EDA
جمعية الإمارات للغوص
Emirates Diving Association

DIVERS FOR THE ENVIRONMENT

DECEMBER 2009, VOLUME 5, ISSUE 4

DIVING AQABA
GARDENS OF LIGHT

SHARKQUEST ARABIA
CAN WE PREVENT THE DEMISE OF SHARKS?

MUSANDAM BIOSPHERE EXPEDITION

14th CLEAN UP ARABIA CAMPAIGN

ABU DHABI & FUJEIRAH

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THE GOLDEN TRIANGLE MULTI-CHALLENGE

11 - 20 FEBRUARY: NORTHERN THAILAND.

Kayak, cycle and trek 345km through the remote jungle and hill tribe villages of the Golden Triangle in Northern Thailand and raise funds for the Human Development Foundation's work with disadvantaged Thai children.

LEBANON MOUNTAIN ECO-TRAIL

(In the Footsteps of Khalil Gibran)

7 - 14 MAY: LEBANON.

A fabulous hike through the remote and culturally rich heights of Lebanon, with sweeping views from snow-capped mountains to the sparkling Mediterranean. Funds raised will support the Palestine Children's Relief Fund and SOS Children's Villages.

TREK TO THE ROOF OF AFRICA

1 - 10 JULY: MOUNT KILIMANJARO, TANZANIA.

This trek to the glaciated summit of Africa's highest mountain (5,892m) is one of G4G's toughest challenges, but well worth the effort. Funds raised will support the impoverished children of Tanzania cared for by Plan International.

THE REVOLUTIONARY RIDE

11 - 20 NOVEMBER: CUBA.

A fascinating cycling challenge following a historical route through rural Cuba from the Bay of Pigs, through Trinidad to Cienfuegos and exploring Havana. Funds raised will support the disadvantaged children of Cuba.

CHALLENGE YOURSELF - HELP OTHERS

All challenges include a visit to the charity to spend time with the children and, where appropriate, do some work to help them.

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CONTENTS

REGULARS

NEWS

CORAL NEWS

FEATURES

UW PHOTOGRAPHY

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 March 2010. Send all articles/comments to: magazine@emiratesdiving.com.

EDA COVER
PHOTO BY WARREN BAVERSTOCK

Please recycle this magazine after you have read it.

DIVERS CAN **MAKE A DIFFERENCE!**

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Our Clean up Arabia slogan this year as every year, is: "You can make a difference"! This is the slogan that I keep repeating at all the EDA Socials and events. To be honest, I sometimes stop and think about it. Do we really make a difference? I have to confess here that I sometimes, after a long tiring day, come close to saying, "There is no way I make any difference!", (the "I" here represents myself, all EDA members and even sometimes the activists working on the marine conservation!).

But as we are coming close to ending the year 2009, I look back at all our events this year and the years before, at EDA's increasing active members and to all the discussions I have had with divers I have randomly met while diving in and outside the UAE. One thing is clear, all divers genuinely want to protect and conserve the marine life! To put it in a simpler and probably more selfish way, we want to enjoy our dives! And without a healthy marine life, dives are boring, aren't they?

As you will read in this issue of the Clean Up Arabia coverage, divers organized clean up campaigns, kayaked to clean up mangrove areas and went on expeditions to film and protect sharks and to study the marine life. Even YOU reading this magazine is proof that we are all united in our attempt to make a difference. I hope that world leaders will do their part this coming December in Copenhagen in this defining and most crucial moment of the decade that will hopefully define our roles as countries and individuals in combating climate change.

We had an excellent Clean Up Arabia this year. EDA's committee in Abu Dhabi and all our members there managed to put Clean Up Arabia on the UAE's capital key activities agenda: Having the Patronage of Sheikh Hazza Bin Hamdan bin Zayed Al Nahyan and partnership with the Environment Agency in Abu Dhabi took this event to an even higher level this year. Divers and the community at large were involved for a whole week in an awareness program that promoted for the rich marine life that we have here.

Our members on the East Coast did a great job as well. Under the patronage of HH Sheikh Hamad Bin Mohammed Al Sharqi, Member of the Supreme Council – Ruler of Fujeirah and in collaboration with Dibba Municipality, EDA had another successful clean up day.

In addition to the dive sites we have here, you will also read about new dive sites in other countries. I believe that divers know no borders, especially underwater! EDA's magazine "Divers for the Environment" has become a platform to promote for diving destinations all over the world.

I would like to wish everyone a happy 38th UAE National Day! EDA will be celebrating the National day by publishing another valuable pearl diving cultural book, "The Men of Pearl Diving in the UAE", a book that has taken us more than six years of data collecting.

I also want to wish you Eid Adha Mubarak, Merry Christmas and a Happy New Year. I am looking forward to 2010, which I'm sure will be as exciting, fun and rewarding as this year.

"The sea, the great unifier, is man's only hope. Now, as never before, the old phrase has a literal meaning: we are all in the same boat."
By Oceanographer Jacques Yves Cousteau

Eco Regards,

Ibrahim Al-Zu'bi

EDA SOCIAL SUHOUR EVENING

The holy month of Ramadan is a special time of the year, when people gather with friends and family to break their fast and enjoy the Ramadan spirit.

EDA invited its members, partners and friends to join them for Suhour, which was held at the Layali tent in the Mina A Salam on Thursday 3rd of September.

Suhour is an Islamic term referring to the meal consumed before fasting. The meal is usually eaten as a late dinner or an early morning meal before dawn. This is to give the person sustenance until sunset when he/she can break their fast at Iftar.

The tent was decorative and designed with an Arabian theme. Soft Arabic music played in the background as people made their way in and in a short amount of time the tent was bustling with people who were seated either on the majlis style sofas or in the central dinner area.

The event gave EDA the opportunity to congratulate the Reef Check students, who passed the course and present them with their Reef Check cards.

A raffle draw was also held during the course of the evening. The grand prize was a 4 days/3 nights dive package for two in the Philippines, which was generously sponsored by Discover Orient Holidays. 4 lucky winners also won Reef Check courses and the rest of the winners announced were presented with chocolate hampers which were donated by Nestle.

Finally dinner was served, which consisted of several delectable dishes and the usual selection of Ramadan beverages.

PROJECT AWARE

FEATURE **ADELINE SHAK – BORNEO DIVERS TRAINING INSTITUTE** PHOTOGRAPHY **BORNEO DIVERS**

Borneo Divers Training Institute organised a Project Aware campaign on the 17th of October 2009.

We gathered 270 participants to walk our talk in protecting our environment, the Project Aware Foundation way. Our united effort and strong voice created a lot of awareness in the local community. Local media and relevant authorities have endorsed our program by the appreciation statement made by our honorable Assist Minister Datuk Ellron Alfred Angin and Datuk Suzannah Liaw Permanent Secretary to the Minister of Tourism ,Culture and Environment. The media published a write up and the detail results of the Project Aware campaign in six papers. Three of those in Chinese papers, the other three in English papers.

The total weight of garbage collected from underwater and from on the island was at 701.20 kg. On one hand, we were so happy to see the huge support from the government agencies and public, but on the other hand it was sad to see the amount of garbage collected. We are determined to do more Project Aware campaigns as often as we possibly can.

Borneo Divers And Sea Sports are planning a mega 2010 Project Aware campaign next year.

EVENT SUPPORTED BY:

- Sabah Park
- Tourism Malaysia
- Sabah Tourism Board
- Jabatan Pertahan Awam Malaysia (Civil Defense Ministry)
- Sutera Harbour Resort
- Treasure Image
- Seaquest Tours & Travel
- Raleigh International
- Kuchai Catering Services
- Sky Camario
- Blue Waters Dive Center
- All the volunteers

And last but not least, our entire team at Borneo Divers and Borneo Divers Training Institute for their wonderful support.

Advisor: Mr. Clement Lee
Chair Person: Ms. Theresa Tham
Event Organiser: Ms. Adeline Shak

FREEDIVING IN ABU DHABI

FEATURE **ALEX BOULTING** PHOTOGRAPHY **ADEL ABU HALIQA**

All children want to know how long they can hold their breath for. Whether this is driven by The Poseidon Adventure or Man From Atlantis, like flying, we have all thought what would it be like to swim endlessly underwater. Well, we can, to an extent, by freediving. Anyone who has held their breath underwater has freedived. For thousands of years people have freedived for pearls or simply for food. Freediving has particular importance for Abu Dhabi where pearls brought wealth to the region before oil. So how do freedivers manage to hold their breath for so long and dive so deep? Like diving mammals, humans have a dive reflex (the Mammalian Dive Reflex) which helps to conserve oxygen.

Our bodies achieve this by restricting the flow of blood to the extremities (arms and legs) and slowing our heart rate down. Amazingly freedivers have reported a 50% drop in their heart rates during a dive. Along with intensive training, the dive reflex has allowed freedivers to descend to depths of over 200 metres on a single breath hold. But how do their bodies cope with this depth? For years, doctors believed that our lungs would collapse if we descended further than around 30 metres. But freedivers proved them wrong. It was found that at depth, our blood shifts into the blood vessels around the lungs to compensate for the reduced lung volume allowing divers to go deeper. However there is still much to learn about freediving.

The surface breath-hold world record is over 11 minutes – but it takes less than 4 minutes to get to 200 metres and back – so where will it end? This is one of the attractions of freediving, it is a young sport and there is still a lot to be discovered. I freedive because I find it a relaxing sport that requires physical fitness, strength, flexibility and mental control. I try to keep my ribcage flexible and lungs strong using yoga and aerobic exercise but I also use anaerobic exercises to build up my tolerance to lactic acid which is critical in freediving where there is limited oxygen.

However, I find the most important aspect of training is mental control – trying to resist the temptation to breathe. You may think of freediving as an 'extreme' sport but it is the first sport I have tried where adrenaline is a 'no no'! In fact the first rule of Freediving after 'never dive alone' is 'Dive within your Limits'. A group of us who are AIDA qualified (AIDA is the Worldwide Federation for breath-hold diving) are trying to get people in Abu Dhabi interested in freediving and will be running some introductory courses over the next couple of months.

Early next year we have invited Emma Farrell, one of the world's leading freediving instructors, and the author of the inspiring book 'One Breath, a Reflection on Freediving' to run some 1 to 3 star AIDA courses here giving you the opportunity to become a qualified freediver.

So do you want to hold your breath for as long as Patrick Duffy? If you are interested please e-mail **alexboulting@fastmail.co.uk.**

IMAGES AT A GLANCE

EDA MEMBER: KARIM SAAD
DOLPHIN SITING AROUND BURJ AL ARAB 7:30AM

THE NEW CAGE EXPERIENCE AT DUBAI AQUARIUM & UNDERWATER ZOO

Come face to face with Grey Reef Sharks, Fan-tail rays, Cow nose rays and Giant Groupers in the new Cage Experience at Dubai Aquarium & Underwater Zoo.

The newly installed Perspex and metal cage descends into the Aquarium tank allowing snorkelers an inside view and interaction with the marine life without having any diver training.

Open to all, from school children to mall visitors to snorkeling enthusiasts, this is a great way for everyone to interact with over 33,000 aquatic animals at Dubai Aquarium. For some, this is an easy first contact with the underwater world.

The Cage Experience snorkeling program will start with a briefing and kitting up into your wetsuit with your mask and snorkel. Snorkelers will then enjoy a 20 minute snorkeling session inside the cage. This will be available from 30th October 2009, every half hour from 12 noon to 9:30pm daily. Cage experience tickets are priced at Dhs 225 per person.

For more information contact Al Boom Diving on: abdiving@emirates.net.ae or +971 (0)4 342 2993.

CONGRATS TO THE NEW PADI INSTRUCTORS

Francis Uy, Course Director at Al Boom Diving, and all of the Al Boom Dive Crew would like to congratulate the newly certified PADI instructors!

"This was a big Instructor Development Course!" said Francis. "Eleven instructor candidates took the challenge towards their dream career in diving!

The candidates were: Hussein Sherif Mourad; Wafaa Abu El Eniem; Al Prince Alwishy; Mohammed Alshahrani; Dhahi Binthalith; Rebecca Coleman; Christy Bawasanta; David Buck; Nicholas Brunette; Ryan James Clifton.

The Instructor Exam took place on the 16th and 17th of October at the Jebel Ali Golf Resort and Spa, lead by Instructor Examiner, Bruce Phillips, from PADI.

The instructor exam party was held at Cactus Cantina where all of the newly certified instructors enjoyed some well deserved relaxation time!

Al Boom Diving will hold an Assistant Instructor Course leading up to the next IDC and IE that will take place in March 2010. Contact Francis Uy at Al Boom Diving on: **francis@alboomdiving.ae.**

DISCOVER SCUBA DIVING
AT THE JEBEL ALI GOLF RESORT AND SPA

An ideal day out in the cooler weather, and a great idea for entertaining your visitors!

The Al Boom Diving bus will pick guests up from hotels in the Dubai Marina, Old Town, Sufouh and Sheikh Zayed Road and transfer them to the Jebel Ali Golf Resort and Spa where our PADI 5 Star Dive Resort is located.

After a quick intro to scuba in the classroom, guests head to the swimming pool to blow their first bubbles underwater! It is then time for the ocean dive on the house reef.
Discover the wonders of scuba diving in Dubai's clear warm waters, a perfect introduction for those who have always wanted to try diving under the professional supervision of a PADI instructor. Close to all of the Dubai hotels and attractions, take a day out to discover the underwater world of Dubai.

There is time for lunch at the Sports Café before collecting your souvenir photo and catching the Al Boom Diving bus back to the guest's hotel.

- PADI approved course
- Introduction to diving PADI video session
- Learn to control breathing, buoyancy, and basic safety
- Enjoy a 30 minute ocean dive with your instructor
- Lunch at the Sports Cafe is included
- Souvenir photo of your dive is included

Booking Restrictions:
Open 365 days a year, subject to availability
Anything the customer would need to bring with them:
Swimsuit, towel, a hat and sunscreen.

Other information:
Note: Customers must be in good health with no lung, sinus or heart problems; and must be a confident swimmer to participate. No refunds for bookings that cannot be completed due to these reasons.

Booking Contact: Al Boom Diving Call Centre
Email: abdiving@emirates.net.ae
Phone number: +971 (0)4 342 2993

Advertised Price: Dhs 800

TURTLES AT RAS AL JINZ

FEATURE AND PHOTOGRAPHY **PHILIPPE LECOMTE**

Summer is the time most of us go back to our home countries to visit our families. Summer time in the UAE means alot of hot weather and plenty of humidity.

But during this season, there is something very interesting to see for all the family right here.

Ras Al Jinz in our neighbouring Oman is one of the only places in the world where we can see turtles nesting grounds.

All year long, green turtles come onto the beach in order to deliver hundreds of eggs but it's especially during June, July and August that they come by the hundreds on the beach every night.

Ras Al Jinz is in Oman next to Sur, a beautiful fishing village. Sleeping in Sur is a good deal, but now you can also sleep at a new hotel just before the beach of Ras Al Jinz.

Being just several minutes from the beach is fantastic. You should go between 8pm and 11pm with the two guides. The beach is private and belongs to the national park and you cannot access the site on your own. You also have a chance to see the turtles early in the morning and see the beautiful sunrise. In the morning time you have some chances of seeing the babies leave their nest and scramble to get to the ocean in order to avoid being eaten by a fox, seagulls or crabs.

Going to Ras Al Jinz is a great experience for all the family and the children. You will see and understand the start of a turtles long and hard life of survival.

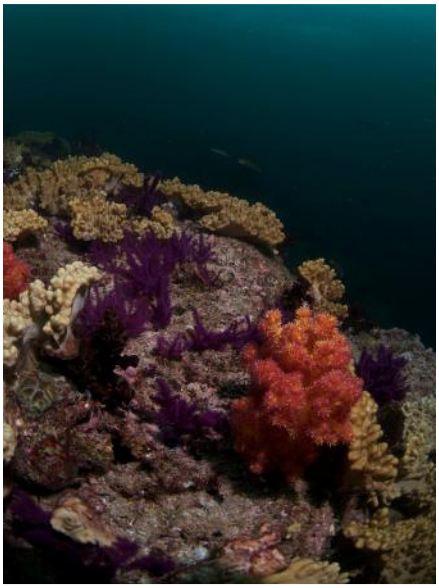
DOOM AND BOOM ON A RESILIENT REEF:
CLIMATE CHANGE, ALGAL OVERGROWTH AND CORAL RECOVERY

FEATURE **GUILLERMO DIAZ-PULIDO, LAURENCE J. MCCOOK, SOPHIE DOVE, RAY BERKELMANS, GEORGE ROFF, DAVID I. KLINE, SCARLA WEEKS, RICHARD D. EVANS, DAVID H. WILLIAMSON, OVE HOEGH-GULDBERG** PHOTOGRAPHY **MARCELO MARIOZI**

Coral reefs are among the most biologically diverse and economically important ecosystems. However, reefs are rapidly degrading at a global scale, due to a combination of pressures, including climate change, overexploitation, coral diseases, and declining water quality. Rising ocean temperatures have triggered mass coral bleaching events that have devastated many coral reefs around the world and caused ecological phase or state shifts, from coral-dominance to dominance by seaweeds (fleshy algae). Current climate change models suggest increasing frequency and severity of mass coral bleaching events, so that phase shifts to algal dominated states are expected to occur more frequently and last longer.

Critically, the recovery of degraded reefs depends on the reversibility of seaweed dominance. However, all previously documented cases have found dominance by seaweeds difficult to reverse, because the algae prevent settlement of new corals, and because the algae persist, usually due to overfishing or mass mortality of key herbivorous species and to relative unpalatability of algae to herbivores. Examples of natural reversals from algal dominance to coral dominated states are extremely rare and take years to decades to occur. Rapid reversals from algal dominated states to dominance by corals and small algae have only been demonstrated at a very small scale after experimentally induced herbivore exclusion. In that experiment, artificially enhanced algal biomass was rapidly consumed by grazers upon removal of exclusion cages, and reef recovery was dependent on recovery of herbivory, a process extrinsic to the corals and algae.

Inshore, high latitude coral reefs of the largest reef system in the world, the Great Barrier Reef (GBR), Australia, suffered severe mass bleaching of coral in early 2006. Reefs in the area exhibit low coral species diversity and are widely dominated by Acropora corals, with branching Acropora accounting for more than 90% of the coral species. Sea surface temperatures in the inshore reefs of the Keppel Islands in the southern GBR rose rapidly in late 2005, with some locations reaching temperatures in December that are not normally found until February. The onset of high sea temperatures early in the season triggered coral bleaching by mid January 2006. Overall, bleaching damage was severe, affecting 77–95% of coral colonies. The purpose of this study, conducted by Guillermo Diaz-Pulido et al, was to document some novel mechanisms for coral reef resilience based on changes in coral and seaweed abundance following the 2006 mass coral bleaching event that affected reefs of the Keppel Islands.



This coral mortality was followed by an unprecedented bloom of a single species of unpalatable seaweed (Lobophora variegata), colonizing dead coral skeletons, but that corals on these reefs recovered dramatically, in less than a year. Unexpectedly, this rapid reversal did not involve reestablishment of corals by recruitment of coral larvae, as often assumed, but depended on several ecological mechanisms previously underestimated.

These mechanisms of ecological recovery included rapid regeneration rates of remnant coral tissue, very high competitive ability of the corals allowing them to out-compete the seaweed, a natural seasonal decline in the particular species of dominant seaweed, and an effective marine protected area system. This study provides a key example of the doom and boom of a highly resilient reef, and new insights into the variability and mechanisms of reef resilience under rapid climate change.

NOTE: *This is a resume of the paper "Diaz-Pulido, G., L.J. McCook, S. Dove, R. Berkelmans, G. Roff, D.I. Kline, S. Weeks, R.D. Evans, D.H. Williamson and O. Hoegh-Guldberg, 2009 Doom and Boom on a Resilient Reef: Climate Change, Algal Overgrowth and Coral Recovery PLoS ONE 4(4): e5239. doi:10.1371/journal.pone.0005239".*

If you want to receive a copy of the full article please send a request to:
research@emiratesdiving.com

STATUS NOW AND **PREDICITIONS FOR THE FUTURE**

FEATURE **CLIVE WILKINSON (IN STATUS OF CORAL REEFS OF THE WORLD: 2008)**
PHOTOGRAPHY **MARCELO MARIOZI**

The Global Coral Reef Monitoring Network (GCRMN) has used the reports from 372 authors and contributors to assess the current status of the world's coral reefs and make predictions about the future of reefs out to 40 years from now. There are contrasting trends: reefs are recovering from the massive bleaching losses in 1998 in the Indian Ocean and Western Pacific; however, there were similar scale bleaching losses in the wider Caribbean in 2005 and 2006; direct human pressures are resulting in chronic losses on coral reefs near major population centres; while effective coral reef management is reducing threats in a number of countries.

REEFS EFFECTIVELY LOST: Expert opinion backed by extensive monitoring and assessment data suggest that the world has lost the goods and services provided by 19% of the global coral reef area. These reefs are either so heavily degraded as to be non-functional, or have been polluted or mined out of existence. The comparable figure was 20% in 2004. The decrease of 1% is due to strong coral reef recovery particularly in the Indian Ocean and Western Pacific after the devastating bleaching in 1998. However, recovery is stalled or weak where there are substantial human pressures (over-fishing, pollution, sedimentation and unwise development). Countering that, there were major losses in the wider Caribbean following similarly devastating bleaching, coral diseases and hurricanes in 2005, compounded by on-going degradation from sediment and nutrient pollution and over-fishing and associated damage. Reefs in the heavily populated areas of Asia and the wider Caribbean report most losses. Reefs in the Persian Gulf have been devastated by major coral bleaching events and recently by extensive coastal developments along the Arabian Peninsula. Many reefs in this category are not irretrievably lost and will recover if human stresses can be reduced or if the devastating impacts of coral bleaching, diseases and predators are not repeated in the short-term.

Predictions about the future of coral reefs are particularly difficult as multiple stresses and climate factors impinge on reefs. Thus, we recommend that these predictions be used as a guide, particularly for national, international and funding decision makers to establish priorities for action. These predictions are made on a 'business as usual' assumption that there will be no major improvements in remedial management action and not considering the looming threats posed by global climate change. This latter assumption effectively ignores the growing global consensus that climate change seriously threatens the medium to long-term future for the world's coral reefs.

REEFS AT THE CRITICAL STAGE: It is predicted that 15% of the world's coral reefs are under imminent threat of joining the 'Effectively Lost' category within the next 10-20 years, unless effective management actions are implemented. These predictions are based on observed trends over the past decade, on demographic increases in human population pressures, and assessments of the effectiveness of current management. The regions with most 'Critical Stage' reefs have not changed from 2004 (predominantly Eastern Africa, South and South-east Asia and the wider Caribbean), where human pressures are regarded as high and increasing in the regional chapters below. This is a decrease from the 2004 estimate of 24% critically threatened.

If current predictions from the Intergovernmental Panel on Climate Change and coral reef experts are factored into these assessments, this category or the next (threatened) will contain all of the remaining coral reefs. This is why urgent action is needed to drastically reduce the emissions of greenhouse gases.

REEFS AT THE THREATENED STAGE: The predictions are that 20% of reefs are under threat of loss in 20-40 years; again with the caveat that management will be ineffective at reversing growing demographic pressures. The location of these 'Threatened' reefs is similar to the Critical Stage reefs, and includes those a little more remote from human disturbances or 'next in line' for serious exploitation of development. This is a decrease from the Threatened state in 2004 of 26%.

REEFS AT LOW RISK: Fortunately, the regional experts consider that 46% of the world's reefs are either stable or recovering rapidly and not threatened by significant levels of human stresses. Most of these reefs are either well managed such as the Great Barrier Reef, Bonaire, Bermuda, the Flower Garden Banks and Cuba, or remote from large land masses and human disturbances such as the Red Sea, the Maldives, Seychelles and Chagos in the Indian Ocean, and Papua New Guinea and many small atolls and islands in the Pacific Ocean, along with a few reefs in the wider Caribbean and Atlantic Ocean. The comparable figure was 30% in 2004, with the differences mainly being reefs that have recovered after the 1998 bleaching and the discovery of large areas of deeper reefs, especially in the Northern Caribbean.

CAVEATS: These status assessments and predictions are based on considerable monitoring data using a range of methods, varying from very detailed species level monitoring to rapid monitoring by trained volunteers. However, it is recognised that monitoring in many countries only covers a small and unrepresentative proportion of the reefs, such that the monitoring data are inadequate for a quantitative assessment. In these cases we have relied on qualitative assessments based on the expert opinion of national and visiting scientists, complemented by information from professional dive guides.

Reefs categorised as lost are not effectively functioning as coral reefs and exhibit many of these criteria: live coral cover has declined radically (to below 5%); many remaining corals are either broken, diseased or covered in sediment; fish populations are seriously over-fished with very few large predators and algal grazing fish; there is clear evidence of pollution with poor quality turbid water; and the reefs are being over-grown with macro-algae, sponges or other organisms favoured by polluted waters. Another caveat is that the predictions of 'Threatened' and 'Critical' are based predominantly on future human stresses, without considering the threats of global climate change, predicted to be inevitable but without clear timelines. We have assessed the validity of regional assessments in the Table.

MONITORING LEVEL (%)

REGION	HIGH LEVEL	MEDIUM LEVEL	LOWER LEVEL	COVERAGE	CONFIDENCE LEVEL
Cold water reefs				Minimal	Fair
Red Sea	10	30	60	Low to Moderate	Fair
The Gulfs	10	30	60	Low to Moderate	Fair
Eastern Africa	25	35	40	Moderate to High	Moderate
SW Indian Ocean	30	40	30	Moderate to High	Moderate
South Asia	30	20	50	Moderate to High	Moderate
SE Asia	40	40	20	Low to High	Moderate
E & N Asia	35	30	35	Moderate to High	Moderate
Australia,	60	25	15	Extensive & High	High
Papua New Guinea	5	10	85	Low	Fair
SW Pacific Islands	25	35	40	Moderate to High	Moderate
Polynesian Islands	25	25	50	Low to High	Fair
Micronesian Islands	35	30	35	Moderate to High	Fair
Hawaiian Islands	65	35	10	Extensive & High	High
US Caribbean	85	10	5	Extensive & High	High
North Caribbean	35	25	40	Low to High	Moderate
Central America	40	35	25	Low to High	Moderate
Lesser Antilles	20	30	50	Low to Moderate	Fair
S Tropical America	30	40	30	Moderate	Moderate

This table summarises the extent of data collection and an assessment of the reliability of methods used to generate the data in coral reef countries and states around the world. Three levels of monitoring are recognised: High Level at species/genus level for corals and fish with high level reliability and repeatability, usually performed by trained scientists; Medium Level at 'lifeform' or similar category with moderate to high reliability and possibly with irregular repetitions, and performed by scientists or well trained volunteers and dive operators; and Lower Level, either performed with timed swims or manta tow, or employing semi-trained volunteers, this category also indicates that large areas have not been observed. The Coverage details the extent of monitoring within the country that feeds into the Confidence category, which is a subjective assessment of the confidence that can be placed on these assessments.

