EDA

جمعية الإمارات للغوص
Emirates Diving Association

DIVERS FOR THE ENVIRONMENT

MARCH 2009, VOLUME 5, ISSUE 1

CARBS AND FITNESS
YOUR CHOICE OF FOODS CAN AFFECT YOUR BODY'S RESPONSE TO DIVING STRESSES

EXPEDITION NOTES: OMAN
NEW REEF CHECK BIOSPHERE EXPEDITION – MUSANDAM

STATUS OF CORAL REEFS OF THE WORLD: 2008

DIGITAL ONLINE
UNDERWATER PHOTOGRAPHY COMPETITION








BORNEO DIVERS SABAH

BORNEO DIVERS

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DMEX 2009 DIVE SPECIALS

USD 985

(TWIN SHARE BASIS)

(Single Supplement @ USD 1,475)

(6 DAYS / 5 NIGHTS)

10 PAID 1 FOC

Included:-

- Airport pick up and transfer on arrival and departure days ex - Tawau
- 3 meals, light snacks, twin share chalet accommodation
- Free coffee, tea and juices except carbonated drinks, liquor, wine or beer
- 3 boat dives except on arrival and departure days
- Tank, weight and weight belt
- Sipadan permit fee (subject to approval)

Excluded:-

- Air ticket to arrive Tawau
- Dive equipment (rental available)

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Email : information@borneodivers.info

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Emirates Diving Association

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DIVERS FOR THE ENVIRONMENT

Please note that EDA's magazine, "Divers for the Environment" includes articles written by individuals whose opinions, whilst valid, may or may not represent that of EDA. It is hoped that the magazine can become a platform for individuals to voice their opinion on marine and diving related issues. You are welcome to submit an article for the next issue of "Divers for the Environment" released in June 2009. Send all articles/comments to: magazine@emiratesdiving.com.

CORAL NEWS

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EDA COVER
PHOTO BY MARCELO MARIOZI

Please recycle this magazine after you have read it.

THE SHOW **MUST GO ON!!!**

IBRAHIM N. AL-ZU'BI
EDA Environmental Advisor

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I have been asked in an interview prior to DMEX about the future of the diving industry in the UAE and will the credit crunch affect the sport. I replied that diving is a passion and I do believe that the sport of diving and the dive industry will continue to boom. DMEX 2009 saved me and proved that I was right and I did not speak too soon! DMEX 2009 was so different for EDA and most of the exhibitors this year. Many divers joined EDA during the show and showed a lot of interest in what we are doing in the association, in terms of activities, mission statements and upcoming events. Most of the Boat Show and DMEX visitors wore the blue scarf and most importantly, the successful demonstrations in the indoor pool which attracted a large crowd to the DMEX section of the Boat Show. It was wonderful to catch up with our members, our UAE dive industry partners and dive tour operators from Malaysia , Oman, Jordan and Djibouti.

I noticed lately that fashion is a big part of our sport and divers do care about their appearance, even when they are underwater; wetsuits with different colors and cuts , t shirts with diving graphics and the EDA famous blue scarf were a main DMEX attraction this year which made me think that the diving industry may take a new approach with providing more than just diving equipment and courses. I'm sure we may see interesting innovations in DMEX 2010.

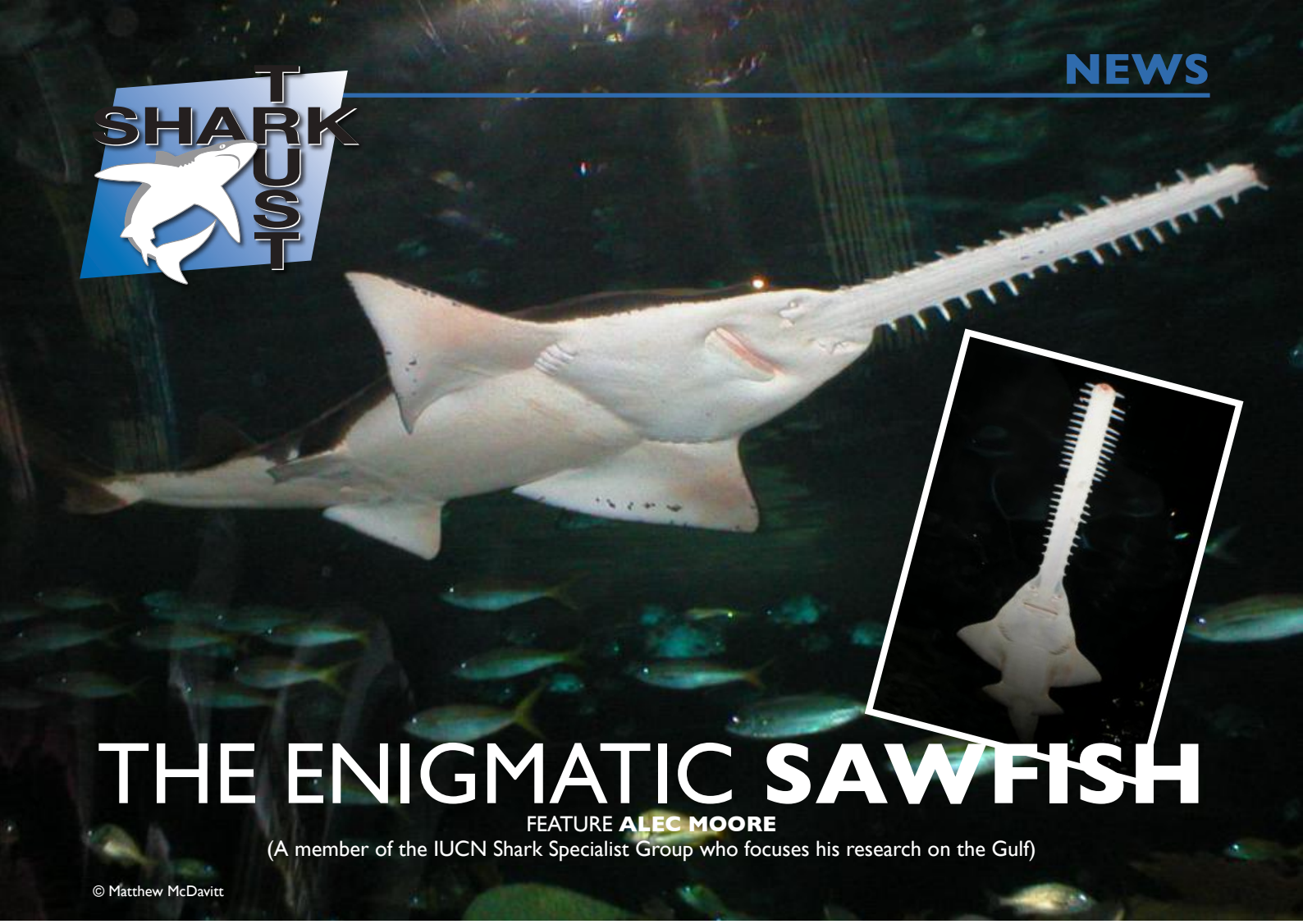
I mentioned in the last issue that we had a busy year in 2008, well I think 2009 will be busier for EDA with an interesting calendar for our members. This year we are launching a digital online photo contest which will be managed by MARCELO MARIOZI. I do encourage all EDA members to participate in this contest and I am sure we will end up with an amazing collection of underwater photos. Check out details of the competition in this issue and also on our website.

I believe that most of you are aware of the red tide problem that we are facing on the East coast, EDA received an official letter from the UAE Ministry of Environment and Water, asking for assistance in studying the impact of the Red Tide on the marine environment. EDA's team is finalizing the data and as soon as the report is ready we will have it summarized and added onto our website. It seems that the credit crunch made some of the companies aware that they need more environmental awareness campaigns for their staff, and to try to do things in the right way so we have been receiving many requests from companies inviting EDA staff to give presentations about the marine environment, diving in the UAE and EDA's environmental activities.

I am sure you will enjoy reading this issue, it is rich with interesting articles and I want to thank all contributors to EDA's magazine "Divers for The Environment" as they are what keeps it going, THANK YOU!

Eco Regards,

Ibrahim Al-Zubi



THE ENIGMATIC **SAWFISH**

FEATURE **ALEC MOORE**

(A member of the IUCN Shark Specialist Group who focuses his research on the Gulf)

© Matthew McDavitt

Sawfish are one of the most instantly recognisable of all fish, with their shark-like body and many-toothed flat elongated snout or "saw". Sawfish can grow to a very large size, over 5 metres and feed by slashing their saw through schools of small fish and eating the dead and wounded. The old pearl divers used to dread these great animals, and legend has it that they were capable of cutting men in two.

Sawfish and their close relatives the sharks, stingrays and guitarfish, have been swimming in the oceans for many millions of years. As predators on top of the marine food chain, they have evolved to reproduce only very slowly compared to other fish, and in general have a long pregnancy with only a few, slow-growing young. While this strategy worked well in the time before humans, pressure from fishing means that now, when populations of this group are reduced by fishing, it is very difficult for them to regenerate their numbers. Sawfish are particularly vulnerable to capture, as the saw easily becomes entangled in fishing nets.

In the past few decades there has been huge declines in populations of sharks, rays and sawfish worldwide due to overfishing. All species of sawfish, once common in many seas, are now classified as "critically endangered", and in some locations they have become locally extinct.

Sawfish sightings are now extremely rare in the Arabian Gulf. To help try and conserve them, scientists need to know basic information from local people, such as which areas they were found in, what time of year they occurred, and if any areas were known as "nursery" areas, with many young sawfish. This knowledge may help to identify the most important sawfish habitats and protect their breeding areas for future generations.

Have you ever seen a sawfish from the Arabian Gulf, or one of its dried saws? Any information is of great use, such as stories of captures, old photos, diving encounters, and their presence in fish markets. The most important information is:

- Location
- Time of year (month or season)
- Photograph (if possible)

If you have any information like this please send it to me in an email to **amoore@rsk.co.uk**. All records will be valuable to scientists researching sawfish conservation.

© Shark Trust – Sawfish Rostrums, Dubai

THE **ULTIMATE UNDERWATER VIEWING EXPERIENCE** WILL SOON BE LAUNCHED **IN THE FLORIDA KEYS**

Full boat rendering

Unveiling of the revolutionary "Semisub One" semi-submersible jet boat vessel targeted for Summer 2009 in Key Largo

WESTLAKE VILLAGE, CA – January 02, 2009 – It's 85-feet long, 24-feet wide, can hold up to 150 passengers and can reach speeds of up to 50 miles per hour. It's also the only vessel of its kind in the entire world. Part luxury yacht, part submarine, the "Semisub One" semi-submersible catamaran will soon be redefining the underwater viewing experience for people in the Florida Keys and around the world.

Curtiss Jackson, retired U.S. Navy veteran, is the inventor and president of Semisub, Inc. The boat's prototype, "Maui-E-Ticket," which was built and operated in Muai 12 years ago was the first semi-submersible passenger vessel of its kind ever approved by the U.S. Coast Guard. For the new vessel, Jackson is building on the success of the Maui-E-Ticket to create a craft that offers the ultimate in comfort, stability, safety and stunning underwater viewing.

"I've been working on this for many years," said Jackson. "I designed the first boat on my kitchen table, made it come to life and ran it for nine years in Maui with complete success. As successful as the Maui-E-Ticket was, Semisub is going to surpass it."

The boat's Ultra Jet water propulsion system, designed and produced by Ultra Dynamics, is propeller-less and environmentally friendly, so the vessel is in line with the mission to protect the natural and cultural resources contained within and around a coral reefs ecosystem.

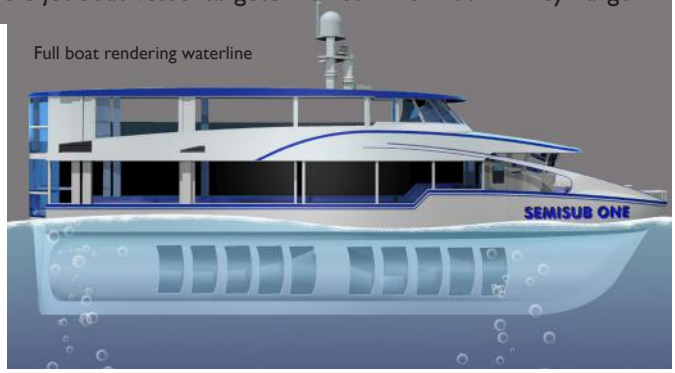
Curtiss Jackson holds the patent on the revolutionary design of the windows, which are manufactured by Texstars Inc. The window design features a unique curve, allowing passengers to get a crystal clear, wide-angle view of the reef and marine life. When compared to glass-bottom boats and similar vessels, there's simply no comparison.

"This is like an IMAX theatre in the ocean," said Jackson. "The windows are three feet by six feet and an inch thick. You're literally looking through a wall of glass, and you're looking at the world's biggest fish tank."

The twin hull design allows for excellent stability and virtually eliminates seasickness. The Semisub reef tour will consist of a 20-minute jet boat ride to the designated reef location. On the way to the reef, passengers can enjoy all the amenities that are offered on the main and top deck, including two full bars, a spacious lounge and dining area.

When the boat arrives at the location, water pumps will fill the ballast tanks with seawater and the viewing windows will drop 6 feet below the water's surface. Passengers then enter the spacious viewing compartments and begin their tour of the reef. An audio presentation offered in 20 different languages for passengers and tourists from around the world would narrate the tour. At the completion of the submerged viewing tour the vessel pumps out the water-filled ballast tanks and returns to the harbor.

Full boat rendering waterline



Semisub will also be offering an evening dinner cruise package. Passengers will be treated to an elegant dinner under the stars on the main deck, followed by a night time underwater viewing experience. With 10,000 watts of underwater lighting, the view of the underwater reef and marine life is nothing short of spectacular. "There's nothing that compares to this," said Jackson. "It's like scuba diving without getting your feet wet. And you're sitting there in comfort with your whole family."

Curtiss Jackson is excited about the prospects of using Semisub for educational as well as recreational purposes. He plans on donating reef-viewing trips to schools in the local community. "This is one of the reasons I'm doing it," added Jackson. "It's a unique and safe way to see what's in the ocean. For students and anyone for that matter, it's a once-in-a-lifetime experience."

With headquarters in Westlake Village, California, Semisub is the creation of Curtiss Jackson, retired U.S. Navy veteran. The first Semisub is being built in Long Beach, California at Gambol Industries (www.gambolindustries.com), Pier D. The vessel will begin operating in 2009. The company is entertaining offers from investors and suppliers throughout the world.

To get the whole picture, visit **www.semisub.com** or call Semisub, Inc. at 818-706-7766.

DIA WEEK
WITH FREESTYLE DIVERS

Sunday the 14th of December saw the start of Dubai International Academy's week with Freestyle Divers. 40 odd keen Open Water Students met us at the school to start the practical work of the course, which was to be completed by the coming Thursday.

There were a few little pests (not to mention any names, Timothe) in the group but for the most part they were a good bunch. They managed to cope well with the wind chill and cold water conditions and kept laughing.

Freestyle Divers would like to thank Ron Hair and Terry Swain for organizing the trip and handling logistics.

CONGRATULATIONS GO TO:

Anuradha Mallik
Sujyot Mony
Cedric Ohlms
Dominik Tausz
Aron Szebegyinszki
Minal Sapra
Franco Le Grange
Vishal Bala
Emma Heart
Jussi Naapuri
Jacob Wester
Hojung Seo
Tamer Hijaz
Daniel Berlee
Alexander Brihed
Benjamin Miller
Robin Wirz
Lawrence Jokun-Fearon
Rasmus Mathiesen
Timothe Feys
Vikram Singh
Christian Skioldbro
Keagan Harvey
Askun Naderian
Calli Mclane
Jennyfer Missamou
Mariah Cadzow
Eivind Kjolberg
Aakash Doshi
Kai Harvey
Jack Langnes
Philip Skjoldbro
Danielle Wirz
Anna Leksell
Andreas Lohmann
Edvard Hozman
Oskar Stenholm
Shuaib Sulaimani
Kirsten Engelmann

We also hope to soon see Joshua Brodalka, Omar Mekkaoui, Lina Leksell and Anna Leksell to either start the practical sessions or complete the open water dives.

WHATS NEW AT FREESTYLE

- Diving the Dara in Umm Al Quwain
- New products arrived from Aropec
- Fishing trips
- Speed boat trips to the Musandam

For all bookings and information please visit:
www.freestyledivers.com
Email: **freestyle@eim.ae**
Call: **09 244 5756**

PAVILION DIVE CENTRE
PADI CAREER DEVELOPMENT CENTRE

Phil O'Shea

Ernst Van Der Poll


Paul Cunningham

The Pavilion Dive Centre is celebrating 10 years in the diving Industry and what better time to be selected by PADI as the country's first PADI Career Development Centre.

A Career Development Centre is the highest rating for PADI Dive Centre's. It denotes a standing in the local market, time served as a PADI resort member and more importantly the commitment to diver training and the training of PADI professionals (Instructors and continuing Instructor education).

In being a PADI CDC we can now offer fast track diving resort management programs. This allows non diving professionals to take a consolidated course to become a PADI Professional and gain sufficient resort management to get started in the diving industry anywhere in the world.

The Pavilion Dive Centre, Dubai's only PADI 5 Star Career Development Centre is located in the luxurious grounds of Jumeirah Beach Hotel **http://www.jumeirahbeachhotel.com/**, an award winning destination. In addition, The Emirates Academy of Hospitality and Management **http://www.emiratesacademy.edu** is conveniently located adjacent to the resort.

Choosing the right Course Director and PADI 5 Star Career Development Center for your instructor training is the most important decision you will make prior to entering the dive industry as a professional educator. One of the most important steps towards a successful career in diving is your Instructor Training. Becoming a diving instructor is much more than a change of career. You are embarking on an exciting adventure, one that will change your life forever. It is important that you receive the right preparation to make this lifestyle change a success. The Pavilion Dive Centre and our PADI Course Directors are committed to providing a very high standard of quality, service and professionalism guaranteeing success in your new venture. Your Career Development will be conducted in one of the most luxurious resorts in the world making for a professional setting but above all, a very comfortable and conducive atmosphere with a touch of Arabian adventure. To compliment your Instructor Development, your education will be rounded off with Diving Resort Management which is conducted at the award winning Emirates Academy of Hospitality and Management **http://www.emiratesacademy.edu**. To ensure that you can concentrate fully on your IDC, The Pavilion Dive Centre and our PADI Course Directors provide dedicated Instructor Training in English, German, French, Russian, and Arabic. It's time to start your diving career, so come on in and let us educate you. Our next Instructor Development course begins the 3rd April and will run conveniently over Friday and Saturdays for 5 weeks ending with the PADI Examination on the 8th and 9th of May.

PADI Instructor Development Course IDC
10 Days - 6000 AED

We believe we offer one of the finest instructor training programs available today. Our IDC provides a professional learning experience in which you will learn how to teach others to dive using the most successful diver training program in existence. Not only will you learn how to teach in classroom, pool and open water environments, you will also learn effective use of all PADI's teaching aids and support materials.

Our Instructor Training program is intense and demanding but fun and excitement is also guaranteed along the way. You will make new friends and share rewarding life experiences while earning some of the most coveted credentials in the dive industry. In our candidate centered IDC programs you are guaranteed individual attention and progress feedback every step of the way.

Your IDC begins with independent learning and encompasses both the PADI Assistant Instructor (AI) course and the PADI Open Water Scuba Instructor (OWSI) program. Prior to the start of the IDC you are required to complete all 16 IDC Knowledge Reviews from the IDC Candidate Workbook.

If you have not completed our comprehensive PADI Divemaster Course you will be required to complete a pre-assessment covering 5 theoretical areas (Physics, Physiology, Decompression & RDP's, Equipment and Skills & the Environment) and a basic skill circuit covering 20 skills.

When you complete the IDC, you will have been trained and prepared to successfully complete the PADI Instructor Examination (IE). This is the final step toward your Open Water Scuba Instructor certification.

You will also be equipped with an excellent understanding of the diving industry, marketing techniques for all PADI courses and dynamic instructional methodology.

YOUR IDC INCLUDES:

- Complimentary Nitrox Instructor course (PADI fees not included)
- VIP Card - 20 % discount on all daily dive charters at the PDC and concessions on our live aboard charters.
- Preferred rates on PADI materials and diving equipment.
- High speed e-mail, internet, wireless network.
- Complimentary National Geographic course and orientation.
- One day intensive theory and skill pre-assessment.
- Preferred rates on equipment rental throughout the IDC & IE.
- The entire IDC program takes place at The Pavilion Dive Centre & The Emirates Academy of Hospitality and Management.
- Access to our 25 x 12 m swimming pool, throughout your IDC, including tanks and weights for unlimited practice.
- Job Placement Service.
- Personal attention and Professional Organization.
- 10 day IDC program (11 days when you participate in our complimentary pre-assessment program).
- A proven IDC program with an outstanding IE success rate.
- Tropical resort environment minutes from the beach - average water temperature 30° Celsius.
- Special in-water workshops - Buoyancy, CESA, Buddy Breathing, Rescue, Ascents/Descents.
- Tanks & weights during your pre-assessment, IDC/IE and all pre/post IDC courses.
- IE preparation day where you'll be doing a simulated IE, similar to the actual IE.
- All transfers, tanks and weights during the IE.
- IE Graduation dinner, party and t-shirt.
- Multilingual IDC Staff are present for logistical and technical support throughout the IE.

Your IDC is conducted at Dubai's first and only PADI 5 Star Career Development Center (CDC) and includes our IE pass guarantee: We will invite you to complete a complimentary second IDC AND IE with us, in the highly unlikely event that you do not pass your first IE. Our pass guarantee includes any IE segment covered by PADI's IDC Curriculum.

Phil O'Shea
PADI Course Director
Manager, The Pavilion Dive Centre
PADI Career Development Centre and National Geographic Dive Centre s-3478
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Visit us at **Jumeirah.com**
http://www.thepaviliondivecentre.com

LAUNCH OF SPEED BOAT TRIPS TO MUSANDAM

Freestyle Divers has recently been awarded permission for its boats to travel to the Musandam. We will therefore be running frequent trips up the Musandam coast for diving and snorkeling trips.

This does not mean we will be stopping our very successful dhow trips. These shall still be organized on a frequent basis.

PRICES FOR THE TRIPS WILL BE AS FOLLOWS:
Boat ride only – Dhs 280
Snorkeling (with kit rental) – Dhs 320
Diving with tank and weight rental – Dhs 340
Diving with full equipment rental – Dhs 440

The site we will visit will depend on the least qualified diver. However if you would like to do a more challenging dive you can put a group together and request a private boat. A private boat will be subject to a minimum number of divers, 8 on weekends and 4 on weekdays. If you can not get the people together, do not worry. We will just add Dhs 280 per person missing, onto your bill.

Just call or email to enquire.

For all bookings and information please visit:
www.freestyledivers.com
Email: **freestyle@eim.ae**
Call: **09 244 5756**

PRESS RELEASE

UNDER THE PATRONAGE OF HH SHEIKH MAJID BIN MOHAMMED

DUBAI TAKES A **DIVE INTO THE PAST**

FEATURE **DANA IBRAHIM** PHOTOGRAPHY **REEMA AL ABBAS**

Dubai, UAE, February 4, 2008 – Under the patronage of His Highness Sheikh Majid Bin Mohammed Bin Rashid Al Maktoum the Chairman of Dubai Culture and Arts Authority (DCAA), the Knowledge & Human Development Authority (KHDA) in Dubai in co-operation with the Emirates Diving Association (EDA) launched the Diving Encyclopaedia in an effort to keep the UAE's marine culture and heritage alive.

Written by Emirati, Juma Khalifa Ahmed Bin Thalith Al Humairi, the book is a detailed, pictorial glossary of the local diving terms and words. It took him six years to write and he hopes it will maintain a link between today's generation and their heritage. Plans are underway to use the encyclopaedia as educational material within the national curriculum, and seventy-nine public schools will be receiving copies of the book.

Various social groups and environmental bodies have welcomed this book as a step in the right direction to spread awareness of this age-old tradition.

