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COVER PHOTO BY WOLFGANG LEANDER
silver

cinema of dreams

www.seacam.com
Shark Conservation:
Growing from Indifference to Awareness

The first time I consciously realized that sharks are at risk was when I read a Rolex ad in which David Doubilet, the Henri Cartier-Bresson of underwater photography, was being quoted as saying that sharks needed to be protected from humans, not the other way around. Even though I thought it was much more than just a gag, it did not really hit me hard.

Of course, I knew of the finning problem, and I must have been aware of the statistics. However, statistics are lifeless unless you are a passionate statistician (which to me seems like a contradiction in terms). But it was a most devastating personal experience that turned me into the sort of shark conservationist I am now. While living in Ecuador (1997 - 2003), I could afford the luxury of going to the Galapagos Islands at least twice a year. When I first dived the Galapagos, I was struck by the sheer abundance of sharks: white-tipped reef sharks, scalloped hammerhead sharks, and the most elegant and sleek of the requiem sharks, the omnipresent Galapagos shark.

To my growing dismay, however, every time I went back I noticed that the shark population was dwindling—it was the direct result of indiscriminate shark finning in what is supposed to be a marine sanctuary where sharks are officially protected. What I discovered was not "statistic"; it was the real thing I could painfully see for myself. Places that were once "shark infested" (what a delight for sharkpeople like me!) in 1997 became "cleansed" of sharks within a few years.

After looking into this more closely, I sadly became aware that the authorities did very little to enforce the laws, to say it politely. In a country where corruption is a deeply ingrained legacy of Spanish colonialism coupled with a remarkable lack of understanding for environmental problems, I felt that there was very little hope to reduce, let alone stop the senseless slaughter of sharks merely to cut off their fins.

In March 2005, I free-dived for the last time in a small island of the archipelago where I would normally see many Galapagos sharks. It was my preferred spot to observe and photograph these magnificent predators. On this last dive, I saw none. The sharks were gone, fished by the local ateliers or shark finners, as I was later told by dive operators. I was outraged and decided to boycott the Galapagos. From what I hear, the massacre of the sharks in the "Enchanted Islands"—as the Galapagos are being called—still goes on, probably more clandestinely as organizations such as The Sea Shepherd and WildAid actively assist the Galapagos Marine Park authority to enforce the existing laws against shark finning.

For a protest article, I wrote about shark finning in the Galapagos Islands. Visit my website (www.oceanicdreams.com) and click "Galapagos" to read it.

Stop online trade of shark fins. Unfortunately, Ecuador and the Galapagos are only paradigmatic. The problem is world-wide—just as global as the shark fin trade is, which is now being promoted on the Internet by such companies as the Chinese online broker Alibaba.com in which Yahoo.com has a 40% stake worth one billion dollars. It was only by accident that I discovered the shark parts trading activities of Alibaba last fall.

The Ocean Realm Society, the Shark Research Institute, The Sea Shepherd and many other organizations, which I subsequently alerted, immediately took up the issue and spread the news. By now, the diving communities around the globe know about Alibaba.com and their shameless activities. There will be mounting pressure on them and others to stop fueling the international shark fin trade by providing both buyers and sellers a convenient trading platform.

Stop recreational fishing of sharks! My passion for diving with sharks does not...
diminish with age. Quite the contrary, the older I get, the more fanatical I become about interacting with sharks. I am now 66, and I prefer to dive in what I consider the last paradise for sharks on earth—the Bahamas. While sharks might get fished occasionally by sportfishermen in Bahamian waters, they seem to be safe from commercial fishing and the so-called recreational shark fishermen who are doing their share to decimate the shark populations. I simply believe that it is wrong to fish sharks for “fun” knowing what is at stake.

Talking about the Bahamas, recreational fishing in the Bahamas will be substantially curbed as the Bahamian authorities have introduced very stringent fishing regulations a couple of months ago that will make it rather unattractive for foreign anglers (mostly Americans from Florida) to fish in the Bahamas—a smart and responsible move by the Bahamian government. Good news for the sharks and other big game fish!

I only wish those macho shark anglers, and others who do not care about the survival of sharks, would have the chance to dive close to a large tiger shark, which is what I did recently at Tiger Beach in the Bahamas. Tiger sharks have the reputation of being “man-eaters”—a ludicrous term for any shark. Sharks, even large ones, don’t eat “man”.

Create awareness, educate the public relentlessly, boycott places where shark products are being sold, join conservationist organizations and promote shark diving. Individuals who love sharks should go out and tell their story.

One example worth mentioning is the work of a German baron, Jupp Kerckerink zur Borg. Jupp is a retired advertising executive, who has decided to dedicate much of his time to the cause of shark preservation. Have a look at his website and see what he does. Go to Sharkprotect.com.

Leading marine biologists should unite outside of academia and make forceful attempts jointly, such as public manifestos and coordinated press conferences in those countries where shark finning is an issue, to induce government leaders to enact a complete ban on finning immediately world-wide, not just in national waters. Scholars have much to say, not only to their students and fellow scientists. When scholars speak up publicly, the non-academic world listens. Professors, to the front!

Shark fishing has to be controlled and monitored effectively on a global basis before it is too late. "Too late" can be sooner than we all think.....

---Wolfgang Leander, Director of Shark Preservation
Ocean Realm Society
www.oceanicdreams.com

Guest-editorial

Tiger sharks have the reputation to be ‘man-eaters’, a ludicrous term for any shark. Sharks, even large ones, don’t eat ‘man’. They occasionally bite people, and very rarely do humans die from shark bites.

Don’t kill sharks, swim with them!

This is how I described my first encounter with tiger sharks to some friends:

"I just got back from a shark diving trip in the Bahamas where I could, for the first time in my life, free-dive with tiger sharks sized between 7 and 12 feet (2.5-4m). The experience was so overwhelming that I cannot adequately describe what I felt. Let me say just this, I wish people who are scared of sharks, hate sharks, or love to fish them as a recreational activity, could face tiger sharks in their habitat just once. A humble glance into the dark eyes of these majestic creatures would probably change their lives forever as they would feel a sense of awe in the fact that to save the oceans they would have to protect the very shark that is looking at them."

What you can do to help
What can be done to stop the mindless killing?

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Photographers of all ages, skill levels and backgrounds are invited to participate.

For complete contest rules and submission form, visit our website at www.naui.org.

Enter to win the “JUST DIVE®” photo contest!
Antarctic Lifeforms

Last year, 52 scientists spent the Christmas and New Year season working in the bitter Antarctic cold aboard an upgraded research ship, millions of kilometres away from family and friends. Although they were away from family and friends during the festive period, we suspect that they would not have wanted it any other way. In fact, chances were high that these 52 scientists could not have asked for a better Christmas present.

They had departed from South Africa on 23 November 2006, on this historic mission to find out about one of the world’s little-known ecosystems and its indigenous marine life. Their destination was the Weddell Sea where, for at least 5,000 years, two ice shelves shielded the sea bed for an area of 10,000 square kilometres.

That is, until the two ice shelves, dubbed Larsen A and Larsen B, collapsed in 1995 and 2002 respectively, exposing its secrets to the world. This meant that scientists were now able to study, collect and catalogue the unique wildlife beneath the two ice shelves; they didn’t have to peek through holes drilled into the ice any more.

What the ice was hiding

Together with the excitement of exploring an ecosystem untouched for millions of years, there was also a sense of urgency. “This is virgin geography. If we don’t find out what this area is like now following the collapse of the ice shelf and what species are there, we won’t have any basis to know in 20 years’ time what has changed, and how global warming has altered the marine ecosystem,” said Gauthier Chapelle, a biologist from the International Polar Foundation.

And so, for ten weeks, the scientists, hailing from 14 nations, lived aboard the research vessel Polarstern and conducted the very first comprehensive survey of the area that the Larsen B ice shelf once covered.
region. They carried with them hi-tech, sophisticated sampling and observation equipment including a vehicle that is remotely operated and equipped with a camera.

In all, the discoveries made during the expedition have given us a glimpse of what life must have been like under the Antarctic ice. Picture a world filled with deep-sea llies, long-limbed sea stars, amphipod (shrimp-like) crustaceans, settlements of gelatinous sea squirts, glass sponges, orange starfish, clusters of sea cucumbers...

Scientists have managed to collect about 1,000 specimens, some of which have adapted to the unique conditions under the ice, while others are new to science.

The latter include an ice fish that has no haemoglobin (red blood pigment) or red blood cells. This characteristic allows its blood to flow more freely, saving on energy used to pump blood through its body. There is also a venomous sea anemone that lives on a snail’s shell, in a symbiotic relationship in which it provides protection for the snail in exchange for transport to food sources. There are also 15 potentially new amphipod species, some as large as ten centimetres long.

“We were in the unique position to sample wherever we wanted in a marine ecosystem considered one of the least disturbed by humankind anywhere on the planet,” said Julian Gutt, a marine ecologist and chief scientist on the expedition.

He added, “we also found the first hints of a shift in the species composition.” This was exhibited, far instance, by the presence of sea squirts, which would not have survived under the ice cover.

Abundant settlements of these creatures were found latched on the sea bed previously covered by Larsen B.

Gutt believes that a fully mature community would require several hundreds to thousands of years to develop.

Although the expedition ended its stint on January 30th, the story does not end here. The scientists have taken about a thousand specimens for further analysis.

Explained Dr Gutt, “The results of our efforts will advance our ability to predict the future of our biosphere in a changing environment.”

The first findings from this analysis are expected to be announced in September.

India: New Coral Species Found

No less than thirteen coral species new to science have recently been identified in the Gulf of Mannar Marine National Park. These discoveries come as the gulf’s existing coral reefs are found to be deteriorating rapidly, with their coverage shrinking by 30 per cent over the last two decades according to a four year survey conducted by the Suganthi Devadason Marine Research Institute (SDMRI) in the 560km² park.

According to the report, 117 species of coral exist in the park but according to the report by the SDMRI team live coral is present only on a 78km² area in the park. That is 32km² less of the coral cover found 20 years ago.

“The degradation happened mainly because of destructive fishing and sewage disposal,” said J. K. Patterson Edward, Director, SDMRI.

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Scores of New Marine Species Discovered Off Philippines

An international team of scientists has discovered thousands of new species of crustaceans and molluscs in waters off the Philippines. From a survey conducted in 2004-05, the researchers found between 150 to 250 new crustacean species and up to 2,500 new mollusc species. The discoveries include a variety of new shrimp species: fat salmon-coloured shrimp with antennae longer than their bodies, mustard and tan shrimp with thick front appendages that bend like bananas, and lavender shrimp with segmented tails that look like stacked purple marshmallows. At a ceremony at the Philippine National Museum a new five-year program to study and discover additional fauna, titled Census of Philippines Deep-Sea Biodiversity, was announced.

The new initiative is just one of a series of scientific expeditions in the region. This past fall, a team from Conservation International announced the discovery of 52 new species off Indonesia, including a walking shark.

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20 New Species of Sharks and Rays Discovered

Twenty new species of sharks and rays have been discovered in Indonesia in a five-year survey of catches at local fish markets by Australian researchers.

At least 20 previously unknown species of sharks and rays have been found no by using high-tech mini-submarines or expensive deep-sea diving operations. Instead, investigators travelled to Indonesia’s fish markets over a period of five years, checking out what was for sale.

The survey by scientists from Australian Commonwealth Scientific and Industrial Research Organization (CSIRO) was part of a broader project working toward improved management of sharks and rays in Indonesia and Australia.

“Indonesia has the most diverse shark and ray fauna and the largest shark and ray fishery in the world, with reported landings of more than 100,000 tons a year,” said William White, a co-author of the study. “Before this survey, however, there were vast gaps in our knowledge of sharks and rays in this region.”

First real survey since 1860
The survey represents the first in-depth look at Indonesia’s sharks and rays since Dutch scientist Pieter Bleeker described more than 1,100 fish species from 1842-60. At the time, scientists in Europe rejected Bleeker’s finds, saying they doubted such high levels of diversity could exist among marine life. The survey also forms the basis of a new field guide called Economically Important Sharks and Rays of Indonesia, which is available in English and Indonesian.

The guide represents the first in-depth report of Indonesia’s sharks and rays since Bleeker’s work in the mid 1800’s.

From 2001 to 2006, researchers photographed and sampled more than 130 species on 22 survey trips to 11 ports across Indonesia. More than 800 specimens were lodged in reference collections at the Museum Zoologicum Bogoriense at Cibinong, Java, and the Australian National Fish Collection at Hobart. So far, six of the new species have been described in scientific journals. These are the Bali Catshark and Jimbaran Shovelnose Ray found only in Bali, and the Hortle’s Whipray found only in West Papua. Scientists are preparing to describe a further 14 of the species.

“Good taxonomic information is critical to managing shark and ray species, which reproduce relatively slowly and are extremely vulnerable to overfishing,” White said in a statement. “It provides the foundation for estimating population sizes, assessing the effects of fishing and developing plans for fisheries management and conservation.” The island region also has the world’s largest shark and ray fishery, White said, with reported landings of more than 100,000 metric tons a year.

The new finds come only shortly after two expeditions off the coast of Indonesia revealed a remarkable “lost world” of marine species. The island region also has the world’s largest shark and ray fishery, White said, with reported landings of more than 100,000 metric tons a year.

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Where’s the world’s northernmost coral? Off Sørøya in Finnmark, Northern Norway.

Local fishermen have known about it for years, because their trawlers often pull some of it up. Over the past few years, researchers have been diving to the deep in minisubs to chart it and photograph it. They’ve found one reef after another and want to make sure that oil exploration efforts don’t damage it.

Ancient Corals Predict Future of Global Climate

Much like scientists can read the rings of trees to determine climate changes that tree has endured, researchers can “read” coral. For example, by analyzing the coral’s strontium-calcium ratio, scientists can measure how much rain fell as much as 6500 years ago. In a recent study, in fact, researchers with the British Antarctic Survey concluded that the periodic and normal increase in monsoons in the Indian Ocean paradoxically result in stronger droughts in Indonesia and Australia.

While this trivia may not have much import for the typical suburban mom, the implications of this research are fairly staggering. Simply, corals provide a giant, untapped library of information about the planet’s past. According to Nerilie Abrams of the British Antarctic Survey, “There is a lot more we can learn from the corals. It’s a matter of analyzing them.” Of course, we can’t analyze them if we’re destroying them.

Impression of ancient coral reef, by Heinrich Harder (1858-1935)
Moscow in February—for a Westerner, that brings up certain associations; one, is the image of the bitter cold that devastated Hitler’s armies during WW2, and which adults don’t recall, the footage of the tight formations of soldiers and missile batteries parading across the Red Square with the politbureau saluting them from the top of the Lenin mausoleum. Boy, were some of us scared that the Ruskies or Commies were coming, watching those grainy images during the cold war.

How things have changed

An Ikea store now greets you when you leave the airport, giant billboards for mobile phones and cars are everywhere and, on the Red Square where the tanks were, is now a skating rink full of laughing kids. And across the square, opposite Lenin’s mausoleum, the classy department store Gum is now full of designer stores. Here, you can find Vero Moda and Armani, and have a cappuccino and a crepe when you take a moment to rest your legs at one of the mall’s fancy cafés.

Moscow has come a very long way in a very short time. The city is now cool and hip, with Communism and all its shortages being seemingly distant memories already. In the streets, you now see so few Ladas and other sputtering putt-putts that you could easily mistake Moscow for any other European city, if not for the Cyrillic lettering everywhere and the overwhelming grandeur of the city. Moscow is big, and it’s got big buildings everywhere. It is strange, foreign, mystic, yet undeniably European, too, and comes with a lot of history.

The Dive Expo

A sense of history and the classic past greets you at Gostiny Dvor, where the Golden Dolphin Dive expo is held. Where else in the world is an international dive expo held on marble floors and in a building with colonnades and chandeliers, but in Russia? If there was a prize for the most classy venue, this expo would take 1, 2 and 3 place!

The atmosphere is relaxed, especially for the first two days of the four day show. As in many other parts of the world, the general public have jobs to go to during the week and so, attend the show during the weekend, making Thursday and Friday seem more characteristic of a trade show. As Russia doesn’t have much of a native dive equipment manufacturing industry—aside from a couple of companies doing wetsuits and spearfishing equipment—a number of the big American, Western European and Asian brands were present either as themselves or represented by their local distributor. Or both, with somebody from Headquarters lurking in the background. I spotted several high ranking dive industry professionals discreetly walking around somewhat incognito without name tags or wearing company apparel. Either they were just there on a covert fact-finding mission or they were there to meet or help their local reps but were steering clear of the grunt-work. Since they were not able to speak Russian, that would be understandable. The language barrier is certainly prevalent and goes both ways—the Cyrillic letters don’t help the average Westerner either. But a lot of the younger Russians had remarkably good English skills; it was mostly the older generations who could be hard to communicate with.

Upbeat dive industry

The show was very dynamic and the enthusiasm that characterises Moscow International Festival “Golden Dolphin” is a special exhibition, dedicated to diving, spearfishing and leisure on the water. It is the largest diving show in Eastern Europe. More than 210 exhibitors from 33 countries were gathered this year in Moscow. Among the exhibitors there were Russian and foreign manufacturers, distributors for diving and spearfishing equipment, underwater photo and video-housing; training scuba schools, dive-tourism companies, tourism representatives; photo and video studios, film makers and photographers; well-known journalists from leading international diving publications. And of course the whole pallette of dive training agencies: PADI, SSI, PDA, IANTD, NAUI and CMAS were all vying for the interest of new divers.
a young industry was almost tangible. In other places in the world, there seems to be an almost weary sentiment in comparison, following years of recession in the industry. But Eastern Europe seems to be on the upswing. While the restraints of communism now lie some years back, there still seems to be a lot of pent up energy and yearning for freedom and adventure that is still being unleashed. This energy was a nice sensation. What was more stressful was the noise level, at times. For one thing, there were constant and repeated public announcements made over a supercharged PA system that forced any on-going conversations you might be engaged in, to stop involuntarily. The other thing was the stage, which had ongoing fashion shows, rock bands or award ceremonies of some sort. I did not fancy that they permitted smoking in the building. I hated having my clothes stinking of tobacco smoke after a day at the show. But that was not enough to ruin an impression of an otherwise very nice show. Aside from the big international manufacturers, there were a lot of Russian dive clubs and a range of Russian dive and tour operators. I don’t suspect that many from the West have yet gone on a dive trip to Russia, but I have—both to the White Sea and Lake Baikal—and I can vouch for the impressiveness of the diving, which is quite something. So, if you are looking for a new and different experience, perhaps look in this new direction.

The resort and operators seem to be quite able and willing to handle outside tourism on a level that is fully on par with what is offered elsewhere. Once you’re there, everything works remarkably smooth, though there is the occasional bureaucracy, which still rears its ugly head and makes for a hair-pulling experience. Getting visas, for example, takes quite some time, effort and money. But once you arrive, you get through the airport and taxi faster than anywhere else. It took us 20 minutes from the time we arrived at the gate to the moment we were sitting in the taxi heading into the city. Beat that.

The show is the brainchild of Gennady Grutsya and he is a piece of history himself. Now a wealthy man, whose printing business manufacturers half the envelopes produced in all of Russia, and sponsor and president of the Golden Dolphin, he was formerly in the Soviet special forces and military advisor or instructor in Libya. Who would have guessed? He explains that he has been into photography since childhood. He later got into CMAS photography competitions. He has dived all over the world, including, of course, Russia itself from the White Sea to Kamtjatka. Six years ago, he started photo exhibitions in Moscow; the first ones were only 500 square meters. In the following years, Russian divers wanted to adjoin their dive-expo to the photo-exhibition, and the joint venture was then called the Golden Dolphin. The main purpose of the show was to get new divers into diving, says Gennady Grutsya. This was not easy as diving was only for the middle class and rich people. Diving was tied in with economic development. “In Russia, we will see more middle class people, and we are confident in the future,” he said. Now, there are about 200,000 divers in Russia. Considering the dive industry there is only considered to be 12 years old, that is

Irina Kochergina took third place in the category, Seas, Lakes & Rivers of Russia, with this poetic and stunning image

Киноса, means movie theatre. Simple, no?

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Celebrities

The show also hosted a number of celebrities, conferences and talks. The triple spear fishing world champion, Pedro Carbonello, was present, and Natalie Tirkalo, course-director in HSA, held a master class about the handicap divers training. The master class of underwater video and photography was headed by Igor Dvinjaninov, director of The Underwater Videography faculty VGIK with cameraman Grigory Jablchiknov letting the audience in on his secrets.

The round table debate, “Tourism Safety and Dive Industry Development in Russia”, took place here also, to which all dive professionals, dive centers, tour operators, instructors and clubs were invited. Representatives of the Russian Tour Operators Association, Russian State Tourism Agency, Rescue Service Ministry and the Russian Foreign Ministry also took part in the discussions. The technical divers visiting the show would not miss the presentation given by Pascal Bernabe, the legendary French cave diver and record holder for the deepest dive on SCUBA. His record dive was done off the island of Corsica, where he reached the staggering depth of 330 meters. Such a dive was only made possible thanks to the support and sponsorship of a number of diving companies and the help of a team of good friends.

The audience had many questions for Pascal Bernabe and vividly discussed the record, technical details, modern decompression programs, the problems connected with unreliable equipment and various amusing anecdotes. There were many questions related to diving beyond the depths of 120 meters in caves and on wrecks. All visitors got complete information about future master classes, expeditions and the champion’s upcoming schedule. Visitors with children had the option to leave kids at a specially equipped children’s playground where skilled animators were entertaining the kids.

Underwater World award

Russia’s maritime history and legacy goes as far back as any European nation—this great country was and is among the leading powers in the world. In honour and recognition of the many great people who were pioneers, or devoted their lives, to the Big Blue—whether geologists, biologists, historians, doctors, sportsmen, travellers or writers—a national “Underwater World” award was inaugurated. It was awarded to Yana Churikova and Oleg Sedov who captained the legendary four masted bark Krusensfenn on its 60-year anniversary around-the-world tour in 2005-06. At the ceremony, the famous Russian singer, Edita Pyekha, performed assisted by the “Valaam” chorus from the institute of Singing Culture.

VI Moscow International Photo and Video Festival “Golden Dolphin” had participation from 89 photographers from 15 countries who had entered 452 images. The five-person jury included Gennady Grutsya, Jury President. Mihael Semenov won the category, Seas, Lakes & Rivers of Russia, using an unusual model.

Trankvlitcky, Alexander Evteev, Vladimir Vyatkin and Maxim Gubatov. All winners were awarded Golden Dolphin trophies and cash prizes.

In the video category, more than 90 films from 17 countries were entered. They were shown non-shop in a specially equipped cinema hall. Another first at the film festival was Andrey Makarevich’s Round Table in which the producers and judges of the festival participated. Andrey Makarevich presided over the competent jury.

By the end of the four day event, more than 15,000 people passed through the tillers. The next Golden Dolphin expo is scheduled for 14-17 February 2008, once again at Gostiny Dvor—a stone’s throw from the Red Square.

Pascal Bernabe’s presentation held the packed audience captive. As second, X-Ray Mag’s Andrey Bizyukin translated not a bad number. The first PADI center in Russia didn’t start until 1996 (the federation is from 1958 though) and Gennady Grutsya started diving with this center, Aquanavt, in 1997.

Gennedy Grutsya stresses the importance of the presence of foreign guests and media to have Golden Dolphin firmly stiched into the fabric of the international diving community, “Once we were a closed society, now we are open.” He got the inspiration for Golden Dolphin from traveling to all the biggest dive shows on the planet from Antibes and DEMA to Düsseldorf and what not. He combined all the best elements from each show into the Golden Dolphin. The show now covers 5,000m² and is growing by 1,000m² a year.

The coveted Golden Dolphin Statuette. CENTER: Andrey Oborin’s entry won second place in the category, Seas, Lakes & Rivers of Russia

Karen Jablochnikov letting the audience in on his secrets.
News from NAUI

Visit NAUI During the following International and Regional Trade Shows in 2007!

Asia
TDEX Show – Bangkok, Thailand (May 24-27)
MIDE Show – Kuala Lumpur, Malaysia (July 6-8)
CDEX Show – Beijing, China (August 25-27)
CDEX Show – Hong Kong (September 14-16)

Europe
The Dive Show – Birmingham, England (October)

USA
Ocean Festival – Ft. Lauderdale, FL (April 20-22)
Scuba Show – Long Beach, CA (June 2-3)
DEMA – Orlando, FL (October 31-Nov 3)

Plan to visit the NAUI booth at each of these shows to catch up on the latest news, view new products or get together with your fellow NAUI members.

DAN and NAUI are pleased to announce their alliance to work together for the greater good of diver safety. Effective immediately, DAN is the official dive accident insurance provider for NAUI Worldwide.

NAUI has discontinued its Dive & Travel Insurance Program and is endorsing the Membership and Dive Accident Insurance programs offered by DAN. “We’ve always supported DAN’s mission,” says Jim Bram, President of NAUI, “and the quality of their insurance program is well known. We value what DAN provides to the dive community, and we hope that our joining in this alliance will contribute to DAN’s continuing success for many years to come, while allowing NAUI to focus on maintaining the strength and quality of its diver education programs.”

Divers currently carrying NAUI’s Dive & Travel Insurance will be notified of the change as their policies come due for renewal, and they will be offered the opportunity to join DAN. In addition, NAUI dive centers and instructors will be provided materials on DAN and its programs, including the DAN Student Membership Program.

Congratulations to the first four NAUI instructors in Denmark. In NAUI course director, Michael Henrichsen, stands in the back (photo). The four new instructors—Armin, Jens, Lars and Michael—look forward to start teaching after a hard but very interesting and giving course. Armin will work in Holland and Austria, the others will operate in Denmark.

One early morning in March, a research expedition steamed out of the Port of Galveston, Texas, for the Flower Garden Banks National Marine Sanctuary—about 180 kilometers off the coast of Texas and Louisiana. Led by Robert Ballard and Kevin McBride, the expedition consists of a 44-meter-long Navy research submarine NR-1, the world's only nuclear-powered research submarine, two ships and a remotely operated vehicle (ROV).

When humans first trekked from Asia to North America, perhaps as long as 25,000 years ago, the continent was gripped by glaciers. Those early immigrants probably trekked along the shore, where finding food and shelter would have been easier. The trouble for archaeologists is that as the ice melted, the land rose and covered any traces of this early migration. Now, marine geologists and archaeologists are hunting for underwater clues in the Gulf of Mexico.

Exploring the Mexican Gulf for a Sign of Early Americans

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Artist's impression of NR-1 at work.
Pro Wrestler Gets into the Ring to Fight...for Turtles?

Hijo del Santo is a Mexican professional wrestler. Recently, Santo announced that, in addition to fighting Spandex and mask-wearing meatheads in the ring, he plans to fight overfishing, turtle egg hunting and pollution along Mexico’s west coast. During a news conference—that included the presentation of a mock movie trailer announcing “Santo vs. the Enemies of the Sea”—the wrestler pledged to raise consciousness about how human actions damage the ocean. To do this, he plans to join forces with conservation group, WildCoast, and work to stop sea turtle consumption in Mexico, defend protected beaches and promote gray whale protection. He also intends to visit coastal communities in northern Mexico and distribute educational comics featuring his character confronting threats to the ocean.

While it’s easy to make jokes of Santo’s expense, you have to admire his dedication to working on such an important cause. Interestingly, Mexico’s pro-wrestlers are a very activist group, using their celebrity to raise awareness in everything from presidential campaigns to battles for affordable housing.

missing divers found? US Air Force to use DNA analysis to identify recently discovered bones

China Completes Its First Helium-Oxygen Saturation Dive

On December 30, 2006, 12 Chinese divers working with the Shanghai Salvage Bureau of Ministry of Communications completed a string of 28 dives, working under a combined total of 1.26 hours to change an oil field pipe. Though the divers had trained in a simulated environment, this was their first official dive to a maximum depth of 103.5 meters. This occasion marks China’s first successful helium-oxygen saturation dive, which is similar to a space launch, except for two important differences: divers work under extreme pressure at extreme depth.

Missing Divers Found? US Air Force to Use DNA Analysis to Identify Recently Discovered Bones

Twenty-eight years ago, three American divers—Air Force Stg. Donald Michaud, Airman 1st Class Jan Granroth and her brother, Mark—went missing after cave diving in Vouliagmeni Lake, a area known for treacherous currents. Michaud and Granroth were stationed at Hellenikon Air Base in Greece at the time. Late last year, the bones of three divers—along with American-made dive equipment—were located in a cave in the lake.

Though the general consensus seems to be that the bones belong to these divers, no one is certain. This month, the Greek government handed over the bone specimens to the Air Force, and now, Air Force pathologists are using DNA analysis to try to determine whether the bones are those of the divers. Experts say it should take four to eight weeks to positively identify the remains.

Knitting for Dolphins

Recently, the US Navy made public its plan to use dolphins and sea lions to help protect the Pacific Northwest’s coastline from terrorists. Training the animals to locate—and, in some cases, apprehend intruders—the Navy thinks marine animals are perfectly suited to this kind of work. However, some people don’t like this proposal and to demonstrate their displeasure for it, they’ve taken up…their knitting needles.

In an effort to raise awareness about the issue, an informal collection of women, men, teens and children in the Pacific Northwest have started a campaign called Knitting for Dolphins. Arguing that only a wetsuit would serve the mammals better, the knitters have decided that the symbolic act of creating sweaters for the animals is the best way to get the word out. No word yet on what colors suit dolphins most.

One woman, Laura Apps-Green, really likes to do some different things while she’s diving. While on a family trip to Sharm El Sheikh this winter, Apps-Green claims she “was just lying on the beach and thought I would do a dive and take my knitting with me.” Of course! What a common thought! Later that day, she made her extreme knitting debut at the bottom of the Red Sea.

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Though she didn’t actually complete the knitting project she was working on at the time, she plans to complete it soon. Meanwhile, Apps-Green claims she’s looking to take her extreme sport everywhere. Who knows? Maybe she’ll figure out a way to combine swimming the English Channel, knitting and raising money for charity.

Larry Smith Passes Away in Indonesia

Eric Cheng of Welpixel.com writes: Larry Smith, beloved dive pioneer, guide and critter expert in Indonesia, passed away on March 20, 2007, in Sorong, Indonesia. Larry spent two days in a hospital in Fakfak with what everyone thought was pneumonia. He was on his way to Bali when he passed away at the Pertamina hospital in Sorong from complications associated with pneumonia. Our heart-felt condolences go out to his family and friends. Letters and images have been pouring in for the last two days, and we’d like to share them here. If you would like to share your condolences or a story about Larry, please leave a comment at the end of this page. To send in images and video, please contact us.

