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DIVERS FOR THE ENVIRONMENT

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ESCAPE TO MUSANDAM

AN EXOTIC LIVABOARD CLOSE TO HOME

• THE DIVE MENA EXPO • **REEF CHECK NEWS** • OUR YOUTHS CLEAN-UP • **PRODUCT REVIEW**
• OIL UNCOVERED • **DIGITAL ONLINE 2025** • LIVEABOARD ESSENTIALS • UPCOMING EVENTS

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Emirates Diving Association

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EDA is a non-profit NGO registered with the Ministry of Community Development and CDA, and accredited by UNEP as an International Environmental Organisation.

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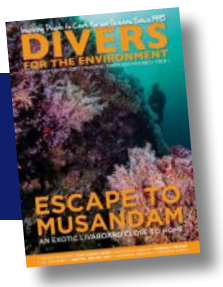
DIVERS FOR THE ENVIRONMENT

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 June 2025. Send all articles, feedback or comments to: magazine@emiratesdiving.com

COVER

PHOTO BY ALLY LANDES
Escape to Musandam – An Exotic Livaboard Close to Home



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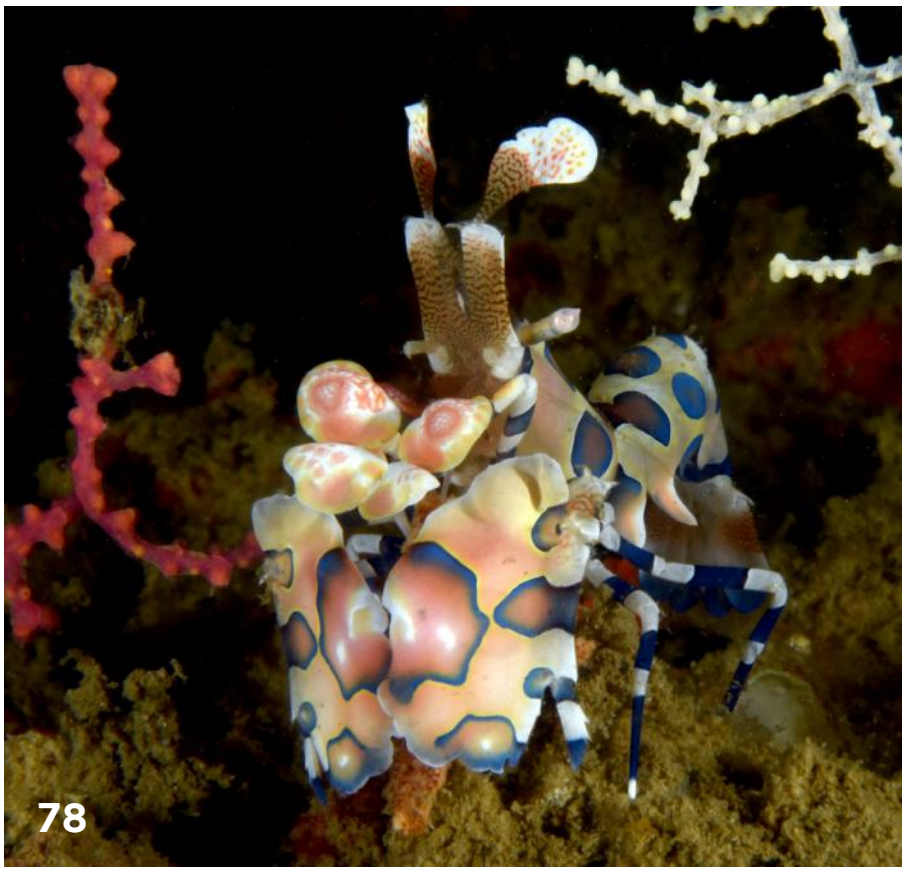
UNDERWATER PHOTOGRAPHY

DIVING DESTINATIONS

HEALTH & SAFETY



EDITOR & GRAPHIC DESIGNER

ALLY LANDES
Ally is EDA's Project Director, Event Planner, Graphic Designer, Editor, and Photographer. 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 CONTRIBUTORS

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

ISHANI PILANKAR COONEY
A MOHRE-licensed private educator with a background in life and forensic sciences, she has resided in the UAE since 1995. Fascinated by microbiology, ocean science, and forensics, she explores how microbes aid ocean conservation, environmental crime investigations, and forensic analysis. Aspiring to become a technical diver, she seeks to uncover hidden microbial networks shaping marine ecosystems.

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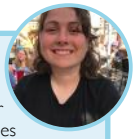
GORDON T. SMITH
Gordon has lived and dived in the Middle East region for the past 36 years. He is a frequent visitor to south east Asia, in particular to Indonesia and the Philippines. Nudibranchs and seahorses are his favourite subjects, and he's always ready to dive in the UAE due to the variation in subjects he encounters.

www.instagram.com/gordon.t.smith



CAITLIN MCFARLANE
Growing up in the UAE, Caitlin's passion for the ocean grew during her undergraduate and postgraduate studies with her interest in marine mammals and sharks. Caitlin joined the UAE Dolphin Project in 2023 to study the cetacean populations in the UAE's coastal waters.

www.instagram.com/uaedolphinproject

TONY SIDGWICK
Tony is a communications professional, writer and diver based in the UAE. He began his diving journey in 2016, and is now passionate about ocean conservation, with a Reef Check certification and several ocean clean-ups under his belt.

ESTHER RODRIGUEZ
Esther is a passionate diver, experienced trip organiser and event manager who turned her love for the ocean into a business. The Big Blue is more than just a name – it's a reflection of her lifelong connection to the sea, inspired by her favourite film and the incredible underwater world that continues to captivate her.

www.instagram.com/thebigbluediving

RAMADAN KAREEM!

IBRAHIM AL-ZU'BI
Co-Founder

We have been incredibly productive in our first quarter of the year as a community. I would like to take this opportunity to thank our Stratgic Partner, DP World for the trust they have confided in us to work together, and to all our partners and sponsors for all the continued support they give EDA, enabling us to continue our mission in conserving and protecting the UAE marine resources. These collaborations are the only way forward for the future of our ocean health.

The Dive MENA Expo 2025, co-located at the Dubai International Boat Show was back this February where the diving community of the UAE and the rest of the region met to find all the latest tech, dive gear, and travel destinations on offer this year. It was great fun catching up with everyone who came to visit the show.

I am very much looking forward to this year's Digital Online – EDA's Underwater Photography and Film Competition to see all our member's new images and videos of all the marine life they have captured on their most recent dive travels. A huge thank you to our partner of the past 16 years from Print Works/Giga Works for continually providing us with the winning prints for the exhibition.

There are some really outstanding prizes to win from our sponsors which we are also incredibly grateful for. I want to thank all our judges and welcome this year's two new judges, Ollie Clarke and Kate Joker which a lot of you will be very familiar with if you follow them on your social media channels. I wish them luck in the tough job coming up to review all the amazing underwater photography and films that will be submitted. It's going to be another exciting awards ceremony this year at Deep Dive Dubai – who are not only our partner for our Digital Online Awards Night, but also for our quarterly EDA Movie Screenings and presentations.

I also want to take this opportunity to thank all our EDA members who volunteer to take part in our clean-ups. We couldn't do it without you. Thank you to our members who also share their insightful diving experiences and underwater photos with us. Your experiences are imperative in recommending when and where to go diving, as well as what to look out for on our trips.

I do hope you enjoy reading this issue. The EDA team continues to work tirelessly to bring more activities for EDA members to get involved in. We're looking forward to seeing you all at the next EDA events.

We wish you all a peaceful month for Ramadan, and a happy Eid Al Fitr at the end of the month.

Happy reading and safe diving,

Ibrahim Al-Zu'bi

Ibrahim Al-Zu'bi

A CLEANUP ARABIA EVENT
UNDERWATER CLEAN-UP AT D-MARIN
MARSA AL ARAB MARINA

WORDS AND PHOTOGRAPHY BY **ALLY LANDES**

On Saturday the 11th of January, EDA members, in partnership with DP World, D-marin, and Imdaad LLC, successfully removed 467kg of ocean waste from D-Marin's Marsa Al Arab Marina with 37 divers and a 20-strong support team as part of this year's first Cleanup Arabia campaign!

A big shout out to everyone for another successful clean-up morning, and thank you to D-Marin for generously catering the event.

The majority of items collected were construction materials, including a lot of black piping and ropes. Two vapes, a carpet, a plastic chair, a pair of sunglasses, a mobile phone, a fin, a tennis ball, and a plastic letter 'D' were the most unusual items found amongst the most likely to find items counted.

Cleanup Arabia was first launched by EDA in 1995, bringing together ocean enthusiasts and environmental activists to protect the coastal areas of the UAE. To date, the initiative has removed a total of 62,157kg of waste from the country's coastal areas.

We're also grateful to our waste partner, Imdaad LLC, who responsibly collect and dispose of the waste and provide exceptional volunteer support for our divers.

The second underwater clean-up is on the 19th of April at the Dubai Offshore Sailing Club.

WANT TO JOIN OUR EVENTS?
Acquire EDA membership, or renew it here to register to all our social events and activities:
www.emiratesdiving.com/membership-form

CLEAN-UP PARTNERS: D Marin Imdaad Ocean Conservancy










D-MARIN MARSA AL ARAB | DUBAI	
37 Divers + 20 Support Team	
MOST LIKELY TO FIND ITEMS	TOTAL
Grocery Bags (plastic)	15
Other Bags (plastic)	76
Beverage Bottles (glass)	11
Beverage Bottles (plastic)	86
Beverage Cans	32
Beverage Sachets/Pouches	10
Bottle Caps (metal)	1
Bottle Caps (plastic)	10
Cigarette Butts	4
Cups, Plates (foam)	1
Cups, Plates (paper)	1
Cups, Plates (plastic)	21
Food Containers (plastic)	24
Food Wrappers (candy, chips, etc)	58
Lids (plastic)	15
Straws (plastic)	11
Utensils (plastic)	7
FISHING & BOATING	
Line, nets, traps, rope, etc	59
ILLEGAL DUMPING	
Construction Materials	133
PACKAGING MATERIAL	
Strapping Bands	2
PERSONAL HYGIENE	
Condoms	1
Gloves & Masks	3
OTHER ITEMS/DEBRIS	
Balloons	1
Clothing	36
E-cigarettes	2
Electronic Waste (phones, batteries)	1
Footwear (shoes/slippers)	3
Paper Bags	1
Tobacco Products (lighters, wrap)	5
Toys	3
Other Plastic Waste	52
Other Waste (metal, paper, etc)	24
TINY TRASH LESS THAN 2.5CM	
Plastic/Foam Pieces	4
OTHER ITEMS NOT LISTED	
Plastic Letter 'D'	2
Carpets	2
Knife	1
Scuba Fins	2
Plastic Buckets	2
GRAND TOTAL OF ITEMS	**722**
TOTAL BAGS COLLECTED	**27**
TOTAL WEIGHT (KG)	**467**

ONE-OFF EDA EVENTS
EMIRATES NATURE-WWF + Q&A

WORDS AND PHOTOGRAPHY BY **ALLY LANDES**

We want to thank Daniel Mateos and Paula Clemente Abad for the enlightening presentation they gave our members on Thursday the 6th of February on all the work they do at Emirates Nature-WWF to protect the marine megafauna of the UAE and the Gulf region. We also want to thank our partner Deep Dive Dubai for hosting these wonderful educational events.

It was a very captivating evening to hear from Daniel about all the projects and research done on turtle conservation, the diversity of distribution and sightings of sharks and rays, the number of fish species, new species, habitat mapping, coral and seagrass surveys, as well as mangrove reservation.

Paula led us through the exploration of eDNA technology which is used as a monitoring tool for coastal ecosystems. A study which involves the collection of samples across all habitat types (sediment and water) and are then processed in the lab to give some remarkable results which was really exciting for all of us to learn about.

ABOUT EWS-WWF

Emirates Nature-WWF has been a prominent and active partner in environmental conservation in the region for over two decades. They are part of the global WWF network which has a 60+ year legacy and is supported by more than five million people worldwide. They are rooted in a country renowned for achieving the impossible.

To find out more about the work and volunteer opportunities with Emirates Nature-WWF, go to: **www.emiratesnaturewwf.ae**

EDA MEMBERSHIP

If you are not yet a member and would like to attend to all of our EDA events, register for membership on our website:
www.emiratesdiving.com/membership-form

CSR THROUGH CLEANUP ARABIA
WISDOM HOUSE TEAM CLEAN-UP

WORDS AND PHOTOGRAPHY BY **ALLY LANDES**

BEACH CLEAN-UP | DUBAI	
La Mer Beach 6 Wisdom House 3 EDA: 9 Adults	
MOST LIKELY TO FIND ITEMS	TOTAL
Grocery Bags (plastic)	7
Other Bags (plastic)	18
Beverage Bottles (glass)	7
Beverage Bottles (plastic)	1
Beverage Cans	1
Bottle Caps (metal)	50
Bottle Caps (plastic)	47
Cigarette Butts	5,205
Cups, Plates (foam)	3
Cups, Plates (paper)	3
Cups, Plates (plastic)	1
Food Containers (plastic)	17
Food Wrappers (candy, chips, etc)	417
Lids (plastic)	16
Straws/Stirrers (plastic)	10
Utensils (plastic)	34
ILLEGAL DUMPING	
Construction Materials	1
PERSONAL HYGIENE	
Cotton Buds	1
Mask	1
OTHER ITEMS/DEBRIS	
Balloons	2
Clothing	1
Footwear (shoes/slippers)	1
Paper Bags	2
Tobacco Products (lighters, wrap)	16
Other Plastic Waste	230
Other Waste (metal, paper, etc)	26
OTHER ITEMS NOT LISTED	
Wine Cork	1
Tooth Brush	1
Plastic Strings	19
Carpet used in Landscaping	1
DEAD/INJURED ANIMAL	
Cat	Dead
GRAND TOTAL OF ITEMS	6,140
TOTAL BAGS COLLECTED	1
TOTAL WEIGHT (KG)	12.5

A big thank you to the Wisdom House (a premium hospitality and F&B Consulting firm) team for performing their CSR beach clean-up activity with EDA on the 14th of February. They showed some love for our marine environment at La Mer, which needed some TLC.

There are countless cigarette butts, food wrappers, plastic cutlery, plastic and metal bottle caps… and these are just a few of the items we go in to remove. Our collection weighed a total of 12.5kg. A toothbrush was the most unusual item found, and the saddest was a dead cat that looked to have been poisoned.

We picked up a staggering 5,205 cigarette butts in our allocated time and we had only just scratched the surface! All our cigarette butts are separated from the rest of the waste and are sent to Goumbook towards their Save the Butts – Waste to Value campaign to recycle them into a sustainable alternative to plywood.

DID YOU KNOW?

- Cigarette butts are made of cellulose acetate, a man-made plastic material, and they contain hundreds of toxic chemicals.
- The chemicals released can remain in the environment for many more years beyond the life of the cigarette butt itself.
- One cigarette butt alone, contaminates 500 litres of water.
- Cigarette butts are actually the most abundant form of plastic waste in the world, with about 4.5 trillion individual butts polluting our global environment!

THE DIVE MENA EXPO

CO-LOCATED AT THE DUBAI INTERNATIONAL BOAT SHOW

WORDS AND PHOTOGRAPHY BY **ALLY LANDES**

EDA had a stand at this year's Dive MENA Expo co-located at the Dubai International Boat Show from the 19-23 of February at Dubai Harbour. It was great catching up with members who came to visit the show and connecting with new fellow divers.

The Big Blue came to spend the day with the EDA team on the 20th, 21st and 23rd sharing their incredible diving trips worldwide. The Big Blue is a company dedicated to organising world-class diving trips for less, for divers who seek more than just a vacation – they seek adventure, connection and the magic that happens underwater. EDA members love The Big Blue and have shared some fantastic reviews about their trips so far!

The Dubai Voluntary Diving Team (DVDT) joined on the 21st to introduce dive show guests to their ghost net rescue missions and how to get involved in volunteering. EDA members know the DVDT team well from EDA's Cleanup Arabia events as, like all EDA members, they are an integral part of EDA clean-up activities!

Rania Shawki Mostafa, EDA's Reef Check Trainer, spent the day on the 23rd to share all things about being a Reef Check certified EcoDiver. When divers join a Reef Check training course, they learn about our local ecosystems and will be able to participate in EDA's survey dives which help us to understand the threats our corals face by providing important data. It's all about citizen science!

There were some great deals on gear available, especially from the Dive Garage and Divers Down stand, and AMIT Retail LLC. Bermuda Diving Centre had a good looking stand to share info and showed some demos in their pool. You also got to meet some of the Deep Dive Dubai team to explore the latest equipment, learn about their courses and the incredible dive experiences available in the world's deepest pool. Al-Can were also there with their diving cylinders. Showcasing for the first time were Pearl Fleet, introducing their luxury livaboard trips in the Maldives, Indonesia and Palau; and Gull, a Japanese brand of masks and fins – not on sale at the show, but displayed for a future UAE distributor.

We had the absolute pleasure of meeting up with Arlindo Serrao, The Diving Talks International Diving Show and PortugalDive.com's Founder and General Manager, visiting from Portugal! We had a great catch up swapping dive stories, dive travel destinations, and other dive shows around the world!

We caught three talks relating to divers at the Port of Call this year. Dr Barbara Lang-Lenton gave an informative presentation on the Dubai Turtle Rehabilitation Project (DTRP) which was the highlight of the speeches! If anyone finds a sick sea turtle in the UAE, remember to keep the turtle safe, preferably on a wet towl and immediately call the DTRP on 800TURTLE. Do NOT attempt to remove any barnacles from their carapace (shell), it would be incredibly painful for them! The DTRP will diagnose and rehabilitate your rescued turtle for a safe release back to the ocean once they're back in healthy shape.

Nico de Corato gave his annual presentation at the show (he has presented for the third year running), highlighting the role of a Heli Rescue Diver, showing the difference in equipment used with that of a scuba diver; and Ahmed Nabil from Alpha Diving gave a talk with a Q&A aimed at the audience on Sustainability in Marine Conservation Efforts and Human Resources.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ABOUT EDA
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TUSA
DIVE WITH US AT
DIVERS DOWN


DIVERS DOWN


DIVEVOLK
SeaTouch 4Max


BERMUDA
DIVING CENTER

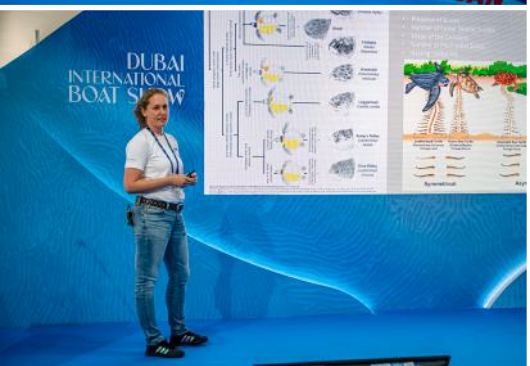

DIVE POOL


THE BIG BLUE


Scuba Diving Tanks
AL-CAN
AL-CAN


DUBAI INTERNATIONAL BOAT SHOW


Port of Call
GULL
GULL


DUBAI INTERNATIONAL BOAT SHOW


DUBAI INTERNATIONAL BOAT SHOW
DUBAI INTERNATIONAL BOAT SHOW


DUBAI INTERNATIONAL BOAT SHOW
Port of Call

THE CRUCIAL ROLE OF SAFETY PROTOCOLS IN FREEDIVING

WORDS BY **BASSEL OUNA – APNEA ZONE** PHOTOGRAPHY BY **AGATA DEPKA**

With the sun well below the horizon, where the tranquil waters turned golden, Maya took a deep breath and filled her lungs with the salty sea breeze. It was her virgin solo freedive which she had trained many months for. Confident, she slipped beneath the surface, embracing the serenity of that underwater world. But as she descended deeper, a sudden light-headedness overcame her. She began to panic as she tried to get her bearings. The dream dive had slowly turned into a nightmare because she had no dive buddy.

Freediving can create a unique sense of freedom and proximity to the underwater world. However, as Maya's case shows, this exhilarating sport has several inherent dangers. Essential safety measures are fundamental to making this sport safe and enjoyable.

THE FOUNDATION: PROPER TRAINING

Before plunging into the depths, one must train with a certified freediving instructor. The instructor will teach the individual breath-holding, equalisation, and relaxation techniques. The instructor will also teach the individual more about the human body's physiological limitations and the dangers of hypoxia and shallow water blackout. This will enable divers to make judgments and recognise warning signs before they deteriorate.

THE BUDDY SYSTEM: A LIFELINE UNDERWATER

One of the cardinal rules of freediving is to never dive alone. Freediving involves two divers operating together to enhance safety and provide immediate emergency assistance. Buddies monitor each other, provide support, and share the experience, making dives safer and more enjoyable. This way, timely intervention by an attentive buddy can prevent fatalities from shallow water blackouts.

PRE-DIVE PREPARATIONS: SETTING THE STAGE FOR SAFETY

These must include extensive pre-dive preparations such as weather and water condition analysis, clearly established dive plans stating the maximum depth and time limit, and the ultimate check that everything is in proper working order with one's equipment. Emergency procedures are discussed with one's buddy, and both divers should be prepared on the spot once needed.

ON-GOING TRAINING: KEEP CURRENT

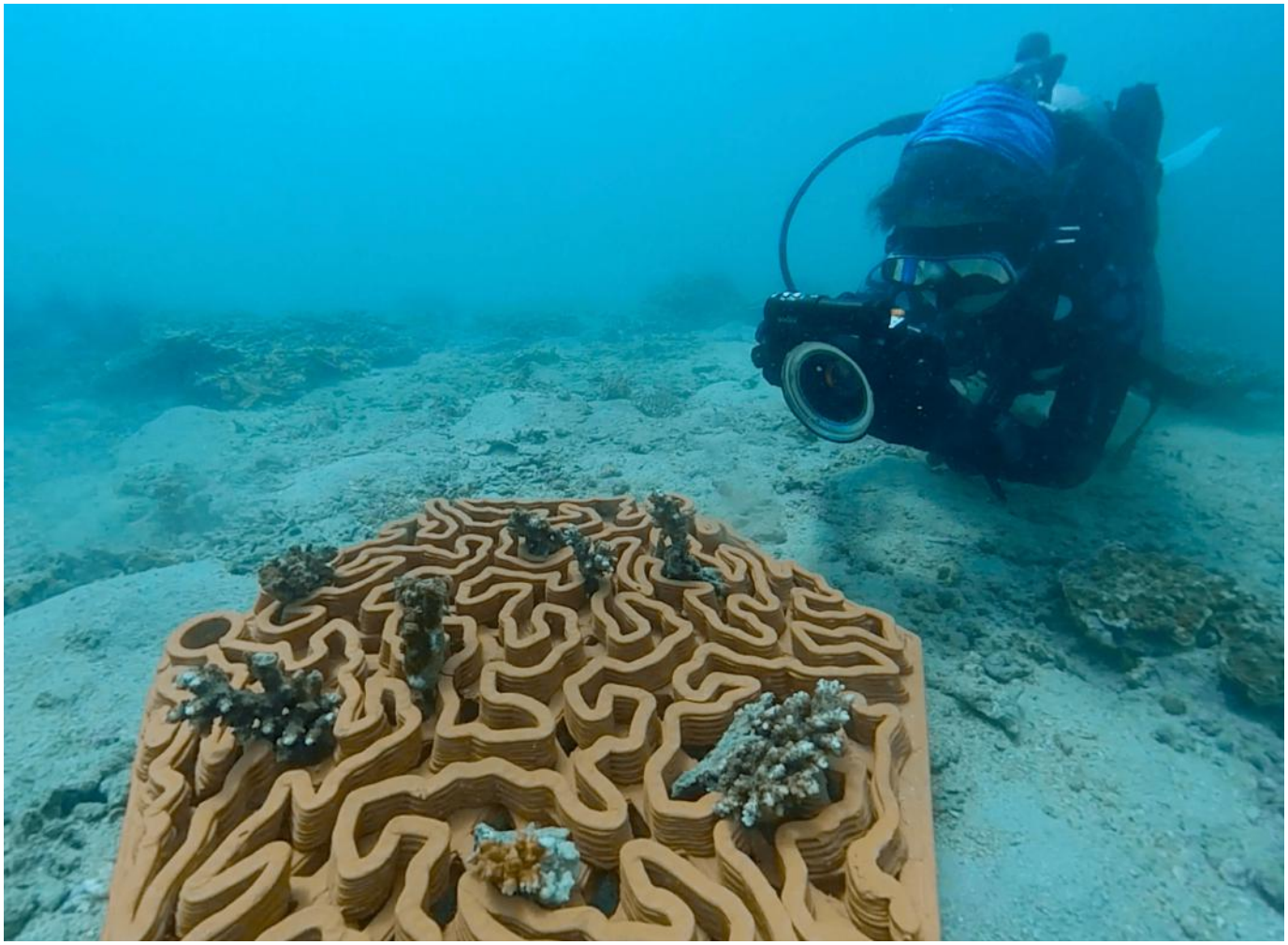
The world of freediving is constantly evolving. Therefore, staying updated on the latest safety protocols while refreshing one's skills through courses, workshops, and practice sessions is equally important. Following these minimal safety practices religiously will go a long way toward reducing the risks associated with the sport.

MAYA'S LESSON: THE NEED FOR VIGILANCE

The awful dive underscored the importance of following established safety guidelines. Maya sought proper training, dived with a buddy, and mapped each dive in minute detail. Her newfound attention to safety helped her become even more confident and appreciative of the underwater world.

Divers have ways of relating to the ocean, yet they deserve respect and responsibility. Adequate training and adopting the buddy system can ensure continuous learning during these thrilling, yet safe adventures.

ARCHIREEF AND SWIRE BULK LAUNCH NATURE-BASED CORAL RESTORATION RESEARCH PROJECT IN SINGAPORE



Archireef, a leading nature-tech company specialising in marine ecosystem restoration, and Swire Bulk Pte Ltd (Swire Bulk), a leading vessel owner and operator in the dry bulk geared sector, announced the launch of a new coral restoration research project in Singapore in December 2024. This collaboration, conducted in cooperation with Singapore's National Parks Board (NParks) and the Reef Ecology Lab at the National University of Singapore (NUS), aims to test the efficacy of restoring coral reefs through advanced 3D-printing technology to support biodiversity and ecosystem resilience through Nature-based Solutions.

Despite its relatively small size, Singapore has always been a global leader in nature restoration and conservation. The project is to be based at the reefs of the Sisters' Islands Marine Park located along the western coast of St John's Island, and will use Archireef's pioneering 3D-printed terracotta ReefTiles™. Designed specifically for coral attachment and growth, these innovative tiles enable rapid coral restoration in areas affected by environmental stress. Swire Bulk's involvement in the project underscores the company's commitment to sustainable marine ecosystems and corporate responsibility in coastal restoration.

"We are thrilled to work alongside Swire Bulk, NUS and NParks in advancing marine ecosystem restoration in Singapore," said Archireef CEO and co-founder, Vriko Yu. "Our technology offers a scalable, nature-based solution that not only aids in coral growth but also enhances biodiversity. This research-focused project not only aims to restore corals but also generate valuable data on coral growth and resilience under varying environmental conditions."

As the world's oceans face rising threats from climate change and human activity, coral reefs, a crucial part of marine biodiversity, are especially vulnerable. Through this partnership, Swire Bulk will assist with logistical expertise and operational support, facilitating the deployment of Archireef's Reef Tiles™ in Singapore's waters.

"Environmental challenges have become more complicated today and Swire Bulk is committed to be part of the solution. As stakeholders in the maritime sector, we recognise the importance of preserving our oceans, and we are proud to be part of a project that aligns with our core values and supports the health of marine environments," said Peter Norborg, Swire Bulk's CEO. "Together with Archireef, we strive to achieve a measurable and positive impact on Singapore's coastal resilience and biodiversity. This initiative complements the Swire Group Charitable Trust's existing efforts in the region with the Swire Institute of Marine Science, which was established in Hong Kong SAR as a leading research facility."

The Archireef-Swire Bulk collaboration, with cooperation with NParks and NUS, represents a forward-looking approach to ocean conservation and sustainability. This project is expected to provide a replicable model for coral restoration in urban coastal areas, serving as a foundation for future coral restoration initiatives across the region. NParks will support the initiative by providing access to the Sisters' Islands Marine Park for the research project and assessing the project's impact on local marine ecosystems, whilst NUS will drive local research to improve marine health through Nature-based Solutions.

SINCE A 2022 BAN, THE ENVIRONMENT AGENCY – ABU DHABI ANNOUNCES THE SAVING OF 364 MILLION PLASTIC BAGS AND THE RECOVERY OF 130 MILLION PLASTIC BOTTLES

Since the ban on single-use plastic bags came into effect on the 1st of June 2022, as part of the emirate's Single-Use Plastic Policy, the Environment Agency – Abu Dhabi (EAD) has announced that 364 million single-use plastic bags have been saved. This is the equivalent of 2,400 tonnes of plastic, or 547,000 tonnes of Green House Gases (GHGs), equating to 130,000 gasoline-powered passenger vehicles being driven for one year.

In 2023, EAD launched the 'Incentive-based Bottle Return Scheme' initiative, in collaboration with key partners, to recover and recycle single-use plastic bottles. To date, more than 130 million bottles have been collected from around 150 Reverse Vending Machines (RVMs), smart bins, as well as door-to-door collections. The total amount of recyclable plastic collected is 2,000 tonnes – enough to fill up 80 truckloads. So far, in 2024, 67 million bottles have been returned for recycling.

Similarly, on June 1st of this year, EAD imposed a ban on some Styrofoam products. The Agency reported a 97 per cent compliance rate has been achieved among retailers, with a prediction of further compliance improvements by the end of the year. These proactive measures by the emirate are a prelude to the Federal ban on targeted Styrofoam and plastic products which will become effective in 2026.

Her Excellency Dr Shaikha Salem Al Dhaheri, Secretary General of EAD said, "When we launched the Abu Dhabi Single-Use Plastic Policy in 2020, which was followed by the ban on single-use plastic bags in 2022, we were the first in the region to do so, setting very ambitious targets to meet our commitments to protect the environment and mitigate the effects of climate change."

She added, "We knew that a consumer change in behaviour was the key to us being able to reduce the reliance on single-use plastics and nurture a culture of reuse and recycling. The Abu Dhabi community has proven to be more than collaborative and proactive, and as a result, we have recorded, during the past two years alone, a significant reduction of 364 million plastic bags. For context, this represents a 95 per cent reduction in the total number of plastic bags distributed at the emirate's cash counters. Prior to the policy's implementation, shoppers used three bags per shopping trip, but now only use 0.4 bags. This has also led to a 2,000 per cent increase in the number of reusable bags in just one year, increasing from 603 bags in 2022 to 26,075 bags in 2023 at one of the emirate's main outlets. We also recorded the recovery of 130 million plastic bottles, and an increase in the number of companies concerned with recycling plastics in the emirate."

