

101 INSPIRING DIVE SITES

No.115 Issue 2/2019

# SCUBADIVER

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2019: Issue 2

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**Thailand** – Asia Books Co., Ltd. Tel: +[66 2] 715 9000

SCUBADIVER is published three times a year by Asian Geographic Magazines Pte Ltd

Printed in Singapore by KHL Printing Co Pte Ltd. MCI (P) 039/11/2018, PPS 1473/11/2012(022874); ISSN 0729-5529

## WRITE TO US

Submissions [editor@uw360.asia](mailto:editor@uw360.asia) | Advertising [ads@uw360.asia](mailto:ads@uw360.asia) | Feedback [info@uw360.asia](mailto:info@uw360.asia)

## WORLD HEADQUARTERS

Asian Geographic Magazines Pte Ltd., 20 Bedok South Road, Singapore 469277,  
Tel: +65 6298 3241, Fax: +65 6291 2068

## AMERICAS REPRESENTATIVE OFFICE

DivePhotoGuide, 84 Perry Street, New York, NY 10014, USA

## EUROPE/AFRICA REPRESENTATIVE OFFICE

Media2Dive, Immenweg 11, 90592 Schwarzenbruck, Germany

# SCUBADIVER

## PUBLISHER/EDITORIAL DIRECTOR

John THET [thet@uw360.asia](mailto:thet@uw360.asia)

## EDITORIAL

SENIOR EDITOR

Diego A. GARCIA [diego@uw360.asia](mailto:diego@uw360.asia)

ASSOCIATE EDITOR

Ian BONGSO-SELDRUP [ian@uw360.asia](mailto:ian@uw360.asia)

ONLINE EDITOR

Terence KOH [terence@uw360.asia](mailto:terence@uw360.asia)

## DESIGN

ASSISTANT ART DIRECTOR

Tintwe JUSTIN [tintin@asiangeo.com](mailto:tintin@asiangeo.com)

WEB/IT

Dutch CATALON [dutch@uw360.asia](mailto:dutch@uw360.asia)

## ADVERTISING & MARKETING

REGIONAL BUSINESS MANAGER

Anne LOW [anne@uw360.asia](mailto:anne@uw360.asia)

Desmond HO [desmond@asiangeo.com](mailto:desmond@asiangeo.com)

Jason TAN [jason@asiangeo.com](mailto:jason@asiangeo.com)

PROJECT & EVENTS MANAGER

Ellfrance PHANG [ellfrance@uw360.asia](mailto:ellfrance@uw360.asia)

MARKETING MANAGER

Nora ISMAIL [nora@uw360.asia](mailto:nora@uw360.asia)

EVENTS & MARKETING ASSISTANT MANAGER

Karter LEE [karter@uw360.asia](mailto:karter@uw360.asia)

## CIRCULATION & PRODUCTION

TRAFFIC/PRODUCTION/CIRCULATION SENIOR MANAGER

Victor OW [victor@uw360.asia](mailto:victor@uw360.asia)

## CONTRIBUTORS

Eduardo ACEVEDO, Laurent BALLESTA,  
Renee CAPOZZOLA, Pietro CREMONE, Tiffany DUONG,  
Jill HEINERTH, Jason ISLEY, Wayne JONES, Steven KO,  
Lilian KOH, Mike KOROSTELYOV, Andrew LIM, Scott PORTELLI,  
Karen STEARNS, Marco STEINER, Mark STRICKLAND,  
Yorko SUMMER, William TAN, Christian VIZL,  
Aaron WONG, Ace WU, Jinggong ZHANG

## MEDIA CORRESPONDENTS

[media@uw360.asia](mailto:media@uw360.asia)

North America, Matt WEISS

Germany, Dietmar FUCHS

Hong Kong, Taiwan, China Connie CHAN

Japan, Keiichi ARANTANI

Malaysia, Regent Media Sdn Bhd

Thailand, Radius

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# Canon PowerShot G1 X Mark III: Your Reliable Diving Companion

By: James Costello

Brunei is more likely to conjure images of oil fields and grand mosques, but the tiny sultanate is also home to some of Southeast Asia's most surprising dive sites. Wreck lovers and macro enthusiasts have plenty to occupy them, with numerous shipwrecks and a plethora of tiny critters to choose from. On some deep dives in unfavourable visibility, it's an ideal destination to put your camera's autofocus and low-light capabilities to the test.

On my recent trip to the country to do some teaching at one of the local dive centres, I was given the opportunity to try out the **Canon PowerShot G1 X Mark III**. The first Canon zoom compact camera to boast a large APS-C size sensor, the PowerShot G1 X Mark III features 24.2-megapixel resolution, a useful 24–72mm (equivalent) built-in lens, and the Dual Pixel CMOS Autofocus system found in Canon's DSLRs and mirrorless cameras. Partnered with the company's dedicated underwater housing (WP-DC56), the camera seemed to have all the specifications needed to tackle Brunei's challenging waters.

Depth-rated up to 40 metres (130 feet), compact, and comfortable to hold, Canon's underwater housing puts the **PowerShot G1 X Mark III**'s important controls within easy reach of your right thumb, with your index finger easily accessing the zoom and shutter buttons.

Adjusting for flash, macro shooting, and white balance are just one press away. I found I only had to move my hand when I wanted to adjust the aperture, by rotating the knob on the front right of the case.

During my dives, the visibility was rather challenging due to a recent full moon, and there were plenty of suspended particulates in the water, making photography more difficult. However, even with the tough diving conditions, the **PowerShot G1 X Mark III** was still able to produce some great shots of the macro life around the wrecks. Many of the wrecks are from wartime and have to be approached with care.

Making use of the camera's macro mode, I was able to get in close to small animals like gobies and nudibranchs to nicely fill the frame, with the camera's impressive autofocus system locking

onto subjects with ease. With its large, high-resolution sensor, the **PowerShot G1 X Mark III** produced shots with a level of detail and dynamic range unlike other high-end compact cameras, and I was able to crop images without sacrificing quality.

Back on the boat, I loved the **PowerShot G1 X Mark III**'s ability to transfer photos via Wi-Fi to my laptop or phone, which made it a breeze to closely review images and share images with my fellow divers aboard. Encased in the WP-DC56 underwater housing, the **PowerShot G1 X Mark III** offers impressive performance and a wide range of features that make it ideally suited to the most difficult underwater scenarios – and proved to be more than capable of taking on Brunei's tricky photo subjects.

To find out more visit:



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Whip coral goby, Canon PowerShot G1 X Mark III, f/4.5, 1/60s, ISO100



Discarded live rounds, American Wreck, Canon PowerShot G1 X Mark III, f/5.6, 1/60s, ISO100



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# F/CENT"

📍 Malapascua, Cebu

📷 Noel Guevara



IT'S MORE FUN IN THE  
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## FROM THE EDITOR

After six long years, I am back in the Editor's chair again, full circle to my saltwater magazine roots. Just like Rajan the Elephant (page 106), I feel like I'm lumbering back into the ocean where I belong, only to find it far more radiant than ever.

Immediately, I'm in awe of the remarkable images that now grace these pages, from longtime contributors like William Tan and Jason Isley, to the new faces in the Voice of the Ocean 2019 competition (page 24). What better way to renew my fascination than the most adrenaline-inducing wildlife you can imagine (*Our Most Thrilling Dives*, page 48)? How better to strengthen my love of the sea than with mouthwatering destinations like Bali (page 102) and the Marianas (page 92)?

There are so many dive dreams in these pages, you can just feel the waves lapping at your toes, like an old friend teasing you, asking *Where have you been?*

*Diego A. Garcia*

Diego A. Garcia  
Senior Editor

## SCUBADIVER



### On the cover

At night, grey reef sharks hunt as a pack in the south channel of Fakarava Atoll, French Polynesia  
Image © Laurent Ballesta  
(From the book: *700 Sharks into the Dark*)

[www.shop.asiangeo.com/product/700-sharks-dark](http://www.shop.asiangeo.com/product/700-sharks-dark)

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SCUBAPRO



Jupiter, FL



new

# GO SPORT

A new Boot-Fit version of the award-winning GO fin has been added to the SCUBAPRO fin line for 2019. Offering the same design and features as the original GO, the GO SPORT adds an improved ERG03 foot pocket that accommodates boots, along with a number of new features that deliver a superior blend of comfort, durability and kicking performance. GO SPORT fins fit easily into IATA-compliant carry-on luggage, making them great fins for travel as well as local diving. Interchangeable Scuba Skegs in a range of colors improve stability and provide trailing edge rigidity.



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\*Blue, Turquoise and Yellow GO SPORT fins are for special order only and may not be available in all markets. Contact your shop for details.

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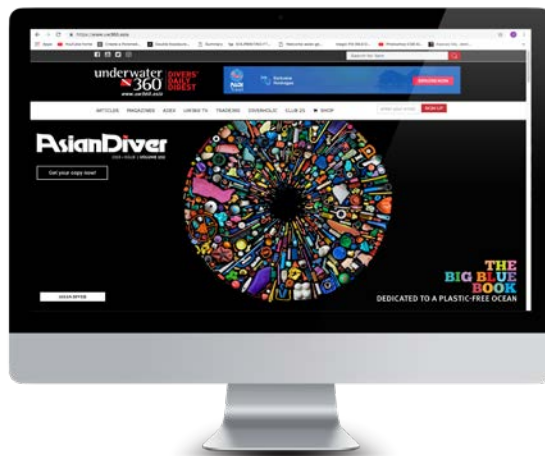


**underwater360** is the platform that offers everything you want and need to know about exploring the world of water. It's the official digital home of the world-leading magazines *Asian Diver* and *Scuba Diver AUSTRALASIA* + *OCEAN PLANET*, as well as Asia's biggest and longest-running dive show, Asia Dive Expo (ADEX)

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UW360 publishes several dive magazines that provide penetrating and unique insights into our blue planet. They also feature visually stunning photos of marine life, diving destinations, and much more! As a platform for the work of pioneers and experts in the dive industry, you won't be able to find this stuff on the Internet – go and visit UW360 and subscribe today!



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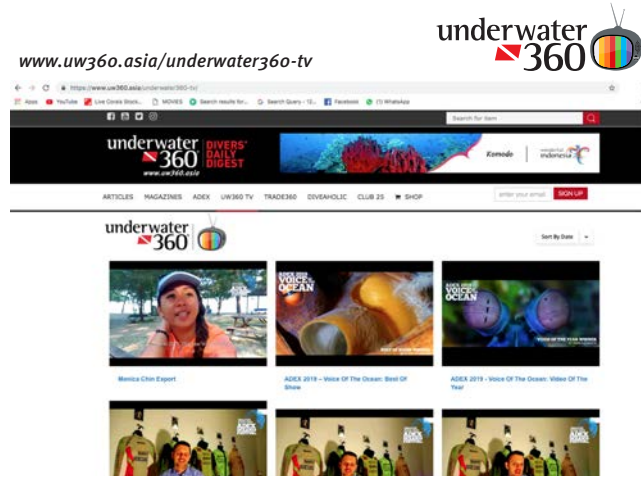
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## ADEX

UW360 is the home of ADEX – a world-class dive expo with a strong focus on conservation. Get the latest updates about ADEX, held in Singapore, China (Shanghai/Beijing) and India, as well as the festivals and awards that accompany it, such as the Ocean Festival, the BlueGreen Awards, and the underwater photography contest – Voice of the Ocean.

www.adex.asia



www.adexchina.cn



www.adex.asia/india



## CLUB 25

To mark the 25th anniversary of ADEX, we formed Club 25, a fraternity of brands, divers and establishments that have been involved with diving for the past 25 years, as our way of honouring the continuous excellence of the diving industry and community over the last quarter of a century.

www.uw360.asia/category/articles/club25



### Club 25 Profile – Christopher Lee (Simply Scuba)

Christopher Lee has always loved the outdoors so when it came time to decide what he wanted to do in life, the decision was exceedingly simple. "Sitting in an office was never my plan for life. So when I first plunged underwater in 1988, I knew that was what I wanted to do for a [...]"

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# ADEX FIGHTS FOR A PLASTIC-FREE OCEAN

Having brought divers together for 25 years, ADEX has become more than a dive show, spearheading Asia's fight for the ocean

By the ADEX Team



Celebrating its 25th anniversary in 2019, ADEX, the longest-running and largest dive expo in Asia, returned to Suntec Singapore Conference and Exhibition Centre from April 11 to 14, 2019. In conjunction with Singapore Ocean Week, ADEX 2019 was met with the usual excitement, fresh gear, and broad support for this year's theme, "Dedicated to a Plastic-Free Ocean" as 150 Speakers, 175 topics, 258 exhibitors and 419 booths packed in four days of exciting events with 60,590 visitors attending the show this year.

This year, ADEX partnered with The Ayer Ayer Project and conservation artist Ernest Goh to

highlight microplastics in the ocean with an art installation. Single-use plastic bottles were banned from the show with visitors encouraged to "Bring Your Own Bottle" for drinking water dispensed from Ayer Ayer dispensers in the exhibition hall.

For visitors with no bottles of their own, ADEX collaborated with Revolv to supply metal cups. Visitors paid a S\$10 initial deposit with S\$8 refunded when the cup is returned at the end of each day. ADEX also partnered with food vendor Dish Dash to ensure that food was served on natural and eco alternatives to plastic.



## OVERVIEW OF ADEX SINGAPORE 2019

### ADEX 2019 BY THE NUMBERS

DAY	1 (11 April)	2 (12 April)	3 (13 April)	4 (14 April)		
TRADE	3,859	7,345	6,233	3,034	LOCAL VISITORS	37,486
CONSUMER	2,593	5,832	16,755	14,939	FOREIGN VISITORS	23,104
TOTAL VISITORS	6,452	13,177	22,988	17,973	TOTAL VISITORS	60,590



## ► DAY ONE

For the first time in the history of ADEX, ADEX Ocean19 Festival was held over a period of four days, with the first day catered to curated activities bringing together industry experts and speakers from across the globe.

Mermaid Deva Harris and Orange Productions launched the Singapore Ocean Week with an uplifting and vibrant opening performance. An event especially brought to audiences by “Wonderful Indonesia”, the stage was set for an evening of casual networking with a focus on the businesses visiting from Indonesia. Industry visitors also got a sneak peek of the premiere events running in the following couple of days.

The event closed with the “Jellyfish Bond”, an inspiring dance performance by Kaeshi Chai. This was followed by the Asian premiere of Kent Yeung’s *Dive Hong Kong* and Richie Kohler’s *The Perseus Survivor*.

At night, the ADEX 25th Anniversary celebrations continued with the VIP Live Onboard Fiesta onboard the *Mega Explorer*, anchored at the Punggol Marina Country Club. The *Mega Explorer* party was organised in cooperation with DYC (Dive Your Choice), the operators of the *Mega Explorer* liveaboard. The evening was a great opportunity for VIPs to network, build and foster business relationships within the diving community. All participants were also given an exclusive private tour throughout the many decks of this comprehensive, self-serving diving ship.



## ► DAY TWO

### TEKDIVE CONFERENCE KICKS OFF ADEX 2019

ADEX 2019 kicked off to the general public with a bang on the morning of April 12 as some of the biggest names in technical diving took to the stage at the ADEX TekDive Conference to share their knowledge with attendees. All the big fish were gathered such as former AquaCorps founder and editor Michael Menduno, as well as David Strike, recipient of the ADEX “Lifetime Achievement Award” for his contributions to technical diving, and Richie Kohler, technical wreck diver, shipwreck historian and host of the documentary television series *Deep Sea Detectives*.

A veteran, groundbreaking oceanographic researcher with a background in military, commercial, recreational and technical diving, David Strike was joined onstage by Michael Menduno, who was the first person to coin the term “technical diving”. Menduno and Strike talked about the humble beginnings of technical diving and how it evolved from a little known fringe sport to being the vanguard of diving exploration. Next up was Beatrice Rivoira from Italy. An active technical instructor on both open circuit and closed circuit rebreather with a master’s degree in marine biology and oceanography, Beatrice shared with the audience her valuable insights on the biological studies she has done on deep wrecks.

Richie Kohler regaled the crowd with stories about his exploration of the sunken *Britannic*, the sister ship to the *Titanic*. He then showed the audience a sneak preview of his new documentary series, *Dark Waters*, which has already been sold in the United States and will be coming to Asia soon.







### **BLUEGREEN360 ZONE: SUSTAINABLE THINK TANK**

Chaired by Chloe Harvey of Reef-World Foundation (Green Fins), co-organised by UW360 and supported by Blue Ocean Network, the Sustainable Think Tank conference featured a gathering of proactive dive industry leaders who each shared intel on how to pursue a sustainable business model. Besides this knowledge sharing, the think tank also broke into small groups to discuss examples of sustainability projects launched by group member companies, the challenges encountered and the support given or needed.

The inaugural Future Forward panel on Innovation moderated by Diving Industry Pro Consulting, Founder/CEO Ronny Roskosch also raised many salient points on how innovation and training advancement can work hand-in-hand with industry and the increased protection of the ocean and its inhabitants. The panel consisted of Jean-Claude Monachon, VP International Sales & Marketing from SSI; John Seddon, Technical Trainer Manager from Scubapro; Sandro Lonardi, Head of Marketing from PADI Travel; Harold Hordosch, CEO from Seacam; Pete Ceglinski, Founder of The Seabin Project; Louise Hardman, Founder of Plastic Collective; Brad Chen, Founder of Crest Diving; and Cyril Castello, Owner and Commercial Director of JellyfishBot.

### **ADEX OPENING CEREMONY: A LOOK BACK**

After lunch, the founders of ADEX, Rainer Sigel and Chris Sweeting spoke about the early days of ADEX while David Strike and Michael Menduno also touched on ADEX being the first in Asia to promote widely the advent of tech diving 25 years ago. The other essential persons responsible for the past success of ADEX such as former ADEX CEO Herman Ho and Clement Lee, formerly from the Sabah Tourism Board, both gave touching testimonies to the progress of ADEX over the years.

Underwater360 and ADEX CEO John Thet also gave a speech thanking his predecessors, his team and the commitment of ADEX towards the ocean with the setting up of Ocean Citizen to unite all comers towards the protection of our oceans. His speech was followed by an address by the High Commissioner of Canada, Her Excellency Lynn McDonald, who spoke about the charter against single-use plastics at the G7 meeting last year, contributions by Canadian artists to Singapore's year of zero waste at the Sustainable Singapore Gallery and Canadian technology companies who have taken up the fight against plastic pollution through innovation.

### **OCEAN PARTNERSHIP SUMMIT LAUNCH**

Bruce Dudley, Senior Vice President of Globe Series, then took to the stage to announce the launch of Ocean Partnership Summit, a government-to-business summit dedicated to combating plastic pollution in the ocean. The initiative will be co-organised by ADEX 2020 and GLOBE Series, marking a new chapter in the development of ADEX to a dive show that now engages at a policy level with governments worldwide.



## OFFICIAL COUNTRY PARTNER – WONDERFUL INDONESIA

Indonesia was the Official Country Partner of ADEX 2019. To commemorate the official opening of ADEX, Guest-of-Honour Ms. Rizki Handayani, Deputy Minister of the Ministry of Tourism, Republic of Indonesia, spoke at the official opening of the show as attendees listened intently to Indonesia's commitment to a plastic-free ocean.

## ADEX YOUTH OCEAN AMBASSADOR

Chelsea Islan talked about her initiative against waste and plastic pollution in Indonesia. She highlighted the fact that two-thirds of Indonesia is ocean and encouraged everyone to “be the change you want to see in this world”.

## ADEX APPOINTED AS SUSTAINABLE OCEAN AMBASSADOR

Dr. Thirach Rungruangkanokkul, Executive Director of the Agricultural and Food Marketing Association for Asia and the Pacific – the inter-government non-profit organisation in association with the Food and Agriculture organisation of the United Nations – also specially flew in to appoint ADEX as the Sustainable Ocean Ambassador.

## ADEX OCEAN AMBASSADOR

HRH Princess Zata Shah Idris W, ADEX Ocean Ambassador (2019 – 2020) and an avid environmentalist in Malaysia, also took to the stage to speak about combating single-use plastic pollution in Malaysia through her initiative #sayno2plastic, which has been running since 2016.

## ► DAY THREE

### SUSTAINABLE DIVING DIALOGUE

Day three of ADEX 2019 offered no let up as Natalie Harms from UN Environment graced the ADEX 2019 main stage to moderate a Sustainable Diving Dialogue and panel discussion in the morning. Co-moderated by Chloe Harvey from the Reef World Foundation (Green Fins), the panel consisted of Rosie Cotton, Owner and General Manager of Tioman Dive Centre; Mik Jennings, Commercial Manager of Blue O Two / Worldwide Dive and Sail; Cassian Bellino, Sustainability Management Trainee from Six Senses Hotels Resorts Spas; Adam Broadbent, CEO of Zublu; John Standing, Director of Fourth Element; Paul Tanner, Territory Director, PADI Asia Pacific; and John Thet, CEO of UW360 and ADEX.

One of the more valuable insights proffered by the panelists was provided by Jim Standing, who stated that Fourth Element's willingness to sell gear made from sustainable materials was something that everyone should pursue, as customers would eventually be forced to buy only sustainable products once most manufacturers moved in concert to produce them. He offered to reveal his sustainable production sources to help other manufacturers with production of their green products.







## WOMEN DIVING FUTURE FORWARD

Dive fans were treated to yet another compelling Fast Forward Panel discussion at 1pm at the main stage as a who's who of women divers assembled onstage for the Women Diving Future Forward Panel discussion. Moderated by Jamie Piyada from Manta Trust, the panelists included: Hidy Yu, ADEX Marine Conservation Ambassador; Beatrice Rivoira, Marine Biologist and technical diver; Ellen Cuylaerts, ADEX Ambassador for Photography (Ocean Conservation); Jill Heinerth, Member of the Women Divers Hall of Fame; Patty Lee, host of popular Taiwan dive travel show, "Salty Mask"; Jade Hoksbergenn, professional underwater photographer; Nathalie Lasselin, Film Director and Professional Technical Diver; and Amanda Cotton, ADEX Singapore 2019 VOO Judge, completed the list of women luminaries in the discussion.

As strong women in diving, a common refrain from the panelists was how they noticed that sexism was not overt today as compared to the past when DEMA shows would feature bikini women hired to appear in the show even though they were not divers. Most of them acknowledged that unintentional sexism due to old habits might still be a common occurrence but as leaders in diving, they were seeking to not be defined by their gender anymore but to be recognised as just great divers, biologists, artists and photographers.

## PHOTO-VIDEO ZONE: WHAT'S IT LIKE TO BE AN UNDERWATER PHOTOGRAPHER

Among the many talks in the Photo-Video Zone, the audience was treated to Tobias Friedrich's eye-opening presentation "Dream Job Underwater Photographer". Peeling away the veil behind the perceived glamour of the underwater photographer's life, Tobias revealed how the bulk of his time is spent, touching up pictures, writing stories, setting up shoots, and planning trips.

## FIRESIDE CHAT: THE THAILAND THAM LUANG CAVE RESCUE AND BEYOND

The highlight of the day was undoubtedly the Tham Luang Cave Rescue Panel discussion headed by Underwater360 CEO John Thet and DAN (Divers Alert Network) President and CEO William Ziefle and supported by Amazing Thailand. The discussion saw a reassembly of some of the heroes of the Tham Luang Cave Rescue team such as Ben Reymenants from Blue Label Diving, Mikko Paasi of Koh Tao Tec Divers, Claus Rasmussen of Blue Label Diving, Erik Brown of Hydronauts Diving, Douglas Yeo of Sunfish Dive, professional tech diver Tan Xiao Long, famous Thai singer and actor Narinthorn Na Bangchang and her assistant, TV producer Chang Pichamon Changkwangyuen, both of whom are from Eighty Eight Eight Co., Ltd. A minute of silence was also observed for their fallen compatriot, Thai Navy Seal Diver, the late Khun Saman Gunan.



## ► DAY FOUR

The final day of ADEX Singapore 2019 brought even more excitement with celebrity speakers such as Patty Lee and freediving world record holder Alexey Molchanov. Inspirational talks by ADEX Heroes and thought-provoking talks on single-use plastics and tek diving helped push ADEX to the new level.

### TEKDIVE CONFERENCE ASIA

Starting out at 10am in at the Tek Dive Conference, cinematographer and technical diver, Nathalie Lasselin talked to the audience about her trip to the Arctic. Showing the audience photos of her trip, Nathalie mentioned that climate change had drastically shortened the ice in the region.

Michael Menduno then introduced the audience to “technical freediving”, where freedivers undergo pre-breathing of nitrox mix before their freedive to load their body with oxygen. This flushes out carbon dioxide in the body, changing blood chemistry to enable freedivers to dive longer.

### SALTYMASK.COM FEATURING PATTY LEE

Before lunch, ADEX attendees were treated to a talk by famous Taiwanese TV dive show host Patty Lee, whose television dive show, *Salty Mask*, is on its third season already.

### INSPIRATIONAL TALKS FUTURE FORWARD

Patty’s popular talk was followed by an inspirational talk by ADEX Heroes. The panel discussion featured Her Royal Highness Zatashah Idris, President and Founder of Youth Of Indonesia; Indonesian actress, Chelsea Islan; Ahmed Gabr, the world record holder for the deepest scuba dive at a depth of 325 metres (1066 feet); Brittany, who overcame her personal disabilities to become an internationally renowned mermaid; and Mark Rausch, who has dedicated his life to helping the disabled and is course director at the Handicap Scuba Association.

### SINGLE-USE PLASTIC CONUNDRUM IN ASIA – A LOAD OF RUBBISH? FUTURE FORWARD

The ADEX Inspirational Talk was swiftly followed by the Future Forward panel discussion on “Single-Use Plastic Conundrum in Asia – A Load of Rubbish?”. Moderated by Dr Toh Tai Chong from the National University of Singapore, the panel featured scientists such as Dr Andrew Chin from James Cook University; Dr Suresh Valiyaveettil from National University of Singapore; Dr Merrin Pearse, sustainability consultant and ecopreneur; Dr Suchana Apple Chavanich and Dr Voranop Viyakarn from the Chulalongkorn University; Dr Thirach Rungruangkanokkul, Executive Director at United Nations – Agriculture and Food Marketing Association for Asia and Pacific; Sustainable Ocean Ambassador Louise Hardman from the Plastic Collective; Gary Stokes from OceansAsia; Thomas Peacock-Nazil from Seven Clean Seas; and Tan Szue Hann from Miniwiz.





## FREEDIVING FUTURE FORWARD

Freediving fans also got to see their hero up close and personal at the Freediving conference. Alexey Molchanov, ADEX Ambassador for Freediving and World Record Holder in Freediving, gave a talk on training for freediving through yoga, flexibility exercises and explained how the development of your breathing muscles can help you to breathe better and thus relieve tension and stress from daily life.

The conference brought Alexey together with other major freediving players, including

freediving instructor trainer Jean-Pol Francois; Pepe Arcos, ADEX Ambassador for Filmmaking & Freediver; Jonathan Chong of Singapore Freediving Academy; freediver Michelle Ooi; John Wright, coach and international competition judge; and Stanley Sradaputta, Indonesia's record holder and ambassador to Wonderful Indonesia. Moderated by Oli Christen, the conference brought forth many interesting topics such as whether freediving would eventually become an Olympic sport.



## VOICE OF THE OCEAN (VOO)

ADEX Singapore would not be complete without the Voice of the Ocean Competition. With an esteemed panel of judges that included Christian Vizl, Amanda Cotton, Ellen Cuylaerts, Indra Swari W, Henley Spiers and Aaron Wong, audiences were treated to expert analyses of beautiful underwater photographs as the winners walked away with holiday stays at Raja Ampat, Komodo National Park, Atlantis Puerto Galera, Atlantis Dumaguete, Summer Bay Resort, Ceningan Divers, Fiji, Aggressor Indo & Ombak Rindu. [SDAA](#)

## ADEX 2020

The enormity of the Earth's plastic pollution problem and its global repercussions are so wide-ranging that for the first time ever, ADEX will continue to tackle this epoch-changing problem with a second edition of ADEX Dedicated to a Plastic-Free Ocean in 2020 as ADEX celebrates its 26th anniversary.



