

*Holiday Gifts & Stocking Stuffers for Divers*



GLOBAL E  
December 2009  
Number 33

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**Great White Dive**

Oman  
**Desert Diving**

Scotland  
**Sounds of  
Mull & Oban**

Canadian  
**Tech Trail**

Russia  
**Moscow River**

Portfolio  
**Dailan Pugh**

DIVING THE PACIFIC  
**Solomon Islands**

COVER PHOTO BY STEVE JONES

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COVER PHOTO: *Pair of Hawkfish, Soloman Islands*  
by Steve Jones

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# So you think you can dive?

The dive industry is not feeling so hot these days – and I am not referring to the arrival of winter in the Northern Hemisphere. Since the onset of the global recession, many big and small businesses have been haemorrhaging as customers have held back on their expenditure.

Sure, we can blame the crisis for our current woes all we want, but let's not kid ourselves. The inconvenient truth is that we have to own up to the fact that the dive industry wasn't doing all that well in the years prior to the recession, when the rest of the world was enjoying a good stretch of economic growth.

Yes, it can be argued that it was also a matter of diving going in and out of fashion with the general public, but I really don't buy that idea either. Humankind has always been drawn to playing in and around water. Going to the beaches is an international past time. Most resorts and holiday destinations are on some kind of coastline, and tourism has generally—save for a few bumps in the road—just been increasing. Underwater movies and documentaries of all sorts are constantly being aired on the Discovery Channel, National Geographic and all the countless look-a-likes.

It doesn't take a degree in economic science to see that the dive industry has gotten

old and out of touch. Just go to any dive show in the western world and look around at all that grey hair. With Asia being a notable and pleasant exception to the rule, both attendees and exhibitors are now overwhelmingly middle-aged and beyond.

The dive industry has lost touch with the youth and become disconnected from the dreams that ultimately drive the whole thing. Why do we dive? It is not a nutritional requirement.

— Because we dream... because we got inspired.

Ask around our soon-to-retire fellow divers and dive industry members what inspired them to take up diving. The vast majority will reply that it was Jacques-Yves Cousteau, or watching *Sea Hunt*, when they were kids. Cousteau certainly did it for me.

Only a few days ago, I listened to a live webcast with Dr Robert Ballard who took questions from a lot of school children. One little girl asked him what first inspired him to go explore the oceans. He said it was reading *A Thousand Leagues under the Sea* by Jules Verne.

Watching the Ballard webcast and the kids on the show so totally engulfed in the experience, watching children become so enthralled with play-pools in the public aquar-

iums I've visited, and going to the Asian dive expos, which are full of young ones having a ball, fills me with both hope and joy.

This is the future audience and customer base that the dive industry so desperately needs. So, what will it take for the captains of the dive industry to open their eyes, embrace this golden opportunity, and start rebuilding for the future? These kids may not have any buying power themselves today, but they already bring their families and friends to dive shows. Eight- to 12-year-olds today will be teenagers tomorrow with ever-increasing skills of persuasion to get their parents' to spend money on diving, in as little as four to six years, and have their own money to spend in seven to ten years. We need to reach out to them.

I watch with envy how the global "So, you think you can Dance?" reality show have created a surge in interest among young people for dance disciplines that were otherwise withering. The participants are not public profiles in the Cousteau way of matters, yet they are role models leading the way for others and making it fashionable again to dance.

I think some "So you think you can dive?" would be great.

Ideas anyone?



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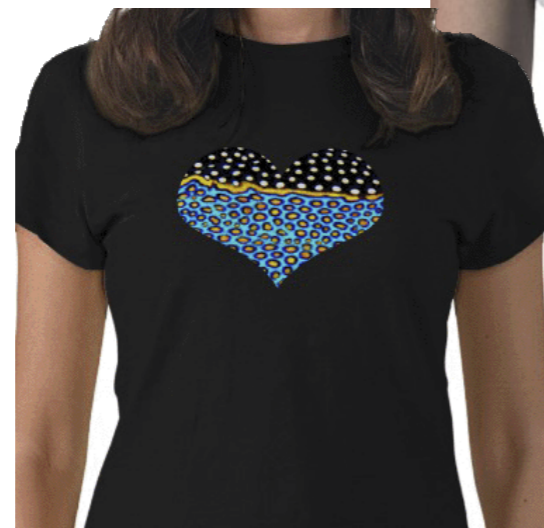
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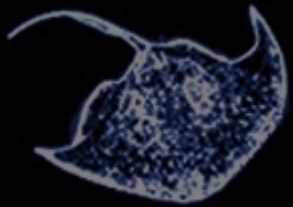
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X-ray mag

News edited  
by Peter Symes  
& Catherine G S Lim

# from the abyss NEWS

They were taking part in the Census of Marine Life, a first global scientific initiative to assess and explain the diversity, distribution and abundance of life in the oceans. Now on its home stretch (the ten-year survey will conclude in October 2010), the Census has so far revealed much fascinating information about the animals beneath the ocean surface. Thanks to the efforts of 344 scientists from 34 countries, we now know that there are indeed creatures living in the depths of the ocean below 200 metres, in total darkness, beyond the enriching rays of the sun.



Cute Dumbo (*Grimpoteuthis discoveryi*).

MIKE VECCIONE

At 2,750 meters in the Northern Gulf of Mexico: an odd transparent sea cucumber, *Erypniastes*, creeping forward on its many tentacles at about 2 cm per minute while sweeping detritus-rich sediment into its mouth



LARRY MADIN, WOODS HOLE OCEANOGRAPHIC INSTITUTION.

# Numerous New Species Discovered in Deep Oceans

Since 2000, these scientists, forgoing personal comfort in the name of science, have either squeezed into deep-diving submersibles or ventured on board research ships amidst storm-racked seas to control automated drones beneath the water's surface.

### Sci-fi movie creatures

So far, as many as 17,650 species have been found living in the deep oceans. To ensure a systematic survey, the Census had been divided into five separate zones: the continental margins; the mid-Atlantic ridge; the abyssal plains; seamounts, lone underwater mountains and volcanoes; as well as the communities of hydrothermal vents and

cold seeps. The places that escaped this close scrutiny were the ocean trenches. "The abyssal fauna is so rich in species diversity and so poorly described that collecting a known species is an anomaly," said Dr David Billett of the National Oceanography Centre, Southampton.

"Describing for the first time all the different species in any coffee cup-sized sample of deep-sea sediment is a daunting challenge," he added.

Some of these creatures easily rival what sci-fi movie producers can conjure up. Take, for example, the finned octopod or cirrate, a primitive octopus-like creature that swims by flapping two large ear-like fins (thereby earning itself the name Dumbo, ala Walt Disney's flying elephant character. One specimen weighed in at six kilograms (13.23 pounds) and measured nearly two



'New' Dumbo (*Grimpoteuthis* sp.)

metres long (2.19 yards). Nine different species of this animal were found, with at least one being a previously unknown species.

The other animals found in the depths comprised an assortment of crabs, shrimp, jewel squid, helmet jellies, sea angels, tubeworms, etc. Indeed, this was an expedition in which discovering new species seemed to be a part of the daily routine. During one cruise, as many as 680 species of fly-like

copepod were found, and only seven of them could be positively identified.

The 'yield' at the Mid-Atlantic Ridge proved to be plentiful: "Because it provides an oasis of topographical relief in the centre of the ocean, we found a high concentration of animals on the Mid-Atlantic Ridge," said Odd Aksel Bergstad of the University of Bergen.

Among them was a creature known as a neocyema, an elongated orange creature living at about 2 to 2.5 kilometres deep. It was the fifth specimen ever caught, and the first to be found at the Mid-Atlantic Ridge.

"New species aren't news for deep-ocean scientists, they're a problem," said Dr Robert Carney of Louisiana State University. "The figure of 17,000 species is just what's made the logbooks, it's what we can deal with.

If you want the real figure, you can multiply that by a hundred or a thousand."

### Finding Food in the Abyss

Without the life-giving rays of the sun, how do these creatures of the deep find food on a daily basis? Sure, once in a while, a carcass of a deceased whale will crash down to the seabed, much to the delight of those bone-eating worms called *Osedax*. But this is a rare occurrence, so the crea-

tures of the deep have adapted dietary requirements more in tune with their living environment.

"In the bathy- and mesopelagic zones—the largest 3D deep-sea living space—animals either have to cope somehow with food scarcity or migrate long distances up to find food," says MAR-ECO project leader Odd Aksel Bergstad of University of Bergen.

While some species rely on the falling animal remains from above, others have adapted to diets of bacteria that break down oil, sulfur and methane. The deep-sea hydrothermal vents make use of microbial life to help them feed from the chemicals in the hot water.

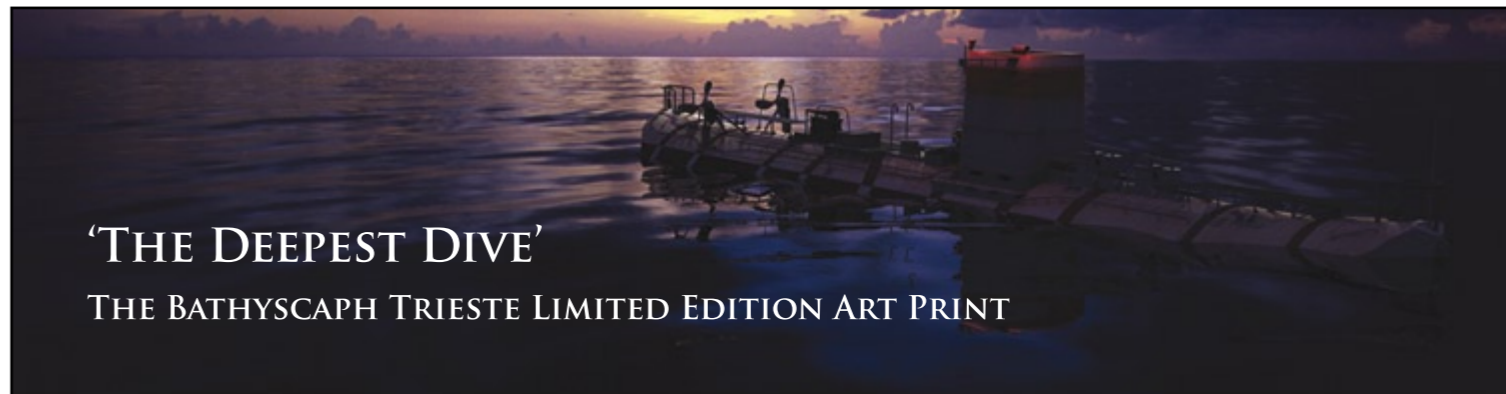
Yet another creature with unusual feeding habits is the *Lamellibrachia*, a tubeworm found in the Gulf of Mexico that literally prospects for oil by using a long fragile tube to probe downwards from the seabed.

### Safeguarding the Future of Our Oceans

By the time the Census concludes next October, more than 210 expeditions would have been made. Even now, scientists can identify patterns of the abundance, distribution and diversity of deep-sea life worldwide.

Apart from the new knowledge gained, the Census will be used to guide efforts to safeguard deep-sea marine life.

"Many species live there. However, the abyss has long been



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viewed as a desert. Worse, it was viewed as a wasteland where few to no environmental impacts could be of any concern. Mine it, drill it, dispose into it, or fish it—what could possibly be impacted? And, if there is an impact, the abyss is vast and best yet, hidden from sight," said Dr Robert S Carney of Louisiana State University.

Thus, it is hoped that the Census' findings will discourage bottom-trawling and dumping. Also targeted is the offshore oil and gas industry that continues to drill in deeper waters, and there are even plans to mine the mineral deposits on the seafloor.

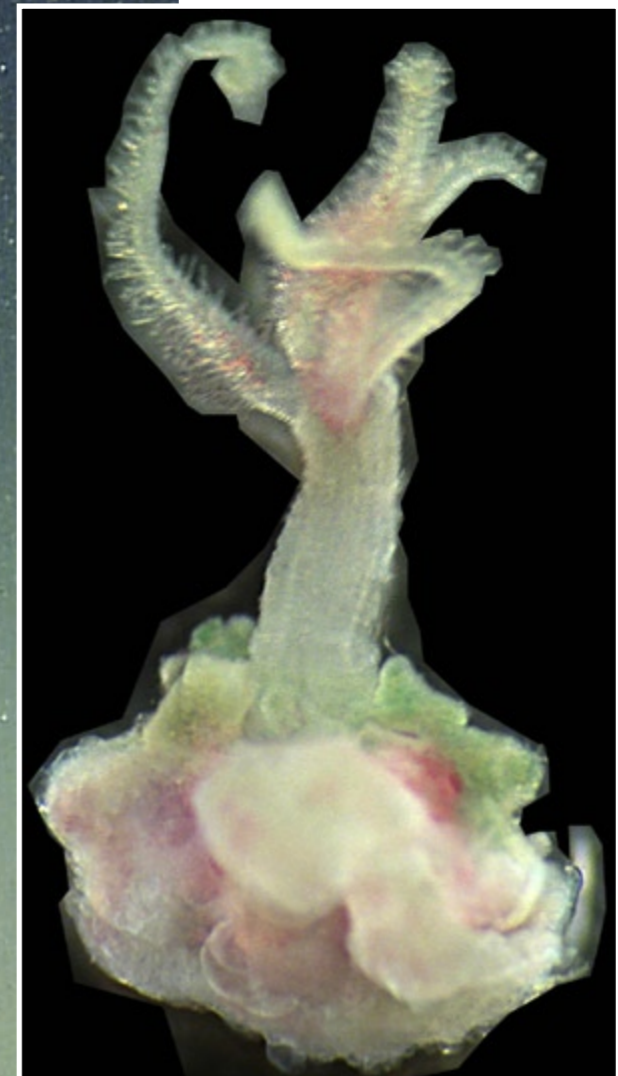
Added Dr Carney: "Ignorance is our main enemy. Before anyone starts to consider the deep ocean as a wasteland, we need to know what's there." ■

A tiny copepod collected this year from the Atlantic abyss



# Meet the bone eating zombie worms

Strange Worms Discovered Eating Dead Whales



Female of an as yet un-named boneworm in the genus *Osedax*, which has been carefully removed from the whale bone in which it was growing

drifting through the darkness of the deep sea. At some point, they encounter a large dead animal on the seafloor. It may be a whale, an elephant seal, or even the carcass of a cow that washed out to sea during a storm. Following chemical cues, the tiny larvae settle down onto the bones of the dead animal.

Once settled, the boneworms grow quickly. One end of each worm develops feathery palps, which extract oxygen from seawater. The other end of the worm develops root-like appendages that grow down into the bone. Bacteria within these roots are believed to digest proteins and perhaps lipids within the bones, providing nutrition for the worms.

Soon the worms become sexually mature. Strangely enough, they all become females. Additional microscopic larvae continue to settle in the area. Some of these larvae land on the palps of the female worms. These develop into male worms. But they never grow large enough to be seen by the naked eye.

Somehow these microscopic male worms find their way into the tube that surrounds the female's body. Dozens of them share this space, not eating at all, but releasing sperm that fertilize the female's eggs. Eventually the female worm sends thousands of fertilized eggs

MONTEREY BAY AQUARIUM RESEARCH INSTITUTE (MBARI)



Skull of a dead whale on the seafloor—the preferred habitat for boneworms.

**It sounds like a classic horror story—eyeless, mouthless worms lurk in the dark, settling onto dead animals and sending out green “roots” to devour their bones. In fact, such worms do exist in the deep sea.**

All images courtesy of Monterey Bay Aquarium Research Institute (MBARI)

They were first discovered in 2002 by researchers at the Monterey Bay Aquarium Research Institute (MBARI), who were using a robot submarine to explore Monterey Canyon. But that wasn't the end of the story. After “planting” several dead whales on the seafloor, a team of biologists recently announced

that as many as 15 different species of boneworms may live in Monterey Bay alone.

After years of study, the researchers have begun to piece together the bizarre story of the boneworms, all of which are in the genus *Osedax*. The worms start out as microscopic larvae,





IMAGE: © 2008 GREG ROUSE

Most female boneworms have long, graceful "palps" that wave in the ocean currents

out into the surrounding water, and the cycle begins again.

### Different species

Between 2004 and 2008, Dr Robert Vrijenhoek, an evolutionary biologist at MBARI, and his team towed five dead whales off the Monterey Bay beaches and sank them at different depths within Monterey Canyon. Every few months, the researchers would send one of MBARI's remotely operated vehicles (ROVs) down to study the worms and other animals that had colonized the whale carcasses.

To their surprise, the different whale carcasses yielded different types of boneworms.

### 45 million years old

One whale carcass hosted three or four different types of worms. After examining all of the worms, co-author Greg Rouse concluded that most of them were entirely new to science. The researchers also discovered that the worms would colonize cow-bones placed on the seafloor, which showed that the worms were not limited to feeding on dead whales.

### Genetics

Extensive DNA analyses suggests that these worms could belong to as many as 17 different species, most of which have yet to be named. None of the worms appear to interbreed, despite the fact that some of them grow side by side. Using one possible estimate of mutation rates, the researchers hypothesized that this group could have evolved about 45 million years ago—about the time the first large open-ocean whales show up in the fossil record.



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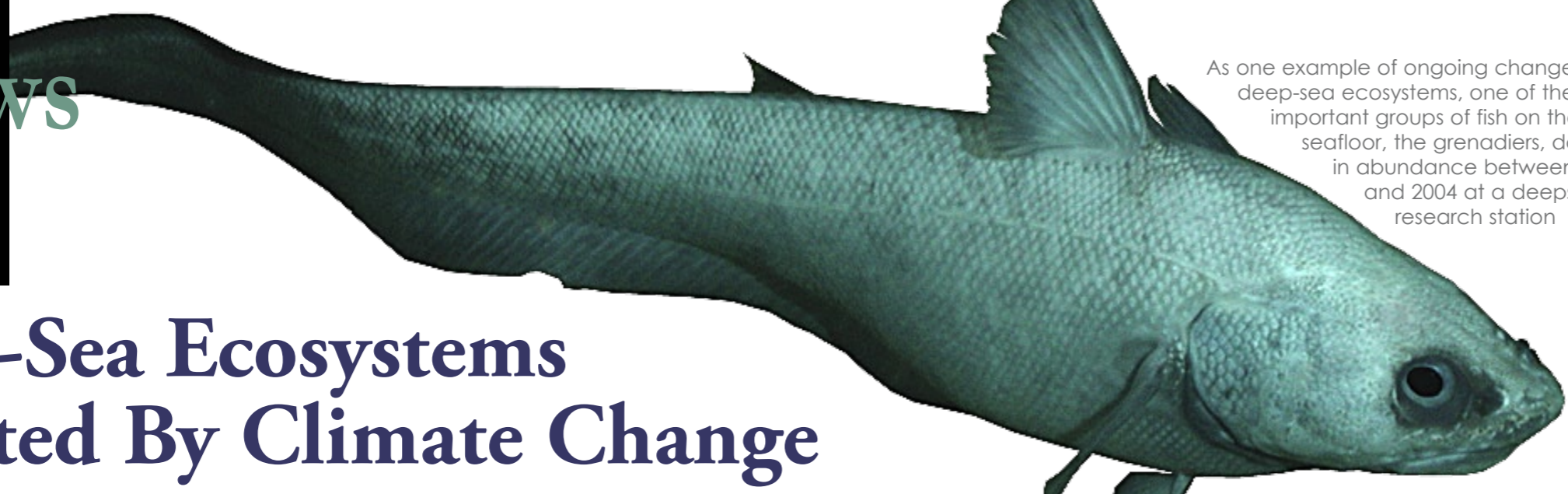


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As one example of ongoing changes in deep-sea ecosystems, one of the most important groups of fish on the deep seafloor, the grenadiers, doubled in abundance between 1989 and 2004 at a deepsea research station

# Deep-Sea Ecosystems Affected By Climate Change

**Communities on the abyssal seafloor are affected in a variety of ways by climate change.**

The vast expanses of the abyssal plains occupy about 60 percent of the Earth's surface. Historically, many people, including marine scientists, have considered the abyssal plains, more than 2,000 meters below the sea surface, to be relatively isolated and stable ecosystems. However,

according to researchers at Monterey Bay Aquarium Research Institute (MBARI), climate change can also cause unexpectedly large changes in deep-sea ecosystems over short time scales of weeks to months, as well as over longer periods of years to decades.

Very little food is available in the cold, dark environment of the deep sea. What food there is takes the form of bits of organic debris drifting down from the sunlit surface

waters, thousands of meters above. During its long descent, this organic matter may be eaten, excreted, and decomposed, drastically reducing its nutritive value. It is estimated that less than five percent of the organic matter produced at the surface reaches the abyssal plains.

Long term studies have shown that the amount of food reaching the deep sea varies dramatically over time. Such variations in food supply have several causes. On a seasonal basis, algal blooms near the sea surface send pulses of organic material to the deep seafloor.

Other factors may also come into play, including how much of the algae is eaten by marine animals, and how the material is moved by ocean currents.

The scientists point out that global climate change could affect the food supply to the deep sea in many ways. Some relevant ocean processes that may be affected by climate change include wind-driven upwelling, the depth of mixing of the surface waters, and the delivery of nutrients to surface waters via dust storms.

Climate-driven changes in

these processes are likely to lead to altered year-to-year variation in the amount of organic material reaching the seafloor.

Based on their observations, the authors conclude that long-term climate change is likely to influence both deep-sea communities and the chemistry of their environment. According to Ken Smith, a marine ecologist with MBARI, "Essentially, deep-sea communities are coupled to surface production. Global change could alter the functioning of these ecosystems and the way carbon is cycled in the ocean." ■



## Shellfish hard hit too

Researchers at Stony Brook research center in New York, found that hard clams, bay scallops and Eastern oyster failed to mature and grow normally when exposed to levels of CO<sub>2</sub>-induced acidity projected by the end of the century if CO<sub>2</sub> emissions continue as projected.

Experiments showed when the larval stage of shellfish were in the more-acidic seawater, they were slower to grow shells, and sometimes failed to grow shells at all. The larva is a soft-bodied creature that emerges from the fertilized egg and begins in less than a day to use seawater to form its shell.

Normally, shellfish

take from two to three weeks to have enough shell formed in order to survive protected on the bottom. But with acidified seawater, that process stretched on to as long as five weeks, or sometimes never happened the researchers found.

Going longer without a protective shell exposes larva to a greater risk of being eaten by

fish and other predators, which would leave fewer mature shellfish to breed the next generation.

The Stony Brook study, published in the November issue of the journal *Limnology and Oceanography*, supports growing findings by the National Oceanic and Atmospheric Administration. ■

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# DEMA *light*

Text Peter Symes with additional reporting by Roz Lunn. Photos by Scott Bennett and Peter Symes

This year's installation of 'the greatest scuba show on the planet' was markedly slimmed down. It appeared to be 30, perhaps even 40% down from last year, but perhaps that wasn't all bad since the consensus at the end of show, which ended on an upbeat note, seemed to be that quality had replaced quantity, and that it was the excess weight that was shed—the tyre-kickers and time-wasters along with empty calories consisting of already barely viable businesses.

But don't get me wrong—even this slimmed down edition was still a huge show, which cannot be completely covered by anyone in those four days the show lasts. The ambience was sombre and reflective, but focused and sanguine.

The global recession, which has been slowly abating, has visibly taken its toll on the already winged dive industry. Several major brands, which in the expo's heyday in the mid 1990 would try and out

compete each other with the biggest and flashiest booths, were now either just attending, not exhibiting or had downsized their displays significantly.

Still, it is the place and the event where manufacturers come from afar to present their wares and new inventions for the first time. And it is the event that still boasts an impressive range of excellent presentations. The new diving and photo equipment presented will be highlighted elsewhere in the magazine.

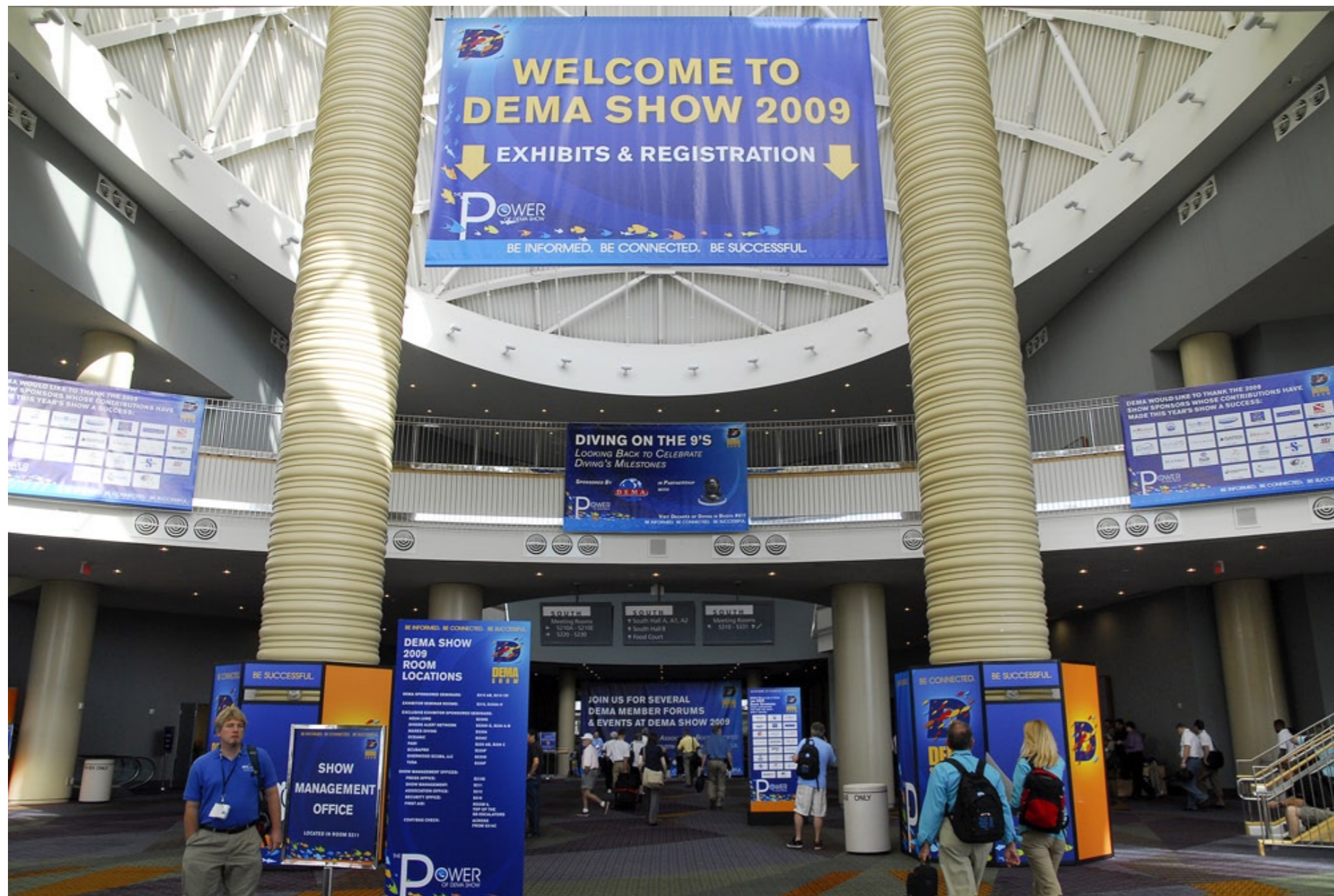


## Showdown at DEMA — Member update

This was rather entertaining. A substantial list comprising of several hundred dive industry professionals had signed a petition calling for a new election, stating that the current DEMA board has lost the confidence of its membership. According

to the petitioners, recent decisions were made by DEMA's board of directors contrary to the stated wishes of the membership. The petition can be read in its entirety and still signed by visiting [www.UnifiedDiveIndustry.com](http://www.UnifiedDiveIndustry.com).