Her Excellency also highlighted other positive results saying, "Despite the decrease in the number of companies manufacturing single-use plastic products in Abu Dhabi – from 110 in 2022 to 88 in 2023 – we witnessed the establishment of 57 new recycling companies working in the emirate's waste sector, which contributes to enhancing the quality of life and its sustainability, and enhances the circular economy system."

She elaborated, "We are delighted, as the residents of Abu Dhabi made an effort to embrace reusable bags and return their bottles to the Reverse Vending Machines for recycling, which has hugely contributed to our success. The results of a survey we conducted indicated that 84 per cent of the public are aware of the policy and its requirements, and 82 per cent said that the policy has a positive impact on quality of life, represented by clean beaches and waterways.

"We could not have achieved our ambitious goals without the cooperation of our strategic partners, including the Abu Dhabi Agriculture and Food Safety Authority, the Abu Dhabi Department of Economic Development, and retailers who have worked closely with us to provide alternatives to single-use plastic products, in addition to helping us implement the ban on Styrofoam products."

She concluded, "We are well on the way to having a positive impact on our environment as we reduce the amount of microplastic entering our precious ecosystems and harming our species."

The Agency predicted that the enforcement of the ban will have saved over 400 million single-use plastic bags by the end of 2024. In the last nine months alone, consumption had decreased by 121.5 million bags. By the end of the year, the Agency anticipated it will have collected 90 million single-use plastic bottles in 2024.

THE INAUGURAL INTERNATIONAL MANGROVE CONSERVATION AND RESTORATION CONFERENCE IN ABU DHABI

CONCLUDED SUCCESSFULLY – HIGHLIGHTING A GLOBAL STRATEGY SHAPING FUTURE PRIORITIES

The world's first edition of the International Mangrove Conservation and Restoration Conference (IMCRC), led by the Environment Agency – Abu Dhabi (EAD), concluded with an urgent message: safeguarding and restoring the world's mangroves is essential to addressing global environmental and socioeconomic challenges.

With more than 50 per cent of mangroves at risk of collapse by 2050 due to human-driven pressures, the conference highlighted the critical role of these ecosystems in ensuring coastal resilience, biodiversity protection, food security, and climate change mitigation and adaptation.

In his closing speech, Ahmed Al Hashmi, Executive Director of Terrestrial and Marine Biodiversity Sector, said, "Over the past three days, the first International Mangrove Conservation and Restoration Conference has demonstrated the power of collaboration and innovation in addressing the critical challenges faced by mangrove ecosystems globally. This milestone event, hosted in Abu Dhabi, provided a platform to bridge the gap between cutting-edge scientific research and practical, on-the-ground restoration efforts. It has reinforced the need to develop traditional approaches to mangrove restoration, instead amplifying science-based strategies, community engagement, and a holistic understanding of ecosystem connectivity."

He added that the conference highlighted the Abu Dhabi Mangrove Initiative, a cornerstone of EAD's efforts to position Abu Dhabi as a global leader in mangrove conservation. Launched by His Highness Sheikh Khaled bin Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Chairman of the Abu Dhabi Executive Council, this initiative exemplifies the integration of science, policy, and action to address climate change and enhance biodiversity.

He elaborated, "Bringing together representatives from governments, NGOs, academia, and the private sector, the conference has sparked a renewed commitment to scaling impactful restoration projects, investing in credible solutions, and building resilient ecosystems that benefit nature, communities, and the climate."

He concluded, "This shared partnership driven by knowledge marks the beginning of a transformative journey toward ensuring a positive and lasting impact on mangrove conservation locally and globally."

A holistic approach to mangrove conservation was highlighted, accentuating the need for connectivity between mangroves and adjacent ecosystems like seagrasses, coral reefs, and upstream rivers. This integrated approach ensures that ecosystems provide both ecological and socioeconomic benefits, creating a balanced strategy for conservation and restoration.

Community involvement was identified as a cornerstone of successful mangrove conservation efforts. Restored mangroves not only support local livelihoods but also reduce pressures on these ecosystems through community engagement and capacity building, ensuring the ability to benefit sustainably.

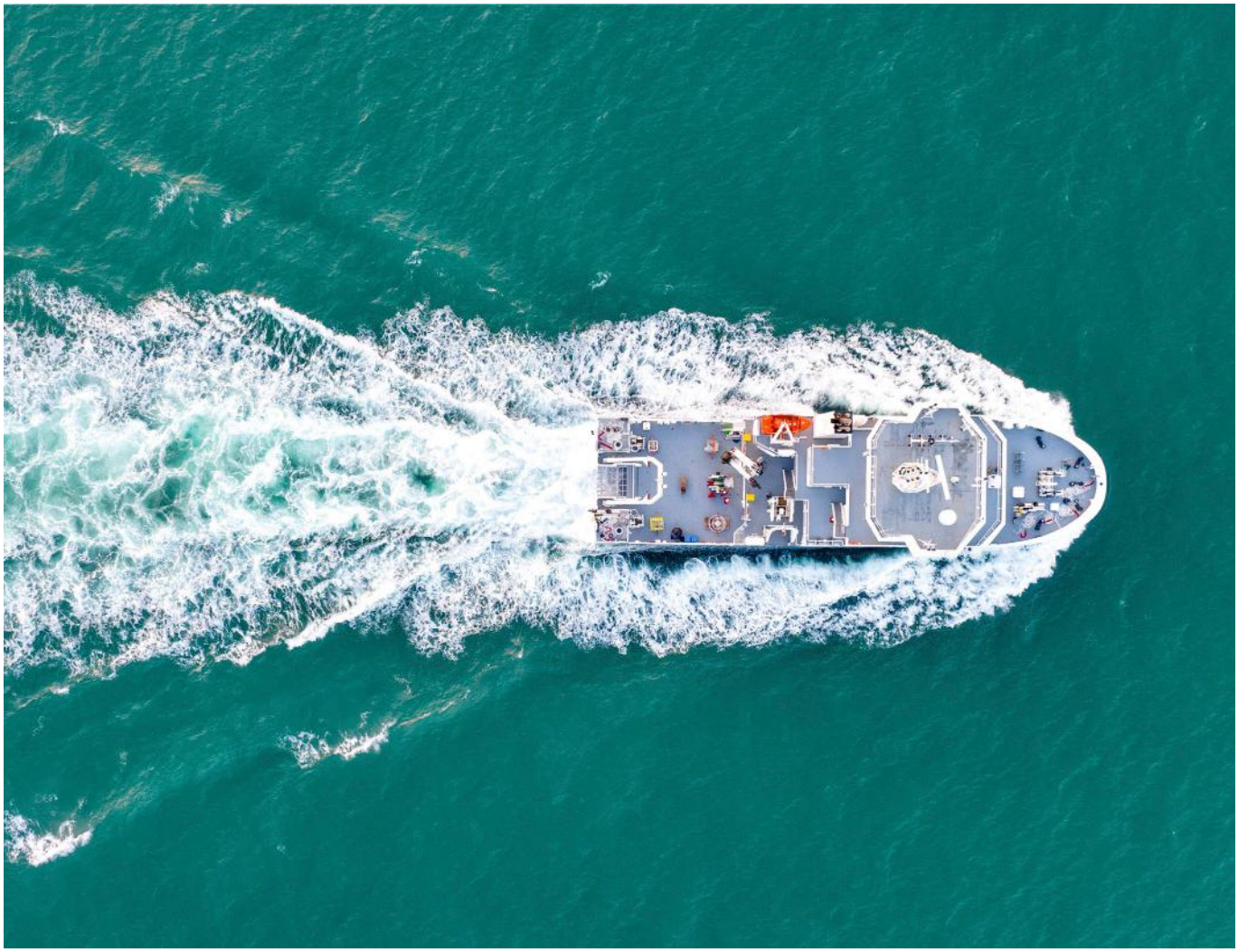
The conference also stressed the need for large-scale collaboration and funding to achieve impactful mangrove conservation and restoration. Efforts like the Mangrove Breakthrough initiative were spotlighted for their role in mobilising resources from governments, the private sector, and philanthropic organisations to bridge gaps and drive transformative action.

Successful examples of community-based mangrove restoration projects were shared from countries such as Indonesia, Guinea Bissau, Kenya, Mexico, and the United States. These projects demonstrated scalable methods and best practices that can be applied globally. With growing awareness of mangroves' importance, the conference highlighted the need to capitalise on this momentum by sharing scientific knowledge, promoting best practices, and implementing large-scale interventions supported by sustainable funding.

The world's first edition of the IMCRC brought together 500 leading experts, policymakers, conservationists, and community representatives to address one of the world's most critical environmental challenges. The outcomes of this landmark event will serve as a foundation for advancing global efforts to protect and restore mangroves, ensuring the health of these vital ecosystems for generations to come.

The international conference was organised by EAD with the support of several environmental organisations and scientific bodies that make up its committee, including the United Nations Environment Programme (UNEP), the United Nations Decade on Ecosystem Restoration, the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the University of St Andrews, the Global Ocean Decade Programme for Blue Carbon, the Global Mangrove Alliance, the Mangrove Action Project, the IUCN Mangrove Specialist Group, ZSL, Wetlands International, and Emirates Nature-WWF.

FIRST MODERN SEAFLOOR SURVEY OFFSHORE ABU DHABI
EXPLORES HISTORICAL IMPACTS OF CLIMATE CHANGE ON MARINE ECOSYSTEM



The Environment Agency - Abu Dhabi (EAD) and Khalifa University of Science and Technology today announced that a team of scientists and marine researchers were on board the region's most advanced marine research vessel Jaywun, leading the first comprehensive modern sediment survey off the coast of Abu Dhabi, to explore the effects of climate change on the Arabian Gulf's distinctive marine ecosystem. This discovery will pave the way for future research opportunities.

Launched by His Highness Sheikh Hamdan bin Zayed Al Nahyan, Ruler's Representative in the Al Dhafra Region and Chairman of EAD's Board of Directors, the UAE's first research vessel Jaywun is equipped with advanced technology and six laboratories to support scientific exploration initiatives in environmental preservation and climate change mitigation.

The project was initially launched as part of the expedition under the multilateral Memorandum of Understanding between the EAD, OceanX, Bayanat, and M42, aboard the Ocean Explorer across the UAE in December 2023. The study aims to uncover critical insights into marine ecosystems and through mapping of the seafloor, it will also shed light on underwater features of the Arabian Gulf along Abu Dhabi's Coast. Future missions on Jaywun, including an extended study off the coast of Fujairah, will continue to build on these findings.

Professor Bayan Sharif, Provost, Khalifa University said, "We are proud to be one of the members of the Abu Dhabi Environmental Research Network (ADERN), launched by the Environment Agency - Abu Dhabi (EAD). As part of ADERN, the Jaywun research vessel is available to UAE scientists, including our faculty members who can submit research projects to the EAD for execution on the vessel. We take great pride in conducting this first modern sediment survey in offshore Abu Dhabi to gain vital information about climate change on marine ecosystems, enabling us to effectively monitor marine health in the Arabian Gulf."

Ahmed Al Hashmi, Executive Director of the Terrestrial and Marine Biodiversity Sector at the Environment Agency – Abu Dhabi said, "Jaywun enables us to conduct in-depth research on marine ecosystems using sophisticated equipment, ensuring high-quality data collection and analysis. Currently, in partnership with Khalifa University, we are studying marine sediments for the first time to assess the impact of climate change on the Arabian Gulf. The collaboration between our scientific teams is essential, and the results from this research will play a key role in informing future sustainability and conservation projects to protect our vital marine ecosystems."

The primary objective of the survey is to explore the waters of the UAE and establish a baseline of sediment data from offshore Abu Dhabi for the first time. This will enable the researchers on board Jaywun to gain crucial insights on historical and recent changes in the marine environment. The research also covers sediment movement, the impact of storm events, as well as the overall health of oceanic ecosystems. Moreover, the marine chemistry and sediments formed under these extreme conditions provide insights into a future warmer climate."

EAD ISSUES REGULATIONS ON ADMINISTRATIVE PENALTIES TO ENHANCE PROACTIVE ENVIRONMENTAL PROTECTION

Environment Agency – Abu Dhabi (EAD) has issued regulations on administrative penalties, outlining procedures for their imposition and appeals. These regulations empower EAD to take immediate action against environmental violations, correct the behaviour of individuals and establishments, and mitigate resulting damages. By doing so, the agency enhances proactive environmental protection, making these penalties an effective legislative tool that balances preventive and punitive measures.

Developed under Law No. (16) of 2005, which reorganises EAD and its amendments, the regulation applies to administrative penalties imposed on establishments, projects, and individuals for violations that harm the environment. It also sets forth the procedures for imposing and appealing penalties. The regulation grants EAD the authority to enforce penalties within the environmental inspection and enforcement system, ensuring oversight and accountability while implementing proactive or corrective measures to address environmental harm.

The regulation stipulates that EAD shall impose administrative penalties independently of any judicial or administrative procedures, without serving as a replacement or complement to such processes. It grants EAD the authority to impose various penalties on violators, including reprimands, warnings, financial, administrative, and technical supervision, temporary suspension of activities, licence cancellation or suspension, and temporary or permanent closure of establishments.

When imposing penalties, EAD considers multiple factors to ensure fair and effective enforcement, including the extent of environmental damage, the financial and time costs of corrective measures, the violator's prior compliance record, and any additional factors determined on a case-by-case basis.

The regulation also grants violators the right to appeal penalties within 60 days of notification. If the appeal is not resolved within 90 days of submission, it will be considered accepted. In all cases, the violator must remediate the environmental impact and restore conditions to their original state within the timeframe specified by EAD. If they fail to do so, the agency will take corrective action against the violator.

Her Excellency Dr Shaikha Salem Al Dhaheri, Secretary General of EAD, emphasised that the regulation strengthens the legislative framework for environmental enforcement by leveraging various legal tools to address potential environmental impacts from development, industry, tourism, and other activities. This aligns with EAD's commitment to preserving and sustaining the environment for future generations.

Her Excellency Al Dhaheri said, "EAD will implement the regulation's requirements in collaboration with strategic partners across the emirate, following systematic and well-structured procedures to achieve its objectives."

FUJAIRAH ENVIRONMENT AUTHORITY AND A TEAM OF SCIENTISTS SUCCESSFULLY RETURN BRYDE'S WHALE TO ITS MIGRATION PATH

The Fujairah Environment Authority, in collaboration with the Port of Fujairah, Fujairah Research Centre, and Yas SeaWorld Research and Rescue Centre, successfully guided a Bryde's whale from the baleen species back on to its migration path after it was spotted near the Port of Fujairah in December last year.

Experts and researchers from the four entities conducted scientific studies and marine surveys to assess the whale's health, behaviour, and vital functions while monitoring seawater quality in its vicinity. The tests confirmed that the whale was in good health with normal vital functions.

The monitoring, research and rescue operations carried out around the clock by dedicated teams helped ensure the whale's safety and smooth return back on to its migration route, preventing any impact on or from navigation activities at the Port of Fujairah. Experts in the marine environment and marine mammal behaviour employed advanced technologies to ensure this exceptional case was handled with precision and professionalism.

"This kind of operation requires coordinated efforts and close collaboration among relevant entities to handle the situation professionally and avoid compromising Fujairah's environmental security," asserted Her Excellency Aseela Al Mualla, Director of the Fujairah Environment Authority. "Whales are among the largest and most magnificent marine creatures that help maintain ecological balance. Their presence along Fujairah's coasts is a clear indication of the region's healthy marine environment and unique biodiversity."

HE Al Mualla thanked the Authority's strategic partners and their scientific teams for their tireless efforts in rescuing the extraordinary creature, commending their collaboration with the Biodiversity Team at the Fujairah Environment Authority to ensure the safe return of the Bryde's whale back on to its migration path.

For his part, Dr Fouad Lamghari, Director of the Fujairah Research Centre, praised the successful rescue operation, which began at the Port of Fujairah several days ago, applauding the teams from the Fujairah Environment Authority, Port of Fujairah, and Yas SeaWorld Research and Rescue Centre for their swift response and their professional and serious approach.

Dr Lamghari thanked everyone who facilitated the rescue mission, reaffirming the centre's commitment to ensuring the whale's safe return to its natural habitat, as well as to drawing lessons from this experience to draft scientific papers and environmental studies documenting Fujairah's healthy marine environment, further cementing the emirate's reputation as a historical site with rich biodiversity.

On a similar note, Rob Yordi, the General Curator of SeaWorld Yas Island and Yas SeaWorld Research and Rescue Centre said, "We take great pride in our swift intervention to support the Fujairah Environment Authority and the Port of Fujairah in rescuing the Bryde's whale. This operation reflects our deep commitment to protecting marine biodiversity in the UAE and beyond. It also highlights the critical role that the Yas SeaWorld Research and Rescue Centre plays, building on more than 60 years of expertise in marine animal rescue and rehabilitation."

"We are honoured to have supported this collaborative effort to ensure the whale's safe return to its natural habitat," he added. "We hope this success inspires further collective action to preserve our oceans."

UBONG UDOESSIEN (YUBII), A SCUBA ENTHUSIAST, INVESTS OVER HALF A MILLION DIRHAMS TO LAUNCH THE FIRST PODCAST SERIES FOR LOCAL DIVERS & MORE

WORDS BY **ARWA MOHAMMED – XPHOTODXB** PHOTOGRAPHY BY **ARWA** AND **YUBII**

LEFT: Yubii and Dr Juan Pablo Torres-Florez; **CENTRE:** Arwa Mohammed and Sarah G by Yubii; **RIGHT:** Yubii and Saeed S. Majed; **BELOW:** Sarah G and Jarrod Jablonski by Yubii.

This is the story of a humble philanthropist who prioritises investing in human potential over financial gain. Electrical engineer and media producer Ubong Udoessien arrived in Dubai with a clear mission: to fill a gap in the market by offering vital support to local talents.

In a century where information holds increasing value over traditional entertainment, Yubii noticed a unique opportunity in Dubai's podcasting landscape. While podcasts are rapidly gaining popularity, most local productions are confined to YouTube. Yubii envisioned a broader reach, enabling local podcasts to distribute across 193 countries on 24 audio platforms and 5 video platforms – something no other media provider currently offers.

Through his generous backing, this expanded distribution comes at zero cost to local scuba diving professionals, like myself and Sarah G (a PADI Scuba Instructor and brand ambassador for PADI and ScubaPro). Yubii understood the challenges of launching one's podcast. Through his company, Anqor Production and Digital Marketing Agency, he has sponsored local talents and scuba divers to launch bilingual podcasts, setting them up for success in both audio and video platforms.

As an Open Water Scuba diver and the founder of Anqor Production, Yubii has personally invested over half a million dirhams to support these creative, local hosts simply because he cares about producing high value content. He said, as an expat, when I came to dubai I was surprised about the niche communities that existed and it took me a while to find and connect with them. I want new expat and dubai visitors to explore these niches prior to visiting so when they arrive they have additional destinations added to their dubai exploration journey.

Yubii's passion for technology and storytelling began at an early age. While many creatives tend to avoid technical fields, Yubii was different. At just 15, he volunteered at his church, recording mid-week and Sunday services, and quickly developed a passion for videography. He also enjoyed taking apart radios to understand their mechanics. This curiosity has fuelled both his personal and professional journeys.

One day, I shared my discovery of soft corals with him. He was so inspired that he offered to sponsor an entire season of eight podcast episodes dedicated to my guests. "It's important to show the world what Dubai has to offer," he told me. "It's an honour to support such a talented woman with an incredible skill set. It's rare for videographers to admire a colleague's work, but Arwa, I love what you do, and I'm honoured to help you share these stories through my network." He added, "If you want to go fast, go alone. If you want to go far, go together." His words reinforced the importance of unity, especially among creatives and visionaries. Through his Anqor podcast series, Yubii has hosted high valued guests such as Jarrod Jablonski, Director of Deep Dive Dubai, Amna Al Habtoor, Founder of Arcadia, Maitha Alawadi Dubai One TV presenter and over 75 talented and successful guests who have shared valuable stories and insights.

Yubii's support moved me deeply. As a scuba diver with multiple injuries – including two torn MCLs, a back injury, and a broken rib – I endure significant challenges to create content that showcases the beauty of local marine life. Knowing that my work is appreciated by someone like Yubii's has inspired me to continue this journey.

Many of us have witnessed Yubii's commitment firsthand at podcast shoots. While he could easily delegate the work to a crew, he chooses to direct and produce every episode – whether in the studio or on location. His genuine love for the stories shared in these podcasts drives him to personally oversee every detail, ensuring that each episode captures the essence of the narrative and resonates with the audience

ANQOR PODCAST SEASON 2 LINEUP

Building on this mission, Anqor Podcast Season 2 features six unique hosts:

- **Arwa Mohammed**: Documentary Filmmaker | Inspired by Arwa
- **Sara G:** Ex-CNN Host | Scuba with Sara
- Funda Çinar – Serial Entrepreneur | Backstories
- **Chineme Prince:** Actor with over a decade of experience | Creative 1s
- **Marwa Mahgoub:** HR Leader & Life Coach | The Hive
- **The Singularity Podcast:** explores innovators and disrupters shaping the future of AI, tech, and machine learning.

My podcast, Inspired by Arwa, will feature nine guests from diverse professional backgrounds, speaking in both Arabic and English. Among them are Dr Juan Pablo Torres-Florez, a marine biologist and renowned scientist; Saeed S. Majed, diving course director marine conservationist; and Eng. Ahmed Nabil, an IUCN expert, United Nations pool of experts member, and founder of Alpha Consultancy.

Starting in March 2025, all podcasts will be available across a range of platforms. Audio streaming will include Apple Podcasts, Spotify, Pandora, YouTube, Amazon Music, Anghami, and others. Exclusive distribution partners such as Etihad Airways, Alif Alif, Fly Dubai, RTA, and Saudi Airlines will feature the podcast for travellers, while video content will be accessible on popular platforms such as Instagram, YouTube, Facebook, Snapchat, and TikTok.

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GROUNDTRUTH

COLLABORATES WITH GLOBAL DIVING ORGANISATION, PADI, ON PIONEERING SUBMERSIBLE COLLECTION

GROUNDTRUTH, a story-led material innovation company that is fast forging a reputation for its next generation travel gear, is thrilled to announce its collaboration with the world's largest diving association – PADI – on a range of pioneering submersible bags. Entitled UNDA, Latin for wave, the collaborative range sets a new standard in sustainable design, with the GROUNDTRUTH team transforming the standard drybag into a future-focused travel companion, representing the two partners' shared philosophy of ocean and environmental protection.

The 100% recycled bag range's proprietary material is made from plastic waste including ghost fishing nets, post-consumer Nylon and plastic bottles. It is used alongside GROUNDTRUTH's own patent-pending GT-OCO-CO2® hardware range, made from recycled plastic and captured CO2 emissions.

With a presence via 6,600 dive centres and resorts in 184 countries and territories throughout the world, PADI has amassed a hugely engaged community of 30 million+ divers to date. This collection creates a platform to highlight the shocking/mind blowing impact of plastics affecting our blue planet while actively contributing to its removal – empowering people from around the globe to take meaningful action to protect what they love.

GROUNDTRUTH co-founder and CEO, Georgia Scott said, "We are incredibly excited to partner with PADI on this project which will be launched via PADI's global diving network and via our own channels," said Georgia Scott, Co-founder and CEO of GROUNDTRUTH. "Ghost fishing nets account for over 50% of all plastic waste in our oceans, causing irreversible damage to global marine ecosystems. By combining our expertise in innovative design with PADI's dedication to Ocean conservation, we aim to make a significant positive impact through the repurposing of these harmful plastics. GROUNDTRUTH was created with the value that all consumer products should contribute to a safer planet."

"We are incredibly proud to collaborate with GROUNDTRUTH, as this partnership exemplifies our shared mission to mobilise the global community of Torchbearers who actively explore and protect our ocean," said Lisa Nicklin, Vice President of Growth and Marketing for PADI Worldwide "Together, we've revolutionised the way that divers can carry around their essentials while elevating their commitment to protecting the place they love. It's truly a product line designed by divers, for divers.

The UNDA range has been made available for pre-order through www.groundtruth.global from the 3rd of February 2025 with PADI members being given the first opportunity to buy via their channels. Join us in this pioneering initiative to explore, protect, and preserve our oceans for future generations.

FOR MORE INFO ABOUT THE COLLABORATION, GO TO:
www.groundtruth.global/collections/unda-range-waterproof

DR SYLVIA EARLE
ANNOUNCED AS FIRST PADI EMERITUS AMBASSADIVER



PADI® has announced the first PADI AmbassaDiver™ for 2025: legendary scuba diver, marine biologist, oceanographer and explorer Dr Sylvia Earle.

"Dr Earle embodies everything PADI stands for and we celebrate her continued commitment to inspiring future generations of divers and conservationists," says Kristin Valette Wirth, Chief Brand and Membership Officer for PADI Worldwide. "For decades, she has continued to break through the glass ceiling and show what is possible when it comes to both seeking adventure and saving the ocean. It's a privilege to amplify her legacy as a scuba diver and ocean advocate."

Since 2015, the PADI AmbassaDiver programme has aimed to amplify the personal stories of exemplary scuba divers who are part of a global team committed to encouraging their communities to experience, explore, and protect the underwater world.

"I am honoured to be asked to serve as the first PADI Emeritus AmbassaDiver," says Dr Sylvia Earle. "I look forward to being a champion for PADI and using this honour to inspire respect, love, and care for the ocean while providing effective guidance on safety for those who seek adventure underwater."

Dr Earle's key accomplishments for the ocean include:

- One of the first scientists to use scuba to document marine life firsthand.
- The first female chief scientist of the National Oceanographic and Atmospheric Administration (NOAA).
- Recording the deepest walk on the ocean floor leading the first all-female team of aquanauts for the Tektite II project in 1970.
- Founding Deep Ocean Exploration and Research in 1992 to develop human-occupied submersibles and other subsea technologies.
- Leading the 5-year Sustainable Seas Expeditions with National in National Marine Sanctuaries.
- Founding Mission Blue in 2009 to establish more MPAs and "Hope Spots".
- Being awarded TIME Magazine's first Hero for the Planet in 1998, the 2009 TED Prize, the United Nations Champion for the Earth in 2014, and the Ken Burns Prize in 2024.
- Authoring over 200+ publications, lecturing in 80+ countries, leading 100+ marine expeditions and spending nearly 10,000 hours underwater.
- Co-Hosts the Dive in With Liz and Sylvia programme sponsored by the Ocean Elders.

"Dr Earle's PADI Emeritus AmbassaDiver distinction is more than a title – it will become a powerful movement that engages the global diving community, honours her legacy, and inspires others to rally behind our shared vision to explore and protect the ocean," continues Valette Wirth.

Twelve additional PADI AmbassaDivers are anticipated to join Dr Earle as the programme's 2025 inductees later this month. Learn more about the PADI AmbassaDiver team at padi.com/ambassadiver.

PADI GLOBAL MEMBERSHIP CONTRIBUTES TO STUDY THAT INDICATES REVIVAL OF MPAS WOULD BOLSTER BILLIONS FOR THE INDUSTRY


Egypt

Scientists, including those from National Geographic Pristine Seas, find scuba divers are willing to pay more to seek adventure in Marine Protected Areas, estimating an additional USD 2.7 billion spent per annum.

PADI®, the world's largest scuba diving organisation, has been working with National Geographic Pristine Seas for the last three years to help identify the positive effects of protecting scuba diving sites around the world – which was recently published in new peer-reviewed research.

PADI's global membership of 6,600 PADI Dive Centres and Resorts in over 180 countries helped National Geographic Pristine Seas assemble a database that estimated the number of scuba dives annually, the extent to which protection would increase biomass and biodiversity in an area, and a scuba diver's willingness to pay access fees to dive in Marine Protected Areas (MPAs).

As a result, the study found that more fully protected dive sites would generate an estimated USD 2.7 billion in additional income globally for the scuba diving industry, most of which would come from access fees paid by divers directly to local communities. This additional protection would also help regenerate marine ecosystems and a new long-term income source for these coastal economies.

"Bottom line, ocean protection benefits marine life, coastal communities and businesses," remarked Enric Sala, founder of National Geographic Pristine Seas. "Protecting diving sites from fishing and other damaging activities can generate new streams of income and benefit more people. It's increasingly clear that efforts to protect 30% of the ocean by 2030 are even more beneficial than we thought."

These research findings directly align with the goals of PADI's Blueprint For Ocean Action – in which safeguarding recreational dive hotspots around the globe would deliver a host of benefits to tourists, local communities, and marine life. In 2022, PADI launched an ambitious new initiative to establish the world's largest network of conservation sites aimed at protecting ocean habitats and species threatened with extinction. Supported by Blancpain, founding partner of PADI's MPA Programme, the Adopt The Blue™ programme activates a global network of dive sites across the planet to establish more Marine Protected Areas to regenerate local economies and coastlines.

"By PADI joining forces with like-minded global partners such as National Geographic Pristine Seas, we will exponentially increase our positive impact for saving the ocean," said Dr Drew Richardson, President & CEO of PADI. "With more marine protected areas, we can reinvigorate the diver experience and regenerate hope for the ocean; and with that comes more people who are inspired to explore the ocean and become Torchbearers to further advocate for safeguarding its future."

Since 2008, National Geographic Pristine Seas has helped establish 29 of the largest MPAs in the world, covering a total area of 6.9 million square kilometres – more than twice the size of India. Their latest peer-reviewed research joins their resume of over 300 that have already been published.

"If you protect a marine area, more recreational divers will show up and they'll pay more for the privilege of seeing sensational underwater


New Zealand


Fiji


Hawaii


The Bahamas

life," said Reniel Cabral, a Senior Lecturer at James Cook University and the study's lead author. "Communities and businesses are leaving money on the table by overlooking the benefits of marine sanctuaries."

Other key findings from the most recent study include:

- Some 33 million dives take place in the ocean each year, but only 15% of dive sites are fully protected from fishing and other destructive activities.
- More MPAs estimated to increase the number of dives annually by 32% (10 million + more per year).
- Egypt, Thailand, and the US host the most scuba diving annually (estimate USD 3 million annually).
- Indonesia, Egypt, and Australia host the most dives within MPA borders annually.
- The Philippines, the US, and Indonesia would benefit the most economically from designating sanctuaries in popular diving spots.
- The Global South, host to some 62% of recreational dives, is poised to gain the most.

"The potential for the recreational diver industry to create positive ocean change is unparalleled," continues Richardson. "As the only global community to have the superhero skills to descend beneath the surface and both connect with and help the marine world directly, there is a massive opportunity to change the way we all seek adventure. As the world's largest scuba diving organisation, we can play a key part in reaching the global target of 30% protection by 2030 and enrich both ours and the ocean's livelihood simultaneously."

TO HELP PADI ADVOCATE FOR MORE MPAS, VISIT:
www.padi.com/aware/AdoptTheBlue

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

2024 YEAR IN REVIEW

WORDS BY **JAN FREIWALD EXECUTIVE DIRECTOR REEF CHECK FOUNDATION**

As the year draws to a close, I am reflecting on the incredible accomplishments we've achieved together over the last 12 months. On behalf of the entire Reef Check team, I want to extend my sincere gratitude to our global community of volunteers, donors, and partners. Your steadfast support has been instrumental in making these achievements possible.

