

*Oceanic Design Inspired by the Sea :: Underwater Photography—Snoots*



GLOBAL EDITION  
Mar-Apr 2011  
Number 41

Indonesia  
**Halmahera**

Tech  
**Team  
Diving**

UW Film  
**Shiver**

Wrecks  
**Leaking  
Fuel**

Portfolio  
**Sayaka  
Kajita  
Ganz**

*A Tour With Cathy Church & Lawson Wood*  
**Cayman Islands**  
GRAND CAYMAN : CAYMAN BRAC : LITTLE CAYMAN

COVER PHOTO BY LAWSON WOOD

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X-RAY MAG is published by AquaScope Media ApS  
Copenhagen, Denmark

[www.xray-mag.com](http://www.xray-mag.com)

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COVER PHOTO: *Red rope sponge reaches out from a wall,  
Cayman Islands*, by Lawson Wood

(CONTINUED ON PAGE 4)

# contents

Sweetlips, Halmahera, Indonesia. Photo by Don Silcock



**14**  
**WRECKS: LEAKING FUEL**  
**—A BIG PROBLEM**  
BY ROB RONDEAU

**18**  
**CAYMAN ISLANDS: A TOUR**  
**WITH CATHY CHURCH**  
BY CATHY CHURCH

**30**  
**STINGRAY CITY**  
**CAYMAN ISLANDS**  
BY LAWSON WOOD

**33**  
**CAYMAN BRAC**  
**CAYMAN ISLANDS**  
BY LAWSON WOOD

**40**  
**LITTLE CAYMAN**  
**CAYMAN ISLANDS**  
BY LAWSON WOOD

**44**  
**USS KITTIWAKE**  
**CAYMAN ISLANDS**  
BY LAWSON WOOD

**66**  
**OCEANIC DESIGN**  
**INSPIRED BY THE SEA**  
BY CATHERINE GS LIM  
& GUNILD SYMES

**69**  
**HALMAHERA**  
**INDONESIA**  
BY DON SILCOCK

## columns...

**52**  
**TECH TALK:**  
**TEAM DIVING**  
BY MARK POWELL

**58**  
**SHARK TALES: SHIVER**  
**—A FINNING CRISIS**  
BY AARON GEKOSKI

**85**  
**UW PHOTO:**  
**SNOOTS**  
BY KERI WILK

**93**  
**PORTFOLIO:**  
**SAYAKA KAJITA GANZ**  
BY GUNILD SYMES

## plus...

EDITORIAL	3
NEWS	5
WRECK RAP	12
TRAVEL NEWS	16
EQUIPMENT NEWS	49
SHARK TALES	58
BOOKS & MEDIA	68
TURTLE TALES	80
MARINE MAMMALS	83
PHOTO NEWS	90

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# We broke it, we fix it

—Reefs at risk revisited

The most detailed assessment of threats to coral reefs ever undertaken finds that 75 percent of the world's coral reefs are currently threatened by local and global pressures. For the first time, the analysis includes threats from climate change, including warming seas and rising ocean acidification. According to the new analysis, if left unchecked, more than 90 percent of reefs will be threatened by 2030 and nearly all reefs will be at risk by 2050.

A pretty grim message indeed, but there are lots of things we can do prevent these nightmare scenarios from becoming a reality.

In 2003, the Phoenix Islands—a remote archipelago located about half-way between Hawaii and Fiji—was hit by one of the most devastating coral bleaching events ever recorded. Nonetheless, in 2009 scientists visiting the islands returned home in a rather optimistic mood.

Dr David Obura, the expedition's chief scientist wrote: "The best part of the story was that the reefs were clearly recovering from the massive bleaching impacts six years ago and looking better than in 2005 ... Overall, coral cover was almost halfway back to where it

was before the bleaching, which is a phenomenal speed of recovery in six short years. This was an incredible affirmation of the expectation we have in the sci-

*"Many of the coral reef habitats that I have dived on have undergone bleaching events in recent years and are now just beginning to show signs of new life. It is actually a testimony to the overall good health of these reefs prior to the bleaching that they are able to rebound at all. So in terms of the future, these places should continue to recover and return to their once lush state."*

—Observation at the time by National Geographic photographer Brian Skerry

ence and conservation communities that ecosystems that are not suffering from a range of different threats have a much greater ability to recover from any one. In this case, the lack of local human impacts has made the Phoenix Islands reefs able to recover faster from a global change impact than most of the reefs that I study anywhere else in the world."

Veteran coral reef biologist

Les Kaufman of Boston University and Conservation International added in a later entry: "The scenes and situations differ on every island that we have visited in the Phoenix group, but the abundance of fishes and regenerating coral have been the persistent themes ... This is the first time I've felt with full conviction, that the reduction of human coastal impacts could significantly help the ocean to heal itself."

There are no simple fixes and certainly no cheap ones, but at least we have some doable solutions at our disposal. The message is clear and it is substantiated by a long list of positive and encouraging observations from the growing number of Marine Protected Areas

and no-fishing zones. Where destructive human activities and influences are curbed and nature is left to heal itself, it often recovers at an impressive speed.

In light of the impending catastrophe, it seems like the establishment of as many marine protected areas as soon as possible is a total no-brainer.

---- Peter Symes, Editor-in-Chief

# Cool iPad Covers

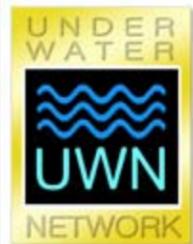
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X-ray mag

News edited  
by Peter Symes

scubacalifragilisticxpialidocious

# NEWS

## Antarctic Green Pools Are Teeming With Life



DAVID MUNROE, UNITED STATES ANTARCTIC PROGRAM

**Emerald pools teeming with life have been observed among remote Antarctic sea ice in the little-studied Amundsen Sea.**

The brilliant green blooms owe their colors to chlorophyll, the photosynthetic pigment in

various types of phytoplankton, or tiny algae. Algae-eating zooplankton, small crustaceans

called krill, and fish and shrimp larvae also thrive in the area.

A recent scientific expedition, which studied the blooms in the Amundsen Sea's polynya (the recurring areas of seasonally open water surrounded by ice —ed. ), found the surface waters in these pools held as much as 45 micrograms of chlorophyll per liter. That's five times greener than parts of the Amazon River plume, the nutrient-rich region where the Amazon empties into the Atlantic.

Such a discovery "exceeds all expectations", Patricia Yager, chief scientist for the Amundsen Sea Polynya International Research Expedition wrote in a preliminary research report. It's "the greenest water I've seen in the world".

