EDA

جمعية الإمارات للغوص
Emirates Diving Association

DIVERS FOR THE ENVIRONMENT

SEPTEMBER 2008, VOLUME 4, ISSUE 3

IYOR 2008
INTERNATIONAL YEAR OF THE REEF

SURVEY REVEALS OVERALL ENVIRONMENTAL AWARENESS

ADRENALINE SPORTS LIVE!
TO HOSE SEVERAL ADVENTURE FIRSTS IN THE MIDDLE EAST

CORALS JOIN FROGS AND TOADS AS WORLD'S MOST ENDANGERED

MABUL ISLAND
DIVING IN BORNEO IN THE STATE OF SABAH

JVC®

The Perfect Experience

Your ideal diving buddy

DOUBLE YOUR FUN WHEREVER YOU GO

WR-MG100 (Marine Case) features include:

- POWER ON/OFF BUTTON
- VIDEO/STILL MODE SWITCH
- VIDEO RECORDING ON/OFF
- SNAPSHOT
- ZOOM LEVER

Everio

For Every You

HDD HARD DISK DRIVE | microSD

- Offer valid till stocks last
- Features differ from model to model. • Camcorder inside Marine Case shown for illustration purposes only.
- * 60 minutes worth of video in Ultra Fine mode. Time will differ depending on the number of files being burned to DVD.

UAE Distributors: Oasis Enterprises

Dubai Airport Road	Deira Showroom	Holiday Centre	Abu Dhabi Muroor Showroom
04-2821375	04-2726374	04-3318386	02-6417075

Diving Centers

Emirates Diving Association	Scuba Tech	Technical Diving	Divers Down	Freestyle Divers	Sandy Beach
04-3939390	04-3348988	04- 3930303	09-2370299	09-2445756	09-2445555

www.jvc-me.com

CONTENTS

REGULARS

NEWS

CORAL NEWS

FEATURES

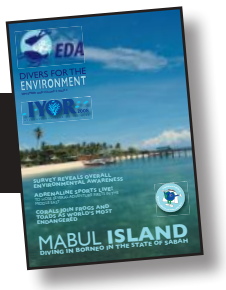
DIVING DESTINATIONS

HEALTH

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 December 2008. Send all articles/comments to: magazine@emiratesdiving.com.

EDA COVER
PHOTO BY ALLY LANDES



Please recycle this magazine after you have read it.

A HOT **SUMMER**

IBRAHIM N. AL-ZU'BI
EDA Environmental Advisor

Emirates Diving Association
www.emiratesdiving.com
Tel: +971 4 393 9390
Fax: +971 4 393 9391
Email: diving@emiratesdiving.com

I hope you have all enjoyed your summer holidays and have had a good rest. We have been busy this summer working on revamping EDA's website. It took quite some time, but it is now finally online and we are now working on having it in Arabic, do have a look and let us know what you think. Your feedback will help us to make this website more useful and a better reference for divers.

We have also been busy finalizing EDA's action plan for the rest of this year as well as the next two years. Our main aim will be on providing more services and social activities to our members. This will include more public participation and raising awareness toward the marine environment conservation and promoting for better diving practices.

As most of you escaped the hot summer, some decided to stay back and spend their summer here. EDA was part of the Dubai School Agency Summer Camp where a 100 young UAE national students certified for their Open Water diving exam and ventured on to join as EDA members. The camp was fun and offered many other activities in addition to diving, so a big thank you goes to the Dubai School's Agency for the initiative, TDIC for running the course and Dubai Police for being there in case of an emergency.

We have some hot topics for you in this issue of "Divers for the Environment". A follow up article about oil spills from ships, a very interesting educational article with a lot of facts. Some of our members share their diving holiday experiences of the summer that take us to Key West and Sharm El Sheikh, in addition to the usual destination updates with a feature story about Sipadan - Malaysia. EDA was part of another FAM trip there; although Sipadan is one of the most featured dive destinations in this magazine I am sure you will enjoy reading the articles and if you haven't dived there yet, TRUST ME, it is highly recommended.

Clean up Arabia 2008, EDA's biggest diver gathering is just around the corner. This year we will have the clean up over a one week period with different team building activities and focusing on involving company staff members to be part of the environment's educational activities.

We will also be launching Blue Scarf © – **The Blue Scarf Campaign** – A Dubai based program to support the International Year of the Reef, with the full support and sponsorship of Dubai Properties Group and in collaboration with the International Coral Reef Action Network (ICRAN), as part of EDA's celebration of the year 2008 – The International Year of the Reef (IYOR). The Campaign will use the Blue Scarf as a symbol for IYOR-Dubai and be the UAE's environmental pride. This campaign aims to raise awareness on international and regional efforts to support the reef (under ICRAN and part of IYOR) with main focus on the local public schools to raise funds to support Emirates Diving Association's Coral Monitoring Reef program in the UAE and to build private and public partnerships as a regional and international example in the International Year of the Reef.

Please make sure that you get yourself a Blue Scarf from EDA.

In the last issue I talked about how you meet other people and you get introduced to new cultures while diving. This summer I had an operation done that prevented me from diving for some time and it made me think whether or not I should get myself another hobby and try to do other things that do not require a lot of effort and energy and without having to carry heavy tanks around. Do I really need diving in my life? It did not take long to get the answer. Jacques-Yves Cousteau said "From birth, man carries the weight of gravity on his shoulders. He is bolted to earth. But man has only to sink beneath the surface and he is free... when you dive you begin to feel like an angel. It's liberation of your weight." I'm sure you all agree !

I hope you will enjoy reading this issue and I look forward to reading your new articles in the next issue that comes out in December.

As we are also celebrating the holy month of Ramadan (the month of Giving), I wish you all enjoy the spiritual month and have a Happy Eid Al Fitr.

Eco Regards,

Ibrahim N. Al-Zu'bi

هيئة البيئة - ابوظبي
Environment Agency - ABU DHABI
RESEARCH • DEVELOPMENT • PROTECTION

SURVEY REVEALS
OVERALL ENVIRONMENTAL AWARENESS
IN ABU DHABI EMIRATE IS 49% (MOST AWARE ARE EMIRATE'S YOUTH)

PRESS RELEASE **12 JUNE 2008**

During a press conference today, the Environment Agency – Abu Dhabi (EAD) released the results of a survey, the first of its kind in the Emirate, which was conducted to measure the level of environmental awareness and behavior among the general public in the Emirate of Abu Dhabi.

"The results of this survey have helped us to better understand the impact of environmental education and awareness programmes conducted so far. This understanding will help us to plan future awareness efforts," said Maisa Al Nuwais, Director of Environmental Awareness Sector, EAD.

THE SURVEY RESULTS

The survey revealed that the overall level of awareness among the general public in Abu Dhabi Emirate stands at 49%, while the level of overall behavior stands at 44%.

The highest awareness was found to be among the youth and the lowest was among younger children. Overall, women were found to be more aware than men, while the survey revealed that there is a variation between awareness and behavior among adults. This means that although some people demonstrated awareness, their behavior did not reflect this awareness.

The most commonly perceived environmental issues (the most talked about) in the UAE among the population were found to be Pollution, Traffic-related problems, Waste Generation and Disposal, Climate Change and Usage of plastic.

The survey revealed that hospital and hotel workers demonstrated a high level of awareness on Water and Energy.

People were most concerned about Energy, while Water ranked as their least concern. On the behavioral side, pollution was the most important issue while water was the less important issue. However, some respondents had demonstrated some efforts and action in regards to water.

ISSUE	AWARENESS	BEHAVIOR
Water	42.8%	40.6%
Energy	61.6%	44.8%
Waste	52.4%	42.9%
Pollution	50.8%	46.6%
Biodiversity	42.9%	42.6%
Global Issues ie. Ozone depletion, climate change, sustainable development, environmental citizenship	50.4%	44.8%

Out of the occupational groups in the Emirate, the most environmentally aware were fishermen, while traders in wildlife (CITES) were the least aware. The highest consistency in behavior was noted amongst farmers and the lowest among traders in wildlife (CITES).

OCCUPATIONAL GROUP	AWARENESS	BEHAVIOR
Fishermen	70.8% 4.25	55.1 3.31
Farmers	60.8% 3.65	59.1% 3.55
Falconers	63.9% 3.84	48.3% 2.90
CITES Traders	54.8% 3.29	48.1% 2.89

Among the influencers in society, teachers displayed the maximum awareness while religious preachers, such as Imams, were the most concerned about the environment. Members of the media were most aware about global issues and teachers were most concerned about global issues. The media was cited by all targets as the main source of their environmental awareness and knowledge.

MORE ABOUT THE SURVEY

An independent consultant was commissioned to undertake this survey. The survey covered several environmental issues including water, waste/energy waste, biodiversity, pollution and global issues. 18 groups and a total of 2,263 samples from a balanced statistically representative population were interviewed. It included general questions as well as issue-based questions.

The public sample of the survey covered lower, upper primary students, secondary students, university students, adult men and adult women. The general public sample was carefully chosen on the basis of nationality, age group, gender, location, length of their stay in the UAE and socio-economic class profile (for adults, youth and children).

The functional sample included fishermen, farmers, wildlife traders (CITES), falconers, hotels, hospitals, retail chains, corporate and industries. Among the influencer sample were members of the media, teachers and preachers.

The questions, which were in both Arabic and English, were carefully designed to assess the awareness level, attitudes and behavior, interest and involvement as well as suggestions. The analysis and rate awareness levels were measured by using relevant statistical techniques and statistical softwares, where answers were translated into a rating scale.

THE SURVEY RESULTS

Awareness & Behavior of Farmers – Water Issue

- Most respondents though had good overall awareness on environmental impact of digging wells, excess water extraction and use of saline water in farming – they were relatively less aware of the ground water resources in UAE and how long they will last.
- A high majority of 80% agreed that there should be a limit on excess water extraction.

Awareness & Behavior of Farmers – Pesticides Issue

- Most respondents were well aware of the precautions and problems associated with usage of pesticides.
- Usage behavior was also noted to be consistent with awareness.
- However the responses given by workers indicated relatively lower rated behavior compared to owners, particularly for storage and disposal of the pesticides and fertilizers indicated.

Awareness & Behavior of Farmers

- Most respondents displayed high satisfaction with the government supervisors visit frequency and quality of training – with most commenting on the training being simple ,clear and good.
- Awareness amongst farmers on environmental issues as well as its impact on their profession and farming was found to be good.

Awareness and Behavior of Fishermen

- All respondents had particularly good awareness on various bad impact of overfishing on marine life as well as environment.
- They were also well aware of endangered species. Most frequently mentioned species was dolphins followed by sharks.
- 63% respondents mentioned occasional accidental catching of marine wild life such as dolphins and turtles.
- All respondents believed that the Government should aid fishermen in such events in terms of advice and money.
- Awareness amongst fishermen on environmental issues as well as its impact on their profession and marine life was found to be quite high.

Awareness and Behavior of Falconers

- As high as 70% do not believe that trading of endangered species can cause impact on the environment. However they agree that prohibiting and controlling hunting would be the best way to protect these endangered species.
- There is high awareness of regulations related to protection of the endangered species and the organizations involved in it like CITES.
- There was a high awareness of Sheikh Zayed's Falcon release program with 30% participating in it.

Awareness and Behavior of Wildlife Traders (CITES)

- Only 30% pet shop traders believe that trading in endangered species affect the overall environment while 63% did not believe so and 20% were unsure.
- There is a high awareness of regulations related to protection of the endangered species but few are familiar with names like CITES and EAD.
- Most agree that the regulations are for benefiting the animals but some mentioned some specific regulations leading them to conduct business at higher cost.
- Most considered main problems faced:
  - Lack of information, guidelines and advice
  - Sudden change/introduction of rules
- Most traders keep their workers informed on all issues related to endangered species handling and keep training them frequently as well as supervising as to whether they are following the regulations.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Mrs Sobhia El Masri, Senior Media Relations Coordinator
Environment Awareness Sector, Environment Agency – Abu Dhabi
Tel: +9712 6934637, Fax: +9712 4464799, Mob: +97150 4450323
Email: selmaasri@ead.ae, Website: www.ead.ae

EMERGENCY CONTACT NUMBERS

The first point of contact should be Dubai Police Rescue Division. Make it clear that you are reporting a diving related injury and the casualty is on oxygen as a first aid measure. **Tel: +971 4 269 4848**

- The person in charge is Captain Juma and his phone is on 24 hrs **+971 50 653 5536**
- The Hyperbaric Doctor is Dr Mohamed Nawaze **+971050 587 5118**

THE ABOVE NUMBERS SHOULD BE THE FIRST POINT OF CONTACT

ADDITIONAL NUMBERS

Zayed Recompression Chamber Abu Dhabi	+971 2 314 8214
CAL Dive as a further contact in an emergency	+971 4 267 9951
Mr Martin Hardey of CAL Dive (General Manager)	+65 9278 2850
Hyperbaric Centre in Sharjah Aqua Diving	+971 6 528 5323
Clive Frost (Owner of Aqua Diving Services)	+971 50 631 2192
Chris Young Aqua Diving Services	+971 50 612 6765
Stevie Scuba Dubai	+971 50 455 4704
Ibrahim from EDA	+971 50 774 8844
Jim Derbyshire DSDC Dive Officer	+971 50 621 4709
Bill Leeman DSDC	+971 50 658 9699

DOCTORS FOR DUBAI

Dr Suliman Al Nayal	+971 50 653 4000 or +971 4 295 9444
Dr Horst Kafer	+971 50 652 3809 or +971 4 344 2773

DOCTORS FOR ABU DHABI

Dr Ebrahim	+971 50 642 6918 or +971 2 633 6744
Dr McCulloch	+971 50 441 6075 or +971 2 633 3900

INTERNATIONAL

Dan Europe	+39 39 605 7858
BSAC Emergency	+44 7831 151523

INCREDIBLE **ENCOUNTER**

DIVERS SWIM WITH WHALE SHARKS IN FUJAIRAH!

FEATURE AND PHOTOGRAPHY **NIAMH BROSNAN**

Dibba Rock

We certainly thought we had seen everything these waters had to offer. So on Wednesday the 18th June we certainly did not expect it to be any different. Video cameras were on standby, and the visibility was the best we had seen there. The pre-dive visualization of whale sharks was not expected to manifest in to reality.

The dive was at the deeper side of Dibba Rock. The fish were in abundance and some good video footage was being captured. Just nine minutes into the dive, I scanned the reef and to my right was a WHALE SHARK!!!

I pointed to it while screaming into my regulator, to get my buddies attention. One of my buddies looked at me, with eyes like saucers and a smile that said it all! I just gave a confirmation nod, as this was her first encounter with a whale shark.

The cameras rolled as we swam towards this four-meter beauty, a juvenile whale shark. Even from a distance you could see he was mostly grey in color with a white belly, with distinctive pale spots and stripes, like a checkerboard. As we swam closer we could see his capacious mouth open, his wide flat head with beady eyes, and the spiracles just behind them. He was accompanied by over 30 remora's in varying sizes, some swam along his dorsal fin, while others attached themselves to the underside of his body for the free ride. After about 8 minutes he swam away. We surfaced briefly and there were a few screams of joy and great excitement.

We continued with our shallow dive, heart rates still pounding with excitement. An urgent tank banging alerted us to a large shape at the surface, our old friend was back again. This time he stayed with us for 15 minutes. The video camera's continued to record until he led us towards the edge of the marine park where he left us. This was a magical experience and we could not over estimate how lucky we had just been. Back on the boat we compared video clips and our smiles did not leave our face that day. Rock on Dibba!

The following Sunday, we decided to dive at Sharm Rock, since we hadn't frequented this dive site in a couple of months. A few minutes into the dive I heard an insistent tank bang, I looked up and there was a whale shark, double the size of the previous one! Could it have been the written invitation on my tank or was it simply my new, bright pink rash vest?

It was over eight meters long, this giant fish gracefully glided through the water and looked like a battle ship, casting a shadow over us. My dive buddy was filming its silhouette as it passed overhead, and later described it as something out of Star Wars. He used his entire body to swim, and his tail fin moved gracefully from side to side as it moved. He was so large we made sure we kept our distance, as we did not want to be unintentionally struck by its large tail fin.

The excitement wasn't restricted to the depths. Overhead the boat driver has just been alerted to the presence of a whale shark, and decided to go for a snorkel. Once in the water he was confronted with the sight of it's large gaping mouth swimming towards him. A speedy exit was made from the water and he later recounted, "It was big enough to eat me". Luckily for us whale sharks are filter feeders and do not pose a threat to humans. The encounter lasted 20 minutes and was even more exciting than the previous week.

Hopefully we'll, once again be graced by their presence and other divers can have this amazing experience. I never tire of seeing these beautiful majestic creatures, which incidentally are the largest fish in the ocean. As Jacques Yves Cousteau said, "The sea, once it casts its spell, holds one in its net of wonder forever".

AT DIBBA & SHARM ROCK!
DATE: June 2008
DEPTH: 3m – 12m
SIZE: Over 8 metres!

Photo taken by dive buddy at Sharm Rock

Sharm Rock


ADRENALINE SPORTS LIVE
ABU DHABI
The region's only exhibition for adrenaline-fuelled sports
CMP
United Business Media
Trials and demonstrations of Wakeboarding, Diving, Surfing, Jet Skiing, Wake Surfing, Dragon Boating, Blokarting, 4x4 Rock Driving, Zorbing, Skate Boarding, Mountain Biking and much more.
13 - 15 November, 2008
Abu Dhabi National Exhibition Centre, UAE
www.adrenalinesportslive.com
BUY THE KIT
LEARN THE SKILLS
JOIN THE CLUB
WEAR THE CLOTHES
LIVE THE SPORT
FEEL THE RUSH.

ADRENALINE SPORTS LIVE!

TO HOST **SEVERAL ADVENTURE FIRSTS** IN THE MIDDLE EAST!

PRESS RELEASE **14 AUGUST 2008**

Abu Dhabi, UAE, 14 August 2008: 'Adrenaline Sports Live!' will be taking entertainment to an all time high with a stunning array of the latest sports and adventure pursuits on offer this November in Abu Dhabi. The region's finest display of sports and outdoor activities promises to have something for everyone.

Visitors to the Abu Dhabi National Exhibition Centre will be able to witness for the first time events and displays of activities such as zorbing (harnessed inside a gigantic, three metre high inflatable sphere for the ride of a lifetime), blokarting or land karting at 90 kilometres an hour, and wake-surfing.

Harnessed inside a nine-foot-wide inflated plastic sphere and sent rolling down the launch ramp, Zorbing is for anyone who's ever wanted to travel at just under 40 kilometres an hour inside a huge inflatable ball. For the ultimate in joy rides with friends inside a harness-free ball that can be filled with enough water to make everyone slide around, it's no surprise that everyone's wanting to become a Zorbonaut.

The newest adrenaline sport to make its way to the Middle East from New Zealand, blokarting on a light, wind-powered go-kart can see you reach speeds of up to 90 kilometres an hour. Simply catch the wind in your sail as you power along inches above the ground. Blokarting is an amazing thrill designed and is the perfect adrenaline packed experience for all ages and abilities.

The latest sport for those who love the beach, wakesurfing combines surfing and wakeboarding. Wakesurfing avoids towropes once a rider is standing behind the boat – instead he or she surfs on the artificially created wave. The sport has already attracted three million fans in the US alone and is set to take the Middle East by storm.

To be displayed alongside dozens of other adrenaline sports, including Zap Cats, 4X4 rock driving, jet skiing, climbing, abseiling, wake boarding and more 'Adrenaline Sports Live!' is set to get pulses soaring across the Gulf.

"The region has such a young population and they're keen to get involved, to have a go at something new," said CMPi UAE's Group Director, Chris Fountain. "They crave different challenges, and what's on offer at 'Adrenaline Sports Live!' Is an alternative to the norm, not just for people who enjoy their sports but for anyone who wants to have a fun day out. We want people to come down to, participate, and discover a love that could last a lifetime."

An industry worth over a billion dollars worldwide, Middle East sports fans and fun seekers have yet to enjoy the latest in adrenaline highs from around the world. With experts on hand, visitors will be able to talk to the professionals about their passions and get hands on at 'Adrenaline Sports Live!'

"Everyone's looking for something new, whether they're into their sports or not. We're delighted to be showcasing new activities to the region, sports that have been thrilling the public in the US, Europe, and Asia. We're sure that visitors to 'Adrenaline Sports Live!' will feel the same way and that they will embrace these new alternative pursuits," explained Farshid Rahimkhani, Managing Director of Dream Days.

Clubs, associations and companies interested in finding out more about 'Adrenaline Sports Live!' should contact the organisers, CMP Information, on: +971 2 406 4471 or email: sampatel@cmpi.biz

Adrenaline Sports Live will run from 13-15 November, and is open to the general public.

Adrenaline Sports Live is organised by CMPi UAE, who are one of the four founding partners of the Abu Dhabi National Exhibition Company.

Further information on Adrenaline Sports Live can be found at: www.adrenalinesportslive.com

Zapcats at Jazira Beach Club

Photo courtesy of Surf Dubai

Photo courtesy of Dream Days

Wakeboarding at Jazira Beach Club

INSTRUCTOR DEVELOPMENT COURSE

If you are ready for the challenges and rewards that come with being a PADI SCUBA Instructor, The PADI IDC is waiting for you!

The PADI IDC will be held from October 5-16, in Dubai and the Instructor Examination will be held on the 19th and 20th of October.

If you wish to do the Assistant Instructor course in the evenings, an Assistant Instructor course will be held in October, every Monday and Wednesday evening.

Francis Uy, resident Course Director at Al Boom Diving and his team are on hand to help you on your way to a career in diving. Al Boom Diving offers great facilities with two fully equipped classrooms and extremely good training conditions; the highest quality education in a relaxed environment is available.

Instructors who are already certified on instructor leadership level with another recreational dive training organization just need to join our OWSI program.

To further enhance your skills and add dive logs, you are welcome to help in Dubai or in Fujairah on the weekends or anytime you are available, just give Al Boom Diving a call in advance. Our instructors will be delighted to assist you with your training and development.