The seminar room in which the meeting was held was filled to capacity and



X-RAY MAG's Scott Bennett (center) with Rod Roddenberry (left) and Greg Martin from the Roddenberry Dive Team



TDI, stood up and pointed out that there were no sides, and the petition was caused because people do care about our industry and want to see it not just survive but thrive. Carney also emphasized that the existing system where the number of votes could be bought left many members feeling under-represented and disengaged.

Then, a rather awkward moment ensued when Tom Ingram announced that after an earlier meeting with Joe Stella of Scubapro, Stella had requested his name be removed from the petition, asking Hollis whether he wanted to be removed from the petition too, which he didn't. This prompted Chris Richardson of Edge Gear to address Ingram, stating that this failed attempt to have Oceanic moved from the petition was a good example of how the



The petition outlining proposed amendments to the association's by-laws was signed by the requisite number of members to be considered a formal request for by-law amendment. The current by-laws outline a process for consideration of by-law amendments. That process is now in motion.



then some. Starting at 8:30 AM, Tom Ingram, executive director of DEMA, presented a report to the membership on the activities undertaken and marketing tools available to members. As usual, these tools were only pertinent to the dive industry within the United States and pretty much useless to us residing in other parts of the world.

When the issue of the petition came up, first Bob Hollis, president of Oceanic and co-signatory, spoke about the need for a panel that could include outside input on how to attract and retain divers. He further recommended that DEMA board members were open to the membership except for personal matters. The next speaker, was Susan Long, president of DUI, who read out the petition to the packed audience underlining that more members had signed the petition than voting on these issues previously.

At this juncture, the meeting seemed to drift towards a showdown between the sitting board and the petitioners until Brian Carney, president of SDI/



DEMA brass is out of touch with its base, pointing out that several hundred industry members had signed the petition wanting change.

By the close of the meeting, the president of the DEMA board of directors, Al Hornsby, announced that he would step down as president and be succeeded by Jim Byrem. The board of directors announced that there will be a special election to fill the vacant seat on the board.



FAR LEFT: The conference room was packed to capacity

TOP RIGHT: Bob Hollis at the rostrum with DEMA's executive director Tom Ingram on the left

CENTER: Tom Ingram giving his presentation

LOWER RIGHT: Chris Richardson of Edge Gear addressing the DEMA Board of Directors



## NOGI Awards

This festive black tie event is one of our favourite highlights. Everybody is looking sharp and well groomed, the food is great, and the presentations truly infotaining and captivating. Presented by The Academy of Underwater Arts and Sciences and sponsored by Ball Watches, this year was the 50th Anniversary of the NOGI Awards.

This year's Arts recipient was Bonnie J. Cardone. During her 22-year career with *Skin Diver Magazine*, Cardone wrote more than 900 articles and published thousands of photos. In addition, she wrote articles about women pioneers for the Historical Diving Society's magazine and authored two books, *Shipwrecks of Southern California* and *Fireside Diver*. She was principal photographer for *Diving and Snorkelling in Southern California and the Channel Islands*. Currently, she is a freelance photographer/journalist and has been published in



Wyland, Emory Krystof, Stan Waterman and Guy Harvey

*California Diving News, Diver Magazine, Alert Diver, Sport Diver* and several e-zines.

The Science NOGI was awarded to Hannes Keller. He is a world renowned philosopher, mathematician and visionary whose work includes the development of decompression algorithms for use in dive computers. In 1961, he set the deep diving record of 216 metres (710 feet).

Walt "Butch" Hendrick Jr was awarded the Sports and Education NOGI. Hendrik has devoted his life to training diving, rescue, recovery and diver safety to thousands of fire, police, EMS, military and sport divers through his company, Lifeguard Systems. Lifeguard Systems now trains in South Africa, Saudi Arabia, the Caribbean and America.

The 2009 NOGI Distinguished Service recipient was Mike Gower. Gower started diving in 1959 and was of the original founding members of The Underwater Society of America. Over a career of 46 years, Mike has dealt with legislation, environmental issues, ecology, aquatic sports, education and safety. Mike has made a second career promoting underwater activities and diving related issues, such as free diving records, spearfishing, and other aquatic sports. He is currently the representative to the U.S. Olympic Committee and CMAS International Fin Swimming and Free Diving-Spear Fishing Competition. ■



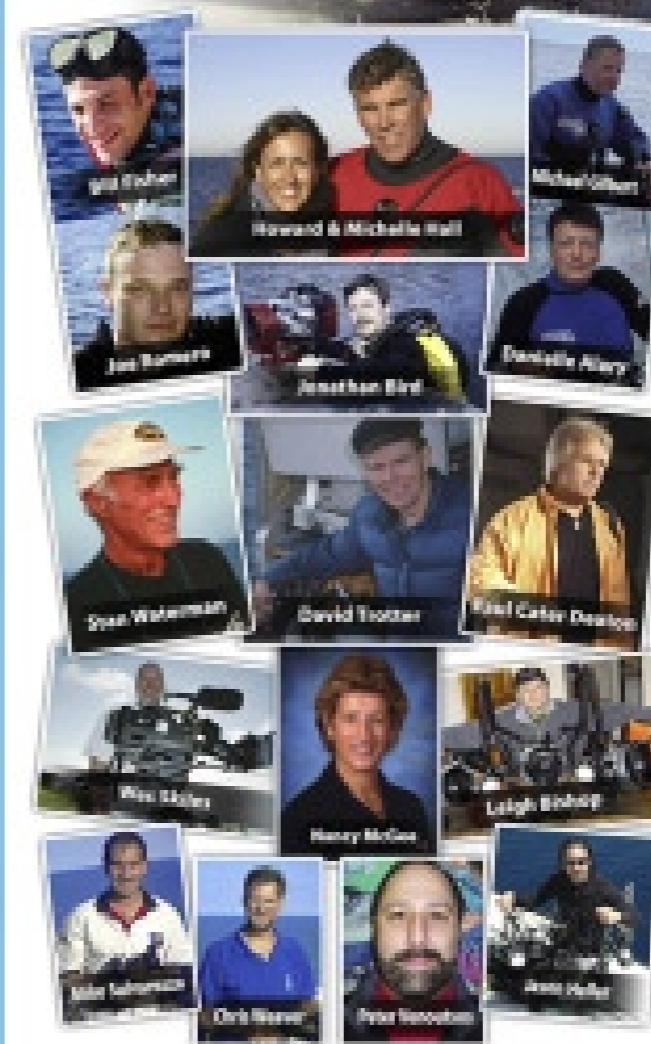
The nite we all dress up. Friends in this picture: Bob Hollis (Oceanic), Pete 'NetDoc' Murray (ScubaBoard), 'Roz' Lunn (Underwater Marketing) and Jeffrey Gallant (Dive Almanac)



19-21 February 2010

Donald E. Stephens Convention Center, Rosemont, IL

Our World-Underwater is the oldest dive and travel show in North America. The show comes to Chicago every February. The event is held just a few miles from O'Hare Airport in Rosemont, Illinois. With hundreds of booths and thousands of divers, it is an event you will not want to miss. The weekend is loaded with educational workshops, and the nights full of films. Be sure to make it!



### WEEK-END AT A GLANCE

#### Friday, February 19, 2010

In-Depth Workshops 8:00 – 5:00  
Exhibition Hall 5:00 – 9:00  
Film Festival 8:30 PM – 10:00

#### Saturday, February 20, 2010

In-Depth Workshops 8:00 – 5:00  
Exhibition Hall 9:00 – 6:00  
Seminars 9:00 – 5:00  
Children's Program 10:00 - 4:00  
Film Festival 7:00 – 9:00

#### Sunday, February 21, 2010

In-Depth Workshops 8:00 – 4:00  
Exhibition Hall 9:00 – 4:00  
Seminars 10:00 – 2:00  
Children's Program 11:00 - 2:00

**Early Bird Tickets available** for the weekend for ONLY \$65.00  
Children 9-12 \$40.00  
8 Years and Under FREE!  
INCLUDES: 3-DAY Admission to Exhibit Floor. Friday & Saturday Film Festivals, Saturday & Sunday Seminars, and 40th Anniversary T-Shirt. Order online at:

[www.ourworldunderwater.com](http://www.ourworldunderwater.com)



# DIVESCAPES 2009 Welcomes Divers in Calgary

Text and photos by Barb Roy

'Dive Into Adventure' was the theme for this year's Divescapes, a consumer dive show held October 23-24 in Calgary, Alberta, Canada. The two-day event was sponsored by the Alberta Underwater Council (AUC), a not-for-profit society in Canada. Several hundred participants attended educational and travel seminars and enjoyed exhibits of dive retailers, charter and resort owners, travel organizers and dive associations from Alberta, British Columbia and Ontario. The event was held at the Executive Royal Inn, Hotel and Conference Centre NE where many of the show organizers and speakers also stayed.

"The Divescapes Scuba Conference and Exhibition started in Edmonton in 1995,"

comments Cathie McCuaig, Executive Director for AUC. "The show was first held in Edmonton in 1995, then switched between Edmonton and Calgary over the years with proven steady growth and excellent national and international speakers giving quality presentations over the years. In 2009 we decided to have the show in Calgary because we were able to book the Executive Royal Inn and Conference Centre, although it was a smaller venue. Our next Divescapes Scuba Conference and Trade Show are scheduled for the fall of 2011 in Edmonton and in Calgary for 2013."

Donations of dive travel, equipment and marine related books were generously provided at this year's show by Mamro



Adventures, Hollis Gear, Oceanic, Underwater Kinetics Canada, Pinnacle Aquatics, Ocean Quest, Divers Choice Charters, Tahtsa Dive Charters, Diver's Dream Charters, Harbour Publishing and Divi Flamingo in Bonaire.

## Guest speakers

An assortment of guest speakers entertained attendees with John McCuaig starting off the weekend with a talk on WWII Shipwrecks off Bell Island in Newfoundland. Speakers included Jeffrey Gallant talking about Greenland Sharks, Barb Roy with a look at Churchill's Polar Bears and Belugas, and Howard Robins discussing the Annapolis Project for Howe Sound. Marine naturalist and educator, Andy Lamb, talked about the Ecology of a Kelp Forest while Ray Agterbos featured Warm Tropical Dive Adventures. Mandy-Rae Cruickshank and Kirk Krack gave a riveting presentation



about their part in uncovering the slaughtering of dolphins in Japan through the award winning film, *The Cove*.

In closing, cave explorer and rebreather diver, Jill Heinerth gave the keynote presentation at Saturday night's dinner show—Ice Island, Antarctica.

## AUC 50 years

2010 will mark the 50th year for AUC, who acts as a representing body in Alberta for underwater activities like scuba diving, snorkeling, underwater hockey and free diving. They are also active in marine ecology, conservation, safety awareness and public education.

## 2011

Watch for the next Divescapes to happen in 2011. ■

Alberta has around 30,000 certified divers in the Province. For more information contact them at [www.albertaunderwatercouncil.com](http://www.albertaunderwatercouncil.com).



# US Boy Scouts Release Scuba Diving Merit Badge



To meet the requirements for the Scuba Diving merit badge, one must do the following:

1. Show that you know first aid for injuries or illnesses that could occur while scuba diving, including hypothermia, hyperventilation, squeezes, decompression illness, nitrogen narcosis, motion sickness, fatigue, overexertion, heat reactions, dehydration, injuries by aquatic life, and cuts and scrapes.

- Identify the conditions that must exist before performing CPR on a person, and explain how to recognize such conditions. Demonstrate the proper technique for performing CPR using a training device approved by your counselor.
- Before completing requirements 3 through 6, earn the Swimming merit badge.
- Discuss the Scuba Diver's Code with your merit badge counselor, and explain the importance of each guideline to a scuba diver's safety.
- Earn an Open Water Diver Certification from a scuba organization recognized by the Boy Scouts of America scuba policy.
- Explain what an ecosystem is, and describe four aquatic ecosystems a diver might experience.
- Find out about three career opportunities in the scuba industry. Pick one and find out the education, training, and experience required for this profession. Discuss this with your counselor, and explain why this profession might interest you. ■

## OnLine academics now available for SDI/TDI Divemasters

Divemaster candidates can complete the academic portion of their education for SDI and TDI Divemaster ratings online.

The new Divemaster program has been completely rewritten and

redesigned including a brand-new 420-page student manual plus a 31-Chapter online program.

"This is one of the most ambitious new product launches in the company's history," SDI Group President Brian Carney said. "The whole company including our

network of facilities, instructors and dive leaders are really happy and excited to offer SDI and TDI Divemaster candidates the option of completing the study and final exam for their first professional level rating online. And we are looking forward to hearing feedback on all the new materials." ■

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Edited by  
Mathias Carvalho

# Well-preserved sternwheel paddlesteamer found in Yukon lake

Canada's freezing lake waters has yet to yield all its many secrets and seems to be doing so, as a team of archaeologists have discovered a well-preserved steamboat from the Klondike Gold Rush era at the bottom of the Lake Laberge in the Yukon wilderness.

The sternwheeler, *A.J. Goddard*, disappeared one stormy winter in October 1901. Its location had remained a mystery for more than a century.

Built in San Francisco and

brought to Lake Laberge, the *A.J. Goddard* was a small iron stern wheel steamboat that operated as a passenger and freight boat across the lake and rivers on the route to Dawson City. Recent data showed that it was also used as a repair shop, forge and kitchen—a hot item for the needs of the Gold Rush frontiersmen.

A joint expedition with the Institute of Nautical Archaeology (INA), the Yukon Transportation Museum, and the Yukon government, ongoing since 2005 and led by INA Research Associate John Pollack, located the wreck in a project designed to pinpoint and document all wrecks that marked the old river and lake routes used by gold-seeking

"stampedeers", during the last great gold rush at the turn of the 20th century.

Amid the already documented wrecks of steamers off the Yukon's rivers, most in broken condition, the discovery of the *Goddard* is the first find of a vessel in relatively mint condition.

During a sonar survey back in 2008, a positive contact with a wreck at the edge of the lake was made. Team member, Doug Davidge, went down to the site before the winter ice set in and lowered an underwater camera.

When the images revealed the paddles of a steamboat's stern wheel, Davidge just knew that the *Goddard* was right beneath him. It was necessary, however, to wait for the ice to thaw; something that would hold everyone back until summer when the team would return to dive the site and establish a positive identification.

## Summer expedition

The summer expedition included Pollack and Davidge; as well as INA president and nautical archaeologist, James Delgado; Texas A&M graduate student, Lindsey Thomas;

Yukon government representative, Tim Dowd; and underwater photographer and dive master, Donnie Reid. The divers plunged in the Lake's freezing waters, and Davidge was the first to locate the elusive steamer.

The wreck was a veritable underwater treasure trove, with personal items such as boots and jacket of a crewman lying on the deck along with the stove, scattered dishes, an axe and several other tools.

When the ship was about to sink in that winter storm, the crew had the fire box of the boiler opened in an effort to gain power and reach the shore. The boiler door was found still open when the divers surveyed the site. Everything was literally frozen in time. Having claimed the lives of three out of a five men crew, diving on *A.J. Goddard* felt like as if these events happened yesterday, and not in 1901, said Davidge.

With the support of the National Geographic Society-Waitt Grants program, as well as several private and government institutions, this gold nugget of Canada's shipwreck history has at last been revealed. ■

The steam-powered sternwheeler *A.J. Goddard* ferrying men, supplies and firewood for the Klondike gold fields along the Yukon River in 1898. It was built in San Francisco, shipped to Alaska, disassembled and hauled over mountain and reassembled

A view through the rails at the bow of *A.J. Goddard* shows the windlass used to raise and lower the steamer's anchors



DONNIE REID, COURTESY OF INA - VIA PRESS RELEASES



DONNIE REID, COURTESY OF INA - VIA PRESS RELEASES

Watch the video

wreck rap



# Shipwreck relics of *Nanhai One* goes on display in Guangdong

Click on images to watch video on China Central Television



The city of Yangjiang established a special museum to house these retrieved treasures. The Guangdong Maritime Silk Road Museum showcases not only the salvaged works of art, but also displays the ship wreck, stored in a huge transparent case.

Spectacular porcelains salvaged from the medieval Chinese merchant ship, the *Nanhai One*, which captured the world's imagination when it was raised from the bottom of the South China Sea in December of 2007, has now gone on display in Yangjiang City of Guangdong Province.

*Nanhai One* proved to be a treasure trove. More than 4,000 gold, silver and porcelain artifacts, and 6,000 copper coins from the Southern Song Dynasty were salvaged.

The Southern Song Dynasty marked the first high point of China's porcelain industry. Products were exported to east, south and west Asia. They traveled as far as the east coast of Africa. Those who owned porcelain in those days were seen as holding status. Experts estimate *Nanhai One* contained more than 80,000 valuable relics. ■

Watch *Treasures of Nanhai Ocean* on YouTube



Porcelain from the Song Dynasty

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wreck rap

# Wrecks of advanced WWII Japanese subs documented off Hawaii

A I-201 type attack submarine—one of the fastest available in the Japanese fleet during WWII—and an aircraft-carrier I-14 submarine, were discovered by University of Hawaii's Hawaii Undersea Research Laboratory (HURL) team, led by chief pilot and operations director, Terry Kerby, off the Oahu coast.

The historical artifacts are considered to be in relatively good shape even after decades of rust and seawater erosion as well as the fact that they were torpedoed, said John Wiltshire, a HURL team member. "These submarines are about five miles off Barbers Point in about 3,000 feet of water," Wiltshire added.

## ► Hawaii Undersea Research Laboratory

That is the reason the team needed to use NOAA's *Pisces IV* and *V*—two three-person, battery-powered

submersibles with a maximum operating depth of 2000 m (6,280 ft).

The site was filmed by both NOAA and National Geographic. The Geographic Channel partly funded and documented the mission for a special, "Hunt for the Samurai Subs", during the network's second annual Expedition Week. See more at:

## ► National Geographic

### Hi-tech Warfare

The I-14 is part of a I-400 class of submarines developed by the Japanese to attack mainland United States and the Panama Canal. Before nuclear-powered subs came along, these were the largest diesel submarines built (400 feet long) and had the longest range, being capable of remaining submerged and sail one and a half times around the world without refueling.

This type of submarine could come

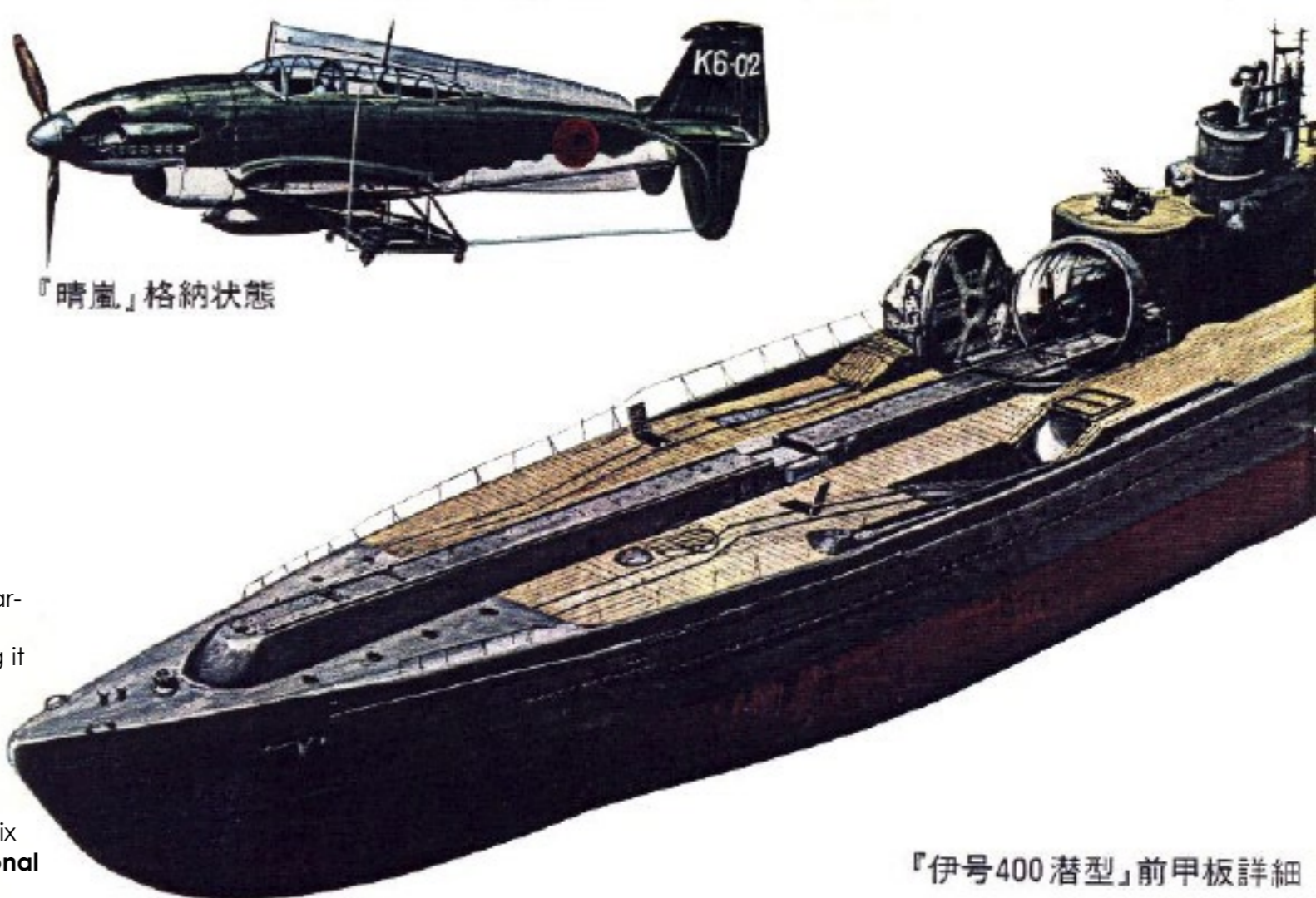
to the surface and launch three large aircraft, supposedly within fifteen minutes. The I-14 was radar-capable, and its exterior had a sonar-absorbing coating, making it less detectable to the enemy.

The I-201, one of the fastest attack subs active during the war, could sail at 19 knots underwater, when comparable American submarines could go six knots at best. **See video on National Geographic**

The U.S. Navy captured the submarines at the end of WWII and sailed five of them (I-400, I-401 and I-14 aircraft-carrying submarines and two fast attack subs, I-201 and I-203) to Pearl Harbor for inspection.

After Japan surrendered, the U.S. Navy sank the captured subs, reportedly to keep the technology from the Soviets. ■

In March 2005 the wreck of the I-401 was located off Oahu during a test dive of the Hawaii'i Undersea Research Laboratory deep diving submersible *Pisces*

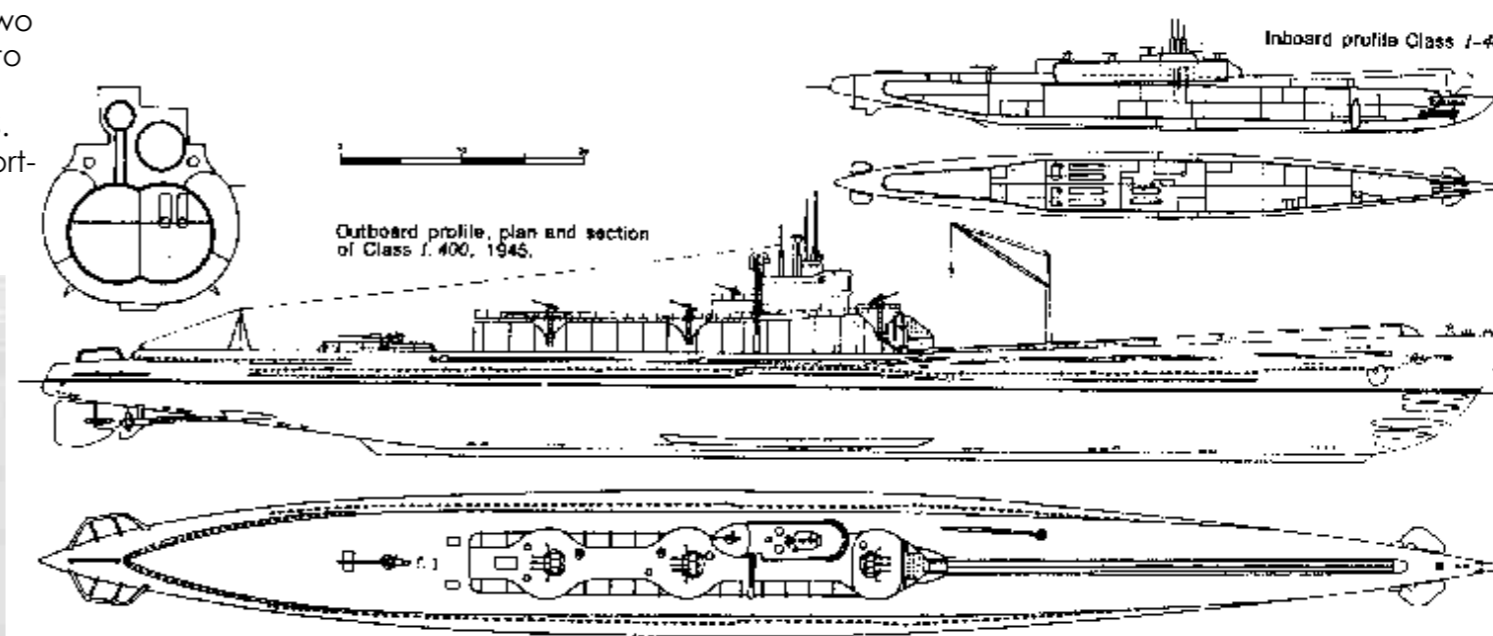


『晴嵐』格納状態

『伊号400潜型』前甲板詳細

画・高荷義之

——無断転載複写を禁ず——



Inboard profile Class I-400.

Outboard profile, plan and section of Class I. 400, 1945.





# Protecting Shipwrecks Proactively

Text by Rob Rondeau

**I was recently chatting online with a colleague from Mexico. We were both lamenting the fact that marine archaeology isn't a high priority for our respective nations. So, why is that?**

Archaeologists, academics and government-types have lots to say on the subject, but the answer need not be complicated. It largely comes down to shipwrecks being out-of-sight and out-of-mind! It's hard for Government (or anyone else) to ignore an archaeological site like England's Stonehenge. Conversely, it's hard to get Government interested in a site underwater - that is both hard to access and is one that relatively few people will ever see.

But, this doesn't mean that the public isn't interested in marine archaeology. In fact, my experience is that most people are more fascinated with archaeology underwater than they are on land. Part of this, in my opinion, has to do with the fact that it isn't easily accessible! After all, anyone can go for a walk in the mountains, but only a talented and dedicated few will climb Mount Everest.

I've worked on some of the most historically important shipwrecks in Canada, but the average Canadian knows almost nothing about them!