THE OCEAN IS OUR BUSINESS

SINGAPORE  
OCEAN WEEK  
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VISION 2020**  
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(2nd EDITION)

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**APRIL, 2020**  
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[www.adex.asia](http://www.adex.asia)



TOGETHER WE  
PLEDGE AGAINST  
SINGLE-USE PLASTIC

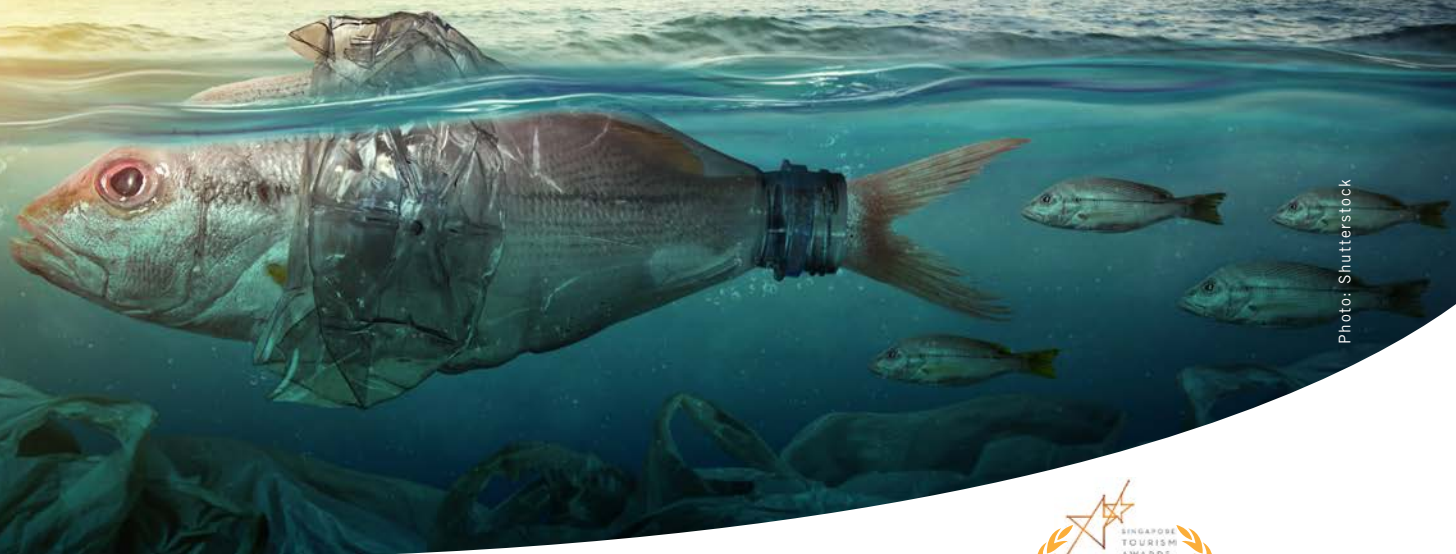


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# ADEX 2019 VOICE OF THE OCEAN

The annual ADEX Voice of the Ocean Photo/Video/Art Competition celebrates visual representations of the ocean and its many creatures. The best works by photographers, videographers and artists are presented and judged live at the show by a panel of distinguished experts. Here are the winners of this year's competition. Congratulations to all!

## 1. BEST OF SHOW

By : **Lütfü Tanrıöver** (Turkey)  
Title : The Mother  
When : June 2018  
Where : İskenderun, İzmir, Turkey  
Equipment: Panasonic Lumix GH4,  
Olympus 12-50mm, Nauticam CMC-1,  
Saga +5, Century Optics +3.5

"I asked some friends who own dive centres around Turkey if they could find me octopuses with eggs that I could film. One mother octopus was found inside a little cave at about 24 metres, and I quickly realised what a huge challenge it would be to shoot it – the eggs were the size of sesame seeds. The cave had a very small opening and the octopus was deep inside, so it proved impossible to get close enough to focus using close-up lenses. On the first day, we noticed that some eggs were quite brown and the babies would soon hatch, so on the following day, I locked my camera's focus somewhere around the exit to the cave and waited to see if I could catch something... Another friend would later spot a different mother octopus in a different location. This time, it was not as deep in its hole, so I managed to get close-ups of the eggs and the emerging babies."







Scan here to watch  
the winning video



<https://qr.go.page.link/eK3LD>



## 2. PHOTO OF THE YEAR

By : **Wayne Jones** (Australia)  
Title : Wonderpus on Marbles  
When : October 2018  
Where : Anilao, Philippines  
Equipment: Canon EOS 5D Mark IV, Sigma 70mm macro,  
Retra strobes, Weefine Smart Focus 3000,  
2x Scubalamp RD90, 6x Scubalamp V6K Plus,  
2x Weefine Solar Flare Max (to attract plankton)  
Settings : f/16, 1/200s, ISO 400

“In one discussion with my good friend Qing Lin, he described an ‘octagonal’ bokeh backscatter produced through creative strobe placement. Strobe placement is probably one of the most important elements in blackwater photography and I enjoy this creative challenge. On this particular dive, I was looking to produce this desired effect, but seeing this paralarval wonderpus, the larger size and distance from my housing port created a new challenge. So, I pushed my strobes further out to allow the necessary light to fall upon my eight-legged subject, while they were still directed inwards towards the front of my lens. Moving slowly is the key to having a lasting encounter with these critters and capturing the desired interaction with them, as I thankfully achieved here.”









### 3. COMPACT CAMERA PHOTO OF THE YEAR

By : **Miguel Ramirez** (France)  
Title : Reflection  
When : April 2017  
Where : St Pierre Lagoon, Réunion Island  
Equipment: Olympus Tough TG4, dive torch  
Settings : f/3.5, 1/80s, ISO 200

“This photo was taken at night while snorkelling in one of the island’s lagoons. I was lucky enough to come across a very cooperative squid after a quiet approach. The calm water and the proximity of the corals to the surface gave this rather unique reflection. For this photo, I just used a compact camera with built-in flash and a handheld torch to illuminate the subject.”



**ADEX 2019  
VOICE<sup>OF</sup>  
THE  
OCEAN**

## 4. UNDERWATER FASHION PHOTO OF THE YEAR

By : **Meaghan Ogilvie** (Canada)  
Title : Tugboat  
When : March 2016  
Where : Sint Maarten, Dutch Caribbean  
Equipment: Canon EOS 5D Mark II, Canon 16–35mm  
Setting : f/14, 1/160s, ISO 400

“I was commissioned by the Seabin Project to create an inspiring image of a woman in the ocean to help promote the launch of their floating rubbish collection device. I teamed up with the Nature Foundation of Sint Maarten and a local freediver, who generously provided me with a guide, gear and boat. Having had great visibility at a particular spot one day, I returned the following day to find very murky water. I tried to use this to my advantage, using natural light only to highlight the model from the back. The resulting images had an eerie feel that worked.”







## 5. VIDEO OF THE YEAR

By : **Marcelo Johan Ogata** (Brazil)  
Title : Mangroves: Corals and Critters  
When : December 2018 – March 2019  
Where : Yangeffo Island, Raja Ampat, Indonesia  
Equipment: Panasonic Lumix GH5, Panasonic Leica 8–18mm,  
Olympus M.Zuiko 60mm macro, 2x BigBlue VL8300P

“The rich biodiversity found in the shallows, a nursery for rare critters, and even corals growing on trees – the mangroves are a unique environment that makes for a unique experience. They have so much to offer that I often struggle to decide which lenses to go for. Hovering with my macro rig without disturbing the silty bottom can be quite challenging. But the abundant ambient light when shooting wide angle can be incredibly rewarding.”

Scan here to watch  
the winning video



<https://qr.go.page.link/ys7bY>

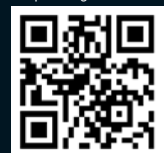


## 6. ARTWORK OF THE YEAR

By : **Clément Lesaffre** (France)  
 Title : Airabyssal 2  
 When : August 2016  
 Equipment: Ink and etching press

“This work was created using a technique I call ‘de-painting’: Instead of using a brush to paint on an empty canvas, I apply ink to the entire surface of a metal plate and then ‘de-paint’ by using a cloth to etch away the ink. An etching press is then used to transfer the work to paper. This particular de-painting emerged from the impressions that came to me during the practice of apnea. It seeks to evoke the sensations and feelings of freedom while freediving, a dance that brings with it a complete connection to the vital element that is water.”

Scan here to watch  
 a short film about how  
 Clément creates his  
 de-paintings



<https://qr.go.page.link/dA7bN>



## 7. ENVIRONMENTAL PHOTO OF THE YEAR

By : **Massimo Zannini** (Italy)  
Title : Our Future  
When : November 2018  
Where : Anilao, Philippines  
Equipment: Canon EOS 5D Mark III, Canon 100mm macro, 2x Inon Z-330 strobes  
Settings : f/9, 1/125s, ISO 320

“During the ascent after a dive, at a depth of a few metres, some pieces of plastic waste were caught in the slight current around me. I suddenly found myself witnessing the disastrous effects of man’s activities on our oceans. Coming to life for just a moment, one tattered plastic bag took on the appearance of a fish and I fired off a couple of shots before it returned to being formless trash. The title ‘Our Future’ struck me as fitting, because if we don’t change our behaviours, our seas will one day be entirely populated with plastic fish.”





## 8. HONOURABLE MENTION AWARD\*

By : **Nicholas Samaras** (Greece)  
 Title : The Noose – *Carcharhinus longimanus*  
 When : November 2018  
 Where : Brothers Islands, Red Sea  
 Equipment: Canon EOS 5D Mark II, Canon 8–15mm fisheye, Retra strobes  
 Setting : f/10, 1/125s, ISO 200

“When we came across this oceanic whitetip shark at Little Brother Island, we immediately noticed the yellow ‘rope’ around its head, the deformation of its flesh clearly visible. Upon closer examination, the rope was identified as a rubber regulator holder that had reached the limits of its elasticity. It had become a noose that was gradually strangling the shark as it grew, leading to a slow and agonising death. We tried several times to gently approach the shark, but unfortunately our attempts to cut the rubber were not successful. Over the three days we stayed at the Brothers, every dive was a rescue dive as we hoped to see the shark again to try and remove the noose. Unfortunately, we never saw it again.”

\*Note: This picture was initially awarded Environmental Photo of the Year, but it was later brought to the organiser's attention that the image had previously been awarded first place in the recent Beneath the Sea Imaging Competition. As this was an infringement of the competition rules, the entry had to be disqualified and the award went instead to Massimo Zannini's image, “Our Future”. However, the organiser felt “The Noose” captured a powerful message and deserved to be recognised with an Honourable Mention Award.



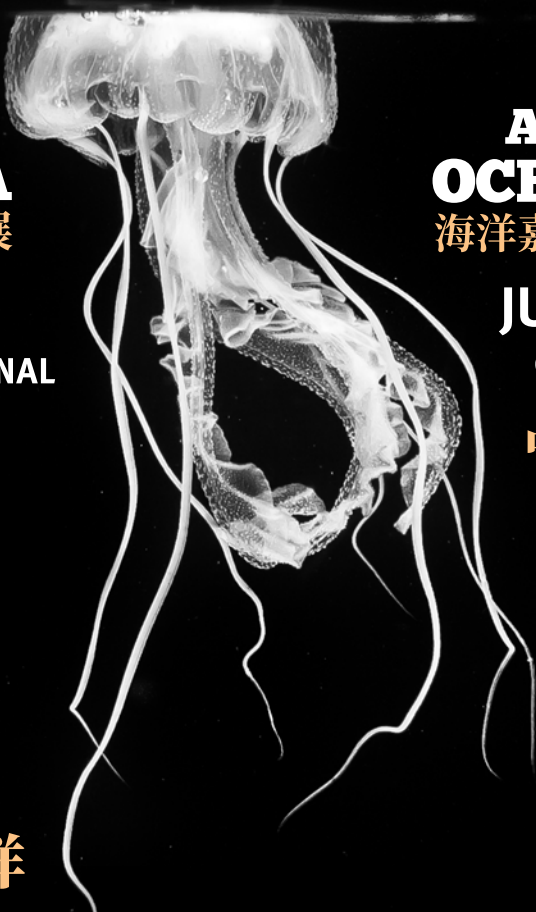


上海站  
**ADEX SHANGHAI**  
**OCEAN FIESTA**  
海洋嘉年华暨亚洲潜水展

**JULY 5-7, 2019**  
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北京站  
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**LIVE JUDGING**  
 7月14日, 下午2点,  
 2PM, JULY 14, 2019  
 中国国际展览中心  
 CHINA INTERNATIONAL  
 EXHIBITION CENTER

- AMATEURS CATEGORY (Free registration) 业余类别 (免费注册)
- 5 BEST IMAGES 首选最佳五张照片
- MACRO & SUPER MACRO 微距和超微距
- WIDE ANGLE 广角
- UNDERWATER FASHION 潜水时尚
- SHARKS 鲨鱼
- UNDERWATER VIDEO CLIP 潜水短片
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将您最佳的潜水照片提交于  
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 OCTOBER 4-6, 2019  
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Photos: VOO China 2018 winners 海洋之声中国2018得奖者





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# 2019 上海站

## ADEX SHANGHAI

## OCEAN FIESTA

### 海洋嘉年华暨亚洲潜水展



## HOW TO GET TO CHINA SHANGHAI NEW INTERNATIONAL EXPO CENTER

2# NORTH ENTRANCE - 1201 FANG DIAN ROAD, PUDONG NEW AREA SHANGHAI 201204, CHINA\*



SNIEC is strategically located in Pudong's key economic development zone. There are two nearby public interchanges for bus and metro: one named "Longyang Road Station", about a 10-min walk from the station to the fairgrounds; and one named "Huamu Road Station", about a 1-min walk from the station to the fairgrounds.

### BY PLANE

The expo centre is located halfway between Pudong International Airport and Hongqiao Airport, 35km away from Pudong International Airport to the East, and 32 km away from Hongqiao Airport to the West. You can take the airport bus, maglev or metro directly to the expo centre.

From Pudong International Airport  
 By taxi  
 By Transrapid Maglev: from Pudong International Airport to Longyang Road Take metro line 2 to Longyang Road Station to change to line 7 to Huamu Road Station, 100 min. By Airport Line Bus No. 3: from Pudong Int'l Airport to Longyang Road, 40 min, RMB 20.

From Hongqiao Airport  
 By taxi  
 Take metro line 2 to Longyang Road Station to change to line 7 to Huamu Road Station, 60 min.

### BY TRAIN

From Shanghai Railway Station or Shanghai South Railway Station take metro line 1 to People's Square, then take metro line 2 toward Pudong International Airport Station and get off at Longyang Road Station to change line 7 to Huamu Road Station.  
 From Hongqiao Railway Station, take metro line 2 to Longyang Road Station and change to line 7 to Huamu Road Station.

### BY TRANSRAPID (MAGLEV TRAIN)

The maglev only takes 8 minutes directly from Pudong Airport to Long Yang Rd, where SNIEC is located, and runs every 15 or 20 minutes. From Pudong International Airport to Longyang Road, drop off at Longyang Road Station, operate between 6:45-21:40 at Longyang Road Station and between 7:02-21:42 at Airport. And then take metro line 7 to Huamu Road Station.

### BY SUBWAY

Take metro line 7 and get off at Huamu Road Station, to arrive at SNIEC directly. Take metro line 3 or line 4 to Zhongshan Park, line 1 or line 8 to People's Square, line 4 or line 6 to Century Avenue, then change to metro line 2 towards Pudong

International Airport Station and get off at Longyang Road Station to change to line 7 to Huamu Road Station.

### BY BUS

Line 799 Lujiazui - SNIEC  
 Bus Da Qiao No.6 - Shanghai Jiaotong University (Xu Jia Hui Area) - Zhangjiang High-Tech Park

### BY CAR

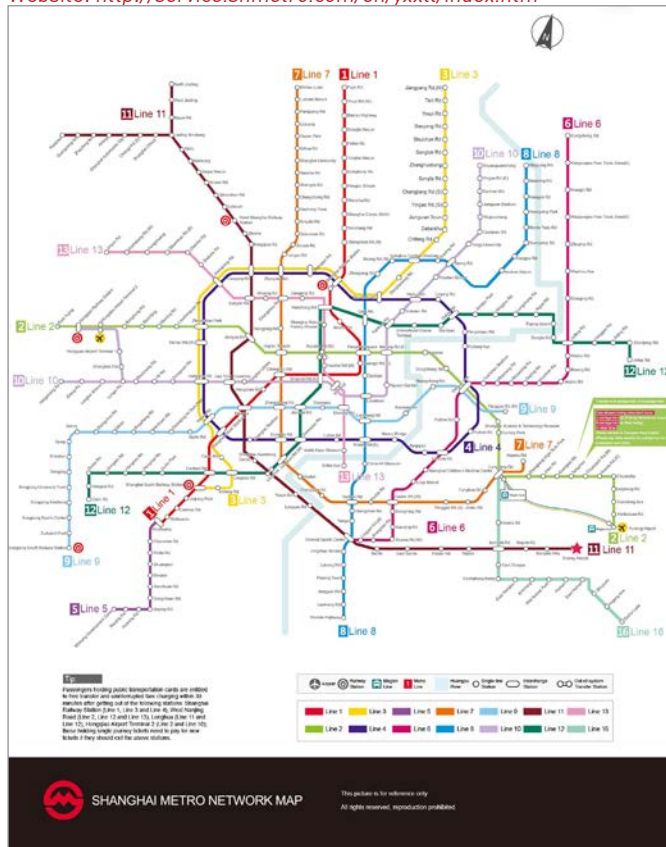
The expo centre is located at the intersection of two ring roads that lead from the centre of Shanghai over the Nan Pu Bridge and through Pudong.

### BY TAXI

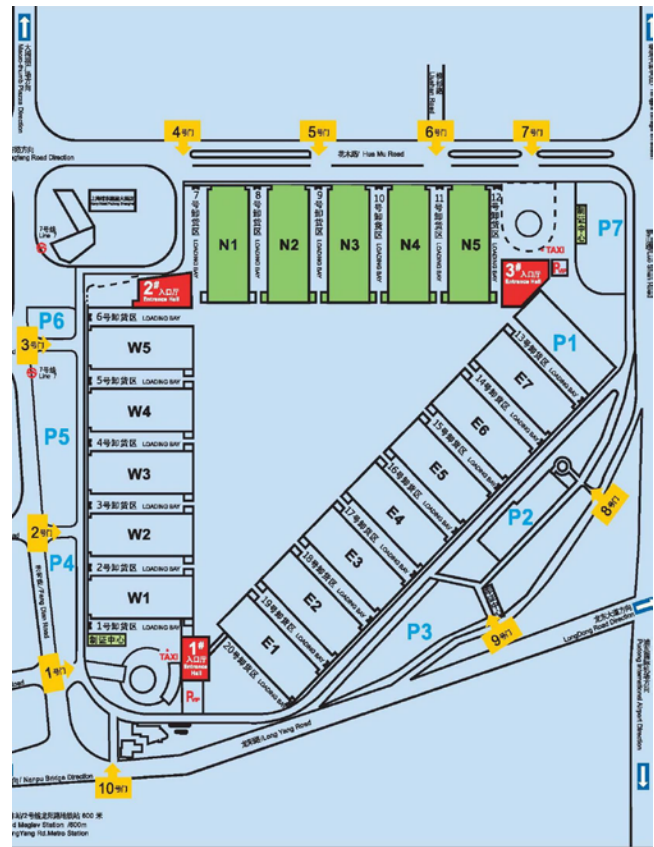
Available at the entrances of the SNIEC fairgrounds.

## SHANGHAI METRO MAP

Website: <http://service.shmetro.com/en/yxxt/index.htm>



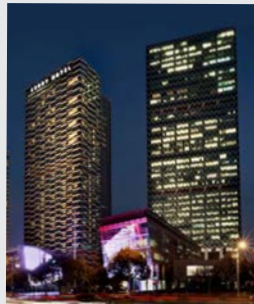
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## OFFICIAL HOTELS 官方酒店 ★★★★★

### Kerry Hotel Pudong, Shanghai

No. 1388  
Hua Mu Road,  
Pudong



It only takes  
3 minutes on foot  
to Shanghai New  
International  
Expo Center



57-minute drive to  
Pudong International  
Airport and a 80-minute  
drive to Hongqiao Airport

### Shanghai Jumeirah Himalayas Hotel

No. 1108  
Meihua Road,  
Pudong



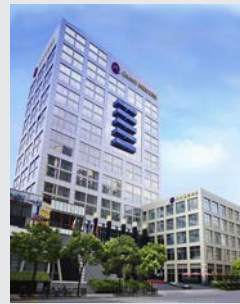
It only takes  
3 minutes on foot  
to Shanghai New  
International  
Expo Center



35-minute drive to  
Pudong International  
Airport and a 30-minute  
drive to Hongqiao Airport

### Grand Mercure Shanghai Century Park

No. 1199  
Yingchun Road, Pudong



It only takes 10 minutes  
to Shanghai New  
International Expo  
Center by free  
shuttle bus



38-minute drive to  
Pudong International  
Airport and a 20-minute  
drive to Hongqiao Airport

### Wyndham Grand Plaza Royale Oriental Shanghai

No.2288, Pudong Avenue  
(Pudong Dadao)



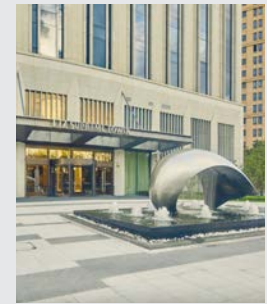
It only takes 17 minutes  
to Shanghai New  
International Expo  
Center by free  
shuttle bus



44-minute drive to  
Pudong International  
Airport and a 73-minute  
drive to Hongqiao Airport

### LJZ Supreme Tower Hotel

No. 1668  
LongYang Road,  
Pudong



It only takes 3 minutes  
to Shanghai New  
International  
Expo Center by free  
shuttle bus



57-minute drive to  
Pudong International  
Airport and an 80-minute  
drive to Hongqiao Airport



**JULY 12-14, 2019**

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12-14日7月 2019**

# 2019 北京站 ADEX BEIJING OCEAN FIESTA 海洋嘉年华暨亚洲潜水展



January 13, 2019 / Beijing China

## ADEX CHINA 2019 MEDIA PRESS CONFERENCE

ADEX is celebrating an exciting age of collaboration in China with some of its most dynamic organisations as it spearheads Asia's fight for the ocean

By the ADEX Team

The ADEX China Ocean Carnival 2019 Media Press Conference was held at the Temple Hotel in Beijing. The Ocean Carnival was created by ADEX Singapore in conjunction with Beijing Enlightened Creations and Guoye Culture.

The following guests are just a few of the many distinguished VIPs who were present to help kick off the opening of the ADEX China Ocean Carnival 2019:

- Anais Martane (Ocean Carnival Ocean Ambassador)
- Tan Xiaolong (Thailand Tham Luang Cave Rescue Team Volunteer and Diving Expert)
- Liu Qing (Deputy Director of the Water Sports Management Centre, General Administration of Sport of China)
- Zhou Rihe (Grand-nephew of Premier Zhou Enlai)
- Lou Yan (CEO, PADI Greater China)
- Qian Hai Ying (Founder of Banff China)
- Li Situo (Director, Philippines National Tourism Board/Beijing Office)
- Wang Xiaofei (Representative, Indonesia Tourism Board/Beijing Office)
- Yan Xuelei (SSI Regional Manager/China)
- Wang Yikun (Head, China Diving International Cooperation Department, China Diving Salvage Industry Association)
- Song Gang (National Geographic Assignment Photographer)
- Andrew Marriott (Underwater Photographer)
- Li Da (ADEX Freediving Ambassador/International)
- Sun Ping (ADEX Photography Ambassador/China)
- Liu Ruoxu (MFI Mermaid Alliance Founder)
- Zhang Yang (DeepBlue Technology Pte Ltd Global Premium Brand Manager)
- You Ling (SEACAM CHINA China Regional Director)
- Teresa M Tan (Philippines Airlines China Region Manager)
- Amber (Diving Development Joint Promotion Partner, Malaysia Tourism Board)
- Huang Bin Yuan (CCTV famous sports host)
- Xia Jiaxiang (Director, Dive For Love)
- Li Tianjun (Marine Biodiversity Project founder, Ocean Beauty (Beijing) Cultural Development Co. Ltd)
- Chen Rong (Beijing University Diving Society)

ADEX was founded in 1995 and celebrated its 25th anniversary in 2019. Headquartered in Singapore, it is organised by Asian Geographic Magazines Pte Ltd. ADEX is the biggest dive expo in Asia and it has the longest history as well. With its wide influence, ADEX is dedicated to the conservation of endangered marine species.

On January 9, 2019, at 3.20pm, the host of the media press conference, Ms Zu Congya, announced the official commencement of the 2019 ADEX Ocean Festival China ADEX CEO and publisher Mr John Thet; Enlightened Creations Founder and CEO, Mr Lin Fan; Guoye Culture Chairman Ms Ye Mingzi; ADEX Ocean Ambassador Ms Anais Martane; and Tan Xiaolong, Thailand Tham Luang Cave Rescue Team Volunteer and Diving Expert, each gave speeches at the event as they shared their stories about the ocean and their affiliation with ADEX.

ADEX CEO and publisher John Thet talked about the history of ADEX and its efforts over the years advocating for the protection of the ocean and marine conservation in China and other parts of Asia. He also revealed his hopes for more like-minded individuals and organisations to join ADEX in its mission to protect the ocean and conserve our marine ecosystems. John also gave attendees a sneak preview of the ADEX Ocean Carnival 2019 by introducing some of the celebrity speakers at the media conference.

Enlightened Creations and Guoye Culture, the co-organisers of ADEX Ocean Carnival in China, shared with attendees their hopes for the continued promotion and development of marine culture, protection, and awareness and their original intentions and motivations behind their commitment with ADEX to protect our marine environment. They also hope that ADEX 2019 will be a success in China and brings about more positive developments for Asia.

ADEX Ocean Ambassador Anais Martane is an ocean lover and an advocate for marine conservation. Born in a coastal city, she revealed that her environmental awareness came from her love of the sea.

Anais has personally witnessed the harm that plastic pollution can have on the ocean, having dived for many years. To do her bit for the ocean, she has reduced or refused to use single-use plastics. Having not appeared in the public eye for a while, Anais was kind enough to update us on how she avoids using single-use plastics by bringing her own cup when she is out, not purchasing water sold in plastic bottles, and using her own lunch box when ordering take-out.

Mr Tan Xiao Long was on hand to talk about how the ocean and underwater sports have changed him over the past two decades. He also shared with the audience his experience taking part in the Tham Luang Cave Rescue in Thailand.

Mr Tan spoke in depth about the expert knowledge required for the rescue and revealed details about incidents during the rescue that the media was not aware of. He also touched on the disappointment and helplessness he felt upon his initial arrival at the rescue site. He hopes to develop along with China's diving industry as its professionalism becomes stronger and better, which would elevate China's status in the international diving scene.

After the end of the press conference, the attendees were able to catch up with each other to indulge in deeper conversations at the cocktail party arranged by the organisers. There was even an exciting lucky draw that marked the end of the press conference on a dramatic and joyous high note.