All courses are held in our dive centre at Al Wasl Road in Dubai. For more information, contact Francis on: **+971 4 342 2993**
Email: **francis@alboomdiving.ae**

MARIO TAPALES

PADI Course Director

Al Boom Diving would like to welcome Mario Tapales who is appointed as the new manager of their dive centre at Le Meridien Al Aqah. Mario has the distinction of being the first Course Director from the Philippines to be certified by PADI. He has also had the opportunity to dive with the President of the Philippines. Welcome Mario!

OPEN WATER COURSES DURING RAMADAN

Ramadan is a time when UAE residents have reduced working hours, and some additional free time in the evenings. This, combined with the good weather for water sports in September, makes it a great time to become a certified scuba diver.

Al Boom Diving is offering new evening classes from 6pm to 9pm to accommodate people that would like to complete their PADI Open Water certification. The Open Water course comprises 5 classroom sessions, 5 pool skills practice sessions and 4 ocean dives. These can all be completed in as little as 3 days, or 3 months, all depending on your schedule. The sessions are booked according to your availability.

The first step to become a diver is to come into the dive centre and collect the materials for your course, and start reading! There are only 5 chapters to review before you can start the course.

In case you are short of time, the theory sessions can be done over the internet, through the new PADI e-Learning.

The PADI Open Water course is 2,350 Dhs inclusive of:

1) all PADI materials
2) all dive equipment rental
3) bus transport to Fujairah
4) a lifetime PADI diver certification license
5) DAN diver insurance during the dive course
6) Two ocean dives in Dubai and two ocean dives in Fujairah

For more information, contact Al Boom Diving on abdiving@emirates.net.ae or call 04-342-2993

MASTERING **FEAR**

FEATURE **HARSH GOVIL**

My passion for water started in the most unusual of circumstances – my fear of it. I remember my dad putting the arm floats on and lobbing me into the pool completely ignoring all the fuss I created. Although the entry scene remained more or less the same for some time to come, I gradually started to enjoy the feeling of being in water. Since then, I have put that fear aside and joined various swim squads both in Australia and Dubai as well as participating in the school swim team. Increasing comfort with water led me to discover scuba diving. I have been pursuing the sport for the last 4 years and have recently completed the Master Scuba Diver certification, the highest non-professional PADI accreditation.

Scuba diving is a rewarding activity for people who want to explore the new sights and sounds that make up marine life. A curious mind and a healthy desire to learn is all that is required of course, supported by basic swimming skills. Scuba diving takes time and discipline that rivals any other sport, and is more rewarding when you swim beside turtles and reef sharks playing hide and seek with coral; it is truly a breathtaking experience. Other students from my school, Dubai American Academy, have also started to look into diving opportunities after realizing the new experiences that come about from a first hand glimpse at the underwater landscape.

As I progressed through various courses in Scuba Diving, I realized the practical benefits of learning the Rescue Diver program to equip me in case of emergencies. My favorite is night diving with its completely different perspective of the underwater world. For one, you realize that fish sleep too! In the end, developing a healthy appreciation for the fragility of marine conservation is crucial to understanding the role we can help play in preserving it.

KNOWLEDGE AND HUMAN DEVELOPMENT AUTHORITY

DIVING FORCE: Emirates Diving Association paired up with the Knowledge and Human Development Authority (KHDA) over the summer to teach a group of pupils from schools in Dubai the delights of diving. The boys were given classes in theory first, and then taken on dives in Jumeirah and Fujairah. The programme was part of the "Professions of Our Fathers" initiative in KHDA's Summer Camp which aimed to teach young people about their rich heritage and the skills of their forefathers.

CLEAN UP ARABIA 2008
ONE WITH A DIFFERENCE!

We would like to invite you to participate in the annual local and regional project – Clean Up Arabia© (Clean Up Arabia, the annual voluntary campaign aimed to cleaning up debris and rubbish from the dive sites and beaches of the UAE, has been running for 13 years), which will be held from 24 to 30 November 2008. The Clean Up aims to make our beaches and dive sites on the east and west coasts of the UAE clean again by removing the rubbish that is spoiling them.

This is the 13th year of Clean Up Arabia and this event will carry a lot of press coverage.

Clean Up Arabia will involve people from all walks of life taking action that makes a real difference. EDA members and sponsors, together with their families, will participate in the dive site and beach clean ups which should help shape their consciousness concerning littering. The campaign's general aim is to clean the marine environment from pollution, as well as directing people towards positive attitudes in maintaining a clean and sound environment by practice and participation.

We shall record the quantities and types of garbage collected by individual groups and will submit this to the International Coastal Cleanup (ICC) which compiles and analyses this information each year from volunteers all over the world. The final information is then used to educate the public, business, industry and government officials about the marine debris problem.

Emirates Diving Association & UNEP YouthXchange West Asia (Shabab) in collaboration with the United Nations Environment Programme - Regional Office of West Asia / UNEP – ROWA are the organisers of this year's clean-up campaign.

Clean Up Arabia is backed up by the Australian's 'Clean Up the World' campaign, the USA-based 'International Coastal Cleanup' and PADI PROJECT A.W.A.R.E. All these organizers have years of experience around the world, coordinating groups from all walks of life, who will join together for the good of the earth.

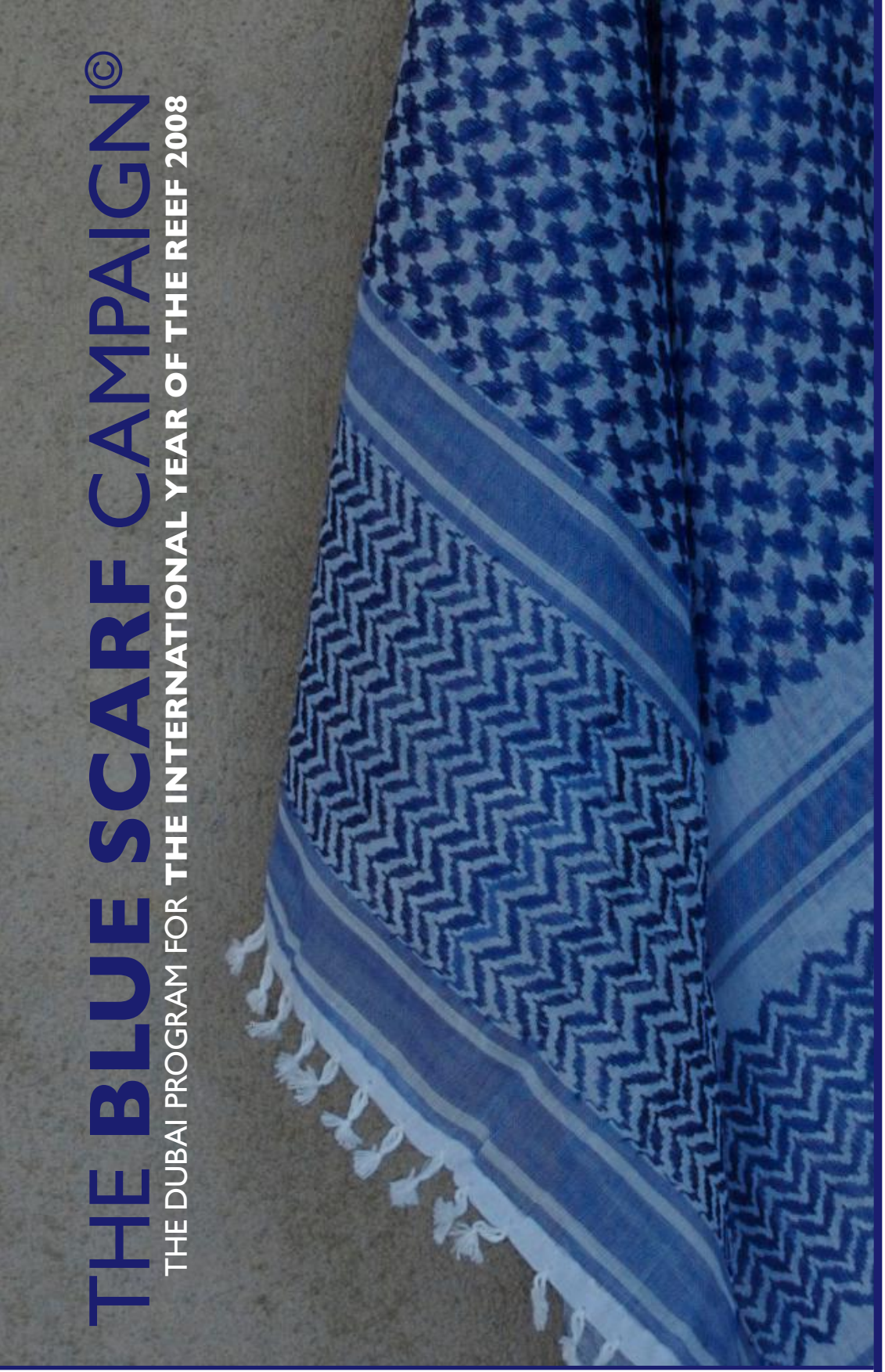
The Emirates Diving Association will carry this work out, along with volunteers, who will be provided with T-shirts and caps, as well as the tools needed to achieve a high level for the clean up.

The main areas to be covered will be:

1. East Coast (Fujairah & Khorfakkan) - UAE: both underwater clean ups and along the shore with volunteers – Supported by Le Meridien Al Aqah Beach resort. (Main Event)
2. Abu Dhabi - UAE: organized by EDA Abu Dhabi Committee, both underwater clean ups and along the shore with volunteers in collaboration with the Environment Agency - Abu Dhabi
3. Ras Al Khaima - UAE: underwater clean up
4. Dubai - UAE: underwater clean up (wreck dives)
5. Musandam - Oman: both underwater clean ups and along the shore with volunteers
6. Bahrain: in collaboration with Bahrain Women's Society
7. Kuwait: EDA members in Kuwait
8. Qatar: EDA members in Qatar and in collaboration with the Supreme Council of Protected Areas

CLEAN UP ARABIA – UAE

CLEAN UP ARABIA – OTHER COUNTRIES



THE BLUE SCARF CAMPAIGN©

THE DUBAI PROGRAM FOR THE INTERNATIONAL YEAR OF THE REEF 2008

IYOR 2008
INTERNATIONAL YEAR OF THE REEF

ICRAN
International Coral Reef Action Network

The ICRI (International Coral Reef Initiative) and IYOR 2008 (International Year of the Reef) is a worldwide campaign to raise awareness about the value and importance of coral reefs and threats to their sustainability, and to motivate people to take action to protect them. All individuals, corporations, schools, governments, and organizations are welcome and actively encouraged to participate in IYOR 2008.

Proceeds & donations to support Coral Reef Awareness and Monitoring Program in Dibba, East Coast run by EDA.

The Blue Scarf Campaign Sponsor

DUBAI
PROPERTIES GROUP
A member of DUBAI HOLDING

HEALTHY **CORAL REEFS** PROVIDE:

HABITAT Home to over 1 million diverse aquatic species, including thousands of fish species
INCOME Billions of dollars and millions of jobs in over 100 countries around the world
FOOD For people living near coral reefs, especially on small islands
PROTECTION A natural barrier protecting coastal cities, communities and beaches
MEDICINE The potential for treatments for many of the world's most prevalent and dangerous illnesses and diseases

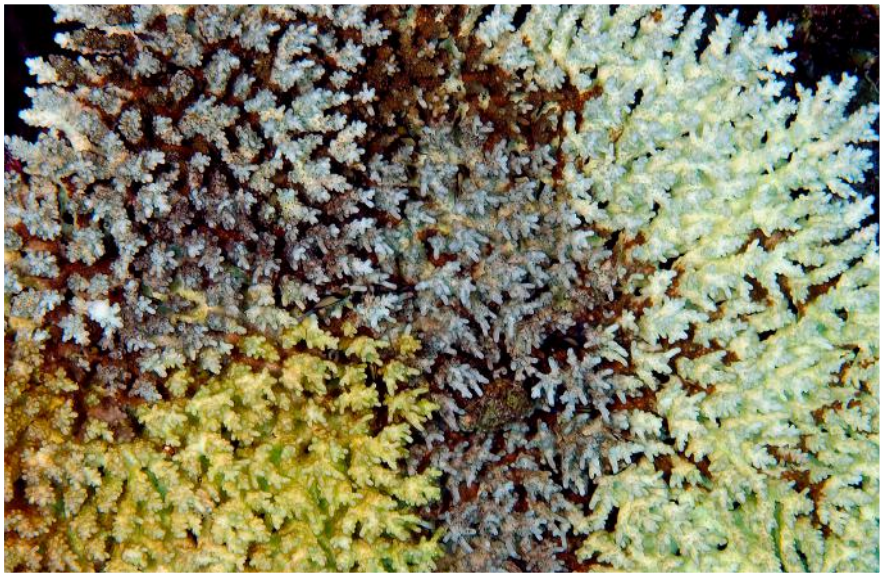
EDA
جمعية الإمارات للغوص
Emirates Diving Association

Emirates Diving Association
Heritage & Diving Village
Shindaga Area
P.O. Box: 33220
Dubai, UAE

Tel: +971 4 393 9390 | **Fax:** +971 4 393 9391
diving@emiratesdiving.com or projects@emiratesdiving.com
www.emiratesdiving.com

CORALS JOIN FROGS AND TOADS AS WORLD'S MOST ENDANGERED

FEATURE **CATHERINE BRAHIC**



Coral Bleaching and Disease. Copyright Statement: "(c) Wolcott Henry 2005/Marine Photobank"

Bicolor Anthias swimming by a wall of soft corals. Copyright Statement: "Chuck Savall/Marine Photobank"

Within one generation, diving on coral reefs could be a very rare holiday opportunity. The first comprehensive review of tropical coral species reveals that over one-quarter reef-building coral species already face extinction.

This means corals join frogs and toads as the most threatened group of animal species on the planet.

There are 845 known species of corals that build reefs and live in symbiosis with algae. Not enough is known about 141 of these to determine how threatened they are. But of the 704 remaining species, scientists say 32.8% are at risk of extinction.

The team, which was led by Kent Carpenter of the International Union for the Conservation of Nature (IUCN) and gathered experts from around the world, used the IUCN Red List criteria to assess the 845 species.

SEWAGE AND CLIMATE

Two hundred and thirty one species (27%) were found to be threatened with extinction. A further 176 (21%) were deemed "near-threatened".

"It was a huge surprise because there is only one other group of animals that has been assessed that exceed that level of threat," says Alex Rogers of the Zoological Society of London, who participated in the survey, "and that's the amphibians."

Humans directly threaten corals by dumping fertilizers and sewage into the oceans and by overfishing with destructive methods.

All this encourages the growth of larger algae, which smother corals. "Outside of the US and Europe, 80% of human sewage is released into the oceans without treatment," says Rogers.

Global warming increases sea temperatures which causes "bleaching" events, where the reefs expel the tiny algae upon which they depend. Warming has also been associated with an increased incidence of coral diseases.

LARGE-SCALE DISASTER

In 1998, a world-wide coral bleaching triggered by unusually warm seas irreversibly destroyed 16% of the coral reef area worldwide.

Coral reefs are home to 25% of all fish species, and as many as 2 million species of animals and plants.

In this sense, they are the tropical rainforests of the oceans and the 1998 bleaching event can be compared to irreversibly wiping out 240 million hectares of forest – equivalent to half of the Amazon.

"If this happened in terrestrial ecosystems we would all be shouting from the treetops," says Rogers. "And yet, it has now completely passed out of public memory."

VALUABLE RESOURCE

"I have two children that are under one-and-a-half years old. I expect that by the time they are 40, coral reefs will have massively declined and in some regions, such as the Caribbean, they will be pretty much gone. By the end of the century there could be virtually nothing left."

Conserving corals will require doing more than addressing the causes of climate change, but the benefits will be considerable. Reef fish feed more than 1 billion people in the developing world and the overall value of coral reefs is estimated at more than $30 billion a year.

There is a little good news, though. The 1998 bleaching event revealed that some species of corals appear to be resistant to coral bleaching, suggesting that these species may become hardy survivors.

RESTORED REEFS

At the 11th International Coral Reef Symposium held in Florida this week, a team of scientists presented evidence that some strains of the endangered staghorn coral Acropora cervicornis can resist white band disease.

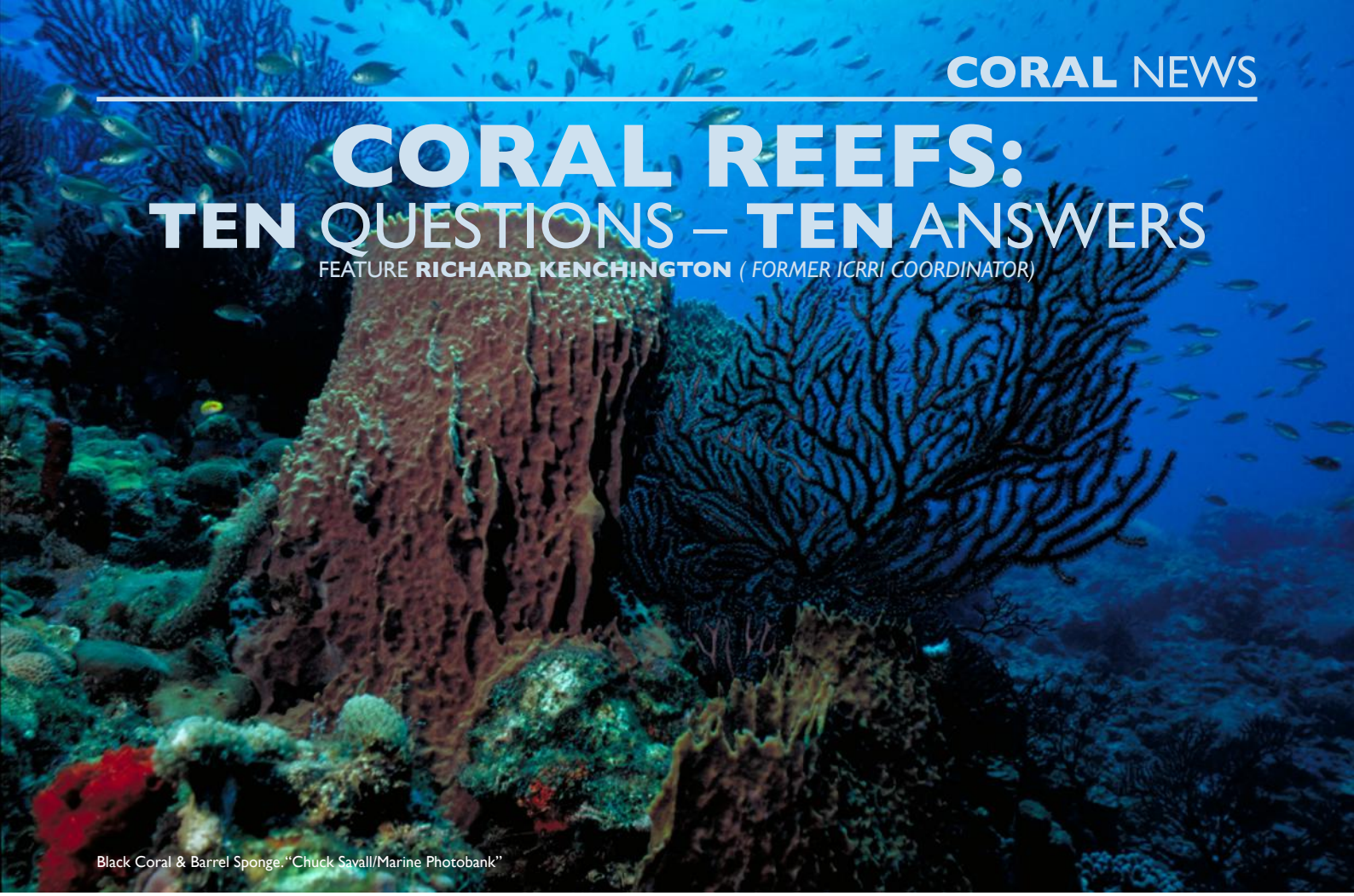
This disease has caused mass die-offs of staghorn corals in the Caribbean, resulting in them being listed in the US Endangered Species Act. The researchers say the findings suggest it might be possible to propagate resistant strains to restore the endangered reefs.

Recent studies have highlighted the plight of coral reefs in different areas around the world. In 2007, researchers announced that reefs in the Pacific are disappearing twice as fast as tropical rainforests. And in 2003, another team showed that Caribbean corals were dangerously close to extinction.

NewScientist.com news service

CORAL REEFS:
TEN QUESTIONS – TEN ANSWERS

FEATURE **RICHARD KENCHINGTON** *(FORMER ICRRI COORDINATOR)*



Black Coral & Barrel Sponge."Chuck Savall/Marine Photobank"

1. WHY ARE PEOPLE WORRIED ABOUT CORAL REEFS?

Most of the world's coral reefs are in trouble. Eight years ago scientists reported that some 10% of coral reefs had already been destroyed or degraded beyond likelihood of recovery. Monitoring results from around the world in 1998 and 1999 indicated that less than 30% of coral reefs have completely healthy communities of corals, fish and other species. Coral bleaching in 1997 and 1998 had severe impacts. Large parts of many reefs and some nations lost 90% of their live coral cover, including colonies as much as 1000 years old. In other areas over the past 30 years similar damage has been caused by the coral eating crown of thorns starfish.

Reefs can recover coral cover and species diversity. Nevertheless if urgent action is not taken quickly it seems likely that the combined effect of direct human impacts, crown of thorns starfish predation, coral disease and predicted increased frequency of coral bleaching and severe storm damage will overwhelm the recovery capacity of many reef systems. For many people this is a crisis calling for immediate action.

2. WHY ARE CORAL REEFS SO IMPORTANT?

Corals have been an important structural feature of reefs in shallow tropical seas since the days of the dinosaurs 100 million years ago. Coral reefs of the type we see today have been around for about 25 million years. They are highly productive and biologically diverse. They are home to members of all the phyla or major groups of the animal kingdom. Put simply, they are a key part of the natural heritage and of the stock of biological diversity of the world.

