



GLOBAL EDITION
October 2010
Number 38



Indonesia
North Sulawesi

Honduras
Utila Island

Sharks
Sandtigers

Amazon
**Pink
Dolphins**

Ecology
Cephalopods

INDONESIA
Lembah Strait

Portfolio
Caelum Mero

DIRECTORY

X-RAY MAG is published by AquaScope Media ApS
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**PUBLISHER
& EDITOR-IN-CHIEF**
Peter Symes
Editor@xray-mag.com

SENIOR EDITOR
Michael Symes
science@xray-mag.com

**PUBLISHER / EDITOR
& CREATIVE DIRECTOR**
Gunild Symes
Gunild@xray-mag.com

SECTION EDITORS
Andrey Bizyukin, PhD - *Features*
Arnold Weisz - *News, Features*
Catherine Lim - *News, Books*
Simon Kong - *News, Books*
Mathias Carvalho - *Wrecks*
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**ASSOCIATE EDITORS
& REPRESENTATIVES:**
Americas:
Arnold Weisz
Arnold@xray-mag.com

CORRESPONDENTS
Robert Aston - CA, USA
Enrico Cappeletti - Italy
John Collins - Ireland
Marcelo Mammana - Argentina
Nonoy Tan - The Philippines

Russia Editors & Reps:
Andrey Bizyukin PhD, Moscow
Andrey@xray-mag.com

CONTRIBUTORS THIS ISSUE
Scott Bennett
Michel Braunstein
Mathias Carvalho
Wayne Fenior
Eric Hanauer
Kelly LaClaire
Catherine GS Lim
Bonnie McKenna
Caelum Mero
Andy Murch
Mark Powell
Don Silcock
Robert Sterner
Gunild Symes
Peter Symes
Carol Tedesco
Lawson Wood

Svetlana Murashkina PhD, Moscow
Svetlana@xray-mag.com

South East Asia Editor & Rep:
Catherine GS Lim, Singapore
Cat@xray-mag.com

**ASSISTANT EDITORS
& REPRESENTATIVES:**
Malaysia Editor & Rep:
Simon Kong, Kuala Lumpur
Simon@xray-mag.com

Canada/PNW Editor & Rep:
Barb Roy, Vancouver
Barb@xray-mag.com

GirlDiver Editor & PNW Rep:
Cindy Ross, Tacoma, USA
Cindy@xray-mag.com

Further information: **contacts page** at www.xray-mag.com

ADVERTISING
International sales rep:
Arnold Weisz
Sales@xray-mag.com

Asia-Pacific rep:
Simon Kong (Malaysia)
Simon@xray-mag.com

French speaking territories:
Mathias Carvalho
Mathias@xray-mag.com

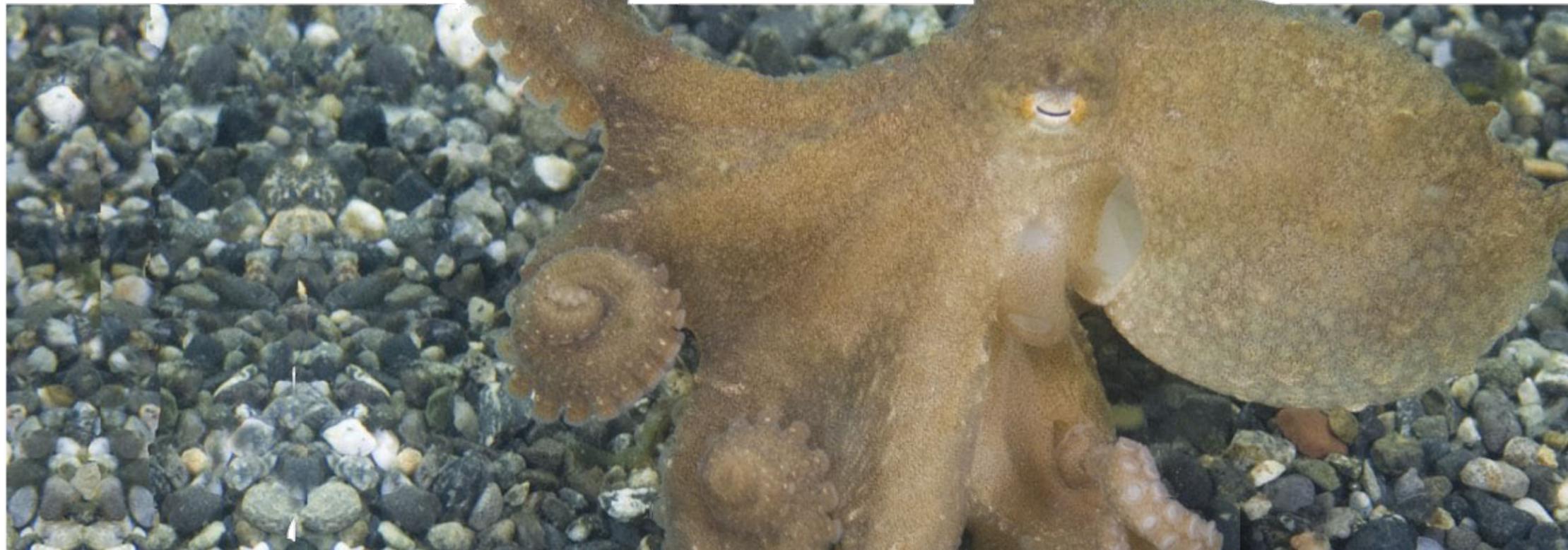
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by Eric Hanauer

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Pacific Red Octopus. Photo by Andy Murch



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go quietly, amid the noise and haste...

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the rebreathers of choice from 6m to 160m



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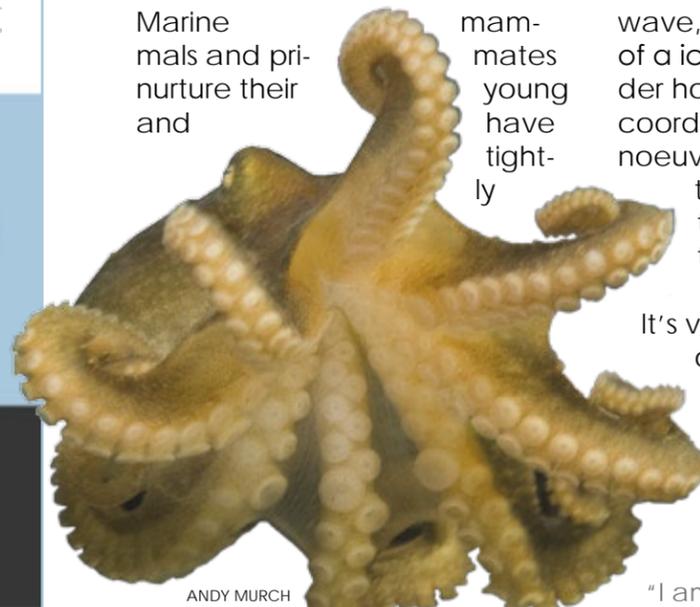
“Take me to your leader”

Cephalopods are such fascinating and seductive creatures, with a weird and alien anatomy. Octopuses are molluscs, a seemingly primitive animal group that includes clams and slugs. Yet, they are capable of some rather brainy feats such as observational learning and solving puzzles—skills supposedly seen only in higher vertebrates with sophisticated brains.

In recent years, we have come to understand how much we have in common with not only our closest relatives, the other primates but also the large marine mammals. While we can probably never know for sure what they feel, their physiological and behavioural responses are similar to ours. The same stress hormones get released when the animal gets spooked or is in pain.

Marine mammals and primate nurture their and

mammals mates young have tightly



ANDY MURCH

knit family structures with a social hierarchy and rules that serve to make the group stronger including using rewards and punishments to teach and discipline their young. And since acquired knowledge seems to be passed on from generation to generation, some researchers even talk about some species having *culture*.

In the Arctic, pods of orcas have been observed orchestrating and coordinating complex attacks whereby they in full synchronicity move to create a big wave, which washes a sea lion of a icefloat. One can only wonder how they communicate and coordinate such a complex manoeuvre requiring a very precise timing. How did they come to *think* of it and think it through?

It's very clear from observations of cephalopods that they are also extremely intelligent animals with an anatomically complex brain, but what goes on in an octopus' thoughts,

“I am one clever sucker”

ANDY MURCH

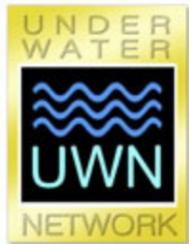


“Greetings biped”

will require a huge leap of the imagination. After all, the brains of animals like the octopus evolved entirely separately from the brains of the vertebrates, and they have an entirely different design—perhaps they also have a unique form of intelligence.

And here is a mindboggling thought: Since they are also very social creatures, does that imply that regardless of underlying construction that all creatures during their evolution converge towards the same sort of higher understanding of their environment and universe we live in? ■

Editorial



X-RAY MAG is a founding member of the Underwater Network **Underwater Network.com**



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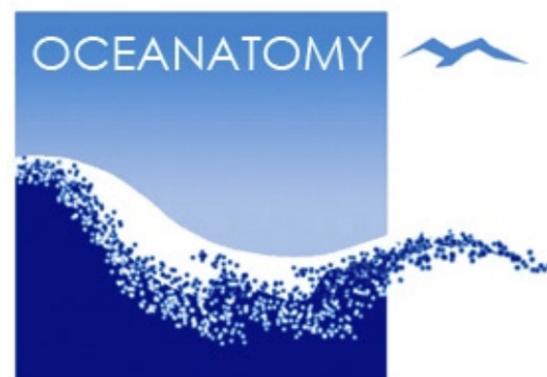
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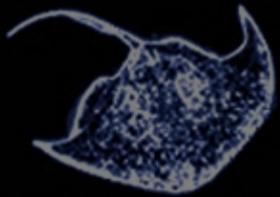


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X-ray mag

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It's all the rage

NEWS



CHRIS JEWELL

John Volanthen (filephoto)

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UK-led cave diving record in Spain

Explorers Jason Mallinson, Rick Stanton and John Volanthen, along with Dutch caver Rene Houben, charted new territory in a 50-hour voyage which saw them spend two nights camped deep underground.

By venturing 8.8km (5.5 miles) into the Pozo Azul cave system in Northern Spain, the British-led team beat the 7.8km (4.8 mile) world record for the longest cave dive penetration, set last year at Wakulla Springs in Florida.

Pozo Azul (Blue Pot) in Northern Spain is, as the name suggests, a deep blue

karst spring. The entrance is a welcoming clear blue basin, which is much visited by tourists. The cave behind the spring is filled with water and only accessible to cave divers. It is widely considered one of the best caves in which to train.

"It's an incredible buzz to explore further than anyone has been ever before," Jason Mallinson was quoted by Metro UK. "There was no wildlife down there, just a tunnel of crystal blue clear water stretching on and on. The adrenaline builds when you realise you are looking at

something nobody has ever seen before. It's that which drives you forward."

The team began their two-and-a-half day foray into the Pozo Azul caves in Covenera, northern Spain, on Saturday. They used underwater scooters to propel them through three sumps, or underwater passages.

After sump two, they emerged in a small dry cave area nicknamed Tipperary. It was there they spent two nights resting and replenishing their underwater breathing mixtures. ■

Fishing skews sex ratio in fish

Population collapses in many species of reef fish may be linked to an excess of males brought about by fishing — a situation that a quota system won't remedy. In many species, particularly those where individuals can change their sex, each fish produces fewer young as the population density drops.

To find out why this happens, Stefan Walker of James Cook University tagged 232 cylindrical sandperches (*Parapercis cylindrica*) in a Great Barrier Reef lagoon, and followed their movements and reproductive behaviour. Cylindrical sandperches are born female, but some later change into males, with harems of two to ten females.

Walker saw more sex changes in regions where fish populations were low. This led to more males holding court to fewer females and a drop in the number of eggs laid per square metre of lagoon.

"It's perplexing, because as population density drops, more resources should be available and populations should increase."

The finding is likely to apply to at least 70 other sex-changing reef fish, including many commonly caught species, said Walker, and suggested that marine protected areas are a better strategy for conserving populations than fishing quotas.