CORALS CLIMATE CHANGE – HEROES

FEATURE **TANZEED ALAM AND TAMARA WITHERS**

هيئة البيئة - أبوظبي
Environment Agency- ABU DHABI

Our climate is changing at unprecedented rates as a result of humans burning fossil fuels and releasing increasing quantities of heat trapping greenhouse gases into the atmosphere. According to the 2008 Arab Forum for Environment and Development, this region is considered to be highly vulnerable to climate change impacts: temperatures are predicted to rise 2°C-5°C, there will be a decrease in precipitation, an increased level of weather variability, and more frequent extreme weather events. This will affect people and our marine environment, which house the 'murjan' (corals) or 'jewels of the sea'.

While the issue of climate change can seem daunting and disempowering, there is a lot that society can do through conservation and action to reduce our carbon footprint and mitigate the effects of climate change. In this article, we discuss coral reefs and climate change, as well as important EWS-WWF programs that are harnessing the efforts of individuals, government, and business to tackle climate change (Heroes of the UAE campaign) and preserve UAE's valuable ecosystems (Coral reef mapping project).

The Arabian Sea, including the Arabian Gulf is a marine priority ecoregion for conservation and is classified as "Critically Endangered." It is part of WWF's "Global 200" – the most biologically distinct ecoregions of the planet, which includes 142 terrestrial, 53 freshwater and 43 marine priority ecoregions for conservation.

The Arabian Gulf is one of the areas that are most severely affected by the loss and degradation of coral reefs – 30% of the coral reefs are at a threatened-critical stage and up to 65% of the coral reefs may have been lost already due to disease, oil pollution, unmanaged coastal development, and unregulated commercial fishing and diving. And now they are facing additional risk from climate change, such as bleaching from warmer sea temperatures, sea-level rise, and also ocean acidification as a result of increasing levels of atmospheric carbon dioxide. This region has already seen more frequent coral bleaching events, which are likely due to the rise in sea surface water temperatures. The coral reefs off the coast of Abu Dhabi suffered very severe episodes of coral bleaching in 1996, 1998, 2002, and 2006. Live coral covers declined by more than three-quarters in some reefs, although recovery is now beginning to take place. The combination of pressures threatens many of the biodiversity and economical benefits provided by coral reefs – such as shore protection, erosion prevention, fisheries habitats, nutrient cycling and tourism.

Programs that reduce the overall stress on corals have demonstrated the ability to reduce climate change impacts on coral reefs. With other stresses reduced, coral polyps demonstrate an improved resilience to increased temperature, which can allow time for natural adaptation to temperature tolerant species and deeper water. Coral reef conservation and management requires a number of different programs to tackle the wide range of threats to coral reefs in order to preserve their environmental and economic values. Two programs at EWS-WWF are contributing to conserving this important ecosystem and national treasure: the first is our coral reef program, which aims to conserve and protect corals; the second is the Heroes of the UAE campaign, which aims to reduce our carbon footprint and help reduce the magnitude of climate change that we are predicted to face.

EWS-WWF's Coral Reef Project in Eastern Qatar and Abu Dhabi sought to assist relevant regional governments and non-government agencies in the development and implementation of a comprehensive conservation strategy for coral reefs in the Arabian Gulf that takes into account the specificity of the habitat and its importance for the local community and biodiversity. It also aimed to increase regional awareness of the importance and uniqueness of coral reef habitats for the region. The project installed monitoring stations, collected and analyzed specific site data, developed a coral reef management plan, built local capacity among Emirati and Qatari nationals, and a comprehensive report and map on the distribution, status and threats on coral reefs between Eastern Qatar and Abu Dhabi

In light of the great success of the Eastern Qatar and Abu Dhabi coral reef project, EWS-WWF is working with the Emirate of Fujairah to conduct a similar project for the coastal reef habitats of Fujairah. The primary objective of this project is to develop and advance the conservation, management and sustainable use of coastal reef habitats in the waters off the Emirate of Fujairah through the provision of biological, ecological and socio-economical information of these habitats. Representative coral reefs will be selected utilizing information gathered during the project pertaining to inventories and map the coral reefs and will also draw on past studies made in the project area. Efforts will be made to have an equal representation between: shallow reefs and deep reefs.

The installation of permanent monitoring stations will be helpful to record the environmental parameters (salinity, temperature) and the coral growth through the years and give indications on the health status of Fujairah coral reefs.

The proposed project will first map and assess the status of coastal marine habitats in the Emirate of Fujairah as a critical step towards developing a comprehensive program for the conservation and management of these vital resources for biodiversity, fishery and tourism and propose management options for the marine protected areas already in place.

Reducing carbon emissions also plays an important role in coral reef conservation and more generally to tackle climate change. The Heroes of the UAE campaign, developed by EWS-WWF in partnership with the Environmental Agency of Abu Dhabi (EAD), involves all sectors of society – the public, schools, businesses and government – in being a part of the climate solution! The campaign aims to inspire UAE residents to reduce their energy consumption and, in doing so, help lower the country's ecological footprint and participate in global efforts to tackle climate change.

The Heroes campaign offers EDA members an opportunity to get involved locally to make a difference globally. EDA members are invited to join the campaign, organize their own awareness events, and tell EWS about it! Joining the campaign is as simple as visiting www.heroesoftheuae.ae – where people can learn about the association between energy use and climate change, find energy saving tips, calculate their own carbon footprint with a UAE-specific carbon calculator, and pledge to reduce their energy use. The Heroes campaign also seeks to bring communities together to learn and share experiences through case studies that document how people and communities are reducing their carbon footprint; as well as hosting public events, such as lectures and workshops. Over the coming months there will be specific phases targeting schools, businesses, the government and also the public about water conservation.

Climate change knows no boundaries and will affect us wherever we are (UAE or otherwise). So please show your commitment and join heroesoftheuae.ae and pledge your support. The power is in your hands – save energy, save our future and save our environment.

Maher Beydoun. Aged 8. Took the cool headed decision to switch the water heater off.

A sustainable UAE
Every child's
right

Most immersion heaters only need about 20 minutes to give enough hot water for a shower. So please keep yours switched off until you need it.

Help Maher and the UAE to save energy and protect the environment. Visit our website to see how a few simple steps can save you up to AED 2,200 a year.

Join **heroesoftheuae.ae** to save energy, money and the UAE.

EWS WWF

Photos courtesy of GASCO.
Group at Mirfa clean up site.

PADDLE AND DIVE FOR TRASH
CLEAN UP ARABIA 2009 (ABU DHABI)

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

This year's Clean Up Arabia in Abu Dhabi was supported under the patronage of His Highness Sheikh Hazza Bin Hamdan Al Nahyan from the 15th to 21st of November. It was a busy week of activities starting with a Marine Talk hosted by ADMA-OPCO in their 350 seat capacity auditorium on the 15th of November. Dr. Himansu Das, Associate Scientist from the Biodiversity Management of Marine Sector – Endangered Species division of the Environment Agency of Abu Dhabi (EAD) talked about the current status of the sea turtles and dugongs, their behaviour and habitats and the threats to their survival within our coastal waters. Both are listed on the endangered species list of CITES and vulnerable list in the IUCN conservation status. Dr. Das emphasized the urgent need to protect these flagship species and their habitats because at least 80% of them live and forage within Abu Dhabi waters especially in the Marawah Biosphere Marine Protected Area thus enabling the stability of their population. By keeping the coastal waters clean of harmful debris, these marine lives can increase their chances of survival in the UAE. Following Dr. Das, Ms. Suaad Al Harthi, assistant scientist from the Coastal Management division of the Biodiversity Management of Marine Sector of EAD presented her topic on Marawah Marine Biosphere Reserve (MMBR), the ecosystems in this reserve and the various habitats it encompasses. The 3 Marine Protected Areas (MPAs) in Abu Dhabi include MMBR, Bulsyayeef (from 2007) and Al Yasat (from 2005). The core areas of the MMBR are restricted to scientific research and non-destructive sampling activities while transition areas allow a certain amount of monitored activities like traditional fishing, recreational activities and oil loading terminal activities. Ms. Al Harthi also described the five habitats of the MMBR which includes the sabkha, coastal sand dunes, Intertidal mudflats and salt marshes, mangroves, sea grass meadows and coral reefs and how they benefit the coastal areas. She also emphasized the importance of protecting these valuable habitats as they are homes and feeding and nursery grounds to a variety of marine life and migratory birds. The final presentation was "Marine Archaeology of the UAE" presented by Dr. Mark Beech, Cultural Landscapes Manager of the Historic Environment Department, Abu Dhabi Authority for Culture and Heritage. Topics included the origins and pioneers of underwater archaeology, methods and techniques of marine archaeology, good practice for prudent divers who find potential archaeological sites, current and upcoming legislation and conservation and storage and publication and interesting case studies of marine archaeology within the UAE and the surrounding regions. Dr. Beech told divers to look for ways to document the "not-so-old" off shore wrecks and to report to the authorities any historical sites encountered; for example, stone anchors within UAE waters.

On the 20th of November, the screening of "Abu Dhabi: Home of the Legendary Mermaids" at Cinestar, Marina Mall attracted a large audience including our Abu Dhabi patron, HH Sheikh Hazza bin Hamdan Al Nahyan. The fascinating documentary is based on the research conducted by the Environment Agency Abu Dhabi and its conservation efforts to protect and preserve the habitat and the dugong population within the UAE and surrounding regions. The film also interviews dugong experts from around the world and highlights its behaviour and anatomy with fantastic high definition footage of the shy and rarely encountered dugongs in Abu Dhabi waters.

Clean Up Arabia events continued on the the 19th of November with Kid's Marine Day held at the Abu Dhabi Corniche Public Beach. Hundreds of children and their families attended this "fun-tastic" event. EAD's environmental awareness and education division organized the many children's activities to build public awareness of the negative impact of marine debris. Activities included a Treasure Hunt on the beach with Petroleum Institute student volunteers leading the teams with marine debris questions. Other activities included a beach cleanup lead by EAD's Environment Education Specialist, Ms. Gayatri Raghwa, an Arabic story telling corner, a coloring corner, a matching and learning game about endangered marine species and a painting corner of the habitats, a face painting corner and a marine animal slide show. Excited and enthusiastic children also lined up in front of the microphone to tell the public an "environmental message" and received a well deserved souvenir from GASCO. Abu Dhabi Municipality and Veolia personnel were present to assist in the beach clean up and to recycle any plastic, tin or paper trash the kids' collected.

On Friday the 20th of November, over a hundred volunteers including the American Community School's Girl Scouts Troops and Facebook group Abu Dhabi Volunteers met at the Eastern Corniche Dolphin Fountain Park

to clean the beaches and the mangroves of any trash. Noukhada Adventure Company hosted the "sit-on-top" stable and colorful kayaks to the volunteers. Kayakers paddled into the eastern Corniche mangroves and walked through the muddy banks to collect a huge amount of garbage. Between the beach and mangrove clean up, an estimated 5,000 cigarette butts, 2,000 plastic food containers, 1,200 cans, many meters of irrigation pipes and construction materials, remains of a washing machine, a large waste bin, a huge truck tire and many other marine debris were picked up. The Abu Dhabi Center for Waste Management personnel were also present to help take the garbage for recycling. Volunteers brought their own refillable water containers to rehydrate themselves because only hydration stations were provided.

On the final day, over two hundred and fifty volunteers and divers met at Al Mirfa Corniche Public Beach to conduct the beach and underwater clean up. Several dive clubs including GASCO, ADMA and Borouge took the plunge into the refreshing waters in Al Mirfa's fisherman port. HH Sheikh Hazza also splashed for trash and dived in the port area. Mirfa Hotel staff joined by Mirfa Municipality and school children and families participated in the beach clean up portion. An estimated 800kg of trash was collected and again the top three types of debris were approximately 2,000 cigarette butts, 455 plastic beverage bottles, 340 beverage cans, several hundred food wrapper containers and lots of abandoned fishing lines and construction materials. The worst type of trash pulled out by divers were an old car battery, two large cans of paint and fiberglass drums and two sign boards. Following the clean up, GASCO hosted a tasty buffet for the hungry and tired divers.

On behalf of EDA Abu Dhabi, we would like to acknowledge the wonderful partnership of Environment Agency Abu Dhabi in making this year's Clean Up Arabia in Abu Dhabi a huge success. In addition other partners include Abu Dhabi Municipality, Al Mirfa Muncipality, GASCO, Noukhada Adventure Company, ADMA-OPCO, Al Mirfa Hotel, Masaood Marine, Abu Dhabi Volunteers and CNIA.

Let's keep our shorelines clean and beautiful!

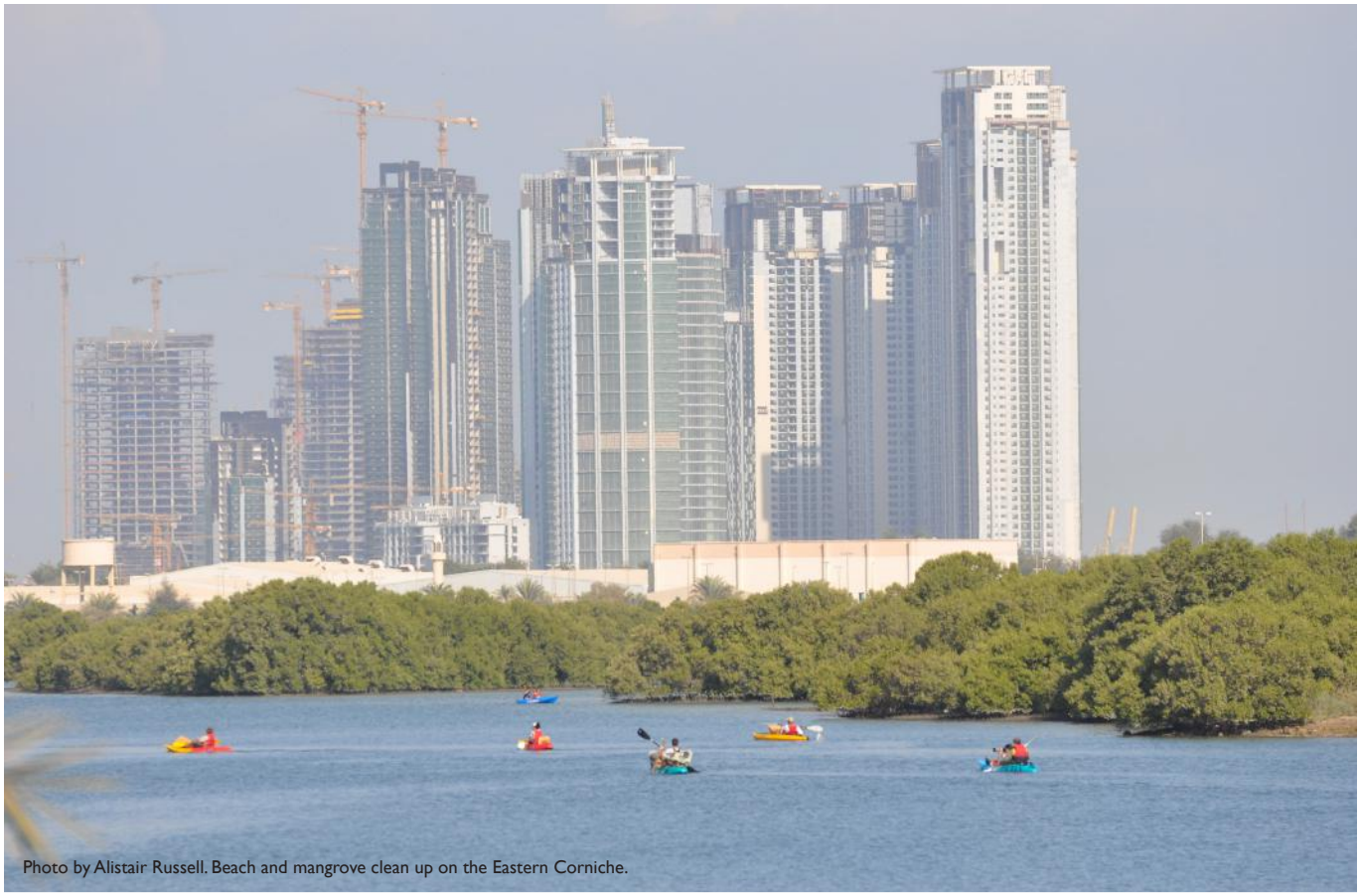


Photo by Alistair Russell. Beach and mangrove clean up on the Eastern Corniche.

Photo by Alistair Russell

Photo by Alistair Russell

Photo by Alistair Russell

Photo by Alex Collin. Kid's Marine Day.

Photo by Alex Collin. HH Sheikh Hazza bin Hamdan Al Nahyan, future environmental leader "splashing for trash".

14th ANNUAL **CLEAN UP ARABIA** CAMPAIGN **2009**

FEATURE **EDA** PHOTOGRAPHY **ALLY LANDES**

On Saturday the 21st of November at 8:30 am, EDA volunteers gathered in Dibba Al Fujeirah at Le Meridien Al Aqah to participate in the 14th annual clean up Arabia campaign.

Coffee and snacks were served as people registered for the event. There was a choice of either a beach or underwater clean-up. After a short press conference, everybody collected their bags, t-shirts, caps & gloves and got on with the task in hand. Divers were directed to their designated boats whilst the beach clean up crew were directed to the open beaches on either side of the hotel.

After the beaches were combed and the divers returned, the bags were collected and weighed. Everyone gathered for a group photo, and then proceeded to the well-deserved lunch buffet.

A beach volleyball tournament also took place as part of the day's activities. 6 teams participated: Dubai Duty Free, FSDC, Al Boom, KHDA, EDA and Le Meridien Al Aqah. Everyone cheered as they watched the teams battle it out for the first place trophy. At the end of the tournament, Dubai Duty Free took first place, Le Meridien Al Aqah came second and Third place was shared by KHDA and EDA.

It was a great day out, a yearly reunion for some of the familiar faces and everyone walked away with the sense of another great achievment toward helping out their planet just that little bit more.




DIVE
OUR OCEANS
95% OF THE UNDERWATER WORLD REMAINS UNEXPLORED














NAKHEEL FILM

FEATURE **JANA MURRAY** PHOTOGRAPHY **SANDY CHESTNUT**

There's been much debate in recent years over Nakheel's coastal developments and their impact on the marine environment. Due to ongoing construction work, the waters around the projects, which include Palm Jumeirah, are not yet accessible to divers, but the Liquid Light underwater filming and photography team recently had the rare opportunity to dive in.

Nakheel's Environment Department first contacted us in mid 2008 to brief us on an intriguing new project. They wanted to produce a documentary style film that showed in an honest, unembellished way how the ecosystems and marine life were developing on their coastal developments. The film was to be shot in High Definition, with the main locations at the breakwaters of Palm Jumeirah, The World and Jebel Ali Port.

To complement the video and for publicity use, a set of high resolution stills was also commissioned, shot on the Canon 5D, using a 17-40 mm ultra-wide zoom lens and a 60mm macro lens.

Nakheel's new coastal projects use locally sourced natural rocks for breakwaters, rather than conventional concrete structures. The coral species of the Arabian Gulf adapt well to the chemical properties of the rocks and over time many different coral species grow on them. Our aim was to illustrate how healthy coral quickly develops and becomes established over a number of years.

Our first dive was in Jebel Ali Port, a good starting point as the coral is 25 years old and mature. We saw many different coral species there, providing a good indication of what we can expect to see on the other sites in the future. At Palm Jumeirah the coral is developing well after 4 years. At the World, the rocks have only recently been laid so coral hasn't had much of a chance to grow yet. Despite this, the site was full of fish! When we first descended about 20 barracuda started circling us.

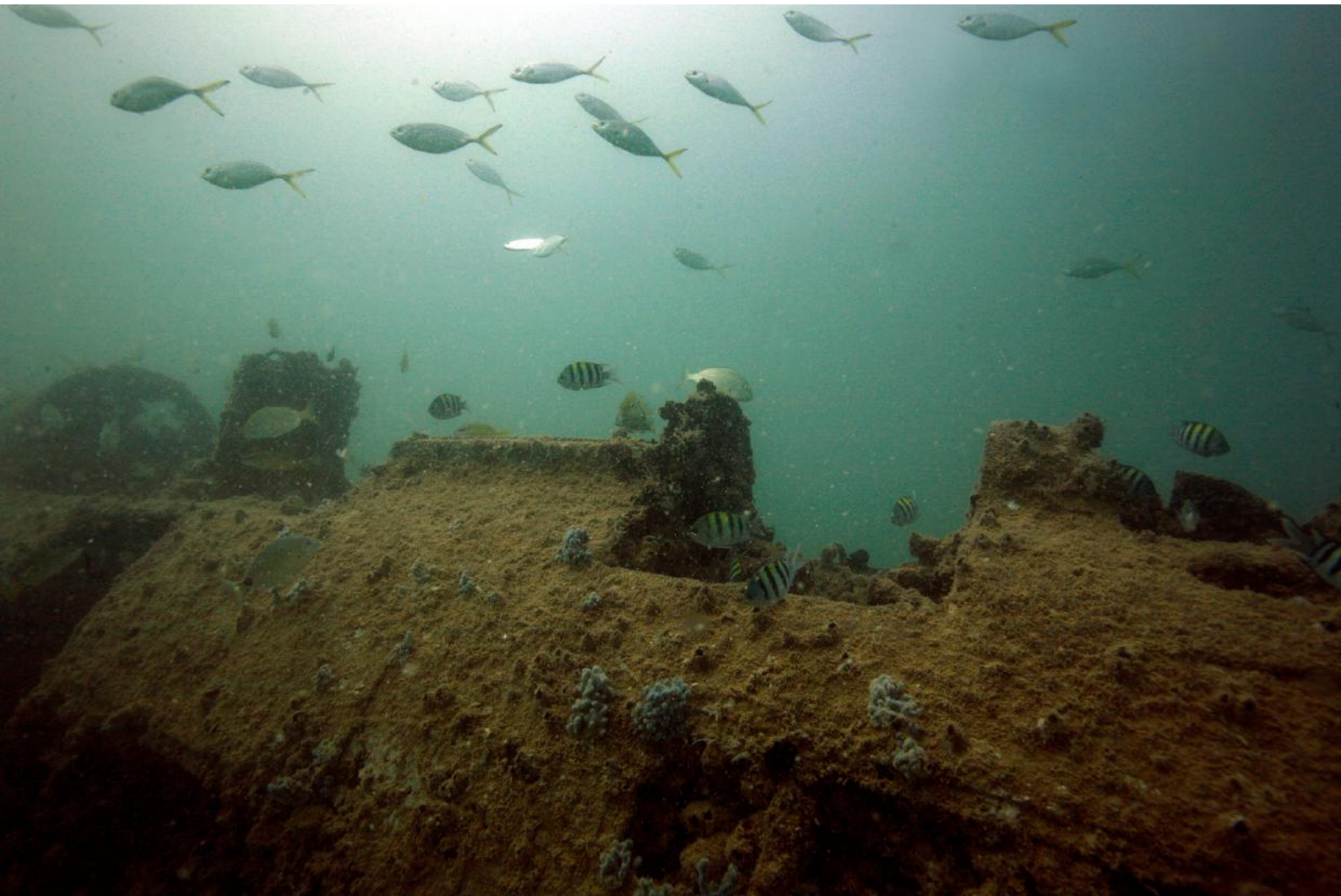
Like many divers in the UAE, we were curious about what we might see on Nakheel's developments and Sandy, our underwater photographer, and I were both surprised by the number and diversity of marine species on all of the sites. We saw Arabian angelfish, parrotfish, large shoals of snapper and sergeant majors, sweetlips, sea bream, goat fish and grouper.

There were also some signs of marine mammals in Jebel Ali. We'd been told there were turtles and dugongs on the sea grass beds and we did see some dugong droppings, but dugongs are notoriously shy creatures and we needed more time than we had allocated to catch them on camera.

With the dugongs being uncooperative, our favourite dive site was "The Jets", an artificial reef created by Nakheel in 2004 by placing two thoroughly cleaned F100 Super Sabre fighter jets on the seabed. There's been much talk about this site amongst divers but sadly the site has not been opened for public diving. The reason Nakheel gave us for this was the strong currents at the site, located as it is in open water off Palm Jumeirah. We did find it difficult to get onto the planes, but when we finally managed we were rewarded by lots of underwater action. There were large shoals of pelagic species hunting and circling the planes and these included fusiliers and jacks as well as some large barracuda. At one point we saw a shoal of sardines that was so large it practically obscured one of the planes.

With no shortage of fish around, finding willing subjects to film was the easy part. More challenging from a filming and photography perspective was the clarity of the water. Because of all the coastal developments in the region and high nutrient levels, the clarity of the water in the Arabian Gulf is generally not very good unless you go a long way offshore. Average visibility is 5-8 metres but in adverse conditions (after a storm) it can be as little as 1 metre. In this case you can barely see your hand, let along your subject!

To overcome this, shoots were planned to coincide with periods of good visibility and filming was spread out over a long period. The Nakheel Environment team, who dive regularly on the sites, monitored the water clarity and scheduled the shoots when the visibility looked like it might be good, but there were no guarantees. A few dives were cancelled at the last minute due to poor weather.



When poor visibility causes low light conditions, it can be particularly challenging for underwater photography. To meet the client's requirement for 'panoramic shots', Sandy had to use high 'f' stops to achieve adequate depth of field, and high ISOs to get a fast enough shutter speed to achieve sharp subjects. This is particularly important with fast moving fish!

Despite the challenges and the less than perfect visibility, we were happy with the results. Nakheel's Environment team is using the video and stills for a variety of purposes, from presentations to exhibitions. The public can also view the film on the Nakheel website.

Once all the construction work is complete the sites may be opened to the public, providing an opportunity for the UAE diving community to witness the excellent variety of coral and marine life firsthand.