The productivity of healthy coral reefs sustains a rich interlinked network of species which has been the main source of food and resources for many tropical coastal and island people since the time of the first humans.

The biological diversity of reefs is a natural treasure which may support future activities yet undreamed of. Already reef species are yielding powerful chemicals effective in treatment of disease. In the future, reefs may add to the range of species that can be cultivated to provide food, materials and economic support for people of tropical developing countries.

Coral reefs form natural breakwaters protecting the fertile coastal lands and human settlements of many island and continental nations from erosion by storm waves.

The beauty and diversity of coral reefs have long been a source of wonder to coastal and inland people and visiting mariners. For many communities they have a deep cultural aesthetic and spiritual significance.

The development of SCUBA, underwater film and video and new technologies which make reefs accessible to large numbers of visitors has made coral reefs a powerful attraction for tourism. Well managed, tourism provides a sustainable means of earning foreign currency and employment generation for people in remote areas of developing countries.

In many ways coral reefs have become the marine environments most accessible for scientific study and popular appreciation. Because of this ability to use coral reefs as reference and monitoring sites and because they are linked to other marine environments by currents, they are probably good indicators of the state of shallow marine environments throughout the world.

3. WHY ARE CORAL REEFS FACING PROBLEMS?

The majority of reef loss or damage is not deliberate. An international conference of reef managers concluded that ignorance is destroying coral reefs.

Reefs are being destroyed by an accumulation of stresses arising from human activities, on top of long term changes in the oceans and atmosphere, and natural stresses of highly variable seasons, severe storms, earthquakes and volcanic eruptions. In many situations the extra impacts are stressing and overwhelming the resilience or self-repair capacity of reef communities. This is reflected in reports of increased


A slender filefish on a soft coral. © Chuck Savall/Marine Photobank

incidence of coral diseases, as well as the more dramatic impacts of widespread coral death.

A small amount of destruction is deliberate. Some reefs are covered with sand, rock and concrete to make cheap land and stimulate economic development. Others are dredged or blasted for their limestone or to improve navigational access and safety.

Most human stresses on reefs come from two causes:

- The first is unmanaged fishing which results in overfishing, removing so many fish, that the ecological community is changed and destructive fishing using chemicals or explosives to target particular species or simply to catch fish when numbers are too low for conventional methods to produce an adequate yield.

- The second is pollution, adding types and amounts of chemicals and sediments not normally part of the reef environment.

4. CAN CORAL REEF FISHERIES BE SUSTAINABLE?

Historically, coral reefs have sustained rich local fisheries targeting a range of fish and invertebrate species. Now, technology has made it easier to reach fishing grounds, to find and catch fish and to keep them in good condition until they reach the market. In many areas the demand is exceeding the productive capacity of reef ecosystems, particularly where those ecosystems are stressed by other human impacts. In some cases the removal of the most attractive food fish, the top predators, has led to major ecological changes in reef ecology.

As fish become harder to catch, fisheries in many areas have turned increasingly to destructive techniques such as poisons or explosives, with further damage to reef ecosystems.

Experience suggests that most reefs can sustain some level of fishing over very long periods. There are two key problems. We don't have a scientific basis to recognize when the critical limits have been reached, and new technologies are changing the patterns and impacts of commercial and recreational fisheries so previous knowledge is often of little help.

Recent expansions in the amounts, types and purposes of fishing have been driven by new technologies and new demands. Better transport and aquarium technology for the home or restaurant have built large markets for live fish and invertebrates at prices far beyond those paid in conventional fisheries. The combination of new and old fisheries has overwhelmed the capacity of reefs in many areas.

There is an urgent need to learn how to manage reefs sustainably with adequate sanctuaries, reference sites and breeding areas free from fishing, and to maintain the species diversity and ecosystem processes of the fished areas.

We have to develop means to manage the demand and trade in reef species. In areas which are not sanctuaries, we must consider increasing the sustainable productivity through aquaculture or sea farming to meet the needs of people in many parts of the tropics. There are already examples of successful farming of reef products such as seaweeds and shellfish. Other species are likely to be farmed for food, pharmaceuticals or as aquarium specimens. The challenge is to develop sustainable techniques which do not themselves cause pollution or introduce disease.

5. WHAT ARE THE MAIN POLLUTION PROBLEMS?

The most obvious concerns are about catastrophic events which result in massive releases of oil or chemicals into the reef environment. There is clearly a case for managing transport and industry so that operators accept the cost of absolutely minimizing the human error, poor staff training and poor equipment design and maintenance, which cause virtually all catastrophic accidents.

In many ways the chronic effects of poor management of waste disposal and the activities of industry, agriculture, cities, towns, households and gardens are the major concern. Regular release of small amounts of chemicals and sediments in runoff from land, through inadequate waste disposal, poor sewage treatment and minor operational spills of fuels and lubricants from shipping can have subtle and ecologically significant effects. For example, adult coral and fish populations may appear healthy but their reproductive physiology may be affected so that they do not produce viable young. Or the strength of coral skeletons may be reduced because they incorporate less limestone into their structure. Areas in which apparently healthy communities suffer severe storm damage may not regenerate because settling larvae avoid areas with minute traces of contaminants.

The concern about pollution is that of managing a complex web of effects. It is not generally possible to identify and address a case of a single cause and a single measurable effect. The problem is that shallow seas near inhabited coasts are likely to be subject to low levels of many materials whose individual effects may be very low but whose combined effects may be significant.

6. IS TOURISM A NEW PRESSURE AND A NEW PROBLEM FOR CORAL REEFS?

Well managed tourism can be an ally of coral reef protection. Tourism operations based on enabling visitors to see and appreciate the wonder and diversity of coral reefs have a powerful commercial incentive to ensure that their sites and their reefs are not degraded.

Many of the problems of tourism have come from extreme and ill-considered development with hotels and infrastructure built with no regard for the activities of the tourists who will use them. There are examples of hotels being built from the limestone of the coral reef on their foreshore which was intended to be their major attraction. Developers who will not operate the infrastructure seek to cut costs and damage the coastal environment by inadequate arrangements for waste and sewage disposal. There are also examples of operations with ill trained staff damaging reefs by anchoring and failing to inform guests of the rules of reef usage.

Tourism can be a threat but it has the long term potential for sustainable development and employment benefits to communities in tropical coastal regions. The challenge is to learn effective management so that the measures necessary to protect the environment are recognized and factored into the costs of establishing and continuing tourism operations.

7. IS CORAL BLEACHING A MAJOR PROBLEM?

When corals are stressed they eject the plant cells that normally live in their tissues. This causes the coral to bleach. If the stress eases quickly the corals will recover and reabsorb plant cells and color. If the stress is severe or lasts a long time the coral is likely to die. Coral bleaching has

been recorded on several occasions since the 1970's.

Several factors and combinations of factors can cause stress in corals. These include low salinity, presence of pollutants, extremely high or low water temperatures and high light levels – particularly when seas are calm so that light penetrates deep into the water column. High water temperatures seem to be a particularly important cause of stress.

There was a major episode of coral bleaching in 1997 and 1998 when high mid summer water temperatures in parts of all the tropical seas and oceans were followed by reports of widespread and severe coral bleaching and coral death.

The warm water events of 1997 and 1998 were unprecedentedly severe, but the International Panel on Climate Change has advised that as a consequence of observed and predicted atmospheric change, such events are likely to become more frequent.

There are already reports from some areas of reef regeneration from surviving parts of affected coral colonies and through recruitment of coral larvae. We also know that in the warmest parts of their range coral species can survive unbleached in temperatures which cause severe bleaching in cooler areas, but we do not know the process which enables corals to adapt. There is much we do not know about coral bleaching, but it is clearly a major stress response. The prediction of more frequent high temperature stresses adds to the urgent need to reduce or remove as many immediate human stress sources as possible.

8. WHAT CAN WE DO TO SAVE CORAL REEFS?

Communities and governments cannot manage the species and the biological and physical processes of reef ecology. But we can seek to manage those things that humans do or do not do which damage coral reefs environments and communities. To do this requires some major changes in many long established thought processes.

We must learn to fish in ways that we can demonstrate to be sustainable without slowly destroying the ecosystem that produces the fish. We can no longer assume that the resources of the sea are limitless and that we can do no harm by unrestrained fishing and collecting. We can develop low impact sustainable aquaculture to produce food and materials.

We must recognize and make specific decisions about the costs of waste disposal. Either we accept the costs of chemical or biological treatment of waste before material is discharged into waterways, or we accept environmental impacts. We can no longer simply assume that the sea is the cheapest and most effective place to dispose of sewage, urban, agricultural and industrial waste.

If we want to save reefs and other marine environments we must develop the means to manage our uses and impacts so that they do not exceed the self repair capacity of those environments. That means reviewing and constraining our expectations of many activities and forms of behaviour which have been regarded as the freedom of the seas.

9. WHAT CAN I DO TO HELP SAVE CORAL REEFS?

The most important thing is to spread awareness of the importance of coral reefs and related ecosystems and to encourage communities, companies and governments to take steps to protect them.

You may do this directly or through joining a conservation group. Either way, you can make a difference by encouraging public awareness and discussion of reef issues and by making your views known to political representatives and key decision makers in your community.

As a tourist or other occasional visitor you can learn beforehand about the reef environment you are visiting and how to ensure that your behaviour minimizes risk of damage to that environment. You can try to ensure through accreditation and reporting systems that any company, resort or operator you select is reef friendly and operates in a sustainable manner. As well as seeking to minimize impacts regular reef users and visitors can become involved in management support groups for marine protected areas. You can establish working groups in cooperation with managers and become involved in reef protection activities, such as installation and maintenance of moorings, litter cleanup and removal of debris and fishing line from reef areas. Or you may seek to be involved in a local monitoring program such as Reef Check to help with global monitoring and to be aware of the condition of the reef areas you use.

Officials and directors of companies that use or operate in reef areas can review their operations, financial strategies and management practices seeking to achieve long term minimum impacts and maximum sustainability. They should also be prepared to consider interactions with conservation needs and other users in developing an integrated approach to problem solving.

Community leaders and decision makers should become familiar with the issues of coral reefs, marine environments and resource protection so that these can be reflected in medium and long term planning and policy. In particular, the issue of incorporating the full environmental and waste management costs of programs and developments should be recognized and addressed early in the policy planning process.

10. WHAT IS THE INTERNATIONAL CORAL REEF INITIATIVE?

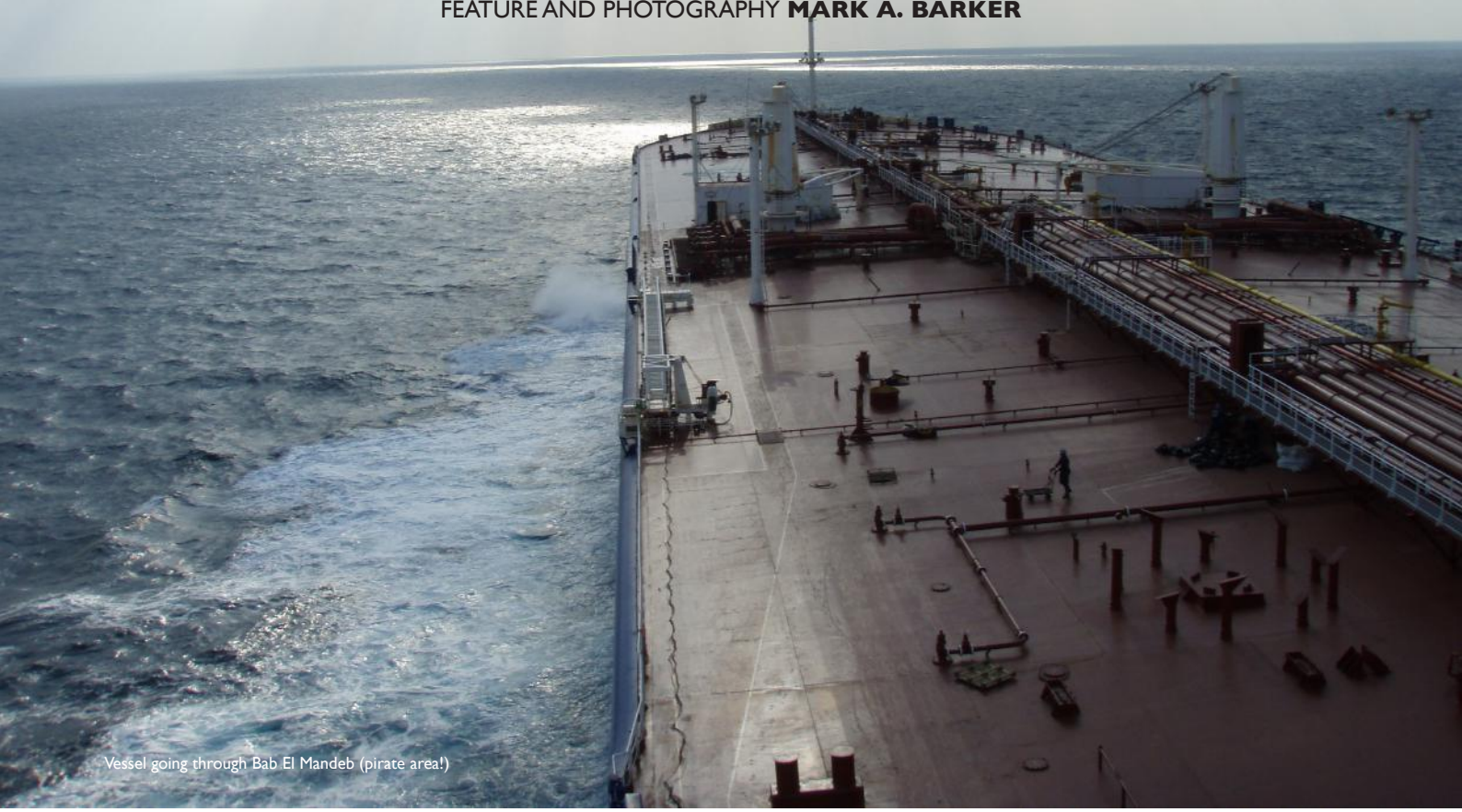
The International Coral Reef Initiative (ICRI) is an informal partnership of governments, international organizations, non-government organizations and scientists. It was established out of concern at the degradation of coral reefs and acts as to be a catalyst to develop awareness of the need to protect reefs and to create linkages and programs to manage and conserve them.

ICRI is not a funding body but it has promoted the establishment of and identified and encouraged donors to support the Global Coral Reef Monitoring Network, the International Coral Reef Information Network, and the conduct of the International Tropical Marine Ecosystems Management Symposium. At the international level, ICRI operates to ensure that the issues affecting coral reefs are raised and considered in development, implementation and review by the widest possible range of international programs and forums – such as the United Nations Commission on Sustainable Development. Management and protection of coral reefs is not simply an environmental issue. It cannot occur without considering the broad range of social and economic issues which affect communities, and the coastal areas and river systems which drain into them. Most effective reef management will be based on community commitment and understanding of the need to ensure the long term sustainability of reef ecosystems, natural resource use management and conservation at the local level.

Scuba divers exploring a coral reef. © Wolcott Henry 2005/Marine Photobank

OIL SPILLS FROM SHIPS
FACTS AND FICTION

FEATURE AND PHOTOGRAPHY **MARK A. BARKER**



Vessel going through Bab El Mandeb (pirate area!)

I read Rita's article in the last magazine with some interest, mainly because there are a few references to the industry in which I have worked for my entire career: the oil tanker industry.

Any professional that works in my industry can only be appalled by what must be deliberate, illegal oil discharges off the East Coast this year. My company, along with all the other major oil companies, is committed to the highest standard of tanker operation and zero pollution; we do not tolerate any illegal discharges of oil.

I am also often disappointed by the way that oil spills and oil tankers are reported in the media, it often appears to me that the general public are misled in an attempt to generate the most lurid and sensational headlines. For example, when the "Braer" ran aground off the coast of Scotland, of the four sea otters killed: "Two of the otters were run over by a camera crew covering the spill, however, and the other two probably died of old age" (New Scientist, 1994). On many occasions the spill clean-up using chemical dispersants has a more damaging effect than the oil itself; certainly in Valdez, steam-cleaning of the beaches killed a host of microbial life on the shoreline which had a terrible knock-on effect on the food chain, causing the effects of the spill to be far worse and prolonged than it should have been.

As Rita rightly pointed out, pollution can occur from many different sources, land and sea, and, as a proportion, oil from ships is only a very small part compared with all other sources, but spills from oil tankers seem to generate the biggest headlines of all.

Ever since the "Torrey Canyon" ran aground off the coast of England, oil tankers have featured negatively in the media; but how many of you are aware that any ship has the capability to pollute? More on that a little later.

The "Torrey Canyon" was the start of international regulation governing oil tankers (and how many of you are aware that there are international regulations and what they are?). Apart from a bungled clean-up attempt (including using bombers in an attempt to set fire to the oil), that event set the scene for tougher and tougher regulation and requirements.

All tankers must clean their tanks from time to time for either inspection or for repairs in the tanks; I have recently returned from a ship in which we were doing both those jobs, the whole ship was cleaned and no oil was discharged overboard; a considerable achievement for a vessel capable of carrying 300,000 tonnes of the black stuff.

So what is the process of tank-cleaning? During the cargo discharge part of the oil is re-circulated back into the tanks through rotating jets; the jets blast away any residue sticking to the side of the tanks, which is then discharged along with the bulk of the cargo. Average cargo left on board is around 0.00005% or less – around 15m^3 out of over 300,000m^3. It is all money after all!

After leaving port the vessel takes on board sea water into the cargo tanks and the same washing process with water begins. As tanks are progressively cleaned of the oil, the remaining oil and water mix is consolidated in the slop tank where the oil separates out over a few days. The clean water is then pumped overboard ("decanted") through an ODME (oil discharge monitoring device) and, when the device detects oil, the discharge is halted automatically. To further clean the tanks for inspection the sludge must be manually removed using shovels; on the ship I was recently, we accumulated around 150m^3 of slops and 30m^3 of sludge in bags. This was retained on board for processing ashore.

This may be a simplified explanation but is not as simple as that. Decanting of slops is not allowed just anywhere in the world. MARPOL, the International Convention on Marine Pollution, designates Special Areas around the world where this operation is not permitted; these include the Mediterranean and Baltic Sea. The Arabian Gulf, Red Sea, Gulf of Aden and Gulf of Oman are also part of these, meaning that whole coast of the UAE is bounded by a Special Area.

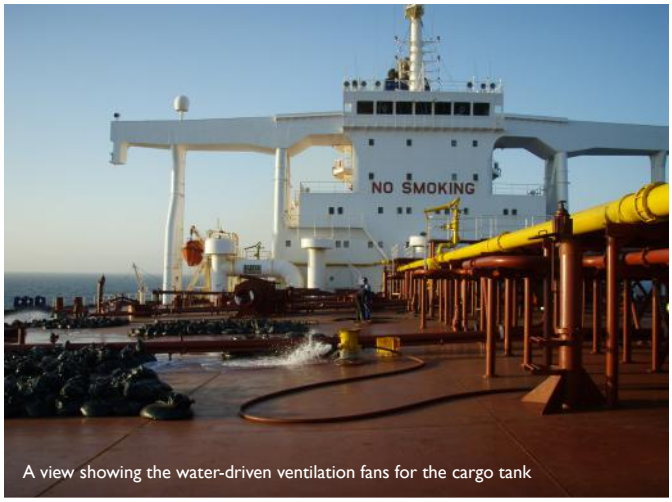
MARPOL also states that signatories to the Convention (which to all practical purposes are most countries in the world), must provide reception facilities for slops and sludge. Therefore our 150m^3 of slops and 30m^3 of sludge went ashore for processing on arrival at Fujairah.

Sad to say however, there are too few of these reception facilities in this part of the world, and illegal discharges may possibly occur simply because there is little alternative. The cost of disposing our residues was less than $30,000, this is not a huge operating cost for a large vessel and certainly less than a fine (or even worse for a reputable company, the ensuing publicity); even if we could not discharge the slops we can always load on top of it. But what about fines, punishment and criminal discharges of oil?

As mentioned earlier, oil tankers feature only negatively within the media. Ask anyone to name the worst ever oil spill from a tanker in history then they are likely to name the "Exxon Valdez" as the culprit. They would be wrong, measured by quantity that spill was only the 40th largest in history; the largest ever was the collision between the "Atlantic Empress" and the "Aegean Sea" in 1979; 27 seafarers died in that event.

One consequence of the "Exxon Valdez" was unlimited liability for oil pollution, which means in essence: pollute in the USA and the law suits may never stop coming. Returning to fines, punishment and criminal discharges of oil, anyone in law enforcement will tell you that a criminal does not fear the punishment, but he does fear getting caught. The US Coastguard are red hot on illegal discharges of oil, from spotter planes in the sky to Port State visits during which they check the recorded quantities of oil on board against the log book and against what is actually on board, they may even dismantle overboard pipes or send divers down to check for any bypassing of oil discharge monitoring equipment; many seafarers have now found themselves answering difficult questions from a jail cell rather than from the comfort of the ship's office! Stiff penalties are also imposed on the principals of companies, therefore there is no escape for managers of companies that either encourage or turn a blind eye to illegal discharges of oil. The situation in Europe is broadly similar, from spotter planes to criminal proceedings. Governments are not powerless to stop these acts, even if they do happen in International waters; ships can be arrested at the next port or even at the lowest level, companies, ships and managers can be named and shamed thus making it difficult or impossible to secure future cargoes. See **http://www.justice.gov/opa/pr/2008/July/08-enrd-594.html** for the latest case.

There are even more tools that vigilant authorities can use to detect ships other than spotter planes and satellites. All ships today are now fitted with AIS (Automatic Identification Systems), similar to that on aircrafts; this transmits the ship's name and other information to all other vessels around and to Vessel Tracking Systems (VTS). I can visit certain websites on which I can see the position of all our company's vessels worldwide; as ships do not travel as fast as air-planes then it is possible to be reasonably clear where the ship has been for the recent past, authorities also have access to these systems and therefore can similarly track vessels quite accurately. Taking samples of oil from any spill for analysis and evidence, can be eventually compared with those found on board a ship to ensure a reasonable certainty of innocence or otherwise. Any company committed to high standards would have no difficulty with such oversight: it already exists in many other parts of the developed world.