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LARRY SMITH FAMILY MEMORIAL FUND

The Benefit of the Larry Smith Family

A memorial fund has been established for Dewi and Breezy, Larry’s wife and daughter. The Benefit of the Larry Smith Family honors Larry’s dedication to his family, friends and marine world. To donate to the fund, you can:

1. Donate via Paypal or credit card (you can donate via credit card without signing up for an account): 2. Send a check payable to “The Benefit of the Larry Smith Family” to: The Benefit of the Larry Smith Family 6113 Fox Ridge, Aingleton, TX 77515 3. Wire money directly into the account. For more information on how to do this, contact the Smith family at smithdive13@hotmail.com.
Warming Oceans Will Contain Less Oxygen for Fish

As the temperature of the world’s oceans increases due to global warming, there may be more and more areas where oxygen in the water is either limited or absent, and that could have a deadly effect on huge numbers of marine species.

The so-called “dead zones” are caused by excessive levels of nitrogen in the oceans. Nitrogen is a component of most commercial fertilizers, and rivers carry the residue of these fertilizers from farms to the ocean. Here, it nourishes phytoplankters from farms to the ocean. As a consequence, the phytoplankters consume great quantities of water giving rise to algae blooms.

When these algae die and rot, they form a residue of these fertilizers, and rivers carry the residue of these fertilizers from farms to the ocean. Here, it nourishes phytoplankters from farms to the ocean. As a consequence, the phytoplankters consume great quantities of water giving rise to algae blooms. Scientists have long known that bacteria could be found in places where plankton and marine plants such as seaweed were dying. But while it was known that quite a lot of bacteria could produce DMSP no one knew how. It turns out that a single bacterial gene is responsible for the mechanism that converts the plants’ decay products, called DMSP, into DMS. But the bacteria only switch on the gene if the DMSP is around. Understanding how the odorous gas is produced could be important because it is implicated in cloud formation over the ocean and helps some animals find food. Some seabirds rely on DMS as a homing scent to find food. On one occasion the researchers opened a bottle filled with the DMSP- producing bacteria only to be bombarded by hungry seabirds.

Why Does Ocean Air Smell So Good?

Why does the air at the seaside have such a delightful and distinctive smell? Scientists have not known the full story until now. The gas that gives ocean air its fishy, tangy smell is dimethyl sulfide, or DMS, and is produced by ocean-dwelling bacteria. Scientists had long known that bacteria could be found consuming decay products in places where plankton and marine plants such as seaweed were dying. But while it was known that quite a lot of bacteria could produce DMS no one knew how.

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Ein Bild der Dunkleosteus terrelli Fossil aufgenommen, auf der der Studie basierte.

A photo of the Dunkleosteus terrelli fossil skull upon which the study was based.

Dunkleosteus who?

It was ten meters long, weighed four tons and ate anything in the ocean that got in its way. Meet Dunkleosteus terrelli, a prehistoric fish that lived 400 million years ago. It was equipped with the most powerful jaws of any fish ever; its bite rivalling that of the T-Rex and modern alligators.

"Dunkleosteus was able to devour anything in its environment," said study leader Philip Anderson at the Department of Geophysical Sciences of the University of Chicago. Anderson and Mark Westneat at the Field Museum in Chicago, used a fossil of Dunkleosteus to produce a computer model of its muscles and its bite. They found it could bite down with 5,000 kgs of force, which translates to 5.5 tonnes per cm² at the tip of a fang. And it was fast, opening its jaws in just one-fifth of a second. That action would have created suction to draw prey into its mouth. Fish typically have a powerful bite or a fast bite, but not both, the researchers said.

Dunkleosteus was one of many species of placoderms, a diverse group of armored fishes that dominated aquatic ecosystems during the Devonian period, from 415 million to 360 million years ago. The creature’s powerful bite would have allowed it to feed on other armored aquatic creatures of the time, including sharks and arthropods.

Mexican Government Passes Sweeping Shark Protection Legislation

In February, the Mexican government published sweeping new regulations and protections for sharks, including: a ban on shark finning; an extension of the moratorium on new commercial shark fishing permits; and extensive protections for great white sharks, whale sharks, basking sharks and mantas. The new rules and regulations come after ten years of debate and the broad support of researchers, scientists, conservation groups, eco-tour operations, local citizens and, of course, divers. Hopefully, other less conservation-minded Latin American nations will follow Mexico’s example and publish similar restrictions.

SOURCE: WWW.PR.COM

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15 X-RAY MAG : 16 : 2007
Bluefin Tuna
Given a Breather

The European Commission has published reduced quotas for the fishing of tuna for 2007, part of a global agreement to prevent the immensely popular fish from being hunted to extinction.

The total bluefin tuna catch for the EU as a whole was set at 16,779.55 tonnes for the year, down from 18,301 tonnes in 2006.

The move follows a decision by an international commission to cut the total hunt of bluefin tuna for 2007, part of a global agreement to prevent tuna from being hunted to extinction.

WWF’s new briefing paper, Tuna in Trouble: Major Problems for the World’s Tuna Fisheries, details rampant illegal, unreported and unregulated fishing, unsustainable quotas and far too many boats competing for the remaining tuna.

Despite efforts by some governments within tuna Regional Fisheries Management Organizations, populations of important species such as bluefin tuna are critically depleted.

EU Stepping in

The Indian Ocean needs better intelligence gathering and tougher law enforcement to fight the threat of illegal tuna fishing by small mobile fleets.

Illegal fishing and over-fishing is costing the region billions of dollars a year.

New Zealand sends air force patrols to look for poachers, but countries such as Vanuatu want more patrols, as they do not have the resources to monitor the fishery.

And the Marshall Islands have now asked New Zealand for more help, a request the Foreign Minister Winston Peters says he is treating sympathetically.

Regulators Aim to Slow Decline in Tuna

Tuna stocks are quickly disappearing, some critically, due to ineffective management of fishing on the high seas, the WWF has warned.

WWF’s new briefing paper, Tuna in Trouble: Major Problems for the World’s Tuna Fisheries (IOTC), told Reuters.

The European Union has granted €7 million to help Indian Ocean Tuna Commission (IOTC), told Reuters.

The European Commission and Ocean nations combat illegal fishing and new briefing paper by Willy Volk

"Sustainable management of the world’s tuna fisheries should be possible, if the will can be found."

EU Stepping in

The Indian Ocean needs better intelligence gathering and tougher law enforcement to fight the threat of illegal tuna fishing by small mobile fleets.

Tuna theft in the ocean could grow rapidly if moves to stop illegal fishermen operating elsewhere push them into its seas, Alejandro Anganuzzi, head of the intergovernmental Indian Ocean Tuna Commission (IOTC), told Reuters.

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EU Stepping in

The Indian Ocean needs better intelligence gathering and tougher law enforcement to fight the threat of illegal tuna fishing by small mobile fleets.
New International Standards for Diving

In January 2007, six standards for Recreational Diving Services were approved by the member countries of the International Organization for Standardization (ISO).

These new ISO standards will be published in mid-2007 and provide international standards for three levels of divers, two levels of instructors and a service provider or dive centre. Each of these standards equate to a PADI certification or member level, which means that, in effect, a diver or member holding one of these qualifications can also be said to have met the requirements of the relevant ISO standard—though they had gained two credentials at once.

The six standards are listed here with their PADI equivalencies:

<table>
<thead>
<tr>
<th>ISO Level</th>
<th>ISO Standard</th>
<th>PADI Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diver Level 1 - Supervised Diver</td>
<td>ISO 24801-1</td>
<td>PADI Scuba Diver</td>
</tr>
<tr>
<td>Diver Level 2 - Autonomous Diver</td>
<td>ISO 24801-2</td>
<td>Open Water Diver</td>
</tr>
<tr>
<td>Diver Level 3 - Dive Leader</td>
<td>ISO 24801-3</td>
<td>Diver Master</td>
</tr>
<tr>
<td>Instructor Level 1</td>
<td>ISO 24802-1</td>
<td>Assistant Instructor</td>
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<tr>
<td>Instructor Level 2</td>
<td>ISO 24802-2</td>
<td>Open Water Scuba Instructor</td>
</tr>
<tr>
<td>Service Provider</td>
<td>ISO 24803</td>
<td>Dive Centre or Resort</td>
</tr>
</tbody>
</table>

ISO (International Organization for Standardization) is the world’s largest developer of standards. ISO standards also have important economic and social repercussions, not just to engineers and manufacturers for whom they solve basic problems in production and distribution, but also to society as a whole.

They are useful to industrial and business organizations of all types, to governments and other regulatory bodies, to trade officials, to conformity assessment professionals, to suppliers and customers of products and services in both public and private sectors and, ultimately, to people in general in their roles as consumers and end-users.

Number of Diving Courses Grow in Landlocked Turkish Capital, Ankara

Gazi University National Sports Location and Reservation Center (GÜDAK), in collaboration with Ankara Nature Activities Center (ADAM) Diving School, have begun a new underwater diving course in Ankara, writes Turkish daily, Today’s Zaman.

There are now three diving programs in Ankara. The course is limited to 35 students because the diving practice takes place in the Aegean coastal city of Fethiye. It will give both theoretical and practical training to a larger number of students.

Participants will receive certificates from both the Turkish Underwater Federation and the World Underwater Federation (CMAS). The cost for the course is YTL 350.

RSTC Endorses DAN Diabetic Guidelines

The latest guidelines from DAN (Divers Alert Network) for those with diabetes allow for some individuals with diabetes to dive. After a thorough overview of these guidelines, the Recreational Scuba Training Council (RSTC) unanimously endorsed the guidelines.

DAN has advised diabetics against diving for many years until the mid-1990s when they determined that a percentage of their members were not only diabetic but those with insulin requiring diabetes. This information led DAN to launch a study, which ran from 1997 to 1999 to determine the possibility of those with diabetes being able to dive.

The finding of that study prompted the Undersea and Hyperbaric Medical Society (UHMS) and DAN to hold a workshop in 2005 with the diving medical experts from around the world to seek formal guidelines for diabetes and diving. This guidelines can be found on the home page of DAN www.diversalertnetwork.org, by searching for “diabetes.”
A World War II troop carrier that saw duty in the Cold War and had a role in a movie is destined to become the largest artificial reef in Florida. The 533-foot Gen. Hoyt S. Vandenberg, will be towed to waters off Florida’s Key West and sunk as an artificial reef, probably in one year, the U.S. Maritime Administration has announced.

The Vandenberg Artificial Reef will be a world-class dive site for all levels of diving experience. This site will be the signature dive of Key West and the Florida Keys, and will become one of the most famous warm-water wrecks in the world. All four upper decks will be opened to divers, with access vertically through the 18 stair towers, elevator shafts and cargo holds. The spaces will also be accessible horizontally through seven by ten foot holes in the hull. The fuel tanks, tank-top and first platform will be sealed and ballasted to insure upright positioning. But first the Vandenberg will be towed to Colonna’s Shipyard in Norfolk, where crews will spend months removing asbestos, lead paint, PCBs in wiring and thousands of pounds of waste oil, according to federal officials.

The Gen. Hoyt S. Vandenberg has seen a long and varied history. Launched in 1944 as the troop transport, USNS Gen. Harry Taylor, she served in the Pacific. After the war, Taylor transported European refugees to new lives in the US and Australia. Called to action again in 1957, the ship transported refugees from the Hungarian Revolution to Australia. In 1961, she was acquired by the US Air Force and completely re-fitted as a missile-tracking vessel, carrying the highest technology of the day. Newly commissioned in 1963 as Gen. Hoyt S. Vandenberg, she served in the Cold War between the super powers and in early NASA programs. A documentary is in production to record and preserve the ship’s history.

On the Net: Artificial Reefs of the Keys: www.bigshipwrecks.com

England: Napoli Disaster – How divers can help?

Project AWARE is deeply concerned by the developing scene of destruction caused by the grounding of the MSC Napoli off the East Devon Coast. Dive Centre Fathom and Blues based in Portland and many other concerned divers from Devon and Dorset have contacted Project AWARE to seek advice, assistance and ask what could be done to ensure the environmental damage created during the clean-up operations are minimised.

There are also some hazardous substances that need to be professionally cleared first. The agencies working together to co-ordinate the response to the MSC Napoli incident have appealed to the public to help them get on with the massive task of clearing the wreckage from the shoreline.

The key messages are:
- Please stay away from the shoreline at Branscombe and nearby beaches.
- Please don’t use coastal footpaths that are closed.
- Please take care where you park at Beer.
- Work currently continues to remove oil from the stricken cargo vessel, and operations are expected to start soon to remove the first of the 800 containers from the ship’s deck. Hundreds of other containers will later have to be removed from the Napoli’s hold.

On the Net: Neutrally Buoyant Wetsuit System: www.fourthelement.com

fourth element

NEUTRALLY BUOVANT
MACHINE WASHABLE
COMFORTABLE
LIGHTWEIGHT
FAST DRYING
BREATHABLE
WARM
HMAS Adelaide

Green Light Given to Sink Her as Artificial Reef

The Australian Federal Government has given the go ahead for the HMAS Adelaide to be sunk off the New South Wales central coast as a dive wreck. The Adelaide will be sunk about 30 metres off the coast of Terrigal early next year. The wreck is expected to provide a great boost for tourism in the region. Due to the proximity of the central coast to Sydney it will attract lots of additional tourists—between 10 and 20,000 extra people is expected.

HMAS Adelaide is a long-range escort frigate with roles including area air defence, anti-submarine warfare, surveillance, reconnaissance and interdiction. The ship can simultaneously counter threats from the air, surface and sub-surface. Adelaide was the first guided-missile frigate to be home-ported in Western Australia. The ship has participated in the 1990-91 Gulf War, peacekeeping operations in East Timor in 1999 and was deployed to the Arabian Gulf as part of the International Coalition against Terrorism in 2001 and 2004.

Built in the United States, Adelaide was commissioned on 15 November 1980 and was the first of six guided-missile frigates to be delivered to the Royal Australian Navy (RAN). Adelaide is the second ship in the RAN to carry this name. The first was a light cruiser that served from 1922 to 1945.

Adelaide is powered by gas turbines for its main propulsion. Guided-missile frigates can be underway from a cold start in less than 30 minutes, in addition, two forward mounted auxiliary propulsion units provide a secondary means of propulsion and excellent manoeuvrability in confined waters.

South Africa: Five-year Ban on Shipwreck Diving Lifted

Historic shipwreck divers can re-apply for their salvage permits after the South Africa Department of Arts and Culture recently lifted its controversial five-year ban. It has also been decided that divers could re-apply to salvage wrecks until 2010.

For one of the teams, which were forced to stop salvaging in 2001 when all permits were revoked, it means an opportunity to salvage the remaining 60 percent of the Oosterland, a ship that was transporting Huguenots to South Africa and sank in 1697.

The team’s partners spent millions of rands, and it spent thousands of man hours underwater on the Oosterland before the ban came into effect.

Another salvor said that while the permits were revoked, the wrecks lay “waiting to be pillaged and for Mother Nature to destroy them”. He added that the only way to protect the sites was to issue permits as divers in control of wrecks were given the right to police them and make sure that unauthorised divers were not plundering them. “In three years you can do a lot,” he said of the permit extension until 2010. “It's a very good move and the only way to protect the sites.”

The department's director for heritage policy, Mbhazima Makhubele, agreed that a problem with the permits having been revoked was that it left the wrecks open to pillage. The department had also found that the way in which the permits were withdrawn “raised serious legal issues”. ■
Is Shipwreck Off Israel the Key to Napoleon’s Holy War?

A mysterious shipwreck discovered outside the Mediterranean port of Acre, Israel, may throw light on Napoleon’s attempt to conquer the Holy Land. British archaeologists from the University of Haifa were led to the wreck by a 200-year-old map, which they found in a British archive. It was drawn by a British soldier in 1799 and showed the formation of the British fleet off the coast of Acre as they faced a blockade of Napoleon’s ships. The British Royal Navy were helping the inhabitants of Acre defend their city against the French. The map also showed a sunken ship at exactly the spot where the wreck was found.

The ship, which is 30 meters long and 9 meters wide, was first discovered in 1966, but systematic excavations have only just begun. Scientists are hoping to discover whether the ship was involved in battles in 1799 or 1840 and whether it was a French or British vessel.

Persian Gulf Shipwreck Remain a Mystery

Not only does its origin remain a mystery, but its location at a depth of 70 meters below the waters of the Persian Gulf makes the excavations technically challenging and expensive as only commercial divers using saturation diving techniques can work at these depths and there is a lack of this expertise in Iran.

Captain Mehdi Masoumi, formerly of the Iranian Navy, explains: “The need for such facilities has always been felt in Iran. The country’s petroleum installations, which are considered vital for Iran must have become equipped with such technology long ago, but today we can see that it was never acquired. At present, enormous amounts of money is spent by the country’s oil companies for hiring foreign divers to do the job at deeper levels. We do hope that the salvage of this shipwreck would open the gates to this system in Iran.”

In the meantime, the first step in bringing this Partho-Sassanid ship out of the water could be accomplished by taking out samples of the ship. This can be done using the existing facilities. However, even taking out small bits and pieces from such depth is a hard task which can only be achieved by few diving professionals, not exceeding five people in Iran.

Some Iranian experts hope the find can settle a dispute over the Persian Gulf, as some Arab states attribute this body of water to themselves, by calling it the Arabian Gulf. Some Iranian experts hope the discovered shipwreck will clearly show that this waterway has always been part of Iran (formerly Persia) throughout history, as it was used for commercial and military purposes 2000 years ago.

Raid in Spain Net 300,000 Artefacts

Spanish police have arrested 52 people accused of plundering 300,000 artefacts from excavation sites throughout Andalusia in the largest swoop against illegal archaeological treasure hunting in the world, the interior ministry said.

The coins, urns, sculptures and mosaics from Iberian, Roman and Islamic settlements were stolen at night using metal detectors, historians hunting in the world, the interior ministry said.

The remains of a merchant ship belonging to either of the two superpowers of Ancient Persia, namely the Parthian (248 BC - 224 AD) or Sassanid (224-651 AD) empires, recently discovered off the Iranian port of Siraf in the Persian Gulf continues to be a challenge for the archaeologists.

Iran and Australia to Cooperate on Underwater Archeology?

In a recent meeting between Taha Hashemi, director of the Research Center of Iran’s Cultural Heritage and Tourism Organization (ICHTO), and Gregory Laurence Moriarty, Australian Ambassador in Iran, the two sides stressed the need for expansion of cultural and archeological cooperation, especially in the area of underwater archeology.

Pointing to the existence of numerous historic relics from different periods of time in the northern and southern waters of Iran, Hashemi said that Iran is intending to make use of the experiences of countries with long background in underwater archeological activities such as Australia.

Stressing the importance of culture as a means to create cultural bridge between nations and expand the cooperation, Hashemi further asked the Australian official for a more inclusive cooperation with Iran in different areas of research including archeology, renovation, anthropology, civilization history and Tourism. He also announced that ICHTO’s Research Center is ready to cooperate with Australian universities and research institutes in the above-mentioned areas.
Australia Searches for WWI Sub

The Australian navy began a search for the nation’s first submarine in a bid to end the mystery over what happened to the vessel, which disappeared in the Pacific in the first months of World War I. It may have been found in Papua New Guinea waters.

The submarine, the AE1, vanished in September 1914, with the loss of all 35 crew while patrolling near Rabaul on the island of New Britain, now part of Papua New Guinea. It was the first major loss of Australian life in World War I, and followed Australia’s first military action of the conflict when troops had captured a German radio base at Rabaul. “I am hopeful that this search will shed some light on to the whereabouts of the AE1 and provide some answers to the relatives of those brave crew members,” assistant defence minister Bruce Billson said in a statement. Billson said investigations suggested that the submarine could have sunk after running aground or colliding with a submerged object near the Duke of York Islands. The AE1 and its sister ship, the AE2, were purchased from Britain and arrived in Australia in May 1914. Both were commanded by British officers with a mix of British and Australian crew.

In August 1914, five days after Australia declared war on Germany, the AE1 was dispatched to support the military operations against German forces on New Britain. The AE2 was also lost during World War I. It sank in April 1915, in Turkey’s Sea of Marmara after penetrating the Dardanelles during the Gallipoli campaign. Unlike the AE1, the AE2’s crew all survived. Australian submarine hunters found the wreck of the AE2 in 1998.

Submarines Discovered Off Isle of Man

UK Divers have discovered three submarines off the Isle of Man which are believed to be WWII German U-boats. Divers from BSAC club Castle Rushen Divers together with shipwreck expert Adrian Corkill located the vessels using sonar scanning equipment. The club has already dived one of the submarines, situated approximately 20 miles off the island. It lies at 52m and is fairly broken up. Further exploration dives on the submarines using rebreathers are planned for late April or early May when sea and weather conditions improve. The remaining two vessels lie at a depth of 40-50m and 64m.

Plan Aims to Raise WWII U-boat

In Ireland, an ambitious plan has been presented to raise a U-boat from the sea bed off County Donegal. If it gets the go-ahead, the aim is to house the boat in a museum where people can get a glimpse of one of the iconic vessels from WWII. A number of U-boats lie 70 metres deep off the coast of Donegal in the Republic of Ireland. Even in the murky depths the outline of the U-boat is quite clear, with divers saying the aerials and periscopes are still intact.

Submarine anyone? US Navy seeks new owner for vintage submarine

The U.S. Navy, is looking for someone to take over the recently decommissioned USS Dolphin, one of the oldest submarines in its fleet. The Dolphin, a one-of-a-kind research vessel, was decommissioned Jan. 15. In a notice dated Jan. 24 and published in the Federal Register, the Navy said it will accept offers for the submarine from government agencies, museums, nonprofit organizations or similar institutions wishing to operate the submarine as a museum. The Navy said it hopes to keep the vessel in its home port of San Diego. Any new owner will be required to maintain the sub in good condition.

USS DOLPHIN Location: San Diego, CA

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Merchant Submarine

A merchant submarine is a type of submarine intended for trade, and being without armaments, they are not considered warships like most other submarines. The intended use would be to avoid naval blockades or to dive under Arctic ice. Strictly speaking, only two submarines have so far been purpose-built for merchant shipping use, though standard or partly converted submarines have in many cases been used to transport smaller amounts of important cargo, especially during wartime.

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Alien Mysids Invade Great Lakes

A half-inch-long shrimp from Eurasia has made its way to Lake Ontario and could threaten the lake’s food chain. The tiny critter, called the bloody red mysid, like so many other invaders, most likely was brought to the lakes through the ballast water of an ocean-going ship. The species is native to the Baltic and Black Sea region. Lake Ontario is an almost perfect home for them, since they prefer shallow waters with rocky bottoms. Their discovery has set off alarms for biologists, who fear they could upset the food chain in the lakes, which has already been compromised by other invasive species. ■

Groupers and Moray Eels Hunt Cooperatively

Groupers (Plectropomus pessuliferus) and Giant moray eels (Gymnothorax javanicus) have been observed working with each other to catch prey in the Red Sea. Tintraspecific group hunting has received considerable attention because of the close links between cooperative behaviour and its cognitive demands. Obviously, fish of different species can communicate, and underwater filming revealed that both partners benefited from the association. Their normal hunting strategies are quite different. Groupers are semi-benthic piscivores, which hunt in open water. Moray eels, on the other hand, sneak through crevices to corner their prey in holes. Prey avoid eel predation by swimming into open water and avoid grouper predation by hiding in crevices. A coordinated hunt confronts prey with a multipredator attack that is difficult to avoid.

It is remarkable that different species of fish have actually created a language, taught each other the language, developed a plan, work together harmoniously to carry out the plan and do not eat each other in the whole process.

The partner that successfully caught and ate the fish was not shown any aggression from the unsuccessful partner. Groupers initiated the hunt by visiting the giant eels and shaking their heads vigorously. The head is shaken three to six times a second just a few centimetres in front of the moray’s head, and the soft part of the dorsal fin is errected. The morays respond by leaving their crevices, with the moray and grouper then swimming off across the reef. The fish would stay together from a few seconds to up to 44 minutes. ■

New Study Says Nassau Grouper is Disappearing

Over the past eight years, Dr. Enric Sala and fellow researcher Rick Starr have used various types of tracking equipment to monitor the grouper spawning site at the Glover’s Reef Atoll in the Belize Barrier Reef. In January 1999, the fish experts found approximately three thousand one hundred adult Nassau groupers. This year, they discovered only five hundred and seventy examples of the species. “This dramatic decline in grouper numbers is mostly due to over fishing,” says Enric Sala. “The Nassau grouper is going down in Belize, and the only way of recovering the numbers, the only way of saving the grouper from extinction, would be a moratorium on Nassau grouper fishing.” ■

New Billfish Species May Have Inflated Population Estimates of White Marlin

Scientists from the Guy Harvey Research Institute at Nova Southeastern University and NOAA Fisheries Service has confirmed the existence of an enigmatic billfish species that closely resembles the heavily-fished, overexploited white marlin. Known as the roundscale spearfish, this species has been found in the northwestern Atlantic Ocean, where its distribution overlaps that of the white marlin—a prized game fish that bears a close resemblance. This means that recent population assessments of the white marlin may have been overestimated. ■

Caspian Caviar Export Quotas Set, But Beluga in Limbo

Exports of caviar from three Caspian Sea sturgeon species will be permitted this year by the international organization that controls trade in the luxury delicacy after a year when no Caspian exports were allowed. Exports of beluga, the world’s most valuable caviar, are not yet authorized for 2007. ■

South African Abalone to Come Under International Trade Controls

South Africa has taken a decisive step towards stemming the illegal harvest and trade of its endemic abalone populations by listing the species under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). ■

US: Puget Sound Fighting Sea Squirt Invasion

Tunicates, or sea squirts, are threatening to take over the Washington state’s Puget Sound. One species has covered New England’s Georges Bank—a massive underwater shelf in the Atlantic Ocean—in 225 km² of slime, while another has hurt the Prince Edward Island shellfish industry in eastern Canada. ■

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A half-inch-long shrimp from Eurasia has made its way to Lake Ontario and could threaten the lake’s food chain. The tiny critter, called the bloody red mysid, like so many other invaders, most likely was brought to the lakes through the ballast water of an ocean-going ship. The species is native to the Baltic and Black Sea region. Lake Ontario is an almost perfect home for them, since they prefer shallow waters with rocky bottoms. Their discovery has set off alarms for biologists, who fear they could upset the food chain in the lakes, which has already been compromised by other invasive species. ■

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Some Caribbean Coral Resistant to Global Warming?

Most coral species can only survive temperature fluctuations of about 12 degrees. If water temperatures vary more than this, corals can suffer bleaching, aspergillosis or other lethal diseases. So, thanks to global warming, corals’ days are numbered, right?

Maybe not

According to Drew Harvell, Cornell professor of ecology and evolutionary biology, Caribbean gorgonian sea fan corals show surprising warm-weather tenacity. In fact, they not only show temperature resilience, but they seem capable of boosting their cellular and enzymatic defenses to fight lethal microorganisms as temperatures rise. In other words, what doesn’t kill coral might make them stronger. As such, Harvell and other scientists have begun examining the so-called “hardy corals” to see what clues they can learn and apply to other, weaker corals.

SOURCE: SCIENCEdAILY ■

Plant-Grazing Fish Boost Resilience of Stressed Reefs

Australian researchers have found that grazing by large herbivorous fishes plays a key role in the ability of coral reef ecosystems to recover from bleaching events and maintain resilience in the face of thermal stress due to rises in ocean temperatures. Reefs subjected to grazing by large herbivorous fish species exhibited resilience in recovery, recruiting new corals to the reef and keeping algal growth in check, the reef areas from which large fish were excluded showed a distinct erosion in reef quality with assemblages of algae and plant life overgrowing the reef and preventing the recruitment of new coral.

SOURCE: CURRENT BIOLOGY 17, FEBRUARY 20, 2007  ■

Great Barrier Reef, Crown-of-Thorns and Global Warming

What’s really going on?

In December, a massive outbreak of the deadly crown-of-thorns starfish (COTS) has been reported at Bait Reef, off the Whitsundays. A COTS control boat has been searching the Whitsundays to remove any starfish on the COTS control program, finding 120 starfish a day, or 30 COTS per 40 minute dive. When a diver finds more than one COTS every ten minutes, it’s defined as a COTS outbreak. The amount of COTS at Bait Reef is about three to four times more than what’s considered sustainable. However, recent “early warning” surveys suggest a crown-of-thorns starfish outbreak is not an imminent threat to corals on the Great Barrier Reef. Researchers from the Australian Institute of Marine Science (AIMS) Great Barrier Reef Long-term Monitoring Team have been undertaking surveys of reefs between Cairns and Cooktown, which are thought to be the source of the coral eating pest.

Meanwhile, scientists also warn that the hysteria surrounding the impact of climate change on the Great Barrier Reef could lead to less being done to protect it from immediate threats such as pollution and over-fishing. Recent reports based on a study by the Intergovernmental Panel on Climate Change have predicted that the reef will be extinct within decades as a result of rising sea temperatures caused by global warming. But reef experts claim the impact of climate change on the reef is more complex and say that other threats are far more immediate.

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Turkey

New Tourist Submarine Heading for Bodrum

The submarine is planned to be 38 meters long, 4.5 meters wide and 3 meters high with a 47-person capacity. The submarine’s top speed will be 20 miles per hour and dive to a depth of 40 meters allowing tourists to experience Turkey’s fascinating underwater life and archaeological treasures for 12 months of the year.

The submarine is expected to cost around $1.3 million and would be built in Tuzla or Bodrum. The submarine is planned to be 38 meters long, 4.5 meters wide and 3 meters high with a 47-person capacity. The submarine’s top speed will be 20 miles per hour and dive to a depth of 40 meters allowing tourists to experience Turkey’s fascinating underwater life and archaeological treasures for 12 months of the year.

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Diving into History in Kaş

The Kaş Underwater Historical Research Association has created an underwater archaeological park by sinking a replica of Uluburun, an ancient shipwrecked ship, off the coast of Kaş. In August 2005, another Uluburun, Uluburun-II, sailed to Cyprus, following the same route the original ship did 3,300 years ago. Upon the return of the ship from Cyprus, the Kaş Governor proposed that the boat remained where its precursor had been discovered. In the following days, the idea of a harbor reflecting the life of the Bronze Age, in which Uluburun-II could be exhibited, came up. From this sprang the concept of an underwater archaeological park. In September, the Society for Naval History constructed the Uluburun-III, destined to be sunk for the archeological park. Uluburun-III is not the only artifact in the park. Imitations of the original ship’s load of copper and bronze bullion, earthenware pots and Kanon amphorae have also been planted on the wreck, according to the plan of where the originals were found when the shipwreck was discovered in 1982.