Dr Abdulla Al Karam, Chairman of the Board of Directors and Director-General at the KHDA, said, "KHDA is proud to be associated with the release of EDA's encyclopaedia. The book is bound to be of interest to everyone and not just students. We hope to work continuously to raise awareness of our heritage and the traditions of our ancestors."

He added, "KHDA welcomes any organisation that would like to enhance the knowledge and education of the community in aspects of the country's history, culture and heritage."

Teachers in Dubai's public schools helped the author with his research for the encyclopaedia. HE Fatma Al Marri, CEO of the Dubai Schools Agency said, "Teaching this encyclopaedia as part of the curriculum is a positive method to reinforce the sense of national identity. It is a vehicle for the younger generation to connect with their roots and learn from the hardships of their ancestors."

Judging from his travels in other GCC countries, the author Juma Khalifa Ahmed Bin Thalith Al Humairi said, "I feel the encyclopaedia will bring together the interests of all the seafaring Arab nations. We share a love for the sea and this book will help us understand each other better. I appreciate that it is being used as an academic tool to educate the children about their past. A lesson in history helps to foster a better understanding of the present and hopefully leads to a brighter future."

ABOUT THE KNOWLEDGE AND HUMAN DEVELOPMENT AUTHORITY

The Knowledge and Human Development Authority (KHDA) is responsible for the future growth, direction and quality of education and learning in Dubai. We aim to support the people of Dubai in achieving their potential from birth and through life's journey as we work towards achieving the goals set out in the Dubai Strategic Plan 2015.

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EXPEDITION NOTES: **OMAN**

NEW REEF CHECK BIOSPHERE EXPEDITION – MUSANDAM, OMAN

Reef Check is partnering with Biosphere Expeditions, a non-profit award winning Eco-expedition organization, to offer a unique, one-week, marine science research expedition to a beautiful, unexplored, coral reef area in the middle eastern country of Oman. Despite its location bordering the Arabian Gulf and Indian Ocean, Oman is a peaceful country and has never experienced the turmoil afflicting other counties in the region. A stable government led by an open-minded Sultan who promotes higher education for both sexes has allowed Oman to enjoy long-term peace and prosperity. The expedition is to Oman's Musandam peninsula, known as the Norway of Arabia due to the dozens of fjord like bays bordered by towering mountains. The spectacular terrestrial scenery is only exceeded by the cornucopia of life found underwater.

Expedition members will arrive at the bustling airport of neighboring Dubai, one of the six "emirates" of the country known as the United Arab Emirates or UAE. The contrast between metropolitan Dubai and the Musandam peninsula could not be greater. Dubai resembles Hong Kong on steroids, with a building boom that puts Shanghai to shame. Wealthy local entrepreneurs are competing to build the biggest, tallest, most ostentatious office buildings, hotels, and mosques and in the world. The latest entrant is a mile high building. The Trump Palm development actually looks like a giant Palm tree floating in the waters fronting the city. It may be hot outside, but there is a downhill sky center in town with man-made snow. Expedition members will travel three hours up the coast by car to Khasab, a small historic town, where they will board the MV Khalad, a live-aboard boat. The MV Khalad, a 23 m long, air conditioned dhow that comes with an experienced crew, a skiff and an imaginative cook. The expedition leader is Jon Shrives, a jovial British doctoral candidate in coral reef ecology at Oxford University. Jon has led Biosphere Expeditions/Reef Check expeditions for two years to Cayos Cochinos, Honduras.

During the first two days, participants will enjoy a mixture of Reef Check training in the classroom and in the sea. By the end of the expedition all members will be trained and those who pass the certification test will be formally certified Reef Check EcoDivers and will also be eligible for a PADI Reef Check Specialty Certification. During the remaining expedition, participants will carry out Reef Check surveys throughout the peninsula.

During the first week of October, I participated in a reconnaissance expedition to Oman to choose suitable reefs for sampling. The team included Jon Shrives, Biosphere Expeditions Managing Director Dr. Matthias Hammer, Biosphere Expeditions Director Kathy Wilden, coral biologist Dr. Michel Claereboudt of Oman Univeristy, Rita Bento a Portuguese marine biologist, Udo Neumann a scuba Instructor from Germany and Suhail Batook a recreational diver from HSBC, the expedition sponsor. The team carried out manta tows and recon dives at over 40 sites throughout the peninsula. The scenery can only be described as spectacular with 1000 m high, solid rock peaks dropping straight into the sea. Below the water, the reefs are often 90% living coral and teeming with large grouper, emperors, and schools of jacks, snapper and fusiliers. Turtles, lobster and sting rays were seen at several sites with an occasional reef shark passing by. Colorful species endemic to the Indian Ocean and Oman are numerous. Blue and yellow Indian Ocean Angel Fish are so common that they form schools. The Arabian butterfly fish is everywhere and hard to miss due to their brilliant yellow-orange color. The dives range from walls to gentle rocky slopes covered by hard corals, with black coral, blue gorgonians common. The reefs are in excellent condition with percentage coral cover reaching the highest levels seen in the world (80%-90%) with over 200 species present. Human impacts on the reefs are relatively low but include gill net and trap fishing, periodic exposure to oil from spills, storm wave damage and predation by crown-of-thorns sea stars.

Participants will survey a range of coral reefs, many that have never been surveyed scientifically previously. An expedition report will be issued and it is hoped that in addition to tracking human impacts on the reefs of Oman, that the results will be useful to the Oman government to help with planning a network of protected areas in Musandam. Only 15 spaces are available on this unique expedition so book your place now at: **www.biosphere-expeditions.org/musandam**.

EDA MEMBERS BECOME **EMERGENCY FIRST RESPONSE** INSTRUCTOR TRAINERS

FEATURE **KATHLEEN RUSSELL** PHOTOGRAPHY **KATHLEEN RUSSELL & MOHAMED AL HELMY**

Picturesque Sharm El Sheikh was the host city to the recent Emergency First Response Instructor Trainer course. Twenty-three multinational EFR instructors from Brazil, Egypt, Oman, Poland, the United Arab Emirates and the United Kingdom attended the course held at the Marriot Mountainside Hotel in the beginning of February.

The full day EFRIT program was conducted by PADI Regional Manager of Egypt, Middle East and West Africa Terry Johnson and his two assistants. The course goals are to assure understanding of the EFR program, structure, requirements and procedures, discuss the EFR philosophy and prepare candidates to teach, refine role model skills, provide practical organizational and marketing suggestions and encourage the candidates to become an active member within the community.

The program started with a brief introduction and course overview, revision of the online pre-assignment and then followed by an informative and constructive presentation and workshop on marketing and how to build a business plan for the EFR and EFRI programs. Participants were broken into smaller group sizes and asked to prepare a business plan for a target audience and specific EFR program, how it was going to be marketed and the measure of success of the program implements. Overall, the participants agreed the workshop was extremely useful for future program planning. Candidates then wrote a final exam to assess their knowledge. After a short break, the candidates were evaluated on role-model instructor demonstration of adult CPR and use of automated external defibrillator, child CPR, infant CPR, choking management and secondary care skills. The final performance requirement was the evaluation of the Instructor Trainer candidates on their positive coaching techniques based on realistic teaching environment scenarios. Finally Terry enthusiastically announced that the entire class passed the course and succeeded to becoming EFR Instructor Trainers.

EDA would like to extend their congratulations to its two active EDA members and PADI Master Instructors, Mohamed Helmy from Al Boom and Kathleen Russell, EDA Abu Dhabi Committee Coordinator on attaining the EFR Instructor Trainer rating.

Creating confidence to Care!

For more information on the Emergency First Response Instructor Program, you can contact Kathleen Russell at **godive@emirates.net.ae** and Mohamed Al Helmy at **gooddiver@gmail.com**

EDA **SOCIAL**

PHOTOGRAPHY **REEMA AL ABBAS**

EDA hosted a social at The Kempinski Hotel in Dubai on the 31st of January 2009.

Approximately 50 EDA members and partners gathered around the beautiful setting of the outdoor pool, where everyone mingled, whilst enjoying the delicious canapés and refreshing drinks that were passed around throughout the evening.

A short speech was given by the EDA staff, welcoming their guests, introducing new staff members and announcing the calendar of events planned for 2009.

Later on in the evening everyone relaxed on the bean bags and majlis style sofas, sipping their hot beverages and puffing on flavoured shishas. It was a great end to a lovely evening spent with friends; old and new.

ZIGHY BAY

FEATURE **REEMA AL ABBAS** PHOTOGRAPHY **EDA**

Tara Hammond – Six Senses Environment & Social Responsibilities Officer with Reema and Rita

EDA was invited by Six Senses Hideaway, Zighy Bay – Oman, to give presentations about the Red Tide and EDA's environmental role in the region on the 22nd and 23rd of February 2009.

Six Senses Hideaway, Zighy Bay is located on the northern Musandam Peninsula in the Sultanate of Oman. The setting of the indigenous village style accommodations and private marina is dramatic, with mountains on one side and a 1.6 kilometer sandy beach at Zighy Bay, on the other.

DAY 1

Rita Bento gave a presentation about the Red tide, explaining exactly what it is, the causes and what the general public should know about this natural phenomenon, which is bewildering to most.

Day 2

Rita gave another Red Tide presentation to the rest of the Six Senses staff and Reema Al Abbas gave an informal presentation to the staff about EDA's role and environmental activities in the region.

Reema and Rita then gave out blue scarves to guests and staff and answered any questions relating to the red tide, EDA and other environmental issues.

EDA would like to thank Ms Rochelle Kilgariff, the General Manager of Six Senses, Zighy Bay & Ms Tara Hammond, the Environment & Social Responsibilities Officer for their invitation and also to all the staff for their kind generosity and assistance in the two memorable days spent in Six Senses Hideaway, Zighy Bay.

REEF CHECK

FEATURE **RITA BENTO**
PHOTOGRAPHY **EDA**

On the 27th and 28th of March, the first Reef Check training of 2009 began. Group 1 was formed by the following EDA members:

- Ahmad Obay
- Mahesh Shahdadpuri
- Laurence Vanneyre
- Rania Mostafa

The first day classes were held in the TDIC classroom in the Diving Village. Different topics were taught, such as the importance of coral reefs, Reef Check history, Reef Check Methods, Substrate identification, Fish Identification, Invertebrate and Impact Identification, Data Entry and Site Selection.

The second day started with some practical exercises in the Al Boom swimming pool, where funny buoyancy exercises were conducted and the field methods and identification practices were done. In the afternoon, the classroom tests began and all of the students successfully passed in the Invertebrates Test. Our congratulations to them!

Next Friday (6th of March) will be their final tests in the field, hopefully at Shark Island. Good luck to all of you!

We would like to give our appreciation to TDIC and AL Boom for giving up their facilities for this training. A big cheer for them.

DATA COLLECTION FROM THE EAST COAST

FEATURE **RITA BENTO** PHOTOGRAPHY **MARCELO MARIOZI**

After a long period of more than four months with the presence of a Harmful Algal Bloom (HAB) on the East Coast of the UAE, a critical change in the marine environment has been noticed. As a request from the Ministry of Environment and Water, Emirates Diving Association (EDA) was contacted to do a report about the rare phenomenon, including a collection of photographs and video of the actual damage encountered in the region.

On the 18th and 19th of February 2009, the collection of data was conducted by an EDA team formed by a Marine Biologist (Rita Bento), a Project Coordinator (Reema Abbas), a Videographer (Ally Landes) and a Photographer (Marcelo Mariozi). At the moment the report is being written and it will be delivered directly to the Ministry of Environment by EDA.

The principal objective of this study, was to conduct several dives on the East coast, Fujairah Emirate, in order to see the damages done by the HAB natural disaster; to evaluate the differences among different areas along the East coast of the UAE, Fujairah Emirate; to identify the areas more affected with the HAB; to collect photo evidences of the marine environment and damages; and to elaborate a video were all the findings were presented.

Unfortunately during the survey, the red tide was in some of the places where the team had planned to dive. According to the weather and sea conditions it was possible to collect data at Shark Island, Snoopy Island, Al Dadna and Dibba Rock.

At each dive site, one transect of 30 meters was placed for the collection of marine biodiversity data, including fish, invertebrates and substrate (corals) diversity. This allowed a standard collection of data for future comparison and analysis. The photos and the video were conducted along all the areas of the dive as well as in the transected area.

We would like to thank the Dibba Marine Research Center team that supported us during the two consecutive days at sea, from 9am until 4pm. A special thanks for them for all their hospitality.

DIVE MIDDLE EAST EXHIBITION 2009

PHOTOGRAPHY **ALLY LANDES**

The DMEX 2009 had another successful year at the Dubai International Marine Club at Mina Seyahi.













Djibouti Palace Kempinski
DJIBOUTI

DJIBOUTI PALACE KEMPINSKI
STAND C1-2

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Fax: +253 32 55 56
Email: sales.djibouti@kempinski
Website: www.kempinski-djibouti.com
Kempinski – Hoteliers since 1897. A Collection of Individuals.

COMPANY PROFILE:

Fondly called the 'Land of the Gods', Djibouti is a place unlike any other on Earth with mystical deserts, lakes, volcanoes and some of the most beautiful underwater sites in the world.

Located on the Horn of Africa, Djibouti is a fusion of Middle Eastern and African cultures mixed in with a French colonial past, which is evident in the language and architecture.

Djibouti offers unique getaways such as Lac Assal, the third lowest point in the world, and numerous unspoiled and isolated beaches, providing the ideal secluded getaway.

The destination is also renowned for diving, and divers from around the globe flock here to see the beautiful coral reefs in the Red Sea around the neighboring islands, and the incredible whale sharks and thriving sea life that is native to the area.

Djibouti Palace Kempinski is a spectacular palace resort situated on its own beach amidst a secluded and peaceful setting of palms and bougainvillea. The vanilla colored hotel silhouette etches against the turquoise blue of the African sky and the deep ocean, offering superb ocean views blended with African and Middle Eastern architecture, design and furnishings.

In addition to several extraordinary dining outlets, Djibouti Palace Kempinski is redefining luxury service in Africa with unparalleled spa and recreation facilities and a brand new world-class casino, and is set to become the continent's newest landmark.

DMEX EXHIBITOR PROFILES

AL BOOM DIVING
STAND A1-1,A1-8

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Email: abdiving@emirates.net.ae
Website: www.alboomdiving.com

COMPANY PROFILE:
Al Boom Diving is the leading dive operator in the UAE with a PADI 5 Star Dive Centre in Dubai, and at Le Meridien Al Aqah. A PADI 5 Star Dive centre certification is awarded by PADI to dive centres that offer a full range of courses and dive trips, and have a PADI certified Course Director (highest instructor designation) on site.

Al Boom Diving offers all courses from beginner to instructor, as well as daily diving in Fujairah and the Musandam. Diver safety and enjoyment are our top priorities. We currently have two PADI Course Directors on staff and our staff speaks a selection of languages.

The dive centre operates six 42 foot dive boats, and one 30 foot dive boat as well as a dhow day trip in the Musandam every Friday. Each boat is equipped with safety equipment that is checked daily and engines that are serviced according to manufacturer's recommendations, and replaced every 12 months. We believe in keeping groups of diver's small and placing a guide (DM or Instructor) with each dive group – we do not run unguided dives. Our tanks and equipment are maintained by a dedicated engineering department and tanks are filled and maintained by our ASSET and Gas Blender certified staff.

BEUCHAT INTERNATIONAL
STAND D1-3

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Fax: 0033 4 9160 0694
Email: scannelle.comex@orange.fr
Website: www.beuchat.fr

COMPANY PROFILE:
Beuchat an innovative manufacturer "inspired by the sea"

For more than 75 years Beuchat has been at the fore front in the design, development, manufacturing and marketing of new products which have marked the history of diving and spearfishing. Distributed around the world into 80 countries, Beuchat is recognised worldwide as a market leader in the fields of Scuba Diving and Spear Fishing. Our team of research and development divers, passionate about their sport continually listen to the comments of our users. Our aim is to anticipate the desires and needs of our customers. To then design and produce products increasingly more desirable and more comfortable to use, whilst fulfilling the safety requirements. To implement our projects quickly and to guarantee the quality & reliability of our products, we decided to integrate our various expertises (plastic injection, machining, and assembly) into our factory in Marseilles.

Extremely proud of our history and convictions, we will remain a world leader in diving & spearfishing.

AL MARSA MUSANDAM
STAND D1-2

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COMPANY PROFILE:
Sailing out of Dibba port in Musandam, an easy 1 1/2 hrs drive from Dubai, Al Marsa with its fleet of 4 luxury purpose built fiber glass Dhows, and 10 speedboats have the privilege of entering the breathtaking world of the awesome rugged 'fjord-like' coastline known as the Eastern Musandam Peninsula. It is here, surrounded by the warm waters of the Indian ocean and Gulf of Oman, that one of the widest biodiversities of marine species can be found anywhere in the world. The deep drop offs and cool water upwelling, provide an abundance of plankton, making this a rich feeding ground for a huge variety of marine life and coral gardens.

Perhaps more than this is the almost indescribable beauty of nature here itself, clear starlit nights, panoramic ocean seascapes, hidden coastal villages with their interesting history and traditions in dhow building and fishing. The Dhows are like small floating resorts that cruise you up into these hidden bays (http://www.musandamdiving.com/photo-gallery/scenery.htm), which are for the most part, inaccessible by land. Every vessel is fully equipped (including satellite communication) for cruising and living onboard with air conditioned cabins, large open sun decks, freshly prepared meals by our onboard chefs and all the facilities for diving, snorkeling, fishing, and kayaking. Sailing trips onboard our fabulous trimaran and catch and release fishing trips with our professional crew are also options to explore. Paragliding and microlite flights are also amongst the attractions at Al Marsa, where you can enjoy a never to be forgotten experience either paragliding from the top of Zighi village or taking off from Dibba beach for a breathtaking flight over the sea.

Al Marsa gives you the opportunity to discover the Musandam in the best possible way onboard trips ranging from 5 hours all the way to liveaboard trips lasting 7 days. So if you are looking to enjoy a nice day or a full week onboard a cruise, where you can swim, snorkel, dive or just soak up the sun and take in the scenery, there is no place more relaxing and peaceful.

BARCKLY TRADING L.L.C
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Website: www.barckly.ae

PRODUCTS/SERVICES:
Supplier of Goods & Packages for Compressed Natural Gas (CNG) and Natural Gas Vehicle (NGV), Oil & Gas, High Pressure Compressor, Diving Equipment & Accessories

COMPANY PROFILE:
Barckly Trading is a pioneer in the field of Oil & Gas in general and CNG in particular with extensive involvement and experience (over 30 years). In addition we represent as exclusive representatives of Aerotecnica Coltri in the Middle East for high pressure compressors primarily used in the Scuba Diving and fire service industries for the filling of breathing air cylinders for use both with underwater scuba diving equipment and fire service breathing apparatus. We also sell a full range of diving equipment and accessories, which complements diving compressors. We are pleased to introduce our Sales Agent for Diving Equipment in the UAE "Dive-Tech Underwater Services", divetec@eim.ae the team has well experienced over 25 years underwater services to Civil Engineering & Construction Contractors, Oil & Gas Sector, Ship Owners and Goverment Dept to the Marine Industries throughout Middle East and Indian Region.

"Make Barckly Your Service Provider of Choice"

EMIRATES DIVING ASSOCIATION (EDA)
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Website: www.emiratesdiving.com

PRODUCTS/SERVICES:
Holds regular activities (Coral Reef Awareness and Monitoring Program, Clean Up Arabia, Presentations, School Campaigns, Mooring Buoy, Artificial Reef installation and other special projects) to fulfill its mission.

COMPANY PROFILE:
EDA is the non-profit umbrella organization of all dive operators, equipment vendors, dive clubs, certified instructors and recreational divers in the UAE. EDA was created in 1995 by UAE Federal Decree No. (23), Article No. (21) to oversee the diving industry. EDA's mission is to conserve, protect and restore the UAE marine resources. It founded the Dive Middle East Exhibition (DMEX), the first dive show in the Middle East, to promote the UAE as a diving destination. It is also one of EDA's goals to promote safe, recreational and environmental diving in the UAE.

EXTRA DIVERS WORLDWIDE
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Email: oman@extradivers.com
Website: www.extradivers.info, www.omandivecenter.com, www.divesalalah.com, www.musandam-diving.com

COMPANY PROFILE:
Extra Divers Worldwide is one of the biggest dive center operators with diving centers and dive resorts in Europe, Egypt, Middle East, Asia and the Caribbean Sea.

Extra Divers services: diving holiday packages, accommodation in nature resorts, live-aboard dive safaris, diving courses, equipment rental as well as all other aqua sport activities like kayaking, surfing, snorkelling and dolphin watching. Extra Divers Nabucco Resorts are planned for divers and nature lovers. You will find them at remote places, well adapted to the environment without any disturbance to the nature. Extra Divers priorities are to protect the environment and to promote eco-friendly dive tourism.

Extra Divers dive centers in Oman are located in:
Musandam – Khasab at the Golden Tulip Resort
Muscat – Oman Dive Center & Bungalows
Salalah at the Crowne Plaza Resort & the Mirbat Resort & Spa

Courses are held according to the standards and policies of SSI. Our dive instructors are multilingual and are able to teach in English, German, Arabic, French, Italian, Spanish and Dutch.

EASTMAN TRADING
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COMPANY PROFILE:
Eastman Trading is a 100% locally owned and operated company. The company's main activity is the import and supply of dive equipment.

MALAYSIA TOURISM BOARD
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Website: www.tourism.gov.my

COMPANY PROFILE:
Malaysia is fast becoming one of the leading dive destinations of the world with one of the richest marine environments in the Indo-Pacific Basin. The incredible bio-diversity of marine life, coupled with beautiful islands, white sandy beaches and clear warm waters, keeps divers coming back time and time again.

Top dive sites around Malaysia include diverse underwater geography such as sloping reefs, coral blocks, wall dives, deep dives, drift dives and wreck dives. A dip below the warm sea's surface guarantees you an astounding experience, with a concentration of vibrant and exotic marine life rarely rivalled anywhere else in the world. From schooling Hammerhead Sharks, to huge schools of barracudas and various species of turtles, to the bizarre Frogfish and Ghost Pipefish, there is always something fascinating awaiting you. It's no exaggeration to say that almost every time a marine bio-diversity survey is conducted in Malaysia's tropical seas, the species list increases!

Dive centres in Malaysia are numerous, well equipped and certified by all the internationally recognised dive agencies like PADI, SSI and SSAC for maintaining their standards of safety and professionalism. Naturally, all scuba diving courses in Malaysian waters are also endorsed by these certifying agencies. After completing your scuba course, get outfitted with the latest scuba equipment as all international brands are available from dive centres in Malaysia. Almost all the islands in Malaysia cater to divers of all levels of experience - be it easy, shallow drift-diving, to advanced wreck-diving or technical diving.

Located in the heart of the Indo-Pacific basin, the heart of the world's richest marine biodiversity area, Malaysia also offers pristine beaches and professional dive centres for the pleasure and safety of the advanced and novice diver. For a most memorable diving holiday, the time is now, the place is Malaysia

AL MASAOOD MARINE
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COMPANY PROFILE:
Marine is a collective of enthusiasts, able to deliver fully trained support for the boat builders, dealers and users. Being Mariners ourselves, we understand the requirements for hassle free time on the sea. We aim to be your best partner on the water.

Our products range is supported by innovative, technologically advanced brands. One brand per product group allows us to advise the best possible solutions to the client.

Our OEM unit can design laminate schedules, supply core materials, boat propulsion, generators, A/C's, lights, toilets, treatment systems, helm seats, davits, gangways, coatings, antifouling and boat care products.

Out Retail range caters for all aspects of enjoying the marine environment & watersports. Visit either our stores or www.marineessential.com to join the fun!

Our After Sales is all-inclusive, located strategically, with fully equipped mobile service units, capable of ensuring reliability and reduce downtime.

We are a perfect match with flexible service contracts and are able to provide bow to stern services of all the equipment. A member of ABBRA, we can globally benchmark our services. Our Marina Development unit, designs, builds wet or dry berth marinas, supplies boat lift equipment, as well as consultation of marine management.