This year, Reef Check volunteers all over the world have dedicated countless hours to monitoring coral reefs and kelp forests. From restoring kelp along the Big Sur coast in California, to removing ghost nets in Malaysia, to training youth for careers in ocean conservation in Mozambique and starting a new programme in Hawai'i, Reef Check teams around the world have achieved so much in 2024. I am immensely proud of what we've accomplished together. Personally, a highlight was getting to know our partners at the Tolowa Dee-ni' Nation and being part of teaching their scuba class in the Smith River in Northern California.

I invite you to take a moment to explore some of our key achievements from 2024, which you can find below. I hope you'll be inspired and encouraged by the positive impact we've made on our precious marine ecosystems.

As we look ahead to the new year, I respectfully ask you to consider supporting Reef Check with a donation, if you're able. Your generous contributions are essential in helping us meet the increasing demand for our work at a time when government resources for our work have expired due to budget cuts. Every donation, no matter the size, is deeply appreciated and strengthens our mission to protect and preserve our oceans. Next year marks the 20-year anniversary of our kelp forest programme, so we have big plans and hope you will be with us to celebrate this significant milestone.

TOP ROW: Newly hired Baja California Regional Manager Jessica Pantoja during a survey trip of the Coronado Islands (Photo by Anahi Bermudez); Reef Check Australia EcoDivers during a survey of The Wall at Mudjimba Island (Photo by Jodi Salmond).

MIDDLE ROW: Reef Check diver during a survey at McAbee in Monterey, CA (Photo by Sage Ono); Aspiring marine conservationists in Mozambique participate in a training programme with Maputo Dive Centre (Photo by Maputo Dive Center).

BOTTOM ROW: Participants of Coastal Chumash and Tongva Community Dive into Science Cohort #2 showing off their NAUI Open Water certification certificates (Photo by RCF); Big Sur kelp restoration site progress from urchin barren in 2022 to kelp forest in 2024 (Photo by RCF).

Reef Check
WORLDWIDE

2024 SUCCESSES

ORGANISATIONAL

- Published our 2025-2030 Strategic Plan.
- Launched an Adopt a Reef corporate fundraising programme.

KELP FOREST PROGRAMME

- A record number of surveys completed along the West Coast – a total of 193.
- Expanded surveys further into Baja California, British Columbia, and along the open coast of Washington.
- Hired new regional manager in Baja California.

CORAL REEF PROGRAMME

- Relaunched Reef Check Hawai'i programme with new Coordinator.
- Reef Check data confirmed 4th Global Coral Bleaching Event.
- Reef Check Malaysia broadened its scope to protecting corals, seagrasses and mangroves.

EDUCATION PROGRAMME

- Five Dive into Science programmes in California from Del Norte to Los Angeles County.
- 10 Dive into Science scuba courses with participants from Tribal communities and foster youths..
- Two Dive into Science graduates from Kashia Band of Pomo now work as scientific divers for their tribe.

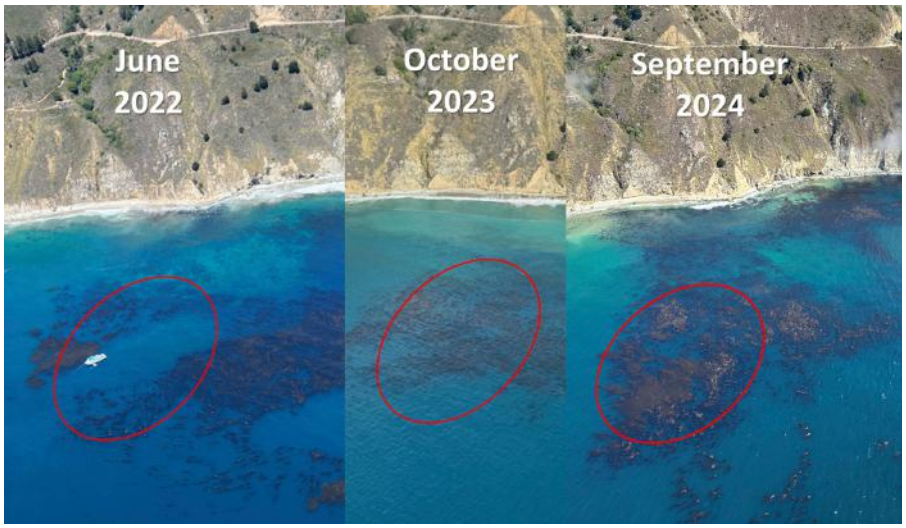
RESTORATION PROGRAMME

- Restored kelp forest in Big Sur.
- Expanded work at three kelp restoration sites in Mendocino.

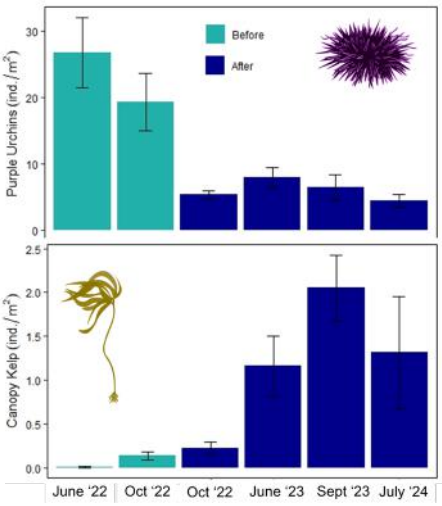
DIVING INTO ACTION:

URCHIN REMOVAL IS REVIVING KELP FOREST IN BIG SUR

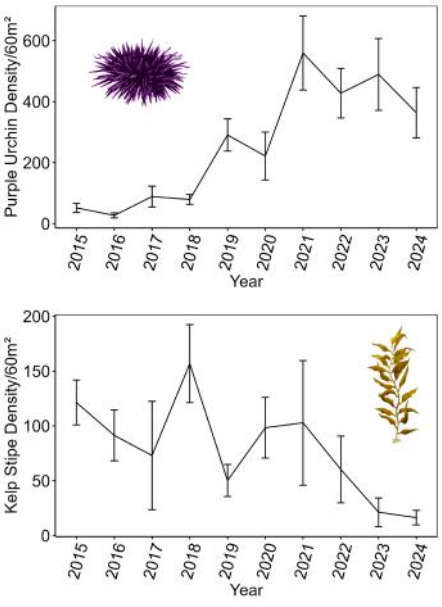
WORDS BY **JAN FREIWALD, REEF CHECK FOUNDATION EXECUTIVE DIRECTOR**



The restoration site seen from the air. In 2022, a three-acre urchin barren is clearly visible as missing kelp canopy where the boat is anchored, surrounded by healthy forest. In the fall of the following year, the kelp is back and persistent throughout 2024.



Purple urchin and kelp densities at Big Sur restoration site before and after commercial urchin divers removed overly abundant urchins to restore the kelp forests



Trends of purple sea urchins and kelp at Reef Check's eight long-term monitoring sites in Big Sur

Kelp forests are one of the ocean's most vibrant ecosystems, providing food, shelter, and protection for countless marine species. But along the West Coast of North America, these undersea forests are in trouble. Between 2013 and 2015, extreme warm-water events devastated canopy kelp species like bull kelp (*Nereocystis luetkeana*) and giant kelp (*Macrocystis pyrifera*). The loss was particularly severe in Northern California, where efforts to restore these vital habitats have ramped up in recent years.

Central California's kelp forests, including those along the iconic Big Sur coastline, have fared better, maintaining healthy kelp longer than other regions. But recent monitoring along the Big Sur coast suggests even these strongholds are now under threat. From 2015 to 2023, data collected by Reef Check's subtidal surveys at eight long-term monitoring sites showed a sharp increase in purple urchin densities. These herbivores, which feed on kelp, saw their densities increase nearly tenfold at monitored sites, from less than 1 per square metre in 2015 to over 8 per square metre on average by 2023. Some areas reached densities as high as 20 urchins per square metre – a level that can decimate kelp forests. At the same time, at five of the eight monitored sites, giant kelp densities plummeted by more than 75%, dropping from 1.52 stipes per square metre in 2015 to just 0.35 in 2023. Urchin barrens, reefs denuded of kelp and covered in sea urchins, started to form in many places.

Faced with these alarming trends, Reef Check teamed up with local community members and commercial fishers to implement a restoration strategy of early intervention of targeted urchin removal. The idea was to remove urchins from an area that is still close to healthy kelp forest nearby in order to reverse the trend before it becomes widespread. At a site in Big Sur where urchin densities had reached over 26 per square metre commercial urchin divers removed urchins over two years. By 2024, urchin density had dropped and stayed at just about 4 to 5 urchins per square metre.

The results were immediate and encouraging. By the fall of 2023, canopy kelp, mostly bull kelp, had rebounded dramatically. Densities at this site went from near zero in 2022 to 2.71 per square metre – rivalling those of nearby healthy kelp forests. Even more promising, this recovery persisted through 2024, with kelp densities stabilising at levels similar to surrounding healthy forests.

This success story shows that early intervention can work, even if urchin populations aren't reduced to the theoretical level of 2 per square metre, which has been cited in much of the restoration work as needed for the reversal of urchin barrens to kelp forests. The findings suggest that early action can make a big difference, offering hope for the future of California's kelp forests and the marine life that depends on them.

With continued restoration efforts, it is our expectation to protect some of the kelp forests that are still strong and bring back some of the ones lost to urchin barrens. For now, scientists, divers and supporters are racing against time to protect these essential habitats and the intricate web of life they support.

REEF CHECK MALAYSIA SEES CONTINUED SUCCESS WITH COMMUNITY MARINE CONSERVATION GROUPS

WORDS BY **REEF CHECK MALAYSIA**

COMMUNITY MARINE CONSERVATION GROUPS (CMCGs) IN MALAYSIA

Recently, a 7th Community Marine Conservation Group (CMCG) joined the six previously established groups. This new group in Mersing consists of youths. Most youths in Mersing tend to leave their town to look for opportunities elsewhere, but this amazing group has stayed and is now making an impact in their own area!

1. Tioman Marine Conservation Group (TMCG)
2. Redang Marine Conservation Group (RMCG)
3. Larapan Marine Conservation Group (LMCG)
4. Selakan Marine Conservation Group (SMCG)
5. Kulapuan Marine Conservation Group (KMCG)
6. Pemimpin IKLIM Mabul
7. Mersing Marine Conservation Group (MMCG)

The members of these CMCG groups are trained with various skills to handle day-to-day marine conservation tasks, including buoy installations, reef rehabilitation and monitoring, ghost net and predator removals, coral bleaching and reef biodiversity monitoring as well as Reef Check surveys. The members of these teams are passionate about conserving the marine environment, and it is visible in their determination and dedication as they tackle their tasks.

Here are some of their achievements:

- Nine members of our Selakan Marine Conservation Group were recently elected as Honorary Park Rangers by Sabah Parks, the state legislative body that manages state parks in Sabah, Malaysia.
- The Redang Marine Conservation Group, together with RCM, piloted a Reef Rehabilitation Toolkit, now available on our website.
- The success of the Tioman Marine Conservation Group (TMCG), the first group to be established, has become the blueprint for the other CMCGs.

COMMUNITY-BASED WASTE MANAGEMENT PROGRAMME

Our Community-Based Waste Management Programme on Larapan Island, Sabah, which ran from March 2022 to September 2024, has now wrapped up. We have officially passed the baton onto WWF-Malaysia (Semporna, Sabah) as part of their No Plastic in Nature (NPIN) initiative.

A total of 105 households, representing nearly 1,000 residents, participated in the programme. Together, we prevented 22,896.4kg of waste from being directly disposed into the marine ecosystem. Compliance levels, based on our monitoring system, reached a satisfactory 54%.

The programme would not have run smoothly without the support from the local district council, village leaders, our partners, the waste management team on the island, as well as the local community members for their active involvement.

COP16 IN COLOMBIA

Our CEO, Julian Hyde, recently attended COP16 in Colombia. Julian joined Malaysia's Minister of Natural Resources and Environmental Sustainability (NRES), Nik Azmi Nik Ahmad to address key funding priorities for Malaysia's biodiversity conservation initiatives. Julian had the opportunity to meet with esteemed representatives from Pew Charitable Trusts, Pacific Environment, and the Zoological Society of London (ZSL) during this trip.

2024 STAR GOLDEN HEARTS AWARDS

Recently, Reef Check Malaysia was honored to be one of 10 organisations and individuals out of over 500 nominees to receive a 2024 Star Golden Hearts Award, given to those who have sparked changes and created impact nationwide through their noble efforts. RCM's team attended the award ceremony, and our Chief Programme Officer (CPO) Alvin Chelliah, gave a speech on behalf of RCM. The award ceremony, themed "Power of One, the Strength of Many", was a significant one as SGHA 2024 celebrated its 10th year anniversary since its inception in 2015.

AN EDA YOUTH PROGRAMME
BEACH NURDLE HUNT

WORDS AND PHOTOGRAPHY BY **ALLY LANDES**

ABOVE: Hasan Salman (8) left, and Sultan Abdulla Muhsen Ali Ibrahim (10) right, searching for leftover washed up nurdles, or plastic pellets, which are small lentil-sized plastics used as the raw building blocks for manufacturing plastic products.

A big round of applause to our 2 youth member champions, Hasan Salman (8) and Sultan Abdulla Muhsen Ali Ibrahim (10) for showing up to our Nurdle Hunt in recognition of the UAE National Environment Day on Tuesday the 4th of February. The special day is a renewed commitment to environmental sustainability through combating climate change, conserving biodiversity and fostering green innovation, and we're proud to have celebrated the afternoon with two of our supportive UAE National members.

We collected 50g of nurdles, and in the last 5 minutes of the clean-up to spare, we sweeped an area of 70 metres and collected 163 cigarette butts which are sent to Goumbook's Save the Butts – Waste to Value campaign to recycle them into a sustainable alternative to plywood. Plus, one plastic bottle cap, one metal bottle cap, a biro pen, one balloon, 2 food wrappers, 2 styrofoam pieces, and 17 other plastic pieces. The total weight only came to 126g, but every effort put into collecting those tiny nurdles and any other rubbish visible in our vicinity counts, and our boys did a great job!

We ended the activity with some tasty muffins while watching the sunset to celebrate another small victory!

Photo by Ali Salman

EDA'S CLEANUP ARABIA SCHOOL PROGRAMME

YASMINA BRITISH ACADEMY'S STUDENT BEACH CLEAN-UP

WORDS AND PHOTOGRAPHY BY **ALLY LANDES**

On Tuesday the 14th of January, 21 primary students and 25 secondary students from Yasmina British Academy, Abu Dhabi came together for a beach clean-up activity.

They did a stellar job at tallying the items they collected and their final result was 147kg, filling up 19 bags. Well done teams!

There were a lot of construction materials, ropes, but also wooden planks with nails to be very aware of. The majority of items collected however, were from people having BBQs and picnics. Cigarette butts, vapes, charging cables, batteries, lighter fluids, plastic and glass bottles, plastic and metal bottle caps, plastic cutlery, wooden & metal skewers, food wrappers, plastic playing cards, 17 metal clothes hangers & one plastic (why???), and several clothing items just to name a few of what we managed to pick up in the time dedicated to the activity.

Diapers and plastic water bottles with urine were the most unpleasant items to collect. A horse shoe and a cat scratching post were the most unusual!

Food scraps are not counted as part of the waste collection, however lemons, countless corn cobs, other fruit and vegetables tossed out, and heaps of noodles etc, are an eye sore and do require cleaning up to allow for the next guests to be able to settle themselves in a clean and safe environment to enjoy the great outdoors.

There is sadly still a lot of work to do in educating the public on how to be responsible human beings and to stop mistreating our environment and show it the respect it deserves!

We want to thank Tadweer Group for their very prompt response in coming to collect and responsibly dispose of the waste at the end of the day.

BEACH CLEAN-UP | ABU DHABI	
Al Bahia Beach 50 Yasmina British Academy Students	
MOST LIKELY TO FIND ITEMS	TOTAL
Grocery Bags (plastic)	157
Other Bags (plastic)	59
Beverage Bottles (glass)	67
Beverage Bottles (plastic)	172
Beverage Cans	35
Beverage Sachets/Pouches	1
Bottle Caps (metal)	21
Bottle Caps (plastic)	575
Cigarette Butts	53
Cups, Plates (paper)	7
Cups, Plates (plastic)	13
Food Containers (plastic)	10
Food Wrappers (candy, chips, etc)	74
Lids (plastic)	17
Straws/Stirrers (plastic)	13
Utensils (plastic)	31
FISHING & BOATING	
Line, Nets, Traps, Rope, etc	103
ILLEGAL DUMPING	
Appliances	2
Construction Materials	33
Tyre	1
PERSONAL HYGIENE	
Diapers	4
OTHER ITEMS/DEBRIS	
Clothing	16
E-cigarettes	3
Electronic Waste (phones, batteries)	2
Footwear (shoes/slippers)	1
Tobacco Products (lighters, wrap)	14
Toys	4
Other Plastic Waste	34
Other Waste (metal, paper, etc)	85
OTHER ITEMS NOT LISTED	
Red Fire Hose	1
Christmas Tree Lights	1
Clothes Hangers	18
Horse Shoe	1
Cat Scratching Post	1
Plastic Bottles of Urine	2
GRAND TOTAL OF ITEMS	1,615
TOTAL BAGS COLLECTED	19
TOTAL WEIGHT (KG)	147


WEEFINE

FOTOCORE FH-2 DOUBLE FLIP HOLDER

A GAME CHANGER FOR UNDERWATER PHOTOGRAPHY

WORDS AND PHOTOGRAPHY BY **CHRISTOPHE CHELLARPERMAL**

In this review, I'll break down its design, functionality, usability underwater, compatibility, and overall performance, sharing real-world insights on how it holds up in various underwater conditions.

As an underwater photographer, I'm always on the lookout for accessories that enhance my shooting experience without adding unnecessary bulk or complexity to my setup. Enter the Fotocore FH-2 Double Flip Holder – a promising solution for divers who need to switch between multiple diopters or filters with ease. After testing this system extensively, I can confidently say that it is one of the most efficient and well-built flip holders on the market.

In this review, I'll break down its design, functionality, usability underwater, compatibility, and overall performance, sharing real-world insights on how it holds up in various underwater conditions.

BUILD QUALITY & DESIGN

One of the standout features of the Fotocore FH-2 Double Flip Holder is its premium build quality. The unit is constructed from anodised aluminium, making it corrosion-resistant and highly durable. The lightweight yet sturdy design ensures that it doesn't add significant bulk to your rig, which is an important factor when dealing with buoyancy and manoeuvrability underwater.

The FH-2 features a dual-flip mechanism, allowing you to mount two different filters, wet lenses, or diopters. The precisely machined hinges ensure smooth flipping action, while the secure locking system prevents unwanted movement, which can be an issue with cheaper flip adapters.

What really impressed me was the compactness of the holder. Unlike some other double-flip holders that stick out awkwardly from the port, the FH-2 maintains a streamlined profile, minimising drag in the water. The precision in the hinge movement also ensures that you can flip between lenses quickly and silently – a major advantage when working with shy marine life.

INSTALLATION & COMPATIBILITY

The FH-2 Double Flip Holder is designed to be compatible with M67 (67mm) threaded ports, which means it fits most standard macro ports used in underwater housings from major brands such as Nauticam, Sea & Sea, Isotta, and AOI. Installation was straightforward – it simply screws onto the front of the macro port and tightens securely.

Once mounted, I tested it with a variety of wet lenses, including the Weefine WFL-05S, Inon UCL-165M67, and Inon UCL-90, and I encountered no issues with fit or stability. The holder kept both lenses secure, and there was no unnecessary play or wobbling, which is crucial for precision macro photography.

One thing to note: if you are using a particularly large diopter or filter, you may need to adjust positioning slightly to avoid vignetting. This is a common issue with all flip holders, but with careful placement, the FH-2 performed exceptionally well.

UNDERWATER PERFORMANCE & EASE OF USE

The real test of any underwater accessory is how it performs in real-world diving conditions. I used the Fotocore FH-2 on multiple dives in varying environments – from calm macro sites with minimal current to drift dives with strong water movement.

FLIPPING MECHANISM & STABILITY

The dual-flip mechanism was incredibly smooth and easy to operate, allowing quick

transitions between lenses while staying in place once flipped.

I particularly appreciated the strong yet adjustable tension of the hinges. The resistance was just right – not too loose that lenses would accidentally flip out of place, and not too tight that it required excessive force to operate.

PRACTICAL USE FOR MACRO PHOTOGRAPHY

For macro photographers, a double flip holder is a huge advantage because it allows you to quickly switch between different magnifications without fumbling with screw-on wet lenses mid-dive. On one dive, I alternated between a Weefine WFL-05S for super-macro shots and an Inon UCL-165M67 for more flexibility. This ability to adapt quickly to changing compositions without disturbing delicate marine life made my shooting process significantly more efficient.

Even in strong currents, the holder remained rock solid, with no unwanted lens movement. This reliability is crucial when shooting subjects like nudibranchs or pygmy seahorses, where precision is key.

FOTOCORE, WEEFINE, & INON PRODUCTS AVAILABLE THROUGH XR HUB

If you are looking to enhance your underwater photography setup, Fotocore, Weefine, and Inon products, they are all available through XR Hub, a trusted source for high-quality dive gear. Whether you need a double flip holder, macro diopters, or advanced underwater lighting solutions, XR Hub provides expert advice and a selection of top-tier equipment to help you get the best results from your underwater photography.

For more information on purchasing the Fotocore FH-2 Double Flip Holder or other accessories, visit XR Hub's Instagram and reach out to them directly for recommendations tailored to your diving needs.

FINAL VERDICT: SHOULD YOU BUY IT?

For any underwater photographer looking to maximise efficiency in macro shooting, the Fotocore FH-2 Double Flip Holder is an outstanding investment. It offers exceptional durability, smooth operation, and reliable performance in a variety of diving conditions.

The ability to quickly switch between two lenses without compromising stability or ease of use makes a huge difference in capturing macro subjects, especially when dealing with limited bottom time and fast-moving critters.

If you frequently shoot macro photography and need a dual-lens solution, the FH-2 is absolutely worth considering.

XR HUB
DIVE CENTER
FOR MORE INFO:
www.instagram.com/xrhubdiving


SUZUKI
Dubai Voluntary Diving Team

HOW TO PARTICIPATE IN UNDERWATER CLEAN-UPS
BENEFITS, LESSONS LEARNT AND MORE

WORDS BY **ABDULLA MUHSEN, HIND AHLI, BARA ZAKY, JOSE ANDRES GONZALEZ, IMAN MALIK & FIDA ALQAISI** PHOTOGRAPHY BY **ALLY LANDES**

Through our volunteering environmental clean-up experiences as the Dubai Voluntary Diving Team (DVDT), we would like to share our knowledge to perhaps benefit other volunteers, divers in particular, from questions we have received over the years.

Through our volunteering environmental clean-up experiences as the Dubai Voluntary Diving Team (DVDT), we would like to share our knowledge to perhaps benefit other volunteers, divers in particular, from questions we have received over the years. The first clean-up campaign the DVDT participated in was in 1999, organised and sponsored by Dubai Municipality on the occasion of Clean Up the World. It was a great experience and we benefited a lot from it.

Underwater clean-up initiatives are crucial for preserving marine ecosystems and protecting aquatic life from the devastating effects of pollution. As a certified scuba diver and environmental enthusiast, we have witnessed firsthand the impact that these clean-ups can have. If you plan to participate in an underwater clean-up, here are some tips to make your efforts both effective and safe.

What are the benefits of clean-up events?

PROMOTES INTERNAL TOURISM IN THE UNITED ARAB EMIRATES

- Clean-up events encourage participants to explore diverse marine environments within the UAE, including its pristine beaches, coral reefs, and unique underwater landscapes.
- These activities showcase the beauty of the country's coastal regions, fostering a sense of pride and a deeper connection to the UAE's natural heritage.
- Participants discover hidden marine treasures and more diving spots.
- Understanding the importance of preserving the UAE's unique marine biodiversity.
- Local businesses, including dive centres, tour operators, and hospitality sectors, will benefit from the increased activity and level-up the UAE's tourism sector.

CREATES SOCIAL CONNECTIONS

- Clean-up events are not just about the environment; they are vibrant social gatherings that bring people together from diverse backgrounds.
- Divers & non-diving environmental volunteers collaborate to achieve a shared goal, fostering camaraderie and mutual respect.

STRENGTHENING CONNECTIONS WITH STAKEHOLDERS

- Clean-up events serve as critical networking opportunities, especially for our team as we focus on marine conservation.
- Participants often interact with stakeholders such as government agencies, environmental organisations, businesses, and media outlets.
- The events open channels for collaboration, funding, and sharing resources.
- Participants build relationships with industry leaders and policymakers, facilitating long-term partnerships for environmental initiatives.

EDUCATIONAL OPPORTUNITIES

- In addition to practical environmental benefits, clean-up events serve as platforms to learn and spread awareness.
- We create opportunities for participants to deepen their understanding of the marine ecosystems, pollution sources, and sustainable practices.
- Learn about the ecological importance of marine habitats.
- Highlight the impact of pollution and inspire behavioural changes.

FOSTER ENVIRONMENTAL STEWARDSHIP

- Participating in clean-up events instils responsibility for our environments; witnessing the extent of marine pollution firsthand, participants are often inspired to adopt more sustainable lifestyles and become advocates for ocean conservation.
- Clean-ups transform passive environmental concerns into active contributions.
- Participants act as ambassadors, spreading awareness within their communities which

in turn reaches further afield.
- Events create a ripple effect, encouraging others to join the cause.

ENHANCING TEAMWORK & LEADERSHIP SKILLS

- For organisations and teams, these events are a chance to develop and strengthen soft skills such as leadership, collaboration, and problem-solving.
- The shared challenges of underwater clean-ups foster cohesion and resilience.
- Team members work together to strategise and execute clean-ups efficiently.
- Leaders emerge naturally during coordination and decision-making processes; and that sense of accomplishment boosts morale and motivation within teams.

TYPES OF UNDERWATER CLEAN-UPS

PLANNED: Scheduled and Organised
These clean-ups are prearranged with clear objectives, detailed logistics, and safety protocols. Often conducted as part of environmental campaigns or events, they involve multiple participants working toward common goals.

UNPLANNED: Spontaneous and Ad-Hoc
Occurs without prior notice when divers, snorkellers, or other individuals come across debris during recreational activities and decide to remove it on the spot within a group or as individuals.

ONSHORE: Coastal or Shoreline Clean-up
Focuses on removing debris from beaches, ports, creeks, lakes, rivers, shorelines, or nearshore waters. Often accessible without specialised equipment, participants typically work from land or shallow waters.

OFFSHORE: Open Water Clean-up
Conducted farther from the shore, these operations often require boats, or specialised equipment to retrieve debris in deeper or less accessible areas.

INDIVIDUAL OR SMALL GROUPS: Personal or Small-Scale Efforts
Carried out by individuals or small groups, these clean-ups are usually flexible and focus on specific areas during regular diving or snorkelling activities.

LARGE GROUP/TEAM/ORGANISATIONS: Coordinated Group Clean-ups
Organised by NGOs, community groups, dive clubs, or corporate teams, these large-scale efforts often require meticulous planning, equipment, and logistical support to manage numerous participants and cover extensive areas.

HOW TO EFFECTIVELY PARTICIPATE IN UNDERWATER CLEAN-UPS

1. Understand the Purpose of Clean-ups

Underwater clean-ups are not just about collecting trash but also raising awareness about marine pollution. The items collected are often analysed to identify pollution trends and develop preventive measures. Participating in these events allows you to contribute to a larger mission of environmental conservation.

2. Get Proper Training and Certification

Safety is a priority when diving. Ensure you have the necessary scuba diving certifications (such as PADI, NAUI, SSI, or any other international certification agency) and are comfortable with your diving skills. If you're new to underwater clean-ups, join workshops or introductory sessions to understand best practices for collecting debris without damaging marine habitats or posing a risk to yourself and others.

3. Choose the Right Gear that Allows you to Deal with Debris

Equip yourself with proper dive equipment, including:
- A mesh bag for collecting trash (it allows






water to pass through and prevents buoyancy issues).
- Gloves to protect your hands from sharp objects or hazardous materials.
- A cutting tool for disentangling items such as fishing lines or nets.
- A surface marker buoy (SMB) for safety and visibility.

Choosing the Right Boat:
- Boats designed or adapted for diving.
- Dive ladders for easy entry and exit.
- Ample storage for collected debris.
- Space for divers to prepare and gear up.
- Communication tools for emergency coordination.

4. Work with an Organised Group
Joining an organised underwater clean-up event ensures better coordination and efficiency. Groups such as Project AWARE, NAUI Green Diver, local diving centres, or environmental NGOs such as the Emirates Diving Association (EDA) who often host these events. They provide guidelines, support, and even classify collected debris for environmental reports.

5. Survey and Plan your Dive
Before diving, familiarise yourself with the site. Plan your clean-up route to avoid getting lost or overstaying underwater. Stick to your dive limits and ensure you have a buddy system in place.

6. Practice Gentle Clean-up Techniques
The goal is to remove waste without harming marine life or habitats. Avoid removing objects that have become part of the ecosystem, such as coral-encrusted items. Gently detach debris to prevent stirring up sediment, which can harm marine organisms.

7. Sort and Dispose of Debris Responsibly
After the dive, sort the collected debris into categories (eg: plastics, metals, fishing gear). Many clean-up organisers work with recycling facilities, so make sure the waste is disposed of correctly to minimise its environmental impact.

8. Document your Efforts
Take photos or videos of your clean-up activities to inspire others and spread awareness. If your event is part of a larger initiative, share your findings with the organisers for inclusion in global databases like the Dive Against Debris programme or the Ocean Conservancy's International Coastal Cleanup.

9. Reflect on Sustainability
Think about the root causes of marine pollution and advocate for sustainable practices. Reduce your own plastic consumption, support policies for waste management, and educate others on protecting aquatic ecosystems.

HOW TO FIND UPCOMING EVENTS?

EMAIL ANNOUNCEMENTS
Subscribe to newsletters for event updates. We receive event updates via email from EDA. It's a well-designed email with all the event details clearly highlighted.

GROUP CHATS OR MESSAGING APPS
Group leaders share event details in group chats on platforms like WhatsApp and Instagram, or other dedicated announcement channels to keep information accessible.

DIGITAL CALENDAR INVITES
I create and distribute calendar invites for the DVDT group via Google Calendar and Outlook, ensuring the invite contains all the relevant event details, such as the date, time, venue, and meeting spot.

SOCIAL MEDIA POSTS
Announce the event on platforms like Instagram, Facebook, Snapchat, or TikTok.

REMINDERS
Send reminders a few days or hours before the event via email or WhatsApp messages.

VERBAL ANNOUNCEMENTS
Announce event details during meetings or calls, and provide a written follow-up after the announcement.

QR CODES
Distribute QR codes that link directly to an event page and survey These are added to the posters, emails, etc.