A view showing the water-driven ventilation fans for the cargo tank


Storing at Fujairah anchorage


Centrifugal purifiers for cleaning fuel oil


Engine control room

The focus so far has been on oil tankers, as there is a perception they may be the villains of oil pollution at sea; I mentioned earlier that all ships have the capability to pollute if they choose and, MARPOL applies to all ships that sail the sea, so how can this be?

All ships use fuel oil for propulsion: a black mix of crude oil residue remaining after refining and cut with diesel oil to reduce viscosity; all engines and machines require lubricating oil to function. Fuel and lubricating oil must be filtered to remove impurities with a resultant oily sludge remaining, this along with any leakage of oil within the machinery spaces (bilge oil) is collected in the engine room tanks for disposal ashore in the same manner as cargo slops. On crude oil tankers we have the option of pumping it to the cargo slop tanks and either discharging it with the cargo or with the slops for processing. But supposing you are a passenger ship or a container or cargo ship, your engine sludge and bilge oil tanks are full and the port has no reception facilities, your owner or operator either is not interested or will not pay and perhaps tacitly encourages malpractice? It does happen often. Because tanker companies feature very high on the radar scope then their practices are generally to a high standard, this is not always the case with other ship types. So if you feel the chances of getting caught are low and it is night-time, the temptation to break the law is quite high; besides which you can always blame it on a passing oil tanker!

Without analysis of spilled oil, it is impossible to determine whether it came from an oil tanker or from the engine room of any ship, but to know would be a good place to start. In conclusion the following suggestions may be a starting-point to prevent any future, deliberate discharge of oil:

- Better use of tracking systems; determine if repeat offenders are the cause by analysing historical data of ship movements in the region.
- More frequent use of Port State control; enhance their powers; examination of ships and their Oil Record Books; detention of sub-standard vessels; prosecution of individuals and companies.
- Use of aerial and seaborne detection systems; enhance cooperation between intra- and inter-governmental agencies to provide a more coherent response.
- More slop and waste oil disposal; waste oil still has a value and can be used.
- "Name and Shame" those organisations which are found to be breaking the rules.
- Better reporting systems; public awareness campaigns. Reward responsible companies with positive publicity.
- Analysis of oil to determine the source whenever a spill occurs; findings to be in the public domain.

My company is part of RECSO – the Regional Clean Seas Organisation. I am happy to discuss any part of this article further should you require any further information.

Leaving the ship at Fujairah

MARK BARKER
PO Box 26373, Dubai, UAE
Tel: **+971 4 312 3370**, Fax: **+971 4 312 3570**, Mob: **+971 50 625 1211**
PADI Open Water SCUBA Instructor: #644381
Emirates Diving Association: #918
Email: **mark-644381@hotmail.com**

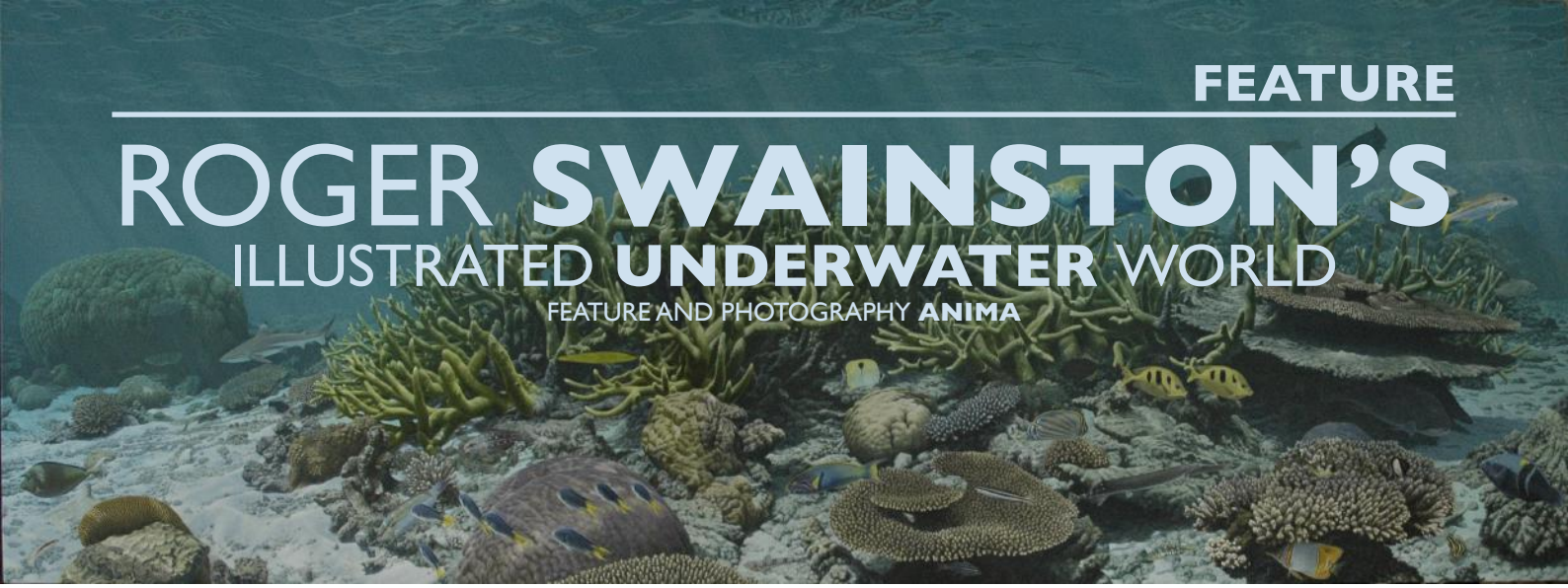
EDA QUIZ
CORALS

ANSWERS FOUND ON PAGE 46

1. What are corals?
   a. Rocks
   b. Plants
   c. Animals
   d. Fungus
2. Corals have:
   a. Fins
   b. Gills
   c. Stinging tentacles
   d. Chevrolets
3. What do coral polyps eat?
   a. Crabs
   b. Tuna
   c. Each other
   d. Plankton
4. Mass spawning in corals is unpredictable but always occurs during daylight hours
   a. True
   b. False
5. Which are corals special partners?
   a. Crabs
   b. Mussels
   c. Algae
   d. Snoopy
6. The Great Barrier Reef of Australia is the longest in the world
   a. True
   b. False
7. The following are conditions optimal for most coral reef growth:
   a. Clear, shallow water, usually above 20°C, and the hotter the better
   b. Clear, high nutrient water above 20°C but below 35°C
   c. Clear, deep water above 20°C but below 35°C
   d. Clear, shallow water usually above 20°C but below 35°C
8. A reef-building coral is characterised by having a hard skeleton. What is this skeleton composed of?
   a. Salt
   b. Carbon
   c. Quartz
   d. Calcium carbonate
9. Which reptile often visits cleaning stations on coral reefs?
   a. Marine turtle
   b. Sea snake
   c. Marine iguana
   d. Saltwater crocodile
10. Which of the following animals is a major predator of corals?
    a. Triton trumpet shell
    b. Spotted moray eel
    c. Crown of thorns starfish
    d. Blue damselfish
11. Tourists affect coral reefs:
    a. True
    b. False
12. Which of the following materials has been used to create artificial reefs?
    a. Tyres
    b. Ships
    c. Subway cars
    d. All of the above

ROGER SWAINSTON'S ILLUSTRATED UNDERWATER WORLD

FEATURE AND PHOTOGRAPHY **ANIMA**



As portrait subjects go, fish are fairly tricky; they move a lot, are often perfectly camouflaged and, oh yes, they are under water.

Western Australian artist Roger Swainston specialises in drawing and painting marine life, and to complete his exquisite and finely detailed works he has to overcome these inconveniences.

During a career spanning more than 25 years, Roger has contributed illustrations to hundreds of books, ranging from scientific field guides involving years of work to educational material and special editions resulting from scientific expeditions. Organisations such as the Smithsonian Institute, the United Nations FAO and governments commission use his pictures for their publications and campaigns.

There have been exhibitions of his work in Europe, the USA and Australia and his drawings and paintings are held in private, corporate and public collections. He's also been the subject of television documentaries about his unique working methods and his effort to capture Earth's beautiful marine life.

Coral reefs are Roger's passion and his work has taken him to many of the world's finest examples of these rich ecosystems.

After graduating with a degree in zoology from the University of Western Australia in 1981, he began to accompany scientific expeditions with institutions such as the WA Museum and the CSIRO (Australia's national government scientific organisation) that were surveying marine areas.

"My work, as an expedition artist, is another way of presenting the subjects and not as cut and dried as pure scientific representation," Roger explains. "You can't always get comparable photos of everything but you can produce comparable illustrations because you can reconstruct damaged specimens, work from multiple specimens and accentuate the most important characteristics of an animal."

"It's probably possible to show more about an animal with an illustration than with a photograph."

These trips have taken him to remote regions off the WA coast, Papua New Guinea, Vanuatu, the Red Sea and Clipperton Island (three days by boat from Acapulco) where conditions can be difficult but the wildlife is spectacular. Roger likes to work in most people's ideal locations – on tropical islands in crystal waters where expeditioners wear shorts and live simply in grass huts – though he does have to lug all his art supplies along with him.

In 2001 Roger began a series of works documenting five different ecosystems on the Ningaloo Reef, a fringing reef system along the northwest coast of WA. Returning to the same places each year, he is building a valuable record of changes on the reef and when completed, it will be a unique work combining science and art.

"The concentration of life on the reefs is the interesting thing for me, on one coral reef location you get a vast amount of life and it's that diversity that's interesting, "he says. "You can really see and appreciate the relationships between the animals, and between the animals and the reef itself."

On location, he tries to select a subject that is representative of the whole area, a good thriving example of what makes that ecosystem distinctive.

After he finds a suitable viewpoint of his chosen reef, Roger spends four or five hours a day underwater for several weeks, sketching with graphite sticks on plastic film and producing a mosaic of intricate drawings of the reef.

His work is usually in shallow waters because his subjects need to have good light conditions, and he tends to work in the mornings when conditions are calmest.

"When you are drawing underwater, the light and the shadows are what give you the form of the reef. You need to be there at the same time each day if you are working on a large drawing because between morning and afternoon the shadows move to the opposite side."

He keeps a list of all the species he sees in the vicinity and takes hundreds of photographs, which he uses as aide-memoires rather than templates, because his work has given him great patience and an astounding memory.

Back in his studio, he painstakingly constructs his large colourful tableaux of life on the reef, using his artist's prerogative to rearrange his subjects to show them at their best.

"The work I'm doing now is more about putting the animals in their environment," Rogers says, "My large scale underwater works are definitely not reproducible with photographs because there is a time element – they represent many weeks of observation."

As the artist, he can collect reef creatures together to compress a whole day's activity into a moment and his extensive scientific knowledge means you will only see the right species on the reef in his paintings, no mortal enemies peacefully sitting together or behaving out of character.

"My aim is to portray the animals doing what they normally do, in their natural relative abundance, behaving as they would. You have a certain amount of freedom to move things around," Roger says. "But once the reef, which is absolutely authentic, is drawn and painted, it somehow dictates where the inhabitants should be."

FEATURE

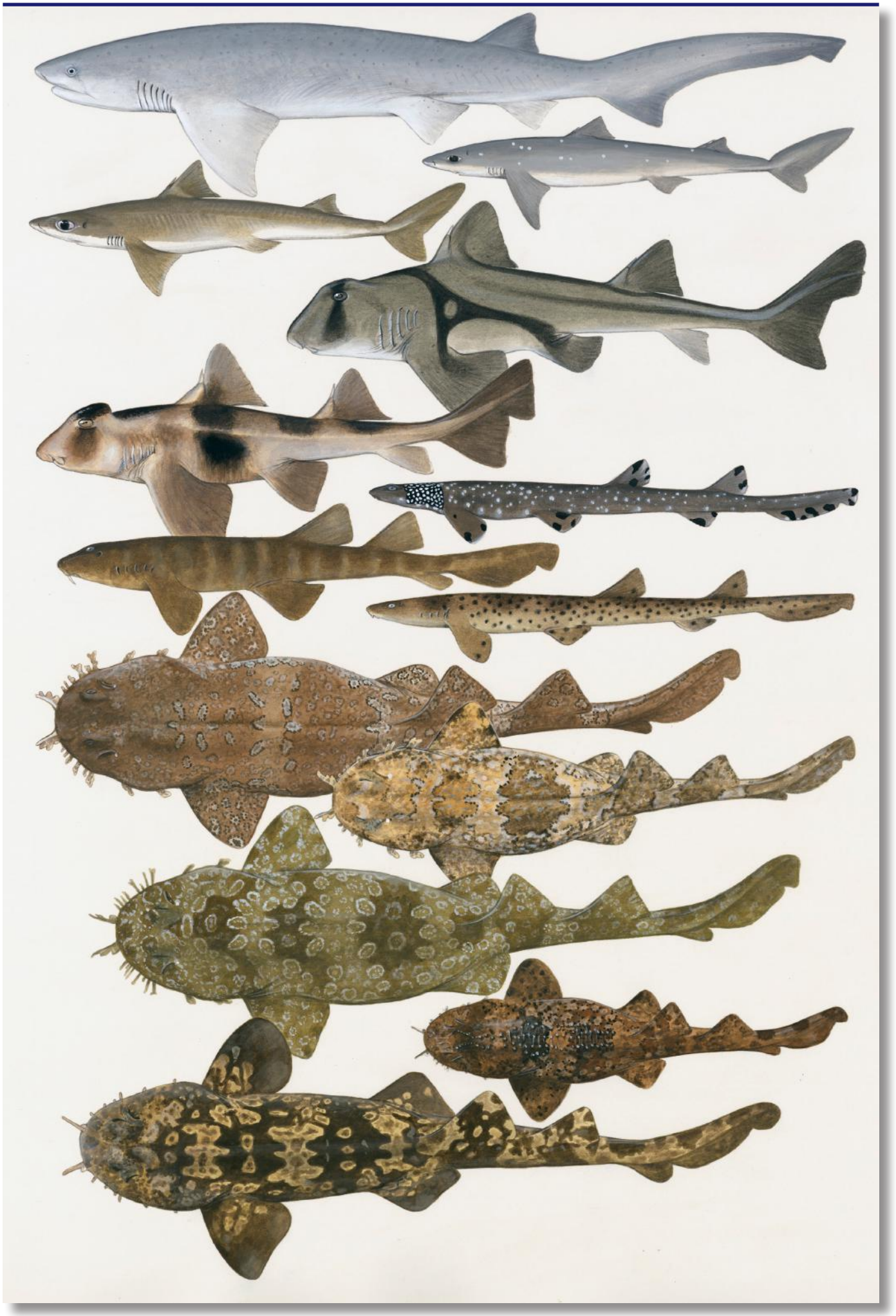
During his career, Roger has collaborated with other artists to produce more artistic works, such as the large impressionistic works he did with Pascal Leclercq on commission for the Department of Fisheries in Western Australia to decorate their new research facilities.

Now he has begun an ambitious project with photographer Xavier Desmier to document reef systems in eight of the best locations in the world (the exact locations may depend on available support and funding). Roger will create large panoramic drawings of the reefs and smaller works of species found there, while Xavier will capture this process and take photographs to place the reef in its context by showing its surroundings.

The BioDiversity-Art and Science Project will then present all this material as a book with contributions from eminent writers and local people to look at biodiversity from many perspectives-emotional, philosophical, social, scientific, historical and intellectual. A website will be established and Roger hopes it will lead to the protection of these beautiful and important sites.

"We hope to inspire and educate as many people as possible about the importance of the biodiversity, and the richness, of these wild places," Roger says. "and use both art and science to create a lasting testimony to them."

You can find out more about the Project, and how you can support it, by visiting Roger Swainston's website at: **www.rogerswainston.com**



ORCA WHALES IN THE WILD

FEATURE **KATHLEEN RUSSELL, EDA ABU DHABI COMMITTEE COORDINATOR**
PHOTOGRAPHY **ALISTAIR RUSSELL, EDA MEMBER**

Wyland once wrote, "If people see the beauty in nature they will work to preserve it before it's too late." It is his "Whaling walls" that remind us of the beauty of the oceans which cover over 70% of our earth and its marine inhabitants.

This summer we had the pleasure to see whales in their natural habitat off the scenic coast of southern British Columbia, Canada. The San Juan Islands in the US and the southern Vancouver Island provide a beautiful backdrop, calm waters and a plethora of wildlife. It is here a point called Race Rock, located at the southernmost tip of Vancouver Island where we encountered the 3 resident pods (families) of orca whales. Also known as the southern resident pods J, K and L, these killer whales are in this area to feed on the returning Chinook salmon especially between May and October every year. Killer whales are also matriarchal which means it is the female who leads the group. Unfortunately, "Granny", the eldest female in pod J had not been seen since December 2007. She was believed to have been 96 years old (born around 1911).

THE JOURNEY TO RACE ROCK

The excursion with Vancouver Whale Watch Company started in the early morning at the departure location in Steveston, a beautiful historic fishing village. Here we suited up and boarded the open-air Lightship 1, a well-equipped zodiac specifically designed for marine and wildlife viewing. Captain James piloted the boat and Joan, a marine biologist was our enthusiastic expert naturalist on this trip. As we embarked, Captain James radioed to the other operators. It is through the WWOANW (Whale Watch Operators Association Northwest), where they communicate and see which operators find the orcas. James informed us the resident pods were coming towards the inland waters from the Strait of Juan de Fuca (trans boundary waters between Washington and British Columbia). Going at about 37 nautical miles per hour, we traveled across the Georgia Strait towards Race Rock. Along the way, Joan pointed out juvenile bald eagles flying overhead of us and herons perched along the sand banks and delta ways. We looked out for transient orcas, minke whales, gray whales, Dall's and Harbour porpoises and other seabirds. As the vessel turned towards Vancouver Island, we made a quick camera stop alongside a lighthouse where Northern Steller Sea Lions (Pinnipeds) were resting during low tide. After a wet and bumpy 2 hour journey, Lightship 1 slowed down and directly in front of us were the orca whales with their distinctive dorsal fins protruding skywards. In her 6 year experience whale watching, Joan explained excitedly it was an infrequent phenomenon to see all 3 resident pods in the same area. Surrounding us were other operators coming from both sides of the border. Orcas now surrounded us as James cut the engine and the vessel drifted with the current. Clearly all the vessels were following responsible wildlife viewing practices and staying a minimum distance of 100 meters from the orcas. A summary is also listed on the WWOANW website: **www.nwwhalewatchers.org**.

The Lightship 1 was equipped with a hydrophone which meant we could hear the whales communicating to each other. As the orcas swam around, some of the younger males breached out of the water landing either on their back or front. Other displays of whale behaviors observed included flipper slapping, blowing, logging and spy-hopping. Spy-hopping allows the whale to raise her head vertically above the water exposing the eyes and perhaps having a good look around at the whale watchers nearby. Eventually, everyone packed up their cameras and the James piloted us safely back to Steveston. It was an awe inspiring experience to encounter the pods of orcas in the wild and has strengthened our desire to truly protect the beautiful marine life, their habitats and food sources.

FACTS ABOUT ORCAS

Name: Orcinus orca (in the toothed whale (Odontocetes) and ocean dolphin group), sometimes called the killer whale.
Distribution: orcas can be found worldwide in all the oceans from the cold polar seas to the warm equatorial waters.
Average length and weight: 8.5 meters and 6800kg, usually transient orcas are larger.
Food: Orcas feed on a variety of animals including sea mammals, fish and birds. The resident orcas also feed on salmon.
Behaviours: often seen breaching, lob-tailing, flipper-slapping, logging and spy-hopping. They also exhibit other social and hunting behaviours.
Group sizes: Size of pods can range between 3 to 25 individuals.

THREATS

The number of orcas within the southern resident pods has decreased in the Pacific Northwest region. Several contributing factors include the decrease in salmon stock and the toxic PCB pollutant contaminating the waters as suggested by the National Marine Fisheries Services in Seattle. The chemical pollutants may have had an adverse effect on the endocrine and reproductive systems of the whale. In addition, the forced capture of several southern resident female orcas between 1961-1971 also contribute to the decrease numbers of newborns as these females would have been in their reproductive years now.

Currently there is a greater awareness to care for these graceful giants as more people participate in whale watching tours or watch exciting documentaries on television. In addition, most operators are following responsible viewing guidelines to reduce any negative impact they would have on the resident pods in the wild. However, we still need to protect these great creatures, their habitat and food source to ensure the survival of this top ocean predator.

WHALE WATCH OPERATOR

Vancouver Whale Watch (www.vancouverwhalewatch.com)

Northern Steller Sea Lions (Pinnipeds)

WOOD BENEATH THE WATERS: **WRECKS** IN **SEYCHELLES**

FEATURE **GLYNN BURRIDGE** PHOTOGRAPHY **TONY BASKEYFIELD**

the seychelles islands
another world

Since that time when early Arab seafarers first entered the watery wilderness they called the Bahr al Zanj (Sea of Blacks), or when the migrants who would eventually populate the giant island of Madagascar made their epic voyage from their home in the Far East, shipwrecks are calamities which have been repeated many times. In the years before Seychelles was first settled in the mid-eighteenth century and maritime records were kept, who can possibly know how many pirate vessels, corsairs, slave ships and the like have been lost in our waters? We can only imagine.

One thing is for sure: navigating the uncharted coral reefs and shallow waters of the Seychelles Islands with only rudimentary equipment, and often with bulky and cumbersome craft, was truly a recipe for disaster.