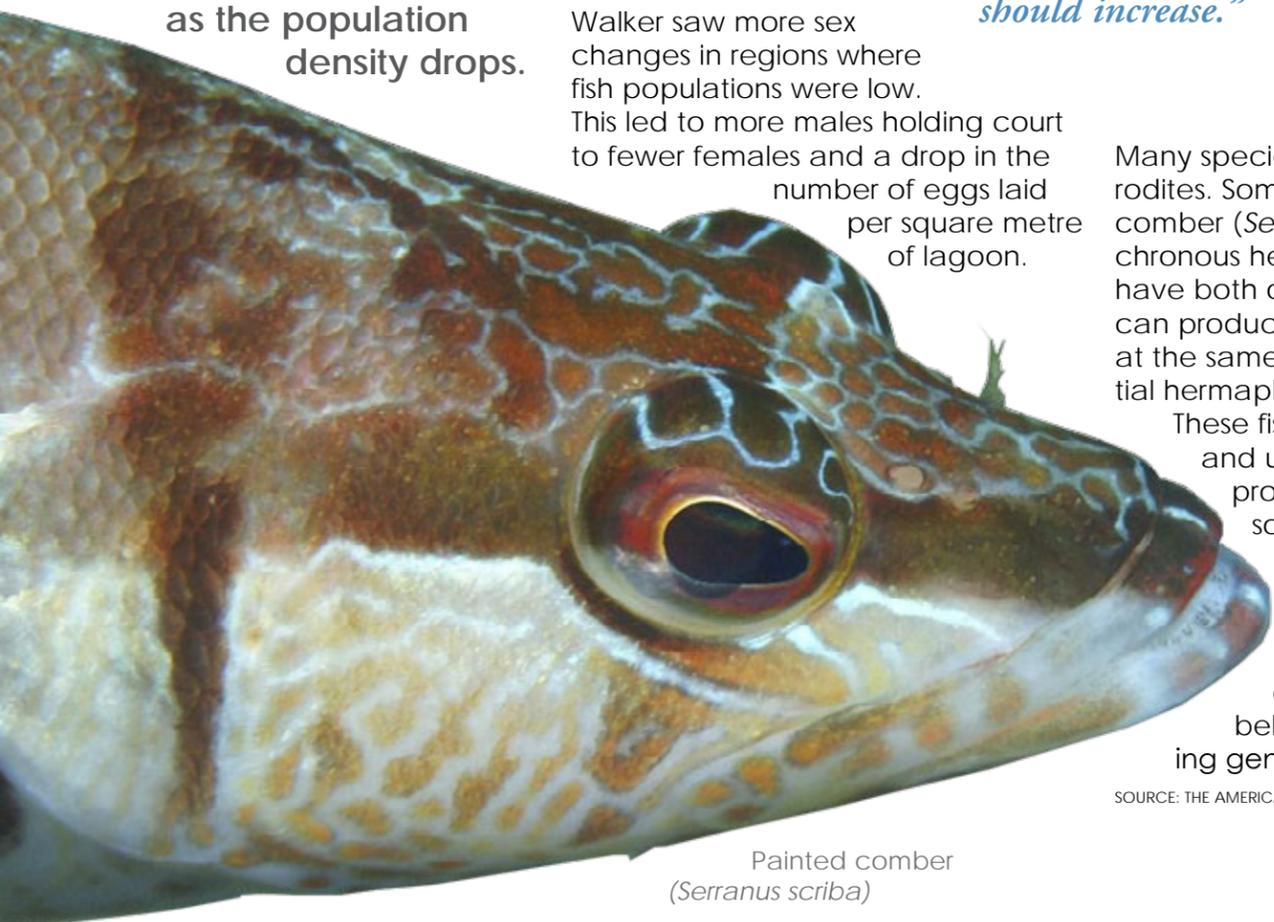
Protected areas maintain the density of populations whereas quotas may still allow populations to decline, increasing the rate of sex change.

Many species of fishes are hermaphrodites. Some, such as the painted comber (*Serranus scriba*), are synchronous hermaphrodites. These fish have both ovaries and testes and can produce both eggs and sperm at the same time. Others are sequential hermaphrodites.

These fishes start life as one sex and undergo a genetically programmed sex change at some point during development. Their gonads have both ovarian and testicular tissues, with one type of tissue predominant while the fish belongs to the corresponding gender. ■

SOURCE: THE AMERICAN NATURALIST, DOI: 10.1086/655219.

PETER SYMES



Painted comber (*Serranus scriba*)



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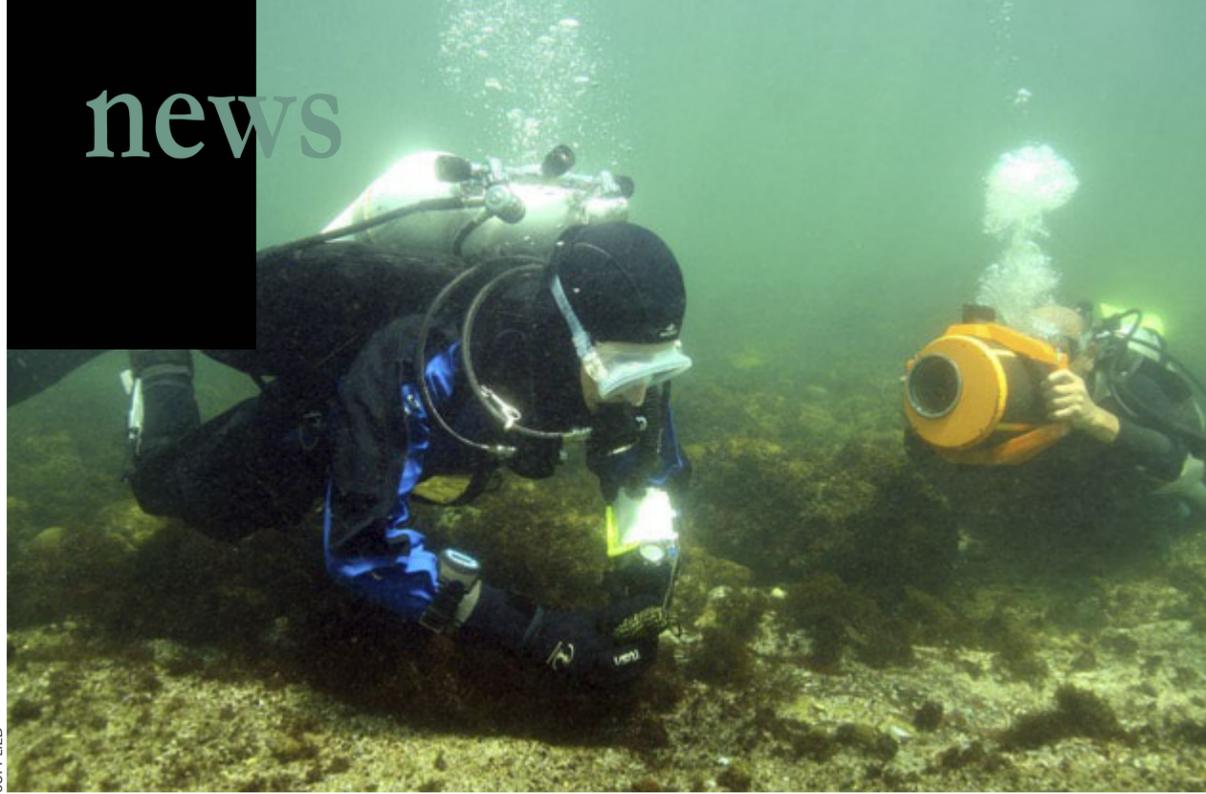
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During the attempt for a new world record, Ivan maintained constant depth of 7-8 meters

Bulgarian Ivan Zhelezarov sets a new world record for salt water dive

The 27-year-old NAUI instructor, spent 50 hours and two minutes under water, setting a new world record for the Longest Open Saltwater Scuba Dive.

The record is dedicated to the National Association of Underwater Instructors (NAUI), which celebrates its 50th anniversary this year. The previous record was set by Will Goodman from the United Kingdom, who managed 48 hours, 9 minutes and 17 seconds.

The attempt for setting a new world record began on 27 August 2010 at 1:46 pm, when Ivan Zhelezarov was submerged to a depth

of 8m in the sea near Kiten.

During the first 24 hours under water, Zhelezarov was accompanied by a support diver at all times, while later on, he was provided support by two divers and a doctor. Despite the difficulties, especially during the two nights when the conditions were the hardest, the enthusiast managed to hold on. Ivan returned to the surface at 3:48 pm today after spending 50 hours and two minutes under water. He is in good health, and after taking a necessary break, he will be back in shape and ready for new achievements.

Ivan had no physical contact with the surface at anytime during his time underwater, while his sup-

port crew replenished his air supply when necessary.

The support team for the dive included nine divers. By taking turns, each diver spent time under water with Ivan and supplied him with new air bottles at intervals of 90 minutes. Ivan's physical condition was constantly monitored by a team of physicians.

Ivan was equipped with a drysuit and nutrition was provided to him in liquid form. The dive was made using open circuit scuba. During the attempt for a new world record, Ivan maintained constant depth of 7-8 meters using a specially built underwater platform. The entire attempt was recorded on camera.

■

Florida Dive Instructor Allen Sherrod falls short on attempt at breaking the Guinness World Records mark for the longest scuba dive in open fresh water.

Sherrod was underwater for a total of 111 hours, just nine hours short of the world record mark set by Jerry Hall in 2004 in a Tennessee lake.

Sherrod dove into Lake David on Sept. 27 but said he had to resurface Friday because of hypothermia.

On this second attempt, a support team was assisting Sherrod with knowledge gained from the first dive which was aborted because Sherrod contracted the flu and surfaced for medical safety. Discomforts such as chapped and cracked hands because of constant water submersion are being averted via a full dry-suit now equipped with dry gloves. Music (classic rock mix), was being sent down to

Sherrod via underwater speakers to help fight the boredom of the six day dive. The team was also delivering water and a small amount of food puree each day to keep his nutrition level up.

With this marathon dive, Sherrod wants to raise awareness of how important it is to maintain and improve the quality of Florida's fresh water local fresh water lakes. Full report by Wayne Fenior on xray-mag.com



WAYNE FENIOR

Allen Sherrod with NAUI National Territory Manager Chad Barbay



WAYNE FENIOR

Allen Sherrod (left) with his Course Director NAUI National Territory Manager Chad Barbay



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PHOTO: DAVID PLOSOF



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PETER SYMES

Three Sisters Springs Manatees protected

Threatened by the prospect of development for years, Three Sisters Springs in Crystal River, Florida, recently became a protected, national wildlife refuge thanks to a multi-agency purchase deal, which puts the springs under the management of the U.S. Fish and Wildlife Service.

More than 150 manatees as-

semble within the warm springs of the area, known as Three Sisters Springs, for calving and feeding during the winter months and during critical cold weather periods.

The 57.8 acres of land were recently purchased for US\$10.5 million from Three Sisters Holdings, LLC. The acquisition more than doubles the size of

the refuge and stops the residential development planned on the property.

The protected area will be owned by the city of Crystal River and the Southwest Florida Water Management District. The U.S. Fish and Wildlife Service will manage the site as part of the Crystal River National Wildlife Refuge. ■

Mel Fischer's Maritime Museum's robbed of gold bar

For 25 years, visitors to the Mel Fisher Maritime Museum in Key West, Florida, had the opportunity to lift a US\$550,000 gold bar in a special display case. The bar was recovered in 1980 from the *Santa Margarita* shipwreck—a Spanish galleon off the Florida Keys, which Fisher discovered, according to the museum's website. The ship was one of eight to sink in a 1622 hurricane and was filled with gold bars, jewelry and silver coins. On August 18 around 5:15 p.m.

two bandits stole the 11-inch, 74.85-ounce gold bar. Security footage shows the suspects breaking into the case. No visitors or security guards were present. Detectives from Key West Police and the U.S. Federal Bureau of Investigation are trying to identify the two men who walked into the gallery room around 5:10 p.m. The police believe one of the men served as a lookout in the small gallery room. Investigators are also looking at fingerprints on the display

case, but they may be of visitors unconnected to the heist.

The museum's insurance company has offered a US\$10,000 reward for the return of the 16.5-karat gold bar. The uniqueness of the piece places the bar's value at \$550,000, Kendrick said. "Having the [insurance] money in its place would not be a winner for me," Kendrick told CNN.