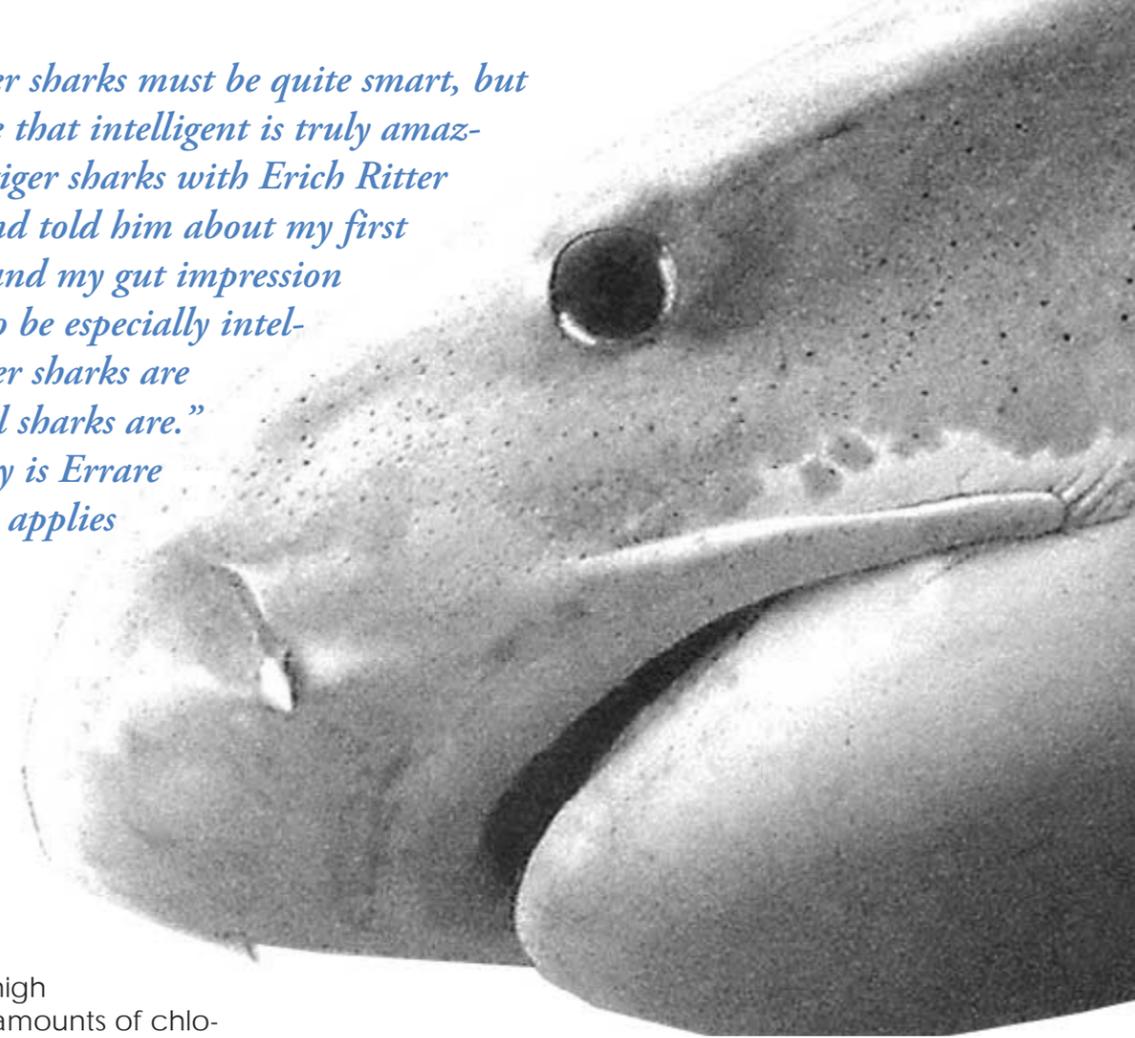
It's not unusual to find

high amounts of chlorophyll in the Amundsen Sea, according to Maria Vernet, a research biologist at Scripps Institution of Oceanography in La Jolla, California. Energy and material transfer between the atmosphere, polar surface ocean and the deep sea in polynyas provide polar ecosystems with just the right ingredients needed for high productivity and intense biogeochemical recycling.

Polynyas may be the key to understanding the future of polar regions since their extent is expected to increase with anthropogenic warming. ■

*I always sensed that tiger sharks must be quite smart, but to find out that they are that intelligent is truly amazing. When I discussed tiger sharks with Erich Ritter about four years ago, and told him about my first encounters with them, and my gut impression that these sharks seem to be especially intelligent, he said: "No, tiger sharks are not very intelligent, bull sharks are." Well, Erich, all I can say is Errare humanum est, and that applies even to experts*

— Wolfgang Leader



Tiger sharks not only look intelligent, they are

## Sharks know where they are going

Some shark species make "mental maps" of their home ranges, allowing them to pin-point destinations up to 50km away, research suggests. Using statistical analysis researchers has demonstrated that the journeys of three species—tiger sharks, thresher sharks and blacktip reef sharks—were not made by accident; the sharks were following some kind of path.

"Our research shows that, at times, tiger sharks and thresher sharks don't swim randomly but swim to specific locations," said research leader Yannis Papastamatiou from the Florida Museum of Natural History in Gainesville. "Simply put, they know where they are going." ■



## A WORLD APART



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# Where are the Great Hammerheads heading?

New study provides new insight into the largely unknown migratory patterns and habitat use of the endangered shark.



Scientists at the University of Miami have successfully tracked a great hammerhead shark using satellite tag technology

WOLFGANG LEANDER

Scientists from the University of Miami in Florida tracked one of the nomadic sharks for 62 days to uncover its northeast journey from the coast of South Florida to the middle of the Atlantic off the coast of New Jersey.

The straight line point-to-point distance of 1,200 kilometers (745 miles) represents a range extension for this species. The data also revealed the shark entering the Gulf Stream current and open ocean waters of the northwestern Atlantic Ocean. The animal was likely following food, such as mahi-mahi and jacks, off the continental slope and into the Gulf Stream, according to the authors.

This preliminary study is part of a larger effort to track tropical sharks by satellite in order to identify areas that are important for feeding, mating, and pupping and to docu-

ment their largely unknown migration routes. In the last year, the researchers tagged the fins more than 50 large and environmentally threatened sharks in Florida and the Bahamas, among them great hammerhead, bull and tiger sharks.

"This study provides evidence that great hammerheads can migrate into international waters, where these sharks are vulnerable to illegal fishing," said study co-author Professor Neil Hammerslag. "By knowing the areas where they are vulnerable to exploitation, we can help generate information useful for conservation and management of this species."

DNA analysis of great hammerhead fins sold in the Asian shark fin market has shown that a large majority of the sharks came from Atlantic waters. ■ SOURCE: ENDANGERED SPECIES RESEARCH JOURNAL

*"This animal made an extraordinary large movement in a short amount of time. This single observation is a starting point; it shows we need to expand our efforts to learn more about them."*

# Network is key for corals too

Strong links between the corals reefs of the south China sea, West Pacific and Coral Triangle hold the key to preserving fish and marine resources in the Asia-Pacific.