Besides the dhows, dugouts and other craft of antiquity which must have plied these waters long before man arrived to settle in any numbers, who knows which other peoples may have visited? There is a growing body of evidence that the massive fleet launched by Chinese Emperor Zhu Di on 8th March 1421 under the command of the brilliant eunuch Admiral Zheng, may have travelled down much of Africa's East Coast during the course of their exploration of what is now the Indian Ocean, and beyond. Was one, or more, of his ships lost during the voyage? It is, surely, more than possible. As I write, an expedition is underway in the Middle East to prove that the ancient Phoenicians were possibly the first to explore the east coast of Africa, even before the Arabs.

Over the centuries, many ships have been lost on the fatally beautiful reefs of Seychelles' islands but records only go back to the late eighteenth century, shortly after the islands became inhabited. One of the first is that of a Portuguese clipper on its way from Traquebar to Trinquemaly which went aground on North Island, followed by the wreck of the frigate Heureuse on Providence in 1763 and that of the French vessel Éclair on Coëtivy in 1787.

One of the most fascinating stories surrounds the fate of the Portuguese frigate 'Le Dom Royal' which, 'laden with plunder and slaves' went aground on the remote atoll of Astove in 1760. The captain and crew immediately took to the sea in a long boat, abandoning the slaves (but probably not the plunder) who then settled into a 'liberated' lifestyle until they were 'rescued' by a visiting ship around 1796, but only after a fierce fight.

Among the various sloops, privateers, whalers and brigs that ran aground from Bird island in the extreme north of the archipelago to Aldabra in the extreme south west during the nineteenth century was the 'St Abbs'. She struck the reef at Farquhar in 1885 in a storm which was so violent that the crew, deciding they were sure to die, got drunk while their vessel ground itself to pieces on the reef. The survivors then spent some time onshore in the company of several casks of beer and port which had 'escaped' from the ship's stores and which presumably rendered their brief stay on the island very pleasant.

Sadly, all too often, traces of these wrecks are now either non-existent or very faint but, on the other hand, one may also argue that the sites of wrecks, particularly on the outer islands, have seen very few divers and who knows what relics from the past extensive searches may still unearth to surprise us?

Of the wrecks that are still visible, undoubtedly the most spectacular is that of the Ennerdale, a 47,000-ton Royal Fleet auxiliary tanker that ran aground 8 miles northeast of Victoria in June 1970, occasioning an elaborate operation to then secure her safe sinking in relatively shallow water where she is now a popular site for divers and for a thriving population of giant groupers.

Other popular wrecks for the diving community are those of the Twin Barges just off Bel Ombre at depths of 15 and 22 metres respectively and the Dredger wreck at Danzil, scuttled in 26 metres of water after use in the reclamation of Mahé's International Airport.

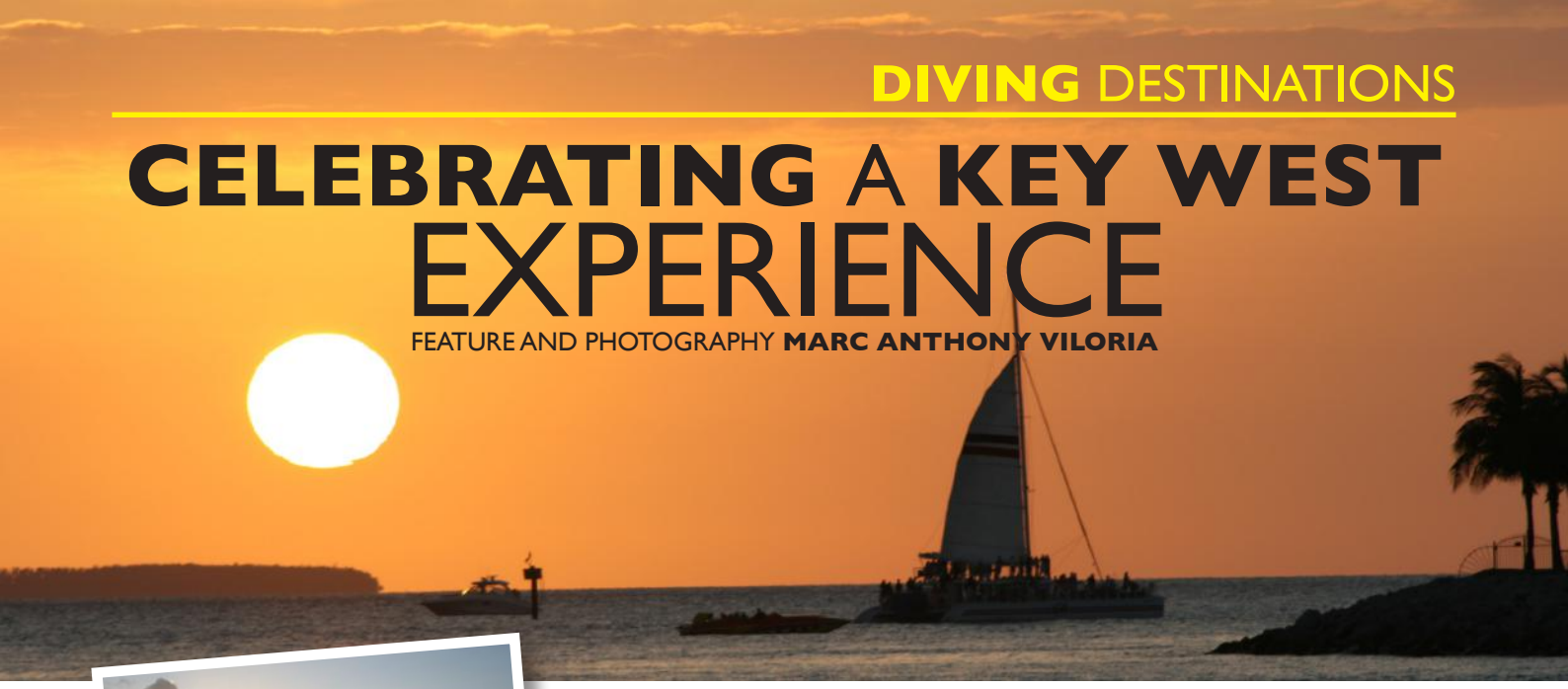
More recent wrecks are those of the 27-metre Aldebaraan which now lies in 40 metres of water off north Mahé, not far from L'Ilot, and the 69-ton barge, Lavann, which may be visited in 15 metres of water near Takamaka Rock in south Mahé.

Since those early times when men first set foot in ships and began to explore the oceans, Seychelles has enjoyed more than its fair share of visitors, many of whose voyages remain obscured by the mists of time. We can now only imagine what shipwrecks may have occurred upon this necklace of sparking islands which are, at once, so phenomenally beautiful but, also, so very deadly to shipping, particularly in the days before the invention of sophisticated navigational aids. However…as treasure-hunting techniques continue to improve, we may yet discover exciting vestiges of lost vessels in the azure waters around Seychelles.

Ennerdale

CELEBRATING A KEY WEST EXPERIENCE

FEATURE AND PHOTOGRAPHY **MARC ANTHONY VILORIA**



It has been known at the best and worst times as America's richest city per capita in 1889 and declared bankrupt in the 1930s. It has had more than its share of conflict, from the Civil War to the Spanish-American War to the Cuban Missile Crisis. Through it all, Key West has retained its status as one of the world's most intriguing cities.

Situated at the southern most point of the USA, indeed, Key West is closer to Havana, Cuba (90 miles away) than it is to Miami (150 miles away). Key West is a treasure trove, and not only because of its multitude of shipwreck artifacts and memorabilia. Its Old Town section is rich with historic sites and architecture. Many venerable houses and other buildings now function as inns, restaurants and museums, retaining the island's old world charm.

Bisecting Old Town is Duval Street, affectionately called the longest main street in the world because it goes from the coast of the Atlantic Ocean to the coast of the Gulf of Mexico. All roads in Key West lead to Mallory Square where crowds gather for the world-famous Sunset Celebration while feasting to the equally famous Conch fritters. These nightly extravaganzas attract thousands to their smorgasbord of artists, musicians, street performers and merrymakers.

FEW KEY SITES TO DIVING KEY WEST

The Gulf of Mexico is where I went to dive. On April 16, 2008, I booked with the Captain Corner Dive Center, which is literary, a small stand at the corner of Anne and Front Street in the area of the Seaport Boardwalk. Booking is so easy; just fill out the necessary forms, present your C-card, pay and you'll get a ticket for the trip. Aboard the Sea Eagle boat is where I rented all my diving gear, except for the camera. We then set out to sail after preparing our equipment. All the fun divers were grouped together for the briefing but the divers got to choose their group or buddy (if you are by yourself).

First Dive 02:59 PM ET – Joe's Tug Wreck is 6 miles off the harbor. After sinking at its pier in Safe Harbor in 1986, it was raised, cleaned and prepped for sinking as an artificial reef off of Miami. The night before it was scheduled to be towed north, a group of locals secretly towed the boat out of Key West harbor. Their booty sank en route, landing on the reef in about 22 meters of water. Local dive shops avoided the wreck for several years, not wanting to be associated too closely with the fiasco. Around 1990, people began visiting the wreck. Several hurricanes battered the tug, removing the wheelhouse and propeller completely.

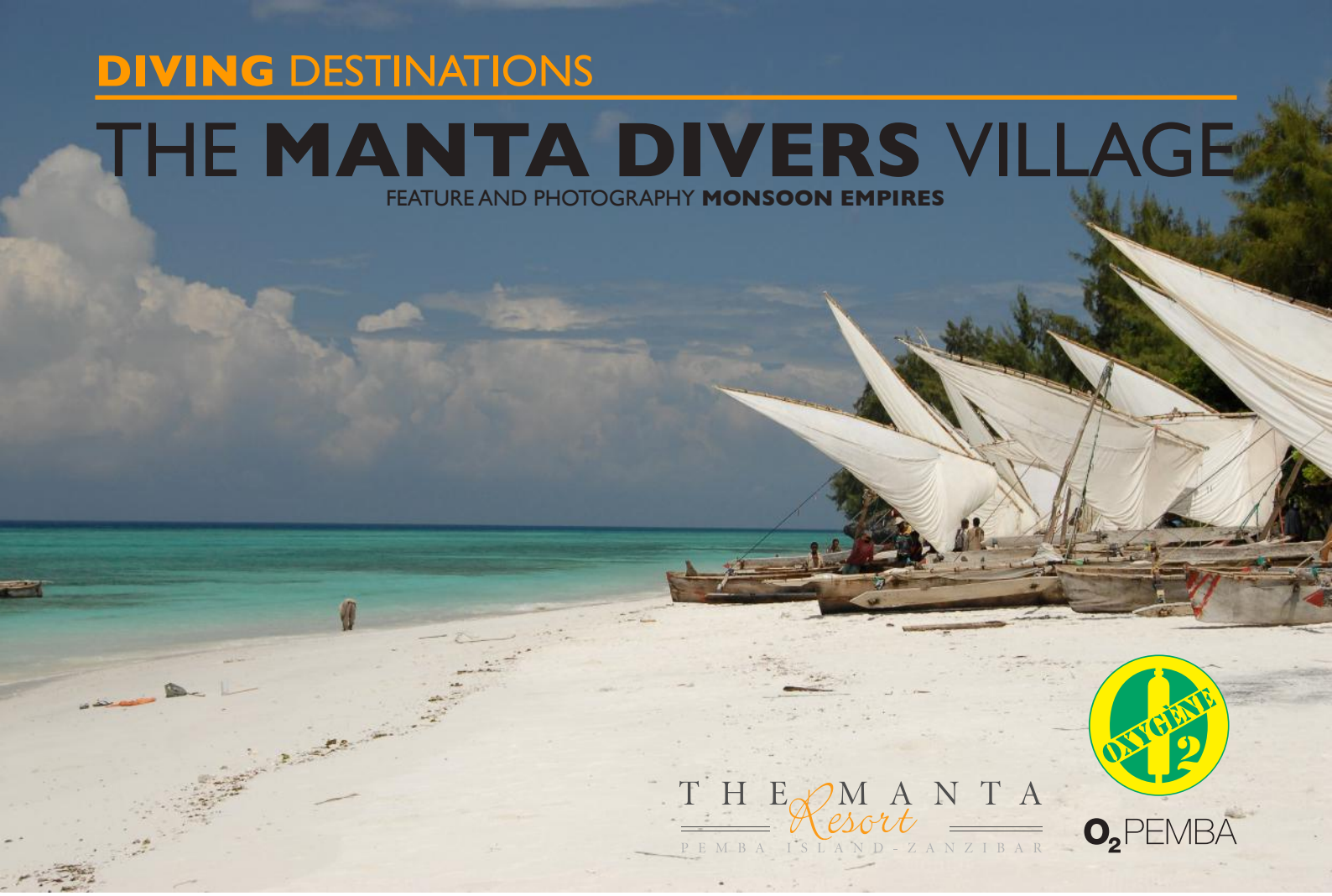
Still, Joe's Tug remains intact, and penetration of the entire wreck is possible. A large moray eel reportedly makes the wreck its home together with plenty of inquisitive fish. Joe's Tug is an easy and rewarding dive. Visibility is good due to its location outside of the reef.

Second Dive 04:16 PM ET – Nine-Foot Stake is apparently an area used by US Navy-Air Development Corporation for testing, thus the many interesting finds made by divers. The shallow depth of this site (10m), provides a very excellent opportunity for photography. There are many exciting varieties of sea creatures; the area is known for brain corals six feet in diameter, as well as juvenile pelagic life. There are also the remnants of a small lighthouse. Several coral mounds rising over 12 feet from the seabed provide protected areas for reef fish like blue tangs, hogfish and yellow goatfish. This site has plenty of fan corals of different varieties and colors but small sea animals like nudibranch, flamingo tongue snail and sponge crabs are intriguing and definitely something to reckon with. Its proximity to Key West makes this a popular site for night divers.

The laid-back, free wheeling lifestyle in the Conch Republic (Key West, Florida) is the stuff of legends and a fitting end to a fabulous day – whether you go diving, do some water sports or just chill out and enjoy what the town can offer – it's an experience not to be missed.

THE **MANTA DIVERS** VILLAGE

FEATURE AND PHOTOGRAPHY **MONSOON EMPIRES**



THE MANTA DIVERS VILLAGE DIVE SITES

SECRET POINT

The Secret Point is a coral pinnacle, and the last island platform before Pemba channel takes on. Drops from 15 to 25 meters. The pinnacle is full of sponges and soft corals, and is a good place to find Scorpion fish, Green Moray Eels, Emperor Angel fish, and Nudibranches. Around the pinnacle you can easily spot big schools looking for food and refuges of the currents such as Chirurgic fish, Batfish, Barracudas, Snappers, and occasionally big pelagic fish such as Bonito, Wahoo and Spanish mackerel.
Recommended for: Experienced divers only as strong currents sometimes occur.

SWISS REEF

The Swiss Reef is a system of sea mountains running parallel to the wall on a platform at a 25 meter depth. The mountains have different profiles, from just a few meters up to 100 meters long. The best thing to do here is to make drift dives over the system, going from one mountain to the other discovering the amazing reef life. This is a good site to spot big pelagic fish and turtles. Big schools of fish swim here.
Recommended for: Experienced divers.

SIMBA WALL

The Simba Wall is the closest wall to the resort, only a 5 minute boat trip away. The wall starts at 5 meters and drops down to a platform 20 meters down. An excellent site to see Lion fish, Nudibranches, Scorpion fish, Leaf fish, Clouded morays, Porcupine Puffer fish, Trigger fish, Glass fish and Cornet fish. Lots and lots of Octo coral.
Recommended for: Novice divers.

SIMBA HILLS

The last corner of the Simba Wall breaks into two and forms a sand bottom valley at 12 meters depth. Lots of Barrel sponges and Anthias, Red Sea Sweatlips, Fusiliers, Red Tooth Triggerfish etc.
Recommended for: Novice divers.

THE EDGE

The last wall of Pemba Island, before Pemba channel takes on. It starts at a 30 meter depth, and just keeps on dropping! At the top of the wall you can find Huge Barrel sponges and Spiral corals as tall as two meters. A good place for close encounters with Napoleon fish, Potato groupers, Cubera Snappers, big pelagic fish, Turtles and even Whitetip sharks!
Recommended for: Deep divers certificate. Strong currents occur.

THE HOLE

Just in front of The Manta Resort there is this hole in the reef, with a maximum depth of 8 meters. It is protected by the coral reef, and is the perfect place for your first dives. Inside the hole is our private little wreck that is slowly becoming part of the coral reef. You will find different species of corals and fish, including the strange juvenile Boxfish, Torpedo Rays, and Hermit Crabs. Highly recommended for your first night dive.
Recommended for: Novice divers.

NJAO GAP

Just a 20 minute boat ride from The Manta Resort you can find the Njao Gap. The wall starts at 10 meters and drops down to 70 meters. The wall is almost vertical in some areas. The current will bring you from the spectacular 90 degree walls covered in soft coral, to big sandy bottoms with enormous coral pinnacles. Discover the most spectacular reef life, and all this without moving a fin. Common encounters with Spanish dancers during the night.
Recommended for: Novice divers.

MANDELA WALL

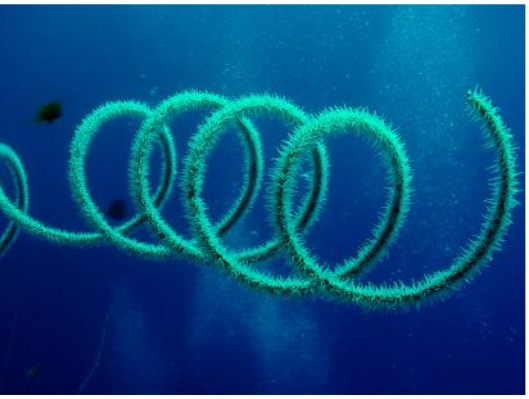
This wall runs parallel with Njao Island, has a shallow platform that gently drops from 4 to 12 meters. There are extraordinary table coral formations on top of the wall and large anemones. The wall continues to fall gently down, all covered with Lettuce Coral, Gorgonian, and sponges till 25 meters depth. Occasional passes of pelagic fish like Tuna, Wahoo, king fish etc.
Recommended for: Novice divers.











CORAL GARDEN
Between the end of Mandela Wall and the start of Fundo Gap, there is a platform of coral protected from currents. The Coral Garden is a great place to see thousands of coral formations. Take your time to explore the macro life that exists in Pemba and find Pipe fish, Banded Boxer Shrimps, Commensal fish, Imperial Partner Shrimp, Eels etc. Good possibilities to see the Napoleon fish, Nassau Groupers, and Torpedo Rays.
Recommended for: Novice divers.

MANTA POINT
The Manta Point is the most famous sea mountain in the Pemba Channel. Right in front of Fundo Gap this extraordinary site offers you an unbelievable experience. The wall drops strait down from 10 to 60 meters. Huge families of Gorgonian and Barrel sponges and millions of fish like Anthias, Spotted Unicorn fish, Black and Big Eye Jack fish, Trevally. Occasional encounters with turtles, Eagle Rays and Devil Rays.
Recommended for: Experienced divers.

THE CRACK
Come and see for yourself.
Recommended for: Experienced divers.

FUNDO GAP
Fundo Gap is a solid coral drop off that starts at 3-6 meters and drops down until it disappears in to the big blue. A smooth current that we call "The Fundo Express" transports you past huge waterfalls of corals such as Broad Leaved coral, Brain coral, sponges and Soft coral. Hunters like Jackfish, Barracudas, Snappers and Groupers pass through the mouth of the narrow Fundo gap, waiting for food. The Gap finishes in an underwater desert where the life is reduced to small coral heads.
Recommended for: Experienced divers.

UVINJE GAP
A fantastic coral wall with enormous coral tables on the top. It starts at 3-5 meters and drops strait down to 60 meters. Here you can find the Clown Triggerfish, Regal Angelfish, Eastern Skunk, Clark's Anemone fish, Bluefin and Barcheek Trevally etc. At the end, this "wonderwall" splits into two and forms a valley at 18 meters where it is easy to find Flatworms, Nudibanches, Pipe fish, and Moray Eels hiding between thousands of coral formations.
Recommended for: Novice divers.

MISALI ISLAND
Misali Island is a world famous coral reef, recognized as a marine conservation area for over 50 years. The whole island is surrounded with coral. Here you will find the healthiest and biggest coral garden in the Zanzibar islands.
Recommended for: Novice divers.

THE DOLPHINS
There are plenty of dolphins spotted every day round Pemba. Dolphins need food, and they find an abundant source around the shallow depths along the shorelines and around the islands surrounding Pemba. The location is ideal for certain species that feed ideally in these locations.
There are principally 5 species of dolphins seen:
- Indo Pacific Humpback Dolphin (Sousa Chinensis)
- Spotted Dolphin (S.Attentuata)
- Common Dolphin (Delphinus Delphis)
- Spinner Dolphin (Stenella Longirostris)
- Indian Ocean Bottlenose Dolphin (Tursiops Aduncus)

Most common around Pemba are the Spinner dolphins.

HUMPBACK WHALES
The whale season starts in July and continues through to September, when the humpbacks move south through the Pemba channel towards Zanzibar and further southward. They are seen as individual males, or usually a mother and a calf.

Sometimes they just come in close and remain there for a day or two. Many sightings have been done just off the lighthouse, only a few kilometers north of the resort as they breach in the late afternoons when the wind has been blowing. It is difficult to predict exactly when you can see them, but August and September are the critical months. We see them from the north Coast of Kenya (around Mombasa and south to Shimoni) and then in the Pemba channel and along the Pemba Coastline to Zanzibar.

WHALE SHARKS
Other sightings that are more reliable and with a longer season are Whale sharks. They arrive along the coast in November, and remain along Kenya's coast till the end of March. January and February are very good. We see them sometimes every day, sometimes they disappear and return after a week, and are seen every other day. There are some specific locations where we see them most. What we suggest in this case, is that we organize a program. The key season is November till March.

The easiest way to guarantee a dive or snorkel with whale sharks is to cross the channel to the Funzi Bay adjacent to Shimoni, in Kenyan waters. El Niño has seen a huge increase in the number of regular sightings, not a week goes by without seeing one. January, February remains the peak season. A visit can easily be arranged from Manta Reef Lodge to Shimoni.