So far, there has been no news on the recovery. ■



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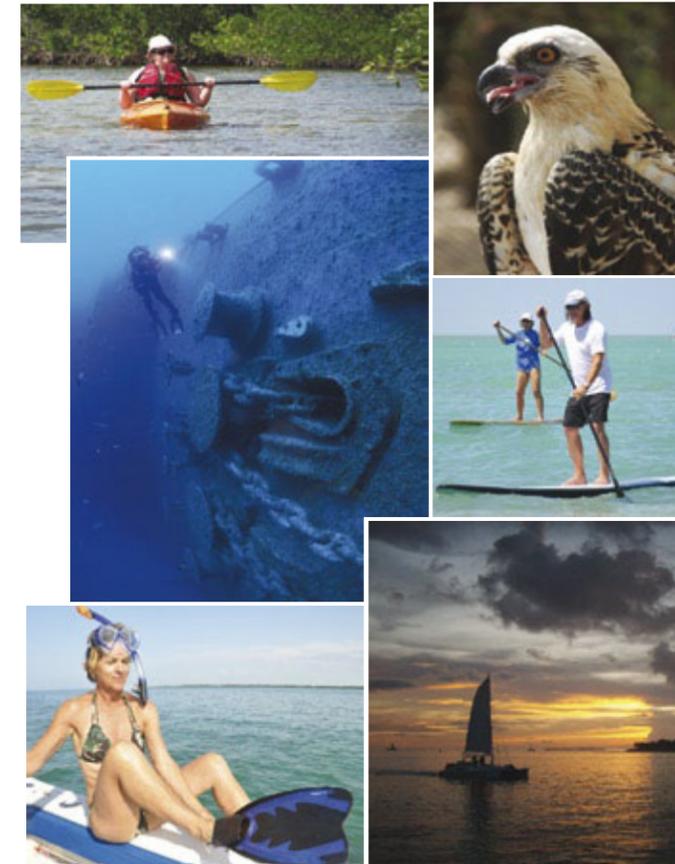
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- Underwater Scooter Races
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- FIRM Bicycle Race



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New Submarine Runs Eternally on Thermal Power from Ocean Currents

Researchers have successfully demonstrated the first robotic underwater vehicle to be powered entirely by natural, renewable, ocean thermal energy. It traps thermal energy from the ocean each time it moves from deep cold water to waters on a warmer surface.

The *Sounding Oceanographic Lagrangian Observer Thermal RECharging* (SOLO-TREC) autonomous underwater vehicle uses a novel thermal recharging engine powered by the natural temperature differences found at different ocean depths. Scalable for use on most robotic oceanographic vehicles, this technology breakthrough could usher in a new generation of autonomous underwater vehicles capable of virtually indefinite ocean monitoring for climate and marine animal studies, exploration and surveillance.

Researchers at NASA's Jet Propulsion Laboratory, Pasadena, California; and the

"People have long dreamed of a machine that produces more energy than it consumes and runs indefinitely."

Scripps Institution of Oceanography, University of California, San Diego, completed the first three months of an ocean endurance test of the prototype vehicle off the coast of Hawaii in March.

"While not a true perpetual motion machine, since we actually consume some environmental energy, the prototype system demonstrated by JPL and its partners can continuously monitor the ocean without a limit on its lifetime imposed by energy supply," said Jack Jones, a JPL principal engineer and SOLO-TREC co-principal investigator. ■



The SOLO-TREC diver is the latest robot unveiled by NASA. The new ocean-going robot is the first of its kind to be fueled entirely by renewable energy

Ocean Conveyor Belt model needs a rethink

The accepted picture of how a massive oceanic conveyor belt of water turns has been complicated by findings published in *Nature Geoscience*. The results could help to boost the precision of climate-change models.

For decades, oceanographers have embraced the idea that Earth's ocean currents operate like a giant conveyor belt, overturning to continuously transport deep, cold polar waters toward the equator and warm equatorial surface waters back toward the poles along narrow boundary currents. The model held that the conveyor belt was driven by changes in the temperature and salinity of the surface waters at high latitudes.

As tropical water from the Equator flows north in the Atlantic Ocean, it becomes cooler and denser. Evaporation along the way makes it saltier and further increases its density. In the frigid Arctic, the water sinks into the depths and then moves southward, returning to the surface once it has warmed up again.

But this simplified picture of what is known as meridional overturning circulation (MOC) has been brought into question by a paper suggesting that, in the past 50 years, ocean circulation closer to the Equator has grown

weaker, whereas the northern waters have flowed more strongly.

"The more we look, the more complicated the ocean is," said Susan Lozier, professor of physical oceanography and chair of the Division of Earth and Ocean Sciences at Duke University's Nicholas School of the Environment, and lead author of the study.

conveyor belt for the overturning was developed decades ago, before oceanographers had measured the eddy field of the ocean and before they understood how energy from the wind impacts the overturning," said Lozier.

The idea of the seas moving as a smooth belt is being changed by the accessibility of satellite data, added

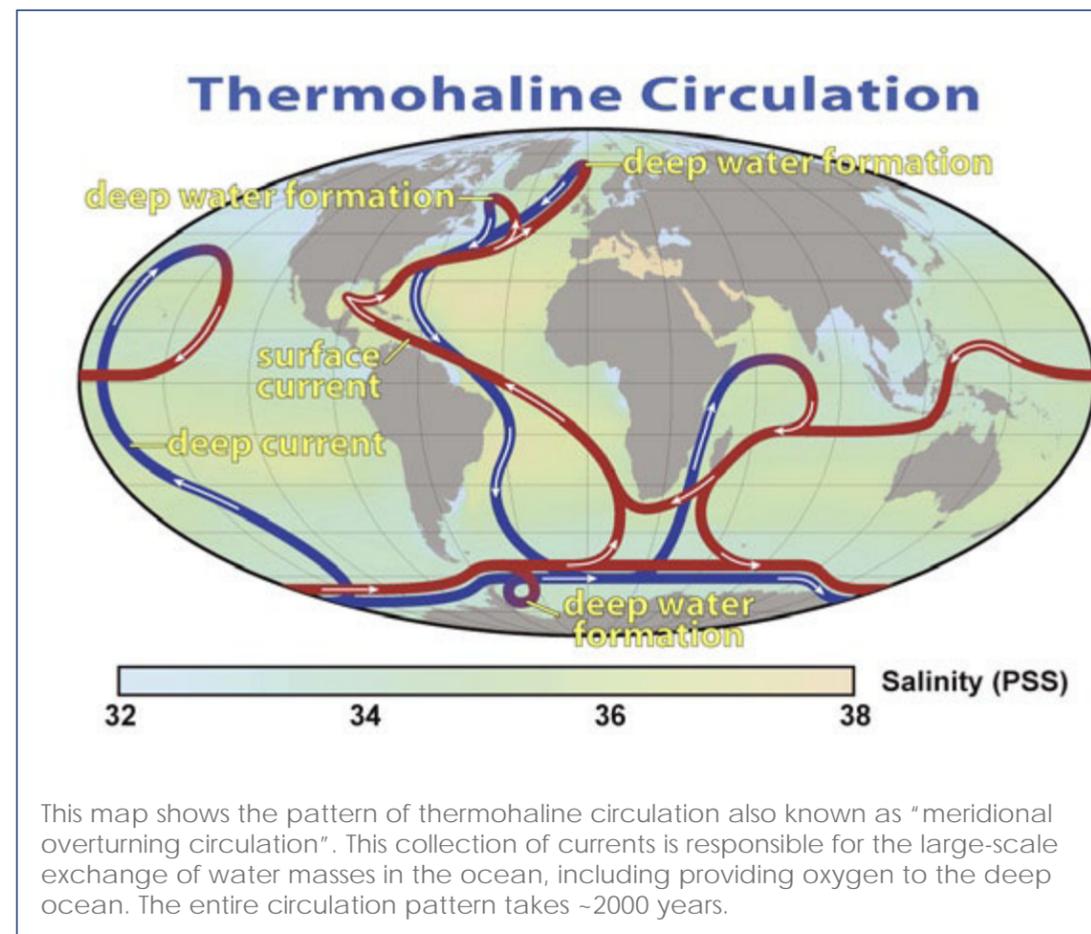
oceanographer Joël Hirschi, also at the National Oceanography Centre and a co-author of the earlier study. The essential outline remains, he said, "but on top of that conveyor picture, there is a lot of variability going on".

More details would help to produce better climate-change models, he said. Because heat released from the water moving towards the pole is part of what keeps Europe warm, filling in gaps in the data could provide a more complete picture of what might happen in particular locations.

Lozier agreed, adding that as surface waters turn over, they carry whatever gases are above them down to

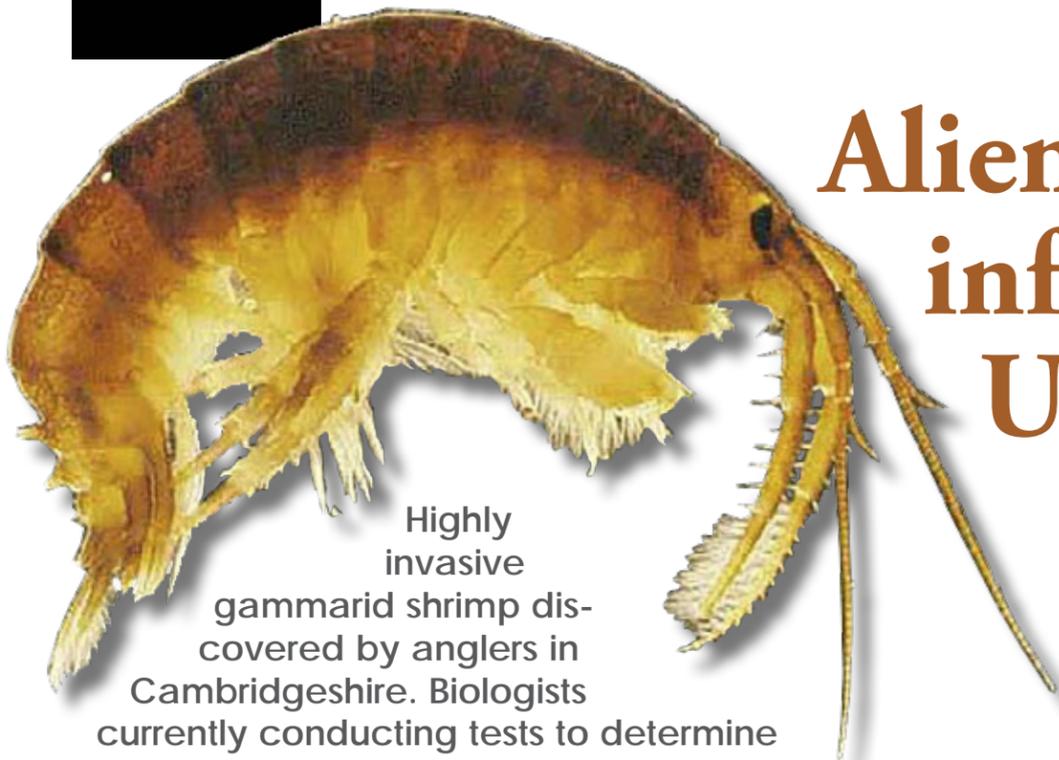
the deep ocean, locking them out of the atmosphere. Understanding the ocean flow could help to reveal carbon dioxide sinks, she said. ■

SOURCE: NATURE GEOSCIENCE



This map shows the pattern of thermohaline circulation also known as "meridional overturning circulation". This collection of currents is responsible for the large-scale exchange of water masses in the ocean, including providing oxygen to the deep ocean. The entire circulation pattern takes ~2000 years.

"The old model is no longer valid for the ocean's overturning, not because it's a gross simplification, but because it ignores crucial elements such as eddies and the wind field. The concept of a



Alien shrimp infiltrate UK waters

Highly invasive gammarid shrimp discovered by anglers in Cambridgeshire. Biologists currently conducting tests to determine the severity of the problem.

The highly invasive gammarid shrimp, *Dikerogammarus villosus*, has been discovered by anglers at Grafham Water in Cambridgeshire. Boasting a fearsome set of jaws, the invasive gammarid shrimp originate in Eastern Europe and are far larger than United Kingdom's native species. The shrimps were confirmed as likely to be the killer species after samples were sent to the Environment Agency. An expert in Holland has now conclusively identified the species.