The richest marine region on Earth, the Coral Triangle—which sits between Indonesia, Malaysia and the Philippines—depends vitally for its diversity and resilience on coral and fish larvae swept in from the South China Sea and Solomon Islands, Australian researchers have found.

The Coral Triangle supports more than one third of all the world's coral reefs, including over 600 various species of reef-building coral and 3,000 species of reef fish. These coral ecosystems are a source of food and income for more than 100 million people who work in marine based industries in the region.

"The currents go in various directions, but the prevailing direction is from east to west, and this carries coral spawn and fish larvae from areas such as round the Spratly Islands in the South China Sea and the Solomons, Papua New Guinea," explained Dr Johnathan Kool of the ARC Centre of Excellence for Coral Reef Studies and James Cook University.

"Maintaining the network of links between reefs allowing larvae to flow between them and re-stock depleted areas, is key to saving coral ecosystems threatened by human pressure and climate change.

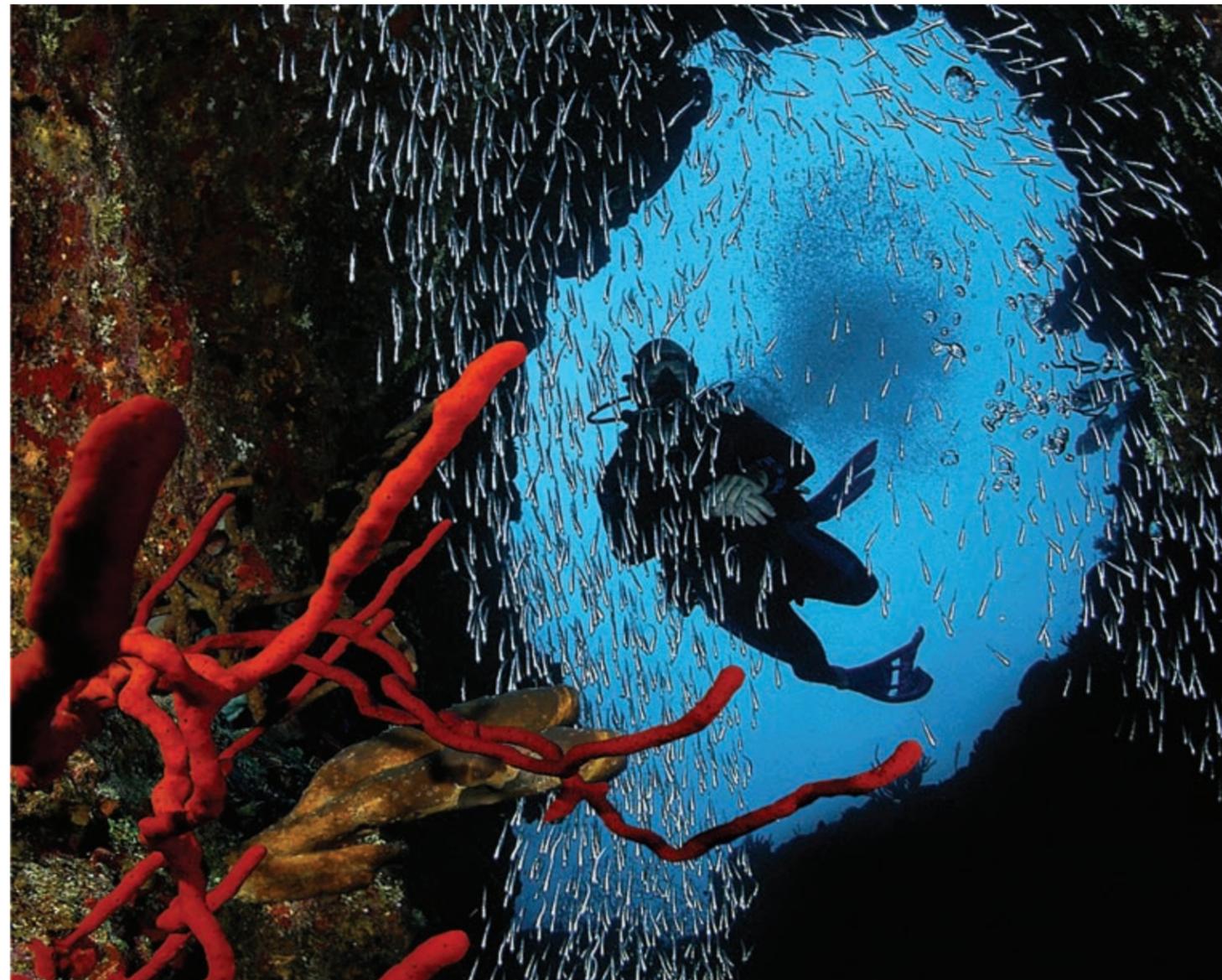
"Knowing where coral spawn comes from is vital to managing our reefs successfully. Even though coral reef communities may not be connected directly to one another, reefs on the edge of the

Coral Triangle have the potential to contribute significant amounts of genetic diversity throughout the region," said Kool.

He argued that recent evidence showing the region's biology is closely inter-connected, suggesting that it is in the interest of all Asia-Pacific littoral countries to work together more closely to protect it: "The science shows the region's natural resources are closely interconnected. Nations need to co-operate to look after them—and that begins with recognising the resources are at risk and that collective action is needed to protect them. ■

SOURCES: GLOBAL ECOLOGY AND BIOGEOGRAPHY JOURNAL AND ARC CENTRE OF EXCELLENCE FOR CORAL REEF STUDIES.

Six nations within the Coral Triangle, (Indonesia, the Philippines, Malaysia, Papua New Guinea, The Solomon Islands and Timor L'Este) are now working together to strengthen coral reef governance and management, under an arrangement known as the Coral Triangle Initiative.



## You haven't been diving in the Cayman Islands? You haven't been diving.

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[caymanislands.co.uk](http://caymanislands.co.uk)



# Aquatic plant traps prey in an instant

A team from University of Grenoble and University of Freiburg have shown that a carnivorous plant can snap up tiny freshwater crustaceans in just one millisecond. Digestive enzymes are quickly released and within a few hours, an animal is completely consumed.

It looks unassuming, the bladderwort, but the vacuum-driven bladders of *Utricularia* are the most sophisticated carnivorous trapping mechanism to be found anywhere in the plant kingdom—about a hundred times faster than the Venus fly trap, according to a new study, which caught the motion on camera for the first time.