OXYGÈNE PEMBA
Pemba is the perfect place to start your diving adventure. With one of the most healthy coral reefs in the Indian Ocean, water temperatures averaging at 26°C, and the best visibility of East Africa of 30-40 meters almost every day! In combination with these great water conditions Oxygene Pemba Dive Center has everything you need, including a great training pool in two levels, professional dive instructors, and multilingual staff to help you feel as free as a fish!

Oxygène Pemba is the first fully serviced five star PADI IDC facility on Pemba, providing multiple dive experiences and water sports, that the variety Pemba Island has become so famous for. The diving around Pemba is nothing else but breathtaking. The untouched coral reefs surrounding the entire island makes Pemba one of the top dive sites in the world.

THE MANTA RESORT (6 Seafront Villas, 4 Garden Rooms)
www.themantaresort.com
Overlooking the northern end of Verani Beach, in a truly stunning location, The Manta Resort was originally built as a dedicated diving place, but has gone through a drastic conversion to a luxury accommodation in natural surroundings. Spacious, individual chalets built high on stilts have an open front to catch the sea breeze, affording a panoramic view across the Pemba Channel. Air-conditioned, with a big double bed, sofa and table, and en-suite bathroom. The air-conditioned Garden Rooms set behind the chalets are less open, facing the sea, with views overlooking the gardens. A central area serves as dining room, bar, lounge and lobby, with a big terrace looking out to sea and steps leading down to a powder-sand beach, with a newly built two-tiered beach bar. For entertainment and relaxing there is a pool for pleasure and diving lessons, a TV in the entrance, a pool table by the bar that serves excellent cocktails, and a small selection of books to browse. It's a place that offers much, and delivers. Aside from diving, guests benefit from a location that boasts a wide range of birdlife (bird watching trips), and some interesting walks to the lighthouse, Vumawimbi Beach and Ngezi Forest, 5km away. Other options include kayaking, boat trips and fishing (advanced notice required for big-game fishing), as well as village tours, and several beauty options in the Spa. An on-site shop sells the basics. Internet access is available. All season (sharing, all inclusive) €195 (Seafront Villa), €125 (Garden Rooms); Peak season supplement of €35pp per night Christmas (20th Dec 2008-5th Jan 2009), Easter (10th-13th April 2009). Airport transfer €30pp. Transfers also possible from Shimoni in Kenya (min 2 people), by speedboat in 90mins. Opened August-May.

THE MANTA DIVERS VILLAGE (10 private chalets)
www.themantadiversvillage.com
Using many of the same facilities as The Manta Resort, The Manta Divers Village is a dedicated diving place, which gets the luxury of using its bigger sister's upmarket facilities. The brand new chalets are nicely set in the gardens with wooden floors, mosquito net covered king size beds, lamu floored en-suite bath rooms, and a makuti-thatched veranda – all with views overlooking the Pemba channel. All season (sharing, full board) €95; Peak season supplement of €35pp per night Christmas (20th Dec 2008-5th Jan 2009), Easter (10th-13th April 2009). Airport transfer €30pp. Transfers also possible from Shimoni in Kenya (min 2 people), by speedboat in 90mins. Open August-May.

FILIPINO SCUBA DIVERS CLUB

DIVING SHARM EL SHEIKH, EGYPT

FEEL. EXPLORE. REMEMBER.

FEATURE **MARC ANTHONY VILORIA** PHOTOGRAPHY **VARIOUS FSDC DIVERS**

The Filipino Scuba Divers Club (FSDC), a proud member of Emirates Diving Association (EDA) went on its first international dive trip outside the UAE or Philippines. Its destination… Red Sea! Thirteen members of FSDC ventured the depth of the Red Sea in Sharm El Sheikh, Egypt which in turn ended up to one conclusion… GREAT DIVING EXPERIENCE! The magnificent reefs of the Red Sea remains one of the diving's best kept secrets. And that's just one of the reasons why you can get world-class scuba diving for a fraction of what divers pay along the world's well-beaten, over-hyped tourist paths. Well-established dive destinations such as Sharm El Sheikh provide examples of how successful the dive industry can be in educating local communities in the benefits of protecting natural resources. In protected areas such as the Ras Mohammed, we discovered spectacular reefs that rival the beauty, but not the price of equally renowned scuba diving destinations.

The diving in the Sharm El Sheikh area runs from Ras Mohammed at the tip of the Sinai Peninsula and runs north up the east coast to the Tiran Reefs in the Gulf of Aqaba. This area benefits from the shelter of the land and conditions are usually calm to moderate, unlike the western coast of Sinai, which can get rough, as the winds blow down the length of the Gulf of Suez. Most of the diving is located in Ras Mohammed National Park and it is strictly prohibited to touch the corals or feed the fish otherwise you may find yourselves with a ticket from the rangers. Wherever you dive around the Sinai you are in for some excitement, fantastic coral and great diving.

DAY 1: 01 JUNE 2008

Arrival in Egypt – We arrived in Sharm El Sheikh Airport at around 6:45 AM. Almost everyone was exhausted from the whole night travel from Dubai via Bahrain while waiting for our luggage in the empty hall of the arrival area. As we exited the arrival hall, the locals who were offering taxi services immediately greeted us but of course our bus service was already there to take us to the resort.

The arrival at Shark Bay Umbi Resort started with a warm welcome from the staff followed by a quick settling-in, a refreshing shower and breakfast. The tiring journey brought us all to bed to ready ourselves for the first dive in the afternoon.

DIVE 1: 03:12 PM GMT+3

Ras Bob Reef is a mooring or drift dive towards the adjacent dive site. The wall drops to about 23 meters where eel garden can be found. There are plenty of large coral heads with sand galleys heading towards the wall. This is where we first encountered the biggest Napoleon fish we've ever seen by far. When we surfaced, you could see big smiles across our faces, knowing that this was just the beginning of our diving adventure.

We did a drift dive. The boat dropped us at the mooring and we were picked up on the northern edge. This follows the same area as a mooring dive but then continues along the drop off which turns more into a plateau as it reaches the corner and can be a very high-speed drift dive. This is a regular for the sharks (but unfortunately they (the sharks) had not received our invitation).

DAY 2: 02 JUNE 2008

Seemingly everyone was excited about this day. We all got up early and had our breakfast just before the call time at 08:00AM. On the way to the Tiran Strait, we came across several Risso Dolphins swimming close and playing along the waves created by our boat. The excitement and the thrill leveled up as one of the Risso Dolphins waved its tail to say goodbye.

After our 2nd Dive, we feasted on the freshly cooked meals aboard the Freedom 8 boat. After our surface interval, we did our 3rd dive and headed back to the resort right after the dive.

DIVE 2: 09:50 AM GMT+3

Jackson Reef is the most northerly of the reefs of Tiran and the northern limit of day boats from Sharm El Sheikh. The wreck of the "Lovilla "lies at the northern end. There is superb wall diving along its entire perimeter, with numerous buttresses and gullies. Sightings of sharks, turtles and other big fish are not uncommon and you will find a huge diversity of different corals and sponges as well as clouds of triggerfish, masked puffers and banner fish. At one point you may be lucky and spot a Hammerhead in the summer.

DIVE 3: 02:12 PM GMT+3

Gordon Reef is the southerly reef of the four and has a different topography from the others. This site has both a shallow plateau area and drop offs, and can be done as a mooring dive or a drift dive. On the northern edge of the reef is the remains of the wreck "Lovilla" that has been on top of the reef for a long time. It only remains there by habit as most of the hull has corroded away. The current on the south edge of Gordon is rarely strong but be aware as it can cut across the plateau. The boats moore up on the southern plateau in about 8m of water. The dives are usually conducted from the mooring buoy and head in an easterly direction to the drop off which starts at about 16m (it is worth keeping an eye out into the blue here!). From the drop off heading north following the edge is a small garden eel area along with coral encrusted drums. At the turn around point of the dive we ascended to about 8m and followed the reef back to the boat on the plateau area.

DAY 3: 03 JUNE 2008

Whale Shark at Ras Mohammed – Ras Mohammed has earned itself a reputation as one of the top diving areas in the world. At the tip of the Sinai where the vast bodies of water, the Gulf of Suez and the Gulf of Aqaba meet, an ecosystem like no other has been created and wall diving is at its very best.

The longer boat trip to Ras Mohammed was filled with different stories and jokes from the previous days dive experiences. Everybody ran around and took their spot on the boat for a picture perfect smile. After the dives (which is upgrading its own-class from one dive site to another), an unforgettable experience happened on our way back to the resort! We encountered a whale shark lurking around the blue, swimming calmly near the surface. After the captain checked our safety on entering the water, we then had the closest encounter of the most beautiful fish we've ever seen. I had tears in my eyes as I saw myself swimming with the whale shark. Two-thumbs up!!!

DIVE 4: 10:57 AM GMT+3

Yolanda Reef, Shark Reef & Anemone City – Situated right at the tip of the Sinai, this site is world renowned, the two small ergs are joined by a vertical wall dropping into the abyss. We started our dive at Shark & Anemone Reef and used the prevailing current to explore the wall abounding in multihued soft corals. At 30m depth, large schools of unicorn fish and snappers gathered in often-strong currents just off the wall. We swam through the schools to the outside hoping some silky sharks would silhouette from the blue, but everyone got back quickly as not to lose orientation to the wall. As we proceeded towards Yolanda Reef we reached a plateau at 15-25m scattered with small ergs and coral outcrops where stonefish, moray eels of enormous sizes and scorpion fish await for a meal. Continuing around the reef, we came upon the scattered remains of the wreck of the 'Yolanda' complete with its cargo of toilets and baths. The whole of this area is big fish territory so you have to keep an eye out for the action with tuna, bluefish, and the occasional hammerhead.

DIVE 5: 01:02 PM GMT+3

Ras Ghozlani Reef – A drift dive on the new dive site Ras Ghozlani opened to the public only a few years ago, offering wonderful landscapes with huge table corals, pinnacles covered with soft corals, some parts with many anemones and their clownfish friends.

DIVE 6: 08:10 PM GMT+3

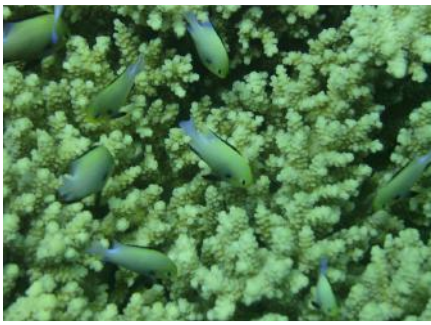
Shark Bay (House Reef) – The one and only night dive we had. We've seen the beauty of this reef every time we come back from our day dive trip. Snorkeling and skin diving while we watched the sun being washed away in the horizon had been our usual routine. Not to miss the adventure of what the night dive in Sharm has to offer, we started our dive in the jetty and dived down to 15 meters. There were lots of lion fish suspended in mid water, porcupine fish on their defensive mode and a baby octopus that put the icing on the cake on this dive. As the dive came to an end, we then swam our way back to shore.

DAY 4: 04 JUNE 2008

Operation Naama Bay – After our last dive, we all decided to have a taste of Naama Bay. From Shark Bay Umbi resort, a 10 minute taxi drive will take you to the heart of the action (if one wishes to have a different kind of fun apart from diving). Entertainment is inescapable in Sharm, so we allowed ourselves to melt into local ambience, vibrant colors, and world famous rhythms found in almost every club, and discotheque in Naama Bay. Fun shows are available in nearly all hotels, suitable for tourists like ourselves wanting to dine, as we watched a multicolored, entertainment show. However, as we wanted to unleash the wildness within us, we visited the El Fanar - highly recommended for a prolonged, loud party night, embraced by a magnificent view of the mountains and the sea. To sway more to the rhythms of world top DJ's, and famous international artists, we headed to Pacha and enjoyed the live concerts and fresh mixes, where we got to mingle with the local people, who love a good party night. Some of us were into roulette, slots, and poker, so we visited Casino Royal in Jollie Ville and enjoyed a grand ambience. Later after some shopping we enjoyed sitting at a café overlooking the downtown while we smoked from water pipes.

DIVE 7: 11:21 AM, GMT+3

Shark Bay (House Reef) is one of the few shore dive sites. As this is one of the few natural beaches in the




area, the sand follows into the water giving a gradual slope that descends downwards. This site is also famous for Deep Dive Specialty courses where there is a canyon starting at 18m and continues down to deeper depths. Our dive plan started on a nice gentle slope in the south where there is a sandy path with coral on each side at a depth of 14m. To the north there are sand gullies in between a solid reef slope. There is lots of life in both directions of the shallows and being in a bay there is more to see than meets the eye.

DAY 5: 05 JUNE 2008

Departure from Egypt – The entire experience gave us mixed feelings and we wished that this underwater exploration, adventure and good-time never had to end. But of course, all good things must end, and must end in a perfect fashion. And that was what FSDC Diving Sharm El Sheikh did… concluding our dive experience to something worth remembering for a lifetime.

FSDC members on this trip: Marc Anthony Viloria, Jon Clave, Jenny Isip, Jeffrey Amparado, Eva Amparado, Tina Amy Bayle, Girlie Dimasuay, Myla Cruz, Marc Brian Queyquep, Rylan Louis Lee, Mario Elmenzo, Bing Villanueva and James Sumagaysay

Thanks to Shark Bay Umbi Resort for the warm hospitality before, during and after our trip.

MABUL ISLAND

FEATURE **SAM JOFFE** PHOTOGRAPHY **TREASURE IMAGES**

When given the opportunity to travel and evaluate new dive sites and new destinations, who could really refuse? The destination was Borneo Divers, a PADI 5 star IDC centre, located on Mabul Island just a short boat ride from the famed Sipadan Island. Sipidan Island is renowned as a top ten dive destination in the world, and it is unquestionably a great experience, but perhaps everyone overlooks the neighbouring Mabul Island? Normally viewed as just the 'place to stay' next to Sipidan Island, it is a world class dive destination in itself.

Although Tourism Malaysia advertises Malaysia as being 'Truly Asia', the islands of Malaysia seem to live up to the standard of being more like 'Truly Paradise'. Picture palm lined beaches with over-water bungalows on stilts and warm tropical waters. Imagine our excitement when the underwater world was even more beautiful. Now there are two species that I have always wanted to see, and was excited to hear that they were both residents of Mabul Island; the pygmy seahorse and the mandarin fish.

Mabul Island itself is a great dive destination for the macro world. Here you will find some amazing dives where you can spot the pygmy seahorse, mandarin fish and nudibranches. I was determined to see the tiny pygmy seahorse, which is no larger than your thumb nail, and a light pink colour. I think that our Divemaster had some new technological whistle that summoned aquatic life on demand. True to his word, after five minutes of bottom time, he pointed excitedly to a coral, signalling that there was a seahorse on it. Now I have been victim to many a Divemasters joke and believed some outrageous claims of whale shark and seahorse sightings before, so I was sceptical. My expression must have been visible under my mask, as he pulled out a magnifying glass from his BCD pocket. After looking in vain, I suddenly saw a tiny piece of 'coral' move and blink. The pygmy seahorse is that small and hard to see. Truly amazing.

My hunt continued around the shores of Mabul Island, as next on the list of things to see was a mandarin fish. The elegant mandarin fish in multi-colours with ever-moving fins is truly unique. Apparently they were not hard to find on Mabul Island, as we went straight off the beach on a sunset dive to see them. No sooner were our fins hovering over the sandy bottom when they had been sighted. Not just one lonesome fish, but a school of ten mandarin fish. Twenty-eight minutes of bottom time later, we managed to tear ourselves away from them and leave them in peace.

Sipadan Island offers big fish like bumphead parrot fish, white tip reef sharks and 30 turtles in one area. It is an interesting place to dive, as the beach drops off to 600m, being the remains of a sunken volcano. It is truly a dive destination to see before you die for the sheer quantity of turtles, sharks, parrot fish, trigger fish and corals. No one is allowed to live on the island, so the area is protected and preserved.

We stayed at Borneo Divers resort on Mabul Island that offers cozy chalet accommodation, full board, and friendly and knowledgeable staff. Not to mention Divemasters that are able to call the aquatic life on demand as I mentioned!

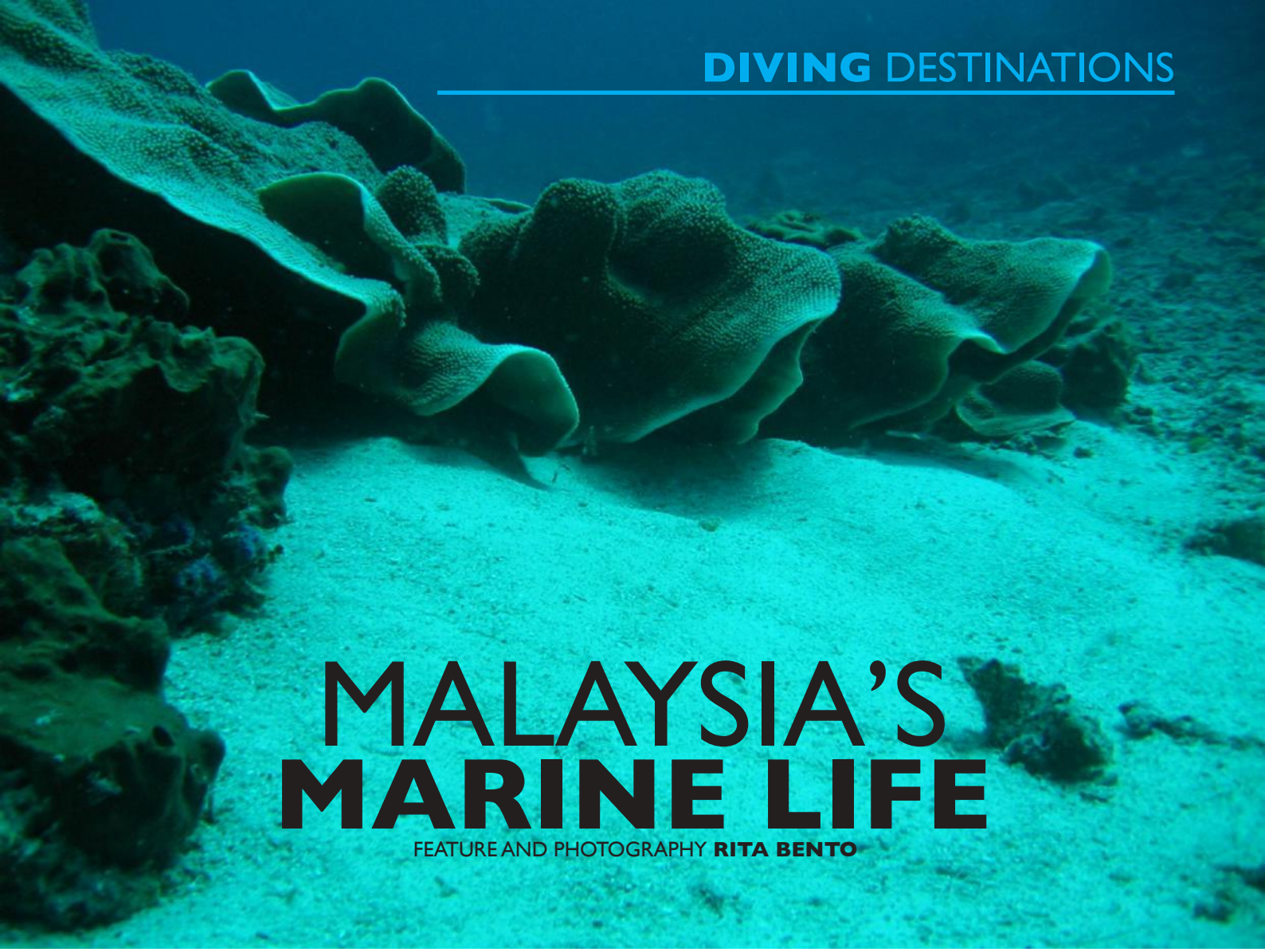
Three dives a day can be done as well as one night dive from the beach. A swimming pool with pool bar, beach bar, wireless internet and spa are also available.

Why not opt to learn to dive when next visiting Malaysia? Start your PADI open water course with Al Boom Diving in Dubai, and complete your final dives on your next vacation to Malaysia! Ask us how!

For more information, please visit:
www.borneodivers.info

Contact Al Boom Diving on: **+971 4 3422993**
Email: **abdiving@emirate.net.ae**
Or visit: **www.alboomdiving.ae**

Samantha Joffe is the Business Development Manager at Al Boom Diving. Occasionally she does some real work teaching dive students, and is a PADI MSDT.



MALAYSIA'S **MARINE LIFE**

FEATURE AND PHOTOGRAPHY **RITA BENTO**

What is there to say about Malaysia that you don't already know? Even if you have never been there, it is obvious what a diver will find out in this underwater world. Isn't it one of the countries that divers dream of going to one day? Well, it's true… you should dream about going there at least once, and to go there again and again.

We had the chance to dive around Mabul Island and the tiny 12 hectare island of Sipadan, two beautiful places located off the east coast of Borneo, southeastern tip of Sabah state, very near Indonesia.

Sipadan, besides being a Marine Protected Area, is also rated as one of the world's top diving spots. It is a deep-water oceanic island separated from the Borneo continental shelf by a trench of 600 meters depth. During a dive, you can enjoy watching turtles, big pelagic fish and colorful coral fish while the deep blue beneath you follows you all the way.

But diving in these places is not just about the marine life, you also need the right person to show you everything that is hidden under water. Thanks to Borneo Divers, and the amazing staff that Clement (the owner) has in is resort, we had the chance to see almost everything, even the mandarin fish and the pygmy seahorse. For all our amazing moments we have to thank the blessed eyes of Maadil and Lianah our equally amazing divemasters.