Crimea

AccessCrimea launches Diving Tour Off Balaklava

AccessCrimea, the leading tour operator in Crimea, is now offering a week long diving tour to Balaklava in the south-west of Crimea. Balaklava is in a unique and fascinating location that offers an intriguing mix of history and natural beauty. It was the location of the Crimean war of 1854 between Russia and Britain, France and Turkey, and the southern-most point that the Germans reached in the second World War. Balaklava’s clean waters and magnificent scenery make this a great destination for diving, exploring or just basking on one of its many wild beaches.

Balaklava offers 30 dive sites with an array of shipwrecks, underwater caves, vertical walls and even an old Soviet submarine factory built into a mountain. Balaklava is the diving destination for people who want to experience the new and exciting.

The founder of AccessCrimea is from Britain but has resided in Crimea for five years. He said, “Many divers today are looking for something new and off the beaten path. Balaklava is the destination for such divers. There’s a lot more to this trip than just diving; the tour includes a day in Kiev and two tours to Crimea’s main sites; the ancient cave towns at Bakhchisarai and the historic palaces of Crimea’s stunning south coast.”

Bonaire Dive Into Summer

This summer everyone is invited to experience the Caribbean’s top-rated dive destination with Bonaire’s new summer-long promotion, Bonaire Dive Into Summer 2007. Taking place June 3 through September 29, 2007, this island-wide event will focus on scuba diving through a series of specialty topics: Family, Photography, Fish and Fun. There is no registration fee to participate in Bonaire Dive Into Summer (select activities may have a nominal cost involved) and all activities are open to anyone on the island wishing to take part.

Curacao Prepares for Second Annual Dive Festival

Curacao is pleased to announce the dates for its Second Annual Dive Festival: May 26 through June 2, 2007. Ranked among the Caribbean’s best islands for diving, called one of the top destinations for new divers, home to “Mushroom Forest”—one of the top dives in the world, and rated best in the Caribbean for shore diving, Curacao is, or should be, on any diver’s wish list of places to visit.

Red Sea Resorts Booming in Off-Season

Despite being the off travel period, Egypt’s Red Sea resort town is seeing a boom in vacationers coming from colder European nations. Russians and Germans have flocked to Hurghada on the Red Sea for relaxation and sun.

According to hotel manager Ashraf Ahmed of the Dana Beach Resort, this is one of the best February’s for the resort. Hundreds of Russians have escaped freezing temperatures in their home country for the warm and friendly confines of Egypt.

This is great for the hotel and for Egypt because at a time when we usually do not have that many visitors, the temperatures in Europe are very cold, so people want to come here and get some warm weather,” Ahmed said.

However, even the hotel manager is skeptical of the way all-inclusive resorts are heading in Egypt. He believes that there needs to be a more concerted effort to offer more of Egypt to the millions of visitors the country receives each year.
Dubai Getting an Undersea Hotel for Rich Abyss Fans

In order to enter this surreal space, visitors will begin at the land station. This 120m woven, semicircular cylinder will arch over a multi-story building.

Joachim Hauser plans to incorporate many different elements associated with the sea. He views his creation as a place where those who do not dive, or do not even swim, can experience the tranquility and inspiration of the underwater world.

Hydropolis is the world’s first luxury underwater hotel. It will include three elements: the land station where guests will be welcomed; the connecting tunnel, which will transport people by train to the main area of the hotel; and the 200 suites within the submarine leisure complex. It is one of the largest contemporary construction projects in the world covering an area of 260 hectares. The $600 million hotel is due to open at the end of 2007 and will incorporate a host of innovations that will take it far beyond the original blueprint for an underwater complex worthy of Jules Verne.

“Hydropolis is not a project; it’s a passion,” explains Joachim Hauser, the developer and designer of the hotel. He developed it out of a passion for water and the sea and goes much deeper than just building a hotel underwater. More than just curiosity, it is a commitment to a more far-reaching philosophy. “Once you start digging deeper and deeper into the subject, you can’t help being fascinated and you start caring about all the associated issues,” he explains. “Humans consist of 80% water; the earth consists of 80% water. Without water, there is no life.”

Hydropolis mimics the human organism in design with a direct analogy between the physiology of humans and the architecture. The geometrical element is a figure eight lying on its side and inscribed in a circle. The spaces created in the basin will contain function areas, such as restaurants, bars, meeting rooms and theme suites. These can be compared to the components of the human organism: the motor functions and the nervous and cardiovascular systems with the central sinus knot representing the pulse of all life.

Hydropolis

Architect and designer
Joachim Hauser

Estimated cost
£300 million

Projected completion
December 2007

Budget Airline Targets Maldives

Maldives can expect to see a rapid growth in the number of tourists from China, Hong Kong and Macau following the introduction of direct flights from the region with a new budget fare airline.

According to chief executive, Andrew Pyne, Viva Macau aims to bring residents of Macau, Hong Kong and the Pearl River Delta to exciting destinations like the Maldives at fares that represent great value for money.

The Maldives have been a favourite destination from China and the Pearl River Delta region since the Maldives received Associated Destination Status (ADS) from China in December 2002. The Maldives have seen a robust increase in Chinese arrivals as a result.

Global Warming & Tourism

Scandinavia’s coastlines can become the new Riviera attracting tourists fleeing the scorching heat and drought around the Mediterranean. This is approximately the scenario painted in a recent report from EU’s environmental directorate on the effects of global warming, which can have devastating effects on Southern Europe. For countries like Spain, Greece and Italy, the extra degrees not only put the poorest and the elderly at risk but also may mean an enormous decrease in revenues from tourism.

Scotland

Meanwhile, diving could spark an economic boom in Scotland. A £200,000 study is to be carried out to see if diving off the Berwickshire coast could spark an economic boom.

The research has been commissioned by Scottish Enterprise Borders to find out if income from diving could be increased to benefit more of the region. The Eyemouth and St Abbs area is renowned throughout the UK for its varied and exciting marine life and it is thought that more than 20,000 divers visit the area each year.

Indonesia

Indonesia could lose about 2,000 islands by 2030 due to climate change, says the country’s environment minister told Reuters. Rachmat Witoelar said studies by U.N. experts showed that sea levels were expected to rise about 89 centimetres in 2030, which meant that about 2,000 mostly uninhabited small islets would be submerged. “We are still in a better position. Island countries like Saint Lucia, Fiji and the Bahamas would likely disappear.”

Indonesia, which consists of 17,000 islands, has been trying to avert such a scenario by reducing reliance on fossil fuels and switching to bio-fuels, he said. “We are optimistic it can be prevented.”
Longest UW Cave Found

In January, German Robbie Schmittner and Englishman Steve Bogarts managed to connect two rivers in the Yucatan peninsula previously thought to be independent. In so doing, the pair have discovered what appears to be the world’s longest underground river. The total length of the river measures 153.6 kilometres (95 miles) with a maximum depth of 72 meters (236 feet). The aquifer also ranks ninth on the list of the world’s longest known underground caves. The discovery occurred in January just south of Cancun, and is the culmination of three years of research. The system has been named “Sac Actun,” after the Mayan name for the larger of the two branches. SOURCE: JURNALO.COM ■

Diving Deep: Robot Explores Waters in Central Mexico for Life

Plunging more than 1,000 feet underground, the world’s deepest known sink hole, Mexico’s Cenote Zacatón, has only been partially mapped; its true depth remains unknown. In mid-March scientists returned to Zacatón, to further investigate the hole and to resume tests of a NASA-funded robot called the Deep Phreatic Thermal Explorer (DEPTHX). DEPTHX—a bulbous, yellow pod—is designed to survey and explore Earth’s most extreme regions, as well as, potently, outer space. DEPTHX is a completely autonomous—some might say “intelligent”—probe designed to map underwater caves, measure geochemical properties of the water, search for microbes and other life forms, and bring back samples for subsequent analysis. Amazingly, DEPTHX even creates 3-D maps of the areas it explores as it swims, and then uses those maps to navigate back to the surface.

Zacatón first achieved notoriety when two divers attempted to reach the bottom in 1994. One of them, Sheck Exley, died in the attempt. The other, Jim Bowden, survived, descending to a record depth of 925 feet.

SOURCE: PHYSORG.COM ■

Divers to lay artificial reefs near Pulau Tioman

At least 300 local and foreign divers will deploy artificial reefs that will be home for the marine life in Soyak Island off the famous Tioman Island. The event is a conservation effort under the Pahang Regent Reef project launched four years ago.

Turtle Tourism Gain Momentum

The Tourism Department of Orissa in India has drafted ambitious plans to attract foreign tourists by developing infrastructures like roads, small huts and tents at the turtle nesting sites of Devi and Rushikulya river mouth areas—the two major nesting grounds of the endangered Olive Ridley sea turtles.

States like Goa and Kerala have recently started programmes to woo overseas tourists by keeping a few sea turtles in some pens near the sea beach, but Orissa is lagging behind to promote the eco-tourism idea, even though millions of turtles come each year here for nesting, said a turtle conservator.

Artificial turtle hatcheries constructed by the forest officials on the nesting ground—to protect the turtle eggs from the predators like dogs, jackals and other animals—could be used to attract tourists. After emergence of the hatchlings from the hatcheries, the tourists could release the baby turtles as is done in other countries.

SOURCE: PHYSORP.COM ■

In January, German Robbie Schmittner and Englishman Steve Bogarts managed to connect two rivers in the Yucatan peninsula previously thought to be independent. In so doing, the pair have discovered what appears to be the world’s longest underground river. The total length of the river measures 153.6 kilometres (95 miles) with a maximum depth of 72 meters (236 feet). The aquifer also ranks ninth on the list of the world’s longest known underground caves. The discovery occurred in January just south of Cancun, and is the culmination of three years of research. The system has been named “Sac Actun,” after the Mayan name for the larger of the two branches. SOURCE: JURNALO.COM ■

Diving Deep: Robot Explores Waters in Central Mexico for Life

Plunging more than 1,000 feet underground, the world’s deepest known sink hole, Mexico’s Cenote Zacatón, has only been partially mapped; its true depth remains unknown. In mid-March scientists returned to Zacatón, to further investigate the hole and to resume tests of a NASA-funded robot called the Deep Phreatic Thermal Explorer (DEPTHX). DEPTHX—a bulbous, yellow pod—is designed to survey and explore Earth’s most extreme regions, as well as, potently, outer space. DEPTHX is a completely autonomous—some might say “intelligent”—probe designed to map underwater caves, measure geochemical properties of the water, search for microbes and other life forms, and bring back samples for subsequent analysis. Amazingly, DEPTHX even creates 3-D maps of the areas it explores as it swims, and then uses those maps to navigate back to the surface.

Zacatón first achieved notoriety when two divers attempted to reach the bottom in 1994. One of them, Sheck Exley, died in the attempt. The other, Jim Bowden, survived, descending to a record depth of 925 feet.

SOURCE: PHYSORG.COM ■

Divers to lay artificial reefs near Pulau Tioman

At least 300 local and foreign divers will deploy artificial reefs that will be home for the marine life in Soyak Island off the famous Tioman Island. The event is a conservation effort under the Pahang Regent Reef project launched four years ago.

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SOURCE: PHYSORP.COM ■
Diving The Visayas

Text and photos by Nonoy Tan
The “Visayas” is a group of islands that comprises the central portion of the Philippine archipelago. A few Visayan islands are popular among travelers, such as Cebu and Boracay; while the majority remain low-profile but nonetheless exquisite. I have been regularly diving in the Visayas during the last six years. I go there primarily to take underwater photographs of marine life, and at the same time enjoy its tranquil ambiance. The diving destinations are all situated in small towns, away from the urban bustle of Cebu City—a metropolis with an international airport and my gateway to the serene islands.

Malapascua Island
Malapascua Island can be reached in four hours travel by land, plus a half-hour by boat northwards from Cebu City. It is not a difficult journey. Roads are mostly paved, and transportation facilities are very accessible. There are several dive sites around the island, but the main attraction is Monad shoal where there are daily sightings of thresher sharks. Each dawn, the sharks approach from the deep onto the shoal for routine cleaning by small cleaner fishes. The thresher sharks linger around, while divers enjoy the spectacle. Soon thereafter, the sharks head back into the deep. After the early morning encounter with the sharks, the rest of the day can be spent diving nearby sites that showcase a lush variety of corals and marine inhabitants such as grey bamboo sharks, white tip sharks, sea hares, lionfishes, mantis shrimps, and all sorts of crabs. There are at least a dozen dive sites, and that justifies three to four days of diving on Malapascua Island.
Cabilao Island
Cabilao Island can be reached in two hours of travel southwards (by land) plus another hour (by boat) from Cebu City. Upon reaching the island, visitors can feel its intense serenity. Life here is extremely laid-back. This atmosphere compliments the exotic nature of the marine life, which makes Cabilao a fascinating place for underwater photographers. The popular subjects include the bend stick pipefish, pygmy seahorse, dragonet, Pegasus sea moth, stargazer, cockatoo waspfish, marbled snake eel, etc. These creatures can be easily found with the help of the local dive guides who have an astonishing ability to spot them. There are seven dive spots around Cabilao Island and two to three days stay on the island is ideal.

Balicasag & Panglao
A few hours from Cabilao is the island of Balicasag, which has at least five dive sites. Here, I find an abundance of fish including schools of barracuda and jacks. This is a good place for wide-angle photography. Also, macro subjects abound particularly nudibranchs of the genus Nembrotha. Another observation is the unusual plumpness and size of the nudibranchs of Balicasag Island. These two individuals of different species are attempting to mate.
the Nembrotha nudibranchs in this area, some close to 100 centimeters in length. They seem to thrive very well because of the abundance of sea squirts upon which they feed. Adjacent to Balicasag is the Panglao Island, which has a dozen dive sites. The island is also host to a number of well-run resorts that are located along the white sand beaches. Three to four days of diving around the islands of Balicasag and Panglao is recommended. While in Panglao, it is best to take a land tour of the main island of Bohol. This part of the Philippines is one of the richest in terms of culture and history. After Balicasag, Panglao and Bohol, the next destination is Dauin.

Dauin
Dauin is a small coastal town in the south-east portion of the Negros Island accessible by boat from Bohol. The travel is about an hour and a half. The town maintains a marine sanctuary where scuba divers come to see bizarre critters such as the Ambon scorpionfish, striped frogfish, horned bumblebee shrimp, flamboyant cuttlefish, mimic octopus, flying gurnard, napoleon snake eel, velvet fish, etc. There is not much coral cover at Dauin. It is largely sandy. But because it hosts an interesting array of interesting subjects, this site is a favorite among serious underwater photographers and muck divers. Fortunately, the local dive guides here are masters in spotting these creatures. There are a few dive sites close to Dauin that also generate surprise finds of rare critters. Thus, a one to two weeks stay in the area is highly recommended.
Siquijor
An hour travel by boat from Dauin is the island of Siquijor. The dive sites around the island also offer excellent macro photography subjects as well as night dives. The least known site is located within an abandoned wharf called “Lazi Pier.” It is found south-east of Siquijor Island. The pillars of the wharf that extend to the sea bottom are densely populated by soft corals, tubastrea, and gorgonians. These in turn are home to frogfishes and a wide range of nudibranchs. There are nine other dive sites located at the West side of the island. At low tide each late afternoon, young children approach the ebbing waters to harvest stranded sea urchins. They open these echinoderms in order to expose an internal roe, which is scooped out and eaten raw. Sashimi lovers like me can also get into the action. The approach of darkness provides magnificent opportunities for night diving as well.

Dauin and the islands of Siquijor, Panglao, Balicasag, Cabilao and Malapascua are a mere sampling of diving destinations in the Visayas. New dive sites continue to be explored, while old and forgotten ones are being rediscovered. The aggregation of many islands and at least 100 dive sites in the Visayas makes it an indispensable itinerary when diving in the Philippines.

There is a wide assortment of dive operators and resorts in the Visayas, ranging from the high-standard to the rugged. As a regular visitor to these islands, I dive with Sea Explorers in Cebu City, because of their professionalism and experience.
Nonoy Tan is an award-winning underwater photographer based in Manila, the Philippines. For more information or to order prints directly from the photographer, please email: nonoytan@yahoo.com.

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Dive Info:
Sea Explorers www.sea-explorers.com
PADI Dive Guides www.padidiveguides.com
Starfish online dive guide www.starfish.ch

CLOCKWISE FROM ABOVE: During the low tide, young children enjoy a snack of sea urchin; Bad hair day? No, it’s a Striated Frogfish; Artificial reefs such as this vehicle provide shelter for marine life; Cuttlefish
The Philippines

History During the 16th century, the Philippine Islands became a Spanish colony; in 1898, they were ceded to the US following the Spanish-American War. The Philippines became a self-governing commonwealth in 1935 under elected President Manuel QUEZON who had to prepare the country for independence after a 10-year transition. The islands fell under Japanese occupation in 1942 during WWII. US and Filipino forces fought together to regain control from 1944-45. July 4, 1946 marks Philippine independence. A widespread rebellion of the people forced President Ferdinand MARCOS into exile after 21 years of rule in 1986 when Corazon AQUINO was installed as president. During her presidency, there were several coup attempts, which affected political stability and economic development. In 1992, Fidel RAMOS was elected president who enjoyed a presidency marked by greater stability and progress on economic reforms. The US closed its last military bases on the islands in 1999. President Joseph ESTRADA, elected in 1998, was impeached on corruption charges and was succeeded by his vice-president, Gloria MACAPAGAL-ARROYO who was elected to a six-year term in May 2004. Armed communist insurgencies and Muslim separatists in the south continue to threaten the Philippine Government. Government: Republic; Capital: Manila

Currency Philippine peso (PHP); Exchange rate: 53 peso per US dollar; 63 peso per Euro

Geography Southeastern Asia, archipelago between the Philippine Sea and the South China Sea, east of Vietnam, mostly mountains with narrow to extensive coastal lowlands; Coastline: 36,289 km; Elevation: Lowest point: Philippine Sea 0 m; highest point: Mount Apo 2,954 m; Agriculture: rice, coconuts, corn, sugarcane, bananas, pineapples, mangoes, pork, eggs, beef; Fish; Natural resources: timber, petroleum, nickel, cobalt, silver, gold, salt, copper.

Climate Tropical marine; northeast monsoon (November to April); southwest monsoon (May to October). Environmental issues: Uncontrolled deforestation especially in watershed areas; soil erosion; air and water pollution in major urban centers; coral reef degradation; increasing pollution of coastal mangrove swamps that are important fish breeding grounds.

Population 86,241,697. Percent of population below poverty line: 40%, Ethnic groups: Christian Malay 91.5%, Muslim Malay 4%, Chinese 1.5%, other 3%; Religions: Roman Catholic 83%, Protestant 9%, Muslim 5%, Buddhist

Language Filipino and English

Decompression chambers Cebu City Recompression Chamber Camp Lapu-Lapu Lahug, Dr. Memento Ortega, (032) 310-709 or (032) 312-325 or (032) 746-652 loc: 2625

Manila (Quezon City): AFP Medical Center at V. Luna Hospital, V. Luna Road, Quezon City Dr. Jojo R. Bernardo Phone: 920 7183 921 1801 loc: 8991

Dive Travel The best time to visit the Philippines is during the period from November to June. Precipitation is lowest during April and May. Temperatures are cooler during December to February (26-27°) and warmer between March and May (29°)

Web sites Philippines Department of Tourism www.wowphilippines.com.ph
Philippines Convention & Visitors Corp. www.dotpcvc.gov.ph
Historic Churches of Cebu www.ngkhai.com
Bais Dolphin Watching www.wowphilippines.com.ph

Dive Books Philippines Travel Guide by Jens Peters www.amazon.com

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Diving the Spice Islands of Indonesia

AMBON

"Have a great time, but keep your head down!"
This was the response I received from a diving friend after announcing I was planning a visit to Ambon. At least he knew where it was; my announcement to friends in Toronto drew blank stares. When I mentioned the Spice Islands, a dawn of recognition crept into their eyes. It was a place they'd vaguely heard of but had no idea whatsoever as to their location.
Tucked away at the eastern end of the Indonesian archipelago, Maluku province consists of roughly 1000 islands scattered in the Banda Sea near New Guinea. Formerly known as the Moluccas during Dutch colonial times, the region has long attracted the attention of merchants, adventurers and explorers. Nowadays, it is attracting the attention of divers eager to explore its underwater treasures.

My journey began back in June of ‘05 in Singapore. While attending “Celebrate the Sea”, I met Mike Hilis and John “Buck” Randolph, the owners of Unexplored Adventures. Their company is comprised of two distinct identities, Maluku Divers and Spice Island Explorers. After regaling me with tales of pristine diving, a fascinating history and a lack of tourists, I was immediately intrigued.

Inevitably, the subject of the past violence came up. In 1999, tensions between Christians and Muslims flared and the resulting violence effectively put the brakes on tourism in the region for several years. Happily though, a peace treaty was signed in 2002 and things have been pretty quiet ever since. “There hasn’t been a westerner killed here since the Second World War!” Mike added with a grin. I was sold!

Six months later, the week before Christmas, I found myself on a packed midnight flight from Jakarta bound for Ambon. I wasn’t really sure what to expect; attempts to obtain information on the Internet were rewarded with 6-year-old stories about the unrest. Descending through the clouds my eyes were greeted with verdant islands cloaked in green. Seven flights, five stopovers and countless hours after leaving home, I touched down at Ambon’s beautiful new airport. Normally, the transfer to the resort is made by a 15-minute boat ride, but due to rough weather the previous evening, they opted to pick me up by car instead. One hour after leaving the airport, I had finally arrived at the dive shop! Located in Latuhalat, on the southwestern corner of the island, the resort is nestled across the road from the beach. Out front, the azure waters of the Banda Sea stretched out towards the horizon. Just off the beach, expanses of jagged volcanic rock could be seen offshore during low tide, contrasting sharply with the lush forest-clad hills lining the shore.

Opening in July of 2005, Maluku Divers works closely with the local community. All 14 members of the professional, well-trained staff are from the surrounding area, including dive guides Toby and Nus. In fact, Toby is something of a celebrity. During his working stint in Manado, he discovered a new species of pygmy seahorse that was named after him! After a virtually sleepless night on airplanes and still burdened with jet lag, I decided to take it easy on the first day. Over breakfast, I asked Buck about some of the things that had been seen that week. Upon hearing the magic words harlequin shrimp and rhinopias, my eyes lit up. A few days later, on a trip to Ieurebes, we also managed to find some green sea turtles and yellowtail groupers.

In conclusion, Ambon is a fantastic destination for divers who want to explore the underwater treasures of the Banda Sea. The local community is热情 friendly and welcoming, the diving is fantastic, and the overall experience is unforgettable. I highly recommend putting Ambon on your bucket list for your next diving trip!
instantly lit up like a Christmas tree! I also had a chat with three guests who had arrived from Singapore a few days earlier. After hearing their enthusiastic accounts of the diving, I was beginning to wonder if the rest day was a bad idea...

Muck diving
Early the next morning, with visions of harlequin shrimps and rhinopias dancing in my head, we headed out across Ambon Bay. At first, we seemed to be headed straight for the airport. I mistakenly assumed we were on our way to pick up some more guests before the dive! We soon anchored a few metres from shore near a concrete jetty, with an array of fishing boats providing a colourful backdrop. Underwater, my eyes were greeted with a barren, rubble-strewn slope descending down to 22m. While seemingly devoid of life, there was more here than meets the eye; for this was Laha, Ambon’s premier muck-diving site.

Within moments of entering the water, the critters started coming fast and furious. The stony bottom provided the perfect habitat for snake eels. Along with the more familiar crocodile and Bonaparte’s species was another variety with a massive, grey head. Underneath the muffled roar of the fishing boats, the slope was home to a collection of seahorses in colours of yellow, orange and chocolate brown.

Care had to be taken however, as the entire area was crawling with scorpionfish; devil scorpionfish, Ambon scorpionfish and false stonefish mingled with pygmy lionfish in colour phases of red, copper and yellow. The critter parade continued; during the next 50 minutes, we saw hingebeak shrimp, emperor shrimps on sea cucumbers, cowfish, morays and flying gurnards. During our safety stop, we came across an enormous cluster of urchins. Many creatures could be seen hiding among and adjacent to the protective spines, including blue-eyed cardinalfish,
banded pipefish, leaf scorpionfish, dragonets, nudibranchs and a pair of giant frogfish, one green and the other black.

Back on the boat, I was grinning ear to ear! However, Toby looked rather sad, as he had searched in vain for the elusive harlequin shrimps. He came to the unfortunate conclusion that the hapless creatures had met their demise courtesy of a hungry eel. Poor Toby was so upset, he wanted to spear every eel in the vicinity and cook them all for dinner!

Laha 2
For our second dive, we motored over the other side of the jetty, but a bit further out in the bay to Laha 2. Descending to 17m, the terrain here was noticeably different. In contrast to Laha 1, rocky outcrops accented with coral growth were dispersed across the sandy slope. While the elusive rhinopias didn’t make an appearance, there were plenty of other fascinating subjects on hand. Jawfish were everywhere; their dark blue faces, punctuated with gold eyebrows, peered out at us from their protective burrows. Toby beckoned me over to show me an unusual fish with a red head and blue body sitting on the sand. He later told me it was a jawfish, but unlike any I’d seen before.

Subsequent visits over the next ten days revealed a mind-boggling assortment of critters, including flamboyant cuttlefish, stargazers, blennies, cockatoo waspfish and frogfish in a rainbow of colours.

At the end of my last dive at Laha, Toby brought me a real treat. Balanced precariously between two metal rods, was a jewel-like red and white fire urchin. Perched on top were four zebra crabs and a pair of Coleman shrimp! I photographed to my heart’s content until my air was nearly gone. Then, Toby gingerly picked it up and carried it back to its original position further down the slope. I could have easily spent my entire trip diving this site alone!

Pristine diving
Ambon, along with the neighbouring islands of Haruku, Saparua, and Nusa Laut, are blessed with literally hundreds of dive sites. Unlike in some other parts of Indonesia, dynamite and cyanide fishing are virtually unknown here and the reefs are healthy and thriving. A wide variety of superb locations are within a 20-minute speedboat ride from Maluku Divers. Nus Point features a slope dropping down to large bommie at 32m. An early morning dive here is good for sighting blacktip reef sharks, along with Napoleonic wrasse and turtles. Higher up is another bommie with luxuriant coral growth and lots of reef fish.

Nearby Mahai has a nice wall descending down to 37m. Abundant coral growth is found here, including tubastreas and some big fan corals at 24m. In the shallows, the bottom is carpeted with a luxuriant meadow of golden-hued hydroids. Look but don’t touch! Above, waves could be seen crashing along the rocky shoreline, while sunbeams added a magical touch. Without a doubt, one of Ambon’s
Spice Trade History

Despite the lack of tourists, a human presence has been in these islands for 1000 years. However, it wasn’t the idyllic beaches or swaying coconut palms that attracted the first visitors. These are the fabled Spice Islands, home to some of the most hotly contested commodities in history: cloves, nutmeg and mace. Though native to the region, cloves were originally discovered on the islands of Ternate and Tidore located off Halmahera. Nutmeg and mace (the lacy red aril that surrounds the nutmeg seed) originated from the two small islands of Run and Ali, located south of Ambon in the Banda Sea.

The Banda people, the islands’ original inhabitants, once traded extensively with India and possibly even China and Africa. Arab spice merchants arrived around the 9th century AD, setting up a trade monopoly with the Moluccas that spawned sultanates and mini empires throughout the archipelago. For five hundred years, the Arabs held a monopoly on the spice trade and kept the location a closely guarded secret. It was the Arab traders that introduced nutmeg to the European palate, a move that ultimately sealed their commercial doom. It was only after Vasco de Gama successfully rounded the horn of Africa that the way was paved for European explorers to try and locate the source of the fragrant treasure. The race was on! The Portuguese were the first to arrive. In the 16th century, the 18 survivors of Magellan’s original expedition of 230 aboard the Victoria (Magellan himself was killed in the Philippines) returned to Spain with over a ton of cloves. Not only was this precious cargo enough to eradicate the Spanish monarchy’s looming debt, it made the sailors wealthy for life.

The Spanish eventually wrestled control from the Portuguese, only to lose their holdings to the Dutch, who founded the Dutch East India Company. Cloves were planted on Ambon, which subsequently became the centre of the region’s spice trade. The company was all-powerful, and controlled the region with brutal efficacy. Harsh laws were enacted, including the death penalty for the illegal possession of nutmeg.

The Dutch monopoly came to an end courtesy of a shrewd Frenchman by the name of Pierre Poivre. In a cunning move, Poivre (Latin for pepper) managed to sneak out a handful of nutmeg fruits preserved in brine. Hence, Peter Piper and his pickled peppers!

Within eight years, nutmeg trees were growing in Mauritius and the importance of the Spice Islands waned. Today, more nutmeg is grown in Grenada in the Caribbean and more cloves in Sulawesi. It’s hard to believe these tiny spices, common in any modern supermarket, had so much impact on world history.

TOP LEFT: Cloves and spices.
INSET: Whole nutmeg and mace, which is the red stringy skin wrapping the kernel.

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crown jewels is Pintu Kota. On the shoreline, a natural archway, created by continuous erosion, spread above the water, along with a number of caves etched into the rock face. The surface currents here can be absolutely fierce! On one dive, it took a monumental effort to pull myself along the rope at the side of the boat in order to reach the mooring line. I was nearly out of breath and I had yet to descend! Fortunately, the current diminished noticeably by the time we reached the bottom. The rugged landscape along the shoreline continued underwater, with the centrepiece being a magnificent underwater arch mirroring the one on the surface. Underneath, surgeonfish and yellowtail fusiliers congregated in large numbers. Descending further, we headed to a vantage point on the other side of the arch. The waters beyond are susceptible to strong currents, making it a magnet for big fish. Napoleon wrasses were quite prolific, along with large numbers of Oriental and harlequin sweetlips. On occasion, mantas can be found frolicking in the current. The visibility was superb, extending to approximately 35m. It was so clear in fact, that even at a depth of 32m, colours were still plainly visible. While enthralled by the show before me, I heard the frenetic banging of tank somewhere in the distance. I found out later that four big Napoleons were posing together right in front of Buck and he was frantically trying to get my attention!
Before I knew it, deco reared its ugly head. Ascending to the shallower water inside the arch, I sat down before a large fan coral and waited. Before long, the curious surgeonfish came in close to check me out. From a depth of 12m and up, spectacular swathes of coral decorated the rugged terrain. A glittering mosaic of fish billowed amongst them, including cardinalfish, Moorish idols, butterflyfish, fusiliers and lionfish.

At nearby Hukurila Cave, Buck had something special to show me. Descending through an opening reminiscent of a big chimney, we descended to a 24m. The site isn’t really a cave but more of an enormous swim-through. The bottom had a healthy abundance of corals and barrel sponges. However, it was one particular fan coral that Buck wanted to show me. In it was a tiny pygmy seahorse. I marvelled as to how they even found it in the first place, as it was smaller than my baby fingernail. Even more remarkable was its colour. This specimen was white with minute red spots!