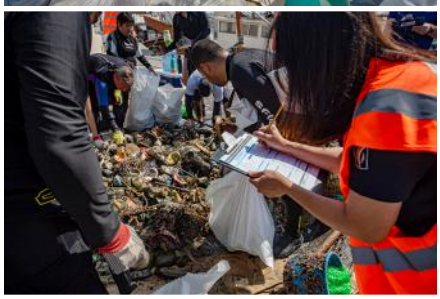
THE VOLUNTEERING SPIRIT
Being a volunteer diver requires a different mindset. Waking up early on a weekend after a hard week at work and family duties, is not for everyone. Some divers are used to making the effort, however it is different from a fun dive.

A volunteer delivers the best of their diving potential to the marine environment, the community and the planet's well being.

The motivation is simple. It's related to that feeling you'll get after seeing the tons of rubbish removed from the bottom of the sea, working







next to people from all the different corners of the world, with different cultures and career backgrounds. It's a magnificent emotion you will not forget and it's an experience money cannot buy.

Can you imagine it? You are welcome to volunteer in our next mission.

LESSONS LEARNED FROM CLEAN-UP EVENTS

1. Injuries Incurred to Divers

- Injuries from encounters with jellyfish, sea urchins, or sharp corals and any other marine creatures.
- Cuts or punctures from sharp debris like broken glass, metal scraps, or fishing hooks, etc.
- Divers should wear protective gloves, wetsuits, and booties.
- Conduct thorough briefings on local marine life and how to safely handle debris.
- Equip divers with first aid kits and train them in basic wound care.

2. Permit was not Obtained for the Event

- Lack of permits can lead to event delays, legal issues, or fines.
- Ensure permits are acquired well in advance by coordinating with local authorities.
- Identify necessary permissions during the planning stage.

3. Clean-up Was Not Properly Organised

- Inefficient coordination can lead to confusion, wasted time, and limited impact.
- Assign clear roles and responsibilities.
- Develop a detailed plan, including timelines, safety protocols, & communication methods.
- Conduct pre-event briefings and provide necessary training.

4. The Location was not Safe to Dive

- Hazardous environment (strong currents, low visibility, or sharp objects) increase risks.
- Conduct a site assessment beforehand to evaluate safety.
- Choose locations aligned with the divers' skill levels and equipment availability.

5. Event Cancellation due to Bad Weather or Special Transportation Requirements

- Unpredictable factors can disrupt plans and waste resources.
- Monitor weather forecasts regularly and have backup dates and locations.
- Arrange transportation suited for the site and ensure flexibility in logistics.

6. Waste Collection and Disposal was not Managed

- Unmanaged waste disposal can reverse environmental benefits.
- Coordinate with waste management services for proper disposal and recycling.

7. Enhance Communication to Boost Engagement

- Poor communication (pre, during & after the event) reduces participant engagement.
- Develop and implement a structured communication plan.

PRE-EVENT COMMUNICATION

- Create a Communication Plan: Use multiple channels (email, social media, messaging apps, event portal) to share clear timelines, messages, and logistics.
- Establish an Online Community: Set up a forum or group chat for ongoing engagement and real-time updates.
- Host Pre-event Orientations: Organise virtual or in-person sessions to explain the event overview, safety protocols, and expectations while addressing participant questions.
- Share Detailed Event Information: Provide clear visuals (maps, schedules) with event details such as location, required equipment, and logistics.
- Set-up a Centralised Hub: Use platforms like Google Drive for seamless access to all event-related information.

DURING THE EVENT

- Assign Communication Roles: Designate a point of contact for participant coordination and inquiries.
- Use Visible Signage: Place clear signs with safety instructions, schedules and event details at the site.
- Encourage Feedback: Create opportunities for immediate participant feedback via debrief sessions or suggestion boards.

POST-EVENT COMMUNICATION

- Prompt Follow-ups: Send thank you messages and share outcomes like collected debris statistics and event highlights.
- Highlight Contributions: Showcase participant efforts and achievements on social media or community platforms.

By improving communication at every stage, participants will be informed, valued, and motivated to engage in future events.

CONCLUSION

Participating in underwater clean-ups is a rewarding way to give back to the environment and preserve marine biodiversity. With proper preparation, training and teamwork, you can make a significant difference. Every piece of trash removed is a step closer to a cleaner, healthier ocean.

Let us all take action to protect our underwater world – one dive at a time!

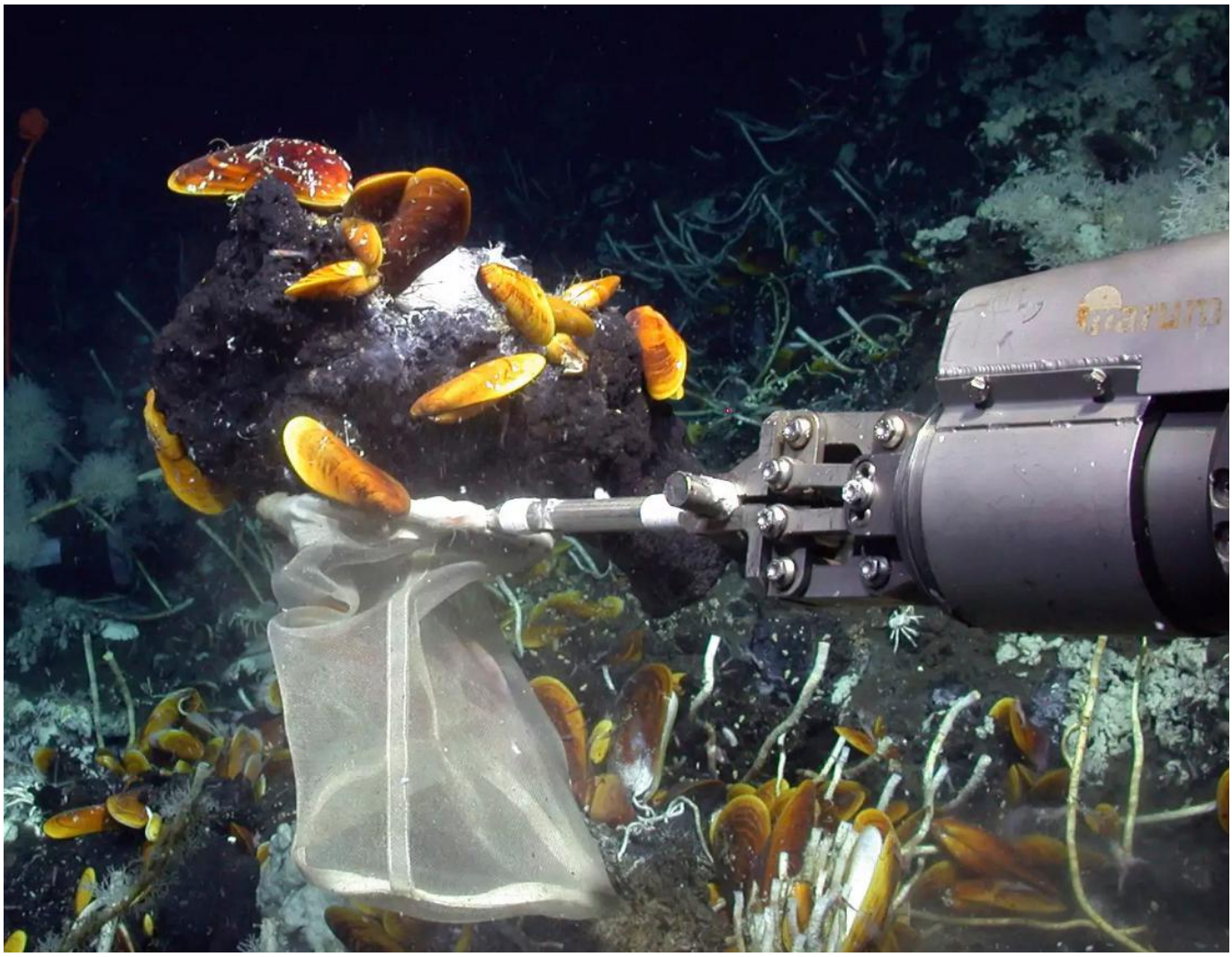
فريق دبي للغوص التطوعي
DUBAI VOLUNTARY
DIVING TEAM
FOR MORE INFO:
www.instagram.com/dubai.voluntary.diving

OIL UNCOVERED:
DECODING ITS COMPLEX CHEMISTRY AND THE MICROBES THAT SAVE OUR OCEANS

WORDS BY **ISHANI PILANKAR COONEY**

This article unpacks the science behind oil spills, examining their composition, environmental impact, and the challenges they present. It also explores how oil-degrading microbes offer a cleaner, more sustainable approach to tackling pollution.

COVER PHOTO: Physical remediation method. Photo by Adobe Stock – Rufous.



ABOVE: The robotic arm of the remotely operated vehical MARUM-Quest is shown collecting Cycloclasticus sp. bearing mussels at 3,000m. Cycloclasticus sp. is able to biodegrade asphalts. Photo by MARUM – Centre for Marine Environmental Sciences, University of Bremen.

INTRODUCTION

This article unpacks the science behind oil spills, examining their composition, environmental impact, and the challenges they present. It also explores how oil-degrading microbes offer a cleaner, more sustainable approach to tackling pollution. While minor spills, such as those at Al Aqah Beach in Khorfakkan in 2022 and 2024, have occurred, the most significant spill in the region remains the 1991 Gulf War oil spill in the Arabian Gulf. Using this disaster as a real-world case study, the article breaks down the remediation strategies employed, highlighting the critical role of biodegradation and bioremediation in restoring marine ecosystems. This case study showcases the impressive synergy between science, nature, and environmental protection.

UNDERSTANDING OIL SPILLS AND THEIR IMPACT

Oil is hidden in almost every facet of our daily lives, from powering our cars and airplanes to providing the basis for products like plastics, solvents, and pharmaceuticals. Over the last century, global economic growth and rapid industrialisation have driven oil demand to an all-time high. Today, a staggering 100 million barrels of oil are produced globally daily, with the UAE ranking among the top 10 producers at approximately 3 million barrels per day. The UAE sits at a unique crossroads where busy shipping lanes, vast offshore oil fields, and extensive refinery networks intersect with thriving marine ecosystems teeming with diverse flora, fauna, and stunning coral reefs. However, this strategic position also makes the UAE highly vulnerable to oil spills, as it is both a hub for oil production and a key transit point for global oil transport from the GCC. Any spill in these waters could have devastating environmental consequences, threatening marine biodiversity and coastal livelihoods.

An oil spill is the accidental or intentional discharge of oil into the environment. When spilt oil exceeds 100,000 gallons, it is classified as a catastrophic spill and can quickly become fatal to the ocean as it coats its surface, endangering its robust marine ecosystem.

Oil-related activities have surged to keep up with rising global demand, from exploring and extracting underground reserves to refining, producing, and shipping oil across continents. These operations generate 67 million tons of waste annually. With 60% of the world's oil transported by sea and offshore drilling on the rise, oil spills remain a major threat to marine ecosystems, making our oceans more vulnerable than ever.

While accidental spills from drilling rigs, pipelines, and tankers often make the news, they're far from the only ways oil reaches our oceans. 5% of the oil pollution is a result of natural seepage beneath the seabed and coastal erosion, which releases oil once trapped in soils. The incomplete fuel combustion from cars and factories also contributes, sending tiny particles into the air that eventually settle on the ocean's surface. Simultaneously, urban and industrial effluents and oil rig operations account for 45% of the atmospheric share that ultimately falls back into the sea, with another 5% coming from unidentified sources.

Approximately 35% of the pollution is a direct result of shipping traffic and other transportation-related activities, including illegal discharges and tank cleaning. On land, runoff from industrial sites, farms, and urban areas carries contaminants into coastal waters, and illegal dumping of waste oil or bilge water only worsens the problem as it is one of the largest sources of pollutants and hydrocarbons. Some researchers even suggest that its routine release

ABOVE: A before and after of Al Aqah's beach clean-up. Photo by Khaleej Times.

may be more harmful than accidental spills.

Remarkably, the ocean has its built-in defence mechanism, unseen to the naked eye: Microbes. These tiny organisms are surprisingly powerful when dealing with oil spills. They can break down harmful hydrocarbons in oil into simpler, non-toxic by-products. Microbes, our essential allies, are not just a part of the solution; they are the solution in the fight against oil spills, inspiring us with their unique ability to diminish the devastating impact of oil contamination on our marine environment.

OIL: A PEEK INSIDE THE "COCKTAIL"

Imagine pouring olive oil into vinegar for a salad dressing, then watching them stubbornly refuse to mix – one floats while the other remains below. A similar principle applies to oil and water, and how they separate depends on the oil's density. This density is measured using the American Petroleum Institute (API) gravity scale, a system that categorises crude oils into three groups based on their density: heavy (API 10-20), medium (API 20-25), and light (API above 25).

But there's more to oil than just "sinkers" and "floaters". It's essentially an underground "cocktail" of various ingredients, predominantly hydrocarbons, molecules composed of hydrogen and carbon atoms. About 85% of crude oil is hydrocarbons, and the remaining 15% contains small amounts of sulphur, nitrogen, and oxygen, plus trace metals like vanadium, nickel, iron, and copper. When crude oil is refined, these components separate into "fractions", such as natural gas, gasoline, naphtha, kerosene, diesel, lubricating oils, paraffin wax, and asphaltene. Each fraction has unique physical and chemical properties, explaining why some are ideal as fuels, like gasoline, while others can be turned into plastics and detergents.

Not all oil is created equal. Each oil source has its unique blend of hydrocarbons and trace elements. For instance, a spill from the Gulf of Mexico, known for its light and sweet crude, meaning it has relatively low sulphur content and is easier to refine, can behave very differently from a spill in the North Sea, which produces heavier and more sour crude meaning higher sulphur levels that make it more corrosive and require extra processing. In either case, some oil fractions evaporate quickly, while others may form tar balls or dissolve partially in the water.

Lighter chemicals, such as low-molecular-weight alkanes and aromatic hydrocarbons, dissolve more quickly and can be highly toxic to marine life. Understanding the exact composition of spilt oil is crucial for predicting its behaviour and selecting the most effective clean-up strategy, whether mechanical skimming, chemical dispersants, or oil-eating microbes. In essence, grasping this intricate "oil cocktail" is key to effective remediation, laying the foundation for targeted approaches like microbial bioremediation that address the specific impacts of each component on our marine environment.

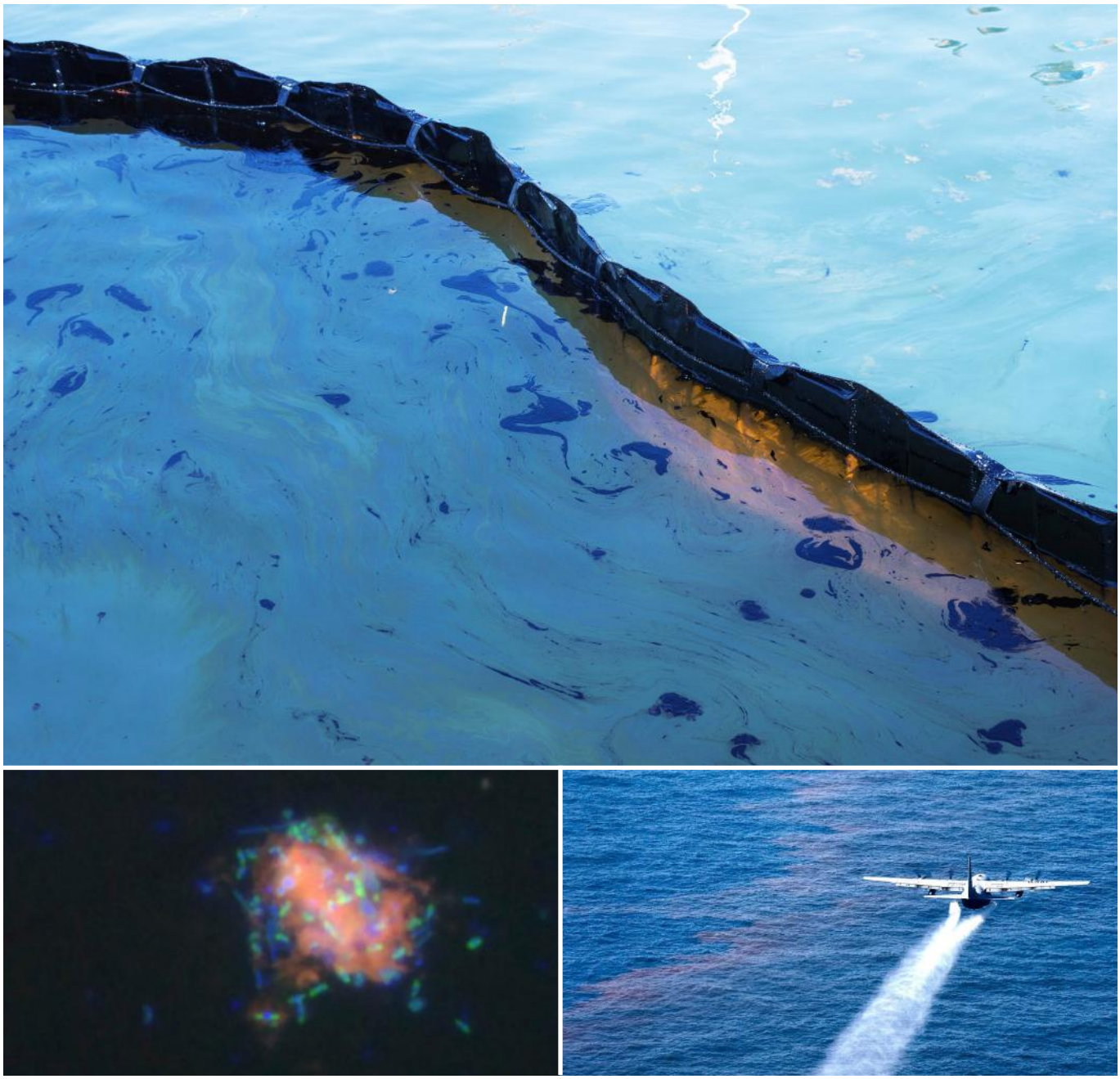
FATE OF OIL IN MARINE ENVIRONMENTS AND THE VARIOUS REMEDIATION TECHNIQUES

When oil enters the ocean – whether through a massive spill or a slow leak – nature immediately takes over, setting off a complex chain of events that determine where the oil goes and how it behaves. Within hours, wind spreads the slick, sometimes covering vast distances, while high waves churn the surface. Equipment like skimmers and booms become difficult to deploy in such rough conditions.

At the same time, biodegradation kicks in, as native marine microorganisms begin breaking down hydrocarbons and ocean currents emulsify the oil, dispersing it beyond the reach of floating barriers meant to contain it. Furthermore, Sunlight triggers photo oxidation, converting some oil into polycyclic aromatic hydrocarbons (PAHs) or oxygenated hydrocarbons, which can be even more toxic to marine life than oil.

In hot conditions, lighter oil components evaporate quickly, leaving behind thick, tar-like residues that are far harder to remove. These heavy residues can clump into sticky tar balls, which eventually sink and settle on shorelines, coral reefs, or on the ocean floor, causing long-term damage.

Meanwhile, weather conditions such as fog, rain, or snow create another obstacle by reducing visibility. This makes it harder for response teams to track, contain, and manage the spill, as poor conditions hinder the safe operation of clean-up vessels and aircraft. With so many variables at play, the fate of an oil spill is always unpredictable therefore, understanding how weathering affects oil spills is key to choosing effective clean-up methods and protecting our oceans.



TOP IMAGE: Physical remediation method. Photo by Adobe Stock – 008melisa. **BOTTOM ROW L-R:** A microphotograph of a bacterial community feasting on an oil particle (pink). The green-coloured bacteria are a well- studied oil degrading bacterium. Other bacteria (blue) thrive in close association with oil particle and their bacterial neighbours. Photo by Luke McKay; Chemical remediation method from the Gulf of Mexico disaster. Photo by US Air Force, Tech, Sgt Adrian Cadiz.

CLEANING UP AND RECOVERING TECHNIQUES: A "TOOLBOX" APPROACH IN THE ARABIAN GULF

Cleaning up oil spills requires a range of strategies rather than a one-size-fits-all approach much like choosing the right tool from a toolbox. Responders must consider several factors, including the type of oil, the spill's volume, the time elapsed since the incident, and local conditions such as weather, wave activity, and location. Consequently, clean-up methods typically fall into one of three categories: mechanical, chemical, or biological.

Oil spills threaten ecosystems, human health, and local economies, particularly in regions heavily reliant on oil exports, such as many of the GCC countries around the Arabian Gulf. A prime example is the Gulf War oil spill in 1991, which released 460 million gallons of oil between August 1990 and February 1991. This massive spill produced an oil slick extending 65km along the Kuwaiti and Northern Saudi coastlines and contaminated 49 square kilometres of the Kuwait desert. Even smaller, more localised spills can have long-term consequences, especially given the Gulf's challenging environmental conditions that affect the oil's behaviour and the microbial breakdown process.

UNIQUE ENVIRONMENTAL CHALLENGES IN THE GULF

- **Salinity:** The Arabian Gulf is amongst the most saline water globally, altering the way oil spreads or sticks to certain surfaces.
- **Temperature Variations:** Sea surface temperatures can plummet to 16°C in winter but soar to around 35°C in summer, changing how quickly oil thickens and how active "oil-eating" bacteria can become.
- **Ecological Sensitivity:** The region's coral reefs are known for handling heat and salinity better than most, they remain incredibly vulnerable to oil pollution. Even a tiny amount can upset coral health, disrupting the delicate balance of marine life that relies on the reefs for food and shelter.
- **Socioeconomic Stakes:** Alongside the heavy reliance on desalinated water, robust fisheries, and coastal tourism, the Gulf's economy and public health depend on maintaining a clean marine environment.

That's why understanding the physiochemical and ecological factors of the region's water is important for developing tailored strategies to effectively remediate oil spills.

TOP ROW L-R: After the Deep Water Horizon oil spill, reaserachers found significant injuries in at least four species of sea fans along the Gulf of Mexico's shelf. Damage primarily took the form of overgrowth by hydroids (fuzzy marine invertebrates characteristic of unhealthy corals) and broken or bare branches of coral. Photo by Ian MacDonald, Florida State University; Methane-eating bacteria helped clean-up the Gulf of Mexico oil spill. Photo by Anne Fjellbirkeland. **BELOW:** Oil covered animals from Aqaa Beach Khorfakhan, Fujairah. Photo by Chris Whiteoak, The National.

ENVIRONMENTAL & SOCIOECONOMIC IMPACTS

The marine ecosystem is a delicate and interconnected web of life, more fragile than we might realise. Imagine it as a bustling neighbourhood where corals, seagrasses, fish, and countless other marine organisms interact through a continuous flow of nutrients and energy. This underwater community thrives, until an oil spill disturbs critical factors like water density, pH, gaseous exchange, and temperature, throwing this finely tuned system off balance and creating an unhealthy environment for the marine life.

Oil spills threaten multiple critical sectors in the Gulf region, impacting marine and terrestrial ecosystems, soil, groundwater, and economic and public health pillars. Given the country's arid climate, it relies heavily on desalination plants for freshwater, making them vulnerable to contamination if oil clogs their intake pipes. The nation's significant fish farming industry also faces heavy losses when oil-laden water damages their operations. Additionally, coastal tourism suffers as blackened beaches and polluted shorelines deter visitors, leading to financial losses and reduced local revenue. To make matters worse, toxic chemicals can accumulate in seafood, potentially contaminating the human food supply and endangering public health.

An oil spill as thick as 1 mm can obstruct oxygen exchange between air and water, forming low oxygen "dead zones" where marine organisms struggle to breathe. In these conditions, fish suffocate, corals become stressed, and higher-level predators, like dolphins, sharks, and seabirds are jeopardised.

Because of the presence of hemotoxic, cytotoxic, and mutagenic components such as BTEX (Benzene, Toluene, Ethylbenzene, and Xylene) and PAHs many elements of oil are extremely hazardous to living organisms. Short-term effects can include necrosis, suffocation, and ingestion of toxic substances. While long-term consequences may involve physical abnormalities such as jaw reductions, loss of skin pigmentation, or unfused bones. Crude oil's volatile organic compounds pose additional toxic risks to humans by damaging our RNA, proteins, and DNA.

ABOVE: A heavily oiled turtle recovered near the Deepwater Horizon/BP accident site. Photo by NOAA.

Furthermore, a spill during spawning season can decimate fragile fish eggs, undermining future populations. Once sensitive habitats like seagrass meadows, coral reefs, and mangroves are polluted, they lose their ability to recover and protect the species that rely on them.

Another overlooked casualty of oil spills is the microscopic world. Spills disrupt "good microbes" that help maintain ecosystem balance. Plankton, vital for everything from small fish to apex predators, can be physically coated by oil or poisoned by chemicals like PAHs, slowing their recovery and causing the entire food web to collapse.

An oil spill impacts the entire marine ecosystem, from microscopic life to top predators, highlighting the need for swift intervention and sustainable remediation strategies.

RESPONSE AND REMEDIATION

Having a sustainable remediation protocol is always preferable to using ad-hoc techniques, as unplanned interventions can become complex and expensive. For example, clean-up efforts following the 1991 Gulf War cost around USD 700 million, and Kuwait is still grappling with oil that has seeped into more than 40 million tons of soil. In contrast, Saudi Arabia's strategic remediation efforts successfully recovered over a million barrels of oil by utilising skimmer ships, which selectively collected and pumped the oil into storage.

Marine oil spill clean-ups involve five key phases: assessment, containment, recovery, disposal, and restoration. In the case of the 1991 Gulf War spill, most of the damage impacted the coastlines of Kuwait and Saudi Arabia. Various remediation techniques are available, with their effectiveness depending on contamination levels, local conditions, resource availability, and ecosystem sensitivity. Clean-up methods generally fall into three main categories: natural biodegradation, mechanical recovery, and chemical treatment, each offering unique advantages based on the specific spill scenario.

NATURAL BIODEGRADATION

Sometimes, nature itself proves to be the best clean-up crew for an oil spill. After the 1991 Gulf War, studies in the Arabian Gulf revealed that areas left unmanaged underwent significant natural remediation. Indigenous bacteria and algae colonised the oil's surface, breaking it down without human intervention.

The Gulf's extreme heat acts as a catalyst, accelerating microbial metabolism and enabling these natural oil-degrading organisms to digest hydrocarbons more efficiently. Intense solar radiation further aids the process by increasing water temperature and triggering photodegradation, which breaks down complex oil molecules into simpler, more digestible compounds for microbes.

However, the success of natural biodegradation depends on multiple factors, including the extent of contamination, weather conditions, water quality, and the resilience of the local ecosystem. Research in the Gulf has shown that most of the spilt oil remained in the immediate area, with minimal spread to the Arabian Sea – thanks in large part to the presence of native microorganisms. In regions where no active clean-up was performed, thick algae layers eventually formed over the oil slicks. These algae, along with organotrophic bacteria and cyanobacteria, played a vital role in breaking down the crude oil, transforming it into less harmful substances.

MECHANICAL CLEAN-UP

When an oil disaster occurs, mechanical remediation methods step in as the first line of defence. These techniques physically remove oil from the water using a range of specialised devices that are especially effective early on when the spill is still concentrated on the surface.

Booms are floating walls that contain and concentrate oil spills, making it easier to collect the oil. These barriers work very well in calm waters because they prevent the oil from spreading over a larger area.

TOP ROW L-R: Oiled crab. Photo by Adobe Stock – Fluke Samed; Collection of oil sample. Photo by Luke McKay. **BELOW:** Oyster population devastated after oil spill. Dispatches from the Gulf.

Skimmers are among the most common tools in an oil spill response.

- **Weir Skimmers:** These operate like a small dam, allowing water to flow over a barrier that traps the lighter oil on top.
- **Oleophilic Skimmers:** Think of these as high-tech sponges. They use materials that attract and hold onto oil, effectively absorbing a thin layer from the water.
- **Suction Skimmers:** Resembling vacuum cleaners, suction skimmers draw in a mixture of oil and water, then use internal mechanisms to separate the oil for collection.

CHEMICAL METHODS

Chemical methods for cleaning up oil spills alter the oil's properties to facilitate easier breakdown or removal. One widely used approach involves emulsifiers, which break the oil slick into tiny droplets. This increase in surface area allows natural processes, such as the action of sunlight and oil-degrading microbes, to work more efficiently. Emulsifiers are especially effective when applied immediately after a spill and work best on lighter oils. However, emulsifiers don't destroy the oil; they just disperse it throughout the water, which can sometimes lead to higher toxicity for small aquatic organisms.

Another chemical strategy uses solidifiers. These agents interact with the oil to transform it into a rubber-like substance that can be physically removed from the water. Solidifiers are most effective in conditions with moderate wave action, where natural mixing helps them work. However, they are required large volumes, sometimes up to 200% of the oil mass, to be effective.

After the Arabian Sea oil spill, clean-up efforts primarily relied on mechanical and chemical techniques. While these methods can respond quickly, they come with significant challenges. For example, high winds and rough seas often spread the oil over a larger area, which makes it harder for equipment like skimmers, booms, and sorbents to collect it effectively. On the chemical side, although emulsifiers break the oil into smaller droplets, research shows they can also make the oil up to 52 times more toxic for tiny marine creatures called rotifers which are an essential part of the marine food web. Moreover, both approaches tend


Wave tank at SL Ross. Photo by Arijit Bose

to be very expensive, which can limit their practicality in large-scale spill situations.

MICROBES TO THE RESCUE: BIOREMEDIATION

When oil spills occur, nature sends in its microscopic clean-up crew of tiny microorganisms like bacteria, fungi, and algae that "chooms down" the oil and break down the toxic hydrocarbons into harmless substances such as water, carbon dioxide, and biomass. This natural process, known as biodegradation, immediately kicks off in the water as the oil is attacked by microbes already present in the marine environment.

But sometimes, nature needs a little boost, and that's where bioremediation comes in. Think of bioremediation as giving nature extra power: by adding nutrients like nitrogen, phosphorus, and potassium, tweaking the pH, or even introducing specialised oil-eating microbes, we can speed up the clean-up process. Bioremediation can be done directly in the ocean (in-situ) or by removing the polluted material to treat it in a lab (ex-situ). However, in-situ methods are usually preferred because they're more cost-effective and don't require heavy equipment.

In short, biodegradation is nature's way of breaking down oil, bioremediation is our way of helping to make that process even faster and more effective.

HOW IT WORKS

Bioremediation can take two primary forms:

- **BIOSTIMULATION:** This method boosts the efficiency of native microbes already present in the environment. By adding nutrients like nitrogen, phosphorus, and potassium or adjusting factors such as oxygen levels and pH, scientists give these hardworking microorganisms a much needed energy boost, helping them multiply and break down the oil faster.

- **BIOAUGMENTATION:** Sometimes, the natural clean-up crew is insufficient to tackle a massive spill. That's where bioaugmentation comes in. In this approach, scientists introduce additional oil-eating microbes into the affected area. These microbes are either carefully selected from other environments known for their oil-degrading abilities or even genetically enhanced to target stubborn oil components. Think of it as calling in reinforcements to bolster the local team with extra hands (or rather, extra microbes) working alongside nature's own to speed up the oil breakdown and restore the environment more quickly.

