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**Voronya of
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COVER PHOTO
A Diver Explores Riviera Maya Caves, by J P Bresser

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Divers explore Riviera Maya caves, J P Bresser



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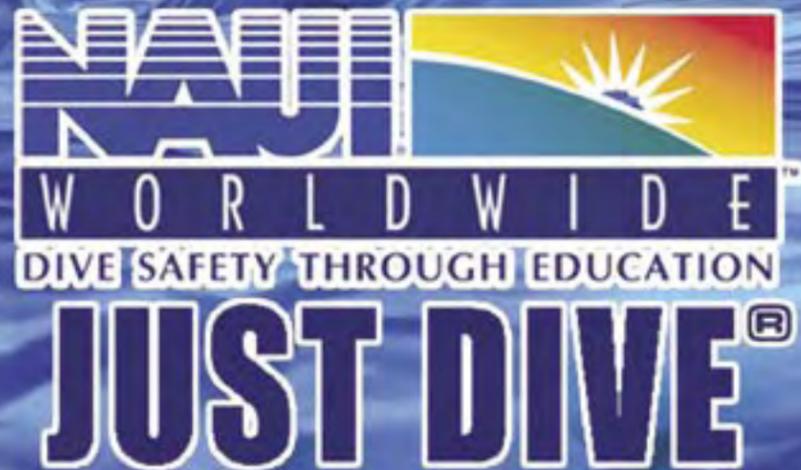
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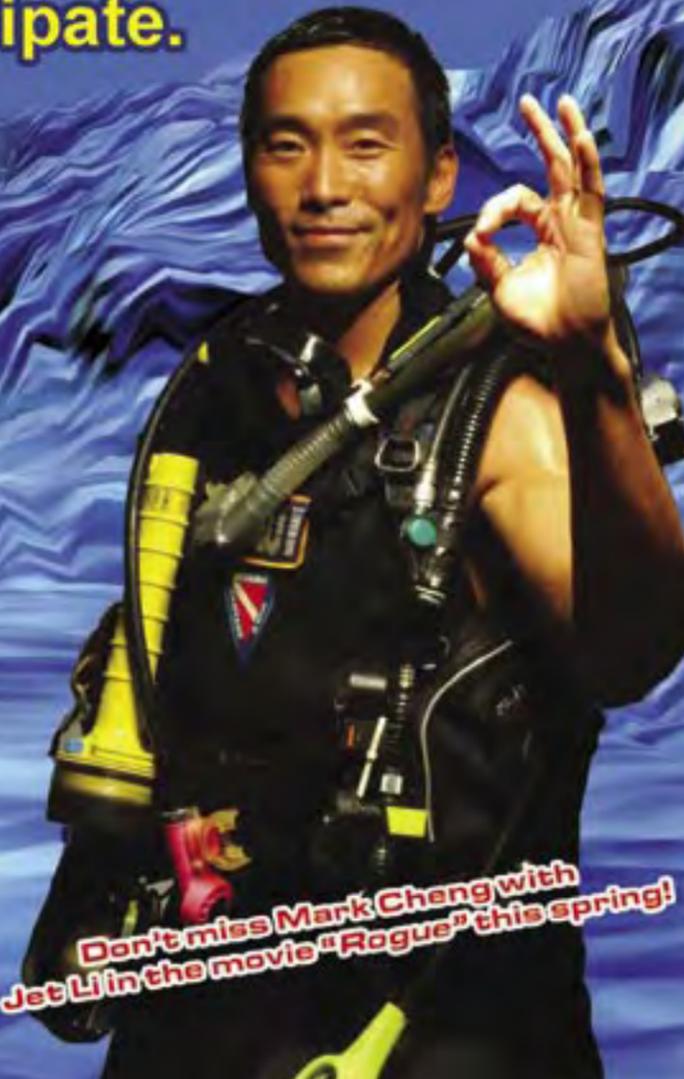
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Don't miss Mark Cheng with
Jet Li in the movie "Rogue" this spring!



Exploration & Evolution in Diving

History is made by people. Passions, visions and a sometimes restless energy forces them to be on the move, transport things, twist the nuts and bolts and to dive in places where nobody has been before. It is these people driven by their zest for knowledge and awed by what lies behind the next threshold that started the evolution of diving.

Genetic scientists studying the process of evolution use laboratory mice and fruit flies as their generation time is very short. Those who want to study how diving evolved can take a look at the cave divers. This unique brotherhood constantly alters, invents and experiments with dive equipment. Cave divers always were and remain an elite and advanced research group of divers—pioneer explorers of caves and scientists. These are the people who are constantly pushing

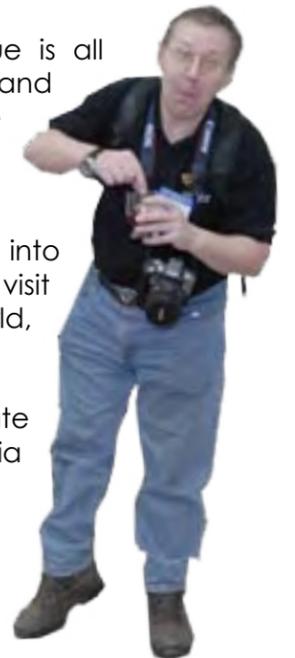
the boundaries and taking technology to its limits, leading the way to further achievements in technology, discovery and adventure.

Where do we find the last white spots on the map of the world other than in the underwater underground labyrinths? It is only here the modern disciples of Magellan, Jules Verne and Norbert Castere can realise themselves.

And that's what this issue is all about—exploring the inner and outer boundaries. We are about to go cave diving and climb down some very deep holes.

Come join us as we dive into the cenotes of Mexico and visit the deepest cave in the world, Varonya in Caucasus.

—Andrey Bizyukin, Associate
and Editor, Russia



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The shark finning continues Shame on them



As we all know, shark finning is not only unbelievable cruelty to animals, but totally unnecessary, as shark fins have no nutritional value whatsoever (they do, however, contain a lot of heavy metals).

As most of us are also painfully aware, shark populations are dwindling worldwide and crashing in places to the point where this important group of apex predators is becoming 'ecologically extinct'—meaning, that their numbers have been reduced to such an extent that they cease to play a regulatory role in the ecosystem. This is about to happen in the Great Barrier Reef where sharks were once plentiful.

Yet, the sharkfinning industry goes on. In a recent report to the UN, it came to light that the true numbers of killed sharks were probably four times higher than previously estimated. Simply because the catches evaded being reported through official channels, which perhaps isn't so surprising.

This bloody business has to stop. Shark fins and other shark products have been, and still are, traded by some of the biggest online trading platforms such as eBay, Amazon and, most notably, Alibaba. Since it was drawn to the attention of fellow divers, diving media and environmental organisations this past fall have placed mounting pressure on these platforms to stop the trade going through their portals. Amazon consequently removed the shark products from their webshop.

Meanwhile, Alibaba.com and others have bluntly refused to do so and continue to permit the trade—even after being thoroughly informed and asked the nice way. By their refusal they are now **knowingly** driving several unique and important species to the brink of the extinction and impoverishing the biodiversity of the planet to the point where whole ecosystems are collapsing.

All just for the sake of a meager

profit. They should be put on trial for crimes against humanity, or rather against the whole planet. Alas, we lack the laws to do so. You can be sent to the war crimes tribunal in The Hague and put away for life if you commit genocide, but other species don't count. Never mind if you wipe out the sharks. They have only been around for a couple of hundred million years anyway.

But that is not to say that the traders are going to get away with it. There is actually something you can do. Get on the case; get on their backs. Write a letter of protest to the management of Alibaba.com by following **this link on www.shark-life.co.za**.

And watch out for news about an upcoming boycott campaign on our website.

—Peter Symes

Publisher and Editor-In-Chief



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This issue of X-RAY MAG and others includes news and press releases from NAUI in sections designated by the NAUI logo. While the page design is done by X-RAY MAG as an integrated part of the magazine, these news stories are brought to you by NAUI at NAUI's discretion.

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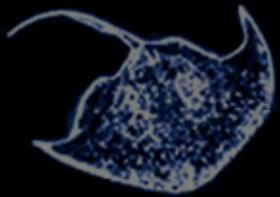
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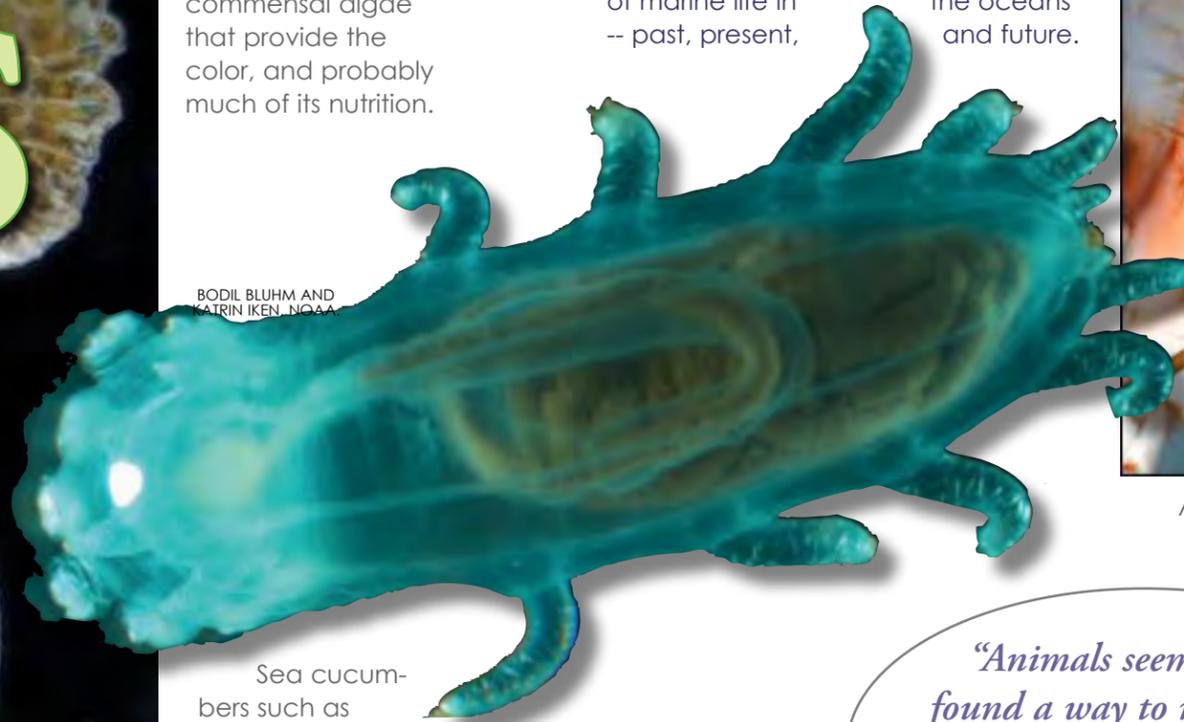
News edited by Peter Symes

NEWS



Linuche unguiculata - thimble jelly - ~1cm - This species was packed with commensal algae that provide the color, and probably much of its nutrition.