Tanjung Sial
One day, we made a very special trip. As the first blush of dawn kissed the horizon, we set out for the 90-minute trip to Seram. Fisherman perched on rocky outcrops, while children waved joyfully as we passed by. The northern portion of the island is predominantly Muslim, with the shiny domes of mosques accenting the villages fringing the shoreline.

The first site of the morning was Tanjung Sial, situated at the extreme southwestern tip of Seram Island. Translated as Bad Luck Point in the local dialect, it’s aptly named, as many boats have been lost here due to the fierce currents that converge off shore. As the boat couldn’t anchor too close to the point due to the currents, we would have to swim along the wall just offshore to reach our destination. This was one seriously vertical wall! The sheer sides, plunging down to the depths, were practically devoid of growth. The current started to pick up as we approached the point. Along the way, a school of around 20 bumphead parrotfish passed by overhead. By this time, the wall had transformed into a slope and coral growth appeared. Sheltered areas provided a respite from the strong currents. A few more bumpheads made an appearance; the big fish were shy though and fled if you got too close. A hawksbill turtle was more compliant, however, and posed for my camera.

Towards the end of the dive, Toby swam over to check on my air. As I was getting low and we had to do our safety stop in open water, he indicated for me to follow him up. I inflated my BCD, but nothing seemed to be happening. It was then I realized that a very strong down current was pulling me down. A lot of inflation was required before I was able to ascend.

After the safety stop, I realized we had surfaced in the midst of a mini-whirlpool! Fortunately, we got out of it pretty quickly and, by the time the boat
picked us up, we were some distance from shore. Our surface interval was made at a beautiful white beach on Seram Island. Seram is much bigger than Ambon but has a fraction of its population. The wild interior is cloaked with extensive tropical rainforest with many species of parrots. After making a second dive at Tanjung Sial, we headed back towards Ambon and the island of Pulau Tiga where we had our surface interval and lunch.

**Pulau Tiga**

While not the location from the Survivor TV show, this Pulau Tiga was truly a world-class site! Upon descending to 24m, a short swim led to the edge of a large drop-off. After taking a seat on a barren section of the slope, we sat back and watched the show unfold. This site could easily be renamed the fishbowl, as an endless procession of species paraded by. A large school of surgeonfish was joined by fusiliers, bannerfish, long-nosed emperors, blue-fin trevally, Napoleon wrasse and a few bumphead parrotfish. Giant trevallies have also been sighted here.

I could have easily spent the entire hour right on that spot, but my computer had other ideas. Reluctantly, I headed for shallower water. The dive would have been impressive enough already, but the sights kept on coming. The slope was shrouded with a riot of corals bursting with colour. Cauliflower corals competed for space with profusion of multi-coloured fan corals and large barrel sponges. Tuna patrolled overhead, while the occasional turtle swam by out in the blue.

The site is also home to some super-sized groupers. Buck related a story of one of his encounters. On one occasion, he had been intently studying a nudibranch, when he turned around and found himself face-to-face with behemoth nearly four metres long, with a mouth wide enough to swallow a man’s head! “It was the most terrified I’ve ever been in over 20 years of diving,” related Buck. However, the big fish meant him no harm; it was merely curious. After a few moments, it swam away, leaving the shaken diver staring in awe!

**Island Cuisine & Culture**

That evening, a farewell party was arranged for the Singaporeans for their final night in Ambon. A traditional Ambonese dinner was prepared, starting off with some incredibly fresh tuna sashimi. The main courses followed, including koho koho (tuna salad), ikan bakar (smoked tuna), cholo cholo (dipping...
Ambon sauce with tomato and spices) along with side dishes of sweet potatoes, manioc and boiled bananas. Traditional Moluccan cuisine is quite healthy, as no oil is used in the preparation of the various dishes.

After dinner, we were treated to music. A lot of the staff joined in to perform some traditional Ambonese songs. Everyone sang very well, with terrific harmony. Ambon is the musical heartland of Indonesia and Ambonese musicians are held in very high regard.

Before I knew it, Christmas Day had arrived. As a majority of the staff is Christian, they had the day off. After a late breakfast of nasi goreng, John, Alia and I strolled over to the local Protestant church. The voices of several hundred parishioners flowed out, along with the strains of a charmingly out-of-tune brass band playing hymns. Built in 1984, the church can seat 704 worshippers at a time. The ornately carved wooden chairs were fashioned in Jepara in Central Java, an area famous for its teak carving. All were donated by individuals, some as far away as Amsterdam. As the service concluded, throngs of people streamed outside, everyone dressed in their finest for the service.

We wandered inside, where we met the minister. A jovial man, he said it didn’t matter whether you were Christian, Muslim, Buddhist or Hindu; the important thing was to be a good Christian, Muslim, Buddhist or Hindu. “It doesn’t matter what religion you follow, as long as you follow the essence of it.” Well put. Initially, I thought this would be a rest day due to the holiday. Luck prevailed in the afternoon, however, as Buck managed to secure a boatman. Nus also agreed to come along. I finally got to fulfill a long-time dream: to go diving on Christmas Day!

Wreck diving
All week, Buck had been raving about a great wreck he wanted me to see. Located in the bay across from Ambon town, it is the remains of a Dutch cargo ship sunk during WW11. While details remain sketchy, it is believed to have been deliberately sunk by the Dutch to keep it out of Japanese hands. It is also BIG, being around 100m in length. Resting on a slope, the stern lies in shallower water, with the uppermost portions rising to 12m. The fore deck is at a depth of 32m, so bottom time can end up being relatively short.

Marking the site was a huge rusty mooring platform. There was no current as we made our descent down the mooring line. The imposing silhouette of the vessel soon became perceptible in the gloom. While visibility can range anywhere from 6-15m, it was definitely on the lower end of the scale. Despite being encrusted with all manner of growth, the vessel’s features were still recognizable. Abundant tubastrea corals branched outwards from the sides. Numerous clusters of bubble corals carpeted the upper deck, while yellow and blue tunicates added splashes of colour. Prolific fish life congregates around the wreck.
wreck, including large numbers of yellow snappers and big-eye trevally. A trio of eagle rays are also known to frequent the vicinity, but are shy and usually vanish at the appearance of divers.

The wreck is equally fascinating to macro enthusiasts. Within moments of our descent, Nus pointed out a perfectly camouflaged orange frogfish perched on top of a pipe. The vessel’s surface is riddled with nooks and crannies, providing home to a myriad of frogfish of all sizes and colours. Also present in great numbers are some very large and well-camouflaged scorpionfish. At one point, while trying to take a photo, I nearly put my hand on one! The upper deck is home to some very large nudibranchs, peacock mantis shrimps, blennies and vivid purple tubeworms. Barramundi cod, uncommon in many other areas, were also abundant. As the wreck is so large, it is impossible to see everything on one dive. Many dives are needed to appreciate all the site has to offer.

Night diving
For superlative night dives, the resort’s own house reef can’t be beat! Literally right across the road from the dive shop, just off the beach, it consists of a sandy bottom with huge rocky outcrops festooned with coral, sponges and tunicates. This is the home of big macro! Crustaceans are particularly abundant here. The numerous crevices and overhangs along the walls provide refuge for spiny lobsters. Along with the adults were some colourful juveniles with their blue and white tails and white antennae. Slipper lobsters were also common, including the biggest specimen I’ve ever seen. It must have been close to a metre long!

The walls were literally crawling with crabs; spider crabs, orang-utan crabs, coral crabs, decorator crabs and sponge crabs. On several occasions we found a lumpy aster nodotis, a huge tan-coloured nudibranch looking like a bumpy brown pancake with gills.

Each dive revealed a fascinating assortment of subjects, including ornate ghost pipefish, flounders, a minute juvenile leaf scorpionfish, Pegasus seamoths, nudibranchs and flatworms. Every day, on the same spot on the wall, sat a beautiful little clown frogfish. On my last night dive, with one more shot left on the camera, he yawned for me!

Background
Over a delicious Christmas dinner of soto ayam (Indonesian chicken soup), I asked Buck how he came to be in Ambon. A helicopter pilot by profession, he has flown humanitarian and search-and-rescue missions around the world, providing aid to victims of plane crashes, sinking ships, war zones and natural disasters, including the Asian Tsunami. While flying in food and...
Ambon

On my last afternoon, Buck took me for a tour of the surrounding area. In the hills above Ambon City, a picturesque and very winding road lead to Soya village. As we ascended higher, the heady aroma of cloves permeated the air. At various points along the roadside were sheets, each covered with the freshly harvested buds drying in the hot, tropical sun. Arriving in Soya, we paid a visit to the village head and made a small donation. As this was the end of the road, we had to walk. After climbing many steps, we reached an area with a number of clove trees. Up here, the fragrant aroma of the ripening buds was even stronger. Also present, a short distance away, were some nutmeg trees. Unlike the cloves, the round, pale green fruits were not quite ripe. It’s hard to believe these unassuming trees played such a major part in world history.

Afterwards, we headed back down to Ambon City. Lunch was at the aptly named Panorama café, which provided expansive views over the city. Sprawling along the meandering hillsides above Ambon Bay, Maluku’s capital is home to over 200,000 people and is one of the largest cities in the entire region. Things are pretty quiet these days, although a few blocks in the downtown core still bear scars from the conflict. The wide streets are lined with many churches, including an impressive Catholic cathedral.

Final thoughts

For my last dive, John asked me where I would like to go. That was a no-brainer; it had to be Pulau Tiga! While no Napoleons showed up, the fish life was even more prolific than on our previous visit. Towards the end of the dive, I spied something gleaming atop a bed of coral. It was the reef hook one of the guests had lost four days earlier. I was surprised that no one else had scooped it up. Then
suddenly dawned on me; no one else had been here since! Here was a world-class dive site and we had it all to ourselves.

In the mid 1800s, the famous English naturalist Alfred Russell Wallace declared, "The species of fishes in Maluku are perhaps unrivaled for variety and beauty by those of any one spot on earth." I wholeheartedly agree!

Getting there
While seemingly far-flung, reaching Ambon is surprisingly easy. Up to four flights a day arrive from Jakarta, Makassar or Bali. Lion Air allows an extra weight allowance of 30 kg for diving equipment. For those with limited time, a convenient red-eye departs Jakarta at midnight and arrives in Ambon at 7:00AM. This is a very convenient flight, as the early arrival means you can be geared up and in the water after breakfast.

If you are arriving from Singapore and connecting right away, be sure to get some rupiah before departing. I paid for my Indonesian visa on arrival ($25.00 US) and was given dollars for change. On hand to meet me was a representative from Unexplored Adventures who gave me my plane tickets for Ambon.

After rushing over to the domestic terminal to connect, I was hit with excess baggage fees (the curse of being a photographer) and they wouldn’t take dollars. After somewhat heated negotiations and help from my driver, they finally relented and I made a mad dash for the plane. Fortunately, they were holding it for me and I made it in the nick of time! Indonesian domestic flights are much more expensive to book outside the country.

Mike booked my flight for me and had someone meet me on arrival to give me my tickets and drive me to the domestic terminal.

Scott Bennett is an underwater photographer and writer based in Toronto, Canada. For more information or to order prints, visit his website at: Bennepix.com
Ambron, Indonesia

History
In the early 17th century, the Dutch began to colonize Indonesia. From 1942 to 1945, the islands were occupied by Japan. After Japan’s surrender in World War II, Indonesia declared its independence, but four more years passed before the Dutch relinquished its colony. Indonesia is the largest archipelagic state in the world. It is home to the world’s largest Muslim population. Current issues include: poverty, terrorism, strengthening democracy after 40 years of authoritarian rule, financial reforms, corruption, human rights violations by military and police personnel, and avian influenza. Indonesia reached a historic peace agreement in 2005 and avian influenza. Indonesia reached a historic peace agreement in 2006.

Economy
Indonesia is a vast polyglot nation and has struggled to overcome the Asian financial crisis. It still struggles with persistent unemployment and poverty. It has inadequate infrastructure, corruption, a weak financial sector, poor investment, and unbalanced resources distribution among regions. The country continues to gradually recover and try to improve the investment climate, and strengthen the financial sector. There has been progress in infrastructure, and strengthen the financial sector. There has been progress in infrastructure, and strengthen the financial sector. There has been progress in infrastructure, and strengthen the financial sector.

Climate
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Population
243,452,739 (July 2006 est.)

Language
Bahasa Indonesia is the official language and is a modified form of Malay. Other languages spoken: English, Dutch, local dialects (Javanese is the most common).

Health
Be prepared and get your shots before you go to Indonesia. There is a high degree of risk for food or waterborne diseases including bacterial and protozoal diarrhea, hepatitis A and E, and typhoid fever. There is also a risk for vectorborne diseases in some locations.

These diseases include dengue fever, malaria and chikungunya. Bird flu, or highly pathogenic H5N1 avian influenza, has been identified among birds in Indonesia. It poses a very low risk, but check with your doctor before you go.

Decompression Chambers
Ambon - Rumah Sakit Angkatan Laut (RSAL) Halong, Ambon, Tel.62-911-52152
Bali - Sanglah General Hospital, USUP Sanglah Denpasar, JI. Diponegoro, Denpasar 80114 Bali, Indonesia, tel. 62-361-227911
Jakarta - Rumah Sakit Angkatan Laut (RSAL) Halong, Ambon, Tel.62-911-52152

Web sites
Indonesia Tourism
www.indonesia-tourism.com
Indonesia Tourism
my-indonesia.info/indexpromo.php
Tourism Indonesia
www.tourismindonesia.com
Dive Operators
Maluku Divers
www.unexploredadventures.com

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Web sites
Indonesia Tourism
www.indonesia-tourism.com
Indonesia Tourism
my-indonesia.info/indexpromo.php
Tourism Indonesia
www.tourismindonesia.com
Dive Operators
Maluku Divers
www.unexploredadventures.com
Upgrade this, update that. Not anymore. Using a computer that your life depends on means that you constantly need to be on top of your game. The DCAP-X dive computer from OMS can handle your dive calculation down to the itsy bitsy micron bubbles out of the box. Scheduled for release later this year.

www.omsdive.com

One piece
The PRO FLEX500 one-piece wet suit is available in 6.5 and 5 mm neoprene. For comfort, the suit is anatomically cut, and inner lined with fine plush. The knees and the forearms have durable pads to prevent wear and tear.

www.seacsub.it

A Classic
The “Hercules” is a great looking Swiss-made dive watch, with the added bonus of being mechanical. With automatic winding you can forget about changing the batteries.

www.zenousa.com

An unlikely item by a dry and wetsuit manufacturer but this mouse with a built-in “aquarium” quickly sold out at recent dive shows.

www.aquata.de

Bring your own noise
Yes, it is true, now you can share your music with Nemo, while snorkeling. But even though they are totally waterproof, don’t wear them on deep dives. The added pressure and the surrounding water can damage your hearing.

www.aquapacwaterproofheadphones.com

Top of the game
Living up to a name is not always easy. To make sure that the R-600 Deep Performance Regulator is at top of its game at any depth, extensive tests have been made, using ANSTI certified tests. Oms states that the breathing function is superior and outperforms several other technical regulators at depths to 329 FSW.

www.omsdive.com

Equipment
Show me the
The vintage edition
When you know have a good product, still comparable with newer and improved models on the market, here’s what you do; you relaunch it. On the market now, in a new retro Vintage edition, the G250V, with all the features intact, including the diver adjustable VIVA. The balanced diaphragm first stage, the MK19 comes with the patented anti-freeze finned cap.

www.scubapro-uwatec.com

No marks
Liquid silicone is used in this mask. The material seals and adapts to your face like nothing before. No more marks after a dive.

Amazon.com or www.liquidskin.mares.com

The locator
“So easy a bottomdweller can do it!” You gotta love this thing. When you are lost, it guides you back to the boat. Tells you how far away and in what direction. Wow! I’m impressed.

www.masterunderwatertech.com

Contact
With this portable gizmo, the M100 Surface Transceiver, you can communicate with your divers, walkie-talkie style, with the push of a button. The divers can also communicate with one another, and the whole conversation can be heard on the surface. A great little tool for research projects, guiding or teaching. Reaches up to 250 meters (750 feet).

www.oceanreefgroup.com

Itsby itsy teeny
This 10w High Intensity Discharge Light is the smallest hand held flashlight of its kind in the underwater world. It is only 7.58” / 19 cm long, and runs on 6 CR123A lithium batteries.

www.omsdive.com

Atom 2 computers recalled
The US Consumer Product Safety Commission, in cooperation with Pelagic has announced a voluntary recall of the following consumer product. Consumers should stop using recalled products immediately unless otherwise instructed.

Hazard:
When performing a switch from one gas to another during a dive, the dive computer’s display will lock up and not return to the main dive screen that displays dive times. This can cause divers to enter decompression unknowingly or the diver could ascend prematurely, resulting in decompression sickness.

Incidents/Injuries:
Pelagic has received a report of two dive computers malfunctioning. No injuries have been reported.

Description and Models:
The recall involves Oceanic-brand ATOM 2.0 dive computers with serial numbers 1 through 2,079 (Revisions 2E, 3A, and 3B) and AERIS-brand EPIC dive computers with serial numbers 1 through 712 (Revision 1A), which can be accessed and viewed on the computer’s display. Also, the serial number and date of manufacture are printed on the bottom of the unit (Oceanic ATOM 2.0 from August 23 to November 23, 2006, and AERIS EPIC from October 18 to November 14, 2006). This recall does not include any other Oceanic or AERIS brand dive computers.

Sold at:

www.oceanicworldwide.com

Twin jet Max
Patented twin-blade technology gives a 30% more efficiency than conventional fins. Soft, semi-rigid foot pocket for optimum leverage and exceptional comfort. Quick release swivel buckles Available in sizes S, M, L and XL in Red, Lime and Blue.

www.scubapro-uwatec.com

Series 3000
This is the first high intensity discharge (HID) light designed specifically for spearfishing. A compact and powerful LED underwater flashlight, Series 3000 is waterproof up to 400 ft, and produces a bright 200 lumens of light.

www.deepblue.com
Wrap around

Thanks to an air cell wrap-around design, the diver is kept upright on the surface. For situations like that, and they do happen, the Enos, an electronic rescue and locating system is the answer. A receiver is kept aboard, and the transmitter is carried by divers during the dive.

Locate

A diver lost at sea. Hours of search in an endless ocean. For situations like that, and they do happen, the Enos, an electronic rescue and locating system is the answer. A receiver is kept aboard, and the transmitter is carried by divers during the dive.

Clear view

This mask has a low profile, a small volume and narrow nose bridge. It is all in the design for a wide view field and easy clearing.

A fresh look

To be made out of a heavy-duty, durable material doesn’t mean it has to be boring, which this cool back pack proves.
Mini Review: Hotbelt

Are you one of those divers that shivers at the mere thought of doing the giant stride, much aware of that moment when the rush of cold water makes it in under your wet suit? You know, that moment when you ask yourself: Why am I doing this, again? For some, that moment last throughout the dive, making it very uncomfortable. If you are one of those with chilled bones, the hotbelt could be an option for you.

The hot belt consists of a wide belt, made of thin neoprene, with a pouch for a heat pack. The belt wraps around your waist, under your wet suit and stays put with Velcro.

The heat pack is filled with a liquid solution that will solidify and generate heat when activated. When you feel the chill coming on, you push a button inside the heat pack for an exothermic reaction. The water inside your suit warms up and will keep you warm for about an hour.

Now, this must be a great idea, right? It is, but don’t expect this marvel to perform impossible marvels. Real cold water requires proper isolation. A warm water wet suit and the hotbelt will not do the trick. For chilly warm water dives, it can fill a function, though.

- **Minus**
Make sure that the belt is on right. With the weight belt over the wet suit, over the hotbelt, adjustments during the dive is pretty much impossible. The heat pack needs to boil for 15 minutes to be "recharged". To make it through two dives you will need two heat packs.

The belt is one size fit all. Don’t bother if your waistline is over 38”.

+ **Plus**
Well, it does keep you warmer.

Backproblem? Even if you do not feel the need to stay warmer during a dive, the hotbelt can help ease back pain.

You have good use of the belt outside the water as well, and also comes in handy when surfing, snorkeling, etc. ■

Tested & Tried by Millis Keegan

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**Snorkelen**
**Duikmateriaal**
**Tek-Diving**
**Diversen**

www.lucasdivestore.nl
Online shopping is here to stay

In our previous issue, we got some customers' views on online shopping. Not surprisingly, many were in favor of it. That is bad news for the majority of small business owners around the world. It is quite clear that they have to do something to adapt to the situation, because online shopping is here to stay. But what?

I called some scuba schools, to ask how they felt about the threat from online shopping. The question of the day was, "What can a one-person operation—as the case often is—do to survive this harsh reality?"

As I talked to a number of Scuba dive shop owners and managers, it was very clear that they are struggling to stay in the business, and there is no easy solution to the situation. Among them was Tony Longenberg from DiveStop, in Miami, Florida. His voice was representative of many others.

Q: So, does Internet-based shopping affect your business at all?
A: Sure it does! And I don’t see it getting any better in the future.

Q: What’s the main problem? Can’t you sell products online as well? Take the “if you can’t beat them, join them” approach?
A: We have to follow the dealership agreement that says we are not allowed to sell their products online. There is no way we can match the online prices. We are also bound by the agreement not to sell anything at more than a certain percent under suggested retail price.

Q: Really! That’s kind of rough, isn’t it?
A: Yes, but the reason is that the manufacturers do not allow anyone to sell their products online, which in a way is supposed to help us. But it doesn’t. I don’t know where the major web-based companies buy their products, probably in Europe where the rules are different, but the same products I sell in the store are available online.

Q: Do you have an example of how this affects you?
A: We are a service-oriented shop, and we like to help customers find what they need. I have a pool in my shop, and when customers come in looking to buy equipment, I let them try the equipment in the pool, and then they say thank you, I am going to buy this online. I just wanted to make sure I ordered the right size.

Q: So, they pretty much walk out of your shop and home to the computer and then place an order... somewhere else.
A: Yes! And many times they don’t even realize that by the time they add up the shipping, and handling, they have only saved like 15 dollars on an item.

Q: And to clarify, you cannot match the online price if they ask you?
A: We are bound by the dealership agreement; we cannot match a price without risking losing the dealership!

Q: To be more competitive, do you get any help from your training agencies like PADI or NAUI or from the manufacturers?
A: Well, PADI gives seminars on how to sell, but all the seminars in the world are not enough to give us a better market. I am a one-person operation, and the hands-on tips they provide are not meant for shop owners like me. Some manufacturers understand the problem and help us with in-store promotions. We’ll see how that works out for us.

The reality is, that online shopping causes problems for customers as well as for us.

Q: What do you mean?
A: It is all good and well when customers find what they need. As a customer, you should be careful even when they promise to handle the problem and help us with in-store promotions. They’ll see how that works out for us.

Q: What do you do now?
A: We have a better market. I am a one-person shop, and we like to help customers find what they need. We know how that works out for us.

Q: So, it comes down to the warranty.
A: If you buy your equipment online you should be aware that the warranty might not apply. As a customer, you should be careful when they promise a lifetime warranty. What happens is, that customers bring equipment they have purchased elsewhere asking for service and sometimes help with assembly. I would like to help, but when I call the manufacturer, the product is not covered by the warranty, and the customer has to pay.

Q: What do you want to say to a future customer? Why should he or she spend money in your shop?
A: Well, if this keeps up, we will not be around for much longer. It has become a lot worse over the last five years, and you will see more small dive shops disappear, and with them, the service, the knowledge and the dive training facilities.

I do have customers that appreciate the service, and the fact that they can try before they buy, but they are few and far in between.

In conclusion

Basically, I feel that in the big picture, the existence of small businesses is important for quality, versatility and growth of diving as a sport. Any ideas as to what can be done to keep these Mom and Pop places open? Is it worth a few extra bucks?

Ultimately, the answer lies in your hands. But, what is the answer?

—Millis Keegan

Warranty tips

Make sure you buy from an authorized dealer, whether you spend your money online or in a shop, the best way is to check directly with the manufacturer. Keep your receipt, and register your product. ■
Cambodia: Tourism Offers Irawaddy Dolphins Protection and Farmers Income

If anyone in the bustling capital of Phnom Penh wants to see the rare and endangered Irrawaddy dolphins, the closest place is Kratie province, eight hours by car on a dusty potholed road. The Kampi dolphin pool in Kratie is the most popular viewing spot. Although it became a tourism zone in 1999, there is still little infrastructure. This lack of development has drawn mostly tight-fisted backpackers. Concerned tourism officials say the government is not doing enough to promote the dolphins and develop services that attract tourist dollars. Although wary, tourists do make it to the quiet spot on the Mekong River and are soothed by the sight of some of the world’s only truly freshwater dolphins rhythmically cresting the water’s surface.

The related Amazon River Dolphin. Animal in captivity in Duisburg zoo. Photo by Dennis Otten

Technology May Save India’s River Dolphins Says WWF

Japanese technology to track and monitor the behaviour of India’s endangered Ganges River Dolphins using underwater acoustics will play a vital role in efforts to conserve the freshwater mammals. WWF-India said researchers from the University of Tokyo have developed an underwater acoustic device or hydrophone that measures the individual sonar pulses or the clicking sounds emitted by the dolphins, which are as unique as fingerprints. The dolphins are blind and emit the sonar pulses in order to navigate and find their prey along the Ganges and Brahmaputra river system, which stretches across 6,000 km and spills into the Bay of Bengal.

Difficult to study “The problem in studying the dolphins is that they are under the water and it is very difficult to monitor or identify them,” from WWF-India’s Freshwater and Wetlands Programme told a news conference. “Now we can identify their individual clicks and get an idea of populations, analyse their behavioural and migration patterns and feeding habits ... this will help in conserving the animals,” he said. The researchers can locate the dolphin from up to one kilometre away.

“The hydrophones are totally passive sonar instruments which do not make any sound and do not impact the dolphins” ■

The Gangetic cetaceans are one of only four species of dolphins in the world that inhabit rivers and lakes and are much less common than their marine counterparts, numbering only around 2,000 in India, according to the conservation group WWF-India.

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US Navy Plan to Put Dolphins On Underwater Patrol

Dozens of dolphins and sea lions trained to detect and apprehend waterborne attackers could be sent to patrol a military base in Washington state. In a notice published in the Federal Register, the US Navy said it needs to bolster security at Naval Base Kitsap at Bangor, on the Puget Sound close to Seattle. The base is home to submarines, ships and laboratories and is potentially vulnerable to attack by terrorist swimmers and scuba divers.

The related Amazon River Dolphin. Animal in captivity in Duisburg zoo. Photo by Dennis Otten

Chinese River Dolphin DRAWING BY ALESSIO MARRUCCI

Edited by Peter & Gunild Symes

New Tracking System for Chilka Lake Dolphins

Scientists from University of Tokyo have started acoustic tracking of endangered Irrawaddy dolphins in Chilka Lake using sophisticated Underwater Array System. The system being used for the first time in the country was installed at Magarmukh, Saltpara region of Chilka on January 29.

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Chinese River Dolphin DRAWING BY ALESSIO MARRUCCI

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Ships Ordered to Slow Down in the Strait of Gibraltar to Protect the Sperm Whales

The channel between Africa and Europe is a principal feeding grounds for whales and several are hit each year, some killed or injured, by ships that do not see them or fail to change course. In the first such initiative in Europe, the Spanish navy this month began recommending vessels go no faster than 13 knots and exercise maximum precaution at times of the year when sperm whales flock to the strait to feast on squid.

The United Nations has officially declared 2007 the Year of the Dolphin. The United Nations Education Program is working in conjunction with the Whale and Dolphin Conservation Society and several other organizations to plan awareness events.

Sperm Whales Have Discretely Returned to the Mediterranean

The sperm whale, once thought to have been nearly wiped from the Mediterranean by drift nets, has returned to the region. Marine scientists tracking tiny particles from space says it appears the whales are returning in “remarkable numbers” since they were first spotted two years ago when NEMO—the Neutrino Mediterranean Observatory—started picking up strange sounds off Catania, Sicily. The sounds turned out to be the “clicks” of sperm whales talking to each other.

The International Fund for Animal Welfare said two years ago that large herds of sperm whales had become unheard of in the Mediterranean. But Italian scientists say the sperm whale, an endangered species and the world’s largest toothed animal, has made a quiet return in “remarkable numbers”. Scientists say there may be hundreds of sperm whales off Sicily now.

Spain is advising ships passing through the Strait of Gibraltar, one of the world’s busiest maritime lanes, to slow down and look out for whales. The Spanish Government is also to change the placing of the sea lanes in the Strait of Gibraltar, so that local whales can be better protected.

Pollution also to blame?

A high number of pilot whales are dying in the Straits of Gibraltar because of contaminated seas some scientists say.

In the past three months, six animals have died and their corpses have been discovered on the beaches of southern Spain. According to the Centre for the Recovery of Threatened Maritime Species in Andalusia, all the whales were adults and in good health.

A study is being carried out by the centre with the help of the University of Sienna in Italy into the cause of their deaths. Scientists will measure the levels of hydrocarbons, heavy metals and other toxins in the bodies of the whales.

Renaud de Stephanis:

“Pilot whales are very sensitive to any type of contamination and this could be the cause of their deaths, but we are not sure yet.”

The World Wildlife Fund/Adena and CIRCE, a group of scientists studies whales, said this could be due to crude oil spills from ships. They called for urgent action to stop this “grave problem” getting any worse.

It’s thought that about 25 sperm whales live in the area under the threat of extinction. One of them was hit and killed by a Tangiers to Algeciras ferry in 2002, but the new guidelines will establish a protection area for the whales.

Smaller species such as pilot and fin whales are faster and can get out of the way of vessels more quickly.

Marine biologist Renaud de Stephanis doubted ferries would heed the voluntary speed advisory but expected it to raise whale awareness among crews.

“If they’re not going to slow down, at least they may go a little bit to the right, a little bit to the left,” said de Stephanis, which works with ferry captains and whale watching companies to try to protect the sea mammals.

“It is difficult to accurately document how many whales die or are injured in collisions each year in the straits as bodies are washed into the Mediterranean by currents, de Stephanis said.

Spain is advising ships passing through the Strait of Gibraltar, one of the world’s busiest maritime lanes, to slow down and look out for whales. The Spanish Government is also to change the placing of the sea lanes in the Strait of Gibraltar, so that local whales can be better protected.

The channel between Africa and Europe is a principal feeding grounds for whales and several are hit each year, some killed or injured, by ships that do not see them or fail to change course.

The Spanish navy this month began recommending vessels go no faster than 13 knots and exercise maximum precaution at times of the year when sperm whales flock to the strait to feast on squid.