Aggressive hunters, they feed on native freshwater shrimp, damselflies, small fish and water boatmen—common sights on Britain's lakes and rivers—and could upset the delicate food chain. The shrimp often kill without feeding and can quickly dominate rivers and lakes.

Biologists are currently conducting tests to determine the severity of the problem and what measures need to be taken. Although the shrimp pose no risk to drinking water supplies, anglers using the reservoir are being urged to make sure the invasive species does not spread elsewhere.

"I am extremely concerned to hear that this highly invasive species has been found in Britain," stated Richard Benyon, the minister in charge of the natural environment. "Anglian Water has acted quickly to put biosecurity measures in place, and the

"I am extremely concerned to hear that this highly invasive species has been found in Britain."

Environment Agency is working hard to establish the extent of the problem and what action may need to be taken. We need to do everything we can to protect our native wildlife and young fish from the potential damage the killer shrimp can cause."

Paul Leinster, chief executive of the Environment Agency, said: "We are devastated that this shrimp has been found in Britain, and very grateful to the keen-eyed anglers who found it."

Posters have been put up warning boat users to check their equipment and vessels to stop the shrimp escaping to other reservoirs, lakes or rivers. Native to a region encompassing Romania, Moldova, Ukraine, Russia and Kazakhstan, the shrimp have already invaded Western Europe via the Danube. It is believed they have been spread via the ballast water in ships. ■

Dutch government funds coral nurseries in the Netherlands

The Dutch Ministry of Agriculture, Nature and Food Quality has recently selected the development of a coral nursery for financial endorsement from a short-list of innovative projects and technologies aimed at protecting biodiversity.

Soon, construction of a small-scale coral aquaculture facility will commence, after which the cost-effectiveness of the facility will be determined during an 18-month period. Two years from now, the first high-quality, sustainably cultured corals may find their way to wholesalers and retail stores around the globe.

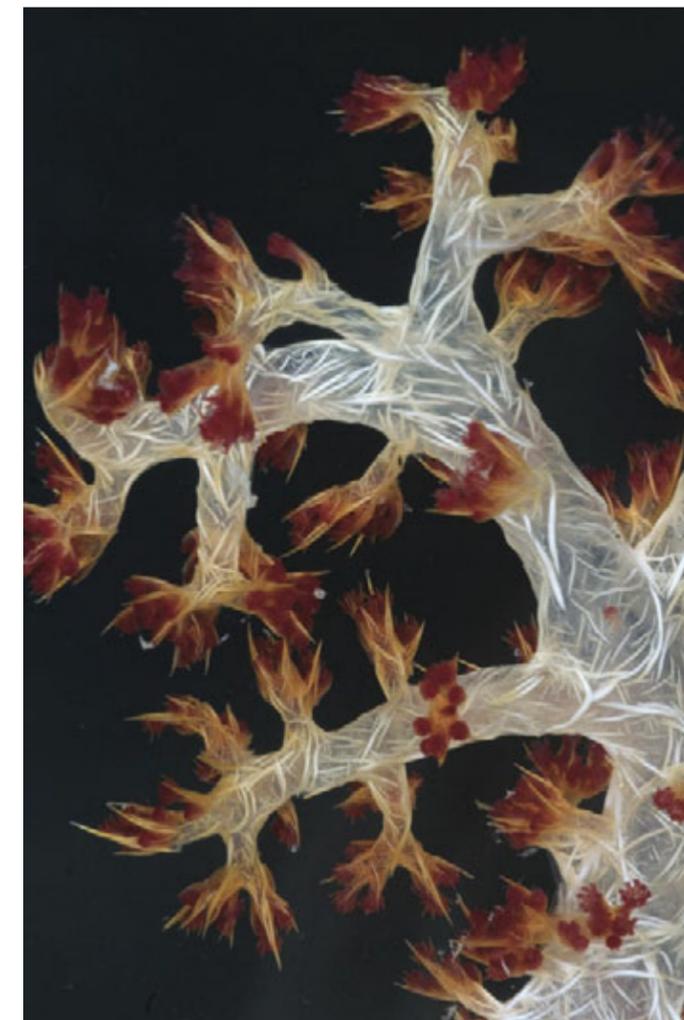
Coral reefs today are faced with unprecedented threats, including climate change, pollution, disease, overfishing and coastal development. The marine aquarium industry, which in great part relies on the collection of wild corals, fish and other reef organisms, has been under great pressure of late due to the decline of coral reefs worldwide. The sustainable aquaculture of corals and other reef organisms may be more important than ever, reducing pressure on wild populations and providing a "Noah's Ark" for endangered species.

Aquaculture

The establishment of a coral aquaculture facility is a welcome accomplishment in the International Year of Biodiversity. However, sustainable, aquaculture of corals has never been implemented on a large scale due to the high costs involved. As Peter Henkemans, CEO of EcoDeco a company which develops and builds biologi-

cal filtration systems for public aquaria, explains: "Growing corals is highly expensive, which is why most efforts have focused on mariculture. By letting nature do the work, costs can be greatly reduced. Mariculture however has several disadvantages. First, the ocean behaves in an unpredictable fashion. El Niño events for example may lead to coral bleaching and destructive tropical storms, which can decimate entire harvests. Second, anthropogenic disturbances such as pollution, including oil spills, may also disrupt the efforts of local Asian mariculture companies. EcoDeco's technology however, together with new scientific insights, offers new perspectives. In an ex situ aquaculture

facility, corals are able to grow under stable, controlled conditions. At the heart of the Coral Greenhouse project lies the unique combination of new aquarium technology with recent scientific advances in coral biology. ■



Octocorals are named for the eight tentacles that fringe each polyp. Shown is a soft coral, *Dendronephthya*, from coral gardens off Lizard Island

GARY CRANITCH, QUEENSLAND MUSEUM



Annapolis Reef Project Put on Hold

Text by Barb Roy

British Columbia, Canada — Due to unforeseen technicalities in the Provincial permit process for sinking a ship, Howe Sound will have to wait a while longer for their new wreck diving site, designated for Halkett Bay on Gambier Island. Representatives from the Artificial Reef Society of British Columbia (ARSBC) and the Dive Industry Association of British Columbia (DIABC) are currently meeting with government officials to work out the legalities and come to a

positive solution as soon as possible.

“The entire dive community is behind this project,” comments Kal Helyar, President of the DIABC and owner of Porpoise Bay Charters in Egmont. “We have all wanted a ship in Howe Sound for years and the underwater terrain is similar to what we had in Sechart Inlet where the Chaudiere was put down — both were once log dumping grounds. The Chaudiere provided a stable platform for marine life to grow on. It’s now a healthy underwater area,

which is what can happen in Halkett Bay too.”

Background

In June of 2008 the ARSBC towed the *HMCS Annapolis* (271 feet in length) to Howe Sound where it began to undergo its transformation from a ship of war to an under-

water habitat for marine life. Since then the ARSBC has utilized volunteers from British Columbia, Alberta and Washington State to environmentally clean and prepare the ship for sinking.

What sets this ex-military ship apart from the other large ships in five destinations around coastal BC is the helicopter hanger. This steam-powered destroyer escort once carried anti-submarine Sea King helicopters, which were used to extend surveillance capabilities of a ship and find surface vessels in the dark during times of war.

Rockfish oasis

Although the northwest dive community is excited about getting a wreck so close to the Mainland, they are also thrilled with the idea of how this new reef of steel will aid in their efforts to restore endangered Howe Sound rockfish populations.

Previous observations by divers have suggested that other artificial reefs (ships) around Canada have provided a needed shelter and habitat in their individual areas, creating a noticeable

increase in marine residents. This is also true for other juvenile fish species like lingcod, cabezon and wolf-eels thus enhancing an overall replenishment of the aquatic realm.

“I have been in contact with many of the retailers and charter operators,” adds Deirdre Forbes-McCracken, spokesperson for the ARSBC and co-owner of the retail dive centre Ocean Quest in Burnaby. “They have told me that over the years have seen the direct benefits these reefs bring to their businesses and communities as well the enjoyment they bring to the divers of British Columbia, the United States and abroad while being positive for the environment.”

Ship prep

At this point, a sinking date is still undecided but the spring



of 2011 is a realistic possibility. Nonetheless, it is still business-as-usual on the *Annapolis* and the ARSBC is still in need of volunteers to continue preparing the ship. Work is conducted on the weekends with Deirdre Forbes-McCracken handling the schedules. Individuals and groups are encouraged to contact Deirdre

to schedule a volunteer workday or weekend. Volunteers meet at 8:00am in Horseshoe Bay, with free transportation to and from the ship. Contact Deirdre at: oq@diveoceanquest.com or dmc-cracken@artificialreef.bc.ca.

For more information, visit: www.artificialreefbc.ca www.diveindustrybc.com ■



For more info on diving in
British Columbia
 contact DIABC

www.diveindustrybc.com

THIS PAGE: Children participate in a Try Out Scuba session during the launch in August of Kids Scuba Denmark at the Naerum Sports Complex in Denmark

Kids Scuba Launched in Denmark

A group of children and teenagers ranging from eight to 12 years old, took part in the newly launched Kids Scuba Denmark Program by completing their Try Out Scuba Discovery dive at the Naerum (Rundforbi) Sports Complex in Denmark in August this year. The children did their Try Out Scuba sessions in teams of two under the direct supervision of the Scuba Rangers instructors. They dived underwater in a saltwater pool with full scuba gear for about 30 minutes.

"The kids are part of the Scuba Rangers Program, the First Scuba Rangers Club in Denmark, which is a children's education program of the Scuba School International (SSI) Scuba training program that specializes in teaching kids ages eight to 12 years old," said Nick J. Visser, director and Scuba Rangers instructor of Kids Scuba Denmark.

Kids Scuba Denmark is the only children's scuba school in the country. The Kids Scuba Discovery program brought together 16 children and teens in total.

Taking part in the launch of Kids Scuba Denmark was dive education professional, Syed Abd Rahman, the director of Kids Scuba Malaysia—the largest of its kind in the world with over 100 children as members. Rahman is a Scuba Rangers Instructor Trainer, who flew in specially from Malaysia to assist with the launch of the program.

"The Kids Scuba program is not only excellent for children and families, it is also a good form of family bonding. Families can look forward to enjoying a professionally organised program so that they can focus on participating in activities and much more," said Rahman during the launch.

The Kids Scuba program also educates the kids on marine awareness with marine environment education through a series of video presentations before the children get into the pool with the instructors. All children and teenagers are taught to respect marine life and as divers; they pledge to conserve the underwater world.

All 12 children participating in



Syed Abd Rahman with students in try dive

the session completed the Kids Scuba Discovery program with a smile on their faces after receiving their certificate of completion at the end of the program. The presentation of the certificate was witnessed by the SSI (Scuba Schools International) Nordic Regional Director, Ole Skjaerbaek, who came personally to oversee the launch of Kids Scuba Denmark. Skjaerbaek said that for the children, the achievement of scuba diving is the ultimate experience. "It is something that even adults might not be able to do, and it definitely gives the kids a great sense of achievement."

One of the biggest challenges of conducting a Kids Scuba program of this kind is bringing the families together. Visser said that it was an achievement to have parents and their children bonding, sharing their love of the sport, and enjoying a fantastic family day out without interruptions.

"And of course, the logistics is another





Quotes from the parents and kids:

“Thanks for a great Sunday. Felix was so worked up afterward—he simply just loved it. I would like Felix to join the sessions together with his friend Rasmus.”

“Thanks a lot—Atash just couldn’t stop talking about how great it was and wore his t-shirt all night yesterday. Your friend was truly a great teacher!”

“That was really great. Thanks. Sara really enjoyed it and Syed. Please sign Sara up for the Scuba Ranger Programme.”

winning certified SSI (Scuba School International) Scuba Rangers Club dedicated to conducting SSI Scuba Rangers courses for children ages 8-12 in the Nordic region. The school was founded and organised in Denmark by Visser, a qualified SSI Scuba Rangers Instructor who did his training for three years as a Scuba Rangers Instructor in Malaysia.

Children are exposed to basic scuba education, snorkeling techniques and elementary scuba diving skills, graduating to beach and shallow dives during organized Kids Scuba Camps, which will be held in June and July 2011. Kids Scuba Denmark integrates care and conservation of marine life in all its materials imparted to all its students as part of

its programme.