Liquid Light is the underwater filming and photography division of Seraph Production FZ-LLC, a Dubai Media City based film production company.
Jana Murray is a producer and underwater filmmaker.
For more information about Liquid Light check out:
http://www.seraphproduction.com/services/underwater-filming
To watch the Nakheel film go to:
http://www.seraphproduction.com/seraph-produces-marine-doctumentary-for-nakheel

EDA QUIZ
GROUPERS

ANSWERS FOUND ON PAGE 66

1. Grouper belong to the family
   a) Scaridae
   b) Serranidae
   c) Lutjanidae
   d) Labridae
2. The groupers family have how many species?
   a) <100
   b)100-250
   c) 250-350
   d) >350
3. Groupers can attain maximum length up to:
   a) 1m
   b) 2m
   c) 3 m
   d) 4m
4. Groupers can weigh up to:
   a) 200 kg
   b) 300 kg
   c) 400 kg
   d) 500 kg
5. How many groupers are Vulnerable according to IUCN Red List 2009?
   a) < 5
   b) 6-10
   c) 11-15
   d) >15
6. How mane groupers are Neat Threatened according to IUCN Red List 2009?
   a) < 5
   b) 6-10
   c) 11-15
   d) >15
7. How many groupers are Endangered according to IUCN Red List 2009?
   a) < 5
   b) 6-10
   c) 11-15
   d) >15
8. How many groupers are Critically Endangered according to IUCN Red List 2009?
   a) < 5
   b) 6-10
   c) 11-15
   d) >15
9. Groupers feed on:
   a) Jellyfish and crustaceans
   b) Fishes and crustaceans
   c) Algae and corals
   d) Algae and jellyfish
10. The local name for Grouper is
    a) Shaam
    b) Gamlo
    c) Hamoor
    d) Kofar
11. Groupers are mainly:
    a) Protogynous hermaphrodites (start out as females and change sex to male later in life)
    b) Protandry hermaphrodites (start out as males and change sex to female later in life)
    c) Simultaneous hermaphrodites (has both male and female sexual organs at the same time)
    d) None of the above
12. Groupers are distributed mainly in:
    a) Polar oceans
    b) Tropical and temperate oceans
    c) Polar and temperate ocean
    d) Tropical ocean

PART 1 OF A SHARKQUEST ARABIA 3 PART SERIES OF ARTICLES BY JONATHAN ALI KHAN

CAN WE PREVENT **THE DEMISE OF SHARKS?**

FEATURE **JONATHAN ALI KHAN** PHOTOGRAPHY **HUSSAIN AL QALLAF**

Tom Stephens and Dareen Al Mojil prepare the bait box – Hussain Al Qallaf

SHARKQUEST ARABIA is an initiative by UAE based natural history filmmaker Jonathan Ali Khan (Wild Planet Productions), to produce two 47 minutes documentary films on the status of Arabia's sharks. One film will feature the natural history and distribution of sharks generally throughout the seas of Arabia, highlighting shark hotspots, focusing on the status of research and the scale of shark fisheries in relation to the Far East. The second film is dedicated to the whale sharks that frequent our waters and explores the theory that this region is in fact part of the main nursery and pupping grounds for the Indian Ocean population. This project is partially funded by a grant from the Emirates Foundation with additional support from IFAW (International Fund for Animal Welfare), Sony Broadcast & Professional, Western Digital, Scubapro, Scuba Dubai, Al Boom Marine and Le Meridien Al Aqah Beach Resort.

In the face of wide-scale overfishing throughout the region, the UAE is still believed to be a major hub for the distribution of shark meat (mainly fins and tails), to the Far East. During the late 90's the UAE, and particularly Sharjah was rated as the 6th biggest supplier in the world. Until recently, the taking of sharks has continued unhindered by any legal restrictions throughout most of the region and today, we face a bleak reality – sharks have literally been fished out of many region's of Arabia.

Shark fining refers to the removal and retention of shark fins whilst the rest of the animal is usually discarded back into the sea and is more often still alive when tossed back into the water. Unable to swim, the shark slowly sinks towards the bottom where it eventually drowns or is slowly eaten alive by other fish. In some parts of Oman and Yemen, it is often possible to see scores of discarded shark carcasses strewn along beaches literally left to rot away.

Globally shark fining is widespread, and still largely unmanaged and unmonitored. Despite growing international pressure from conservation organizations, it has increased over the past decade by 5% annually due to the combination of growing demand of fins from Asia for shark fin soup and traditional cures, improved fishing technology and improved market economics. Shark specialists still estimate that approximately 70-100 million sharks are killed for their fins, annually. One pound of dried shark fin can retail for $300 or more. It's a multi-billion dollar industry.

The loss and devastation of shark populations is happening all around the world. Experts estimate that within a decade, most species of sharks will be lost due mainly to long-lining. This is a massive unsustainable fishery as the incredible quantity of sharks harvested and lack of selection deplete shark populations faster than their reproductive abilities can replenish local populations. This also threatens the stability of marine ecosystems. Removing the apex predator from the top of the food chain on reefs that sharks have managed for almost 400 million years will undoubtedly have significant consequences.

In some parts of the world, including parts of Arabia, this also results in the loss of sharks as a food staple for many fishing dependent communities. Local waters are invaded by large industrial, foreign fishing vessels, often sponsored by local Governments or partnered by local fisheries companies, threatening the socio-economically important artisanal fisheries upon which whole communities are built in coastal regions. This also obstructs the collection of species-specific data that are essential for monitoring catches and implementing sustainable fisheries management.

All this leads us to realize that the immediate introduction of strong laws protecting sharks is needed throughout the Arab world. However, whilst initial emphasis is placed on establishing protective control measures targeting the fisheries practices with partial or full bans, efforts also need to be directed towards establishing a full ban on the trade of shark fins. Recently, the IUCN Red List has added an important range of new sharks to endangered and threatened status. CITES are also in the process of adding more shark and ray species as it becomes increasingly apparent that more species are on the verge of disappearing from our seas.

Research by FAO, (the Food and Agricultural Organization based in Rome, Italy), indicates that Arabia is collectively responsible for supplying between 8-12% of the demand from the Far East, mainly to Hong Kong and Singapore (and that is more than likely a conservative estimate). This scale of trade has been possible due to the well-organized network of agents and traders established throughout the region with Sharjah as the main

Part of the grey reef shark pack we filmed at Shab Rumi, Sudan – James Lea

Grey reef shark on Shab Rumi, Sudan – Hussain Al Qallaf

hub for re-distribution. At the heart of the business are a few Chinese businessmen that have unscrupulously managed to exploit the artisanal fisheries of the region encouraging fishermen from traditionally poorer rural parts of Oman, Yemen, Somalia, etc. to form collectives and set up an industry that is more lucrative to the end markets, rather than the fishermen themselves.

Marine biologists and shark researchers are increasingly worried about the impact this is having on Arabiaís marine environment as a whole. Dareen Al Mojil, a Kuwaiti shark researcher collaborating on the Sharkquest Arabia project tells it, as it is... "What is really frustrating is that we are losing sharks from our natural environment for something that has nothing to do with our culture. Why should we lose our environment for the sake of a demand that comes from far away"?

Taking that argument a step further, I personally believe it is wrong for fishermen to be involved in fishing practices that are altering the balance all across our planet's seas for the sake of a soup dish enjoyed only by the affluent Chinese of Hong Kong, Singapore, Shanghai and other parts of Asia.

Historically Arabia's waters have been used as important nurseries and pupping sites for millennia by a number of important shark populations in the Indian Ocean. The same applies for cetaceans, turtles and the now endangered dugong amongst others. These waters were considered remote and naturally safe providing relative sanctuary for thousands of years by countless species due to the absence or low impact of human presence up until the advent of the oil era. With the rapid growth and development of the region since the affluence provided by oil, human encroachment, coastal colonization, population growth and the increased demand for fisheries have literally changed the shape and dynamics of the seas of Arabia in less than 50 years. The accelerated loss of habitats and important conditions due to massive land reclamation, oil pollution and other chemicals have brought about a whole new set of 'natural' environmental parameters that in turn will undoubtedly affect many marine species.

Despite the onset of issues surrounding the fishing industry, such as apparent shortage of commercially viable species, including sharks, efforts to change the stubborn and entrenched ideology or practices of local fishermen have had scarce, if any real effect throughout the region. In many cases, fishermen form a powerful lobby fuelled by government subsidies and a strongly vocal sense of birthright. More often than not, Ministries of Fisheries have capitulated far too often in the face of angered responses by fishermen to attempts by officials to limit catches, impose net restrictions and even the creation of protected areas. For far too long, the problem has been a matter of policing the regulations that should make a difference. One could argue that fishermen have had far too much leeway in their fisheries practices and too little inclination to manage their marine resources responsibly.

But maybe things are finally changing more out of necessity than anything else, albeit too late in some cases. In the past, fishermen would demand subsidies for better engines and bigger nets in direct response to the apparent scarcity of fish in local areas. Their way of thinking led them to believe that the fish had moved elsewhere and that with bigger engines, bigger nets and longer fishing trips, they could reach further afield. This only served the purpose of amplifying the scale and impact of fishing activities on a still dwindling fish stock. Now, the primary response to a scarcity of fish catch is to demand subsidies to replace loss of income. What this shift in demand highlights is whether artisanal fisheries are gradually falling to a level of inefficiency and dependency that questions the continued viability of having one at all? Despite the apparent success by the UAE to limit boat numbers with foreign crews by having their National owner on board whilst fishing at all times, one has to question the point of having artisanal fishing fleets along coastal waters that are also being used by marine life as nurseries if they don't follow the laws? If these nurseries are being targeted, it clearly defies the purpose in a self-destroying cycle of bad decisions.

Regional conservationists and researchers are trying to lobby Arab governments to halt or at least limit the shark fisheries in order to allow them to recover. In Kuwait, KERA (the Kuwait Environmental Research and Awareness group) are currently drafting a legislative proposal to protect the whale shark in Kuwaitís waters. In Oman it is apparent that shark populations are currently on the verge of collapse, following the fate of other GCC states. Despite Oman's ban on 'live' shark fining, the practice of landing sharks for fining followed by the discarding of the carcass continues, recently observed to be a big issue in Dhofar. In the UAE, the Ministry of Environment and Water recently imposed a partial ban of shark fishing at certain times of the year and a full ban on live fining; certainly a move in the right direction. Last year Egypt imposed a full ban on shark fishing more out of recognition that live sharks helped their diving industry and GDP more directly than fishing them (although it's substantial fleet of trawlers and long liners have moved further afield in search of sharks outside of their waters). So perhaps, things are changing gradually and there may be hope that in the future sharks will be protected. However, for as long as there are no dedicated education initiatives for regional fishermen about sharks and for as long as the trade of fins is allowed, it is doubtful that sharks would be safe even in protected areas.

In June earlier this year, we took a team of researchers on an expedition to Sudan's famous shark diving sites in order to film sharks in a healthy state. Sudan has officially protected sharks from being fished since 1996. As such it was the first Arab nation to do so and I thought a great place to start the project. We had arrived at a time when the seasonal transition should have provided us with ample opportunity to observe significant numbers of sharks in the main hotspots frequented by a number of Red Sea liveaboards. Sadly, we were exposed to evidence that Yemeni fishermen have been plundering shark stocks here for some time. Despite the ban in Sudan, which is adhered to by local fishermen, Yemeni raiding fishing boats were traveling hundreds of miles up from Yemen to take advantage of the remoteness of Sudan's vast stretch of coastal reefs. Yemeni shark fishermen are in fact the worst culprits when it comes to transgressing territorial boundaries and local bans traveling great distances throughout the Arabian Seas. We will feature the full Sudan expedition in the next Sharkquest Arabia feature.

Majid Sarhaddy and Dareen Al Mojil interview Sudanese fishermen – Hussain Al Qallaf


A large and smaller whale shark feeding together in Djibouti's rich waters – L.Riley


Our vessel and home for 5 weeks in Sudan, the MY Deli – Hussain Al Qallaf

As a project, Sharkquest Arabia was born out of the realization that despite the global interest in shark conservation, there were few if any local initiatives that I was aware of. This triggered my curiosity as a filmmaker and when the whale shark (a flagship shark species protected by international laws) was captured by Atlantis; under ludicrous false pretenses, I felt compelled to create a documentary that could contribute to a better understanding of our regional issues. After a year of swimming in tight circles, Sammy is still being held prisoner to ignorance, arrogance and greed. However, the catalyst she has provided in raising interest and awareness has sadly but surely helped us launch this initiative. In a few months we shall be releasing our films in the hope that viewers will learn something significant enough to change the current apathy into one of shared concern about whale sharks and other shark species too.

A few things we have learnt whilst making these films is that tiger sharks and hammerheads use the Arabian Gulf as nurseries and that there are fewer female whale sharks than males. Aggregations of male whale sharks are more common in the Maldives and Djibouti, the two main aggregation hotspots of the Arabian Sea. This leads us to ask where the females are? We also know that a pregnant female can also carry over 300 embryos giving birth to many neonatal young. A single female can therefore make a huge difference to the population in a region such as ours. As a female, Sammy's role as a reproductive member of the wild population should not be thwarted any longer.

In this project, we aim to define the true status of Arabia's shark populations and identify measures that can help to prevent the overall demise of sharks in our waters – something that could happen within the next 15 to 20 years. We shall also aspire to dispel some of the myths surrounding sharks and present them for what they truly are – the apex marine predator that has a clearly defined role in the natural order of life on our planet.

SQA T-shirt with a message – Hussain Al Qallaf

We are still looking for additional sponsorship support for our SharkquestArabia project and would like to hear from you if you have ideas on how you can help. Please email us on **sharkquestarabia@yahoo.com** or visit our website **www.sharkquestarabia.com**.


JAK filming grey reef shark on Shab Rumi's South Point, Sudan – Hussain Al Qallaf

NEWS RELEASE:
The First Arabian Seas Whale Shark Research Symposium & Workshop December 8th & 9th,2009

"ARABIA'S WHALE SHARKS – DEFINING THE MISSING LINKS"

On December 8th and 9th, the Sharkquest Arabia Initiative is hosting the 1st Arabian Seas Whale Shark Research Symposium & Workshop at the Le Meridien Al Aqah Beach Resort, sponsored by the Save Our Seas Foundation, Wild Planet Productions, Le Meridien Al Aqah and IFAW.

Both days of the event are open to the region's diving industry, diving community, Government sectors and conservation authorities, NGO's, Schools, Universities, Colleges and general public as a whole. Access to attend and participate in the Symposium and Workshop is free for both days. The hotel is offering special rates for anyone interested to stay overnight between day 1 and 2.

DAY 1 features fascinating presentations from the leading whale shark researchers operating in the Indian Ocean. Key guest speakers include Dr. David Rowat (MCSS, Seychelles), Dr. Brad Norman (Ecocean, Australia), Dr. Brent Stewart (Hubbs-Seaworld Research Institute, USA), Richard Reese, Morgan Riley and Guy Stevens (MWSRP, Maldives), Dr. Vivek Menon (Wildlife Trust of India), Simon Pierce (Mozambique). Other featured speakers include KERA (Kuwait), Sultan Qaboos University (Oman), Save Our Seas Foundation, Burj Al Arab Aquarium, IUCN, IFAW and Sharkquest Arabia. The day will conclude with a full on debate about the status of Arabia's sharks.

DAY 2 features a two-part workshop by David Rowat, who will be training diving community volunteers and professionals from within the region's diving industry on how to establish and participate in the AWSRP (Arabian Whale Shark Research Program) regional whale shark Foto ID Database. The 2nd part of the workshop hosted by Brad Norman focuses on integrating the Arabian whale shark database within the global database curated by Ecocean.

This event is open to all divers and non-divers alike. For more information about the Sharkquest Arabia Initiative or the 1st Arabian Seas Whale Shark Research Symposium & Workshop, please visit the website **www.sharkquestarabia.com**. For those intending to participate, please RSVP to **sharkquestarabia@yahoo.com**.

The MY Deli moored on the South Wall at Sanganeb Reef – Hussain Al Qallaf

SUBIOS 2009: DIVING THE GRANITIC ISLES OF GONDWANA

FEATURE **SEYCHELLES TOURISM BOARD** PHOTOGRAPHY **TONY BASKEYFIELD – STB**

Reflecting one of the world's most unique marine heritages, SUBIOS – the Seychelles Underwater Film and Image Festival – is a must-have event that highlights the wonders of the Seychelles marine environment.

This year saw the twentieth edition of SUBIOS, and it was being celebrated under the theme 'Diving the Granitic Isles of Gondwana' from October 2-3.

SUBIOS was created in 1989, inspired by Mr Philippe Blanchard and a group of local divers, and with close collaboration with government facilitators. SUBIOS gained stature to feature Seychelles' exceptional marine world and showcase the islands as an ideal diving destination, as well as to sensitise the local population and visitors alike to the beauty beneath our turquoise seas.

As is customary each year, an array of fun and educational marine-oriented activities were organised that led up to the closing ceremony on Saturday 3rd October.

SUBIOS 2009 was officially launched on Friday evening by Vice President Joseph Belmont, who is also the Minister of Tourism, at the Berjaya Beau Vallon Bay Hotel.

In his opening speech, Vice President Belmont said that SUBIOS has indeed played and continues to play an important role in terms of sensitizing people concerning the issues of our marine environment.

"I very much hope that SUBIOS will continue to grow in stature and play a significant role in raising our collective awareness of the environment in which we live and upon which we so heavily depend," he said.

Mr Belmont commended SUBIOS for its prominent and sustained role in promoting marine and coastal ecosystems conservation.

"The annual SUBIOS activities are instrumental in recognising and highlighting the real value of our marine wildlife and coastal ecosystems. We are blessed to have an underwater world that is rich in an incredible, diverse and vivid array of plants and animals and it is our duty to protect and preserve it," said Mr Belmont.

The opening ceremony was followed by a seafood buffet and the prize giving ceremony of the 2008 underwater image and video contest.

The winners of the 2008 underwater image and video contest were Elizabeth Fideria, who won the best image shot in Seychelles, and Gino Rosier, who took both the public choice and jury's video awards.

Other activities on the programme that night included the public voting for the 2009 underwater image and video contest, a fashion show by Mangouya Studio featuring the SUBIOS theme along with live entertainment.

The second day of SUBIOS convened at the Beau Vallon beach where the SUBIOS village was set up along with a special Bazaar Labrin (open market). There were also the SUBIOS Cyber Treasure Hunt and the SUBIOS Man and Woman competition being held at the Beau Vallon beach.

Various organisations were also present at the festival where they mounted information stalls such as the one set up by the Seychelles National Parks Authority showcasing the importance of marine-conservation, eco-systems, as well as displaying various aspects and activities of the organisations.

Before the official ending of the festival, there was the award presentation of this year's winner of underwater image and video contest. The video category was won by Elodie Turpin with Terpsichore: Will I Be Able To Dance? She also clinched the jury's award for video and the public choice award while the best video shot category in Seychelles was won by Edward Snijders.

In the photography category, the winning prize went to Tony Baskeyfield with his underwater image entitled Green Turtle. He also took the jury award with his Spinner Dolphin photography and the public choice award with Green Turtle. The best image shot in Seychelles was won by Elizabeth Fideria with Time to Move On.

Perhaps, the most captivating moment of the closing ceremony was the revealing of the 2010 SUBIOS poster and theme, which is 'Seychelles:

Seas of A Thousand Species', after which there was a screening of Our Planet Earth video and live entertainment for the rest of the night.

SUBIOS is for everyone and not just for photographers or divers. It is aimed at everyone wanting to experience and learn of the importance of our marine environment and encourages all to participate. So, lets all gear up for SUBIOS 2010 as we have only one year till its next appearance on the local scene.

BOSNIA AND HERZEGOVINA
LAND OF MARVELLOUS LAKES AND RIVERS

FEATURE AND PHOTOGRAPHY **ABDULAH VRSELJ AND ECO SPORTS GROUP – WWW.SCUBA.BA**

Strbacki buk cascade, Una River

Bosnia and Herzegovina are located in south-east Europe within the mountainous heart of the Balkan Peninsula. The world doesn't know of this country as a diving destination, although it has a vast and thick network of rivers and streams, numerous natural and artificial lakes and some twenty kilometers of sea shore of the Adriatic Sea. Some of the rivers of Bosnia and Herzegovina are so clean that you can drink from them even 50 kilometers downstream from their source, whilst the mountain lakes of this magnificent country simply captivate the minds with their beauty. Our country is also home to Europe's longest subterranean river, Trebisnjica, whose stream is over 90 kilometers long and which pours into the Adriatic Sea through a whole array of underground channels.

One more interesting fact is that waters of these parts flow into two different seas. Waters of the northern parts of Bosnia and Herzegovina end up in the Black Sea via the Danube River, whilst the waters of the south pour into the Adriatic Sea and through it, into the Mediterranean Sea. This is to rightfully say that the waters of our country are a true treasure, lying at the threshold of Europe!

As time passes by, and the world recognizes the various values of these parts of the world, our country is becoming more and more known as an interesting destination for tourists. Abundant waters, breathtaking vistas and plentiful forests are but a fraction of treasures which this magnificent landscape holds. Located at the very border where the mediterranean and continental climate meet, Bosnia and Herzegovina was always a happily visited country and it is only natural that it has a very rich history. This is where various people mixed, where countries fell apart and where world wars started. Throughout history, Bosnia and Herzegovina has been a home and refuge to many people – Romans built roads and fortifications, crusaders passed through here on their way to distant lands and the Ottoman Empire threatened Europe from here.

Unfortunately, the recent war which raged through Bosnia and Herzegovina from 1992 to 1995 has left this country not only with over encumbered graveyards but also with many problems which will burden this noble country for many years to come. One of the such problems is the huge number of people left with disabilities. They need to be rehabilitated and reintegrated into the society. Numerous organizations and associations emerged and started dealing with this issue but none in such an interesting and efficient way as the Eco Sports Group.

Eco Sports Group is a non governmental organization whose members are mine victims and other individuals with disabilities. The organization carries out numerous activities within its program that deal with sport and recreation, all aimed at rehabilitation and social integration of this very specific social group. One of the focuses of this organization is also dealing with larger problems of Bosnia and Herzegovina, primarily those which are related to mines and unexploded ordnance, mine victims assistance, care for children with special needs and all others

who could benefit from humanitarian actions in terms of improving their lifestyle. Since 2003 "Eco Sports Group" has been carrying out a project called "ADAPTIVE SCUBA DIVING" which has covered over 240 mine victims during the past six years and some 150 of them have been certified with various diving and instructor certificates. In execution of our diving activities we have visited numerous locations in Bosnia and Herzegovina in order to bring our program closer to our focus group and make it easier for them to try out this interesting sport. This allowed us to gain a first hand insight into the state of waters all across Bosnia and Herzegovina and we have identified two major problems which have a direct impact on the environment.

One of the problems which we observed through diving is a huge amount of waste which the local population throws away wherever they feel like and a large part of it ends up in our waters. This problem is one of the direct consequences of the recent war when for various reasons (military operations, mobilization of people, lack of fuel, neglect, absence of communal services, etc.) the local population dumped their garbage all over the place with no apparent order. A considerable part of that garbage has been cleaned out after the war, but bad habits which are much harder to dispose of, remained.

The problem of pollution became more apparent during the end of the 90's when there was an instant increase in usage of PVC packaging for water and beverages, and plastic bags which were used on a massive scale by large supermarkets. This problem is not specific to our country; it is recognized across the globe. However, it is more obvious in Bosnia and Herzegovina largely due to the poorly organized state which doesn't enforce any punitive policy on its own laws, and additionally has very poorly organized waste disposal and recycling policies.

The second problem we came across through our involvement in mine action in B&H, is the leftovers of munition and unexploded ordnance. Driven by desire to further investigate this problem we checked out some of the locations in Bosnia and Herzegovina suspected to be polluted with such waste and personally witnessed that several of these such locations are used by people as dumping sites for UXO. People rather dump this deadly waste into deep waters of Una, Trebisnjica, Neretva, Drina and other rivers rather than give it to the authorities such as the military or police. Naturally, this pollution of our waters with UXO is also contributed by nature itself. During the last 14 years since the war ended, natural erosion of soil, thawing of ice and snow, floods, and other natural processes carried large number of mines from the fields into the river streams. Luckily, the number of locations where water streams cross through minefields is not as large, but what worries us the most is the lack of concern regarding this problem on the government's part. If there was to be one good thing the war brought us, it would have to be the impeding of growth of potentially large industrial pollutants, so our main struggle today is with solid waste.

During the post war period a large number of ecological associations emerged in the country. These are mostly local in nature and rarely addressed global issues. The sad thing is that our waters carry some of our waste into two different seas and we pollute not only our own country but other countries as well. On their way to the Black Sea, our waters pass through Croatia, Serbia, Romania and Bulgaria; whereas the waters which end up in the Adriatic Sea directly affect coasts of Bosnia and Herzegovina, Croatia, Monte Negro, Italy, Albania and Slovenia and due to the connection of the Adriatic with the Mediterranean Sea, all the countries of the Mediterranean as well. Our association has dedicated itself to more active involvement in the protection of the environment, especially the preservation of our water. We will also work on more active involvements of the whole diving community of B&H on this issue since we want to continue diving and to enjoy the jewels of our waters, for as the famous Albert Einstein put it: "The world is a dangerous place to live; not because of the people who are evil, but because of the people who don't do anything about it." We are prepared to do our part and we hope, for the sake of all of us, that we will be successful.


Una River – Eco Sports Group training new members


Boračko Lake


River Lasva – plastic bags and bottles


Neretva River

ICE DIVING: PUSHING HUMAN LIMITS

FEATURE **AHMAD JUDEH**

Abysmal depths, sub-zero temperatures, frozen lakes, and icebergs for many, reason enough to stay indoors with a good book and a hot cup of cocoa. For others, reasons to get their wet suits and gloves and to jump right into it – the colder, the better. Ice diving is a type of penetration diving where the dive takes place under ice. Because diving under ice places the diver in an overhead environment typically with only a single entry/exit point, it is considered an advanced type of diving requiring special training.

This special training includes learning about how ice forms, how to recognize unsafe ice conditions, dive site preparation, equipment requirements, and safety drills. Ice divers are tethered for safety. What this means is that the diver is wearing a special harness under his/her scuba unit. A line is secured to this harness, and the other end of the line is secured to the surface by one of a number of methods.

Ice diving is a team diving activity because the divers line requires a line tender. This person is responsible for playing out and taking in line so that the diver does not get tangled. Communication to the diver, or to the surface, is accomplished by pulling on the line. Each series of tugs means a different thing. There is a diver suited up and ready to enter the water at a moment's notice. This diver is a safety diver, and has his own tender. His purpose is to assist the primary diver in the event of a problem.

EQUIPMENT

Since diving under the ice takes place in cold climates, there is typically a large amount of equipment required. Besides each person's clothing and exposure-protection requirements, including spare mitts and socks, there is basic scuba gear, back-up scuba gear, tools to cut a hole in the ice, snow removal tools, safety gear, some type of shelter, lines, and refreshments required.

PROCEDURES AND PRECAUTIONS

- Use a snow shovel to clear the snow and ice from the area.
- Use an ice saw or a chain saw to cut a hole in the ice.
- Use a weatherproof area for the divers to suit up.
- Use a diving regulator suitable for cold-water use. All regulators have a risk of freezing and free flowing. Good practice – two unfreezing regulators arranged as follows: first stage number 1 with primary second stage, BCD inflation hose and Submersible Pressure Gauges, first stage number 2 with secondary second stage (octopus), dry suit inflation hose and Submersible Pressure Gauges.
- Connect the diver and tender on the surface with a rope and harness. The harness is typically put on over the dry suit but under the BCD or other buoyancy device so that the diver remains tethered even if he or she must remove his or her air cylinder or buoyancy control device. The harness fits over the shoulders and around the back such that the tender on the surface can, in an emergency, haul an unconscious diver back to the hole.
- Use rope signals.
- Have a standby rescue, roped diver ready on the surface.
- Have one or two divers diving at the same time from the same hole, each with his or her own rope. Using two ropes runs little risk of getting tangled together, but using three significantly increases this risk.