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“It is difficult to accurately document how many whales die or are injured in collisions each year in the straits as bodies are washed into the Mediterranean by currents, de Stephanis said.

A study is being carried out by the centre with the help of the University of Sienna in Italy into the cause of their deaths. Scientists will measure the levels of hydrocarbons, heavy metals and other toxins in the bodies of the whales.

Renaud de Stephanis:

“Pilot whales are very sensitive to any type of contamination and this could be the cause of their deaths, but we are not sure yet.”

The World Wildlife Fund/Adena and CIRCE, a group of scientists studies whales, said this could be due to crude oil spills from ships. They called for urgent action to stop this “grave problem” getting any worse.
Showdown off Antarctica
Whaler catches fire as activists and Japanese whalers clash

Hundreds of whales have probably been spared after the Japanese whaling fleet’s only factory ship was crippled by fire in the Antarctic.

According to the conservation group Sea Shepherd, two of their vessels have caught a Japanese whaling vessel Kaiko Maru bearing down on a pod of whales. Two of their vessels, the Robert Hunter and Farley Mowat, moved in on the whaler and chased it into the ice. At one point during the confrontation, the Kaiko Maru turned to starboard and struck the Robert Hunter.

A fire broke out on the vessel’s second deck, close to where the whales were processed, and was raging for days, partly fuelled by whale oil from the slaughtered mammals. One crew member was killed and most of the 148 others abandoned ship.

Environmentalists hope that the 8,000-tonne ship, the only one capable of processing harpooned whales, will have to be scrapped following what is its second serious fire in less than a decade. If so, they hope it will not be replaced, spelling an end to an annual hunt, which has caused protests for a quarter of a century.

Whale ship attacks ‘inevitable’
A former marine biologist and author, George Muller, says attacks on a Japanese whaling fleet by the Sea Shepherd Conservation Society, are long overdue. The collision of the two vessels was described as “eco-terrorism” by Japan but Mr Muller said Japan had only itself to blame for the attack.

“If Japan wasn’t down in the Southern Ocean hunting whales illegally in violation of numerous international treaties then there wouldn’t be an issue. “Right now they have as much credibility as a burglar caught in the act by an irate homeowner.” ■

Environmental group labelled terrorists following collision
The Japanese whaling fleet has labelled environmental protesters as “terrorists” and “pirates” after the collision in the Southern Ocean.

The group’s tactics to stop whaling also came under fire by the New Zealand Government and described by Conservation Minister Chris Carter as “stupid playground behaviour” and were putting lives at risk.

The Japanese position is that the IWC regulations permit the taking of whales for scientific research. But the Japanese have killed hundreds of whales each year since 1987 for a total of at least 8,137 animals taken under the guise of research. ■

Pirates? Flying the Skull and Crossbones. Sea Shepherds’ vessels got their registrations revoked by the UK and Canada after diplomatic pressure by Japan

Whales and dolphins found in Japanese pet food
Whale and dolphin meat is being sold in pet food in Japan, thus negating Tokyo’s controversial claim that it needs more whale meat, according to three environmental groups.

They said analysis carried out earlier this year on samples of pet food purchased near Tokyo revealed levels of both Antarctic minke whale and dolphin meat. “The fact that Japan is using whale meat for pet foods totally invalidates Japan’s attempts to legitimise and increase their catches,” said Clare Perry, of the British non-governmental Environmental Investigation Agency (EIA). ■

Photos: Sea Shepherd
A Zealand fishing vessel hauled in the world's largest invertebrate, a colossal squid of science fiction proportions, while fishing for toothfish in Antarctic waters. The crew of the San Aspiring winched the roughly half-ton, 40-foot behemoth from the abyss as it chewed on a toothfish, and determined the animal to be in deteriorating condition. "The squid was almost dead when it reached the surface, and the careful work of the crew was paramount in getting this specimen aboard in good condition," said Jim Anderton of the New Zealand Ministry of Fisheries in a statement.

Largest Squid Ever Caught

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Giant Squid Attacks at Speed, Using Light

A large, deep-sea squid has been caught on video for the first time. The footage of the Dana octopus squid shows that far from being sluggish, passive creatures, the bioluminescent creatures are fast, aggressive hunters.

The metre-long eight-armed squid, Taningia danae, was caught on camera as deep as 900m in waters off the Chichijima Islands in the north Pacific. The Japanese researchers who caught the squid on camera think they may have seen it attempt to communicate with the small torches they were dangling along with the bait in front of their underwater camera.

Taningia danae is an eight-armed squid measuring up to 2.3 metres long. It has two large bioluminescent “bulbs”, called photophores, at the end of two of its arms. The researchers filmed adult squid emitting both short and long flashes from their photophores when they attacked the small Japanese common squid that were used as bait.

The first live videos of the creature showed it swimming forward and backward around bait, attacking a rig line on which researchers dangled bait, flashing light at prey, potentially to blind it, and attacking the halogen light researchers used to observe it. "Blue light seemed provocative," the researchers wrote in their online report in the Feb. 13 issue of the journal Proceedings of the Royal Society B.

The researchers also saw the squids emit short bright light flashes from large glowing organs at the tips of their tentacles before their final assaults. Kubodera and his colleagues speculate these flashes might blind prey or help the squids measure distance to their targets in the dark depths of the sea.

The most curious flashing behaviour, however, was triggered by two pencil-shaped underwater torches that were attached to the bait. The researchers noticed that when both torches were lit, adult squid would sometimes wander around the bait without attacking it. They would produce long glows from both of their photophores as they approached the torches, then several shorter glows as they moved around it.

Watch a movie of a squid making flashes.
The Black Sea is an unusual sea. Nearly one third of the land area of continental Europe drains into this sea into which seven large rivers flow, including the major rivers of the Danube, Dnieper and Don. However, its only outlet is the narrow channel of the Bosphorus, which is only about 70 metres deep and 700 metres wide. The depth of the Black Sea itself is more than 2,000 metres in places.

The inflowing rivers dilute the Black Sea, reducing its surface-layer salinity to 1.7% (17 grams of salts per litre of seawater) which is less than half of the average salinity of the oceans at 3.5%. This reduced salinity is the most important environmental factor influencing marine biodiversity in the Black Sea. Most marine animals and plants cannot survive here. For example, there are no corals (but see below), no octopuses and squids; no seastars, and no sea urchins living in these waters. On the other hand, there are very few dangerous marine creatures in the Black Sea—no deadly jellyfish or stinging sea anemones.

Despite the fact that the Black Sea biodiversity is reduced the marine life here is still full of wonders. Due to the constant supply of nitrogen and phosphorus flowing into the Black Sea from the rivers, it has always been very fertile. Phytoplankton, small marine plants, are therefore very abundant and form the basis of a long marine food chain. The surface waters can therefore support a rich and diverse marine life including Bottlenose and other dolphins, and seals. There are about 180 species of fish, including tuna, anchovy, herring, grey mullet, mackerel and the white sturgeon.

The sea is unique in having two layers, an oxygenated upper layer and a dead lower layer. Due to the lack of vertical currents there is little exchange of the bottom waters with the top layers. Unlike the upper 180 meters of surface water, replenishment of the bottom waters can take hundreds of years. Bacteria in the bottom waters con-
sume all the oxygen and the sea is mostly dead below 180 meters. Although the lower depths were long believed to be completely devoid of life, corals have recently been found at the bottom of the Black Sea. These corals contain micro-organisms processing methane and sulphates in total darkness. It is thought that these corals are the oldest life form on Earth.

Another peculiarity of the Black Sea is the bi-directional current where it flows through the straits of the Bosphorus to the Mediterranean. The surface current flows westwards but there is a deep current which simultaneously flows in the opposite direction back into the Black Sea.

Origin of the Black Sea
The Black Sea was once part of a larger body of water that included the Caspian and Aral seas. About 20,000 years ago the Black Sea began its life as a fresh-water lake. However, it appears that some seven to nine thousand years ago, due perhaps to melting glaciers and polar ice-caps, sea levels rose causing the salty Mediterranean Sea to catastrophically break through the Bosphorus. From this event the Black Sea took its present form. The dead lower layer may thus have been formed when the denser salt-water flooded in, when it would have plunged straight to the bottom.

Evidence for the flooding
Without doubt, some catastrophic event did occur some 7,500 years ago. The depth of the sea seems to have increased by some 100 metres over about a year. This caused an increase in the area of the Black Sea, with local flooding around its edges. This has been confirmed by archaeological investigations, especially off the Turkish coast. In a series of expeditions, marine archaeologists led by Robert Ballard identified what appeared to be ancient shorelines, freshwater snail shells, drowned river valleys and tool-worked timbers at roughly 100 m of water. Radiocarbon dating of the remains of freshwater molluscs indicated an age of about 7,000 years.

What was the nature of the flooding?
Lovers of the supernatural like to claim that this was due to the deluge, a period during which it rained for 40 days and nights, flooding the whole Earth, as described in the events of Noah’s Flood in the Bible, and in the Epics of Gilgamesh and Atrahasis. The oldest version of the Flood is the Sumarian, recorded on a fragment of a tablet, discovered in ancient Nippur, which dates most probably to before 2000 BC. So these and many other historical sources do seem to indicate that in 1999, the comb jelly, Beroe ovata, invaded the sea due to a rise in water temperature rise of two degrees. And this comb jelly eats only mnemiopsis. That is why food zooplankton started growing again, and ovata established itself in the Black Sea of its own accord, either by migrating naturally from the Mediterranean or possibly in ship’s ballast water.
there was in fact a flood of some sort or other several thousand years ago. But as to this flooding being that which occurred when the present Black Sea was formed, that is quite another question. There has thus been much written about this topic, much of it pure guesswork, but let us look at just one simple fact.

If the rate of rise of the sea level was 100 metres for some 300 days, or perhaps up to two years, many people would eventually have been displaced, and much agricultural land lost. However, this could hardly be called a catastrophic event as compared to an earthquake or volcanic eruption where people cannot escape in time, and are overwhelmed. For example, the dire events at Pompeii occurred when the present Black Sea was formed, is that quite another question. There has thus been much written about this topic, much of it pure guesswork, but let us look at just one simple fact.

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Invaders of the Black Sea

The major part of the Black sea consists of an up to 1800m deep hydro sulfurous zone devoid of Oxygen. The concentration of life forms are then found in a quite thin—about 130m—upper layer. (See the figure three pages back)

Another more serious problem are phytoplankton blooms. Phytoplankton is the basis of mankind's food chain—it forms the primary nutrition for almost all inhabitants of the Black sea ecosystem. Scientists have discovered that recent summer algae blooms in the Black sea were not caused by its usual dia-tomic algae—but by the algae Cocolithophora, which has been detected in all the world’s oceans too. However, Cocolithophora algae are the same type of the Black sea water transparent drop. Two invaders were detect-ed there—two new biologic species: comb jellies mnemiopsis and beroe ovata.

Mnemiopsis comb jelly invaded the sea in eighties and caused catastrophic drop in zooplankton biomass by eating it all. There was no zooplankton left to graze the algae water transparently dropped significantly. Moreover, this comb jelly exudes tons of mucus during its vital processes. Plankton-eating fish have lost their food sources, consequently their numbers dropped affecting dolphins and predatory fish in the process. Fisheries lost up to $350 million per year in 1989-1990.

What then happened in 1999 was that the comb jelly Beroe ovata invaded the sea due to water temperature rise of two degrees. And this comb jelly waits only mnemiopsis: That is why food zooplankton started growing again, even exceeding the levels from before mnemiopsis appeared.

Study Reveals Leaks in Antarctic ‘Plumbing System’

Scientists using NASA satellites have discovered an extensive network of water-ways beneath a fast-moving Antarctic ice stream that provide clues as to how “leaks” in the system impact sea level and the world’s largest ice sheet. Antarctica holds about 90 percent of the world’s ice and 70 percent of the world’s reservoir of fresh water.

With data from NASA satellites, a team of scientists detected for the first time the subtle rise and fall of the surface of fast-moving ice streams as the lakes and channels nearly a half-mile of solid ice below filled and emptied. The study was published in the Feb. 16 issue of Science magazine.

“Although discovery of large lakes exchanging water under the ice sheet surface has radically altered our view of what is happening at the base of the ice sheet and how ice moves in that environment,” said co-author Robert Bindschadel.

NASA’s state-of-the-art satellite systems are so sensitive, we are able to capture an unprecedented three-dimensional look at the system beneath the thick ice sheet and measure from space changes of a mere three feet in its surface elevation. That is like seeing an elevation change in the thickness of a paperback book from an airplane flying at 35,000 feet.”

Flow

The surface of the ice sheet appears stable to the naked eye, but because the base of an ice stream is warmer, water melts from the basal ice to flow, filling the system’s “pipes” and lubricating flow of the overlying ice. This web of waterways acts as a cycle for heat to rise and change its influence on the ice movement.

Moving back and forth through the system’s “pipes” from one lake to another, the water stimulates the speed of the ice stream’s flow a few feet per day, contributing to conditions that cause the ice shelf to grow or decay. Movement in this system can influence sea level and ice melt worldwide.

In recent years, scientists have discovered more than 145 subglacial lakes, a smaller number of which comprises this “plumbing system” in the Antarctic.

The research has delivered new insight into how much and how frequently these water-ways “leak” water and how many connect to the ocean.

New Sub Dives to Crushing Depths

Deepgilder is a 71-inch long, 138-pound device made of carbon fiber that can withstand the deep ocean’s immense pressure. The energy-efficient, battery-powered glider carries sensors to measure oceanic conditions including salinity and temperature—information that is key to understanding global climate change. When the measurements are complete, Deepgilder rises to the surface and transmits the data via satellite to onshore scientists.

“Reaching a depth of 2,700 meters (nearly 9,000 feet) is quite a feat and promises to extend the nature and type of missions that can be carried out by gliders,” says Princeton University engineering professor Naomi Leonard. “Scientists envision a heterogeneous fleet of gliders working in tandem at different depths to explore this otherwise impenetrable undersea.”

Deepgilder opens up new research possibilities for oceanographers studying global climate change. The glider’s first trip revealed unexpected warming of water near the ocean floor, and scientists are interested in studying whether the temperatures are related to global warming.
‘Hole in Earth’ discovered in the mid-Atlantic

A team of British scientists has set sail on a voyage to examine why a huge chunk of the earth’s crust is missing, deep under the Atlantic Ocean—a phenomenon that challenges conventional ideas about how the earth works.

Dr Chris MacLeod, from Cardiff University, said the Earth’s crust appeared to be missing across an area of several thousand square kilometres—midway between the Cape Verde Islands and the Caribbean, on the Mid-Atlantic Ridge. The 20-strong team aims to survey an area some 3,000 to 4,000 metres deep where the mantle—the deep interior of the earth normally covered by a crust kilometres thick—is exposed on the sea floor.

Experts describe the hole along the mid-Atlantic ridge as an “open wound” on the ocean floor that has puzzled scientists for the five or so years that its existence has been known because it defies existing tectonic plate theories of evolution.

Dr MacLeod said the hole in the Earth’s crust was not unique, but was recognised as one of the most significant. “Usually the plates are pulled apart and to fill the gap the mantle underneath has to rise up. As it comes up it starts to melt. That forms the magma,” he said. Here, the crust does not seem to be repairing itself.

“Effectively, it’s a huge rupture—one side is being pulled away from the other. It’s created a rupture so big, it’s actually pulled the entire crust away. We also think the mantle did not melt as much as usual and that the normal amount of mantle was not produced,” he said.

As a result, the mantle is exposed to seawater, creating a rock called serpentinite.

The survey voyage, costing $1m (£510,000), will be led by marine geophysicist Professor Roger Searle, from Durham University.

This cross-section from Smith and Cann (1992) shows the crustal structure of the Mid-Atlantic Ridge. The crust is made of seamounts and fissure-fed flows (area above magma chamber). Normal faults bound the edges of the ridge’s inner valley.

Small separate magma bodies (gray ovals) feed individual volcanoes. The solidified magma bodies make the lower oceanic crust. Their results for all of the North Atlantic suggests there are as many as 85 million seamounts on the ocean floor. Two and a half million of these are over 200m tall.

Does diving produce free radicals? Can vitamins really protect divers from some the physiological effects of diving? X-Ray Mag’s own editor and medical doctor Andrey Bizyukin conducted a series of experiments to find out.

You probably heard about free radicals, and why you should eat antioxidants to stay healthy. But have you heard of Reactive Oxygen Species?

Chances are that you haven’t. But to cite a well-known online dictionary: Reactive oxygen species (ROS) include oxygen ions, free radicals and peroxides both inorganic and organic. They are generally very small molecules and are highly reactive due to the presence of unpaired valence shell electrons. ROSs form as a natural byproduct of the normal metabolism of oxygen and have important roles in cell signaling. However, during times of environmental stress ROS levels can increase dramatically, which can result in significant damage to cell structures.

During times of environmental stress, huh? Does that include diving? It is the cell enzymes that produces ROS during metabolism and it turns out that these molecules have several roles to play in the body. Firstly, they are modulators of the immune system, in other words, molecules which can intensify or weaken the immune response. And the very same molecules can, by virtue of their strong oxidizing powers, simply “kill” pathogenic microbes and viruses, destroy alien substances (antigens), or when the concentration gets too high, also harm the cells themselves by creating ulcers or abscesses inside of a living tissue or by starting allergic reactions.

Even for an experienced diving physician it is not so simple to understand all the subtleties. There is a normal quantity or production of ROS. If too little ROS is produced, the normal immune reaction does not develop, and the organism falls ill from even the most insignificant trifle. If too much ROS is produced, it first enhances the immune response, but then (if high production levels persist) it will start destroying the organism. Speak about a golden median!

Any technical diver breathes gas mixes, be it oxygen enriched (nitrox) or impoverished (hypoxic trimix). Either of these will surely influence ROS production and levels somehow. But how? And, in which direction is it going to be—for the better or worse? And if it is for the worse, what can a diver do to protect himself or herself from the negative effects of these molecules?
and go on to live a long life and dive happily?

Oh, rats

In our first experiments, we used immune system cells from white rats. They were placed in test-tubes with a nutritious solution to keep them alive. These test-tubes were then pressurized equivalent to a depth of 350 meters. One group of test-tubes stayed under this pressure for no more than one minute. Another group was kept under pressure for a considerable time. Both groups were brought “back to the surface” in an uniform manner. All the cells remained alive. But ROS production in them was considerably different.

In the cells that were under pressure for a short period, ROS production was found to be elevated. By contrast the other group, which was under pressure for a long time, practically lost their ability to produce ROS. In other words, these cells essentially lost their immune protection.

Hypothesis

This made us hypothesize that short dives are beneficial for cells—they keep up their tone and strengthen immunity, whereas long dives destroy parts of the enzyme system involved in immune system response, and that the cause may be an excessively prolonged elevation of ROS production. Thus, it seems, to be a good idea if one could get ROS production under control during a dive.

Vitamin pills

This can be achieved in several ways. We opted for the easiest. Antioxidants are readily available in the form of commonplace, over-counter vitamin supplements: vitamin PP (Rutin), vitamin C (Ascorbic acid), vitamin E (Alpha-tocopherol) and lipoic acids. These substances bind to the reactive oxygen forms, preventing the damaging peroxidation in the organism. A regular intake of these anti-oxidants interferes with surplus ROS production and protects the organism. It doesn’t hurt the immune system. The deep dive had affected the control group of mice (those who were not given vitamins) so profoundly, that the blue pus bacillus toxin killed all of them. By contrast, the mice from the experimental group who were given the vitamins all survived, except for one who got sick and died.

The conclusion seemed clear: The increased doses of vitamins protected the mice during and after the deep dives.

But does that imply that pharmacological substances that can reduce the risk of decompression illnesses may exist? How many people could possibly be saved or protected following these scientific findings? And could this knowledge possibly extend the time span a human can spend safely under water?
Can Antioxidants Protect Scuba Divers?

A recent study, published in The Journal of Physiology, shows that acute oral intake of antioxidants Vitamin C and E prior to a scuba dive can reduce alterations in cardiovascular function that are caused by a single air dive.

A group of professional divers were studied before and after a moderate scuba dive to a depth of 30 meters for 30 minutes, similar to those enjoyed by countless recreational divers. A single scuba air dive induced mild changes in cardiac function and a significant change in endothelial function (endothelium is the inside lining of blood vessels and other tissue). The authors thought that these changes could be influenced by oral ingestion of antioxidant vitamins C and E before diving, and that endothelial function, in particular, might be preserved.

This intervention showed a positive effect on vascular endothelial function, whereas other cardiac functional changes were unaffected. Although generally very safe, diving may be associated with serious consequences such as decompression sickness. These new data raise the possibility that pre-dive intake of antioxidant vitamins may prevent some of the negative effects of diving on vascular function. The results of this study are of interest for their potential to reduce types of reactive and professional diving.

The implications were mind-boggling. Now there was no turning back, we just had to investigate the effects in humans. During a run of 21 days, we then monitored three professional commercial divers as they went down as far as 250 meters. One these was our diving doctor who took blood samples at regular intervals, which were sent up through a special sluice for analysis in a lab.

Conclusions

The results were stunning. Neither during the descent nor during the extended stay at maximum depth could we detect any significant deviations from normal ROS production. However, during decompression the picture changed dramatically. From the beginning of ascent, the production of reactive oxygen forms spiked pily ever after. This period of suppressed immune system lasted at least ten days.

Our friends, who had to listen to all our technical babble and enthusiastic tales about "wandering under water" made fun of us and thought we were engaged in something too ethereal for normal people. But once again they were helpless to help finding the jargon a bit sexy and envy our enthusiasm and dedication.

A scientific investigation like this is indeed somewhat akin to detective work. Here are our conclusions:

1. Short dives can be beneficial to an organism.
2. Longer dives can have a profound negative effect on the immune system and make deep water divers very susceptible to infections that is normally harmless for healthy people.
3. It has been demonstrated that diving starts long-term immune inflammation calling for a scrutiny of decompression procedures. Also, the various free-of-charge decompression programs and algorithms in the cheaper computers should be reevaluated in the light of these findings.
4. Regarding the average diver, if he has made it this far without falling asleep over the text above, we recommend: "Take those vitamins and keep on diving with pleasure, have a long life and live happily ever after."

Andrey Bayukin, PhD of Medicine, senior researcher of Pulmonology Institute, ■

The cooperating evidence:

Sea Urchin Could Help Cure Diseases

A purple sea urchin has 70 percent of its genes in common with humans, including genes associated with such diseases as Huntington’s, Parkinson’s, Alzheimer’s, and muscular dystrophy. There are roughly 100 human disease genes in the sea urchin genome.

Researchers found that humans and sea urchins share a lot of the same biology. Researchers said they believe similarities in the genes of sea urchins could one day help them better understand how the human immune system works. Sea urchins have no eyes or brain and could live for up to 100 years. Because sea urchins live longer than most humans, they might also provide clues in developing new antibiotic and antiviral compounds to fight various infectious diseases.

DAN Releases 2006 Report on Dive Accident Data

The 2006 Report on Decompression Illness, Diving Fatalities and Project Dive Exploration is ready for the scuba diving community. Compiled and published annually by DAN, the report presents information on Project Dive Exploration (PDE), scuba diving injuries and dive fatalities, as well as breath-hold diving incidents based on data collected during 2004. DAN has added new material this year that describes breath-hold incidents and annual injury and fatality rates for this activity.

Rates of DCS and Death

According to the PDE data collected between 1998 and 2004, the decompression sickness (DCS) incidence rate among warm-water dives fluctuated from 0 to 5 cases per 10,000 dives. The annual fatality rate for DAN Members between 1997 and 2004 varied between 11 and 18 deaths per 100,000 members per year.

The most common procedural problem was equalization, reported in 2.7 percent of PDE dives, followed by buoyancy control in 1.8 percent. The face mask was the most commonly reported equipment problem (0.69 percent); the dive computer followed at 0.4 percent. Twelve PDE divers reported post-dive headaches, and three reported fatigue. Out of 591 reported instances of equalization problems, six divers reported post-dive symptoms that were severe enough to concern them or make them skip at least one dive. One diver reported short-lasting vertigo, and there was one case of severe sinus barotrauma.

Sea Urchin Could Help Cure Diseases

Researchers in the UK have concluded that fish can get the bends. After reviewing anecdotal evidence from fishermen that fish hauled up quickly from depth suffer from decompression sickness, the researchers decided to look at fish raised in commercial fish farms as well. Sure enough, they concluded that farmed fish also get the bends. Why? It turns out that farmed fish are exposed to dangerous levels of nitrogen, a problem for their fragile bodies. Consequently, the researchers are looking at ways of “degassing” fish farm water. If that doesn’t work, maybe the team will look at creating hyperbaric chambers for fish.

Fish Get Bends Too

Scientists at Southwestern Medical Centre in the US believe they have developed a new cancer treatment using the toxin from a sea squill, Diadiza angulata, which resembles a translucent ring donut, emits the liquid to repel potential predators. It is found off the coast of the Philippines and lives in colonies anchored to rocks. Studies using mice were successful in reducing tumour growth without some of the side effects associated with other cancer drugs.

Cancer Cure?
In 2000, when my wife Lynn and I conducted the “world’s largest diver survey,” our main goal was to determine exactly what factor or combination of factors led to diver panic aside from just “stress.” The unquestioned gospel in all the dive literature for decades has been that diver panic is the number one cause of diver deaths, so it is a worthy research subject.

PADI vice president of international training, Drew Richardson, challenged me over even the feasibility of studying the problem, but as a private psychiatrist I told him that even severe panic disorder patients can remember the details of their first panic attack. I also had several panic disorder patients who were divers and not only had they never had a panic attack while diving, but they claimed they felt the most relaxed when they were diving. DAN founder and then president Dr. Peter Bennett gave me a big break when he allowed me to administer a beta test of the survey to the 100+ attendees of a Dive Medicine continuing education course that summer, which helped me convince Drew that the study could be done.

Over 13,000 scuba divers from around the world participated in the online survey sponsored and hosted by Rodale’s Scuba Diving magazine and actively supported by then PADI vice president of international training, Dr. Drew Richardson. Many dive clubs and other organizations around the globe helped publicize it. Paper surveys were also made available for magazine readers without access to the web. We designed the 28 questions with the invaluable input of experts like Dr. Peter Bennett, Dr. Drew Richardson, Dr. Art Bachrach, Dr. William Morgan, Dr. Thomas Griffiths, and many of my dive buddies on Bonaire and in Raleigh. Due to incomplete surveys the final number of usable surveys was just over 12,200. In May 2002 I presented a poster and gave a brief talk to the annual international scientific meeting of the UHMS in La Jolla, California. At the request of Drew Richardson we prepared a six-page feature article for The Undersea Journal first quarter 2003 issue. Both can be found at www.DivePsych.com.

But Lynn and I failed to achieve our main goal of determining exactly what factor or combination of factors leads to diver panic. We used the usable responses to questions 6 and 26 to calculate the relative risk of panic under each of the 44 “circumstances that you have ever experienced while scuba diving” (Question 6) and “conditions that were present during your first panicked dive” (Question 26). We also asked in question 26 if they were experiencing the condition for the FIRST TIME during their first panicked dive, but apparently too many respondents got confused by the question’s wording, so we had to just analyze the conditions that were present during the first panicked dive whether it was the first time they had ever experienced them or not.

When I showed Dr. Bennett Table 1 and he saw that three of the top four factors were “Other,” “Other,” and “Other,” his response was that we had proven nothing after several years of hard work. Researchers do not tend to publish negative findings, so the table has resided in my laptop until now.

For three years I conducted follow up surveys of those divers and am slowly analyzing the data and releasing the results, such as the prior articles on diver obesity. In September I will be speaking at a workshop on diver panic and stress at the South Africa UHMS annual dive medicine refresher course in Johannesburg, South Africa. David F. Colvard, M.D., is a private psychiatrist and clinical investigator in Raleigh NC and a divemaster. He hosts the website www.DivePsych.com which provides evidence-based information for divers on psychological and stress factors in scuba divers.

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*Sherman’s Lagoon* by Jim Toomey © 1999 Jim Toomey
Spring Dive Fashion

Sea Inspired Style The fashion label Kawayan (Philippino for ‘bamboo’) was created by two sisters, Anna Frances and Anna Mae Dioso. Both born on Mindanao in the south Philippines, they are now based in Wein, Austria. Influenced by diversity in people and countries, the designers have invented a new eclectic style which suits all occasions and trends. This sea foam beach cover-up is from their ‘mamuschka beneath the sea’ collection. See www.ichiban.at/kawayan

Stylish Jewelry from the Sea A piece of dyed mother of pearl or shell is cut and set by hand in each of these stainless steel pendants. Other designs by the Canadian based husband-and-wife design team Eric Jean-Louis and Vivian Cheng come in bamboo, coconut, coral, ox bone, steel, Mah Jong and Washi styles. Price: US$75.00 Blendcreations.com

Stylin’ Togs for Your Tank Have a little fun with your gear and get ‘em grinning with this polyethylene air tank shirt inspired by Lifesavers hard candies. Price: US$21.97 www.divingtoysfromdiveonight.com

Swimming with the Fishes 100% organic cotton t-shirt designs for divers by ZooZoo2. Price: GB£25.00 www.zoozoo2.com


Patagonia Be comfortable. Wear this Sea Grass flip-flop sandle for men on the beach. Rice fiber footbed. Four colors. Price: US$50.00 www.patagonia.com

Bottom Crawlers 100% cotton Tribal Shark Men’s T Bold oriental brush strokes on mocha t-shirt. Price: US$16.95 www.bottomcrawlers.com

Stylish Jewelry from the Sea

Stylin’ Togs for Your Tank

Swimming with the Fishes

Patagonia

Blue or Yellow Jacket, $29.95 Pant, $20.99

O2 Rainwear

Lightweight, breathable, waterproof cover for sea bound divers
O2rainwear.com

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O2 Rainwear Lightweight, breathable, waterproof cover for sea bound divers
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Chammyz
Manufactured from 100% natural fibers, Chammyz are extremely soft yet durable garments, designed to provide the utmost in warmth and comfort, offering the highest level of protection against rapidly changing weather conditions. Unique design promotes maximum water absorption from the body and immediate processing through a unique moisture management system. (Left) Aussie Top in Deep Purple, US$62.00. Body Parts, Inc. Visit Chammyz.com

ScubaDoRag™
Be seen above and below the sea by dive buddies, students, instructors and boat crew in a stylish way! Patented for working out, running, cycling, styling, protecting your scalp and/or hair color, snorkeling and scuba. The SecretCompartment is for stowing your ponytail to keep it from tangling in your tank valve, or for hiding small valuables or your room key. US$35

ScubaTubeSocks are getting rave reviews for funky style and function, which lets you get into your wetsuit more easily and prevents blisters. Make your dive buddies smile with HappyFeet! Can also be worn with clogs and sandals. Made from the same yummy fabric as the ScubaDoRag™, US$13

FashGuards 'cause who wants to talk about a rash? Shoods (or shirts with hoods) are suitable for all SuperHeroes who travel beneath the waves, and Shoodn’ts (shirts without hoods) are in very limited quantities, so order soon. Get down and funky with these innovative ways to add long sleeves and extra room (thanks to print gussets). Brighten up your everyday courageous, stylish life. ScubaDorag.com

Wear Scuba
T-shirts from down under for the diving dudes and divas in your life. All tees by this Australian maker are made from 100% cotton with high quality screen printed graphics. Scubagear.com.au

Girls4Sport Neoprene Rashguard has the same cut as their long sleeve rashguard, but with 1mm neoprene panels front and back for extra warmth and a front half-zip. The built-in shelf bra provides support; the extra length in the torso keeps it from riding up. It features sleeves in cool prints and colors that can be mixed and matched with co-ordinating bottoms and board shorts. Can be worn alone or layered under a wetsuit. Price: US$73. www.girls4sport.com

Dive Republic
Dive Republic is a scuba themed T-Shirt design and production company aiming to bridge the gap between street fashion and the often ‘in-joke’ nature of diving shirts. The T-shirts retail at £20 (inclusive of p&p) and you can purchase them at: www.dive-republic.co.uk

TOP TO BOTTOM: ChromaMomSea PurpleJoker ScubaDoRag™ SeaBra FashGuards US$60-110

ScubaGear.com.au

Women’s Deep Down T, AU$27.00 LEFT. Men’s Rust in Peace T, AU$15.00
**Deep Down Dive Apparel**

Let ‘em know you dive by wearing quality apparel paired with hardcore dive designs like “Skull Flag” and “Last Great Act”. Featuring over 30 designs, Deep Down is the latest in alternative dive apparel. Check out all of Deep Down’s cutting edge designs at DeepDownDive.com.