Kids Scuba Denmark will organize a number of camps to the various dive destinations in the tropical climate and warm waters of Asia with the cooperation of Kids Scuba Malaysia, which



organizes camps four times per year at the beautiful marine park islands of Malaysia and Borneo.

Awards received by Kids Scuba Denmark include the Award for Success for the Scuba Rangers and Kids Scuba Camp at Mabul Sipadan Island in Sabah Malaysia in December of 2009 and the Award for Success for the first successful Kids Scuba Denmark program organized in the Nordic Region.

For more information on Kids Scuba Denmark and its courses at Naerum (Rundforbi) Sports Complex every second Sunday, log on to www.kidsscuba.dk or email Nick Visser at jv@kidsscuba.dk, telephone: (+45) 99 55 82 32 (Nick) or (+45) 50 62 21 41 (Mette). ■

At the Malaysia International Dive Expo 2010 in Kuala Lumpur, Syed Abd Rahman accepted an award from King Tuanku Mizan for Kids Scuba Malaysia for being the most successful Scuba Rangers program in the world, while show organizer, Thayalan Kennedy (far left) looks on. Two of the King’s children are also Scuba Rangers



complicated story,” he added with a laugh. “But what is important is that the children feel they have accomplished something wonderful with an experience that will take them a long way in life.”

A Kids Scuba session with the Scuba Rangers program will be conducted every second Sunday on September 5, 19 and 26 in 2010. It will be held at the Naerum (Rundvorbi) Sports Complex. The Kids Scuba Denmark program was assisted by the SSI Nordic Region, Kids Scuba Malaysia, Hana Sea Sports and Oceanic Dive Consultant.

About the program

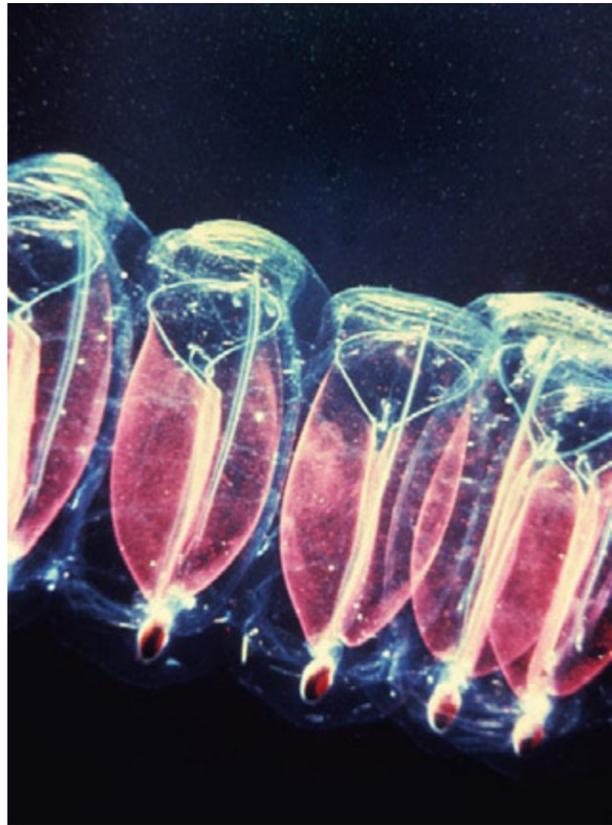
Kids Scuba Denmark is the first award-

Salps are the most efficient filter-feeder in the deep

Salps' role extends to removing carbon dioxide from upper ocean and atmosphere.

What if trains, planes and automobiles all were powered simply by the air through which they move? What if their exhaust and by-products helped the environment? Such an energy-efficient, self-propelling mechanism already exists in nature. The salp—a small, barrel-shaped organism that resembles a streamlined jellyfish—gets everything it needs from ocean waters to feed and propel itself. Scientists believe its waste material may help remove carbon dioxide (CO₂) from the upper ocean and the atmosphere.

Now researchers at the Woods Hole Oceanographic Institution (WHOI) and MIT have found that the half-inch to 5-inch-long creatures are even more efficient than had been believed.



"This innovative research is providing an understanding of how a key organism in marine food webs affects important biogeochemical processes," said David Garrison, director of the National Science Foundation (NSF)'s biological oceanography program, which funded the research.

Reporting this week in the journal *Proceedings of the National Academy of Sciences* (PNAS), the scientists have found that mid-ocean-dwelling salps are capable of capturing and eating extremely small organisms as well as larger ones, rendering them even

hardier—and perhaps more plentiful—than had been believed.

"We had long thought that salps were about the most efficient filter-feeders in the ocean," said Larry Madin, WHOI Director of Research and one of the paper's authors.

"But these results extend their impact down to the smallest available size fraction, showing they consume particles spanning four orders of magnitude in size. This

is like eating everything from a mouse to a horse."

Salp consumption

Salps capture food particles, mostly phytoplankton, with an internal mucus filter net. Until now, it was thought that included only particles larger than the 1.5-micron-wide holes in the mesh; smaller particles would slip through.

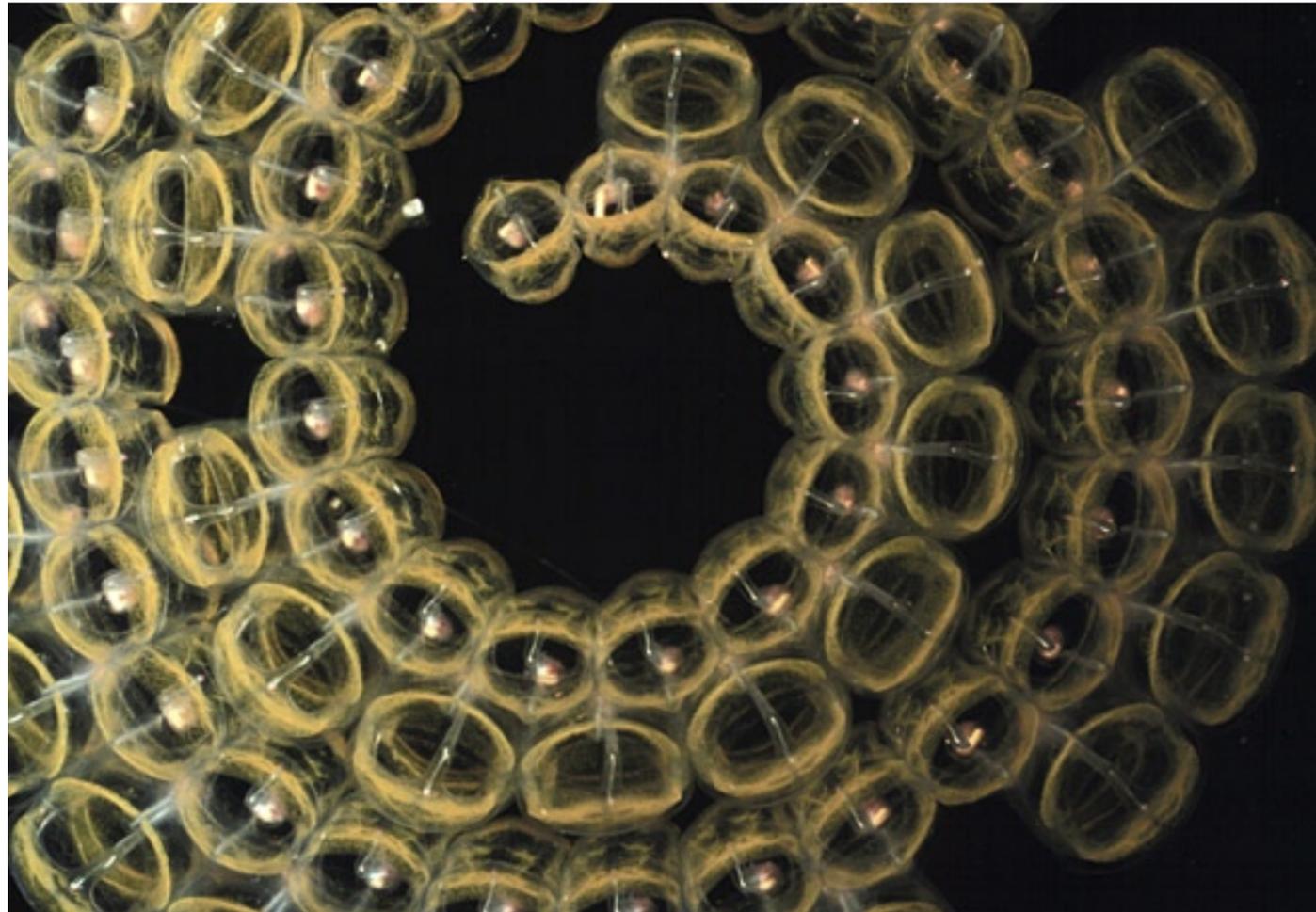
But a mathematical model suggested salps somehow might be capturing food particles smaller than that, said Kelly Sutherland, who co-authored the PNAS paper after her PhD research at MIT and

WHOI.

In the laboratory at WHOI, Sutherland and her colleagues offered salps food particles of three sizes: smaller, around the same size as, and larger than the mesh openings.

"We found that more small particles were captured than expected," said Sutherland, now a post-doctoral researcher at Caltech. "When exposed to ocean-like particle concentrations, 80 percent of the particles that were captured were the smallest particles offered in the experiment."

The finding helps explain how salps—which can exist either singly or in "chains" that may contain a hundred or more—are



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co-author Roman Stocker of MIT.

"The most important aspect of this work is the very effective shortcut that salps introduce in the process of particle aggregation," Stocker said. "Typically, aggregation of particles proceeds slowly, by

able to survive in the open ocean where the supply of larger food particles is low.

"Their ability to filter the smallest particles may allow them to survive where other grazers can't," said Madin.

Perhaps most significantly, the result enhances the importance of the salps' role in carbon cycling. As they eat small, as well as large, particles, "they consume the entire 'microbial loop' and pack it into large, dense fecal pellets," Madin said.

The larger and denser the carbon-containing pellets, the sooner they sink to the ocean bottom. "This removes carbon from the surface waters," said Sutherland, "and brings it to a depth where you won't see it again for years to centuries."

And the more carbon that sinks to the bottom, the more space there is for the upper ocean to accumulate carbon, hence limiting the amount that rises into the atmosphere as CO₂, said paper

steps, from tiny particles coagulating into slightly larger ones."

"Now, the efficient foraging of salps on particles as small as a fraction of a micrometer introduces a substantial shortcut in this process, since digestion and excretion package these tiny particles into much larger particles, which thus sink a lot faster."



This process starts with the mesh made of fine mucus fibers inside the salp's hollow body.

Salps, which can live for weeks or months, swim and eat in rhythmic pulses, each of which draws seawater in through an opening at the front end of the animal. The mesh captures the food particles, then rolls into a strand and goes into the gut, where it is digested.

"It was assumed that very small cells or particles were eaten mainly by other microscopic consumers, like protozoans, or by a few specialized metazoan grazers like appendicularians," said Madin.

"This research indicates that salps can eat much smaller organisms, like bacteria and the smallest phytoplankton, organisms that are numerous and widely distributed in the ocean."

The work, also funded by the WHOI Ocean Life Institute, "implies that salps are more efficient vacuum cleaners than we thought," said Stocker.