We would like to thank our sponsors for providing the fantastic lucky draw prizes and for their continued support:

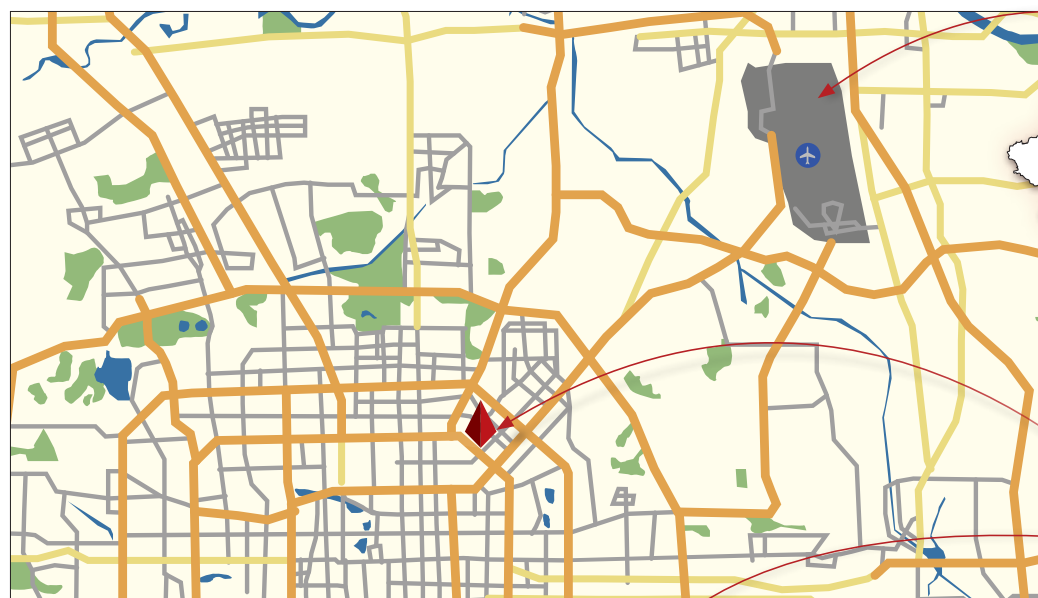
- Sublue Underwater AI Co., Ltd
- Summer Bay Lang Tengah Island Resort
- DIVEVOLK (Diving Assistant)
- Mermaid Federation International (MFI)

Congratulations to all our prizewinners!

# HOW TO GET TO CHINA INTERNATIONAL EXHIBITION CENTER (JING'AN MUSEUM) HALL5

6 N 3RD RING RD E, CHAOYANG QU, BEIJING SHI 100096, CHINA

BEIJING CAPITAL INTERNATIONAL AIRPORT



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中国国际展览中心



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**FROM BEIJING CAPITAL INTERNATIONAL AIRPORT**

 **TAXI**

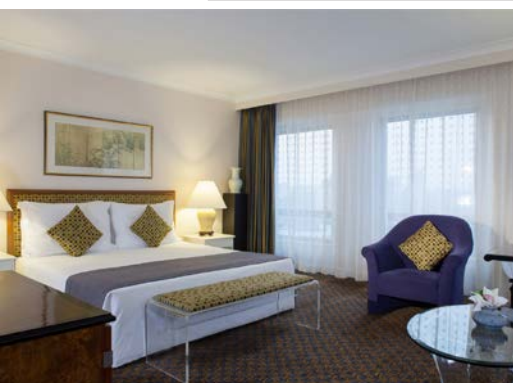
Take a taxi to the exhibition venue, which costs around RMB52. The distance from the airport is 20.5km; travel time is 30 minutes

 **AIRPORT SHUTTLE**

Take the airport shuttle bus (direction to Gongzhufen) in Terminal 1 and get off at Sanyuanxiqiao (about RMB20); travel time is approximately 44 minutes

 **METRO**

Take the airport express (direction of Dongzhimen) from Terminal 2 and 3, and get off at Sanyuanxiqiao station (about RMB25); travel time is 20 minutes







# BLUEGREEN360 AWARDS 2019

Now in its third year, the *BlueGreen 360 Awards* celebrates businesses and individuals that are pioneers in implementing sustainable solutions in their work and making a positive impact in the communities where they operate. This year's awards highlight businesses that are implementing solutions to tackle ocean plastic pollution. Four businesses and one individual were honoured at the *BlueGreen360 Awards* at this year's Asia Dive Expo (ADEX) in Suntec City Singapore. And the winners are...

1. Dive Operator of the Year: Lembeh Resort
2. Hotel and Resort of the Year: Ceningan Divers Resort
3. Plastic Pollution Innovator: Six Senses Laamu
4. Personality of the Year: Helen Pananggung
5. Green Fins Award: Tioman Dive Centre

*"This year we had very inspiring winners for the BlueGreen360 Awards representing role models in the marine tourism industry. Each one of them provides a personal inspiration and commitment to promote responsible tourism and their commitment to empower local communities"*

**Rili Djohani,**  
Executive Director, Coral Triangle Center

**CLOCKWISE FROM TOP LEFT**  
From making biodegradable and eco-friendly choices for use in their facilities, these award-winners have done everything from beach and village cleanups to helping remove discarded fishing nets and supporting ecological research





#### Dive Operator of the Year

### LEMBEH RESORT



Lembeh Resort and its dive centre Critters@Lembeh Resort is taking major steps in addressing ocean plastic pollution. It places demands on its suppliers to reduce plastic packaging for all purchases and takes steps not to repackage items in plastic, opting instead for traditional wraps including banana leaves. Its accommodations use green technology such as solar water heating systems that reduce their carbon footprint. The resort established the Lembeh Foundation in 2018, with the core aims of reducing plastic waste, providing education and economic benefits, while improving the health and sustainability of local communities.

They have also raised funds to build a trash bank and a Green Library school building where locals can exchange their plastic waste for cash, and learn how to repurpose plastic waste into items that can be sold in the resort's gift shop. The resort and dive staff regularly organise underwater and beach cleanups and teach local children about sustainability, wildlife, conservation and plastic pollution. The resort works with community leaders to ensure the most participation possible in the sustainability projects in the village. Since the creation of the Lembeh Foundation, the village of Pintu Kota Kecil is embracing a more sustainable way of life.

**ABOVE**  
Each BlueGreen360 Award winner receives a stunning statuette





Hotel and Resort of the Year

## CENINGAN DIVERS RESORT

Ceningan Divers Resort wins this year's hotel and resort category for its continuous drive in promoting sustainability in its operations and working with the local community to address ocean plastic pollution. The resort, which was also last year's Dive Operator of the Year winner, implements an in-house training programme for all staff to teach them about the impact of single-use plastic and proper waste management. The resort has a recycling programme and has set up the local Trash Hero Ceningan chapter.

They also conduct weekly cleanups with the community, participate in ghost net removals, coral transplantation, and reef health surveys in the Nusa Penida Marine Protected Area. The resort sponsors rubbish bins around the islands and conducts weekly workshops on various topics such as manta rays and sunfish, as well as the impact we have on our reef and the ocean. In addition, resort team members advocate the reduction/elimination of single-use plastic and promote alternative options for travellers. They will soon begin giving free swimming lessons to local school children and support a scholarship for its local divemasters, masters, which is key to ensuring local participation in the diving industry for years to come.



Plastic Pollution Innovator

## SIX SENSES LAAMU

Six Senses Laamu wins this year's Plastic Pollution Innovator Award for its serious commitment to be plastic-free by 2022. This past year, the Maldives-based resort has undertaken an inventory of all plastic items in resort operations, and measures are being taken to eliminate or reduce the number of pieces of plastic used. They have partnered with a sustainable packaging company to use plastic-free food shipment packaging made of eco-friendly hemp, jute and wood fibres.

The resort also helps in the removal of ghost nets – a massive threat to pelagic marine life – and conducts weekly reef cleanups to remove rubbish from nearby corals. In 2018, the resort collected 2,800 pieces of plastic from its surrounding reefs and submitted the data to the Project AWARE database. Alongside community members and students, it collected 1,400kg of plastic waste from Maldivian beaches of inhabited and uninhabited islands and repurposed the materials in the resort's Earth Lab recycling hub.





#### Personality of the Year

### HELEN PANANGGUNG

Helen is a staff member at Lembah Resort and has been intrinsic in creating the Lembah Foundation as a registered Indonesian charity. The Foundation works alongside local communities on Lembah Island to provide environmental and economically sustainable solutions to waste management. Helen is at the forefront of driving change and reducing plastic consumption within Lembah Resort and local communities. Over the last two years, she has devoted all of her spare time and energy into making Lembah Resort and neighbouring village Pintu Kota more sustainable.

Helen liaises with the resort's suppliers to ensure that they meet the demands of reduced packaging and plastics. She has approached village leaders to gain their trust and support as an environmentally, economically and socially sustainable model community. Helen hosts regular workshops within the village, teaching skills to repurpose plastic, and she delivers twice-monthly Green Library classes to educate the next generation about wildlife, ecosystems, conservation and sustainable options.



#### Green Fins Award

### TIOMAN DIVE CENTRE

Tioman Dive Centre (TDC) in Malaysia has been a Green Fins member since 2009. The winner of the Green Fins Award is decided by a rigorous assessment of business practices, which determines the company's environmental impact. All active Green Fins members have all undergone this assessment, as well as Green Fins sustainability training. TDC was ranked as the business with the lowest environmental impact overall.

TDC have implemented several processes to improve their sustainability, including changing to environmentally-friendly cleaning products; educating their staff about the benefits of protecting the ocean; running Green Fins inductions for all new staff; correcting guests' bad behaviour on dives; and encouraging their staff to pick up their lunches in Tupperware boxes.

These organisations and individuals have gone above and beyond, setting an example for the entire scuba diving industry, and they are more than deserving of our recognition and hearty congratulations! The winners were judged by sustainable tourism and marine conservation experts Luigi Cabrini, Chairman of the Board of Directors of the Global Sustainable Tourism Council; Rili Djohani, Executive Director of the Coral Triangle Center (CTC); Dianna Cohen, CEO and co-founder of the Plastic Pollution Coalition; Natalie Harms of UN Environment; and Chloe Harvey of the Reef-World Foundation, in collaboration with the organisers of ADEX 2019.





## ABOUT THE ORGANISERS

**ASIA DIVE EXPO (ADEX)** is the largest and longest-running dive expo in Asia, celebrating its 25th anniversary in 2019. A must-attend gathering for anyone interested or involved in the world of diving, the event has seen a continuous increase in visitors over the past few years. ADEX 2019 proudly presents world-renowned explorers, marine life artists, conservationists, photographers and videographers to speak about their passion and work towards

protecting and appreciating the underwater world. It is organised by Underwater360 (UW360), which includes *Asian Diver* and *Scuba Diver AUSTRALASIA + OCEAN PLANET* magazines, and is endorsed by major organisations in the industry such as DEMA (USA), the Singapore Tourism Board (STB) and the Singapore Underwater Federation (SUF).

[www.adex.asia](http://www.adex.asia)

underwater  
360





**CORAL TRIANGLE CENTER (CTC)** is an Indonesian foundation based in Bali with a regional scope and global impact. CTC provides training on sustainable fisheries and ensures that marine protected areas within the Coral Triangle are managed effectively. CTC supports on-the-ground programmes through its learning sites in Nusa Penida and the Banda Islands, as well as Atauro in East Timor. CTC leads regional learning networks of women leaders, local government executives and marine protected area practitioners in the six Coral Triangle countries – Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands and East Timor. CTC works with communities, businesses, governments and partners to shape lasting solutions to protect coral reef ecosystems and ensure sustainable livelihoods and food security. It is developing its Center for Marine Conservation in Bali to serve as a centre of excellence for marine conservation training programmes and outreach activities and a venue for artistic and cultural performances to inspire ocean conservation.

[www.coraltrianglecenter.org](http://www.coraltrianglecenter.org)



**GREEN FINS** is paving the way to unite politics and sustainability for marine conservation at popular diving destinations around the world. Established through a partnership between the United Nations Environment Programme and the Reef-World Foundation in 2004, Green Fins uses a unique and proven three-pronged approach: green certifications of dive centres, strengthening regulations, and environmental education for dive staff, divers and government representatives. Almost 500 dive and snorkel operators across seven countries have signed up for free membership and are using Green Fins as a platform to set examples of sustainable business operations. [SDAA](http://www.greenfins.net)

[www.greenfins.net](http://www.greenfins.net)





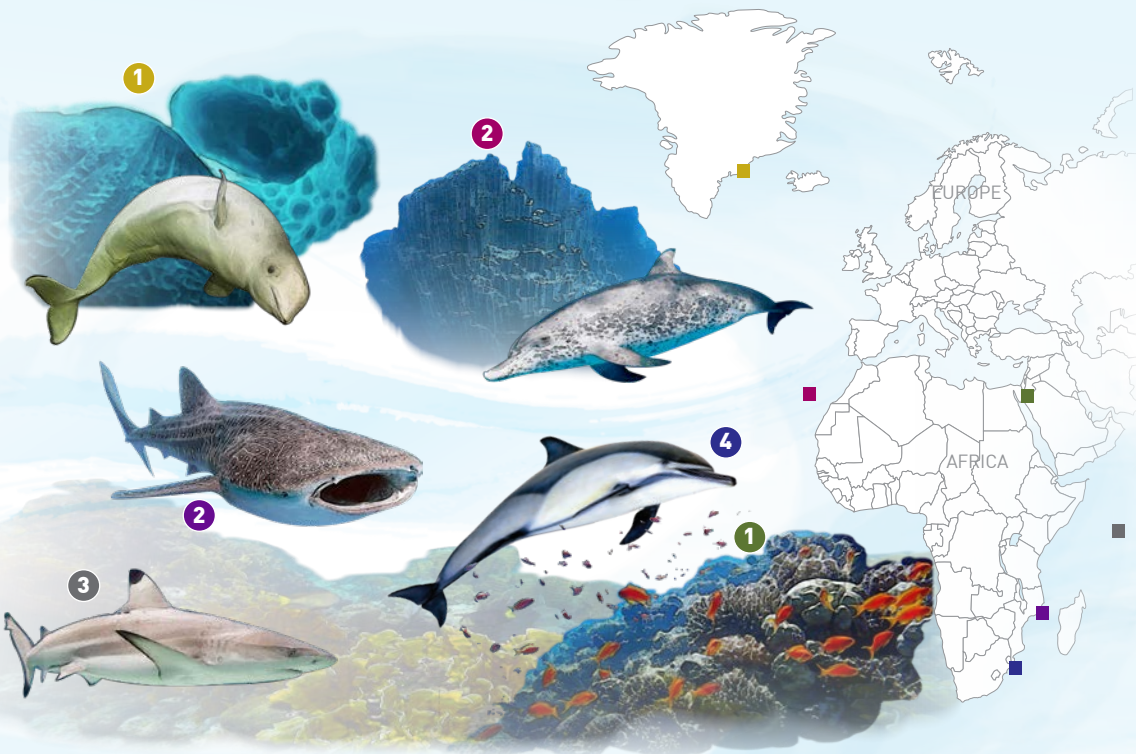
# YOUR 10-YEAR DIVE PLAN

If you daydream as much as we do, you've already got your next three dive trips in mind. We take that even further and start thinking long-term! Here's our ultimate, money-is-no-object 10-year plan for world-class diving in places we dream about often but have never been before.

by **underwater**  
**360°**  
[www.uw360.asia](http://www.uw360.asia)

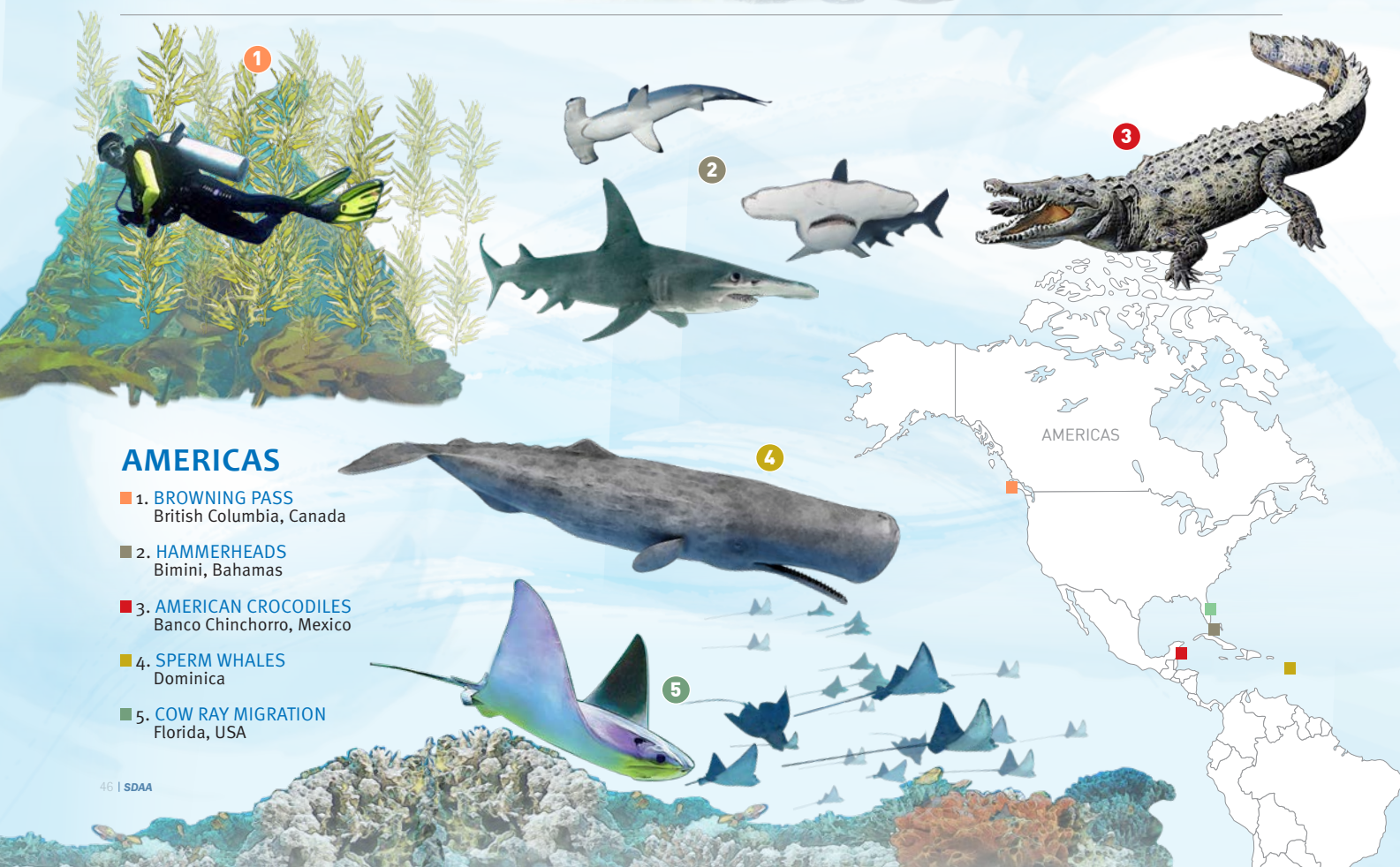
## EUROPE

- 1. **ICE FORMATIONS OF TASIILAQ FJORD**  
Greenland
- 2. **BASALT FORMATIONS AT RAPADURA**  
Tenerife Island, Spain



## AFRICA

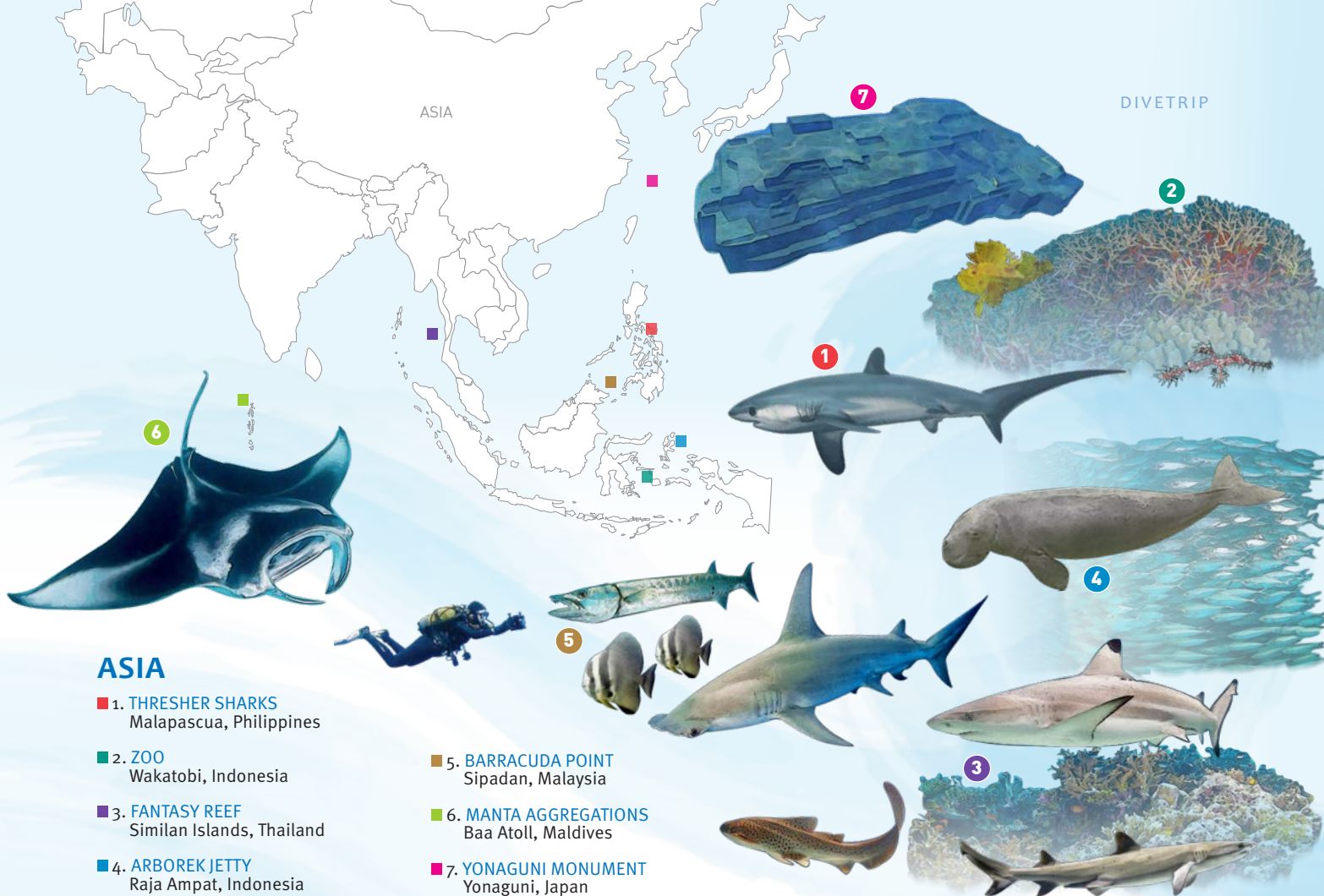
- 1. **GREAT BLUE HOLE**  
Dahab, Egypt
- 2. **WHALE SHARK ALLEY**  
Tofo, Mozambique
- 3. **ALDABRA ATOLL**  
Seychelles
- 4. **SARDINE RUN**  
South Africa



## AMERICAS

- 1. **BROWNING PASS**  
British Columbia, Canada
- 2. **HAMMERHEADS**  
Bimini, Bahamas
- 3. **AMERICAN CROCODILES**  
Banco Chinchorro, Mexico
- 4. **SPERM WHALES**  
Dominica
- 5. **COW RAY MIGRATION**  
Florida, USA





## ASIA

- 1. **THRESHER SHARKS**  
Malapascua, Philippines
- 2. **ZOO**  
Wakatobi, Indonesia
- 3. **FANTASY REEF**  
Similan Islands, Thailand
- 4. **ARBOREK JETTY**  
Raja Ampat, Indonesia
- 5. **BARRACUDA POINT**  
Sipadan, Malaysia
- 6. **MANTA AGGREGATIONS**  
Baa Atoll, Maldives
- 7. **YONAGUNI MONUMENT**  
Yonaguni, Japan

## OCEANIA

- 1. **CHANDELIER CAVE AND JELLYFISH LAKE**  
Palau
- 2. **FUJIKAWA MARU**  
Truk Lagoon, Micronesia
- 3. **LAMA SHOALS**  
Kimbe Bay, Papua New Guinea
- 4. **HUMPBCK WHALES AT NINGALOO REEF**  
Western Australia
- 5. **GREAT WHITE SHARKS**  
Port Lincoln, South Australia
- 6. **THE SPOTLIGHT**  
Saipan, Mariana Islands





# OUR MOST THRILLING DIVES

When first you learn to scuba dive, every breath is an utter thrill. Laying your eyes on your first moray eel, lionfish or even clownfish can be a near-overwhelming experience. For the seasoned pro, however, every passing year pushes the bar higher and higher, until the only adrenaline rushes you crave can be found at the world's most exhilarating scuba destinations

By various contributors

**SHARKS AFOOT:** Protected from commercial fishing for over 50 years, Cuba's Jardines de la Reina (Gardens of the Queen) marine park is a gem of the Caribbean. Beautiful silky sharks and Caribbean reef sharks are commonly seen. These large predators are very friendly with divers and often come close, offering great photo opportunities for photographers. The action is non-stop close-up shark encounters from start to finish. A true adrenaline rush.

Text and Photo by Aaron Wong

FEATURE: OUR MOST THRILLING DIVES





1

## FASTEST SHARK

Text by UW360

Photo by Mike Korostelyov

SOUTH AFRICA



The waters off Cape Town are famous for their sharks. Besides the great whites, sevengills and the blues, this is one of the few places in the world where you can even try diving with shortfin makos. These animals are easily recognised by their astounding mouths full of teeth, and an almost iridescent shimmer. But be warned, it is the animals' speed and size that can be incredibly intimidating, evolved to help them prey on powerful tuna and even other shark species. Shortfin makos grow to four metres (14ft) and weigh roughly 700kg (1,500lbs). Makos are sometimes encountered by divers in the Mediterranean, Baja California, and off Rhode Island.

⚡ Makos are considered the fastest sharks, with speed bursts topping 68 km/h (42 mph)

What	: Mako shark encounters
Where	: Cape Town, South Africa
When	: December–March





2

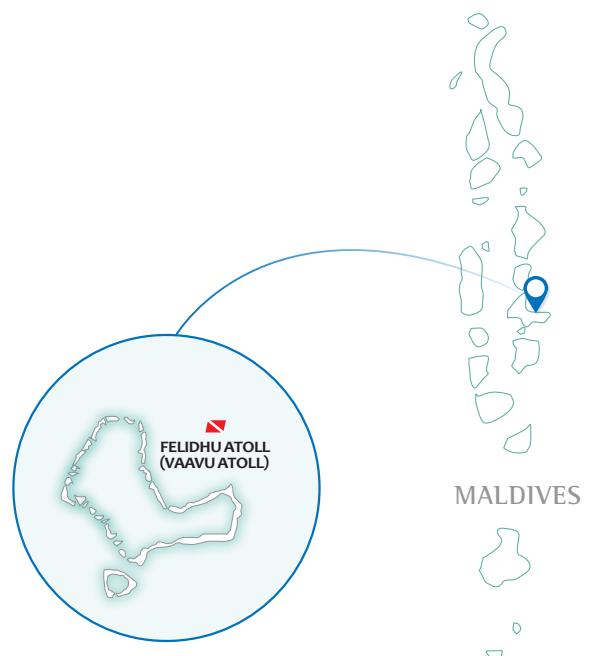
## LOVE AT FIRST BITE

Text and Photo by **Aaron Wong**

Alimatha Jetty in central Maldives is famous for its night dive with big rays and nurse sharks. But on this particular dive, I got a lot more than I bargained for. It started with a single three-metre male nurse shark showing extreme interest in a large female by following her everywhere. Within a minute, more large males joined in and the heat was on! Each male fights to grab hold of a fin as they pin her down. The action is rough, extremely violent and intense to witness. I could actually hear the sound of their teeth grinding against her tough skin. This went on for over 40 minutes until I had to surface. What an amazing encounter!