MARITIME MUSEUM OF THE ATLANTIC

I remember the time I was flying back from lecturing Stateside and a Customs Officer at the airport asked me the nature of my trip. I replied that I had been speaking about the Empress of Ireland - which is often described as Canada's worst marine disaster. More paying passengers died aboard the Canadian Pacific liner than did Titanic!

"Who's she," the officer asked.

"Oh boy," I thought.

Over the years I've gotten to know lots of politicians. Just like most people, I've found that they are just as interested in shipwrecks. So why the disconnect?

## Chicken and the Egg

To my way of thinking, it's what I call the "Chicken and Egg" scenario! What comes first?

When it comes to archaeology, both on land and underwater, it's "Public Interest and Government Funding!"

Government-types are loath to commit the financial resources to properly manage cultural heritage because they think the public isn't interested!

On the other hand, most citizens are ignorant about, and thereby uninterested in, their country's history - partly

because it's not adequately represented and interpreted in museums and parks.

Every museum I know worldwide is hard up for money and resources! Most administrators complain that Government just isn't interested. Nor does it care!

The annual number of visitors to most national parks has dropped. National Parks in the U.S. have seen a

steady decline in visitors over the past decade. According to the National Parks Conservation Association, it's very chicken and egg - with services in the parks having declined because of a lack of commitment from

Washington. It estimates an annual \$800 million funding shortfall. Squeezed budgets have lead to fewer visitors.

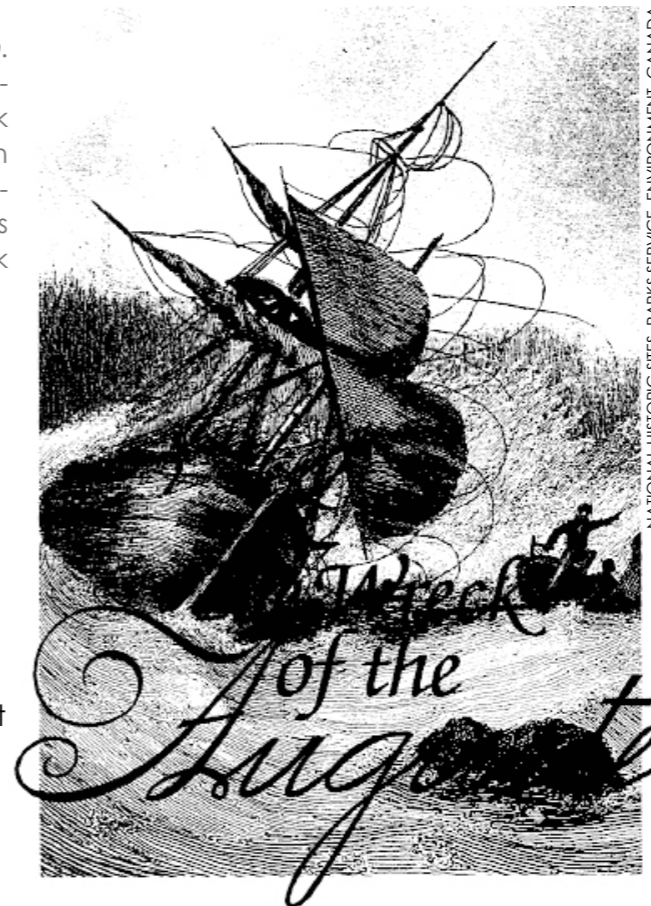
Experts also point to other factors contributing to the decline; the poor state of the economy, high gas prices, fewer foreign tourists and a declining interest in nature pursuits among younger generations.

"There's a lot of talk about the need for more innovative programs to educate youth," says Steve Martin, the superintendent of the Grand Canyon National Park.

Competition from "sexier" destinations, such as theme parks, and less money spent on marketing and advertising have also taken their toll, he pointed out recently.

"Fewer visitors also means the U.S. Park

The *Auguste Cannon*. PROCOM has recommended that the wreck of the 18th Century British warship *Auguste* be designated Nova Scotia's first marine park



NATIONAL HISTORIC SITES, PARKS SERVICE, ENVIRONMENT, CANADA

Service is unable to fulfill its mission of educating the public and preserving the natural environment."

North of the border things are a little better. The Government of Canada has said it will invest in new programs over the next five years to expand and promote the "ecological integrity" of its national parks - although no one seems to know exactly what this means!

Visitor numbers to this country's national parks haven't fared much better than those in the U.S.! They've been flat for the past five years. It's hard to imagine Government spending more money in an area that it deems "under utilized!"

## At Odds with One Another

Another big factor affecting the advancement of marine archaeology is who has jurisdiction over shipwrecks! In the U.S., most shipwrecks fall within the jurisdiction of each State. In Canada, it's much the same, with the Provinces being responsible for shipwrecks management.

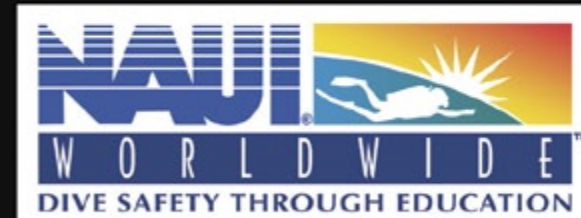
However, both countries have national government agencies dedicated to marine archaeology. The U.S. Parks Service and Parks Canada each have their own underwater units. Both like to

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think of themselves as being their nation's "defacto" marine archaeologists. In reality though, their only jurisdiction is federal lands – mostly within national parks.

And, both units rely heavily on other branches of the federal government, such as the Navy, Coast Guard and other departments. Last year, Canada's Minister of Heritage announced a new three-year plan to search for the lost ships of Sir John Franklin. The Erebus & the Terror were lost in the Arctic during in the mid 19<sup>th</sup> Century while searching for the Northwest Passage. They are considered to be two of the world's most important shipwrecks – although neither has been found.

However, marine archaeologists from Parks Canada were limited last summer as to how much time they could spend on the water looking for the Franklin wrecks. In actual fact, they borrowed the services of a Canadian Coast Guard icebreaker while it performed its regular summer duties in the Arctic.

Earlier this year, the Coast Guard said that its icebreaker would be too busy this summer and wouldn't be able to conduct a remote sensing survey for the Parks team. So, Parks Canada asked the Canadian Navy if it could loan a vessel. The reply was "no!"

### Public Versus Private

Most States and Provinces only award archaeology field permits to academics. However, some jurisdictions, like the Province of Nova Scotia in Canada and the State of Florida in the U.S., do allow contract marine archaeologists, such as



Johnny Depp. Everyone loves a pirate and his ship. Films like the *Pirates of the Caribbean* series have helped raise interest in Colonial-era shipwrecks

ing underwater cultural heritage. They have a better understanding and appreciation for the resource than do non-divers. And, they're both taxpayers and voters. Politicians have to listen to them!

So, what can you do to help? Government legislation provides everyone with the "rules of the road." If there aren't any a government is powerless to act.

This includes protecting marine archaeological sites, deciding what's to be done

myself, to work there. Likewise, both areas also allow for privately funded archaeology.

Archaeologists who work in the private sector, either on land or underwater, are often viewed as Pirayas by their academic colleagues – although they're equally, or better, qualified!

Whether marine archaeology should only be funded from the public purse is another topic for discussion. One that requires a column all to itself!

### Let's Be Friends

I can't remember which '60s Rock 'n Roller it was who said, "why can't we all just get along?" Sage words indeed!

The first thing that has to happen is everyone who's interested in marine archaeology, be they academics, bureaucrats, elected officials and/or the public, has to put aside their differences.

Recreational divers have one of the most important roles in manag-

with them and who makes such decisions. You can help by asking your politicians, at the national, regional and local level, to support new legislation aimed at protecting & better managing underwater cultural heritage.

As we journey under the sea we will, undoubtedly, come in contact with more shipwrecks. The exploration, and exploitation, of natural resources in the world's oceans is increasing rapidly, thanks largely to advancements in technology.

If we don't take steps now to better protect and manage shipwrecks they will, most certainly, be destroyed or lost to the public for good.

Shipwrecks don't belong to only a few! They belong to everyone – divers and non-divers alike. It's only by working together that we can better protect and manage them.

—Rob Rondeau  
Marine Archaeologist  
PROCOM ■



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## First Norwegian Luxury Liveaboard

Now you can dive the stunning Norwegian archipelago from a luxury liveaboard and explore wrecks and nature of Southern Norway.

The new boat is built by Benetti Shipyard in Italy. The vessel accommodates 8-10 divers in the spacious cabins but is certified for 20 passengers. This provides a unique opportunity for divers to jump on the way and be part of a couple of dives during the day.

The boat, which was contracted by an operator in Sweden will arrive in Kristiansand (a port in Southern Norway) in February next

year, and the first tours will commence shortly thereafter.

Currently, two different itineraries are offered both of which take seven days to complete.

The first is called Wreck & Nature and goes from Risør to Kristiansand, while the other is called Wreck Safari and takes you from Kristiansand to Flekkefjord.

[www.liveaboard-norway.com](http://www.liveaboard-norway.com) ■

# 'Pearl of the Antilles' poised for a comeback

## Healthy Reefs Buoy Haitian Hopes for Tourism Revival

These days, it seems Haiti makes the news for all the wrong reasons, but at one time the island nation was known as the 'Pearl of the Antilles', a Caribbean vacation destination that rivaled Jamaica or Puerto Rico. With 1,100 miles of coastline, Haiti's sandy beaches and coral reefs lured tourists by the boatload. "It was much easier because you had a lot of tourists," recalled Jose Roy, a 30-year veteran of Haitian diving. "You really didn't have to fight for survival."

Then, in 1991, things started to change. Turmoil commenced after former President Jean-Bertrand Aristide was ousted in a military coup. As security worsened, Haiti's tourism industry was among the first casualties, with U.S. State Department warnings against travel to Haiti hastening the collapse.

### Back to the good old days?

Today, government and private entities want a return to the good old days and are pumping money into schemes aimed

at restoring and protecting marine areas. While coral formations are as colorful and vibrant as in protected waters elsewhere in the Caribbean, marine life is scarce. Smaller fish

can be found, but larger fauna such as stingrays, sharks, turtles and barracudas are noticeably absent. "There's almost no fish in the water with you," said Jean Weiner, director of the Fondation pour la Protection de la Biodiversité Marine, or FoProBim.

Still, the fact that Haiti possesses healthy marine resources at all is something of a miracle. Many areas are remarkably pristine despite the devastation wrought on land by deforestation and dense development of wetlands and floodplains.

Reefs remain in good shape far offshore including those off the coast of La Gonâve and the Arcadins Islands, a region activists hope to transform into Haiti's first marine park. Wiener, who has been running the Haitian nonprofit FoProBim for more than 20 years, believes conditions are ripe for a resurgence of tourism.



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## Gujarat Whale Sharks

The Indian state of Gujarat coast may soon emerge as a hot spot for viewing whale sharks. A five-member team of experts from Australia and the United States has taken up a research project to study the feasibility of whale shark eco-tourism in the state.

"Australia and Philippines have developed tourism based on whale sharks. However, a lot more needs to be known about the accessibility whale sharks and the duration of their stay in Gujarat waters," said Dr John Keesing of Australian Commonwealth Scientific and Industrial Research Organization (CSIRO).

Around 60 percent of the whale sharks visiting Gujarat coast are female sharks, and the area could be one of the important breeding hubs. ■

## Underwater sculptures help save Cancun's coral reefs

**Battered by storms and pollution, Cancun's famous coral reefs have taken a beating in recent years. The Mexican government has created a plan to enable the reefs to heal while still attracting visitors. They are creating an underwater sculpture garden that will bring back the tourists and encourage growth of new coral.**

The project is the brainchild of the Mexican government and artist Jason de Caires Taylor, who specializes in the unique art of underwater sculpture. Composed of inert, PH-neutral concrete, his figures are human forms cast from real people. The figures then become platforms for coral and various other marine life, creating an alluring fusion of the natural and man-made. It takes only a few weeks for green algae to form on the surface of the sculptures, with coral and other sea creatures following suit within a couple of months.

Mexican park officials are hopeful the sculptures will draw snorkelers and scuba divers away from the overburdened coral reefs, allowing the reefs time to heal. ■



Diving in the Tristaina lake at 2,305 m. You get to the dive site by walking off-slope with snowshoes.

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Bordered by Spain and France in the eastern Pyrenees mountains, the tiny landlocked nation of Andorra doesn't exactly leap to mind as a diving destination. The Diving Andorra company is now offering the chance for beginners and advanced divers alike the opportunity to experience the Tristaina Lakes at an elevation of 2000m. The three lakes are situated in the Valls del Nord of the Principality of Andorra and form one of the most representative cirque glaciers in the country.

The departure point is the La Coma Restaurant in the Arcalís sector with a minimum of three people required. All gear and insurance is provided. There are two options available: a "baptism" for beginners and a technical dive. The beginners' dive is done in the 12m La Canaleta pool, complete with an artificial dam to produce snow and ice. This dive is aimed at beginners over the age of 14 and lasts for 15 to 20 minutes and costs €75 per person.

The advanced dive is done in the Tristaina Lake at an elevation of 2,305m. The lake is accessed via snowshoes, and divers can descend to 23m under the ice. The excursion lasts for a duration of five and a half hours and is suitable for people over 18. Cost is €295.

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# *Diving in the South Pacific* **Solomon Islands**

Text and photos by Steve Jones





Solomons

I'm nervous. That's not an unusual feeling for me when embarking on a challenging dive, yet I am in only two metres of water, the sea is flat calm, and there is no current to impede my progress at all. Indeed, the source of my apprehension lies just beyond the tunnel that I'm cautiously making my

way through. I will soon emerge into a shallow pool known as Mirror Pond, and it is here that saltwater crocodiles are frequently sighted.

They are the largest crocodilians on earth, and some say 'the animal most likely to eat a human'. They are opportunistic hunters and will eat anything they can get their jaws on, even

LEFT TO RIGHT: A diver enters the giant chasm of Leru cut (far left)...and eventually surfaces surrounded by overhanging jungle (center); Diver with an elephants ear sponge encrusted with crinoids

PREVIOUS PAGE: Diver with healthy gorgonians found in the Russell Islands





# Solomons

LEFT TO RIGHT: All the colours of the rainbow: a coral encrusted wall leads the way into Morovo lagoon; A boy canoes home to Karumolun Island as sunset approaches; The Florida Islands seen from the deck of the *MV Spirit of Solomons*

sharks. Sadly, it is this reputation as a man-eater and the high value of their hides that is putting immense pressure on their population, as is the case for so many of the world's great predators. I have never dived with a 'saltie' before and the chance to photograph one in the wild was an opportunity that despite my nerves I could not forgo. The photographer in me had fearlessly fitted an ultra wide angle lens meaning that I would need an extremely close encounter to get those coveted shots.

Despite every natural fibre in my body screaming at me that what I am doing is insane I continue into the tunnel. Behind me a fellow diver must have listened to her instincts as I catch a glimpse of her reversing out of the tunnel. Unfortunately it is, I have to admit with a slight element of relief, clear that the pond is not concealing the awesome hunter that we seek. However there was one







LEFT TO RIGHT: Giant elephants ear sponges encrust the wreck of *Anne*; Porcelain crabs are easy to find in the Solomons; The Solomons are a critter spotters paradise. Here, a white speckled chelidonura

more place to try.

As we move toward a dark, overhanging corner of the pond my heart again begins to race. I stop, my nerves

forcing me to ponder my potential fate. It is then that I feel someone push past me. Di, one of my fellow passengers on the *MV Spirit of Solomons*, who only recently learned to dive, brushes past me torch boldly in hand, somewhat frustrated by the hesitating 'professional' in her way.

Coming to my senses I pluck up the courage and follow her in. So much for the wildlife photographer—when it comes to saltwater crocs, I'm reduced to fol-

lowing others. Alas, maybe just to further prove my humility, there is still no sign of the elusive croc. I can't help but feel somewhat relieved.

**The Edge of the World**

Of course, the lure of such thrilling encounters is not compulsory when diving in the Solomon Islands—the true variety of diving here will satisfy all tastes, but the mere fact that saltwater crocodiles have not been dislodged from their natural habitat by man's relentless expansion should give you a hint that this destination remains most definitely "off the beaten track".

Indeed, the Solomons receives less than 15,000 visitors each year, of which only around a third are tourists. Compare that with a popular destination such as the



The delicately camouflaged Ornate ghostpipefish, *Solenostomus paradoxus*





CLOCKWISE FROM LEFT:  
Dolphin pods are a common sight in the Solomons; Diver illuminates Crinoid featherstar on fan coral; *Chromodoris lochi*, a species of nudibranch; Huge Jack schools gathered at Mary Island

but at only a 3-4 hour flight from Brisbane it is not difficult to reach. That said, there are places here both above and below the water that will simply make you feel like you ARE at the edge of the known world, so untouched by man's influence are they.

The nation consists of 992 islands lying to the north-east of Australia and the archipelago runs between Papua New Guinea to the north-west and Vanuatu to the south-east. The islands themselves are spread over a distance in excess of 1500 km and form part of the Pacific "Ring of Fire", the volcanic region that encircles the Pacific Ocean basin. It is this volcanic origin that has led to some

Maldives, which at 1/100th the landmass, still accommodated over 675 thousand visitors in 2007. Even more exclusive destinations such as Palau attract over 85 thousand visitors a year. With these statistics you could be forgiven for thinking the Solomons is at the edge of the world,



of the spectacular seascapes in these waters, which include huge caverns, crevasses and drop offs. Add to this the remnants of the Solomons historical past: this was the location of some of the fiercest battles of World War II with many of the wrecks within diveable depths, festooned with marine life.

### Extraordinary biodiversity

Marine life, of course, is something the Solomons is renowned for. The marine biodiversity here is simply staggering. The Solomons is part of the "coral triangle", the region with the highest marine biodiversity on earth which also spans Indonesia, Malaysia, Papua New Guinea,

Philippines and Timor-Leste. During a survey in 2004 by the Nature Conservancy (<http://www.nature.org/>), over 494 species of coral were recorded in this region, making the Solomons second in the world only to Raja Ampat in coral species diversity. The area is no less rich in fish life, with over a thousand species recorded here. A large number of sites exceed 200 species, which is considered the benchmark for an excellent fish count.

The diversity to be found underwater is not limited to the animal species. One overwhelming impression that the Solomons left on me was that the diving itself is





Solomons

CLOCKWISE FROM TOP LEFT: The *Soltai 61* wreck lodged in a crevasse as it sank and now lies vertically—a true multilevel wreck dive; Pygmy seahorses (this one is *Hippocampus denise*) are smaller than a thumbnail and perfectly camouflaged; The rare Velvet ghost pipefish, *Solenostomus* sp.; Slug spotters delight: *Glossodoris hikuerinis*



equally diverse, different not only from that to be found in neighbouring Papua New Guinea but even each island group itself differs, often drastically, from its neighbouring group. From abundant macro life in the Florida Islands, you move to crystal clear waters, drop offs and labyrinths in the Russell Islands, before encountering spectacular big school action in Mary Island. There are resorts that offer local diving on a number of the islands, however the only way to encounter this true diversity is by liveaboard.

**The Florida Islands**

The Florida Islands are a small Island group to the north of the Solomon's most famous island, Guadalcanal, and amongst others, the group contains the

islands Nggela Sule (also known as Florida Island), Tulagi, Gavutu and Tanambogo.

The Floridas have become popular particularly amongst technical divers. Whilst the majority of the ships sunk in the Solomons campaign in World War II lie in the unattainable (at least with scuba) depths of the aptly named "Iron Bottom Sound", there are still a number of notable wrecks that can be dived around the Floridas, with the destroyer *USS Aaron Ward* being at the top of most techies lists at a depth of 70 metres.

Wrecks however, make up only a fraction of what the



Floridas has to offer. As a taster of what was to come, less than five minutes into my first dive in the Solomons, dive guide Phillipa Dean casually illuminates a pygmy seahorse (*Hippocampus bargibanti*) in her torch beam.

Out of the 50 species of seahorse so far identified, this is one of the smallest at only 2cm long. However, it is not only its size that makes it so difficult to find, it is supremely camouflaged to blend in with its gorgonian coral habitat. Indeed, the species was only discovered



when a sample of the host gorgonian was being examined in an aquarium—so perfect is the pygmy seahorses' camouflage.

It would have been all too easy to have spent the entire dive around this gorgonian, but that would have meant missing the rest of this dive on Tanavula point. This steeply sloping reef is home to countless critters and

it's an easy dive – a popular acclimation spot for the first day of a trip. Amongst the group of expats I'm sharing the boat with, there seems a healthy obsession with "slug spotting" identifying as many nudibranchs as possible. It would seem we are in the right place: every nudi I see on this dive is new to me.

The Floridas offers the more challenging dive sites also. Passage Rock, as it's name suggests, is a shipping hazard rising from deep water as if out of nowhere. It's swept by strong currents and frequented by pelagics. Within seconds of dropping into the water, an eagle ray swoops in close before speeding off into the blue and dog-

tooth tuna patrol the upstream side of the reef. The reef top itself has a healthy coral garden, but it is a struggle to hold our position as the current sweeps over the site. Despite my best efforts I'm put to shame by a green turtle that effortlessly glides upstream whilst I fight a losing battle and drift downstream.

LEFT TO RIGHT: Rebreather diver, Tim Armstrong, looks on at an unbothered turtle; The corals in the Solomons are untouched; A magnificent ceratosoma nudibranch



**The Russell Islands**

How different the diving in the Solomons becomes after only an overnight steam. The Russell Islands lie approximately 48

kilometres north west of Guadalcanal and comprise of two main islands and a number of smaller ones. The water here is crystal clear, visibility in the 30 to 50 metre range and this area is all about spectacular seascapes: coral gardens, caves, drop offs and

huge crevasses. Dropping onto a site known as the bat cave, I'm distracted at the entrance by the discovery of an orangutan crab.



LEFT TO RIGHT: It really is this atmospheric...Leru cut is a spectacular dive; The aptly named Orangutan crab, *Achaeus japonicus*; An ever inquisitive blenny; Ghost pipefish are common in the Solomons

kilometres north west of Guadalcanal and comprise of two main islands and a number of smaller ones. The water here is crystal clear, visibility in the 30 to 50 metre range and this area is all about spectacular seascapes: coral gardens, caves, drop offs and

This small decorator crab of around a centimetre gets its name from the mass of red hair that covers its entire body, which it uses both for camouflage and to help collect the plankton on which it feeds. It's a tricky subject to photograph—the mass of red hair just doesn't provide enough contrast for my camera's autofocus to lock onto easily.

Dragging myself away we swim into the large chamber and surface. I'd been warned by dive guide Justin Anderson to keep my mouthpiece in, not because the air is bad—there is a large opening in the ceiling allowing fresh air into the cave—but rather because the mass of bats are not a bad aim when depositing their guano, as a visitor learned the hard way a few years earlier.

Exiting the cave, the reef drops away steeply into very deep water. Large red gorgonians, whip corals and giant barrel sponges adorn the wall and it's various ledges and amongst this spectacular vista a myriad of critters dwells: the biggest challenge for a photographer is

whether to shoot wideangle or macro, but with either choice you wouldn't go far wrong.

The bat cave is an excellent dive but it's soon overshadowed by Leru Cut—one of the signature dives in the Solomons. It's simply a jaw dropping experience. This chasm reaches some 100 metres into the island of Leru and the light was incredible, streaming in shafts down to the white sand floor through gin clear water. After the long swim in we eventually surfaced to see the roots of trees hanging down the steep cliffs from the encroaching jungle. Perfect.

The Russells isn't just about caverns and caves however: the hard coral garden at Leru Bommies is without doubt the finest I've ever seen whilst another stunning dive is Karumolun Point. This site shelves down to a depth of 30 metres before dropping off steeply. It's right at the edge of the shelf that we see grey reef sharks, including juveniles patrolling back and forth in the mild current. They of course, are no trouble at all, completely



Solomons



disinterested in us.

The same cannot be said for all inhabitants of this reef however, for whilst swimming towards the shallows, I feel a sharp tugging on my fin and turn sharply. No one in sight. Turning back I'm face to face with a large female yellow margin triggerfish. Some species of triggerfish



become aggressive when they have eggs—and it's not just us human's they'll have a go at, any fish intruding into their area will be attacked. It's a fair approach when you think about it—the triggerfish's eggs are prime food for many predators—so the triggers are just doing what any animal would do, protect their unborn. Fortunately for the trigger, and

unfortunately for me, they are well equipped to defend their brood with teeth that are capable of crunching coral. Swimming upwards would be dangerous and serve no purpose, the trigger would simply follow me up. So, the only way is to move out of its defensive arc. Alas this leads me straight into an even larger, and angrier resident—



Solomons

CLOCKWISE FROM LEFT: An inquisitive blacktip reef shark; An anti-aircraft gun on a Japanese supply vessel still points defiantly at the sky; The mighty Titan triggerfish; A coral encrusted field gun on a Japanese supply vessel

the titan triggerfish—well known for its aggressiveness towards divers. I swim out into the blue and give it a wide berth.

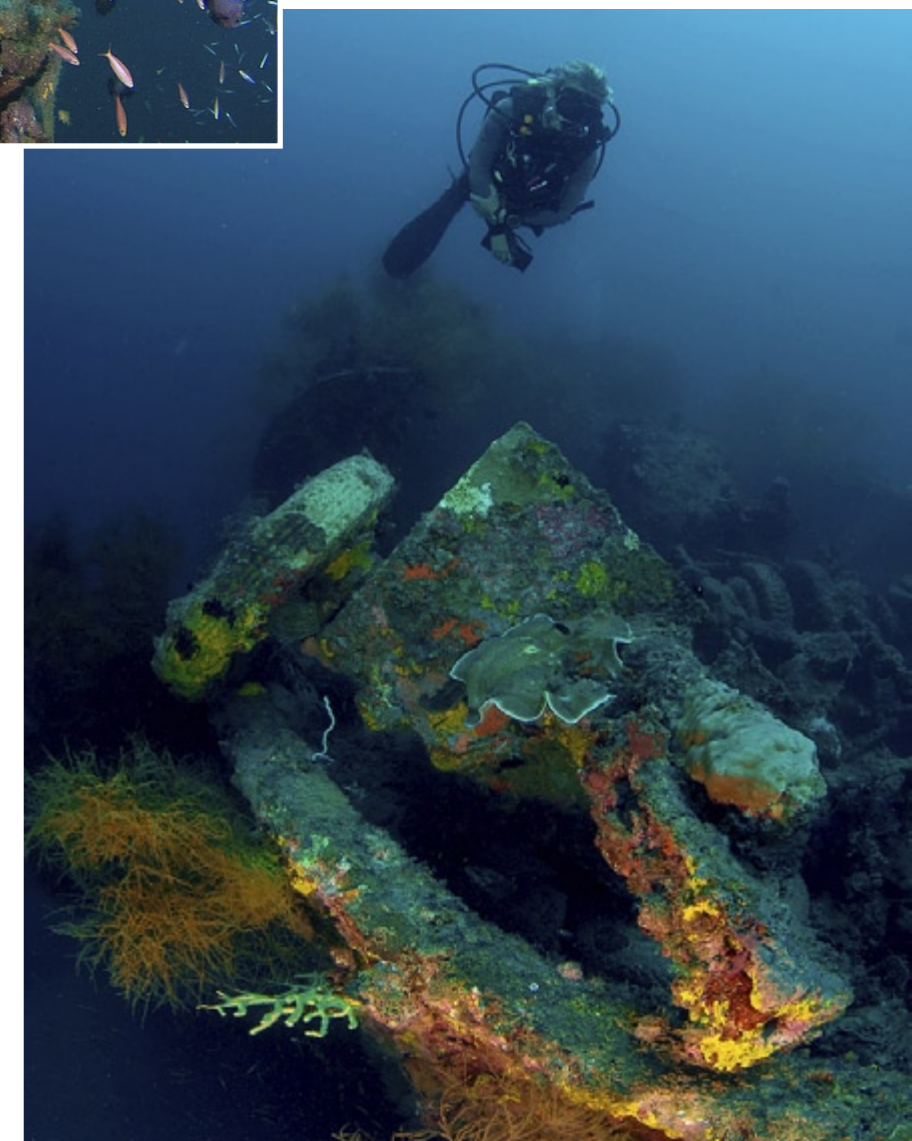
My tattered faith in fish is restored with the discovery of some of the most passive of marine creatures at the very same site. Firstly an ornate ghost pipefish, perfectly camouflaged to match the crinoid it shelters within, and moments later we, discover a halimeda ghost pipefish, camouflaged to the patch of algae it lives within.