BODIL BLUHM AND KATRIN IKEN, NOAA



Sea cucumbers such as *Kolga hyalina* were the dominant sea floor fauna at several stations during an expedition to the Canada Basin

COMIL - RUSS HOPCROFT, UNIVERSITY OF ALASKA FAIRBANKS

and 70,000 kinds of marine mammals. A couple of thousand have been discovered during the census. They include life adapted to brutal conditions around 407°C fluids spewing from a seafloor vent (the hottest ever discovered), a mighty microbe 1 cm in diameter, mysterious 1.8 kg (4 lb) lobsters off the Madagascar coast, a US school of fish the size of Manhattan Island, and more unfamiliar than familiar species turned up beneath 700 meters of Antarctic ice. An underwater peak in the Coral Sea was home to a type of shrimp thought to have gone extinct 50 million years ago. More than 3 miles beneath the Sargasso Sea, in the Atlantic, researchers collected a dozen new spe-

The Census of Marine Life is a growing global network of researchers in more than 70 nations engaged in a ten-year initiative to assess and explain the diversity, distribution, and abundance of marine life in the oceans -- past, present, and future.



Anemone crab with striped eye stalks collected during a Census expedition off Hawaii

"Animals seem to have found a way to make a living just about everywhere"

Jesse Ausubel
Sloan Foundation,

Leptocephalus - this is an eel larva. They are flat like a ribbon with transparent bodies reaching up to 30cm long before they move to the seafloor.

cies eating each other or living on organic material that drifts down from above.

Other highlights

— Found alive and well, in the Coral Sea, was a type of shrimp called *Neoglyphea neocaledonica*, thought to have disappeared millions of years ago. Researchers nicknamed it the Jurassic shrimp.

— Satellite tracking of tagged sooty shearwaters, small birds, that mapped the birds' 43,500-mile search for food in a giant figure eight over the Pacific Ocean from New Zealand via Polynesia to foraging grounds in Japan, Alaska and California and then back. The birds averaged a surprising 217 miles

COMIL - RUSS HOPCROFT, UNIVERSITY OF ALASKA FAIRBANKS



Census of Marine Life

Amazing marine life forms revealed

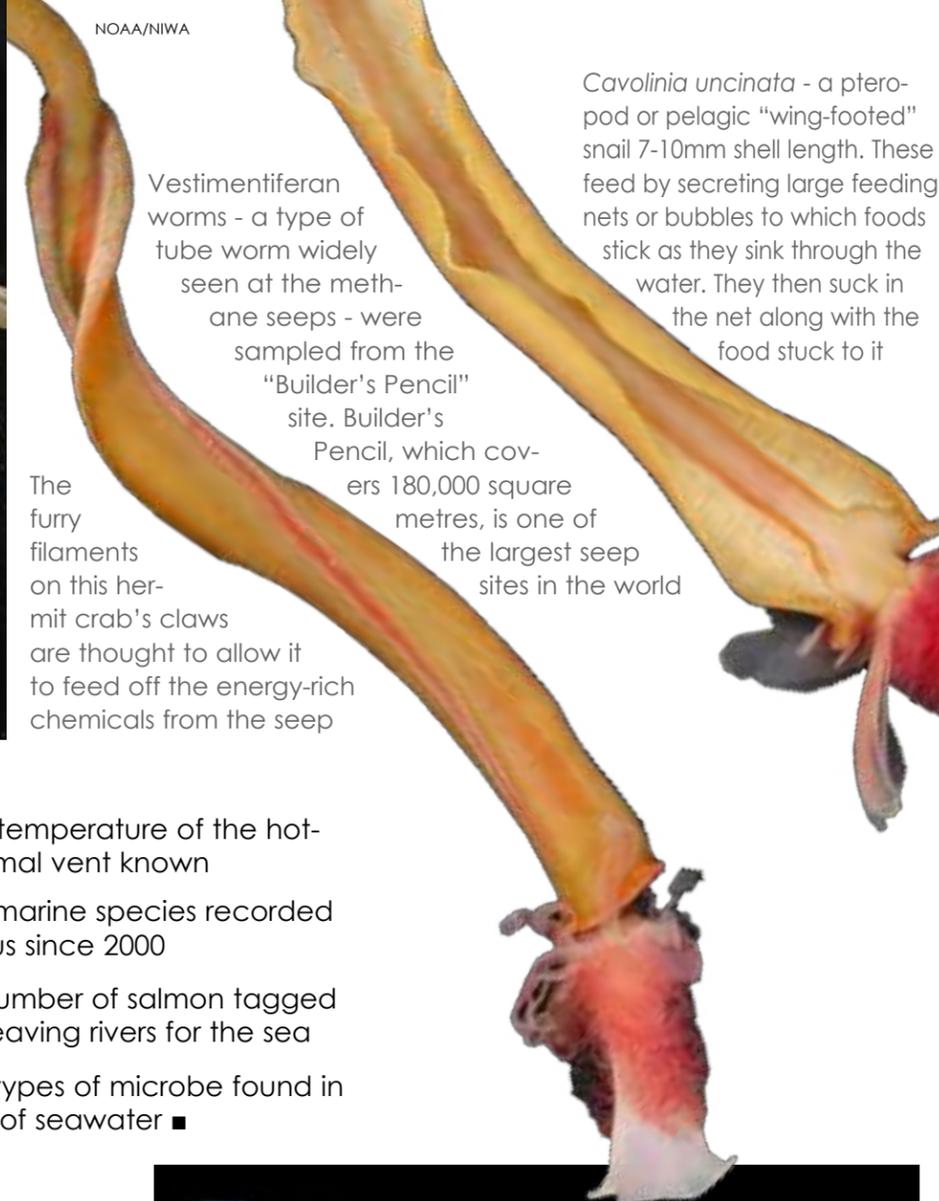
A host of record-breaking discoveries and revelations that stretch the extreme frontiers of marine knowledge were achieved by the Census of Marine Life in 2006.

Thousands of new species have been discovered during the census in which 2,000 researchers from 80 countries participated. The researchers con-

ducted 19 ocean expeditions this year; a 20th continues in the Antarctic. In addition, they operated 128 nearshore sampling sites and, using satellites,

followed more than 20 tagged species including sharks, squid, sea lions and albatross. There are nearly 16,000 known species of marine fish





NOAA/NIWA

daily. In some cases, a breeding pair made the entire journey together.

— A single-cell creature big enough to see, in the Nazare Canyon off Portugal. The fragile new species was found 14,000 feet deep. It is enclosed within a plate-like shell, four-tenths of an inch in diameter, composed of

mineral grains.

— A new type of crab with a furry appearance, near Easter Island. It was so unusual, it warranted a whole new family designation, *Kiwaitidae*—named for Kiwa, the Polynesian goddess of shellfish. Its furry appearance justified its species name, *hirsuta*, meaning hairy.

Tidbits

- 407°C temperature of the hottest thermal vent known
- 78,000 marine species recorded by census since 2000
- 2,600 number of salmon tagged before leaving rivers for the sea
- 20,000 types of microbe found in one litre of seawater ■

Phronema - This amphipod is sticking its head of its house, the hollowed out living body of a salp, where it will eventually lay its eggs and raise its family

Doubling Zooplankton

Census zooplankton researchers discovered 3 new genera and 31 new species of copepods and mysids, small crustaceans, in Southeast Asian, Australian and New Zealand waters. Analysis of collections from biodiversity hotspots, the deep sea, and other unexplored regions is on track to double the number of known zooplankton species

A 4 kg rock lobster, *Palinurus barbarae*, found off Madagascar



COMAL - RUSS HOPCROFT, UNIVERSITY OF ALASKA FAIRBANKS

Jellyfish surge endangers fish stocks

A dramatic increase in jellyfish populations are now threatening fish stocks around the British Isles, according to a group of marine scientists. Warmer ocean temperatures have already seen jellyfish numbers surge in the North Sea and scientists fear they may soon dominate at the expense of other marine life.

The predictions look particularly bad for cod stocks, which have already plummeted through over-exploitation by fisheries. Cod larvae hatch in waters that are rich in plankton, but these are also feeding grounds for the jellyfish. Many of the jellyfish species feed directly on fish larvae or on the plankton and tiny crustaceans that make up the larvae's sta-

ple diet, before they are big enough to hunt more substantial prey.

As ocean temperatures rise over the next century, jellyfish populations will continue to grow, putting further pressure on fish stocks already devastated by overfishing.

"Looking ahead over the next 50 to 100 years, all climate projections expect the North Sea to become warmer, so jellyfish will become more common in our waters," said Professor Attrill, whose study appears in the journal, *Limnology and Oceanography*. ■





At Daikoku and Nikko volcanoes in the Marianas, tonguefish and crabs cover the seafloor in some areas



NOAA

The remotely operated submersible *Jason II* caught this image of a tonguefish swimming in front of the camera (foreground). Notice the other fish scattered on the unsedimented bottom of the fossil sulfur lake

Strange Flatfish Thrive in Extreme Conditions —Water Up to 180°C

Scientists on a NOAA expedition have witnessed the extreme lifestyle of tonguefish that like to skip across pools of molten sulphur

Huge numbers of these flatfish—that belong to the taxonomic genus of *Symphurus* but are a species new to science—were seen to congregate around the sulphur ponds that well up from beneath the seafloor in the Mariana Arc.

“There are a lot of toxic heavy metals coming out of these active volcanoes,” Dr John Dower, a fisheries oceanographer told BBC News. “The water is very warm, and it can be very acidic, the pH can be as low as two, like sulphuric acid. And yet, here we’ve got a group that has not previously been seen in this type of environment and they’re doing very well—they’re actually thriving.”

The Mariana Arc is a 1,200km chain of volcanic seamounts and islands between Guam and Japan. It hosts a number of hydrothermal vents—rock systems that draw water through cracks in the seafloor, heat it to temperatures which can be well above 100C, load it with dissolved metals and other chemicals and then eject the hot fluid back into the ocean.

Measured temperatures above 180°C (355°F)

“These flatfish live right up against the edge of the pools, and in a couple of cases, we saw them out on the surface of a pool,” said Dr Dower to BBC.

“We have video of a fish sitting on the molten sulphur and then moving off after a couple of minutes, apparently unharmed. They seem to be able to tolerate an environment that no other flatfish, and very few fish in general, are found in.”

So what do all these fish live on?

“The density of these things is remarkable; we’ve determined that the abundances are actually about 100 times higher than what one typically finds on the continental shelf,” said Dr Dower.

But what sustains all that biomass? The researchers speculate the flatfish may be living on resources in the sediments, possibly worms or even bacteria. But they may be omnivores. On one occasion, tonguefish at the vents were seen to rip apart a dead fish that had fallen out of the water column above. SOURCE: NOAA and BBC News ■

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the shark & whale experts

30 New Fish Species Discovered on Borneo

At least 52 new species of animals and plants have been identified this past year on the island of Borneo, according to a report compiled by WWF, including 30 unique fish species.

The finds include a miniature fish measuring less than one centimetre in length and found in the highly acidic blackwater peat swamps of the island; six Siamese fighting fish, including one species with a beautiful iridescent blue-green marking; a catfish with protruding teeth and an adhesive belly which allows it to literally stick to rocks; and a tree frog with striking bright green eyes. ■

‘The more we look, the more we find’



Sharks on Great Barrier Reef Face ‘Extinction’

Sharks living around the coral reefs of Australia’s Great Barrier Reef (GBR) face imminent “ecological” extinction unless urgent action is taken to protect them from fishermen and poachers, according to the first study of the animals’ survival on the GBR.