We understand the lifestyle like no other. Our commitment is to provide hassle free, reliable operations to the user. We support better boating with less environmental impact.
Explore the possibilities – Extend yourself – Live it, don't dream it.

JORDAN TOURISM BOARD
GCC REPRESENTATIVE OFFICE
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Website: www.visitjordan.com

COMPANY PROFILE:
Jordan Tourism Board is an independent public – private sector partnership committed to utilise marketing strategies to brand, position and promote the Jordan tourism product internationally as the destination of choice.

Jordan is a country of outstanding bio diversity. It is a land that encompasses all, from pine-clad mountains, lush green valleys, wetlands and oasis to the breathtaking desert landscapes of Wadi Rum and the kaleidoscopic underwater world of the Red Sea.

Jordan's only outlet to the sea, Aqaba, backed by purple-tinted mountains – rich in phosphates. Beyond , are the rose-coloured deserts of Wadi Rum. Beneath the clean, crystal clear waters of the Red Sea, is a unique marine environment, where divers can discover Jordan's amazing underwater wildlife. It is also Jordan's pearl, a place, where one can enjoy over 23 diving sites situated along the coastline and a perfect destination for those who are just starting to learn to dive.

NEWS

From Left: Mr Rahman, Regional Director of Tourism Malaysia. From Right: Mr Mat Yussof, Deputy Director TM in Dubai

Tuan Razali, Ibrahim Al Zu'bi & Clement Lee

Ibrahim Al Zu'bi, Mr Rahman, Reema Al Abbas & Mat Yusof

Photos below by Reema Al Abbas

AL BOOM DIVING **REEFBALL PROJECT**

Al Boom is starting a project to place artificial reefs at two or more locations in Dubai, and one location outside Le Meridien in Al Aqah. We are importing reef balls from the Reefball Foundation (www.reefball.org) for this purpose.

The Reef Ball Foundation, Inc. is a non-profit organization that functions as an international environmental non-governmental organization. The foundation uses Reef Ball artifial reef technology, combined with coral propagation, transplant technology, public education and community training to build, restore and protect coral reefs. The foundation has established "Reef Ball reefs" in over 56 countries with ongoing projects in 14 additional countries (giving a total of over 70 countries).

Man's activities and natural disasters have led to a reduction in our natural reef systems. Recreationally, growth in sports fishing, scuba diving, and boating has increased the pressures on these systems. Commercially, our seafood industry is dependent on developing the ocean to enable ever larger, yet sustainable, harvests. The loss of our natural systems, coupled with increased use, compels us to do all that we can to save the natural coral reefs. Even so, the natural reefs cannot rebuild themselves fast enough to meet human demands.

To increase the number of coral reef areas in the UAE, Al Boom Diving has started the Reef ball project.

Although Al Boom Diving is the primary party in this project, we have the assistance of some other companies. Other parties involved in the project are: the Emirates Diving Association, PADI Project Aware, and, Le Meridien Al Aqah for a house reef outside the hotel. Permissions for the placement of the Dubai reef at Jumeriah Corniche (Russian Beach) and the Palm Jebel Ali will be sought from the Dubai Coast Guard, and Nakheel as needed.

Al Boom Diving will present the reef ball project at the Dubai International Boat Show from 3rd – 7th March. The DIBS has been kind enough to offer us a space to present the project. We will also seek sponsors (companies or groups of individuals) that would like to 'sponsor a reef ball' and have their name placed onto the reef ball.

HOW CAN YOU HELP?

Option 1 (Individuals)
Signup at the Boat Show! We will group interested parties together to sponsor a reef ball as a group. Sponsorship of a single reef ball costs Dhs 1,500 and groups will be made up of 10 people per reef ball, making your sponsorship cost just 150 Dhs.

Option 2 (Groups)
If you are a group of divers or a company, consider this option. Sponsor a reef ball for Dhs 2,500 and get 5 single dives included in the price, so that you can monitor the progress of your reef ball!

The first reef balls will be placed within the next three weeks, these will be just off Le Meridien Al Aqah, as a house reef. The exact date is yet to be confirmed.

Placement of the other reef balls in Dubai is dependant on permissions from the authorities.

For more information, please contact Al Boom Diving on **04 342 2993**, or email **Abdiving@emirates.net.ae**

AL BOOM DIVING **BBQ SOCIAL**

Al Boom Diving held their BBQ Social at the Dubai Offshore Sailing Club on 1st March. Divers gathered for a BBQ dinner, a few beverages and a chance to discuss their diving adventures and meet new dive buddies.

Francis Uy, Course Director at Al Boom Diving, presented the new activities including the Reef ball Project, Diving in the Dubai Mall Aquarium and announced the opening of Al Boom Diving at the Jebel Ali Golf Resort and Spa; and at the Dubai Marina Yacht Club.

Divers then tested their knowledge with a fun dive quiz for a chance to win beach pass vouchers and dinner vouchers at Le Meridien Al Aqah in Fujairah.

The next Diver Social will be held on 30th March at the Terrace of the Dubai Marina Yacht Club. To receive information on promotions and news from Al Boom Diving, please email: **Abdiving@emirates.net.ae**

AL BOOM DIVING OPENS IN **THREE NEW LOCATIONS**

Al Boom Diving is happy to announce that it will start diving activities in three new locations in March: the Dubai Mall Aquarium; the Jebel Ali Golf Resort and Spa; and the Dubai Marina Yacht Club.

In the Dubai Mall Aquarium, certified divers will be able to dive (without a cage) in the aquarium with all of the marine animals, and non-divers can complete the Discover Scuba Diving program with their experience dive in the aquarium under the close supervision of a PADI instructor. Dives will start on March 16th and dive times are 5pm, 7pm and 9pm.

Diving on the Dubai coast will soon be possible with dive trips out to the west coast wreck sites, like the Neptune and Ludwig, as well as the Jebel Ali reef. Al Boom Diving is opening a dive centre at the Jebel Ali Golf Resort and Spa to allow for daily diving on these sites.

Residents close to the Marina area will be happy to hear that they can now complete their dive training at the Dubai Marina Yacht Club starting in March. Al Boom Diving will be located inside the Al Boom Marine store at the yacht club, with training facilities nearby. Open water dives can then be done from the dive centres at either the Jebel Ali Golf Resort and Spa, or Le Meridien Al Aqah in Fujairah.

SHARK DIVE TRAINING

Al Boom Diving will be offering guided dives for certified divers, Discover Scuba Diving experiences and the PADI Dubai Mall Distinctive Specialty in the Dubai Mall Aquarium, from the 16th March. Dives will be scheduled at 5pm, 7pm and 9pm, with 4 divers accommodated in each group. This means that only 12 lucky divers can enter the aquarium each day, making a truly prized activity.

In preparation, a team of PADI instructors from Al Boom Diving were put through the Shark Dive training by Head Curator, Paul Hamilton at the Dubai Mall Aquarium.

"When PADI talks about a dream job in the dive industry they must have been referring to days like this!" said Francis Uy, Course Director at Al Boom Diving.

To kick off the training, the team was introduced to the 'Stars of the aquarium", including sand tiger sharks, grey reef sharks, nurse sharks, zebra sharks, bow-mouth guitarfish, eagle rays, fantail rays, giant groupers, hump-head wrasse and more.

"All of the animals in the aquarium are quite used to having divers swimming around, as there is a schedule of diving, feeding and maintenance each day," says Paul Hamilton. "But having said that, divers do need to behave and interact with the animals in a positive way, and this is the basis of the training done before the dive."

Once the theory was completed, it was time to kit up and dive into the aquarium waters!

"It is an amazing experience," said Samantha Joffe, Marketing Manager and instructor at Al Boom Diving. "Before the dive, we were excited and a bit nervous, but as soon as we were underwater, the experience distracted us all completely and I think that we all felt like newbie divers looking around in wonder!"

"It is something new to look around and see more fish than you have seen on any other dive on one side, and a view into the mall on the other!" said Francis.

The team paid close attention as Paul pointed out the correct diver behavior and demonstrated the safe way to swim with sharks, so that they can in turn safely guide divers in the aquarium.

All too soon the dive was over and the team quickly left the aquarium waters before the start of the shark feeding!

Al Boom Diving will be offering three activities in the Dubai Mall Aquarium:

1) Guided dives in the aquarium
2) Discover Scuba Diving where the theory and pool practice sessions are held at Al Boom Diving on Al Wasl Road, and the experience dive in the aquarium under close supervision
3) The PADI Dubai Mall Aquarium Distinctive Specialty, including one dive in the aquarium

For more information, please contact Al Boom Diving on **04 342 2993**, or email **Abdiving@emirates.net.ae**

CLEMENT LEE RECEIVES **DEMA REACHING OUT AWARD**

Clement with his wife, Ivy

DEMA is pleased to announce that dive industry icons Clement Lee and Marty Snyderman are the recipients of the 20th Annual DEMA Reaching Out Awards (ROA). Given in recognition of their significant contributions to the sport of scuba diving, the Awards were presented on October 24, 2008 at the DEMA Awards Party in Las Vegas in affiliation with DEMA Show 2008.

A true leader in the development of diving in Southeast Asia, Clement Lee is a pioneer in introducing professionalism in recreational diving and the dive tourism industry in Sabah as well as resort management in Sipadan. As Managing Director and a founding partner of Borneo Divers & Sea Sports, in 1989 he was among the first to build a dive resort on the famous Sipadan Island.

With extensive diving experience in Sabah waters, Lee became a dive master in 1985 and later that same year, a PADI Instructor. Six years later in August 1991, Lee became the first ever PADI Course Director in Malaysia. For the past ten years, Lee and Borneo Divers have organized Mabul Marine Day on Mabul Island near Sabah, in conjunction with Sipadan Water Village. Lee actively promotes conservation and environmental protection, is effectively involved in Project AWARE initiatives, the Crown of Thorn Operation and various clean up activities.

Lee is the recipient of numerous awards for his achievements and contributions to the diving industry including: the PIRA Excellence in Dive Resort Operations Award, for Significant Leadership and Innovation in the Dive Resort Community (1994); PADI Outstanding Achievement Award, for 12 Years of Excellence in Dive Retailing & Dive Travel (1996); a Malaysia Tourism Award for Outstanding Contribution to the Tourism Industry (2000); and the United National Environment Program & Project AWARE Foundation Award in Recognition of Outstanding Effort at the Coral Reef Conservation Workshop in 2004.

For more information about DEMA Show 2008 visit: **www.demashow.com**.

WHAT ARE **CORALS AND CORAL REEFS?**

FEATURE **NOAA** PHOTOGRAPHY **MARCELO MARIOZI**

Appearing as solitary forms in the fossil record more than 400 million years ago, corals are extremely ancient animals that evolved into modern reef-building forms over the last 25 million years. Coral reefs are unique (e.g., the largest structures on earth of biological origin) and complex systems. Rivaling old growth forests in longevity of their ecological communities, well-developed reefs reflect thousands of years of history.

CORALS AND THEIR KIND

Corals are anthozoans, the largest class of organisms within the phylum Cnidaria. Comprising over 6,000 known species, anthozoans also include sea fans, sea pansies and anemones. Stony corals (scleractinians) make up the largest order of anthozoans, and are the group primarily responsible for laying the foundations of, and building up, reef structures. For the most part, scleractinians are colonial organisms composed of hundreds to hundreds of thousands of individuals, called polyps.

As members of the phylum Cnidaria, corals have only a limited degree of organ development. Each polyp consists of three basic tissue layers: an outer epidermis, an inner layer of cells lining the gastrovascular cavity which acts as an internal space for digestion, and a layer called the mesoglea in between.

All coral polyps share two basic structural features with other members of their phylum. The first is a gastrovascular cavity that opens at only one end. At the opening to this cavity, commonly called the mouth, food is consumed and some waste products are expelled. A second feature all corals possess is a circle of tentacles, extensions of the body wall that surround the mouth. Tentacles help the coral to capture and ingest plankton for food, clear away debris from the mouth, and act as the animal's primary means of defense.

While coral polyps have structurally simple body plans, they possess several distinctive cellular structures. One of these is called a cnidocyte – a type of cell unique to, and characteristic of, all cnidarians. Found throughout the tentacles and epidermis, cnidocytes contain organelles called cnidae, which include nematocysts, a type of stinging cell. Because nematocytes are capable of delivering powerful, often lethal toxins, they are essential to capturing prey, and facilitate coralline agonistic interactions.

Most corals, like other cnidarians, contain a symbiotic algae called zooxanthellae, within their gastrodermal cells. The coral provides the algae with a protected environment and the compounds necessary for photosynthesis. These include carbon dioxide, produced by coral respiration, and inorganic nutrients such as nitrates, and phosphates, which are metabolic waste products of the coral. In return, the algae produce oxygen and help the coral to remove wastes. Most importantly, they supply the coral with organic products of photosynthesis. These compounds, including glucose, glycerol, and amino acids, are utilized by the coral as building blocks in the manufacture of proteins, fats, and carbohydrates, as well as the synthesis of calcium carbonate ($CaCO_3$). The mutual exchange of algal photosynthates and cnidarian metabolites is the key to the prodigious biological productivity and limestone-secreting capacity of reef building corals.

Zooxanthellae often are critical elements in the continuing health of reef-building corals. As much as 90% of the organic material they manufacture photosynthetically is transferred to the host coral tissue. If these algal cells are expelled by the polyps, which can occur if the colony undergoes prolonged physiological stress, the host may die shortly afterwards. The symbiotic zooxanthellae also confers its color to the polyp. If the zooxanthellae are expelled, the colony takes on a stark white appearance, which is commonly described as "coral bleaching".

FROM POLYP TO REEF

Massive reef structures are formed when each stony coral polyp secretes a skeleton of $CaCO_3$. Most stony corals have very small polyps, averaging 1 to 3 mm in diameter, but entire colonies can grow very large and weigh several tons. Although all corals secrete $CaCO_3$, not all are reef builders. Some corals, such as Fungia sp., are solitary and have single polyps that can grow as large as 25 cm in diameter. Other coral species are incapable of producing sufficient quantities of $CaCO_3$ to form reefs. Many of these corals do not rely on the algal metabolites produced by zooxanthellae, and live in deeper and/or colder waters beyond the geographic range of most reef systems.

The skeletons of stony corals are secreted by the lower portion of the polyp. This process produces a cup, called the calyx, in which the polyp sits. The walls surrounding the cup are called the theca, and the floor is called the basal plate. Thin, calcareous septa (sclerosepta), which provide structural integrity, protection, and an increased surface area for the polyp's soft tissues, extend upward from the basal plate and radiate outward from its center. Periodically, a polyp will lift off its base and secrete a new floor to its cup, forming a new basal plate above the old one. This creates a minute chamber in the skeleton. While the colony is alive, $CaCO_3$ is deposited, adding partitions and elevating the coral. When polyps are physically stressed, they contract into the calyx so that virtually no part is exposed above the skeletal platform. This protects the organism from predators and the elements.

At other times, the polyp extends out of the calyx. The timing and extent to which a polyp extends from its protective skeleton often depends on the time of the day, as well as the species of coral. Most polyps extend themselves furthest when they feed on plankton at night.

In addition to a substantial horizontal component, the polyps of colonial corals are connected laterally to their neighbors by a thin horizontal sheet of tissue called the coenosarc, which covers the limestone between the calyxes. Together, polyps and coenosarc constitute a thin layer of living tissue over the block of limestone they have secreted. Thus, the living colony lies entirely above the skeleton.

Colonies of reef-building (hermatypic) corals exhibit a wide range of shapes, but most can be classified within ten general forms. Branching corals have branches that also have (secondary) branches. Digitate corals look like fingers or clumps of cigars and have no secondary branches. Table corals are table-like structures of fused branches. Elkhorn coral has large, flattened branches. Foliose corals have broad plate-like portions rising above the substrate. Encrusting corals grow as a thin layer against the substrate. Submassive corals have knobs, columns or wedges protruding from an encrusting base. Massive corals are ball-shaped or boulder-like corals which may be small as an egg or large as a house. Mushroom corals resemble the attached or unattached tops of mushrooms. Cup corals look like egg cups or cups that have been squashed, elongated or twisted. While the growth patterns of stony coral colonies are primarily species-specific, a colony's geographic location, environmental factors (e.g., wave action, temperature, light exposure), and the density of surrounding corals may affect and/or alter the shape of the colony as it grows.

In addition to affecting the shape of a colony's growth, environmental factors influence the rates at which various species of corals grow. One of the most significant factors is sunlight. On sunny days, the calcification rates of corals can be twice as fast as on cloudy days. This is likely a function of the symbiotic zooxanthellae algae, which play a unique role in enhancing the corals' ability to synthesize calcium carbonate. Experiments have shown that rates of calcification slow significantly when zooxanthellae are removed from corals, or when corals are kept in shade or darkness.

In general, massive corals tend to grow slowly, increasing in size from 0.5 cm to 2 cm per year. However, under favorable conditions (high light exposure, consistent temperature, moderate wave action), some species can grow as much as 4.5 cm per year. In contrast to the massive species, branching colonies tend to grow much faster. Under favorable conditions, these colonies can grow vertically by as much as 10 cm per year. This fast growth rate is not as advantageous as it may seem, however. Mechanical constraints limit the maximum size that branching corals can achieve. As they become larger, a heavier load is placed on the relatively small area attached to the substratum, rendering the colony increasingly unstable. Under these circumstances, the branches are prone to snapping off during strong wave action. The opposite is true of the massive-shaped corals, which become more stable as they grow larger.

National Oceanic and Atmospheric Administration
www.noaa.gov

CAVE SPONGES
CRUCIAL TO SURVIVAL OF CORAL REEF

FEATURE **UNIVERSITY OF GRONINGEN** PHOTOGRAPHY **JASPER DE GOEIJ**

CORAL REEF WITH CAVESPONGES

Charles Darwin asked himself the same question: how can coral reefs survive so well in nutrient-poor tropical oceans? Marine biologist Jasper de Goeij conducted research into this and discovered that cave sponges play an important role in the survival of the coral reef. He will be awarded a PhD by the University of Groningen on 30 January 2009.

'The coral reef is one of the most productive ecosystems in the world', explains De Goeij. 'You can compare it to a tropical rainforest. This high production is extraordinary because the tropical ocean is very nutrient poor. That's why the water is so clear and blue. There's nothing in it. That's why coral reefs are also called oases in a desert. It's still a mystery how coral reefs can survive in such a nutrient-poor environment. This is also called the Darwin Paradox. Darwin was one of the pioneers of coral reef research and was also the first to describe this problem.' In order to gain more insight into the food cycle, De Goeij studied the role of sponges in coral caves.

COLOURFUL PAINTING

A coral reef is created through an accumulation of the skeletons of corals, tiny animals that live in colonies. During the accumulation process, all kinds of hollows, holes and caves are created too. 'Very little attention is ever paid to these caves because they are so dark and appear to be uninhabited. If you bring a light there, though, you can see that the walls resemble a huge, colourful painting', says De Goeij, who has seen it with his own eyes. This wonderful colour palette is mainly due to cave sponges, which are between one and five millimetres thick and cover the walls in thin layers.

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DISSOLVED ORGANIC MATERIAL

De Goeij discovered that these cave sponges play an important role in the food cycle of the coral reef. Algae and corals produce a great deal of organic material. Because a great deal of this is dissolved in the water and is very difficult to break down, very few organisms can use it as food.

If nobody uses this food, it will wash out of the reef and into the ocean. Energy would leak out of the system. De Goeij, however, has proved that much of the dissolved organic material is taken up by the cave sponges. He was able to determine this by measuring the amounts of carbon, nitrogen and phosphor – the basic elements of all life on earth – that went into the caves and how much came out again.

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INTESTINES

But what exactly do the sponges do with all that food? They can't invest in growth because the space is limited on a coral reef. De Goeij discovered that they mainly use the food to rejuvenate their cells. 'Sponge cells divide incredibly fast. By comparison, cell division in a mouse's intestine takes at least half a day. Sponges take between 5 and 6 hours. According to De Goeij, sponges need to do this because they come into contact with so much dirt. 'Sponges filter their food out of the water. Because they live in a nutrient-poor environment, they sometimes have to pump 100 litres of water a day. This increases the chances of a sponge coming into contact with all kinds of viruses, bacteria and poisonous substances. These things can cause permanent damage. In order to avoid this, the sponge constantly rejuvenates its cells.' Remarkably, the structures the sponges use to take up their food are very similar to the human intestinal tract. 'Sponges are about 700 million years old and are our oldest multicellular ancestors. It looks like our digestive tract has not changed so much during evolution.'

SPONGE CULTIVATION

Thus cave sponges constantly produce a huge stream of dead cells which – unlike the dissolved organic material – can be easily eaten by the other organisms on the reef. Has De Goeij's research resolved the Darwin Paradox? 'No, it hasn't. But at least we now understand better how such an ecosystem can function – by recycling efficiently.' He hopes that his results can be used in sponge cultivation. 'That's not really successful at the moment. Perhaps we'll get better at it now we know exactly what they eat and how cells grow and die.'

TINY MEDICINE FACTORIES

De Goeij sees a lot of applications for cultivated sponges. Because they are outstanding filters, they could be used to purify water. But sponges also contain substances that could be used as medication. 'Sponges are tiny chemical factories, but the substances they produce are so complicated that it is much too expensive to synthesize them and the medicines would be unaffordable. It's therefore important to develop good cultivation methods for sponges. Natural medicines mainly come from plants and animals that live on dry land at the moment. However, 70% of the earth is under water and the sea contains a wealth of interesting substances.'

CURRICULUM VITAE

Jasper de Goeij (1977) graduated as a biologist in 2001 at Wageningen University. In 2003 he started his PhD research at the Royal Netherlands Institute for Sea Research. His supervisor was Prof. G.J. Herndl of the University of Groningen. The research was financed by NWO. His thesis is entitled Element cycling on tropical coral reefs: The cryptic carbon shunt revealed. He and Dr Ronald Osinga will be continuing the research with their own company Porifarma. **www.porifarma.com**

TIME RUNNING OUT ON CORAL REEFS AS CLIMATE CHANGE BECOMES INCREASING THREAT

FEATURE **BEN SHERMAN** PHOTOGRAPHY **MARCELO MARIOZI – WWW.UWPHOTO.AE**

Increasing pressures from climate change will reach a tipping point in less than a decade triggering a significant decline in the health of the planet's coral reef ecosystems according to the findings in an international report issued today.

Released by the Global Coral Reef Monitoring Network and the International Coral Reef Initiative, international governmental and scientific partnerships, "Status of Coral Reefs of the World: 2008" provides both good and bad news while sounding the call for urgent global action to respond to climate change.

Coral reefs continue to be threatened from direct human activities of pollution and over-fishing, but now the threat of climate change is being recognized as the major threat to the future of reefs around the world. One fifth of the Earth's coral reefs have disappeared since 1950, and a NOAA authored report issued in July states that more than nearly half of U.S. coral reef ecosystems are considered to be in "poor" or "fair" condition.

"Unless the world gets serious about reducing greenhouse gas emissions in the next few years, it is likely there will be massive bleaching and deaths of corals around the world," notes the report's lead editor and global coral authority Clive Wilkinson who coordinates the Global Coral Monitoring Network in Australia. "This will have significant impacts on the lives of the people in developing countries who are dependent on reefs for food, for tourism, and for protecting the land they live on."

This status report was put together from 370 contributors in 96 countries and states and is the most authoritative report on the world's coral reefs. The report presents regional assessments of the health coral reef ecosystems found throughout the world, the threats they face, and recommendations for action. A new feature of the 2008 reporting is publication of a separate report, "Socioeconomic Conditions along the World's Tropical Coasts: 2008," detailing socioeconomic data on how people use coral reefs in 27 developing tropical coastal countries.

The status report includes satellite data from NOAA's Coral Reef Watch project which measures stress to reefs from global temperatures and resulting bleaching. NOAA recently started tracking ocean acidification changes in the Caribbean.

Frequent or long-term bleaching kills or severely weakens corals, leaving them more vulnerable to disease, and resulting in a sea bottom covered with algae and sponges that may eventually smother remaining coral. Acidification is a growing threat that could imperil the ability of corals to build their skeletons. A number of recent studies demonstrate that ocean acidification is likely to harm coral reefs by slowing coral growth and making reefs more vulnerable to erosion and storms.