⚡ A fortunate encounter with a pair of large mating nurse sharks during a night dive

What : Shark aggregations  
Where : Vaavu Atoll, Maldives  
When : Year-round





3

## BRYDE'S DINNER

Text and Photo by Eduardo Acevedo

Atlantic Ocean

SPAIN

CANARY ISLANDS



This picture shows a hunting Bryde's whales at the exact moment of feeding, surrounded by hundreds of common and spotted dolphins. The population of Bryde's whales has increased in the last 10 years in the Atlantic Ocean. As a result, in the Canary Islands there are more visits of these cetaceans all year, with many whales choosing to reside in these waters with their calves. March, April, and May are normally invaded by many bait balls of mackerels, sardines, anchovies and other little juvenile fish. This increase of food for big predators like Bryde's whales gives us the opportunity to try to take pictures, though it is extremely difficult because they are very elusive. They are also considered the fastest whales in the ocean.

^ ADEX VOO Singapore 2019  
(Best of Show Shortlisted)

What : Bryde's whale  
Where : Canary Islands, Spain  
Where : May

4

## NIBBLE ON THE NOGGIN'

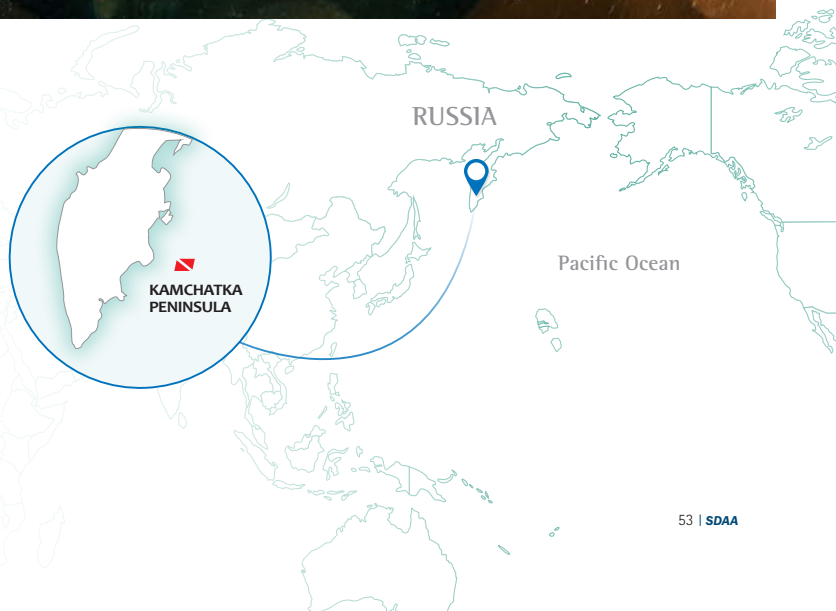
Text and Photo by Mike Korostelyov



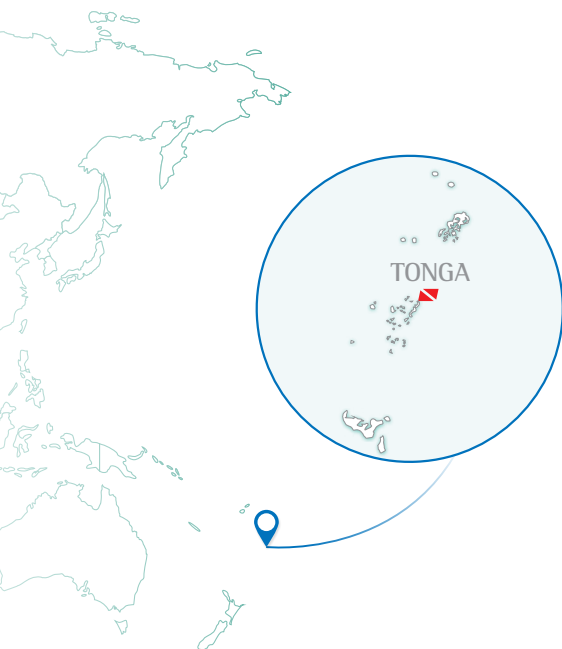
Diving with sea lions can give you a huge rush of adrenaline. Famously curious and playful, they are surprisingly very big animals, as their grace underwater tends to disguise their hulking mass. In this image the young diver is just 12 years old. It may seem frightening but sea lions are known to perform these “mock bites”, and in this case the young man actually intended to get a photo like this.

⚡ Stellar sea lions, also known as northern sea lions, are the largest of all sea lion species

What : Stellar sea lions  
Where : Kamchatka Peninsula, Russia  
When : November-February







5

## HEAT RUN

Text and Photo by Jason Isley

^ Family of humpback whales  
(*Megaptera novaeangliae*) with a calf

What : Humpback whales  
Where : Tonga  
When : July–August

Half a dozen buses are heading down the highway, all jostling to be next to the bus in front. Meanwhile, you are stepping onto the highway to film them as they roar past – that is the closest way to describe the task of trying to film humpback whales during their “heat run”. We were in the Kingdom of Tonga and we had three weeks to capture this spectacular event for the BBC series *Life*.

The whales migrate from Antarctic waters, where they stock up on krill and visit the warm waters of Tonga to give birth and raise their young. Young males will vie for the attention of females, fighting rivals as they race along. The battle consists of fin slapping, head lunging, blowing bubble curtains and breaching, known as a “heat run”.

Our first encounter was fleeting but awe-inspiring, as a mother and calf passed us by with four males in hot pursuit. Watching from the water and the boat was spectacular. Underwater was a slightly scarier experience. These huge animals were moving fast and the constant internal battle you have is: *How close can I get to snap the best shot, without getting fin-slapped by these giant creatures?*



6

## FAREWELL TO A FRIEND

Text and Photo by **Mike Korostelyov**

⚡ Rajan lived on Havelock Island, India

What	: Rajan the elephant
Where	: In Our Hearts
When	: Forever

An ode to Rajan the elephant, who passed away not long ago. I remember we had prepared everything for our dive and were waiting anxiously with our photo equipment. We were excited when we saw the elephant and his handler come to the beach but we still couldn't be sure that he would want to swim. The elephant, of course, decides for himself whether or not he will swim. No one could make old Rajan swim. But my wife and I were lucky as Rajan went into the water and allowed us to swim alongside him. Sometimes his whole body would be underwater and just his trunk would be out. It was fantastic! I could see his eyes were open underwater. He swam slowly for about 40 minutes and didn't seem to want to return to the beach!









7

## BULLS OF CABO PULMO

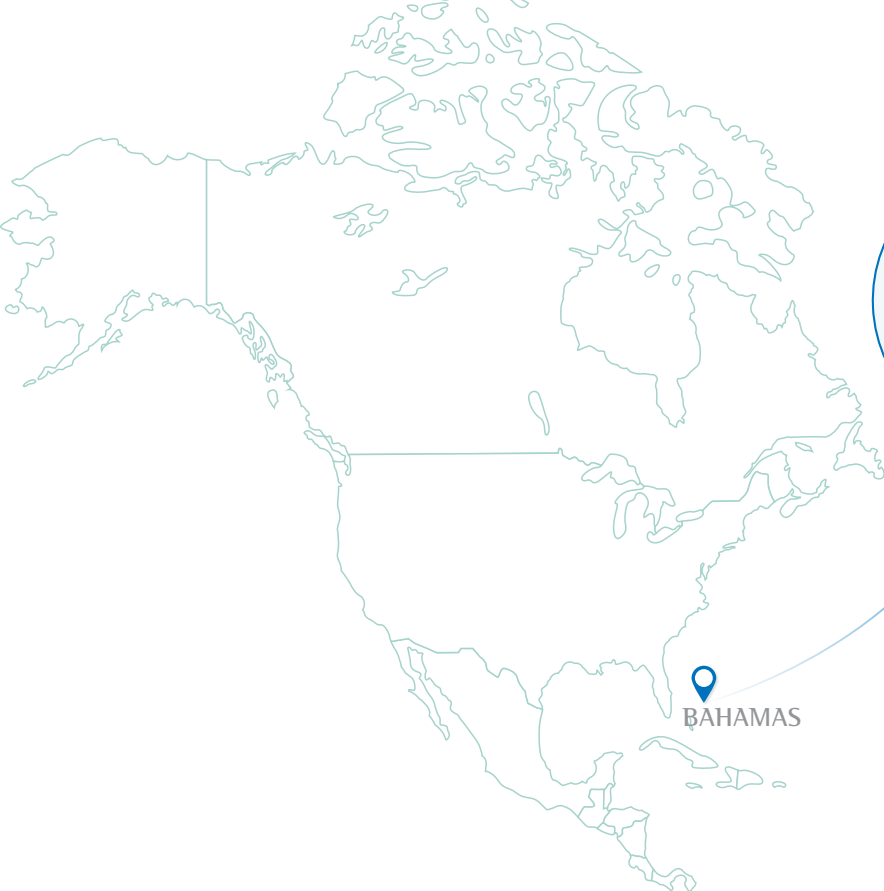
Text and Photo by **Pietro Cremone**

Cabo Pulmo is a hidden gem in Baja California Sur, Mexico. Once a fishermen's village, its waters became a national park in 1995. Only those who experience diving here can truly understand the exact wonders it hides beneath the waves! A successful conservation policy has made possible a 400-percent increase of the fish population in just a few years. From November till August, a large number of bull sharks gather to nurse, hunt and rest around the shipwreck of *El Vencedor* and other dive sites close by. Despite bull sharks' reputation for being aggressive, I've never felt in danger, even when surrounded by 10 sharks at the same time. They seemed calm and relaxed, and undisturbed by the divers all around.

⚡ A fortunate encounter with a very large predator, bull sharks can grow to 3.4m (10ft)

What	: Bull sharks
Where	: Cabo Pulmo National Park, Baja California Sur, Mexico
When	: November-August





8

## DAN'S CAVE

Text and Photo by **Jill Heinerth**

✓ The Crystal Palace in Dan's Cave,  
Great Abaco, Bahamas

What : Exploration tek dives  
Where : Abaco, Bahamas  
When : Year-round

There is still plenty of exploration left in caves such as Dan's Cave in Abaco, Bahamas. Local explorer Brian Kakuk can offer experienced cave divers with the appropriate skill set, a chance to lay line in places where no human has been before. But if you are not ready to put your mark on the history of exploration, Kakuk also offers cave diver training to those who are ready to learn more about the overhead environment.



9

## FAKARAVA SHARKS

Text and Photo by **Aaron Wong**

Every year, around the full moon of July, one of the greatest shows on Earth unfolds in Fakarava, French Polynesia. Tens of thousands of groupers gather to spawn in this short and narrow pass and as always, when there are prey in large numbers, sharks arrive too. This humble little pass in the middle of the South Pacific is then transformed into the famous “wall of sharks”. Grey reef sharks glide effortlessly in the current in their thousands, forming literally a wall that goes on for almost a mile. It is a sight that will wow even the most seasoned shark divers. And even if you somehow get sick of looking at sharks, tens of thousands of groupers are hanging around at the bottom on the reef.

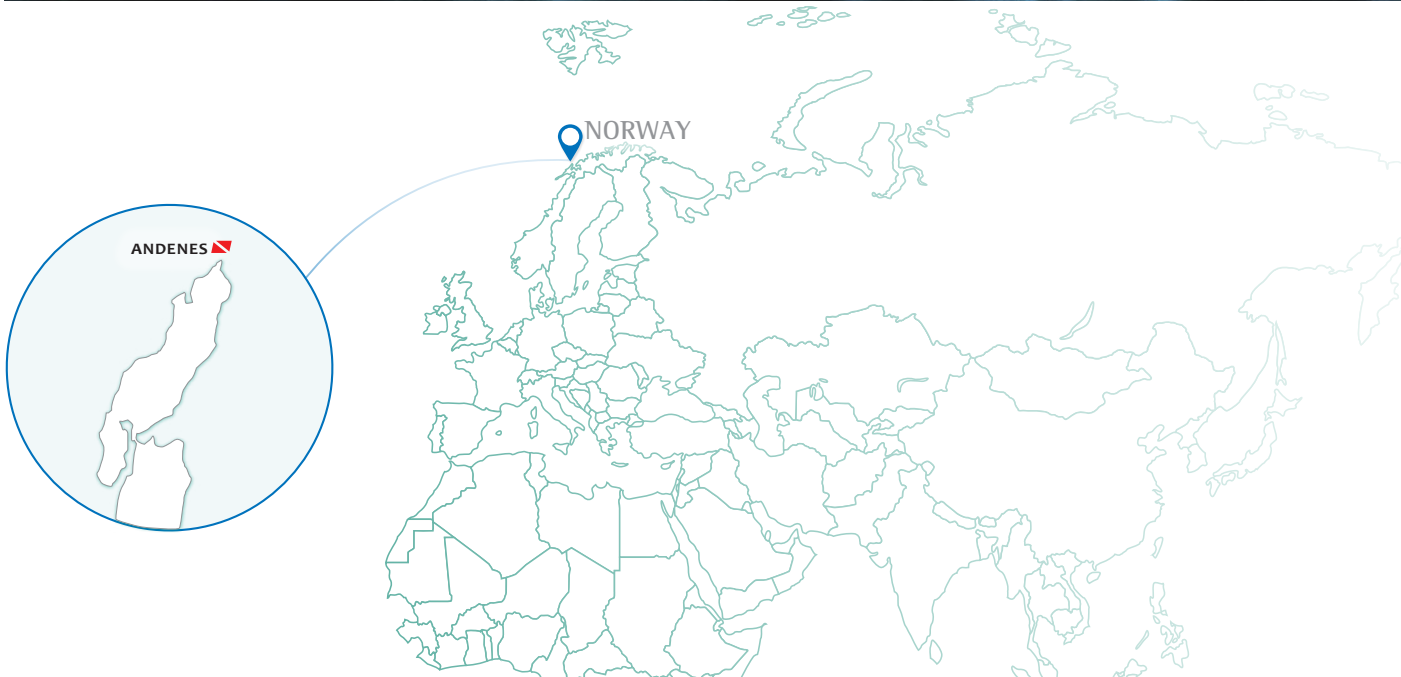
>> This incredible shark aggregation is also amazing at night; see page 72

What : Grey reef and silky sharks  
Where : Fakarava, French Polynesia  
When : July, full moon



FRENCH  
POLYNESIA







10

## OH MY ORCAS!

Text by **UW360**

Photo by **Mike Korostelyov**

In the frigid waters of Norway, orcas – or killer whales – arrive in some numbers in winter. They gather in search of the huge schools of herring that provide sustenance for wildlife and locals alike. This pod was moving along the shore towards a sheltered bay that was filled with herring. All Mike needed to do was hang out in the shallows and wait for them to pass by. Although these orcas were likely specialised fish hunters, offshore orcas can also be fearsome predators of large cetaceans and their calves.

⚡ Orcas chase huge schools of herring up and down the Norwegian coast

What	: Orcas
Where	: Andenes, Norway
When	: November-February

Interestingly, despite increasing encounters, there is no record of a wild killer whale ever killing a person. There have been incidents of mistaken identity, though none were fatal. In Antarctica for instance, orcas have been known to startle people standing on floes of ice, attacking from below, just as they would a seal. Experts believe the intelligence of the mammals leads them to realise, in the final moments of these cases, that humans are not on the menu. [SDAA](#)



# OUR FAVOURITE CORAL DIVES

A field of fragile staghorn as far as the eye can see. Radiant soft corals swaying in the shallows. A cliff's edge staggered by paper-thin plate formations. Everyone's got their favourites, but our team cast their votes and chose a few of the world's top dive sites for a pristine coral reef experience. Did your favourite make the list?

by **underwater**  
**360**  
www.uw360.asia

NORTH AMERICA

## AMERICAS

**Dive Site:**  
Palancar Horseshoe  
**Type:**  
'Amphitheatre',  
tunnels, crevices  
**Encounters:**  
Moray eels, turtles  
**Location:**  
Cozumel  
**Country:**  
**Mexico**



## AMERICAS

**Dive Site:**  
Blackish Point  
**Type:**  
Reef wall  
**Encounters:**  
Goliath groupers,  
rays, whale sharks  
**Location:**  
Utila  
**Country:**  
**Honduras**



## AMERICAS

**Dive Site:**  
Half Moon Caye Wall  
**Type:**  
Sheer reef wall  
**Encounters:**  
Tarpon, eagle rays,  
loggerheads  
**Location:**  
Lighthouse Reef Atoll  
**Country:**  
**Belize**



## AMERICAS

**Dive Site:**  
Bloody Bay Wall  
**Type:**  
Vertical reef wall  
**Encounters:**  
Turtles, reef sharks,  
Nassau groupers  
**Location:**  
Little Cayman  
**Country:**  
**Cayman Islands**

SOUTH AMERICA



## AMERICAS

**Dive Site:**  
Something Special  
**Type:**  
Sloping reef  
**Encounters:**  
Squid, rays, variety  
of frogfish  
**Location:**  
Kralendijk Harbour  
**Country:**  
**Bonaire**



## AFRICA

**Dive Site:**  
Ras Mohammed  
**Type:**  
Sheer wall  
**Encounters:**  
Soft corals,  
Napoleon wrasse  
**Location:**  
Red Sea  
**Country:**  
**Egypt**

## SOUTHEAST ASIA

**Dive Site:**  
Crystal Bay  
**Type:**  
Slopes to deep  
**Encounters:**  
Reef fish,  
Mola molas  
**Location:**  
Nusa Penida, Bali  
**Country:**  
**Indonesia**



## SOUTHEAST ASIA

**Dive Site:**  
Blade  
**Type:**  
Unusual reef ridge  
**Encounters:**  
Schools, rays, pelagics  
**Location:**  
Wakatobi  
**Country:**  
**Indonesia**

\*See page 98 for more on this destination



## SOUTHEAST ASIA

**Dive Site:**  
Magic Mountain  
**Type:**  
Seamount reef hook dive  
**Encounters:**  
Mantas, sharks, maybe dolphins  
**Location:**  
Misool, Raja Ampat  
**Country:**  
**Indonesia**



## SOUTHEAST ASIA

**Dive Site:**  
Apo Island  
**Type:**  
Gentle sloping reef  
**Encounters:**  
Clownfish and anemone fields, fish schools  
**Location:**  
Dumaguete  
**Country:**  
**Philippines**



## OCEANIA

**Dive Site:**  
Ulong Channel  
**Type:**  
Sloping reef  
**Encounters:**  
Reef sharks, large fish schools  
**Location:**  
Ulong Island  
**Country:**  
**Palau**



EUROPE

ASIA

AFRICA

AUSTRALIA



## SOUTH ASIA

**Dive Site:**  
Manta Point  
**Type:**  
Atoll reef  
**Encounters:**  
Mantas, sometimes in cyclone formations!  
**Location:**  
North Malé Atoll  
**Country:**  
**Maldives**



## SOUTH ASIA

**Dive Site:**  
Victory Wreck  
**Type:**  
Shipwreck  
**Encounters:**  
Groupers, sea turtles, schools of fish  
**Location:**  
North Malé Atoll  
**Country:**  
**Maldives**



## OCEANIA

**Dive Site:**  
Acropolis  
**Type:**  
Hard corals  
**Encounters:**  
Schooling reef fish, invertebrates, corals  
**Location:**  
Great Barrier Reef, Queensland  
**Country:**  
**Australia**



## OCEANIA

**Dive Site:**  
Mbulo  
**Type:**  
Double barrier reef  
**Encounters:**  
Schooling reef fish, fields of corals, reef fish  
**Location:**  
Mbulo Island  
**Country:**  
**Solomon Islands**



## OCEANIA

**Dive Site:**  
Rainbow Reef  
**Type:**  
Vertical wall  
**Encounters:**  
Legendary soft corals!  
**Location:**  
Somosomo Strait  
**Country:**  
**Fiji**





# A DIP IN DARKWATER

As the sun sets on a perfect day, our minds turn towards dinner, heading out on the town or enjoying a few drinks with friends. For a growing number of aficionados, however, the evening is a time to delight in darkness. Night diving has been around forever, of course, but increasingly underwater photographers and biodiversity enthusiasts are venturing beyond the shallows, past the reefs and far off into darkwater.

Text by UW360  
Photos by various photographers

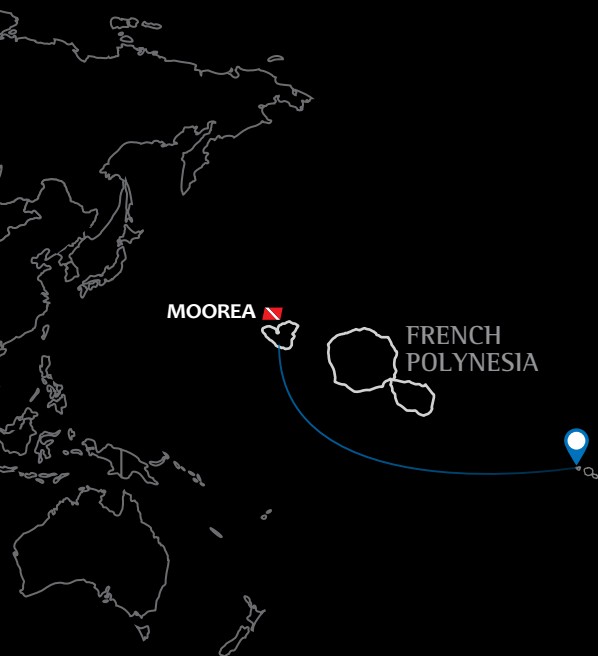
While photographing stingrays at sunset in Moorea, French Polynesia, a paddleboarder suddenly passed by in the background.

Read more on page 66 >>

FEATURE: A DIP IN DARKWATER





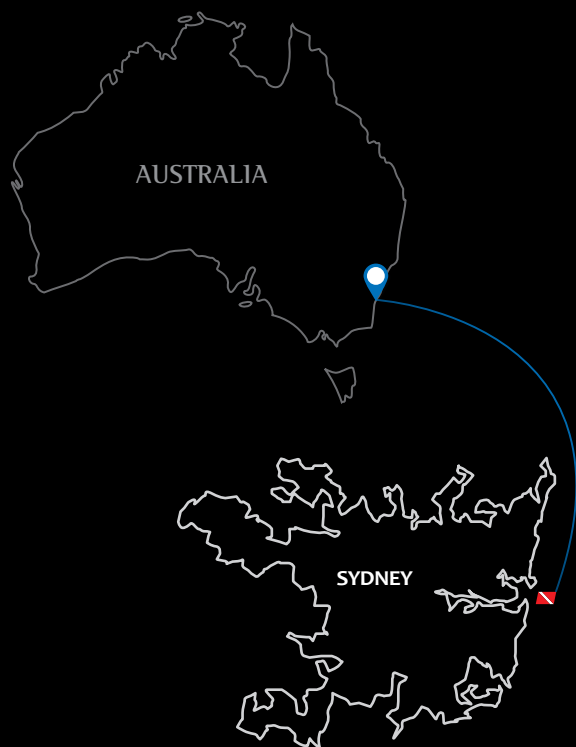


## MOOREA, FRENCH POLYNESIA

<< PREVIOUS PAGE

By : **Renee Capozzola** (ADEX V00 Singapore 2019  
Photo of the Year Shortlisted Entry)  
Title : Sunset Rendezvous  
What : Stingrays and paddleboarder  
When : June  
Equipment : Canon EOS 5D Mark III, Sigma fisheye 15mm f/2.8,  
Nauticam housing, 2x Sea&Sea YS-D1 strobes

“I wanted to capture an over-under shot of the stingrays at sunset during a recent trip to Moorea. Getting this image required multiple attempts over several evenings due to some bad weather and the inherently limited window of time to shoot sunsets. I also needed the stingrays to be in a photogenic position. These two stingrays didn’t seem to mind my presence, so I continued to approach them slowly. Just as I started shooting, a paddleboarder came into the background of my frame. My immediate instinct was to wait until the paddleboarder moved out of the frame, but I was concerned that I was going to lose the sunset or the rays or both. So instead I decided to incorporate him into the shot, and it worked! I feel that this image shows how humans and marine animals can peacefully coexist.”



## SYDNEY, AUSTRALIA

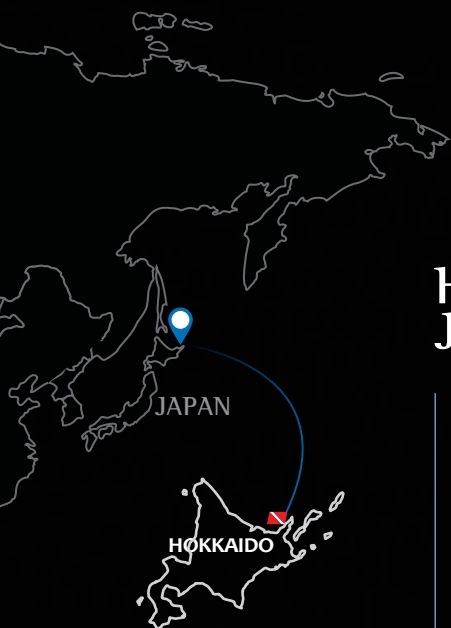
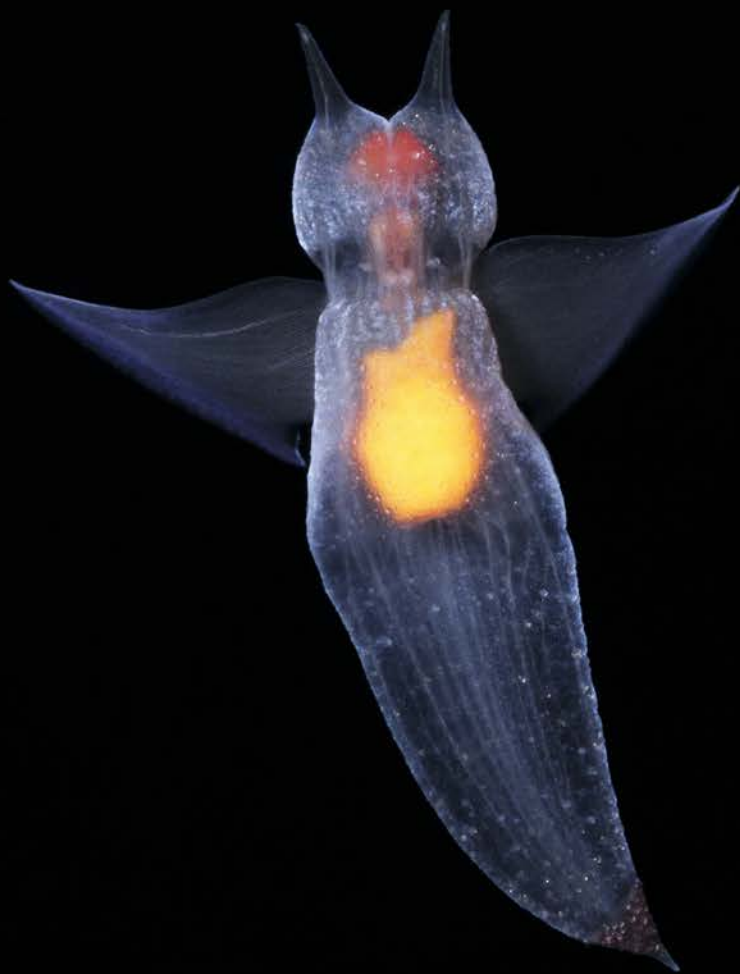
>> RIGHT

By : **Scott Portelli** (ADEX V00 Singapore 2019  
Photo of the Year Finalist)  
Title : Dragon’s Light  
What : Juvenile weedy seadragon  
When : February  
Equipment : Canon EOS 1DX Mark II, Canon 16–35mm f/2.8,  
Seacam housing, backlit with Sola lights

Juvenile weedy seadragons hide in the thick kelp to camouflage themselves in order to avoid predators. At a young age their features are not yet developed but they are starting to resemble the more vibrant and flamboyant adults. At night the backlight accentuates their features and the delicate bodies that appear translucent. Weedy seadragons are endemic to the southern parts of Australia and are masters of camouflage. They move slowly and their bright features and intricate details accentuate the unique creature and how it has evolved to resemble the kelp environment.