Their exquisite camouflage serves to hide them from predators and also the tiny crustaceans they feed on. As with so many other areas of marine taxonomy, little is presently known about the natural history of these relatives of seahorses. There are currently only five identified species in the Indo-Pacific, so observing two within

metres of each other is a pretty special experience. Indeed, much of the uncertainty that surrounds the ghost pipe fish stems from the fact that they are so good at mimicking their surroundings; their incredible ability to camouflage themselves often makes it difficult to tell one species apart from another.

Karumolun Point is not alone in being the home for ghost pipefish in the Russell Islands. They can also be found at White Beach—a site where the US forces dumped all their machinery off the piers before they left at the end of the war. The site is now littered with artefacts: from trucks and cranes, to genuine 1940's Coke bottles, and it's muck diving at it's best.

One of the more unusual inhabitants here is the archer fish. These expert shots catch their prey by





Sunset in Morovo Lagoon (left); THIS PAGE: Hospitality, South Pacific style. Karumolun Islanders greet us with song, dance and gifts



stealthily hovering under the mangroves, then shooting a jet of water into the air at any unsuspecting insects crawling about above them. When the insect falls into the water,

its quickly devoured. They've evolved quite remarkably—not only do they compensate for the refraction in the water, but they can vary the power of their shot for different size prey, bring-

ing insects down from up to 1.5 metres above the water.

The diving in the Russell Islands impressed me. It was a mix of high octane, big seascape diving interspersed with incredible critter life. Before departing we made a visit to a Karumolun Island itself, and I can only say that South Pacific hospitality is something we should all attain to.

Our small group was greeted by the articulate village chief, Raymond, as we arrived, and the children presented us with the most beautiful necklaces of flowers, whose scent filled the warm air around us. Feeling more and more like visiting royalty, we were then treated to a magnificent display of dance and song by the women of the village. The tapping

of their feet drove the rhythm and structure of their performance, which was enchanting and hypnotic, their voices melodic and soothing.

We are given fresh coconut water to drink, and as if to demonstrate the contrast and diversity surrounding the island, the men of the village begin their dance. This is a more powerful and strong display that reverberates with tribal passion, fierce and vigorous. To close this impromptu ceremony, everyone from the village joins together for one final performance, and we are left feeling humbled by the magnitude of the hospitality that was offered to us.



Solomons

**Mary Island**

The edge of the known world—that's what this place feels like. Below me, I can see a huge school of jacks swirling like a silvery grey cyclone as if threatening to suck our small tinny down to the depths. As I don my mask, I look up and see a wall of greenery extending several hundred metres to the right of me, which then stops as abruptly as it begun—a startling emerald backdrop for the white outline of the *MV Spirit of Solomons* anchored before it. There is nothing else in sight except the distant horizon of the Pacific Ocean—no ships, land masses, nor any other signs of human influence whatsoever. It's all too easy to imagine this is the last human outpost, and everything that lies beyond is unknown, a wilderness. Welcome to Mary Island—as smile inducing a place as I have ever visited.

Dropping into the water, I slowly descended right into the heart of the jack school. They momentarily parted, and then I am engulfed as the school

closes around me their silvery scales creating the illusion of liquid metal. It's not even possible to take a picture; there are jacks everywhere, inches from my mask.

Dropping out of the bottom of the swirling mass, I'm distracted by a similarly sized school of barracuda only 30 metres upstream. The two schools keep a distance apart as if magnetically repulsed by each others rotation. The entire body of water here is alive with fish life. Reef sharks patrol the drop off, oblivious to the current that makes it so difficult for us land dwellers, whilst fusiliers frequently burst in unison avoiding the predations of the tuna that hunt them.

Mary Island (local name, Mborokua) is an extinct volcano to the west of the Russell Islands. It rises from deep water, is rarely visited and there are three sites here, all aptly named: Barracuda Point, Jackfish point and UTB, which, amusingly, means "under the boat". As you can gather from the dive site names, big fish schooling action is what Mary

THE SOLOMON ISLANDS CAMPAIGN

Some of the most intense fighting in the Pacific theatre occurred in the Solomon Islands during World War II. The Solomon Islands Campaign continued from 1942 right to the end of the war, however, it was the Battle of Guadalcanal, which took place between 7 August 1942 and 9 February 1943 that engraved itself in the annals of military history. There are few other, if any, campaigns where the fighting on land, sea and air was so violent for such a sustained period and where the outcome so frequently hung in the balance.

The aim of the Guadalcanal Campaign was both to prevent further Japanese expansion that might threaten Australia and to establish allied bases within striking distance of occupied Rabaul in Papua New Guinea. The initial landings on Guadalcanal took the Japanese by surprise, and the occupying forces were relatively quickly overwhelmed. However, Japanese attempts to regain their foothold on Guadalcanal resulted in a bloody campaign of attrition, which included seven major naval battles and a multitude of land and air engagements. The Japanese eventually abandoned Guadalcanal and evacuated their forces. This marked a transition for the allies from defensive to offensive operations and vice versa for the Japanese—it was the turning point of the Pacific war.

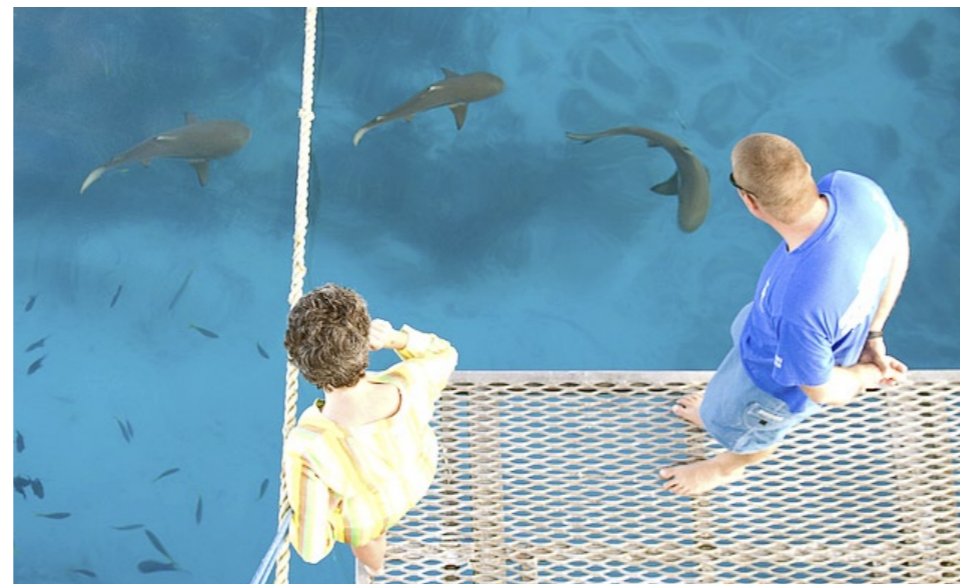
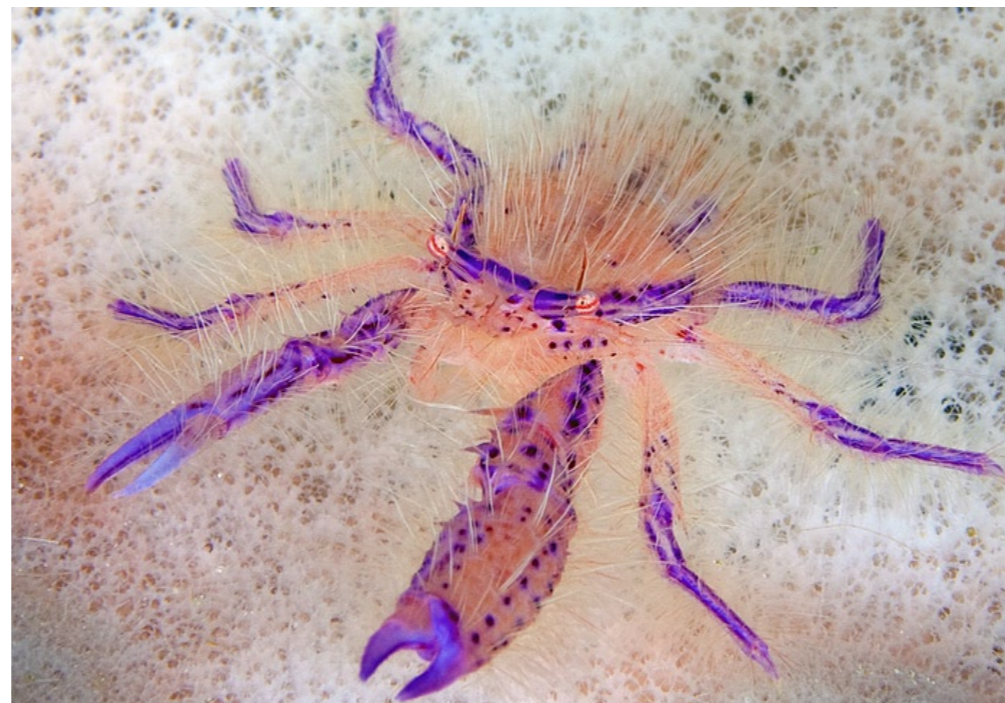
The legacy of this battle and the entire campaign still litters the seabed. Many of the wrecks are at diveable depths, and the others confined to the deeper waters of the aptly named "Iron Bottom Sound", only accessible by mini-sub and documented by Robert Ballard's, *The Lost Ships of Guadalcanal*, expedition.

During the entire course of the Solomon Islands Campaign in 1942-45, a total of over 90 ships were sunk between both sides, over 2300 aircraft destroyed, and upward of 90,000 men killed.

In addition to the world class diving, battlefield tours now form popular tourist attractions, bringing in visitors from both Japan and the United States. ■

THIS PAGE: Schooling Jacks at Mary Island





CLOCKWISE FROM LEFT: Blacktip reef sharks gather under the back of the boat waiting for cooking scraps; The uncommon orange mantis shrimp, *Lysiosquilloides mapia*; The intensely coloured squat lobster, *Lauriea siagiani*, lives in the giant barrel sponges that adorn Solomons reefs; The name of this nudibranch is as extravagant as it looks. It's called "the much-desired flabellina"

Island is all about. Pelagics are frequently seen here as well as the resident, towering schools.

The *Spirit* allows open deck diving at this location; you can dive when you like, as there is no agenda to keep us motoring between sites. This gives a good opportunity to explore the third, and not to be overlooked site, "under the boat". This site contrasts and compliments the exhilaration of the other two sites, for here is a wonderful coral garden alive with critters including leaf fish and ghost pipefish.

**Marovo Lagoon**

The *Spirit of Solomons* spent only a day moored at Mary Island on this trip. Part of me didn't want to leave, and another

part was eager to push on further and see what other treasures she would lead me to beneath these turquoise waters.

We departed and headed for the New Georgia Islands. For the next few days we'd be diving at Marovo Lagoon, the largest saltwater lagoon in the world.

Marovo lagoon is bordered by lush tropical islands with thick forest and mangrove. Ideal territory for saltwater crocodiles. It was nominated as a world heritage site, such is its significance, although that nomination was rejected due to the controversial and destructive logging practices going on here—an issue that hopefully in time tourism may help alleviate by providing alternate revenue sources.

Some of the most exciting dives here are to be found on the entrances to the lagoon. Kokoana passage is a drift dive along a vertical wall, following the current in. The reef simply explodes with colour, alive with undamaged gorgonians and soft corals. Fish life is also rich here. A school of over 20 humphead parrotfish seem to follow me the whole dive. These are the largest of the parrotfish family growing to 1.3 metres in length and can weigh over 40 kilograms. We also see a number of reef sharks but it's not unusual to sight pelagic species such as hammerheads here.

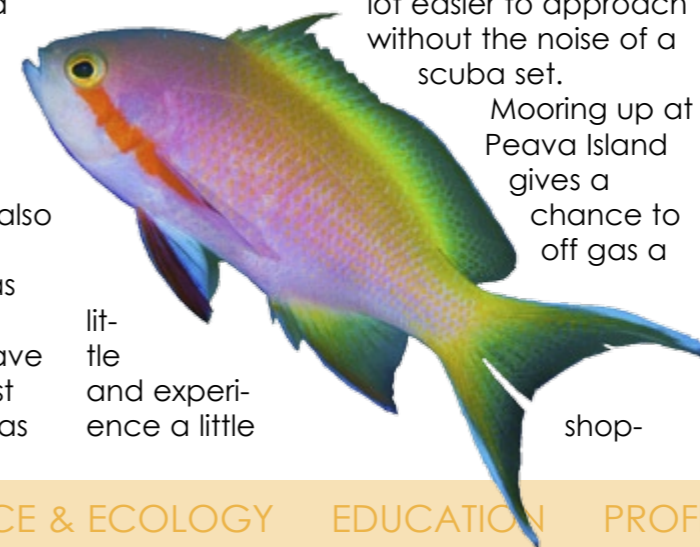
Shark populations in the Solomons have declined in recent years, along with just about every where else on the planet as

mankind's abominable lust for shark fin soup is pursued. Nonetheless, shark sightings are relatively common here, at least for the time being.

That night, we moored on Karunjou Island, and it wasn't too long before black tip reef sharks gathered at the back of the boat. Over the years, they have become used to the *Spirit of Solomons* and her sister ship, *Bilikiki*, throwing fish scraps overboard whilst moored, so they assemble for a free dinner. This also provides an opportunity to snorkel with them—this normally quite shy species is a lot easier to approach without the noise of a scuba set.

Mooring up at Peava Island gives a chance to off gas a

little and experience a little



shop-

**TROUBLE IN PARADISE**

The Solomon Islands have made the headlines for all the wrong reasons in recent years. Ethnic tensions and breakouts of violence has threatened the country to such an extent that an Australian, New Zealand and Pacific Islands peace keeping force has been present on the islands since 2003.

After a relatively peaceful period following World War II, trouble boiled over into society in 1998 when militants on the island of Guadalcanal began a campaign of intimidation towards settlers from a nearby province. It wasn't long before civil war threatened.

The government struggled to respond to the growing crisis, attempts at reconciliation failed, and by 2003, the country was bankrupt. Foreign aid was drafted in to help restore order and get the country back on its feet, which came under the banner of the Regional Assistance Mission to the Solomon Islands (RAMSI).

Even though tourists were never targeted, such internal turmoil did not help the industry to develop. Combine this with a complicated land tenure system, which makes it a real challenge to purchase land on which to build resorts, and it's easy to see why tourism remains low, even though it's a safe destination to visit. ■



Solomons



ping, Solomons style. The Solomon Islanders are famous for their wood carvings, and on the jetty, every carver in the vicinity has gathered to display their work.

The carvings being shown are works of art, formed meticulously from ebony, kerosene, sandal wood or coconut in the shapes of manta rays, sea shells or the distinctive "nguzunguzus"—classical figureheads that were used to decorate canoes to ward off evil spirits. Bartering here is not common and there is an etiquette to be followed in the whole transaction.

With a voice no louder than a whisper, I ask the price after complimenting the carver on his craftsmanship. The price is quietly stated by the carver. I then ask for the second price. After a little thought, the carver quietly responds—and that's as far as the barter goes, any further would serve as an insult to these craftsmen. The

deal is done, money is discreetly exchanged and we bid farewell. It's all so very far removed from the boisterous dealings to be found in the bazaars of Egypt, but no less enjoyable.

Our final dives in the New Georgia Islands take us to some of the relics of the war. The unidentified Japanese cargo ships, known simply as Japanese Maru 1 and 2 were bombed by allied aircraft and sunk at their moorings whilst supplying Japanese forces in the area. A field gun lies on the deck of one of the ships and an anti aircraft gun points defiantly at the sky on another, both the colour of a rainbow, they are so encrusted in coral.

The wrecks are a haven for marine life and even the submerged mooring buoy is covered in life—sea spiders, tiny decorator crabs even blenny's live on the coral encrusted sphere, no bigger than a football. Safety stops have

never been this interesting.

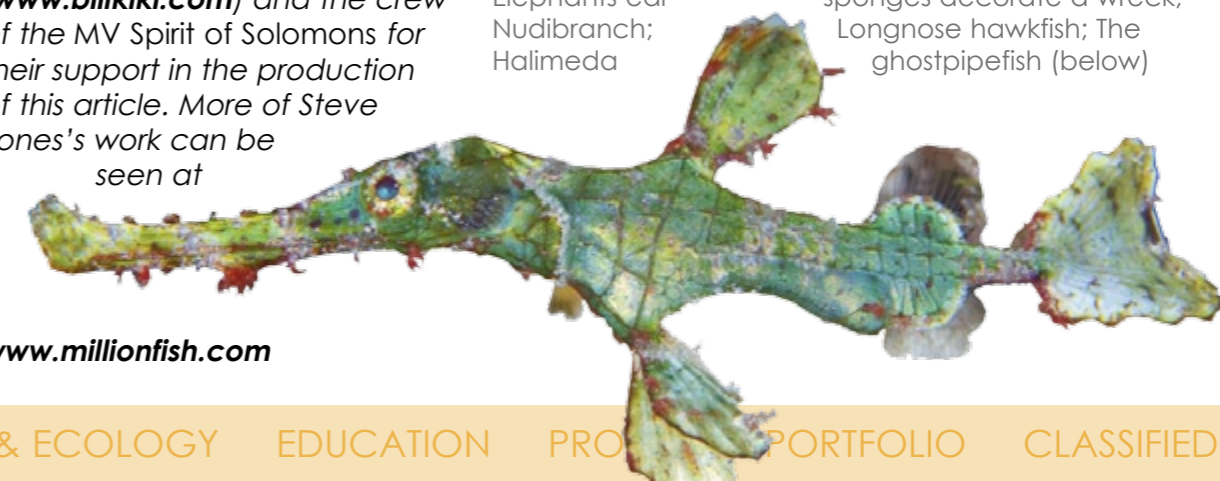
The Solomons possess incredible variety underwater—walls, caverns, critters, big schools, large animals and, of course, an abundance of wrecks, each of which has its own story to tell. The country displays a raw unrefined edge—far more exciting than the sterility to be found in mature tourist destinations. It is one of those places that has so much to offer but is seen by so few, and this simply adds to its appeal. ■

Special thanks to Bilikiki Cruises ([www.bilikiki.com](http://www.bilikiki.com)) and the crew of the MV Spirit of Solomons for their support in the production of this article. More of Steve Jones's work can be seen at

[www.millionfish.com](http://www.millionfish.com)



CLOCKWISE FROM LEFT: Lionfish; Velvet Ghostpipefish; Elephants ear Nudibranch; Halimeda sponges decorate a wreck; Longnose hawkfish; The ghostpipefish (below)



# fact file

## Solomon Islands

Text by  
Steve Jones



**History** Early settlement in these lands began between 30,000 BC and 10,000 BC when Papuan settlers are believed to have reached the Eastern Solomons before the sea levels began to rise with the end of the Ice Age. Austronesian settlers, skilled with canoes, settled throughout the remainder of the area from about 4000BC.

Polynesians reached the outer edges of the country between 1200 and 1600 AD. In the 1560s the Spanish explorer Don Alvaro de Mendaña y Neyra led an expedition to find islands in the western Pacific, cited in Inca legends. He returned to Peru and by 1570 the name Yslas de Salomon was in common use.

In 1893 Britain proclaimed a protectorate over the southern part of the group, extending it further in later years. After the Second World War, British authority was restored until independence was granted on 7<sup>th</sup> July 1978.

**Geography** The Solomon Islands are a double chain of 6 large islands and many smaller ones (992 in total!) lying just over 2000 km from Brisbane, Australia. Brisbane is by far the easiest gateway into the country. The Solomon's extend 1667 km south east from Bougainville Province in Papua New Guinea. 347 of the islands are populated.

**Climate** South Easterly trade winds and mild weather accompany the dry season which runs from late May to early December. Higher temperatures, humidity and rainfall occur in the summer months from mid December to mid May, with the winds coming predominantly

from the west or north west. Coastal breezes keep the climate fresh on and near the sea, whilst temperatures and humidity make it tropically muggy further inland.

**Environment** Much of the Solomons is covered with dense rain forest, with mangrove swamps common along the coastal region. The country has suffered in recent years from deforestation, although an awareness that eco-tourism is a far more sustainable industry is starting to sink in. As far as topside animal life goes, land mammals are few whilst insect and reptile life are abundant. The Solomons is part of the highly volcanic Pacific "Ring of Fire", where the Indo-Australasian and Oceanic Tectonic plates meet. Volcanic activity here is much lower than in neighbouring Papua New Guinea and there are 3 volcanoes on land.

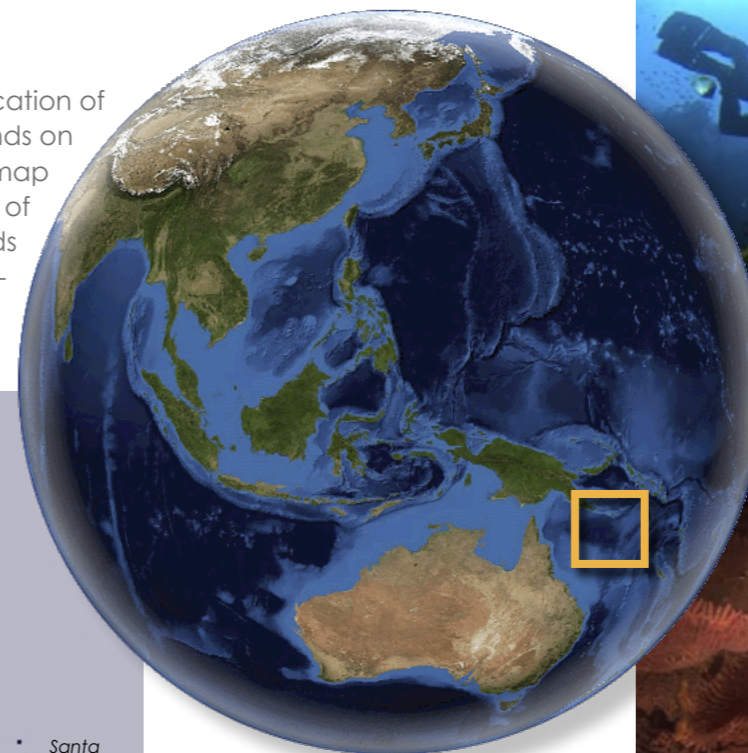
**Currency** The local currency is Solomon Island Dollars. Australian and US dollars can be readily exchanged at hotels and banks

**Population** The estimated population of the Solomon Islands is 581,318. Of these the majority are Melanesian in origin, with Polynesian and Micronesian making up most of the balance.

**Language** The official language in the Solomons is English but Solomons Pijin, which contains many English words, is the more widely spoken language. There are 68 other living languages spoken throughout the country.



RIGHT: Location of Solomon Islands on global map  
BELOW: Map of Solomon Islands  
FAR RIGHT: Diver explores reef with large fan corals



Brisbane. The Solomons can also be reached from Port Moresby in Papua New Guinea, Port Vila in Vanuatu and Nadi, Fiji.

**Dive Season** The Solomons are located in the tropics, not far from the equator.

Dry season runs from May to December, with rainfall very light. Summer runs from mid December to mid May and this is known as the wet season, but the surrounding sea tempers the effect and there is no persistent monsoonal type rain. January to March are the wettest months. You can dive here year round.

**Health & vaccinations** There is a decompression chamber in Honiara, which is manned by volunteers. Medical facilities are very basic throughout the Solomon Islands – insurance for diving and general travel insurance is essential. Dengue fever and malaria occur in the Solomon Islands, although not on the scale of African countries – preventative medication and insect repellent are advised.

**Visas and Permits** US, Australian and EU countries do not require visas, just a valid passport and return ticket. A

**Security** Even with its turbulent past, the Solomons is a safe destination for tourists. The Regional Assistance Mission to the Solomon Islands (RAMSI) provides military and police forces from Australia and several other Pacific Island nations and has helped improve law and order since the troubled times before 2003. It's important to note however, that even during the troubles, tourists were never targeted. On Guadalcanal, expats are advised against certain activities such as walking alone at night and tourists should follow the same advice – exercise the same precaution as when travelling in any developing nation.

**Electricity** 240 volt, Australian style plugs. The liveaboards additionally provide 110 volt US style plugs for chargers etc.

**Getting There** Solomon Airlines and Virgin Blue fly to Honiara from



Visitor's Permit will be issued on arrival. Other nationals should check with their foreign office.

**Communication & GSM** GSM roaming is limited in the Solomon Islands and will also depend on whether your service provider has a roaming agreement with the operators here. Wireless broadband is available in some hotels in Honiara, but bandwidth is limited. The MV Spirit of Solomons and MV Bilikiki have satellite phones on board for guests to make use of, subject to standard satellite phone call charges

**Timezone** Standard time zone: UTC/GMT +11 hours

**Links**  
Solomon Islands Tourism  
[www.visitsolomons.com.sb](http://www.visitsolomons.com.sb)



silver



[www.seacam.com](http://www.seacam.com)



# *The Sound of Mull & Oban* Western Scotland

Text and photos by Steve Jones





**There is a point in the journey to the west coast of Scotland just a little way north of the City of Glasgow that the landscape changes from “merely” pretty to the full on highland spectacular. It seems as if you are driving into the wilderness. Modern life, along with its stresses, seems to become a distant memory, and it’s not difficult to imagine you’ve travelled back hundreds of years in time; relics of this country’s rich history, castles and ancient ruins, adorn the stunning hills and deep green valleys. The tranquility of the Lochs help to define a place that simply possesses a “kind of magic”.**

I am heading towards Oban—a former Victorian seaside resort that has retained all its old-world charm. It appears quite at odds with the rugged beauty of the western Scottish landscape. Oban has become an attraction for a whole range of adventure tourists. Hikers, climbers, wildlife enthusiasts all flock here in droves year round. For Oban is not only the gateway to the Scottish Highlands, but also to the less visited Hebridean Islands with their deserted white sand beaches and crystal clear blue waters—favourite destinations of wildlife filmmakers. The attractiveness of this place is not restricted to the topside, however. This region has some of the finest diving in the British Isles.

Tucked away in a sheltered cove amongst the cliffs south of Oban, is Puffin Dive Centre—an ideal location to base activities given the fact that it is fully self sufficient—boats, gas, accommodation, all conveniently located right at your feet. Indeed, the location is also superb for families. Whilst mine went off to see

the many topside attractions in this area, I headed off to the see those under the water.