“We wanted to know how fast the trap was,” said Philippe Marmottant from Grenoble University. Using high performance light microscopes and a high-speed camera that captures up to 15,000 frames per second, the researchers were finally able to record the bladderwort swallowing several freshwater copepods. The resulting research paper is the first ever detailed analysis of the bladderwort’s mechanics.

## 600 G’s

“Because the suction is so fast, with accelerations of up to 600G, it is very difficult for any living ani-



mal to escape,” said Marmottant. Space shuttles reach a G-force of around three, demonstrating the ferocious speed of the bladderwort’s inescapable motion.

## Pure mechanics

The trapping mechanism of *Utricularia* is purely mechanical; no reaction from the plant is required in the presence of prey, in contrast with the triggered mechanisms employed by Venus fly traps. The bladder walls are very thin and transparent, but are sufficiently inflexible to maintain the bladder’s shape despite the vacuum created within. The entrance, or mouth, of the trap is a circular or oval flap whose upper half is joined to the body of the trap by very flexible, yielding cells that form an effective hinge. Once the seal is disturbed, the bladder walls instantly spring back to a more rounded shape; the door flies open, and a column of water is sucked into the bladder. The animal, which touched the lever, if small enough, is inevitably drawn in, and as soon as the trap is filled, the door resumes its closed position—the whole operation being completed in as little as one-hundredth of a second. ■



Watch video: The ultra-fast trap of an aquatic carnivorous plant >>>

The stem is lined with tiny traps of a length of just a few millimeters each. Glands in the traps routinely pump out water and the trap thus deflates, meaning interior pressure is far lower than pressure in the surrounding water. The result is similar to when a pipette is squeezed, and poised to suck up liquid. The trap door is slightly concaved at this point, ready to collapse inwards like a spring trap if stimulated. Tiny hairs lining the watertight door trigger the trap when organisms brush past

# Gray whale tracked across the Pacific

Marine researchers say a rare whale tracked across the Pacific Ocean into North American waters this year has been there before.

Photo analysis has confirmed that the highly endangered western Pacific gray whale nicknamed "Flex" by the researchers—one of only 130 remaining—was photographed in 2008 off Canada's Vancouver Island and was assumed to be part of the eastern gray whale population.

### Critically endangered

There are only about 130 western gray whales left. The species is listed as Critically Endangered on the IUCN Red List of Threatened Species, with perhaps only about 33 mature and reproductively active females. Their feeding grounds in the Russian Far East are known but details of their migration routes and breeding grounds are not. It is believed that western

gray whales migrate south in the winter, towards Japan, Korea or China.

U.S and Russian researchers started tracking the 14-year-old male whale on October 4, when they tagged him with a satellite tracker off Sakhalin Island, Russia, as part of research into where the animals spend winters. Flex stayed at Northeast Sakhalin until around mid-December, but instead of moving south as expected, he moved across the Okhotsk Sea to the west coast of Kamchatka, then followed the coast around the southern tip of Kamchatka.

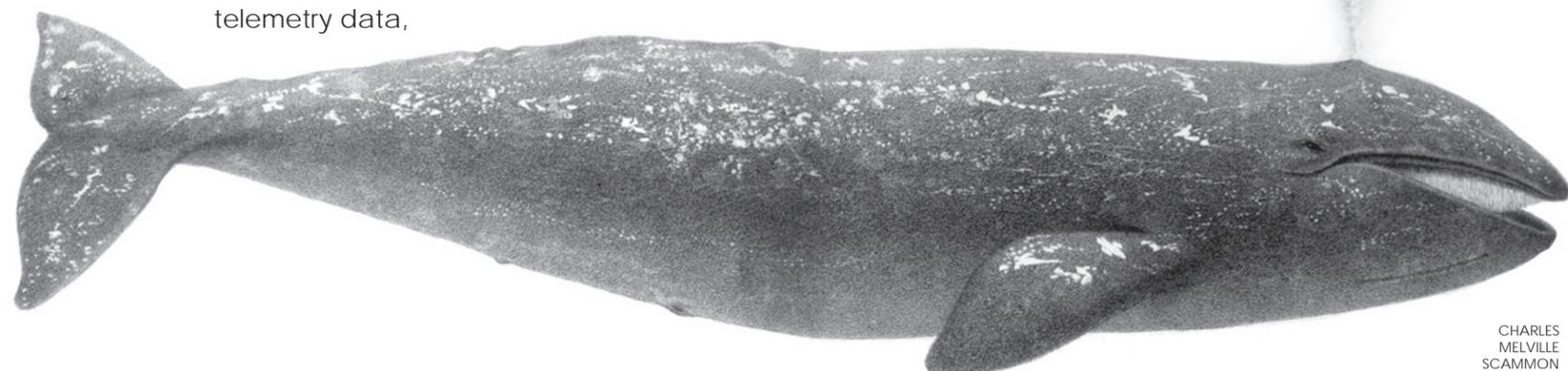
The whale left Russia's Kamchatka Peninsula on January 3 and began swimming east. It swam halfway across the Bering Sea, turned south and swam

between Aleutian Islands into the Gulf of Alaska. It continued southeast to shallow coastal waters off Washington and Oregon. Its last confirmed location was February 4 off Siletz Bay, Oregon, where researchers believe the satellite tag fell off.

Since leaving the Kamchatka Peninsula, Flex travelled more than 8,500 kilometers over 124 days with an average speed of 6.6km per hour during his migration. Flex was first photo-identified off Sakhalin Island as a calf in 1997 and has subsequently

been observed in multiple years off Sakhalin during the summer feeding season. This photographic match, in combination with the telemetry data,

provides the first evidence that links the Sakhalin feeding ground of western gray whales to locations in the eastern North Pacific. ■



CHARLES MELVILLE SCAMMON



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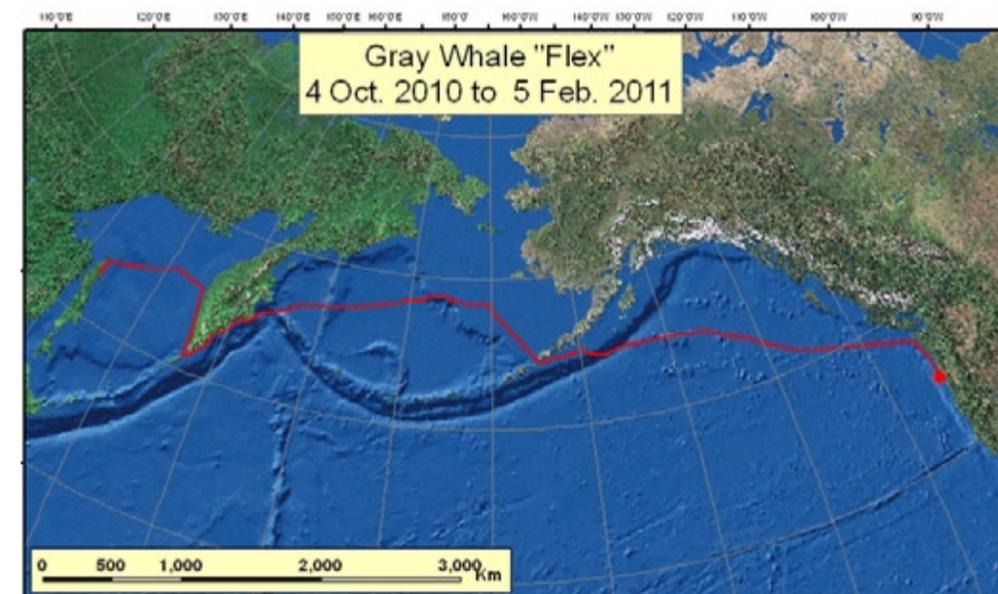
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On 4 October 2010 a team of scientists from Russia and the United States satellite tagged a western gray whale off the east coast of Sakhalin Island, Russia. This whale has now been successfully tracked for over four months traveling from the Okhotsk Sea to the eastern North Pacific and is currently off the west coast of the United States