**Mad Mermaids**

Scuba is a dive wear brand that gives a damn! So we have our way about stuff that make us mad. Shark Finning, Killing Whales, Climate Change, Water Pollution...We believe that wearing MadMermaid Scuba Dive Wear is a great way of getting the messages out there. www.madmermaids.com

**UWAHU = underwater human**

Original and high quality out of the water divewear for scuba divers, freedivers and aquanauts. Distributed in Europe, Australia and the USA. Secure online shop available. For more information please check our website at: www.uwahu.com or email: info@uwahu.com

**Scuba Punk**

Unleash your imagination and slip into a new skin with Scubapunk T-shirt as it expresses your passions about scuba diving in a wholly different depth. Adorned with street graphics, revolving around scuba diving, that go beyond your conventional designs found on the market. Scubapunk adds a layer of distinctive spunkiness to the current diving apparel arena. Scubapunk.com

**Dive Junkie**

is a fast growing specialty retailer of Scuba Diving casual apparel. Their range of clothing are constantly revitalized by regular additions of new designs and clothing styles. The latest collection of Polo shirts to join their wide range of T-shirts is refreshing and stylish. Made using a cotton and polyester blend, the soft and comfy honeycomb Polos are casual yet smart and are perfect for work as well as play. www.divejunkie.com.sg

**Wetsuit for your wine?**

Now your spirit or wine bottles can be scuba-cool too, in these fashionable neoprene jackets by French designer Thomas Renaud Combhard.com

**Rubber Radio**

Totally waterproof, this fully rubber made radio makes listening possible in the bathroom or by the dive pool. Has a simple control panel, which relies upon the material elasticity as does the loudspeaker membrane. Eliumstudio.com
Dive Goddess

Tired of dark dreary black? Why not try something with a bit of pattern and color? The makers of these zany dive togs call their high quality skins, "visually-distinctive active-wear for serious divers who don't take themselves too seriously". They are supposed to be the answer to how to look 'hot' even while you struggle to put on a cold, wet and pungent wetsuit on a crowded boat rocking on the waves. Finally, your buddy can spot you easily out of a slew of divers dressed in black. Left to right: Abyss, Hot Pursuit and Leaping Leopard. Price: US$65-95. www.divegoddess.com

Terrapin Wetsuits

constructs truly custom fitted wetsuits from highest-quality neoprene or neutrally-buoyant Polartec where you choose the colors and style. Since sometimes you grow (or shrink) and your wetsuit doesn't, we provide expert alterations, including customization for Technical and Handicapped Divers. We also produce fun, colorful accessories...especially our famous Minihoods. www.terrapinwetsuits.com

Exceed Wetsuits

Step up to a new fashion wetsuit by EXCEED. Their suits feature the highest quality neoprene available, with a new E-Plush interior, which keeps you warmer and dries quicker. All seams are glued and blind stitched to keep water out. www.exceedwetsuits.com

Shoulder Bags with Fins

As the makers, Reef and Reed, say, "It's not just a bag... it's a fish!" This new collection, which highlights fish from the Great Barrier Reef, includes favorites such as the Shark, Orca, Clownfish, Purple Tang and Cutthroat Trout. Price: US$35.95. www.reefandreed.com

Dive Deep T-Shirt

Get the word out with this straightforward scuba shirt by Island Image. Price: US$19.95. www.islandimagedesign.com

Hot Shower in a Can

Get rid of all that salt with a soothing hot water rinse heated by the cigarette lighter in your car! Cleverly designed by Büro North, this handy portable surf shower goes with you anywhere. Buronorth.com

Dive Deep

T-Shirt
Dive Fashion

Moonfish Chic diving gear from France is designed to prolong the inspiring sensations we experience in the underwater world, its sense of freedom and abundance of life. Glamour hooded black cotton-lycra women’s long sleeve shirt, €78. Jessy navy women’s shorts, €54. Sirius men’s board shorts, €60.

Dolfin Swimwear keeps its promise to maintaining the highest standards of innovation, quality and value. High leg and modest leg models available. Try this Planetary Blue Women’s tank swimsuit, 80% Nylon/20% Spandex, fully lined. Uglies Papillon Rash T, 100% Polyester, UV (50+) protection.

Body Glove Girl A new crop of fresh swimwear for the diving diva. Browse through their online gallery at: Bodyglovegirl.com


UZZI Amphibious Gear uses innovative and high tech fabrics in their exclusive designs. Uzzi says their divewear line is more than a fashion trend or a lifestyle, “It’s also a mindset.”


Charming New Sea-life Charm Necklace with sculpted silver forms of manatee, octopus, dolphin, sea turtle, shark, ray plus Caribbean-colored ceramic beads from Mykonos. Price: US$24.00 Bigbluedive.com

Bigbluedive.co.uk

Creating a sense of freedom and abundance of life, Moonfish gear is designed and made by women for women. Chic and comfortable, Moonfish offers women’s and men’s swimwear, wetsuits, and more. Their commitment to quality and innovation is evident in every piece they create. Whether you’re a diving enthusiast or just love the feel of water, Moonfish gear is the perfect choice for you.
Under the waves, the mermaids play—blissful and carefree... because they've never had to shop for a swimsuit.

One-piece, two-piece, bikini, tankini, shutter, swimsuits? It’s sometimes too much for a girl to decide. But like shoes and handbags, one suit is not enough for the diving girl, so we will look at the benefits of each to assure that our wardrobe is adequately stocked. The swimsuit, for divers, is usually a basic layer to be worn under garments designed for protection from the elements. Water temperatures dictate coverings, ranging from lightweight dive skins to 7mm wetsuits, for thermal protection. Stinging jellies, sun’s UV, and even a one-piece can work for use in the bush when transforming back to our land clothing. The one-piece works well at shallower depths for changing, as a large beach towel or oversized shirt will eliminate the trek into the bush when transforming back to our land clothing. The onepiece does work well at shallower depths for changing, as a large beach towel or oversized shirt will eliminate the trek into the bush when transforming back to our land clothing. The one-piece often shifts shamelessly, while shirtless, is more limiting in the changing areas.

Form Follows Function
Comfort is crucial when descending for the surface interval, with the sun’s UV, temperatures dictate coverings, and modesty will precede the swimwear, so minimal clasps and lay the suit flat to dry. For most of us, the image of our pesty body in a swimsuit is a far cry from the supermodels on the front of Sports Illustrated. However, with a few tips, you can find a suit that will make the most of what “real bathing beauties” have to offer.

Go up one size While trying on swimsuits, remember to go up one size, as they’re made small. Don’t get caught up in the number, after all, it’s the fit that counts. Move around in the fitting room; bend over, sit down. The movement will assure that the suit will stay where you want it. Try on as many as possible, to find the one that looks best. And don’t be afraid to ask the sales associate for help. They’re usually very knowledgeable about enhancing or detracting for different body types.

Fabric Freshness
How to keep the stink from your suit? Swimsuits are made from man-made fabrics that absorb and retain odors. In addition to the microorganisms we swim through in the water, we’ve added our own body oils to the fabric. Mix in sun tan lotions and body crèmes, and we’ve got the recipe for serious stickiness. Keeping your suits fresh isn’t hard, but timing counts. Suits should be rinsed within two hours of use. This allows the sunscreens, salt water, chlorine and body oils to be removed before they’re absorbed into the fabrics. Use an approved swimsuit cleaner, avoiding Woolite or chlorine bleach detergents. No machine washing or drying—simply hand wash and lay the suit flat to dry. For those divers who have frequent pool sessions, a simple mixture of water, liquid laundry detergent and aquarium de-chlorinator (found in pet stores—1:4 ratio with water/detergent mix in spray bottle) will help keep your suit bright and colorful.

For your liveaboard vacations, be sure to pack as many suits as you have dives per day. It’s considered poor form to traipse about the cabin area in a wet suit. For laundering purposes, you’ll want to change your suit between each dive. Cleanse the used suit and lay flat to dry for the next day’s diving. For diving divas, thankfully, the swimsuit serves a different purpose than bathing beauties. Remember, our reason for wearing a suit is not to “be seen”, but rather “to see”.

Cindy Ross is a dive instructor and writer dedicated to promoting the scuba lifestyle for women of all ages worldwide. For more information, please visit: Goldiver.com

Diving

Diva Style

Swimsuits for

Text by Cindy Ross. Photos courtesy of the manufacturers

We want a suit that fits right, so it won’t shift or rub on our wetsuit. While the flowing tankini top does conceal a bit of belly, it may also fall victim to disappearing in the wetsuit as we change after our dive. A well fit tankini gives us the advantages of a two-piece and the coverage of a one-piece.

Say no to padding
Stay away from excessive padding. When diving, the padding in a swimsuit is going to absorb the salt water like a sponge, resulting in sagging, and even with a thorough wash after, the smells are tough to get out.

Flattering your figure
Simple tips can enhance and flatten your natural looks. The right silhouette can disguise figure disputes.

Small busts can be overcome by emphasizing contours. Bold prints or colors flatten, while white or pastel stripes across the chest will flatten further. For larger chests, pay attention to support, comfort and coverage. Wide straps and crossover straps can offer additional support, without adding the underwire that may be uncomfortable under pressure.

To mask the tummy, fool the eye with fabric that pulls the eye away from the stomach area. Large hips are overcome by choosing a bright color on top to pull the eyes upward. Choose styles with bust detailing.

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Depending on who you ask, humans are responsible for removing between 20 million and 100 million sharks per year from the oceans. Considered a delicacy in many parts of the world, shark fins are served at Chinese weddings and business dinners throughout Southeast Asia and the Pacific Rim. The problem with finning is two-fold. First, from a humanitarian aspect, sharks are still alive when their fins are sliced off; the animals back into the sea, where they're left to drown. Second, from a practical standpoint, for shark fins will soon outpace the sharks to reproduce—the number of pups in any shark's litter rarely exceeds 100—and overfishing could have serious effects for both coral reef systems and the entire food chain.

Underwater photographer Rob Stewart decided he needed to do something about the problem of finning, so he chose to make a movie about sharks, showing the world how beautiful, graceful and essential the animals are to the oceans' ecosystems. Never having shot a feature film before, Rob picked up a book on how to shoot movies and began his journey. The end result is Sharkwater, an 89-minute high-def extravaganza of a movie, which has already won a slew of awards, including Best Documentary (Ft. Lauderdale International Film Festival); the Jury Award (Hawaii International Film Festival); Best of the Festival (Palm Springs International Film Festival); Prix Planete (Antibes); and more.

Recently, X-Ray Magazine got the chance to talk to Rob about Sharkwater and his experience filming it. Despite all the awards his film has won, he hasn’t let it go to his head. Impressively, Rob was down-to-earth, accessible, and interesting. Passionate about his subject and full of energy, Rob spoke with us at length about Sharkwater.

X-Ray: What is Sharkwater about?

Rob: Originally, I wanted to make a beautiful underwater film about humanity’s relationship with sharks. I wanted to show people that sharks are not the mindless killers that the media portrays them as. They’re actually beautiful, shy creatures...
who avoid humans. So, I went down to Costa Rica to film them. However, it didn’t work out that way. After about four months, I realized I wasn’t getting the underwater footage I had been hoping for, because we were busy outrunning pirate boats, being charged with attempted murder and uncovering an underground shark finning operation in Costa Rica. In order to protect ourselves, I turned the cameras on us. Although I wasn’t getting the shark footage, this human drama was unfolding around me. It was a crazy experience that covered 15 countries and four and a half years. Sharkwater is not like any movie out there. It’s not really a documentary. It’s not really a film. It’s more of a “reality journey.”

X-Ray: Did you head to Costa Rica with the intent of uncovering the shark finning operations, or did you just stumble upon it?

Rob: I went to Costa Rica to film sharks off Cocos Island with Sea Shepard, which had been invited by the President of Costa Rica to help monitor sharks in the area. I wanted to work with Sea Shepard’s conservation initiative and get underwater footage with the sharks. But I had no idea of the extent of the corruption in the area. The Taiwan Mafia has established a huge shark finning operation there.

X-Ray: You couldn’t just go down there and see them. The Taiwan Mafia is extremely well-hidden. The shark finning operations have their own private bay in Puntarenas and their own private docks. They’re down long dirt roads, and you can’t go down there.

Rob: They’re down long dirt roads, and you can’t go down there. The Taiwan Mafia is extremely well-hidden. The shark finning operations have their own private bay in Puntarenas and their own private docks. They’re down long dirt roads, and you can’t go down there.

X-Ray: If they have their own bay and docks, doesn’t the government have to know about it? Are they just ignoring it?

Rob: Exactly, the Costa Rican government is turning a blind eye to finning. But now the public has learned about it, and a local non-profit, PRETOMA, is suing the government for letting finning occur and for allowing the depletion of the country’s resources. After all, the natural resources of Costa Rica are owned by its citizens.

X-Ray: You’ve said that sharks are “the most misunderstood animals in the world.” What is the biggest misunderstanding about sharks?

Rob: Probably the biggest misunderstanding is that they’re primitive eating machines. That’s not the case. They’re very sophisticated animals that have survived on the earth for hundreds of millions of years. Over the course of their evolution, they’ve evolved to become sleeker. Like electronics, they’ve become smaller and more efficient. They’re amazing animals. Another misunderstanding about sharks is that they want to eat humans. They don’t. In fact, most shark attacks aren’t attacks at all. They’re “mistakes.” However, newspapers sell more if they run stories about shark attacks splashed across their pages.

X-Ray: Other than divers and conservationists, it seems very few people are trying to protect sharks. Why do you think there are no “Save the Sharks” campaigns like there are “Save the Whales” campaigns?

Rob: First of all, sharks are a relatively new fishery. People only started fishing for sharks in the late-80s. On the other hand, whales have been fished for a while, and people have had a long time to see what effect removing them from

There’s lots of shark finning going on. It’s a multi-billion dollar operation.

X-Ray: Could anyone heading to Costa Rica see the shark finning operations? Or are they well-hidden?

Rob: You couldn’t just go down there and see them. The Taiwan Mafia is extremely well-hidden. The shark finning operations have their own private bay in Puntarenas and their own private docks. They’re down long dirt roads, and you can’t go down there.

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An eye-opening film…visually stunning…this movie will change the way you see our oceans.” — Bonnie Laufer Tribute Magazine

Sharkwater

Rob Stewart
The ocean has had a long time for people to see the dangers associated with removing them from the ocean. Since sharks are a new fishery, there hasn’t been that same build-up. Now, suddenly, we’re starting to understand how many sharks are being removed from the oceans and what effect this is going to have. Also, whales are... X-Ray: ...cute?

Rob: Right, whales are cute and sharks aren’t, so there’s been no public support for a save-the-sharks campaign.

X-Ray: I watched the trailer of your film and was amazed by the guy who said that sharks are “the scourge of the ocean and everyone should catch one.” What would be the result if that happened?

Rob: Never in the history of humanity have we wiped out such a critical animal, the top predator in the food chain. So, we have to look at the next best thing: the sea otter, an animal that nobody thought was very important. In the 70s, the sea otter was an endangered species. Sea otters eat sea urchins, and urchins eat kelp, which is a prime habitat for the Pacific herring. So, when we nearly wiped out sea otters, there was nothing there to eat sea urchins. The urchins ate the kelp, kelp populations dropped dramatically and the Pacific herring lost its habitat and nearly vanished. This animal that no one thought was very important in the big picture actually created a huge imbalance. So imagine the problems associated with removing the ocean’s top predator. It could create a framework for declining oxygen populations, declining fish populations, and declining plankton populations, plankton being responsible for creating 70% of the Earth’s oxygen. It could be a disaster for all of humanity.

X-Ray: It opens this month in Canada, right?

Rob: Right. On March 23rd.

X-Ray: When does it open in the US?

Rob: In the fall.

X-Ray: I can’t wait. What was the most surprising thing you learned while shooting the film?

Rob: The most surprising thing I learned while shooting the film... is how hard it is to shoot a film. It’s totally different from shooting photos, because the post-production work is so difficult. We’ve got over 400 hours of footage in every kind of format, from high-def to 16mm. Putting it all together is so difficult. If you were just directing the film, I guess it would be easier, but when you’re crafting the story on so many levels—when you’re writing, directing, producing and editing the film—you have a lot to think about.

X-Ray: Yes, but that’ll serve you well on your next film. You won’t have to start from scratch.

Rob: Right. That’s good.
Something else that surprised me was how much money is being put into the shark finning industry. I had no idea. When you see that the corruption extends along multiple governments, you realize that there’s a lot of money at stake. Another thing that surprised me is how difficult it’s going to be to work against finning. It’s going to be very hard.

X-Ray: Speaking of your next film, can you tell us about what you’re going to be working on next?

Rob: I have several other documentary projects I’m working on. All of them are eco-minded and try to teach that “conservation is cool.” I think that conservation should be taught in schools before Shakespeare or geometry. The future of our planet depends on it. Anyway, one of my projects is a feature documentary that deals with ocean issues. Another one is the story of human evolution told through Africa. It’s amazing to me that Africa is the place humans learned to stand upright and, yet, with all the civil war, it almost seems there’s a de-evolution going on. Finally, I’m also working on a reality television show. Like any reality show, it’ll involve lots of young, beautiful people, drinking, sleeping with each other and stabbing each other in the back. But these people will all be on a ship sailing through the South Pacific, and they’ll stop off at various islands and pick up local biologists and give them the tools they need to carry out effective conservation issues on their home islands.

X-Ray: Are the young, beautiful people on the boat biologists, too?

Rob: Yes.

X-Ray: So, you need to find people who are young, beautiful AND smart?

Rob: Yeah, it’ll be kind of hard to cast, but I think we can do it.

X-Ray: Good luck with that. What do you want to leave X-Ray’s readers with?

Rob: I want to remind people of the issues at stake here. Our survival is in jeopardy. We need six Earths to provide us with the resources that we use every day. The earth can not sustain us. Moreover, as we use more resources, the number of large predators on our planet goes down, and that will have terrible results down the road. We need to keep in mind that conservation is critical to the success of our planet. The ocean is not a toxic waste dump. Trees are not for decoration. We need to make decisions now that will affect our future.
The Maori warrior cautiously moved towards us. His face was painted and body adorned in traditional combatant attire. He yelled words I did not understand and pounded the ground with his spear-like weapon to challenge us. More warriors appeared out of the darkness behind him, each taking defensive positions with wide eyes and tongues out to intimidate. Like the other visitors around me, I froze with excitement, waiting for their next move.

Our guide spoke their language and understood their ways as he coached the leader we selected on what to say and do. His advice proved to be invaluable, as we soon found ourselves invited into their theater for a cultural evening experience of unforgettable measure, performed by local youth at the Treaty of Waitangi Sound and Light Show, located on the northern tip of the North Island.

This was just one of the many entertaining activities I found to do when visiting New Zealand, a land of limitless opportunities and unforgettable memories. I guess it was New Zealand’s remoteness that initially attracted me to this extremely diverse place. Or perhaps it was the country’s lush green valleys, massive evergreen forests and jagged snow peaked mountains I saw in the movie, Lord of the Rings, which was filmed on the South Island.

As a diver and avid paddler, I was pleased to also find an assortment of dive sites and kayaking options on both islands. Curious to learn more, I researched the Internet, and was soon on my way down under aboard an Air New Zealand’s 12-hour flight from Los Angeles to Auckland, on the North Island, in March (which is the beginning of their winter).

On the world map, New Zealand can be found east of Sidney, Australia, in the South Pacific Ocean between latitude 34°S and 47°S; 266,200 square kilometers (103,735 sq miles) covers two islands resting in a north to south direction with a vast mountain range running almost the country’s full length. While North Island is considered mostly sub-tropical, South Island is temperate. In perspective, New Zealand is about the size of Japan or the state of California. Aside from the Maori people arriving more than 1000 years ago, the country’s first documented discovery by a European was in 1642 when the Dutch navigator Abel Tasman came upon it while searching for the southern continent. In 1769, Captain James Cook claimed the country for Britain and proceeded to map out the area.

Diving The Poor Knights

Upon arrival, I rented a car and headed towards a country-style B & B near Waitangi Sound and Light Show, located on the northern tip of the North Island.

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Wangarei for some diving around The Poor Knights. The constant hum of Cicadas filled the air as I navigated the narrow winding country roads, past pastures with llamas and cattle. New Zealanders consider this southeastern part of the North Island sub-tropic, meaning many of the tropical plant and fish species flourish, without the usual muggy humid climates normally associated with islands closer to the equator. I was just glad I could wear my shorts, T-shirt and sandals.

After repacking my dive and underwater camera gear the following morning, I headed for the Tutukaka Marina for my first day at the Poor Knights, with Dive Tutukaka. The shop was teaming with excited divers picking up rental gear, buying souvenirs and getting air fills. Totally unexpected, I met up with two fellow Canadian residents, originally from New Zealand, Ian and Julia Hass, who arranged to joined me.

The shop had plenty of room for everyone on their seven dive charter boats, with tasty sack lunches from a nearby restaurant (offered as an option). During the 45-minute ride out, the boat captain told us we could expect a water temperature of 21°C (70-72°F), with a visibility of 17-24 meters (60-80 feet). He also added that the water temps drop to 15°C (59°F) during the winter months. I was the only diver in a dry suit; everyone else wore a full 5-6mm wet suit.

Two large islands and several smaller pinnacles, islets and rock stacks make up the Poor Knights, volcanic in origin, which are located about 15 miles (24 kilometers) off the northeastern coast. In 1981, this area was established as a Marine Reserve. Today, hundreds of divers from around the world enjoy the area’s rich abundance of marine life found in the clear waters of this unique archipelago. The unusual name Poor Knights was actually given by Captain Cook when he sailed past the islands. Thinking they resembled a popular breakfast dish in Europe, ‘Poor Knights Pudding’ (known today as French Toast), and the fact the red flowering lilies in October look a bit like strawberry topping, it’s easy to understand why.

Upon arrival, we tied up next to a sheer rock wall in front of the massive Rico Rico Cave, so big a whole marina would fit inside if they ever decide to build one! Leaving my hood and gloves behind, I donned my DUI shell dry suit with a 300 gram polartec undergarment and joined the others entering the water. Ian and Julia followed me in, and we descended next to fronds of kelp, swaying gently in a mild surge.

Next to the cave entrance, we followed a wall stretching from the surface to over 27 meters (90 feet). A rich blend of invertebrate life covered everything. Stingrays, over two feet across, kept swimming past, almost close enough to touch. Ian and Julia were happy to play models for me, without really knowing they were. Huge boulders below the cave entrance resemble a canvas of art with a colorful collage of marine critters painted upon it. Scorpion fish and other camouflaged sculpins also hid in cracks and crevasses around the rocky pinnacle. A few white squid eggs...
New Zealand

Above: Snapper. Left: Northern Scorpionfish; Diver at Poor Nights

were clustered together on the bottom and more colorful fish than I could keep track of.

Our second dive was at a site called ‘Magic Wall’ and the third dive at a location beneath an archway called ‘Middle Arch.’ Within 20 minutes at Magic Wall, I lost count of how many different species of moray eels we saw. One was actually next to a scorpion fish and stayed there for the longest time as if they were friends. Sponge, tunicates, crabs, nudibranchs and pink gorgonian fans flourished on a kelp-covered reef, between 12-18 meters (40-60 feet) at Middle Arch. Sandy patches separated the rocky terrain, where I found tiny slender fish, starfish and more stingrays. Like everything else, the wall beneath the archway was covered with macro life, creating awesome wide-angle, close-up or macro image opportunities.

In all, I did four dives over two days at the Poor Knights, with each dive quite different in appearance, yet still didn’t see it all. Talking with the crew and other divers, there are over ten choice dive sites in the area to choose from.

On one of our excursions, our boat joined several other boats from the mainland for a jazz jam in the big cave. The acoustics were incredible from the live music being played by the bands!

Overall, the diving was easy, service exceptional and price reasonable. While diving is available year round, the seas are the calmest during the summer months (our winter) and the visibility best during their autumn and early winter months (March-July).

If wreck diving is your pleasure, there are two retired Navy ships scuttled for divers, north of the Tutukaka Heads. The HMNZS Tui is a 62-meter (203 foot) long US Navy ship was put down in 1999 in 30 meters (98 feet) of water. The 113-meter (370 foot) long HMNZS Waikato went down in the year 2000, in 28 meters (92 feet) of water.

Kayaking Poor Knights

Before I left the area, I arranged
Worn by professional and sport divers who demand the best. Tested down to -1.5°C. Chosen for comfort and versatility.

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www.weezle.co.uk

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Only made for and by:

New Zealand

a day of paddling along the shoreline with Kea Spill and Shane Orchard, from Paradise Coast Kayaking (now called Pacific Coast Kayaks). We launched our boats just south of the marina, in a secluded bay. The day was fairly sunny and the water calm, just how I like it. A dry bag kept my camera safe and a spray skirt kept the bottom half of me dry, as it pulled over the lip of the boat. Kea also packed a lunch, water, sun block and snorkeling gear before we headed north.

Our journey led us through tight passageways and across water that resembled washing machine agitation. Kea and I were in a two-person kayak and Shane joined us later with his single person kayak. At times, I was sure our boat was attracted to white water. Having Kea as a chauffeur (steering from the back) was great, especially when I needed to photograph something or steady my camera.

We landed at Kukutauwhao Island for a lunch and hiked through thick brush to the top of a steep hill.

Once again, the cicadas song was in the air, and I actually found one of the little critters squeaking away. Looking around at the breathtaking view, I was amazed at the grandeur of such a stunning place.

Once back in our boat, we continued north past weather beaten cliffs, sparse patches of trees and secluded beaches. After Shane joined us, we headed for Whale Bay for a snorkel dive. Shane said many of his clients enjoy coastal snorkeling during the summer months, and some even camp along the way during multi-day journeys.

Diving Paihia

Paihia was my next destination, located at the top of the North Island, for some diving at The Bay of Islands. The town was hopping with activities like wind surfing, whale watching boats, kayaks, diving and more outdoor enthusiasts. I located Paihia Dive for a day of diving on the Rainbow Warrior, an old Greenpeace boat with a very colorful history.


I was in photographic heaven to find so many different shades of jeweled anemones clinging to the rails and hull as I perused the Rainbow Warrior underwater. The wreck was sitting upright with the stern at 22 meters (70 feet), but didn’t look safe to penetrate. A thick growth of kelp covered the deck while the most color and life was found on the starboard side. Clusters of sponge clung to the rail and tiny sculpins danced about the deck. I reached a maximum depth of 26 meters (85 feet) where sand surrounded the hull.

We explored Lion Point next, within the Bay of Islands group. Upon descent I could see the fingering reefs suggested a volcanic
New Zealand

Kayaking
Queen Charlotte Sound
From Auckland, I caught a flight to Blenheim, at the northern tip of the South Island and picked up another rental car. Within a few hours, I was kayaking in the Queen Charlotte Sound with Marlborough Sound Adventure Company out of Picton. The setting sun gave the Tea trees lining the banks a golden hue. Paddling clear of a huge passenger/auto ferry, connecting the two islands, we headed for a blue penguin nesting area. Unfortunately, the tiny birds were still out fishing.

We made it back to town as the sun was setting. My new paddling friends joined me for a plate of green-lipped mussels and some tasty local wine, two items the area is famous for.

General information:
- Tourism New Zealand www.tourisminfo.govt.nz 310-395-7480 or 866-639-9325 (US/Canada)
- Air New Zealand www.airnewzealand.com, 310-648-7000, 800-262-1234 (Canada 800-663-5494)

Diving in New Zealand:
- Dive Tutukaka www.diving.co.nz 0800-288-882
- Blenheim Dive Centre www.blenheimdive.co.nz or 0064 3 5780331
- Dive Kaikoura www.scubadive.co.nz 0800 SCUBADIVE
- Rainbow Warrior Information matauribay.co.nz/diving.htm

Activities in New Zealand:
- Pacific Coast Kayaks www.nzseakayaking.co.nz 09 4344262
- Marlborough Sounds Adventure Company Marlboroughsounds.co.nz 03-573-6078
- Whale Watching Kaikoura www.whalewatch.co.nz 0800-655-121
- Dolphin Encounter www.dolphin.co.nz 0800 733 365
- Albatross Encounter www.oceanwings.co.nz 0800-733-365

Books about New Zealand:
- New Zealand Adventures In Nature by Sally McKinney, John Muir Publications
- Coastal Fishes of New Zealand by M. Francis
Diving a Russian cruise liner

Kevin Bailey from Blenheim Dive Centre picked me up at my B&B the next day for a dive on the 176 meter (578 foot) Russian cruise liner, Mikhail Lermontov, in Marlborough Sound. Kevin explained the $45-million ship unsuccessfully tried to pass at night between the shallow turbid waters of Cape Jackson and the Cape Lighthouse in 1986. Barely making it to Port Gore, the ship sank with the port bridge wing just 12 meters (39 feet) below the surface, on its side. Only one crew member was lost of the 408 passengers. Not bad, considering it went down in about ten minutes!