We are heading out first and foremost to the Sound of Mull—the channel of water that lies between the Isle of Mull and the mainland. This place is a graveyard for wrecks and coupled with sheer submerged cliffs, clear water and fast currents, it has all the ingredients for excellent diving. It’s a two-hour boat journey to the Sound, and Puffin’s large dive boat is fully enclosed—a welcome feature given the unpredictability of Scottish weather.

Within an hour of leaving our base at Oban, we see Duart castle standing like a sentinel guarding the waters that lie at the foot of hauntingly beautiful Mull. The view is simply awe inspiring.

Mull is the second largest of the inner Hebridean Islands, which lie close off the coast of Scotland. At first, it can seem quite foreboding, as the grey clouds circle the highest peak, “Ben More”. The view in the other direction is of the high-



CLOCKWISE FROM TOP LEFT: Duart castle sits majestically atop a stony outcrop; Wildlife abounds in the rugged hills of western Scotland such as these wild deer grazing on the slopes; A view of the rocky landscape from the pier. PREVIOUS PAGE: A tall ship graces the waters of the Sound of Mull, as it glides past the austere hills of western Scotland

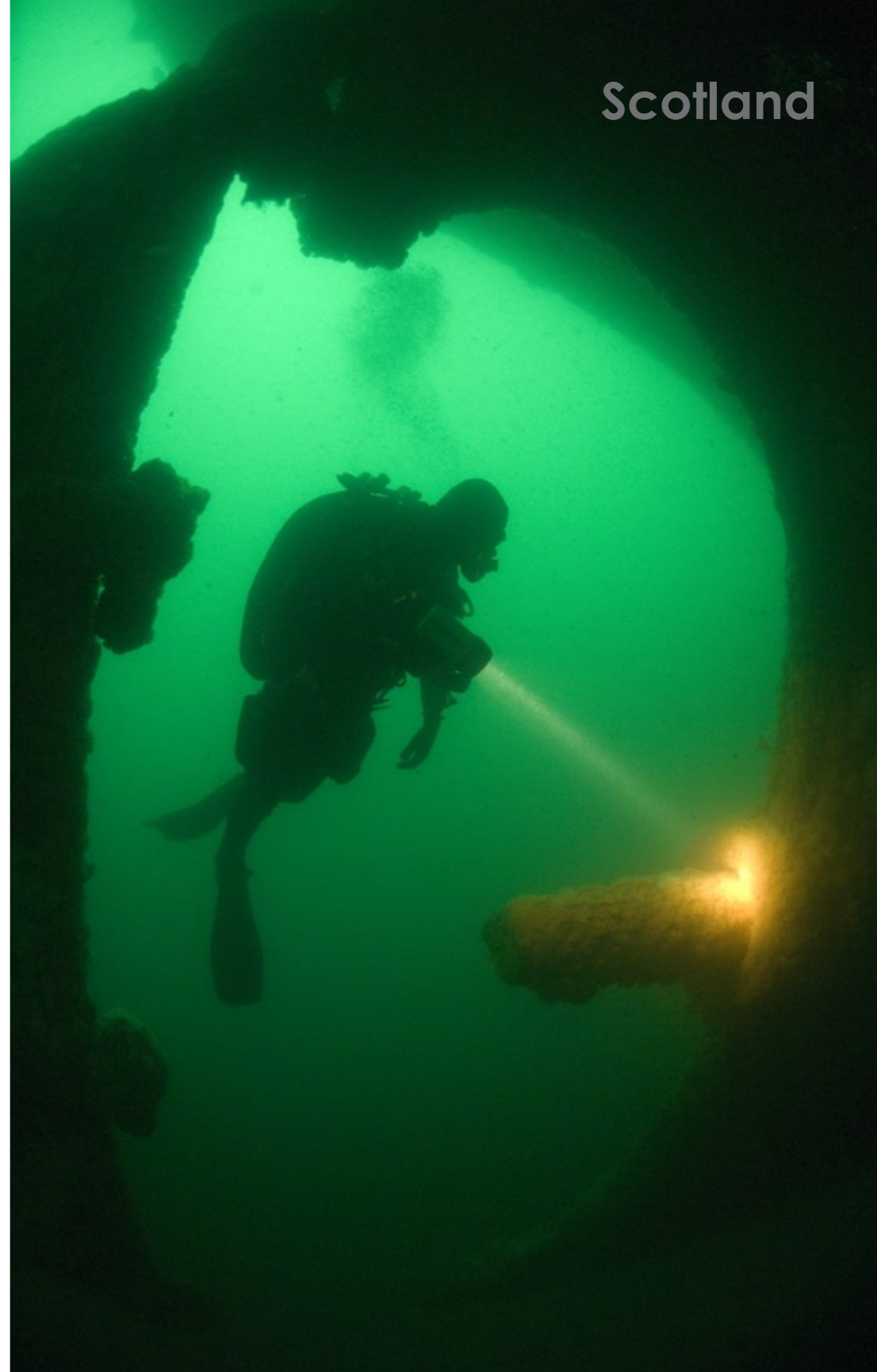


THIS PAGE: Scenes from the wreck of the *Hispania*

short wait and a thorough safety briefing later, and we are in.

The water is a deep emerald green. Eight or nine metres into our descent down the buoy line, we see the wreck looming below us. Torches are essential in these waters if you really want to bring the colours out, and my beam soon illuminates the wreck in its true spectrum—bright orange. The wreck is simply covered in plumose anemone.

This once proud ship is lying upright and intact. With a little caution, it's safe enough to explore



**The Hispania**

We are diving the *Hispania*—one of the most famous wreck dives in UK waters. A Swedish steamer, she was en route from Liverpool to Sweden in 1954 when she encountered atroc-

Captain Ivan Dahn chose to stay with his sinking vessel and went down with his command, allegedly saluting as she sunk beneath the waves—one of the few modern day examples of a captain choosing to go down with his ship.

We are at the mercy of the strong tides in this area—tides which also ensure the marine life on the wrecks is rich. Each day's diving is planned by the dive centre, so you are in the water when the tides are changing, and the waters are still. A



the open, beckoning holds.

We glide over the railings of the ship and drop into her dark belly. Fish life is plentiful, with schools swimming in and out of the ship's superstructure whilst the venomous Lions Mane Jellyfish drift by

oblivious to our rude intrusion into their world.

Average dive depth on this wreck is around 22 metres, making the use of nitrox ideal, and dry suits are really essential this far north for all but the bravest of

souls.

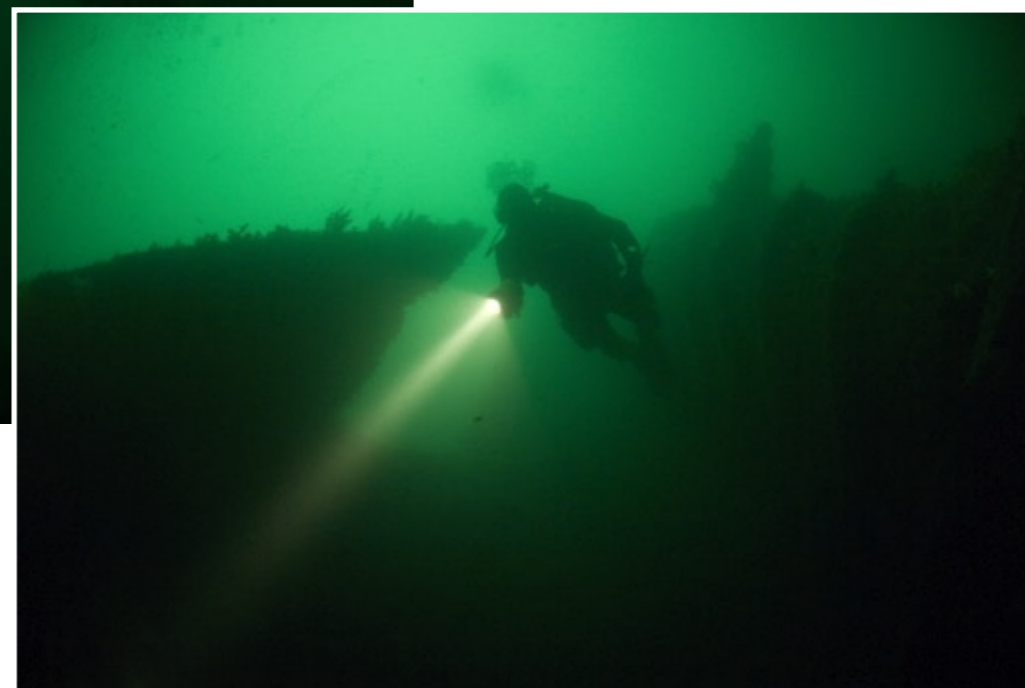
The best of the dive is saved for last, for the bridge of the ship, open as it is to the tides, is bursting with life that would rival a tropical wreck. The decaying hull has created a catacomb

est Scottish peaks including Ben Nevis. If you dive here in the winter months, you will invariably surface to the view of snow-covered peaks in the distance.

cious weather. The captain chose the more sheltered route between the Scottish Islands, but in poor visibility, the ship struck a reef close to the Mull shore.

The crew abandoned ship but





that allows safe exploration, always having clear exit points and no overhead environments. Until recently, even the captain's bath tub was still intact in his quarters.

Sixty minutes into the dive, it's time to return to the surface—the cold is starting to creep through my suit, and the currents are beginning to flow.

The *Hispania* lies at the northwest side of the Sound, so the boat spends the next few hours slowly making its way back towards Oban. In the afternoon, there is an opportunity to sample the natural rather than the man-made reefs in this area—a scenic dive on the shores of Mull itself.

The reefs here are dominated by kelp forests for the first 15 metres of water, and it's amongst these forests that much of the marine life can be found—sea urchins, squat lobster and large crabs make the protection of the kelp forest their home, whilst species of wrasse orbit above.

As abruptly as the kelp forest ends, the reef plummets away vertically into deep water. The sound is abound with drop-offs, as it's over 100 metres deep in places—the underwater topography matching the rugged steepness of the topsides.

### The Sound of Mull

The Sound of Mull is formed by the deep

stretch of water, some 25 miles long and one to two miles wide, which separates the Isle from

mainland Scotland. Many a ship sought out this sheltered passage for refuge from the fiercest Atlantic storms only to fall prey to the many islets and shallow reefs that bespeckle this channel.

The appeal of this area lies not only in the number of wrecks, however. The fast currents that flow here also make for a rich marine biodiversity and set the

scene for exciting drift dives; currents can exceed three knots on many of the drift dive sites. At these speeds, it's possible to cover over a kilometre of ground in one dive!

This area is often described as having one of the best collection of shipwrecks in the British Isles. In addition, there is diversity in the wrecks themselves. Most

THIS PAGE: Scenes from the wreck of the *Rondo*

of the wrecks are relatively deep, sitting on the seabed at around 30 to 35 metres. Since many are upright, however, the average dive depth is more likely in the 20 to 25 metre range, making long dives possible with the use of nitrox.

There is one wreck, however, that stands out from the rest for the particularly adventurous dive it offers. The *Rondo's* stern lies in three metres of water whilst its bows are in 50 metres. The whole ship lies at an angle of around 70 degrees. This is one of the few wrecks where a true deep multi-level dive can be carried out, starting in the deep water areas and finishing your dive around the shallow stern. The bows themselves lay in dark but crystal clear water due to the nature of the tides in these waters.

The last time I dived these waters was over 20 years ago, and it was amongst some of my first ever open water dives. Since then, I have travelled the world and dived a myriad of waters. So, on this return visit to Oban, I was unsure of how





A diver sheds his light on the wreck of the *Thesis*  
 RIGHT: A diver examines the coral growth on the wreck of the *Shuna*

as I gaze across the incredible scenery, that Scotland is breathtaking and mysterious both above and below the water.

### Top Sites

#### The wreck of the *Hispania*

(position: 56.34.55N 5.59.13W)

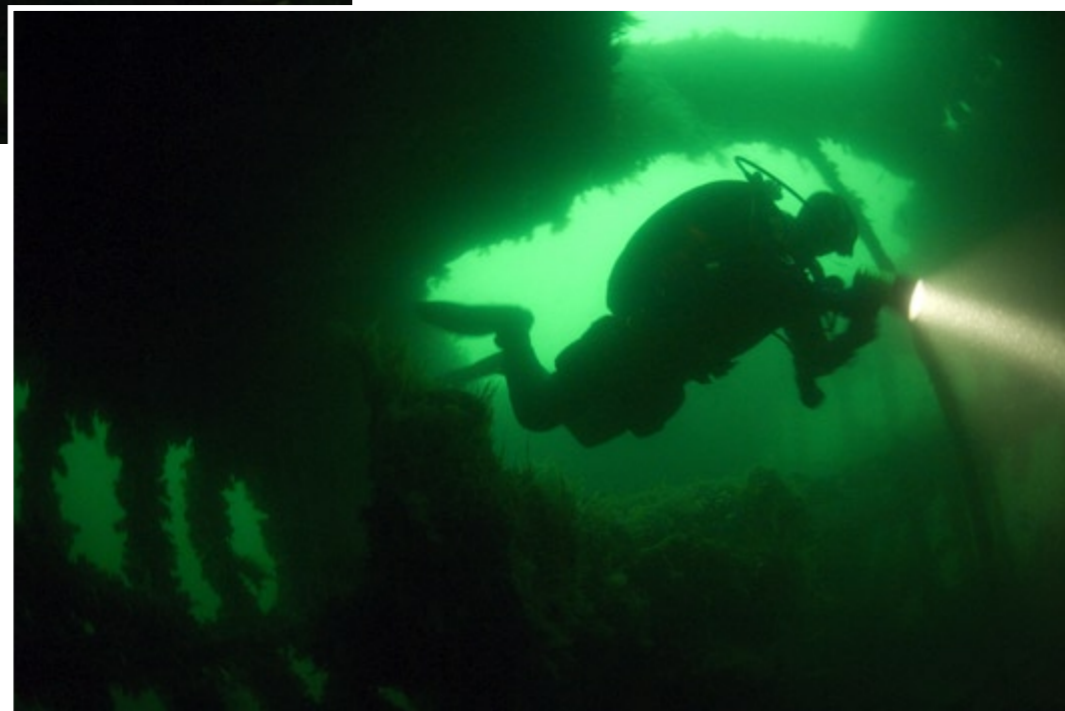
Undeniably a masterpiece amongst the Sound's dive sites, the *Hispania* is often described as one of the best shipwrecks in the UK. A Swedish steamer, which sank in 1954 in bad weather, the captain chose to go down with his ship. Today, his ship lies as a beautiful shrine, absolutely covered in orange and white anemone. Virtually intact on the seabed with a slight list to starboard, the gangways and handrails are all still in place, and the cavernous cargo holds are an oasis for exploration.



my maturity and knowledge would affect the experience.

Diving in clear tropical waters, may be easier and require a lot less equipment, however diving in green waters is often more rewarding due to its challenges. I have grown to appreciate the variety of temperate marine life and the atmospheric qualities that totally absorb and surround one.

Rejoining my family after my last dive, for a barbeque on the chalets veranda, I am reminded



A diver investigates the interior of the *Thesis* wreck

#### The wreck of the *Rondo*

(Position: 56 32 18N: 05 54 45W)

One of the most thrilling dives in the area can be found further down the Sound. The *Rondo* was lost in 1935 after breaking her anchorage in a fierce storm. She ran aground on the islet of "Dearg Sgeir", and after a salvage attempt, she slipped down the cliff coming to rest almost vertically. The bows are in 50 metres of water, whilst the stern is only a few metres from the surface! Only the hull remains, along with various debris, but the wreckage is rich with anemone, and large fish schools are always to be seen. The *Rondo* has to be

one of the few wrecks where one carries out a true deep multi-level dive, starting midships or deeper and finishing in the shallows at the stern. The only apt description for this dive is spectacular.

#### The wreck of the *Thesis*

(Position: 56.29.56N 005.41.28W)

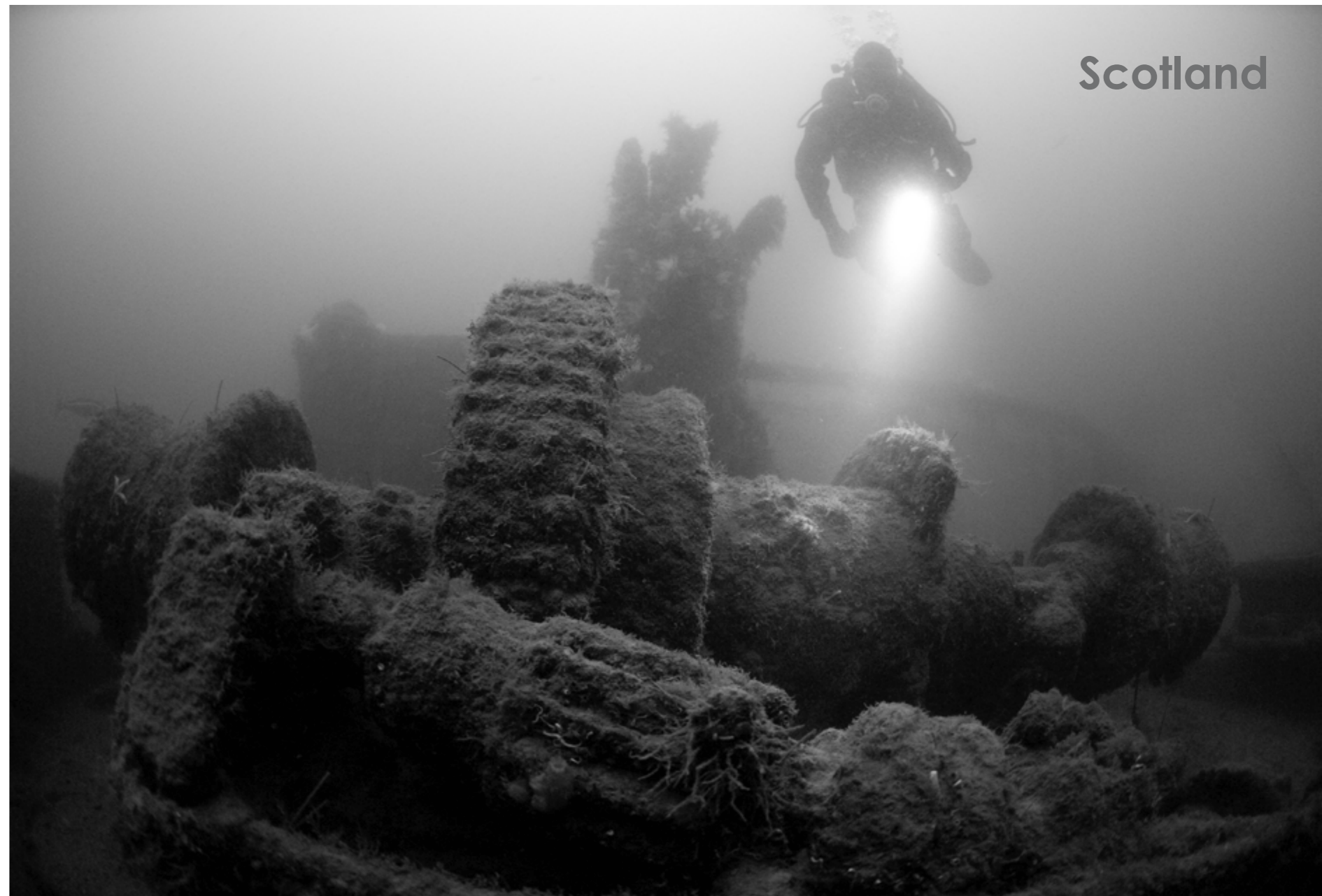
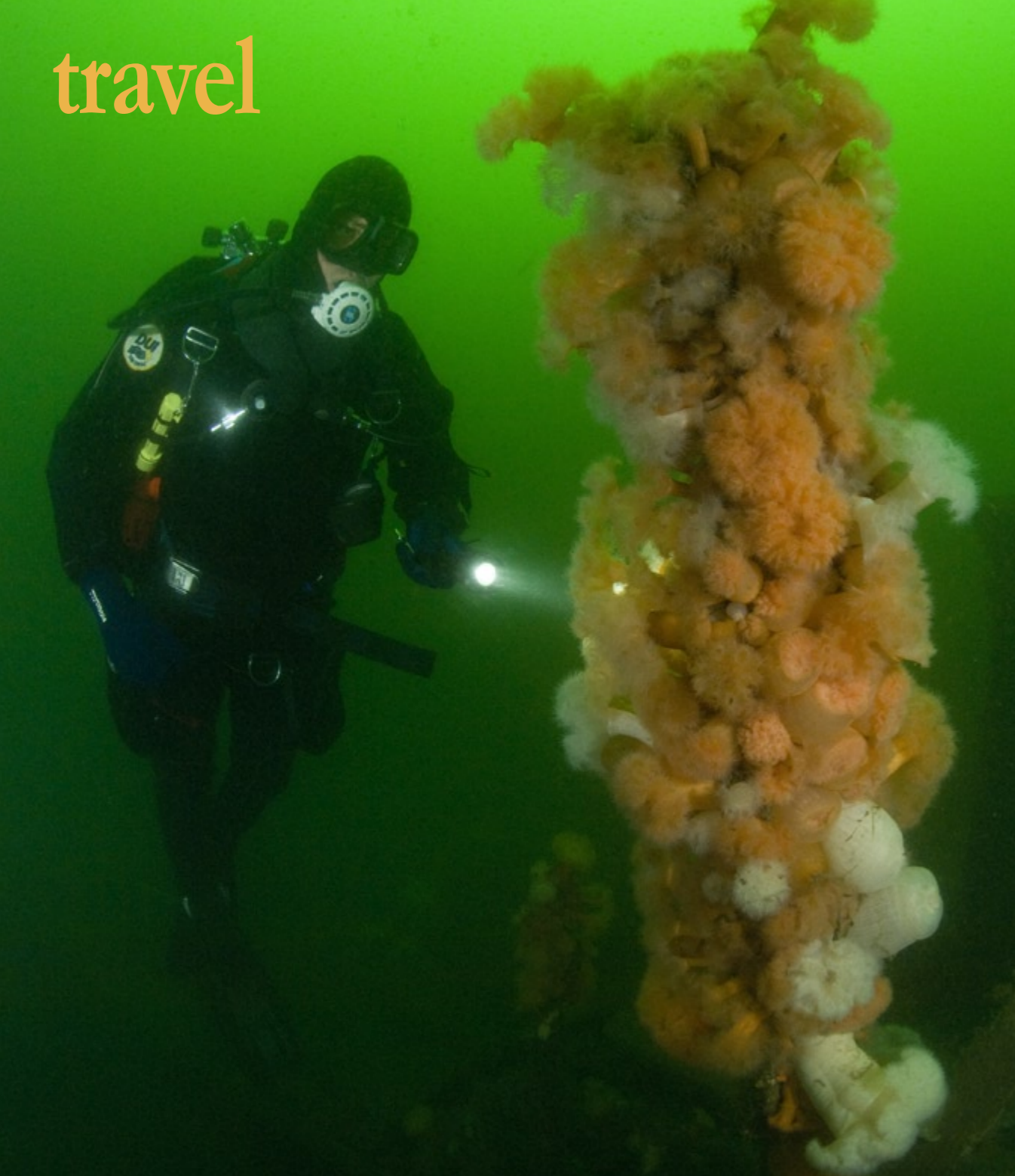
Without doubt one of the most atmospheric wreck dives in the Sound of Mull, the *Thesis* was a steamship that sank in 1889 carrying a cargo of pig iron. This 50-metre long wreck lies on a slope between 20 and 30 metres and must be dived at slack water, as the tides can be fierce whipping between the Sound of

Mull and the Lynn of Morvern. The superstructure and decking of the ship have all but disappeared, leaving the ribs of the hull exposed in many places. It is possible to swim the length of the ship below deck level. The deep emerald light beaming through the many holes in the ship's side make it a truly unforgettable dive.

#### The wreck of the *Shuna*

(Position 55.33.26N 5.54.52W)

This 73 metre long steamship sunk in 1913 after running aground in a storm. She was the last large wreck to be located in the Sound, being accidentally



discovered by a commercial diver. Sitting upright in 30 to 36 metres of water, her decks are only in 16 to 20 metres depth. The sides of the ship are covered in thousands of brightly coloured sea squirts and, as a rare treat for wreck divers, the propeller is still attached. The holds carried coal, and as she lies in a sheltered spot, the *Shuna* is covered in a layer of silt. Careful finning will keep the normally good visibility intact.

**Lochaline Pier**

The waters beneath the pier at Lochaline slope steeply before dropping off vertically to depths exceeding 70 metres. The upper reaches of the cliff are kelp covered, giving way to gullies and overhangs profuse in marine life. It's a stunning wall dive and can also be dived from the shore, although advice should be sought on the tides as danger-



THIS PAGE: Scenes from the wreck of the *SS Breda*

ous downward currents can occur at certain times.

**Calve Island**

One of the finest scenic dives can be found on the north-west of Calve Island, which lies just outside Tobermory Bay at the North entrance to the Sound. Dropping away to over 45metres, chimneys and gullies covered in life drop off vertically in places. The town of Tobermory is also worth a visit, having one of the most colourful of sea fronts.