In good news the report, which is issued every four years, found that there was major recovery of reefs in the Indian Ocean and western Pacific from climate change induced bleaching events in 1998 – especially those reefs that were in protected areas. Other reefs cited as being in healthy condition included Australian reefs in general, most notably the Great Barrier Reef, the remote reef systems of the Pacific and Indian Ocean that suffer little human impacts and some small areas of the Caribbean.

The report also acknowledges that increased awareness such as that promoted by 2008 being designated "International Year of the Reef" is beginning to have an impact pointing to a series of major conservation initiatives that have been announced in recent years including the Coral Triangle Initiative in Asia, the Micronesia and Caribbean Challenges, and the creation of the two largest marine protected areas in the world: in the Phoenix Islands of Kiribati and the U.S. Papahanaumokuakea Marine National Monument.

In addition to climate change, negative impacts to corals in the past four years included the Indian Ocean tsunami, hurricane damage which combined with bleaching has endangered wide ranges of Caribbean coral reefs, and increasing human activity pressures including pollution, development, deforestation and overfishing in East Africa, South Asia, Southeast Asia, populated areas of the Pacific and Caribbean. One particular threat is the increase in "bomb" and cyanide fishing in Asia and in Tanzania.

The assessment includes detailed recommendations to preserve and better manage reef ecosystems. Human pollution and fishing pressures have to be reduced while the development of sustainable tourism activities can protect the reefs while stimulating economic growth. The report also encourages increased use of marine protected areas as a means of ensuring reefs can continue to protect important fish nursery areas and serve as reservoirs of marine biodiversity.

The Global Coral Reef Monitoring Network receives support from governmental and non-governmental organizations including the U.S. Department of State, NOAA (the National Oceanic and Atmospheric Administration), the World Bank and the WWF (World Wildlife Fund) to publish this survey of the health of the world's coral reefs and diagnoses solutions for halting and reversing their decline.

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STATUS OF CORAL REEFS OF THE WORLD: 2008

FEATURE **CLIVE WILKINSON**

GCRMN
GLOBAL CORAL REEF MONITORING NETWORK

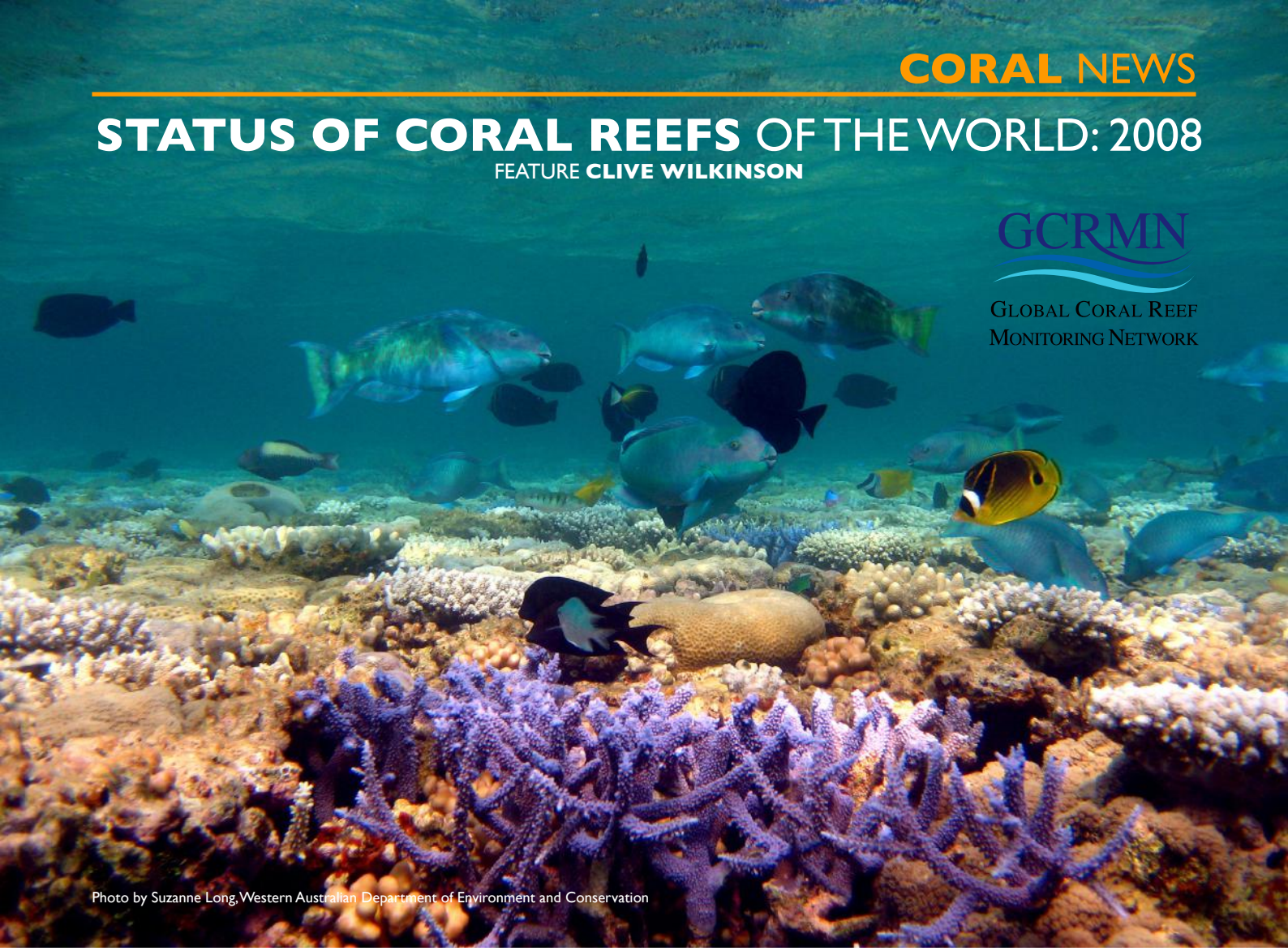

Photo by Suzanne Long, Western Australian Department of Environment and Conservation

Expert opinion of 372 coral reef scientists and managers from 96 countries and states is that:

- The world has 'effectively lost' 19% of the original area of coral reefs since 1950;
- 15% of coral reefs are in a 'Critical' state with loss possible within the next 10 to 20 years;
- 20% are seriously 'Threatened' with loss predicted in 20 to 40 years;
- 46% of the world's reefs are regarded as healthy and not under any immediate threat of destruction… except for 'currently unpredictable' global climate threats.

'Effectively lost' means that these coral reefs are not functioning because there are few live corals and the remaining corals are either broken, diseased or covered in sediment; fish populations are seriously over-fished with very few large predators and algal grazing fish; there is clear evidence of pollution with poor quality, turbid water; and reefs are being over-grown with macro-algae, sponges or other organisms favoured by polluted waters. This also means that the 500 million people dependent on these coral reefs could be deprived of reef goods and services in food, coastal protection and income from tourism in the near future.

Predictions of 'Critical' and 'Threatened' are based on a 'business as usual' scenario assuming that human stresses will continue to increase and no dramatic improvements will occur in coral reef management. Moreover, these predictions do not factor in the threats of global climate change – which are predicted to be inevitable, but without clear timelines.

The global climate change threats of ocean warming, increasing ocean acidification and more intense tropical storms are now regarded by the world's leading scientists and managers as the greatest threats to all of the world's coral reefs and that unless urgent action is taken soon to reverse the rate of greenhouse emissions, we are faced with massive losses of coral reefs around the world. This will mean extinction of species, diminished food supplies, loss of tourism potential and a reduction of coastal protection for low lying areas near coral reefs.

Since the last GCRMN report was issued in 2004, overall the coral reefs of the world have effectively 'marked time' because of a near balance between reef recovery and degradation.

Reefs in the Indian Ocean and western Pacific have recovered well after the climate change induced bleaching in 1998 and human damage. But the Indian Ocean tsunami, more bleaching, and human pressures have slowed or reversed recovery on many of these reefs. Those in the Caribbean have been less fortunate, due to the effects of the 2005 mass bleaching.

The critical issue emerging from the 2008 report is that about 500 million people have some dependence on coral reefs for food resources and supplementary income from fishing, coastal protection, building materials and income from tourism. Of these people about 30 million are almost totally dependent on coral reefs – including those who live on very low lying coral reef islands.

This report on the world's coral reefs in 2008, the International Year of the Reef, contains a mix of good and bad news. Coral reefs were damaged during the Indian Ocean tsunamis in late 2004, and 2005 was the hottest year in the Northern Hemisphere since 1998 with massive coral bleaching and hurricanes throughout the wider Caribbean. Increasing human pressures are damaging coral reefs near major centres of population, and there is increasing evidence that global climate change is threatening more and more coral reefs through warmer waters and rising ocean acidification.

THE DAMAGING EVENTS

The Indian Ocean Earthquakes and Tsunamis of 2004

The largest earthquake for 40 years struck near Sumatra on 26 December 2004 and spread 1300 km to the Andaman Islands of India. Some reefs in Sumatra and the Andaman Islands were thrust out of the water, killing them almost instantly. The resulting tsunamis

killed more than 230,000 people in Indonesia, Thailand, the Andaman and Nicobar Islands of India, Sri Lanka and devastated their lands and economies. There was significant damage to reefs in Indonesia, Thailand, the Andaman Islands, Nicobar Islands, Sri Lanka and the Maldives, with much of the damage caused by debris from the land or by dead coral rubble smashing or smothering other corals. Many broken corals have since recovered, but over-fishing and pollution from poor land use and inadequate treatment of wastes remain as the main threats to Indian Ocean coral reefs (from Wilkinson C, Souter D, Goldberg J (2006). Status of Coral Reefs in Tsunami Affected Countries: 2005. Australian Institute of Marine Science and Global Coral Reef Monitoring Network, Townsville Australia, 154 p.).

Coral Bleaching and Hurricanes in the Caribbean in 2005

2005 and 1998 were the hottest years, and most devastating for coral reefs since global records started in 1880. In 1998, the damage was greatest in the Indian Ocean, Western Pacific and the Caribbean. In 2005, damage was confined to the wider Caribbean where coral bleaching and mortality compounded previous bleaching in 1987, 1995 and 1997-1998. Losses were extreme: 51.5% losses of live hard coral cover in US Virgin Islands; more than 50% of coral colonies bleached in Florida, Puerto Rico, the Cayman Islands, St. Maarten, Saba, St. Eustatius, Guadeloupe, Martinique, St. Barthelemy, Barbados, Jamaica and Cuba; up to 20% coral mortality on Barbados; 11-30% in the French West Indies, and Trinidad and Tobago. Also, 2005 was the most severe hurricane season ever with 26 tropical storms including 13 hurricanes, which damaged coral reefs. For example, coral cover was halved around Cozumel, Mexico. Many stressed and bleached corals subsequently died from coral diseases in 2006 and 2007 (from Wilkinson C, Souter D, (2008). Status of Caribbean Coral Reefs after Bleaching and Hurricanes in 2005. Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre, Townsville Australia 152 p.).

Plagues and Diseases: New outbreaks of crown-of-thorns starfish (COTS) are devastating coral reefs in Egypt, Kenya and Tanzania; as well as parts of South-east and East Asia, especially the Philippines, Japan and China; and in Guam, Majuro Atoll (Marshall Islands), Fiji and French Polynesia in the Pacific. Diseases devastated coral populations throughout the wider Caribbean in 2005 and 2006 following mass coral bleaching. This was similar to losses in the 1980s and 1990s and particularly affected species of Acropora and the Montastraea annularis complex with significant losses of coral cover.

POSITIVE ACTIONS

This 2008 report also highlights good news in major conservation advances:

The Coral Triangle Initiative was signed in 2006 by the governments of Indonesia, Philippines, Malaysia, Papua New Guinea, the Solomons and Timor Leste to conserve coral reefs with the highest biodiversity. President Yudhoyono of Indonesia marshalled international assistance to conserve the biodiversity, fisheries and food security potential of the vast marine resources surrounding thousands of islands. This was a response to calls by the Convention on Biological Diversity and the World Wildlife Fund (WWF) to reduce losses in biodiversity and set up networks of Marine Protected Areas. New partnerships are being forged with governments, UN agencies and big NGOs.

The Micronesia Challenge arose at the same time when Palau, Federated States of Micronesia, the Marshall Islands, Guam and the Northern Mariana Islands pledged to conserve at least 30% of their marine resources and 20% of terrestrial resources by 2020. They are seeking international assistance to establish new MPAs and strengthen existing ones to conserve 61% of the world's coral species, more than 13,000 species of reef fishes, 85 species of birds, 1400 species of plants; all with considerable cultural significance.

The Caribbean Challenge was launched in 2008 with The Bahamas, Dominican Republic, Jamaica, Grenada, St. Vincent and the Grenadines pledging to conserve 20% of their marine and coastal habitats by 2020 because the livelihoods and cultures of 10 million people depend on these resources. Other Caribbean countries are also considering joining to pool their resources and capacity to fund rangers, patrol boats, scientific expertise and education programs in new and existing MPAs.

The two largest marine protected areas in the world were recently declared in the Pacific. The Papahānaumokuākea Marine National Monument was upgraded to highly protected status by the USA to take in the 356,893 km^2 of the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve, previously designated in 2000. The Government of Kiribati declared the Phoenix Islands Protected Area (PIPA) with help from major NGOs to make this the largest MPA in the world at 410,500 km^2. These eclipse the Great Barrier Reef Marine Park established in 1975 and upgraded in 2004 which has 115,395 km^2 as no-take status out of the total 344,400 km^2.

In June 2008, the World Heritage Commission listed a large part of New Caledonia for special protection, including 15,743 km^2 of coral reefs. They acknowledged that these reefs are of global significance with a large concentration of biodiversity resources.

Coral reefs in the Indian Ocean, especially in the Seychelles, Chagos and the Maldives, and Palau in the Western Pacific, have continued to recover from the devastating bleaching of 1998.

Socioeconomic assessments are increasingly being used to improve coral reef management decision making. Through the GCRMN, a series of socioeconomic assessment manuals and guidelines have been produced for many parts of the world and translated into local languages. Local communities are increasing their awareness of the need to protect their coral reefs through community-based management. The Fiji Locally Marine Managed Area (FLMMA) program is leading the way by incorporating traditional systems of temporary closures (or tabus).

STATUS OF CORAL REEFS AROUND THE WORLD

MIDDLE EAST: Reefs in Red Sea and Gulf of Aden continue to be healthy with high coral cover and only minor damage from coral bleaching and crown-of-thorns starfish; in contrast, reefs in the Persian Gulf, Arabian Sea and Gulf of Oman were devastated in 1996, 1998 and 2002 due to climate related stress and the massive cyclone 'Gonu' in mid 2007. Corals have also been destroyed during massive coastal development along the Arabian Peninsula.

INDIAN OCEAN: Reefs in Eastern Africa recovered well after massive bleaching losses in 1998; however growing populations and coastal developments are slowing recovery, especially outside MPAs. More local communities are now involved in coastal management. Southwest Indian Ocean Islands reefs also recovered well after 1998, especially parts of the Seychelles and Comoros; whereas Madagascar and Mauritius continue to lose coral cover due to human pressures. Effective reefs management has aided coral recovery. In South Asia there is a mix of reef decline due to human damage, and amazing reef recovery in the western Maldives, Chagos, Lakshadweep Islands of India and on northwest Sri Lanka; some reefs increased from 5% coral cover to 70% in 10 years.

ASIA: Reefs in the Coral Triangle Initiative countries in Southeast Asia (Indonesia, Philippines, Eastern Malaysia, and Timor Leste) continue to decline due to over-fishing, increasing sedimentation and urban and industrial pollution from the rapid economic development; government and NGO conservation efforts are inadequate and 50% of the mangroves have been lost. Reefs in Northeast Asia are also declining under significant human, bleaching and crown-of-thorns starfish pressures. Conservation awareness is increasing as economies develop and regional cooperation increases.

THE PACIFIC AND AUSTRALIA: Reef management in Australia continues as the conservation benchmark, with the Great Barrier Reef being well managed and relatively stable, and rapid increases in management in Western Australia. Climate change, cyclones and poor inshore water quality remain the major threats.

Reefs of Papua New Guinea are predominantly healthy; mainly due to low population pressures rather than good management, with NGOs providing the only effective management with local communities. The outlook is encouraging in Micronesia with good reef recovery especially in Palau. More MPAs will be declared via the Micronesia Challenge. Similarly reefs in the Southwest Pacific are predominantly healthy, but fishing and coastal developments are increasing. Climate-related bleaching remains the greatest threat, while the Locally Managed Marine Area network in Fiji leads the way with community management based on traditional practices. Most reefs in Polynesia Mana are remote from land and human pressures, and may serve as biodiversity reserves with coral bleaching and ocean acidification as the major threats. The US Pacific presents a large contrast; the Northwest Hawaiian Islands are near pristine, whereas reefs around the Main Hawaiian Islands suffer from over-fishing and sediment pollution. Management efforts are increasing rapidly.

THE WIDER CARIBBEAN: There was massive coral bleaching and hurricane damage in 2005. Reefs of the US Caribbean have been intensely researched, monitored and managed, but pollution from the land and over-fishing continue to cause damage. The remote Tortugas and Flower Garden Banks are well managed and healthy. The US Congress is revising the 'Coral Reef Conservation Act' to improve conservation through reef restoration and strengthened international programs. The nearby Northern Caribbean and Western Atlantic region has more reef recovery and conservation in Bermuda, the Cayman Islands and Cuba, but reefs in the other countries are either unchanged or continuing to decline due to bleaching, diseases and pollution. In the Lesser Antilles there was particularly severe bleaching and disease in 2005 with some countries reporting 50% loss of coral cover; all exacerbated by pollution and over-fishing. The Caribbean Challenge may help reduce some human damage. Reefs along the Mesoamerican Barrier Reef have continued to decline after severe losses in the 1980s; many reefs lost more than 50% coral cover. Bleaching and hurricanes in 2005 caused considerable local destruction. Major programs have raised capacity and improved MPA management. News is both good and bad in the Southern Tropical Americas; reefs close to land continue to suffer from pollution and sediment runoff, however more remote reefs show increasing coral cover.

Photo by Darren Cameron

CLIMATE CHANGE, CORAL REEFS AND THE INTERNATIONAL CORAL REEF SYMPOSIUM

Serious global climate change threats to coral reefs were confirmed by 3500 of the world's leading coral reef scientists and managers in Florida in July 2008. The news from these scientists was far from encouraging.

The major consequences of increasing greenhouse gases will be:

- More coral bleaching from warmer oceans;
- Rising ocean acidification from more dissolved carbon dioxide (CO_2);
- More severe storms;
- Rising sea levels that will drown some coral reef nations.

Climate change is proceeding faster than in previous ice-age transitions and coral reefs and corals are falling behind and suffering fever-high temperatures and rising acidity. There are some hopeful signs, but no single, easy remedies.

NOAA satellites reveal tropical oceans have warmed at a significantly faster rate during the last 10 years, suggesting that there are only 8-10 years left to turn the tide because CO_2 concentrations in seawater above 450 ppm threaten the existence of coral reefs as we know them. Already 33% of the world's coral species are at high risk of extinction following widespread losses since the 1970s. Healthy and resilient coral reefs can respond vigorously to damage; but climate change stresses are eroding that resilience. For example, ocean acidification will prevent juvenile corals from settling and make adults more fragile.

Genetic studies are now showing how reefs and their organisms are connected. Genes have been isolated within new symbionts that make some corals more resistant to temperature extremes and coral bleaching by allowing corals to grow at higher temperatures, or by producing antioxidants to soak up toxic oxygen products. This will assist managers in designing networks of MPAs to incorporate such resilient species. Genes also code for signals to tell other corals when they are ready to spawn, ensuring synchronised activity. The role of microbes is becoming clearer and more important in nutrient cycles, in responding to climate change, and in disease; but many coral reef organisms appear to be developing an immunity to diseases.

Problems for reef managers are increasing as 50% the world's population will live along coasts by 2015, putting unsustainable pressures on coastal resources. The reefs they manage will likely contain less attractive, but tougher corals. Rising food and fuel prices are resulting in over-fishing and serial depletion of fish stocks in many poor countries. 'Healthy Reefs for Healthy People' is a useful theme to link national economics, tourism, livelihoods, food security, cultural and spiritual well-being into reef management, especially via multiple-use Marine Protected Areas linked into networks and managed by all stakeholders (more information on: http://www.nova.edu/ncri/11icrs/).

We may be losing some animals from stressed coral reefs. Crinoids (feather stars) and ophiuroids (brittle stars) are disappearing off reefs near Florida and the Netherlands Antilles; while sea snakes are becoming particularly scarce on reefs off Western Australia, where they were once abundant. Is climate change behind these losses?

RECOMMENDATIONS FOR ACTION TO CONSERVE CORAL REEFS

Experts from around the world have made the following high priority recommendations to conserve coral reefs for future generations; more are within the report.

- Urgently combat global climate change – unless there are urgent reductions in current rates of emissions of greenhouse gases, climate change will threaten the long-term future of coral reefs. Scientists estimate that the world has 8 to 10 years before galloping climate change will start to devastate coral reefs;
- Maximise coral reef resilience (by minimising direct human pressures on reefs) – damaging human activities of over-fishing and destructive fishing, sediment pollution from poor land use, runoff of nutrients and other pollution, and habitat loss through unsustainable development continue to 'irreversibly' damage coral reefs. Controlling these threats will improve the resilience of coral reefs to resist climate change losses. Developing countries need assistance to improve local catchment and coastal management through community-based management and to develop alternative livelihoods that take pressures off reefs.
- Include more reefs in MPAs – a proven and effective governance approach for conserving coral reefs and promoting sustainable use is to include them in effectively managed marine protected areas (MPAs). These should preferably contain large fishery reserves or no-take areas, and be linked into a network of MPAs with effective management and government support.
- Protect remote reefs – in the future, the largest reservoir of coral reef biodiversity will be on coral reefs remote from continental land masses and human populations. If these are protected, they can serve as replacement stocks of juveniles and larvae for damaged reefs. The examples mentioned above in the Pacific can be expanded and developed elsewhere. Developed countries have the best governance and enforcement capacity resources to protect reefs in their national waters.
- Improve enforcement of MPA regulations – effective and enforceable governance systems are essential to regulate access to and exploitation in managed ecosystems. Developing countries need assistance to establish effective enforcement systems that are compatible with local cultural values and practices.
- Help improve decision making with better ecological and socioeconomic monitoring – increased monitoring is necessary to provide information to natural resource managers and decision-makers on the impacts of imminent climate change threats, so that appropriate actions can be taken to reduce threats to reefs and coastal communities.

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EDA QUIZ
DUGONGS

ANSWERS FOUND ON PAGE 50

1. Sailors once believed dugongs were…
   a. Mermaids
   b. Giant Squids
   c. Whales
   d. Walruses

2. Dugongs are:
   a. Fish
   b. Mermaids
   c. Mammals
   d. Seals

3. A dugong is also known by which name?
   a. Killer Whale
   b. Sea Cow
   c. Sawfish
   d. Thorny Devil

4. Dugongs are found to live in:
   a. Deep waters
   b. Ocean floor
   c. Shallow tropical waters
   d. Reefs

5. Dugongs are clumsy and slow-moving in their natural habitats:
   a. True
   b. False

6. Dugongs are related to:
   a. Hippos
   b. Whales
   c. Dolphins
   d. Elephants

7. Dugongs have poor eyesight but good hearing.
   a. True
   b. False

8. How much vegetation can an adult dugong eat a day? Up to:
   a. 1 pound / 450 kg
   b. 53 pounds / 24 kg
   c. 172 pounds / 78 kg
   d. 385 pounds / 174 kg

9. Which waters hold the largest dugong population in the world?
   a. Torres Strait and the northern Great Barrier Reef
   b. Bay of Bengal
   c. Manila Bay
   d. Persian Gulf

10. The second largest population of dugongs in the world is in:
    a. Mozambique
    b. Arabian Gulf
    c. Philippines
    d. Japan

11. IUCN has classified the dugongs as:
    a. Least concern
    b. Near threatened
    c. Vulnerable to extinction
    d. Extinct in the wild

12. Even with the most optimistic combinations of life-history parameters a dugong population is unlikely to increase more than _____ per year.
    a. 1%
    b. 5%
    c. 10%
    d. 15%

SUBIOS: CELEBRATING TWENTY YEARS

FEATURE **GLYNN BURRIDGE** PHOTOGRAPHY **ELIZABETH FIDERIA**

There are few forums that have achieved as much in sensitising visitors and locals alike to the wonders of Seychelles' unique ocean environment as has SUBIOS, Seychelles' Underwater Image and Film Festival which, from its inauguration in 1989, has continued to fascinate audiences over the years with a tantalising suite of marine-oriented activities, presentations, film-shows, school projects and, of course, image & film competitions.