Grey reef shark densities are 97% lower on fished and poached reefs compared with strictly protected no-entry zones and

a remote Indian Ocean atoll. Grey reef shark densities are 97% lower on fished and poached reefs compared with strictly protected no-entry zones and a remote Indian Ocean atoll. This is according to Howard Choat, who carried out the study with colleagues at James Cook University in Townsville, Australia.

Choat’s team predicts that numbers of grey reef shark will continue to decline at the rate of 17% per year, and the numbers of whitetip shark by 7% per year, unless urgent measures are taken to prevent over-fishing.

Shark-fin soup

“The fishing pressure on sharks is increasing dramatically. The total biomass of reported shark catches on the GBR has increased four-fold in the last decade,” says team member Sean Connolly. Sharks are fished for meat, or for their fins, which are sold to Southeast Asia for soup.

Although the sharks are not in imminent danger of extinction, they are at the top of the coral-reef food chain, and play a key role in maintaining the health of its ecosystem—a role they will not be able to perform if their numbers fall below a critical level. “They will be ‘ecologically’ extinct,” says Connolly. SOURCE: *Current Biology* (Vol. 16, Page 2314) ■





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Tuna quotas cut as stocks decline

The annual catch of bluefin tuna in the Mediterranean Sea and eastern Atlantic Ocean is to be cut by one-fifth in an attempt to conserve dwindling stocks. The 42-nation International Commission for the Conservation of Atlantic Tunas (ICCAT) agreed the quota cut at a meeting in Dubrovnik, Croatia. Scientific advice prepared for the ICCAT meeting concluded that catches in the eastern Atlantic and Mediterranean were about three times above sustainable levels. ICCAT also agreed measures to combat illegal hunting of the giant fish. Conservation groups however criticised the scale of the cuts

as "weak, scandalous and inadequate".

The environmental group, WWF, says many EU fishing fleets are breaking the law and catching far more tuna than allowed. ■

Illegal fishing hits tuna stocks

Bluefin tuna stocks in the East Atlantic and the Mediterranean are being stripped bare by illegal fish-



ing, WWF has warned in a report. WWF found that the annual fishing quota of 32,000 tonnes, set by ICCAT, has been smashed for the past two years. In 2004, the actual catch was 44,948 tonnes and this rose to 45,547 in 2005. A campaigner says the real figure may be well over 50,000 tonnes. ■

Farming Endangered Blue-Fin Tuna



SYDNEY UNIVERSITY

Tuna is hard to cultivate because it is difficult to recreate the conditions they are used to in the wild. But in the city of Shizoka—in a small shed on a university campus—Akito Yamamoto is trying to recreate the oceans that the tuna are used to. The tanks are specially designed to keep the tuna happy and the light is dim. Tuna, it seems, are rather sensitive to daylight and to pretty much anything else. The water pumped up from deep down under the surface is just about as clean as you can get—no bac-

teria, no viruses and no parasites. The water flows in circles in each tank—creating an effect like a tread mill for the 15 fish in each tank. They need to keep moving to keep breathing. Normally well-travelled fish, they are capable of crossing the Atlantic in less than 50 days.

The tuna have to be shown where to swim, so there are streams of bubbles flowing away from the edges of the tanks, which guide the tuna away from the sides. The blue-fin will not be big enough to breed or be eaten for at least three years.

"I know some people are puzzled about why I am spending so much on this," said Mr Yamamoto. "But I am trying to make a facility that could be used for 10 or 20 years."

"However much we spend it's worth it if we can provide safe food for consumers." ■

White Marlin May Soon Become Protected Species

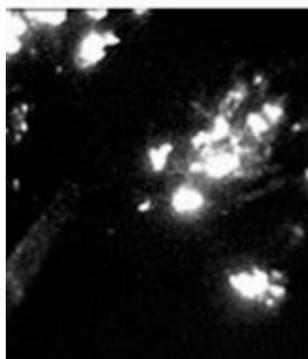
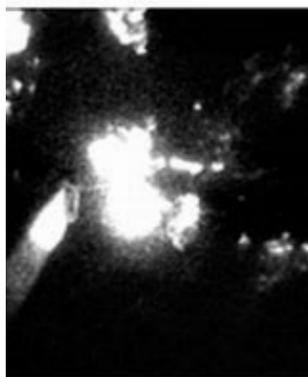
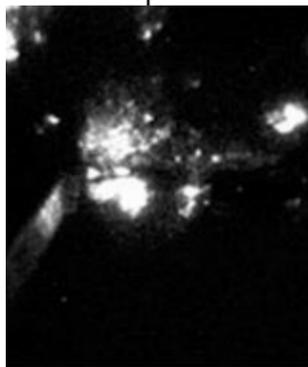
The swift billfish, the White marlin, which inspires huge investments each year in boats and tournaments by New Jersey sportsmen, may become listed as a threatened or endangered species.

Federal officials are examining the species after pressure from two environmental groups. A federal judge approved a settlement to a lawsuit which followed a negative ruling by the National Marine Fisheries Service to protect the White marlin, that included a reconsideration by the agency.

Environmentalists say that the White marlin are overfished by sportmen. Fishermen say current regulation and recreational catch-and-release measures reduce the numbers killed. *SOURCE: Asbury Park Press.* ■



NORTH CAROLINA DIVISION OF MARINE FISHERIES



Lights appearing at baits on the sea floor at 1000m depth off the west coast of Ireland

Mystery Lightshow Witnessed in the Deep

Researchers have published two papers that announce the discovery of deep sea lights in the Atlantic Ocean. The research team assembled from Oceanlab, University of Aberdeen, National Oceanography Centre Southampton and the University of Bristol recorded the spontaneous display of light by small abyssal creatures with the aid of a new *stealth* unmanned vehicle that has a high sensitivity camera.

Prof Monty Priede said "We have seen three kinds of displays, single flashes of light, animals swimming along producing repeated flashes of light and animals squirting a luminescent substance into the water".

The source of the light is still a mystery, but it is thought to be small shrimp-

like creatures swimming just above the bottom of the sea. Why the animals produce the light is also not understood. However, the squirting of luminescent materials is most likely a way the animals defend themselves.

Researchers have discovered two hot spots so far of this mysterious deep sea light. Off the tropical West African coast, there is one spot at 3200m depth. The other is off the west coast of Ireland at a depth of 1000m where some luminescence squirted by animals reach football-size balls of light. *SOURCE: University of Bristol via Physiorg.com* ■

See streaming video of the bioluminescence caught on tape here: www.oceanlab.abdn.ac.uk

Potential Global Demand for Golden Bath Sponge

The golden bath sponge has been found to have surprising benefits for agriculture, medicine and pearling, said marine researchers.

A researcher from the Australian Institute of Marine Science, Dr Chris Battershill, says that more study is needed to farm sponges successfully. "In the

agricultural sector the leads can be taken right through to market and quite quickly," he said.

Australia is a global leader in many areas of farm husbandry and maintenance and can provide the capability of taking things into a clinic setting. *SOURCE: ABC Rural* ■



Cave Sponges Play Important Role in Coral Reef Nutrient Cycle

Dutch biologist, Sander Scheffers, has found that sponges in caves play an extremely important role in the coral reef's nutrient cycle.

By investigating sponges in the coral reefs off the Caribbean island of Curaçao, he gathered valuable information for nature conservationists who steward the coral reefs. Indeed, the researcher says the sponges probably play the most important role in the ecosystem.

Scheffers used a special underwater camera to capture images of the marine organisms and their communities in almost inaccessible caves.

The resulting film revealed that the animals as well as tube worms, bivalves and tunicates fill more than 60 percent of the coral cavities. In addition, it was noted that these caverns had eight times the surface area as that of the

coral reef according to divers viewing the area from above.

A larger living surface means a larger filtering surface according to Scheffers. This organisms feed by filtering water and taking up plankton particles at a high rate.

Because of their incredible capacity to convert large quantities of organic plankton into inorganic material, the hidden organisms like sponges play a key role in the marine nutrient cycle according to Scheffers. *SOURCE: Netherlands Organization for Scientific Research via Innovations Report.* ■



Plastic particles are clogging the seas

Small particles of plastic could be poisoning the oceans, according to a British team of researchers.

They report that small plastic pellets called "mermaids' tears", often smaller than a grain of sand, have spread across the world's seas.

Dr Richard Thompson at the University of Plymouth is leading research into what happens when plastic breaks down in seawater and what effect it is having on the marine environment. Sturdy and durable plastic does not bio-degrade, it only breaks down physically, and so persists in the

environment for possibly hundreds of years.

Some are the raw materials of the plastics industry spilled in transit from processing plants. Others are granules of domestic waste that have fragmented over the years. Plastic rubbish, from drinks bottles

and fishing nets to the ubiquitous carrier bag, ends up in the world's oceans and are almost impossible to clean up. Findings estimate there are 300,000 items of plastic per sq km of sea surface, and 100,000 per sq km of seabed. Dr Thompson's team also set out to find out how small these fragments can get. So far, they've

identified plastic particles of around 20 microns—thinner than the diameter of a human hair.

The scientists are worried that these fragments can get into the food chain. Among clumps of seaweed or flotsam washed up on the shore, it is common to find mermaids' tears, small plastic pel-

lets resembling fish eggs. Thompson and his team conducted experiments on three species of filter feeders in their laboratory. They looked at the barnacle, the lugworm and the common amphipod or sandhopper, and found that all three readily ingested plastic as they fed along the seabed. ■



Prince Pieter-Christiaan with a student



His Royal Highness Prof. mr. Pieter van Vollenhoven ready to enter the water



Ready to dive!



Everone had a great day

The Dutch Royals Take Disabled Diving

Special guests on NAUI and IAHDs Dive challenge day were the Dutch Royal family, HRH and father Pieter and son prince Pieter-Christiaan van Vollenhoven, who took several disabled divers on their first intro-dive. This Dive challenge tour was made possible

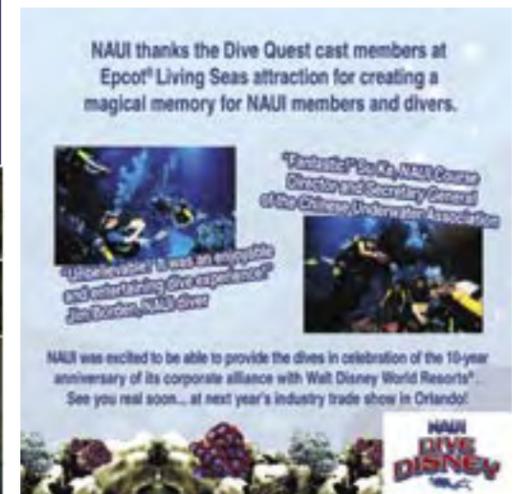
through several sponsors to organise a 'Make a difference day'. As the pictures show, all involved had a great time. A good attention value for the organisation and the dive-industry, HRH Pieter van Vollenhoven promised to stay in contact and do more together. ■

HRH mr. Van Vollenhoven helping the disabled for their first intro dive



NAUI Airforce?