OREGON STATE UNIVERSITY MARINE MAMMAL INSTITUTE



## Alvin gets a makeover

Text and image courtesy of Woods Hole Oceanographic Institution

**Alvin is the world's longest-operating deep-sea submersible. It was launched in 1964 and has made more than 4,600 dives, along the way, participating in some of the most iconic discoveries in the deep ocean. Throughout 2011 and into 2012, Alvin will undergo a comprehensive overhaul and upgrade funded by the National Science Foundation that will greatly expand its capabilities and eventually put almost the entire ocean floor within its reach.**

Alvin is owned by the U.S. Navy and is operated by WHOI through the National Deep Submergence Facility. The facility provides marine scientists with access to the deep ocean with Alvin, as well as the remotely operated vehicle, Jason, and the autonomous underwater vehicle, Sentry.

Alvin's most famous exploits include locating a lost hydrogen bomb in the Mediterranean Sea in 1966, exploring the first known hydrothermal vent sites in the 1970s, and surveying the wreck of RMS Titanic in 1986. In its final series of dives before the current upgrade period, Alvin explored deep-sea biological communities in the Gulf of Mexico near the site of the Deepwater Horizon blowout and oil spill.

The upgrade will take place in two stages. After stage one is complete in 2012, Alvin will boast several new improvements, including:

\* A new, larger personnel sphere with

an ergonomic interior designed to improve comfort on long dives

- \* Five viewports (instead of the current three) to improve visibility and provide overlapping fields of view for the pilot and two observers
- \* New lighting and high-definition imaging systems
- \* New syntactic foam providing buoyancy
- \* Improved command and control system.

Several of these and other improvements to the sub will be designed to withstand descents to 6,500 meters—the remainder will be upgraded later. As a result, Alvin will initially maintain its current diving capability of 4,500 meters. In stage two, the entire sub will be upgraded to 6,500 meters depth. In addition, new batteries will be added to enable the submersible to stay at depth longer, giving scientists more time to work in unexplored parts of the ocean and putting 98 percent of the seafloor within their reach. ■



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SEVENTEEN years ago, Asian Diver initiated and launched the ever first dive show in Asia. And last year, ADEX 2010 saw a big success, with more than 21,000 visitors from around the world, and over 100 exhibitors representing various dive entities from across the industry.

This year, Asian Diver is pleased to announce that the Asia Dive Expo, ADEX 2011, will be held from 22-24 April 2011 at the Suntec City Convention Centre in Singapore. Organised "by divers, for divers", ADEX is the region's longest-running dive show and a must-attend event for all divers and underwater photography, videography enthusiasts

In keeping with previous years, ADEX 2011 provides dive and underwater lovers with opportunities to test out the latest dive equipment, discover new dive destinations and marine hotspots and find out about all the best offers on resorts and hotels in the region as well as great deals on dive and travel equipment.

In addition to special deals on equipment, photographers and videographers can fine-tune their skills with some of the most highly regarded names in underwater photography and marine conservation by participating in photography workshops and seminars. These talks will be complemented by screenings of inspirational underwater videos and photography displays.

ADEX has been working with many renowned underwater personalities. Last year, the show was dedicated to sharks. Legendary filmmaker Stan Waterman and award-winning photographer John A. Scarlett attended the event and spoke about the urgent need to conserve these apex predators, whose numbers are decimated by the inhumane practice of shark finning.

In 2011, ADEX will be celebrating and supporting the much loved and enigmatic creature of the oceans – the turtle.

Again it will feature our best ever line up of big name speakers, including:

- **Brian Skerry**, one of the world's leading underwater photo-journalists. *National Geographic* lists him among their "legendary" undersea photographers. In addition to special assignments for National Geographic, Skerry has also worked with Jacques Cousteau's organisation and published a book, "Successful Underwater Photography".



News edited  
by Millis Keegan

# World's oldest Heidsieck champagne and beer found in shipwreck

In summer 2010, one of the oldest preserved beers was found off the Aaland archipelago in the Baltic Sea at a depth of 50 meters. Divers found not only several bottles of well-preserved champagne, but also five bottles of beer.

Among the 30 bottles of champagne salvaged last summer from a nearly 200-year-old two-masted schooner in the Aaland archipelago in the Baltic, experts have discovered what are believed to be the oldest existing bottles of Heidsieck champagne. Divers stumbled across a cargo of around 150 champagne bottles last July in a two-masted schooner, which had run aground sometime between 1825 and 1830, and by last November, experts had already identified the world's oldest Juglar and Veuve Clicquot brands among the bottles.

*The wine found on the seabed was perfectly preserved because of the conditions of dark and cold on the seabed.*

One of the bottles of beer recovered from the Baltic Sea ship-



Monopole. "In the 1800s and the beginning of the 1900s, it was one of the leading champagne houses, and it was one of those that we expected we might find in the cargo," Richard Juhlin, one of the world's leading champagne experts, told AFP

**Wreck beer second life**  
In addition, five of the bottles later proved to be the oldest drinkable beer yet found. The local government of the Aaland island chain where the wreck was found has now commissioned a scientific study to unpick the beer's original recipe.

VTT Technical Research Centre of Finland will determine what kind of a recipe was used in the brewing of the beer and what kind of yeast caused the fermentation process. The beer in question is one of the world's oldest preserved beers, and the Provincial Government of Aaland is interested in its reproduction.

The brew has already been sampled by four professional beer tasters. "They said that it did taste very old, which is no

surprise, with some burnt notes. But it was quite acidic, which could mean there's been some fermenting going on in the bottle, and with time, it's become acid," said Annika Wilhelmson of the Technical Research Centre of Finland (VTT).