SUBIOS was the brainchild of Mr. Philippe Blanchard and a handful of local divers who, in 1989, together with Mrs. Maryse Eichler, Mr. David Rowat, Mr. Maurice Loustau-Lalanne and a special committee, put together a festival that would highlight Seychelles' extraordinary marine world, showcase the islands as an ideal diving destination and also sensitise the local population to the beauty beneath the waves.

Diving in Seychelles at that point in time was still in its infancy as was awareness of the Seychelles Islands as a diving destination and what it had to offer to aficionados and amateurs alike. From the outset, SUBIOS has done much to change perceptions both among visitors and the local population alike and to raise the profile of the marvelous treasures of Seychelles' unique and remarkable marine heritage.

Over the intervening years SUBIOS' special guests have included such names as Kurt Amsler, recognised as the "Grand Master" of underwater photography, Pierre Coton – one of the organisers of the Festival Mondial de l'image Sous-Marine in Antibes, David Doubilet, a National Geographic magazine underwater photographer; John Boyle, Mark Shelley, Lawson Wood, Norbert Wu, who used to film with Howard Hall, as well as Piet & Karen Van Zyl from South Africa.

The twin-pronged approach of educating visitors to the islands as well as the local Seychellois population has been especially successful. Presentations, talks and film shows conducted throughout Seychelles' schools have ensured that the nation's youth have become increasingly aware of their marine environment while their participation in successive, dedicated SUBIOS writing and painting competitions has also heightened their sensitivity to the challenges facing the surrounding ocean and its inhabitants. Each year, the organizers choose a specific theme that focuses attention on a particular marine domain and which showcases its potential as well as the challenges facing it. Recent themes have included 'Cetaceans: Our Ocean Cousins', 'The Gardens Below', 'Wrecks as Ocean Habitats' and this year's theme, 'Diving the Granite Isles of Gondwanaland'.

Reinforcing each year's theme are the guest speakers who enrich the festival with their expertise and whose various films and presentations serve to provoke discussion and so enhance public knowledge of Seychelles' marine worlds.

The Film & Image Competition itself, an ever-popular component of the SUBIOS Festival, assembles well-known film makers and photographers from abroad such as John Boyle, Dr. Andreas Fichtner, Dr. Pedro Vieyra, Leandro Blanco, Edward Snidjers and Neville Coleman together with local diving experts and speakers such as Dr. David Rowat, Leo Hoevers and Mrs. Elizabeth Fideria, to provide a vibrant ambiance and, of course, an interesting film and image contest whose winners are decided by public vote.

SUBIOS also traditionally enlivens the islands' hotels with an array of dedicated SUBIOS evenings in which guest speakers, foreign and local alike, talk and present on a wide range of topics while local bands play and models strut their stuff on the catwalk. Highly decorated school floats have also been known to wind their way through the streets of the capital, each one resonating with a particular marine theme and outdoor film shows have long captivated audiences on a moonlit Beau Vallon Bay.

Special intro-dives organised by the islands' dive centres, glass-bottom boat rides into Ste. Anne Marine National Park, an annual Cyber Treasure Hunt and a SUBIOS Man & Woman triathlon event complete an array of activities that continue to make SUBIOS a true celebration of Seychelles marine heritage and one that, after two decades, is still going strong.

TECHNICAL DIVING - A NEW ERA

FEATURE **ALI FIKREE**

Recreational diving is usually known as diving that is easy, attainable, demanding and unquestionably safe. It's been the aim of the majority of training organizations to bring people to a level of competence and not to expose them to any unnecessary risks.

As time goes on, diving and exploration often pushes divers beyond the norm which in return needs a wider range of techniques, skills, equipment and knowledge to undergo any form of underwater exploration in a safer manner. Most recreational agencies have a depth limit on air which most of the diving population never feel the need to go past. Few have ever been past the limit set for them by their qualifying agency.

As time went on, individuals wished to take on certain exploration projects which were well outside the scope of normal recreational diving. This presented a new area of risks that needed to be met with a new set of solutions. This area went to be known as extended range diving as it pushed the boundaries of recreational diving. A diver was able to explore wrecks and caves for longer times under extreme conditions. Gradually, diving in extreme conditions called for new training standards and solutions that enabled divers to push further, longer and deeper.

So what did technical diving involve?

The principle feature is the use of safer gas mixtures other than air. This reduced the effects of narcosis, CO2 (Carbon Dioxide) build up and decompression issues. A broader range of techniques and equipment are also key elements to technical diving. For many divers, the first step to training and becoming a technical diver starts with a basic nitrox course.

Nitrox is a mixture of oxygen and nitrogen that has a higher percentage of oxygen compared to the oxygen content in air. The advantage of nitrox is longer no-stop dive times, or shorter decompression times or a higher safety margin. By reducing the nitrogen percentage and increasing the oxygen percentage we absorb less nitrogen and therefore have a lot less nitrogen to off-gas.

Nitrox is not without its set of problems. Because of the increased percentage of oxygen you are more exposed to the risk of oxygen poisoning or oxygen toxicity. This can have a toxic effect on your pulmonary system and central nervous system (CNS). Thus in order to dive nitrox, proper training is required as well as proper dive planning.

In order to achieve greater depths and explore for longer durations of time, you need to reduce the oxygen content of your breathing gas to avoid toxicity issues and also reduce the inert gas content as well. This is where we step through the real door of technical diving. As you have reduced the oxygen and nitrogen content of your gas mixture, you will need to substitute another to make up the difference. Because of its low density and least anesthetic property, helium is usually added hence creating a gas called TRIMIX. Trimix is the ideal gas for divers wanting to explore and dive depths greater than 40m. However, Trimix does not come into the picture without presenting its own issues. Trimix dives need exceptional and meticulous planning preparation. Often PC based decompression software is used.

A well-trained and well-organized mixed gas diver will often carry multiple cylinders containing numerous gases that can be used for traveling to their operating depth as well as multiple decompression gases. It's within the norm to see Trimix divers entering the water with 4 or more cylinders. An average Trimix dive table usually ends up with a decompression schedule such as in the example below. Quite a difference from the 3 min safety stop at 6 meters from a 15m-weekend dive on Martini Rock!

Over the years, techniques and procedures have been developed to ensure diving is safe under extreme conditions. A good example of this is diving some of the local wrecks in the regions such as the U-533 that rests at 112m, Anita at 92m and penetrating the wreck of the Ines. Dives like these require up to months of planning and build-up dives as well as gas and diver logistics. On an average Trimix dive, decompression is anything up to and exceeding 3 hours. Trimix divers need to be fluid in a number of skills ranging from perfect neutral buoyancy and trim, piloting a diver propelled vehicle (DPV) to eating and hydrating under water during long decompression stops.

The path to becoming a technical mixed gas diver is long and quality training must be attained prior to undergoing any mixed gas diving. Most technical Trimix courses are not weekend courses such as advanced diver or rescue diver courses. Finding a reputable dive centre that has well-trained and experienced instructors is also key to getting a better education in technical diving.

Numerous agencies offer training courses such as IANTD, (International Association of Nitrox and Technical Divers) GUE (Global Underwater Explores) etc. It's advisable to check the background of your instructor to ensure that they have adequate experience to teach diving at this level.

ABOUT THE AUTHOR

Ali Fikree is a GUE Tech 2 level exploration diver as well as an IANTD Instructor. He teaches Trimix and technical courses with well-known cave explorer and IANTD Instructor Trainer Glenn Campbell, manager at the Palm Dive Centre at the Hotel JAL in Khorffakkan.

The Palm Dive Centre is the first full Recreational and Technical Dive Facility in Khorffakkan offering quality onsite blended and pumped Nitrox, trimix, oxygen and air as well as the full IANTD Technical syllabus and equipment sales. The Palm Dive Centre also offers trimix dive expeditions to some of the new local deep wrecks in the region that rest between 57m and 112m.

DEPTH (m)	TIME (mins)	DETAILS
72	20	At target depth (include 4 min descent time). Trimix 15/55. Start ascent at 19 mins.
57	1	Initiate first deco stop. Switch to Trimix 21/35.
54	1	
51	1	
48	1	
45	1	
42	1	
39	1	
36	1	Stow Trimix 21/35. Switch to 15/55 for clean up.
33	1	Switch to first deco gas Trimix 32/30.
30	2	
27	2	
24	2	Switch back to bottom gas. Stow Trimix 30/30.
21	5	Second Deco Gas Switch to EANx 50 (Nitrox 50). Begin 5 min deco gas cycle.
18	4	Surface support to check on diver. Provide food and drink. Support diver to take away any spent stage and decompression cylinders.
15	4	Prepare Spool and DSMB.
12	4	Team leader shoots DSMB.
9	4	Hydrate on electrolyte from camelback. Switch back to Trimix for clean up break. Stow EANx 50 cylinder.
6	22	Gas Switch to 100% O2 and cycle gas breaks on 15/55 Trimix.
End	74 mins	End of dive including 1m per min to surface.

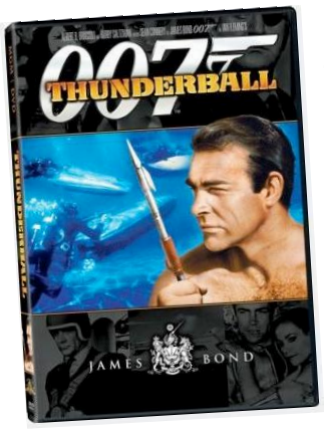
DIVING THEN AND NOW

FEATURE **COLIN SIMPSON** PHOTOGRAPHY **GEORGE HERIOT'S SCHOOL SUB-AQUA CLUB**

Club members take to the water – note the absence of BCDs and alternative air sources

Members on the trip to Lanzarote cook supper

Members prepare for a dive with their all-black equipment



For many divers of a certain age, like me, it all started with the James Bond film Thunderball. Until then the only time you saw divers on the big screen was in documentaries such as Jacques Cousteau's The Silent World and Hans Haas's adventures with sharks.

These pioneering works are of course classics, but for a schoolboy growing up in Edinburgh, Scotland – hometown of the greatest Bond, Sean Connery – there was something missing. But all that changed with the release of Thunderball.

The film features extensive scenes involving divers including a spectacular speargun battle between the sub-aquatic forces of good and evil. The aqualungs that enabled the divers to breathe underwater seemed amazing enough then, but in addition there were fabulous gadgets such as one-man tow sleds with built-in spearguns, and some of the divers parachuted into the water. I watched it all wide-eyed.

The Bond magic transformed the image of diving, turning it from a naval specialisation or the subject of Sunday afternoon TV documentaries into something thrilling, exotic and glamorous.

I immediately decided I would become a diver and as soon as I was old enough I joined the sub-aqua club at my school, George Heriot's in Edinburgh. But diving back then was not only rather different from the way it was portrayed in Thunderball – compared with today it was incredibly primitive.

One essential in those early days that is rarely seen in kitbags now was… talcum powder.

Most wetsuits were made of bare, unlined neoprene and had to be sprinkled liberally inside with talc before you could put them on, otherwise you couldn't pull the neoprene over your arms and legs.

All of you who have grown up with nylon-lined suits that slip easily on and off don't know you're alive.

Another change I notice when I gaze around an equipment shop now is that everything is in Technicolor. I took up diving during the sport's Model T Ford era – you could have any colour you liked as long as it was black. Wetsuits, masks, fins – almost all of them were uniformly black.

Improved materials and manufacturing processes mean you can now buy yellow fins, blue fins, red fins – any colour you like, really. And the same goes for wetsuits, masks and snorkels.

Huge strides have been made in the area of instrumentation. My first depth gauge was an extraordinarily simple and inaccurate affair consisting of a little transparent plastic tube attached around a plastic disc that you strapped to your wrist. The tube was open at one end as you went deeper, water pressed in further against the column of air trapped inside. You checked how deep you were by noting where the water and air met in relation to a scale printed on the disc.

Nowadays, of course, there are incredibly sophisticated diving computers that tell how deep you are, how long you can remain safely underwater and a host of other information. Even Q from the Bond films would be impressed.

Between us the members of my club had only one submersible pressure gauge, a battered device of questionable accuracy. But nowadays you can of course get wireless ones! You wear them on your wrist and an electronic transmitter connected to the tank sends a signal indicating the remaining pressure so you never run out of air.

Today purpose-built dive boats with plenty of shade and racks where air tanks can be stored safely are commonplace, and EDA of course has its own dhow. My old club's boat was not nearly as classy.

It was a homemade affair – we simply borrowed a boat from someone, turned it upside down and used it as a mould, covering the hull with sheets of fibreglass and slapping on resin. Once the resin had hardened we separated the boat from the fibreglass, added some box sections to give it a semblance strength and, voila, we had our own boat.

Such a craft probably broke every marine safety regulation even then, but we were happy enough using it, hauling it onto the roof of our second-hand minibus and securing it with ropes before heading off to a dive site.

It was never the most sturdy of crafts – the brittle fibreglass cracked easily and frequently had to be patched up. In the exciting climax of Thunderball the Disco Volante, the yacht belonging to villain Emilio Largo, famously splits in two – the front half is revealed to be a large, powerful speedboat in which Largo attempts to escape. I always felt our boat could very easily have split in two as well, though not by design.

The club's land transport was not much better. We had a succession of ancient, worn-out vans and minibuses in which we travelled all over Scotland and beyond. Once we went from Edinburgh to Cornwall and on to Land's End – a round trip of 1,900km – in a small battered furniture van. A dozen divers sat on the floor in the back surrounded by wetsuits, air tanks and catering-sized tins of baked beans and rice pudding.

Something that has not changed over the years is the distrust felt by fishermen towards divers. On that trip we drove into the Cornish port of Penzance but quickly left to the sound of our own footsteps as the locals made it very clear they did not want us in their waters. They were afraid we would interfere with their lobster pots, but like most divers we would never have thought of doing so.

One year the club went on a diving trip

overseas, to Lanzarote in the Canary Islands. Closer to home we visited dive sites near picturesque Scottish towns and villages such as St. Abbs, Dunbar, Oban and Ullapool. For deep diving we went to Loch Long, whose steep sides made it ideal for the purpose. One thing I particularly remember about diving in Scotland was the sheer numbing cold. We went diving throughout the year, even in midwinter, and I've never forgotten the initial shock when the chilled water gushed into my wetsuit. I actually went into the water one time when ice was forming at the edge of the rocks where they jutted into the sea – I know that sounds impossible but I swear it's true.

Nowadays advances in equipment have solved this problem, as many divers in the UK use drysuits to keep out the cold.

The buoyancy control device, now an essential in every diver's kitbag, was virtually unheard of in the Seventies. One or two models were available but I never saw anyone using one.

The alternative air source, again a standard piece of equipment today, had not even been developed back then. And the use by sports divers of nitrox – now readily available at many dive centres – likewise lay well in the future. Then there are Kevlar gloves, LED torches, sophisticated underwater cameras… the list of innovation goes on and on.

Though the basic principle of the most essential piece of equipment of all, the regulator, remains unchanged, in almost every other area of diving equipment design there have been the most amazing advances.

Now if only someone could invent an air tank that becomes weightless as you clamber back onto the boat at the end of a dive…

Colin Simpson on a recent dive in Oman
Photo by Sue Brattle

PRESS RELEASE

GREEN SOCIAL NETWORKING WEBSITE IS LAUNCHED

WWW.COOLTRIBE.COM

London, 2nd March 2009
www.cooltribe.com, the social networking site dedicated to connecting like minded people around the world who care for the environment, health, social justice and other ethical issues, is now live.

Cooltribe.com offers a focal communication platform for groups and individuals around the world to share their thoughts, ideas, videos and all other forms of content about issues that matter to them.

Cooltribe includes daily environmental news imported from across media sources, daily discussion topics where members can air their views and experiences and daily action challenges, where a small action taken daily can help reduce human's negative impact on the environment.

More features are planned for www.cooltribe.com including a comprehensive directory service for all things green and ethical, as well as more advanced functionality found in some of the more developed social networking sites like facebook, myspace and bebo. "Our aim is not to compete with facebook, but instead to create a focused, vibrant community who is interested to keep the environmental topic at the forefront of the social agenda", said Hessia Fernandes, Co-Founder and CEO.

"There are huge numbers of groups, of all sizes and from all corners of the world, who are doing amazing things everyday and these people don't have a platform to publish their news directly to an audience who are highly likely to be interested in what they are doing", said Fernandes. "One of the key reasons cooltribe.com was created was to give these groups a voice and enable them to attract more people to join their valuable causes and make a difference", she adds.

Being a diver herself, Hessia knows how divers care for the environment and how, they often see first hand, what is happening to our natural habitat.

Joining the community at www.cooltribe.com is absolutely free for everyone and international users are welcome. The site is currently in English language only but cooltribe believes that its success will attract further investment to develop other language versions and new and cool applications. Cooltribe is not an accredited body, nor a charitable organisation. Cooltribe believes in the spirit of community and its power to make a difference.

Cooltribe believes the global warming problem and its social repercussions are so important that they warrant their own environmental social networking site.

Visit **www.cooltribe.com** for more information
HESSIA FERNANDES
Tel: **+34 628 061 220**
Email: **info@cooltribe.com**

cooltribe

NEW FORUM FOR PHOTOGRAPHERS

EUPS

The newly created EUPS – Emirates Underwater Photographic Society, is another way for underwater photographers to develop their skills by getting together and exchanging experiences.

If you like to shoot your dives and meet your peers, you can join the Yahoo! Group:
http://groups.yahoo.com/group/eups/
Or send an e-mail to:
eups-subscribe@yahoogroups.com
And/or, go to the FaceBook Group:
http://www.facebook.com/group.php?gid=54454423911
Or search for "EUPS"

WHERE AM I?

FEATURE **ERNST VAN DER POLL**

I recently returned from my annual leave to South-Africa. The trip back home was a little bit different than the last 10 trips I have been making home every year during my 10 years in Dubai. I guess like many of you ,current concerns about the world economy, job security and concern in general of 'what is going to happen to my/our future' made me ask myself a very important question… 'WHERE AM I?'

'Where am I' is a question of place… a universal question and an important one to know the answer of before you can decide where you are going.

We are all finding ourselves at the centre of a big turning wheel. How do our lives connect to the current economy? How does my everyday life affect the environment and biosphere? How, will where I live today effect the who I will become tomorrow? Because the "Place" of where we "are" ultimately affects our decisions, our dreams, how our children grow up and in the end, where we are going…

I remember looking out of the airplane window during takeoff at Dubai's lights and was reminded of the wise words of Sheik Zayed:

"He who does not know his past cannot make the best of his present and future, for it is from the past that we learn."

Learning from the past is like looking over your shoulder .You can see the path that brought you to where you are today. The milestones of important events in your life like big lighthouses or landmarks marking out your life's journey. The past has brought you to the "place" where you are today, but it is only with the realisation of this place that we are able to confidently know where we are going.

"Placing" ourselves is place making: an active engagement with the world that begins at our doorstep and expands outward in both space and time as we learn about and connect to our surroundings throughout our lives. Placing ourselves is weaving an understanding of natural facts, our culture, what we believe in into a durable fabric of identity and belonging. Understanding our places entails an effort to untangle our relationship with our planet.

Freeing our senses to perceive the landscape around us, wether we are living in the city or in the country side or standing on a beach looking at the ocean that opens us up to a whole new understanding of place.

To understand where we are, we can start with some simple questions:
"What's above us?"
"What is below us?"
"Who has been here before?"
"What is the name of that coral or fish?"
"What is going to happen next month or next year?"

The answers woven together makes us aware of a bigger picture and a clear eyed grasp of the industrial metabolism in which each of our lives, as part of a global economy is affecting our planet.

For example… Project Manager, Teacher, Hotel Manager, Construction worker, Diving Instructor, school student… we are all sustained by the commercial flows of electricity, water, materials, waste and things so omnipresent and part of our lives that it has actually become invisible to us.

To understand "place", we have to start looking at these converging systems from a closer perspective to understand the extent of our dependencies.

Have you ever asked yourself what you would do without an aircon in the summer? How your life would be different if you had to walk 5 km with a bucket to stand in line for 2 hours so you can get enough water for you and your family to cook, wash and drink for the whole day.

Have you ever wondered what it would be like to trace the energy and water supplied to your apartment or villa to see what it takes to get there and where it goes after you use it? Have you ever walked through your local shopping centre and stopped to think how exactly did those red strawberries from the United States land on that shelf? Someone had to pick them, pack them, drive them to the airport, fly them to Dubai, unpack them, and drive them to the supermarket.

Or the baby sharks on the ice slab next to

the frozen food section? They are obviously not there for aestheticism or decoration. Somewhere a fisherman is catching and harvesting these little creatures because he knows that someone will be paying top dirham to have them in their soup or salad. As our demand and consumption affects the industrial metabolism of our society, the climate, the change of society as we know it, will be forced to think of "place" in new ways.

With our current world situation, the realities of our planet will demand people, even people who have settled in one place for the long term to "re-place" themselves. Understanding the patterns and processes of "place", in an ever-changing global economy and culture will hold the keys to our sufficiency and survival.

Since the birth of the spoken language, the placing has been about naming. All across cultures, place names told stories, names that could "teach" us about a place. Very often our ancestors named a place not for what it is, but for something that happens there. You can learn from these interesting place names wether you are visiting Sir Bani Yas, Van Couver Islands or the small town of "Twee buffels met een skoot mors doodgeskietfontein" in South-Africa. The latter meaning, two buffaloes killed with one shot at the local watering hole.

One such interesting place was the town of "Waterval Boven" where I grew up until I was about 11 years old. The name of the place translates to "above the waterfall", a small railroad town in Mpumalanga separated by a waterfall from the neighbouring town called "below the waterfall".

It was in this little town that I had my first revelation of "where I am", a connection and realisation of "place" which ultimately steered me to where I am today and who I have become.

So with the "where am I question" and the wise words of Sheik Zayed of knowing your past, I landed In South-Africa to start my vacation retracing my connection with place.

It started with a weekend road trip to Waterval Boven to find Uncle Schalk. Uncle Schalk and his wife lived on a farm just outside of the town. He was known as a man that could fix anything and he had a great passion for nature. His farm was divided by a great ravine with countless waterfalls, thick forests and aloe species that in blooming season would look like wild fire with their orange flowers.

Uncle Schalk wanted to share the beauty of this "place" and laid out a 20km nature trail around the farm. Shortly after he finished laying it out, he invited me to walk it with him. It was on this trail that I learned about how certain grass gets "bent" by passing wild life, and when it rains, the seeds react by turning slowly like a cork screw embedding itself in the rich African soil. It was on this trail that I remember being engulfed by a sea of kosmos flowers, a sea of white, pink and purple flowers towering above my own height as a 10 year old, making me feel like I am literally surrounded by an ocean of flowers and colour. I remember learning from Uncle Schalk how to suck out the honey from the aloe flowers, how to harvest the wild baboon strawberries. I remember the trail meandering behind tall waterfalls and how the roots of the trees made fairy castles behind these waterfalls. I remember how he knew the name of each tree and berry and how his passion and stories made me look at this "place" through new eyes.

On finding Uncle Schalk one Sunday afternoon, I was amazed to see the same passion burning in his eyes. He is now retired and doesn't stay on the farm any more, but he can still recall each little flower, root, tree or insect wandering in the veldt behind his house. At the end of our visit, I thanked him for my first introduction to "place"… a realisation that pushed me in the direction to where I find myself today.