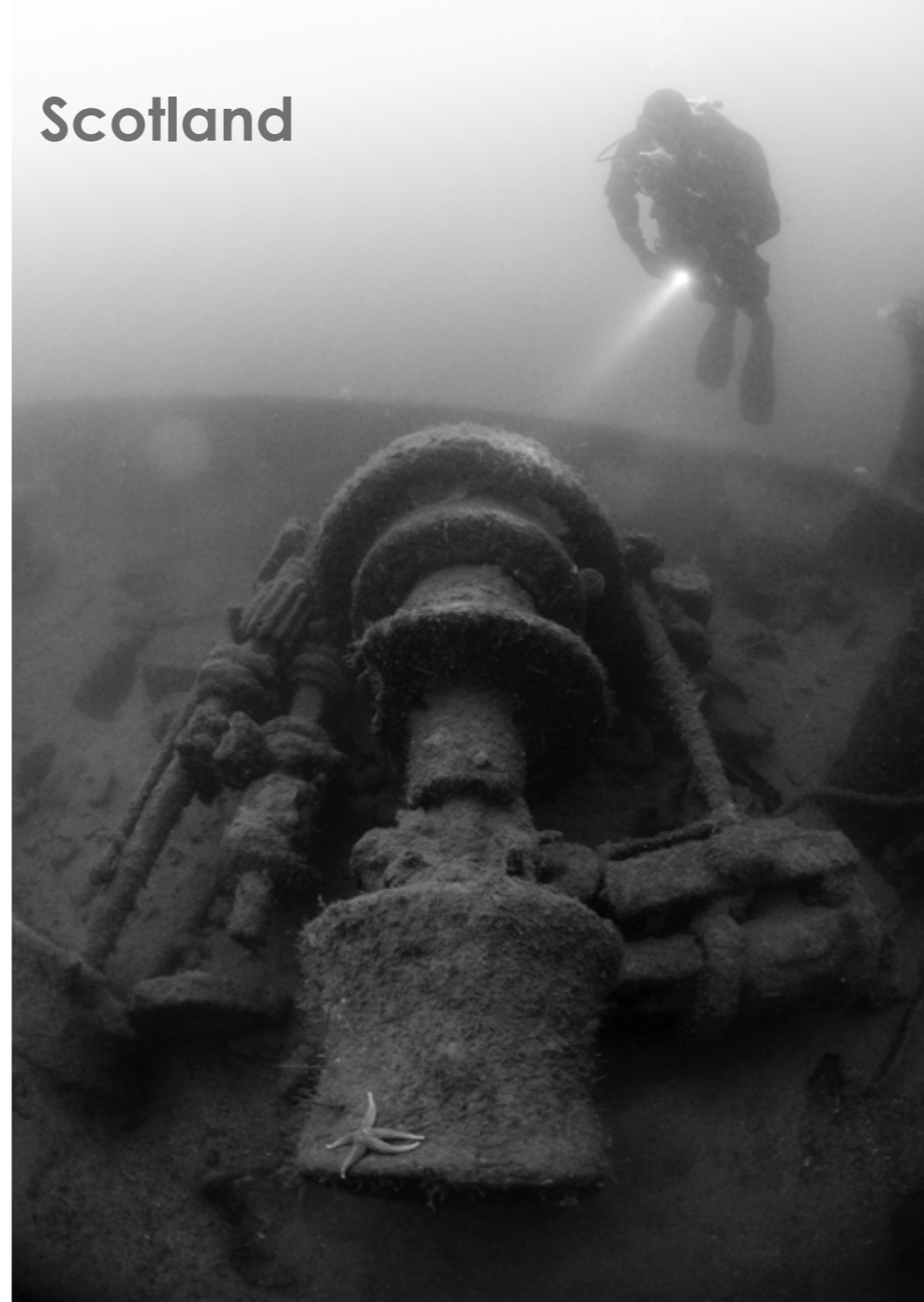
**Dives outside of the Sound**

***SS Breda***

(GPS location: 56°28'32"N; 05°25'07"W) In addition to the superb array of dive sites on offer within the Sound of Mull, one should not overlook the sites closer to Oban. The *SS Breda* has long been a favourite amongst divers. Requisitioned as a supply ship during World War II, she met her fate on 23 December 1940 whilst anchored in the Lynn of Lorn. Damaged by the bombs dropped by a German



## Scotland



**OBAN** Oban is the quintessential Victorian resort town, possessing a unique character. Here, you will not find the pre-packaged entertainment to be found in so many more accessible resorts. The activities on offer put you firmly at one with the countryside, the history and the nature of the surrounding area. Spectacular walks, whale watching, historic castles, wildlife parks, island hopping—this is a destination for people who want to experience the countryside's natural beauty rather than man-made entertainment. Or of course you could soak up the atmosphere in the Oban Inn following a visit to the world famous whisky distillery.

**DIVING** Puffin Dive Centre ([www.puffin.org.uk](http://www.puffin.org.uk)) offers a comprehensive shop, full recreational and technical training facilities, and a variety of well-equipped dive boats, ranging from large offshore rigid-hulled inflatable boats to a jet-powered catamaran. These make light work of the journey to the Sound of Mull. Puffin caters to groups and individuals of all levels of experience and provides thorough briefings covering the wrecks and all safety aspects before each dive.

**CONDITIONS** Despite the foul weather that can occur in this region, there are very few days in the year when diving is completely impossible. There are many dive sites, so finding a sheltered one merely requires some flexibility. The region is therefore one of a few in the British Isles where year-round diving is possible. With water temperatures peaking at around 15°C between July and September, they will drop to a refreshing 4°C by winter. This is drysuit territory, all year round, if you want to make the most of it.

**USEFUL LINKS**  
 Puffin Dive Centre [www.puffin.org.uk](http://www.puffin.org.uk)  
 Oban Tourist Board [www.oban.org.uk](http://www.oban.org.uk)  
 Isle of Mull [www.isle.of.mull.com](http://www.isle.of.mull.com)  
 Visit Scottish Heartlands  
[www.visitscottishheartlands.com/areas/oban/index.cfm](http://www.visitscottishheartlands.com/areas/oban/index.cfm)

CLOCKWISE FROM LEFT: Diver explores the wreck of the *Hispania*; Thousands of tunicates decorate the wreck of the *Shuna*; The *SS Breda* wreck

seabed that slopes from 24 to 30 metres. Standing upright, the superstructures have largely disappeared following the work of salvage divers in the 1960's. However, her cavernous cargo holds are full of interesting artifacts, and the stern of this 127-metre long behemoth is covered in dead mens fingers and anemones. Good buoyancy control is a requirement. The wreck catches the silt deposits from Loch Etive, so normally good visibility can quickly deteriorate if divers are not careful. Because of this, great care must be taken when venturing into the holds.

### The Falls of Lora

Loch Etive itself also holds one of the most challenging and exciting drift dives for the advanced diver. The Falls of Lora ("Lora" being a rough translation of

the Gaelic word for noisy!) are caused by many millions of litres of water rushing between Loch Etive and the Firth of Lorn through a narrow constriction under the bridge at Connel, about six miles north of Oban. Nicknamed the "washing machine", only the most experienced drift divers should attempt this dive when it is flowing. Currents can exceed six knots, and downward currents are common. The most established dive centre in the region,

Puffin Dive Centre, offers a series of build-ups to this dive, taking divers in for familiarity dives at lower current strengths before the real thing. Excellent boat cover is essential. ■

*Special thanks to Puffin Dive Centre [www.puffin.org.uk](http://www.puffin.org.uk) for their support in producing this article. More of Steve Jones's work can be seen at [www.millionfish.com](http://www.millionfish.com)*



Heinkel 111 bomber, she limped into Ardmucknish Bay before finally sinking. She remains one

of the shallowest intact wrecks in Scottish Waters, with her decks standing eight metres above a



## Books & DVDs

Edited by Robert Sterner

POINT & CLICK  
ON BOLD LINKS



This issue's Media is brought to you by Book Log compiled by Robert Sterner of Sterner Editorial Services. Read earlier Book Log reviews by genre or call attention to books and videos to review at [www.sternereditorial.com](http://www.sternereditorial.com)



## What a book for a dive dream

Undecided where to spend a winter vacation? Pick up Beth and Shaun Tierney's *Diving The World* from Footprint books. In 18 chapters the 360-page soft cover presents vignettes on Egypt, East Africa, Maldives, Thailand, Malaysia, Indonesia, Philippines, Micronesia, Australia, Papua New Guinea, Solomons, Fiji, Galapagos, Mexico, Central America and Grenada. Each section kicks off with an introduction on historical or geological aspects that make it unique, and then provides details on sites, customs, depths, visibility, currents, sea life, air and water temperatures and suggested protection suits for

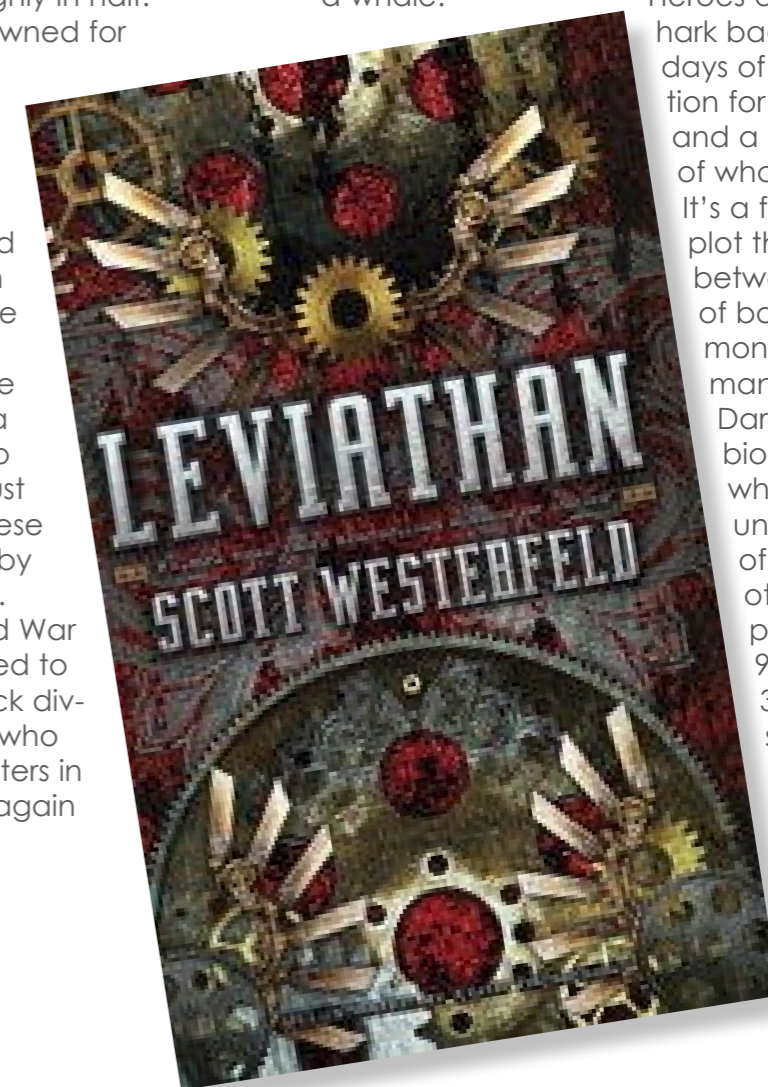
above and below the water. Tips on surface interval activities and operators are provided as well. Icons and tables provide info at a glance and color photos spruce up every page. An introduction opens the book with general suggestions on trip planning and it closes with an appendix of resources on marine biodiversity, conservation, first aid, photo tips, training, an advertising directory with contact info for many of the operators plus an index. It's a handy resource for daydreams that'll help divers find their ideal destination. ISBN: 978 1 906098 76 6. [www.footprintbooks.com](http://www.footprintbooks.com).



## See more in the Philippines

Divers considering a trip to the Philippines this winter may want to check out Gary Knapp's Dive Travel DVD on *Anilao Mabini Batangas*. This swath of water below Manila links the South China and Andaman seas and divides the 7,100 volcanic islands of the Philippines roughly in half. The two seas are renowned for

their biodiversity. The 47-minute high-definition video does not disappoint on documenting critters and plants. Much of the video is filled with glimpses of sea life, including many like leaf sea-horses, giant clams, and exotically colored morays, nudibranchs and octopi that can be found only in the region. That many are drawn to the nutrients swept through the waters with strong currents is evident in the footage. Knapp's episodes always have a "tip of the week" which was "stay close to your dive master to see more." Knapp must have followed the advice, for many of these creatures would be tough to find except by a local who knew exactly where they live. Oddly for the island's significance in World War II, the only wreck that was visited appeared to be a small fishing craft or work boat. Wreck divers may be disappointed here, but those who enjoy cruising through warm turquoise waters in a thriving Day-Glo garden will watch this again and again. [www.DiveTravelDVDs.com](http://www.DiveTravelDVDs.com).



## Tween war and an Xbox

Parents who want to inspire their tweens and early teens to do something other than play with the Xbox over the holidays might try giving them Scott Westerfeld's *Leviathan* from Simon Pulse, Simon & Schuster. Okay, it's not about diving per se. However, it may captivate young minds with its Jules Vernesque sci-fi retake on World War I as fought with a 19<sup>th</sup> century version of high technology. It starts with the assassination of Archduke Franz Ferdinand, of course, and the escape of his fictionalized son, Aleksandar. He meets Deryn, a Scottish girl who has disguised herself as a boy to join the British Air Service. Together, they get swept into the world of war fought with zeppelins, walking machines and other half-beast half-machine creatures. One of them, the leviathan, is a dirigible that was grown on the genetic chassis of a whale.

Heroes and heroines hark back to Victorian days of exploration for adventure and a strong sense of what is proper. It's a fast-paced plot that caroms between opposites of boy / girl, commoner / aristocrat, man / machine, Darwinists / and bio-engineers, which presents an underlying theme of acceptance of others' ideas and people. ISBN: 978 1 416971 73 3. [www.books.simonandschuster.com](http://www.books.simonandschuster.com).



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POINT & CLICK  
ON BOLD LINKS



# Holiday Gifts & Trips

## & Stocking Stuffers for Divers

ALL PHOTOS COURTESY OF THE MANUFACTURERS OR VENDORS



### Sea Ornaments

Okay, so they're not reindeer or snowmen ornaments. But surely this oversight can be overlooked once you tell your guests that these set of ornaments are made of jewelled glass? However, if crabs are still not your thing, this range also has fish and starfish ornaments as well.

[www.sienajulia.com](http://www.sienajulia.com)



### Star light, Star bright...

Here's an interesting twist to those typically symmetrical starfish. With its stylish slant to the starfish outline, this 14-karat yellow gold pendant (with its 14-karat yellow gold chain) is sure to find its way into quite a number of Christmas wish lists (Hint, hint, guys!). Matching earrings available.

[www.divingdesigns.com](http://www.divingdesigns.com)

### Antarctic Holiday

While everyone else is headed home this Christmas, why not treat yourself to some extreme adventure? Why not embark on a cruise to the ends of the world -namely, Antarctica. Your Christmas vacation will be the awesome experience of an Antarctic expedition, with the options of scuba diving in the icy waters or climbing the similarly icy peaks. Beats roasting chestnuts over an open fire, eh?

[www.responsibletravel.com](http://www.responsibletravel.com)



### Wreck Dive Game

Explore the RMS Gigantic for sunken treasure! This shipwreck, measuring an entire 18 inches, ought to be enough to tantalise your thirst for adventure. Get ready to discover hidden coins, jewels, a shark and even a human skull (yikes!). All this without getting your flippers wet!

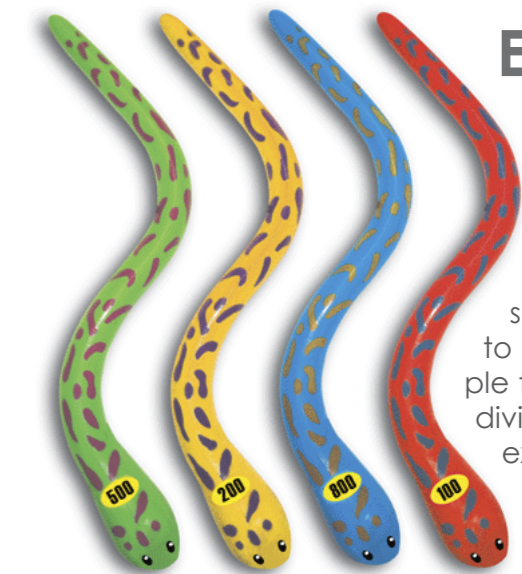


[www.recsupply.com](http://www.recsupply.com)

### Twin Tanks

Be sure to order this item at least a month in advance to be in time for Christmas (or promise it for New Year's or Valentines Day). Why? For the simple reason that quality requires time to materialise. Far from being mere pendants, these are 14-kt white gold pendants. Their components are handcrafted, inspected and polished, and have undergone a precision manufacturing method that ensures dimensional stability for the tanks. A perfect gift for the technical diver.

[www.explorationdesign2.com](http://www.explorationdesign2.com)



### Eelusive

Is it really safe to go back into the water? These red, blue, green and yellow wiggly snakes are bound to make some people think twice about diving in. Once the excitement is over, let them loose in a swimming pool to keep kids busy in a fun game of retrieval.

[www.recsupply.com](http://www.recsupply.com)





gifts



## Sea Glass Ornaments

These colorful sea glass ornaments are intended for a mini Christmas tree. They measure between 1 and 1 1/4 inches in length, not including the attached silver wire hook. Each ornament is adorned with a silver triple leaf decoration. Sea Glass colors are brown, seafoam green, light blue, cobalt blue, amethyst, white, emerald green, and lime green. They would also look great as year-round decorations, perhaps on a twig tree.

[www.etsy.com](http://www.etsy.com)

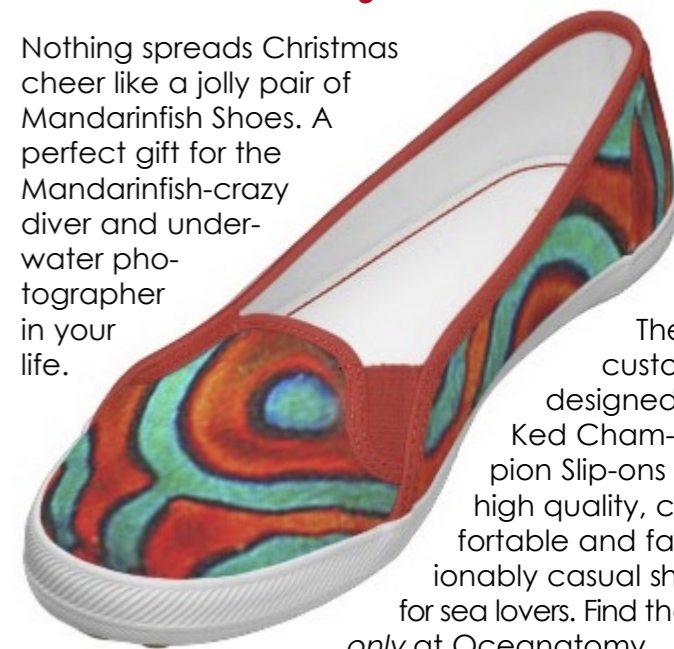


## Haircare for Divers

Finally, the world's first professional hair and skincare for divers! Subseries has created over nine reef safe formulas that include a state-of-the-art hair protectant that protects hair while submerged. Their products have been used and tested by a cosmetologist and their own chemists who are divers. Subseries products are not tested on animals. [Subseries.com](http://Subseries.com)

## Mandarinfish Shoes

Nothing spreads Christmas cheer like a jolly pair of Mandarinfish Shoes. A perfect gift for the Mandarinfish-crazy diver and underwater photographer in your life.



These custom designed Ked Champion Slip-ons are high quality, comfortable and fashionably casual shoes for sea lovers. Find them only at Oceanatomy.

[www.zazzle.com/oceanatomy](http://www.zazzle.com/oceanatomy)



## Drink it up

NEW! A sports drink for divers? Yes, just launched at DEMA 2009, this refreshing drink is formulated specifically for the active scuba diver. Diver's D\Lyte™ provides essential assistance to your body for safe, enjoyable diving. Enticing point of sale displays available for dive shops.

[www.diversdlyte.com](http://www.diversdlyte.com)



## Knock, knock...

The Tank Banger Signalling Device is simply that.

You slip it over your scuba tank and use it to attract your buddy's attention by pulling on the plastic ball and letting it snap back.

But don't just stop at that. Have one of these around each of your tanks, and perhaps you can consider forming an underwater musical band? [www.joediveramerica.com](http://www.joediveramerica.com)

## Dive Junkie

Can't get enough scuba? Stuck top-side? Missing that snug feeling of having a regulator and diving gauge wrapped around you? No worries. Now you can have the scuba regulator and gauges as close to you as a t-shirt, with the Reg-Gauge T by Dive Junkie. A 100% fully-combed cotton round-neck t-shirt of 150gsm light-weight fabric and finely-singled ring-spun yarn, with soft and comfortable ribbed bound collar, and flat-locked stitch trimmings Available in men's and women's sizes. [Divejunkie.com.sg](http://Divejunkie.com.sg)



## Nifty Security

Here's a little number that's tough enough to thwart even the more determined thieves. Use it to secure your precious scuba gear or luggage. It's small size (just two inches long) and dark colour is discreet, so not to attract unwanted attention to your valuables (we're talking about the scuba gear, of course!) [www.joediveramerica.com](http://www.joediveramerica.com)



## Philippines Christmas

Enough of snow-covered roofs and carrot-nosed snowmen! We'd like to tempt you to pencil in a holiday in tropical Philippines. This luxurious accommodations is ideal for the family, small groups and couples. The nature-oriented activities at this eco-friendly resort – scuba-diving, sailing, whale shark tours, mountain walks, mangrove tours – is sure to awaken the nature-lover in you. [www.responsibletravel.com](http://www.responsibletravel.com)

# Great White Shark Dive

*with Amos Nachoum*

Edited by Gunild Symes  
Photos by Amos Nachoum  
and Jeb Corliss

**How to get out of the protective cage and swim with the Great White shark—that's what Big Animals expeditions founder and leader, Amos Nachoum, helps the adventurous and steely-nerved diver and underwater photographer do. We sat down with him at the DEMA Show 2009 and asked Amos about his Great White shark encounter, an experience he calls "the Mount Everest of diving".**



AMOS NACHOUM

**X-RAY MAG:** Tell us how it all began. What inspired you to start the Great White shark encounters?

AN: The whole idea started with the fact that we've become such a society more and more concerned about the environment and making an effort in the mainstream of our living to correct our behaviour and to be more environmentally correct. And that starts with how we use energy and how we use plastic, or not

use plastic, and how we deal with our garbage, or how we deal with the elements that we don't want or don't need, how much we purchase, how much we throw out, and so forth.

Well, it is also related to diving in a way, and one point of which is the flooding of shark in cultures, and the shark-feeding behaviour, which actually is against the environment. It's totally against the environment. There are so many studies that have been done all

over the world on what the effects are: Are we conditioning sharks? So, many more shark accidents are happening. Either it is because of shark-feeding, or there is an increasing number of people in the ocean. So, there are so many other elements.

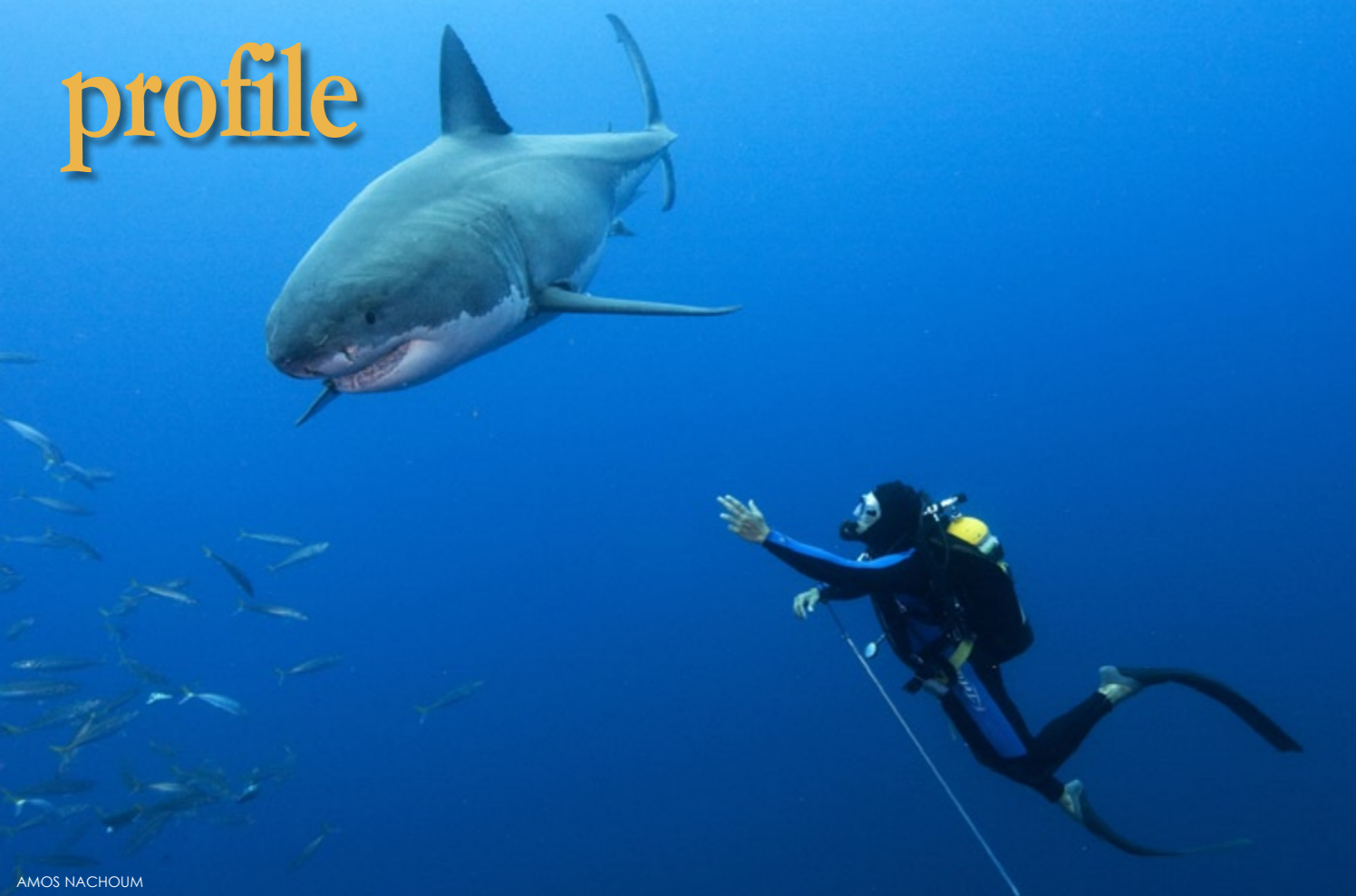
Well, I looked at one of the elements and said, what if we don't feed the sharks, what will happen? And if we don't irritate them, what will happen? And the fact of the matter is that we will

learn by experience, which I have done many times in the past for other purposes. For major television, we did out-of-the-cage shooting, but it was only to supplement other kinds of sensationalism rather than to focus on the fact that we can swim with the shark in open water without being afraid or concerned. And the fact is, the sharks never attacked us.

So, I started to take people, individuals, into the water (to encounter the Great White shark). And all of this with a lot of

precautions, since "what if" is the big question—and if something happened, did somebody have to be responsible? I took it upon myself and built procedures, or a protocol of behaviour, out of the water and in the water, which proved successful, as I have already done at least two trips in the past three years and introduced about 12-15 people in to and out of the cage (with Great White sharks), and everybody returned happily. Otherwise, I would not be able to be sit-



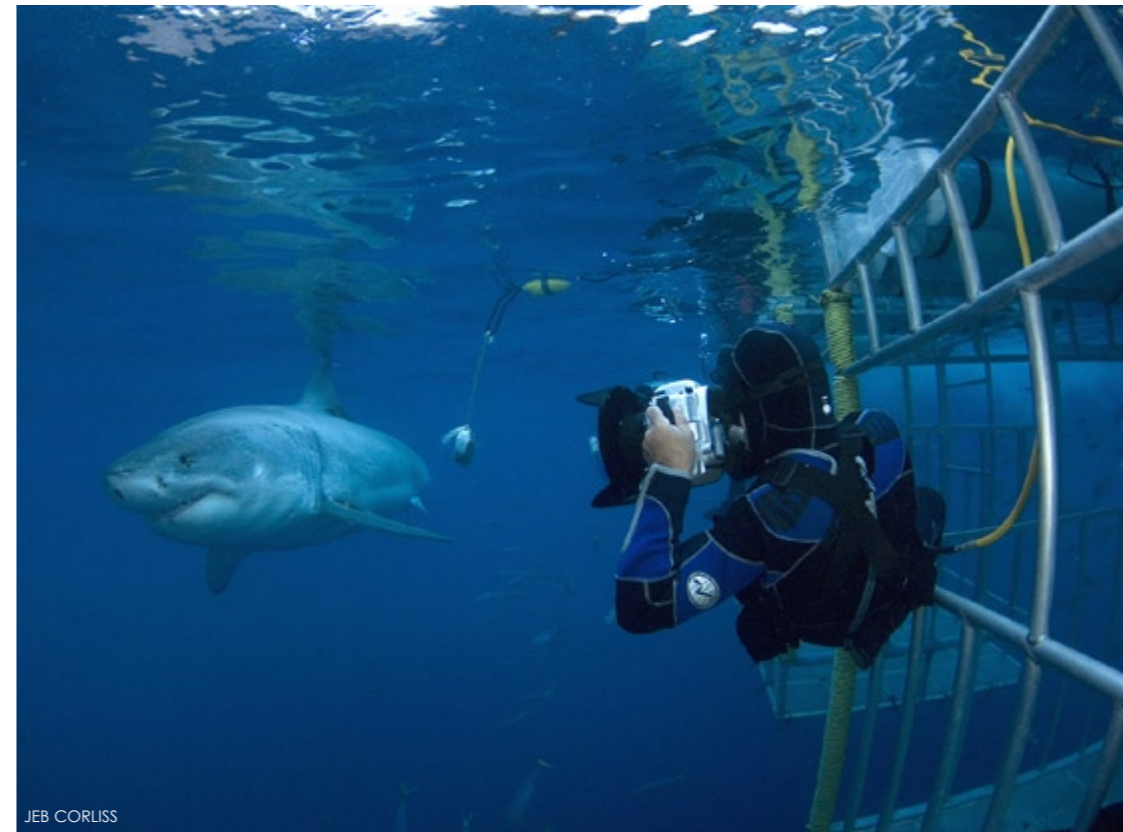


CLOCKWISE: Diver and Great White shark; Amos is on the edge of comfort and cage; Amos faces a Great White shark from three feet away

## Amos Nachoum

ity from the strobe from three feet away does affect the sharks—I don't know exactly what element of the shark's anatomy is affected, but it affects something, because the shark just turns around and moves away. And what happens when a shark bumps into you, it just moves away, because it is not used to bumping into anything, and they don't like it. And that's how we make it very safe and how it happens very safely.