"Their amazing performance relies on a feat of bioengineering—the production of a nanometer-scale mucus net—the biomechanics of which remain a mystery." ■

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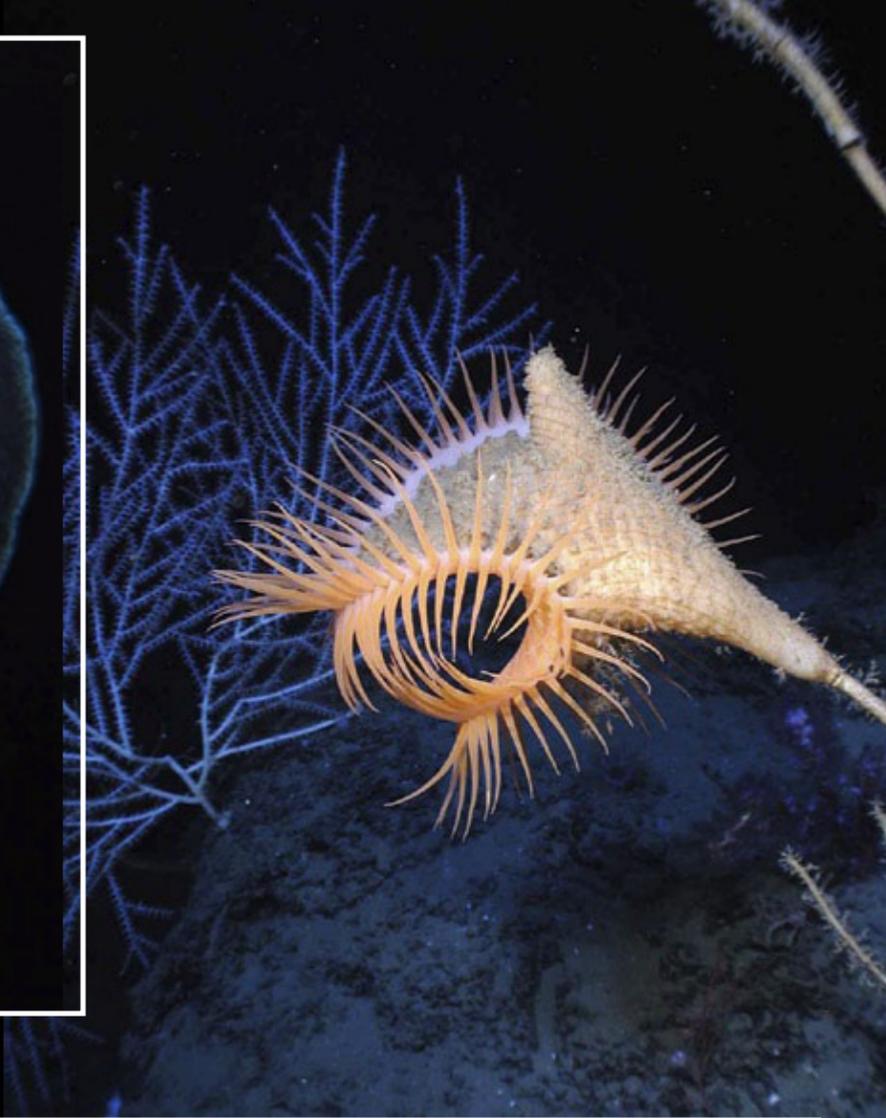


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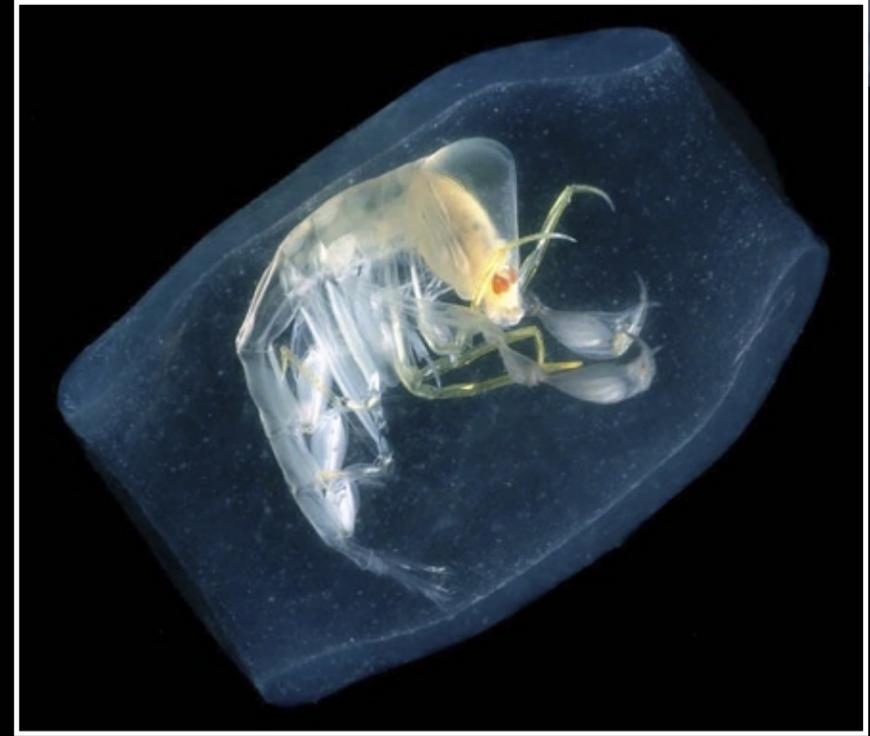
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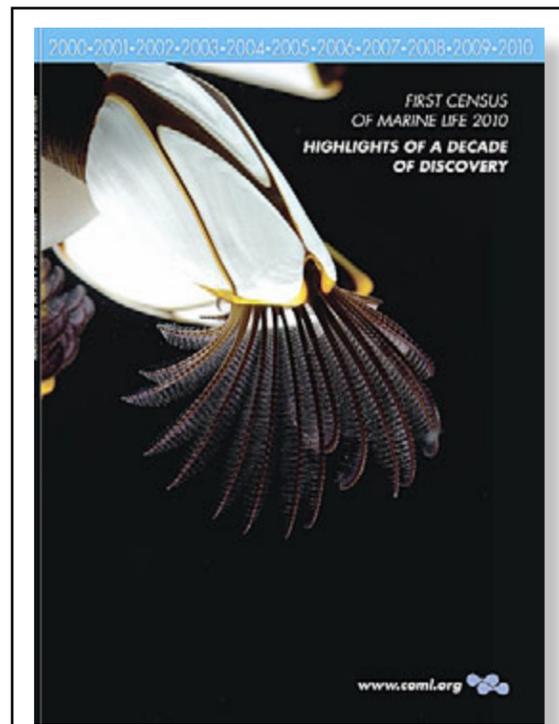


Planet Ocean is richer, more connected, more altered than expected.





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Just released —

First Census of Marine Life 2010: Highlights of a Decade of Discovery (CoML, 64 pages), edited by Jesse H. Ausubel, Darlene Trew Crist and Paul E. Waggoner.

Culminating a ten-year exploration, 2,700 scientists from 80 nations report the First Census of Marine Life.

In one of the largest scientific collaborations ever conducted, more than 2,700 Census scientists spent over 9,000 days at sea on more than 540 expeditions, plus countless days in labs and archives.

Released yesterday are maps, three landmark books and a highlights summary that crown a decade of discovery.

The now-completed documentation in books and journals, plus the accumulating databases

and established websites, videos and photo galleries report and conclude the first Census. Over the decade, more than 2,600 academic papers were published—one, on average, every 1.5 days.

Presented is an unprecedented picture of the diversity, distribution, and abundance of all kinds of marine life in Planet Ocean—from microbes to whales, from the icy poles to the warm tropics, from tidal near shores to the deepest dark depths.

Oceanic diversity is demonstrated by nearly 30 million observations of 120,000 species organized in the global marine life database of the Census, the Ocean Biogeographic Information System (OBIS). The

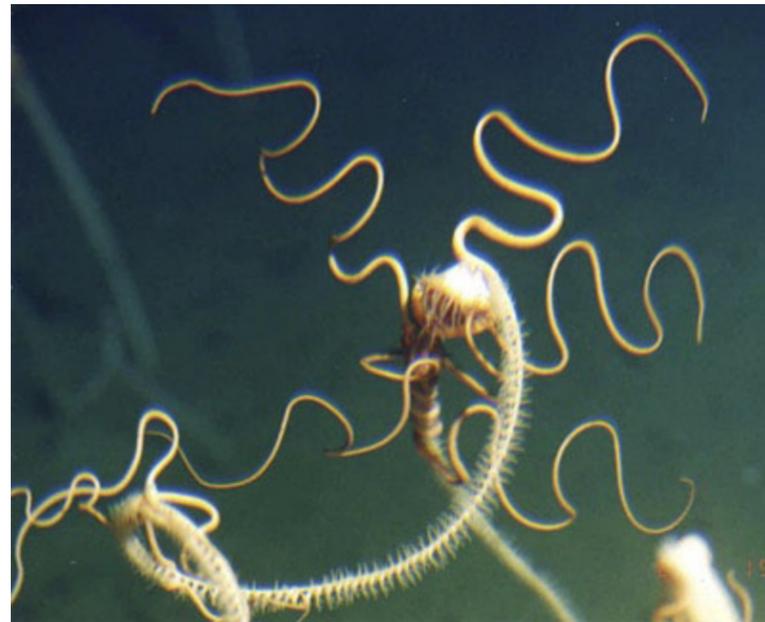
migrations tracked across seas and up and down in the water column, plus the revealed ubiquities of many species, demonstrate connections among oceans. Comparisons of the present ocean with the bountiful ocean life portrayed in old archives document changes. The Census established declines—and some recoveries—of marine abundance.

The OBIS directory of names and addresses of known ocean species establishes a reference against which humanity can monitor 21st century change. It also delineates the vast areas of ocean





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that have never been explored.

"We prevailed over early doubts that a Census was possible, as well as daunting extremes of nature," said Australian Ian Poiner, chair of the Census Steering Committee. "The Age of Discovery continues."

"This cooperative international 21st century voyage has



systematically defined for the first time both the known and the vast unknown, unexplored ocean."

According to Poiner, the beauty, wonder, and importance of marine life are hard to overstate.

"All surface life depends on life inside and beneath the oceans. Sea life provides half of our oxygen and a lot of our food and regulates climate. We are all citizens of the sea. And

while much remains unknown, including at least 750,000 undiscovered species and their roles, we are better acquainted now with our fellow travelers and their vast habitat on this globe." ■

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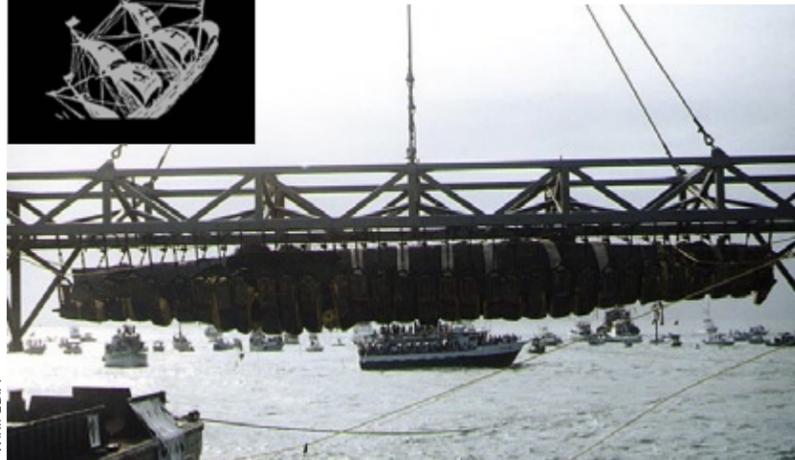
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wreck rap



Solution to the *Hunley* mystery inching closer



Confederate Submarine *H.L. Hunley*, suspended from a crane during her recovery from Charleston Harbor, 8 August 2000

Scientists studying the mystery of the shipwreck of the Confederate submarine *Hunley* are getting closer to understanding what happened to the hand-cranked sub and its eight-man crew. *Hunley* archaeologists now plan to delicately rotate the

submarine to an upright position, exposing sections of hull not examined in almost 150 years. Early next year the 23-ton sub will be delicately rotated to an upright position, exposing sections of hull not examined in almost 150 years. When the *Hunley*

sank, it was buried in sand listing 45 degrees to starboard. It was kept that way as slings were put beneath it and it was raised and brought to a conservation lab in North Charleston a decade ago. ■

Historic British Submarine plundered



The *Holland 5*, which sank six miles off Eastbourne in East Sussex in 1912

English Heritage said divers stole the torpedo tube hatch of the *Holland 5*, the only surviving example on the seabed of this class of submarine in the world. The theft was discovered during a licensed dive by the

Nautical Archaeology Society in June and confirmed during a survey dive last month. Experts said a group of people would have been behind the theft but that the hatch carried very little monetary value.