Different species of microorganisms each have their specialities in cleaning up oil. In oil-soaked sediments, fungi often team up with bacteria to break down pollutants more effectively. Fungi play a crucial role in this process, as they produce enzymes that can break down complex hydrocarbons, making them more accessible to bacteria. Bacteria are widely regarded as the real superheroes of oil degradation. In 2015, researchers discovered four powerful bacterial strains from mussels – tiny warriors like *Shewanella algae*, *Micrococcus luteus*, *Pseudoalteromonas*, and *Shewanella haliotis*, proved especially effective at digesting oil. Another strain of Pseudomonas showed remarkable potential by breaking down both aromatic and aliphatic hydrocarbons by up to 62%.

One standout is *Paracoccus marcusii*, which tackles not only tough compounds like PAHs but also produces natural surfactants that help mix oil with water, enhancing the clean-up process. Scientists have identified over 100 different genera and 200 species of bacteria that aid in oil degradation, including well-known names like *Achromobacter*, *Acinetobacter*, *Arthrobacter*, *Burkholderia*, *Pseudomonas*, and *Rhodococcus*.

These microorganisms have unique talents: some, like *Rhodococcus*, *Oleispira*, and *Alcanivorax*, prefer crude oil, while others, such as *Flavobacterium petrolei* and *Acinetobacter dijkshoorniae*, are better suited for refined petroleum products. Still, others specialise in digesting specific hydrocarbons, such as alkanes or aromatic compounds – examples include the thermotolerant *Gordonia amicalis* and *Bacillus simplex*, as well as the methane-loving *Methylococcaceae*. In fact, round and rod-shaped thermophilic *Bacillus* species have been isolated from crude oil samples (provided by ADNOC from Abu Hasu site to UAEU), with their best oil-eating performance observed at temperatures between 75°C and 80°C in 6% salinity. In nature, things eat things, and life finds a way – even in the harshest environments.

While it was once thought that oil breakdown could only occur in oxygen-rich environments, some microbes have shown they can work even when oxygen is scarce. In both oxygen-rich and oxygen-poor settings, these tiny

organisms use a variety of chemical reactions – such as oxidation, reduction, hydroxylation, and dehydrogenation – to transform complex oil molecules into simpler, harmless substances.

In the challenging waters of the UAE, where extreme temperature variations and high salinity are common, microbes such as *Bacillus megaterium*, *Chromobacterium violaceum*, and *Bacillus cereus*, along with fungi like *Aspergillus niger* and *Aspergillus versicolor*, are particularly well-suited due to their high tolerance for heat and salt. When the water cools down, species like *Arthrobacter*, *Rhodococcus*, *Pseudomonas*, and *Acinetobacter* are among the most frequently cited cold-tolerant bacteria capable of degrading hydrocarbons, while specialised cold-water fungi groups, are relatively rare.

RECENT PROGRESS IN MICROBIAL OIL CLEAN-UPS

Scientists are making exciting strides in advancements in bioremediation techniques. For instance, in deep-sea studies from the Gulf of Mexico, one resilient bacterium, *Oleispira antarctica*, consistently dominated across varying pressures and temperatures, while other species were intolerant to extreme environmental changes.

Cleaning up older industrial sites poses an extra challenge because these areas can also be contaminated with heavy metals like lead from past gasoline use. Heavy metals boost toxicity and complicate clean-up efforts. To tackle this, researchers are turning to solutions like biochar, a nutrient-rich, charcoal-like substance made from natural materials. Biochar works in two major ways: it locks up stubborn pollutants such as PAHs, preventing them from spreading further, and its porous structure adsorbs heavy metals, reducing their bioavailability and keeping them in check. At the same time, biochar provides essential nutrients that help boost the oil-eating abilities of microbes.

One of the most incredible breakthroughs comes from the world of nanotechnology. Scientists have figured out how to "magnetise" oil-eating bacteria like *Alcanivorax borkumensis* by coating them with tiny magnetic nanoparticles. These bacteria naturally have a slightly negative charge on their cell walls, while the magnetic nanoparticles are designed with a positive charge, so they stick together like magnets on a refrigerator. This coating not only helps the bacteria latch onto oil droplets more effectively but also allows researchers to use magnets to guide and concentrate the bacteria exactly where the oil is essentially summoning a microscopic clean-up crew on demand.

A GREENER FUTURE FOR OIL SPILL CLEAN-UPS

Oil spills may be one of the biggest environmental challenges of our time, but nature offers some of the most powerful solutions. While traditional methods like mechanical and chemical clean-ups are necessary, they have limitations such as high costs, potential toxicity, and inefficiencies in large-scale spills. However, nature's microscopic warriors-bacteria, fungi, and algae, whose ability to break down oil, makes them one of the most promising solutions in environmental remediation.

The science of bioremediation is proving that the best clean-up crew might not come from high-tech machinery but from the very organisms that have evolved alongside crude oil for millions of years. With innovations like biochar and nanotechnology-enhanced microbes, scientists are finding ways to supercharge this natural process, making oil spill response more effective and sustainable. The lessons learned from real-world spills, from the 1991 Gulf War disaster to modern-day clean-up operations, highlights the importance of blending scientific advancements with nature's resilience.

Ultimately, no single approach can solve every oil spill. The key lies in a balanced strategy – using skimmers and booms for immediate containment, chemical agents where necessary, and biological methods for long-term restoration. By continuing to refine these strategies and invest in microbial research, we move closer to a future where oil spills no longer spell environmental catastrophe but become opportunities to harness the power of nature itself.

The next time an oil spill occurs, it won't just be human ingenuity at work – it will also be billions of invisible microbial workers tirelessly restoring the balance of our oceans. And that's the beauty of bioremediation: a natural, intelligent, and sustainable way forward.

UNITING FOR MARINE MAMMAL CONSERVATION

AT THE 24th SHARJAH INTERNATIONAL FORUM FOR ARABIA'S BIODIVERSITY

WORDS BY **CAITLIN MCFARLANE** PHOTOGRAPHY BY **UAE DOLPHIN PROJECT**
EDIT BY **BRYANA COPE & ADA NATOLI, ZAYED UNIVERSITY – UAE DOLPHIN PROJECT**

The first forum in the region to focus on marine mammals and their conservation.

COVER PHOTO: Indo-pacific bottlenose dolphins from the last sighting recorded during the Dubai Dolphin Survey in January 2024 close to the Dubai coastline. Whales and dolphins are regular inhabitants of the UAE and Gulf waters, but the majority of people are unaware of their existence and the threats they face in the region.

ABOVE: Dr Ada Natoli explaining the importance of data from skeletons. Data from bones, especially from skulls, are a diagnostic for marine mammals and can be pivotal in furthering the taxonomy understanding of these species. These skulls are a part of a larger research project being conducted by her team which can be read about in more detail here: www.emiratesdiving.com/magazine/divers-for-the-environment-june-2024.

The 24th annual Sharjah International Conservation Forum for Arabia's Biodiversity (SICFAB) took place from the 3rd to the 6th of February at Sharjah Safari and hosted by Environment and Protected Areas Authority - Sharjah (EPAA) on behalf of His Highness Sheikh Dr Sultan bin Mohammed Al Qassimi, Ruler of Sharjah, and Member of the UAE Supreme Council. The forum brings together experts, conservationists and researchers from across the globe to advance the protection and understanding of the region's biodiversity.

One of the main themes for this year's forum was marine mammals, with a specific emphasis on marine mammal strandings as a continuation of the previous 2024 forum, dedicated to reptile strandings This was the first time that a forum focused on marine mammal species in the Arabian region. The forum counted the presence of representatives from all the Arabian countries and provided a platform for sharing information on occurrences, current ongoing research, main threats, strandings and the situation of stranding networks in the different countries.

The forum featured a keynote speaker, Dr Shanan Atkins, from the Marine Mammal Research Unit, University of Pretoria and coordinator of the Indian Ocean Humpback Dolphin Network (HuDoNnet, **www.hudonet.org**). Dr Atkins, while illustrating the commendable results of the extensive South African marine mammal research, highlighted the importance of long-term monitoring for these species. She also provided an overview of the different techniques that can be utilised to monitor these species, including boat-based and aerial surveys, photo identification, and various sampling procedures. She also introduced the concept of rapid assessments and the South African national stranding network's current organisation.

NOAA defines marine mammal strandings as: 'Whales, dolphins, and porpoises (cetaceans) are considered stranded when found dead, either on the beach or floating in the water, or alive on the beach and unable to return to the water.'

After a brief summary of the available knowledge on these species in the different countries of the region, the forum highlighted the extensive work done so far in the UAE by Dr Ada Natoli (Zayed University), Fadi Yaghmour (EPAA), and SeaWorld Abu Dhabi. It showcased responses to past strandings, and demonstrated how to collect essential data to determine the species and possible cause of death. A newly established tiered forms system developed by Zayed University in collaboration with different stakeholders at the national and international levels was also presented.

This tiered system approach to strandings aims to allow all people, from the general public to veterinary experts, to respond quickly and effectively to stranding events. This system aims to standardise data collection at all response levels to ensure data can be scientifically analysed for future research.

The forum extensively discussed what marine mammals' stranding response could look like through close collaboration with the experts and researchers in the region, discussing current protocols regionally and globally, current challenges, and possible mitigation measures. The long term target is to develop a national stranding network within the UAE, collaborating across the Emirates and with neighbouring countries.

The forum's second day fully introduced the stranding responses with presentations covering the current region's response to strandings and the post-mortem techniques. This was followed by a panel discussion in which experts discussed the practical considerations and limitations when responding to regional whale strandings. This highlights the critical role that a stranding network could play in terms of personnel training, the practicality of the responses, and the need for region-specific protocols, especially when dealing with the very hot climate that characterises this region.

There was a unique opportunity for the participants to observe a necropsy of a stranded common bottlenose dolphin found on the eastern coast of Sharjah last year. The

ABOVE: Participants observed a necropsy from a common bottlenose dolphin found stranded on the eastern coast of Sharjah last year. This demonstration was led by the SeaWorld research and rescue team, Dr Ada Natoli and Fadi Yaghmour. This necropsy showcased the amount of data that can be collected from a specimen when having the facilities to transport and do an offsite necropsy is available. Earlier talks discussed how data and samples can still be collected with much larger animals, or when it is not possible to move the specimen from the stranding site.

activity was organised by Fadi Yaghmour, EPAA Sharjah, and led by the SeaWorld research and rescue team and Dr Ada Natoli, Zayed University. The necropsy provided insight into the procedure and the protocols on data collection, and procedures to attempt to determine the cause of death effectively.

The third day of the forum was focused on field research techniques currently being conducted by the Environmental Society of Oman, which included tracking and monitoring the Arabian sea humpback whale. This subpopulation does not undertake seasonal migrations for feeding and calving. The day's final talk focused on the vital data that can be extracted by collecting skeletons from stranding events. The skull of a marine mammal can be used as a key diagnostic technique for determining species, taxonomic identification can be made from these remains, and they can be utilised as educational tools through events such as this one.

TOP IMAGE: International expert Dr Shanan Atkins, Coordinator of the Indian Ocean Humpback Dolphin Conservation Network (HuDoNET, www.hudonet.org) highlighted the collaborative work that is being done across the country and continental boundaries with HuDoNET. She also presented on the South African stranding network and the importance of long-term dedicated monitoring, as well as what important information can be gathered with rapid assessment surveys when the budget and time allocated for such research is limited.

BOTTOM IMAGE: Regional expert Dr Ada Natoli from Zayed University and the UAE Dolphin Project, gave several talks on subjects related to marine mammals in the UAE and the status and importance of a national stranding network, as well as the data that can be gathered from such events.

The fourth and final day evaluated sampling techniques during a necropsy at different levels of experience. Taking tissue samples can allow researchers to detect environmental factors that affect the species' overall health such as where these pollutants might come from, and how they might get in the water. Ultimately, the goal was to determine the cause of death for the animal and whether it was an environmental factor that can be mitigated in the future.

The final presentation of the forum was an informative discussion on the South African stranding network led by Dr Shanan Atkins. This is a great example of a long-standing marine mammal stranding network. This presentation emphasised the importance of collaboration at all levels of a stranding, from government entities to those responding.

The forum was wrapped up with a panel discussion on regional stranding networks. The debate allowed all participating countries to explain the current status of the stranding networks in their country and their future aims. Despite being from different countries, there was a common theme regarding the strengths and weaknesses of the current marine mammals' stranding response. Collaboration between stakeholders is not only ideal, but necessary for the success of a national network. There were discussions over whether universities hold the best

TOP IMAGE: Experts from the region (left to right), Dr Ada Natoli from Zayed University, Fadi Yaghmour from the EPAA, Dr Daniela Denk and Dr Elsburgh 'Tres' Clarke from SeaWorld Abu Dhabi, held a panel discussion on the practical considerations for responding to whale strandings. Highlighting the challenges of collecting such data in the harsh environment of this region and the importance of gathering samples are vital, as these animals are data deficient and every bit of data collected helps further the research and conservation efforts in the region.

BOTTOM IMAGE: Photo by the EPAA. The 24th annual Sharjah International Conservation Forum for Arabia's Biodiversity took place from the 3rd to the 6th of February at the Sharjah Safari. Delegates from the region and experts from around the globe gathered to discuss updates on a national marine mammal stranding network, as well as share updates for reptiles and amphibians for the IUCN red list of endangered species list.

opportunity to facilitate these connections, or if it is best to have the government entities hold that role. It was agreed that all stakeholders, from public companies, universities, and government entities, all need to be involved in these discussions. A workshop was proposed to meet these stakeholders and further the discussions into actionable goals before the next available SICFAB forum.

This forum has provided insight into the potential of what can be achieved in the region regarding marine mammal strandings by bringing together expert researchers, conservationists, and government authorities. It has also highlighted the common gaps in the area when creating such a network and provided a common starting point to develop effective strategies on how to move forward in defining national stranding networks in the region.

U.A.E. DOLPHIN PROJECT

REPORT YOUR SIGHTINGS!

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

1. Take videos or photos (if you can). You are there in that moment so you become the scientist. 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 whales or dolphins when 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. You can send your data to us via:

sightings@uaedolphinproject.org
www.uaedolphinproject.org
www.facebook.com/UAEDolphinProject
www.instagram.com/uaedolphinproject
+971 56 671 7164
+971 50 955 1742 or +971 56 671 7164

DIVING INTO PARADISE:
SIR BU NAIR PROTECTED AREA ISLAND JOINS IUCN GREEN LIST

WORDS AND PHOTOGRAPHY BY **DR OSAMA MELIKA, SCIENTIFIC RESEARCHER (CORAL RESTORATION EXPERT)**

In a groundbreaking achievement for the UAE's marine conservation efforts, Sir Bu Nair Island Protected Area has been officially included in the International Union for Conservation of Nature (IUCN) Green List of Protected and Conserved Areas. This prestigious recognition highlights the island's exceptional ecological value and Sharjah's commitment to environmental stewardship.

COVER PHOTO: Staghorn coral (*Acropora cervicornis*) cover at 17.5m by Keith Wilson.


IUCN
Green List
Protected | Conserved Areas

In a groundbreaking achievement for the UAE's marine conservation efforts, the Sir Bu Nair Island Protected Area has officially been included in the International Union for Conservation of Nature (IUCN) Green List of Protected and Conserved Areas. This prestigious recognition highlights the island's exceptional ecological value and Sharjah's commitment to environmental stewardship.

A GEOLOGICAL MARVEL IN THE ARABIAN GULF

Sir Bu Nair Island is a remarkable geological formation located 110 kilometeres off the coast of Sharjah. This nearly circular island, with a diameter of about 4 kilometres and a distinctive 1-kilometre teardrop extension, has earned the poetic moniker, "the tear that fell in the waters of the Gulf." The island's formation is primarily attributed to salt dome structures created by the movement of late Neoproterozoic to Early Cambrian Hormuz Formation salt. This geological process resulted in the upward movement of salt, puncturing through younger overlying strata and creating the distinctive dome structure. The island's surface is composed of evaporate rocks, igneous rocks, and quartzitic sandstone, contributing to its unique topography.

Sir Bu Nair's subsoil is rich in minerals, particularly iron oxide and sulfur. These mineral resources have been historically exploited, especially during the British colonial period when iron was mined and exported, playing a significant role in the island's economic development. In the past, railways were used to transport these minerals to ships for export abroad. The island's Mars-like red terrain, a result of its mineral composition, has led to comparisons with the Red Planet and has earned it the nickname, "Al-Jazirah Al-Hamra" or "The Red Island."

BIODIVERSITY HOTSPOT

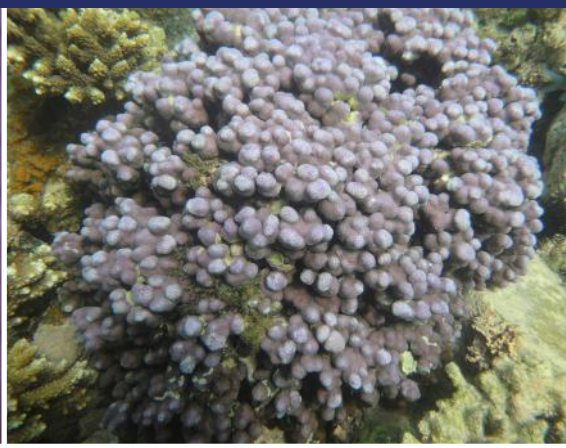
Sir Bu Nair Island is a biodiversity hotspot and a protected area of immense ecological significance. Declared a National Protected Area in 2000, the island spans 4,964 hectares and is recognised for its exceptional marine and terrestrial ecosystems. It is home to a wide array of species, making it one of the most important conservation sites in the Arabian Gulf.

The island's marine ecosystem is particularly noteworthy. Sir Bu Nair boasts over 45 species of corals, including extensive staghorn coral Acropora cover, which serves as a critical reef-building component. These corals thrive in the island's relatively stable environmental conditions and represent some of the last remaining large stands of Acropora in the southern Arabian Gulf. Alongside these corals, 98 species of coral reef fishes have been documented, including rare species such as the citron goby (*Gobiodon citrinus*), which is absent from nearby waters in Dubai and Abu Dhabi. The island also supports rare and endangered ray species, further underscoring its role as a marine sanctuary.

Sir Bu Nair is equally significant for its role in supporting endangered species. It is one of the most important nesting sites for the critically endangered hawksbill turtle (*Eretmochelys imbricata*) in the Arabian Gulf, with 350-400 nests recorded annually across its pristine beaches. The green sea turtle (*Chelonia mydas*), another endangered species, has also been observed nesting on the island. Conservation efforts, including satellite tracking programmes conducted in collaboration with organisations such as WWF and Emirates Wildlife Society, ensure that these turtles are closely monitored and protected.

The island's avian biodiversity is equally impressive. Sir Bu Nair provides a crucial refuge for seabirds, including approximately 1% of the global population of sooty gulls





(*Larus hemprichii*). Large colonies of bridled terns (*Onychoprion anaethetus*), lesser crested terns (*Sterna bengalensis*), and great crested terns (*Sterna bergii*) also nest on the island. These bird populations highlight Sir Bu Nair's importance as a breeding ground for marine birds in the region.

Beyond its marine life, Sir Bu Nair hosts a variety of terrestrial species such as deer, hedgehogs, and reptiles, thriving in its undisturbed environment. The island's strict protection policies ensure minimal human interference, allowing these ecosystems to flourish.

Recognised internationally for its ecological value, Sir Bu Nair is included on UNESCO's tentative list of World Heritage Sites and features on the International Union for Conservation of Nature (IUCN) list. Its designation as a Ramsar Wetland of International Importance further highlights its global significance. These recognitions underscore Sir Bu Nair's role as a vital refuge for biodiversity and a model for sustainable conservation practices.

CULTURAL HERITAGE AND HUMAN HISTORY

Sir Bu Nair Island boasts a rich tapestry of natural wonders and cultural heritage. Archaeological findings on the island date back approximately 3,500 years, with pottery vessels from the Iron Age confirming continuous marine activity for 35 centuries. This evidence provides valuable insights into the cultural practices and daily lives of past civilizations, highlighting Sir Bu Nair's long-standing significance as a meeting point for seafarers and traders.

During the British colonial era, Sir Bu Nair played a crucial role in regional trade and economic development. The island was the site of the first railway in the Emirates, used for transporting minerals to ships for export. The extraction of minerals, including iron oxide and sulfur, contributed significantly to the island's economic importance.

Sir Bu Nair's cultural heritage is deeply intertwined with the maritime traditions of the region. The island served as a vital stopover for pearl divers and seafarers, thanks to its freshwater well that provided a crucial source of drinking water. This maritime significance is reflected in the island's role in the region's pearl diving legacy, which has shaped the cultural identity of the UAE.

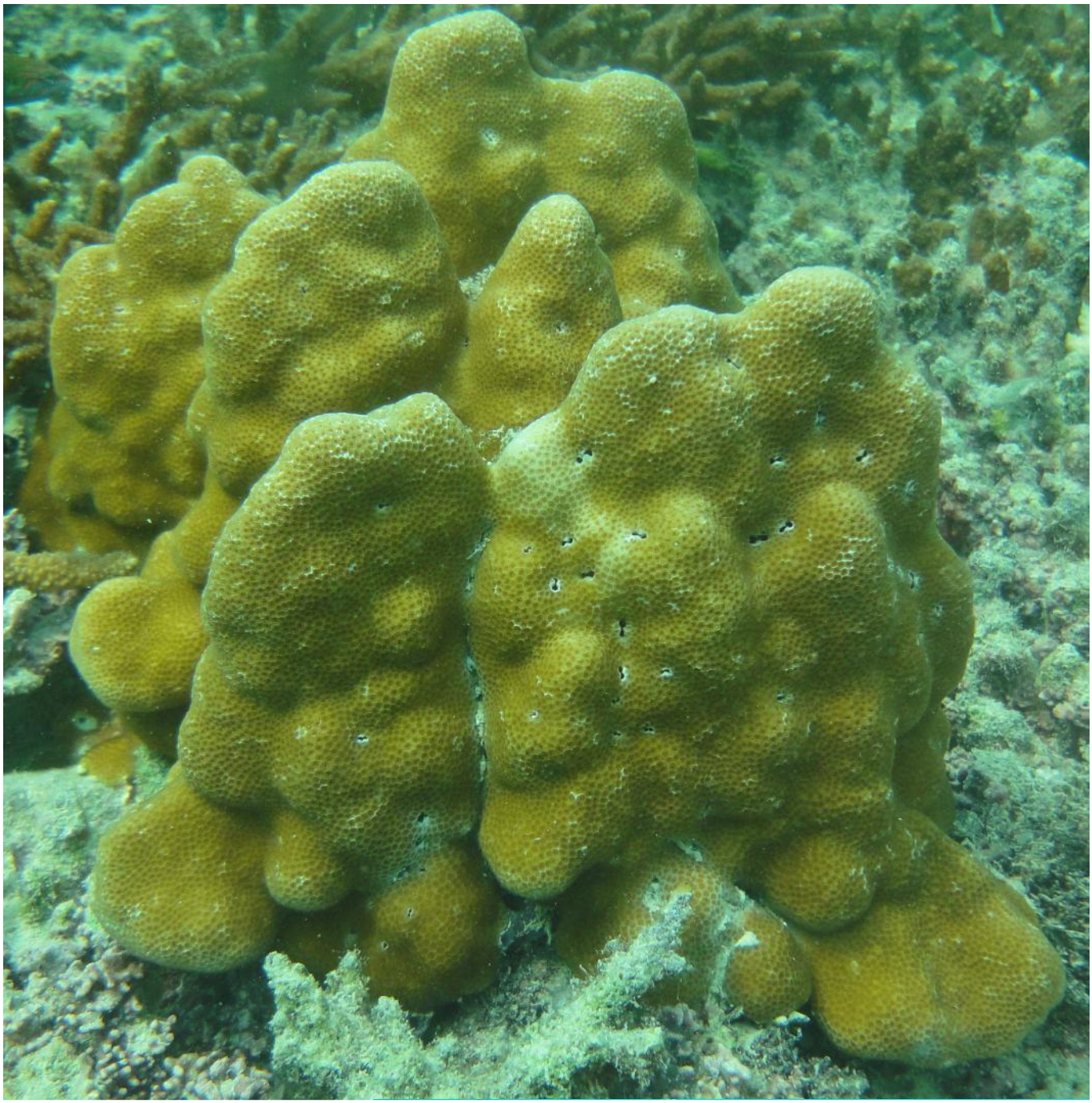
The island's historical importance is further evidenced by the presence of a cemetery containing the remains of divers and miners, representing a significant chapter in the development of communities along the Arabian Gulf coast. Emirati poets have long described Sir Bu Nair as "the tear that fell in the waters of the Gulf," highlighting its cultural resonance.

Today, Sir Bu Nair stands as a protected nature reserve, declared as such in 2000 by His Highness Dr Sheikh Sultan Bin Mohammad Al Qasimi, Ruler of Sharjah. This designation aims to preserve both the island's natural wonders and its rich cultural heritage for future generations.

CONSERVATION MANAGEMENT AND GREEN LIST IMPLICATIONS

Sir Bu Nair Island's commitment to join the IUCN Green List represents a significant milestone in its conservation efforts. This prestigious recognition enhances the island's global profile and strengthens its management practices, ensuring the protection of its unique biodiversity and cultural heritage for future generations.

The IUCN Green List Standard, which Sir Bu Nair Island aims to meet, comprises four key components: good governance, sound design and planning, effective management, and positive



conservation outcomes. By adhering to these criteria, the island demonstrates its dedication to implementing best practices in conservation.

Sir Bu Nair Island's exemplary conservation management practices include:

1. Strict regulations for visitors – To protect its fragile ecosystems, Sir Bu Nair Island has implemented strict regulations governing visitor access and activities. These regulations are designed to minimise human impact on sensitive habitats, particularly during critical breeding seasons for marine turtles and nesting birds.

2. Ongoing monitoring and research programmes – The Environment and Protected Areas Authority (EPAA) conducts regular monitoring of wildlife and habitats to ensure compliance with conservation laws

and assess the health of the ecosystems. Research initiatives focus on the island's marine biodiversity, including surveys of turtle populations, nesting bird colonies, and coral diversity.

3. Public participation campaigns – Community engagement campaigns serve as essential tools for encouraging local residents and visitors alike to actively participate in conservation efforts. These initiatives not only raise awareness but also advocate for responsible behaviour among those who visit the island, ensuring that its natural beauty and cultural heritage are preserved for future generations.

4. Effective zoning strategies – The island employs a zoning system that designates specific areas for conservation, recreation, and research. This system helps manage human activities and minimises impacts on sensitive habitats.

The Green List status will provide Sir Bu Nair Island with a framework for continuous improvement. The island will undergo a rigorous evaluation process, including stakeholder consultation and site visits, to achieve and maintain its Green List certification. This process ensures that the island's conservation efforts remain at the forefront of global standards.

By joining the IUCN Green List, Sir Bu Nair Island reinforces its role as a model for sustainable practices in protected area management. This recognition not only validates current conservation efforts but also motivates ongoing initiatives to preserve the island's natural and cultural values.

LOOKING TO THE FUTURE

As a biodiversity hotspot in the southern Arabian Gulf, Sir Bu Nair's conservation has far-reaching implications. Its thriving coral populations serve as a source of larvae for nearby reefs, contributing to the overall health of the region's marine ecosystems.

The IUCN Green List recognition is more than just an honour – it's a pledge to uphold and advance exceptional conservation practices. It positions Sir Bu Nair as a model for marine protected area management in the UAE and beyond, showcasing how effective governance, science-based monitoring, and community engagement can preserve natural wonders for generations to come.

For divers and marine enthusiasts, Sir Bu Nair Island offers a glimpse into an underwater paradise, where conservation and natural beauty coexist in perfect harmony. As we celebrate this achievement, we're reminded of our responsibility to protect and cherish these irreplaceable ecosystems that are vital to the health of our oceans and the planet as a whole.

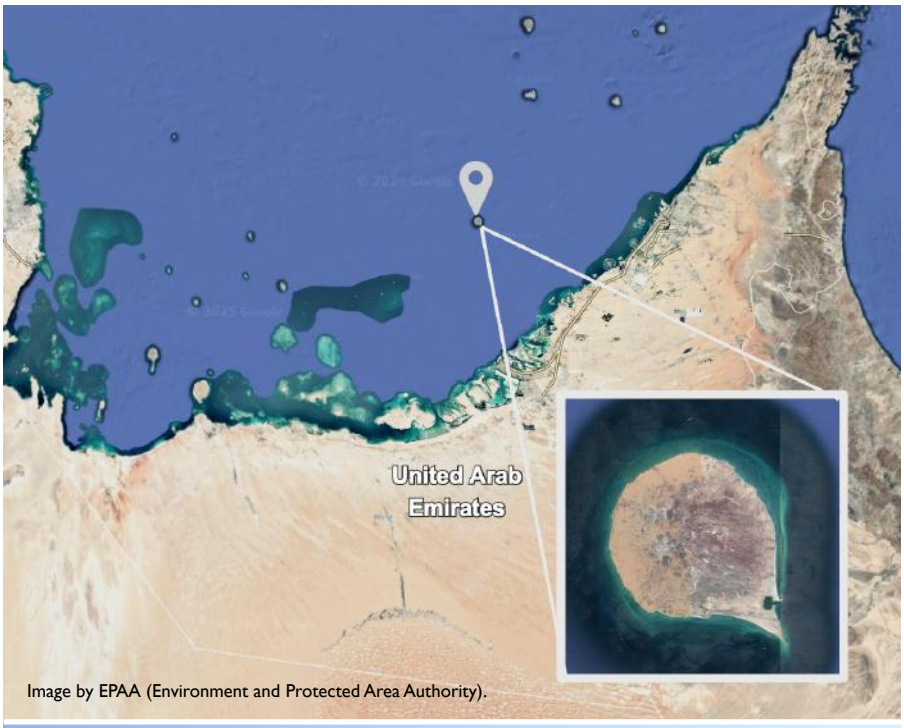
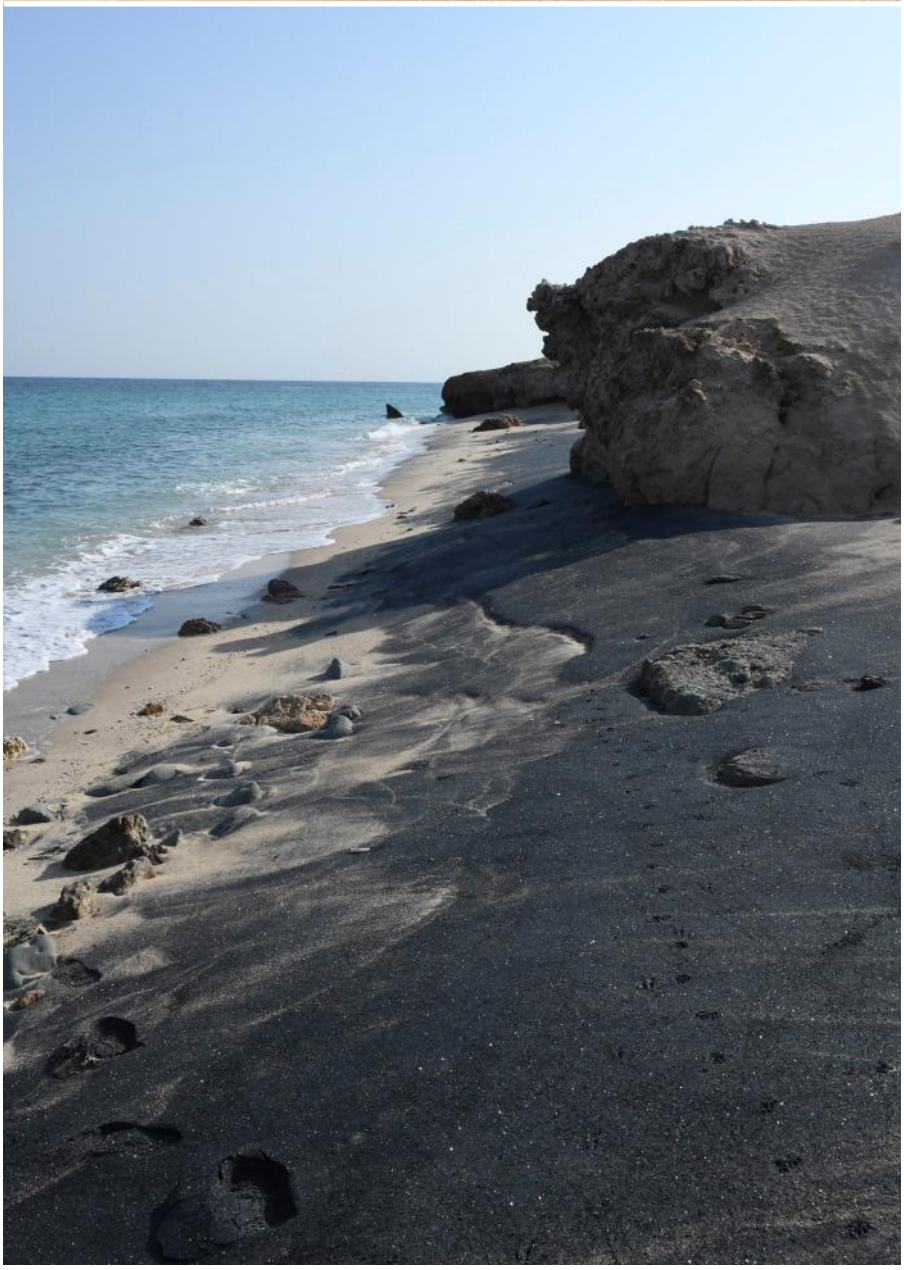


Image by EPAA (Environment and Protected Area Authority).