In addition, I also have my dive master/safety diver wear an AGA mask with communication to the surface just in case something happens—a remote chance—at least we can act as fast as possible and give help and assistance, but we have never had to use it. However, I take the responsibility to deploy all humanly known meas-



JEB CORLISS

ting here and talking to all of you and smiling about it, with the pictures to show.

As I started to tell people, in all businesses especially new ones, there are two elements which are the most dangerous: one, being short on time; and two, being short on money. I decided to eliminate those two issues. If I can have all the time in the world and I charge enough to take this kind of project on hand, hopefully, I will be successful.

So, I wanted to go on a three-day trip to Guadelupe. We now have a trip with five days in the water. So, we have all the time in the world. I have five days. Rather than take 20 people, I take ten people in the boat. And from these ten people, only five are allowed to go out of the cage. And those five, I take only one at a time out of the cage.

So, now people know that

they only get one time out of the cage, and for this, they pay extra, whatever that extra is. And I don't promise more than one encounter. And for this, they are willing to do it, because it is so avant garde, it's so unique, it's so exotic, or so whatever it is. And so, people are willing to make this effort and this investment in time and money. As it happens during the trip, people get three to five times a day, and over five days, 25 chances to be out of the cage with the sharks and totally safely.

Every time I go out of the cage, I have a safety diver with me. The safety diver is actually a shark researcher. The shark researcher/safety diver has a stick, not a bent stick, just a stick in his hand. And the customer is sandwiched between the two of us. And that's how we conduct it. We go out for 15-20 minutes at a time, half

an hour, the sharks stay around us, because the other boat has already been chumming on the surface, and we take the cage, and we go to 30-40 feet below.

The sharks are roaming in mid-water and they come at us, they look at us, they pass by us, and that's when we are able to take those wonderful pictures and to be with them in the same water. And they are not irritated by our presence. On the contrary, they come by and take a look, come very close, and as long as we are flashing them with the cameras—we are taking pictures, because that is what we do in the water or what everybody wants to do, either because the camera and strobe is like a safety shield or you want to hide behind the camera.

All of a sudden, you don't seem in danger, perhaps because the shock or electric-



JEB CORLISS



# profile

ures in case something happens, so we can minimize the damage that could happen even though it is not necessary, and it has been proven that it is not necessary.

We want to be prepared, and we want to do it. Just like we have airbags in cars... even when you sell a car for 20 or 30 or half a million dollars, with the most intelligent person sitting behind the wheel, and all the electronics the car has, you still have a safety system, because accidents do happen, despite the fact that we have been developing cars for almost 80 years and shark diving is

only two years old!

Still we can take all that we have learned from other disciplines or other industries and apply it to ourselves and be as safety-cautious as possible, but at the same time, we are also challenging, not the shark—we are not irritating it—we are challenging only the perception that is embedded in people's minds wrongly for so many years since (the film) *Jaws* or before that about shark behaviour.

*X-RAY MAG: Can you give us a description of what happens to*

*one of your clients when they came back up from such an experience?*

AN: They could not wait to go back into the water. It was just amazing (for them). First of all, I would have looked out to see if they were shaking or not shaking. Yes, some of them said they wanted to wait until the next turn (to swim with the sharks), and of course, they did... nobody pushed them. So, those more forthcoming got in first. Then, the others see the first person go in and get out and say that they could not wait to go

## Amos Nachoum

in the second time, they couldn't wait to swim again with the sharks, and that's how every day continued.

What's happening is... it is like melting ice, because you are melting all this resistance, all those preconceived notions, and all those messages you had in your mind before. And every time the ice melts, or the resistance melts, or the negative sentiments melt, the more each person could have the sensation of really being with these animals at once in the same water, without all this sensationalism and all this irritation, and experience peace and joy and appreciation of being with them in the water.

*X-RAY MAG: Have you had any women do it?*

AN: Yep. We have women do it. Young and old. (The youngest was) about 29.

And men... one in his twenties. And we had in the last trip, an elderly man. He was 75.

So, the whole gamut. It makes no difference... American, European, men, women, I have seen each one of them have an enjoyable experience.

*X-RAY MAG: Where and how often do you do this encounter?*

AN: Guadelupe, off Mexico. I start with once (per year). I need at least ten people to run a trip, and if we have enough, then we run a second trip. But we usually start with one at least.

*X-RAY MAG: How do divers contact you and sign up for the encounter?*



JEB CORLISS

CLOCKWISE FROM LEFT: Great White shark with divers inside and outside protective cage; Portrait of Amos Nachoum; Amos facing a Great White shark



Silhouette of Great White shark against the sun

AN: The simplest way is to go to BigAnimals.com. That's what I do, that's my expertise in the past 35 years. I gave myself a mission to search for and locate encounters, safe encounters, with all of the big animals in the ocean including the Great White and the polar bear, including the leopard seals, the Blue whales and the Anaconda.

There is no difference between any of these animals (when talking about behaviour). All these animals have only one mechanism. If we irritate them and aggravate them, yes, they will attack the source of aggravation. If we actually enclose them or box them in, then they will try to break the box, like they tried to do with Steve Irwin, but when we keep the number of people to a minimum, and we are not more than one target in the water—like with Humpback whales, with Blue whales, with Great White sharks—a small number of people together as one unit, the animal does not

feel trapped.

They see us as only one target, and they can deal with it. As long as they can deal with it, there is no aggression I have ever felt from any of them. Some animals just run away when the group separates for one reason or another, and it was mostly the case of separation. They just left us behind, which they do very easily. They are much faster than us. And with the Great White, it just turns around, and it's gone. We turn them off with the camera flash or one reason or another, and never do we have the chance or reason, really, to push them with the stick.

*X-RAY MAG: What preparation and orientation do you give to divers that sign up for the Great White encounter?*

AN: The diver will go through a very thorough orientation and very thorough preparation before the trip. Not everybody is qualified to do the encounter. I



AMOS NACHOUM



AMOS NACHOUM

need to know in the interview that I run with each passenger before the trip, or if they express interest, to go out of the cage. They have to sign a quite lengthy document—a legal document—that is signed not just by the person him/herself, but also by a family or business lawyer. It has to be signed by a notary public to make sure that the information and the lawyer are legal and authenticated. So, everybody is aware.

Like any drysuit or a motorcycle, utilizing this equipment can be dangerous for your life. You might die if you do that. And the people

sign their life away and learn the ramifications of it all. Even then, they are not yet qualified to go out of the cage, because the second element that is very important for me is total and absolutely perfect buoyancy control in the water. It is something I work on with the diver when they get on the trip and before we get out of the cage. When people perform at this level, only then do they go out of the cage.

During the process, there is something that I have learned profoundly from a classic event that happened several years ago on Mount Everest, which has become a motto in my life, and is

in the book, *Into the Thin Air*, (by Jon Krakauer, the mountaineer's epic account of the 1996 tragedy on Everest that claimed five lives)—a story in which a recreational climber wants to reach the top of Mount Everest. (People) are going to Everest on a regular basis now. There are actually pilgrims... tens, if not, a hundred teams every year during the season of recreational climbers.

I call this trip with the Great White shark the Mount Everest of diving, because if not climbing physically, we are all climbing emotionally, overcoming our fear, overcoming the sentiment of fear and danger that has been

embedded in our minds.

So, what happened at Everest is that despite the warning from the leaders, six or eight of the customers tried to go without the leaders to the top. One of the leaders joined them for whatever reason, and I am not going to judge what happened at Everest, however, the result was very devastating, and people perished including the leader that led them and joined them on the trip. I learned a good lesson from that, and the lesson that I apply is the fact that I tell everybody that is coming on the trip that during the trip, during the out-of-the-cage operation, there is only one god, and it is not the one

This year's team on Nachoum's Great White Shark expedition



AMOS NACHOUM

Classic smiling Great White shark (left); Amos with Great White (below)

## Amos Nachoum

with the Great White.

*X-RAY MAG: Do people change after such an encounter?*

AN: Oh yeah, they change internally. Because they go back home, and they tell the story. They become ambassadors of the big animals. That's the key. If I am the ambassador of taking pictures of the big animals, they become the ambassadors of telling the stories, because these are stories that operators, or other magazines, claim they cannot make public. Then the public will not know.

The public should know through the experience of the individual, because those other editorial magazines are constrained by the big—I am sorry to say—squareness of the publications, or because of liability or whatever else they may have, or because they cannot endorse what I have been doing because I do it personally.

Well, the reality is that's not

the case. People drive fast anyway. They go to the statusphere anyway because they have 30 million dollars they can pay.

People will do a lot of different things because of their imagination and are able to push their own limits and are not constrained, like the companies that have liability issues are and therefore cannot talk about it. People can go to the stars as well, and people can buy Ducats and drive 180 miles per hour, like myself (laughs), or people buy Porches because they can and they will and they can take the risk and manage their own risk and do it safely.

*X-RAY MAG: There is quite a passion underlying it all. Is there anything else you would like to add?*

AN: Just do it! (laughs)

*X-RAY MAG: Yes, I think that sums it up nicely. ■*

above, if the one by your side, and that's me. Only if they give me this right and allow me to make the calls—no if's, but's or maybe's—I will let them in, and I will let them out of the cage, and I will lead them back to the cage. And that is safety for me, and that is leadership.

I guess I have the upbringing of being a leader, being in the military in Israel, being an officer, going through a military activity in the battlefield for numerous years and numerous occasions, working undercover in many environments and foreign environments. There is not much more danger in those fields compared to being with sharks, compared to being in the

water.

There is, interestingly enough, another part of my history that is important to share.

Anybody who has dived the Red Sea knows the part that is called the Blue Hole. Many people have perished in the Blue Hole—about a hundred people, if one looks at the records.

For the record, for anybody reading this material, in 1988, I ran single-handedly over 3000 people to the Red Sea and introducing at least 500 of them to diving in the Blue Hole. And we did not lose one person. This was 29 years ago between 1980-88.

I introduced, personally, groups of 10-12 people down to 180 feet

or 200 feet and went through the passage and out the opposite side and lost not even one person. No one got bent, and there were no embolisms, simply because we adhered to basic rules and protocol of behaviour and lead by them, despite other things that are known today.

Perhaps, we cannot make (the information) public knowledge. We cannot make it known to the common people, but when customers join the leader and let the leader lead, then one can perform successfully. You can push the envelope without breaking it.

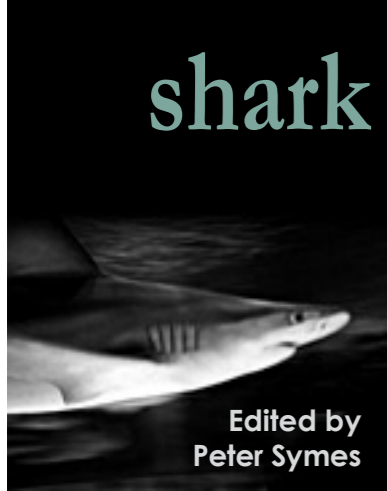
But if you try to do it on your own without experience, just because of ego, or whatever, accidents do

happen. But if you have a leader who shows a track record, like mine in the military—which is not important for anybody because it is out of the rim (of context)—but at least in the diving I did in the Red Sea and all kinds of diving I have done all around the world since the mid-70's from the North Pole all the way to Antarctica, and with all the big animals including the Anaconda, the polar bear, the Blue whale, and the Humboldt Squid, I feel and I know by the fact that while leading people on Big Animals expeditions over the last 20 years, we have not had one accident—either diving or animal, or animal interference—that I could also lead people to swim



JEB CORLISS



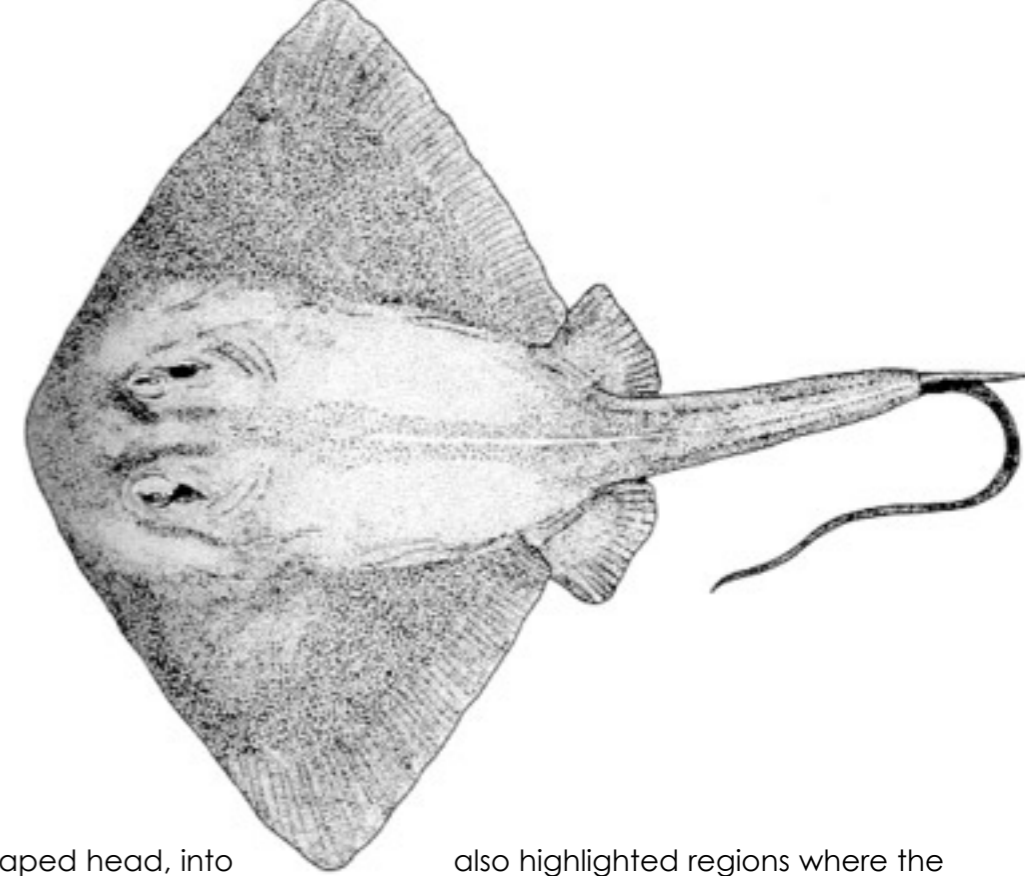


Edited by Peter Symes

## World's largest stingray

One of the rarest giants of the ocean has been caught on film for the first time. The elusive smalllele stingray with can attain a width of more than 2 meters and is the largest of all 70 species of stingray, has only ever been seen alive off the coast of Tofo in southeastern Mozambique, since it was first discovered in 1908.

An underwater camera crew filming for the BBC recorded a rare video of the smalllele. **Watch the video on BBC**



# Hammerheads have 360° vision

Debate over why hammerheads are shaped as they are goes back centuries. New research suggests that the wing-like heads with their widely spaced eyes give the sharks excellent binocular vision. The wide set eyes even allow some shark species to see through 360 degrees of vision.



WOLFGANG LEANDER

Prowling hammerhead. Eye tests on species caught off the coasts of Florida and Hawaii show that the wider the head, the better the shark's binocular vision, and hence, its perception of distance

Researcher Stephen Kajiura, a sensory biologist, suggests that the stereo vision helps the sharks hunt prey like squid that dart around in three dimensions. The wide set eyes also allow the sharks to see through 360 degrees of vision, according to the researchers, who published their findings in *The Journal of Experimental Biology*.

Various lines of thought have suggested that the conspicuous form of the hammerhead aids swimming by producing hydrodynamic lift, improves smell by increasing the distance between nostrils, or produces better vision. Meanwhile, other researchers argued that the placement of the eyes must make it hard for the shark to look forward, and thus would prevent the two fields of vision from overlapping.

### Putting it to the test

To test the frontal vision in hammerhead sharks professor Timothy Tricas from the University of Hawaii in Manoa, United States, and Stephen Kajiura, also from Florida Atlantic University, placed a variety of shark species, each with a differ-

ent shaped head, into an aquarium tank. They then placed sensors on the shark's skin to measure its brain activity, specifically testing whether the animal would react to beams of light shone from different locations around the tank.

During the examinations, a low-intensity light was swept horizontally and vertically across the eye of each shark, while electrodes picked up electrical activity from the fishes' retinas.

By doing so, they could measure each shark's field of vision and could confirm that hammerhead sharks can see directly ahead while swimming and can accurately judge distance, particularly to any prey they hunt. What's more, the researchers also demonstrated that the degree of overlap between the two eyes increases with head width.

The researchers then worked out the size of the visual field for each eye in the different shark species. This revealed any blindspots, but

also highlighted regions where the visual fields from each eye overlapped to produce binocular or 3D vision.

The eye tests showed that the bonnethead shark had a modest 13 degree overlap in the visual fields of its eyes, while the winghead had an enormous 48 degree overlap, giving it a much broader field of 3D vision.

### Tilted eyes

"I believed hammerheads would not have binocular vision, because their eyes were pointing out on the sides of the head," admits Dr Michelle McComb from Florida Atlantic University in Boca Raton, Florida. "However, it turns out that the positioning of the eyes was really the key."

The eyes of hammerhead sharks are tilted slightly forward, she says, allowing the field of vision of each to significantly overlap. ■



# ARKive needs your images

ARKive ([www.arkive.org](http://www.arkive.org)) is calling on all divers and underwater photographers for their help in gathering images of all the world's threatened marine animals and plants.

Images courtesy of Andy Murch

Films and photographs are an emotive, powerful and effective means of building environmental awareness. They bring every species to life and demonstrate quickly and simply what makes them so special. Thinking about the non-divers - would they know what the Indonesian speckled carpet shark looks like, does it really have speckles? Does a spotted hand-fish really have hands? And what on earth is a Banggai cardinalfish or a seadragon?

Many divers, amateur and professional alike, take fabulous photographs of a broad range of threatened species, so this is an opportunity to work with ARKive and help the wide variety of amazing animals and plants that give pleasure to so many divers. Photographs and video give these threatened species a face.

They give people, who won't ever be lucky enough to see them in the wild, the chance to understand their characteristics, their biology and the threats they are currently facing.

## Donating images

Threatened marine species make up just ten percent of the current material held in ARKive, reflecting just how hard these films and photographs are to collect, so the divers underwater images are urgently needed to help fill the watery gaps in the rapidly growing library.

TV presenter and passionate diver, Kate Humble, is a keen supporter of ARKive. "I love that first plunge, the first glimpse through the mask of the underwater world," says Humble. "And I know I am privileged to have experienced

ARKive promotes conservation and builds environmental awareness through wildlife photographs, films and sound clips, which are being pledged by many of the world's top photographers and filmmakers. The aim is to produce a global, centralized record of all 16,928 species on the IUCN Red List of Threatened Species. This will provide an invaluable conservation tool—a quick, easy and free online source of information for anyone keen to learn more or to help with conservation efforts.



Blue shark

to raise support for an animal that has no face in the media and good images can make a huge difference. I feel ARKive is a shining example of what can be done to bring attention to the plight of the world's endangered species. A project of this size is too large for individual photographers to take on, but it is an obvious cause for us to contribute to."

The ARKive team are searching for a huge variety of marine materials and are keen to see the photograph captured from the cage when the diver comes face to jaws with a huge Great White off South Africa or South Australia. They too will be mesmerised by the classic silhouette of swirling hammerheads filmed whilst gazing up into the clear blue waters of the Pacific.

From the mighty pelagics that every diver longs to witness and photograph, right down to the camouflaged and almost impossible to see pygmy seahorses of the Pacific Ocean, ARKive is interested in them all, and the more unusual and obscure the species, the better.

## Most wanted

A list of the 'most wanted' images is published on the ARKive website [www.arkive.org](http://www.arkive.org) and to check out if your species appears on the Red List see [www.relist.org](http://www.relist.org). Anyone wishing to donate images can email ARKive's media research team at: [arkive@wildscreen.org.uk](mailto:arkive@wildscreen.org.uk), or upload to [www.flickr.com/groups/arkive](http://www.flickr.com/groups/arkive) using the tag 'marine'.

So far, around 38,000 films and images have been given a safe-haven in the ARKive digital vault. More than 3,000 media donors are actively contributing to the project, from major broadcasters, film and photo libraries to conservation organizations and academic institutes, as well as many individual filmmakers and photographers.

All media is donated freely upon the understanding that it will be used as a resource for scientists, conservationists, educators and the general public, and not for commercial purposes. ■



the ocean's depths; many others are not so fortunate. So, I encourage divers to donate their images to give ARKive the best means possible in their quest to raise awareness for the world's underwater creatures." Her celebrity scrapbook on the ARKive website focuses on diving and includes some of the species she has been lucky enough to see whilst underwater for pleasure and work (such as when filming *Springwatch*).

Professional shark photographer and regular ARKive contributor, Andy Murch, says, "Many of my shark images have been used in conservation campaigns to help push through legislation aiming to protect animals at risk. It's hard

Porbeagle shark





# Diving in Oman

*A Story of Coral Reef Regeneration*

Text and photos by Charles Stirling



## Oman



JENNY FOWLER

Red gorgonian soft coral with shoal of blue line snapper; Junn Island beach with dive boat; Green sea turtle, *Chelonia mydas*, Daymaniyat Islands. PREVIOUS PAGE: Desert sand dunes. Wahiba sands dunes, notice little plants do grow here

**I went to Oman to look at coral reefs that are regenerating from damage caused by cyclone Gonu in June 2007. Divers are just beginning to learn of the Sultanate of Oman; it's becoming yet another destination to consider. A country with a 1700km coastline extending from the border with the Republic of Yemen in the south to the Strait of Hormuz in the north. Its shores are lapped by three seas—the Arabian Sea, Sea of Oman and the Arabian Gulf—all within latitudes where coral reefs are expected. So what are you going to find if you visit?**

Reef building corals normally need fairly specific conditions to survive: temperatures 22°C to 29°C, clear water, hard substrate to attach to, and low nutrient water. Then they need maintenance of the right biological diversity. Oman has four distinct areas that allow reef building. Much of its coastline is sand so does not provide the hard substrate. In the regions which have the hard substrates, it's a country which challenges some of the perceived concepts over the requirements. This, in itself, should make the diving of interest to the scientifically inclined coral biologists, but will be of lesser interest to the ordinary diver who is generally more interested in simply good dives.

In the far north west off the Musandam region in the Strait of Hormuz, most dives seem to be conducted off liveaboard boats, often



out of the United Arab Emirates but also out of Daba. The attraction is the rough mountainous coastline with narrow fjord like bays. This area of Oman is separated from the rest of the country by the UAE, which completely surrounds it—an exclave. I've heard that it's enjoyable as a dive trip with at least reasonable coral and good fish life, but haven't visited.

Hundreds of kilometres down the coast is the Daymaniyat-Muscat region with the Daymaniyat Islands my prime site of interest, and Muscat area a



OMAN'S MONSOONS

The monsoon system in Oman is a major climatic and oceanic influence with the dry North East monsoon winds prevailing November to April, which then reverses with the South West prevailing April to October. These South West monsoon winds bring cold, nutrient rich, waters up from the depths of the Arabian Sea which reaches more than 4000 metres deep. In the south of Oman, corals have adapted to survive both the cool temperatures and algae growth which results. In waters with adequate nutrients, other organisms generally out-compete corals, which is not always happening here. Further north, from Ras Al Hadd to Muscat and even the Daymaniyat Islands, the seas are shallower and can warm considerably, sometimes above the normal high temperature for coral growth. The cold upwellings here arrive as intermittent cool packets of water being pumped by surface waves. It's thought this occasional cooling helps to keep the good coral growth, as they do bleach but quickly recover. Even in constant temperatures above those that bleach coral in other regions of the world, corals here may not bleach. Water temperatures in the Daymaniyats can change by ten degrees in an hour. ■

TOP: Bluespotted Cornetfish *Fistularia commersonii*



Red tailed or Pakistani butterflyfish, *Chaetodon collare*; Reef stonefish, *Synanceia verrucosa*; Masked bannerfish, *Heniochus acuminatus*



of the Al Munassir, welcome the diver. This is rated second to the Daymaniyat Islands, and normally it should be possible to combine the two on a single week's trip, which I was unable to do as rather strong winds stopped all diving activity during my allocated time for Muscat.

Moving on down the coast, the diving infrastructure simply hasn't yet been well established, though corals are found in the Jazirat Masirah island and surrounding waters. Much further south, around Salalah and Sadah and the Hallaniyat islands, diving sounds possible, but it's almost virgin territory. Salalah is probably the best bet; an airport has recently been opened, and the diving is reported as very good.

There are wrecks in the area, including the "City of Winchester" the first casualty of WWI, a 19<sup>th</sup> century one and others.

The cooler water during the monsoons is nutrient rich along with temperatures below coral growth normal limits but almost uniquely in the world here it doesn't kill

the coral. Coral here will gain an algae covering for a few months but survive to continue growing after. The diving operators seem few, maybe one at the Salalah Hilton maybe one at the Al Jabal Hotel.

**Diving the Daymaniyats**

I went out of the expected diving season, January early February, with the primary objective to see the regeneration in corals which was reported as unusual. Some specific shallower reef areas on some of the islands had been scrubbed virtually clean down to bare rock by backwash from the extremely high surge waves generated by cyclone Gonu. Other areas with extensive table corals had many of them ripped from the substrate, washed into piles or broken up. This was evident on beaches all along the coast with a tideline of newly deposited coral debris, particularly from table but also small brain, pillow and fungi corals.

This is a natural phenomenon that must



close second. This region is the most popular destination, which effectively splits into the two sub areas.

The Daymaniyats are tiny, isolated islands, about 20 km off the coast from Al Sawadi, an hour's drive north of the capital city of Muscat. This distance limits boats visiting from the far side of Muscat to exceptionally fine days, and most will use Al Sawadi Beach

Resort or the centres near the closer outskirts of Muscat. The islands are a marine reserve, established in 1996, consisting of a nine-island archipelago with many submerged rock pinnacles.