NAUI CD Wilson van Heugten trained a complete team of the Royal Dutch Airforce from Scuba Diver up to Instructor.



NAUI Service Center Receives Award from Africa's Largest Boat Show!

Michael and Ursula van Neikerk, operators of NAUI's South Africa Service Center, were the recipients of the

"Outstanding Exhibitor Award" during the 2006 WesBank National Boat Show which was held in Johannesburg, South Africa.

The "Outstanding Exhibitor Award" recipient is determined by show organizers and is awarded to the exhibitor who is considered to be the best at the show. Of

the 180 exhibitors who attended the show, NAUI was the only exhibitor to receive this honor!

"We are truly honored to be recognized as the "Outstanding Exhibitor" of the 2006 show," said Michael van Niekerk. "We have attended this show for the last five years because it is the largest of its kind on the African

continent and our experience has been that this was our best show ever! This year's show incorporated the Dive 2006 pavillion, which was dedicated to the scuba diving industry and showcased scuba diving gear and equipment, accessories, services, training and education, and travel destinations. ■





NAUI Europe acknowledges the National Dutch Underwater Federation (NOB)

NAUI Europe are working closely together with the National DUTCH UNDERWATER FEDERATION, to create new divers, keep existing divers diving and make convincing prospects to start a diving career. This project has run for more than a year and has been joined by PADI and SSI making it a truly joint effort.

NAUI Europe has presented the NOB with a certificate of appreciation. The certificate was presented on the holiday exhibition by Jelle Buisman, NAUI Europe training director, and he mentioned the unique fact that the 4 major agencies work together and that they are all on the same page. ■

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

Asia

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

Europe

Duikvaker – Utrecht, Netherland (February 10-11)
 EUDI – Roma, Italia (March 9-12)
 The Dive Show – Birmingham, England (October)

USA

Our World Underwater – Chicago, IL (February 9 -11)
 Beneath The Sea – Secaucus, NJ (March 23-25)
 Ocean Festival – Ft. Lauderdale, FL (April 20-22)
 Sea Space – Houston, TX (March 31-Apr 1)
 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.

Tiny Crabs Keeps the Coral Clean

Tiny crabs that live in coral help to prevent the coral from dying by providing regular cleaning "services" that may be critical to the life of coral reefs around the world, according to scientists reporting in the November 2006 issue of the journal *Coral Reefs*.

The relationship between the corals and the trapeziid crabs is mutually beneficial, or symbiotic. The coral provides a home and protection for the crabs. The little crabs, measuring only a centimeter wide, make their home in branching corals like *Acropora* or *Pocillopora*. The crabs provide "house-keeping" duties for the coral, routinely "sweeping" out sediment that falls onto the coral, according to the study. The accumulation of sediment on coral tissue is known to reduce metabolic and tissue growth

rates of coral, increasing the probability of bleaching and coral death. Many corals can remove some sediment from their surfaces but high sediment loads can be deadly. Predicted increases in sedimentation threaten coral reefs in many near shore areas around the world.

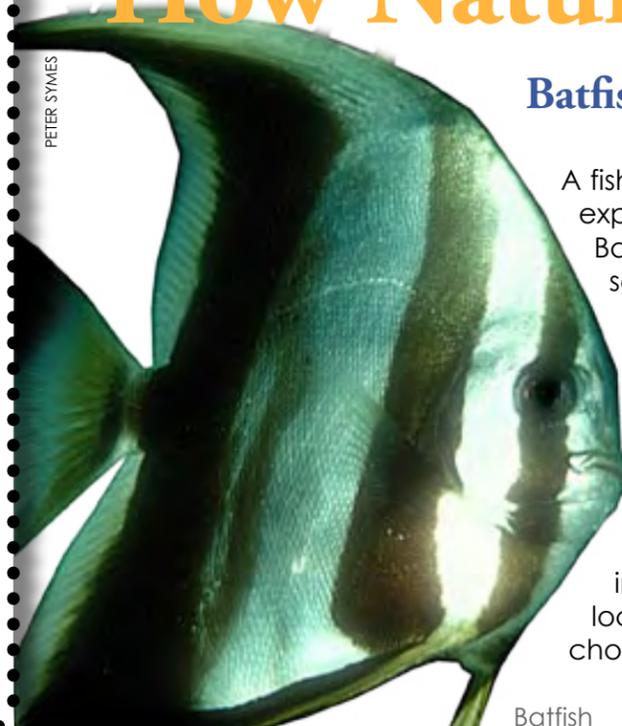
Coral reefs are threatened by a variety of environmental changes. For example, higher water temperatures and increased ultraviolet radiation, which are associated with climate change, are sources of widespread coral bleaching. Changing land use patterns, caused by population increase on the coasts increases the sediment load on coral. This is due to the higher amount of water run-off from development, deforestation with erosion, and expansion of agriculture. ■

PETER SYMES



The scientists showed the importance of trapeziid crabs by gently removing crabs from sections of the two species of branching corals on a coastal reef. This resulted in 50 to 80 percent of those corals dying in less than a month. By contrast, all corals with crabs survived. (Filephoto)

How Nature Keeps Coral Reefs Healthy



PETER SYMES

Batfish Increases Reef's Recovery Capacity

A fish that gatecrashed an experiment in Australia's Great Barrier Reef has surprised scientists by emerging as an unexpected weapon against the worldwide decline of coral reefs. Part of the research involved generating a bloom of the tropical kelp sargassum weed to mimic the effects of choking invasive weeds and seeing if local weed-eating fish would chomp their way through it.

Batfish

While herbivorous species like the parrotfish and surgeon fish only nibbled disinterestedly at the algae, the batfish (*Platax pinnatus*) turned up and cleared the weed within two months.

Professor David Bellwood from James Cook University said the batfish's voracious appetite for weed saved the coral from being choked to death.

"The surprising finding was that a different group of fish was responsible for reversing the algal bloom. Batfish are normally considered to be plankton feeders so

we were amazed when we captured on video the effects those fish were having. In five days they had halved the amount of weed. In eight weeks, it was completely gone and the coral was free to grow unhindered," he said.

Bellwood said declining coastal mangroves serve as nurseries for batfish, which are found in reefs around the world.

This highlights the need to preserve mangroves and protect these accidental weed warriors, he said. ■





Lt. Jessica Hill and Petty Officer 2nd Class Steven Duque

U.S. COAST GUARD

Did Norway drug some of its commercial divers?



Kari Todnem, medical director at Norway's St. Olav's Hospital, believes some North Sea commercial divers in the 1960s were systematically and unknowingly drugged in hyperbaric chambers during ascent in order to calm them -- and to spare diving gas. Todnem came to this conclusion after analyzing nerve and lung damage among the divers, interviewing surviving divers, and inspecting hospital records, which refer repeatedly to drugs such as Medrol and Valium. Why would a government drug its citizens? According to Todnem, "The only reason I can think of for this being done is a form of trickery, a way to decompress the divers without them getting symptoms of decompression sickness. This is criminal." The surviving divers are trying to sue the state for compensation, arguing that Norway was aware of the dangers posed by their diving. So far, the state has refused to accept responsibility, though some payments were approved by parliament in 2004. The case goes to court in March. *SOURCE: Aftenposten* ■

Two men rescued after being trapped in a sub for 13 hours

If you think being trapped in traffic is bad, imagine being trapped in a submarine 130 meters below the surface of the ocean—for 13 hours. That's what happened to a pair of men in December. Performing a bi-annual certification of a submarine rescue vehicle (the Remora, a 16.5-ton remotely-operated rescue vehicle with room for seven people), the men were inside the sub as it was being winched in by a ship when the cable failed. While rescuers riddled out how to bring the men to safety, the sub was lowered to the sea floor -- 130 meters below the waves. Battling high seas, it took three rescue attempts to finally bring the men within 15 meters of the surface, at which point rescue divers assisted the men in their escape. While the submariners were uninjured, this is a terrible setback for the Remora. Since the



rescue vehicle failed its certification test, if there is an accident on an Australian navy submarine, help will have to come from either Singapore or the US, which could mean a delay of more than 24 hours. *SOURCE: news.com.au* ■

US Coast Guard divers' deaths attributed to "a chain of events and decisions which, had any link been broken," would not have occurred

On August 17th, Lt. Jessica Hill and Petty Officer 2nd Class Steven Duque undertook what the Coast Guard has repeatedly referred to as a "cold water familiarization exercise." Reportedly only diving to a depth of 20 feet—to inspect the rudder of their ice-breaker, the Healy—the divers were tethered to a support team on the surface. Despite this, both divers drowned. In November, Hill's father released the autopsy results of his daughter. According to the autopsy summary, Hill suffered "an uncontrolled descent to a possible depth of 189 feet." But wait—weren't the divers only supposed to descend to a max depth of 20 feet? Why had Hill descended to 189 feet?

According to the Coast Guard's recently-released report, multiple regulations were violated that contributed to the deaths of Hill and Duque, including expired dive certifications, untrained personnel put in charge, faulty equipment used, and the presence of alcohol. Apparently, when Hill and Duque entered the water, they were carrying more than twice the amount of weight required for the dive. Unable to ditch the weight, the pair quickly entered free fall. Single jerks on the line signaling "stop" were misinterpreted by unqualified dive tenders who—distracted by the so-called "ice liberty" party going on topside—erroneously paid out more line. Hill descended to 187 feet, and Duque plummeted to more than 200 feet. By the time the tenders realized what happened, the pair was dead. The Coast Guard has vowed to take steps to ensure this will never happen again, but for the families and friends of Hill and Duque, of course, it's already too late. *SOURCES: CNN, Seattle PI, Military.com* ■

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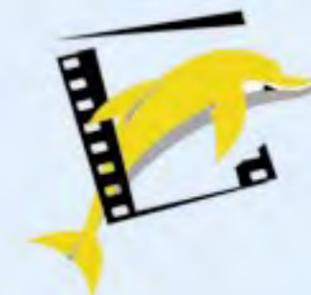
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Edited by
Willy Volk

Scuba diving professor wins climate change research award

James Crabbe, a scuba diving professor at the University of Bedfordshire, studies climate change by looking at the world's coral reefs.



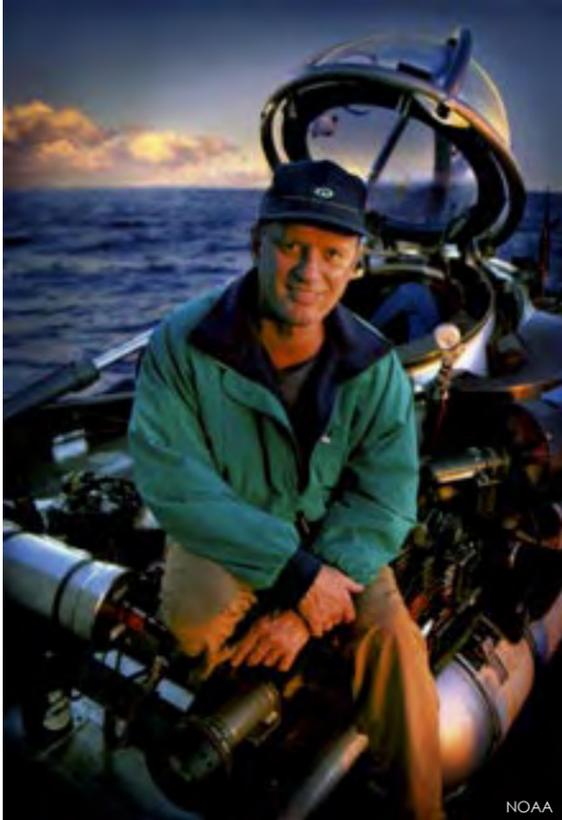
UNIVERSITY OF BEDFORDSHIRE

Ultimately, Crabbe hopes to produce a predictive model for the effects of climate, climate extremes, and anthropogenic changes on the growth, physiology and biodiversity of tropical coral reef colonies.