RISKS TO MOROCCO'S MEDITERRANEAN COASTS: REALITY AND IMPACTS

WORDS BY **MOHAMMED TAFRAOUTI**

Coastal erosion is a major issue in the Mediterranean region, with complex social and economic impacts that threaten the natural and cultural heritage of nearly half its coasts.

COVER PHOTO: Cap des Trois Fourches by Mohammed Tafraouti.

Coastal erosion is a major issue in the Mediterranean region, with complex social and economic impacts that threaten the natural and cultural heritage of nearly half its coasts.

Two field visits stand out in my memory, showcasing the effects of climate change. The first was to the northern shore of the Greek Mediterranean coast, and the second to the Atlantic coast of Rufisque in Senegal. Since then, the issue of coastal erosion along Morocco's Mediterranean coast has stayed with me, prompting an exploration of this silent encroachment on land and the rising sea levels in a journalistic approach to raise awareness.

The coastal environment is constantly changing, with erosion and coastal shifts posing significant challenges to coastal infrastructure. Modern data on coastal changes and erosion are crucial for coastal managers, enabling decision-makers to identify and mitigate the effects of coastal erosion.

MOROCCO'S COASTAL PROFILE

Morocco's coastline, with both Mediterranean and Atlantic fronts, boasts significant ecological diversity and forms the cornerstone of national development. However, rural-to-coastal migration and urban expansion have intensified pressures on this environment. Around 60% of Morocco's population now resides in coastal cities, alongside industrial, tourism, and port activities. Compounding this, approximately 70% of hotel wastewater and 90% of industrial wastewater are discharged untreated, alongside over-exploitation of sand dunes, both terrestrial and marine. These factors render Morocco's coasts highly vulnerable to climate change.

To address this, Morocco enacted Coastal Law No. 81.12 to protect and sustainably manage its coastal areas. The law aligns with the Barcelona Convention, particularly the protocol on integrated coastal zone management, aiming to reconcile environmental, social, and economic imperatives. Despite these efforts, interventions in coastal areas often remain sectoral, underscoring the need for integrated and precise management approaches. Institutional and other stakeholders must collaborate to align projects and actions with sustainable development trajectories.

THE NEED FOR A SOURCE-TO-SEA APPROACH

Professor Michael Scoullos, an oceanographer and President of the Mediterranean Information Office for Environment, Culture, and Sustainable Development (MIO-ECSDE) in Athens, stated in an interview with Maroc Environnement (https://marocenv.com) that coastal erosion is a significant issue in the Mediterranean, with complex socio-economic impacts threatening the natural and cultural heritage of nearly half the region's coasts. Human activities like urban and tourism development, coupled with climate change-induced phenomena such as droughts, storms, floods, sea level rise, and changes in ocean circulation, exacerbate the problem. Scoullos stressed the need for comprehensive policies and interventions that extend beyond the coastal zone, encompassing the entire basin and maritime activities through an integrated source-to-sea approach.

COASTAL DRIFT DYNAMICS IN TETOUAN

To understand the interplay between coastal morphodynamics, geomorphological frameworks, and human interventions on Mediterranean beaches in northwestern Morocco, Dr Abdelmounaim El Mrini, a marine environment researcher at Abdelmalek Essaadi University in Tetouan, highlighted the unique characteristics of Tetouan's coastline in a Maroc Environnement interview. Stretching approximately 40 kilometres, this high-priority area for coastal tourism development features beaches with variable widths and constant morphological changes due to wave and wind forces.

Dr El Mrini explained that waves, often coming from the east and northeast, create a primary coastal drift current moving northward. This natural process divides the coast into two zones based on sediment movement. The southern zone, south of the rocky headland Ras Al-Aswad, is shielded from the strongest northeast waves and receives significant sediment deposits from the M'diq River. These sediments are redistributed by coastal drift until they meet the headland, creating wide beaches with medium to well-sorted sand and, in some areas, sand dunes.

Conversely, the northern zone beyond Ras Cabo Negro faces stronger waves, leading to sediment withdrawal into the sea. With no major sediment sources, these beaches are narrower and more susceptible to erosion. Human interventions, such as sediment trapping in dams and disrupting natural coastal exchanges by constructing ports and destroying sand dunes for urban developments, further complicate the dynamics. Integrated management of this coastline, including understanding its changes and influencing factors, is critical to ensuring the sustainability of services like tourism.

MONITORING COASTAL EROSION IN TANGIER

Kenneth Mubea, Capacity Development Manager at Digital Earth Africa, revealed that satellite data from the programme showed erosion levels on Tangier's coast among others in Africa. Using Landsat satellite data ready for analysis (ARD) at a 30 metre resolution, the Digital Earth Africa monitoring service mapped changes in the African coastline from 2000 to 2023.

This data offers valuable insights into annual coastal erosion and accretion trends at local and continental levels. They enable decision-makers to prioritise and evaluate the impacts of coastal management based on historical shoreline changes. The data also shed light on how coastlines respond to change drivers, such as extreme weather events, rising sea levels, and human development, providing a foundation for sustainable coastal management strategies.

THE IMPACT OF CLIMATE CHANGE ON MOROCCO'S COASTLINE

Professor Abdellatif Khattabi

President of the Moroccan Association for Regional Sciences, considers climate change one of the most pressing environmental challenges in the Mediterranean region, with far-reaching effects on ecosystems and human systems. Among its consequences, rising sea levels pose a significant threat to coastal areas, where millions of people live, and where numerous economic activities, such as tourism and fishing, directly depend on ecosystem health.

Professor Khattabi notes that the direct effects of climate change on coastal areas, coupled with sea-level rise, intensify phenomena such as coastal erosion, lowland flooding, and increased storm frequency. These impacts generate high economic costs, damage coastal infrastructure, and increase stress on ecosystems – particularly due to changes in salinity and persistent flooding – threatening their ecological balance and natural regulatory functions. Communities relying on coastal resources for livelihoods, including fishing, agriculture, and tourism, are especially vulnerable. The loss of natural resources and vital infrastructure may exacerbate social and economic inequalities, necessitating urgent intervention to mitigate these destructive effects.

THE NADOR REGION: A CASE STUDY OF COASTAL CHALLENGES

In Nador, located on Morocco's Mediterranean coast, the effects of climate change are especially evident. Rising sea levels pose a direct threat to local ecosystems and economic activities. The region's coastline, home to unique ecosystems such as the Marchica Lagoon, is at significant risk from accelerated beach erosion and increasingly frequent marine storms. These factors lead to shoreline retreat, jeopardising coastal infrastructure and local livelihoods.

The Marchica Lagoon, one of Africa's largest lagoons, faces significant water-related changes, including increased salinity and disruptions to freshwater cycles. Such changes threaten traditional fishing activities that many local inhabitants depend on. Furthermore, eco-tourism, vital to the region's economy, is in decline due to coastal erosion and inundated lands, undermining the area's appeal as a tourist destination.

THE NEED FOR AN INTEGRATED RESPONSE

Nador exemplifies the broader challenges facing Mediterranean coastal regions. Sea-level rise is an environmental, social, and economic issue requiring an integrated and proactive approach. To safeguard these areas, it is essential to enhance coastal infrastructure, protect sensitive ecosystems like wetlands, and implement sustainable adaptation strategies.
Dr Khattabi urged local authorities, in partnership with the government and international organisations, to develop innovative solutions. These measures could include constructing robust infrastructure to mitigate damage caused by floods and storms, restoring and preserving coastal ecosystems as they play a crucial role in natural shoreline protection, and raising awareness among local populations while involving them in sustainable resource management initiatives.

COASTAL EROSION IN AKLIM VILLAGE: A CLEAR EXAMPLE

Coastal erosion is notably evident along the Mediterranean shore in northern Morocco, especially in the sandy strip of the Marchica Lagoon, specifically in the Al-Muhandis area. Here, the coastline has retreated several metres, and the sandy barrier has been eroded (forming a 3-4 metre escarpment). The previously parallel road has disappeared.

Said Azouagh, Eastern Region Coordinator for the Moroccan Group for Bird Protection, highlights erosion in the eastern area of Aklim Beach, known for its vacation villas. The beach and escarpment have eroded significantly, with the sea encroaching on buildings, some of which have collapsed or were recently demolished by authorities as a precaution. In Marchica Lagoon, sea levels have risen by 10 to 20 centimetres, submerging some islands (the Twin Islands) and inundating areas once used by tern species for summer nesting.

PRESERVING THE FUTURE FOR GENERATIONS TO COME

The Nador region offers a microcosm of the global challenges posed by climate change in coastal areas. Ensuring a sustainable future demands collective and coordinated responses that integrate immediate protection measures with long-term adaptation strategies. Protecting these regions not only ensures the survival of local communities but also preserves their unique environmental heritage for future generations.

El Hadi El Ouarti, President of the Forum for Urban Planning, Environment, and Development, highlighted that Greater Nador is one of Morocco's most dynamic urban areas, home to around 320,000 residents and boasting unique natural features. These include extensive agricultural lands (10,000 hectares of irrigated land in the Bouarg Plain), advanced infrastructure such as modern ports (supporting maritime navigation and fishing), and thriving coastal tourism thanks to its beautiful beaches. Additionally, Martchika Lagoon, one of the Mediterranean's most significant lagoons, is classified as a Site of Biological and Ecological Interest (SIBE) and a Ramsar site.

However, El Ouarti noted that the region faces growing challenges from climate change, which threatens its environment and socio-economic systems. These challenges include floods that increasingly endanger cities and infrastructure. Populated areas like Nador, Azghanghan, and Beni Ansar suffer frequent flooding, causing significant material damage. Flooding also impacts agricultural lands, particularly in the Bouarg area, jeopardising biodiversity and local food security. Coastal infrastructure deterioration and erosion degrade the quality of life and increase maintenance costs.

El Ouarti emphasised that rising sea levels and coastal erosion pose significant threats to coastal regions, such as Arkaman Village, leading to beach degradation and the destruction of natural habitats for coastal species, including those around Martchika Lagoon. He also highlighted the effects of drought and water scarcity, which reduce water resources and irrigation capacity in agricultural zones. Biodiversity is directly

ABOVE AND OPPOSITE: Erosion on the coast of Nador. **OPPOSTIE BOTTOM ROW L-R:** Professor Michael Scoullos; Map of Tangier's erosion.

affected by desertification and salinisation, harming natural ecosystems.

To address these challenges, El Ouarti called for good governance and strategic planning. He stressed the need for an integrated flood risk management plan that includes resilient infrastructure and natural protection zones. This should be complemented by effective urban planning policies to limit the exploitation of flood-prone areas. Coastal zone management should focus on projects that enhance resilience against erosion and rising sea levels and implement policies to protect environmentally significant lagoons.

To tackle water scarcity, he recommended improving irrigation systems, adopting water-saving technologies in agriculture, and advancing agricultural research to enhance crop efficiency under drought conditions. Capacity-building initiatives, community awareness campaigns, and training for local populations and decision-makers on climate change adaptation are also essential. He underscored the importance of involving various stakeholders, including universities and non-governmental organisations, in policy development and implementation.

El Ouarti stressed the need to promote scientific research and international collaboration, particularly in universities, to develop science-based climate solutions. Establishing partnerships with international organisations to secure funding for climate projects is equally critical.

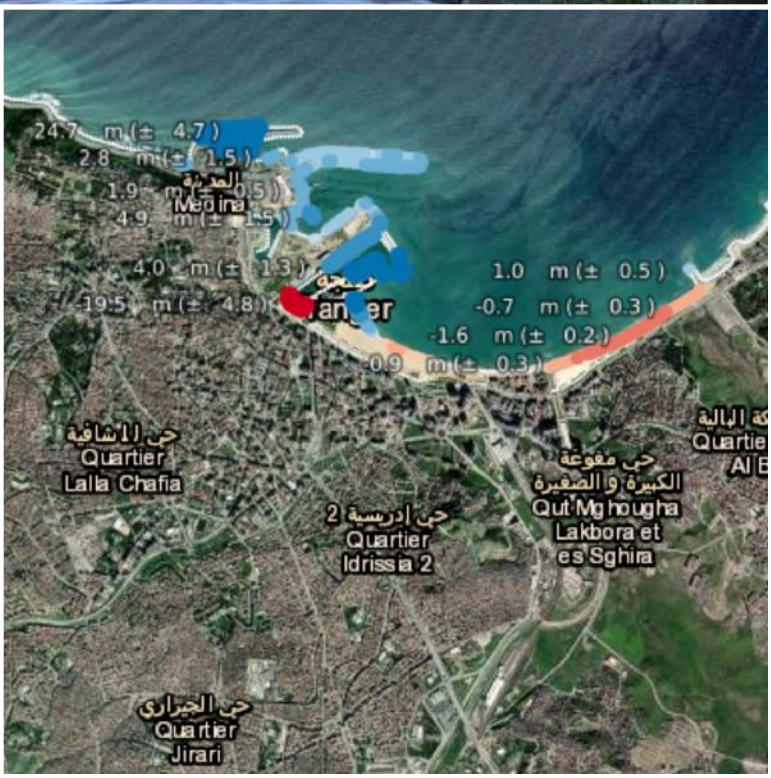
Addressing the climate change challenges facing Greater Nador requires the concerted efforts of local governance, civil society, and the private sector. By adopting comprehensive and sustainable strategies, Greater Nador can become a model for coastal cities that successfully adapt to climate change while preserving their environment and economy for future generations.

A CALL TO ACTION

Tackling climate change challenges in Greater Nador requires the combined efforts of local governance, civil society, and the private sector. By adopting comprehensive and sustainable strategies, Nador can serve as a model for coastal cities that successfully adapt to climate change while preserving their environment and economy for future generations.

This issue was the main focus of a recent workshop which was held in Nador to mark the International Climate Day held on the 8th of December, under the theme "Climate Action: Our Responsibility, Not an Option". The event, organised by the Environmental Prospects Centre for Media and Sustainable Development, in partnership with the Moroccan Association for Regional Sciences and other organisations, aimed to raise awareness and mobilise stakeholders to enhance community and infrastructure resilience along Morocco's Mediterranean coast.

This report was produced with the support of the Earth Journalism Network, as part of the Mediterranean Media Initiative.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GrandStores
SeaLife
MONSTER MIDDLE EAST
GoPro
LARQ
BASE FILMS
MARELUX
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DIVERS DOWN
Dive Campus
AL MAHARA
DIVING CENTER L.L.C
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Photo by Suretta Venter – Digital Online 2024

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EDA'S UNDERWATER PHOTOGRAPHY AND FILM COMPETITION 2025

HOW TO TAKE PART

Register for EDA Membership to take part in Digital Online and get the chance to win some amazing prizes. Membership gives you access to all of EDA's annual events and activities.

SUBMISSION DEADLINE

Friday 4th April 2025 at 11:59pm (GST)

DIGITAL ONLINE

جمعية الإمارات للغوص

EMIRATES DIVING ASSOCIATION

PHOTOGRAPHY AND FILM COMPETITION

DIGITAL ONLINE 2025

EDA'S UNDERWATER PHOTOGRAPHY AND FILM COMPETITION

SUBMISSIONS OPEN: Monday 3rd March 2025 | **SUBMISSIONS CLOSE:** Friday 4th April 2025 at 11:59 PM (GST)
DIGITAL ONLINE AWARDS & EXHIBITION NIGHT: Thursday 15th May 2025 at Deep Dive Dubai at 7pm

THE EVENT

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

AN EVENT BY

EDA
جمعية الإمارات للغوص
Emirates Diving Association

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Digital Online 2024's Awards & Exhibition Night was held on the 16th of May at Deep Dive Dubai. Thank you to all our prize sponsors and partners for making the event such a success!

DIGITAL ONLINE'S MAIN OBJECTIVES ARE:

- To develop the human interaction with the underwater environment and highlight the beauty of its flora and fauna.
- To gather information on the number of underwater photographers in the UAE.
- To discover new promising underwater photographers locally and internationally.

Digital Online is open to all photographers and videographers of all skill levels with a valid EDA Membership status. EDA membership must be renewed if expired or acquired in order to take part: www.emiratesdiving.com/membership-form

DIGITAL ONLINE 2009-2025

Digital Online – EDA's Underwater Photography and Film Competition, is about to celebrate its 16th year! The competition was introduced by EDA in 2009 to resident photographers to develop a relationship and human interaction amongst those unfamiliar with the underwater world environment. The competition holds both local and international marine life categories to offer variety between our local and international diving enthusiasts. The film category was introduced as an extension to the competition in 2012 to share our underwater world through motion pictures and deliver a better understanding of the habitats and surroundings.

The event sees continuous and steady growth with new underwater photographers taking part and joining our regular annual participants. The enthusiasm and passion strives on, and the drive to bring our underwater world's conservation to the forefront increases even more so. The purpose of Digital Online is to keep our underwater world visible by displaying its hidden beauties and to exemplify its importance to all life on Earth through the powers of its ecosystems.

The event has attained equal success with non-divers who come to support the participating photographers and videographers at the annual Awards and Exhibition Night. Whether it's through discussions, or articles published for our readers through our free quarterly magazine, Divers for the Environment, the inspiration the event brings, is a success in its own right.

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

COMPETITION CLAUSE

EDA does not disclose photographers' names during the judging process. The competition is run fairly and without prejudice, professionally adhering to all of Digital Online's rules and guidelines throughout.

RULES AND GUIDELINES 2025

- Digital Online is open to all photographers and videographers of all skill levels with valid EDA membership. EDA membership must be acquired or renewed if expired in order to take part which can be done through the EDA website.
- Each competitor can only win one prize. Other winning images will be displayed at the event as Highly Commended.
- The other prize or prizes are awarded to the next photographer in line with the highest score, and so on.
- Winners will choose their own prize in order of winning status.
- Participants are obligated to follow environmental conservation regulations and to respect the underwater world during the process of taking their stills and videos. Any damage to the underwater world, including the disruption of the natural habitat of marine life, provocation through touching, displacing, feeding or annoying, is prohibited and will disqualify the images or the photographer/videographer.
- By entering the competition, entrants declare that they own copyright of the submitted photographs and films which generates an automatic acceptance of all the rules. EDA reserves the right to publish images in the 'Divers for the Environment' magazine, on EDA's social media pages and EDA website. Images will also be used in any future promotional material for EDA events and competitions royalty free, but copyright remains with the photographer. Use of images or video will require no additional written or verbal permission from the photographer or videographer.
- Images (photos or videos) must not have already been submitted to previous Digital Online competitions.
- Photos and videos must be taken underwater unless specified in a category description.
- Manipulation is restricted to colour correction, brightness, contrast, sharpening and cropping, except for the Creative Photography category. The Digital Online judges reserve the right to examine RAW/untouched images in the other categories if requested.
- Removing backscatter is allowed to an extent, this does not include the removal of subjects such as fish or divers, or cutting and pasting sections of images from one to another, except for the Creative Photography category.
- The winners will be announced and their work displayed at the exhibition and award ceremony on the 15th of May 2025. Participants who do not make it to the evening of the event will be asked to collect their prize from the EDA offices.
- Judges, Sponsors and prizes will be announced in the March 2025 magazine issue.
- We pledge to run this photography and video competition ethically, and with integrity. Our judges have volunteered their time to help. The photographers' details remain hidden to the judges during the judging process.
- All judges' decisions are final.

HOW TO ENTER

- Submissions may be entered from Monday 3rd of March 2025.
- The entry deadline is Friday 4th of April 2025 at 11:59pm (GST – Gulf Standard Time).
- Submit entries to: **photo@emiratesdiving.com** with the requested *category details included for each photo and film submission.
- File names should include participant's name and the category as follows:
  1. Name – Macro.jpg
  2. Name – Wide Angle.jpg
  3. Name – Best of the UAE.jpg
  4. Name – Black & White.jpg
  5. Name – Behaviour.jpg
  6. Name – Creative Photography.jpg
  7. Name – Treasured Underwater Discoveries.mp4
- Photo entries must be saved in jpeg format and should be sized between 2000 and 6000 pixels in the longest dimension. Please limit your images to a maximum file size of 5MB. Images will be viewed on a monitor and should be in the Adobe RGB 1998 or sRGB colour space.
- Video submissions must be in mp4 format.
- Photography and video entries are to be sent electronically through WeTransfer.
- You will receive an email to confirm your registration with photos and/or video upload. If you do not receive one within 24 hours, your email may not have come through and you may need to try again.

HOW PRIZES ARE AWARDED

Once the judging is complete, the winners will be able to choose a prize available to them on the list they will receive via email. Digital Online Judges award a 3-way point system to each photograph/video consisting of Technique, Composition, and Impact which is added to give the image or video's total grand score.

Best of show with the highest points will get first choice. 1st place winners by highest score will choose a prize before all other winners, 2nd place winners before 3rd place winners, etc.

Please note, each individual can only win one prize. If photographers get a multiple win, their highest scoring image will win a prize and the other will get a highly commended mention which will also be displayed at the event.

PHOTOGRAPHY CATEGORIES

Photographers may enter one image per photography category. The categories are open to photos taken with any type of camera: DSLR, mirrorless or compact.

* DETAILS TO INCLUDE FOR EACH PHOTO SUBMISSION:

- Photographer Name
- Category
- Location
- Story Behind the Shot
- Camera and Gear
- Settings

1. **MACRO**
   Definition: Photographs taken with close-up equipment, portraying underwater flora and/or fauna. The photographer may not crop the original more than 20%. The original image may be requested.

2. **WIDE ANGLE**
   Definition: Photographs taken with a wide angle lens (or adapters that provide an equal field-of-view), with or without human presence, portraying the natural beauty of the underwater environment.

3. **BEST OF THE UAE**
   Definition: Any underwater subject taken in the UAE or Musandam.

4. **BLACK & WHITE**
   Definition: Black and white photography is timeless and elegant. Focus on tonal contrast, shapes and textures and the composition of the shot.

5. **BEHAVIOUR**
   Definition: A photograph showing marine life action, such as feeding, cleaning, schooling, mating, fighting, etc. May be captured under or above water.

6. **CREATIVE UNDERWATER PHOTOGRAPHY**
   Definition: This field is wide open. It can involve a simple workflow used to capture a unique look of a photo. Or it can be a complex post-processing technique that is used to bring out the mood and textures in an image. Photos entered into this category can be taken in any underwater environment – including controlled environments (e.g., pools, tanks). The main subject can be anything ranging from an abstract concept to a person (a diver, freediver, model, etc.) to a fish. There are no post-processing (photoshop) limits in this category. This category is designed to let your imagination swim free.

VIDEO CATEGORY

Videographers may enter one film with the following title:

7. **TREASURED UNDERWATER DISCOVERIES**
   Guidelines: Looking for films of all genres – documentaries, narratives, shorts and animation films. Film subject must focus on all aspects of our underwater world including but not limited to, ocean exploration, wildlife, environmental, conservation and oceanography.

- All film genres will be accepted.
- Content must focus or relate to the ocean.
- Non-English films must have subtitles.
- If music is used, it must be from a public domain or royalty-free.
- Film length should be 5 minutes or less, including credits.
- Winning films will be chosen on creativity and the ability to tell a story that leaves the audience better informed and/or moved by the ocean.

* DETAILS TO INCLUDE WITH VIDEO SUBMISSION:

- Videographer Name
- Genre
- Location
- Story Behind the Film
- Camera and Gear

THE SPONSORS AND PRIZES

Digital Online's 2025 Prize Sponsors will be offering this year's 21 winners the following prizes to choose from:
NOTE: Participants are only able to win one prize each. Entrants with multiple winning entries will be given priority in the points awarded.

1. **SHEESA BEACH DHOW CRUISES** | www.sheesabeach.com
Voucher for one to join a 2 nights Sharing Liveaboard Dive Trip.

Terms & Conditions:
- Valid from June to September 2025
- Up to 6 dives
- Person accompanying the winner on this trip (if any) will be offered a 50% discount.

2. **GRAND STORES** (3 Prizes) | www.grandstores.com
www.sealife-cameras.com
   1. **SEALIFE SportDiver ULTRA Smartphone Housing**
      - Underwater smartphone housing (130ft/40m)
      - Compact & lightweight design
      - Large shutter lever & control buttons
      - Free app with advanced camera features
      - Dual leak alarms & safety features

   2. **SEALIFE SL671 Sea Dragon 2500F Photo-Video Dive Light**
      - 60-minute run time
      - 120° wide beam angle.
      - Powerful 2500 lumen LED light.
      - One button control for easy operation.

   3. **SEALIFE Sea Dragon Mini 1300S Power Kit**
      - Dive light - 1300 lumens
      - Ultra-narrow beam for long range
      - 5 light modes (full, half, quarter, flash, SOS)
      - Easy one-button operation
      - Durable aluminum construction
      - Depth rated to 100 meters (330ft)
      - Includes rechargeable battery & charger

3. **MONSTER MIDDLE EAST** (3 Prizes)
   1. **GoPro HERO13 Black**
      + a LARQ Bottle PureVis™
      Transform your camera. Fuel your creativity.

   2. **GoPro HERO13 Black & Macro Lens Mod**
      + a LARQ Bottle PureVis™
      Transform your camera. Fuel your creativity. Includes the HB-Series Variable Close-Focus Wide Angle Lens.

   3. **GoPro HERO13 Black & Ultra Wide Lens Mod**
      + a LARQ Bottle PureVis™
      Transform your camera. Fuel your creativity. Includes the HB-Series 177° Ultra Stabilised POV Lens.

Included in each Prize Bundle:
The LARQ Bottle PureVis™ is the world's first self-cleaning water bottle and water purification system. It uses PureVis technology to eliminate up to 99%* of bio-contaminants such as E. coli from your water and bottle.

4. **MARELUX** (2 Prizes) | www.basefilms.ae/marelux-uae-ksam
Bundle Includes:
   - 1 Apollo S Strobe
   - 1 x Marelux Automatic Vacuum Pump
   - 1 x Marelux Flexibuoy (400ml)
   - 1 x Marelux Flexibuoy (800ml)
   - 1 x Marelux Flexibuoy (1500ml)

5. **CREST DIVING** (4 Prizes) | www.crestdiving.com
   1. **CR-4 White Dive Computer**
      + CREST Black Bucket Hat (2)
      https://crestdiving.com/en/products/cr4
      https://crestdiving.com/en/products/hat

   2. **CR-F White Dive Computer**
      + CREST White Waterproof Bag (5 litre lightweight version)
      https://crestdiving.com/en/products/cr-f
      https://crestdiving.com/en/products/drybag5l

   3. **CR-F Yellow Dive Computer**
      + CREST Blue Waterproof Bag (5 litre lightweight version)
      https://crestdiving.com/en/products/cr-f
      https://crestdiving.com/en/products/drybag5l

6. **DIVE CAMPUS** (2 Prizes) | www.divecampus.com
   1. **PADI Freediver License**

Terms & Conditions:
- The prize includes PADI eLearning, Confined Water, and Open Water Dives, leading up to the international PADI license to freedive up to 16m when the performance requirements are met.
- This course can be redeemed for personal use or gifted to a friend.
- Safety in freediving is directly linked to physical fitness; individuals who smoke or have medical conditions that may affect their safety are not encouraged to participate.
- The course must be redeemed and completed within one year from the date of receiving the award.
- This prize voucher is non-transferable, non-extendable, and cannot be exchanged for any diving products or other courses.

   2. **ORCA Dive Light 910V 5000 Lumens**
      OrcaTorch D910V is a high CRI neutral white diving video light for underwater photography. It features a chip-on-board CREE LED array to create even illumination with a 5000 lumens output and 120 degree wide angle beam. With the industry's first magnetic fast charging technology, the led video dive light can be charged without taking out the battery.

7. **XR HUB** (2 Prizes) | www.xrdiving.com
   1. **Isotta Underwater Housing for Insta360 Ace Pro**
      - Red colour anodised aluminium body
      - Back housing completely detachable from the front housing
      - Single-handed closing knob for the back of the housing
      - Aluminium buttons

- Wide back display viewfinder glass
- Double O-ring seals on all buttons and removable parts
- Double square flat porthole
- Rubber covered feet for solid footing on boat or sea floors
- Cold shoe located on upper side of the housing for various accessories such as focus lights
- A M6 hole and a 1/4 hole located on housing bottom side for different accessories such as brackets for strobes or tripods
- Working depth: 200 metres

2. Pinnacle VENTURE 3mm Wetsuit

The VENTURE is a 3mm one-piece jumpsuit designed for warm-water scuba diving, snorkelling and other watersports. Highly flexible and lightweight, the Venture is available in both adult and children's sizes

- One piece jumpsuit made of 3mm titanium lined neoprene throughout the suit
- Mesh finish rubber chest, back and wrist panels reduce wind resistance, ideal for high-speed watersports
- Smooth skin O-ring wrist seals
- 3mm zipper flap with handy key pocket
- All seams are flatlock stitched for added stretch and comfort
- Lined with comfortable quick-drying, low pile, high stretch nylon
- Mesh finish on chest provides additional grip for surfing
- Plastic zipper slider and pull with long zipper leash and Velcro™ tie-down
- Duratex kneepads cushion the divers knee and protect the suit, yet are very flexible
- The ideal wetsuit for snorkelling or other water sport enthusiasts

8. AL MAHARA DIVING CENTRE & ANANTARA DESERT ISLAND RESORT | www.divemahara.com

A complimentary one night stay with full board at Anantara Desert Island Resort on Sir Bani Yas Island, including boat transfer to/from island (terms and conditions apply) and a complimentary 2 tank dive on Sir Bani Yas Island with Al Mahara Diving Centre, including one kayak experience at Sir Bani Yas Island mangroves.