"What we want to do, first of all, is to analyse the contents of the bottles. After that, we hope to be able to recreate the original recipe so that it can be used to make beer," said Rainer Juslin, Department Head at the Provincial Government of Aaland.

VTT has decades of experience in malt and brewery research. VTT's expertise in, for example, proteomics and DNA will be utilised in the project. The research results will be ready in May 2011. VTT will prepare a scientific article of the results in due course.

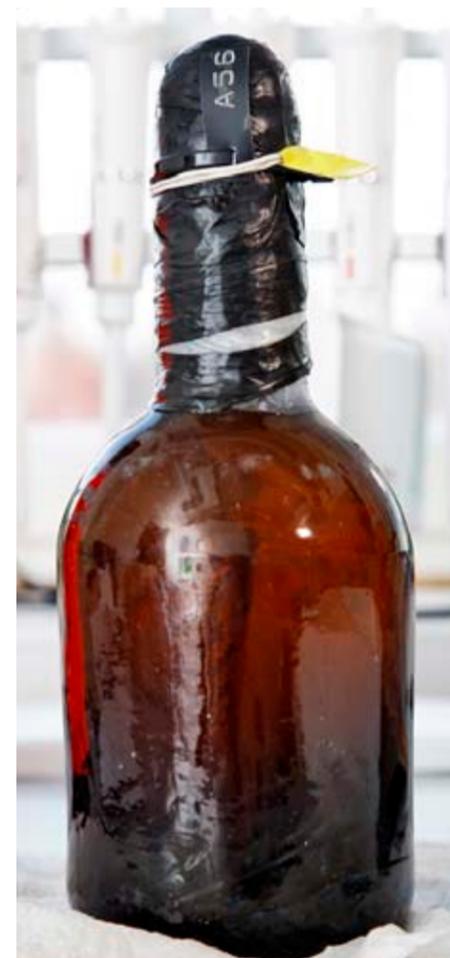
"We're going to try to see if we can find any living yeast or other microbial cells, because that would be very interesting with respect to reproducing the beer," Wilhelmson explained. ■



RABOE/WIKIPEDIA

Archival photo of like bottles

See video here: <http://www.youtube.com/watch?v=RuSR04goJK8>



## Pieces of Eight

Silver Treasure Coins of the 1622 Shipwrecks  
*Nuestra Señera de Atocchia*  
*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](mailto:lostgalleons@aol.com).





Text and photos  
by Rob Rondeau

In September 1952, the CPR ocean liner *SS Princess Kathleen* sank beneath the waves just north of Juneau, Alaska. It ran aground on its final cruise of the season, from Vancouver to Juneau, during a bad storm. Ten hours after running

up on Point Lena, it was gone. Fortunately, all 307 passengers had been safely disembarked before the plunge. The wreck was largely forgotten, lying at the bottom of the Lynn Channel.

The *Princess Kathleen* lodged on the rocks of the coast



# Leaking Fuel

—A Big Problem!



The advent of scuba diving in the 1950s made visiting the wreck possible. The 369-foot liner lies on its port side on a steep sloop—with its bow at 40 feet and its stern at 140 feet. Although the water is cold, it's the perfect wreck dive.

But, in the 1970s, sport divers from Juneau started to notice droplets of oil leaking from the wreck. As time went by, more and more oil escaped to the surface.

In 1924, the *Princess Kathleen* was launched in Glasgow, Scotland, outfitted with 14 fuel tanks. Some of these were now leaking. In 2007, "tar balls" were noticed on the beaches around Point Lena. A "rainbow sheen" was seen at the surface.

On the wreck, scuba divers noticed oil trapped overhead in compartments

below deck. The oil had leaked from the ship's fuel storage tanks and had become trapped there. Something had to be done.

The situation was reported to the U.S. Coast Guard. Its "Unified Command" mobilized in the spring of 2010. Remotely Operated Vehicles (rovs) were first used to inspect the wreck. They observed large droplets of bunker oil floating to the surface.

Commercial hard hat divers then drilled holes in the ship's hull to find out where the oil had collected. Then, using a system called "hot tapping", they removed approximately 110,000 gallons of oil from the wreck.

"We have removed a significant threat to the local environment and maintained the *Princess Kathleen* as a historic rec-

reational diving site," said USCG Captain Melissa Bert.

## A growing problem

This wasn't the first shipwreck to leak oil. In February 2003, the U.S. Navy pumped approximately 1.95 million gallons of bunker oil from the wreck of the *USS Mississinewa* at Ulithi Atoll in the Federated States of Micronesia.

Oil washed up on the beach. Micronesians had no idea at the time where it was coming from—other than they knew it had to be from a WWII shipwreck lying offshore. They reported the situation to the U.S. Coast Guard.

The *USS Mississinewa* was a Navy support tanker. It sunk during combat on 20 November 1944, with 3.8 million gallons of oil aboard—in 22 tanks.



CLOCKWISE FROM BELOW:  
Skylight of the wreck of the  
*Princess Kathleen*; Wheelhouse;  
Helm and binnacle; Diver at  
the bow of the wreck



unique to the Pacific. In 2008, the former German WWII oil tanker *Welheim* also started to leak bunker oil off the coast of Norway. Like the *Princess Kathleen*, it too is a popular dive destination. In the last ten years, divers there noticed more and more oil leaking from the shipwreck.

The government of Norway acted quickly—hot tapping and pumping out the wreck. It cited the importance of keeping the Norwegian coastline free of contamination.

#### You can help

The modern-day reality is that there's no way to identify and clean-up every shipwreck containing fuel. In fact, the location of many wrecks isn't even known.

But, what we can do is respond quickly when a leak is detected. And, sport

The U.S. Navy quickly responded in August 2001. They found the wreck and initially patched it. In February, 2003, the Naval Sea Systems Command (NAVSEA) returned—removing all accessible oil from the warship's tanks, engine and pump rooms and previously leaking pipes.

The spill and subsequent clean-up led to the organization of a U.S. government task force, which looked at the issue of fuel leaking from WWII shipwrecks across the Pacific Region. It concluded that there were thousands of U.S. warships that pose a potential problem. For example, there are 60 wrecks in the 40-mile wide Truk Lagoon alone. And, in sea battles around the Solomon Islands, hundreds of American and Japanese warships were lost—so much so that the strait between Guadalcanal and Savo was knick-named "Iron bottom Sound".

"The oil, chemicals and unexploded ordnance still on board many of these vessels pose a grave and imminent danger to the people, marine and coastal environments and fisheries of the region," the task force stated in its final report.

Nor is the problem of leaking warships



divers can play an important role in detecting the problem.