EXPOSURE SUITS

Because of the water temperature (about 4°C in fresh water), exposure suits are mandatory. Some consider a dry suit mandatory (neoprene dry suits are recommended); however, a thick wetsuit is also sufficient for hardier divers. A wetsuit can be pre-heated by pouring warm water into the suit. A hood and gloves (recommended three-finger mitts or dry gloves with rings) are mandatory, and dry-suit divers have the option of using hoods and gloves that keep their head and hands dry. Some prefer to use a full face diving mask to essentially eliminate any contact with the cold water. The biggest drawback to using a wet suit is the chilling effect the water evaporating off the suit has on the diver. This can be reduced by using a heated shelter.

OUTFIT RECOMMENDATIONS

- Warm waterproof shoes.
- Warm anorak for cold weather.
- Warm cap covering the ears.
- Sunglasses with a UV filter to protect the eyes in sunny days.
- Lip-care stick and cream to protect hands and face against cold and wind.

PAVILION DIVE CENTRE'S 2nd SIPADAN NATIONAL GEOGRAPHIC EXPLORATION VOYAGE 2009

FEATURE AND PHOTOGRAPHY **LESLIE FINNEGAN** UNDERWATER PHOTOGRAPHY **LAETITIA DE PELICHY**

INTRODUCTION AND BACKGROUND

On Thursday the 17th September 2009 twelve intrepid explorers (of the underwater variety) met at Dubai International Airport Terminal 1 to commence a 22 hour journey that would bring them to an island east of Sabah, Borneo in the Celebes Sea. The location was Mabul Island which would be their base for the next 6 days and also act as a jumping pad for their diving trips around the surrounding islands of Kapalai, Boyahan and the world renowned Sipadan.

It would quickly become apparent to the twelve brave souls that these islands were the polar opposite of what they were used to and experienced on a day to day basis in the hectic and ever growing (and unfortunately polluting) city of Dubai. It was to be an eye opener into another world which would highlight the chasm between the 'Haves' and the 'Have Nots'.

A few weeks prior to our departure we (being the twelve beautiful and handsome explorers of course) all committed to undertake an assignment as part of the PADI National Geographic Diver specialty course. The aim of the assignment was to see, interact with and learn about places, people, ways of life, nature and other things that would have otherwise been unknown to us but for this trip. Once we had gained an appreciation and understanding for all of these aspects we then needed to compare our findings with everyday life in Dubai to ascertain how we impact the environment we live in as compared to our Malay island brethren. Diving around the islands to see the impact of island lifestyle, especially antiquated fishing methods, on the immediate local environment was one of the observations methods we gladly used. So to ensure none of us left our mark at the dive site we all perfected our buoyancy techniques and skills prior to leaving Dubai. The other mechanism involved to gain a better understanding of island life involved visiting one of the outlying islands and talking to the islanders themselves about their problems, fears, hopes and aspirations. The comparison, and contrast, between island life and life in Dubai was going to throw up a few surprises.

GETTING STARTED

To get things moving in Dubai in the run up to departure a number of introductory tasks were given to us (5 in all) to do at different times to ensure we set about and completed our assignment in a fun and interesting way. The tasks (or steps) were as follows:

Step 1: Visit the website **www.earthlab.com** and find out what is your earth impact, identify your carbon footprint score, try to reduce your impact score and put a conservation plan in place for yourself. The question now was how did our traveler's impact figures stack up against someone from the islands off Sabah?

Step 2: Assess the environmental quality, the availability of, utilization and distribution of resources, the government and the culture of the inhabitants of a small village on the small remote island of Bohayan Island.

Step 3: Visit the island of Bohayan and in buddy teams talk to the village folk and ascertain a number of key factors about how they lead their lives.

Step 4: Compare the findings with a comparison of what was learned in Steps 1 and 2 and discuss as a group "Islanders vs. Dubai" lifestyles.

Step 5: Post the findings and opinions on Tawasul for all to read and comment.

"The Learning Journey"

LOCATION:

DUBAI

The Emirate of Dubai, our home, is one of seven emirates to make up the UAE. Covering over 408.18/km^2 (97/sq mi) the emirate has, according to 2008 figures, a population of over 2 million people, most of whom live in the Municipality of Dubai (rather than outside the city in places such as Hatta).

In recent years Dubai's economy has boomed and heavy emphasis has been put on the construction and tourism sectors. Dubai and the UAE was an already wealthy country as a result of its oil supplies but the construction boom and surging real estate prices made the citizens of Dubai even wealthier. As a result wealth is everywhere and large powerful motorcars are everywhere to be seen. Their use is favored by most because of low fuel prices at the pumps, poor public transportation, minimal road taxes, good road infrastructure, ability to travel at speed and a suggested increased safety factor (which is diminished if everyone is traveling at speed!). The contribution of pollutants to the atmosphere from hundreds of thousands of automobiles in Dubai is a major issue. The construction sector is also a major contributor to atmospheric pollution as dust levels are impossible to control. New ambitious mega projects are continuing to come on stream all the while adding to the already serious air and offshore water quality problems. The life cycle of a building is not simply the construction of the building itself but also the manufacturing of the raw materials (concrete manufacturing being the worst polluter) and the disposal and destruction of left over materials.

Dubai recently experienced seriously polluted seawater along its coast when illegal sewage was dumped into the storm water drains. Thankfully the Municipality has clamped down on this unacceptable behaviour.

As Dubai's freshwater source is the Arabian Gulf and the city's reliance on desalinization cannot be overstated. However, desalinization facilities are energy intensive and therefore

expensive. They also discharge the salt out into an already salt saturated Gulf. And water use and waste is an expensive waste. General public energy consumption is high especially in the summer to keep the city's citizens cool from the crazy summer temperatures. And its not unusual for public street lighting to still be on well after the sun has come up.

Taking all of the above into account Dubai now has the highest Carbon footprint per capita of any country in the world. People are learning and are becoming aware of their responsibilities and every month new initiatives are being proposed and acted on. Given time Dubai will come around to 'green thinking' but it has some way to go yet.

LOCATION:
BOHAYAN ISLAND, SABAH

Bohayan Island is approximately a 1 hour boat ride from the island of Mabul. The island is a typical subtropical island with lush green palm vegetation and turquoise seas lapping the beaches. The people living on the island are mostly settled sea gypsies who simply had enough of living on the sea and decided to settle on land. The population of the island is unknown due to the fact that the settled sea gypsies have no citizenship and are not registered with the Malaysian government. There are no census results to review. They hold no passports. However, an estimate of the population would say that a few hundred people live on the island.

The islanders live off the sea and stick mainly to traditional fishing methods to keep food on the table and earn a living. Some of the fish that is caught is brought ashore to Semporna and sold so that the islanders can get cash, fuel for their boats and other provisions that their family may need. It is a hand to mouth and day to day type of living. The traditional methods of fishing for the settled sea gypsies on Bohayan ranges from spear fishing, to use of small gill nets to cyanide poisoning. The latter method is extremely dangerous as the cyanide used on the reefs to drive out and drowse the fish so the fishermen can catch them is toxic. These poisoned fish accumulate the chemical and when the fish is eaten then the humans accumulate it too (bioaccumulation). This in turn leads to serious potential health issues. One traditional method of fishing that is no longer practiced is the use of dynamite and other explosives. This method was thankfully realized by the islanders to not be a sustainable way of fishing. Explosive damage can still be seen on some of the local reefs.

There is no real infrastructure on the island. The houses are constructed out of wood and are elevated on stilts so that they can be built over the inter-tidal areas. There are no roads except for a beaten pathway through the small village. There is one generator that provides a small amount of power to those who can afford to pay for it (about 40 ringgits (equals to approx 40 AED) per month). Most people use small oil lamps for light. Telecommunications on the island is out of the reach of most islanders, however visitors to the island can pick up signals.

Bohayan Island has a small close knit community where family values are respected and adhered to. Despite the poverty, people wear western clothes and eat and drink some western foodstuffs (Coca Cola for instance) when they can. But the staple diet for all is fish, dried or fresh. A local type of potato is grown to supplement the fish meal. Local baking is popular as well.

DUBAI VERSUS BOHAYAN ISLAND

When comparing the two locations against each other a number of similarities and differences were noted. Some of these were stark and clearly obvious but others were more subtle and were not evident at first glance. The similarities and differences are bullet pointed below.

SIMILARITIES BETWEEN THE TWO LOCATIONS

1. Both are Muslim countries.
2. Both locations have a reliance on the sea, however Dubai's reliance is much less today than it was two to three decades ago when pearl diving and fishing were important mainstays to the economy.
3. There is a strong community bond amongst the local population and the sense of family is clearly evident. Long established 'Dubains', and especially Emiratis, have strong family and community ethos. This was evident on Bohayan as well.
4. The weather is somewhat similar although Bohayan is subjected to more extremes as it gets more rain and stronger winds.
5. Both locations have forms of governance. Bohayan has an elder who rules the island.

DIFFERENCE BETWEEN THE TWO LOCATIONS

1. Water is delivered to the people by different means – in Dubai and the UAE water distribution is via a network of pipelines from a water treatment plant (desalinization plant) and ultimately out of the taps. On Bohayan all fresh water is from a number of wells dotted around the island. Villagers have to extract what they need using a bucket on a rope and carry it back to their abode. The villages shower close to the wells.
2. There are no automated vehicles apart from boats with outboard engines on Bohayan whereas Dubai has hundreds of thousands of pollution belching automobiles and boats.
3. There is virtually no infrastructure (power, water, sewerage, transport) on Bohayan. Dubai has a complex network of varying distribution infrastructure in place. Bohayan has nothing except for one diesel driven generator for its power.

4. The standard of living is remarkably different where Dubai has a very high standard, if not opulent in some cases, versus a very low standard in Bohayan.
5. Houses are made out of wood on Boyahan and are fragile and vulnerable to the elements as compared to reinforced concrete structures, mostly high rise, in Dubai.
6. The daily human caloric intake is completely different in the two countries. The UAE has a major health issue struggling with obesity rates of 25 per cent for men and almost 40 per cent for women. Twenty per cent of UAE residents have diabetes, a condition linked to obesity. The average caloric intake for an average man in the UAE is approx 3000 calories due to rich diets. On Bohayan the average caloric intake seems to be approximately 1/3 if not less than in Dubai.
7. Health care in Dubai is good whereas on Bohayan it is low if even non-existent relying on local traditional remedies and only using modern medicine when someone needs to go ashore for hospital care in Semporna. There is no dental care on Bohayan. It was clear to see that all the children on the island had a poor diet and no idea of dental care as all their teeth were rotten or missing.
8. Life expectancy is less on Boyahan (approx. 60 years old for men) than in Dubai (approx. 75 years old).
9. There is no structured education system on Bohayan. Children are taught the 'lessons of life' but do not receive any formal education.
10. People in Dubai have aspirations and dreams of bettering themselves and their lot. The people on Bohayan, especially the children, have none. The most some of the adults hoped for was to be left alone (by the Malaysian authorities) and have a decent house for their family. Nothing more.
11. The Carbon Output and Earth Conservation Plan Profile of a typical islander on Bohayan is considerably less than someone living in Dubai. This is for a number of reasons but the main one being there is no electricity or carbonized modes of transport. The islanders' water consumption is managed and there is no wastage (like leaking taps, gardens to be watered, etc).
12. Bohayan Island is a clean and unpolluted location. Dubai is polluted.

PERSONAL OBSERVATION

The children are our future and on Bohayan Island it is no different. The welcoming beaming smiles, albeit a toothless smile in some cases, from the children portrayed a sense of happiness and excitement of children from a settled and peaceful community. Their laughs and games were the same as anywhere else in the world. Even though they have no dreams to tell us they do dream. All children do. These children will grow up on the island and will be the next generation of settled sea gypsies to seek out a living from the sea. But they are happy with this outlook. But in the meantime all they want to do is play and do what children do.

The adults seem content but they did have some concerns. These centered around the fact that they are still essentially nomads with no fixed abode. They cannot get citizenship from Malaysia and so live every day as squatters on the island. They are afraid of going ashore as they run the risk of being apprehended by the authorities and detained. They hold no passports or identification papers. They are the unwanted. They live in fear that the island will be raided by the authorities and their house broken down. They want to be wanted yet they also want to be left alone and continue on the traditions, in a slightly different way of their forefathers and leave a future for their children. So it seems that their biggest fear is linked to their biggest wish and dream.

Bohayan Island is still an unspoilt piece of paradise, virtually untouched by western modernization or influence. Is this the way it should be or should the island be westernized and seek our help? That is something only the islanders can answer and is not for us visitors to judge. We were there for a fleeting visit and despite where we come from and what we are used to, it does not mean that our influences and ideas would be suited for the islanders on Boyahan. At the moment who is the happier of the two locations? The answer to this question is different for each person but looking at the villagers going about their daily chores you could see that life was stress free and they were happy. Can we in Dubai say the same about our daily lives? We here in Dubai can learn a lot from the people on Boyahan Island.

MUSANDAM **BIOSPHERE EXPEDITION**

FEATURE AND PHOTOGRAPHY **RITA BENTO**

From the 18th to the 31st of November, Biosphere Expeditions with the support of EDA, organized a Reef Check Expedition in Musandam. During the two weeks, two groups of 12 team members (one group each week) joined the expedition where they helped collect data after being trained in Reef Check. The group contained members from the UAE, Germany, UK, Oman, Brazil, Australia and the USA. Among the 24 team members involved, three were EDA members: Adel Abu Haliqa, Ken Atkinson and Rob Beaumont, to whom we would like to give our special thanks for taking part in this expedition (please read their inputs regarding their own experience on board).

After the first two days of hard Reef Check training with EDA's marine biologist Rita Bento, the team members were finally ready to collect data. In each dive site selected, two transects were deployed at two different depths; one between 2 and 5 meters (shallow dives) and the next between 6 and 12 meters (medium dives). In groups of two, divers covered the 100 meter transect tape collecting fish, invertebrates and substrate data.

During the two weeks, 18 dive sites were covered making the total of transect data collected to 36 Reef Checks. The dive sites selected included known touristic dive sites, known sites for fisheries as well as sites that weren't known by the diving or fishing industries. With this panoply of dive sites it was possible to get a general idea of what can be found along the Musandam coastline. As preliminary results, an average of 38% of hard coral coverage was found in the shallows of the Musandam coastline, and even though it looks like a small number, it is slightly higher than the global hard coral coverage average of 30%. The second higher substrate found was rock (around 35%) meaning that there is a high area for the recruitment of new coral colonies in the area.

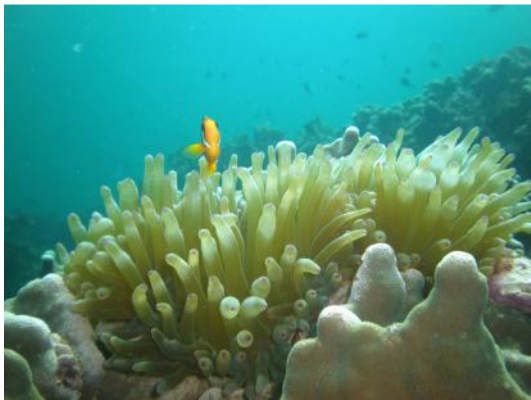
Nutrient indicator algae was not found, and less than 1% of silt and sponges were observed, indicating that dredging or sewage is not an actual problem in Musandam, as it was already expected. Unfortunately the biodiversity of fish and invertebrates was low, especially in the last group. An average number of less than one sweetlip and less than four groupers (bigger than 30cm) per transect indicate a probable overfishing problem. The average number for groupers in a 100sqm area of healthy coral reef should be around 20 individuals bigger than 30cm. The recent harmful algal bloom in the region from August 2008 to March 2009, together with the cyclone Gonu in June 2007, probably had some influence in these results.

The main impacts found in the region were general trash and lost fish nets as well as boat/anchor damage. This indicates the lack of awareness in the region, especially among tourist operators as well as in the fishermen community. Bleaching is not a problem at the moment with an average of 2% of bleaching per dive site. Unfortunately this number can rapidly change if some new stress reaches the area, like a new algal bloom, a rise in the sea surface temperature or pollution. After a more detailed look into the data, more information will be obtained.

Besides the dives, some of the team members visited the remote villages of Musandam where Dr Barbara Steinbauer-Groetsch distributed her books, "Aisha Saves The Reefs" and "Aisha and The Turtle" among the children and the EDA encyclopedia, "Encyclopaedia of UAE Marine Terminology" was distributed among the fishermen. Along with the book distributions, some interviews and conservation awareness talks were had with the local fishermen.

The expedition was made possible thanks to the support of Sultan Qaboos University and Six Senses - Zighy Bay.

FOR MORE INFORMATION GO TO:
www.biosphere-expeditions.org
www.reefcheck.org
www.sixsenses.com/six-senses-hideaway-zighy-bay
www.squ.edu.om/



EDA MEMBER: ADEL ABU HALIQA
"I don't know, was it because of all the warnings Biosphere Expeditions showered us with, 'Things could go wrong in expeditions… you need to be prepared… days could get tough… etc, etc'… or was it really the case. But, If I am to go back in time and redo this expedition exactly the way I dream of, and I'm seriously speaking here, either it's the team leader, the expedition scientist, the location scenery both below and above water, the scope and scientific contents, the skipper and his helper, the cook and his helper, the dive master, the volunteers, the dive sites, the food, the boat, the sky, the stars, the dolphins, the turtles, the single reef shark, the shy sweetlips and the lovely parrotfish, the list could go on and on. I would choose to have exactly the same, no more and no less! Well, if I had to change something then maybe it would be to have a 75% hard coral average coverage on both shallow and medium dives and maybe having a 30 minute freedive hold time.

A successful expedition, reaching its scientific goals for the first time in this area is something to be proud of being part of. I know it will have a wonderful "impact" on our marine life. Thank you very much for this."

EDA MEMBER: ROB BEAUMONT
"I consider myself lucky to have spent a fantastic week participating in a Biosphere expedition to perform the first surveys on the coral reefs in Musandam. It has been a truly excellent experience that has allowed me to work with a professional organisation while getting to know an outstanding bunch of people who voluntarily gave up their time and money to support the cause.

The professionalism of the Biosphere team and their knowledge of the environment greatly impressed me. Led by Dr Matthias Hammer and Marine Biologist Rita Bento, we were put through our academic paces to make sure we were up for the the job at hand, while this was hard work, it was a very enjoyable experience and allowed us to learn more about the complexity and frailty of these underwater environments.

Diving continuously for the best part of 4 days, allowed us to put what we learnt into practice. MAGNIFICENT! We found out how hard it is to swim slowly, read a tape, watch for fish, record it on a slate. It's much tougher than you imagine. The pre-expedition briefing had said to be prepared to work, this is going to be no holiday and they were right. I can honestly say I have never enjoyed working quite so much.

In summary: rays, dolphins, ospreys, tuna, coral, squid, cuttlefish, great people, lots and lots of fish, jellies (no stings), great boat, great crew, magical scenery and a Snapper Tragedy (you can ask Rita to enlighten you).

Roll on next year."

EDA MEMBER: KEN ATKINSON

"I get a number of emails saying, 'come and help in this region' and 'come and help with research on turtles and dolphins' and as much as they would be interesting, when I received the email asking for volunteers for Reef Checks in the Musandam area, I was in. I had not done the reef check training so I thought what better way to learn and not only does the data collected assist in the region I dive, it has to make me a better instructor.

The reef check training started off and I thought ok, here starts the roller coaster, but Rita was so professional and patient to everyone's questions and in-line with a couple of the training aids, which supported the training beautifully, the 3 exams were passed and it was off to count fish. My buddy was from the UK and along with the rest of the team it was a barrel of laughs from start to finish. Dr Hammer even tried to entice her to his team but there was no breaking 'Team Fish', the A Team (Ritas team).

There were so many highlights, rare starfish, crown of thorns, rays, giant eels which even made Dr Hammer jump back and Pollys cooking. There were also some not so good points; abandoned nets covering coral, aquatic life caught in other nets and dead coral. Thankfully, the data collected will go to educate decision makers and hopefully ensure the coral reefs and aquatic life in the region will be sustainable for generations to come.

A big thanks to the Biosphere Expedition Team and Rita and I will certainly be back to do it all again next year."

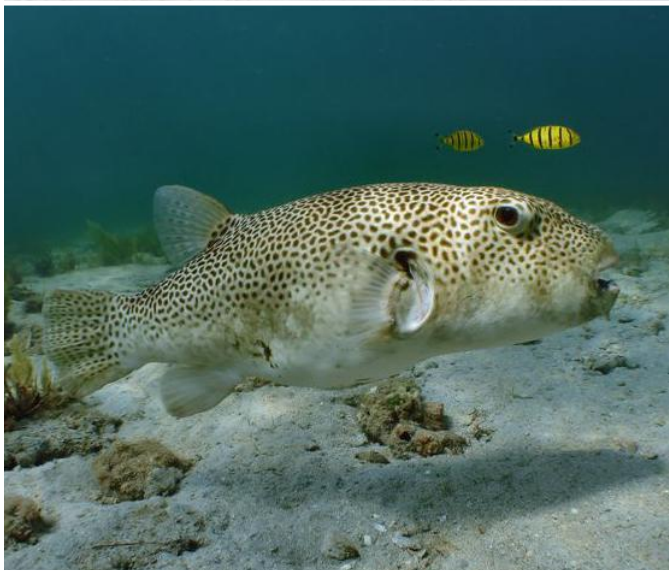
Photo by Matthias Hammer

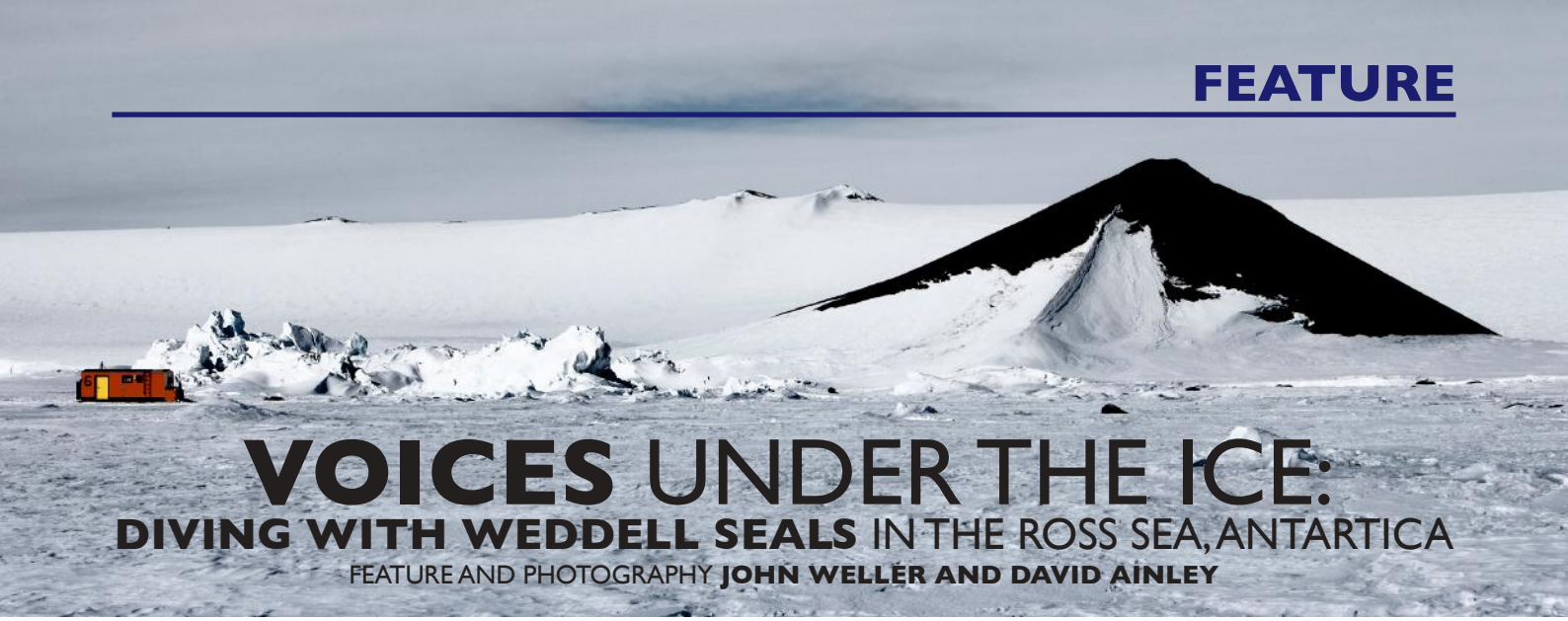
Photos by Ken

IMAGES AT A GLANCE

EDA MEMBER: PHILIPPE LECOMTE

SOME ENCOUNTER IN ABU DHABI





VOICES UNDER THE ICE:
DIVING WITH WEDDELL SEALS IN THE ROSS SEA, ANTARTICA

FEATURE AND PHOTOGRAPHY **JOHN WELLER AND DAVID AINLEY**

At this point, no marine system in the world is completely untouched by human influence. That being said, the Ross Sea has sustained the least damage of any open ocean ecosystem. There has been no widespread pollution, no mineral extraction, no native fisheries, and no introduction of alien species. Perhaps most importantly, all the natural predators that existed in the Ross Sea before our arrival 150 years ago are still there, and at close to their original densities. This is not the case in any other open ocean ecosystem on earth. To say it another way, in the Ross Sea, and nowhere else, the dynamic balance is still intact. The ecosystem is still healthy. This is the Ross Sea, the last ocean, and it has many stories to tell.

There is quite a long story about how I (John Weller) came to be standing in a dry-suit over a hole in the ice covering McMurdo Sound, Antarctica. Of course, it has a lot to do with help from the U.S. Antarctic Program, but as I stood there, looking down, the previous four years, actually the entirety of my life's experiences up until that moment, seemed to drain out of my memory. The only thing left was that hole, and what I would experience in the world below.

Squeezing through that tunnel of ice at Turtle Rock I emerged as if a skydiver under a low-hanging blanket of expectant clouds. With the lid of ice clamped shut, shades of blue and cyan replaced the veils of white, finally merging with the black water at the margin of my vision in a seamless hinge. The temperature was -1.8°C, the freezing-point of salt water, and though it was late in the season, with phytoplankton starting to grow under the ice, visibility was still nearly 200 meters – clearer than any other water in the world.

And then there were the sirens… Weddell seals live on and below the fast-ice all year long, through the winter, maintaining holes in the ice – portals to their cold-water world – with their teeth. Above water they are barely mobile as they lie on the ice with their young, but below water they are dancers. And their voices are more than sound. The call seems to start as semi-conscious thought, a memory of wind whistling through a drafty window, sharp and sweet. It has no direction, no source, and it cuts cleanly through the dark shadows of the mind even before the tone starts to accelerate and deepen, crossing fully into consciousness as the long descending note breaks abruptly into thumping vibration, almost too deep to hear.