My 2nd stop on my itinerary was the South Coast of the Kwazulu Natal. I moved there when I was 11 and remember the sharp contrast when comparing the differences of the two places. The Ocean became a part of growing up. Crossing the road to snorkel in the rock pools in front of our school during Biology period. Running to the beach to see the annual migration of the sardines, being chased up a tree by a hippo on a school camp in St Lucia, seeing a whale give birth to her calf, learning to surf with wild dolphins sharing your waves… all strong revelations of where I was at that point in time and now with retrospect made me realise that it was more than where I was, but also became where I was going.

About a year ago, two dear friends of mine gave me a book to read. Two quotes from the book became a testimony of what an important revelation our experiences with nature and "place" plays in our lives while growing up:

There was a child went forth every day,
And the first object he looked upon,
That object he became,
And that object became part of him for the day or a certain part of the day,
Or for many years or stretching cycles of years.
Walt Whitman

I like to play indoors better because that's where all the electrical outlets are.
4th grade child

(Quotes from 'Last Child in the Woods saving our children from Nature – Deficit Disorder by Richard Louv)

As a Diving Instructor in Dubai, this challenged me with a question of how can we as Scuba divers use the underwater environment to help young people in the UAE to find a connection with "place".

By connecting the young people of Dubai and the UAE with the sea, we are reconnecting them with an ecology and culture that inspired the UAE of today and will sustain its vision of tomorrow.

For the last 7 years, I have been working on a program called Tawasul. Reach out to help us make that connection.

Tawasul – Reaching out today for a better tomorrow

If you would like to learn more of the activities we do with the schools, you can log onto: **www.tawasul.ning.com**

DIGITAL ONLINE
UNDERWATER PHOTOGRAPHY CONTEST

FEATURE **MARCELO MARIOZI - WWW.UWPHOTO.AE**

DIGITAL ONLINE
UNDERWATER PHOTOGRAPHY CONTEST

We have the honor to announce a new step on the development of underwater photography in the UAE with the official launch of Digital Online Underwater Photography Contest. Digital Online will happen on the first semester of each year from now on and will serve as a qualifying event for the planned National Championship to be held in the second part of the year, it will also add points to a soon to be released ranking system so that the photographers can keep track of their development. The Digital Online event (as well as the National Championship) will be open to all EDA members (UAE Nationals and foreigners with a Resident Visa) and holders of any diving certificate.

On a recent study we found we have many divers with underwater photography equipment, a great number of photographically interesting dive spots in both the Omani and the Arab Gulf, but not a good number of people diving and taking pictures locally. Our goal in underwater photography is to change that scenario, we want to increase the number of people diving and shooting in our waters, bring the photographers together on a web forum dedicated to underwater photography, organize workshops, lectures and events like the championships so that we can surely increase the information exchange on techniques, equipment, preferred dive spots etc… and by that, increase the quality of pictures they get and publish, augmenting the general awareness about the sea and specially about our shores.

Marking the first step in underwater photography as a sport in the UAE, Digital Online starts a long and rewarding trip, which will benefit all the diving industries with a great number of people diving in the region and for that we count on the support of all EDA Members and Dive Centers. Participating in Digital Online is very simple. You need to carefully read the event rules that follow on these pages, or on EDA's website and follow the instructions to send in your images. The images don't necessarily have be taken in the UAE. The registration will open on March 3rd and will close on April 30th. The results will be announced at the EDA Social in May, posted on the EDA website and published in EDA's magazine in June.

Personally, I expect the participation of all, I wish you all the best of luck, and after ten years of competing and organizing events like this I would humbly ask for any excuse to point out some suggestions.

If you are a beginner, don't be afraid of taking part of such an event if you think your pictures are not worth it. It is very unlikely for someone to win their very first competition, but your learning curve at this stage is very steep, and you might see a nice fast increase in the quality of your pictures. It is also a lot easier to start at the creation of a new system like this, because you don't have to compete with people that already have points in the ranking or are more used to the rules, everybody is leveled at this time.

The article in this issue on how to improve your pictures can be used as a guide to choose the images to send.

Since the event counts points in 3 categories (wide-angle, fish and macro), I strongly recommend you participate in all of them, because even a very bad picture (as long as it is not disqualified by the rules) will generate some points that would otherwise not be won if you decided against sending it, and it will help your overall classification.

Never wait until the last minute to send your pictures as internet connections cannot always be relied upon. We have a good window (almost 2 months!) for registration, so if you think you need to improve your pictures you can still dive and try to get better ones. If you see that you won't be able to do more dives and shoot what you want before the deadline for registration, choose your images among the ones you already have.

You can clear any doubts you may have about this event, sending an e-mail to: photo@emiratesdiving.com.

INTRODUCTION

The Digital Online Underwater Photo Contest, from now on referred to as Digital Online, is a yearly internet-based event with the main objectives of:

- Gathering information on the number of underwater photographers in the UAE;
- Discovering new promising underwater photographers in the UAE;
- Developing the human interaction with the underwater environment by displaying the beauty of its fauna and flora.

Digital Online is open to all UAE Nationals and all people living in the UAE under a valid Residence Visa and holders of any diver certificate.

CATEGORIES

Wide Angle (WA): Photographs taken with a wide-angle lens (or adapters that provide an equal level of field-of-view), with or without human presence, portraying the natural beauty of the underwater environment and/or the human interaction underwater (see Orientations & Restrictions).

Fish (FI): Photographs of whole fish(es) and/or fish parts as the main visual element (NOT mammals, crustaceans, mollusks etc…) taken with any lens, portraying it's natural behavior and environment.

Macro (MA): Photographs taken with close up-equipment, portraying underwater flora and/or fauna. The main element NOT being fish.

ORIENTATIONS & RESTRICTIONS

- Digital Online is open to pictures taken all over the world;
- Pictures submitted must be unpublished pictures that have NOT received any award and/or prize in any other form of contest/championship;
- Digital editing will only be allowed if applied in a uniform manner over the whole image (such as contrast, white balance, saturation and sharpening i.e.);
- Selective editing such as (but not limited to) layers, brightening/darkening part of the picture, or cropping are NOT accepted;
- The WA is the ONLY category that accepts creative techniques as (but not limited to):
  - Half-half pictures, where the water half must be 50% or more of the picture;
  - Colored lights, and other effects if done by the time of the image capture;
- Multiple exposures are NOT accepted in any category;
- NO pictures that portray manipulation characteristics, harm (or risk of), bait use or alteration on the habitat and/or species will be accepted;

- Pictures with identification (any form, even dates) over the image are NOT accepted;
- In pictures with models (divers) these must show an unquestionable behavior with regards to the underwater environment protection. Actions like touching, kneeling, leaning, or even positioning the fins in a risky manner to the environment are going to be penalized by the jury;

The following list will result in immediate disqualification:

- Any action against the rules;
- Any deterioration/pollution of the environment;
- Sending pictures taken by other people;
- The use of dead/artificial creatures;
- Moving live animals;
- Pictures of other pictures;
- It is understood that the photographers are responsible for any image use authorizations from his models/divers and EDA is NOT responsible for any damage/litigation related to Digital Online.

REGISTRATION AND IMAGE UPLOAD

Registration to Digital Online is free. The participant needs to be a member of EDA and send an email to **photo@emiratesdiving.com** with the following information:

- Full name
- EDA Membership Number
- Camera Model
- Non-Nationals should also add a low-res scan of their Resident Visa

And he/she MUST send all his/her images attached to this same email message. Because only the first email received by the organization will be considered valid.

- All images must be **.JPG** files, in the EXACT dimensions of 600 x 400 pixels.
- The images should be named:
- Wide Angle Category: **w.jpg**
- Fish Category: **f.jpg**
- Macro: **m.jpg**
- Only ONE picture will be accepted per photographer, per category.
- The original pictures (slides, negatives or high-resolution digital files) are going to be requested by EDA to confirm and authenticate the results before their announcement. If they are not received within 15 days from the requested date, the picture will be disqualified.
- The process of registering and sending images is the confirmation that the photographer accepts the rules of the event, and recognizes EDA and only EDA as capable of evaluating the cases not contained herewith.
- You will receive an email to confirm the registration.

DEADLINES AND RESULTS

The deadline for registration and image upload is midnight (UAE local time) on April 30th 2009. The results will be made public and the prize ceremony will take place at the EDA Social event in May.

IMAGE VALIDATION

Before being exposed to the Jury, the images will pass through a validation process to access the adherence to the rules. If any picture is found not to comply with the rules, it will be eliminated and not voted by the Jury.

The registration confirmation email does not guarantee that the images are valid as this is a sole responsibility of the participant.

JURY

The Jury will be composed of underwater photography specialists, local dive VIPs, public authorities, and EDA guests from the UAE and around the world. The Jury will meet in private after the event and its decision is not subject to any form of appeal. The composition of the Jury will be made public at the result ceremony for anonymity and confidentiality purposes.

CONTEST

The Jury will assign notes from 0 to 100 to all images. Each image score will be defined by the average of notes, after the exclusion of the highest and lowest notes. Only the final image note will be published.

The general winner will be the photographer that accumulates more points in the sum of his pictures. There will be prizes and/or awards for the following positions:

First Place Overall Digital Online
Second Place Overall Digital Online
Third Place Overall Digital Online

First Place Wide Angle Category
Second Place Wide Angle Category
Third Place Wide Angle Category

First Place Fish Category
Second Place Fish Category
Third Place Fish Category

First Place Macro Category
Second Place Macro Category
Third Place Macro Category

SPECIFIC RULING

EDA might also use the results from this event as a "qualifying" event for any subsequent in-water event this year or next year that requires a limit in the number of photographers participating.

EDA may use the images at will, exposing these images on its webpage, magazine, or in any way associated with the subaquatic environment cause, such as products, booklets, publications etc. with no copyright to the photographer nor his heirs but the mention of his/her name.

EDA, Sponsors and Supporters are not responsible for any accidents the participants may incur or provoke as a result of his/her participation in this event.

MEMBER'S **PIC CORNER**

MEMBER: WILLIAM R. MESSRUTHER

I have attached a picture I took at Martini Rock right when the red tide was at its worst, showing that some life still existed, especially this common sea horse which must have been somewhere between 12-15 cm from tail to head. I always assumed that sea horses were delicate and could not withstand any pollution etc but this clearly shows that they are a hardy species.

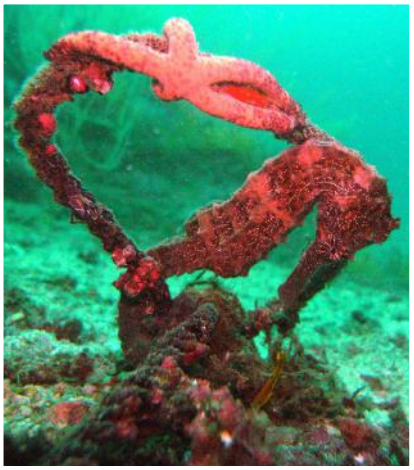
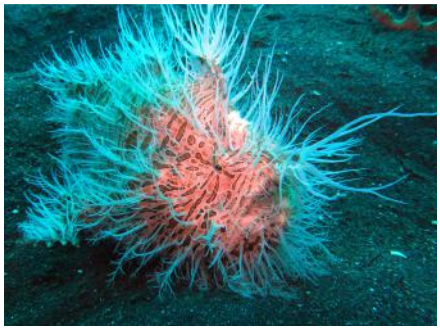


Photo by William R Messruther

I have also attached a shot of the Hairy frog fish and one of the rhinopia I believe both of the scorpion fish family, taken on my holiday in Sulawesi at Lembeh Strait – probably one of the best muck dives in the world.



WHAT MAKES **A GOOD IMAGE?**
5 SIMPLE WAYS TO IMPROVE YOUR PICTURES

FEATURE **MARCELO MARIOZI – WWW.UWPHOTO.AE**

I guess this is the question I got most often. What makes a good picture? How can I take good pictures? Or something like it… but when they come from someone who is already an underwater photographer, they are even more interesting to answer.

There are a few rules, better known as guidelines, for a technically good picture. They are not absolute rules, but I once heard this from an old timer photographer, "For every rule, there is an exception. For every broken rule that's not an exception, there is a penalty", so before tossing these guidelines out the window to create your masterpiece, it is very nice to get used to them.

FOCUS & LIGHT

The first one comes out of almost every underwater and topside photography course, pictures must be sharp and with a pleasant illumination. If there is a clear mistake in either or both focus and illumination (be it flash or natural), there is a big chance your picture will be unpleasant to the viewer. This one is the most important, if you do not dominate the focus and exposure it will not matter if you get everything else right. In competitions, pictures with mistakes in one or the other almost never reach the 50% mark, if the mistake is on both it would be lucky to get more than 25% of the possible points. Luckily this is the easiest to correct, and I very rarely come across someone with big problems in this area.

GET CLOSER

Almost just as important as the first one, and definitely the one I see most frequently. It is quite often that I try to explain to other photographers that normally, successful underwater photography works at the extremes. At the wide angle extremes using fisheye lenses with up to 180° of coverage, and at the macro extremes. But both most of the time, at the extreme of approximation.

It's amazing how people don't believe this one. It is very usual for me to only be able to correct this behavior on my students when I dive with them, holding their camera into position and telling them to come and look through the viewfinder. How much closer should one get? As close as the minimum focus distance of your equipment, provided you do not damage the reef.

By getting closer you can accomplish two very important things. You reduce the amount of water between your camera/flash and the subject (remember, colors not only fade with depth but also with distance from your flash) thus reducing the backscatter, and increasing saturation and sharpness. The other one is that you normally get the chance to compose your picture in many different ways. If you are close enough, with a slight change in your position you can radically change the background and the direction of the shot, which sends us to the next good piece of advice.

SHOOT UPWARD

Shooting with the camera pointing down usually gives the idea of an unpleasant closed space and flattens your subject, shooting upwards recalls the amplitude and spells some greatness on your subject. To point your camera up and place your subject in the picture one needs to follow the "Get Closer" rule to it's maximum extent. And the magnitude of the big blue behind your subject will help you to control the next tip. Sometimes just getting lower and not shooting "straight down" or just level can achieve the same effect.

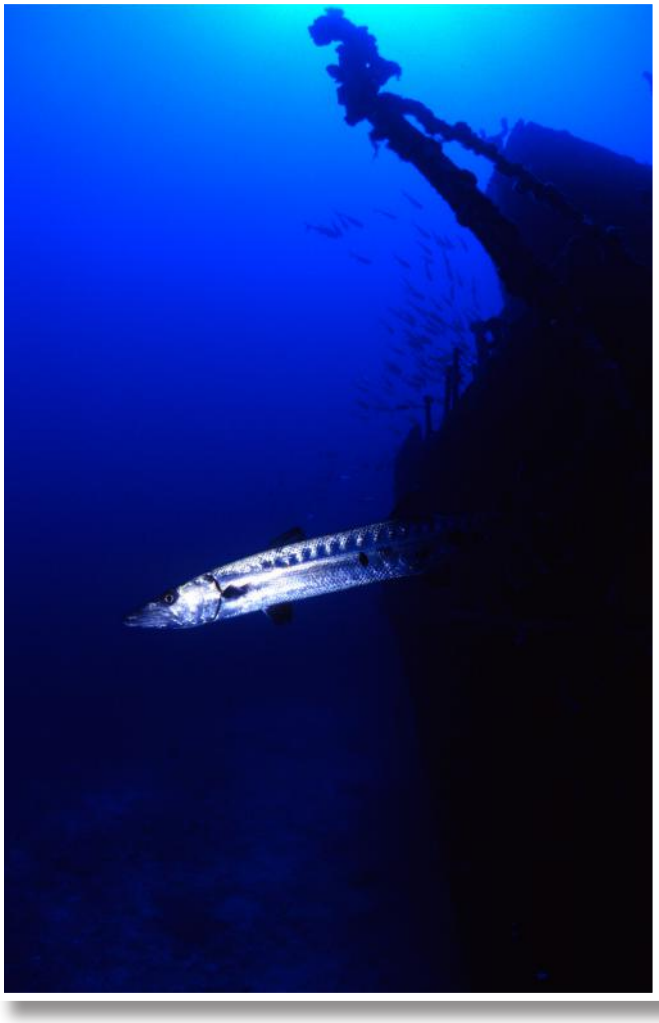
CHOOSE A BACKGROUND

Negative space is defined as everything in your picture that is not the main subject. The negative space can be flattering or oppose your subject. By not only choosing your subject but its negative space around it, you can greatly improve the quality of your pictures. In cases where there is no pleasant background for your subject, you can increase your shutter speed (this does not affect flash exposure) to try to black out the background, place your subject (by shooting it from a different angle) against the blue waters or shoot it from below to create a silhouette.

COMPOSE IT

For some reason this is more common among men than women. Photography is not like shooting a bow and arrow, you do not get extra points for placing the subject dead center on the picture. Photography is a very technical activity, but above all the technical stuff is the artistic side of it. Great painters studied colors and composition rules that you as an underwater photographer can benefit from knowing. Yellow subjects over blue backgrounds or magenta/red subjects on green waters tend to work better. Framing techniques like the rule-of-thirds, leading curves, the use of the diagonal, circles and triangles, the golden mean, should be studied ad used to get better results.

These guidelines are not 'shoot only guidelines'. One of the best ways to describe them are as guidelines to choose your subject. You can use them to evaluate if the fish, crab, coral or whatever you find is a good subject with a good photographic opportunity. And even in cases where you can not get closer, or get lower, you can use the other ones to compensate somewhat for this difficulty.



The barracuda below came out of a deep water wreck in Brazil as I was swimming past its side, I had little time to think and I got this shot of her, but I remembered to try to point my camera upwards for a more dramatic effect, and to off-center the fish. I was lucky the light reflected from her and didn't ruin the picture. I was using one of the extremes in underwater photography, the extremely wide Nikkor AF-D 16mm/2.8 fisheye lens with 180 degrees coverage from corner to corner. This was taken on film, and today you find even better lenses for that. The best advice I can give from this picture is that underwater photography is something that needs practice in order to be able to shoot quickly when needed, and the best thing to do is to dive and shoot closer to where you live.

This picture was taken a few days back, at Dibba Rock after the apparent end of the HAB – Harmful Algae Bloom. You do not need a strong subject (like a barracuda) to get a good picture, but it shows the benefits of the "get closer and get lower" approach. You can see how the negative space was controlled with this low approach and how the subject fills the frame with its main point of attention off-centered to the upper left part of the image.

Also taken in Dibba a few days ago, this little red crab was deep in this coral on a crack in the rocks, it was impossible to get lower and I had to shoot it almost straight down. Luckily the coral had this opening that was almost aligned with the crab, letting us to see it's eyes. It is not a great shooting opportunity but even shooting down, you are able to get closer and use a diagonal to help compose the shot. Another thing about using a smaller aperture, is that you manage to not lose focus on the foreground coral as it is a great negative space that compliments the subject.

WHAT TO DO WITH THE RED TIDE?

This red tide is something that is warning us all and is sadly killing a good number of corals and seems to be sticking around, but it is definitely not the end of underwater photography. The limited visibility increases the necessity for good strobe placement and the right choice of lens (which most of the time is a macro lens). With the increase of scavenging species coming after the mass killings, there are a festival of slugs and nudibranchs at some of the sites I have seen. Depending on the wind and current direction, there is always a good side to dive on every small gulf or island, and local operators are the best ones to contact about it. They can place you in the right spot for better photos and being in the right spot is the best start for good pics.

PIC FIX

YOUR IMAGES EXPOSED AND REFLECTED

FEATURE **MARCELO MARIOZI – PHOTO@EMIRATESDIVING.COM**

If you want to get your pics published here and reflected on, send an email to: photo@emiratesdiving.com with your attached picture (2000 x 3000 JPG), with a description of the equipment you used, where you took it and your background in underwater photography.


BEFORE

Hi Rita, nice image. I bet it was a lucky find after the HAB effect on Dibba. You have clearly mastered the basics of underwater photography, your focus is dead on sharp and the measured light is also on target, but most importantly you have a very good eye for nice subjects, this anemone is very well located, clear of any obstacles and easy to approach.

Even though you told me this picture is intended for identification purposes, I think we have some room for improvement. The first tip I could give you is the most important one for underwater photography, get closer. There is too much dead space around your subject, making it small. When I look at the picture it makes me want to get closer, to see it better. Several underwater photographers consider the flash the main thing in their equipment, or just as important as the lens they use, so getting closer would also help your camera get more light out of your in-camera flash. It would also reduce the amount of backscatter, and bring better contrast to the image. The flash would also help you in the id process by showing you the correct color of the specimen.

This is the best and easiest way to improve this picture, I am sure you can do it easily with such a nicely chosen subject. I took the freedom to edit your image a little bit to try to show what it would probably look like if you just got closer. In this case, just by getting closer we off-centered the subject a bit for a better composition. Once you get used to getting closer you could try to change the angle, like shooting it from the front to try to hide the rock on the right side behind it, placing the camera in a lower position, closer to the bottom so we could have clear water behind it as a more pleasing negative space.

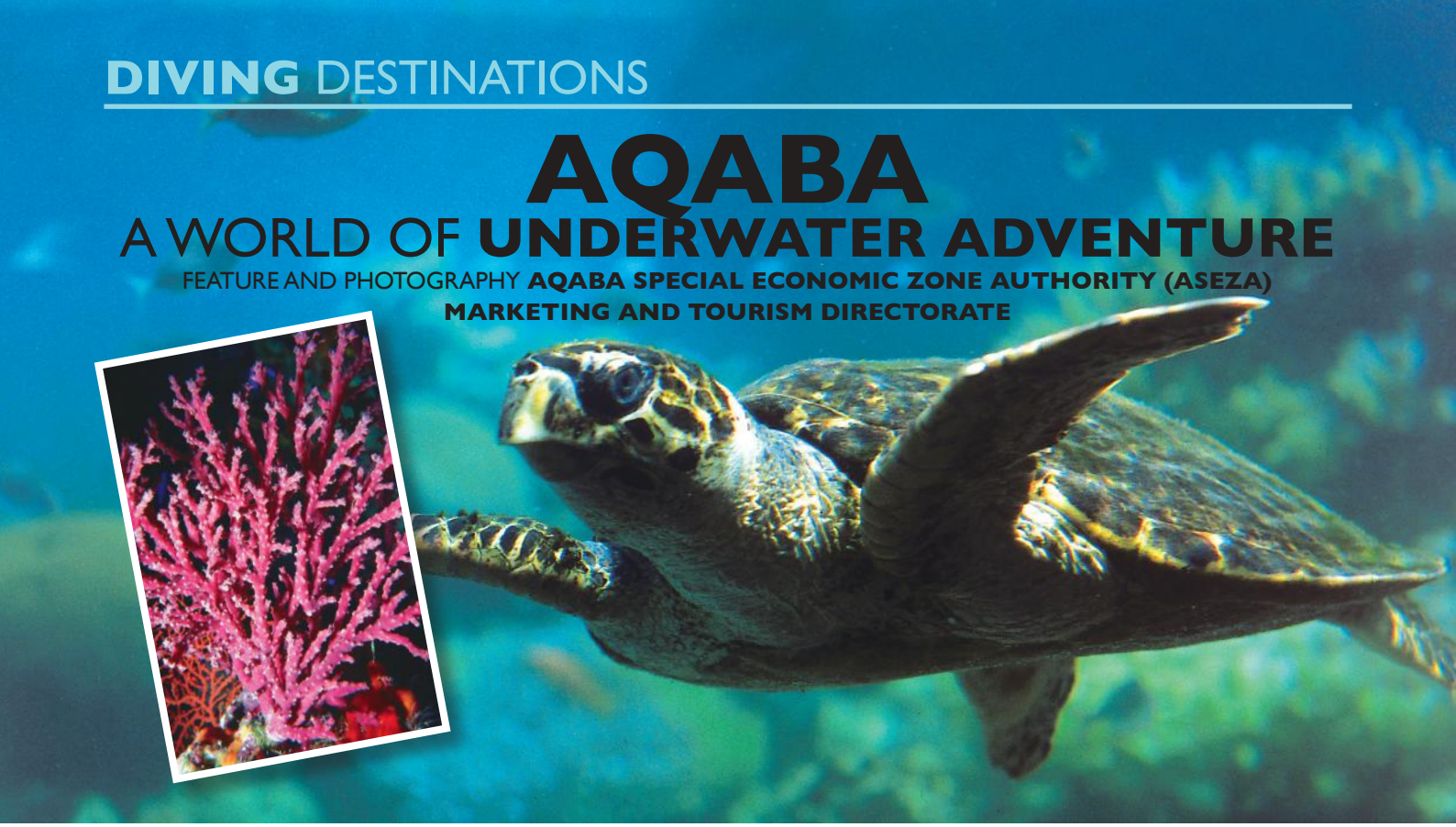
Anyway, congratulations!!!
Just getting the focus and light ok without a proper underwater photography course and your instinctive subject find, shows a great future as a photographer. Another good thing is the gift to be able to dive close to home in Dibba, this the best thing to get better, because you can practice more often!