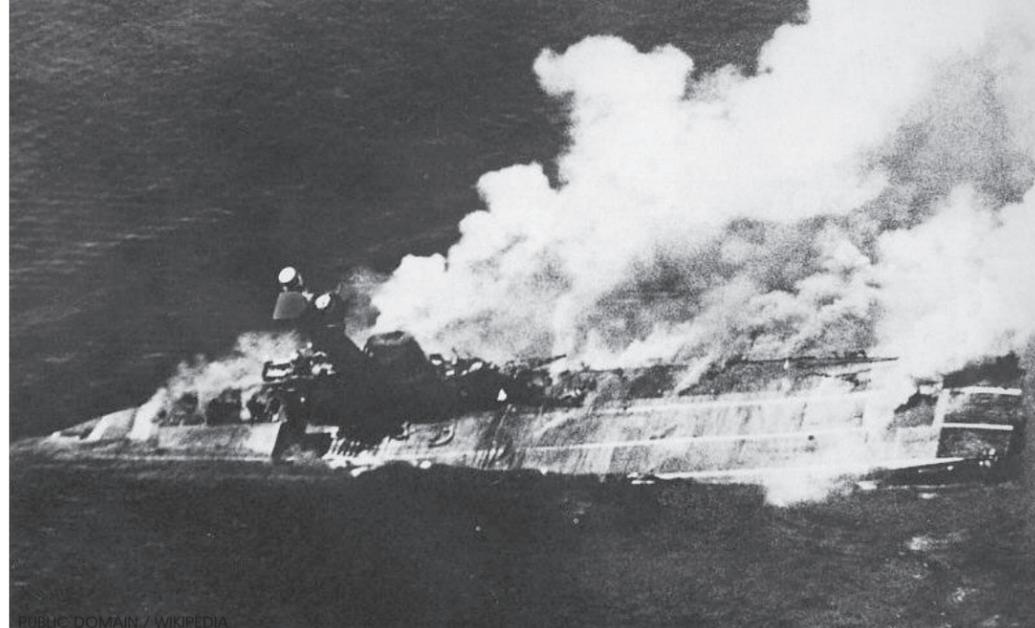
So, keep an eye out the next time you're diving a wreck from the 20<sup>th</sup> century, especially if it's a warship. And, if you do see evidence of leaking fuel, make sure you report it immediately. In the United States, your best bet is

the nearest U.S. Coast Guard station. Outside of the States, try the local office of the Department of the Environment. ■

—Rob Rondeau  
Marine Archaeologist  
ProCom Marine Survey & Archaeology  
[www.facebook.com/procomsurvey](http://www.facebook.com/procomsurvey)



British carrier *Hermes* sinking after Japanese carrier air attack on 9 April 1942. Photo taken from a Japanese aircraft



## HMS Hermes now open for divers

More than 60 years after her sinking during WWII, the area has been opened to tourism, and the *HMS Hermes* has finally become available for technically trained divers to explore.

At dawn, on 9 April 1942, the 167-meter-long, 12,900-ton aircraft carrier *HMS Hermes* was spotted off the east coast of Sri Lanka in the Indian Ocean by a Japanese reconnaissance plane. With her 814 Naval Air Squadron ashore at the time, she was

defenseless when she was subsequently attacked by 70 Japanese bombers. Hit 40 times in less than ten minutes, *Hermes* sank with the loss of 307 men 8km off the coast of Batticaloa.

Resting at 45-58m, the intact wreck, a war grave, had been been offlimits to divers unless accompanied by the Sri Lankan navy and for all practical purposes inaccessible until Sri Lanka's civil war recently ended.

Now Maldives Scuba Tours has begun organising one-week trips for up to 12 divers. According to their guidelines *HMS Hermes* is recom-

mended for divers with minimum technical training to 50m. The wreck is a "military maritime grave", and as such, no attempt should be made to gain access to the inside of the wreck or touch or disturb or in any way interfere with the wreck. There must be no attempt to remove artefacts of any kind from the wreck. Whilst there is no objection to still photography or filming of the wreck, the dive team should only photograph or film the exterior of the wreck. Every effort must be made to avoid photographing or filming any human remains. Any photographs or film inadvertently taken of human remains should under no circumstances be published or broadcast. ■



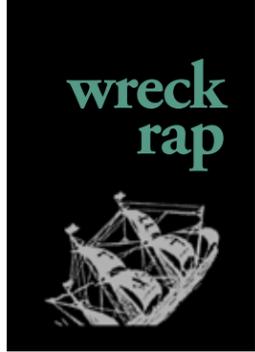
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# Intact German WWI found off Ireland



The German submarine, the UC 42, was sunk off the Irish port of Cork in 1917

SM UC-42 was a German Type UC II minelaying submarine or U-boat in the German Imperial Navy during World War I. On 10 September 1917, UC42 was laying her deadly cargo of mines at the entrance to Cork harbour when a terrific explosion occurred, which sent the vessel to the seabed and the 27 German submariners aboard to a horrifying death.

A team of five sport divers from Cork discovered the WWI German U-boat in good condition in 27m of water just off Roches Point after a 12-month search.

On November 2 of that year, hardhat divers from the Haulbowline dockyard dived the area. The divers reported a German U-boat lying on the seabed with her stern blown off, and a brass plate on her conning tower reading "C42, 1916", identified her as UC-42. No survivors were ever reported even though some of the hatches were found to have been opened. It was thought likely that the submarine had been sunk by one of her own mines detonating under her stern while minelaying.

It was widely believed that in July 1919 divers using explosives

from HMS Vernon torpedo school had destroyed the submarine with the remains being dispersed on the seabed by wire sweeps.

The actual wreck was relocated by two local divers, Ian Kelleher and Niall O Regan, on 6 November 2010 in 27m of water just off Roche's Point. It was found with "little obvious explosive damage".

As they descended a shot line to see the menacing sight of the hull of a German U-boat emerge from the shadows, both divers were very surprised and ecstatic to find a fully intact World War I U-Boat just outside Cork harbour.

## 20th century shipwreck in NOAA's Stellwagen Bank Sanctuary listed on National Register of Historic Places



The wreck of a mid-20th century fishing vessel, representative of a distinctive regional fishing technique, has been listed on the National Register of Historic Places, the United States' official list of cultural resources worthy of preservation.

The Edna G shipwreck site rests within NOAA's Stellwagen Bank National Marine Sanctuary. The Edna G was a 54-foot groundfishing vessel launched in 1956 by the Morehead City Shipbuilding Corporation of Morehead City,

N.C. From her launch until 1974, the Edna G fished off the North Carolina and Virginia coasts, and in 1974 new owners moved it to New England.