Turtle Rock rises steeply out of the sea ice that covers the Sound. The seasonal fast-ice was approximately 2.5 meters thick in that area of the Sound in 2008, and though it was more than sufficient for vehicles and a dive hut, it was still in motion. Fifty meters past the dive-hut was the evidence: a gapping crack, arched underneath like a railroad tunnel, perhaps 3 meters across and extending into the distance as far as I could see. The crack is a function of the geography in that part of the Sound and the prevailing ice movement, thus it forms every year in nearly the same spot, and has done so for millennia, providing predictable access for the seals, which slip smoothly into the water through holes in the thin ice at the center of the arch. At the right time of day, shafts of light shot down through the seal-holes, illuminating patches of the seafloor, nearly 70 meters below.

On the dive in question, my dive partner and I headed south from the dive hole just under the blanket of ice and alongside the crack towards the rocky island. We slowly descended as the steep slope of the approaching island rose out of the dark, meeting the bottom at 12 meters, where the slope abruptly tops-off into a wide, flat shelf for perhaps 50 meters before continuing steeply upwards again to break the surface. Here the prevailing ice movement and local geography combine to form another striking feature. While that combination dictates that the ice splits and spreads to form the crack, here it dictates that the ice is piled up against the side of the island. As the ice is piled against itself, it rises skyward above water, buckling into spectacular sculpted ridges. But below it is even more spectacular – the crumpled ice is pushed deep underwater, in some places even touching the 12-meter-deep shelf. The result is a twisted complex of underwater ice caves. I had seen these caves on two previous dives, and had peeked in from several different entrances along the outside of the shelf. I signaled to my partner. I was now ready to go inside.

The entrance of the cave was hidden around a thick wall of ice, extending from the shelf floor to the ceiling 10 meters above. The darkness was immense, seemingly impenetrable, until I had turned the corner around the great triangular wedge. There, a 3-meter archway led to a cathedral chamber, filled with light. The ocean floor was a mosaic – writhing piles of lurid sea stars, urchins and meter-long nemertean worms. Giant sea spiders progressed over the substrate with their bizarre walk, sometimes taking amphipods or other freeloading passengers along for the ride on their vivid red legs. I swam carefully under arch and into the chamber, floating only half a meter off the sea floor.

The ceiling of the chamber was like a cloud formation from an El Greco painting – tortured clouds and shafts of light. The end of the chamber narrowed, seemingly ending in another wall of ice, touching the ocean floor. But behind that wall was another archway, this one only a meter high. It was nearly pitch black again, the brilliant light of the first chamber now hidden behind the wall, but I could see a dull blue light beyond the arch. I was 16 minutes into the dive, so I floated through into the second chamber. My eyes adjusted to the dim light. An assortment of benthic creatures had assembled on a small group of rocks. It looked like they had been arranged by hand. A thin blue crack in the low ceiling seemed to originate from the assemblage, snaking up like a plume of smoke. It was perfect.

I carefully placed the legs of my tripod on the seabed and hung on, rotating to release air from my suit and reset my buoyancy before I let go. I rotated back, now neutrally buoyant again without the weight of the camera and tripod, floating just above the seabed. I started to work. I positioned the camera, and pointing my dive-light at the sea stars, brought the scene into focus. Next I brought the strobes around

into position, extending one of the arms far in front of the camera to the right to rake light across the scene from the side, one far up to the back left to fill the shadows. The tiny knobs on the strobes had required extra attention in the dark and cold, but I had them set to light the scene softly, at 1/16th power and 1/8th power respectively. I started to determine an overall exposure. I was so concentrated on the work that I was oblivious to other movement nearby.

The blast was so loud that at first I didn't even recognize it as a noise. It was like a jet engine had started up in my head, a shockwave of buzzing bees exploding through every inch of my body. I couldn't see! My eyes instantly defocused, registering, as I remember, only a dull line of blue light from the crack, and darkness encroached from all sides. I've used a jackhammer a few times to break up concrete in my back yard, and this is the only experience that remotely relates to the rest of the sensation. My entire body felt like my arms and shoulders do after an hour on the jackhammer – numb, unresponsive, almost as if they aren't mine to control. I had no idea if I was breathing or not.

The final thumping notes pumped through me, and then ended, but the bees remained, buzzing inside me under every inch of flesh. My eyes regained some focus, as did my head, but everything was fuzzy like waking up from a deep sleep. I fought hard against it, trying to regain control. And now I finally had time to be terrified. I was gulping air, but felt completely out of breath. I realized I was lying on my side on the ground. I had tipped to my right, losing air from my suit through the shoulder vent, but I didn't understand this part of it right away. Some of the haze was actually the silt that I was now stirring up, and I flailed in it, trying vaguely to get away, worsening the situation. Through the silt, I could see the massive male Weddell seal hovering directly above me. Thought finally kicked in, and my hand shot to my chest, filling my suit with air, lifting me off the ground. I grabbed the tripod, and tried to move, again forgetting to add more air to the suit, dragging the camera for a meter before I remembered. Somehow in the midst of panic, I registered that a few of the sea stars had been dislodged off the rocks by the sound in the untaken photograph.

I swam backward away from the seal, which had turned slightly to watch me, and then I flipped over and kicked hard in the direction of the arch, forcefully folding the legs of the tripod as I swam. I made it through the arch and into the first chamber with no problem. I had regained control of my breathing as I was exiting the cave complex, but my heart was still pounding in my chest, and every muscle was exhausted. I looked back once at the corner of the great wall of ice before I started to ascend. I saw only darkness. Ahead was my dive partner, suspended in the blue under ice arena.

During the next week I related this story to my colleagues, one of whom confirmed that very intense Weddell sounds had been recorded, in some cases as loud as small dynamite explosions. But no one had yet explained why the seals produced such loud noises.

When I told the story to Dr. David Ainley, he immediately made a connection between my experience and other unexplained Weddell seal behaviors. Weddells have been repeatedly observed bringing huge (100kg) Antarctic toothfish up into holes in the ice. These fish, some half the size of the seal, reveal no tooth marks and are placid rather than being dead. How could the seals so easily manage these huge fish? We surmised that the seals must use sonic blasts, like the seal did to me, in order to subdue the massive fish!

Thanks to scientists working in the US Antarctic Program, and other national research expeditions, the Weddell seal is one of the best-studied pinnipeds in the world – an intensive effort spanning 50 years – yet, obviously, much remains unknown about their behavior and life history. I think about this continually. There is so much we have to learn.

Until recently, the Ross Sea was perhaps the last near-pristine stretch of ocean on Earth. But having depleted much of the rest of the world's ocean, industrial fishing has finally reached this place, the very last 'unfished' hotspot on Earth. In only a few years, the target, Antarctic

toothfish (marketed as Chilean sea bass), has already started to disappear from McMurdo Sound. Fish-eating Type C killer whales, which are thought to live almost exclusively in the Ross Sea, apparently are beginning to search elsewhere. The toothfish is the 'shark of the Antarctic,' and the damage levied on benthic communities and reefs elsewhere in the world by the loss of such large predators is well documented. In short, loss of the toothfish would likely affect this entire system in a similar way. Who knows how many of these incredible stories would be lost along with it.

This last place is in danger.

With colleagues, I'm helping to pursue an effort to designate the Ross Sea as a marine protected area. We don't have much time. Please learn more and get involved at:
www.lastocean.com.

THE DX FACTOR

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

Some suggestions for your (first) advanced underwater photo equipment.

A few issues back, we talked about the choices to take when choosing your first underwater photo equipment and explored some relatively cheap options. I have been approached lately by quite a few people interested in advanced photo equipment. In other words, a "housed DSLR" (Digital Single Lens Reflex camera in an underwater housing) which many people consider "Pro" equipment which is in fact used by a very large number of "serious amateurs" all around the world.

A very important question to ask is: "Does the equipment define a better image?". The straight answer is unfortunately a very sound YES, but before I get stoned let me explain a few things. Being a more advanced and modular system, the DSLR system is more suitable for the wide range of subjects we encounter underwater, from wrecks to whale-sharks, to dive buddies, to groups and clown fish, down to nudibranchs. And it often represents something else: commitment. The high initial investment most often than not represents a deep devotion to dive more and shoot more in order to develop one's skills in underwater photography. This will come at a price, and I'm not only talking about money. The DSLR system is MUCH bulkier to travel with, requires a great amount of care, and you don't have the flexibility of varying your shooting style (macro, fish or wide angle) when underwater as some compact systems can do. But in the long run, moving from a compact to a DSLR is definitely an upgrade, and it is one that people very rarely regret.

THE CAMERA

The first thing people normally think about when doing this upgrade is "which camera should I get?". That is the right question, but it can lead you to a not-so-right answer especially here in the UAE. Unfortunately for most camera makers the underwater DSLR market today is dominated by 2 brands: Canon and Nikon. Nikon has a greater history with underwater photography and when the digital era came to us, Canon was the only manufacturer that was able to enter this "realm", mainly through a heavy output of high-quality compacts for the beginners, but in the upper segment of the underwater photography market, Nikon still dominates it.

Having said that, there are some important aspects that we should consider and I will approach them separately, most of them (if not all) have to do with "productivity" rather than image quality, as the first is much more important. Image Quality is pretty much at an acceptable level in all DSLRs, but it is how fast and how you set your camera that will determine whether you get the shot or not underwater…

COMMAND DIALS

Underwater photography is a challenging type of photography, and being so will require you to go in manual mode much more often than "land" photography. A good camera for underwater photography should include 2 command dials (one for aperture and one for speed) without the need to press a button to set your aperture or speed. This will make your life alot easier, especially underwater where your camera will be boxed inside a housing and you will probably be wearing gloves… the 2 separate dials is one of my "musts".

SENSOR SIZE

This is a weird one. All the top-notch cameras today boast that "Full Frame" is better, etc…

A camera with a bigger sensor has a higher IQ than one with a smaller sensor, especially in high ISO settings. But I am part of a big group of underwater photographers that believe that (as of today) the best sensor size for underwater photography is the APS-C size sensor (named by Nikon as DX) and my reasons on why this is so are mainly 3 size and weight, lens choice and price.

Size-wise DX cameras are smaller than their FX (Full Frame in "Nikonish") and this difference in size is much more noticeable when the camera is inside a housing. A bigger setup underwater produces more drag, makes you use more air, makes it more difficult to approach smaller subjects, is harder to carry when you travel, etc.

The lens choice today is another big factor. Underwater, photography is pretty much dealt with at extremes. The extreme wide-angle and the extreme of macro, you always trying to reduce the amount of water between you and your subjects to get punchy colors. And the choices for the DX cameras are way better than the choices the FX shooter has. On the macro side, the smaller sensor makes much more powerful tele lenses, today shooting DX I get a 60mm lens that shoots like a 90mm due to the smaller sensor. A 105mm gives me an amazing 160mm underwater (not counting the water refraction index!) at the price of a 60mm and a 105mm respectively. I am a "Nikonian" (heavy Nikon user) and in October, Nikon released an amazing 85mm macro, for the DX sensor alone… this situation reflects on the other side of the Canon border as well. On the wide angle it is even better! Today we have lenses like the Nikon 10.5mm fisheye, the 10-24mm zoom, or the Tokina 10-17mm fisheye zoom that are breaking the barriers we had with film and full-frame options, especially when it comes to close focus capabillities! Sorry, Canonians APS-C shooter can use the Tokina, the excellent Canon 10-22mm or the Sigma 10mm fisheye.

The price is a joke, the highest end PRO DX camera from Nikon is the D300 (recently replaced by the D300s with video capabilities) it comes at a third of the price of the flagship model, with pretty much the same AF capabillities, continuous shooting fps, metering systems etc… and the same magnesium alloy weather sealed body. The lenses (requiring less glass) are also cheaper, same story in the Canon world.

METAL SEALED BODY

A metal weather sealed body is not a "must" but it is very welcome. You try your best to not flood your system and the weather seal will surely not be resistant to that, but the places we go to when shooting underwater are very humid and it is very hard not to get a "splash" of water on your camera eventually. And if you get one, a weather seal is one of the mostly welcomed characteristics of your camera, so if it is in your budget, try to get a good metal body weather sealed camera. Normally these cameras are referred to as being the "Pro" line of a manufacturer, and amazingly enough the "Pro" line is easier to work with than the amateur line!!! In the pro-line, most of the important commands are in your hands where as in the amateur line, sometimes they are only accessible via (sometimes complicated) menus.

THE LENS(ES)

Bad news is, one lens does not do it all. It used to on your compact, but not anymore, this is where "Kansas goes bye-bye Dorothy". The very best thing about a DSLR is to choose the best glass for each occasion, in real life terms: "Why would you have one pair of shoes for every occasion?" you would be better off shooting with a compact then! I don't know why, but women often better understanding this point.

Basically it resumes to you if you go wide. Go REALLY wide, if you go macro, REALLY go macro. The cheap 50mm/1.8 (amazing lens by the way) lens that shoots rocking portraits of your kids won't have the same bang underwater whereas the 60 or 50mm micro

looks great!!! If you are a fan of nudibranchs and smaller things, a 100 or 105mm micro is the one for you, with a teleconverter and some extra accessories if you're a macro-maniac like me. If you like pelagic the wide zooms (10-24, 10-22, 12-14…) from Canon, Nikon, Sigma or Tokina are the ones for you. For the corals we have in the Red Sea for example, a fisheye lens like the Nikon 10.5mm, Tokina 10-17mm fisheye zoom or the Sigma 10mm are great!

THE HOUSING

Please save me the trouble and get an aluminum housing. You are spending something just below 30,000 dirhams in electronic photographic equipment to use under salt water. These things don't really combine…there are only two situations where I would consider the use of a plastic housing. One, if it is paramount (by your budget) that you should get one (so you are probably shooting with an advanced amateur plastic bodied camera as well) or otherwise, you won't be shooting a DSLR. The other one, is in the case you live and do most of your diving within the US where these housings compensate for their inherent flaws with an amazing service network. Commonly known brands are Ikelite (plastic), Sea&Sea, Aquatica, Subal, Seacam, Hugyfot, Nexus etc… I use Sea&Sea and here in Dubai we have dealers for Sea&Sea (Al Boom Diving), Ikelite and Subal (SCUBA Dubai). Due to the low flow of this market they don't carry stocks here. I hope we can change that in the future.

STROBES

Underwater flashes are called "strobes" most of the time. Don't worry we do things differently, like calling "close-up" pictures "macro" just because they happened underwater… you'll get the hang of it. It's best to have medium strobes rather than a top level one. Twin strobes make a world of difference underwater, recommended models for DSLRs are Sea&Sea's YS110a and Inon's Z-240, other models exist like the Subtronic in Europe, but these are the most common ones and very competent. A good thing is they use AA batteries (I use rechargeable ones) and even if you're far out in the Land of Oz, you will be amazed at some of the places you can find AA alkaline batteries in an emergency situation.

In difference with your compact, you will be using sync chords instead of the optical connections compact users love. So you don't burn your brains about TTL, here's a little secret: You don't need them! (Where was Kansas?) It is a nice thing for macro but it is definitely not a "must". All DSLR cameras have good AF capabilities in low light, but if you find yourself often cave diving or doing night dives too much, get a focus light, it is much better than the flash "modeling" light which is in there for a completely different reason.

ARMS

To support the flash we use arms (not ours, but aluminum ones that attach to the housing), some people like long ones, some are ok with short ones. I like them short. They are easier to travel with, to dive with and with the correct flash positioning skills (VERY IMPORTANT in underwater photography), I tend to think they achieve the same effect, especially when shooting DX with the fisheye lenses that let you get closer than with film or FX.

DOMES & PORTS

Just a quick one on ports and domes. Domes require proper positioning on the lenses. Please check the manufacturers chart for which correct dome/flat port to use with the lenses you want to use BEFORE buying your house/camera/lenses!!! The smaller the domes, the better, unless you're shooting a lot of over-unders, or want to use some weird non-fisheye zooms. Smaller and modular flat ports like the Sea&Sea Compact Macro Port system are also amazing!

I guess those are the basics when choosing DSLRs for underwater photography. If you have any doubts, feel free to contact me. The only thing I would like to add is a little story about how us underwater photographers are NEVER at the top of the wave when it comes to equipment.

"A long time ago in a galaxy far, far away called Film Photography, the camera makers were at the top of technology, everybody knew everything and there were no secrets, new cameras would come out every 4 or 5 years and it was only a matter of how much money the manufacturer put into its products. Before they released the camera, the camera makers would release mock-ups of the camera for third-party makers (people that make accessories, bags, and guess what? Underwater housings!) so that when a camera was released, it was soon followed by many accessories and we were able to get housings for a 5 year life-spanned camera within 2 months of its release.

This is long gone. In the digital world, everybody hides their products until they're on the shelves!!! It is VERY hard to get a camera + housing within 6 months of it reaching the market. If you are mounting your first setup and have no ports, lenses, strobes etc… it is even harder, might even take up to a year to get it all fixed. And now we're talking about cameras whose life-spans are ONLY 2 years. Do you see where I'm going with this?

So the BEST advice when it comes to DSLR underwater photography equipment today is: Get the best equipment your budget can get you (which as I've described does NOT mean the greatest-brandest-newest and most expensive!) with what's available TODAY and start shooting right away!

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The APS-C sized sensor (DX) D300 with the amazing Nikon 10.5mm fisheye lens, using the smallest of domes this lens still has the power to focus inside the dome! Allowing a greater freedom of composition with smaller subjects! This camera is very compact when compared to the Full Framed D3 or D700.

The brand-new Nikon D300s magnesium alloy body chassis with all the weather seals indicated in red.

The amazing Canon 10-22mm wide angle zoom. This lens was the first of it's kind, and still is an amazing lens today for Canon users, with good usage both underwater and topside.

Sea&Sea's versatile and compact YS-110 alpha strobe, with 3 strobe bulbs, one optical connection (small black round window on the front/bottom) and modeling light (round silver window in the middle).

UNDERWATER PHOTO COURSES ARE IN FULL SWING

FEATURE **MARCELO MARIOZI – WWW.UWPHOTO.AE – UWPAE@ME.COM**

If you are interested in joining the UW Photo crowd there is a good number of courses now being taught in Dubai at dive centers and on a one-on-one basis. I have completed a few of these courses already and expect a great number of students in on the next ones.

I have been shooting underwater for a little over 10 years now and was always involved with instruction (CMAS Dive & UW Photo Instructor), UW Photo Competition organizing, competing and judging, totalling to more than 20 such events. The results we have been getting in Dubai so far have been amazing! The courses are really tight and to-the-point, the dry sessions and pool sessions are really helpful and interesting, maybe more important than the sea dives!

You have many options to choose from depending on your level of photography and with what you want to achieve.

BASIC UNDERWATER PHOTOGRAPHY FOR COMPACTS

This course is designed for the absolute beginner with a compact camera. It saves time by eliminating all subjects directly related to advanced DSLR cameras, it includes some basic "top-side" photography concepts as well as ALL the basic elements to achieve technically corrected images and to guide the new underwater photographer in his/her first year of shooting. This is a basic course in which we will discuss areas such as equipment, maintenance, light underwater, basic photography, flash, basic composition, techniques, etiquette…

THEORY: 12h of class/review
PRACTICE: 1 dry session, 1 pool session and 2 dives
REQUIREMENT: Compact UW Camera system (see note on equipment). Can be rented.
GRADUATION: No special requirement
PRICE*: AED 1,500 not including dives

UPGRADE TO DSLR UNDERWATER PHOTOGRAPHY CRASH COURSE

Designed for students that graduate from the Basic Underwater Photography for Compacts if they want to upgrade from compacts to DSLR, this course does NOT revisit most of the basic knowledge and concentrates on what else they need to know to achieve technically corrected images in a pleasant composition from their first dives with the new equipment. On this course, we will focus on the operation of the new equipment and its challenges both in macro and wide angle shooting.

THEORY: 6h of class/review
PRACTICE: 1 dry session, 1 pool session and 2 dives
REQUIREMENT: Basic Underwater Photography for Compact Course; Housed DSLR system (see note on equipment)
GRADUATION: Written Test
PRICE*: AED 1,000 not including dives

INTRODUCTORY DSLR UNDERWATER PHOTOGRAPHY

This course is designed to the photographer upgrading from a compact camera to a DSLR or a new underwater photographer that wants to start as a DSLR underwater photographer. It saves time by eliminating all subjects directly related to compact cameras, and it includes some basic DSLR top-side photography concepts as well as ALL the basic elements to achieve technically corrected images in a pleasant composition. It is a course in which we will discuss areas such as equipment, maintenance, light underwater, basic photography, flash, basic composition, techniques, etiquette, followed by a 2 day dive where we will practice what has been discussed in a macro dive and in a wide-angle dive.

THEORY: 12h
PRACTICE: 1 dry session, 1 pool session and 2 dives
REQUIREMENT: Housed DSLR system (see info on bottom of this page)
GRADUATION: Written Test
PRICE*: AED 2,000 not including dives

ADVANCED UNDERWATER PHOTOGRAPHY

The Advanced Underwater Photography course is ministered to pupils who graduated in the Introductory DSLR Underwater Photography course, and/or those who demonstrate complete knowledge of its contents through his/her images. A pre-assessment with image analysis, underwater photography knowledge, equipment discussion and dive experience is necessary.

THEORY: 12h;
PRACTICE: 1 dry session, 1 pool session and 2 dives
REQUIREMENT: Housed DSLR system and advanced accessories (contact me on: mariozi@gmail.com?subject=Advanced%20DSLR%20 Course for info)
GRADUATION: Portfolio Pre-Assessment; Written Test & Post-Dive Image Analysis
PRICE*: AED 2,500 not including dives

This course quickly reviews the basics of DSLR UW Photography and develops into areas such as, (but not limited to), Advanced UW Photo modes, B&W UW Photo, Close-Up Wide Angle, Super-Macro, Advanced Composition, Advanced Equipment Knowledge, Creative Underwater Lighting, Image Analysis, and UW Competitions. It's a 2 day theoretical course followed by 2 days of diving sessions in pool and ocean.

EQUIPMENT

COMPACT: any compact camera with manual shooting mode, and a dedicated strobe. *I STRONGLY RECOMMEND TO CONTACT ME BEFORE BUYING YOUR FIRST EQUIPMENT FOR UW PHOTOGRAPHY.*

DSLR:

- Nikon DSLR with DX Sensor, equipped with Main and Sub Command Dials (Nikon D300(s) or D90)
- DX Fisheye Lenses (Nikkor 10.5mm, Tokina 10-17mm, Sigma 10mm)
- Macro Lens (Nikkor 60mm, 85mm or 105mm)
- Aluminum Housing with appropriated ports for the lenses used (Sea&Sea, Seacam, Hugyfot, Nexus, Subal or Aquatica), check housing compatibility before you buy the camera!
- 2 Underwater Strobes with cables and arms (Sea&Sea YS-110a or Inon Z-240.

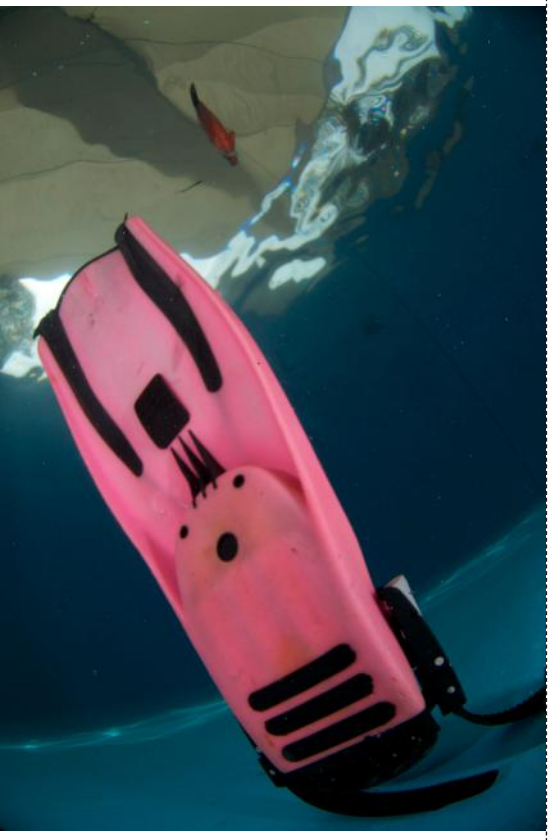
*Prices are subject to discount in groups of 3 or more.

Students setting up their equipment for the first time on an introduction DSLR course done at Al Boom Diving.

EDA DIGITAL ONLINE 2010
LADIES & GENTLEMEN, START YOUR CAMERAS!

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

Fish photography pool exercise



Wide angle pool exercise.

Macro Photography exercise, all these images were taken by Hussein Mourad on his first time shooting a DSLR.

The diving season was nicely started with whale shark sightings, good visibility and some locations showing a tremendous recovery from the red tide. It is time again to think about our underwater photography for next year.

As it was announced during the (amazingly nice) results from this year's EDA Digital Online competition, we will begin next year's alot earlier. We planned for January 1st, but we are making it earlier. So from December 1st we are open to registration and submission of images.

The general rules regarding photos, categories etc, will remain the same. So you can start thinking about what you have in your portfolio or start shooting for it from now on. The recommendation from last year remains: try to participate in all 3 categories: Macro, Fish and Wide-Angle.

The main reason for the change in the dates, bringing it closer to the beginning of the year is the intention to do the first UAE UW Photo Championship later in the year (Oct/Nov) with all photographers diving the same spot in the same conditions, this is not only fun but it is a great way to improve your photography by talking to others and exchanging ideas on techniques and equipment.

EDA DO 2010 RULES

INTRODUCTION

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

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

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

CATEGORIES

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

FISH (F): Photographs of whole fish and/or fish parts as the main visual element (NOT mammals, crustaceans, mollusks etc…) taken with any lens, portraying its natural behavior and environment.

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

ORIENTATION & RESTRICTIONS

- Digital Online is open to pictures taken all over the world
- Pictures submitted must be unpublished pictures that have NOT received any award and/or prize in any other form of contest/championship
- Digital editing will only be allowed if applied in a uniform manner over the whole image (such as contrast, white balance, saturation and sharpening)
- Selective editing such as (but not limited to) layers, brightening/darkening part of the picture, or cropping are NOT accepted
- Multiple exposures are NOT accepted in any category
- NO pictures that portray manipulation characteristics, harm (or risk of), bait use or alteration on the habitat and/or species will be accepted
- Pictures with identification (any form, even dates) over the image are NOT accepted
- In pictures with models (divers) these must show an unquestionable behavior with regards to the underwater environment protection. Actions like touching, kneeling,

leaning, or even positioning the fins in a risky manner to the environment are going to be penalized by the jury
- Wide Angle is the ONLY category that accepts creative techniques (but not limited to):
  - Half-half pictures, where the water half must be 50% or more of the picture
  - Colored lights, and other effects if done by the time of the image capture

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

REGISTRATION AND IMAGE UPLOAD

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

Non-Nationals should also add a low-res scan of their Resident Visa (people who have already sent a passport scan to a previous EDA Digital Online competition do not need to resend it)

All images MUST be sent attached to a single email message. And only the first email received by the organization will be considered valid.