The Holland class were the first submarines built for the Royal Navy ordered by the British Admiralty to evaluate the potential of the submarine with the Royal Navy. ■



One of the seven coins revealed during conservation—a choice Mexico City “piece of eight”

Encrusted conglomeration yields artifacts of wealth and war

Key West, Florida Keys -- The five pound encrusted conglomeration of Santa Margarita shipwreck artifacts discovered in the Florida Straits in May by W. Keith Webb's Blue Water Ventures, though still in conservation, has thus far yielded two prime examples of 17th century Spanish presence in

the America's—money and weaponry. The money appears in the form of seven silver “pieces of eight” treasure coins; the weaponry are ten “gunner's dice.” John Corcoran, chief conservator for Mel Fisher's Treasures—Blue



Four of ten “gunners dice” found in the conglomeration, still undergoing conservation

Water's joint venture partner—explained that gunner's dice are approximately 1”x1” bits of square-cut iron that were wrapped into a bundle—sometimes mixed with pieces of broken spike—and fired from cannon.

One never knows what might be discovered in a conglomeration of shipwreck material. Even though gold does not typically become encrusted in sea water, it can if it is near another metal such as iron, so a conglomeration can include a variety of artifacts, such as hull spikes,

weaponry, silver and gold coins, chains and jewelry.

The near-mint condition, Mexico City minted silver “piece of eight” coin in the accompanying photograph is from the conglomeration discovered in May by BWV diver Kris Goodner and represents one of about 80,000 coins still to be discovered on the sunken 1622 Tierra Firme Fleet galleon Santa Margarita. Mexico Mint coins are particularly rare on the Santa Margarita as they were actually part of the cargo of an altogether different fleet, the New Spain Fleet—whose admiral made the unfortunate decision to transfer valuable coin cargo from his fleet to the better-armed, but doomed, Tierra Firme fleet ships to carry.

For more information about Keith Webb's Blue Water Ventures and the Santa Margarita shipwreck, visit www.bwvkw.com. ■



Captain's Dan Porter and Mike Perna examine an E.O., and encrusted artifact, which conservation revealed to be a partial wooden sword handle





WWII Soviet Submarine located in the Black Sea

Text by Milen Milanov

27 August 2010, Bulgaria — Divers from the Varna Black Sea Diving Odesos club announced that they have found the Soviet submarine C-34, which sunk near the Bulgarian Black Sea coast in November 1941. They came across the remains during a dive east of Cape Galata, which is approximately 15 miles from the city of Varna.

Up to now, the team has carried out two dives on the spot with the support of the Black Sea Sunrise cooperation.

Orlin Canev from the team says that the submarine lies on its right board and that its hull is literally split in two. The periscope is out, which makes the divers believe that during the accident that caused the sinking of the Soviet submarine, it was at a periscope depth.

The news of the discovery caused quite a few debates. Many announcements in the Russian media challenged the authenticity of the statement that the object near Varna was indeed C-34.

In an August 28 article, Atanas Panayotov, Ph.D. in history, claims that it is impossible that the divers from the Black Sea Diving Odesos club have found C-34. To support his claim, the historian applies two

facts. First of all, the object is outside Position 22, where according to the military archive, the submarine was sent. And second, on 15 and 16 November 1941, the bodies of chief lieutenant Violet Dushin and boatswain Frol Terehov from the submarine's crew were found equipped with ЭПРОН diving gear on the Tsarski beach near the town of Sozopol, some 90 kilometers south of Varna.

On the other hand, in a subsequent article from September 1, Panayotov said that after examining the photo- and video-material, provided by the diving team after their second dive on the spot, he is convinced that the object found is C-34. Panayotov explained that the initial information that the submarine was on the territory of the Varna Bay was corrected with the addition that it was under the parallel of Cape Emine. That puts it in Position 22, where it was ordered to be. What is more, the discovery of the chief lieutenant and the boatswain's bodies that further south could be explained with the strong currents that are present in that part of the coast.

C-34 was the last of five submarines from the Soviet Black Sea fleet that were lost in



Bulgarian waters during the Second World War, with a location which remained unknown. The cause of the submarine's destruction is still unspecified. C-34 was located within the framework of a large Bulgarian mine barrier laid in the summer of 1941, said Panayotov.

According to him, it is possible that the propeller tangled in a mine-rope. That would explain why Dushin and Terehov went out. After they failed with the task of untwining the rope, the commander of the vessel gave an order to move in a last attempt to free C-34, said the historian. As a result, the mine was pulled nearer the hull and exploded causing a secondary inner explosion, which caused the hull to split.

Some sources mention airbombs scattered on the bottom around the submarine. This fact leads to the conclusion that C-34 was also attacked from air.

Specialists hope that further investigation will shed more light on the fate of the Soviet submarine. The

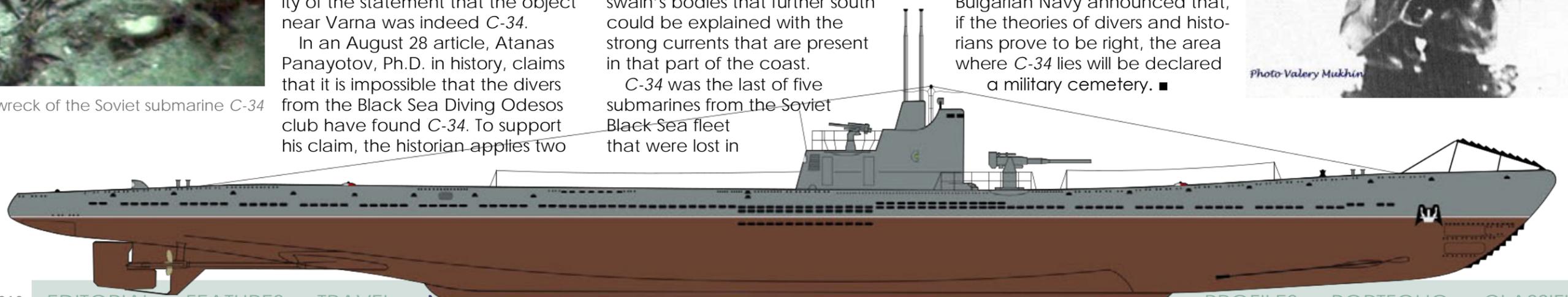
Bulgarian Navy announced that, if the theories of divers and historians prove to be right, the area where C-34 lies will be declared a military cemetery. ■



Photo: Valery Mukhin



Scenes from the wreck of the Soviet submarine C-34





Rare German wartime bomber found in the UK

A wreck of the German bomber Dornier 17 was discovered about two years ago, on a sandbank off Deal, Kent, in southeastern Great Britain. The plane, which landed on the sandbank in 1940 before it sank, is still in good condition, hence, there are plans to recover it.

Wessex Archeology has been working with the Royal Air Force (RAF) Museum and English Heritage on the twin-engined Dornier 17, a German bomber that was shot down in the Battle of Britain in 1940. The plane was found at a depth of 15 meters (50 feet).

"The flying pencil"

More than 1,500 examples of the Dornier 17 medium bomber were built. The twin engine, twin fin configuration together with the narrow fuselage and shoulder-mounted engines gave the aircraft a distinctive silhouette and earned it the nickname, The Flying Pencil.

Remarkable condition

According to the RAF Museum the plane was found in "remarkable" condition considering the years it has spent underwater, and is largely intact with its main undercarriage tires inflated and its propellers still showing the damage they suffered during its final landing. Plans to recover and preserve the plane and eventually put it up for exhibit are underway. The work to conserve

and prepare the Dornier for display will be undertaken at the RAF Museum's award-winning conservation center at Cosford.

The discovery of the Dornier is of national and international importance. The aircraft is a unique and unprecedented survivor from The Battle of Britain. It is particularly significant because, as a bomber, it formed the heart of the Luftwaffe assault and the subsequent Blitz, said Air Vice-Marshal Peter Dye, Director General of the RAF Museum.

Controlled landing

With a crew of four and loaded with 900 kg / 2000 lb of bombs, the aircraft, a twin-engined Dornier 17 was part of a large enemy formation intercepted by RAF fighter aircraft at midday on 26 August 1940 as they attempted to attack airfields in Essex. The Dornier found on the coast of Kent was flown by Feldwebel (Flt Sgt) Willi Effmert who attempted a wheels-up landing on the Goodwin Sands (a 16 km /

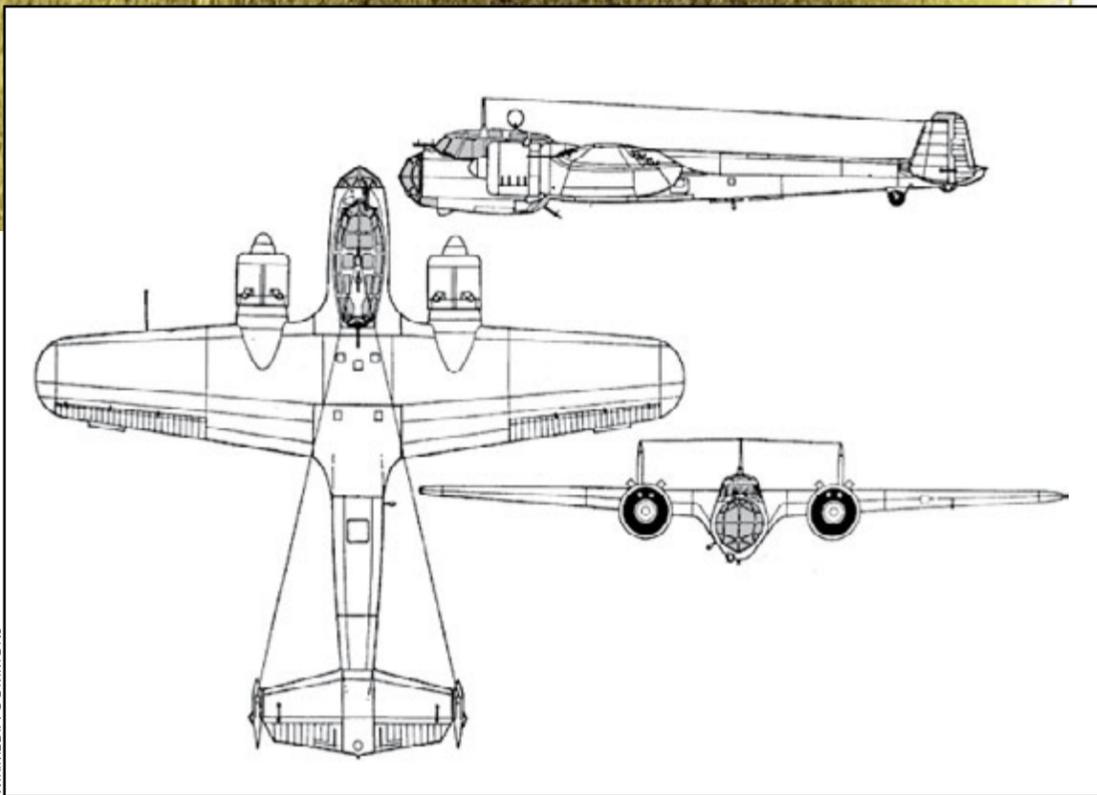
10 mile long sandbank). He touched down safely and the aircraft sank inverted. Effmert and his observer were captured, but the other crewmen died, and their bodies were washed ashore later.

Only existing plane

The Dornier was used throughout the war and saw action in significant numbers in every major campaign theater as a front line aircraft until the end of 1941 when its effectiveness and usage was curtailed, as its bomb load and range were limited. Production of the Dornier ended in the summer of 1940. The Goodwin Sands wreck is the only known surviving example. ■



Click on the image to go to the video on our website



Pieces of Eight



Silver Treasure Coins of the 1622 Shipwrecks
Nuestra Señera de Atchúa
Santa Margarita
& the Portuguese Carrack *São José*

by Carol Tedesco

Fully illustrated with hundreds of finely detailed photographs, *Pieces of Eight* is more than just a reference book. Carol Tedesco not only explains the subtle nuances of the coins themselves, but places them in the context of their moment in history, explaining where they were coming from, where they were going and why.

To be released in 2010 by
SeaStory Press, Key West Florida.
To be on our availability e-mail alert list,
please inquire at lostgalleons@aol.com.

Wreck of *HMS Investigator* found in the high Arctic

Canadian archaeologists have found the *HMS Investigator*—a British ship abandoned in the Arctic while on a 19th century rescue mission.

HMS Investigator was a merchant ship purchased in 1848 to search for Sir John Franklin's lost expedition. She made two voyages to the Arctic and had to be abandoned in 1853 after becoming trapped in the ice. Now her wreckage was found on Banks Island, in the Beaufort Sea.