## HOKKAIDO, JAPAN

By : **William Tan** (Singapore)  
Title : Heaven by Night  
What : Sea angel (*Clio limacina*)  
When : February  
Equipment: Canon EOS 1DX Mark II, Canon  
100mm f/2.8 macro, Nauticam  
housing, 2x INON Z-240  
strobes, FIT Pro +10, RGBBlue  
System02 video light

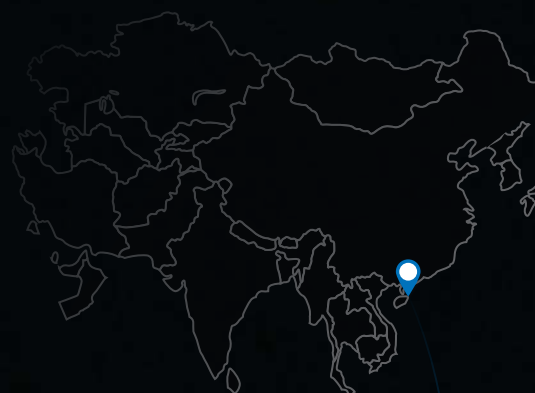
Sea Angels prefer deep dark waters, living at a depth of 200m or more in the sea of Okhotsk. They migrate with the drift ice to the northern coast of Hokkaido in the winter months. This image was shot during the annual Fourth Element Ice Diving expedition, in  $-2^{\circ}$  Celsius water. Sea angels are a type of sea slug with remarkable translucent bodies no bigger than 5cm, and with gentle wings that are used to fly through the water.



## HE JIE, KENTING, TAIWAN

By : **Steven Ko** 柯閔郎 (Taiwan)  
 Title : Pokémon Go  
 What : Aristeidae shrimp  
 When : June  
 Equipment : Canon EOS 5D Mark IV,  
 Canon 100mm f/2.8 macro,  
 Nauticam housing, 2x INON  
 Z-240 strobes, FIT Pro +10,  
 RGBLue System02 video light

The larvae of Aristeidae shrimps sometimes show up in deep trawls, but they are rarely seen by divers. When a crustacean expert showed me this amazing animal during a blackwater dive, its tiny size and erratic spinning movements challenged the limits of my camera's autofocus system. Where were those Ultra Balls and Razz Berries when you need them underwater? [These are weapons in the Pokémon video game that freeze the animals! - Ed.]





# ANILAO, PHILIPPINES

“This remote  
outpost has become  
a beacon to all  
blackwater divers”

<< LEFT

By : **Wayne Jones** (ADEX VOO Singapore 2019  
Photo of the Year Finalist)  
Title : Jellyfish Pilot  
When : December  
Equipment : Canon EOS 5D Mark IV, 70mm lens

“A jellyfish pilot floating in the middle of the  
water column during a blackwater night dive.”





<< LEFT

By : **Jinggong Zhang**  
(ADEX V00 Singapore  
Photo of the Year Finalist)  
Title : Wonderpus (Juvenile)  
When : January 2019  
Equipment: Nikon D850, 60mm lens

>> RIGHT

By : **Lilian Koh** (ADEX V00 Singapore 2019  
Photo of the Year Finalist)  
Title : Hitchhiker  
What : Female Paper Nautilus (*Argonaut*)  
When : December  
Equipment: Canon EOS 5D Mark IV, Canon 100mm  
f/2.8 macro, Kenko extension  
tube 20mm, Nauticam housing,  
2x INON Z-330, Orcatorch D900V

“The pelagic octopuses known as argonauts are also called paper nautilus, referring to the paper-thin eggcase that females secrete. Argos are ranked highly on every blackwater photographers’ wish list. This shot was taken 15 minutes into my dive at 25m (80ft) depth. I managed to capture a couple of shots before it disappeared into the deep. Luck was on our side, as it came up to a shallower depth around 8m (24ft) for a second chance to spend more time with it.”





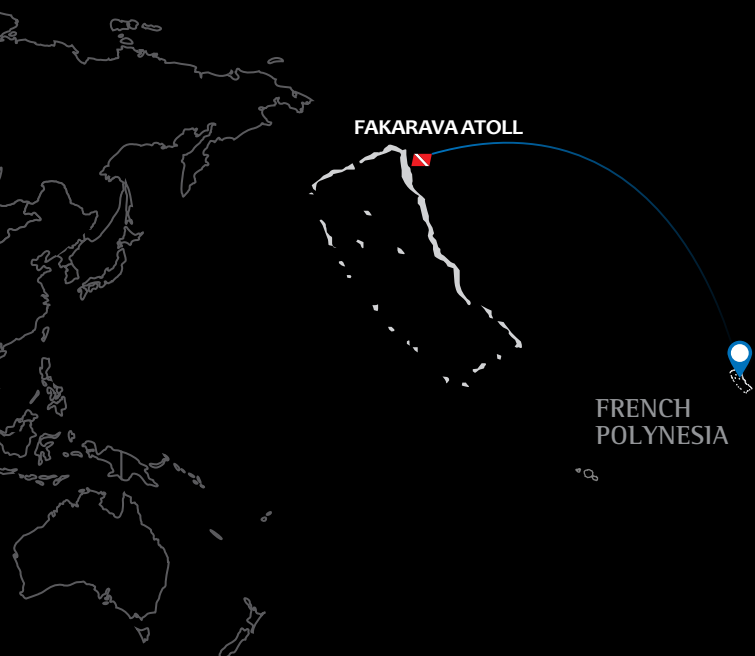




FEATURE: A DIP IN DARKWATER







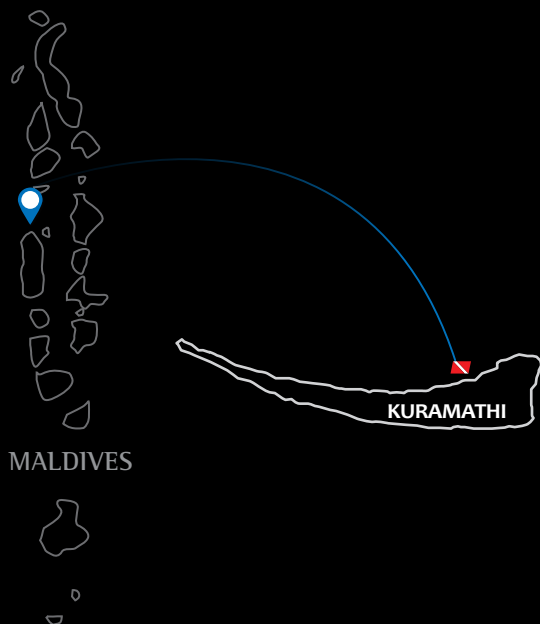
## FAKARAVA ATOLL, FRENCH POLYNESIA

<< PREVIOUS PAGE

By : **Laurent Ballesta** (France)  
 Word by : UW360  
 Title : 700 Sharks  
 What : Grey reef shark pack  
 When : July, full moon  
 Equipment : Nikon camera, Seacam housing

From the book *700 Sharks into the Dark*. Laurent took four years, following the cycles of the moon, to compose an exceptional collection of images. This long-term project enabled him to overcome his own fears, eventually entering the heart of the shark packs at night in Fakarava, a pristine atoll in French Polynesia. The pictures he brought back are astonishing testimonies of life, death, innocence and violence. That such a slice of wild nature still exists is simultaneously reassuring, frightening and dazzling.

[www.shop.asiangeo.com/product/700-sharks-dark](http://www.shop.asiangeo.com/product/700-sharks-dark)



## KURAMATHI, RASDHOO ATOLL, MALDIVES

>> RIGHT

By : **Marco Steiner** (ADEX V00 Singapore 2019  
 Photo of the Year Finalist)  
 Title : Almost Symmetric  
 What : Diamond Squid  
 When : February  
 Equipment : Nikon D810, Subal housing, Nikon 60mm lens,  
 2x INON Z240, 2x Supe V6K Pro, Supe RD90T, Supe PV40S

"In February I decided to start blackwater diving in the Maldives and I was very excited about the creatures that I might encounter. On my list of most-wanted critters, the diamond squid was very high up as I had never seen one. The conditions were challenging with very strong currents (causing us to drift 112km, or 7.5 miles, in one hour in one instance), and big sharks showing up from time to time. On one of the first dives I saw something in the deep that looked pretty big, so I decided to go all the way down to around 25m (80ft) when I realised that I finally found a diamond squid! The squid stayed with me for easily 10 minutes and I only left because I was close to deco. I had this composition in my head from the first time I came to learn of this animal, but getting it near-symmetrical was very difficult as the critter was constantly moving."







## LANG TENGAH ISLAND, MALAYSIA

By : **Ace Wu** (Taiwan)

Title : Bonfire

What : Squid

When : June

Equipment: Canon EOS 1DX Mark II,  
Canon 100mm f/2.8 macro, Seacam housing,  
2x Seacam Seaflash 150 Digital

In what can be considered a paradise island renowned for wide-angle photography, I have the privilege to be the first person to do blackwater at Lang Tengah Island.

Lang Tengah Island has a terrain very suitable for shooting blackwater. If you are a beginner in blackwater photography, you can also choose to use bonfire blackwater as an entry point. This is because the ocean currents bring a wealth of plankton, which promises a wealth of sweet surprises for an underwater photographer.



MALAYSIA



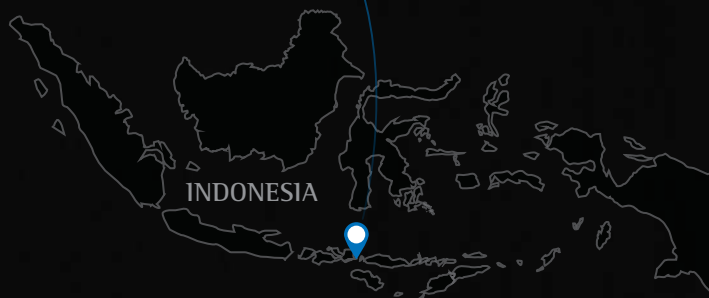
## SEKOTONG, LOMBOK, INDONESIA

By : **William Tan** (Singapore)  
 Title : Sharpear Enope Squid Larva  
       (*Ancistrocheirus lesueurii*)  
 What : Squid (larvae)  
 When : June  
 Equipment: Canon EOS 1DX Mark II, Canon 100mm f/2.8 macro,  
             Nauticam housing, 2x INON Z-240 strobes,  
             FIT Pro +10, RGBBlue System02 video light

“We were about to surface when the divemaster signalled to me from a distance. He then pointed his torch to what seemed like a tiny tube anemone larva with extra long tentacles and with the ability to change colours rapidly. I only recognised it as a squid larva when I neared the animal. It flexed its tentacles, putting on quite a display in front of the camera. I followed it casually for another 20 minutes until my almost empty and super buoyant tank forced me to end the dive.” [SDAA](#)



SEKOTONG,  
LOMBOK



INDONESIA





The largest of all sea turtles, leatherbacks are an endangered species and seeing one underwater is extremely rare

# ENDANGERED ENCOUNTERS

We are facing a mass extinction crisis; awareness is the first spark that leads us towards taking collective action and ultimately saving species

Text and Photos by Jason Isley / Scubazoo with various contributors

Capturing images of endangered or vulnerable animals underwater is one of the hardest, yet most rewarding pursuits for an underwater photographer. The aim is always simple – photograph a rare species without impacting on it to raise awareness, gain knowledge and ultimately help save a species.

Before embarking on any shoot, a great deal of research has to be undertaken to ensure a successful trip. Without proper planning and research, you are very likely to come away empty-handed. By definition, endangered animals are rare so you have to know exactly where you should be looking for them. They also tend to be extremely shy and wary of humans, who are usually the cause of their conservation status.

An understanding of the animal's behaviour is also vital as it will help you to predict their movements, but also to know when it's time to back off, which can be crucial for the well-being of all involved. And just as important, make sure you've got the proper permits and authorisations to embark on any project with endangered animals.







*Dermochelys coriacea*

## LEATHERBACK TURTLES

Text by **UW360**

Photo by **Jason Isley**

- ✓ A leatherback dives after surfacing for a breath in remote waters

Where : Kei Archipelago, Indonesia  
 When : During the jellyfish blooms, October–December  
 Sea Temp : 22–26°C  
 How : Not easy! Fly to Jakarta. Then onwards to Ambon and finally Langgur  
 Type : Open water, snorkel/freediving

### Conservation Status



Extinct in wild

**Vulnerable**

Least Concern

Each year a remarkable migration takes place and very little is known about it, yet it involves a unique and highly endangered marine creature. Leatherback turtles are the largest of the seven species of sea turtle and are unique in the fact that they don't have a bony shell. Their carapaces are soft, which gives the animal its name. The combined population of Pacific leatherbacks is thought to be less than 2,500, making them one of the most endangered marine turtles.

Pacific leatherback turtles make their way from the west coast of America to feed and breed in the area surrounding the tiny Kei Archipelago in the remote Banda Sea, a journey of thousands of miles for these ancient sea creatures. The Kei Islands are one of the few places in the world where you can encounter leatherbacks underwater and the main reason they can be seen here, and undertake their arduous journey, is to feed on the huge numbers of jellyfish that are swept in every year from the vast surrounding ocean. Given that leatherbacks eat an almost exclusive diet of jellyfish, this is an important feeding ground for these turtles and a feast not to be missed.



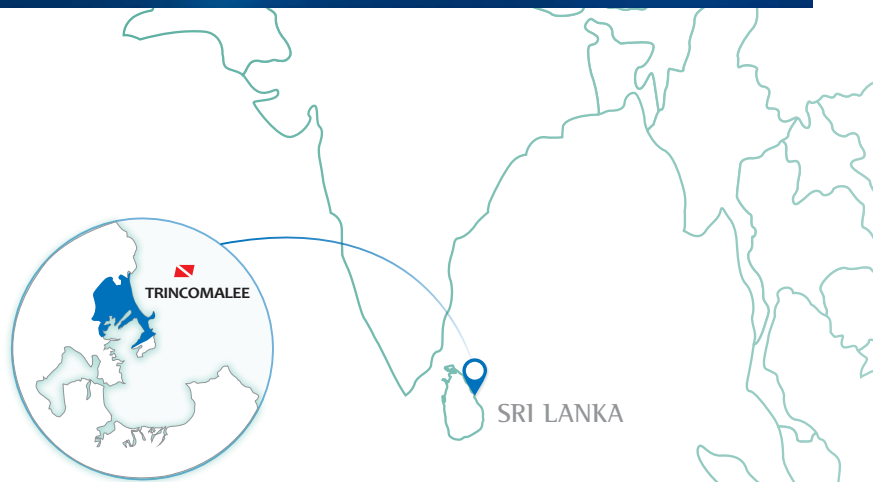


*Balaenoptera musculus*

## BLUE WHALES

Text by **UW360**

Photo by **Jason Isley**



One of the most reliable places to encounter not just the biggest marine creature but also the biggest animal to have ever lived is Sri Lanka. Although the subspecies found here is known as the “pygmy blue whale”, it’s only slightly smaller than its cousin. Although their numbers have been improving since the whaling ban of the 1970s, blues are slow to reproduce and are still considered endangered, with an estimated global population of fewer than 15,000 whales.

In Sri Lanka whales gather over the winter months to feed in the ocean depths. In between dives for food, they can be seen near the surface, which is the perfect time to drop in to try to get your shot. They are extremely challenging photographic subjects and a high degree of fitness is required to get in the right place for a shot before the animal disappears.

⚡ A blue whale cruises by in the open ocean

Where	: Trincomalee, Sri Lanka*
When	: January–March
Sea Temp	: 25–29°C
How	: Fly to Colombo. Arrange a trip through a registered tour operator, based in either Trincomalee or Marissa
Type	: Open water, snorkel/freediving

\*Department of Wildlife Conservation permits required

### Conservation Status

EX	EW	CR	EN	VU	NT	LC
Extinct			Endangered		Near Threatened	





🚩 Crocodiles are indicators of a healthy, balanced ecosystem

Where : Jardines de la Reina, Cuba  
 When : Year-round  
 Sea Temp : 25–30°C  
 How : Check with your embassy before embarking on a trip to Cuba. Most travellers will connect through Europe, Canada, the US, Mexico or via Air China  
 Type : Gut-check diving

### Conservation Status

EX EW CR EN **VU** NT LC  
 Extinct in wild Vulnerable Least Concern

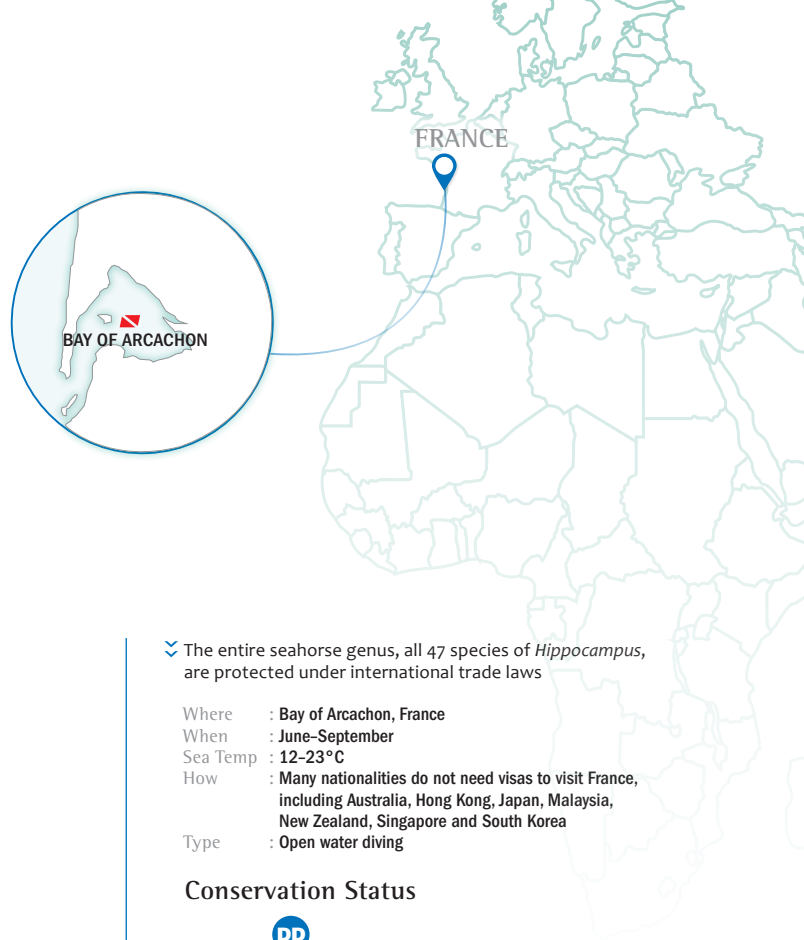
*Crocodylus acutus*

## AMERICAN CROCODILES

Text and Photo courtesy of Aaron Wong

Mention Cuba to a diver and images of crocodiles come to mind. And there is no better place there to do it than at the Jardines de la Reina (Gardens of the Queen) National Marine Park. Getting there is an adventure on its own with a six-hour bus ride from Havana to the harbour in Júcaro. This is followed by another five hours on a boat. This untouched paradise is dotted with mangrove lagoons where the saltwater crocodiles hang out. You will need some nerves, a good guide and, of course, a piece of chicken to get close to these amazing reptiles!





*Hippocampus guttulatus*

## LONG-SNOUTED SEAHORSES

Text by UW360

Photo by Laurent Ballesta

Although many seahorses are considered threatened primarily by habitat loss and their use in traditional medicines, the long-snouted seahorse is considered somewhat of a mystery. The IUCN Redlist of Threatened Species lists the animals as “Data Deficient”, so an accurate understanding of the population is lacking. However, the international export of the animals is controlled by Appendix II of the Convention on International Trade in Endangered Species.

✓ The entire seahorse genus, all 47 species of *Hippocampus*, are protected under international trade laws

Where : Bay of Arcachon, France

When : June–September

Sea Temp : 12–23°C

How : Many nationalities do not need visas to visit France, including Australia, Hong Kong, Japan, Malaysia, New Zealand, Singapore and South Korea

Type : Open water diving

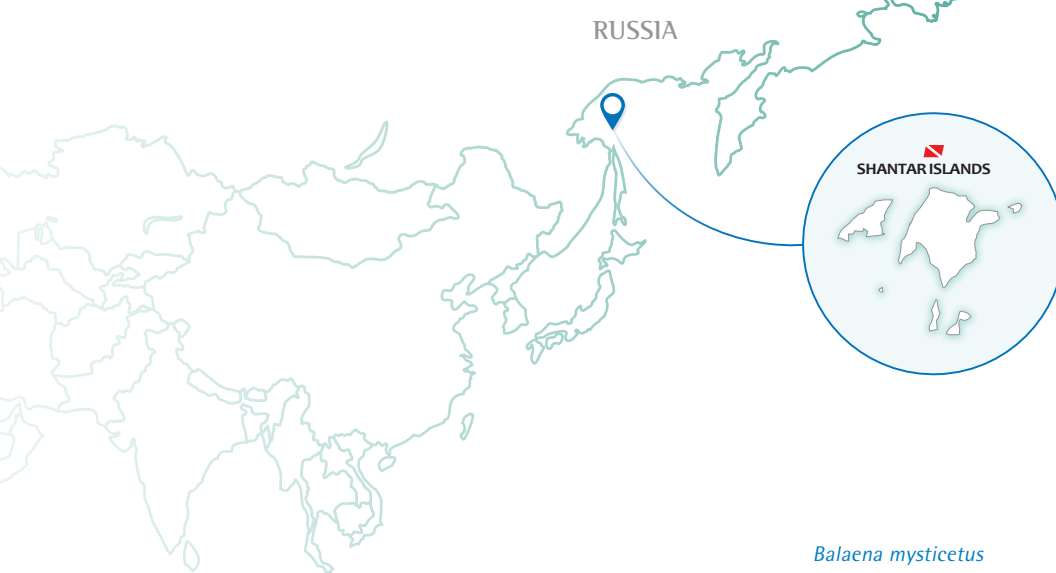
### Conservation Status



Data Deficient







*Balaena mysticetus*

## BOWHEAD WHALE

By Mike Korostelyov

✓ Bowhead whales can live as long as 200 years, tops among all mammals

Where : Okhotsk Sea, Russia  
When : July–August  
Sea Temp : 5–8°C  
How : International flights arrive to Khabarovsk. From there, you'll need to board the buses of the Whale Watching Russia Project to Nikolay's Bay  
Type : Scuba and snorkelling

### Conservation Status



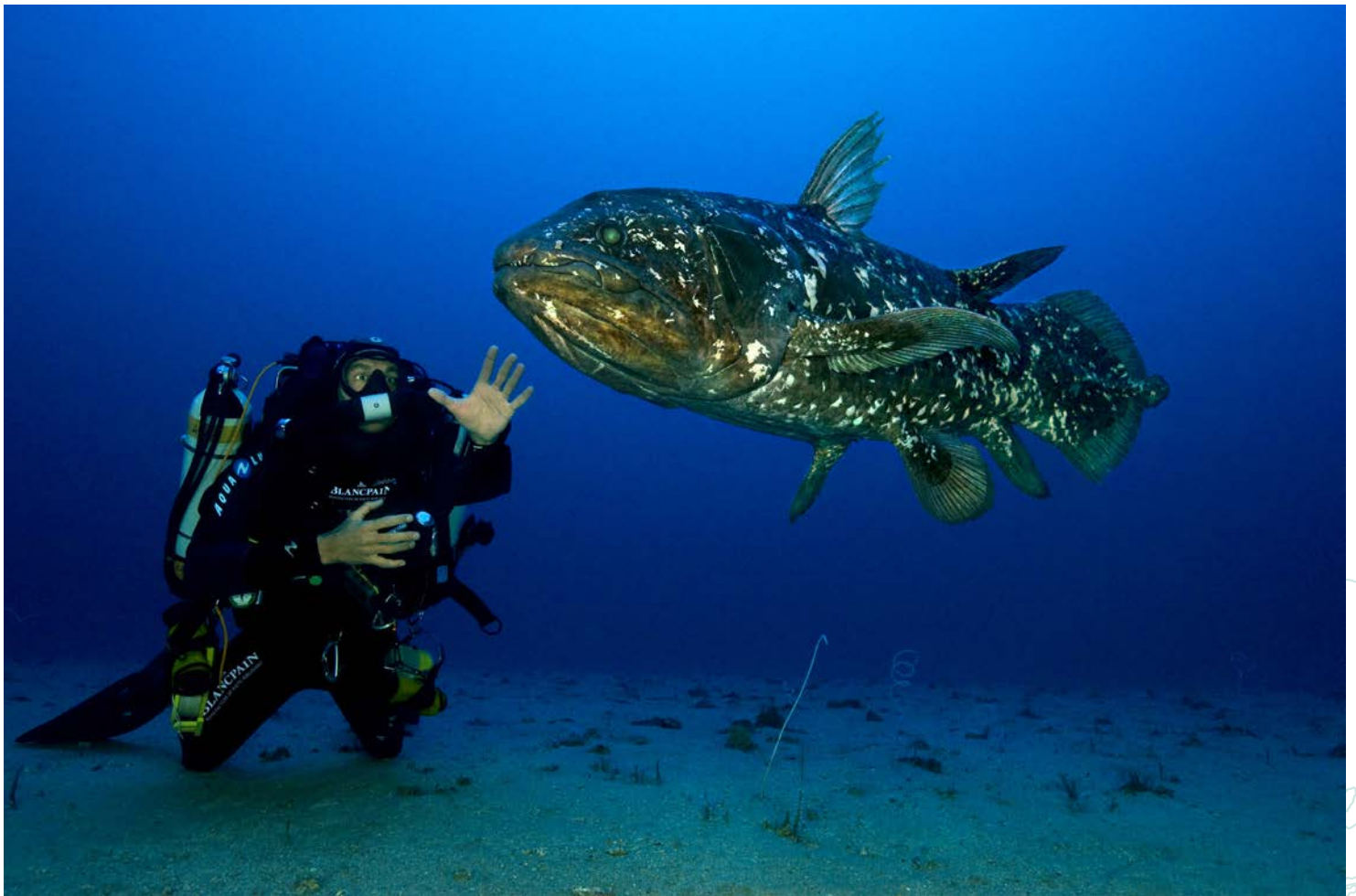
Extinct

Endangered

Least Concern

While the global population of bowhead whales are considered of low concern, the Okhotsk Sea bowhead population, in the far east of Russia, is “Endangered”. We were very lucky therefore to find countless bowheads in a shallow water bay. At the time we thought it most probable that they were hiding from nearby killer whales. After several calm weather days, the sediment in the water settled and the visibility improved. I approached the whales using a paddleboard, and when I was close, I dived to the seafloor to wait for a whale to swim by.





*Latimeria chalumnae*

## COELACANTH

Text by **UW360**

Photo by **Laurent Ballesta** (From the book *Gombessa: A Meeting with the Coelacanth*)

Presumed long-extinct, the now-legendary story of the scientific rediscovery of this bizarre fish began in December 22, 1938, when a fishing trawler pulled one up in its nets. It was then described by a scientist, but it wasn't until 2000 that a diver named Peter Timm saw a coelacanth in South Africa off Sodwana Bay. The animals were encountered on a technical dive to 120m (400ft). At least two other divers tried the same dive with cameras and both sadly passed away. It wasn't until 2008 that Laurent Ballesta was able to capture these remarkable images and safely return to tell the tale.