The vessel sank on 30 June 1988, off Gloucester, Massachusetts, as her two-man crew set out its trawl net. A strange noise alerted the crew to water rapidly filling Edna G's engine room. The fishermen were able to abandon ship and were picked up by another fishing vessel. The exact cause of the sinking was never determined. ■

# Beneath the Sea

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SEAWIFS PROJECT, NASA/GODDARD SPACE FLIGHT CENTER, AND ORBIMAGE

Queensland, Australia, and the Great Barrier Reef

## Queensland tourism industry receives AU\$10 million

The Australian state of Queensland was hard hit by cyclons and floods recently and is now rebuilding its tourism industry. The state is among others famous for the Great Barrier Reef, which runs along its coastline. The Queensland tourism industry will receive a AU\$10 million injection with a new tourism industry support package from the Australian state and the federal government.

"It's no secret the tourism industry, like many industries in Queensland, has taken a hit by the floods and is still haemorrhaging because of the negative publicity that spread world-wide," said Queensland Premier Anna Bligh.

Tourism contributes a massive \$9.2 billion per annum to the state, directly employing 122,000 people and indirectly employing 100,000 more. Bligh also stressed that most of the state's tourism regions were largely unaffected by floods and that now is the time to take a Queensland holiday. ■

## Thailand temporarily closes popular dive sites

Seven areas in marine national parks in the Andaman Sea and the Gulf of Thailand were temporarily closed for diving from January. The closure of some divesites is to allow coral reefs affected by bleaching to recover and regenerate.

The National Parks, Wildlife and Plant Conservation Department (DNP) of the Ministry of Natural Resources and Environment has reported

PHOTO: COURTESY OF TOURISM AUTHORITY OF THAILAND



Coral fans at East of Eden, Similan Marine National Park, Andaman Sea



that coral reefs at several sites along Thailand's Andaman coast and in the Gulf of Thailand have been affected by coral bleaching—a phenomenon in which coral loses colour and becomes paler or completely white. Coral bleaching at these sites extends over 80 percent of the areas concerned.

Corals that have been exposed to environmental stress for an extended period of time are vulnerable to bleaching. The key to stopping and reversing the situation is to immediately alleviate the environmental stress to prevent further damage to the affected reefs and create a more favourable environment that allows the coral colonies to recover and regenerate.

The following areas have been closed for diving:

- Ko Chueak Island, Hat Chao Mai Marine National Park in Trang Province

- Ko Bu Lone Mai Pai Island, Mu Ko Petra Marine National Park in Satun Province
- The islands of Ko Takieng, Ko Hin Ngam, Ko Rawi, Hat Sai Khao and Ko Dong in the Tarutao Marine National Park
- Ko Ma Prao, Chumphon Marine National Park
- Hin Klang, Hat Nopparattara, Mu Ko Phi Phi Marine National Park
- Ao Mae Yai Bay, Ao Mangkon Bay, Ao Jak Bay, Ao Tao Bay, and Ko Torinla in the Mu Ko Surin Marine National Park in Phang-nga Province
- Ao Fai Wap Bay, Ko Payu or East of Eden in the Mu Ko Similan Marine National Park in Phang-nga Province

The Tourism Authority of Thailand stresses that these are a handful of the thousands of divesites available throughout the country. The vast majority of dive sites still remain open. ■

Map of areas temporarily closed for diving



SRTM TEAM NASA/JPL/NIMA

Satellite map of Panama

## Panama offers free medical insurance for tourists

As of 17 January 2011, all visitors arriving in Panama through Tocumen International Airport, as well as Panamanians living abroad will receive medical insurance with top level coverage in case of emergency during the first 30 days of their stay. The Panamanian tourist authorities has signed a three year contract with Italian assurance company Assicurazioni Generali. Tourists arriving at the airport in Panama City, can go to the tourist information office, and ask for a brochure with all the

necessary information, along with a user card. If the person requires medical attention, they will only need to present this card along with its passport at any health center.

Health insurance is an incentive for tourists visiting Panama. The health services in the country are good with highly trained physicians and hospitals, said Salo Shamah, Director of the Autoridad de Turismo Panamá (ATP).

The free insurance policy covers accidental death (up to

US\$20,000 dollars), hospitalization and medical expenses for injuries due to accidents or in case of contracting a disease in Panama (up to \$7,000 dollars), expenses for dental emergency (up to \$2,000 dollars), administrative legal assistance by accident (up to \$3,500), and lost or stolen documents, among others. The policy does not however cover incidents caused by negligence, those related to alcohol and drugs or injuries caused by extreme sports (e.g. scuba diving). ■

## Egypt travel bans lifted

At the time of writing most countries have lifted their travel bans for Egypt, which came into

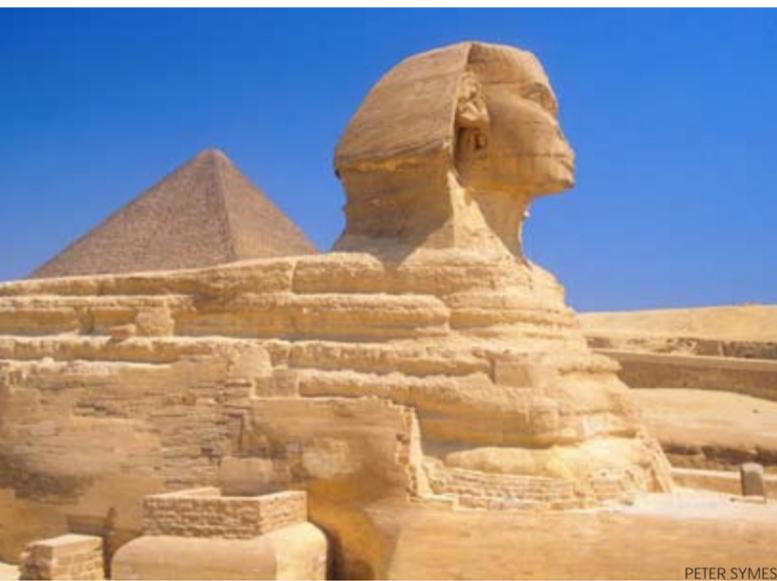
effect during the recent upheaval. The Red Sea resorts remain quiet, as many of the flights that were

cancelled won't be replaced. Travel agents say that many of the tourists who had bookings to Egypt chose to cancel or re-route their travel plans. Many of the aircraft that were scheduled for Egypt have been redirected to new destinations. However, the situation is returning to normal. The World

Tourism Organization (UNWTO) welcomes efforts by the national authority of Egypt to restore confidence among tourists and by foreign governments to update travel advisories accordingly.

"As the situation has evolved over the past few weeks, I have been pleased to see that travel advisories have been kept accurate, confined to the affected areas and regularly updated," said UNWTO Secretary-General, Taleb Rifai.

Egypt reported 12 million international tourist arrivals in 2009 and preliminary results for 2010 are 14 million. In terms of international tourism receipts, the figures stand at around US\$11 billion in 2009 and \$12.5 billion in 2010. ■



PETER SYMES

File photo: Great Sphinx of Giza and pyramid, Egypt

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