Recently, Crabbe was awarded the Aviva/Earthwatch Award for Climate Change Research. Worth £6,000, Crabbe

Professor James Crabbe

plans to buy a video ray underwater ROV with the money. Not to be confused with a death ray, the state-of-the-art video ray will allow him to analyze coral at greater depths, even when dive teams are not present. Crabbe plans to visit Jamaica this winter with his ROV to collect more data, and will head to Belize next summer. He also plans to launch new projects in Mauritius and China. *SOURCE: Bedford Today* ■



Dr Robert Ballard

Ballard to explore the Gulf of Mexico—from Connecticut

Famed explorer Dr. Robert Ballard is about to embark on an unusual underwater exploration of the Gulf of Mexico's Flower Garden Banks. What's so unusual about that? He'll undertake the investigation from his offices at the Mystic Aquarium -- in Connecticut. Through satellite technology, a virtual submarine command center will allow him to see what's going on

at the site from the comfort of his offices. Interestingly, this exploration will not focus on marine life. Rather, it's an investigation into the human activity of an area previously above water. According to Ballard, "We're pretty convinced that ancient native Americans actually were living there. So we're going to the Flower Gardens with this technology to see if we can find evidence of human habitation when it used to be land." *SOURCE: WTNH* ■

Herbert Nitsch breaks static apnea record in Hurghada

On December 13, 2006, Austria's Herbert Nitsch -- the first freediver to reach 100 meters using his own strength -- turned in a static apnea performance of 9 minutes 4 seconds, setting a new world record. Static Apnea is timed breath-holding and is usually attempted in a pool, or -- if you're David Blaine -- in a giant sphere. *SOURCE: Deeperblue.net* ■

See NITSCH'S other records



HERBERTNITSCH.COM

Moonie pastor arrested for his involvement in trade of leopard sharks

A British pastor of the Moonies church, Kevin Thompson, will soon be sentenced for his involvement in a worldwide shark-poaching and -smuggling racket. Thompson, based at the Unification church in San Leandro, California, is one of six men arrested for taking and selling thousands of undersized California leopard sharks. Investigators charge that Thompson paid fishermen \$2-3 for each baby shark they provided and, in turn, he sold the sharks to international dealers for \$20-35. Reportedly, his shark operation grew so big that he had to store some of the fish at his church! Authorities became suspicious of Thompson when dealers he supplied were caught and testified against him. Thompson faces up to eight years in jail and fines of up to \$1 million. Investigators believe that Thompson was trying to impress his leader, the Reverend Sun Myung Moon, who frequently extols the virtues of fishing and refers to himself as King of the Ocean. Lucky for Thompson, he'll soon be able to refer to himself as King of San Quentin State Prison pool. *SOURCE: Independent* ■



Belize suspends dive guide's license for a minimum of 5 years

In October 2005, a seemingly innocent pleasure trip turned deadly. When divers on an outing with Belize's (ironically-named) Advanced Diving experienced a power outage on their vessel, they decided to swim for shore rather than float aimlessly. Ultimately, three of the divers spent three days and two nights adrift before being rescued; a fourth diver, Abigail Brinkman, died. In December 2006, Belize suspended the license of Advanced Diving's Vance Cabral for a minimum of five years. In addition to citing his gross negligence--on top of allowing the divers to leave, Cabral operated a single-engine boat that evidently had (a) no working radio; (b) no emergency signaling equipment; and (c) no drinking water for a trip to a destination located 20 miles offshore--Belize's Tourism Board noted that Cabral's behavior had placed Belize's entire tour operating profession in disrepute. Cabral will not face criminal charges, however, because police dragged their feet for 13 months before charging him. The statute of limitations expired after 6 months. *SOURCE: Channel5belize* ■

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Edited by
Willy Volk

Ikelite's Ike Brigham dies

In the early 1960s, Ike Brigham and his dive buddies would gear up and explore Indiana's flooded limestone quarries. Not happy diving in the dark, and not having access to quality lighting, Ike set out to design a small, robust light for himself and his friends. After fiddling around in his kitchen, Ike ultimately devised a way to make

an inexpensive light quickly and cheaply -- in his oven. Word soon spread about "Ike's Light," and dive shops around the Midwest began calling in orders. Ikelite was born. Ikelite has come a long way since since 1962, and today the company provides divers with housings, strobes, strobe controllers, arms, trays, flashlights, and compasses. Dedicated,

innovative, and constantly trying to make a better product, over the years curmudgeon-y Ike made many friends in the diving community, worked tirelessly to provide the best customer service possible, and truly revolutionized both the sport of diving and the discipline of underwater imaging. Ike passed away on December 20th, 2006. According to his daughter, Jean, he had been fighting lung cancer. He will be sadly missed. *SOURCE: Scubadiving.com* ■



Ike Brigham

Underwater photographer Alessandro Dodi dies during rebreather course

According to a friend, underwater photographer Alessandro Dodi was participating in a rebreather course in Italy's Lake Como in November, 2006. Apparently, Dodi made a dive using one rebreather, surfaced, switched to another unit, and descended again. Dodi's buddy surfaced when he lost sight of Dodi and, having established that he was not at the surface, re-descended to find him motionless, on the bottom of the lake, his regulator out of his mouth. Dodi was a winner in Diver Magazine's Image 2003 photo competition, taking four medals including gold in the Grand Master (Marine Life/People/Scenery Prints) category. In 2004, Dodi's website won the Best Artistic site award at the Antibes Festival. *SOURCE: Divernet* ■



WWW.MAR.ROSSO.IT

Diver survives spear gun shot through his neck



On Christmas Eve, a 27-year-old man was spearfishing with friends off South Africa's East London coast when he was accidentally shot in the neck. According to the National Sea Rescue Institute, fellow divers sounded a distress call and alerted authorities. Rescue officials were slow in arriving, however, so the divers pulled the spear from the diver's neck, since it "had missed vital organs, including the jugular vein." The spearfisherman was delivered to the hospital later that afternoon and released the following morning. While it may sound macho, self-removal of the spear is the recommended course of action. *SOURCE: news24* ■

Squid mail

Residents along Japan's southeastern coast have been using "Surumail" -- edible postcards made from squid -- since 2000. Produced by the Susami fishing cooperative, Surumail postcards consist of surume squid, which has been dried, flattened, and vacuum-packed. Used in conjunction with the conveniently-provided adhesive label (for postage, delivery address, and a short message),



The fishing cooperative claims they've sold 4000-5000 of these \$3 cards since their inception. Fittingly, this is the same community that installed an underwater mailbox off its shore a few months ago. *SOURCE: Pinktentacle* ■

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Drowned diver failed to turn on equipment

In September 2005, diver Nigel Peter Lees was diving alone off a chartered boat anchored near Ship Cove, New Zealand. Planning only to check his gear, clear mussels off the mooring line, and collect crayfish, Lees was gone from the boat for a long time. Later, his boatmates found him dead at 15 meters, with his equipment switched off. Ordinarily a methodical diver, Lees evidently failed to use his equipment properly. A recently-completed investigation revealed that Lees' electronic handsets had not been turned on, and additional oxygen was not being put into the system to compensate for that which was being used. *SOURCE: Stuff.co.nz* ■

Julio Cesar Cu wanted to be an oceanographer. Instead, he wound up as a sewer diver in Mexico City

Mexico City, home to 18 million people, has some filthy sewers. They're not just regular filthy, though: they're dangerously, disgustingly, putrefyingly, puke-inducingly filthy. In addition to all the poop that sewer diver Julio Cesar Cu is forced to swim through, Julio frequently encounters far more wretched items, like severed animal heads and decaying human bodies. Clearing the 20-foot-wide pipes beneath the streets earns him \$400 a month. While many people would probably grumble about his job, Julio has a bright outlook: "I like diving as a sport. As a job I like it even more. I do a job that benefits a lot of people." Thank God for people like Julio. *SOURCE: Signonsandiego.com* ■

SSI Introduces Technical Diving

SSI enters the technical diving market with the official launch of "TXR", the SSI Technical Extended Range program

The TXR product launch includes four courses which are: Technical Foundations, Decompression Procedures, Normoxic Trimix and Advanced Decompression.



The academics for the four courses will be presented in one manual with four sections. There will be an accompanying interactive CD and a series of dive planning slates. The TXR program has been designed to provide both students and instructors with an unprecedented level of flexibility. The four courses are building blocks, which can be taught individually and sequentially or combined to meet specific training objectives. The SSI TechXR program is designed to meet the needs of divers and dive lead-

ers. The instructor can formulate training around each customer's individual goals and objectives as students who just want to learn more about the right decompression procedures can stop after the second course. Others who would like to go through the entire program to become a TEK DIVER have the option to do so. The program has also been designed to seamlessly integrate with the traditional SSI recreational products.

Xtreme Training

The SSI TechXR program was designed and tested under the most demanding conditions. All of the complex information has been broken down and made simple to teach and understand. The training materials for both the student and instructors were developed by industry professionals with years of technical experience. SSI's signature training method, the SSI Diver Diamond and Comfort Through Repetition, has been applied to keep the programs consistent and provide the same high quality education as other SSI products.

If you want to know more about TechXR, contact your local SSI Facility or www.ssiusa.com/txr. ■



Updated B2B web shopping cart for PADI Members

PADI continues to develop digital tools designed to make it easier for PADI Members to succeed. One exciting new development is a completely revamped business to business web shopping cart.

The new iteration of PADI's online shopping cart uses the latest technology as part of the organization's overall move to help members embrace the internet and expand their business perimeters throughout the online world. "As part of the PADI commitment to helping members succeed in the digital age, the PADI organization is reviewing and upgrading online services while continuing to explore additional online offerings," said Budd Riker, PADI Director of eBusiness. "The updated web shopping cart will include a web catalog, enabling PADI Members to order training materials any time of day that's most convenient." ■

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Flat masks block over 75% of your natural field-of-view. Enjoy natural panoramic vision. See almost 5X more through a Double-Dome™ lens perfected with NASA technology. NanoFOG™ coating, applied at the factory, ensures fog-free dives. Only naturally nearsighted divers (broad Rx range) can use the MEGA® 4.5DD mask with their naked eyes. But over 700 divers around the world with 20/20 vision wear disposable contact lenses to use this mask. These divers become temporarily nearsighted. The incredible view is worth the effort. Endorsed by 1,000 eye doctors worldwide. Older divers love the *Magic Bifocal* phenomenon. Seeing is believing!