All images must be .JPG files, in the EXACT dimensions of 600 x 400 pixels.

THE IMAGES SHOULD BE NAMED:

Wide Angle Category: **w.jpg**
Fish Category: **f.jpg**
Macro: **m.jpg**

Only ONE picture will be accepted per photographer, per category.

The original pictures (slides, negatives or high-resolution digital files) are going to be requested by EDA to confirm and authenticate the results before their announcement. If they are not received within 15 days from the requested date, the picture will be disqualified.

The process of registering and sending images is the confirmation that the photographer accepts the rules of the event, and recognizes EDA and only EDA as capable of evaluating the cases not contained herewith.
- You will receive an email to confirm the registration.

DEADLINES AND RESULTS

The deadline for registration and image upload is midnight (UAE local time) on January 15th 2010. The results will be made public and the prize ceremony will take place at the EDA official event.

IMAGE VALIDATION

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

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

JURY

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

CONTEST

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

DIGITAL ONLINE JULY 2009 PHOTO COMPETITION RESULTS
WIDE ANGLE CATEGORY 1st PLACE
Phillipe Lecomte

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

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

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

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

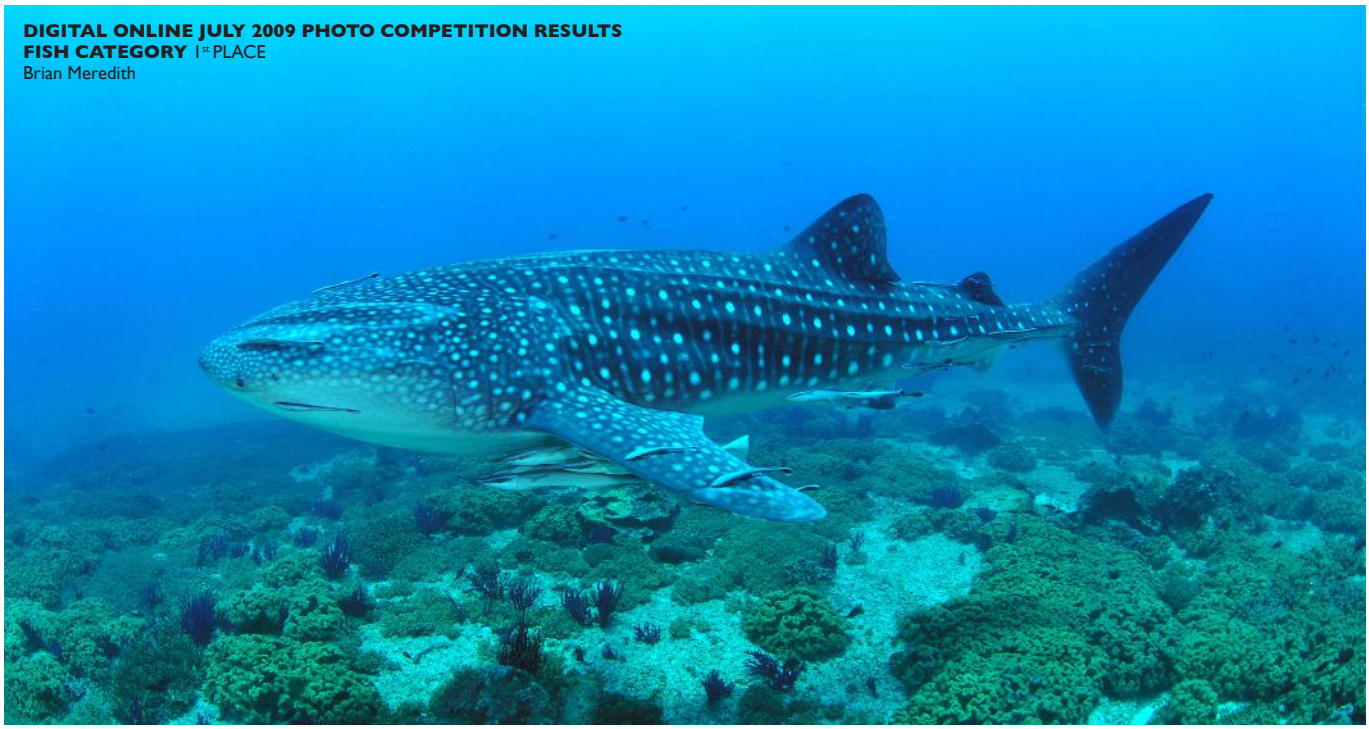
First Place Macro Category
Second Place Macro Category
Third Place Macro Category

SPECIFIC RULING

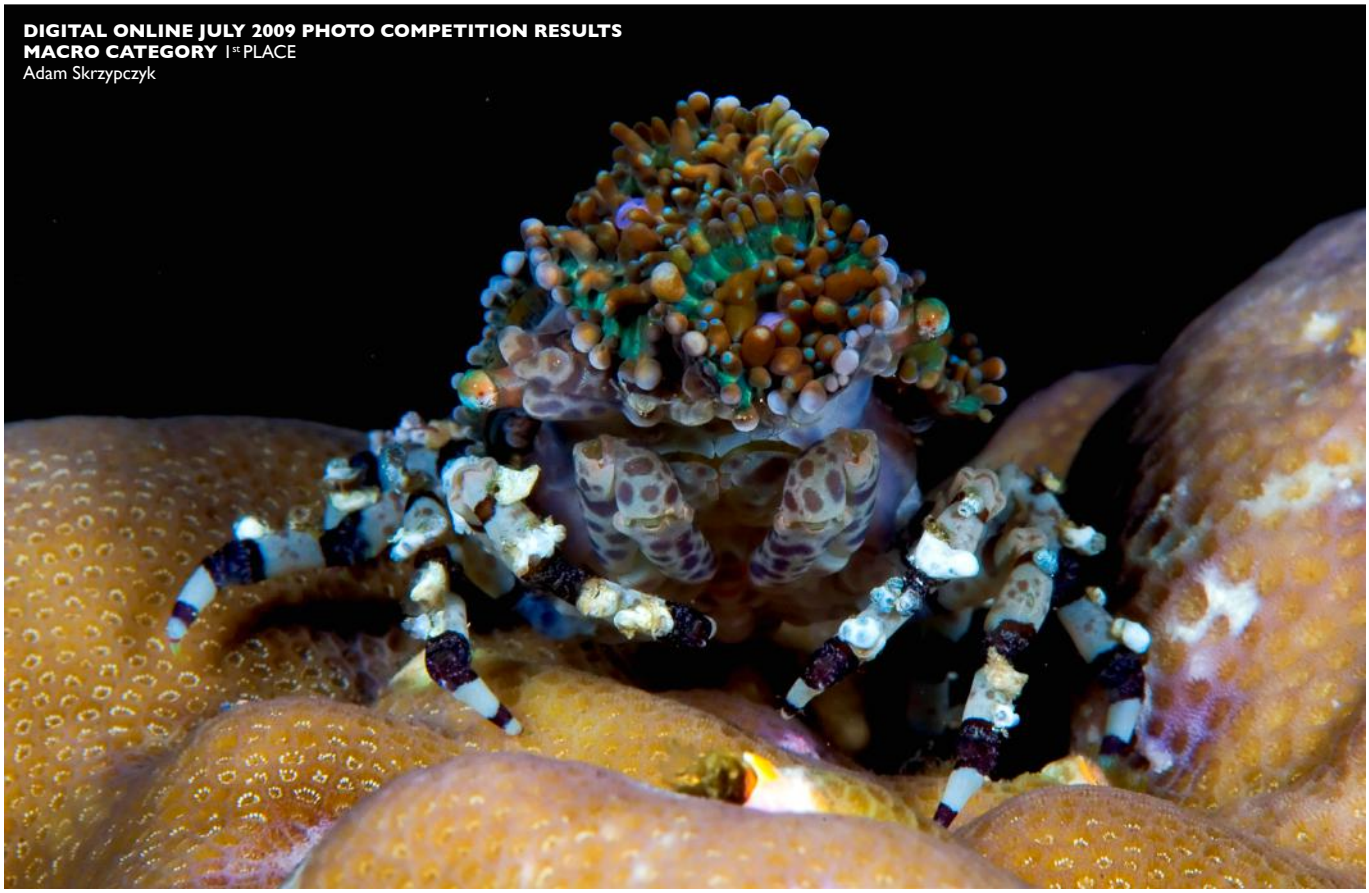
EDA will use Digital Online results as a "qualifying" event for any subsequent in-water event this year or next year that requires a limit in the number of photographers participating.

EDA may use the images at will, exposing these images on its webpage, magazine, or in any way associated with the subaquatic environment cause, such as products, booklets, publications etc. with no copyright to the photographer nor his heirs but the mention of his/her name. EDA, Sponsors and Supporters are not responsible for any accidents the participants may incur or provoke as a result of his/her participation in this event.

DIGITAL ONLINE JULY 2009 PHOTO COMPETITION RESULTS
FISH CATEGORY 1st PLACE
Brian Meredith



DIGITAL ONLINE JULY 2009 PHOTO COMPETITION RESULTS
MACRO CATEGORY 1st PLACE
Adam Skrzypczyk



PIC FIX

YOUR IMAGES EXPOSED AND REFLECTED

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

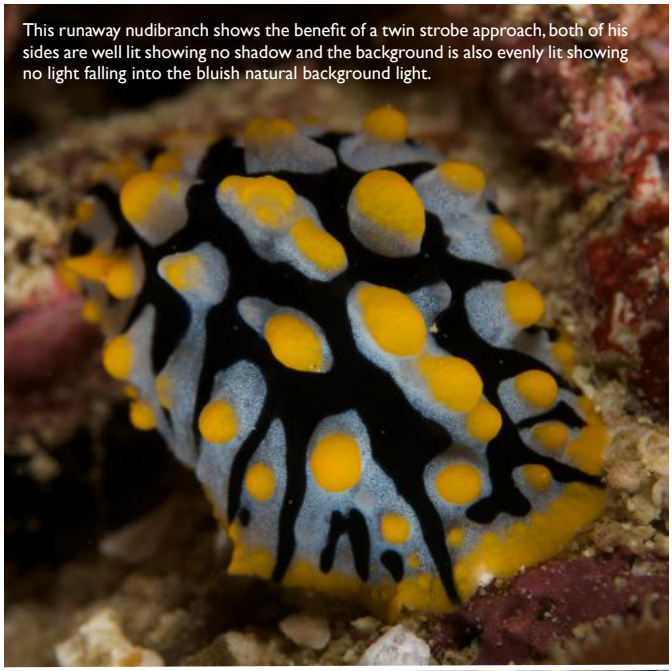
If you want to get your pics published here and reflected on, send an email to: **photo@emiratesdiving.com** with your attached picture (2000 x 3000 JPG), with a description of the equipment you used, where you took it and your background in underwater photography.

Bjorn Mikkelsen sent us a few images from his portfolio and it was very hard to choose one picture for this section that would show an area of improvement. He dives with an advanced compact camera, the Sea&Sea DX-1G and has just been through a Basic UW Photo workshop.

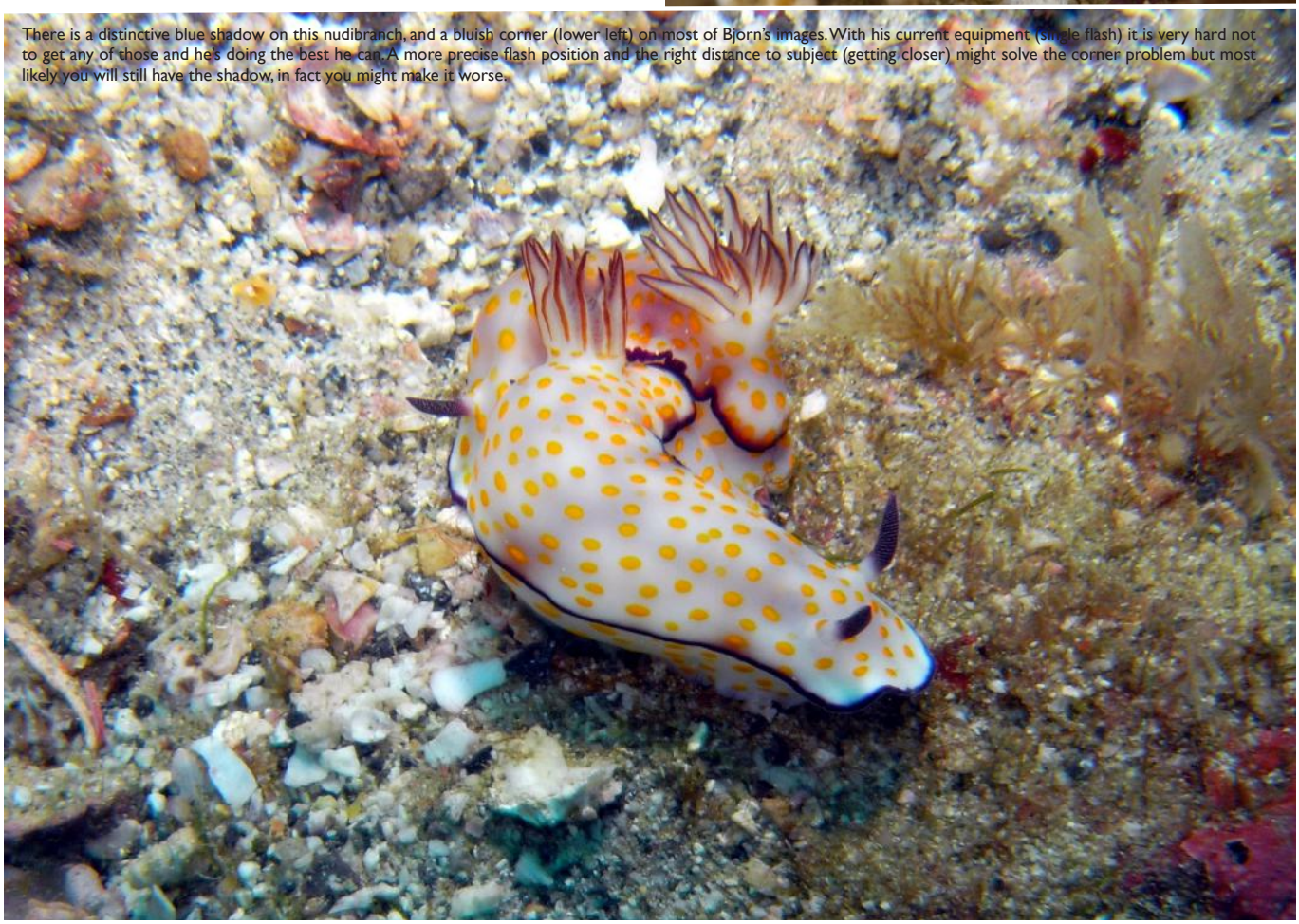
After thorough research through his photos, the best example of possible improvement is represented in this image here. Bjorn is definitely very close to the limit of his equipment and I think I found one way to improve his images that will also represent a new challenge in his underwater photography.

Most of his images either show a distinctive blue shadow on his subjects or a bluish light coming from one corner. That was the clue for what's next in store for Bjorn's images: they need a second flash.

It is very hard to edit his original image to show the benefits of adding another flash unit, I can only show some examples of it where the blue shadow or bluish corner does not appear because of an added strobe. This would not only represent a big challenge for Bjorn – maybe the last one before his foreseeable upgrade to DSLR equipment – but would also be an improvement (the easiest one I can see) to his images, as he will be able to get photos with more even lighting.



This runaway nudibranch shows the benefit of a twin strobe approach, both of his sides are well lit showing no shadow and the background is also evenly lit showing no light falling into the bluish natural background light.



There is a distinctive blue shadow on this nudibranch, and a bluish corner (lower left) on most of Bjorn's images. With his current equipment (single flash) it is very hard not to get any of those and he's doing the best he can. A more precise flash position and the right distance to subject (getting closer) might solve the corner problem but most likely you will still have the shadow, in fact you might make it worse.

FABULOUS DIVING AT **LEMBEH STRAIT**

FEATURE AND PHOTGRAPHY **DISCOVER ORIENT HOLIDAYS**

ABOUT LEMBEH

WHY DIVE LEMBEH STRAIT?

Lembeh Strait offers a variety of diving, including some coral reefs and wrecks; however it is best known for the small and hard-to-find creatures that inhabit the rich-muck strait. The world renowned Lembeh Strait lies off the northern tip of Sulawesi, 1.5 hours from the center of Manado city. It is a completely different type of diving from that of Bunaken National Park or Bangka Island.

Considered as the diving Mecca for critters and macro marine life this area has rapidly gained popularity amongst macro photographers. The extremely diverse marine habitat in this stretch of water offers a plethora of macro species, many of which can found nowhere else on the planet. Diving here is the ultimate experience for photographers in search of the unusual and unseen. It is often referred to as a muck-divers paradise as most of the sites are either sandy areas or small reefs. With over 30 dive sites to choose from and even a WWII wreck, all within a short boat ride over calm waters from the resort; it is no surprise that the Lembeh Strait is indeed a world class dive destination.

Lembeh Strait offers all-year round diving but the sea conditions do vary from month to month. January to June is a bit variable with fewer divers. Due to the west wind in August, the visibility declines a bit, however September and October offer divers the best two months overall.

THE MOST EXCITING SITES THAT ARE HOME TO BIZARRE MARINE LIFE ARE:

POLICE PIER

The sandy shallow slope here has a lot of rubble, trash and things that look out of place underwater. However don't let this waste-look disappoint you as they all make excellent hiding places for all manner of exotic critters. Under the pier itself you can expect to see frogfish, seahorses, wasp fish, snake eels, cleaner shrimp and cuttlefish, also keep an eye out for the endemic Banggai cardinal fish. This is also a great spot for a night dive as countless species of crab comes out to forage for food and the rare Bobbit worm may also be found.

NUDI FALLS

Here, a vertical rock drops down into a slope that ends on a grey sandy bottom at 25 meters. As its name suggests, the highlight of this dive site is the sheer numbers of nudibranches that can be found. The soft coral bed houses myriad macro creatures including pygmy seahorses, frogfish and mantis shrimps. The elusive Rhinopias can also be found here though your dive guide is more likely to spot one than you.

HAIRBALL

This bizarrely named spot is one of Lembeh's more popular. Frogfish sightings here are pretty much guaranteed on this black sand bed of life. This is a true muck dive site with seahorses, octopus, crabs and plenty of other crustaceans. Many of the critters are very well disguised, as the algae make a great camouflage. Close by is Hairball 2 where juvenile batfish, cardinalfish and zebra crabs are seen.

CRITTER HUNT

Placed at the southern tip of Sarena Kecil Island is this spot which upon first impressions does not look like much. However, it is home to macro marine creatures scattered amongst the rubble and small coral heads. Passion and patience are the key here, hence the name! Keep a look out for decorator crabs, wasp fish, frogfish and squat lobsters.

ANGEL'S WINDOW

Placed off the north coast of Lembeh Island, the submerged peaks here have a number of gorgonians that are home to pygmy seahorses. It is a little different to the rest of Lembeh's muck dive sites, much more like a coral reef dive. Visibility is usually a bit better and there are a couple of swim throughs at about 25 meters which make up the "Window". Snappers and jacks are often found hanging out here and the walls are lined with crinoids and feather stars.

CALIFORNIA DREAMING

A nice dive to get a break from all the muck. Colourful coral gardens with large orange tree corals and red gorgonians feeding in the current here. The visibility is also often better than that of the murkier muck sites. There is a plateau at around 14 meters where the critters can be found for those macro addicts that simply can't get enough bizarre critters!

TELUK KEMBAHU

Abbreviated to TK1 and TK2, these are named after a local village and are found on the Sulawesi side of the Strait. Topography consists of a dark sandy bottom with scattered rubble and sunken logs. It is where the first mimic octopus was sighted in Lembeh, also the home of the Banggai Cardinalfish which can only be found in this region. There is no shortage of other marine inhabitants here either with mandarin fish, gobys, devilfish, frogfish, porcelain crabs and razorfish, all making this an exceptional dive site.

MAWALI WRECK

A Japanese steel cargo ship from WWII was scuttled and sank in 1943. She now lies in 30 to 15 meters of water on her port side. The wreck is around 65 meters long and has heavy coral growth, a number of large lionfish lurk in suspension over the hull. Spotted baramundi cod are seen along with the usual macro subjects including pipefish, nudibranchs and shrimps. Penetration is no longer recommended due to the heavily encrusted surfaces and instability of the structure.

Stonefish

For booking and enquiries, please contact Discover Orient Holidays at opdxb@discover-orient.com.my or doh.dubai@gmail.com. You may also call May on: +971 50 9133298.

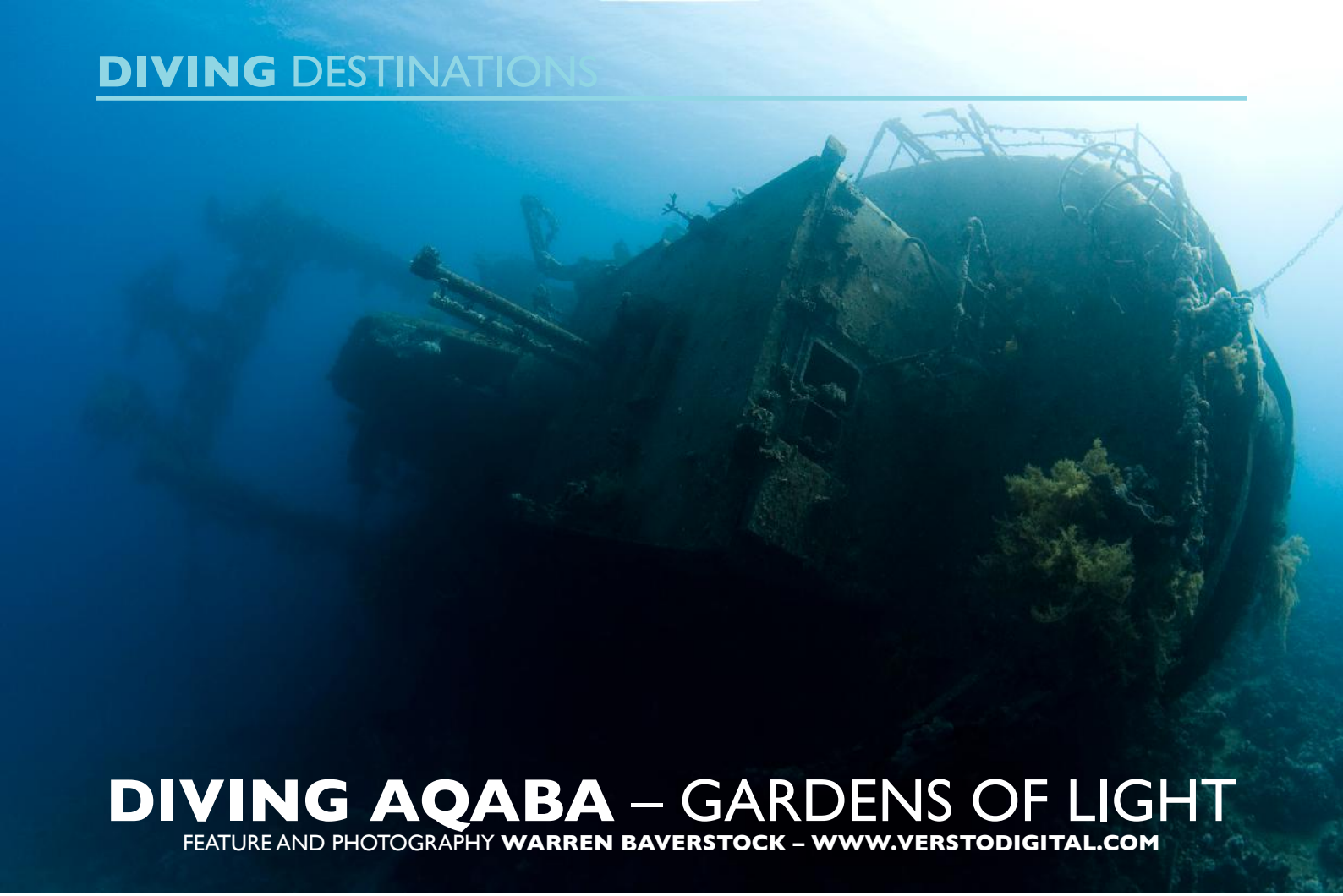
Devil Fish

Mantis Shrimp

Mimic Octopus

White Painted Frogfish

Wonderpus



DIVING AQABA – GARDENS OF LIGHT

FEATURE AND PHOTOGRAPHY **WARREN BAVERSTOCK – WWW.VERSTODIGITAL.COM**

In 2008, I was asked if I would be interested in going to Aqaba to photograph the marine life for a book about Jordan's underwater world. I had previously heard many good things about Aqaba's diving and its special marine life, but more important to me the promise of crystal clear waters and relatively easy diving. It didn't take much to convince me that I could capture the material for the book within the two and a half week schedule, and so one month later my buddy JAK and I found ourselves standing on the edge of a dive boat platform looking down into the turquoise waters of Aqaba.

Descending down over the hard corals of 'Japanese Gardens' and I was filled with joy of finally having 30+ metres visibility. Equipped with two cameras, one wide and the other macro, I continue to descend in search of something interesting to photograph. It didn't take long; a mass of various zooplankton taking refuge within a sand jellyfish, a blue spotted stingray and a group of peppered morays with cleaner shrimps all within 20 minutes. Realising that the dive should soon come to an end I look up the rich coral slope and while watching a silhouetted hawksbill turtle swimming in the shallows, I thought to myself "I'm going to like it here".

Kitted up, ready to go and before I know it I'm descending down the buoy line onto the 'Cedar Pride' shipwreck, and it's impressive. For the last couple of days we have been diving the reefs of Aqaba but now we find ourselves looking at the Cedar Pride, a ship that was sunk as an artificial reef in 1985. Lying on it's starboard side at 28 metres I can see that there is a large swim through under the wreck and as I come out the other side and look to the surface, I see the ships coral covered crow's nest teaming with marine life. As I approach the mast a shoal of Banded Bream swim away and looking closely amongst the soft corals I see several Common Lionfish taking cover from the mild current. As I photograph the array of marine life around the crow's nest, hundreds of Anthias surround me, darting up into the water column feeding on tiny fragments of food that float past them. With three wreck dives under our belts and reducing visibilities we decided that for the last dive we would go shallower in search of critters that inhabit Aqaba's sea grass slopes. After 60 minutes of diving 'Black Rock' we had managed to find a pair of delicate Dragon Sea Moths, a Seahorse and several Pipefish.