There are several different dives that can be made in Sipadan, but one for sure is the best, not only because I'm saying it, but because Cousteau himself said it the day he dove there, at Barracuda Point. We saw thousands of chevron barracudas (*Sphyraena putnamiae*), and pickhandle barracudas (*Sphyraena jello*) swimming in big schools around us, but this spot has all that there is to see, black-tip reef sharks (*Carcharhinus melanopterus*), white-tip reef sharks (*Triaenodon obesus*), green turtles (*Chelonia mydas*), hawksbill turtles (*Eretmochelys imbricate*) and the million other colorful fish and invertebrates of the reefs.

The number of turtles that we saw all at once was amazing. At first it was hilarious and we couldn't stop calling each other and pointing to every turtle, but after 20 minutes into our dive, we realized it was pointless, we were going to see them throughout the dive time, and their company suddenly became very natural and comforting… we had several local inhabitants receive us.

In all our reef dives the surgeonfish were everywhere. We saw the black-spot surgeonfish (*Acanthurus bariene*) normally single or in a pair, the almost continually in motion lined surgeonfish (*Acanthurus lineatus*) and the whitecheek surgeonfish (*Acanthurus nigricans*) with its characteristic horizontally elongated white spot directly below its eye. We also saw the bluish grey spotted unicornfish (*Naso brevirostris*) and the bluespine unicornfish (*Naso unicornis*) both with their distinguishing rostrum in the coral reefs of Sipadan.

On the shallow part of the reef, among the spines of Diadema and corals, a school of razorfish (*Aeoliscus strigatus*) were looking for minute crustaceans in the zooplankton. These animals, besides their strange body shape, where the 15cm body is covered in an armor of thin, transparent plates also has a strange swimming habit: they swim in synchronized groups, each fish in a vertical position with the snout pointing downwards.

On the sandy bottom, Maadil found what looked like a "moving shell". It was a sea moth (*Eurypegasus draconis*), also known as a short dragonfish. This fish has a distinctive shape and bony armour, reaching the maximum length of 8cm. It is very difficult to find because of its impressive camouflage; it resembles pieces of shell or rubble lying on the sandy bottom. If it wasn't for the movements he was making, I wouldn't have been able to see him or I would have thought the dive guide was mocking me.

Running along the reef were the 18cm peacock mantis shrimps (*Odontodactylus scyllarus*), unlike its conspecifics, it often abandons its hole (a u-shaped tunnel dug into the debris) to hunt its prey. That's why we could see them running around with quite an aggressive look. This species has some special and very different characteristics, their extraordinary vision is due to the structure of their eyes, which consist of six rows of numerous smaller eyes; besides this accurate sense, they also have powerful feeding appendages that they use to smash shells and spear fish, they are even known for breaking glass.

In the pelagic life section, there were the outstanding trevallies, one of my favorites. The orangespotted trevally (*Carangoides bajad*), the blue trevally (*Carangoides ferdau*) and the giant trevally (*Caranx ignobilis*) that can reach 170cm. Joining the water travelers, a huge grey reef shark (*Carcharhinus amblyrhynchos*) of about 250cm approached us, close enough to spot us but far away enough not to be disturbed. We were amazed by his beauty and strength and we were attracted toward him, but the closer we got, the further away he swam. Judging by his size, he could be 20 years old, and I bet that with all this time of experience, it's given him enough knowledge to know that we don't like to be disturbed by them as much as they don't like to be disturbed by us. And so we left each other and continued our dive.

From all the dives we did around Mabul and Sipadan, I can definitely advise you to do as much diving as you can in Sipadan, but you shouldn't miss three special dives around Mabul: the night dive, the pygmy seahorse dive and the platform dive; and one in Sipadan which is an absolute must is the 5am dive.

Still in Sipadan, but starting the dive at 6am (leaving the bed at 5am) there is the magnificent dive with the green humphead parrotfish (*Bolbometopon muricatum*). What an amazing creature! This huge school of more than 70 animals, with individuals of almost 130cm, swimming very slowly and very close to each other, is something I have never seen before. They feed on benthic algae, shellfish and live coral, and it seems that they must ram their large heads against the corals, breaking them into pieces to facilitate feeding. As a result, they have a pink forehead that really does look like an old scar from all the times they "beat their heads against the walls", that


Grey Reef Shark © Pete Faulkner/Marine Photobank


Humphead Parrotfish


Wall of Barracudas

is why they are also called the double-headed parrotfish.

They sleep all together in caves, or shipwrecks, at night and only go out at sunrise, where they are visited by "sleepwalking" divers that only really awake the minute they see this school of strange and very large creatures. This species is the largest and wariest of all the parrotfish and unfortunately is considered vulnerable according to the IUCN Red List. They were described in 1986 (Choat & Randall) as widely distributed in West Indian and Pacific Oceans, and most commonly observed on reef fronts, reef crests and flats. But at other locations, it is now uncommon or rare, and is virtually extinct in Guam, Marshall Islands, parts of Fiji and East Africa, and is also declining rapidly in Palau.

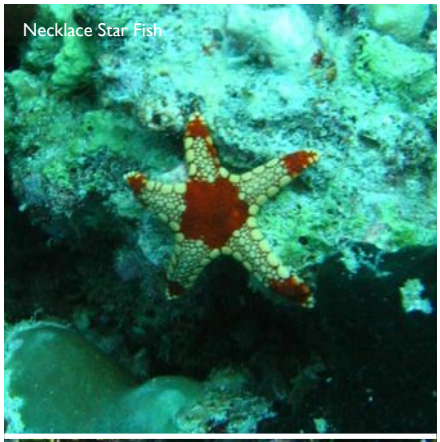
The night dive off the pier of Mabul is truly exquisite and gives you an unforgettable encounter with the famous mandarin fish (*Synchiropus splendidus*), the small 6cm fish characterized by a combination of colors of blue, orange, green, purple and yellow. This species is commonly found in small groups or in pairs, and at sunset you can see them in couples, circling around each other, performing their distinctive mating behavior. They will keep circling and rising in the water until they reach the apex of this beautiful dance. Then the eggs and the sperm are simultaneously released and the pair go in separate directions. This behavior can occur almost every night for several months, so it's almost sure you will see them during a sunset dive, you just have to be patient and wait for them.

Continuing the dive, we didn't seem to stop encountering amazing creatures such as the night active stumpy-spined cuttlefish (*Sepia bandensis*) of 70mm, that walks on sand rather than swim using his third or fourth arm and a pair of raised flaps on the ventral mantle. And how can we find a decorator crab (*Camposcia retusa*)? As its name says, it decorates its brown body with sponges, shells, rocks, and other items as a method of camouflage. That's why he is so tricky to see and that's why you need a good dive guide with you to show you how to find all these incredible creatures.


Decorator Crab © Bassamio Fung

To look for tiny and delicately camouflaged species, you have to dive in Mabul and look for the pygmy seahorse (*Hippocampus bargibanti*). This 2cm seahorse is found only on gorgonians (sea fans) of the genus Muricella, in depths of 16m to 40m. The seahorse color matches the gorgonian it inhabits, varying from pink to red, and the body tubercles look very similar to the polyps of the gorgonian. They are so petite and so similar to the gorgonians that you have to gaze for several minutes to one single spot to be sure you are looking in the right place. In one single gorgonian you can count up to 28 pairs of seahorses; but we were so afraid we would never find that one again, that we kept our eyes in that small portion of the gorgonian at all times.


Mandarin Fish © Bassamio Fung


Necklace Star Fish

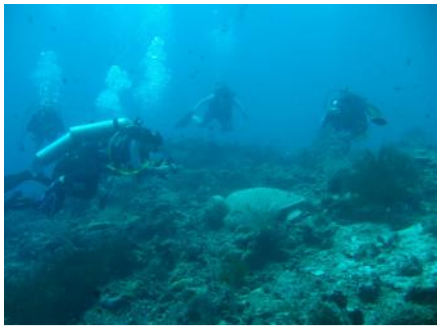

Haliclona Marine Sponge


Bowtie Damselfish


Haliclona Marine Sponge

The platform dive was for sure the funniest dive of my life. When we started the dive I just thought "why are we here?" we were right beneath an old petrol platform that is now being used as a dive centre. Underneath it, we could see a lot of garbage, tires, several different kinds of equipment… it wasn't the kind of dive I was expecting to do in Malaysia. To my surprise, we started to see several nudibranchs, each one with different colors and sizes, and then we found a crocodile fish (*Cymbacephalus beauforti*) lying on the sand. Next to it was a painted frogfish (*Antennarius pictus*), but I had to clear my eyes to spot him. The frogfish was inside a sponge and it had the same green color; it really had the exceptional ability to mimic his environment! It didn't move once the whole time we were there, it was amazing. The dive became an even more thrilling adventure the further we went on as at each corner, hole or rock we found a new strange species. It was like a "where's Wally" underwater version. After spotting many other marvelous creatures like the leaf fish (*Taenianotus triacanthus*), and the blue ribbon eel (*Rhinomuraena quaesita*), recognized by its hugely expanded anterior nostrils and his bright blue color, we had a close encounter with a black giant frogfish (*Antennarius commersonii*). Its body looked like a flabby weed-encrusted sponge that effectively blends into its surroundings. The astonishing thing was that this creature could literally walk on his pectoral fins. Our video recorder, Ally, loved him so much, she filmed every small part of his body… but it looked like he had also fallen in love with her. He suddenly lifted himself off of the sandy floor and began swimming towards Ally, opening and closing his big mouth. We knew he was capable of swallowing a fish almost as long as himself, but attacking Ally was a surprise. Seeing Ally being chased by a frogfish was enough to flood my mask from all the laughing we were doing. I think the other divers around the site could hear us screaming and laughing, it was hilarious!

These are the memories I brought back with me from Malaysia. Incredible creatures that you normally only see on the National Geographic Channel, the constant company of green and hawksbill turtles and the invariable smiles and laughter underwater.



LIVING **AQUARIUMS**

FEATURE AND PHOTOGRAPHY **ALLY LANDES**

PULAU MABUL Pu•lau meaning Island. Mabul Island is located in the Malaysian part of Borneo in the State of Sabah and first became popular due to its close proximity to Sipadan Island. Mabul Island is recognized as one of the best "muck-diving" sites in the world. It is a small oval shaped island surrounded by sandy beaches and perched on the northwest corner of a larger 200-hectare reef. The reef is on the edge of the continental shelf and the seabed surrounding the reef slopes out to 25m-30m deep. Mabul is a magical macro site.

Borneo Divers Mabul Resort's new dive centre under construction

PULAU SIPADAN Pu•lau meaning Island. The internationally famous island of Sipadan lies off the northeast coast of Borneo and is Malaysia's only oceanic island. Sipadan was formed by living corals growing on top of an extinct undersea volcano, which rises 600m from the seabed. At the dropoff, five metres of white, soft sand in knee-high deep water suddenly gives way to a precipitous drop of discovery. Few islands in the world offer such prolific marine and coral life, it guarantees that every dive is a memorable experience.

FAM TRIP DIARY

It is very difficult to describe Mabul Island and Sipadan Island in just a few words. There is much to be said about these small islands that are both very small little paradises with an enormous amount of magical sights to offer below their shimmering surfaces. This is by far the best diving I have ever experienced to date and I've travelled to quite a few different places now in the 15 years I've been a diver. They are both an underwater odyssey where you glide through realms of breathtaking visions you think you could only ever dream about. If you can make it a reality to go to Mabul and Sipadan, it's worth every effort you make to get there! You cannot possibly imagine to see as much as we've seen in the three days we were there, unless of course you've already been there. Those who have, know exactly what I'm talking about. On the third dive of the first day, we thought we'd seen everything and we couldn't possibly see anything more. We saw so many things we'd never seen before that we didn't know how/where to look from one spot/creature to another. The second day blew us away. It would be a lot quicker to list the species not found there. How are there still so many new things to see?!? It really is an amazing place and I definitely want to go back!

Borneo Divers Mabul Resort

Lets start at the very beginning and I'll give you our daily itinerary to see if this can help you in any way to make plans to go there yourselves.

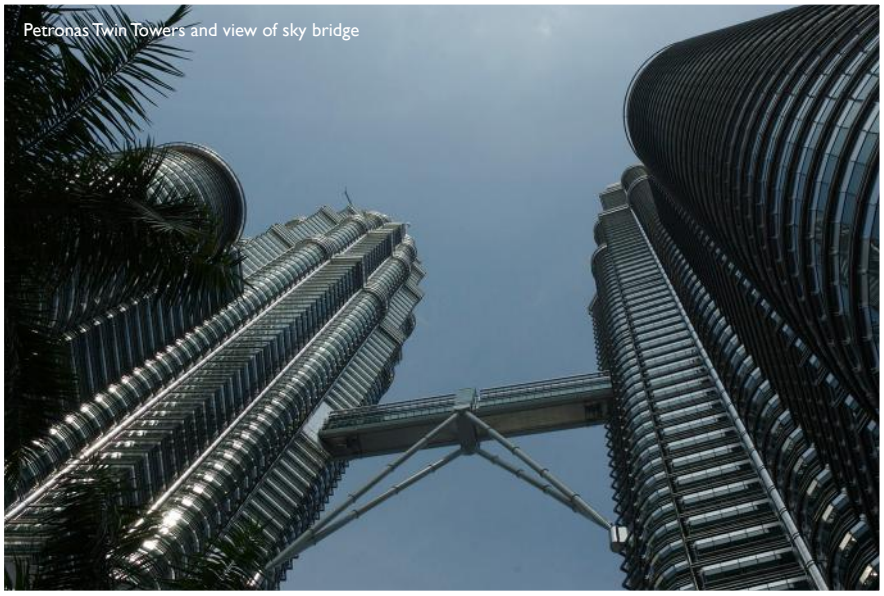
DAY 1 – 19th JULY 2008

06:00 Arrive at Kuala Lumpur International Airport (KLIA) and transfer to Hotel

Our flight had departed the previous night from Dubai at 18:35 and very little sleep was had on the flight as I ended up watching two movies from the in-flight entertainment. It was good landing in KL and we were buzzed with excitement from having arrived and were already planning to go straight out to explore and take photographs as soon as we were checked in to the hotel. We only had the one day in Kuala Lumpur and wanted to make the most of it.

We stayed overnight at the PNB Darby Park Executive Suites which is conveniently located in the centre of KL. Pretty much everyone, everywhere in KL is incredibly friendly. We were welcomed in to the hotel, our luggage was piled up on a trolley, labelled and sent to our rooms, while we were ushered over to the breakfast buffet for our first taste of Malaysia.

A good, varying breakfast (you can have


Petronas Twin Towers and view of sky bridge

noodles and soup at any time of the day in Malaysia), most importantly lots of coffee, a quick shower, change of clothes, cameras in tow and off we went!

The hotel is a 10 minute walk from the Petronas Twin Towers and there is a shopping mall inside the towers. We were on a mission to find Rita an underwater housing for her camera as she had not found one in Dubai. Alas, we found no housing, but had a good old wander around and took some photos of the towers from the outside, stopped for a coffee break as Sam (Al Boom Marine), Rita (EDA's marine biologist) and myself were beginning to flake from lack of sleep and it was then time to meet up for lunch with the rest of our group.

Our host for the Malaysia FAM tour is Tuan Razali Tuan Omar from Tourism Malaysia Dubai. He was waiting for us looking refreshed as he very cleverly had a nap instead of going out. We met at Madam Kwan's Restaurant for lunch inside the Suria KLCC (Petronas Towers, Suria Kuala Lumpur City Centre). One of our group was still missing. Siobhan Leyden from Dubai Eye. She had slept through her alarm and joined us not long after we'd ordered looking very panicked... but refreshed none the less. The rest of us had wished we had taken a nap.

We had our lunch and then our KL Tour began.

13:30 Petronas Twin Towers, Sungei Wang Plaza, Menara Kuala Lumpur (KL Tower), Petaling Street and Central Market.

Of course, with the FAM trip consisting of four women, we made sure that we got to stop at some of the shopping destinations as we only had the one day to do so during the entire trip. First thing was first though, we got to go inside the Petronas Twin Towers which tower the city at 452m with 88 storeys and we got to take photographs from the sky bridge on the 41st floor. This is a must when visiting KL. You must also go to the KL Tower which is the world's fourth tallest communication tower. The observation deck stands at 276m and gives you a 360° aerial view of the city.

There are a lot of malls similar to that of Dubai in KL in the fact that they have the same designer retailers and are of the same price range so we headed to the Sungei Wang Plaza for something different. There are 7 floors with over 700 retail outlets to choose from and its a very entertaining, outrageous mall that is very easy to get lost in. There are so many unique things to buy in there that you won't find them anywhere else. You do have to like shopping to go in here though and they have pretty much everything from fashion, art, accessories, gadgets, games to electronics and more. Bintang Walk is also a very good shopping, dining and entertaining area to go to when you have more time to spend in KL.

We also stopped at Petaling Street which is KL's Chinatown and at Central Market for more of the local artisanal items which is a good place if you're looking to buy souvenirs. There are so many other places of interest to visit while in KL and around it which we did not have time to do but recommend you take the time to fit more visits in. One I can suggest as a must see, is the Batu Caves just outside of KL. I visited it a few years ago while on holiday there and loved it.

DAY 2 – 20th JULY 2008

06:00 Check out from hotel and transfer to airport
09:20 Depart to Kota Kinabalu
11:55 Arrive at Kota Kinabalu Airport and transit
13:15 Depart to Tawau
14:00 Arrive at Tawau Airport
14:20 Transfer to Semporna by mini van
16:00 Arrive at Semporna Jetty and transfer to Mabul Island by boat
17:00 Arrive at Mabul Island and check in to Borneo Divers Mabul Resort

What a day! You lose this day to travelling and lots of it. I could have said, planes, trains and automobiles, but there are no trains in this excursion, there is though, a boat!

Kota Kinabalu, is the modern gateway to the rest of Sabah and you have to get here to get to the other destinations! Direct flights between KK (the name by which Kota Kinablu is fondly called) and the regional capitals of Kuala Lumpur, Singapore, Tokyo, Hong Kong, Sydney to a name a few, make Sabah easily accessible to travellers everywhere. Everyone has told me that if you get to KK, stay in KK for a bit and go to Mount Kinabalu which is a 2 hour scenic drive from KK itself. And of course, not to miss out seeing the orang utans in Sepilok, the world's largest orang utan sanctuary. This is on my list for my next trip over there.

Borneo Divers Mabul Resort is a lovely little resort tucked in along the beach on one side of Mabul Island. It is one of four resorts there. The other three are, Sipadan Water Village Resort, the Sipadan-Mabul Resort and the Mabul Water Bungalows. We are welcomed onto the island by Clement Lee, the Managing Director of Borneo Divers.

Borneo Divers, Tourism Malaysia and EDA group

We learnt a little history about the resort on our welcome tour. Borneo Divers actually began 25 years ago on Sipadan Island. Because of environmental protection and conservation efforts, they had to leave Sipadan in 2004. Half a year before that, they had already started building the Borneo Divers Resort on Mabul Island which is now in its fourth year running.

Sipadan Island had too many divers diving in its waters and it caused a depletion in the coral and marine life. The island is now owned by the government for its protection. No one can stay or walk around on the island and there are only 120 divers a day permitted to dive Sipadan, so planning your diving holiday well in advance is necessary as dive permits need to be obtained.


One of Borneo Divers Resort Chalets


View of the garden


Borneo Divers Resort pool


One of the dive boats being loaded for the days first dive


Sipadan Island


On Sipadan Island's security post for lunch

Clement said that it has made a big difference there and that the marine life numbers are coming back up. "The environment is our silent partner. If the environment is not well, we are ill. We vacated the island to protect the future of this world heritage site." And it's definitely paying off from what we witnessed.

Borneo Divers have one policy! One dive boat, two divemasters. Our divemasters during our stay were Maadil and Lianah and we could tell that we were going to have a lot of fun we these two! Water visibility is 20-30m all year round and water temperatures are between 27-30°C also all year round. You can dive here at any time of the year. Being a tropical climate, annual rainfall varies from 2,000mm to 2,500mm. It rained a little while we were there, but they still go out diving when it does. It's up to you whether or not you want to go.

Borneo Divers is a 5 star IDC Dive Centre, so you can also do your dive certs there. Clement Lee is a Course Director and he has 22 Instructors and Divemasters at the resort. Mabul and Sipadan both have 12 dive sites each so there is lots to explore.

The islands do not only attract divers. We arrived on the island with a group of bird watchers which we learnt was becoming a very popular pastime. 4 different types of pigeons have been found on the islands. Just comes to show, there is a little something for everyone.

Mabul Island itself is very small and Rita, Siobhan and myself went to explore it the one morning we passed on diving because of the rain. It only took us 30 minutes to walk around the entire islet. There are two villages on each side. One is a gypsy village, where the people live on their boats. They do not stay for long periods of time and eventually move to other islands. The other village is built on stilts and bustling with children. The ratio is 10:1!!! And these kids love to have their photographs taken. They will accompany you while you walk through and pose and giggle all the way until you reach the end of their village. They are very simple folk and all of them a joy. They don't have much, but they certainly know how to enjoy life!

DAY 3 – 21st JULY 2008

08:00 Breakfast

09:00 Diving begins

All our dive gear was collected from our rooms and sent to the dive centre and we'd got there a little early to put the things we needed to one side. The team at the dive centre took care of the rest and had it all put on the boat. They even assemble your kit for you. The only thing you have to do is make sure you have your weight belt and make sure you take it off the dive boat at the end. And of course check that everything you need is in actual fact on the boat and not back at the dive centre.

Rita rented an underwater camera from Treasure Images to try and take some photos and they didn't turn out half bad. She could be on to something there. Treasure Images is an underwater filming service at the resort if you want to have your own personalized DVD of your diving trip.