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PADI International writes:

No Barrier Tour Celebrates Its 10th Anniversary

The No Barrier Tour was established in 1996 in the UK by Fraser Bathgate, PADI's Adaptive Techniques Adviser and the first paraplegic person to become a PADI scuba diving instructor. 2006 saw the Tour celebrate its 10th anniversary—a real milestone for everyone involved.

No Barriers was devised to bring a new dimension in sport for disabled people, initially catering to those with spinal injuries, but over time reaching out to people with other dis-

abilities such as cerebral palsy, Down's syndrome and muscular dystrophy. The name, No Barrier, was inspired by the belief that there are really no barriers in the water, and everyone can experience the freedom that scuba diving brings. Originally, No Barrier began in the UK, but during the past five years has also worked internationally.

PADI wishes the No Barrier Tour every success for the future, in their 10th anniversary year. To find out how you can get involved, contact PADI International Ltd. by calling + 44 (0) 117 300 7234. www.padi.com ■



wreck
rap



Treasure from the *Wanli* wreck to go on exhibit

In year 1625, a Portuguese vessel set off from China on a voyage to the Straits of Malacca. Onboard were tonnes of china-ware and pottery that would bring lucrative profits for the Portuguese. However, the ship now named "Wanli" never reached the Portuguese fort of Melaka as she sank half way sailing through the South China Sea. The ill-fated voyage of *Wanli* remained a mys-

tery until almost four centuries later when her wreckage was discovered buried deep in the ocean off the coast of Terengganu (Malaysia) together with her precious cargo.

A team of researchers led by a Kuala Rompin-based marine archeologist, Stan Sjostrand, discovered the shipwreck in November 2003. During the team's search and investigation in 2004, parts of the cargo comprising the priceless blue-and-white pottery and other wares were also recovered.

The highly prized Ming Dynasty's blue-and-white porcelain found onboard *Wanli* also indicated that the Portuguese had access to better quality Chinese wares than the Dutch, while the *Wanli* vessel itself was believed to have been constructed somewhere in Southeast Asia.

Meanwhile, various steps have been taken by the Museums and Entiquities Department to extensively promote and inculcate better understanding of the country's rich underwater heritage. Among them is a plan to create a permanent gallery for the maritime history at the National Museum. ■



JIM KENNARD/WWW.SHIPWRECKWORLD.COM



An early 1800's schooner has been discovered in deep water off the southern shore of Lake Ontario near Oak Orchard / Point Breeze, New York. Shipwreck enthusiasts, Jim Kennard and Dan Scoville located the old schooner utilizing sophisticated side scanning sonar equipment. *SOURCE: Shipwreckworld.com*

19th Century Schooner sits almost intact in Lake Ontario

Shipwreck explorers Jim Kennard and Dan Scoville who located the schooner *Milan* in the summer of 2005 about five miles off Point Breeze, off Rochester, New York, have now videotaped the 93-foot-long, square-stern vessel using an ROV built with the help of college students. The ship sits evenly on the lake bed; its masts

extending 21m (70ft) up in a dark, almost oxygen-free setting. Its rigging and sails have long disintegrated, but much else appears largely undamaged. Both anchors are firmly in place near the bow. The tiller, a large handle for turning the rudder, is intact. *SOURCE: International Herald Tribune.* ■

Mica wreck offers glimpse into early shipping in the Mexican Gulf

The *Mica* wreck, measuring 20m and laying under half a mile of water on the seafloor of the Gulf of Mexico, is a bit of a mystery. Why was the hull covered by copper sheets?

Such a coating, often too expensive for small merchant vessels, was commonly applied to large vessels by ship builders from the late 18th century to the mid-19th century. It protected ships from wood-eating creatures such as barnacles. ■



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wreck rap



Truk's Wrecks an Environmental Disaster?

Truk Lagoon is arguably the world's premiere wreck diving location. Boasting dozens of wrecks (destroyers, transports, cargo, subs, tugs, carriers, tankers and other vessels) in her waters, the island's economy centers around these sunken ships. However, Micronesia's greatest asset may also be its greatest liability: massive oil leaks from the tankers, destroyers and other WWII relics are

threatening the island's coastline. Local blast fishermen have illegally fished the area for decades, causing damage to the wrecks. Consequently, the wreck's disintegrating hulls are beginning to leak diesel fuel, oil and other toxic chemicals.

According to Joe Konno, former Director of the Truk Environmental Protection Agency, "If one of those ships happens to break loose in the lagoon or

on the reef, you can imagine the damage it will cause from the loads of fuel being released."

Although Micronesia profits from the vessels through tourism revenue, maritime law dictates that Japan still owns the sunken ships and planes. Together, these two governments will have to come to a solution—and swiftly!—otherwise these divers' dreams may mutate into environmentalists' nightmares. ■

German WW2 Sub Wreck With 65 Tons of Mercury Has Started to Leak

More than 60 years after being torpedoed by the British navy, the rusting wreckage of the *U-864*, a German submarine, now poses a major environmental threat due to its poisonous cargo. At the time of the sinking, *U-864* was on a top-secret mission to supply Japan with advanced weapons technology. As the German vessel sank in two parts into more than 120 meters of water, it took with it not only the 73 men on board, but also 60 tons of mercury for the Japanese munitions industry and, some historical accounts say, a newly developed German jet-fighter engine—technology that was supposed to give the Axis powers an edge in the closing stages of the war.

The long saga of the *U-864*, however, is far from over. Many of the canisters containing the liquid mercury are corroding. Small amounts of mercury have seeped out and Norwegian government tests around the wreck have detected slightly raised amounts of the metal in crabs and fish—the country's second biggest export after oil and gas.

The Norwegian Government has announced that the most likely treatment for the toxic threat posed by a



HMS Venturer (Lt. J.S. Launders) torpedoes and sinks the German submarine *U-864* in the North Sea west of Bergen, Norway, in position 60.46N, 04.35E. This is the only known incident in all of naval warfare in which one submarine sinks another while both are submerged

sunken wartime U-boat is entombment. The wreck will probably be covered by a gigantic mound of gravel and sand, concreted for stability and extending 12m above it to allow for a shifting seabed.

U-864 was sunk by the British sub *HMS Venturer*—the only recorded fight to the finish by two submarines.

The remarkable story of the duel between *HMS Venturer* and *U-864*, and the results of a recent diving expedition to the U-boat wreck, was screened on a BBC2 Timewatch documentary on 2 January. ■

ROV footage of the wreck shows the progressed deterioration



Sidescan sonar image showing the broken *U-864* on the seabed



For 65 years, the wreck of the *USS Arizona* has been leaking oil from its grave at the bottom of Pearl Harbor, staining the water, visitors often say, as if it were the ship's blood. The leaks come from about 500,000 gallons of thick, bunker C fuel oil that remain trapped in the deteriorating hulk—oil whose "catastrophic" release experts now think is inevitable



Divers find three U-boats wrecked by secret war-time minefield

Divers have uncovered the wrecks of three Second World War German submarines off the British coast, shedding light on a British operation that has remained secret for more than 60 years. Historians were amazed at the discovery of the severely damaged U-boats. The submarines are all lying close to each other seven miles off Newquay in Cornwall, an area where no U-boats had ever been recorded as being lost.

After extensive research using declassified wartime documents, historians revealed they were victims of a deep minefield laid to defend supply lines. After the British intercepted a radio message from a U-boat commander

His boat had sunk a British destroyer after discovering a gap in the Irish Sea minefield that allowed supply ships in to Cardiff and Bristol. He radioed the news to Germany but his message was deciphered by British Intelligence. The British then laid deep mines to allow ships through but trap U-boats. ■

Japanese WW2 Minisub found off Sydney

Divers have found the wreck of a Japanese midget submarine that attacked Sydney Harbour in 1942 and brought the Second World War to Australia's biggest city, ending a 64-year mystery over its fate.

Divers were since told not to visit the wrecks, with a government minister saying the vessel might have unexploded weapons inside. The Federal Government has warned of huge penalties for anyone who disturbs or interferes with the sunken vessel.

The missing two-man submarine M24 was one of three Japanese midget submarines that launched a surprise attack on Sydney Harbour. In darkness it slipped in past protective nets stretched across the harbour entrance on May 31, 1942, with the plan attack shipping, including the American battle cruiser USS Chicago.

Two of the 46-ton subs were sunk. But the M24 fired two torpedoes, one of which sank the converted ferry HMAS Kuttabul, killing 19 Australian sailors and two Britons before vanishing under heavy fire. The other torpedo failed to explode.

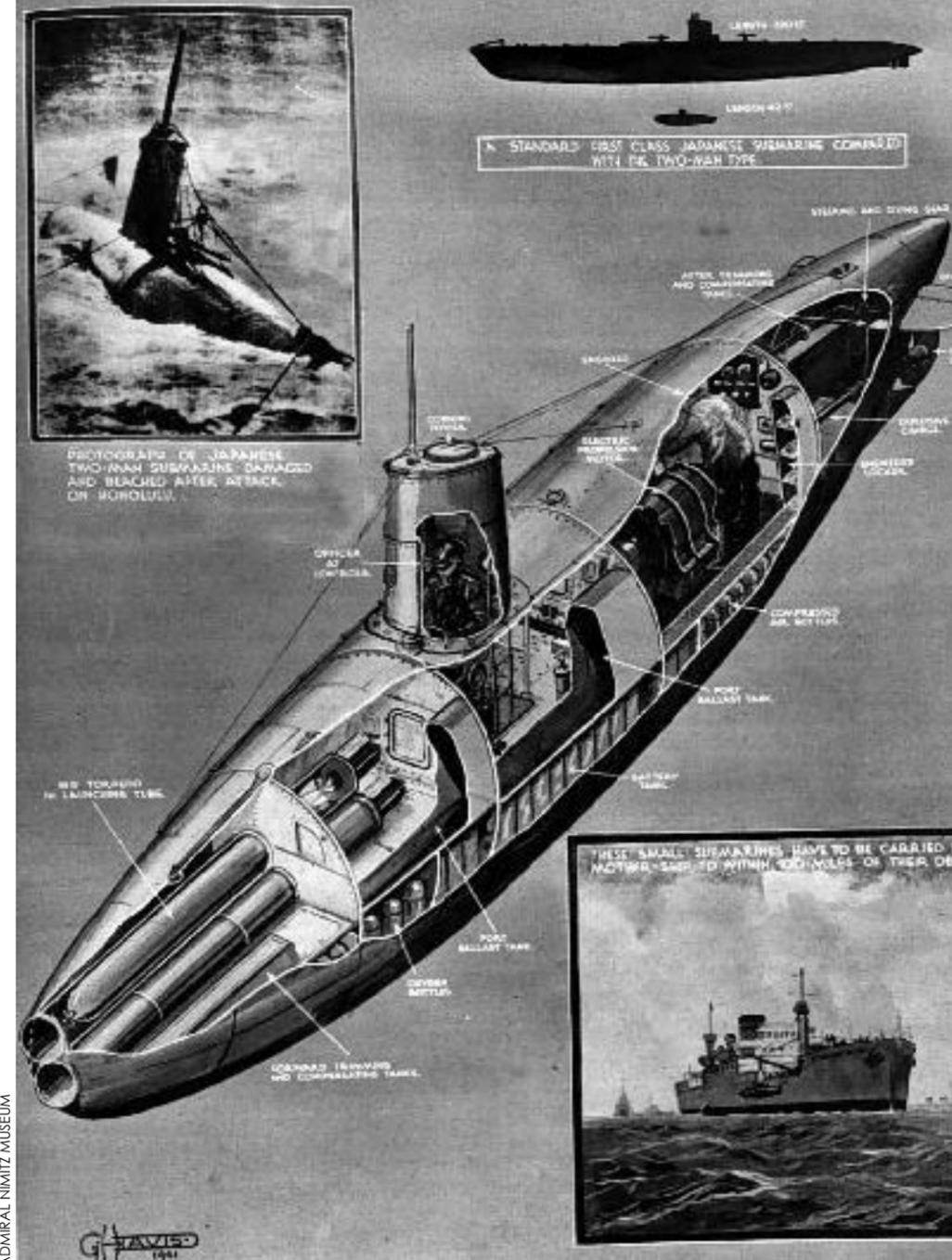
Filephoto of another midget submarine



What became of the M24 after the attack was carried out has remained a mystery until recently when the wreck of the long-sought submarine was found by recreational divers in deep water 5.5km off Sydney's north coast.