Kevin and I entered the murky water (October has the best visibility) and descended to the wreck. I made sure to don my hood and gloves this time, since the water on South Island was 10 degrees colder! No way would we be able to see everything, so we cruised along the top and outer edge of the deck. Fish of every size and color flourished in small to large groups. Sea cucumbers, sponge, bryozoans, orange and white anemones and hydroids were among the Lermontov’s residents. I was able to get some good shots of the ghostly looking bridge and mast, also covered in life. Ken went in and out several openings. Our maximum depth was 35 meters (114 feet) with the bow at 25 meters (85 feet) and the upper deck at 18 meters (58 feet).

The second dive was on a pinnacle rising out of the water next to Long Island Marine Preserve. The underwater terrain was filled with nudibranchs, fish, lobster and large sea stars. An inquisitive black sea lion buzzed us several times while we checked out numerous small valleys between the reefs. Sea stars with long rays, urchins, sea cucumbers fish and wary crabs were also observed.

After the diving we stopped at Motuara Island Reserve for an afternoon hike to see the scenic views of the Sound. I thought it to be more of a birders’ paradise, counting over six different species and dozens of penguin houses positioned on both sides of the path up the hill. Once at the top, the view was breathtaking.

Kaikoura

Kaikoura, on the eastern side of South Island, was my final New Zealand destination. This bustling seaside town is located on a peninsula flanked by mountains on one side and a breathtaking coastline on the other. Kaikoura business operators cater to visiting tourist by offering a wide range of marine mammal activities.

Before my scheduled day of diving, I signed up for several of these excursions.

The Whale watching trip offered by Whale Watching Kaikoura took the group to a favorite place frequented by sperm whales for hunting. Throughout the four hour tour, we learned all about these illusive giant-toothed creatures.
and observed them in the wild as they rested at the surface, while doing their deep 120-360 meter (400-1200 foot) feeding dives. We were also told that most of the whales in the area are males, who seem to tolerate the cooler water for better hunting grounds. Females are known to prefer warmer climates like Fiji and Hawaii.

On my next tour, I was able to snorkel with dusky dolphins. It took several in and out of the water tries, but our persistence soon rewarded us with a large pod of 30 animals. They were all around us at one point then minutes later were gone! All snorkeling equipment and suits were provided by the operator, Dolphin Encounter Kaikoura.

On another excursion, Albatross Encounter took me out to open ocean where we found some local fisherman feeding gulls scraps of leftover bait. These were no ordinary gulls though they were one of the five varieties of the ocean-going great albatross who frequent the Kaikoura area. Normal gulls were clearly dwarfed by these beautiful gargantuan. Their wings were so long they had to double fold them on their back for management. Up to eight varieties of the smaller albatross can also be found along with petrels, shearwater, penguins and shags.

I next came across a group of kids during a school field trip, who were snorkeling with resident seals. What a treat to be able to learn about your marine neighbors as the classroom is brought to the ocean! It was also fun to watch young kids get their first cold water experience and encounter groups of young playful pups at the same time. I couldn’t tell who was having more fun! Dive Kaikoura who took me out for a dive in the kelp in a cove not far from the harbor. During the ride out (all of about ten minutes) the dive master explained they use about ten regular sites in the area, all within an hours ride. Most of their customers are divers who want to do one to three dives in a day and if they fly in, all of the equipment is provided, including wetsuits.

Upon entering the water in a sheltered cove, a gentle surge pulled at me, but disappeared around eight meters (25 feet). Wide-eyed fur seals curiously watched from the distance and submerged when I did. The boulders below were draped with lavender and purple algae and speckled with the base structures under the kelp. Glimpses of colorful invertebrate life appeared as the surge revealed its treasure of life. Several fur seals zoomed by to check out my buddy and I.

New Zealand

CLOCKWISE FROM LEFT: Snorkeling field trip at Kaikoura; Albatross encounter; Pink Jewel anemone; Furs seal hunting

Before long we were both enthralled with the wreckage of an old sailboat. Realizing the seals had lost their hide-and-go-seek partners, they both began to follow us, becoming our shadows. The four of us stayed together for most of the dive and even ventured over to the deeper parts of the cove where the current became more noticeable. The bottom quickly dropped to 18 meters (50 feet) and continued down. My buddy, the seals and I just peered down the bank into the dark abyss and decided this wasn’t the day to push our luck. Perhaps another day with double tanks and trimix…

Afterthoughts

Soon it was time for me to depart this wonderland in the Southern Hemisphere, I found New Zealand to be a place requiring several two to four-week visits to gather enough experiences of what this land was all about. I still want to paddle some coastal lands, see volcanoes, traverse a few mountains, go rock climbing, try sand surfing on the dunes and explore the southern part of South Island. Rafting through ice caves, exploring fresh water crystal springs and visiting Milford Sound are all on my list for a return holiday one day.

Barb Roy is a dive writer and underwater photographer based in Canada. Visit: www.barbroyphotography.com
History
In about A.D. 800, the Polynesian Maori reached New Zealand. Their chieftains signed a compact with Britain in 1840, the Treaty of Waitangi, in which they ceded sovereignty to Queen Victoria while keeping territorial rights. The British started the first organized colonial settlement in that same year. Between 1843 and 1872, a series of land wars resolved with the defeat of the native peoples. In 1907, the British colony of New Zealand became an independent dominion and supported the British militarily in World War I and II. By the 1980s, New Zealand’s full participation in a number of defense alliances ended. Recently, the government has looked into addressing longstanding Maori grievances. Government: parliamentary democracy. Capital: Wellington.

Geography
New Zealand is made up of several islands located in Oceania, in the South Pacific Ocean southeast of Australia. Coastline: 15,134 km. Terrain: New Zealand is predominantly mountainous with some expanses of coastal plains. Lowest point: Pacific Ocean 0 m. Highest point: Aoraki-Mount Cook 3,754 m. Natural resources: natural gas, iron ore, sand, coal, timber, hydropower, gold, limestone. Natural hazards: mild earthquakes and volcanic activity. Environmental issues: invasive species have hit native flora and fauna hard; deforestation; soil erosion; New Zealand is party to international agreements such as Antarctic-Environmental Protocol, Antarctic-Marine Living Resources, Antarctic Treaty, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Tropical Timber 94, Wetlands, Whaling, Agreements which New Zealand has signed but are not yet ratified include Antarctic Seals, Marine Life Conservation.

Economy
Over the past 20 years, the New Zealand government has helped industrialize, free market economy dependent on concessionary British market access to a more international, middle class, mixed ethnicity 7.8%, unspecified ethnicity 3.6% (2001 census). Religion: Anglican 14.9%, Roman Catholic 12.4%, Presbyterian 10.9%, Methodist 2.9%, Pentecostal 1.7%, Baptist 1.3%, other Christian religions 9.4%, other religions 3.3% (2001 census).

Currency
New Zealand dollar (NZD). Exchange rates: 1 USD=1.43 NZD, 1 EUR=1.89 NZD, 1 GBP=2.8 NZD, 1 SGD=94 NZD, 1 AUD=1.13 NZD.

Language
English (official), Maori (official), Sign Language (official). Religion: Anglican 14.9%, Roman Catholic 12.4%, Presbyterian 10.9%, Methodist 2.9%, Pentecostal 1.7%, Baptist 1.3%, other Christian religions 9.4%, other 3.3%, unspecified 17.2%, none 26% (2001 census).

Climate
New Zealand climate is temperate. There are sharp contrasts within regions.

Population
4,076,140 (July 2006 est.). Cities hold about 80% of the population: Wellington is the most southern national capital in the world. Ethnic groups: European 69.8%, Maori 7.9%, Asian 5.7%, Pacific Islander 4.4%, others 0.5%, mixed ethnicity 7.8%, unspecified ethnicity 3.6% (2001 census). Religion: Anglican 14.9%, Roman Catholic 12.4%, Presbyterian 10.9%, Methodist 2.9%, Pentecostal 1.7%, Baptist 1.3%, other Christian religions 9.4%, other religions 3.3% (2001 census).

Decompression Chamber
24/7 Diver Emergency Service 0800 4 DES 111 (0800 4 337 111) Navy Hospital Slark Hyperbaric Unit 91 Calliope Road, Devonport, Aukland +64 9 445 5922 or 445 5920 www.nzhyperbaric.mil.nz
**Shark Sinks Boat**

*In what can only be described as a scene from *Jaws*, a shrimping boat operating off the west coast of Florida was attacked and sunk by a pack of Bull sharks.*

The shrimping boat’s captain, Rodger Schmall, said that for four days they came under sustained attack by the Bull sharks who repeatedly rammed his ship’s hull before one very large 14-foot individual disabled the boat’s tail shaft, leaving his ship, the Christy Nichole, disabled and adrift 100 miles off the Florida coast.

Schmall radioed in for help and some two hours later his crew were picked up, though Schmall remained on board to pump water out while another vessel remained on board to pump water out while another vessel towed him back to land. All went well for the first two hours, but unfortunately for Schmall, the high seas got the better of him, and his ship the Christy Nichole sunk to the sea floor.

Sharks and shrimping boats regularly cross paths in the open ocean as the shrimpers collect their unwanted by-catch and throw them back into the ocean. The sharks then move in for an easy meal. For sharks to bump and investigate a fishing boat, its metal running gears, or any metal object near or within the water is common, and any investigations are short lived. To have a boat the size of the Christy Nichole damaged to the point of sinking is a very rare occurrence.

**Cupid, Sweet Pea and Sam, Gil and Scooter**

Cupid’s on overtime at the “Swimming with Sharks” exhibit at the Newport Aquarium, and looks like he is going to be busy. Newport Aquarium has acquired a very rare male Shark Ray and hopes that its resident female Shark Ray, aptly named Sweet Pea, will mate producing offspring for this nearly endangered species. “We’re hoping for a love connection right here in the tank,” said Jill Isaacs, the aquarium’s spokeswoman.

A competition, “Name the Shark”, to be held, will determine the new arrival’s name, which will be ‘Sam’, ‘Gil’, or ‘Scooter’.

On-going concern for this species’ survival has meant an unfortunate listing on the World Conservation Union’s Red List of Threatened Species, so no pressure on the new chap to perform! Mating is still a mystery due to the horn-like ridges on their neck, back, and dorsal fin. Scientists believe the fish copulate with the female carrying any offspring inside, unlike most fish who lay eggs for the male to swim past and fertilise. The program is scheduled to last 12 years so good luck Sweet Pea, Sam, Gil, and Scooter!

Meanwhile the Monterey Bay Aquarium has done it again. A male Great White Shark measuring in at six feet five inches and weighing in at 171 pounds was successfully housed at the centre for 137 days in the Outer Bay exhibit. Living alongside sea turtles, tunas and other sharks prior to being released back into the open ocean.

Since 2002 the aquarium has received ten Great White Sharks, five died, two were released from holding facility and one escaped. These ambassador sharks have helped increase attendance numbers at the aquarium by up to 30%. The aquarium has said that displaying the sharks has helped raise interest in their education, awareness and conservation programs. Increased attendance figures have also helped fund the aquarium’s tag and release programs too.

**Call to Cull Bull Sharks**

In a world of climate change, destruction of the oceans ecosystems and all the animals that reside within its realm, the further depletion of natural non-renewable energy is faster than we can come up with clean alternatives.

Bull sharks are subject to a distasteful fishing tournament. You just would not think man could fall any lower or be more arrogant and obtuse. I regret we have reached that point.

The Bull shark fishing “Classic Tournament” will be held as an annual tourist attraction on Australia’s Gold Coast. The aim is to lure tourists to this area and help clean out these so-called man-eaters from the canals and waterways that ring this coastline. This shark hunt will be held annually. Ms Bristow said she would target recreational fisherman from the U.S. and Japan.

“There is a big market out there,” she stated. “We will be tagging the sharks. There will no doubt be some that die from the struggle”. The tournament will be run from behind the Marriott Resort and follow the Nerang River.

Ms Bristow said she hoped the competition would be up and running by March 2007. “Hopefully in four weeks it will be confirmed. There are way too many Bull sharks in the water and this concept will help to monitor how bad the problem is,” she said in an interview in February 2007.

This competition is even more distasteful in light of a recent press release from IUCN. Their latest findings reflect that even the fastest, widest ranging sharks are now threatened by over fishing as yet more species are added to the IUCN Red List of Threatened Species. With an estimated 100 million sharks killed each year, either deliberately or as by-catch, and with confirmed shark attacks on man at an all time low according to George Burgess, director at the International Shark Attack file at the University of Florida.

This would make the fatality ratio one human to every 10 million sharks, according to some conservationists. That is for every tragic loss of human life in the oceans due to a shark attack, 10 million sharks will die by our actions.

If only more people could follow Toomey’s cartoon sticker which featured a kindly looking shark saying, “Please help protect my pal, the endangered Sawfish,” the unprecedented response was so overwhelming that this helped list the Sawfish as endangered in 2003.
Adobe Photoshop for Underwater Photographers
by Jack and Sue Drafahl
Paperback: 224 pages
Publisher: Amhurst Media, US
ISBN: 1584281898
Featuring 100 photos and 120 screenshots, this handbook walks users through the steps of correcting imperfect underwater images. Featuring tips on hardware, monitor calibration, and room lighting, the guide also offers step-by-step instructions on how to group underwater images for editing; approach corrections for images that require a multi-step enhancement process; and choose the right output options for printed images, video, slide shows, and Web viewing. The book isn’t a Photoshop tutorial, though, so if you’re completely unfamiliar with that software, you may need to obtain a primer on that first. The book is available through the Drafahl’s website www.jackandsuedrafahl.com for $35 (signed). Also at Amazon.co.uk for £15.99.

Scapa Flow Dive Guide
by Lawson, Wood
Paperback: 176 pages
Publisher: AquaPress
ISBN: 1905492049
A brand new dive guide to scapa flow, featuring 3D wreck scans, highly detailed full colour maps of all locations, full colour world class photography throughout, and previously unseen archive material. The most comprehensive guide to diving the reefs and wrecks of Scapa Flow, Scapa Flow has international acclaim as one of the top five wreck diving locations in the world and has more diveable wreckage than any other area in Europe. The shipwrecks are a mixture of battleships, cruisers and destroyers from the German high seas battle fleet scuttled towards the end of WWI and the direct actions of the British Admiralty which sank a further 43 ships during both world conflicts to block the entrances to Scapa Flow. Available from Amazon.co.uk for £15.99.

Deep Sea
IMAX film
Octopuses and squids, 14-foot sharks and 10-inch shrimp swim across the screen in this new IMAX film. The movie gives viewers an intimate look at the life of exotic, colourful and dangerous creatures of the deep. Deep Sea, narrated by Kate Winslet and Johnny Depp, brings viewers to the bottom of the world’s oceans to observe the lives and habits of many aquatic species. The movie shows how the species interact with and depend on each other. Many scenes, for instance, show small fish “cleaning” the skin of bigger fish with their mouths, and one scene shows reef fish nibbling algae off a sea turtle’s shell. Amazon.com $20.99.

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The Underwater Photographer Digital and Traditional Techniques
by Martin Edge
Paperback: 408 pages
Publisher: Focal Press
ISBN: 0240519884
Martin Edge has produced the third edition of his classic book. While he provides the basics for beginning photographers, he delves deeply into the digital revolution, helping even the skilled underwater shooter better use his LCD screen, read histograms, or, if one wants to shoot manually, use exposure modes and solve metering, focusing and TTL issues. Edge accompanies hundreds of his own issues with description of his technique and mechanics. A great teaching tool. Amazon.com $26.37 or Amazon.co.uk at £23.74.
Deep-Sea Books
—recommendations for children

**The Deep-Sea Floor**
by Sneed B., III Collard
Paperback: 32 pages
Publisher: Charlesbridge Publishing
ISBN: 1570914036

Text that is accessible for even young children. The illustrations by Wenzel help children visualise the environment.

Amazon.co.uk £7.95, Amazon.co.uk £3.60

**Diving To A Deep-Sea Volcano**
by Kenneth Mallory.
Hardcover: 60 pages
Publisher: Houghton Mifflin Company
ISBN: 0618332057

It has great photographs and follows Richard Lutz, a deep-sea biologist, as he explores hydrothermal vents.

Amazon.com $13.26 or Amazon.co.uk £7.79

**Beneath Blue Waters**
by Deborah et al Kovacs
Hardcover: 64 pages
Publisher: Viking Children’s Books
ISBN: 0670856533

It has excellent photographs several of organisms not yet named.

Amazon.com or Amazon.co.uk £2.57

**Kira’s Undersea Garden**
By Verena Tunnicliffe
Paperback: 28 pages
Publisher: Trafford Publishing
ISBN: 1412014999

This is about a spider crab that lives at hydrothermal. Available at Amazon.co.uk at £9.49

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**GEO (Global Environmental Outlook) Year Book 2007**
New United Nations Report
Paperback: 88 pages

The new GEO Year Book notes that climate change may aggravate the fishery situation by increasing the acidity of oceans and seas and bleaching coral reefs, important nurseries for fish, and one management technique for countering the collapse includes a dramatic expansion of marine protected areas.

Written to inform the debate being held by Environment Ministers attending UNEP’s 24th Governing Council/Global Ministerial Environment Forum in Nairobi, Kenya, it stresses that the pace at which new marine reserves are being listed means the goal will be achieved three decades after the collapse of today’s commercial fisheries.

The Year Book outlines a range of options to steer globalization onto a more intelligent, environmentally, economically responsible and sustainable course if more widely deployed, and acknowledges the importance of responsible business and the power of consumerism to direct globalization. Price: USD 20.00. Can be ordered form Earthprint.com

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**Whales, Whaling, and Ocean Ecosystems**
By James A Estes, Editor, and others
Hardcover: 418 pages
Publisher: University of California Press
ISBN: 0520248848

This new book resulted from a workshop on whaling and whale ecology organized by Estes and his co-editors and held in Santa Cruz in 2003. It explores an aspect of whale ecology that until now has received surprisingly little attention. Focusing on the role of whales in ocean ecosystems, the book looks at the effects of industrial whaling in terms of its ecological impact on the world’s oceans.

Whales are the largest animals on the planet, and they are such impressive creatures that our interest in them has tended to focus on the whales themselves rather than on the roles they play in the marine environment. But their large body sizes and high metabolic rates make them important players in ocean food webs, and they are found throughout the world’s oceans.

This question has important implications for the conservation and management of the great whales. Management strategies must be considered not only in terms of their effects on the sustainability of whale populations, but also in terms of how they will affect the broader ocean ecosystems in which whales are key players. Many of the questions raised at the workshop remain unresolved, but the book provides a wealth of information for anyone interested in these issues. Estes can be contacted at (831) 459-2820 or jestes@ucsc.edu.

Price: $46.26 Amazon.co.uk £34.15
Ocean Odyssey—The life of an 80-year-old 45-ton bull sperm whale
Format: PAL
Region: This DVD may not be viewable outside Europe
Run Time: 116 minutes
From the BBC makers of the Walking With... series comes an enthralling exploration of Earth’s final frontier seen through the eyes of its greatest inhabitant and the world’s largest predator, the sperm whale. Following a young male from infancy to old age, the oceanscape comes vividly to life; the impossibly deep canyons, the underwater volcanoes, and the spectacular mountain ranges. This DVD, which is divided into two episodes, takes the audience from the time the whale is born until it reaches the end of its adulthood. Along the way, the audience is able to see the other creatures that make up the world beneath the waves: learn about what a struggle it is for the bull sperm whale to survive; and explore the ocean’s floor as the whale travels on a never-ending quest for food. Amazon.co.uk £16.99 or Amazon.co.uk £10.48

Census of Marine Life in Print
CReefs researcher Philippe Bouchet of the French National Museum of Natural History authored a chapter in The Exploration of Marine Biodiversity, published by Fundación BBVA (www.fbbva.es). Philippe reviews the global magnitude of marine biodiversity, including the current accelerated rate of species discovery. CReefs researchers Eva Ramírez-Llodra and David Billett also authored a chapter in this book about deep-sea ecosystems, which featured the innovative work being done by the Census’ projects CReefs, COMARGE, MAR-ECO, CeDAMar and OBIS. Scientific Steering Committee member Victor Gallardo also was the author of a chapter on marine biodiversity, which is in The Biodiversity of Chile, released by the Chilean publisher Conama. For further information go to www.conama.cl

New downloadable game
Diver: Deep Water Adventures - Trial-Version
Free high-speed download! Go to www.4players.de and then just click on Diver: Deep Water Adventures installation executable and follow onscreen instructions. The game is a bright mixture of 3-dimensional strategy and first person adventure drive. But first you’ll need to pass a training course to obtain the professional diver certificate. A great experience is waiting for you along with the captivating assignments, which won’t let you be distracted even for a single minute. Did you dream of photographing the mysterious Loch Ness monster? Or to fight a gigantic white shark in a deadly battle and become the winner? The underwater world is full of danger. It’s very easy to lose your life. Minimal recommended system requirements: Operational system Windows 98/ME/2000/XP, CPU PIII 800 MHz Pentium IV 1600MHz, RAM 128MB 256MB, DVD-ROM drive 8X speed 8X speed. Free high-speed download! Go to www.4players.de and then just click on Diver: Deep Water Adventures installation executable and follow onscreen instructions. The game is a bright mixture of 3-dimensional strategy and first person adventure drive. But first you’ll need to pass a training course to obtain the professional diver certificate. A great experience is waiting for you along with the captivating assignments, which won’t let you be distracted even for a single minute. Did you dream of photographing the mysterious Loch Ness monster? Or to fight a gigantic white shark in a deadly battle and become the winner? The underwater world is full of danger. It’s very easy to lose your life. Minimal recommended system requirements: Operational system Windows 98/ME/2000/XP, CPU PIII 800 MHz Pentium IV 1600MHz, RAM 128MB 256MB, DVD-ROM drive 8X speed 8X speed.

Say no to shark-fin soup
South Africa’s Great White Shark
by Tom Peschak
ISBN: 1770073825
Tom Peschak, marine biologist, author and award-winning underwater photographer, hopes his photography will help protect sharks. His most recent book is South Africa’s Great White Shark, co-authored with Michael Scholl. He is now working on another shark book with local marine biologist Alisson Kock and Scotland’s Jenna Cains. This one entails photographing all 50 species of shark off the coast of Africa. The book will be aimed at a wide audience, at researchers, shark enthusiasts, surfers, and the tourism industry. There has been a lot of really good science done on sharks by South African scientists, but ‘very little of it is behavioural work. Because obviously it is very difficult to observe sharks.

These won’t be scientific papers, but will be in a very accessible style, that will be of as much interest to scientists as to surfers. This 96-page paperback is available from Amazon.co.uk at £7.25

Deep—Fishlabs’ latest 3D Mobile Game, the beta version of Deep in Deep, players immerse into a world of exotic submarine life forms, in service of the Colonial Navy. The player makes his or her way underwater with various tasks like exploitation of resources and production of new goods but also military missions. While exploring the vivid and fascinating underwater world in a high-tech submarine the player will meet other parties with different interests on the water planet. The ongoing conflicts between the Colonial Navy, rebels, pirates and a mysterious marine species will pull the gamer between the lines. Deep is based on Fishlabs’ mobile games engine AMY3.2 and is scheduled for Q2 this year supporting a broad range of 3D Java handsets. For more information visit www.fishlabs.net.

Free download
Diver: Deep Water Adventures - Trial-Version
Free high-speed download! Go to www.4players.de and then just click on Diver: Deep Water Adventures installation executable and follow onscreen instructions.
Most of the articles one can find about rebreathers deal with potential problems and limits of these wonderful pieces of kit. They give extensive information about oxygen sensors, scrubber duration, electronics and any of the risks associated with this kind of equipment. Becoming proficient with the emergency procedures is a very important component of training and experience. But an aspect that is sometimes a little bit overlooked is how to properly dive with a rebreather.

Text and photos by Cedric Verdier
Additional b/w photos by Peter Symes
They swim as gracefully as a grasshopper with a portable fridge strapped on its back and a vacuum cleaner around its head. They swim as gracefully as a grasshopper with a portable fridge strapped on its back and a vacuum cleaner around its head. They swim as gracefully as a grasshopper with a portable fridge strapped on its back and a vacuum cleaner around its head. They swim as gracefully as a grasshopper with a portable fridge strapped on its back and a vacuum cleaner around its head.

Unfortunately even some experienced rebreather divers are not comfortable and efficient with their rig. Their equipment is a mess and you hardly see their face underwater. They swim as a grasshopper with a portable fridge strapped on its back and a vacuum cleaner around its head.

**Being Streamlined With a Rebreather**

Very often, one can see a lot of rebreather divers who don’t move in a very efficient way. They swim in a strange position, closer to the seahorse than to the manta ray. They spend a lot of energy fighting against the increased density of water, adding drag and turbulence to the necessary energy one has to spend for their propulsion.

In one of his articles, Jarrod Jablonski states: “Resistance increases as the square of velocity. The energy required to overcome this resistance increases approximately as the cube of the initial energy required. What this means is that if one doubles the surface area of something, this results in a resistance that is four times the original resistance; in turn, this requires an increase in energy nearly sixteen times as great to offset the increase in resistance.”

It simply means that a rebreather diver (and all divers in general) should work to reduce their surface area. An article published in DIVE Magazine a few years ago shown that lots of drag were simply created by hoses and danglies not as close as they should be to the diver’s body. The gas consumption of a CCR diver is directly proportional to their level of exertion. Using more O₂ to move underwater means having a shorter dive time and a higher CO₂ production. Both factors are counterproductive for a rebreather diver who wants to get all the benefits of using such a complex piece of equipment.

**Configuration and danglies**

Most of the time, rebreathers look very bulky and messy. The technical rebreather diver has lots of hose and cable on their chest and their arms. Additional sling tanks and poor configuration don’t help to avoid the now popular astronaut-like image of the rebreather diver. It’s maybe satisfying to show that we can manage to dive with heavy and obviously very complicated equipment, but it’s definitely not streamlined and efficient.

**Handsets**

Most of the CCRs have one or two handsets that are attached to the diver’s forearm. A highly inelegant cable is connected to the electronics, most of the time on top of the canister or the housing on the back of the rebreather.

A rebreather diver (and all divers in general) should work to reduce their surface area.

Each rebreather diver should have someone else taking pictures or video of their configuration to see how poorly streamlined these handsets are. A better routing and maybe a check cord loop at the appropriate location should help to keep the cables close to the body in any position (not only in a vertical position in front of a mirror!).

**SPG and LP hoses**

In a similar way, a rebreather is full of hoses pointing downward or bulging out when the diver swims horizontally. Shortening the hoses is of prime importance if you want to have a better configuration. And of course, unnecessary hoses and components are like pimples on a fashion-model’s face: they should be immediately removed!

**Counterlung placement**

With a Rebreather... Each rebreather diver (and all divers in general) should work to reduce their surface area.

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The sling tank is clearly too low!!!

of the time, not true. They are maybe horizontal when they swim but slowly (or quickly) come back to a more vertical position as soon as they stop swimming. With a balanced rig you can stop close to the bottom and stay horizontal even while doing a specific and difficult task (tying some knots on a guideline, adjusting some settings on a camera/dive computer, helping another diver, etc). A balanced rebreather is sometimes quite difficult to achieve because most of the units have the heavy components on the bottom (valves, regs, etc) and the buoyant components on the top (counter-lungs, wings, etc).

The first step is to work on the rebreather configuration:

Cylinder and regs: Some rebreathers have the option to de-invert the tanks in order to shift some weight on top of the unit.

Trim weight: The rebreathers with a case don’t have a lot of flexibility for their configuration. A trim weight can then be added on top of the unit to offset the unbalance.

Wing and backplate: A short wing with more lift on the bottom than on the top is clearly a useful tool for a better trim. Counterlungs: the position of the CLs is obviously important but their size is also another factor to consider. A smaller volume and less gas (optimal loop volume) help to reduce the uplift component of the vertical vector.

Then the second step is to see how the rest of the dive gear will interact with the rebreather.

Dry or wet suit: a dry suit generally gives a better trim as it provides the diver with some additional buoyancy on the legs. It’s most of the time not the case with a wetsuit (specially at depth with the suit compression). Other equipments like pockets or heavy fins (ie JetFins) have also to be considered.

The sling tank is clearly too low!!!

Scubapro’s JetFin is a classic favoured by many, but it is weighty

Additional equipment: Most of the time, a rebreather diver will carry other pieces of gear like sling tanks and canister lights. The buoyancy characteristics of the tanks (full or empty) and the lights have to be thoroughly checked as they can easily ruin a good trim so difficult to achieve! Ask a friend who has a camera to spend some time with you underwater. Then, back to land, have some fun discovering what you actually look like. Spot all the danglies. Check what could be more streamlined. Go back diving and repeat the process till you become frozen. To speed up this process, a friend of mine even uses a big mirror in his pool. You directly see what could be adjusted and immediately try! Like a dancer in a ballroom.

Mastering Buoyancy Control with a Rebreather

So, let’s assume that the trim is now a problem of the past. The next step is Buoyancy.

Buoyancy control is an essential element of diving proficiency; it is also one of the hardest skills to master, especially with a rebreather. You have to control the gas in the wing, the dry suit, the breathing loop. You have to take into account the suit compression at depth, the buoyancy characteristics of the tanks when empty. Additional equipment: Most of the time, a rebreather diver will carry other pieces of gear like sling tanks and canister lights. The buoyancy characteristics of the tanks (full or empty) and the lights have to be thoroughly checked as they can easily ruin a good trim so difficult to achieve! Ask a friend who has a camera to spend some time with you underwater. Then, back to land, have some fun discovering what you actually look like. Spot all the danglies. Check what could be more streamlined. Go back diving and repeat the process till you become frozen. To speed up this process, a friend of mine even uses a big mirror in his pool. You directly see what could be adjusted and immediately try! Like a dancer in a ballroom.

Scubapro’s Jetfin is a classic favoured by many, but it is weighty.

You may not be diving the Britannic, doing extended penetrations in Italian caves or following photographer Norbert Wu under the Antarctic ice just yet, but you might find it reassuring to know that your VR computer has already been there and performed perfectly!!!
at the end of the dive, the effect of oxygen automatic injection when you’re in the shallows, the gas you loose from the loop when you clear your mask or equalize your ears. So many elements! Few diving skills are so essential, and yet so underemphasized by the rebreather diving community. Buoyancy control can be divided into three different phases:

Buoyancy control at constant depth:

O2 injection. It might be done manually or with the help of a solenoid valve or a KISS valve. In all cases, oxygen level is kept pretty much constant in the breathing loop and that directly affects buoyancy.