AFTER

AQABA

A WORLD OF **UNDERWATER ADVENTURE**

FEATURE AND PHOTOGRAPHY **AQABA SPECIAL ECONOMIC ZONE AUTHORITY (ASEZA)**
MARKETING AND TOURISM DIRECTORATE



Aqaba is a picturesque Jordanian city situated on the coast of the Red Sea. It enchants with its fairytale landscape and the underwater environment is admired by tourists from all over the world. It has five hundred species of corals and over a thousand species of brightly coloured fish. Aqaba is a real paradise for experienced divers, as well as beginners. More and more scuba divers are planning their holidays connected with this sport. Due to this fact, places where one can enjoy this sport all year round, with a rich diving base and find peace and quiet are all a bonus and highly valued. Aqaba – Jordan's pearl, is such a place, where one can enjoy over 23 diving sites situated along the coastline.

Aqaba is also a perfect destination for those who are just starting to learn to dive. Visibility under water is an important factor for divers, thus it is worth underlining that visibility surpasses 20 metres and the stream current is minimal. The city offers easy access to the dive sites since they are located near the beach. There is also a shore access from the beach to the dive sites giving both possibilities to dive either from the shore or by boat through the dive centers. Training centres are adjusted to the needs of the clients.

Aqaba Marine Park, consists of 21 dive sites situated along the coast and is a perfect place for underwater sports lovers. The place offers many facilities & utilities which serve the divers. The diversity of the fauna and flora, artificial dive sites, such as ships (Cedar Pride), barges or tanks, provide unforgettable memories just a few meters from the sandy shore (Aqaba Marine Park is responsible for the protection of the underwater life of the Gulf of Aqaba and so make sure that Aqaba's beaches and coral reefs are kept clean). In the North Beach Area there is a choice of hotels suitable for the needs of all clients. Jordan's beaches are the perfect place to spend the holidays with the whole family all year round, due to the fact that the Aqaba Bay is a gulf sea and protected, the water, though deep, is warm and calm. The water temperature ranges from 20°C in the winter to 26°C in the summer. Aqaba's air temperatures range from 20°C in the winter to a pleasant 34°C in the summer, though it can soar as high as 40°C in July and August.

Night diving is an attraction worth recommending for advanced divers. Observing nocturnal marine life such as crabs, shrimps and lobsters come out in search of food in the dark waters of the night will definitely become an unforgettable experience. An underwater guide will take you to places hard to get to, where you will find the Spanish Dancer and many lobster treats for anyone to see.

The Marine Science Station aquarium is home to 30 species of stony and soft corals, 30 different invertebrates and about 45 species of reef fish that live in the Red Sea. These include the renowned butterfly fish, parrotfish and lionfish; it is definitely a great opportunity to become familiar with Aqaba's marine life. A trip on a boat with a glass bottom is a unique attraction for those who do not want to get wet. There is also the opportunity to partake in a variety of water sports above water.

IMPORTANT INFORMATION

- A valid international licence is required for scuba diving, which can be made by completing a diving course in Aqaba.
- It is illegal to remove, buy or sell corals or shells.
- Aqaba Marine Park has strict regulations, which must be adhered to.

For more information, please visit Aqaba Special Economic Zone Marketing and Tourism Directorate's website: **www.aqaba.jo**

ISLAND **SAFARI**
A **MALDIVIAN** ADVENTURE

FEATURE **KATHLEEN RUSSELL, EDA ABU DHABI COMMITTEE COORDINATOR**

Considered to be one of the most enthralling destinations to visit, Maldives is a sea lovers paradise. This Indian Ocean Archipelago is only a short flight from the United Arab Emirates. Our group consisting of 17 intrepid divers and snorkelers flew to Male airport to begin the live aboard adventure organised by 7Seas Divers. Upon arrival, we were greeted by the friendly ambience of the Maldivian hospitality which was present throughout the entire trip. The Island Safari, a 32 meter luxury custom built live aboard was to be our home on the sea for the next eight days.

Niyan a soft spoken Maldivian was our top dive guide and trip director. His experience of our destination was truly amazing as he described the route we were to cruise. He continued that the Republic of Maldives is made up of many islands; these tropical palm-fringed islands are grouped into ring-shaped reefs called atolls. The atolls are enclosed by shallow sandy bottom turquoise coloured waters of the lagoons and an outer reef varying in depth making up the perimeter. Deep channels spaced intermittently between the atolls allow the oceanic currents to flow through the lagoons. We would be travelling through to North Male Atoll, followed by northern Ari Atoll and back towards South Male Atoll. It would be an unforgettable adventure and we would be experiencing some world class diving he promised.

The dive sites were breathtaking both above and below the pristine waters. Some sites offer divers challenging currents, colourful arrays of soft coral bommies, huge overhangs making some spectacular cave dwellings for resting sharks and shoals of sweepers. The marine life is diverse and a haven for underwater photographers. We encountered a variety of sharks including white tips, black tips, grey reefs, hammerhead sharks and whale sharks. Divers were enchanted by the majestic and graceful movements of the many manta rays at a cleaning station off Kalhu Handi Huraa in South Ari Atoll. Another memorable dive was off Mayaa Thila which our group aptly named octopus rock. The octopus would instantly change their colour and texture to mimic the reef environment. Many octopi were found at this incredible site. An easier site for the more relaxed divers is Kuradah Thila in South Ari Atoll. A favourite for many divers for its huge shoal of blue-striped snappers, huge gorgonian seafans along the gentle slope in the northern side, rainbow runners, barracudas, giant trevallies and colourful butterflyfish, fairy basslets and anthias. Mention of drift dives and Miyaru Faru in South Male comes to mind. This site is best dived with incoming currents during the east monsoon. Like the famous Blue Corner of Palau, this adrenaline pumping site offers similar grey reef shark action. More than twenty grey reef sharks cruised alongside the reef holding themselves in the strong current, along with blue fin tunas, giant trevallies, barracudas, Napoleon wrasse and white tip reef sharks. One week of diving does not do justice for the plethora of marine life and underwater marvels a diver or a snorkeler can experience both underwater and above.

The trip was made even more memorable when the Island Safari crew prepared a beach BBQ, surprising the group with a life-sized sand sculpture of a whale shark and playing traditional Maldivian drum, songs and dances. One marine enthusiast also brought his kite surfing gear and tested out the winds along the reef breaks while the winds guided him across the unspoiled waters.

The Maldivian adventure on the Island Safari was a memorable trip. The crew was hospitable and boat facilities were comfortable with its beautiful teak wood frames, spacious sleeping arrangements and tasty meals. New friendships were forged and divers and snorkelers were left with a longing to stay in this little paradise to discover more of its hidden splendour.

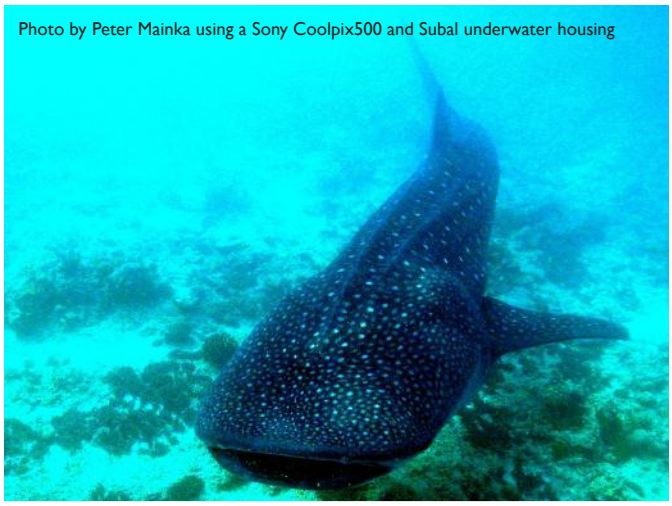


Photo by Peter Mainka using a Sony Coolpix500 and Subal underwater housing

For more information on the liveboards in Maldives, contact 7Seas Divers at: **bestdive@emirates.net.ae**

Photo by Abdulla Al-Mehairi

Photo by Abdulla Al-Mehairi

Photo by Abdulla Al-Mehairi

TONGA

FEATURE **SARA-LISE HAITH**

Photo by Dirk Ernert of Divers Down

SACRIFICED IN A REVIVAL OF CANNIBALISM

So was written an article in the New York Times, 8th May 1910. Two Presbyterian missionaries were captured and eaten by local Tongans, where some of the earliest and most successful attempts of missionary work were done. The Kingdom of Tonga, or Friendly Islands, as they were known decades ago lie south to Fiji on the 20th parallel. They were acquired by the British in 1899, when Great Britain ceded all her rights to Germany in the Samoan group. Today, Tonga is the only sovereign monarchy among the island nations of the Pacific Ocean, as well as being the only island nation never to have been formally colonized. Fortunately, incidents of cannibalism in the Pacific Islands no longer reach the press or have been recorded since 1957.

Tonga is an archipelago in the south Pacific Ocean comprising 171 islands, 48 of them inhabited, stretching over a distance of about 800 kilometres (500 miles) in a north-south line. The islands lie south of Samoa and are about one-third of the way from New Zealand to Hawaii. The word tonga means 'south' in the Tongan language, an apt name for the islands as they are the southernmost group of all neighbouring Polynesian islands. The word tonga is pronounced with the ng rolled together like sing.

One would wonder why a person would travel for 2 days to reach such a destination. If you're flying out of Dubai, you have to fly to New Zealand and then take a flight to the capital, Nuku'alofa which is on Tongatapu. We then took two internal flights to reach our destination, the island of Ha'apai. After hours of travelling, changing of planes and making a million excuses for the weight of my hand luggage, reaching Ha'apai was like landing in heaven itself, almost. They have to chase the pigs off the runway before planes can land, in fact, I have never seen a country with so many free range pigs running round everywhere. Pigs in Tonga run amock, cause accidents, they are strewn about gardens, streets, fields, and seem to breed countless offspring that run wildly across the bumpy lanes while the adults seem to lay out on lawns lazing in the sun like tourists on the French Riviera.

HAAPAI AIRPORT

We were picked up at the airport by the co-owner of our resort, Dave, who had about 20 boxes of fresh bread in the back of his 4x4 and explained that one should make the most of trips "to town". This comment alone made us realize that we were indeed far from civilization, supermarkets, shops, malls and other day to day amenities that we take for granted. Fantastic! We threw our bags in the back and Dave drove us to our resort, Matafonua Lodge on the island of Foa, deftly avoiding pot holes in the road, while the scent of fresh bread played with our senses. It was clear already that dieting was not going to be on the agenda for the next 10 days.

After many years of living in the ever growing and fast paced Middle East and Asia, a destination like Tonga seems like one of those countries you could only dream about. The beaches are natural, without a dredger or plastic water bottle in sight. Even the Maldivian islands have fallen succumb to massive dredging projects and some are losing their natural beauty. Here, there was no oil, no "plastic bag trees", no remnants of construction floating in the water, and in fact, there was nothing but white sand on the beach and crystal clear sea water lapping up the edges. There were no empty cans of Coke, no old shoes, no empty packets of KFC or leftover Macdonalds thrown on the beach, it was just sheer virgin white beach with pristine blue water, and it left me speechless, which in itself is a feat. No man can create this paradise. This can only be sketched in an artist's mind, painted on a canvas, imagined, dreamed, or splashed in watercolours, but there is no way that can be reproduced. Upon first sight of the beach, it was raining and cloudy, but even so the crystalline waters shone and displayed seemingly untouched waters. My travel and freedive buddy Rebecca Scott, and I, stood on the beach gaping. We picked up sand and let it flow through our fingers, and stared out to sea at neighbouring islands. It was time to discover, explore, and also rest.

ONE OF THE BEACHES ON MATAFONUA

The plants and fields of jungle were filled with indigenous plants and huge bananas that grew naturally with the natural resources of abundant rain and mineral wealth of the soil. Hidden within the dense vegetation of the northern tip of Haapai, on Foa Island, Matafonua Lodge sat quietly and unobtrusively. Matafonua is an eco-friendly resort, and they do not brag about it, they just do it. Lip-service to conserving the environment is not part of their language. New Zealanders Dave and Sally were doing things right, and as much as possible. The water was heated by solar panels, and they had a back up generator as local power supply can vary in reliability. We had a power cut one afternoon and it was gently raining. In spite of the low power supply, Sally and her team pushed on in the kitchen with the generator power, Dave pulled down the clear blinds so we could all still enjoy the ocean view from the restaurant verandah while protected from the winter wind. Red wine flowed and kept us warm as did the beautiful smiles of the Tongan chefs and the resort dog Tui, at our feet. The showers in the ablution block are low pressure to save water, the lighting is minimal and there is no air conditioning, just open vents in the walls to allow air flow. We may have shared the shower room with a spider or two, but this was just a reminder that we were off the beaten track.

The first sign of environmental consciousness was seen in the building of their new beach bar. Every glass bottle consumed in their establishment was saved and then broken up and used for aggregate. The beaches surrounding their resort were kept clean, the gardens are natural and little irrigation is needed to keep the beauty of the local plants and trees lush. Drinking water was served in recycled bottles and the need for plastic was minimal. The resort was not pretentious; the accommodation was made up of simple "fales" which are small wooden bungalows on stilts with an open air verandah, twin beds and the basic essentials. Sheets, blankets, mosquito nets and coils, drinking water were provided. The windows were louvered and allowed for natural "air conditioning" throughout the night. Needless to say our sinuses cleared within days and the feeling of polluted skin disappeared within a day or two. The ablutions are communal, and the sunnier the day, the hotter the water. The sound of the waves crashing over rocked us to sleep at night, and the whistle of the wind through the islands was a lullaby before sleep. This was a getaway indeed.

FALE AT MATAFONUA

The main reason for our visit in July, was that it is humpback whale season. Humpback whales visit Tonga during the winter months, to train their calves and prepare them for the trip home again to the Antarctica. The mothers starve during these months as there is little to feed on in the gin clear waters of Tonga. Tonga was the first South Pacific nation to set aside marine reserves, and pride themselves on responsible behaviour towards the animals. We did two trips with Happy Ha`apai Divers/ Ocean Blue Adventures who are based from Sandy Beach Resort. Sandy Beach Resort staff and owners were particularly unfriendly and shooed sunbathers away from their "private" beach, but the dive centre has a whole different personality.

The owner Glenn Edney who seems to be a bit of a legend, ran whale watching trips from his catamaran, Katnapp. He used as little motor power as possible and maximizes the potential of his sails when he can. Edney was very knowledgeable on humpbacks, and has been interacting and photographing them for years. He said with the thrill of diving and interacting with whales came a responsibility, both on the part of the whale watch operator and those who use their services. The responsibility lies in the need to protect these magnificent creatures and their environment from over exploitation.

On one of the trips with Ocean Blue Adventures there was a large family with small children, itching to snorkel with the whales. In this particular instance, Glenn did not feel comfortable enough to allow them in the water near the whales and therefore only allowed viewing from the boat. Even though we were all prepared with snorkeling gear and psyched to get in the water, I fully respected his decision, even though my dive buddy and I were fully capable of acting responsibly around the whales.

We watched from a distance, as a mother and a two day old calf swam warily past our boat. We saw a males head thrusting and lots of tails waving in the distance. We unfortunately could not get close enough. Apparently we had come to Tonga at the beginning of the whale season and the best time would have been end of July or mid-August. We were also hit with bad weather almost the whole week, and had missed a pod of whales the week before. It really was luck of the draw. The catamaran was followed by an oceanic white tip shark for some distance, but reef sharks however, were not apparent.

WHALE (HAAPAI)

On the days when we weren't whale watching, we freedived. There was no need to pay for scuba diving, as the ocean world was at the tips of our fins. High volcanic and low limestone islands characterize the Ha'apai.

ONE OF THE MANY ISLAND SCENES FROM A BOAT (HAAPAI)

The reef types comprise reef communities, fringing, barrier and lagoon reefs. Some island types are basically volcanic some of which are active but most are composed of non-calcareous rock. The high limestone islands represent old coral reef accretion, which has been uplifted and aerially eroded. There are 192 species of scleractinian corals described from the reefs around Tonga. Surveys have concentrated on the marine park areas. 229 species of fish were found in 39 families in the reefs around Tongatapu. Hakaumama'o Reef Reserve showed the greatest diversity with 127 species in 28 families. The most common families are the Labridae and Pomacentridae. Reef Fish of Tonga (Smithsonian Institute, 1993) provide information on the fishes of the Kingdom. There have also been described 55 species of bivalves and 83 species of gastropods from 3 different habitats: seagrass bed, coral reef, and sand. Coral bommies (pinnacles) were teaming with fish life and massive table corals were just a swim away from the beach. The corals were healthy and laid in different colours like stacked plates down the reef edge, and there are 50 fish species named in Tonga in their local language.

TYPICAL CORAL REEF OFF HAAPAI

Two giant clam species, Tridacna gigas and Hippopus hippopus, were re-introduced into Tonga in 1990 and 1991. Both species are believed to have become locally extinct. The giant clam project started in Tonga with the creation of clam circles in 1986. Clam circles were created by the Ministry of Lands, Survey and Natural Resources in an attempt to revitalize the stocks of these animals. Several community giant clam sanctuaries were initiated, and one of these can be dived (snorkeling only) from Haapai.

There has been some over-fishing for invertebrates for export from several Pacific Island countries recently, but even this is not entirely new. The current boom in bêche-de-mer fishing was paralleled by similar events in the early 19th century in Melanesia, and the pearl shell export fisheries of yesteryear sometimes far exceeded their modern equivalents in volume. Damaging fishing methods such as dynamite and poisons, despite being in reportedly widespread use in South East Asia, are not a common feature yet of Pacific Island fisheries, where a more custodial attitude prevails towards traditional reef resources. One of the most unselective and habitat-damaging fishing methods, trawling, is not currently economically possible over the vast majority of Pacific Island coastal water due to the lack of the extensive soft substrates characteristic of large estuaries and continental shelves. Pacific Island coastal fisheries are almost entirely coral reef fisheries.

On a wander around the island, we saw a local spearfisherman preparing for a swim. He used his shoes as a float and was sporting the old round mask style and wore Jet Fins and a homemade pole spear.

LOCAL SPEARO

It is written that Pacific Island reef fisheries are probably in much better shape overall than most other fisheries in the world, and this is in part due to the ingrained traditional nature of the community management of these fisheries. The coral reefs therefore, are intact and appear little if not at all damaged by divers and swimmers.

FREEDIVING OFF FOA

The currents were particularly strong on some days, so we started our swim at one end of the island and "drift snorkeled" at a tremendous pace to the other side. It was truly exhilarating. Being the winter months, the water was 24°C and the wind was slightly chilly. This did have an advantage however, as the cooler temperatures allowed for us to enjoy exercise and we rented a kayak and paddled across the ocean to the next island, against the wind and across the current. The return journey was a welcome breeze with the wind pushing us forward and the current taking us back to the opposite shore. Experiences like these cannot be emulated in any water park. The beauty of the colours of the ocean, the scent of the islands and the balmy air are a cure for any form of executive stress.

ANEMONE FISH LAYING EGGS (MATAFONUA)

On the island of Foa we noticed many churches, mainly owned, run and paid for by Mormons. Religion seemed to play a very important part in the life of the Tongans. Graveyards are heavily decorated in flowers, fairy lights, plants, and photographs, and Sunday ceremonies are a must do, just to hear the local choir. According to a survey done by their own church statistics, Mormons claim 48 percent of the population to substantiate their claim that Tonga is the most Mormon nation in the world.

LOCAL CHURCH ON FOA

Everyday life is heavily influenced by Polynesian traditions and especially by the Christian faith; for example, all commerce and entertainment activities cease from midnight Saturday until midnight Sunday, and the constitution declares the Sabbath to be sacred, forever. We attended a church service out of interest, and men and women come dressed up in the traditional grass skirt, pay their dues to the church and all donations get recorded with your name and amount. The total balance of the Church's fund is read out to the community and the community is kept abreast of the expenditure. We paid our dues as well and our names were recorded. Perhaps that will keep us in good stead for our next visit.

In the evenings we sat outside on the verandah and ate home cooked food prepared by Sally and her staff, listened to other diver's war stories including some freedivers bragging about 4 minute breath hold times. We giggled, unwound, and felt at home. Some Tongans came around, cooked local food, and brought local musicians and dancers. The dancers oiled their bodies with jasmine and ylang ylang oil and while they danced, the audience stuck money on them, according to local tradition. They danced daintily in woven grass skirts, their dark eyes shining in the dim light of the verandah hiding island secrets of the past, the chanting of the singers harmonized with the whirring of the wind in the surrounding palms and the modern world was forgotten. We were back in 1910 and emotions were stirred, our souls were shaken and we were immersed totally in the land that time forgot.

Mohe *(Sweet dreams)*

CARBS AND FITNESS

FEATURE **BARBEE W. TUCKER, R.D., PH.D.**

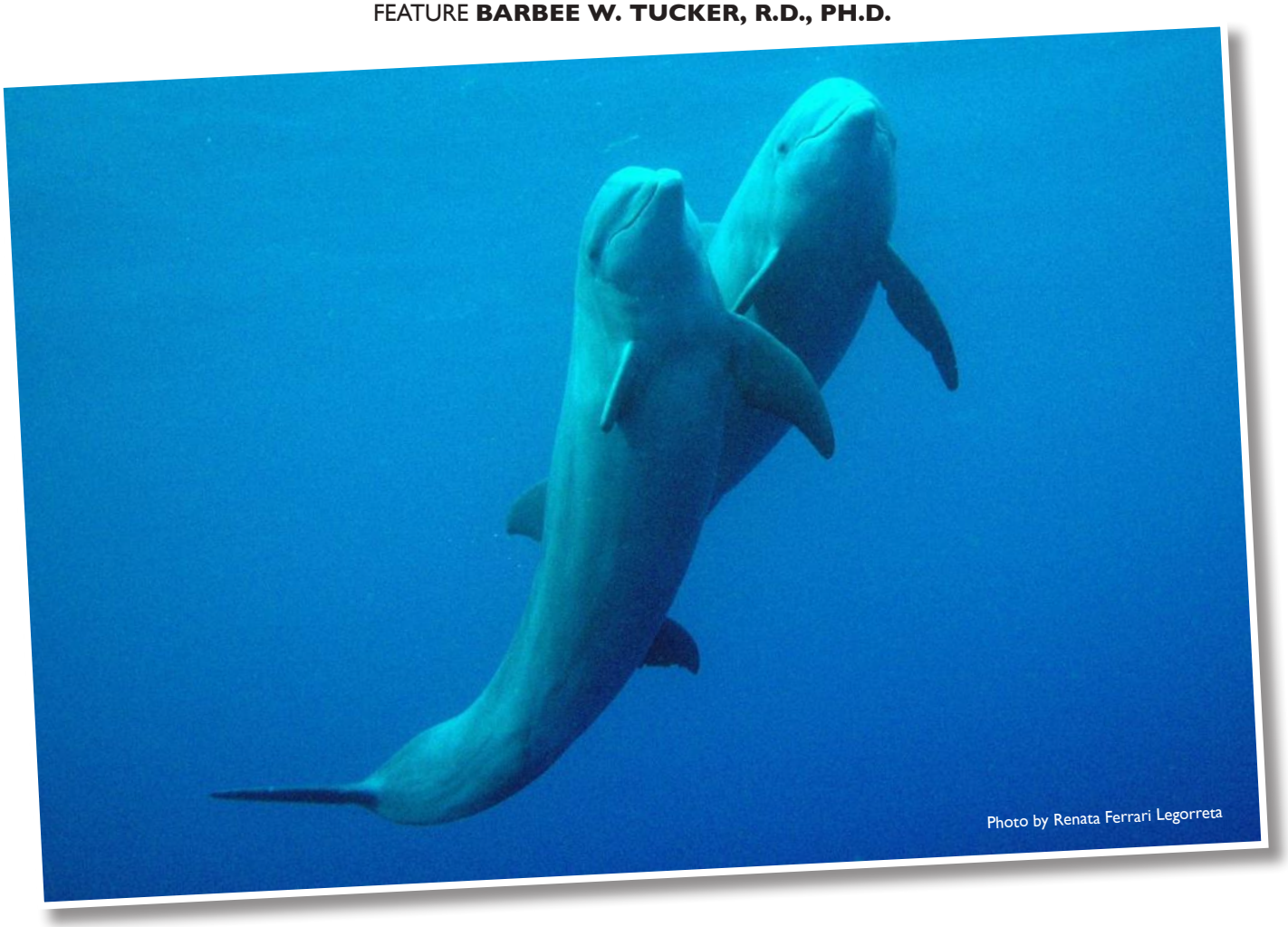


Photo by Renata Ferrari Legorreta

The carbohydrates (carbs) you eat affect your moods, your weight, your energy level, your general health and well-being and your body's fitness.