Canada's government says the discovery bolsters its claim to sovereignty over the Northwest Passage, which is feared threatened by increased shipping.

The *Investigator* was abandoned while searching for the Franklin expedition, itself lost with all its crew during a mission to discover the passage.

"It's an incredible site," Canadian Minister of the Environment Jim Prentice told the BBC by telephone from Mercy Bay. "You're looking at what people have not seen in 156 years, which is a remarkably intact British sailing vessel."

The *Investigator*, captained

by Robert McClure, left Britain in 1848, ultimately making two attempts to find the Franklin expedition.

The vessel was purchased by the Admiralty in February 1848 and was fitted for Arctic exploration at the Blackwall yard of Greens. The ship accompanied *HMS Enterprise* on James Clark Ross's expedition to find the missing Sir John Franklin. Also aboard *HMS Investigator* on this expedition was the naturalist Edward



HMS Enterprise (left) and *HMS Investigator* (right)

Adams.

Investigator was commanded for the return voyage by Robert

McClure, but became trapped in the ice, and was abandoned on 3 June 1853 in Mercy Bay on the

western side of the Canadian Arctic, where she had been held for nearly three years. The following year, she was inspected by crews of the *Resolute*, still frozen in, and reported to be in fair condition despite having taken on some water during the summer thaw.

Running low on supplies and food, Capt Robert McClure and his men were eventually rescued

by another party from the Royal Navy. Capt McClure is credited as the first European to discover the western entrance to the Northwest Passage.

'Largely intact'

Archaeologists discovered the ship under about 25ft of pristine, icy arctic water this week using sonar and metal detectors.

"You could make out all the planking on the deck, the details on the hull, all of the detail of the timber," Prentice told the BBC. "It's sitting perfectly upright on the floor of the ocean."

The Canadian researchers also found three graves of British sailors who died of scurvy on the 1853 expedition.

Parks Canada, a government agency, will inventory and study the ship and other artefacts but will not remove them. It has been in touch with the British government regarding the sailors' remains. ■

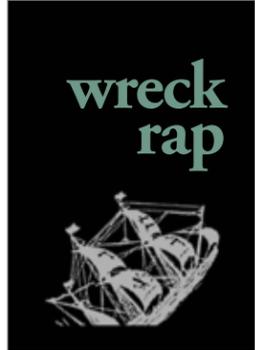
FOURTH ELEMENT TEAM DIVER, Pete Mesley
in Truk Lagoon, June 2010
Pete wears: PROTEUS wetsuit.

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wreck
rap

For the 11th consecutive year, the S.C. Army National Guard has partnered with the S.C. Department of Natural Resources (DNR) to donate surplus materials to the Marine Artificial Reef program, a collaborative project known as Reef-Ex. (File photo of an artificial reef deployment from 2005)



South Carolina extends its artificial reefs

The S.C. Department of Natural Resources and the S.C. Army National Guard teamed up once again and placed 20 stripped down armored personnel carriers (APC's) into the waters at the Beaufort 45 artificial reef.

The artificial reef in 45 feet of water was established about 15 years ago with concrete reef balls, retired Army tanks and even debris from the old Broad River Bridge. The APC's were distributed in a separate location, but are in the same permitted area for the Beaufort 45 Reef.

"I have fished at the Beaufort 45 and I have dived on it, and I can tell you first hand that this is a healthy reef. Besides seeing lots of fish around the artificial reef, I have seen sponges, soft corals and other fully developed invertebrates inhabiting the ecosystem," said Mel Bell, a fisheries biologist with the Department of Natural Resources,

Often divers and fishermen have

to share these reefs, and the APC section will provide them a new option."

Of course it will take several years for invertebrates to colonize the APC's. Over 33 permitted sites are active in S.C. waters, and the joint program has been placing structure in these locations for the past 15 years. Bell said, "This is a win-win situation for DNR, the S.C. Army National Guard, fishermen and our natural

resources. In terms of budgeting, DNR is only responsible to oversee the placement of the structure, while the NG cleans and prepares their retired vehicles and takes care of the logistics of barges, cranes and such. DNR is extremely grateful for the work that they do."

The state has one of the most prolific reef building programs with the National Guard along the Atlantic Coast. ■



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Edited by
Scott Bennett



ERIC CHENG

Solmar V liveaboard becomes green(er)

In 2011, *Solmar V* will partner with Carbonfund.org to establish carbon offsets for the boat's diesel emissions.

A part of revenues from every trip in 2011 will be earmarked for this program to help fight global warming—*Solmar V*'s contribution in making the transition to a clean energy future possible.

"When thinking about our business' environmental impact, we fol-

low simple principles: avoid-reduce-offset. Partnering with Carbonfund.org provides a great way to offset our impact. We want to encourage everyone to be good stewards of the oceans. If other operators are interested in learning how to do this, my staff would be happy to walk them through the process." said Jose Luis Sanchez, the operator.

In recognition of this move and to encourage divers who support this kind of action, *Solmar V* is offering the "Green Boat" special for all January 2011 trips to Socorro Islands. The Socorro Islands offer some truly pristine diving with exceptionally large animals: 18-plus foot mantas are common as well as numerous shark species, dolphins and even whales. ■

Scuba divers visiting the southern Thai provinces of Narathiwat and Pattani now have some unusual entries for their log books as 25 Chinese-made battle tanks (MBTs) have been dropped into the Gulf of Thailand.

The 36.7 ton (39.7 US ton) T69-2 tanks entered service with the Thai army in 1987 and were decommissioned in 2004 after the Chinese

army stopped manufacturing the tanks and parts became scarce.

After slowly rusting away in a holding yard at a Thai army base in Nakhon Ratchasima, the tanks have become part of an artificial coral project initiated by Thailand's Queen Sirikit aimed at improving the marine ecosystem and increasing fish stocks in the sea off the southern

Chinese tanks to form new Thailand reefs

provinces of Narathiwat and Pattani. The vehicles were lowered into the sea off the Narathiwat coast by crane on August 10.

The fertile waters of the Gulf of Thailand are crucial to the nation's fishermen, but overfishing has left the ecosystem depleted in recent years. It is hoped the combat vehicles will soon attract coral and fish to the areas where they are laid to rest. Thailand still has 70 of the Chinese armored fighting vehicles still in service. ■



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Nautilus Explorer offers trip to remote Clipperton Atoll

The *Nautilus Explorer* is offering the very rare opportunity to combine the adventure of a voyage to a remote coral atoll with diving the Pacific mantas and dolphins of Socorro Island. Discovered by Ferdinand Magellan in 1521, Clipperton Island is a beautiful and very remote tropical coral atoll that has been visited by very, very few divers.

The *Nautilus Explorer* offers the only diving expeditions to have ever visited this place



EARTH SCIENCES AND IMAGE ANALYSIS LABORATORY, NASA JOHNSON SPACE CENTER



other than Jacques Cousteau, Scripps, the Smithsonian Institute, National Geographic and a French scientific party. The two-mile long atoll itself is jam-packed with life including five million land crabs and 500,000 boobies. It is surrounded by a shallow barrier that descends down to a white sand bottom at 175 feet. The amount

of fish life is prolific, ranging from the endemic Clipperton angel-fish to big schools of jacks and other panamic fish, nudibranchs and multitudes of free-swimming green moray eels. Sharks species include hammerhead, silky and tiger sharks as well as mantas and whale sharks.

Trips depart from Cabo San Lucas, which is easily accessible from anywhere in North America or connecting from Europe. It is a one-day ocean crossing out to Socorro and then an additional two days of voyaging to Clipperton. There is an overnight stay on the boat, with guests disembarking the next morning at 8:30 a.m. Trip length is 15 nights/16 days. ■ Nautilusexplorer.com

Galapagos Islands removed from the UNESCO World Heritage danger list

A U.N. panel has voted to withdraw the Galapagos Islands from the World Heritage in Danger list.

At the annual meeting of the UNESCO committee for World Heritage Sites, which was held this year in Brasilia, the capital of Brazil, it was decided that Ecuador has improved the situation in the

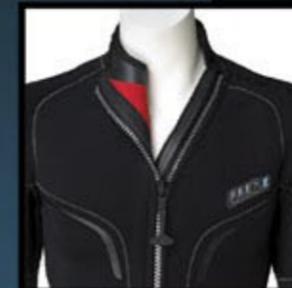
Galapagos Islands to such an extent that they need no longer be included on the List of World Heritage in Danger.

The archipelago of volcanic islands off the Pacific coast of Ecuador had been on the list of endangered world heritage sites since 2007. A growing local population, fishing, and tourism had put pressure on natural resources there.

But the committee voted 15 to 4 in favor of Brazil's recommendation to withdraw the islands from the list, saying Ecuador had made progress in recent years.

"It's important to recognize the effort made by the Ecuadorean government to preserve this heritage," said Luiz Fernando de Almeida, head of the Brazilian delegation. ■

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How to sleep on airplanes

For most travellers, the prospect of getting forty winks on a plane can be a nightmare. Sleeping bolt upright in a sardine can-sized compartment isn't particularly easy, and those long trans-oceanic flights are a virtual free ticket to stress-management therapy. Fortunately, catching a snooze at 35,000 feet is indeed possible.

For starters, skip the coffee. Dehydrating drinks such as coffee, tea, colas and alcohol coupled with tinder-dry cabin air can make sleep even more difficult. Instead, drink plenty of water, starting the day before you fly.

During takeoff, your body is subjected to increased G-forces, resulting in feelings of drowsiness due to the decreased oxygen in the cabin. If you're the sort of person who can fall asleep quickly, take advantage of this short time and try to get your body to

retire before you reach altitude. Music is a great way to relax. Before departure, create a playlist on your iPod with at least 20 songs that you find relaxing. Listening to music during sleep has been shown to help maintain normal blood pressure and good circulation throughout a long flight. Consider purchasing a set of sound isolating canal earphones (Etymotic Research ER-4P Earphones, US\$165, Amazon.com).

As the body expands at high altitude where cabin temperatures can be wildly inconsistent, layered, comfortable, loose-fitting clothing is best for sleeping. Take along a lightly stuffed full body pillow, preferably one made of memory foam because it can be packed into a small bag. Once you're in your seat, pull it out, fold it double and place it on your tray table

or somewhere you can reach it easily.

Try to get a window seat near the front, where it's quieter and not quite as bright. Choose a window seat for the wall, preferably in an exit row, so your neighbor won't disturb you if he or she gets up. An eye mask to block all light is also helpful.

Pressurized cabins can also

create havoc on one's gastro-intestinal system. Preflight, avoid gas-producing foods such as apples, apri-



cots, beans, broccoli, cabbage and cauliflower. Pack high-fiber snacks in your carry-on. Dried fruit, nuts and whole-grain granola bars are good choices. Containing melatonin and serotonin, bananas are a virtual sleeping pill in a peel. A handful of almonds can also be snooze-inducing as they contain tryptophan and a nice dose of muscle-relaxing magnesium. A pre-departure turkey dinner will also help! ■

Airline meals website

AirlineMeals.net is a website where users publish actual pictures of actual inflight meals. Since its inception in 2001, it has grown to more than 20,000 airline meal photos from approximately 600 airlines, searchable by airline, flight class, date and route, news and forums. ■ www.airlinemeals.net

List of international visa restrictions

The Henley Visa Restrictions Index is a global ranking of countries listed according to the extent of travel freedom their citizens enjoy. Henley & Partners has analyzed the visa regulations of all the countries and territories in the world. ■



New clearance programs for international travellers going to or through the US

Global Entry is a U.S. Customs and Border Protection (CBP) program that allows expedited clearance for pre-approved, low-risk travelers upon arrival in the United States.

Though intended for frequent international travelers, there is no minimum number of trips necessary to qualify for the program. Participants may enter the United States by using automated kiosks located at select airports.

GOES—The Global On-

line Enrollment System—allows registered users to enter their own applications for U.S. Customs and Border Protection (CBP) Trusted Traveler Programs, and approved members to edit their information as needed. Once a completed application is certified by the applicant and the non-refundable payment is successfully processed, CBP will review it and determine whether or not to conditionally approve the application. ■



Non-US citizens still have to through the indignifying proces of having fingerprints taken upon arrival to the US as if they were criminals. Image from Washington Dulles International Airport