After several days of examination by navy divers, Environment Minister Ian Campbell confirmed the wreck was the missing M24.

"The resident expert in the Royal Australian Navy tells us that from what he has seen, this is the one. This will give the people of Australia and Japan the final piece of this maritime heritage puzzle," Campbell said in a statement. ■



ADMIRAL NIMITZ MUSEUM

The hunt for Chile's first submarine

The search for the first submarine designed and built in Latin America has brought together public attention and Chilean history with civil, military, academic leaders and artists. The Flach submarine was launched in 1866 to protect Valparaiso harbor from attack by the Spanish fleet. But the unique pedal-powered vessel sank just days after its unveiling. Nine crew members, the sub's designer, Karl Flach a

German immigrant to Chile, and his young son were aboard the sub when it sank.

The Chilean President José Joaquín Pérez had commissioned the submarine to assist the war effort between Chile, Peru and Spain from 1864 to 1866.

A filmmaker, Juan Enrique Benítez, has researched the sub for the past year and coordinated an effort to locate the vessel in collaboration with Navy divers

and researchers from the department of sub-aquatic archeology at the Universidad Internacional SEK in Santiago. State-of-the-art equipment including high-frequency sonar to detect objects on the ocean floor and a low-frequency depth profiler to locate objects buried in the sea floor as well as an electromagnetic scanner to identify metallic objects, was used in a four-day survey of Valparaiso harbor. ■

19th Century Shipwreck Recovered in Chile

A sub on a routine mission fell upon one of nearly 600 shipwrecks resting in the bay of Valparaíso. Artifacts found are of British origin and include nautical telescope, dishes, a sailor's shoe buckle, metal handheld lamps and bottles dating back to 1850 according to the experts.

Archeologists say the vessel appears to be an English merchant ship. Vessels such as this ran a route from Great Britain to the west coast of North America. Most of the shipwreck is buried under sediment at a depth of 17 meters. It is thought that the ship is split in two. ■

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Scapa Flow's Ghost Ship

Underwater archaeological experts have now created the most detailed sonar images to date of the *HMS Royal Oak*, which sank to the bottom of Scapa Flow in 1939.

The battleship took less than 15 minutes to sink with her crew of more than 1,200,833 who perished with her. U-boat ace Kapitänleutnant Günther Prien of U47 was responsible for her demise as he slipped through Royal Navy defences in Orkneys and shot four torpedoes into the warship.

Oil leaking from the ship's fuel tanks have presented a problem, much of it pumped out of the wreck, but still up to 286,000 gallons are thought to remain trapped in the hull of the ship.

In order to find out what state the wreck was in and how stable it was before attempting to empty the inner tanks, the Ministry of Defense called on Adus, wreck survey and sonar experts from the University of St Andrews. Computer wizardry turned data collected into 3D images of the wreck.

Maritime archaeologist with Adus, Martin Dean, said, "The sonar images are of such accuracy that even small changes in the hull over time can be monitored closely year on year... This will not only help reduce the impact of a catastrophic failure of the hull should it occur but, better still, allow a much greater understanding of how and when the wreck might break up." *SOURCE: Navynews.co.uk, Diving-News.com* ■

British War Graves Vulnerable to Desecration by Foreigners

Vessels sunk with British servicemen inside are under the protection of the British Protection of Military Remains Act of 1986. A loophole in the law which stops British citizens from penetrating the wrecks doesn't bar foreigners from diving them.

Evidence of this form of desecration come in the form of videos posted on the internet by foreigners. In addition, items taken from the wrecks are showing up on eBay and on DVDs, which include footage of human remains. Companies are now taking divers into battleships according to officials. Foreigners cannot be prosecuted for diving on wrecks in international waters, since there is no law protecting them from this activity.

There are individuals calling for a change in the law according to officials. The new law would ensure that wrecks would get the same respect as war cemeteries do. While visiting the outside of the wrecks are permitted, entering the wrecks is restricted. *SOURCE: icwales.icnetwork.co.uk* ■



Oceans of adventure!

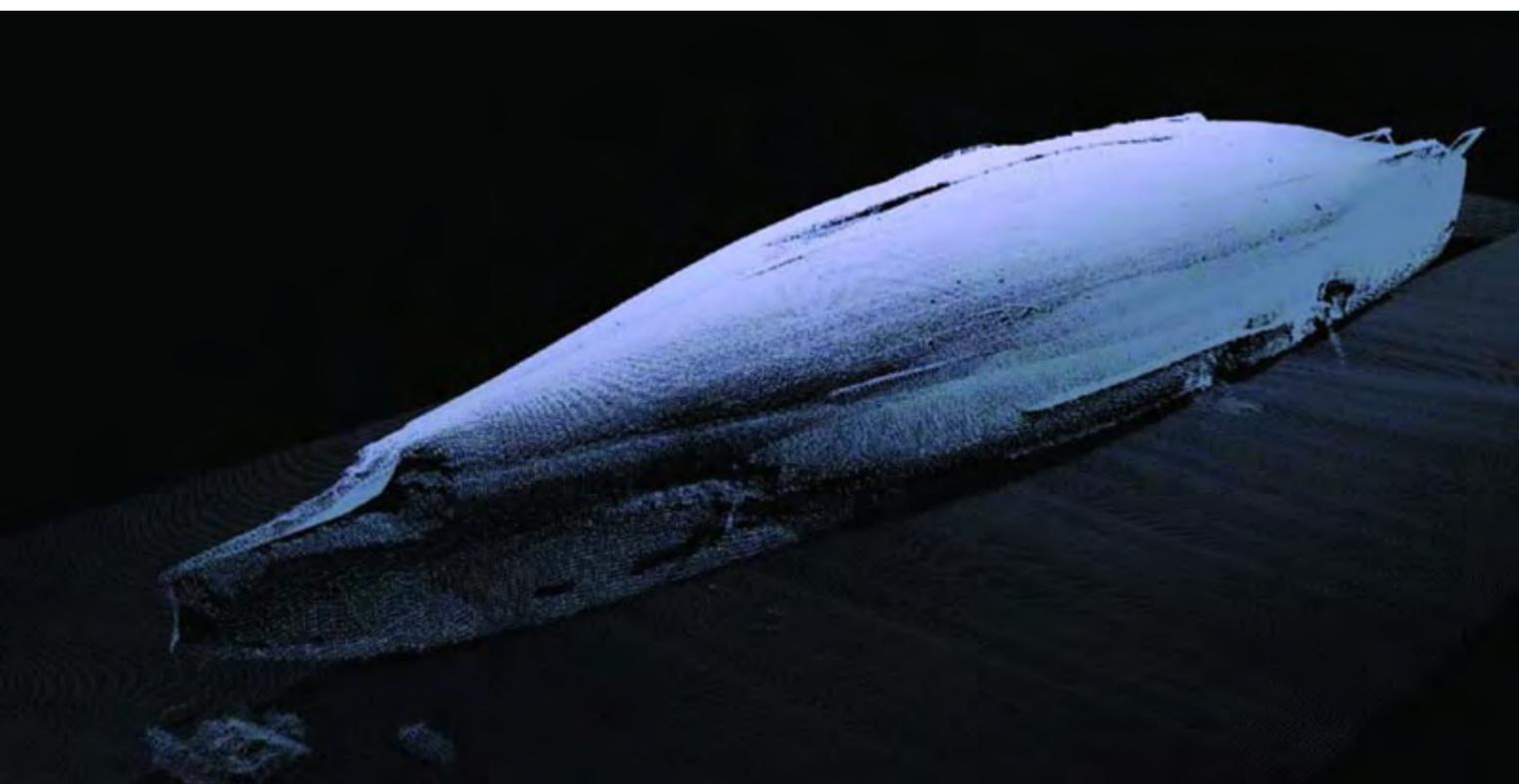
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Can Visitors Enter the Largest Marine Sanctuary on Earth in 2007?

The Northwest Hawaiian Islands National Marine National Monument is the largest marine sanctuary on earth. It boasts over 7000 species, a fourth of which do not exist anywhere else in the world. It is the largest protected area governed by the U.S. The large atoll in the island chain, Midway, was once accessible to divers. But it has been closed for about five years. It is pristine territory, remote, untouched... a diving wonderland. Three governmental agencies that run the Sanctuary have devised a plan that would allow visitors access to the area in mid-2007. There will be a limit on the number of visitors per night—30 per night in 2007 and 50 per night in 2008. Activities like snorkeling, kayaking, hiking and sight-seeing historic military sites on the island are listed as appropriate activities. Diving is not mentioned, unfortunately. *SOURCE: Seattlepi.nwsourc.com* ■

16th TDI Pro Development Center on Grand Cayman

Divetech on Grand Cayman Island is now one of only 16 TDI Professional Development Centers in the world. In order to gain such a status, the center must have two certified Instructor Trainers on staff. Returning from Maine, USA, world headquarters of SDI/TDI, Divetech's Nat Robb carried a new certification as an IT with TDI and SDI. He was awarded several IT ratings including: TDI Advanced Trimix, Trimix, Extended Range, Advanced Nitrox, Decompression Procedures, Nitrox Diver, Nitrox Gas Blender, SCR Drager Dolphin, CCR Inspiration, CCR Inspiration Mixed Gas, CCR Inspiration Advanced Mixed Gas, CCR Evolution, CCR Evolution Mixed Gas, CCR Evolution Advanced Mixed Gas, CCR Kiss, CCR Kiss Mixed Gas and SDI (Recreational).