Just choosing to emphasize only those fats and oils that are associated with health and fitness, your choices of foods containing mostly carbohydrates can determine how your body responds to health challenges as well as your level of fitness when diving or enjoying other sports. Carbohydrates usually provide more than 50 percent of your calories, so it behooves each of us to select foods that provide more than just energy (calories).

The Healthy Eating Pyramid ("Nutrition and Fitness," IV 2004), developed at Harvard School of Public Health, emphasizes carbohydrate foods such as whole grains, vegetables in abundance and moderate amounts of fruit. In the United States, however, most carbohydrate calories come from the "Use Sparingly" group: refined foods such as white rice, those made from white flour (bread, pasta, bakery items), white potatoes and / or sugars.

SUGARS AND FIBERS

Soft drinks, jams, sweet snack and dessert items provide largely "empty" calories from high-fructose corn syrup (HFCS) and sugar as well as trans and saturated fats. These are mostly lacking in many vitamins, minerals, antioxidants and disease-fighting components.

Additionally, "low-fat" versions of food products often contain considerable amounts of added sugar to replace the removed fat. A breakfast of donuts or sweet rolls, juice and coffee can impact not only your energy level and enjoyment of the morning's dive, but also (if this is your usual breakfast) long-term fitness and health.

The simplest carbohydrates in your food are sugars. Glucose and fructose in honey and fruits are "single" sugars, while table sugar, sucrose is a "double" sugar-glucose linked to fructose. Linked chains of glucose are starch. Humans digest double sugars and starch to single sugars that are then absorbed into the bloodstream.

Certain foods, such as wheat, barley, onions, tomatoes and bananas, contain more complex indigestible sugars, which are fermented by intestinal bacteria-producing compounds that contribute to colon health. Additionally, our foods may contain other carbs, such as fibers, that are starch-like, but linked differently and not digested by humans.

Dietary fibers are classified as soluble or insoluble. Insoluble fibers pass through the intestinal tract, providing bulk and leading to improved intestinal health. Soluble fibers, on the other hand, are primarily used by the bacteria residing in our intestines, aiding intestinal health and also producing compounds which are absorbed and help to regulate blood glucose and blood lipid (e.g., LDL cholesterol) levels.

Choosing breads made with coarse whole grains, whole fruits rather than juice and lightly cooked vegetables help us to obtain the suggested amounts of fibers, 30-40 grams/day. Moreover, oats, barley and other whole grains, dried beans and peas, and many other vegetables contribute significant amounts and a variety of soluble fibers.

THE GLYCEMIC INDEX

Carbohydrates have long been categorized as "simple" or "complex," as in sugars or starches. Currently, we look more at the rates at which these foods are digested and absorbed since these rates affect our physiological reactions to carbohydrate foods.

The Glycemic Index (GI) was developed to measure these rates in a variety of carbohydrate foods as compared with glucose with a GI of 100. Moderate or high GI foods are mostly processed foods, readily digested to a single sugar, and are quickly absorbed to increase blood glucose levels; they have GIs of 50-70 or 70-plus. Low GI foods are mostly "natural" or minimally processed foods, such as whole grains, non-starchy vegetables and fruit.

Because the GI measures 50-gram amounts of carbohydrate in a food rather than the amount of carbohydrate in a typical serving of that food, the Glycemic Load (GL) of a serving of a specific food was developed to give a more realistic comparison of the effects of consuming these foods (See chart). Note that the GL for carrots is much lower than the GI. You would have to eat about 1 pound of carrots to get 50g of carbohydrate. A low GL is 1-10, a medium GL is 11-19, and a high GL is 20 or more.

Rising blood sugar levels trigger certain cells in the pancreas to produce the hormone insulin. Insulin enables muscle and other cells to allow the glucose molecules in blood to enter and then be used (metabolized) for immediate energy or stored as fat for future energy production. As blood glucose levels decline, insulin levels follow.

Consumption of mostly high GI foods on a regular basis can cause a condition known as insulin resistance, a decreased efficiency in allowing glucose to enter cells. The pancreas continues to produce insulin in an attempt to lower blood sugar levels; the result is consistently high levels of both glucose and insulin in the blood, damaging blood vessels, increasing blood pressure, lowering HDL cholesterol (the good kind) and possibly wearing out the pancreas.

Prolonged insulin resistance leads to Type II Diabetes, often accompanied by increased risk of heart disease, stroke and several types of cancer. Low GL foods usually contain other energy nutrients (fats and proteins) and fibers, which slow the rate of digestion and absorption, allowing a normal insulin response. The satiety value of these foods helps maintain normal body weight, since hunger returns less rapidly.

The fitness of your cells determines, to a large extent, how you handle the glucose and insulin in your blood. Muscle cells need to be exercised or used regularly to efficiently utilize these compounds. Since fat cells do not readily clear glucose and insulin, a higher ratio of muscle cells to fat cells is better, accomplished only by exercise. Moreover, fit cells metabolize fat as a fuel more readily and efficiently than do unfit cells.

CARBS AND PHYTOCHEMICALS

In addition to helping normalize insulin production, minimally processed carbohydrate foods also contain protein, good types of fat, vitamins, minerals, fiber and other compounds known as phytochemicals (plant compounds). These natural bioactive plant components include antioxidants, immune system boosters and anti-cancer agents. While no single plant gives us all the compounds we need for maintaining health and fitness, consumption of a wide variety of whole grains, fruits and vegetables goes a long way toward this goal.

A good rule of thumb is to get variety by incorporating many different colors – red, orange, yellow-orange, bright green, blue, and purple – into your daily diet. More than 2,000 natural pigments are found in edible plants, each providing its own benefit for us. From inhibiting cancer growth, stimulating the immune system and blocking free radicals to encouraging strong, healthy vision and improving cholesterol metabolism, phytochemicals are of vital importance for long-term health and fitness. For instance, the cruciferous vegetables (broccoli, cauliflower, cabbage, kale, etc.) are known for their anti-cancer components.

Although many plant compounds remain to be discovered, scientists do know that phytochemical effects are synergistic. We get more benefits from the whole food than from separate, identified phytochemicals.

Soybeans and soybean products (soy nuts, tofu, soy milk, soy flour, textured vegetable protein and soy protein isolates) are becoming increasingly important in Western diets as sources of beneficial proteins, fibers and certain phytochemicals (isoflavones, antioxidants) that help prevent certain cancers, diabetes, obesity and cardiovascular disease. Nuts, both peanuts and tree nuts such as almonds, walnuts and hazelnuts, provide considerable protein, desirable fats, fibers, low GI carbs and a variety of vitamins, minerals and other compounds to help prevent cancer, diabetes and heart disease.

Why whole grains? As harvested, a single grain consists of an outer husk, a layer of bran, the germ (a rich source of vitamin E) and the endosperm or starchy white interior. During milling, all but the endosperm are removed, thereby also removing about 60 percent of the nutrients, more than 75 percent of the phytochemicals and nearly all of the fiber. Only four B vitamins and iron are added back to white rice and white flour, "enriching" it.

Many of the discarded nutrients and phytochemicals are those believed responsible for protecting against cancer, diabetes, heart disease and obesity. So, the problems associated with consumption of mainly white breads and pastas are what one is NOT eating. In addition to whole wheat, rye, barley and oats contribute their own phytochemicals, antioxidants, fibers and nutrients to our diets.

A FINAL WORD ON FOOD

Food labels can be most helpful in eliminating unhealthy food choices. Avoid those items whose main ingredients are sugar, HFCS, or partially hydrogenated oil.

Choose instead ingredients such as whole-grain flour, canola oil or olive oil. Snack on nuts, whole fruits, raw vegetables and their juices, plain popcorn, or whole-grain crackers. Drink lots of water. By choosing to eliminate (or, at least, cutting back) sugary soft drinks, snacks, bakery items and other sources of "empty" calories, you can take a major step to promote a healthier and happier future.

GLYCEMIC INDEX AND GLYCEMIC LOAD VALUES
of some common Foods

FOOD	GLYCEMIC INDEX	GLYCEMIC LOAD
All-Bran	42	8
Apples	38	6
Apple Juice	40	11
Bananas	52	12
Bread, White	70	11
Bread, White Wheat	71	9
Bread, Sourdough	54	15
Carrots	47	3
Cantaloupe	65	4
Cheerios	74	15
Cornflakes	81	21
Grapes	46	8
Kidney Beans	28	7
Oranges	42	5
Orange Juice	50	12
Peanuts	14	1
Popcorn	72	8
Potatoes, New	57	12
Potatoes, Russet	85	26
Rice, White	64	23
Spaghetti	42	20
Watermelon	72	4

Adapted from www.mendosa.com

DENTAL PAIN IN DIVERS

FEATURE **DR. BASHAR N. AL-ZU'BI, MDSC, PHD CONSULTANT, PROSTHETIC DENTISTRY**

It is evident that the general public has shown more interests in all types of sports as compared to the last decades. One of the fast growing sports that is gaining remarkable popularity among different individuals within different age groups is scuba diving[1]. This can be noticed not only from coastal areas, but also in countries and provinces far away from any open water borders. Along with this increasing popularity and interest, came sincere attention to all kinds of medical or pathological complications that may arise during practicing this sport. This includes variable effects of different types of dental treatment modalities that open water divers may experience. In this article, these effects together with preventive measures will be summarized, discussed and explained.

In certain instances, environmental pressure variations have been noticed to cause dental pain (toothache)[2]. This was first reported during World War II with pilots and air crew in non-pressurized cabins and aircrafts and was called Aerodontalgia[3]. The same dental pain was also observed and reported in underwater divers[4]. Therefore, whether pain was induced by an increase or decrease in barometric pressure; a broader more general scientific term was introduced to describe this bizarre phenomenon; Barodotalgia[5,6]. In general terms, barodontalgia, which affects air crew and open water divers can be defined as dental pain or injury provoked by changes in atmospheric pressure that usually disappears when normal pressure zone is reached again[7]. This pain may appear in the teeth (tooth squeeze) or in the jaw joint (Temporo-mandibular Joint or TMJ). Tooth squeeze in particular is mainly experienced whenever a dental pathology or trauma existed[2]. Upon clinical examination, most divers who experienced tooth squeeze were found to have one or more of the following conditions: acute or chronic periapical infections, untreated or recurrent caries, deep restorations, residual dental cysts, inadequately filled root canals and history of recent extractions[5,6]. Sometimes, referred pain from sinusitis, cracked tooth or un-erupted third molar (wisdom tooth) may complicate the differential diagnosis of barodontalgia[7].

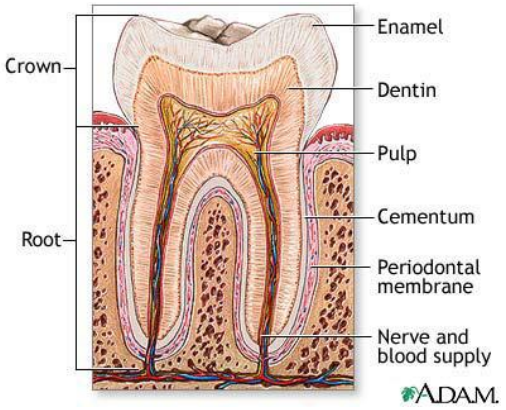
The mechanism of dental pain caused by changes in pressure can be related to the effects of pressure changes on air volume "Boyle's Law". This law states that at a given temperature, the volume of a gas is inversely proportional to the ambient pressure; that is as pressure increases, volume decreases and vice versa[8]. This means that as the diver descends, air bubbles are being forced into exposed dentinal tubules or pulpal tissues due to the increased pressure of the inspired air. The exerted pain is related to the diver's depth, and usually improves when the diver starts ascending, thereby relieving the pressure. Primary and recurrent caries or leaking restorations will easily allow compressed air to reach the pulp or dentinal tubules. When pressure is applied to inflamed tissues, for example pulpitis, gases that are formed due to the inflammatory process are compressed and subsequently increase the pressure in the pulp chamber causing the pain.

Some divers may already have undergone prosthetic treatment and crowns were delivered to them. These prosthetic crowns are usually permanently cemented on top of natural existing teeth using different types of cements (luting agents). This cement layer is considerably weakened by exerted pressure cycles due to repeated diving, consequently leading to debonding of the crown[9]. However, beforehand, the continuous disruption of the cement layer due to the increased pressure may present clinically as barodontalgia. Therefore, it is highly recommended for dentists to use a luting cement with minimal microleakage effect, for example resin cement.

Divers with unfinished root canal treatments or old neglected restorations are susceptible to tremendous pain particularly as the divers ascend[10]. This is mainly caused by compressed air that has been trapped in an enclosed space and then expands as the diver ascends. The compressed air slowly inters these infected teeth during descent due to a poor physical seal, but can not escape quickly enough during ascent. The air expands as the diver's depth decreases, causing pressure build-up within the tooth, leading to the tremendous pain. Cystic leasions due to failed root canal treatment may appear symptomless for a while. However, repeated dives will induce pressure that may cause pain, since the lesion will not collapse under pressure and be filled with blood[7].

In deep sea dives, physical properties of the gas mixture may also contribute to barodontalgia[10]. In scuba tanks, oxygen's natural diluent gas, nitrogen, is replaced by helium resulting in a gas of lower viscosity. This gas can enter tissues, including teeth and can sometimes become trapped in closed spaces such as pulp chamber and root canals. This trapped gas will expand and the resulting stress may cause barodontalgia[11]. In severe cases, the pressure build-up may lead to tooth fracture or explosion of the tooth (Odontocrexis). It was also reported that diving after recent tooth extraction or minor oral surgery may induce pain and bleeding due to increasing pressure[1]. Many divers, intentionally or unintentionally, clench their jaws continuously to maintain the mouthpiece of the regulator in proper position. This will eventually result in constant pressure exerted on the muscles supporting the TMJ that may end up in fatigue or pain in these muscles especially in divers suffering from TMJ disorders. This can be resolved by either using a commercially available mouthpiece that is moldable or ordering a custom-made mouthpiece that can be made by the dental practitioner. The main aim behind this is to distribute the weight of the regulator over the occlusal surfaces of the existing teeth[12].

Finally, it has been shown and proven that there is an intimate correlation between dentistry and scuba diving. It is highly recommended that open water divers must attend routine dental check-ups, that should be very thorough and investigative. Any diver who is undergoing dental treatment must postpone all routine dives until the dental procedures are completely finished. Special attention and care to oral hygiene and different dental treatment modalities must be practiced by all divers, but in particular deep water divers.



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ANSWERS TO **DUGONG QUIZ**

1. **a.** Though dugongs weigh 1,000 pounds (450 kg), are shaped like cucumbers, and have whiskered, wrinkly faces, European sailors mistook them for mermaids. This mistake of mythic proportions is immortalized in the Manatee's order's name: Sirenia, which refers to the mermaid-like creatures in Homer's Odyssey. Ironically today's dugongs are frequently injured or killed by boats.

2. **c.** Dugongs are large mammals, weighing up to around 400 kg and measuring up to 3.5 m in length.

3. **b.** The name sea cow refers to the fact that they graze on the seagrass, which form meadows in sheltered coastal waters. Like whales, dugongs are mammals, breathing with their lungs and giving birth to live babies.

4. **c.** They inhabit sea grass beds and shallow tropical waters throughout the Indo-Pacific region. Major concentrations tend to occur in wide shallow protected bays, wide shallow mangrove channels and in the lee of large inshore islands. These areas are coincident with sizeable seagrass beds.

5. **b.** Dugongs are incredibly agile in the water. Most of their bones lack marrow and are therefore extremely dense and heavy. This enables them to remain submerged, rather than floating up to the water's surface. When threatened, they can swim up to 15 miles per hour (24 km/h)!

6. **d.** Dugongs are more closely related to elephants than to other marine mammals such as whales and dolphins, but their closest living aquatic relatives are the manatees.

7. **a.** Dugongs have poor eyesight but acute hearing. They find and grasp seagrass with the aid of coarse, sensitive bristles, which cover the upper lip of their large and fleshy snout.

8. **d.** Dugongs spend most of their time grazing in shallow, slow-moving rivers. To maintain their tremendous body-mass, 800-3,500 pounds (360-1580 kg), dugongs must consume roughly 11 percent of their weight in vegetation a day: that's between 88 and 385 pounds (40 and 174 kg).

9. **a.** Torres Strait and the northern Great Barrier Reef region support the largest known population of dugongs in the world. The status of the dugong in this region is unknown. There is no evidence of a decline; however, there are some indications that the indigenous harvests may not be sustainable

10. **b.** The dugong population in the Arabian Gulf is believed to be the second largest in the world after Australia. Akab Island (Umm Al Qaywayn, UAE) is the oldest site (6000 years) where dugong remains have been discovered. The Arabian Gulf is considered to contain the most important dugong habitat in the western half of the dugong's range. Aerial surveys conducted in 1986 indicated that in the Arabian Gulf, dugongs are restricted to the southern and south western coastline between Ras Tannurah in Saudi Arabia and Abu Dhabi in the United Arab Emirates. Within this area the population was estimated to be 7,307 animals.

11. **c.** It is listed as vulnerable to extinction at a global scale by The World Conservation Union (IUCN). The dugong has a large range that spans some 37 countries and territories and includes tropical and subtropical coastal and island waters from East Africa to Vanuatu, between about 26° north and south of the Equator.

12. **b.** The maximum rate of increase under optimum conditions would be on the order of 5% per year even when natural mortality is low (5% per year).

FEATURED **CREATURE**

NUDI**BRANCH**

(Gymnodoris ceylonica)

FEATURE **RITA BENTO**

PHOTOGRAPHY **MARCELO MARIOZI**

EDA accepts text and photo contributions for this page.

FAST FACTS

- Length: 5cm
- It is characterized by the translucent white body with small bright orange-red spots and large orange-lined white gills
- Occurs from Australia to Red Sea, Indonesia and Japan
- Lives mainly on sandy bottoms

FUN FACTS

- Prey on other gymnodorids and sea hares
- Characterized by enormous gills
- Orange rhinophores' tips
- Lays an orange spawn mass with the eggs arranged in clusters

UPCOMING **EVENTS**

REEF CHECK TRAINING

13-14 March 2009 Group 2
27-28 March 2009 Group 3
10-11 April 2009 Group 4

EARTH DAY

28 March 2009 (8:30pm - 9:30pm)

WORLD ENVIRONMENT DAY

5 June 2009

CLEAN UP ARABIA

November 2009

BIOSPHERE EXPEDITION

8-31 October 2009

NOTICES

DIGITAL ONLINE
UNDERWATER PHOTOGRAPHY CONTEST

We have the honor to announce a new step on the development of underwater photography in the UAE with the official launch of Digital Online Underwater Photography Contest. Digital Online will happen on the first semester of each year from now on and will serve as a qualifying event for the planned National Championship to be held in the second part of the year, it will also add points to a soon to be released ranking system so that the photographers can keep track of their development. The Digital Online event (as well as the National Championship) will be open to all EDA members (UAE Nationals and foreigners with a Resident Visa) and holders of any diving certificate.

MAGAZINE CONTRIBUTORS

MARCELO MARIOZI
UNDERWATER PHOTOGRAPHER

A CMAS underwater photo and diving instructor, Marcelo is the newest addition to the EDA team. He has been living in Dubai for a little more than a year and a half and after his initial adjustment stage, is going back to his undersea passions, diving and underwater photography. Back in Brazil, Marcelo spent the last 10 years helping the development of the national underwater photo & video commission. He has organized, competed (3rd place in the nationals, captain of the Brazilian team once in Marseille 2002) and judged these events with great passion over the years. Marcelo will be a regular face within EDA.

EDA
جمعية الإمارات للغوص
Emirates Diving Association

Chairperson Mr Faraj Butti Al Muhairbi

Vice Chairperson Mr Essa Al Ghurair

The Secretary General Mr Jamal Bu Hannad

Financial Director Mr. Khalfan Khalfan Al Mohiari

Head of the Technical Committee Mr. Omar Al Huraiz

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MISSION STATEMENT

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

LEGISLATION

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

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

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DIGITAL ONLINE

UNDERWATER PHOTOGRAPHY CONTEST

We have the honor to announce a new step on the development of underwater photography in the UAE with the official launch of Digital Online Underwater Photography Contest. Digital Online will happen on the first semester of each year from now on and will serve as a qualifying event for the planned National Championship to be held in the second part of the year, it will also add points to a soon to be released ranking system so that the photographers can keep track of their development. The Digital Online event (as well as the National Championship) will be open to all EDA members (UAE Nationals and foreigners with a Resident Visa) and holders of any diving certificate.

INTRODUCTION

The Digital Online Underwater Photo Contest, from now on referred to as Digital Online, is a yearly internet-based event with the main objectives of:

- Gathering information on the number of underwater photographers in the UAE;
- Discovering new promising underwater photographers in the UAE;
- Developing the human interaction with the underwater environment by displaying the beauty of its fauna and flora.

Digital Online is open to all UAE Nationals and all people living in the UAE under a valid Residence Visa and holders of any diver certificate.

CATEGORIES

Wide Angle (WA): Photographs taken with a wide-angle lens (or adapters that provide an equal level of field-of-view), with or without human presence, portraying the natural beauty of the underwater environment and/or the human interaction underwater (see Orientations & Restrictions).

Fish (FI): Photographs of whole fish(es) and/or fish parts as the main visual element (NOT mammals, crustaceans, mollusks etc…) taken with any lens, portraying it's natural behavior and environment.

Macro (MA): Photographs taken with close up-equipment, portraying underwater flora and/or fauna. The main element NOT being fish.

REGISTRATION AND IMAGE UPLOAD

Registration to Digital Online is free. The participant needs to be a member of EDA and send an email to photo@emiratesdiving.com with the following information:

- Full name
- EDA Membership Number
- Camera Model
- Non-Nationals should also add a low-res scan of their Resident Visa

And he/she MUST send all his/her images attached to this same email message. Because only the first email received by the organization will be considered valid.

- All images must be .JPG files, in the EXACT dimensions of 600 x 400 pixels.
- The images should be named:
- Wide Angle Category: w.jpg
- Fish Category: f.jpg
- Macro: m.jpg
- Only ONE picture will be accepted per photographer, per category.
- The original pictures (slides, negatives or high-resolution digital files) are going to be requested by EDA to confirm and authenticate the results before their announcement. If they are not received within 15 days from the requested date, the picture will be disqualified.
- The process of registering and sending images is the confirmation that the photographer accepts the rules of the event, and recognizes EDA and only EDA as capable of evaluating the cases not contained herewith.
- You will receive an email to confirm the registration.

DEADLINES AND RESULTS

The deadline for registration and image upload is midnight (UAE local time) on April 30th 2009. The results will be made public and the prize ceremony will take place at the EDA Social event in May.


FI


WA


MA

PHOTO@EMIRATESDIVING.COM