9. FREEDIVING UAE | www.freedivinguae.com

AIDA Level 2 Freediving Foundation Course

The AIDA Level II Freediver Course is the foundation freediving course covering the necessary skills and knowledge for a non-competitive recreational freediver to safely freedive with or without a guide line. The course is not aimed toward competitive freediving and does not include competition rules and regulations.

10. GOBLIN DIVE CENTRE(2 Prizes)

www.facebook.com/GoblinDC

1. Two Tank Boat Dive

The trip includes:

- 2 dives with tanks and weights
- 50% off on equipment rental or Nitrox tanks
- Can be shared with one additional certified diver – participant must be a certified diver

2. PADI Search & Recovery Course (must be a certified Advanced Open Water diver)

Includes:

- Dry and wet training
- Dive trips (subject to availability)

Excludes:

- PADI eLearning fees

Terms & Conditions:

- Voucher is valid for 2 months from the 15th of May.
- Bookings are subject to availability.
- Prizes are non-transferable and cannot be exchanged for cash or other services.
- Cancellations or no-shows will result in forfeiture of the prize.
- Standard dive centre policies and safety regulations apply.

11. DIVE GARAGE | www.divegarage.com

DIVEVOLK SeaTouch 4 MAX Underwater Advance Macro Kit for iPhone and most Android

Elevate your underwater photography with the Advanced Macro Kit, designed for serious photographers eager to capture the intricate details of marine life with precision. This advanced kit features a high-quality close-up lens with a +18 diopter, crafted from optically coated glass for superb clarity and detail. It allows you to explore and document the minute wonders of the underwater world with stunning accuracy. Accompanied by an adjustable flexible arm, this kit offers the flexibility needed to position your lighting precisely. To illuminate your subjects, the kit includes the DIVEVOLK SL20 Underwater Video Light with 2,000 lumens, enhanced by a snoot that projects light into a focused beam. This setup not only highlights your subject but also allows for the creation of striking black background effects, adding dramatic contrast and depth to your images. The Advanced Macro Kit is the perfect choice for capturing the unseen beauty of underwater environments, providing photographers with the tools to create compelling and artistically impressive macro shots in any underwater setting.

12. DIVERS DOWN | www.diversdownuae.com

3 pleasure dives with Divers Down Fujairah. Includes tank and weights.

13. SANDY BEACH DIVE ACADEMY

www.divesandybeach.com

2 tank boat dive, and a 3rd shore dive to Snoopy on East Coast.

14. AL BOOM DIVING | www.alboomdiving.com

2 tank boat dive on East Coast with or without equipment, including tank and weights for 1 person.

WHO WILL MAKE THIS YEAR'S JUNE MAGAZINE COVER?

DIGITAL ONLINE PANEL OF JUDGES

OLLIE CLARKE
Marine Biologist and Award Winning Underwater Photographer

Growing up on the South Coast of England I developed a love for the ocean, which lead me to pursue a career in Marine Biology. After completing my studies in the UK, I spent almost 8 years travelling the world and working in marine conservation, the dive industry and photography. I now reside in Exmouth, Western Australia, with amazing access to the Ningaloo Reef and its iconic megafauna, its hard to find a better place to be an underwater photographer. In 2023 I was named British Underwater Photographer of the Year and have since gained a few more international awards.

WEBSITE: www.OllieClarkePhotography.com
INSTAGRAM: www.instagram.com/OllieClarkePhoto
FACEBOOK: www.facebook.com/OllieUnderwater

DAVID DILEY | SCARLET VIEW MEDIA
Filmmaker, Underwater Cinematographer and Digital Colourist

David is a multi-award winning Film-maker, Underwater Cinematographer and Digital Colourist from the UK best known for his work with sharks and large marine megafauna as well as his multi-award winning feature documentary, "Of Shark and Man".

His profile has increased rapidly thanks to his work on a wide variety of projects for film and television, alongside his commercial work for a number of household brands.

David is the owner of Scarlet View Media, a high end boutique Production House in the north of England, and is a Panasonic Professional Ambassador and Angelbird Media Creative.

WEBSITE: www.ScarletViewMedia.com
INSTAGRAM: www.instagram.com/ScarletViewMedia

KATE JONKER
Award Winning Underwater Photographer and Writer

Kate Jonker is a renowned ocean explorer, underwater photographer, and storyteller from Cape Town, South Africa. With a deep passion for the sea, Kate has earned national and international recognition for her captivating underwater photography. As an advocate for ocean conservation, she uses her platform to raise awareness about protecting marine ecosystems. Kate's work goes beyond photography – she is a respected writer, speaker, and educator, sharing her expertise through workshops, dive expeditions, and numerous publications.

As co-owner of Indigo Scuba Diving Centre and Underwater Photo Company, Kate leads unforgettable dive experiences and offers personalised photography coaching. Her role as a Marelux ambassador allows her to contribute to the underwater photography community, where she continues to inspire others to explore, appreciate, and protect the ocean's remarkable beauty.

WEBSITE: www.KateJonker.com
INSTAGRAM: www.instagram.com/KateJonkerPhotography
FACEBOOK: www.facebook.com/KateAJonker

MOHAMED ALMUSALLAMI
Marine Biologist and Award Winning Underwater Photographer

Mohamed is a son of the Arabian Gulf. Coming from a long line of legendary pearl divers and fishermen, a strong bond ties him to the deep blue. He started his passion as a freediver and a spear-fisherman at an early age and naturally fell in love with the beauty of the underwater world.

He took up underwater photography in 2008, and has won several awards and been published internationally since. His eye-catching and distinctive style pushes the limits to how photographers represent life below the waves. Mohamed has dedicated himself to conservation and to the Art of Underwater Photography, putting forth the message, "The Ocean has given our ancestors everything, now it is our turn to give back".

As a marine scientist with a masters degree in Environmental Science, he works closely with sea turtles, dugongs, dolphins, and sharks, where he is also responsible for many rare scientific discoveries in the Arabian Gulf region. Mohamed is also a PADI Instructor, an affiliate at Mohammed bin Rashid Academy of Scientists (MBRAS), the Head of Fisheries Management at the Environment Agency – Abu Dhabi, and a Board Member at the Emirates Zoos and Aquariums Association.

INSTAGRAM: www.instagram.com/b47r

SIMONE CAPRODOSSI | SUNDIVE BYRON BAY
Award Winning Underwater Photographer

Simone is an Italian underwater photographer, who has been awarded in several prestigious competitions and published internationally. After over 10 years of corporate life in Dubai, he moved to Australia where he co-owns and manages Sundive Byron Bay, a PADI 5 Star Dive Centre offering dives at the amazing Julian Rocks in Byron Bay. After travelling to and photographing many unique diving destinations worldwide, he also runs expeditions with Sundive to help others experience and photograph his favourite ones such as the Sardine Run and Djibouti. Simone was the Overall Winner of Digital Online for two consecutive years until he became a judge for the competition and has been a main feature contributor to the EDA magazine, 'Divers for the Environment'.

FACEBOOK: www.facebook.com/SimoneCaprodossiPhotography
INSTAGRAM: www.instagram.com/SCaprodossi

ALLY LANDES | EMIRATES DIVING ASSOCIATION
Project Director, Editor, Graphic Designer, and Photographer

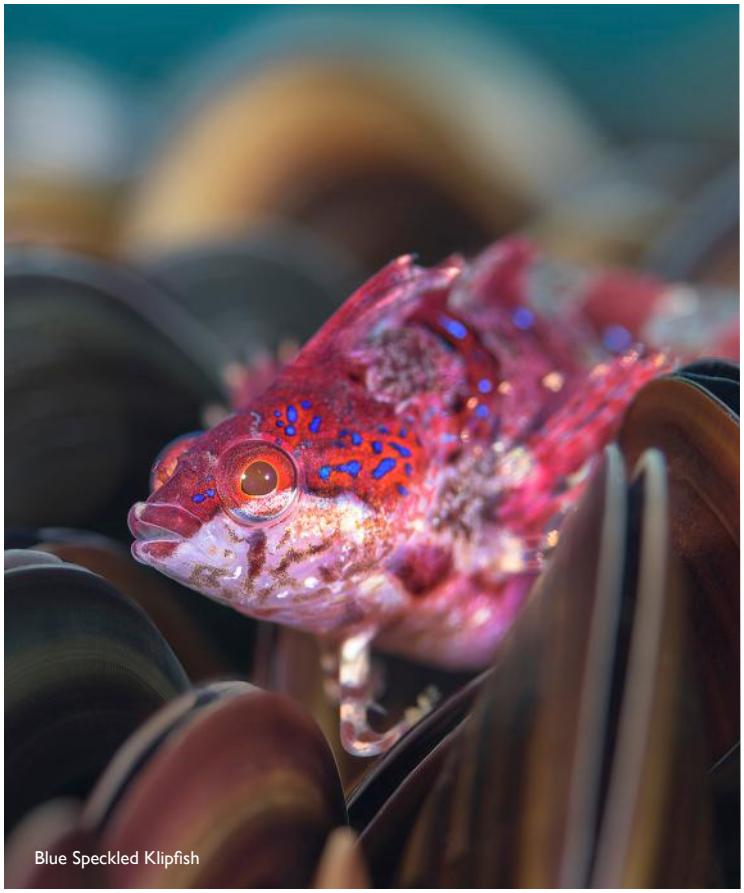
Ally joined EDA in December 2004 when she created and introduced the organisation's quarterly magazine, "Divers for the Environment". She played a central role in the development of Digital Online – EDA's Underwater Photography and Film Competition from its launch in 2009, as well as introducing the film category as an extension in 2012 to share our underwater world through motion pictures, and has managed the event since inception. Today, Ally continues to oversee the EDA team and develop the brand, manages design and production of the magazine, handles photography and videography, and runs the organisation's events and social media, all in the name of ocean conservation.

WEBSITE: www.EmiratesDiving.com
INSTAGRAM EDA NEWS: www.instagram.com/EmiratesDivingAssociation
INSTAGRAM DIGITAL ONLINE: www.instagram.com/EDA_UAE

TAKE THE PLUNGE:

WHY YOU SHOULD ENTER UNDERWATER PHOTO CONTESTS!

WORDS AND PHOTOGRAPHY BY **KATE JONKER**



Blue Speckled Klipfish

Common Octopus

Gasflame Nudibranch

I remember the first time I considered entering a photography competition. I hesitated, paralysed by the fear of failure. What if my images weren't good enough? Then, a fellow photographer gave me advice that changed everything: "None of your peers will know you've entered, unless you win. But you can't win, if you don't enter." That was the push I needed. I took a deep breath and submitted three photos. To my astonishment, all three made it onto the winners' list, and one was even crowned Overall Best Underwater Photograph. If I had let fear hold me back, that moment would never have happened.

Since then, I've entered other competitions – some with success, others where I didn't place at all. That's the nature of photography contests: subjective, unpredictable, yet immensely valuable. Competitions are an excellent way to gauge whether your underwater photography is on the right track. Different judges favour different styles, so a photo that doesn't place in one competition might win another. The key is to keep putting your best work out there and learning from the process.

If you're on the fence about entering EDA's Digital Online Underwater Photography & Film Competition, here are four top tips to help you choose your best images and improve your chances of winning:

1. **Select Impactful Images:** A winning shot should evoke emotion, tell a story, or offer a fresh perspective. Think about composition, lighting, and subject placement – make sure your image stands out.

2. **Technical Excellence Matters:** Ensure your entries are sharp, well-exposed, and properly balanced in colour. Photos that are blurry, out of focus and poorly lit will not see it to the final rounds.

3. **Know the Judges and the Competition Style:** Every competition has its own preferences. Research past winners and understand what types of images do well. Stay true to your style, but consider the competition's aesthetic and the judges' preferences.

4. **Submit with Confidence:** Don't let self-doubt hold you back. Even if you don't place in every contest, entering competitions helps refine your work, gain exposure, and receive valuable feedback. Every competition is a learning experience that brings you one step closer to your next (or first!) big win.

EDA's Digital Online Underwater Photography & Film Competition is a fantastic opportunity to showcase your talent and connect with a community that shares your passion. So, take the plunge – enter your best shots, believe in your work, and who knows? You might just see your name among the winners!

UNDERWATER PHOTO COACH

FOR MORE INFO:

www.katejonker.com
www.facebook.com/kateajonker
www.instagram.com/katejonkerphotography
www.youtube.com/katejonker
kate@katejonker.com

HARLEQUIN SHRIMP

WORDS AND PHOTOGRAPHY BY **GORDON T. SMITH**

We have not seen this species of shrimp in this region, but then again, over the past ten years or so, we have seen many new species of nudibranchs appearing off the east coast of the United Arab Emirates (UAE), so perhaps it's not surprising after all.

This Harlequin Shrimp and sea star was taken in Tulamben, Bali, Indonesia.

Left and lower right photos were taken in Dauin, Negros Oriental, Philippines; Top right photo was taken in Fujairah, United Arab Emirates.

During the summer of 2024 there were some reports coming from divers at Barracuda Dive Centre about sightings of Harlequin Shrimp at Deep Reef, off Fujairah. Initially I was very surprised as we have not seen this species of shrimp in this region, but then again, over the past ten years or so, we have seen many new species of nudibranchs appearing off the east coast of the United Arab Emirates (UAE), so perhaps it's not surprising after all.

So how did these beautiful crustaceans arrive here, and will they remain and settle down?

Something that has been discussed many times in the past is, it is very possible that many new species are arriving in UAE waters via ballast tanks from ships, and provided a food source is available, they could remain here.

However, there is also a danger that any foreign species may also be detrimental to local fauna such as witnessed by the arrival of Lionfish in the Caribbean.

The Harlequin Shrimp (*Hymenocera picta*) was first described by Dana in 1852. This species has circum-tropical distribution, throughout the Indo-Pacific and distributed from eastern Africa, to Indonesia and northern Australia, central and eastern Pacific, as far east as Hawaii.

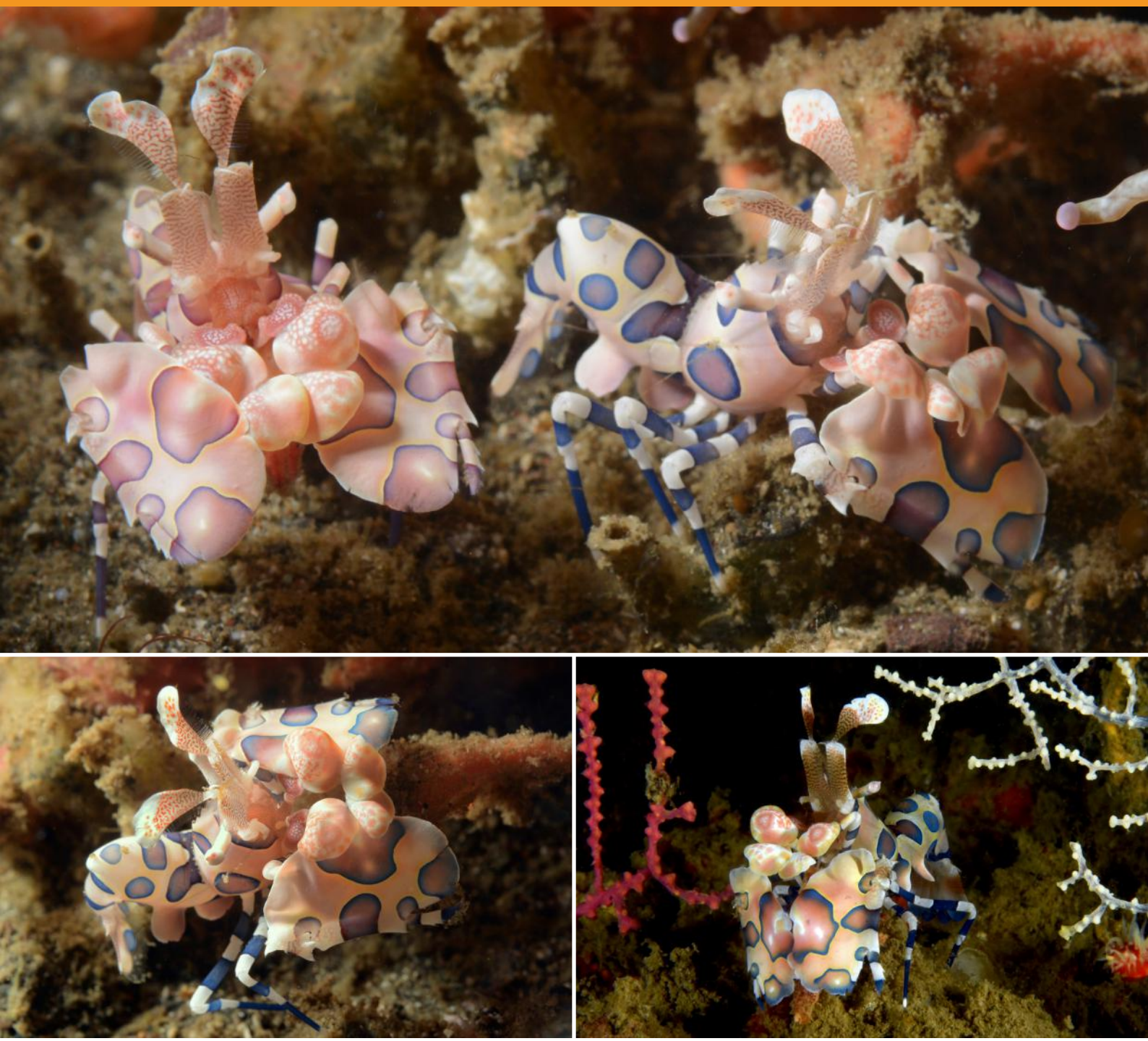
The genus Hymenocera, is believed to consist of two species: *Hymenocera picta*, Dana, 1852 and *Hymenocera elegans*, Heller, 1861.

However, these two species are based on colour differentiation only and proper DNA analysis is required to confirm this as it has been reported by aquarium enthusiasts who keep these animals, that the colour can change depending on diet, and perhaps there is only one species?

My first sighting of these was in Lembeh, North Sulawesi, Indonesia and as you can see the colours of each one are distinctly different.

I have also photographed Harlequin Shrimp in the Philippines, and on one occasion whilst I was doing so, a seahorse photobombed the shot, not that I minded of course. At Tulamben in Bali, we came across these shrimps almost on a daily basis, and if you ask a local dive guide there, you are almost 100% guaranteed to see one.

The most distinct characteristic of the genus is the unique colouration.



Top and bottom left photos were taken in Lembeh, Sulawesi, Indonesia; Bottom right photo was taken in Fujairah, United Arab Emirates.

The Harlequin Shrimp is territorial and normally live in pairs, with the female being slightly larger (around 5cm) than the male. Males and females are sexually dimorphic, forming monogamous pairs and are not known to change sex.

Harlequin Shrimp show a very special feeding behaviour and their anatomy is specific for this.

As decopod crustaceans, Harlequin Shrimp have five pairs of legs, some of which are tipped with "chelae" or claws. One pair of legs are highly specialised, terminating in huge flattened chelae which are used to lift and flip starfish onto their backs.

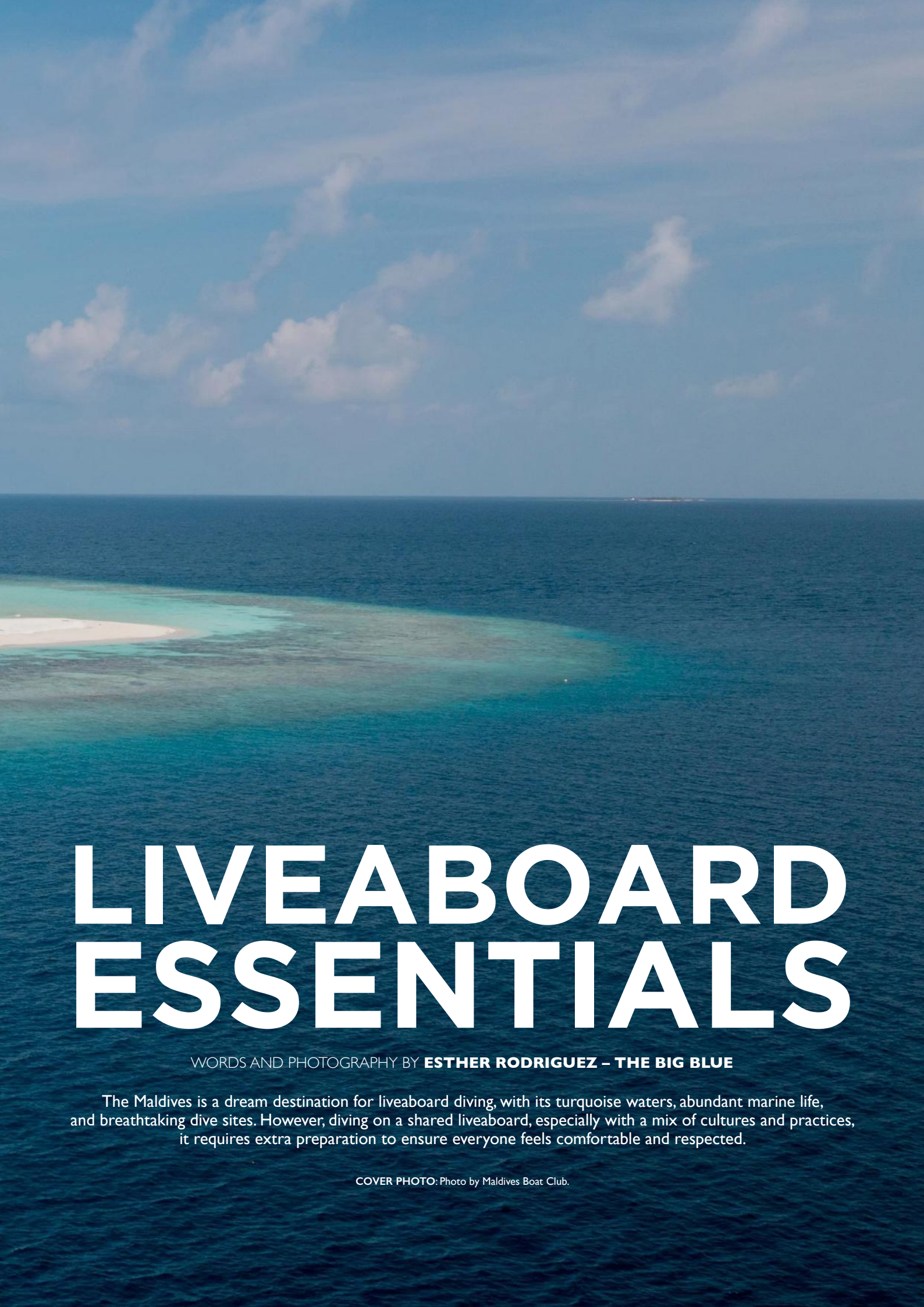
In fact, their diet consists almost exclusively of sea stars, including Crown-of-Thorns Sea Stars (COTs), which is good news considering our recent experience around Khorfakkan earlier in 2024. My own experience though is seeing the Harlequin Shrimp eating much smaller sea stars when diving in southeast Asia.

On its head, the shrimp has "petal-like sensory antennules" to smell out prey by these chemical sensors, which are also responsible for balance, touch and taste. Once the shrimp is close to a sea star, only then does sight take over.

Amazingly, the Harlequin Shrimp can tackle sea stars much larger than themselves and as a pair, they can work together to manage an attack and flip a sea star over on its back before using the chelae on the shrimp's legs, which are small and sharp, to remove the tube feet for consumption as well as piercing the epidermis of the inverted sea star, eating it alive.

The bright colouration of the Harlequin Shrimp may also be indicative that it contains toxins from its prey (sea star), and as a warning to predators. The female can also produce up to 5,000 eggs per season, depending on environmental factors, which is good news for us divers. I'm sure we would like to see more of them in our local UAE waters in the future, especially since there has been a recent sighting as far north as Lima Rock off Musandam, and as far south as Ras Al Hadd in Oman.

FOLLOW GORDON:
www.instagram.com/gordon.t.smith



LIVEABOARD ESSENTIALS

WORDS AND PHOTOGRAPHY BY **ESTHER RODRIGUEZ – THE BIG BLUE**

The Maldives is a dream destination for liveaboard diving, with its turquoise waters, abundant marine life, and breathtaking dive sites. However, diving on a shared liveaboard, especially with a mix of cultures and practices, it requires extra preparation to ensure everyone feels comfortable and respected.

COVER PHOTO: Photo by Maldives Boat Club.

The Maldives is a dream destination for liveaboard diving, with its turquoise waters, abundant marine life, and breathtaking dive sites. However, diving on a shared liveaboard, especially with a mix of cultures and practices, it requires extra preparation to ensure everyone feels comfortable and respected.

Whether you're a Muslim diver balancing your prayer routine, or a western diver exploring new cultural norms, these tips will help you make the most of your first Maldives liveaboard adventure.

Here are the 10 top tips for your first liveaboard trip in the Maldives to ensure an enjoyable time:

1. PACK SMART FOR THE TROPICS

Luckily, the Maldives has a warm climate, so you won't need heavy clothing, but thoughtful packing is essential as space is limited on the boat.

- **CLOTHING:** Light, breathable clothing, a hat and a sarong or any cover-up for sun protection is useful. Bring several sets of swimwear/shorts so you always have a dry pair for the next dive.
- **DIVE GEAR:** Water is 27-30°C all year-round. Most divers are comfortable diving in rashguards and no wetsuit, BUT, if you're prone to getting cold quickly, a 3mm shorty or full body wetsuit should be enough.
- **AVOID:** Overpacking; you'll spend most of your time in swimwear or wetsuits!

2. BRING YOUR DIVE ESSENTIALS

Whilst most liveaboards provide rental equipment, having your own gear with you will most definitely enhance comfort.

- **ESSENTIALS:** Mask, fins, dive computer and a surface marker buoy (SMB).
- **EXTRAS FOR COMFORT:** Rashguards are often underrated by beginner divers. Having a rashguard will not only give you an extra layer of warmth after consecutive diving, but it will also prevent chafing from the BCD jacket on your skin or potential scratching against the reef or marine life. Especially if you're still adjusting your buoyancy control.

3. STAY ORGANIZED AND RESPECT SHARED SPACES

With limited space in shared cabins, being mindful of common spaces is key.

- **DIVE DECK:** Organise your gear neatly and avoid taking up too much room.
- **SOCIAL AREAS:** Allow others to enjoy quiet moments if they appear to want some "me time" and be inclusive when socialising.
- **PRAYER SPACES:** If you need to pray, let your cabin buddy know your routine so they can respect your time and space. If you're not following a prayer routine, being mindful of others will go a long way.

4. CATER TO YOUR DIET AND STAY HYDRATED

Liveaboards often serve a mix of cuisines, but it's good to confirm your dietary preferences in advance.

- **HALAL FOOD:** Most Maldivian liveaboards cater to halal diets – just confirm with the operator beforehand.
- **WESTERN DIETS:** Expect a mix of local and western dishes; feel free to mention allergies or preferences.
- **DRINK UP:** Drink plenty of water between dives to combat dehydration. Also bring personal snack favourites for the long days of diving.

5 BE PREPARED FOR LIMITED CONNECTIVITY

Liveaboards are often far from cell towers, (thankfully!) meaning little to no internet and more human to human interactions.

- **RELAX:** Use this time to unwind, read or journal. Maybe learn more about marine life and generally, slow down.
- **ENJOY:** Embrace the surroundings! If you must have your fix, make sure to download

books, movies or music playlists for entertainment beforehand.

6. MASTER YOUR DIVE ETIQUETTE
Sharing a liveaboard with other divers means respecting the group's schedules.

- **DIVE BRIEFINGS:** Be on time to avoid delays and ensure a smooth itinerary.
- **SAFETY TIME:** Listen attentively during the dive briefings to ensure everyone's safety.

7. BE ENVIRONMENTALLY CONSCIOUS
Liveaboards operate in pristine marine environments, so it's important to minimise your impact.

- **REEF-SAFE PRODUCTS:** Use reef-safe sunscreen.
- **NO PLASTIC:** Avoid single-use plastics and bring a reusable water bottle you can refill onboard.
- **BUOYANCY CONTROL:** Be mindful of your buoyancy and your fins position to prevent accidental damage to corals.

8. MANAGE SEASICKNESS
Even calm waters can lead to seasickness for some divers.

- **PREVENT:** Bring motion sickness tablets or ginger candies.
- **KEEP IT UNDER CONTROL:** Focus on the horizon, get some fresh air and avoid the upper decks when feeling queasy.

9. PREPARE FOR INCREDIBLE DIVING
The Maldives offers world-class diving, from thrilling drift dives, to encounters with mantas and whale sharks.

- **GEAR CHECK:** Ensure your gear is ready and adequately serviced for a whole week of diving.
- **SAFETY FIRST:** Always stick to your guide's instructions, especially for the more challenging dive sites.
- **CAMERA PREP:** The Maldives offers spectacular photo opportunities, make sure your camera batteries are charged!