[www.shop.asiangeo.com/product/gombessa-a-meeting-with-the-coelacanth-by-laurent-ballesta](http://www.shop.asiangeo.com/product/gombessa-a-meeting-with-the-coelacanth-by-laurent-ballesta)

⚡ Coelacanths favour deep water to 700m (2000ft)

Where : Sodwana Bay, South Africa  
 When : Year-round  
 Sea Temp : 20-28°C  
 How : Diving with the coelacanth is too extreme to recommend although Sodwana Bay is a great diving spot. Fly into Johannesburg where you'll meet your guides, then on to KwaZulu-Natal along the east coast  
 Type : Reef diving, open water, tek

### Conservation Status

EX EW **CR** EN VU NT LC

Critically Endangered Near Threatened





*Physeter macrocephalus*

## SPERM WHALES

By Mike Korostelyov

I spent a full month in Azores to get this photo of seven socialising females. Only towards the end of the month did I have this great encounter, when I spent almost 20 minutes alongside these animals. The encounter was also remarkable given the unique access we had under a government permit. According to the regional legislation, swimming with whales and other cetaceans (other than dolphins) is forbidden in the Azores.

⚡ These whales were once hunted extensively by the locals, a practice dating back at least to the 13th century

Where : Azores Islands, Autonomous region of Portugal\*  
 When : April–October  
 Sea Temp : 15–24°C  
 How : International flights arrive to Lisbon, and then connect to local airlines via Ponta Delgada (Azores). Major Portuguese airlines are SATA and TAP-Air Portugal. SATA also connects all nine Azores islands  
 Type : Open water snorkelling

\*Permits required

### Conservation Status

EX EW CR EN VU **NT** LC

Extinct in wild

Near Threatened





*Aptenodytes forsteri*

## EMPEROR PENGUIN

Text by **UW360**

Photo by **Laurent Ballesta**

In Antarctica, emperor penguins dive from an ice floe. The largest of all penguins, the emperor stands at most 1.3m tall and can dive to 500m. Renowned photographer and explorer Laurent Ballesta would spend days on these floes where the animals did not fear humans. Each diver on the team carried with them around 200 pounds during their submersions, sometimes as deep as 60m (200ft) below the surface. It took Ballesta seven months to recover from these icewater dives, after suffering damage to his nerves from the extreme cold.

✓ A diving trip across the Southern Ocean will likely exceed \$10,000 per person!

Where : East Antarctica\*  
 When : December and January  
 Sea Temp : -2 to 1°C  
 How : Since Antarctica is not a country, passports are not required for entry, though operators require permits. Common gateway countries include Chile and Argentina  
 Type : Snorkelling and drysuit scuba

\*20 hours of daylight in summer

### Conservation Status

EX EW CR EN VU **NT** LC  
 Extinct in wild Near Threatened





*Kajikia audax*

# STRIPED MARLIN

By Christian Vizl

Snorkelling with a striped marlin in full hunting mode can be one of the most intense experiences in all of Nature. With speeds topping around 75km/h (50mph), marlin are among the fastest fish in the sea. They possess an intimidating bill (or rostra) used to slash at schools of fish. The bills of certain species have even been found embedded in the bodies of billfish predators such as great white and makos sharks.

✓ A striped marlin hunting a school of mackerel some 65km off the coast of San Carlos

Where : Bahia Magdalena, Mexico

When : October-December

Sea Temp : 24-27°C

How : International flights arrive to Mexico City or closer still, La Paz and Cabo San Lucas. Check with your dive operator if Magdalena Bay is on their itinerary

Type : Open water snorkelling

## Conservation Status

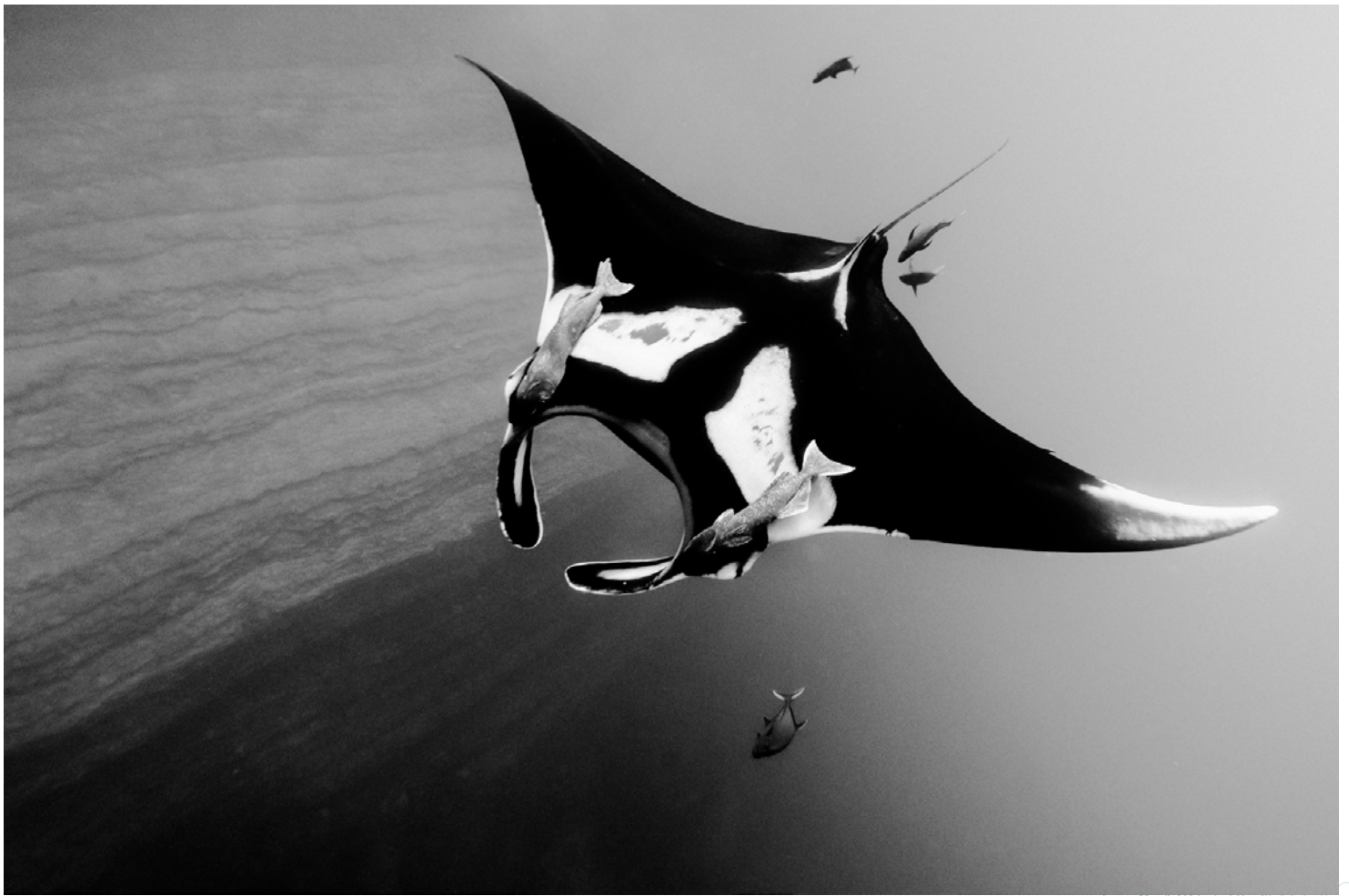
EX EW CR EN VU **NT** LC

Extinct

Threatened

Near Threatened





*Manta birostris*

## GIANT MANTA RAY

By Christian Vizl

The dive site known as “El Boiler” has become famous the world over for its encounters with large pelagics, and perhaps most commonly, giant manta rays. The site harbours a cleaning station for mantas, making it commonplace for divers to encounter several rays at any one time. Other visitors to the site can include silky sharks, hammerheads and even humpback whales.

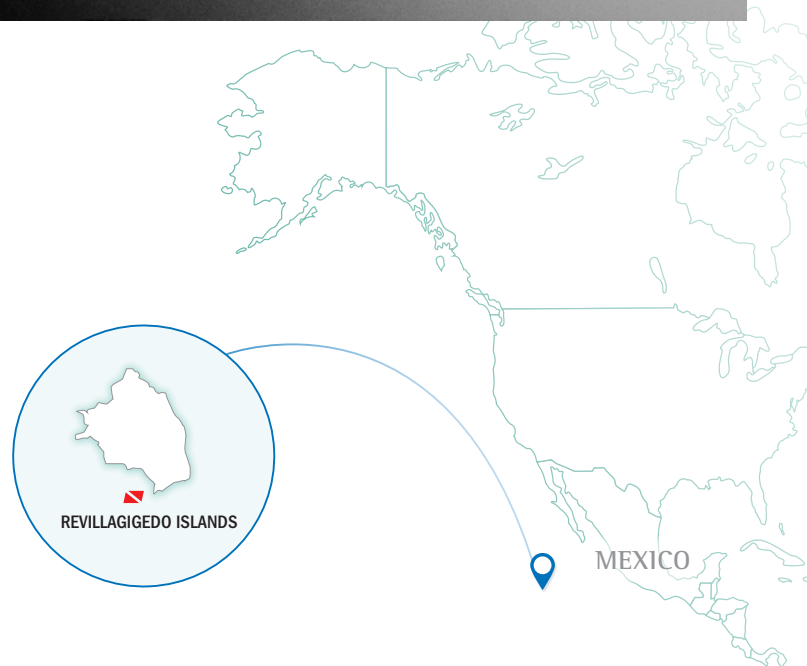
⚓ A giant manta swimming near a cliff at the “El Boiler” dive site

Where	: Revillagigedo Islands, San Benedicto Island, Mexico
When	: November–June
Sea Temp	: 24–27°C
How	: Numerous liveaboards travel to San Benedicto via Cabo San Lucas. Arrange a trip through a registered operator based in Mexico. Some operators transit to Ensenada, Mexico for departures
Type	: Open water scuba diving

### Conservation Status



Extinct in wild    **Vulnerable**    Least Concern







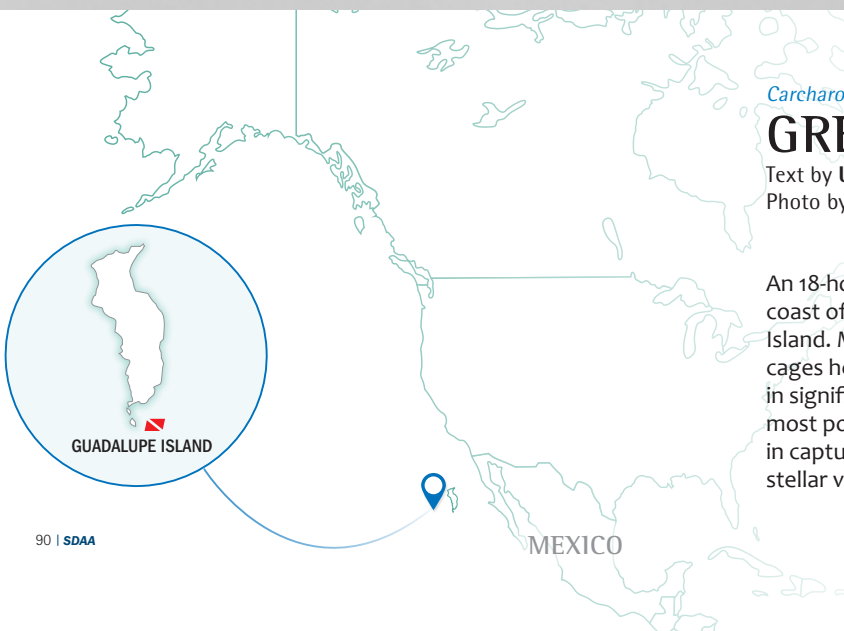
*Carcharodon carcharias*

## GREAT WHITE SHARK

Text by UW360

Photo by Christian Vizl

An 18-hour crossing via liveaboard vessel from the Pacific coast of Mexico brings you to the incomparable Guadalupe Island. Most operators will spend two or three days diving in cages here, where great white sharks are known to gather in significant numbers. This location has become one of the most popular among professional photographers interested in capturing images of this legendary predator, as it boasts stellar visibility often beyond 30m (100ft). [SDAA](#)





Portrait of a great white shark swimming in midwater

Where : Guadalupe Island, Mexico  
 When : August–October  
 Sea Temp : 18–22°C  
 How : Fly to San Diego, USA. Arrange a trip through a registered operator, based in either USA or Mexico. Some operators transit to Ensenada, Mexico  
 Type : Cage diving

#### Conservation Status

EX EW CR EN **VU** NT LC

Extinct in wild

**Vulnerable**

Least Concern



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# THE MARVEL OF THE MARIANAS

The warm and tropical Pacific Ocean draws intrepid travellers to the shores of a group of islands that are still off the beaten path, yet relatively simple to reach

Text and Photos by Yorko Summer



**ABOVE**  
Taga beach,  
Tinian Island

**OPPOSITE PAGE  
TOP**  
The famous  
submarine  
of Saipan

**OPPOSITE PAGE  
MIDDLE**  
The sunken  
tank at Kilili  
Beach, Saipan

**OPPOSITE PAGE  
BOTTOM**  
Lau Lau  
Beach, Saipan

Every diver has a bucket list of dream islands. For me, the Mariana Islands in the western Pacific Ocean harbour a number of these idyllic destinations. The tropical atmosphere of the region is legendary where leisure and comfort beckon divers from afar. The welcoming local waters are crystal clear, perfectly warm, rich with life and varied terrain, as well as being home to a remarkable trove of World War II shipwrecks.

The Northern Mariana Islands are a commonwealth of the USA, and are located at the northern end of Micronesia, approximately 2,000km south of Tokyo and 2,200km east of Manila. The Marianas consist of 14 islands stretching across more than 600km above the Western Pacific, just like a string of pearls scattered on the sea.

*The world-famous Marianas Trench is a stone's throw away, with a maximum water depth of 11,034 metres*

## DIVING AMONG MOUNTAINS

The world-famous Marianas Trench is a stone's throw away, with a maximum water depth of 11,034 metres – the deepest part of any ocean on Earth. In fact the islands themselves are the peaks of only a few mountains in that extraordinary submerged mountain range. The three main islands – Saipan, Tinian, and Rota Island – are blessed with sunshine throughout the year. With an average temperature of 29 degrees Celsius, and average sea temperatures of approximately 28 degrees Celsius, you can dive all year round, but the recommended season is from May to October.

For divers, the first questions that come to mind are likely: What are the most popular dive sites that must be visited and what marine life can be seen? First of all, no matter if it's Saipan, Tinian or Rota, you can be assured of great visibility in any season, so you know you're going to be happy. And while all three islands have very special cavern dive sites, Saipan's Grotto is at the top of the list.







Yorko Summer

## SAIPAN

The Grotto's unique cave terrain is arguably the most "prestigious" dive site in all of the Marianas, attracting both scuba divers and freedivers. There are three submerged tunnels and when you jump into the water, you can choose from the three large pockets that seem to transmit blue light from the sky above. The central tunnel is especially beautiful as it is adorned with many sea fans which hit peak density at around 22 metres. However, it is not easy to see such a fascinating underwater wonderland, because The Grotto is a shore dive. You'll need to overcome more than 100 steps to reach The Grotto's entry point, but believe me, if you can manage the trek it's definitely worth the effort.

In the northeast of Saipan, there is another underwater cave that I personally like, called Spotlight. Around noon, a powerful beam of light enters the main opening above and illuminates the cavern. Like the name of the site, a diver can swim into this shaft of light and be transformed into the protagonist of a drama, performing on a stage. There is also a small chamber to the side of this famous location, where you can ascend to the surface, take off your mask and second stage, and take a look around and enjoy a quiet cavern, before diving back down and on with the rest of your dive. This dive site, however, does have seasonal restrictions, as it is less affected by wind and waves between May and October.

Another particularly interesting dive site is Obyan Beach at the southern end of Saipan. With an endless white sandy bottom, there are special bicycles and even a supermarket trolley intentionally

placed along the dive site for some fun and silly photo opportunities.

Of course, the real underwater relics can be found along the Maritime Heritage Trail – the Battle of Saipan. Somber but fascinating sights include the *Chinsen Maru*, a large Japanese freighter, as well as a Japanese warplane, all underwater relics left after World War II. The dive site known as Dump Coke on Tinian Island also provides some unusual underwater marvels, such as jeeps, tanks, numerous planes and even bombs.

In the southeast of Saipan, Lau Lau Beach is the place where most people go to experience a purely fun dive not far from the shore. A large number of bigeyed scad may give you a jolt, as they give the impression of a submerged torrent. Sea turtles are also frequent visitors here, with a very high probability of close encounters. I also have fond memories of my dive at Wing Beach in Saipan. During my first visit, I discovered the super-rare Coleman's pygmy seahorse. What a stroke of luck!

### ABOVE

Even mermaids love Saipan!

### TOP RIGHT

Sea turtle at Lau Lau Beach, Saipan

### BOTTOM RIGHT

Coleman's pygmy seahorse at Lau Lau Beach, Saipan

### OPPOSITE PAGE TOP

Yorko Summer taking a photo of himself riding a bicycle underwater at Obyan Beach, Saipan

### OPPOSITE PAGE BOTTOM

Maritime Heritage Trail, Battle of Saipan



Yorko Summer



Yorko Summer







Yorko Summer



Yorko Summer



Yorko Summer

#### CLOCKWISE FROM TOP LEFT

The unmistakable shaft of light at Rota Hole; Eagle Ray City; underbelly of an eagle ray

### TINIAN AND ROTA

On Tinian, there is also a Tinian Grotto, which has to be seen, while Rota has another even more fascinating dive site called Rota Hole. In comparison, I rank Rota Hole higher because the underwater light and shadows are even more astounding, especially so around noon (once again), as the high sun penetrates the cavern's openings straight down like a beam of light. Later in the afternoon, it becomes more like a curtain of light being drawn by Mother Nature herself. It's enthralling for divers, and provides a dream scene for freedivers to come and pose for photos.

My favourite encounter from my time here was with an eagle ray, the true stars here. Sometimes, just walking along the beach, you can see them passing in the shallows, their unmistakable shape, patterns, and long tail standing out against the white sand. The best dive site to see them is at the aptly named Eagle Ray City as well as Pipe Line. In recent years, they seem to prefer the cleaning station of Pipe Line, where sightings have increased. Another dive site, Ice Cream, can also occasionally surprise you with eagle ray encounters. The diving is so serene on Tinian, and topside on Rota they say it's "the friendliest island in the world" so you can be sure both islands are absolutely not to be missed.

## MARIANAS STRONG

In October 2018, Saipan and Tinian were struck by Typhoon Yutu, a Category Five monster with 210kph winds. Reports called it the strongest storm to ever hit the Marianas, and claimed the islands were fortunate to have suffered only two casualties. Nevertheless, they suffered heavy losses, but from the windswept destruction emerged the “Marianas STRONG” call to healing. In short order, much has been rapidly rebuilt and restored, and fortunately the underwater environment remains intact. The Mariana Islands have risen once again to beckon visitors, with their crystal clear waters, white sand beaches, intoxicating sunsets and of course that mythic tropical sea breeze. **SDAA**



Yoriko Summer



Yoriko Summer

### GETTING THERE

The Marianas are served with regular flights from Japan. United Airlines has daily flight connections from six cities in Japan to Saipan with one stop. From Korea, Asiana Airlines, Jeju Air, and T'Way provide direct flights from Seoul-Incheon and Jeju Air also provides service from Busan. From mainland China, direct flight service is available from Shanghai, Beijing, Guangzhou, and Hangzhou. HK Express and Hong Kong Airlines provide service from Hong Kong. United States mainland connections can be made to Saipan via Seoul-Incheon, Hong Kong, or Guam. Visitors from Russia and Taiwan usually arrive via Seoul or Hong Kong. Inter-island travel to Rota and Tinian is provided by United Express (Cape Air) and Star Marianas Air. For more information on the Marianas, visit [www.mymarianas.com](http://www.mymarianas.com)



■ **Yoriko Summer** is a Taiwanese underwater photographer who is often featured in a variety of media, magazines, and galleries. With almost 20 years of underwater photography experience he is often invited to cooperate with tourism bureaus to promote local diving scenes. He is also a sought-after speaker at dive events and judges at underwater photography competitions. He currently serves as the Marianas Ocean Tourism Ambassador and the ADEX Ambassador of Photography / Greater China.

**TOP**  
Chillin' at  
8m in the waters  
of Rota Island

**ABOVE**  
Managaha Island,  
Saipan



# A CORAL DREAMSCAPE

## OPPOSITE PAGE TOP LEFT

Dive site Roma, Wakatobi

## OPPOSITE PAGE TOP RIGHT

Just off the base of Wakatobi Resort's jetty is the drop-off of the house reef wall

## OPPOSITE PAGE BOTTOM

At the dive site Zoo, a school of two-spot snappers (*Lutjanus biguttatus*) with a small school of yellowfin goatfish (*Mulloidichthys vanicolensis*)

Everyone's got their faves, but Wakatobi's top dive sites continue to rank among the world's best coral havens

By Karen Stearns

Wakatobi is one of the most celebrated dive destinations on the planet, and has been called a "dream destination" by more than a few visitors, but what keeps Wakatobi at the top of so many divers' lists? For starters, the private marine preserve created and supported by Wakatobi Resort is home to some of the most pristine and biodiverse coral reefs on the planet. Of the 40-plus locations regularly visited by the resort's dive boats, some sites tend to rise above the rest, consistently making the lists

of both staff and guests. And while we don't like to play favourites, we are offering up a few examples that showcase the diversity and quality of Wakatobi's underwater environment.

Before you can see what all the fuss is about, you're likely going to rack up some air miles getting to this coral dreamland. Wakatobi sits on a small island in a remote corner of Indonesia in southeast Sulawesi. But unlike many out-of-the-way destinations, getting to the resort won't require a string of puddle jumpers, inter-island ferries and taxi rides. Instead, arriving guests are met by the concierge staff at the Bali Airport, and from that moment they take care of everything, from the heavy-lifting, to coordinating transfers and scheduling overnight layovers. This allows guests to rest and refresh prior to boarding a direct mid-morning charter flight to Wakatobi's private airstrip. On arrival, you can relax over lunch and plan an afternoon dive, knowing that your bags have been delivered to your bungalow or villa, and your scuba gear moved to the dive centre and made ready for use.

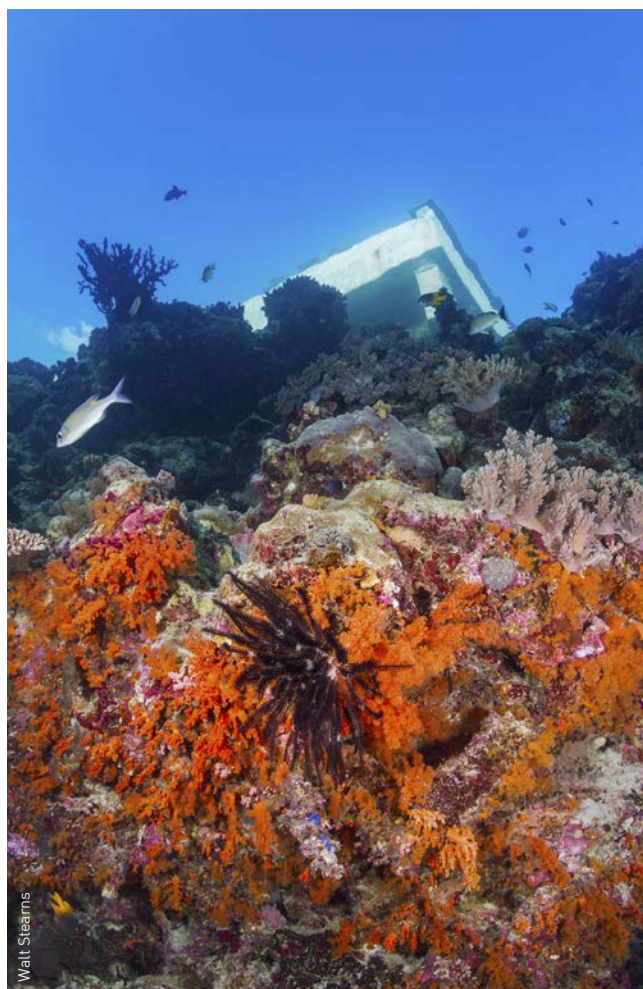
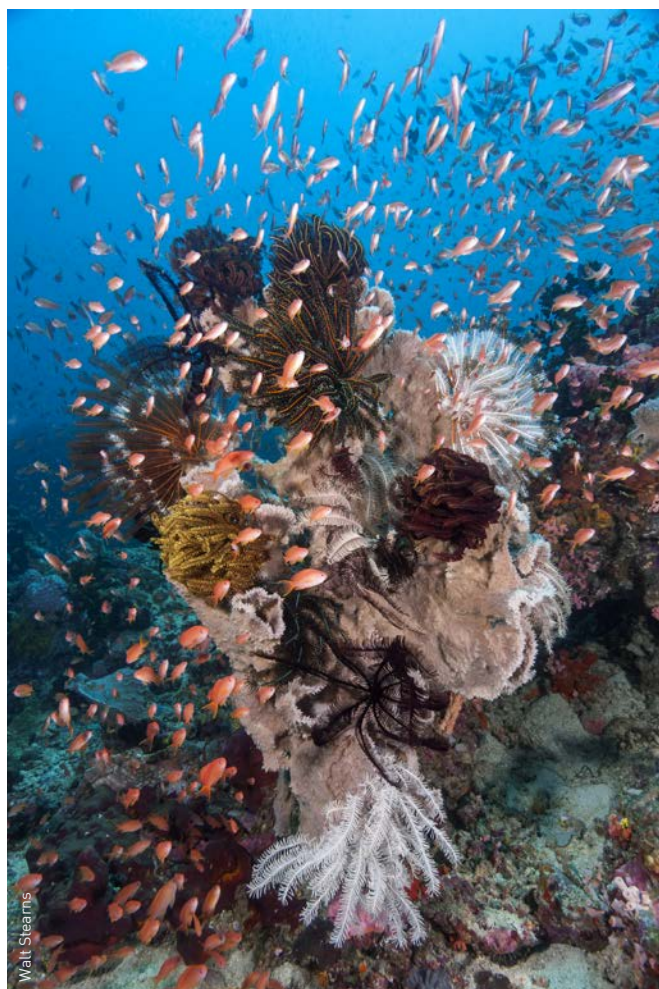
*Wakatobi sits on a small island in a remote corner of Indonesia in southeast Sulawesi... but getting there won't require a string of puddle jumpers, inter-island ferries and taxi rides*

## MORE FROM SHORE

Wakatobi's House Reef is known around the globe, and often ranks among the world's very best shore dives. Some 80m from shore, a shallow, coral-encrusted shelf transitions into a series of steep slopes and walls that plummet beyond the range of scuba. Entry to the House Reef is easy, as divers and snorkellers can make the short swim from shore, or descend stairs at the jetty. Pier pilings attract shoaling fish, and clustered nearby are dozens of anemones populated with iconic clownfish. The reef slope is covered with a dense coat of hard and soft corals, sea fans, sponges and tunicates, with overhangs that create resting places for resident turtles. Moving away from the jetty, divers and snorkellers have acres of coral slopes and shallows to explore.

The face of the drop-off is covered in an impressive collection of hard and soft corals, and large sponges while the shallows are prime hunting grounds for an even more diverse range of subjects. This expansive site is available to divers and snorkellers day and night, and on request "taxi boats" will ferry guests to more distant portions of the House Reef so they can leisurely make their way back to the jetty.





## THE ZOO

Just a quick boat ride from the resort is one of the fishiest places in central Indonesia. Close to shore, a patch reef within a sand-bottom bay provides shelter for a wealth of interesting marine life. And a leisurely look among the corals will expose frogfish, ghost pipefish and leaf scorpionfish hiding in plain sight. Closer scrutiny may reveal smaller prizes such as hairy squat lobsters, while a survey of the bottom will yield bizarre burrowers such as the stargazer and the alien-like mantis shrimp. Check the mushroom anemones for their namesake mushroom pipefish, which is a small white pipefish with a triangular head that gives it the appearance of a small underwater python.