Optimal Loop Volume. A rebreather diver should have enough gas to comfortably breathe from their loop. If more than a deep breath is possible, it means that there’s too much gas in the breathing loop. And too much gas means more O2 injection to maintain a constant pO2.

Buoyancy control during descent:

Positive buoyancy:
Manual/ADV Diluent injection
O2 injection (KISS valve/solenoid/manual injection)
Wing inflation
Dry suit inflation

Negative buoyancy:
Lead weights
Gas compression
Suit compression
Gas lost during air space equalization and mask clearing

The idea is to go down slowly in order to manage the buoyancy properly. Most of the time, when you realize you start to ascend too fast, it’s already too late! Practicing some skills should help you to fine tune your buoyancy.

For all of them, do not use your hands to keep your balance or to maintain your depth. Relax and try to make as few movements as possible.

1) Float for a few minutes in a slightly head down position while remaining within 30cm off the bottom or of the starting depth if you’re practising in midwater (use a point of reference like a shot-line)
2) Switch from CCR to open circuit back and forth without changing depth
3) Manually fly your rebreather without changing depth
4) Remain horizontal and stationary, hovering over a fixed point while focusing on another task (like scrolling down the menu of your computer or your handset)
Buoyancy control during ascent:
When it comes to buoyancy control during the ascent, rebreather divers have often more problems than their OC colleagues. So many air spaces expand during the ascent that a lot of rebreather accidents are caused by uncontrolled ascent. Starting the ascent with only a small amount of gas in the loop/dry suit/wing definitely helps this kind of ballistic event. Here are some other skills:

Perform an ascent in a horizontal position. The proper positioning of the rebreather OPV (Over-Pressure Valve) is quite important. The alternative is to exhale off the loop to keep the loop volume constant, despite the O₂ injection (manual or automatic) during the ascent. In this position, venting the wing should be done with the dump valve on the bottom of the wing, instead of the corrugated hose that requires the diver to be more vertical. Some skills that might be helpful to practise:
1) Slow ascent with manual O₂ injection only
2) Same ascent but eyes closed (shallow depth)
3) Slow ascent and simulated stops on Semi-Closed Rebreather mode.
4) Slow ascent on Open Circuit (buoyancy control of an expending breathing loop)
5) Slow ascent with all the bail-out tanks nearly empty. Simulated stops with tank exchange with a team-mate could also be a useful skill to practice.
6) Slow ascent and stop at any predetermined depth, using only manual O₂ injection to maintain your pO₂.

Don’t cheat! If your rebreather has an ADV, don’t shut it off and don’t turn the diluent tank valve off. You have to learn how much gas you have to vent without completely emptying the loop.

Mastering Propulsion Techniques
Now you’re not only horizontal underwater, perfectly balanced at all time, but you’re also motionless exactly at the depth you want to stay. Just add various efficient kicking techniques, and you’ll be able to move in any direction with the least amount of energy (a.k.a. oxygen consumption). You’ll be comfortable and efficient (less stress and drag). There are a variety of propulsion techniques available to divers. The experienced diver alternates between different types of kicks to reduce muscle cramping and to meet the demands of various diving environments.

Alternate kicks
First, by alternating between kicking styles they allow themselves to rest certain muscles by using others. Second, by varying a kicking style, an experienced diver can adjust their propulsion technique to the demands of a particular environment; by switching from a frog kick to a modified flutter, the diver can minimize silting in a low and silty area where the full movement of a frog kick is restricted by some walls or rocks. Those of you who regularly dive in silty or overhead environments might be concerned about reductions in visibility. A loss of visibility can substantially impact both individual and team safety. To avoid the likelihood of reduced visibility, trim has the utmost impact. With a proper, feet-up swimming profile and reasonable buoyancy control a good diver can safely travel in wrecks and cave passages that are particularly susceptible to diver movement. As exhaust bubbles and percolation are normally not a concern with rebreather divers, the main culprits of reduced visibility are errant fin kicks, erratic hand movements and poor trim.

Modified flutter kick
Instead of the strong flutter kick used by recreational divers (great deal of power but also significant downward turbulence), the modified flutter kick is based on bent knees and kicks from the knee, directing the water upward. In extremely silted areas, the modified flutter kick can also be done only with their ankles.

Frog Kick
Commonly used by cave and technical divers, the frog kick eliminates the vertical component of a flutter kick. As the modified flutter kick is not really powerful, it cannot be used in high flow conditions or for very long periods of time. Therefore, as the frog kick directs the water up and back rather than down, some divers use it most of the time.
Some skills to fine-tune your propulsion techniques:
- Alternate between frog kick and modified flutter kick.
- Swim within 30cm from the bottom in a silty area.
- While hovering horizontally, turn your body 360 degrees in each direction using only your legs (no hand movement).
- While floating horizontally, back up slowly while using only your legs (no hand movement).

So, it's all about comfort!
When rebreather divers discuss with open circuit divers, they always talk about the benefits of diving their favourite unit. Some speak about silence, lack of bubbles, low gas consumption, warmth of the inhaled gas, etc. However, one of the main benefits of open circuit SCUBA is obviously its simplicity, especially when it comes to buoyancy control and trim. Compared to a rebreather diver, an experienced OC diver will more easily be comfortable with their rig.

Why?
Because most of the rebreather divers don’t really work on their comfort, their trim, their balance, their streamliness, their propulsion or their buoyancy. It takes more time and it’s often more difficult to achieve than in OC. But it’s like many things in diving. It’s worth the extra work. I don’t know any rebreather who never had the feeling that their unit was cumbersome and that their trim didn’t need to be improved. Being comfortable is a way to better enjoy the dive, but it’s also a critical component of safety!

Finally, a GOOD reason for scuba tanks to be heavy
In April 2004, Charles Everett Coma of Olympia, Washington, robbed a bank. Wearing a wetsuit under his clothes, Coma’s getaway plan involved rushing to the local pier, diving into Puget Sound and swimming away. However, Coma must’ve forgotten how cumbersome scuba tanks were, because police tackled him before he was able to enter the water.

After recovering $6000 and a rifle from the scene, last month, a federal court sentenced Coma to 16 years in prison. Wow. That’s one looooooong face interval.

SOURCE: WWW.KGW.COM

Some skills to fine-tune your propulsion techniques:
- Alternate between frog kick and modified flutter kick.
- Swim within 30cm from the bottom in a silty area.
- While hovering horizontally, turn your body 360 degrees in each direction using only your legs (no hand movement).
- While floating horizontally, back up slowly while using only your legs (no hand movement).

So, it’s all about comfort!
When rebreather divers discuss with open circuit divers, they always talk about the benefits of diving their favourite unit. Some speak about silence, lack of bubbles, low gas consumption, warmth of the inhaled gas, etc. However, one of the main benefits of open circuit SCUBA is obviously its simplicity, especially when it comes to buoyancy control and trim. Compared to a rebreather diver, an experienced OC diver will more easily be comfortable with their rig.

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SOURCE: WWW.KGW.COM
Why Shoot Video?

In the past we’ve focused on teaching you about underwater still photography, including (amongst other topics) equipment, locations and techniques. In the next few issues, we’re going to be diversifying a little, with a series of articles about underwater video.

As with any topic, there are various degrees of understanding to underwater video. For now, we’re going to be concentrating on helping you get to grips with the basics, and we’ll be breaking it down into small digestible topics, which will include:

- Equipment (camera’s and housings, planning a trip or shoot)
- Lighting and Colour (underwater lights, white balancing, using filters)
- Technique (diving for underwater video, camera movements)
- Post processing (capturing, editing, colour correction, sharing)

In this first article, we’re going to look at some general video theory, including:

- Why shoot video?
- Formats
- Frame rates
- Progressive or interlaced?
- Aspect ratios

Why Shoot Video?

People have different reasons for first taking a video camera underwater. Some divers turn to video in an effort to generally rejuvenate their interests in diving. Once you have a camera in your hands, the quietest of dive sites can become a haven, you can spend an entire dive waiting to capture a certain fish species, or rare behaviour.

For others, it can be out of necessity. Many resort or live-aboard dive guides shoot holiday videos for guests to supplement income. Commercial divers regularly use video camera cameras for inspection work, to show a client a progress or damage to an underwater construction.

There’s also the obvious application of professional filming work for documentaries and feature films. A select few individuals specialize in high definition and large format film work, creating ‘blue-chip’ documentaries for broadcast and theatre release. The majority of divers however simply shoot for fun, and to share their underwater experiences. Thanks to technological advances, it’s now easier than ever to successfully shoot, edit and share your videos.

Cameras are simultaneously getting cheaper and better, and the technology surrounding underwater housings and lighting systems is also helping us to achieve consistently better results. Many computers now come with video editing software such as iMovie, which allow you to easily put together basic movies. You can also buy consumer version’s of professional software packages such as Final Cut Pro, these provide an end to end software solution, allowing you to capture footage from your video tape, edit and output to a variety of different formats.

Sharing your videos is now also easier than ever. With the advent of websites such as youtube, you can share your videos with friends and family, or create podcasts for people to subscribe to and regularly download. After taking all this into account, there really seems that there’s never been a better time to get into underwater video.

Formats

There’s a number different video formats available these days. We only really need to look at a couple, DV and HDV. Other formats...
DV has been a popular format for a long time now, and is still very popular today. The cameras are still available to buy, as are the housings and other support equipment, but the advent of a newer, better format has taken DV’s place as the most common video format in use.

Roughly three years ago, Sony released their first HDV camera. Since this time, the HDV format—which was created by a consortium of manufacturers including Sony, Canon, Sharp and JVC—has gained tremendous popularity. Many production companies and networks have adopted the format for a variety of uses. Often times, to save costs, a production may consist of a mixture of true High Def material alongside HDV material, the picture quality is that good. Even though it's been adopted by major industry players, don’t think that HDV is for professionals only. Many different manufacturers produce HDV cameras, and there are models available for as little as $1000, which produce stunning results. More and more cameras become available, some of which even have switchable frame rates, or can be switched between progressive or interlaced modes. Both DV and HDV use the same storage medium—mini-DV video cassette tapes.

FPS, Frames per Second
The number of images that a video camera records in a second is known as the ‘frame rate’. In order to trick the eye into seeing movement rather than a series of still images, a minimum number of frames per second must be seen. Old mechanical cameras used to shoot frame rates as slow as six or eight fps, but modern, professional level cameras can shoot as much as 120fps, which can be used to show fast action in slow motion.

Different geographical regions use different frame rates, for example Europe, Asia and Australasia use 25fps, which is known as PAL. USA, Canada and Japan, etc., use NTSC or 29.97fps. Generally, you’ll only ever shoot the frame rate that is used in your country of residence.

Progressive or Interlaced?
Video cameras can record in either interlaced or progressive formats. Interlacing was created as a means to provide visual quality inside the limitations of narrow bandwidth for broadcast. When material is interlaced, every frame is divided into odd and even horizontal lines, and the two are scanned separately. Progressive, as it sounds, progressively scans each individual frame, in the same way that a film camera does. Many professional level video cameras can be set to record either progressive or interlaced. Oftentimes, people choose to shoot progressive...
as it gives a more filmic, cinematic look, as well as ensuring the maximum compatibility with old film stock. The ability to switch cameras in between interlaced and progressive formats is now filtering down into smaller, consumer level cameras.

Video format abbreviations often include an ‘i’ or ‘p’ to indicate interlaced or progressive recording: 50i, 60i, 24p etc. For some applications, including underwater and wildlife video work, interlaced formats can be more popular. Fast moving subjects, like the subjects we often encounter underwater are preserved better when using an interlaced format, but ultimately what you shoot is down to personal preference.

It’s important to look into the various frame rates and formats before you make decisions on purchasing equipment, make sure that the camera you’re looking at shoots’ the right format for the kind of work you plan to do.

**Aspect Ratio’s**

The term aspect ratio is used to describe the width and height of your video picture. The most common aspect ratios are 16 x 9 and 4 x 3. Traditional television screens are 4 x 3, but new high definition and ‘widescreen’ displays are 16 x 9. This is the same aspect as traditional 35mm film, and so has a more cinematic look and feel. 16 x 9, as a general rule is a more popular aspect ratio these days, one reason being that the human eye view’s a widescreen image more comfortably than a traditional 4 x 3 one. On a personal note, I find working in the 16 x 9 aspect ratio much more enjoyable.

It’s worth bearing in mind the final use of whatever footage you’re shooting. If you want to view it on your home TV system, then you’ll may be best going for 16 x 9, but if you exclusively want to view it on a personal device, such as an iPod, then the screen would be 4 x 3, if you shoot 16 x 9 then you’d either need to ‘letterbox’ your final movie, or adjust it in some other way when you edit it.

Hopefully now some of the jargon behind video cameras is a little clearer. In the next issue we’ll be looking closely at what cameras are available on the market today, what their advantages and disadvantages are. We’ll also look at some different types of housings, and what other equipment considerations you should take before you decide to get wet. ■

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16 x 9 and 4 x 3 are both popular aspect ratios. Here, you can see how the two differ, and how your frame can be used in different ways to compose your subject.

When material is interlaced, every frame is divided into odd and even horizontal lines, and the two are scanned separately. If progressive, each individual frame is scanned individually, like a film camera.

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Under the Blue 2007
International Underwater Photo and Video Competition

Over $20,000 in Prizes!

Next in the series of Underwater-Competition.com underwater photo and video competitions, and on the heels of the popular Our World Underwater and DEEP Indonesia competitions, popular underwater imagery websites Wetpixel and DivePhotoGuide have teamed up with the 2007 SCUBA Show to develop a competition for amateurs and hobbyists entitled “UNDER THE BLUE”. Winners will be announced online and exhibited at the 2007 SCUBA Show in Long Beach, California, June 2nd – 3rd. Deadline May 12, 2007.

Photographers will compete in four still image categories, including a category for images that focus on California’s unique and beautiful underwater environment, and one video category. Winners will share in more than $20,000 in prizes, including premium dive travel, and underwater photo and video equipment! Travel prizes include trips to some of the top photo destinations in the world including Fiji, Indonesia, Papua New Guinea, South Africa and Australia.

15% of entry proceeds will be donated to marine conservation efforts.

2007 CATEGORIES
1. Majesty of the Oceans
2. The Macro World
3. Man & the Sea
4. California Underwater
5. Video

www.UnderwaterCompetition.com

Sealux ultrawide for Sony HC1
The new fisheye port for Sealux’ HD1 Housing for Sony’s HC1 boast a 145° shooting angle and permits for a 6x zoom. It weighs in at 1500 gram, is rated at 90m and comes with a 2-year warranty. www.sealux.de

Canon Releases the EOS-1d Mark III Digital SLR

EOS-1D Mark III is the world’s fastest digital SLR camera. At 10 frames per second, the 10.1 megapixel EOS-1D Mark III digital SLR can fire huge motor-driven bursts of 110 Large JPEGs or 30 RAW files. The all-new 10.1 megapixel, APS-H size CMOS sensor which is designed and manufactured by Canon, is the most light-sensitive and innovative sensor that Canon has developed to date. A new microlens array and a more efficient pixel structure for ultra-low noise, resulting in exceptional image quality and an amazing ISO range of 100 to 3200 with extensions to ISO 50 and a highly usable ISO 6400.

WM 3.6 Colour monitor. The high-resolution Colour TFT-LCD monitor offers a sharp picture of 3.6” in 16:9 format that is rich in contrast. The housing is made from aluminium, hard anodised and specially coated for highest seawater resistance. Brightness: 250 cd/m² Contrast: 350:1 Video Input: PAL or NTSC Operation time: 4 hours Testing depth: 90 m. Guarantee: 2 years www.sealux.de

www.UnderwaterCompetition.com

Gates Light & Motion Amphibico Aquatica Sea & Sea Seatool Inon Ikelite and more!
Light & Motion has announced the Bluefin HC7, an underwater housing for the compact Sony HDR-HC7 HDV camcorder. The Bluefin HC7 will allow Manipulation of the camcorder’s touch screen menu to provide access to one-touch manual white balance, independent aperture and shutter speed control (a great feature of the HC7 camcorder), Tele Macro mode, and Smooth Slow Motion. Also standard on the Bluefin HC7 is Light & Motion’s signature Smart Grip Handles, an underwater microphone, flip-down color correction filter, and an all glass zoom through lens. Pricing has not yet been announced, but will likely be $3,099 USD.

www.fantasea.com

Housing includes a one-year free D.E.P.P flood insurance policy.

18-55mm Zoom Port included. Fully functional, allowing access to a housing for the new Nikon Fantasea must be the first with FD-40X Housing will be Available Soon Fantasea must be the first with a housing for the new Nikon D-40 and D-40X Cameras. housings come with standard 18-55mm Zoom Port included. Fully functional, allowing access to all essential control options. Depth rated to 60m/200 feet. The Housing includes a one-year free D.E.P.P flood policy insurance. www.fantasea.com

Photoshop CS3 is out Adobe announced Adobe Photoshop CS3 and Photoshop CS3 Extended, two editions of the professional industry standard for digital Imaging. Photoshop CS3 software is a major upgrade, offering new innovations in editing power and productivity for designers and photographers. www.adobe.com

Adobe Photoshop CS3 Adobe Photoshop CS3 Extended

Call for entries: ADEX Photographer of the Year Competition 2007

The categories for the ADEX Photographer of the Year Competition are Seascapes, Macro and Animal Behaviour. The final round of the competition will be judged “live” at ADEX 2007, where the judges, made up of distinguished underwater photographers, will give their scores and critiques. There will also be a Q&A session for participants to learn the finer points of successful underwater photography. For the top honour of “ADEX Photographer of The Year” the audience will cast their votes on the finalists selected from the three categories. Winners of any of the three categories stand a chance to win a SEACAM Nikon D50 housing!

How to Enter and Regulations

1. The ADEX PHOTOGRAPHER OF THE YEAR COMPETITION is owned by Suntec Integrated Media and managed by the Ocean Geographic team. The contest is open to all participants worldwide.

2. Participants must first register to compete with the competition application form (download) and submitted to APOTYC@underwaterartists.com; deadline for registration is 18 April 2997 – 1600 hrs GMT +7.

3. We will acknowledge your application via email within 24 hours, and we will advise you of your Competitor ID / entry number. We will also forward instructions on how to submit your images.

4. Submission by email only; Images must reach us by email 20 April 2007 – 1600 hrs GMT +7. We recommend you send registrations as soon as possible.

5. Images must have been taken in the wild, underwater, with a digital camera. Aquarium photos will not be judged. Over-under shots are permitted, but digital composites or montage are not. Images may not have been won in any competitions. Images not may not have been won in any competitions.

6. The categories for submission are Seascapes, Macro and Animal Behaviour. You may present up to three images in each category.

Definition of Categories:

Seascapes (WA): Any image taken with a wide-angle lens showing reefs scenery with or without animals as main subject. Model permitted.

Macro (MA): Any image taken with a macro lens showing part of or entire a subject that is smaller than 20cm (8”).

Animal Behaviour (AB) Any image showing natural behavior of marine animals.

8. The final round will be judged “live” during ADEX 2007 – 28 and 29th April 2007; sessions time to be announced on site. Two sessions with live audience and live video broadcast over show floor.

9. Participants will be invited to attend the judging sessions.

10. Subject to space availability, all entries will be presented on the show floor but only the finalists will be presented for the final “live” round judging during ADEX 2007. Though the jury will present their scores, critiques and summary of their competition.

11. Competitors agree to reproduction of their pictures for the ADEX PHOTOGRAPHER OF THE YEAR COMPETITION archives.

12. Competitors agree to the use of their works by the ADEX for the promotion of future competitions. Winning images may be shown to the public at future event. At each use of the works the name of the author will be mentioned but no payment for use of the copyright or no retribution of any kind will be possible. No commercial use of the image will be made by the organizers of the competition. Individuals wishing to purchase any of the works will be put in contact with the photographers.

13. The Ocean Geographic Organizing Committee will consider that, according to law, all works presented are free and clear of copyright and that the images are the exclusive property of the authors. By their participation in the competition, the authors undertake to guarantee the organizers against any claims that might be made against them. Ocean Geographic may in no way whatsoever be held responsible in cases of dispute or litigation.

14. The decisions of the jury are final.

15. Entry fees:
   One category is AUD $10
   Two categories is AUD $15
   Three categories is AUD $18

16. The categories for submission are Seascapes, Macro and Animal Behaviour. You may present up to three images in each category.

17. Any image showing natural behavior of marine animals.

18. Any image taken with a wide-angle lens showing reefs scenery with or without animals as main subject. Model permitted.

19. Any image taken with a macro lens showing part of or entire a subject that is smaller than 20cm (8”).

20. Any image showing natural behavior of marine animals.

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12. Any image showing natural behavior of marine animals.

13. Any image showing natural behavior of marine animals.

14. Any image showing natural behavior of marine animals.
**Dive Operators AMERICAS**

At the Water’s Edge, MA, USA
When you just gotta dive! www.lovetodive.com
Captain Slade’s Atlantic Dive Center
For the very best diving in the Florida Keys www.captainslade.com
Tiedeman’s Diving Center, NY, USA
Long Island’s Premier Scuba Ed Facility www.tiedemans.com
Tunefelt Island Lodge
A private Caribbean island www.tunefeltlodge.com
Uffo Dive Center, Honduras
Welcome to the Wholesaler experts www.uffoldivecenter.com

**Dive Operators EUROPE**

Dive Academy Gran Canary Island Europe’s most southern dive center www.diveacademy-grancanaria.com
Diving World, Netherlands
Dive travel specialists www.divingworld.nl
Dykkercenter Langeland, Denmark
Carpons & Weds Education in Denmark www.dykkercenterangleland.dk
Eden Roc Amigos Del Mar
Costa Brava Ikh owned, reef, wrecks, caves, Clubs & Individuals welcome www.divelaguna.com
MediaSub, Erstfeld, France — Underwater video and photography equipment and service www.mediasub.com
Profound Blu, Usloc An underwater paradise in the Med www.uslifica-diving.it
Timuna Sea, London, UK
Premier diving specialist! In East London www.timunasea.com
West Wales Diving Center, UK
Longest serving dive center in Wales www.westwalesdivers.co.uk
Zapp Divers, Denmark
Dive tours around Jutland www.zappdivers.dk

**Dive Operators AFRICA**

Dive Solutions, South Africa — Diving Mozambique, tech & rec dive edc www.divesolutions.co.za

**Dive Operators ASIA**

Ball International Diving Professionals
Specialists in Macro to Pelagic Sights bidp-bałdpulivn
Big Bubble Center, Singapore
Taking the mystery out of scuba diving www.bigbubble.com
Dolphin Diving, Maldives
Since 1982, Safe, personal & organised www.dolphindiving.co.mv
Lumbalumba Diving - Manado
Small, customised and personalized dive resort in Bunaken Marine Park www.lumbalumbadiving.com
Sipadan Water Village Resort, Sabah
Luxurious diving resort in Borneo www.waveresort.com
Thomac Scuba — Finest diving at the best price in Peninsular Malaysia www.thomascuba.com
Ocean Adventures — Philippines Welcome to the world of wonder www.oceanaventure.com.ph
Swando, Bikoff Indonesia
Discover the hidden treasures in Cenderawasih Bay www.swando.com

**Dive Operators AUSTRALIA**

Abyss Scuba Diving, Sydney Australia
Scuba diving in Australia is worldclass www.abyss.com.au
Aquapro Dive Services Australia
Your first choice for Instructor training www.aquaprodive.com
Deep Dive, Sydney Australia
Eaglehawk Dive Center, Tasmania
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**New Zealand Dive Experiences**

Expand your diving and underwater photography horizons in Kiwi country www.nzdiveexperiences.co.nz
Ningaloo Reef Dive, Western Australia
Professional operaion, on the West Coast www.ningalooafricadive.com.au
Perth Diving, Australia — Western Au-stralia’s premier diving organisation www.perthdiving.com.au

**Liveaboards**

Eagle Bay Liveaboard, Maldives
Maldives Oceanic Dreams— your ultimate diving experience begins www.maldivesdiveandadventure.com
Nautilus Explorer Liveaboard, USA
Diving Mantas to Icebergs www.nautilusexplorer.org
Ocean Adventures — Ceylon, Thailand, Myanmar, Indonesia and Malaysia www.oceanrover.com
SMY Odinia — Dive Indonesia www.smyodinia.com
The Best Diving in the World Co., USA

**SCUBA & UWP Clubs**

Andesunds Sportsdykkerklub, Norway
PS Voktdalsberga ved Borgundfjorden www.aasdik.no
Ajax Scuba Club, Ontario, Canada
Serving Durham Ontario since 1973 www.ajaxscubacvb.ca
Albion Underwater Council, Canada
Underwater sports & eco-awareness www.albionunderwatercouncil.com

**Dive Shops**

Carlsens Dykkercenter, Denmark
Education. Equipment & Service www.cddcydk.dk
Deep Six Underwater Systems, USA
New Paltz, NY — We ship worldwide www.deep-six.com
Divers Supply - Shop us for the best prices, equipment and service www.diverssupplyusa.com

**Dive Travel Agents**

AquaTours UK
Aquabure specialist in Scuba Diving holidays worldwide. Aquatours.com Blue o Two Operating since 2001, Blue o Two offers tailor-made diving holiday packages to THAILAND, RED SEA, USVI and MALTA. www.blueotwo.com
Dive Discovery, Houston, TX, USA
Complete dive & adventure travel www.divediscovery.com
US Travel Network, USA
Not just a vacation, an adventure! www.usdive.travel

**Business Directory**

To order a directory listing:
Call or email to reserve space 30 days before publication. Text due 15 days before publication date. Send link and text info to: BizDir@xray-mag.com

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**Wet & Weird**

**News edited by Willy Volk**

**97 X-RAY MAG : 16 : 2007**
Looking Sharp

From John E. Randall, and Andrew S. Comish (2000)

Labrid fishes of the genus Xyrichtys Cuvier, popularly known as razorfishes, are aptly named, not only because razorfish is the direct English translation of the Greek derivation of the generic name, but because it appropriately refers to the highly compressed body, and in particular to the sharp ridge at the front of the head.

These fishes live over open stretches of sand substratum and are well known for their ability to quickly dive headfirst into the sand with the approach of danger. If a scuba diver swims toward a razorfish, it may retreat, perceiving that the diver does not move with the speed of a large predatory fish such as a species of Caranx. If the diver persists in pursuit, the razorfish may move to another location where the sand is without obstruction and provides easy entry. It will hover over the site with its head oriented slightly downward.

At this moment, any sharp movement or continued approach by the diver will result in an amazingly rapid dive by the fish into the sand. If one digs into the sand at this site, one usually fails to find the fish, only to find it moving nowhere. One usually fails to one usually fails to one usually fails to one usually fails to...
Atlantic Mackerel search of food under the surface of the North Sea. It is a common fish, but still very beautiful. At market, consumers buy mackerel as a blue fish, but alive in the sea, they are a vivid iridescent green.

*Scomber scombrus* by Jeroen Verhoeff. 160 x 82 cm. Acrylic on panel. 2006 commission: sold. Available as a signed, numbered limited edition giclée print of 100 with certificate of authenticity. Unframed 80 x 41 cm, €200 / US$270
Wildlife artist, Jeroen Verhoeff of the Netherlands, loves the underwater world. It is his favourite playground. While Verhoeff is not yet a certified diver, he does snorkel quite a lot and explores many rivers, streams, ditches, mangroves, reefs and areas of open ocean around the world as often as he can.

"The underwater world is simply more special to me than the land," he said. "The light, the murkiness, the silence, the way a snorkeler is almost equal to the surrounding animals, the feel of flying, the excitement of being in another element, the feel of gliding through weeds like an eel, the excitement of being tossed about like a leaf in the surf on a reef... I could go on forever," he said. "Water moves me."

From these enthusiastic treks into the underwater realm, comes Verhoeff’s inspiration to create the
Not well known due to its small and northerly distribution, Atlantic white-sided dolphins are some of the most beautiful dolphins in the world according to the artist who tried to capture them hunting in the North Sea in this image. By isolating and herding a school of Herring against the surface of the sea into a so-called "bait ball" the dolphin are able to snatch fishes out of it. *Lagenorynchus acutus* by Jeroen Verhoeff. 160 X 82 cm. Acrylic on panel. 1999 commission: sold.
Jeroen Verhoeff

Jeroen Verhoeff is a man of many hats. He is a writer, illustrator, designer, travel guide and cartoonist. His love for nature started at an early age when he began to sketch and paint. Throughout his career in painting, Verhoeff has tested various creative processes to get the results that he desired in his paintings.

Since then, Verhoeff has developed his talents into a career. Verhoeff is a realist and enjoys rendering images as realistically and originally as possible. While painting from photographs was a common method in naturalist art, Verhoeff grew bored quickly with it and tried instead to work from field experiences and memories aided by reference images. He found this method too imperfect. So, he finally developed a third method, which was the most time-consuming.


Verhoeff

one of all. He worked from research and field studies to develop a model and a model table to finally render a finished painting.

The method
Here is how it works. To design scenes of wild animals and their behaviour as they really are in nature, Verhoeff goes beyond what the general public gets to see. He does research in the field. With photography, film and video footage, wildlife literature and museum specimens, Verhoeff studies a specific animal until he feels that he understands it well enough to sketch several views of it—from the front, side, back, above and below.

These sketches become a plan for a three-dimensional scaled or life-sized model in clay, wood, metal, foam or plastic depending on how much flexibility the model needs to possess. Flexible models are more easily manipulated to find every pos-

Blue Marlin and Yellow Fin Tuna by Jeroen Verhoeff. 160 x 82cm. Acrylic on panel, 2005. Original for sale. Also available as a giclée print in a limited edition of only 60 copies. Signed and numbered, with certificate of authenticity. Unframed 80 x 41cm, US$300
sible pose of the animal under study. Once the details of the model are in place, it is painted to life and put into a miniature set called a model table or tableau. This allows control of lighting, or how the light falls on the object, as well as control of the composition and surroundings of the animal.

Through this process, Verhoeff gets acquainted with the anatomy of the animal and the various poses it is capable of making. He can also play with the composition and the light and the action to get a high level of realism in the final image. A final sketch of the total scene is made with finer detail than prior sketches. The next step is the actual painting of the image on board.

Verhoeff employs the technique of painting many layers of paint, one over another, to create a sense of depth and atmosphere in his artwork. He paints with acrylics on wooden panels to create original works depicting scenes in nature and the behaviors of wildlife in a highly realistic manner.

Being out there
Verhoeff says that the most important part of the creative process is being out there in the natural world. He loves the aquatic world and the life that he finds there. Crocodiles and sharks don’t stop him; rather, they encourage him to jump in and get wet. Verhoeff says all he needs is at least a half a meter of visibility, and he’s in.

For more information or to order prints, please visit: www.jeroenverhoeff.com