Kneeling on a sandy slope in front of a small coral covered pinnacle, 18 metres down I find myself on 'Eel Garden'. Staring at a huge cloud of marine life hovering over the soft coral covered pinnacle, I cannot help but be amazed by how different the dive sites that I have seen over the last several days are. As I turn and look down the slope I see a large shoal of Red Sea Banner fish around another pinnacle, while groups of Garden Eels sway in the current. The next dive, 'Gorgone One' and the marine life to be found around one of the large pinnacles on this site is the most impressive I have seen so far. Around the top of the pinnacle, several

large Stonefish blend into the dome coral while large shoals of Damsels unknowingly swim centimeters above them. All the time Trevally and Garfish swoop down onto the Damsels causing chaos. Down one side of the pinnacle a crevice leads down to a cave where inside a large Redmouth Grouper surrounded by thousands of Golden Sweepers are seeking shelter. Around the cave, Lion and Scorpion fish lie in wait and as my bubbles disturb the Sweepers, the predators move in on the distracted fish.

A couple of days later we had planned a day of wreck diving. The first would be the 'Al Shorouk', a shipwreck that was sunk by Aqaba Marine Park only weeks before our arrival. Lying deep off 'Eel Canyon', the Al Shorouk is 38 metres at its shallowest point and exceeds 60 metres at its deepest. With poor visibility we descended down onto the bow of the boat briefly so that we could photograph it. The next dive was the Second World War American 'M42 Duster' tank complete with anti-aircraft canon lying in 6 metres of water. This unique wreck was sunk in 1999 by the Jordanian Royal Ecological Diving Society and since its introduction has developed into a nice artificial reef, reachable by not only divers, but snorkelers too. Our final wreck dive of the day would be a night dive on the Cedar Pride to see what this wreck would be like during the night. We were not disappointed and the most impressive crow's nest by day was even more amazing by night. As we illuminated the mast we found that all of the soft corals were fully extended and covered with an array of macro marine life including the most fully camouflaged Oate's Soft Coral Spider crab.

A couple of days later an arrangement had been made for us to dive a private wreck. During our dive brief it was mentioned that a bottlenose dolphin had been seen playing with jet skiers near the dive site and on the odd occasion had been seen down on the wreck. My goal was to photograph a pair of Painted Frogfish that resided on this dive site and as our guide pointed out the camouflaged critters, I photographed them. Moments later our guide signaled to me to follow and looking down from the top of the wreck I saw JAK with the dolphin. Waiting for what seemed like an eternity, I gave JAK the space he needed to film the dolphin and as it returned to the surface for its breath of air, I dropped down onto the seabed. Looking up at the surface I waited patiently hoping that it would come back and as I watched, this graceful creature glided effortlessly down from the surface and joined me. Looking directly into my mask the dolphin inspected me and with what seemed like a nod of approval, then backed off and nudged the sandy bottom with his nose, signaling me to play with him. With his nose in the sand, I also buried my finger into it and with this, the dolphin instantaneously followed it allowing us both to interact with each other. By now I was ready to get the picture and as

the dolphin nuzzled its nose into the palm of my hand, I pushed him away and upwards to my chest height. Quickly I raised the camera and as I did, the dolphin spotted its reflection in the dome port. Inquisitively the dolphin observed its reflection and while doing so remained perfectly still allowing me to take a photo. Momentarily, I looked to the back of the camera to check the photo and while doing so I reached to the dolphin with my other hand. Swimming forward, the dolphin placed his nose back into my hand and we continued to play our game of push and shove until he needed to return to the surface. After making several trips to the surface it was now my turn and with my twin cylinders nearly empty I sadly made my ascent leaving my new friend behind.

My last diving day at Aqaba had finally arrived. Still on a high from the previous days dolphin experience, I am feeling tired after an intense schedule of diving and so in a way I am a little relieved to be going home. JAK and I had already made up our minds where we were going to dive, 'Coral Garden' and the 'Aquarium' and so as we headed for the 'Royal Diving Club', I assembled my equipment for the very last time.

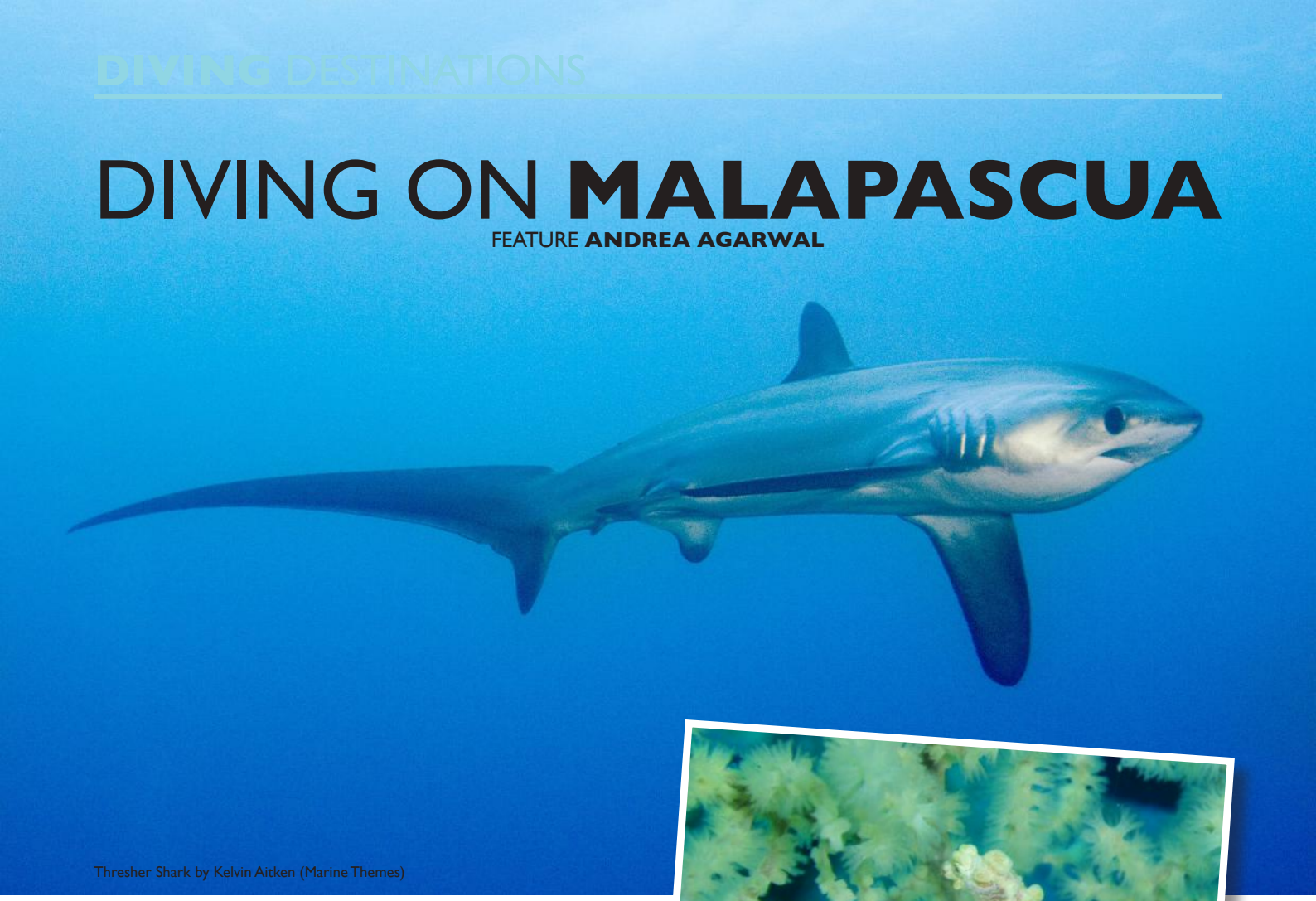
Although I had previously dived the coral gardens, I decided to venture a lot deeper and my decision to do so paid off. At 30 metres there was a slight current and as normal the dive site was busy with marine-life, however, one thing that I noticed was that a lot of the soft tree corals were fully extended. Although I was treated to this spectacle on the Cedar Pride night dive, I was especially happy to be spending my last day capturing more of these pretty corals and as Anthias left the shelter of the coral to catch food, I snapped away. Moving from one small garden of life to another, I now realised that on earlier dives I had missed out on a great opportunity as each of these small eco-systems offered something different. Like every other day, while handing up the cameras, surfacing just before lunch we were always greeted by the rich pleasant aroma of Arabian barbequed fish and chicken being cooked on the dive platform by the boats chef. With cameras in freshwater and a plate of freshly barbequed food with humus and Arabic bread, I sat with my feet in the water gazing down on our last dive site.

Although a fairly shallow dive, the Aquarium is staggering all the same with pristine hard and soft corals fighting for space. Hovering above the corals are various reef fish and with the good visibility I can see the furthest since I have been in Aqaba. There are predators everywhere, Stonefish and Filamented Devilwalkers lying perfectly still in the sand while Bearded Scorpionfish compete for space around small pinnacles. With my 5-metre safety stop complete I decide for the very last time that I would explore the maze of hard corals in the shallows and as I venture closer to the shore I encounter more predation. Groups of juvenile Common Lionfish in less than a metre of water are stalking small fry and as I take my last photographs I just can't help but continue to be amazed at how unique Aqaba is.

As our boat glided through the calm sea, I watched the sun sink down behind the Egyptian mountains for the last time and with the warm sea breeze on my face reflected on the great diving I had experienced over the last two and a half weeks. Looking back, Aqaba is a truly fun place to dive with plenty of marine life for divers of all experience levels and given the chance, I will surely visit again.

DIVING ON **MALAPASCUA**

FEATURE **ANDREA AGARWAL**



Thresher Shark by Kelvin Aitken (Marine Themes)

Yellow Pygmy Seahorse

BIODATA

I am originally from the UK. After completing a DSD in Mexico, I fell in love with diving and never looked back. I spent a year in Thailand doing my dive instructor training where I met my husband Trevor, then we moved back to my adopted home of San Francisco to set up a dive school. After two years of cold water diving, we longed for the tropics and sold up and moved to the Philippines. After falling in love with Malapascua, we opened Thresher Shark Divers, which has since grown into one of the biggest and most professional dive operations in the Philippines.

HERE IS THE STORY OF MY FIRST DIVE AT MALAPASCUA…

As an avid diver, I had heard about the legendary thresher sharks of Malapascua and wanted to see them for myself. Malapascua is the only place in the world where the beautiful and rarely seen thresher shark can be seen on a daily basis, so I took the plunge and went for two days, hoping that would be enough time to get lucky.

I still vividly remember my very first dive on Malapascua as one of the best dives of my life. I rose at 5am, blearily admiring the fantastic sunrise and sipping the cup of coffee pushed into my hands by the boat crew. This is one of the earliest dives anywhere, but the thresher shark numbers are at their peak at this hour of the morning. The sharks are attracted from their usual home in deep water to the "cleaning stations" of Monad Shoal, which are like a carwash for fish: small fish called cleaner wrasse will pick the dead skin and parasites off the bodies of bigger fish. It is a necessary service, and one to which the sharks subscribe, luckily for us.

As I set out on the 20 minute boat trip to Monad Shoal, I crossed my fingers, toes and everything else I could think of, hoping desperately to see these sharks about which I had heard so much. As we got closer and closer to the dive site, the adrenalin built up, pumped even harder by the tantalizing possibility of seeing manta rays at the same time. Threshers and mantas on one dive! I did not dare hope.

We descended as the sun was rising to a flat bottom. We swam around for a few minutes, and then, out of the darkness, the unique silhouette of the thresher appeared, its huge scythe-like tail swishing gracefully behind. It swam closer and closer, and soon it was within a few meters. Its silver body glistened in the early morning light, and its distinctive tail, almost half its body length, followed lazily behind. The shark circled several times and then swam off into the blue. Wow!

We moved along the drop-off a little further and encountered another of these magnificent creatures. We stopped and watched for 5 minutes as it circled in front of us. Then, I heard someone hollering underwater. People only holler when there is something really special. My head snapped to the side and what did I see but a six meter manta ray headed straight in my direction! My breath caught as my heart melted at the sight of this gentle giant. My first manta ray. What a perfect end to a perfect dive.

That dive was six years ago and I still haven't left Malapascua. The diving has got me hook, line and sinker! I quickly found out there was much more to diving on Malapascua than thresher sharks. While I continued to dive Monad Shoal every morning with the sharks, it left my days free to explore the other underwater delights of Malapascua.

Gato Island is a 45 minute trip from Malapascua and is a treasure chest

full of marine life. There is a bit of something for everyone from big to small. One of the main attractions we had heard about was the cave, so we came with torches at the ready. As it turned out, the 'cave' is really a tunnel that runs through the center of Gato Island. We started the dive at its entrance, a mere 5 meters deep. As we got deeper and darker into the cave, our lights picked out lobsters, feather stars, and other bright eyes shining in the crevices. Just as I thought it couldn't get any darker and we were about to lose the little remaining ambient light, we turned a corner and gasped. The passageway opened out into a big cave exit and circling right at the opening were a couple of huge whitetip sharks. Their silhouettes made for an amazing sight. We watched for 10 minutes until they swam leisurely away, then found a couple more sleeping under the rocks outside the cave exit and managed to get within a meter of them.

We continued our dive and saw… well everything really! Everywhere I looked there was something else to see. The macro was incredible. Nudibranches? On my first dive there, I saw more nudis than I had ever seen in my entire life put together. All different colours and shapes and sizes. As for crabs and shrimps, it seemed that on every coral and under every anemone were crustaceans of every variety. Our laser-eyed DM spotted a funky painted frogfish and beautiful seahorses including a yellow pygmy!

But the highlight for me was the mating cuttlefish. I had never seen anything like it. These broadclub cuttlefish mate in threesomes, and as one male spread out to protect his female, a second male tried to get a look in. The light show is amazing as the cuttlefish 'strobe' their zebra stripes and casually go about their mating business.

Lighthouse was another first for me. It is home to the rare mandarin fish. There are only a few places in the world you are guaranteed to see these beautiful fish and this is one of them. At dusk you will often see them mating and hence I nicknamed this the "Randy Mandy Dive".

We descended a little before dark, down to the reef at a very shallow 5 meters. There, we spotted the psychedelic mandarin fish darting around in and out of the coral. Very soon a pattern emerged as a larger male would become surrounded by a harem of smaller females and do their mating dance. After about 20 minutes, night started to fall and in that few minutes before the light completely left for the day, the real action took place. The male would choose a female and they would spiral up together above the reef, up and up, until they explode in a puff of eggs and semen. Immediately, the two would shoot back down to hide in the corals, as if shamed at being caught in the act. But if the male was feeling particularly frisky, he would emerge again, and repeat this act one or more times with a different female each time. What a stud!

As soon as it got dark, and the mandarins had their fill for the night, they went back into hiding, but the dive did not end there. Even without the mandarins, Lighthouse makes for an incredible night dive. We went off in search of seahorses, bobtail squid, huge crabs, blue ring octopus and other creatures of the night.

The diversity of marine life around Malapascua is incredible and the diving has something for everyone – big fish, macro life, wrecks, walls, coral gardens, novice diving and advanced dive sites. Even now, after hundreds of dives on Malapascua, I am constantly discovering new and sometimes rare marine life.

OTHER INFO

Lapus Lapus has beautiful unspoiled coral gardens stretching as far as the eye can see and the giant frogfish is an almost permanent resident. Nunez Shoal and Calangaman Island have incredible wall dives with fantastic visibility.

Dona Marilyn is possibly the best wreck in Central Philippines. It was a passenger ferry that sunk over 20 years ago, and is still in one piece. There are several species of large rays in residence and the fish can grow huge. The Tapilon Japanese WWII wreck was torpedoed and cannot be penetrated, but it has an incredible amount of marine life. A huge school of small barracuda will circle the divers during their dive, and frogfish and ghost pipefish are often seen.

Malapascua is a great place for beginners. There are many novice level dive sites that make it easy to progress and build up confidence before trying out the shark dive. More advanced divers will find there is something for them as well with the shark dives, the wrecks and the walls. There are also chances for technical diving, on the various shark dives and the wrecks including the WWII Pioneer Wreck at 55 meters.

Thresher Shark Divers is the foremost shark diving expert on Malapascua and they offer shark dives every morning. As a PADI 5 Star IDC Center they offer a full range of courses from beginner to instructor, including a unique Thresher Shark Diver Specialty course, nitrox and trimix. They arrange all inclusive dive holiday packages. For those who want to stay longer and are thinking about PADI Divemaster and Instructor courses, consider a dive internship, and dive with the sharks every day of your stay!

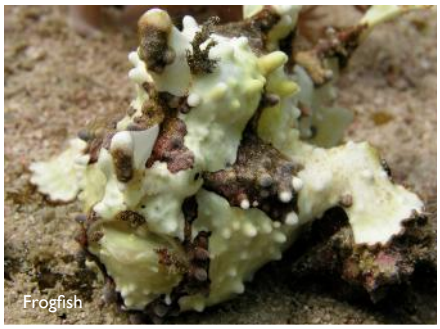
Malapascua's reputation is starting to spread and its picture postcard reputation is well deserved: beautiful white sand beaches, palm trees, and aqua blue waters. The idyllic island is a perfect getaway for anyone, but for divers it is heaven! So visit this paradise before everyone else gets the message!

GETTING THERE

Nearest airport is Cebu-Mactan. There are direct international flights from Qatar, Singapore, Cathay, and from Japan and Korea. You can also fly to Manila and get one of the many domestic flights to Cebu. Thresher Shark Divers can arrange airport pickup.

SEASON

There is diving year round, although the weather is best from January to April. 'Rainy season' from May-December does not affect Malapascua very much and the chances of bad weather are very small. Threshers and mantas are seen year round, hammerheads are more common in March and April.


Frogfish


Mating Cuttlefish at Gato by T.D. Holmes


Nudibranche © Alex Tattersall 2006

For booking and enquiries, please contact Discover Orient Holidays at opdxb@discover-orient.com.my or doh.dubai@gmail.com. You may also call May at +971 50 9133298.

GALAPAGOS AGGRESSOR I

FEATURE AND PHOTOGRAPHY **SUE GILES**

This year our family had three milestone birthdays and to celebrate, my husband booked us a trip of a lifetime to South America, including a weeks diving in the Galapagos Islands on the Galapagos Aggressor I.

Aggressor I is part of the Aggressor Fleet who are one of the oldest liveaboard specialists, having been in the business for 25 years. They have boats in all the major exciting diving destinations including two in the Galapagos Islands. They have a reputation for luxury with superbly fitted boats, well appointed cabins, excellent food, highly qualified staff and an enviable safety record. Have a look on their website. A very useful section was entitled "Know before you go" It has all the information you need and is updated regularly. We took our own dive gear but you could hire kit if you booked it in advance. They did carry spare gear on the boat but in limited quantities and sizes. I recommend getting your own wetsuit as it is important to have a good fitting one otherwise you would soon become chilled especially on the days where 4 dives were made.

Having booked the liveaboard part on line using their website, we then had to try to find the best way to get there from Dubai. After many hours on the internet we settled for British Airways to London and then on to Miami. From Miami, we took Aerogal to Guyaquil in Ecuador and then on to San Christobal in the Galapagos. Aggressor insists that you spend the night before your charter in Ecuador, either in Quito or Guyaquil. We opted for Guyaquil because the flight to San Christobal the next morning originates in Quito – early! It then stops to pick up passengers from Guyaquil at a much more sociable time. We also allowed an extra day in Guyaquil at the start which was just as well as Aerogal delayed our departure from Miami by about 2 hours and then a heavy storm delayed us longer. We arrived at our hotel in Ecuador at 4 a.m. needing a big sleep and were relieved not to be getting up early to go back to the airport.

Aggressor had left us a letter of instructions at our hotel and once we had made our way to the airport the following day, we were met by their representative who helped us through the check-in. You have to pay $10 per person at the airport to be allowed to fly to Galapagos then you pay $100 per person at San Christobal as National Park fees. The flight to San Christobal is only an hour and the approach to landing is a bit hairy if you have a window seat. It seems like the plane is going to land on the water.

Once we collected our bags, they were taken by truck to the boat so we only had to concern ourselves with hand luggage. We were met by Walter and Ruben, our two dive guides, and shown to the bus which would take us to the port. We were then ferried out to Aggressor I in an inflatable RIB. Once on board, we were given a welcome drink of fresh fruit juice or iced tea while Walter briefed us on boat and dive deck procedures. Cabins were allocated and we had a short time to retrieve bags and go to find our rooms.

There followed a more detailed briefing in the saloon over a light lunch where we introduced ourselves to our fellow divers, (14 in total) completed the required paperwork and gave our certification cards and passport details.

Then it was down to the dive deck to assemble kit in preparation for the first dive of the trip. The dive deck was spacious with each diver being allocated a station consisting of two tanks with a large locker under a bench for boots, gloves, masks etc. All the tanks were nitrox and it is strongly recommended that all divers use Nitrox as there are two days where four dives are made with minimum surface intervals. Not all the tanks were refilled after every dive as there simply wasn't time on some days, hence the second tank at your station for you to swap your kit onto. There was also a separate table at the back of the dive deck where camera equipment could be assembled and safely left between dives. Between the 14 of us, there was an incredible array of photographic equipment!

There was also a charging station with adaptors to fit any kind of charger for cameras, flash guns, ipods etc, a fresh water tank to rinse cameras and computers, hot showers to rinse divers and a pair of large rails with hangers for wetsuits.

Working out how much weight to use was a challenge, but our first dive was going to be shallow and sheltered, allowing us all time to adjust weight and kit as necessary. Most of us had brand new wetsuits ranging from 5mm -7mm. My son had a full 5mm suit with a 5mm shortie over the top! When diving in the UAE winter in a 5mm full suit I usually take 9kg. Now I was wearing a 6.5mm semi dry, boots, hood and gloves. Bearing in mind the water there is less saline than the UAE, I decided on 12kg. It wasn't enough! I had to add another 2kg, but by the end of the week I had dropped down to 10kg.

The briefings for the dives were carried out on the upper deck by Walter and included in the first one was an introduction to the safety equipment provided by Aggressor for every diver. The first item was a flag on a jointed stick which when assembled flew the flag about 1.5m above the water. Walter assured us it was much easier to see than an SMB. The crew had also fitted air horns to all our inflator hoses to attract the boat driver's attention if they had not seen us in the water. The final item was a personal positioning beacon attached to the BCD. We were instructed on how it works and how to use it. I started to feel a little anxious at this point. Had they lost divers in the past? Walter explained that many of the dives we would do later in the week were often affected by current and heavy seas. This equipment was for our peace of mind

and obviously to make any rescue as speedy as possible if the situation arose. The nitrox log and tank analyzer were also explained.

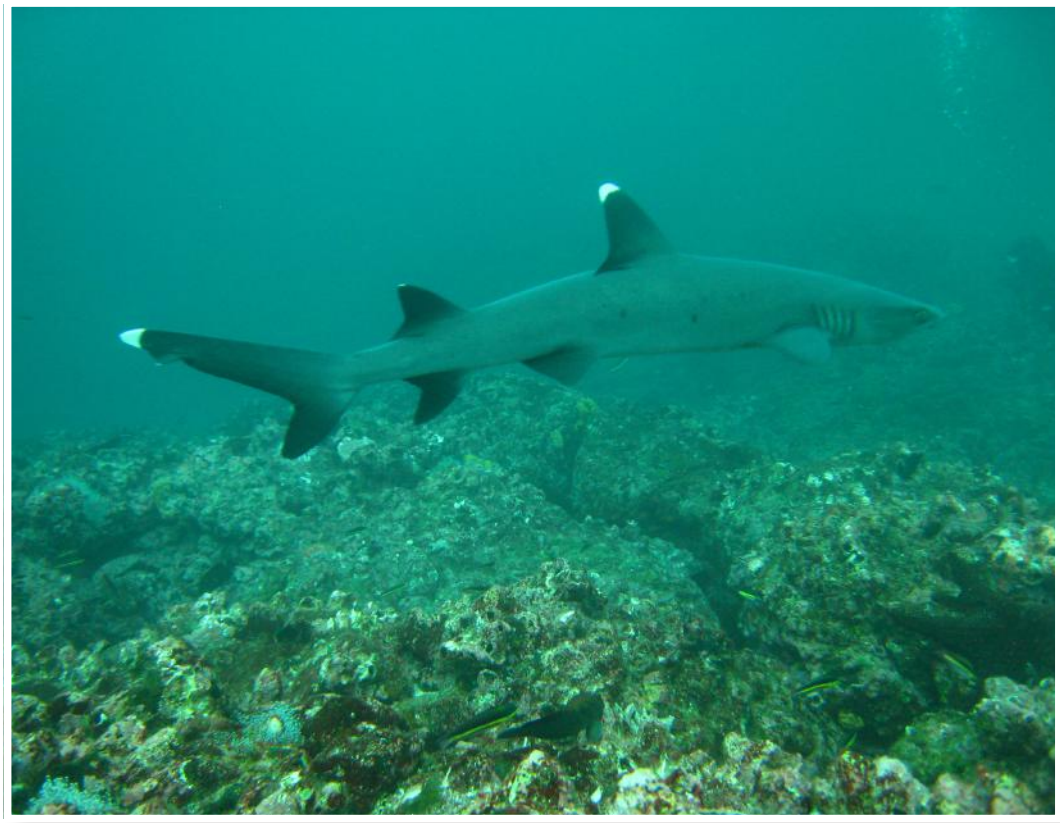
The first dive was at Isla Lobos and was the only dive we made straight off the back of the boat. As soon as we entered the water, we were investigated by a couple of sea lions. This was a bit disconcerting while trying to get to grips with buoyancy issues but Walter and Ruben were on hand to help with providing extra weights. The water was not as cold as I expected at 24 degrees. The dive was fairly shallow at 8m max and the visibility was not the best but the sea lions accompanied us for most of the dive. We also saw a sting ray in the sand and a few reef fish. It was strange diving in a hood for the first time and my 6.5mm of new neoprene was trying to keep me floating, but by the end of the dive I was feeling more at ease with everything.

Once back on board, max depth and time recorded, the chef appeared with a plate of warm cinnamon buns and hot chocolate. This was to become a regular occurrence, after each dive there was a snack, hot drinks and warm towels. (The towels were kept in a heated cabinet at the back of the dive deck).

That evening, we were invited for a welcome drink and to meet the crew. They were all smartly turned out in their official uniforms for the event, although for the rest of the week they dressed more appropriately for the work they were doing. Walter introduced us to each one and we toasted them with sparkling wine or fruit juice then tucked into a delicious barbeque supper on the top deck. English is not widely spoken by the crew (except by Walter) but they all know a few words. What they lack in vocabulary they more than make up for with enthusiasm. Knowledge of Spanish is a definite advantage!

As we needed to cover considerable distances to reach all the dive sites, much of the traveling was done at night. It is advisable to take motion sickness medication if you are prone to sea sickness as most of the passages were quite rough. We set sail soon after supper to reach Seymour Island to be ready to dive first thing in the morning.