Zoo is a favourite site for night dives as well. Residents include frogfish, octopuses, ghost pipefish, mantis shrimp, leaf fish, funky hairy squat lobsters, and more. Later, under the cover of full darkness, a new range of nocturnal animals such as hunting cuttlefish, colourful flatworms and many species of lionfish scour the reef, including the elusive twinstot lionfish. Bobtail squid and octopuses are

found here, and dive lights will reveal thousands of glowing eyes from the various shrimps and crabs that hang out in just about every crack and crevice.





#### BELOW

The top of the site Blade is as picturesque as it gets

#### OPPOSITE PAGE TOP

Diving the House Reef from Wakatobi's beach

#### OPPOSITE PAGE BOTTOM

Kids Club snorkelling fun on the Wakatobi House Reef

### THE BLADE BECKONS

Wakatobi offers something for all. Divers can spend relaxing hours on shallow reefs and exploring sheltered bays, or drop on coral-covered pinnacles that attract large schools of fish. Reefs that begin very close to the surface drop to depths of more than 100m, creating opportunities for long multi-level profiles, and providing extended-range divers with new opportunities. The unique site known as Blade is within range of the resort's day boats. A distinct formation consisting of a row of elongated parallel seamounts rises from a deeper ridge to within two metres of the surface. When seen in profile, the entire formation resembles the serrated teeth of a giant knife set on edge, hence its name.

The individual pinnacles are long but quite narrow. Divers drifting close to the surface can actually view both sides of the formations simultaneously from above. Blade is about as picturesque as it gets, complete with colourful arrays of giant sponges and sea fans that can at times grow to upwards of 2–3m (6–10ft) across.

Red whip corals grow thick on the steep sides of each pinnacle, providing fantastic photo opportunities. Multi-hued crinoids can often be seen perched on the tips of gorgonians, extending their tentacles to catch passing morsels of food. Mild currents allow divers to drift from peak to peak, evoking a sensation of weightless flight. All in all, Blade is an experience not soon forgotten. The dive yacht *Pelagian* carries guests on one-week excursions through the Wakatobi archipelago, spending some quality time at Blade, as well as the bays of southern Buton Island for world-class muck diving.

### BRING THEM ALONG

Divers won't have to leave significant others and children at home, as the resort also offers a range of water, beach and land activities, and is family friendly. Bungalows are large enough to accommodate families, and there are one and two-bedroom waterfront villas offering even more space. A nanny programme frees up new parents, and Bubblemaker and junior diving programmes



Walt Stearns





Henrick Rosen

let youngsters experience the underwater world. The same premier reefs that wow divers are equally inviting to snorkellers who are welcomed aboard boats headed to any site with a shallow component, and are given equal respect. This creates unique opportunities for non-diving members of the family to join in the fun.

And finally, in an era when going green is the right thing to do, Wakatobi remains a regional leader in conservation and environmental protection. The resort's award-winning Collaborative Reef Conservation Program was among the first of its kind, creating a new paradigm for sustainable tourism. The resort operates recycling and waste-water mitigation stations sponsors weekly village cleanups that involve up to 100 local people, and works closely with local communities and governments on the issues of waste management. The resort owners have been instrumental in bringing clean solar power to the region, and most recently tied Wakatobi into a local solar cooperative that supplies most of the property's needs during daylight hours. **SDAA**



Want to learn more about Wakatobi Resort, or perhaps schedule your own visit to their little piece of paradise? Visit [www.wakatobi.com](http://www.wakatobi.com), where you can complete a quick trip inquiry, or e-mail their team at: [office@wakatobi.com](mailto:office@wakatobi.com).



## A QUICK GETAWAY TO BALI

Even if you've only got a few days to travel, Bali can still amaze and enchant both landlubbers and jaded divers alike

By Andrew Lim

After a long first day of travel, our small group wasted no time on our second day. We quickly chartered a boat and headed straight for the world famous dive site known as Manta Point. We were understandably tired after air and overland travel, but fortunately for us, the Artotel Sanur hotel afforded us a good night's rest and smooth transition to underwater adventure. The divers in our group were all smiles when we realised the walk to the dive boats was only a five-minute stroll from the hotel doors.

To be honest, my expectations were low. I'd been to Manta Point before but unfortunately did not see any mantas so I never really understood the hype. Part of me was skeptical about the rave reviews this site has received over the years. However, this trip totally changed my mind.

We were really lucky that day as the sea was flat and Manta Point actually had calm waters! We jumped in right away and were greeted by three bamboo sharks within the first few minutes of the dive. As I was distracted and busy trying to get a shot of one of the sharks, the shadow of a behemoth passed

right above me. As I looked up, I soon realised that a squadron of six mantas was swimming alongside us, and would stay with us the entire dive. I savoured every minute of it. I remember thinking to myself "so this is what Manta Point is all about". I fell deeply in love with Bali that day.

Every time I dive with these majestic creatures, I can't help but feel humbled by their sheer size and grace. It was truly magical. But naturally I couldn't help but think that every other dive that followed would pale in comparison after such a wonderful first dive. Our boat circled around Nusa Penida to the more sheltered side of the island. Who'd imagine I'd have such fun at the dive sites Crystal Bay and Toyapakeh too.

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*As I looked up, I soon realised that a squadron of six mantas was swimming alongside us, and would stay with us the entire dive*

### OPPOSITE PAGE

Manta Point delivers once again on this quick trip, with only one dive at the legendary site

### RIGHT

We spent the afternoon with numerous mantas



Andrew Lim



Andrew Lim



The quality of both hard and soft corals was amazing. I was surprised to see minimal signs of bleaching and breakage, which indicated a healthy reef despite the large volumes of tourists Bali sees each year. It's also remarkable that a reef so intricate is just a day trip from the busy vacation centre that is the south, with Kuta and Denpasar just a stone's throw away. The biodiversity at these dive sites was incredible, with plenty of reef fish. Where there's plenty of food means there are predators around too, but they stayed well hidden on this occasion. Still, it was a day worth remembering.



#### BELOW LEFT

There was something familiar about this sight, so I took a few shots but then I realised it looked like a traffic light!

#### BELOW RIGHT

A lizardfish at Toyapakeh

#### OPPOSITE PAGE TOP

With a macro lens, who can resist taking photos of a clownfish?

### TOTALLY TULAMBEN

The next day, we headed to the *Liberty* shipwreck at Tulamben, along the northeast coast of mainland Bali. The USAT *Liberty* was a US Army cargo ship that was torpedoed by a Japanese submarine back in 1942. Unfortunately, due to recent volcanic activity at Mt. Agung, the wreck had shifted. It looked different from when I first saw it years ago, but that made it feel like a totally new dive experience too. Since I used my wide-angle port the day before, I thought I'd play around with macro this time, for close-up images of tiny creatures. What I love about shooting macro is observing how these tiny animals go about their daily lives. If you don't invade their space, they don't really seem to care about

you. Once again the biodiversity dazzled me, and left an impression of renewed awe in the wonder that is Bali.

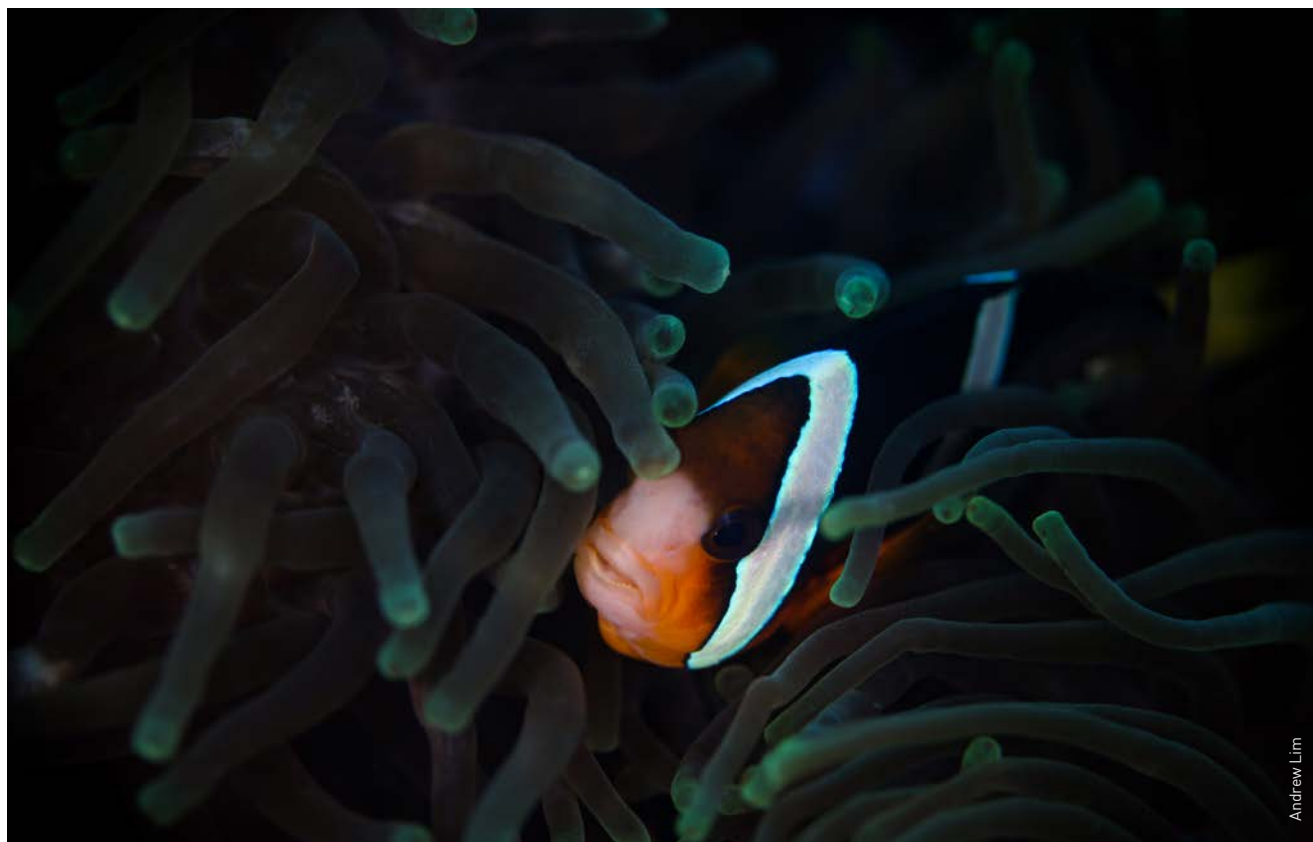
I know so many people who have essentially given up on diving because they've got kids, or because their spouses don't dive. In my short time here, I realised that Bali is the perfect solution to this problem. Travelling with a group, my time underwater was already up! I only had the two days to spare for diving, but for a relatively quick trip we experienced so much below the waves. It was time for me to come up for air, only to realise that Bali caters to everyone else you might be travelling with too, including friends or family members that do not dive.



Andrew Lim



Andrew Lim



Andrew Lim

### DRY LAND EXPLORATION

Our group was desperate to experience the cultural sights of this legendary isle, so we headed to Taman Ayun Temple, not far from Ubud. Built in 1634, Taman Ayun means “beautiful garden” and is regarded as one of the most attractive temples in all of Bali. We were fortunate to have great weather so it was a real pleasure walking around and exploring the area.

Then, of course, it was on to the iconic Tanah Lot. This is the temple by the water that you’ve probably seen images of even if you’ve never been to Bali. Tanah Lot is very unique as you can walk to it during low tide, but not when the tides come in! It was a really picturesque sight – a charming temple sitting atop a rock with waves constantly crashing against the sides.

We ended the evening having dinner by the beach at Jimbaran, a site famous for its seafood. However, I think it is the overall atmosphere that makes it a great place to check out. Grilled seafood, waves lapping in the background, and a live band that moved from table to table taking song requests. It was the perfect way to end a relatively short but remarkable trip across this incredible island that has now captured my heart. [SDAA](#)



Andrew Lim



■ **Andrew Lim** published his first underwater photography book, *Silhouette of Serenity*, at age 21. Having donated part of the proceeds to charity, he was invited to meet the (then) President of Singapore Dr Tony Tan, in recognition for his work. The 26-year-old TEDx speaker and former national rock-climber strives to capture and unleash the incredible beauty of people that only underwater photography can provide.

### ABOVE

Food writer and TV personality Victoria Cheng (@victoriacheng) enjoying the golden hour with social-media influencer Katie Yon (@katepurk).





## ANDAMAN ISLANDS



Mark Strickland

## RAJAN – INDIA'S MAGICAL DIVING ICON

By Mark Strickland

As huge mammals adapted for life in the jungle, the idea of encountering an elephant underwater might seem strange. But if you think about it, with their long, flexible “snorkel” of a trunk, there are few land animals that are better suited for an aquatic existence. Enter Rajan, India’s famous swimming elephant. Widely celebrated for his willingness to pose for underwater photographers, this gentle giant was born in southern India around 1950, then brought to the remote Andaman Islands as a young adult to labour in the logging industry. His life was not easy but Rajan did find time for romance, eventually meeting a female with whom he was clearly smitten. Relationships between the sexes are typically fleeting affairs with elephants, but their case must have been an exception, as the two were seen together frequently over the years. The female was an avid swimmer and Rajan soon followed suit, often joining her for a dip in the sea after work. Swimming was also a job requirement as the logging companies occasionally swam their elephants between neighbouring islands, rather than hiring barges to transport them. The pair lived happily together for several decades, until a few years ago the female was bitten by a cobra and succumbed to complications.

Grief stricken, Rajan was inconsolable and slipped into a deep depression for more than a year following

her death. Normally a hard worker, he became disinclined towards his log-hauling duties, and therefore useless to his employers. With no hint of when or if he might get his mojo back, the elephant’s future looked grim. Fortunately for Rajan, it was about this time that movie director Tarsem Singh heard about his affinity for the sea and tentatively cast him in a film called *The Fall*. Rajan’s then-current location was not suitable for the shoot so arrangements were made to move him to Havelock, an idyllic, mostly undeveloped island in the central Andamans. Apparently, the surroundings and job description agreed with him and Rajan gradually regained his former *joie de vivre*.

After filming was completed for the movie, the photogenic pachyderm settled easily into the sleepy pace of life on Havelock, spending much of his time foraging in the forest with his *mahout* (handler). Before long, however, his owners announced their intention to ship him back to the mainland, where he would likely have spent his remaining years chained to a temple wall. Thankfully, the owners of Barefoot Resort, who’d been looking after him during his time on Havelock, came to the rescue. The elephant’s owners had demanded a huge sum for the animal, so the resort enlisted Rajan to raise the money via paid photo sessions with visiting divers. Averaging only a few sessions each month, Rajan eventually raised enough cash to earn his freedom, and officially retired from underwater modelling in 2014. Since then, he could often be seen wandering in the forest near the resort, enjoying his well-deserved retirement while entertaining visitors and locals alike.

Rajan recently passed away at the ripe old age of 66. [SDAA](#)

### ABOVE

Rajan the Asian elephant, *Elephas maximus*, cavorts in shallow water

[www.adex.asia](http://www.adex.asia)

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## REBUILDING THE SEASCAPE

There are countless ways you can help protect our reefs while diving. The Coral Restoration Foundation is one of many organisations around the world helping to heal ecosystems, one tank at a time

Text by Tiffany Duong

Photos by Coral Restoration Foundation

**ABOVE**  
Recently  
“outplanted”  
coral takes root  
rejuvenating  
the seascape

**OPPOSITE PAGE  
LEFT**  
Volunteer divers  
assist CRF staff

**OPPOSITE PAGE  
RIGHT**  
Structures known  
as “coral trees”  
help grow corals  
two or three times  
faster

“That was just incredible!” gushes Maria Gomez, a volunteer diver from Medellin, Colombia. We’ve just surfaced from a coral outplanting dive at Pickles Reef in Key Largo, Florida. Maria and I successfully put 10 endangered staghorn corals back onto the reef. The other dive teams on our boat also restore 10 corals each. High fives are heard as we announce our totals: 40 corals restored for the day. “It feels great to use your best hobby for a good purpose, doesn’t it?” adds Maria.

Our boat glides along the turquoise blue water back towards land, and Kyle Krause, a local 17-year-old tells me, “It was a new view of things. Really cool.” He’s right. It’s not every day we get to touch an endangered species, let alone act to help increase its chances of long-term survival in the wild.

Maria and Kyle are just two of many divers from around the world who come to the Florida Keys looking to scuba dive but also looking to do more with their time underwater. They join us at the Coral Restoration Foundation (CRF) on one of our dive programmes to figure out what that “more” might mean to them.

These programmes – unique, one-day dive experiences – transform interested citizens into coral restoration warriors and ocean stewards helping to restore the imperiled Florida Reef Tract. The morning starts with an information session and hands-on training. We CRF staff and interns show a series of pictures of iconic Carysfort Reef, once revered as the jewel of the Caribbean and it begins to sink in: Our reefs are in danger. There’s just one to two percent of the historical cover of staghorn and elkhorn corals left. But why? There’s discussion of all the local and









Zach Ransom (Coral Restoration Foundation)



Zach Ransom (Coral Restoration Foundation)





Jessica Levy (Coral Restoration Foundation)



Jessica Levy (Coral Restoration Foundation)

global factors contributing to this coral crisis, from agricultural runoff to irresponsible boaters and divers to global warming.

Then, a welcome change of scene brings a glimmer of hope. We see images of thriving corals – not on the reefs but suspended in the water column on curious PVC and fibreglas “coral trees”. Developed by CRF to optimise coral growth, coral trees are used to grow endangered staghorn and elkhorn corals, the same ones that used to dominate the Florida Reef Tract. They’re so efficient that they actually grow corals two to three times faster than a natural reef can. And when these new corals are big enough, they’re harvested and put back onto the reefs by divers using hammers and marine epoxy. The process – outplanting – is part finesse, part muscle and sweat, and all a labour of love.

*Many hands make light work. Let’s keep it up and recruit more! The reefs need it!*

Jasper Lillingston

Next, the hands-on training on proper coral tree nursery maintenance and outplanting techniques begins. We CRF veterans share pro tips like proper buoyancy, watching for entanglements and proper breathing. During the training, everyone cleans mini-mock coral trees and outplants on a papier-mâché reefscape.

As he cleans his mock corals, Robert Anderson from New York nods his head. “All divers should do this once for the knowledge and understanding of the wildlife that we often enjoy throughout our diving careers.” He adds, “It’s so important to know how much corals bring to the table.” Danielle Berkowitz of Saratoga, California agrees, “It’s interesting and meaningful because we talked about the urgency of coral restoration, and its key role in the ecosystem.”

By noon, divers are eager to get into the water and we head over to our local dive shop partners. The moment we go under the surface, awe sets in. Rows and rows of trees in our Tavernier Nursery await us. It’s unlike anything you’ve ever seen – a verifiable underwater forest of corals, growing and representing a future hope for our reefs. This first dive is a nursery dive, which includes a tour of the largest coral tree nursery in the world, cleaning coral trees and harvesting corals to outplant.

The second dive is on a local reef that’s been devastated by local and global stressors. Divers hop in and put their training to work, outplanting dozens of corals by hand. As he emerges from this outplanting dive, Jasper Lillingston of London, UK jokes, “Many hands make light work. Let’s keep it up and recruit more! The reefs need it!”

As we finish our outplants for the day, the elation on everyone’s faces is unparalleled. Our team leader shares why we do this work: “Hopefully, when you come back in five, 10 years, you’ll be able to say, ‘That reef – that reef is there because of me.’” **SDAA**

[www.coralrestoration.org](http://www.coralrestoration.org)

#### OPPOSITE PAGE TOP

A coral forest holds promise for the future of Florida’s reefs

#### OPPOSITE PAGE BOTTOM

Keeping the growing surfaces clear of algae and other nuisances

#### ABOVE

Evidence of coral spawning shows the restoration efforts are working



# DAN PROVIDES UNRIVALLED MEDICAL SERVICES FOR DIVERS

By Bill Ziefle

If you are involved in an accident that threatens your life, the last thing you want is for those you call on for help to make inappropriate recommendations or fail to recognise the severity of your symptoms. At DAN, our staff is more familiar with dive injuries than just about anyone else in the world. Whether you are calling our emergency hotline, seeking medical information about diving or need help finding a local expert, we answer, and we provide the most practical, relevant and up-to-date information. Our commitment to providing divers with the utmost care is what sets DAN apart from the rest. For almost 40 years divers around the world have trusted DAN to be there when they have a dive accident – because we have been there.

DAN is the only dive safety organisation with an in-house 24/7


emergency hotline. Today our emergency hotline fields an average of 5,200 calls per year. Our expertise is not outsourced. Only DAN is fully staffed with doctors, nurses and medics trained in dive medicine. It has been this way since the organisation's inception, and we are committed to keeping it this way.

DAN Medical Services staff members are on call 24 hours a day, 365 days a year: Without physically touching patients, they save lives through vital medical information and assistance services. Through DAN's nonemergency Medical Information Line, our staff members answer an average of 8,000 additional phone calls and 2,300 emails each year. DAN established this Medical Information Line just one year after the creation of the emergency hotline to free up phone lines for emergency cases. While emergency cases require more

timely responses, cases that come to us through the Medical Information Line still warrant the same level of care. The medical advice we give through this service has prevented countless injuries, accidents and even fatalities.

The services we provide don't end after the first conversation. We follow up continually as we manage cases; in cases that require a patient to seek medical attention, we are with them through every step of the treatment process. If we are involved from the beginning, we can help guide first-aid providers, arrange emergency evacuations and help divers find the nearest medical facility that's equipped to treat their injuries.

We currently have more than 600 physicians in our network worldwide, which means it is easier than ever for our members to find a physician who understands the unique physiological and medical demands of diving. With every referral, DAN Medical Services puts patients in direct contact with the physicians most qualified to assess their fitness to dive or treat their dive injuries.

The medical services DAN provides are unparalleled in the dive industry. Because of our response capability and the people we have taking care of these divers, DAN has built our reputation on trust. We work every day to earn and maintain that trust as we continue to refine and expand the medical services we provide, making expert care more accessible to divers anytime, anywhere. DAN members can rest assured that DAN will be there when they need us. 



The Divers Alert Network (DAN) is a not-for-profit, member-based organisation dedicated to the advancement of diving safety through education, funding and/or manning 24-hour diving emergency hotlines, the provision of worldwide emergency evacuation and optional dive injury treatment coverage, accident management training, and undertaking data collection and research.

## Connect

Engage with DAN on Facebook for insights into various dive safety and medical issues. Search "Divers Alert Network"

Dive safely,

**Bill Ziefle,**  
**President**  
**DAN (Divers Alert Network)**



# ALERT DIVER

The magazine of the Divers Alert Network (DAN)



Water is 800 times denser than air and absorbs many colours over very short distances. To achieve good colour, photographers need to work close to their subjects, often near fragile corals



Travel Smarter

## CYLINDER SAFETY

By DAN (Divers Alert Network)

If you dive a lot you might find yourself moving tanks to and from dive sites on a regular basis. Amid the work of dive planning and emergency preparations, it's easy to overlook the safety hazards that come with some of the most mundane pieces of equipment. The tanks we use to explore the underwater world are safe, but only if they're handled with appropriate care and precaution. Minimise your risks and know the hazards before you get in the water.

### LIFT WITH YOUR KNEES

Back injuries, while rarely divers' most significant safety concerns, are the cause of many missed dives every year, and serious back injuries can cause long-term problems. Moving a single

aluminum 80 cubic foot tank is relatively straightforward, but it's heavy enough to cause a pulled muscle or slipped disc if you lift incorrectly. If you must lift a tank not attached to a carry handle or buoyancy compensator device (BCD), focus on moving the weight with your legs and keeping a straight back throughout the lift. Even better, attach the tank to a BCD, lift it from a comfortable seated position, and then carry it to your destination on your back – you'll have two hands free to stabilise yourself or carry the rest of your gear.


### COMPRESSED-AIR CONCERNS

The more you transport and use tanks, the more frequently you'll be exposed to the related hazards, and the more important it is to keep them in mind. These hazards are manageable but

require a little extra thought when planning a dive. Keep your tanks serviced and cool, and handle them appropriately. Tanks require a visual inspection and hydrostatic testing in Australia every 12 months (this will differ in other parts of the Asia-Pacific), and tank valves have their own maintenance requirements. Make sure your equipment is serviced regularly to minimise your risk of failures both large and small and to confirm appropriate function of the valve or valves. Store your tanks in a cool, dry area; if you're not going to dive with them for a few weeks, it's a good idea to store them with just a few hundred PSI (approx. 15 bar) in them – just enough to keep out moisture but not cause sustained load stress that could shorten tank life.

When you transport tanks to a dive site, pay close attention to the outside temperature and how long your tanks will be in your car. As tanks heat up and the gas inside attempts to expand, your likelihood of dealing with a burst disc failure will increase. A final important concern is gas embolism caused by inappropriate valve handling. When you pick up your tanks, always make sure the opening of the valve is facing away from your hand so that if your hand slips and the valve opens, you won't be able to accidentally inject high-pressure gas through your skin and cause a gas embolism.

### BUCKLE UP

You wear a seatbelt in your car for good reason – so should your tank. A full scuba tank stores an immense amount of energy; if it ruptures as a result of a car accident, it can cause serious injuries or even death to people in or near the vehicle. Tanks can be restrained with simple tie-downs, heavy equipment (such as weight belts or gear bags) or specially made vehicle-transport racks, but they should always be restrained in a way that prevents them from moving around the passenger compartment in an accident. 



Stephen Frink

**LEFT**  
Keep your tanks serviced and cool, and handle them appropriately.

## Skills In Action

## KEEP YOUR HEAD

Situational awareness and safety fundamentals can save the day

By Patty Seery, MHS

When conditions took an abrupt and unexpected turn during an exotic warm-water dive, our dive leader decided to abort. His awareness of the group's abilities, the worsening weather conditions and the intensifying sea state led him to make the first of several good decisions that were made that day.

As a group, we began to swim away from the reef where we had been diving at about 10 metres (30 feet) and headed toward the boat. I was at the back of the group when I realised I was often equalising my ears. When I checked my

depth gauge I saw that I had descended to 15m (50ft); in response I began finning harder and added a little air to my buoyancy compensator (BC). When my dive buddy looked back and gave me an OK sign, I responded with an OK.

I continued my efforts to ascend, keeping my eyes on the group, but I still needed to equalise frequently. I added more air to my BC and kicked harder, but I had dropped to 20m (65ft). I was caught in a down current and couldn't break free.


When my dive buddy checked on me again, I let him know there was a problem, so he came to my aid. We linked arms and together kicked our way out of the down current, eventually joining the group during their safety stop. Later he said he was concerned we

may have ascended too fast, but his dive computer confirmed what I already knew – getting to a shallower depth took work. The whole event transpired in about two-and-a-half minutes.

Several elements contributed to this positive outcome. First, I recognised there was a problem and took action. By finning harder and adding air to my BC, I resisted the pull of the down current. While my training and experience suggested that I move closer to the reef to get some relief from the strong current, the circumstances did not provide that option because we were in open water.

Second, when my efforts were not getting the desired result, I asked for help. Together, my dive buddy and I had the strength to break free from the down current. Third, my dive buddy remained close by and was paying attention, so he was able to provide the assistance I needed. Diving without a buddy or being separated from the group could have led to a disastrous outcome in this situation.

Staying calm and considering options are significant parts of any problem resolution. By the time my buddy came to my assistance, I still had time to drop my weights. I was not low on air, and I had not reached a critical depth for the nitrox mix I was breathing. Timely actions broke the chain of events and prevented escalation of the problem.

Situational awareness is the overarching skill required to dive safely and respond quickly. In this event, both my rescuer and I were paying attention and were therefore able to avert an incident. Rescue skills do not just involve helping other divers. Self-rescue capabilities – as well as knowing when you need help and being willing to ask for it – are just as important. 