10. EMBRACE FLEXIBILITY
Diving conditions can change unexpectedly and itineraries might be adjusted while onboard.

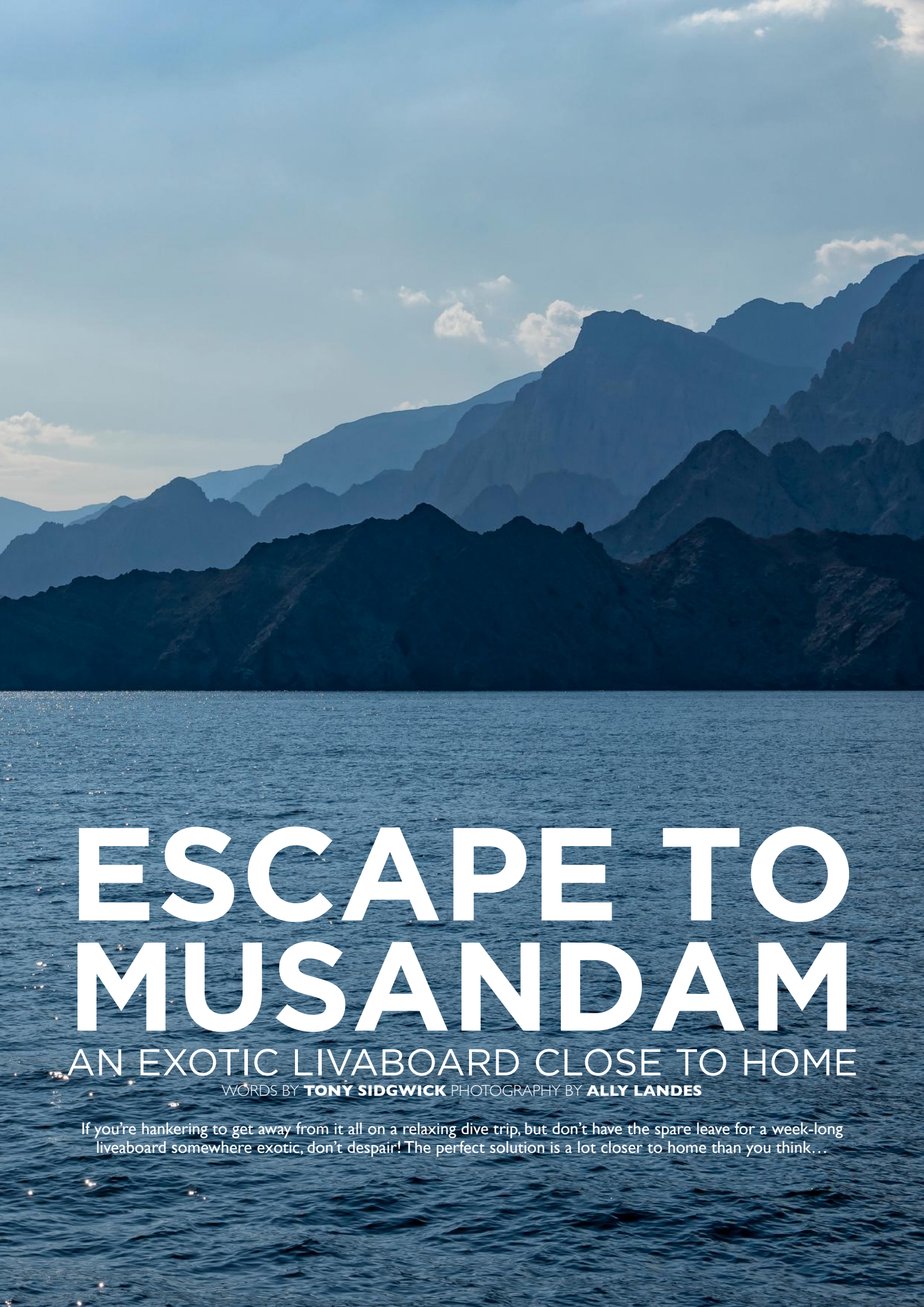
- **TRUST THE CREW:** They prioritise your safety and will ensure you have an amazing experience.
- **BE OPEN MINDED:** You might end up exploring alternate dive sites you didn't know about, and that could include some hidden gems!

THE BIG BLUE
magic happens underwater

The Big Blue is more than just a place to plan your next dive trip; it's a gateway to unforgettable experiences in incredible destinations such as the Maldives, Mexico and Southeast Asia.

Whether you're dreaming of diving alongside the majestic marine life or connecting with other passionate divers, the magic happens underwater!

FOR MORE INFO:
www.thebigblue.co
www.instagram.com/thebigbluediving
www.instagram.com/divewithesther
hola@thebigblue.co
+971 50 847 0477



ESCAPE TO MUSANDAM

AN EXOTIC LIVABOARD CLOSE TO HOME

WORDS BY **TONY SIDGWICK** PHOTOGRAPHY BY **ALLY LANDES**

If you're hankering to get away from it all on a relaxing dive trip, but don't have the spare leave for a week-long liveaboard somewhere exotic, don't despair! The perfect solution is a lot closer to home than you think…

Head north-east on any highway in the United Arab Emirates, and eventually you'll reach Musandam. Officially a governorate of the Sultanate of Oman, this magical exclave sits separated from mainland Oman at the very tip of the Arabian Peninsula, right on the Strait of Hormuz, the gateway to the Arabian Gulf. For this reason, it has significant strategic value, and features various lookout posts and naval installations standing guard at its northernmost reaches.

Fortunately, the rest of Musandam is open to explore. It boasts 1,800km^2 of rugged mountainous terrain, and the coastline comprises hundreds of kilometres of towering cliffs dropping straight into the ocean. These are punctuated by countless coves, inlets, islands, beaches, and remote Omani fishing villages, some only accessible by boat, that have existed and survived along this barren coastline for centuries.

The best part, though, is what Musandam boasts under the ocean's surface! With around 40 known dive sites, ranging from shallow reefs to bottomless walls, isolated islands, rocky outcroppings and even an accessible wreck added by a powerful storm in recent years, Musandam offers a wealth of treasures for divers to explore. All the sites are dramatised by the striking topography Musandam is renowned for – towering walls, tiny islands that drop suddenly to 40m depths, clusters of huge sunken boulders and gorgeous reefs.

DIVING BY DHOW

There are a range of options available to divers who wish to explore Musandam's many sites. You can head out by speedboat for a day trip, or choose from one of several dhow operators which head out from either Khasab on the western side, or Dibba on the eastern side of the peninsula. Our preference is always the eastern coastline, departing from Dibba.

The dhows range from single-deck vessels on which you will eat, sleep and dive from the main deck, to larger, triple-deck dhows with air-conditioned cabins below decks. One of the leading dhow cruise operators is Sheesa Beach Dhow Cruises, who is our company of choice for liveaboard trips to Musandam.

In addition to the more basic, open-air dhows, they operate two large triple-deck air-conditioned dhows with berthing for up to

16 guests, though you also have the option to sleep under the stars on the top deck if the weather permits. Comfortable and spacious, they also offer a range of non-diving activities, including kayaking, fishing and even inflatable tow toys for the speedboat upon request.

On the main deck you'll find the air-conditioned salon, galley, the open-air dive equipment kit-up and briefing area at the rear, and an open space for sunbathing, chilling or fishing at the front.

Below that are the guest cabins, usually two or three bunks to a room, some ensuite, others with a shared bathroom. On the top deck, which is basically a big flybridge, is the leisure and dining area, with sun loungers, a chillout area with Arabian cushioned floor seating, and the dining table where the day's meals are served.

DAY 1: ARRIVAL

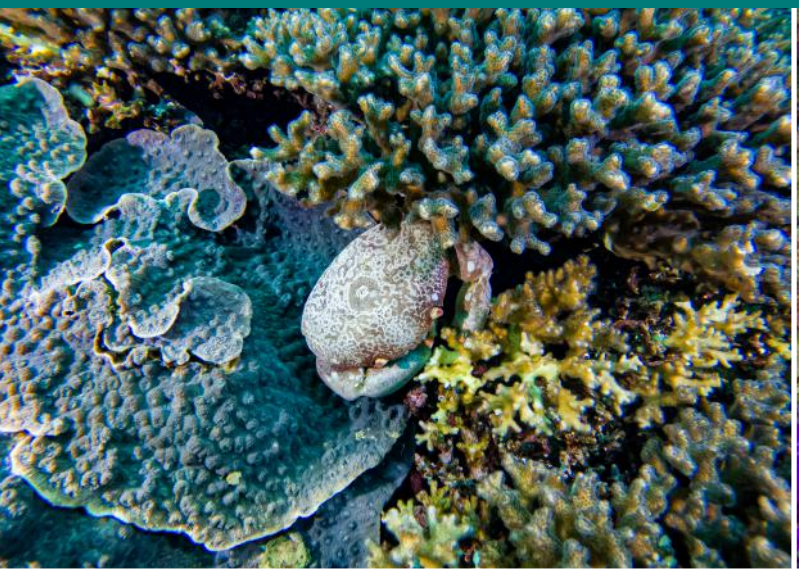
For the weekend liveaboard package, you'll have to take the Friday afternoon off for the drive to Dibba, which takes around two hours by car from Dubai. You should aim to be there by around 5 or 6pm, to allow time for the border crossing into Omani territory and transfer onto the dhow.

NOTE: You will need the necessary paperwork from whichever cruise/tour operator you are travelling with to cross the border. You must provide all the required documents to your operator prior to arrival, and they will meet you at the border to provide you with the paperwork to cross. Do not lose this paperwork, as you'll need it to return to the UAE!

Once everyone is safely aboard the dhow with all their gear, the friendly crew will provide a safety briefing for the dhow, and an overview of the weekend's trip. For the longer trips, the Sheesa dhows will sail to the further northern reaches of Musandam, where the more remote and peaceful bays can be enjoyed away from all the day trippers and party dhows.

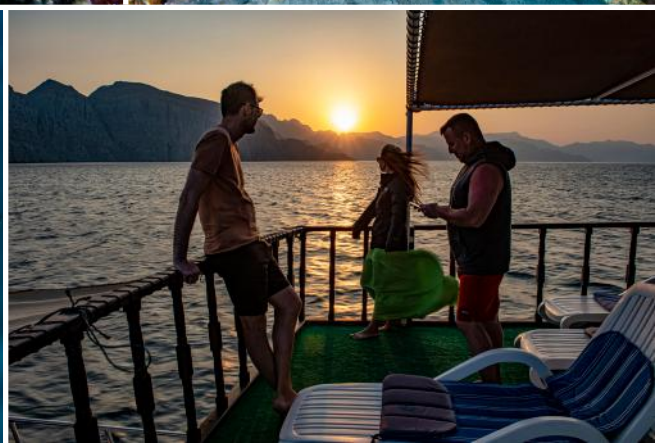
If the weather is choppy, dinner will be served in the fishing port before departure for safety reasons. However, if the weather is calm, the dhow will depart around 7pm, and dinner will be served while underway, which is a gorgeous al-fresco dining experience!

It's a five-hour cruise to the northern reaches







of Musandam, where the dhow's captain will find a nice, calm sheltered bay to anchor in for the night. On the way, you'll pass the glamorous Six Senses Zighy Bay resort and then the larger village of Lima on your left, but then as you leave civilisation behind, you'll enjoy the inky darkness of Musandam's wild coastline. If the sky is clear, you'll also be treated to a beautiful starlit sky.

At this point, you will also lose all cell reception, so you are literally off the grid for the next two days, which is a truly refreshing and relaxing experience in today's hyper-connected age!

Once the dhow has anchored and the engine is off, it's advisable to get some sleep, as the next day's first dive briefing will be around sunrise the next day.

DAY 2: THREE DIVES (OR FOUR) AND A GLORIOUS SUNSET

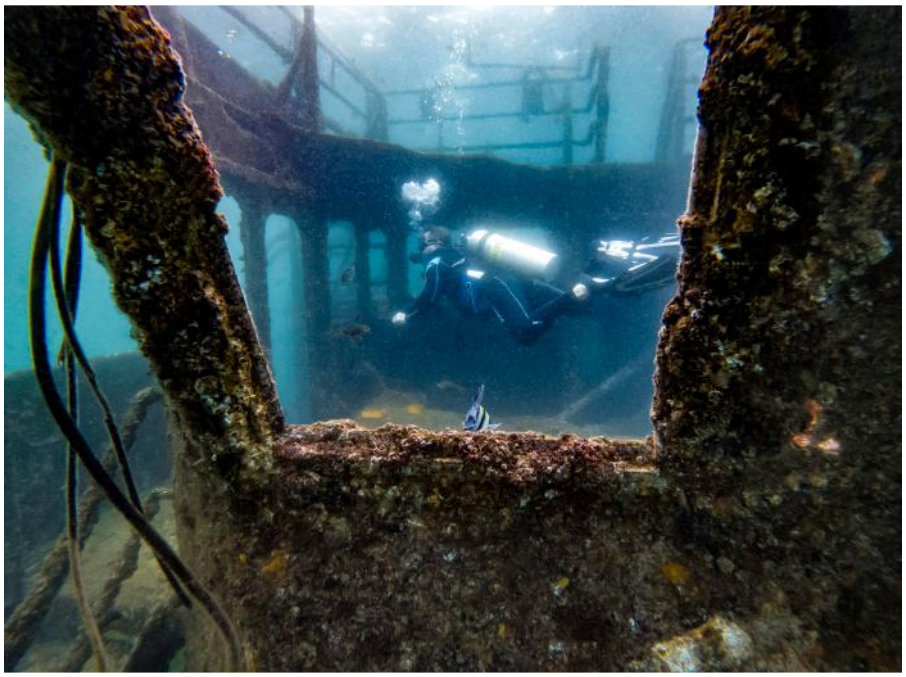
The first day's dive takes place before breakfast, so the bell rings for the briefing at 7am.

However… if you're already awake beforehand, there's another incredible experience to be had for the early bird. As you'll be on the coastline facing eastwards, if the weather permits, i.e. there are no clouds and the sea is calm, you can head out on the kayaks or stand-up paddleboards (you'll have to bring your own SUPs, only kayaks are provided on the dhow) to be treated to an absolutely magnificent sunrise over the horizon of the Gulf of Oman.

Back at the dhow for the first dive of the day, there are many superb dive sites available in this area. Red Island is one of two islands surrounded by beautiful reefs in the protected area of Sheesa Bay, which is also often frequented by pods of dolphins. All along the coastline from Ras Allul to White Rock (so named because of the droppings of thousands of birds that have completely covered it) there are several fantastic reef and wall dives to choose from.

After the first dive, it's back to the dhow for breakfast, and a couple of hours of surface time which can be used for kayaking, snorkelling, or snoozing, before the bell rings for the second dive at around 11am.

For this dive, our favourite choice is always Umm Al Fayyarin, an islet about a kilometre off the coastline with some fantastic diving to be done on both sides, where sharks, rays, turtles and even whale sharks can be spotted by the lucky diver. As you do this dive, the dhow will pull anchor and start slowly making its way down the coastline to a second spot, where



you'll meet it for lunch.

Following lunch, it's time for the third dive of the day. Two popular choices for this are Ras Dillah, or Ras Sarkan, both exceptional dive sites boasting a combination of reef and wall diving.

Back to the dhow, it's time for some R&R (unless you've opted for an extra night dive in the evening). At this point, it's about 3pm, and the dhow will begin its cruise southwards for the final stop. On the two-hour journey, as everyone gathers on the top deck, you'll be treated to a spectacular sunset over the Musandam mountains to the west.

The dhow will anchor for the final night in one of the many coves near Lima village, where those who wish to do a night dive can do so right after sunset, and before dinner. Aside from the night sea life, another great feature of Musandam's waters is bioluminescent plankton often visible at night, so be sure to switch off your torches for a few moments to enjoy the light show!

DAY 3: TWO DIVES & A JOURNEY HOME

On day three, the first dive is always, by popular demand, Octopus Rock. So named because the pinnacle of this dive site pokes up out of the water like the body of an octopus, the rock walls then cascade down to a reef at about 20m below, from which you can then swim eastwards to a couple of fantastic walls to search for seahorses. Here we've also spotted cuttlefish, cowtail rays, eagle rays, turtles, and even the occasional whale shark.

Easily one of the most popular dive sites in Musandam, there is so much to see and explore, and visibility varies from 10m to 30m, so it's never the same dive twice!

For the second dive of the day, the usual choice is Lima Rock, another islet with fantastic reef and wall diving on both sides. However, a violent storm in recent years has added yet another exciting site to the area! Just south of Lima, up against the base of the cliffs there lies a large tugboat that lost power in the storm and was grounded on the reef below the cliffs.

It sunk to a depth of about 15m, and its wheelhouse sits just below the surface of the water. Nice and shallow, you can easily explore the whole wreck in 15 to 20 minutes, and then spend the rest of the dive exploring the reef around it.

And then, it's back to the dhow for lunch, and the cruise back to port in Dibba. Even though the weekend dhow liveaboard is only two nights, you'll still feel relaxed and refreshed upon your return, having enjoyed the fresh sea air, gorgeous scenery, excellent diving, and dolphin spotting. It's simply one of the best things you can do from the UAE without flying to far flung locations!

IMMERSION PULMONARY OEDEMA: A DIVING SAFETY CONCERN?

WORDS BY **GUY THOMAS**

Immersion Pulmonary Oedema/Edema (IPO/IPE) might not be the most common safety concern or health problem during diving, but it probably is one of the most unknown ones. As we will see in this article, it might even be misunderstood by both the diver and his buddy, leading to wrong decisions during the dive, which can have life threatening consequences.

IPO, EXPLAINED

When we scuba dive or do other immersion related activities, such as swimming or freediving, the hydrostatic pressure of the water pushes substantially more blood to the central part of our body, where we have our heart and lungs. Our heart size and the cardiac filling pressure therefore increases and as a result, we require more workload from the heart. When we then also have constricted peripheral blood vessels (vasoconstriction) caused by, for example, immersion in cold water or due to a high blood pressure, the backpressure or pulmonary capillary pressure increases as well. The blood pressure in the alveolar capillaries can increase to a level that makes it possible for the blood plasma to leak into the alveoli, where the gas exchange takes place. With this fluid in the alveoli (similar to drowning), we have a reduced gas exchange and consequently a reduction of oxygen levels (hypoxia) in our body. Additionally, a negative airway pressure can even worsen IPO. This negative airway pressure can for example be present during an ascent because at that moment the position of the diver's head is higher than his lungs.

As a direct consequence, the diver can experience breathlessness, coughing (the victim may also cough up pink coloured frothy sputum), confusion and the inability to carry out normal functions. During the ascent, the decrease of the partial pressure of oxygen in the lungs/body can make symptoms even worse and might lead to unconsciousness and cardiac arrest.

Although persons with a heart problem or a high blood pressure are more at risk, healthy individuals are not excluded from getting IPO. Several cases of fit military swimmers/divers with IPO have been reported in the past. As already mentioned, cold water will lead to vasoconstriction, but contributing factors such as stress and exertion can also lead to an increased blood pressure. A good level of hydration before the dive is important to reduce the risk of DCI, but overhydrating is not good either because this could increase the risk of getting IPO.

RECOGNISING THE SYMPTOMS

IPO obviously is a severe health problem but we can make things worse without realising it. When a diver experiences breathlessness or finds it hard to inhale during the dive, he can erroneously conclude his regulator is not working properly or does not have enough breathing gas anymore. When he then signals to his buddy that he is in an out of air situation, the buddy will give an alternative air source to the diver, but this will not resolve the problem. While the diver will become anxious, the buddy can become confused as he knows his alternative air source works perfectly and might conclude the diver is just out of breath and panicking. As a reaction, the buddy might try to calm down the diver and do his best to avoid him rushing to the surface while panicking. The problem though is not the regulator or gas supply, and we just make things worse trying to keep the diver down.

What we need to do is accompany the diver to the surface and get him out of the water as soon as possible, as this will reverse the effect of the hydrostatic pressure on our body as earlier described. Do not have the diver surface by himself, because unconsciousness during ascent or at the surface might occur. 100% Oxygen should be administered while the diver is kept calm and placed in a comfortable sitting position, but do not give fluids. Keep the diver warm to reverse the effect of the vasoconstriction and activate EMS immediately for further treatment.

IPO is relatively rare and might not be the most common safety concern, but knowing what it is, how to recognise it and what to do in case of an emergency, can save lives.

FURTHER READING:

- www.scubadiving.com/ask-dan-what-do-i-need-to-know-about-immersion-pulmonary-edema
- Immersion Pulmonary Edema

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.

WHICH EAR DROPS?

WORDS BY **CLAUDIO DI MANAO**

EDITOR'S NOTE

This is the last article of our Equaleasy series, which is based on a course on equalisation developed in a collaboration between DAN Europe and champion freediver Andrea Zuccari. It is also the first article to be published without Andrea being among us. He tragically disappeared following a scuba dive to perform maintenance on a freediving platform in Sharm el Sheikh, Egypt, on August 28th. We at DAN Europe mourn the loss of a good friend and close collaborator, and our heart goes out to Andrea's loved ones. He won't be forgotten.

Divers have a special relationship with their ears. They care for them almost as much as they do for their equipment. Any mistreatment of this part of the body does not happen intentionally, but is generally the result of mistakes or oversights.

LEGENDARY EDIBLE INGREDIENTS

Vinegar, it is worth remembering, is one of the most revered ingredients by sailors and divers. It removes encrustations, neutralises jellyfish nematocysts, and, although the mechanism of action is unknown, is thought to strengthen the immune system and keep high blood pressure at bay. Another well-known ingredient, at least in the Mediterranean region, is olive oil. It counteracts cholesterol, and the ancient Greeks used it in place of soap or as a beauty treatment. Much more recently, due to its emollient and waterproofing properties, olive oil has been used to soothe sunburn. For a long time, these two ingredients for delicious salad dressings were considered a panacea for ear problems. However, both vinegar and olive oil may contain allergens, of natural origin and from preservatives, that can trigger irritations. Pharmaceutical products, which are more effective, refined, well-dosed and safe, are preferable to kitchen ingredients.

EAR MAINTENANCE

Considering the ear as part of the equipment is not a mistake: the ear is exposed to stressors from both waterborne microorganisms and pressure variations. Many divers care for their ears the same way they care for their BCDs and regulators: they rinse them after diving.

Some well-informed divers also treat their ears with a homemade solution before and after each dive as a prophylactic. With the exception of swimming pools, all bodies of water are home to large quantities of microorganisms, ranging from plankton to bacteria, which may cause ear canal infection. The ingredients for the optimal countermeasure have been known approximately since the early days of scuba diving, and they are all readily available: water, alcohol, and vinegar. Or rather: glacial acetic acid, or pure acetic acid. As so often, getting the mix right is crucial. DAN recommends 5% glacial acetic acid, 10% water and 85% alcohol. The acid component creates an inhospitable environment for bacteria, while the alcohol helps water escape from the cells.

MORE DROPS

Earwax plugs, as some divers have unfortunately experienced, can inhibit equalisation, with potentially serious consequences for the tympanic membrane and therefore the hearing. Earwax plugs should be softened with glycerine drops.

But beware: a sense of muffled hearing and fullness in the ear is not necessarily a symptom of earwax accumulation. It can also be the consequence of a tubal problem, ie, a problem in the middle ear. After a dive in which you have experienced difficulties with equalisation, you should consider that the problem might be caused by a swelling of the tubes due to inflammation, or that some secretion might have adhered to the tympanic membrane from the inside. This is only one of many cases in which it would be better to consult a specialist before taking any action.

Other cases include outer ear infection: Is it bacterial, viral, or fungal? About ninety percent of external ear infections are of bacterial origin, ten percent are fungal, and viral infections are rare. Each needs a different remedy.

The most important question is whether there is any damage to the tympanic membrane. In the event of a perforation, even a tiny one, drops can worsen the situation. 'Organic' or 'natural' remedies sold in herbalist shops and, alas, even in some pharmacies, can cause allergies.

EXPERTS AGREE ON THIS

Drops of the 'Galenic' vinegar-water-alcohol preparation, dispersed into the ear canal before and after diving, have proven to be very useful and can be used without any problem. Anti-itch drops can also be used in the absence of other symptoms. In the event of itching, or worse, intense discomfort or pain, it would be best not to introduce any do-it-yourself preparations before consulting a specialist.

Bottom line: Prevention is the diver's job, treatment the specialist's.

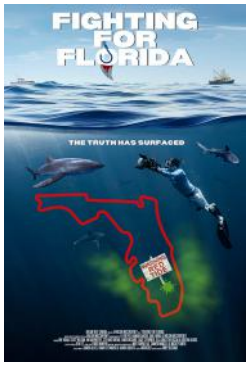
ABOUT THE AUTHOR

A DAN Member since 1997, Claudio Di Manao is a PADI and IANTD diving instructor. He's the author of a series of books and novels about diving, including Shamandura Generation, an exhilarating portrait of Sharm el Sheikh's diving community. He collaborates with magazines, radios and newspapers, talking and writing about diving safety, marine life and travels.

UPCOMING EVENTS

AN EDA MOVIE SCREENING

FIGHTING FOR FLORIDA (EDA IS HOLDING THE FIRST EVER SCREENING)
Thursday 6th March 2025 | Doors Open 7pm | Film Starts 7:30pm | 97 mins | Deep Dive Dubai



EDA Members will be the first audience to see this brand new documentary!

Fighting for Florida is an eye-opening, environmental film that celebrates the natural beauty of Florida while promoting shark conservation and exposing the abuse of Florida's natural habitats and precious resources.

Growing up in a coastal gem like Sarasota, allowed Florida native and documentarian Wilson McCourtney to witness the ebb and flow of the tides on a molecular level. Issues that have plagued the gulf coast are completely unknown to people living in other seaside regions of the United States, proving to be hyper local issues that only affect the residents. Now that Florida has become the top growth state in America with approximately 1,000 people moving there per day, the numbers are unsustainable and with the population continuing to boom, so do the environmental issues. There is a great opportunity to create change and make Florida a shining model of conservation for the rest of the world. With such lush wetlands teaming with birds and reptiles, immense biodiversity, and an abundance of marine life, Florida attracts adventure seekers and animal enthusiasts from all corners of the globe. However, on the flip side of that coin, it is also plagued by corporate exploitation, widespread pollution, algal blooms, irresponsible fishermen, trophy hunters, shark finning, and wildlife abuse.

McCourtney illuminates the need for conservation and illustrates small changes that every Floridian family can make in order to keep Florida beautiful with thriving ecosystems that act as safe havens for the breathtaking wildlife.

ONLINE OPTION

Members who are unable to attend the social event are able to register to receive the special coded link to watch the documentary online. Limited number available.

CLEANUP ARABIA EVENT

DIVE CLEAN-UP | DUBAI OFFSHORE SAILING CLUB (DOSC)
Saturday 19th April 2025 | Registration 7:30am | Dive 8am | EDA Members Only

Register to our second dive clean-up of 2025 taking place in the DOSC marina. Dive timings will be punctual as boats will be blocked from moving for our divers' safety from 8-9am. Late comers will have a limited dive time.

DOSC was born in 1974 as a result of the extreme generosity and support of His Highness Sheikh Rashid bin Saeed al Maktoum, Ruler of Dubai and Vice President of the UAE, who granted land along the coastline to the DOSC founders for the purpose of sailing. Today, DOSC has excellent facilities enjoyed by over 2,000 members, a marina with 152 berths, a welcoming Clubhouse and a busy social calendar.

DOSC are providing all participants with a bite to eat at the end of the clean-up. Spaces are limited.

IMPORTANT PARKING NOTICE

The club's parking area is reserved for their private members only. Members will have to consider time to find street parking to meet with the event schedule.

REEF CHECK

REEF CHECK ECODIVER TRAINING
Online Sessions | 6th, 8th, 12th & 14th May 2025 | 18:30-21:00 (latest end)
Practical Dive Exam | Saturday 17th May 2025 | 8:30am | Divers Down, Fujairah

We are excited to announce our next upcoming Reef Check EcoDiver training course which will be done virtually over 4 evening sessions. Please note you will need to attend all 4 sessions in order to complete the practical dive exam which will be held in Al Aqah, Fujairah from Divers Down.

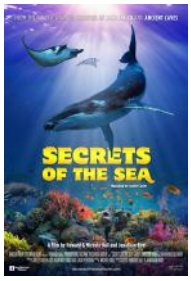
For more information about Reef Check, visit:
www.emiratesdiving.com/events/reef-check

In order to join the course, you must be an Open Water diver (minimum) with at least 25 dives logged, and good buoyancy. The cost for the course for EDA Members is AED 900. Spaces for this session are limited and will be filled on a first come, first served basis.

AN EDA MOVIE SCREENING

SECRETS OF THE SEA

Thursday 1st May 2025 | Doors Open 6:30pm | Film Starts 7pm | 40 mins | Deep Dive Dubai



Prepare to meet some of the ocean's strangest and most spectacular creatures in Secrets of the Sea. From adorable pygmy seahorses and opalescent squid to manta rays, tiger sharks, barnacle blennies, a coconut octopus, and much more, Secrets of the Sea takes you face-to-face with an astonishing array of marine critters and shows the fascinating ways they interact with each other and their environment. Many marine animals depend on one another for survival, and Secrets of the Sea demonstrates the critical importance of marine biodiversity to keeping our oceans healthy. Winner of the Best Film Award from the Giant Screen Cinema Association.

Winner of the Best Film Award from the Giant Screen Cinema Association, Secrets of the Sea was directed and produced by award-winning filmmakers Howard and Michele Hall, who have produced many of the most popular and successful ocean films of the last two decades (Deep Sea 3D, Into The Deep, Under the Sea 3D) and Jonathan Bird, whose giant screen film Ancient Caves premiered to rave reviews in 2020. Secrets of the Sea is narrated by American actress Joelle Carter with a score from renowned giant-screen film composer Alan Williams.

DIGITAL ONLINE 2025

EDA'S UNDERWATER PHOTOGRAPHY & FILM COMPETITION

1. COMPETITION OPEN FOR PHOTOGRAPHY & VIDEO SUBMISSIONS

3rd March - 4th April 2025: Rules & Guidelines on page 73.

2. AWARDS NIGHT & EXHIBITION

Thursday 15th May 2025 | 7pm | Deep Dive Dubai

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

We are very much looking forward to this year's Digital Online – Underwater Photography & Film Competition's Awards Night social event with our partners at Deep Dive Dive. We have inspiring Judges on our panel (page 76), and our prize sponsors continue to offer this year's winners some incredible prizes (pages 74-75). We hope you will join us in congratulating this year's winning photographers and videographers, and enjoy the evening with a bite to eat whilst mingling with other members to see the new photography and films in the exhibition.

DO YOU KNOW?

SEAFUL (DEDICATED TO RECONNECTING PEOPLE BACK TO THE OCEAN)

Seaful

BACKGROUND

Seaful was founded in 2020 by Dr Cal Major MRCVS BVM&S MSc, with the help of Ocean Ambassadors, in response to a growing appreciation that, despite its role in all our lives, as a society we have become largely disconnected from our ocean. Our aim is to inspire, educate and empower; to reach outside of current echo chambers to engage more people in the conversations around our blue planet. To show what's out of sight and out of mind, and how we can all reconnect to, and help protect, our ocean and waterways.

It was also born from a wish to help more people to experience just how powerful the natural world can be in benefitting our mental health.

WHY IT MATTERS

The ocean ecosystems produce half the oxygen we breathe, and are vital for regulating the planet's temperature, water and food resources. No matter where we live, our health is intertwined with the health of the ocean.

The ocean is our planet's life force, home to incredible and important creatures and plants, and the rivers and streams that run through our lands like arteries and veins connect us all to the sea. The ocean faces unprecedented threats from climate change, over-fishing and plastic pollution and needs every single one of us to appreciate the importance of the ocean in our lives, and to stand up for its protection.

www. seaful.org.uk

EDA
جمعية الإمارات للغوص
Emirates Diving Association

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MISSION STATEMENT

Our mission is to conserve, protect and restore the UAE's marine resources by emphasising and promoting the underwater environment and environmental diving.

LEGISLATION

EDA is a non-profit NGO registered with the Ministry of Community Development as per the Ministerial Decree No. 149.

The Decree stipulates the following responsibilities for EDA:
- Ensure environmentally respectful diving practices in all EDA members.
- Support the diving industry within the UAE by coordinating the efforts of the diving community.
- Promote safety in the commercial and recreational diving fields through standardisation of practices.
- Preserve historical aspects of diving within the gulf region and enhance environmental education to diving and non-diving communities through EDA projects and events.

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