There is no need to set an alarm as Walter woke everyone up by ringing a bell. Every morning we needed to be up at about 6am for breakfast. This was the first liveaboard I had been on where you had breakfast before the first dive! Breakfast consisted of a buffet style spread with cereal, yoghurt, cheese, cold meat and fruit. You could order hot breakfast which was cooked on demand. There was a plentiful supply of tea, coffee and fruit juice, (which was available all day along with snacks such as biscuits and crisps). Dive briefing followed. All the dive briefings were accompanied by a site map showing relevant details and information. Walter always gave a very in depth (and optimistic!) briefing. Today's dives were from the dinghies. We split ourselves into two groups which meant there were only 6-7 divers in each dinghy with a dive guide so there was plenty of space. We were advised to do a backward roll entry with no air in the BCD and to go straight down to about 10m and wait for the rest of the group as Walter said there was frequently current and surge at this dive site. He wasn't lying! In fact all subsequent entries were made the same way unless you had a large camera which needed to be handed to you. Diving in the Galapagos was not like any other diving we had done before. At most of the sites, you descended to the pre-arranged depth then found a convenient rock to hold on to and waited for the big stuff to swim past you. At this site, there was heavy surge and current so it was a bit challenging. A good pair of gloves is a must here. In fact I would advise taking a second pair too as the rocks are covered with barnacles and quickly wear away your gloves. The visibility was better here than the previous day and once again we were accompanied by sea lions at the start of the dive. After a few minutes of waiting a couple of white tip reef sharks swam by. Having just got over the excitement of seeing them, I suddenly realized that there were about 30 more swimming all around us. It was stunning. I had never been in the same bit of water as so many sharks. They were beautiful. We stayed where we were and watched them for the whole dive. It was a photographers dream as they were not



at all afraid of us and swam really close, giving opportunities for great photos. After about 45 minutes, Walter motioned for us to move out away from the rocks and to ascend and do our safety stop. Once on the surface, the dinghies quickly came to pick us up. The boatmen were very helpful, taking all your kit from you then helping haul you in over the side, not very dignified but it did get easier as the week progressed. Once back at the boat, those wonderful guys took care of all the dive gear, put it back at the correct stations, swapped or filled tanks, smiling all the time.

Our second dive of the day was at the same site and we were treated to a similar display. I decided not to wear my hood as I was not comfortable in it on the previous dives. It was a great improvement. I would advise anyone using new gear to try to get used to it before you go or it tends to distract you from the dives.

That night we had a very long passage to Wolf Island in the NW of the archipelago. We did four dives here in one day. The weather was overcast and misty and the sea was pretty rough. It was a bit daunting setting out in the dinghy but what fantastic dives we had! We descended to about 20m and there was heavy surge so hanging on was quite tiring as we were being battered around but well worth it for the shark activity. Here we saw scalloped hammerheads and huge Galapagos sharks, all well over 2m long. They were an amazing sight. A large eagle ray also made a leisurely pass, ignoring our presence but causing much interest in the divers. You might think that four dives in the same place would get tedious but I can assure you it didn't. In addition to the sharks, we came across turtles (Green, Leatherback and Hawksbill), sea lions darting around us playing in our bubbles, more Eagle rays and dolphins swimming up at the surface. One of the divers saw a small whaleshark at depth but he was the only one to get a good view. However, this raised our hopes that we would see more.

We moved on to Darwin Island overnight and the next 6 dives were all at Darwin's Arch, 4 on one day, 2 the next. For the first dive the weather was not too good, raining, rough seas and lots of wind, but we soon forgot about that because no sooner had we settled on the spot where we were going to stay, an enormous whaleshark glided into view. It was a pregnant female, about 15m in length. For most of us this was the first time we had ever seen one and she was magnificent. She swam effortlessly past us but we had to swim hard to keep up with her. She finally disappeared into the blue but she must have felt sorry for us because she came back again, only closer this time. It was an incredible experience. The rest of the dive was pretty amazing too, with fur seals, turtles, hammerheads and silky sharks. Towards the end of the dive, another, smaller whaleshark put in a brief appearance. What a dive, we were so privileged!

The first dive of the next day brought us another whaleshark. This one was smaller, maybe the one we saw at the end of the dive the day before. It was swimming above us and tempting as it was to ascend quickly to be close to it, we remained at 20m and observed it from below. Those were our only whaleshark sightings, both on first dives of the day so don't be tempted to skip that dive as it might just be the one!

We managed one more dive at Wolf Island before settling in to our long passage down to Cousins rock for the next days diving. We did two dives at Cousins Rock but at different sites. The first dive on the sunny side was great for small stuff. If you looked closely there was so much to see. We were lucky to spot a frogfish, a seahorse and an octopus as well as a single Galapagos shark, a family of eagle rays, mobula rays and some sea lions. The water seemed much colder here although it was only a few degrees less at 22. The second dive was on the other side of the rock where we saw some white tips, turtles and more eagle rays along with the usual schools of reef fish.

The last dive of the trip was at Gordons Rock. The Galapagos Islands saved some good things for the end – we saw a large manta, about 4m across, turtles, hammerheads and Galapagos sharks. A great last dive.

In addition to the diving, we were taken ashore on certain islands to see some of the land animals which the Galapagos is famous for. Walter and Ruben were also National Park guides and were very knowledgeable and passionate about the wildlife both above and below the water. We saw marine and land iguanas, sea lions with pups, lava lizards, frigate birds, blue footed boobies (yes, really!) even penguins! We visited the Darwin research station and saw the giant tortoises. Lonesome George is now a resident there and is still lonesome. They have not managed to find him a mate so it looks as though his particular species will sadly become extinct when he dies.

We had a fantastic week with Walter and his crew. They did a great job of feeding us, keeping the boat clean, lugging our dive gear around and making sure we had a wonderful time. I would highly recommend the Aggressor to anyone wanting to experience diving in the Galapagos. Having traveled so far to get there you can make the most of it by booking a jungle trek on the mainland, a mountain hiking trip or a visit to Quito. We decided to fly on to Peru to visit Machu Picchu and met many people there who had either just been to Galapagos or were just about to go after Peru.

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SOUTH AFRICA **SHARK TRIP**

FEATURE AND PHOTOGRAPHY **PHILIPPE LECOMTE**

My name is Philippe and I am a Divemaster and underwater digital photographer. In january 2009 my dive club proposed for me to go to South Africa and do two different shark dives.

We were four divers to set off for this trip from the 26th of May to the 7th of June 2009. We took a flight from Abu Dhabi (UAE) to Johanesburg (SA). When we arrived in Johanesburg, a driver with a mini bus picked us up to take us to the north of South Africa.

The beginning of the trip started with a 3 day safari at Kruger Park in the north to see the wonderful wildlife of Africa, especially to see the big Five (Lion, Elephant, Buffalo, Rhinoceros and Leopard).

We only missed seeing the leopard, but we saw the other ones and much more. The savana and bush of Africa is amazing and always grants you with some great surprises, such as impalas, wild dogs, gnous, giraffes and lots of birds as well.

After the beautiful safari, we drove to Durban along the coast, 160kms south to Proteas Bank. Here, there is a reef a kilometre parallel to the coast, at 30m deep and at just 7-8km from the shore, divers can do a baited shark dive with Bull sharks and Tiger sharks. Most of the time there is a strong current and poor visibility at Proteas Bank.

If you don't want some scary meeting with the big boys, you can simply dive on the reef and see other big fish such as guitar fish, groupers and even ragged tooth sand tiger sharks. Our group decided to spend three days there.

The launch at Proteas is very impressive. The rigid-hulled inflatable heads straight out into the waves after waiting severals minutes near the beach. The vessels are fitted with foot straps to ensure that no divers are washed overboard during the launch or during the high-speed beaching at the end of the dive.

The first day we dived the reef in order to meet with some quiet and relaxed sharks, the Ragged tooth. We went to a special place with several caves. That species of shark likes to stay in the dark in hidden places. From June to September they stay in the caves and normally leave around October to go towards the south.

We only saw 3 Ragged tooth sharks in the first cave. Due to the overfishing for fins and some shark nets that South Africa still use at some beaches, the number of sharks has decreased dramatically. Our divemaster told us that it is still possible to see 10-15 sharks in those caves… but for how much longer?

At the end of each dive you also have a lot of chances of seeing other species of sharks during the safety stops. Imagine drifting in a strong current with other potentially dangerous sharks around (Bull shark, Tiger shark, Blacktip, Dusky shark, or Hammerhead).

On the second dive, we dived on the top of the reef. The sealife here is very different from that of the tropical kind. There is a lot of sponges and some long seaweeds. This reef is at the end of the continental sea and the beginning of the tropical sea. At this safety stop we saw one very shy blacktip come toward us twice and then disapeared in the blue.

The second day, we decided to do a baited shark dive with the big boys. The bait is made up with tuna and several kilos of frozen sardines and placed in a bucket. At the dive spot, the captain of the boat started to spread fish-oil and throw bits of sardines about. After 10-15 minutes, depending on the number of sharks under the boat, we jumped in and stayed at 10-12 meters around the bucket with the current in our backs.

We saw 5 bull sharks (about 3.5m) and only one blacktip during that dive. The bull sharks were very shy, and most of the time they stayed below us. This first dive with big sharks was very exciting and impressive. Diving with those beautiful creatures is amazing… once you know that sharks don't eat humans.

For the third day, instead of doing two reef dives as previously planned, we decided to do another baited shark dive. Unfortunately, the visibility was very poor (4-5m) and we only saw one blacktip for 5 minutes and one bull shark twice for 10 seconds only. Some dives are great… some are not so great. Sometimes you see a lot… sometimes not so much. Every

dive is different, it's like gambling!

After that we went toward Umkomaas. A small town a hundred kilometres to the North. Here, our dive will be at one of the 10 best dive sites in the world: Aliwal Shoal.

This reef is only 5-6 kilometres away from the shore. The truck tows the boat to the beach and we start from there with a 10-15 minute ride to the dive site.

One of the best spots is called The cathedral. It's a big cave where several Ragged tooth sharks come and stay seasonly. The condition of the sea was wonderful, with a visibility of about 20-25 metres. Arriving at the destination, we were lucky to see two Humpback whales jumping offshore. It is my first time to see these big animals for real.

During the dive we saw at least 15 Ragged tooth sharks swimming around us, going back in the cave and going out again. It was amazing. They did not pay any attention to us and it was possible to swim with them if you followed them gently. Otherwise they changed their direction and swam away.

Around the cave, we saw turtles, potato groupers and plenty of coral fish. During the safety stop, myself and three other divers were lucky to see a Humpback whale with her calf for 10 seconds. It was wonderful and even for a short moment, it will stay in my mind for ever. My first whale during a dive!

The second dive was at the edge of the reef, on the north. The bottom at this part of the site was beautiful with plenty of small caves, arches, tunnels and big holes. The sea life was completly different from 100km away. There were Leafscorpion fish, Ringed pipefish, moray eels, Anthias, Clownfish, Triggerfish, Hawkfish and a school of batfish.

The second day, we planned to do another baited shark dive. We learnt that a group of 15 teenagers would be coming with us for the dive. They were coming with a tour operator from Durban.

The departure was the same as before. Towing the boat on the beach, moving the boat in front of the wave and jumping in. This day was calm with no wind and a bit of a swell. We arrived on the spot after 10-15 minutes and there were already 2 other boats there.

After talking with the captain from one of the boats, we were informed that 3 tiger sharks were in the water. The chance was maybe with us today. We decided to move 2-3 kilometres away and start our bait. The divemaster was very professional and told us that he would try to attract as many as he could in order to have a great shark dive. The bait took between 30 and 40 minutes.

It was not long enough because the weather was very nice and the sea was flat and clear. It was possible to see from the boat how many sharks we had attracted with the bucket. And suddenly, the green light was given by the divemaster. After a short briefing, we jumped into the water and the spectacle was amazing.
The visibility was truly clear and there were approximately 40 to 50 Black tips.

After 10 minutes, my colleague touched me on the shoulder and pointed below to a bigger shape swimming slowly. It was a Tiger shark.

This specimen was 3 metres long and a little bit shy. It only came around us three times. These moments were so impressive but unfortunetly too short. After that, it disappeared into the blue and never came back. We had dived for 1 hour and 20 minutes, and when the divemaster told me TIME, I had not realized how long the dive had been. We were only 4 divers left in the water compared to 18 at the start.

Even on the surface, I took my snorkel and continued to look at those beautiful creatures. At this moment, I realized that even with dead fish around us, sharks are not dangerous or a threat to us.

While getting bank onto the boat, the spectacle continued and we saw a Humpback whale and its calf coming near the boat twice to take some air before going back down for several minutes and reappeared a kilometre away.

This day was unforgettable. Everyone was so happy and satisfied to have done and lived this experience.

Sharks are extremely misunderstood and doing a trip like this reveals that they are not the mindless killers often referred to in the press. The ocean is theirs… we are simply visitors.

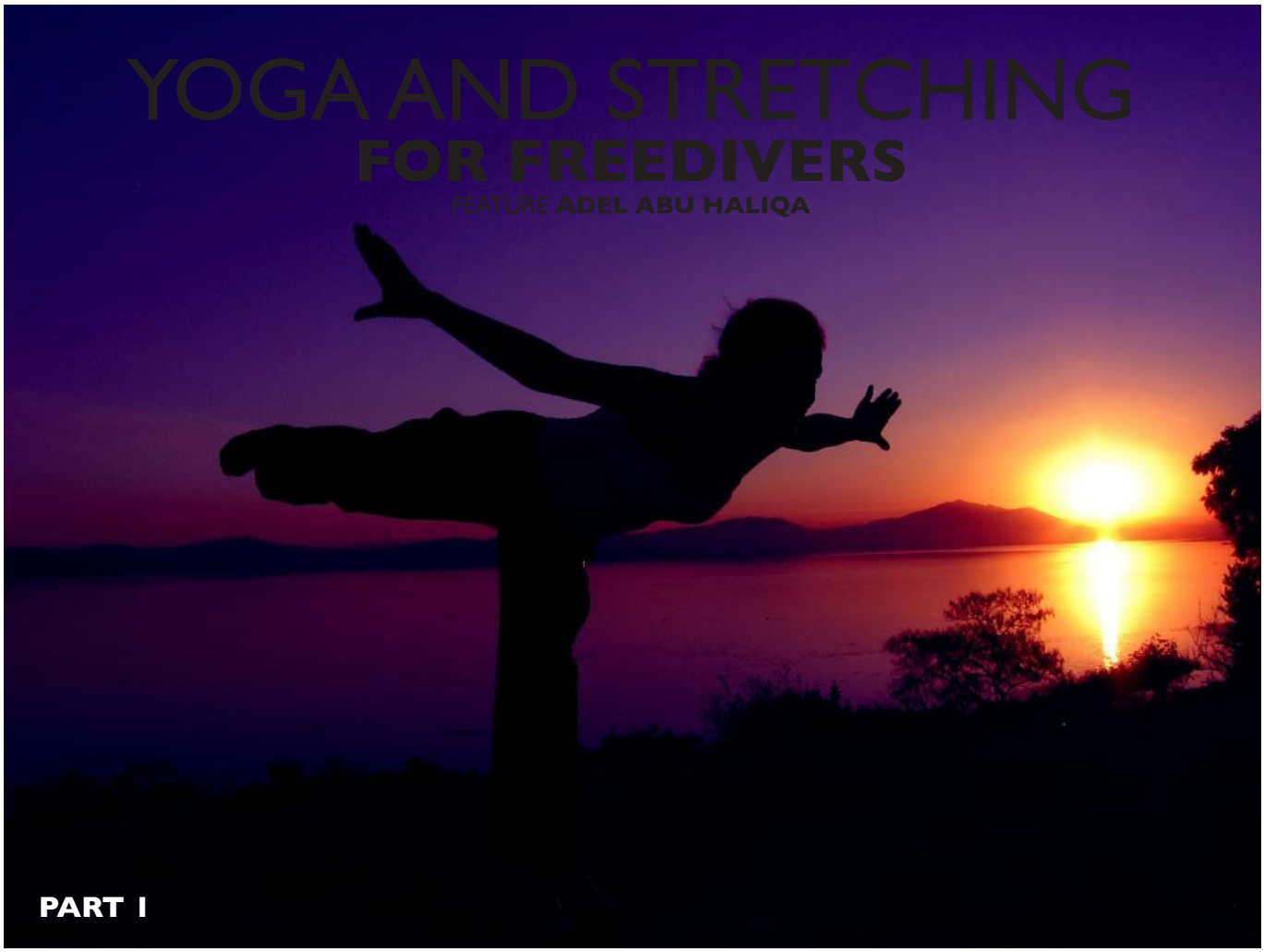

Blacktip Shark


Tiger Shark


Bull Shark


Bull Shark


Ragged Tooth Shark



YOGA AND STRETCHING
FOR FREEDIVERS

FEATURE **ADEL ABU HALIQA**

PART I

INTRODUCTION:
Within this information we are going to address two important subjects for freedivers, yoga and stretching. We will attempt to showcase briefly the different perceptions of what yoga is and then concentrate more on what real yoga is. We will then address why yoga is beneficial for freedivers and go through Asanas, Pranayama and Meditation for freedivers.

In the second part we very briefly illustrate stretching, benefits, some differences between stretching and yoga and a special stretching routine for freedivers.

We then come to a conclusion, give some precautions and some final advice!

I want to address one important disclaimer here, the material you are going to read-through might suggest that yoga and stretching could be a cure or a remedy for some illnesses and an ultimate solution for some physiological and psychological issues. Although this might be true, please keep in mind that the purpose of this information is to give the reader a very general glimpse of the subject. It is not intended to teach yoga and/or stretching and is not intended to cure any illness or otherwise, other than the purpose mentioned above. The author holds no responsibility toward others from using these materials in any way, those who might find the subject interesting or decide to learn yoga and/or stretching are advised to do so by approaching a professional instructor and be responsible with their choice, this being said, please… enjoy!

WHAT IS YOGA
The word yoga is derived from the Sanskrit root yuj, which means "to join" or "to yoke" reflecting the state when the individual self unites with the universal self at a super consciousness level called samadhi. T.K.V. Desikachar in his book "The Heart of Yoga" on the other hand brings many different interpretations to the word yoga, among them is the classical definition "to be one with the divine".

YOGA FROM DIFFERENT PERSPECTIVES
Yoga as understood and perceived by most of the western public nowadays is a lifestyle that combines physical exercises with relaxation and meditation routines in order to gain better health.

HERE WE LOOK AT THREE MAIN PERSPECTIVES IN WHICH PEOPLE SEE YOGA NOWADAYS:

1. The original oriental perspective of yoga, from the old scripts of this science and the way practiced by Yoga Gurus around the world for thousands of years to the present moment. Yoga from this perspective is as defined in the first paragraph "to be one with the divine" it is a path that a yogi (Yoga practitioner) follows throughout his/her life in order to reach to the ultimate goal, that is Perfection. Yoga from this point of view is a perfectionist approach, it affects every aspect of the yogi life and actually forms and transforms them into what we call a yogi. We will call this "Cultic Yoga".
2. What we will call "Hollywood Yoga" is yoga for the benefit of fitness, to help a person to get into a better shape, lose some weight, be more flexible and/or a better performer into his/her profession or hobby (be it dancing, acting or sports, etc).
3. A third perspective is what is commonly called "Hatha Yoga". The term Hatha Yoga originates in yoga scripts, but here we are talking about a new use of the term describing a certain form of yoga practiced nowadays that uses many of the original yoga techniques and philosophical elements to take its yoga practitioner to much deeper realms than so called "Hollywood Yoga" but yet not as fundamental as "Cultic Yoga".

REAL YOGA AND YOGA FOR REAL

Real Yoga as understood from the original sources has one ultimate goal, to reach perfection. That is God, to have full realization of oneself and so the realization of God by establishing and following what is called the Eight Limbs of Yoga.

THE EIGHT LIMBS OF YOGA:

1. Yama: which is moral commandments towards the universe, those five commandments include non-violence, truthfulness, non-stealing, sexual abstinence ('continence') and non-covetousness.
2. Niyama or rules of self purification, which include another five commandments; purity, contentment, austerity, study of the scriptures and surrender to the Lord of all our actions.
3. Asanas or postures. These are physically challenging postures that develop body balance, body alinement, body awareness, body flexibility, body strength. They also lead to stronger deeper breathing, and are therefore the perfect introduction to pranayama.
4. Pranayama is rhythmic control of the breath. The yogi here makes breathing a conscious activity rather than an unconscious one. Please be aware that pranayama has to be started ONLY after the yogi has reached a good foundation in asanas and to be done ONLY under supervision of an experienced yoga teacher.
5. Pratyahara or bringing ones mind to the inside, away from exterior stimulants, in order to bring the mind and senses under control.
6. Dharana is concentration on a single thing, it makes sense that dharana could be achieved only after pratyahara is well developed.
7. Dhyana is meditation, which is a long period of dharana.
8. Samadhi which is an uninterrupted state of dhyana, when the yogi is no longer conscious about his/her body or anything else but the subject of meditation, so it has been defined by BKS Iyengar as "a state of super consciousness brought about by profound meditation, in which the individual aspirant becomes one with the object of his meditation – or Universal Spirit".

These eight limbs of Yoga together with many other aspects of what form todays yoga has been explained in several old scripts. "The Yoga Sutras of Patanjali" which is considered one of the most important scripts ever written about yoga, is considered the root of what is nowadays called Raja Yoga and is over 2,500 years old . Another script is Hatha Yoga Pradipika written by Svami Svatmarama in the 15th Century and is the root for what is called Hatha Yoga.

In part two, we will talk about the different paths of Yoga and then talk about yoga for freediving!

RESOURCES:

- Yoga The Path to Holstic Health, B.K.S. Iyengar ISBN 978-1-40532-235-5
- The Heart of Yoga, T.K.V. Desikachar ISBN 978-0-89281-764-1
- Light on Pranayama, The Yogic Art of Breathing, B.K.S Iyengar ISBN 0-8264-0048-5
- The Tree of Yoga, B.K.S. Iyengar ISBN 978-0-87773-464-2
- Stretching Suzanne Martin ISBN 0-7566-0952-6
- http://en.wikipedia.org/wiki/Hatha_Yoga_Pradipika
- http://www.sivananda.org/teachings/philosophy/fourpaths.html

Lock Padmasana

Salamba Sarvangasana – Shoulder stand

Virabhadrasana – Warrior pose

ANSWERS TO **THE GROUPER QUIZ**

1. b) Serranidae
2. d) 449 species
3. c) Up to 3m
4. c) Up to 400kg
5. c.) 11 species: Humpback grouper (Cromileptes altivelis); White-edged grouper (Epinephelus albomarginatus); Longtooth Grouper (Epinephelus bruneus); Multispotted grouper (Epinephelus gabriellae); Giant grouper (Epinephelus lanceolatus); Snowy grouper (Epinephelus niveatus); Yellowmouth Grouper (Mycteroperca interstitialis); Sailfin grouper (Mycteroperca olfax); Leopard Grouper (Mycteroperca rosacea); Squaretail coralgrouper (Plectropomus areolatus); Blacksaddled Coralgrouper (Plectropomus laevis)
6. d) 21 species: Marbled grouper (Dermatolepis inermis); White Grouper (Epinephelus aeneus); Catface grouper (Epinephelus andersoni); Duskytail Grouper (Epinephelus bleekeri); Olive Grouper (Epinephelus cifuentesi); Orange-spotted Grouper (Epinephelus coioides); Saddletail grouper (Epinephelus daemelii); Spinycheek Grouper (Epinephelus diacanthus); Brown-marbled grouper (Epinephelus fuscoguttatus); Malabar Grouper (Epinephelus malabaricus); Red grouper (Epinephelus morio); Smallscaled Grouper (Epinephelus polylepis); Camouflage Grouper (Epinephelus polyphekadion); Hawaiian Grouper (Epinephelus quernus); Surge Grouper (Epinephelus socialis); Black grouper (Mycteroperca bonaci); Sawtail grouper (Mycteroperca prionura); Yellowfin Grouper (Mycteroperca venenosa); Leopard Coralgrouper (Plectropomus leopardus); Highfin Coralgrouper (Plectropomus oligacanthus); Roving Coralgrouper (Plectropomus pessuliferus)
7. a.) 5 species: Hong Kong Grouper (Epinephelus akaara); Dusky Grouper (Epinephelus marginatus); Nassau Grouper (Epinephelus striatus); Island Grouper (Mycteroperca fusca); Gulf grouper (Mycteroperca jordani)
8. a) 3 species: Strawberry Grouper (Epinephelus drummondhayi); Goliath Grouper (Epinephelus itajara); Warsaw grouper (Epinephelus nigritus)
9. b) Groupers feed on a wide variety of fishes and invertebrates (frequently crustaceans)
10. c) Hamoor
11. a) Protogynous hermaphrodites (start out as females and change sex to male later in life)
12. b) Tropical and temperate oceans

COVER PHOTO:
INQUISITIVE DIVE BUDDY
BY **WARREN BAVERSTOCK**

(Underwater Photographer and Aquarium Operations Manager of the Burj Al Arab Aquarium)

Photograph taken using Nikon D2Xs, 10.5mm Nikkor Fisheye, housed in a SUBAL underwater system and lit using Sea & Sea YS250 Pro's with Heinrichs Weikamp TTL Convertor – (ISO 250 f stop 18 @ 1/80s).
www.verstodigital.com

FEATURED **CREATURE**

ARABIAN **BAMBOO SHARK**
(Chiloscyllium arabicum)

FEATURE AND PHOTOGRAPHY **PHILIPPE LECOMTE**

EDA accepts text and photo contributions for this page.

FAST FACTS

- Size at birth 12cm then max size 78cm.
- Distribution: India, Pakistan and the Arabian Gulf between Iraq and the Arabian Peninsula.
- Depth range between 3-100m

FUN FACTS

- Can be found in coral reefs, sandy bottom areas, rocky shores, and mangrove estuaries searching for small fish, squids, snake eels, shrimps, crabs and other crustaceans.
- More active at night and during the day stay hidden in crevices or under corals.
- No color pattern in juveniles and adults.
- Little is known about its habits and biology.

UPCOMING **EVENTS**

ECO DIVER REEF CHECK TRAINING COURSE

26th-27th February 2010

DMEX 2010

9th - 13th March 2010

DIGITAL ONLINE PRIZE CEREMONY

February 2010 (TBC)

NOTICES

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

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Heritage Department Manager
Mr Juma'a Bin Thalet

MISSION STATEMENT

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

LEGISLATION

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

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

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DIVE OUR OCEANS

95% OF THE **UNDERWATER** WORLD REMAINS UNEXPLORED

مـــازال ٩٥٪ مـــن عـــالم **الاعمـاق** مجهـــولاً حتى الآن

EDA
جمعية الإمارات للغوص
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