Robb and Nancy Easterbrook now carry the flag as the two IT on staff at Divetech, which can now offer with their presence instructor level training for divers who want to become instructors. *SOURCE: Caycompass.com* ■

Grenada's Underwater Sculpture Gallery



Underwater sculpture garden, Grenada

In May 2006, artist Jason Taylor opened his Underwater Sculpture Gallery in Grenada. The unique artistic display celebrates Caribbean culture while it explores the constantly changing relationship between art and the environment. More importantly, the Gallery is a fascinating dive destination. Though sculpting the pieces and placing them underwater looks time-consuming and labor-intensive, for divers exploring Taylor's work, it's

worth it. The pieces aren't just statues or swim-throughs; they're gorgeous, multi-dimensional displays of genius. La Diabliesse, for example, is fashioned from concrete and steel and secured to the ocean substrate. The effect is a sublime underwater goddess -- at once beautiful and wretched -- watching over the reef. Meanwhile, The Lost Correspondent is a forlorn, amazing work totally incongruous at his desk under the waves. There's no way words can convey the beauty -- and the unusual-ness -- of Taylor's work. To begin to understand his art, check out his gallery of images. Better yet, watch the video on his site that takes you through his otherworldly underwater world. *SOURCE: Underwatersculpture.com* ■

Gozo Gets New Hyperbaric Unit

At Gozo General Hospital, Prime Minister Lawrence Gonzi inaugurated a new hyperbaric unit. The unit is located in a converted laundry room that now houses the sophisticated equipment to treat divers with decompression illness.

Arrival of this new unit makes Gozo a safer and more attractive place to dive, since the center is just a few minutes away from dive locations. It is all part of a marketing campaign to strengthen Gozo's position as a quality dive destination. Other measures included the scuttling of the *MV Cominoland* and the *MV Karwela* in August. The total investment for the niche tourism project of Gozo is 1.3 million euros. *SOURCE: MaltaMedia.com* ■



Walt "Butch" Hendrick, of Lifeguard Systems will design the UDC course

The Ultimate Diver Challenge is a Survivor for scuba divers, designed to test the dedication, skills, and knowledge that goes into protecting the reef and engaging in safe dive practices. Scheduled for August in Cozumel, the competition's various challenges are set up to identify a team of Ultimate Divers and, later, a single Ultimate Diver. To determine the Ultimate Diver, participants will demonstrate knowledge of the fundamentals of diving; perform safety drills; demonstrate navigation and search skills; deal with emergency situations; and participate in a wild, day-long beach party. Oh, wait—the beach party isn't actually part of the competition. That's part of the closing ceremonies. *SOURCE: Ultimatediverchallenge.com* ■

Cayman's Stingray City rules to change

The Marine Conservation Law on the Cayman's has recently been amended to help regulate the amount and type of food fed to the stingrays of Stingray City as well as activities in other Wildlife Interaction Zones. There is now a limit of the number of boats that access the zone at specific times and the number of passengers that can be taken to the sites. The measure was inspired by a growing concern that human interaction might be having to heavy an effect on the rays. Stingray City offers visitors an unique opportunity to interact with a lot of wild but friendly stingrays. It is not the rays' natural habitat, but they have been coming here for decades after they were initially attracted to the area by the tasty morsels the fishermen cleaned off their boats. *SOURCE: Caycompass.com* ■



PETER SYMES

Think you're the World's Ultimate Diver? Prove it.

The Ultimate Diver Challenge is a Survivor for scuba divers, designed to test the dedication, skills, and knowledge that goes into protecting the reef and engaging in safe dive practices. Scheduled for August in Cozumel, the competition's various challenges are set up to identify a team of Ultimate Divers and, later, a single Ultimate Diver. To determine the Ultimate Diver, participants will demonstrate knowledge of the fundamentals of diving; perform safety drills; demonstrate navigation and search skills; deal with emergency situations; and participate in a wild, day-long beach party. Oh, wait—the beach party isn't actually part of the competition. That's part of the closing ceremonies. *SOURCE: Ultimatediverchallenge.com* ■

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Rebreather Events in the Dominican Republic

—Silent Seas (16 – 21 April 2007)

—Shipwreck 2007 Xploration (22 – 27 April 2007)

Pirate's Cove Dive Centre—the Dominican Republic's latest state-of-the-art technical diving centre—is proud to announce two weeks of mouth watering special-interest diving in April.

The second Silent Seas (Pirate's Rebreather Week) will be in April. Last year's Silent Seas was quite a special event, attended by many like-minded divers, and they are hoping to repeat the same experience this year. Silent Seas is for all levels and experience (including interested open circuit divers) allowing everyone to share the best of all worlds.

This will be followed on the 22nd April by Shipwreck 2007 Xploration. This unique event will include a wide range of activities, training, dives, presentations and the opportunity to interact with some of the leaders in the wreck diving community.

Shadow Diver, John Chatterton, will be a keynote speaker at Shipwreck 2007 Xploration. "This is a one-of-a-kind event where we are actually going to try to find a new wreck. I'm very excited about this, as it will be a great opportunity for people to take classes and learn, and then put what they learn into practice and have a lot of fun doing it."

If you would like to join Silent Seas or Shipwreck 2007 Xploration, please go to www.piratescove-divecenter.com for registration details and additional information.

■



JILL HEINERT

Colombian Navy Goes After Shark Finners

The Colombian Navy's Pacific task force devotes most of its time to the pursuit of cocaine traffickers. However, lately the group has cast a wider net. Cruising the seas, looking for illegal shark finning boats, the Navy has started working to halt the cruel poachers that ply its waters. Not surprisingly, laws in the region are lax, and the Navy doesn't have jurisdiction when it comes to finners. For example, when the

crew discovered a boat with 14 dead hammerheads on it, Navy Captain Luis Rodríguez was only able to cite the vessel for having too few life jackets. Of course, many of the locals residing in the coastal villages depend on the fishing industry, are they are not pleased with the navy's new "pro-shark" stance. Believing the "government is trying to screw

National Park Service Announces Ocean Park Stewardship Action Plan

At an event celebrating the 50th Anniversary of the Virgin Islands National Park, the US National Park Service has announced the release of the Ocean Park Stewardship Action Plan—a comprehensive plan by the agency for restoring and maintaining ocean resources in the national park system. The Ocean Park Plan will focus the organizational and scientific capacity of the Park Service on conserving marine, estuarine and Great Lakes resources, in collaboration with state and federal agencies and park stakeholders.

"The comprehensive program represents a commitment to restore and maintain productive fisheries, habitats, and wildlife in the ocean parks, and ensure the recreational opportunities they afford to hundreds of communities and millions of visitors. The Ocean Park Plan highlights collaborations with the National Oceanic and Atmospheric Administration and private partners, including our recent agreement for a seamless network of ocean parks, wildlife refuges, marine sanctuaries and estuarine reserves." SOURCE: U.S. Department of the Interior ■

us over," many do not support the Navy's new endeavor. SOURCE: *Financial Times* via *Diverster.com* ■

The Colombian submarine *ARC Pijao* patrolling



US NAVY

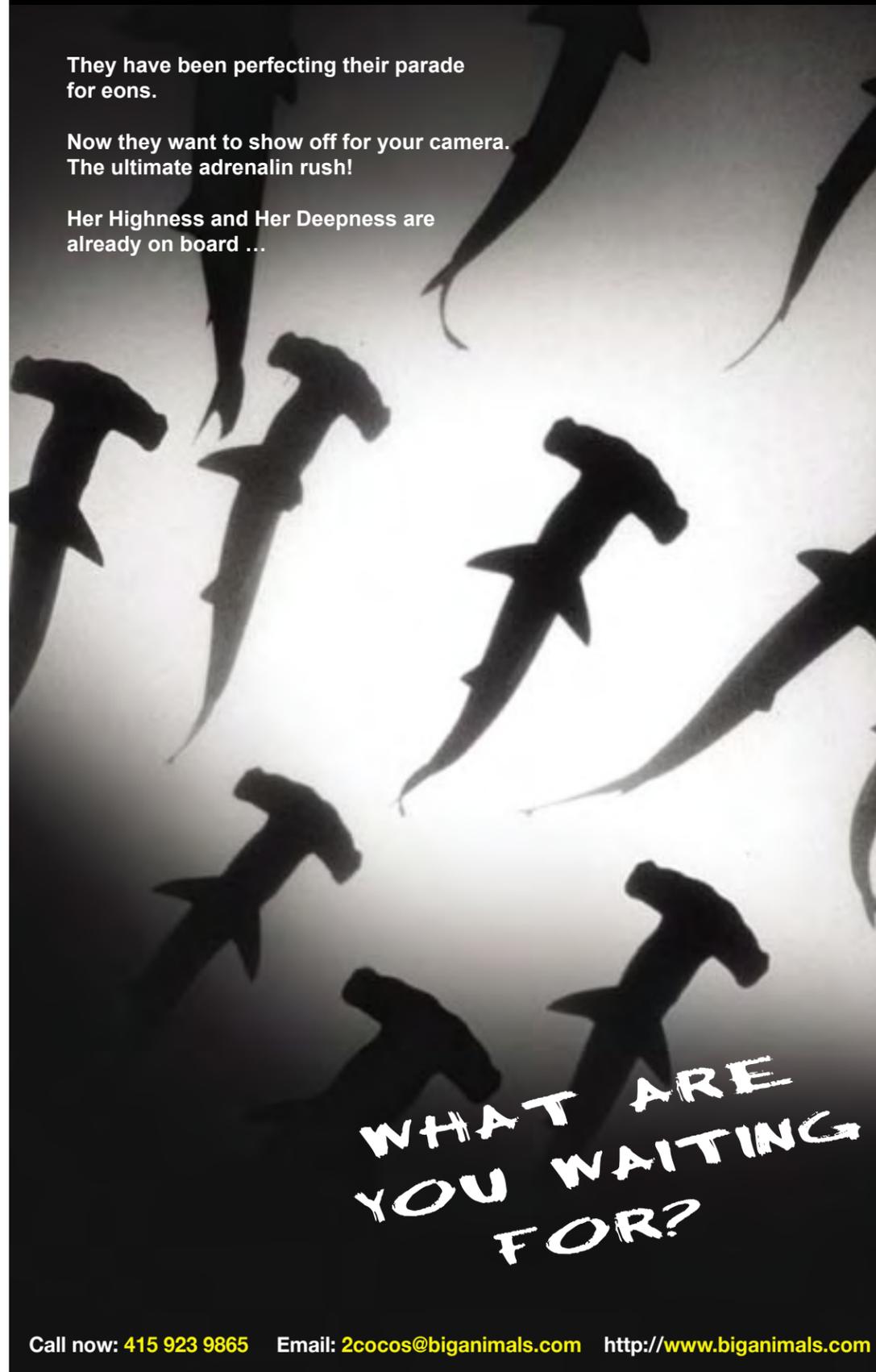
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Scientists, filmmakers and sport divers have made the pilgrimage to Cocos and Malpelo to experience and photograph the overwhelming sight of schooling hammerhead sharks, awe-inspiring whale sharks and the visceral thrill of witnessing a bait ball.



Join DR. KATHRYN SULLIVAN, "Her Highness," May 21 – June 05 '07, on a diving adventure

to Cocos. Dr. Sullivan, a Ph.D. in oceanography, was the first American woman to walk in space and was inducted into the Astronaut Hall of Fame. Dr. Sullivan has served as Chief Scientist of NOAA. She is a passionate advocate of science education and conservation.



Join DR. SYLVIA EARLE, "Her Deepness," May 17 – June 3 '07, on a diving

voyage to Malpelo and Cocos. Dr. Earle, a world-renowned marine biologist, is an explorer-in-residence at the National Geographic Society. Dr. Earle holds numerous diving records, including the women's world depth record for solo diving.



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