My video camera batteries were all charged up and a brand new tape was in place and ready for a new underwater experience. I was more excited about the visibility than anything else at this point. The rest was all to be a surprise as I wasn't entirely sure what to expect. And boy oh boy was I surprised! I nearly wet myself with excitement. Rita, my trusty buddy is very much like myself underwater and we have an understanding. No one else seems to understand us, but we know how to communicate. Well I can tell you one thing for sure, we've never laughed as much as we laughed on this trip. The rest of our group would every now and then turn around to look back at us because they could hear us yelling, doing a little boogie, laughing or chatting away under water. We had found our underwater paradise. We saw things that we had heard of, that we had seen photographs of and we were now finally seeing them for real with our own eyes. Both, Rita and I at this point in our diving years have never seen a sea horse face to face. So the things that I am about to list in my log are things I am very, very excited about. I still talk about them to this day when given the chance and I am sure many of those who have already heard of our tales more than once are physically and mentally exhausted. I just wish that we had been able to take more photos than we had. There is so much macro out there that most things are practically impossible to capture. We had a lot of fuzzy images, but it was worth the effort.


Maadil and Lianah

Borneo Divers Resort Pier looking onto Sea Ventures Dive Resort

1st DIVE – MABUL
LOBSTER WALL
9:03 22.4m 27°C 50mins
Borneo Divers consider the first dive, the orientation dive with the divemasters in order to see how things go and to check equipment, weights and buoyancy. This was a good fast drift dive, but easy enough to hang on to see things. Great fun!
Turtles
Orang Utan Crab
Razor Fish

2nd DIVE – SIPADAN
BARRACUDA POINT
13:51 21.6m 29°C 55mins
Best dive I have ever done to date!
Moth Fish
Clown Frog Fish
Over 30 turtles
Barracudas by the thousands
White Tip Reef Sharks

3rd DIVE – SIPADAN
DROP OFF & TURTLE CAVERN/TOMB
15:58 20.7m 28°C 51mins
The Drop Off is 600m deep 5m from the island beach shore! The Turtle Cavern or Tomb (known as both) is still to this day a mystery as turtles enter the cavern to die, or die in there unable to find their way out. No, we did not go deep inside the cavern, but it can be done.

DAY 4 – 22nd JULY 2008
08:00 Breakfast
09:00 Diving begins

4th DIVE – MABUL
RAY POINT
14:52 24.4m 29°C 52mins
What an unbelievable dive. I finally got to see a seahorse and not just any seahorse. The Pygmy Seahorse is so hard to see (2cm, it really is that tiny) that we didn't find another one, although I was told there would have been a lot more on the gorgonian (sea fan) in which the seahorse inhabits. Maadil, had actually brought a magnifying glass down with him to see if it would help. You really have to stare down hard at the spot to see this little guy as it really looks like part of the gorgonian. I knew it was a seahorse after I managed to see it breathe, was truly amazing.
Pygmy Seahorse
Nudibranches
Spotted Garden Eels

5th DIVE – MABUL
PARADISE 2 (Sunset/Night Dive)
18:30 13.6m 28°C 65 mins
This dive site is just off the Borneo Divers pier, so easily accessible and a much anticipated dive. We got to see the beautiful Mandarin Fish that we had heard so much about. Rita and I had a good laugh as we had also found a toilet, shame we didn't have the camera with us at that time.
Mandarin Fish
Crocodile Fish
Diamond Decorator Crab
Long Arm Octopus (tiny)
Stumpy Spined Cuttlefish (70mm)
Moray Eel and Banded Shrimp
File Fish

DAY 5 – 23rd JULY 2008
05:00 Breakfast
06:00 Diving begins

6th DIVE – SIPADAN
BARRACUDA POINT
06:40 28m 29°C 54mins
This is now the best dive I have ever done to date. To be honest, this is the best dive site... ever!!! We had to get up very early to be able to catch the Bumphead Parrotfish. What an amazing fish. They are so ugly that they are actually beautiful, if that makes any sense. They are huge and follow through like a herd of buffalo. Very mesmerizing.
Gray Reef Shark
Bumphead Parrotfish
Barracudas by the thousands
White Tip Reef Sharks

7th DIVE – SIPADAN
TURTLE PATCH
08:36 28.1m 29°C 53mins
White Tip Reef Sharks
Unicorn Fish
Yellow Nudibranch (don't know name)
Minute Shrimp (don't know name)

8th DIVE – MABUL
SEA VENTURES DIVE RESORT/OIL RIG
11:08 17.1m 29°C 58mins
This is an awesome dive site directly below the oil rig which is in fact a dive resort. Not very cozy looking. This is a really fun dive, you cannot miss this one if you go there. At first it seemed dirty as there is a whole lot of junk down there, but then you realize that all that

junk adds a whole lot of character to this bizarre little underwater world. This dive had me and Rita in stitches. I laughed so much that I literally emptied my tank. Frog fish, if you have ever seen and had the pleasure of meeting one are one of the oddest looking fish there is. Well I got to meet a black Giant Frog Fish in person! He's a round fat ball and he has feet. This fish walks! I was absolutely fascinated by him and he by me. I watched through my video lens as he clumsily turned toward me with his strange stumpy feet and he kept opening his mouth at me and he then gave a little bounce and became airborne. I had no idea they could swim. Rita got behind me and we could both hear ourselves laughing out loud. I could no longer see as I'd flooded my mask and I could hear Rita saying, "It's ok, I'm behind you!" It must have been quite a sight as when I finally managed to partly clear my mask frantically finning backwards with Rita holding onto the back of my tank, I saw Siobhan on the side keeling over, also with mask flooded and straight infront of me is Blackie the Frog Fish still in pursuit. I think he was actually in pursuit of his reflection in the camera housing lens as I was still filming in all this commotion and when I pulled the camera away from him he backed away and went back to plonk himself on the sand. I turned to look at Rita and she was still trying to clear her mask at the same time as trying to have a conversation with me about the flow of events. Truly hilarious! This entire dive was fascinating, full of remarkable creatures I'd never seen before.

White Leaf Fish
Crocodile Fish (they really do look like crocs)
Demon Stinger Stone Fish (huge)
Yellow Giant Frog Fish
Black Giant Frog Fish
Orange Juvenile Frog Fish
Moray Eels
Ribbon Eels (gorgeous)
Giant Sea Cucumber

We saw so many other strange and wonderful creatures on all the dives that I cannot possibly list all of them. That and the fact that I don't know all of their names and I think that Rita is sick and tired of me asking what everything is called. There are only so many descriptions you can give that they all get very confusing.

This was one of the best diving experiences I have ever had and I would like to give a big thank you to Tuan Razali Tuan Omar and Tourism Malaysia for making the trip possible and I would especially like to thank Clement, Maadil, Lianah and the rest of Borneo Divers for the adventure and knowledge they gave us of their living aquariums.

www.borneodivers.info

TOURISM MALAYSIA


One of the village houses raised on stilts


Rita having a laugh with the kids

DIVING AND PREGNANCY

DAN DISCUSSES THE RISKS OF DIVING WHILE PREGNANT

FEATURE **NEAL W. POLLOCK, PH.D.**

Since the 1960s, scuba diving has seen great interest grow in the population. One major is the active participation of more women. They come in all ages, backgrounds and abilities, and they ask such questions as: "If I get pregnant, can I dive?" "I just found out I am pregnant. What course of action should I take with my diving?" Many times physicians unfamiliar with diving and certainly unfamiliar with diving and pregnancy pose such questions to the DAN medical team and to dive researchers. There are more questions than answers, it seems. It is not surprising that women are concerned about the risks associated with diving and planned pregnancy.

PREGNANCY AND THE STATEMENT BY THE AMERICAN COLLEGE OF OBSTETRICS AND GYNAECOLOGY

What is the definition of pregnancy? As it turns out, there are many definitions. For example, the legal definition is: "to be the state of a female who has within her overary or womb, a fecundated germ which gradually becomes developed in the latter receptacle." Webster's Dictionary defines pregnancy as "The condition of being pregnant; the state of being with young."

Commonly, we think of pregnancy as the condition of having a developing embryo or fetus in the body following the union of a male sperm cell and female egg cell. Most pregnancies last nine months, from conception to delivery.

The American College of Obstetrics and Gynaecology (ACOG) recommends against diving in any form while pregnant. Its Committee on Obstetric Practice says that 30 minutes or more of moderate exercise a day on most, if not all, days of the week is recommended for pregnant women. Furthermore, the opinion states that participation in a wide range of recreational activities appears to be safe during pregnancy, with this caveat: Each sport should be looked at individually; risks and benefits of each should be examined. Any sport with the potential for abdominal trauma should not be avoided during pregnancy. Because of the risk of decompression sickness (DCS) to the mother and fetus, scuba diving also should be avoided throughout pregnancy. This is a direct and unambiguous statement from the ACOG.

EFFECTS OF DIVING ON THE FETUS

The goal of those concerned with diving while pregnant has always been protecting the fetus from harm. It is known that during exercise, there are acute and chronic changes in response to the increased demands on the mother from the activity itself. With moderate exercise, however, there does not seem to be any adverse effects on the fetus and mother. In fact, the ACOG statement encourages moderate exercise. In addition, there is no clearly documented adverse outcome in either fetus or mother. Studies in exercising mothers and those non-exercising mothers used as controls do not show any difference in a variety of parameters such as weight gain of infant and volume of milk produced by the mother.

It is in fact that the fetus lives in a relatively hypoxic environment (low blood oxygen levels). If there is further hypoxia, blood flow redistributes to critical tissues in a similar manner to that seen in the diving reflex* - there will be peripheral vasoconstriction and hypoxia induced bradycardia (slow heart rate). This can lead to fetal death.

WHAT ARE THE ILL EFFECTS OF DIVING WHILE PREGNANT?

What are the problems associated with diving during pregnancy? It has been long said that diving is a hazard to an unborn child, and pregnant divers should not engage in scuba diving. This statement is seen numerous times in medical literature such as in statements published by the ACOG.

For the purist, it is highly unlikely that a large scientific study will ever be undertaken to determine the effects of diving on an unborn child because serious ethical consequences are associated with such a study. Even retrospective studies in humans done via interviews and questionnaires have limited value. It is difficult to control the variables and judge them against controls, and thus the study loses much of it scientific validity. And anecdotal evidence, while available, is even less scientific. One should be very reluctant to base any kind of conclusion on that type of evidence.

A SUMMARY OF DECOMPRESSION

Pregnancy is associated with a change in the mother's physiologic state; this affects almost every organ. During pregnancy, the distribution of maternal body fluid changes. Plus, it's important to note that the diver breathes nitrogen into the lungs (air is approximately 80 percent nitrogen). Why is this important? While the diver goes below the surface, the lungs are exposed to air coming from the tank. The pressure of nitrogen in the tank is higher than the pressure at the surface; the pressure also correlates directly to the divers's depth. For example, at 30 msw (meters of seawater) - the pressure of nitrogen is four times greater than at the surface (i.e., because the diver is at a pressure of four atmospheres).
While the body began the dive at equilibrium, when the diver submerges to 99 fsw, the tissues are exposed to four times as much nitrogen as on the surface. Thus, in-gassing occurs. During depressurization (ascent to surface), the reverse occurs. If the redistribution of body and tissue fluid concentrates in the peripheral tissues (as occurs in pregnancy) and away from the central circulation, this could predispose the pregnant diver to nitrogen retention there and a consequent increase in risk of DCS.

BUBBLE IN THE FETUS?

The effects of the uptake of nitrogen and the risk of DCS in the fetus are less clear. One must also remember that the fetal lung does not function in gas exchange. Thus, it is unable to filter any microbubbles that may be present in its circulation: the mother could pass on such bubbles to the fetus from the placenta, or they may occur spontaneously in the fetus.

As in decompression illness (DCI), any bubbles formed in the fetus could have detrimental effects. These could hinder organ development and function, and cause congenital malformation or even spontaneous abortion.

In some animals, the placenta plays a role in filtering these microbubbles. In animals DCS during the first trimester of pregnancy increases the incidence of cardiac malformations.

For example, when pregnant hamsters were exposed to deep dives (43 meters) in a hyperbaric oxygen chamber, the effects on organogenesis (organ development) were significantly deleterious. Diving can change the physiology of other substances in the body. For example, some researchers have found that a change in the blood cells called platelets - caused by intravascular bubble formation - can cause bodily states responsible for DCS10. Thus the stress and environment of diving produced a body state making divers more susceptible to DSC.

Besides DCI, the fetus can be at risk of gas embolism after decompression disease. Recalling that the fetal lung does not function in filtering bubbles of any sort, we can quickly realize the dangers of gas embolism.

CONSIDER PFO

The fetus has a normally occurring patent foramen ovale, a condition in which the right

side of the heart communicates with the left side through an opening between the two chambers. This complicates the issue.+ If such a gas embolism travels between the two chambers, its consequences can be life-threatening for the fetus.**

Blood or bubbles going from the right to left side can be dangerous, as the latter can travel to the brain and cause a stroke. Bubbles travelling to other organs formed or in the process of forming could cause failure of the organ or abortion of the pregnancy.

"WHAT IF... ?" SCENARIOS

What if a diver discovers she is pregnant and has dived recently?* Also known as the Mammalian Diving Reflex, this is a set of physiologic responses to immersion that include (a) bradycardia, (b) decreased cardiac output, (c) lactate accumulation in underperfused muscle, (d) increased peripheral vasoconstriction.

The mechanism controls the shift of blood to the brain and heart, functioning in tandem as an important oxygen-conserving mechanism, not only in scuba divers and freedivers, but also in whales, penguins and seals. This amazing physiological phenomenon was first observed in deep diving mammals as early as the 1900s, but until as recently as the 1950s it was thought that humans did not possess the reflex. From http://www.deeperblue.net/article.php/225 + For more on PFO see "Patent Foramen Ovale Is It Important to Divers?" By Dr. Alfred A. Bove and Dr. Richard E. Moon in the Alert Diver IV 2007 issue.

**Editor's note: The fetal PFO is supposed to close and seal after birth. There is a risk that not all patencies will close, and a degree of risk is common with moderate to large residual openings.

These openings can usually be corrected with surgery. Dr. Richard Moon further notes: "In the fetus, it is true that if venous gas embolism were to occur, bubbles would not be trapped by the lung, but rather pass through the PFO into the systematic circulation. If this were to occur, it could be damaging to the fetus, as could in situ bubble formation within tissues.

While a definite answer is not possible, there have been many live healthy offspring in females who had previously been diving. In the author's opinion, an abortion is not necessary. At the very least, however, in the second trimester of pregnancy, one should have an ultrasound performed to look for congenital abnormalities.

What if the pregnant patient needs to be treated in a hyperbaric chamber (HBO)? Can she do so? That answer is yes, if the treatment is considered an emergency such as with an individual being treated for DCS or carbon monoxide poisoning. A woman in early pregnancy would be ill-advised to undergo hyperbaric oxygen treatment, but such patients who are pregnant with full-term babies are safe.

The reader should note that when a person is treated in a hyperbaric chamber, that individual breathes oxygen. While the subject is scuba diving, the breathing mixture is air or nitrox, but it contains a significant amount of nitrogen. It is this nitrogen that is responsible for DCS. There is minimal risk of any defects in the baby or the development of retinopathy of prematurity (ROP).

FINALLY...

In conclusion, based on current evidence, it is recommended that pregnant women should not engage in scuba diving. The scientific data is very limited and the uncertainties of risk factors too great to jeopardize the life of a fetus.

Additionally, the risk of birth defects seems to be greater among those women who do not follow current recommendations and engage in scuba diving. These birth defects appear to occur from physiologic changes occurring during pregnancy, predisposing the pregnant woman and fetus to gas embolism and DCS. The fetus itself is also at risk of decompression disease without maternal involvement.

So little is known about the effects of scuba diving on an unborn child. Therefore, it is prudent to avoid exposure to high environmental pressure seen in scuba diving.

FEATURED **CREATURE**

NUDI**BRANCH**

(Fryeria rueppelii)

FEATURE **RITA BENTO**

EDA accepts text and photo contributions for this page.

FAST FACTS

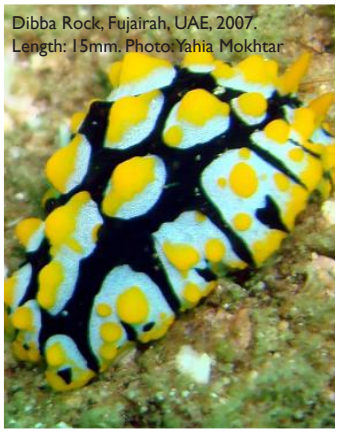
- Belongs to the Order Nudibranchia, meaning "with naked gills"
- Predator
- Specialized on predating sponges
- Diurnal organisms
- Simultaneous hermaphrodites, with internal fertilization

FUN FACTS

- Have spectacular and obvious color patterns for warning potential predators
- Can extend externally the pharyngeal bulb on or into the sponge
- It has been hypothesized that it uses the secondary metabolites of sponges to protect themselves from any potential predators
- Have shell and operculum that is lost in the adult stage
- Its most easily observed external feature is a ventral anus

Photo by Rita Bento

Red Sea, 1983, dorsal view of ca. 25 mm specimen. Photo: N. Yonow



Dibba Rock, Fujairah, UAE, 2007. Length: 15mm. Photo: Yahia Mokhtar

Reef off Hurghada, Red Sea coast of Egypt, 25m, 2002
Photo: Copyright Michael Mrutzek

ANSWERS TO **CORAL QUIZ**

1. **c.** Corals are microscopic tubular animals, called polyps. They have a mouth, surrounded by tentacles which they use to draw in food (mostly plankton) from the sea. They live next to each other in huge colonies.

2. **c.** The phylum cnidaria consists of about 10,000 species of simple animals found only in marine habitats. Species in cnidaria have special stinging cells called cnidocytes. Familiar animals in the phylum cnidaria are corals, sea anemones, jellyfish, sea wasps, sea pens, and sea pansies.

3. **d.** At night a coral polyp will stick its tentacles out of its vase and let the tentacles wave in the current. Then, when plankton floats by, the coral polyp stings them with its tentacles and brings the plankton inside its shell to have for lunch.

4. **b.** False, it occurs during the night. Corals can reproduce both sexually and asexually. An individual polyp may use both reproductive modes within its lifetime. In the case of sexual reproduction, the synchronous spawning occurs in many corals. Polyps release eggs and sperm into the water at the same time. This spawning method disperses eggs over a larger area. Synchronous spawning depends on four factors: time of the year, water temperature, and tidal and lunar cycles. Usually corals spawn (release eggs) annually in the spring, on the third through to the sixth night after a full moon.

5. **c.** Tiny algae live inside each polyp. These algae are called zooxanthellae and produce their food from sunlight, sharing it also with their host, the coral polyp. These algae that live within the tissues of some corals may make the coral appear brown, green, or orange.

6. **a.** The Australian Great Barrier Reef is the longest coral reef in the world, measuring 2011 km (1249 miles) in length and 72 km (45 miles) across, at its widest point. It is the only living mass visible from the moon.

7. **d.** Organisms responsible for building tropical coral reefs can only grow at 20-28°C, so although coral reefs live in all oceans, most are found between the Tropic of Capricorn and the Tropic of Cancer. The best growing habitat for coral reefs is a clear-water photic zone less than 50m deep where light shines down and microscopic algae can best provide photosynthesis for the corals.

8. **d.** Coral polyps secrete limestone (calcium carbonate) which forms the hard skeleton of a reef's overall structure.

9. **a.** Marine turtles, such as the green turtle, can often be found on reefs feeding and visiting cleaning stations. At these special points on the reef, fish gather and remove algae and parasites from the turtle's shell. Who needs anti-fouling?

10. **c.** Recent plagues of coral-eating crown of thorns starfish wiped out huge areas of coral. These starfish are highly venomous, so have few predators to control their numbers. One animal which can tackle them is the triton trumpet shell.

11. **a.** True. Tourists play a key role in protecting coral reefs as they give local people a reason to take care of them. Unfortunately, some tourists, directly harm reefs by taking corals or touching or stepping on them.

12. **d.** All of these materials have been used to create artificial reefs in the past. Just about any hard surface will be colonised by corals when sunk in an appropriate area. Today there are very strict rules about what can be used.

UPCOMING **EVENTS**

IYOR DIVES (every 1st Friday of the month until December 2008)

In celebration of the International Year of the Reef (IYOR) 2008, the Coral Reef Awareness and Monitoring Programme (CRAMP) volunteers are conducting reef monitoring at Dibba Rock every first Friday of the month until December of this year. Interested EDA members need to take the Eco-diver course before they can join CRAMP and the IYOR dives.

DIBBA MANAGEMENT PLAN DIVES (every Tue & Wed until Oct)

EDA is doing a management plan of Dibba Rock. Interested EDA members who want to join the EDA marine biologist on her weekly dives can contact: 04 393 9390.

CLEAN UP ARABIA

24-30 November 2008

ADRENALINE LIVE SPORTS

Abu Dhabi National Exhibition Centre, 13-15 November 2008.

EDA BEACH PARTY

December 2008

NOTICES

INTRODUCING EDA'S NEW **WEBSITE**

One has to say, a new website was truly well overdue. And here it is. EDA's very own brand spanking new site. Enjoy!

http://emiratesdiving.com/

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

Head of the Scientific Committee Mr. Mohd Al Salfa

Technical Adviser Mr. Ahmed bin Byat

EXECUTIVE TEAM

EDA Environmental Adviser
Ibrahim Al Zu'bi
Email: diving@emiratesdiving.com

EDA Marine Biologist
Rita Bento
Email: research@emiratesdiving.com

EDA Secretary
Racquel Valerio
Email: projects@emiratesdiving.com

EDA Events Coordinator
Ally Landes
Email: magazine@emiratesdiving.com

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.

CONTACT DETAILS

Emirates Diving Association
Heritage & Diving Village
Shindaga Area
P.O. Box: 33220
Dubai, UAE

Tel: +971 4 393 9390
Fax: +971 4 393 9391
Email: diving@emiratesdiving.com, projects@emiratesdiving.com
Website: http://emiratesdiving.com/

Acting on our environmental Responsibility

The Dubai Properties Group is committed to building sustainable environments. That is why we're increasing our level of environmental responsibility and encouraging people to use an eco-friendly approach to all aspects of life. Together, we can make our community a cleaner one to live in.

Advancing Horizons

MUBADARA
CORPORATE CITIZEN

DUBAI
PROPERTIES GROUP
A member of DUBAI HOLDING