**LEFT**

Keeping a cool head in a potential emergency situation is a skill that only experience and preparedness can bring

**+ SAFETY TIP**

Enter DAN as a contact in your phone and visit "Emergency" at [www.danap.org](http://www.danap.org). Whilst all divers can call DAN for advice, DAN can only arrange an emergency evacuation and pay for associated treatment costs for current members (within the limits of their coverage).



Stephen Frink



## Incident Insights

# SYMPTOMS RETURN AFTER FLYING: DID THE DIVER FLY TOO SOON?

By DAN (Divers Alert Network)

In this incident, a diver was evacuated for recompression, but flew home sooner than DAN advised, and unfortunately the symptoms returned and persisted for some time. Could this have been avoided if the diver had delayed his flight home?

### The Dives

A 28-year-old dive instructor completed a long 45m dive on mixed gas with decompression. The next day he completed a dive (on air) to 26m for 65 minutes and afterwards noted that he felt more tired than usual.

### Symptoms Present

The following day, more than 24 hours since his final dive, he felt an ache/burn in his right shoulder and the next day, when DAN was called, he had some altered sensation in his hip and elbow. He had been receiving oxygen first aid for six hours without any significant improvement when the call to DAN was made.

### DAN's Advice

The DAN Diving Emergency Service (DES) doctor was not certain the diver was experiencing DCI based on the information provided. He was asked to continue breathing oxygen for a few more hours that evening and take Ibuprofen and in the morning, he would be re-assessed. As the diver was in Timor, where there are no recompression chamber facilities, he would need to be evacuated for treatment if symptoms did not improve. When DAN spoke to the diver the following day, he advised that he remained on oxygen for an additional six hours plus he received another hour that morning. He thinks the Ibuprofen relieved the "pressure" feeling in his lower back but advised the pain in his right shoulder and the hypersensitivity in his shoulder, arm and chest area were still present, along with the discomfort in his right hip. He was also getting waves of pain in his right elbow and had a stiff right little finger. When he

attempted some light activities with his clients, he felt short of breath and his breathing was difficult.

### Evacuation Required

The DAN doctor recommended the diver be seen by a Hyperbaric Medical Specialist and told him that recompression treatment was a possibility. DAN determined that the closest facility capable and available to treat this diver at the time of his accident was in Singapore, so DAN began to coordinate his evacuation.

While waiting to be evacuated to Singapore, the diver breathed oxygen for another three hours and reported feeling much better. In fact, he felt so much better that he considered calling DAN to say he was better, but that evening his symptoms returned.

### Treatment

Once in Singapore, the diver was evaluated and ended up receiving two recompression treatments. His symptoms mostly resolved but he did express to the doctor that he still had shoulder discomfort post treatment. The doctor felt it wasn't DCS and he was discharged from hospital.

### Conflicting "Do Not Fly" Advice

The diving doctor advised the diver not to fly for three days, but DAN advised that this was insufficient and that he should hold off flying back to Timor for at least a week given the remoteness of his destination. The diver ended up flying home four days after treatment and upon his return the diver advised DAN that he was experiencing residual symptoms in his hip, shoulder and elbow.

The DAN doctors advised the diver to continue taking Ibuprofen for several days to help with the residual inflammation, remain hydrated and refrain from exercising or going to altitude. The diver's condition did not deteriorate further, however improvement was very slow, to his frustration.



#### LEFT

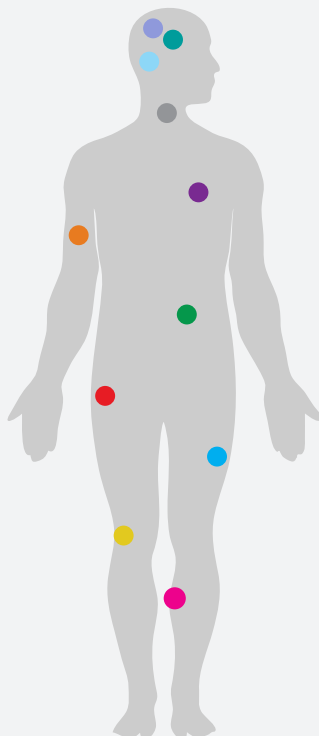
Prompt oxygen first aid is important when a diver exhibits DCI-related symptoms. (Image is for illustrative purposes only and is not the diver in this incident.)

Stephen Frink

## SYMPTOMS OF DCS

### + Mild DCS

- Musculoskeletal or joint pain
- Skin rashes, mottling or swelling
- Tissue tenderness associated with skin manifestations
- Mild constitutional symptoms




### + Serious DCS

- Numbness, tingling or muscular weakness
- Difficulty walking or loss of coordination
- Confusion or impairment of cognitive functions
- Vertigo or spinning sensation
- Chest pain or difficulty breathing
- Bladder or bowel dysfunction
- Tinnitus or hearing loss



Stephen Frink

### DAN Comment

While the diver's symptoms in this case were mild, they were persistent. The diver was evacuated to Singapore and received two treatments, and unfortunately DAN's advice to avoid flying for at least a week was not followed. In many cases divers are cleared to fly after three days from their final treatment if they remain asymptomatic. This is often fine and many divers following this advice have no further issues – although a small number will. In this case, the advice by DAN was greater than the doctor's recommendation as DAN factored in the remoteness of the diver's location. Once the diver flew home to Timor, should symptoms reappear he would be back in the same situation: In a location that was not equipped with higher level medical care, including a chamber. Flying aggravated the diver's condition, as he likely had residual bubbles in his system, and as such it will take a longer time for his persistent symptoms to fully resolve. This case serves as an important reminder to adhere to the advice of DAN, as our case managers factor in all aspects of a diver's situation when providing advice. 

### + DAN TIP

For more diving health and safety resources, including DAN Doc, visit "Diving Safety" at [DANAP.org](http://DANAP.org)





Stephen Frink

Scuba 101

## DIVE SKILLS FOR UNDERWATER PHOTOGRAPHERS

Whether you're a new photographer just learning how to dive, or an experienced saltwater explorer just learning how to shoot, we've got some insights for you

By Stephen Frink

Underwater photography, for me, was an evolution of my passion for topside photography. I suspect most aficionados, however, first became scuba divers and then embraced underwater stills and video to record and share the wonders of the underwater world. Along the way, these divers would have refined their diving skills, either consciously or subconsciously, to become more adept at moving through the water while handling unwieldy photography gear. In-water skills are important for productive interactions with often elusive marine life. Here are a few tips that may accelerate the learning curve.

### DIVE GEAR

While most modern dive gear is very good and will serve the underwater photographer well, a few features might make the task easier.

#### Mask

The mask is probably the most significant piece of personal gear because it's important to both see your subject clearly and have an unobstructed view through your camera housing's viewfinder. For the same reason Ansel Adams draped a black cloth over his

head while focusing on the ground glass of his view camera while in the field, an underwater photographer will likely prefer a low-volume mask with a black skirt. The low volume gets the eye closer to the viewfinder so the frame can be viewed at a single glance, preferably edge to edge, and the black skirt blocks extraneous light. A clear silicone mask lets in so much light that the contrast in the viewfinder glass is diminished, and detail is more difficult to discern. (Masks with side windows to enhance peripheral vision have the same problem.) A mask that doesn't leak is crucial as well.

#### Regulator

Ease of breathing is important, of course, but subtle perks can make a regulator better suited for underwater photography. A regulator that exhausts completely to the side prevents bubbles from percolating in front of the housing and interfering with vision. I prefer a regulator with a knob to adjust breathing resistance according to the task. Exhaust bubbles can ruin the shot if I am shooting an overhead subject, so the ability to inhale softly without the regulator trickling gas is important. For that task I'd increase breathing resistance.

When I need more airflow while exerting myself – in hot pursuit of a turtle, for example, or in a similar situation – the ability to decrease resistance makes breathing more comfortable.

#### Buoyancy Compensator

A buoyancy compensator (BC) with the wings in the back minimises the volume along the front of the torso, which is useful when getting through tight places on the reef or on wrecks. Because underwater photography often requires travel, I try to find a lighter BC that still offers reasonable lift and durability. I prefer fewer hoses, so I like an inflator/regulator that eliminates the traditional spare second stage from my kit and allows me to breathe from it in an emergency while sharing my primary with another diver. The integrated inflator concept is *de rigueur* for a photographer whose hands are otherwise occupied with camera gear.

#### Wetsuit

I'm very picky about my wetsuits. While waiting for marine-life behaviour to present, underwater photographers tend not to move as much as the average recreational diver. Consequently, it is easier to get cold, so good thermal protection is a must. An old and compressed suit has diminished efficiency and should be replaced. Modern wetsuits are wonders of technology, but they can't be expected to last forever. For tropical diving, my 3mm suits get a lot of use, and I tend to replace them annually.

### Fins

I'll use different fins for different tasks. For freediving I like long-bladed performance fins (mine have carbon-fibre blades) to allow me to get closer to deep-diving marine life such as whales or dolphins. For reef diving I prefer a fin that helps me navigate around fragile corals with precision and provides sufficient thrust when in currents. Fins are an exceedingly personal decision, so whether split fins or paddle fins, full foot or open heel, there are many variables in determining the right one for each use.

### DIVE SKILLS

Any skilled scuba diver can take on the challenges of underwater photography. Once the life-support aspect of scuba becomes more autonomic, it is not that difficult to take on another task, but success in underwater photography is certainly facilitated by in-water control.

### Buoyancy

Proper buoyancy is important not only for personal comfort and safety but also to avoid contact with fragile corals. Photography requires proximity, and proximity bears risk to delicate reef

structures. The ability to hover near the reef without contact is crucial. Using small inhalations to slightly rise and exhalations to sink is important. I typically choose to be somewhat negatively buoyant so I can remain motionless on the seafloor when photographing the benthic zone, but the position of the weights is also significant.

Buoyancy but also trim are both critical skills – as important as f-stops. A properly weighted diver can lift off the bottom without stirring a lot of particulate matter, which is a good thing for any other nearby photographers and any corals that would prefer to not be cloaked with a layer of sand.

### Breath Control

Breath control is important when approaching skittish marine life. Deciding when to exhale is a significant skill, as confirmed by watching a tiny pygmy seahorse slide around to the other side of a gorgonian at the relatively explosive sound of a single noisy exhalation. Slowing down before entering the “shoot zone” lets me control my breathing, position my


strobes and set my shutter speed and aperture for what is likely to be the right exposure if I am fortunate enough to make the shot count. I move in very slowly, careful to not push a wave of water in front of me. With possibly only one shot, I don't want to spook the subject with any extraneous motion from adjusting strobes or camera controls. Seeing the composition in your mind's eye and carefully positioning yourself to achieve it is an acquired skill. Once you become thoroughly familiar with the field of view of your lenses at various distances, you can better predict how close you'll have to be for the photo you envision.

### Zigzag Profiles

I've been guilty of letting my underwater subjects determine where I am in the water column at any given time. It has taken discipline and a few trips to the recompression chamber for me to realise I am healthier when I photograph the deepest subjects first, and then gradually work my way up to shallower depths. Many of the places we dive have reef slopes that go almost to the surface, and those are my favourite for long trips with multiple dives per day. Even when diving very conservatively, I can get in long dives and be very productive photographically. I make a point of spending considerable time in the shallows, offgassing while working with whatever subjects might be in the environment.

### Buddy Diving

Diving with a buddy is admittedly a challenge for underwater photographers, as it tends to be boring for a nonphotographer to cruise the reef at the excruciatingly slow pace we sometimes move, and two photographers may have such divergent views of the reef they can drift irretrievably apart during a dive. “Same dive, same ocean,” however, is not a sustainable credo. At some point you or your buddy will need assistance, and your camera won't be much help.

Regardless of whether you come to underwater photography as a diver interested in a new creative pastime or a photographer eager to capture the beauty of the marine ecosystem, you'll find that complementary diving skills and shooting skills are integral to success. 

### DIVE GEAR



### OPPOSITE PAGE

Good buoyancy skills and knowledge of marine animals' behaviour help underwater photographers achieve the proximity necessary for optimal images



From the Medical Line

## HOW WOULD I KNOW IF THIS IS SKIN BENDS OR SUIT SQUEEZE?

DAN medical information specialists and researchers answer your dive medicine questions

**Q:** About an hour after I completed a single drysuit dive on air, I noticed odd bruise-like lines on both shoulders and behind both knees, but no other symptoms. The uneventful dive was to 20 metres for 24 minutes in a lake with a water temperature of 10°C. The drysuit was tight around the shoulders, armpits and knees. How would I know if this is skin bends or suit squeeze?

**A:** When differentiating between drysuit squeeze and the many causes of diving-related skin conditions, we can quickly eliminate most types of marine life injuries simply because the skin is completely covered by the suit. Cutaneous decompression sickness (DCS), or skin bends, is a mild form of DCS. Drysuit squeeze is a type of barotrauma or pressure injury to the skin that is caused by a failure to add air to your drysuit during descent.

While descending, the volume of the air spaces is reduced and trapped in the folds of the suit. The skin tends to be sucked into these folds. Divers will often recall the suit being tight or ill-fitting. The diver may find linear marks or bruises, usually beneath the drysuit's valves and seams. This condition is usually painless and clears within a few days. Cutaneous DCS typically presents

as a blotchy, bruise-like rash generally appearing in areas of the body with the most adipose tissue (body fat), such as the abdomen, thighs, buttocks and breasts. The condition usually responds well to surface-level oxygen therapy.

DAN has observed, however, that at least 20 percent of divers with suspected skin bends may also experience visual disturbances, weakness, confusion or other neurological symptoms that require recompression treatments. It is important that divers do not overlook these symptoms. DAN always recommends a thorough medical evaluation and appropriate treatment of divers with suspected skin bends.

[Travis Ward, EMT-P]

**Q:** My 15-year-old son is interested in scuba diving. While vacationing in a mountain range two years ago, he developed altitude sickness. He was treated quickly, recovered well and has had no problems since. An experienced diver told me that my son could be more prone to decompression sickness because he has had altitude sickness. Is he really at greater risk?

**A:** The short answer is no. The physics of being at altitude and being at depth are

opposite each other. Exposures to less atmospheric pressure, such as being in the mountains, affect human physiology differently than when exposed to increased atmospheric pressure, such as with diving. There is no connection between the two illnesses. If your son is physically fit and healthy, there is no reason for him to be more concerned with decompression sickness than any other diver.

[Marty McCafferty, EMT-P, DMT]



**Q:** Two days ago I was diagnosed with conjunctivitis (pink eye). My doctor prescribed antibiotic eyedrops that I have been using as directed. I am supposed to go diving this weekend. Can I dive while using these drops?

**A:** Antibiotics, whether drops or pills, are not known to be an issue with diving. It is the illness or condition being treated that is always the greater concern. It would be best to wait until the conjunctivitis is completely resolved. Diving is possible if you are physically comfortable enough and have clear vision. Keep in mind that water at the dive site, especially seawater, can be irritating. After you finish diving, you need to clean and disinfect your mask so there is no risk of reinfection. To prevent transmission of conjunctivitis to other divers, do not let anyone else handle your mask, and do not wash it in a communal wash basin.

[Marty McCafferty, EMT-P, DMT] 



Stephen Frink

### TOP

Does a history of altitude sickness mean greater risk of DCS?

### MIDDLE

Can I dive while using drops for conjunctivitis (pink eye)?

### LEFT

How would I know if this is skin bends or suit squeeze?



# THE LEADER IN DIVE SAFETY



## EXPERIENCE MATTERS

# JOIN DAN

- + 39 Years of Divers Helping Divers
- + 24/7 Emergency Medical Services
- + 150,000 Emergency Calls Managed
- + \$100 Million+ Invested in Diver Safety
- + 2,000,000 Members Served Worldwide



DANAP.ORG





Stephen Frink

## Gear

## HOW OLD IS TOO OLD?

Replacing dive computers and BCDs

By Francois Burman, Pr. Eng, MSc., and  
Peter Buzzacott, Ph.D., MP

Everyone loves the smell of a new car, but eventually the car develops problems, and you realise current models have new safety features. Dive gear such as dive computers and buoyancy compensator devices (BCDs) get old, too. When should we consider replacing them?

### DIVE COMPUTERS

Divers don't buy new dive computers every year, so it is not uncommon to see older computers while on dive trips. But just because those models were

the best options 15 years ago doesn't mean they're ideal to use now. New technology has improved computer processing power, battery life, sensor sensitivity and display screens. Older dive computers are often not able to fully implement some decompression algorithms; modern computers are more powerful and in many cases are better able to compute a more faithful rendition of the underlying algorithm. Modern sensors can detect even slight changes in pressure and register changes in water temperature in a tenth of the time it takes older dive computers. This improvement provides more accurate estimates of water temperature, depth and ascent rate, although the dive computer's physical design can affect these measurements – and measuring

depth to the nearest inch of seawater may not have any practical impact on safety.

Many manufacturers will factory test dive computers for accuracy, so DAN recommends that divers contact the manufacturer of any dive computer that is 10 years old or older or that has made 1,000 or more dives and ask if it should be tested for accuracy. Years of diving can take their toll on computers in terms of wear and tear, exposure to sun and salt water, being dropped and other neglect.


As our dive computers steadily age, so do we. Many newer dive computers have sharper screens that are brighter, have larger numbers and are more intuitive to use than older models – worthwhile reasons to add a new dive computer to our wish list.



Stephen Frink

*Older dive computers often are not able to fully implement some decompression algorithms; modern computers are more powerful and in many cases are better able to compute a more faithful rendition of the underlying algorithm*

months, inspect the condition of the inflator hose, check the materials for degradation, fully inflate and inspect the seams for leaks and dump valves for function, and look for any significant scuffing or tearing. The inflator and dump valves need to be periodically serviced, especially as the BCD ages. Annual inspections are a good standard of practice, especially for BCDs in use for five years or more.

While BCDs don't have an explicit shelf life, it is important to carefully and regularly monitor their condition. If the hose is sound with no signs of cracking, there are no leaks, buoyancy control is good and you service the inflator and dump valves annually after the first five years of use, then you should still have a reliable BCD. A good service technician will alert you of any embrittlement of the plastic parts, cracks in the hoses or excessive wear and tear. Keep an eye out for leaks and cracks, especially if your BCD is more than 10 years old. If fashion or function doesn't prompt you to retire your old BCD, just be sure you stay alert for any warning signs that its functionality, and thus your safety, may be compromised. 



Stephen Frink

### BUOYANCY COMPENSATOR DEVICES

A comfortable and good-fitting BCD can give us years of reliable service. Do a few scuff marks or a broken clasp or two signal the end of its usefulness? Does a BCD have an expiration date?

We rely on our BCD to ensure we have both a comfortable and a safe dive; a BCD failure could have very dire

consequences when we most need to control our buoyancy, so we need to monitor the BCD's condition as well as its age. In general, we might provide a cursory inspection of our BCD before and perhaps after use, but rarely do we consider getting them serviced.

Before using your BCD, especially when using it for the first time in many

### OPPOSITE PAGE

Dive computers and BCDs are expensive, which can make it very tempting to keep using the ones we own year after year

### TOP LEFT

Remember that this is life-support gear and it won't last forever

### BOTTOM LEFT

Use your own good judgement and that of your service technician when deciding whether to replace your BCD or dive computer



# TOOLS OF THE TRADE

## 1 Scubapro

**Z1**  
The Z1 is Scubapro's solar powered dive computer – sleek, easy to use and lightweight. Z1 is a robust timepiece, perfect for traveling divers. When exposed to any type of light, the Z1's internal battery is charging. No more charging cords or electrical outlets; no more battery disposal

[www.scubapro.com](http://www.scubapro.com)



1▶

## 2 Scubapro

### DEFINITION

2019 Definition steamers offer more stretch, more comfort and more features than ever before. Special tailoring and strategically placed panels in the chest area, sides, arms and legs, and behind the knees, create a suit that fits like a glove and provides extra stretch where it's needed most

[www.scubapro.com](http://www.scubapro.com)



2▶

## 3 Aqua Lung

### ROGUE

Created for the accomplished diver who knows exactly what they want, the Rogue BC is the ultimate combination of personalisation and minimalist design. With a 15l/35lb lift capacity, interchangeable size, accessory configurations and colour options, the Rogue BC comes standard with everything you need without all the fluff you don't

[www.aqualung.com](http://www.aqualung.com)



3▶

## Aqua Lung

### 4 EXPLORER II COLLECTION: ROLLER

The newly designed black Explorer II Roller is the perfect bag for storage and travel. With its wide main compartment interior and long side pockets, divers can easily stow a full dive kit along with a pair of fins and all their other travel gear

[www.aqualung.com](http://www.aqualung.com)



4▶

## 5 Canon EOS R

Built for speed, top image quality and ease of use, Canon's first full-frame mirrorless camera boasts a 30.3MP 35mm full-frame CMOS sensor, the latest Digic 8 image processor, and is compatible with a new line of revolutionary RF lenses. The EOS R's high-speed autofocus in extreme low light, 5-stop image stabilisation and ergonomic design allow for flexible handling during dives. With a mount adapter, you can continue using the EOS R with your favourite EF and EF-S lenses without compromise on quality

[www.canon.com](http://www.canon.com)



## 6 CineBags CB70 SQUARE GROUPE

This bag is designed to be a compact and collapsible home base for your camera rig to and from the dive boat. With the Grouper, there is no need to share a rinse bucket with your fellow divers. Knowing that your rig is protected, you can focus on the adventure. The bag was designed by underwater photographers Gregory Sweeney and Markus Davids

[www.cinebags.com](http://www.cinebags.com)



Contact your local dealer for pricing



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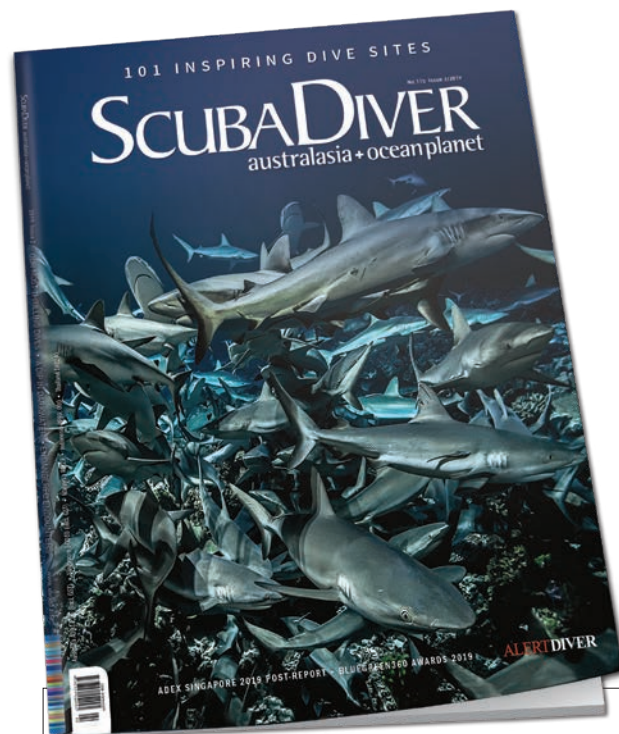
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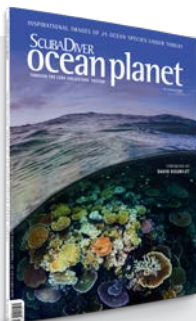


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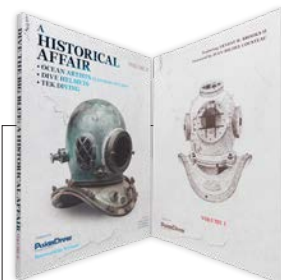
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## CLUB 25 PROFILE: SEACAM

Club 25 is our way of honouring the continued excellence of the diving community over the last quarter of a century. Here, we profile SEACAM, one of the leading manufacturers of underwater camera housings in the world

By UW360



■ 1989 first housings



■ 1997 Silver

A passionate photographer, diver and skillful craftsman for many years, Harald Hordosch started taking interest in underwater photography while diving in the freshwater lakes of Europe. Not satisfied with the two film camera housing brands available in the market back then, he decided to invent his own and founded SEACAM in 1989 as a small business in Austria.

The first serial production was made of simple aluminum cast housings, together with accessories for Canon, Minolta and Nikon AF-single lens reflex cameras. By 1991, SEACAM had developed the MINICAM – an ergonomic and user-friendly new housing concept featuring mechanical transmission elements with a high-quality interchangeable port system, along with optically cut flat and dome glass. In the years that followed, SEACAM also released the MINIFLASH – the world's first system flash housing with an integrated pilot light. The Galilei viewfinder

was also adapted and introduced for the first time in an underwater housing, which dramatically improved functionality. By 1993, SEACAM's product range had 13 different special housings for cameras, system flash housings, and underwater flash devices.

In 1997, SEACAM introduced its revolutionary Silver underwater housing surface technology which allows for a completely varnishing-free housing surface. Constructed out of a saltwater-proof, high-strength light-metal alloy, the alloy parts undergo thermal treatment to achieve an even higher firmness and form stability.

Over the years, SEACAM has also advanced and expanded its port range with innovations such as the brilliant Superdome port, the conically shaped Macro Port and other adaptations to the ever-changing needs and challenges of underwater photographers. In 2011, SEACAM launched the Prelude line for amateur and entry-level underwater photographers and further expanded the range with the introduction of the SEACAM Compact series for mirrorless cameras in 2016.

Today, after 30 years in the industry, Harald Hordosch is still leading the company with a tireless commitment and demand for precise craftsmanship. His small team of dedicated professionals embody local production and prioritise the sourcing of high-quality materials to ensure that underwater photographers can enjoy their equipment for years and years to come – and take pictures that awe, move and inspire people.

SEACAM, welcome to Club 25! [SDAA](#)

### TOP

The first camera housing from SEACAM rolled out in 1989

### ABOVE

In 1997, SEACAM produced its first iconic Silver underwater housing which is completely varnish-free

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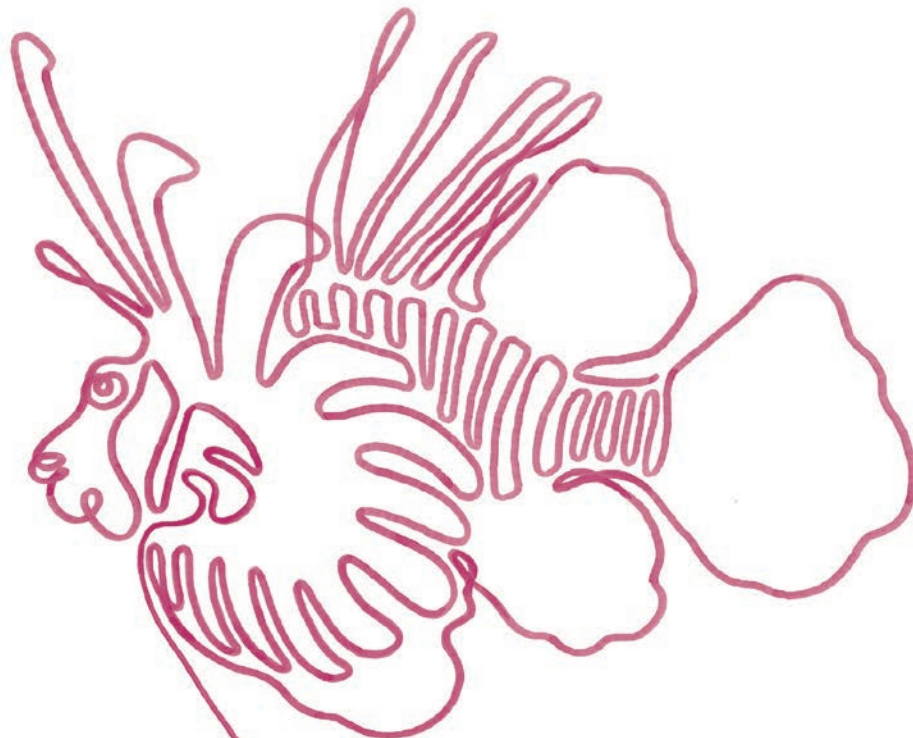
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