In the Muscat area coral reefs, a couple of small wrecks and the artificial reef created by the deliberate sinking of the 84m-long, 2991-ton landing craft, wreck







COUNTERCLOCKWISE FROM LEFT: Damaged table coral, *Acropora valenciennesii*, with upward growing regeneration; New growth *Acropora* table coral polyps; Upturned table coral with regenerating branches

TABLE CORAL

This table coral looks like it is *Acropora clathrata* as the branches coalesce to form solid plates. In this species, which is a common one in Oman, branchlets seldom turn upward so giving the flat table appearance. The closely related species *Acropora valenciennesii* is frequently confused with *A. clathrata*, but its branches do not fuse being more loosely branched while it will have branches which do turn upward. I'm not a coral taxonomist; these identifications show some of the difficulties with describing behavioural differences particularly when circumstances are unusual. This observed regeneration response is dramatic, and the sheer quantity makes it noteworthy regardless of species. It's a natural response to an environmental change, which will keep the reef alive and doing well. Coral is reported to cover 70+ percent of available surface, and the reefs are expanding on the Daymaniyat Islands. ■

cut both by a plankton bloom and stirred sediment. Visually one could see 8 to 12 m at many of the sites, which was reduced from the expected, but photographically the plankton had matured to sizes large enough it might almost be identified in some photographs so ends up in most images. This said, the diving was still very enjoyable.

I managed diving with Roger & Emma Halliday's Al Sawadi Beach Resort dive centre five days out of a possible six, one lost to the wind, but had planned another

five days diving out of Muscat which were blown out. The Daymaniyat Islands have some shallow bays, but most of the diving was on variously contoured walls often progressing along near the bottom regions at 16 to 20 metre depths. Some of these were billed as drift dives possibly having strong currents, but our drift dives ended up at about half a knot or under so just enough to behave fish like with head toward the current and gentle finning to hold position or slightly less finning to slowly drift to see the landscape unfold.

have been happening in this region for thousands of years when the occasional strong cyclone hits every 30 to 60 years. It's one aspect of beach and land development.

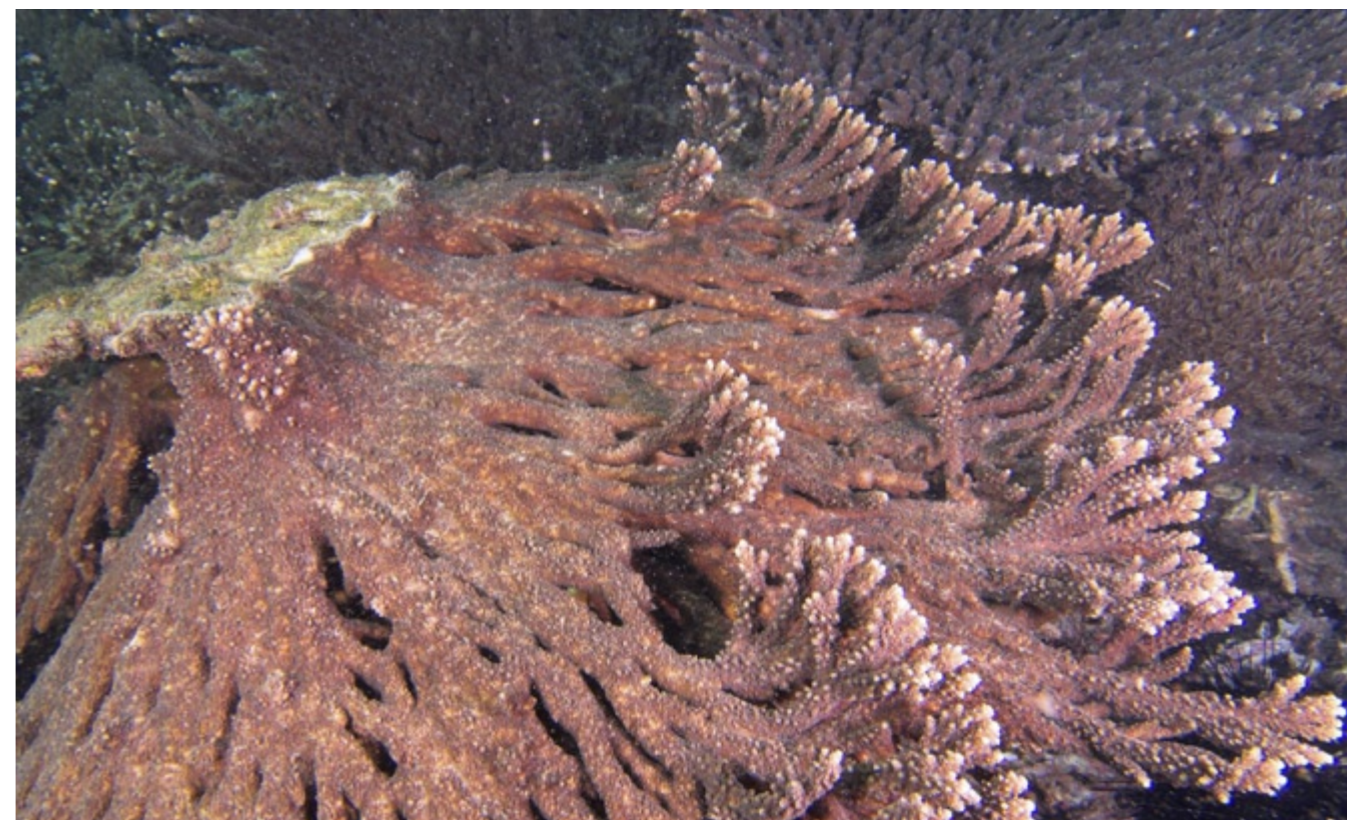
Underwater it was exciting to see how quickly recovery had started. I wasn't doing sampling or measurements, just acting as an inquisitive diver, but the scrubbed rock looked to be gaining a covering of coralline algae, bryozoans and small soft and hard corals.

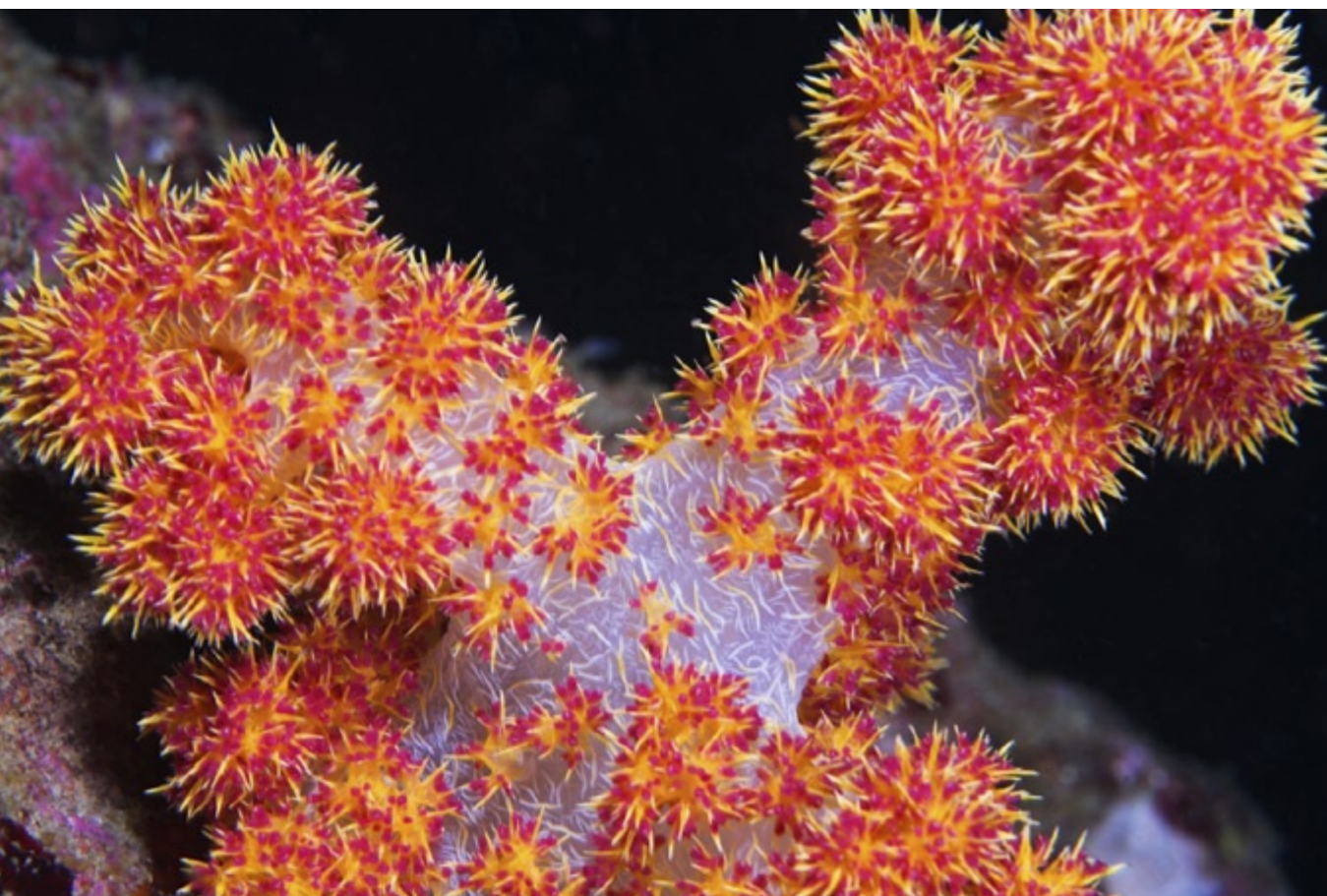
The surprises came with the table coral, upturned and maybe in a pile, sending new branches up from what had been the undersides. In Hawaii some damaged table corals have

experimentally been turned right side up by divers and cemented back to the substrate either with a quick setting cement-adhesive mix or cement. This seems to work but is a skilled, expensive, labour intensive task okay for a few specimens, but not with the quantities here.

**General Diving**

Not as surprising was that most reef areas dived appeared to have seen little damage. The wave energy is near the surface and quickly dissipates with depth, also leeward sites are protected. Being out of the best diving season sea conditions were sometimes a bit rough reaching the islands and the visibility was





Crown of thorns Starfish, *Acanthaster planci*, preying on hard coral but not destroying all the reefs

Often the proposed dives would start with dropping off the boat over a coral garden, finning a short distance to catch the current and drift to another coral garden to surface. The diving is easy, each site, each island has differences, but sometimes subtle.

The islands offer reef diving somewhat similar to the Red Sea to which it inevitably gets compared. One of the big differences is the lack of crowds. I was out of season, so comparisons are misleading, but on some days my guide/buddy and I were the only two divers in the whole nine-island archipelago, while in peak season I was told there might be a few other dive boats scattered among the islands. It's not crowded!

The coral species diversity isn't as

great as the Red Sea with about 120 now known, and new ones still being discovered, but you would need to be a coral taxonomist to tell the difference, as all the various types are present. Other invertebrates and fish are both diverse and abundant; lobster, various crabs, urchins, starfish, cuttlefish, turtles, cornetfish, a number of species of eel, trevally, grouper, turkeyfish, stonefish, angelfish, butterflyfish, anemonefish, parrotfish, shoals of snapper, wrasse and more are all here.

Our boat sometimes took snorkelers out with us, either dropping them at a sandy beach on Junn Island where we would all meet for the midday offgassing and packed lunch, or at the destination point of the planned dive. They seemed to enjoy the days.

Again, this was January, The Sultanate of Oman's shores attract great numbers of sea turtles to nest all year round, but particularly a little latter in the year.

The critically endangered Hawksbills turtles (*Eretmochelys imbricata*), in local Arabic called 'Al Sherfaf', nests particularly on the Daymaniyat Islands, which are consequently closed to boat landing in the months of May-October on conservation grounds. Out of these closed months, exploring the islands' deserted beaches is possible. A traditional dhow was being added to the Al Sawadi stable to make snorkeling more enjoyable and overnight dive trips possible, as it can be used as a floating base for activities when the beaches are closed. The larger dive boat, *Noora*, was away for a refit, and

Prickly alcyonarian soft coral, *Dendroepthya* sp. TOP: Cuttlefish



GREEN TURTLE NESTING SITES

The mainland shores all along Oman offer nesting sites for four species of sea turtles and feeding grounds offshore for visiting Leatherback turtles. For loggerhead turtles these are the world's most important nesting sites particularly around Masirah Island where 30,000 come ashore. The Olive Ridley also nest around Masirah Island. The major nesting area for the Green turtles is about 400 km south-east of Muscat along the Ras al Hadd peninsula, not far from the dhow-building port of Sur where they nest year round. Green turtles nest in numbers that exceed any other single location in the Indian Ocean. ■

CLOCKWISE FROM LEFT:  
Green sea turtle, *Chelonia mydas*;  
Bedu tribesman exercising racing  
camels; Green desert plants in wadi  
east of Ras al Hadd



the new planned catamaran for diving was at the design stage, so trips were on the smaller *Thimsa* or the soon to be decommissioned *Shadiya* dive boats.

Diving, I encountered a number of Green turtles while the snorkellers had a Hawsbill turtle investigate them on Junn West, which I missed as I took my time drifting in that direction along the wall and didn't make the distance in my 70-minute dive, too much else to see.

**Topside Attractions**

A diving trip isn't all diving even if you want it to be. My trip was partly organised by Muscat Dive and

Adventure Centre. We had planned on my also diving out of Muscat for a second week for some wreck dives, but winds prevented this. The air was filled with fine sand, the evening temperatures were cool, the seas rough. Normally, these winds only last for one to a few days, but not for my visit—they lasted for two weeks using up my stay completely. It's these cooler temperatures that make this winter weather high season for land activities. Summers reach 45°C to 50°C inland. Instead, I was able to explore more of the impressive mountains, wadis and desert sands along with Muscat itself.

**Culture**

Oman's religion, its culture, its personality strikes almost as soon as leaving a resort, some before that, as incredibly warm and friendly. Walking on the street people make eye contact, smile, say hello—yes, in English, though Arabic is the main local language. A handshake, with a light grip, a firm one is seen as aggressive, is often extended and a conversation started. That conversation not trying to sell the tourist trinket of your desires but simple friendly banter.

Oman is not an Anti-Western country; though conservative Islamic, it's tolerant of others and has much





caption this page

enjoyed historic ties to Britain. Its civil law is modelled on a mix of Islamic and Western practice, Shari'ah (Islamic) law is used within the family so applies to marriage and inheritance but doesn't seem to dominate outside the family.

Yes, changes are happening here, but it is still conservative even in cities, and more so in smaller villages. To be comfortable away from the dive boat, dress conservatively, i.e. covered up. Normally, I would be in shorts in warm climates. Here, that would, in all likelihood, bring stares if not comments. It's long trousers time.

For woman, loose fitting, non-revealing dress is the order of the day. Long trousers are ideal, or skirts and dresses with a hem below the knee, and a loose fitting sleeved top. A headscarf could be handy at times. Bikinis are okay around the hotel pool, beach or dive boat, but

not in the hotel, certainly not elsewhere.

Most Muslim women still wear the abaya, a full-length black covering. Almost all Omani man wear the dishdasha (ankle length shirt) but not non-Omani, emigrant worker men.

The country doesn't have classes per se, but does have family, monetary and tribal hierarchies. If you know the system, the dishdasha and the men's hat tells a lot about social connections. Both men and women cover the head. Inside the home women can have significant authority. Outside, it is the male, and elder males are dominant. I noticed outside, even young boys have authority over much older girls and may try over adult women.

Women in Oman do have equal legal rights, many work in city offices or with livestock and agriculture in rural communities. In higher education,

there are now more women than men, and women are finding a place in government. But culture dictates the need for women to be back in the family home during the evening with one consequence being they don't take jobs distant to the family. Marriages are normally arranged, preferably to cousins, with consequences that can be seen in villages, and families tend to be large also limiting women's role.

The Omanis number about two million, with an additional half million or so immigrant workers mostly from India or Pakistan in a country about the size of Great Britain, or the state of Utah in the USA. Much of Oman's present wealth is coming from oil but with significant additions from fishing, and agriculture, livestock particularly. The current sultan, His Majesty Sultan Qaboos bin Said, has recognised oil revenue will not



Omanis in traditional dishdasha dress leaving Ar Rustaq fort after prayers  
TOP LEFT: Blue hazy mountains above wadi and town of Birkat Al Mawz



CLOCKWISE FROM FAR LEFT: Inside Mutrah Al Dhalam Souk Muscat; Clothing shop in souk; Dried fish stall in Seeb souk; Main prayer room Sultan Qaboos Grand Mosque in Muscat; Fisherman with the days catch of a reef fish



a meal for two at under US\$6 to \$10, sometimes down to \$2. In the hotels it could be \$20 to \$60 for an evening meal. I wish British fast food was as good, but the choices are a little limited. Try the local shuwa in a restaurant, meat slow cooked in an underground clay oven, and in the cafes the Indian



tourism as a new potential income stream. Tourism has been limited by the lack of hotel beds and transport infrastructure. The transport side is being addressed with the road building and new airports, the hotel beds with new, mainly high end, resorts. Traditionally not many Omanis have travelled, even within their own country, so middle ranking hotels are very limited.

**Night Out**

Going out at night isn't likely to be for a beer. Alcoholic drinks can be found in western oriented hotels and I gather in a few clubs and restaurants in Muscat. The fresh fruit juices make up for this, absolutely excellent, or it is tea, soft drinks or maybe coffee. Getting out of the hotel/

resort complex and mixing with the local population is highly recommended, you will experience more of the real country and eating out will save money compared to hotel fare. It also spreads any spending money to the local economy. What will be noticed is that it is an almost exclusively a male environment, females will be noticed by their absence. Female tourists, well covered, won't have problems. It's local women who will only be seen in limited situations and then chaperoned.

**Eating**

Most of the time my partner, Jenny, and I went to small local cafes. They are plentiful, almost always the food was good to very good and generally inexpensive (or even cheap). We often had



go on forever, and he is endeavouring to educate and modernise the country along with looking at



opportunities.

With our enforced extra non-diving days more mountain, desert and Muscat exploring was possible.

The mountains and countryside around Nizwa are easily reached from Muscat with a days drive including scenic stops, giving good areas to explore and walk. A 4X4 would get you deeper into some of the impressive narrow mountain valleys but some can be seen from saloon car accessible roads. From Nizwa we headed across vast flat expanses of wadis and desert, on good uncrowded paved roads, to the Wahiba sands to be collected by Reinhold Thaumuller of Desert Discovery in a 4X4 for a night out in the desert. More dune bashing of an even more impressive nature than Al Abyad, a campfire and star filled sky with a cold beer made



paratta wrapped around chicken, and I'll reiterate, try the fresh fruit drinks. We both particularly liked the freshly prepared mango, cost, under \$1, and the mango milk shakes with excellent ice cream. Restaurants do exist serving international foods, mainly in Muscat and hotels but were beyond our finances. The Omani's main meal is midday at least in theory, but the men out on their own in evenings seemed to have reasonable appetites. We joked that maybe the woman's authority at home forced them out to eat in evenings as streets were full till 22:00 to 23:00 (10 to 11 pm) hours without much else to do but eat and play cards.

### Exploring the Countryside

Oman is primarily an arid country with a coastal plain backed by mountains and desert interior. Exploring might break into two or three distinct categories: Evenings out, will mainly be to eat, then day and longer trips. Day trips might be most easily done with a tour. We had one organised by Muscat Dive and Adventure taking a 4X4 up into wadi Al Abyad, not

far from Al Sawadi, first seeing the local small village at the foot of the mountain wadi, then off road up into the valley with its always flowing spring. Continuing from this rugged mountain area to desert sand dunes and the classic dune bashing illustrating that a 4X4 can go places, do things not expected of a vehicle. Dune bashing makes a roller coaster seem rather tame.

Multi-day trips you really will want to rent a car. Oman now has a few thousand kilometres of new world class roads. In the early 1970's they had about 10 km. The paved roads can get you to all the towns, most villages and some areas of mountain or desert but off-road or gravel track is necessary for some more interesting desert and mountain exploring. Due to the wadis and mountains long circuitous routes can be necessary. We hired a small sedan car at a third the cost of a 4X4, but it did have its limits. If you are going to drive, hire it at the airport on arrival for the full stay, a long taxi trip costs a day's hire charge, and driving opens up a lot more



Dune bashing, Wahiba sands. TOP LEFT: Wadi Al Abyad with 4X4 car and spring water. TOP RIGHT: Sand dunes and notice the vegetation



## Oman

for a pleasant hospitable evening. The countryside is spectacular and worth visiting, but maybe you would want to limit this in summer when even the locals consider it too hot.

### Muscat

Muscat, the capital, is a long city stretching something over 70km driving distance along the narrow coastal plain backed and constrained by rugged mountains. The place for larger traditional Arabic market places, the Souqs, modern shopping malls, museums and government departments. All over Oman, in every village even out in isolated desert outposts are mosques but here is the new and superlative Sultan Qaboos Grand Mosque which is impressive in size, architecture and sheer grandeur. The Mutrah souq is the classic one to visit with its gold, food, clothing, souvenirs, and more, arranged in a labyrinth of narrow passageways (we couldn't find our way out it was so large and complex), but it did seem very slightly touristy. The smaller but still large souq near the waterfront of Seeb, on the outskirts of Muscat, almost seemed more interesting with no concession to visiting tourists. Museums eluded us. We tried to find the Natural History Museum, but maps are a bit limited in detail and we drove for ages near but never finding it. Asking locals drew a blank, none knew of it, as so often is the case when the subject is natural history or science.

### Environmental Policy

Oman is aware of, and trying to do a lot to conserve both natural habitats and its archaeological history. With the important turtle populations, regulations on disturbing nesting beaches are in place and it's illegal to catch them. They do accept visitors want to see



THIS PAGE: Views of Sultan Qaboos Grand Mosque in Muscat



LEFT TO RIGHT: Sultan Qaboos Grand Mosque in Muscat; Pile of damaged table coral with regenerating branches; Clark's or Yellowtail clownfish, *Amphiprion clarkii*, in anemone—yes, they are even here; Vase Coral, *Turbinaria mesenterina*, Daymaniyat Islands

turtles struggling onto beaches, hatchlings leaving nests for the sea. This is often in more isolated areas without tourist accommodation so regulations are also in place trying to control tourist infrastructure development. Theoretically they are doing more for the turtle conservation than other countries, but in practice sometimes the enforcement evidently falls a little short, particularly since cyclone Gonu when so many resources have been involved in reconstruction.

The longer term worry for the marine environment, I think, stems back to the comments on culture, the large family sizes, combined with fishing seen as an economic area to expand. We see how the corals can recover from natural disasters, ones which have been recurring since the reef started. If the conditions are right coral reefs are stable biological communities as can be seen by thousands of years of growth, wrong for them and something else will replace

them. To produce more of the "right" conditions Bluezone Watersports has teamed with the British School Muscat to produce an artificial reef structure using clay pots just out of Muscat with the side benefit of introducing young students to marine biology and conservation. Oman is interested in conserving its natural environment but like everywhere else conservation and economics co-mingle to an ever changing end.

In the past the local fisherman had their small, slow, boats which probably limited catches. To help the 4,000 plus fisherman economically they have had grants to upgrade outboard motors, new larger boats are being built. Its illegal to catch turtles, but many are accidentally killed by nets or fishing line. The same

protection for turtles doesn't apply to sharks which are caught for local markets nor to reef fish needed to keep reefs in balance. The fish catch is on the increase both for local consumption and export. At the moment the marine environment seems reasonably healthy and stable but the debate on limiting fishing doesn't seem to be happening. Will stability be compromised?

Inland, it was great fun to do the dune bashing, to do the little bit of off road exploring. But, sand dunes and deserts often have very fragile ecosystems. We were visiting in the winter, the dunes and the desert had green shoots aplenty but driving over this, though fun, is unregulated and vehicle tracks are rather frequent. Yes, the dunes move, cover

tracks quickly with the freshly blown sand but the scarce plant life does get damaged, the same with wider desert ecosystems. At least some consideration of this ecosystem needs to come into local thinking.

Oman offers some good diving and its a spectacular, safe and very friendly country. Tourism here is seen as a long term economically good thing being aimed particularly at the discerning, more independent, visitor not the mass market. The diving could suit any level of experience, the country nearly anyone. Let's hope the economic needs for its growth doesn't outstrip concerns for the environment so both locals and future tourists can enjoy it. ■



# fact file

## Oman



SOURCE: CIA.GOV WORLD FACTBOOK AND CHARLES STIRLING

**History** Indian Ocean trade has long sustained the inhabitants of the area of Oman. In the late 18th century, the first in a series of friendship treaties with Britain was signed by a newly established sultanate in Muscat. Over time, Oman's dependence on British political and military advisors increased over time, however, it was never a British colony. Qaboos bin Said al-Said succeeded in overthrowing the restrictive rule of his father in 1970; Since then, he has ruled as sultan. The sultan put into place an extensive modernization program, which has opened the country to the outside world while maintaining its historical close ties with the UK. Oman practices a moderate, independent foreign policy, which has sought to preserve good relations with all the countries of the Middle East. Government: monarchy. Legal system: based on English common law and Islamic law with ultimate appeal to the monarch. Capital: Muscat

**Geography** Oman is located in the Middle East, between Yemen and UAE and borders the Arabian Sea, Gulf of Oman, and Persian Gulf. Coastline: 2,092 km. Terrain: central desert plain with rugged mountains in the north and south. Lowest point: Arabian Sea 0m. Highest point: Jabal Shams 2,980m. Note: Oman holds a strategic location on Musandam Peninsula next to the Strait of Hormuz, an important transit point for the world's crude oil trade.

**Climate** The best time of the year to visit Oman is between October and April for land activities when temperatures

are warm in the day, cool in evenings. For diving September to December and March to May. Oman is mostly dry desert, being hot and humid along the coast; hot and dry in the interior; with strong southwest summer monsoons from (May to September in the far south. Natural hazards: periodic droughts and summer winds, which frequently raise large sandstorms and dust storms in the interior.

**Economy** As a nation, Oman is a middle-income economy heavily dependent on diminishing oil reserves. However, it has sustained high oil prices in recent years, which have helped build Oman's budget, foreign reserves, and trade surpluses. In anticipation of its oil resources running out, Oman has initiated a development plan focusing on diversification, industrialization, and privatization. An objective of the plan is the reduction of the oil sector's contribution to GDP to 9% by 2020. These projects may be thwarted, however, by lack of natural gas to power them. Private foreign investors, are being sought, especially those in the industry,

information technology, tourism, and higher education. Gas resources, metal manufacturing, petrochemicals, and international transshipment ports are the focus of industrial development.

**Environment** Oman is experiencing rising soil salinity and beach pollution from oil spills. It also has limited natural fresh water resources. The nation is party to the following agreements: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Whaling

**Population** 3,418,085 includes 577,293 non-nationals (July 2009 est.) Ethnic groups: Arab, Baluchi, South Asian

RIGHT: Location of Oman on global map  
BELOW: Map of Oman



(Indian, Pakistani, Sri Lankan, Bangladeshi), African. Religions: Ibadhi Muslim 75%, other ethnic groups (including Sunni Muslim, Shia Muslim, and Hindu) 25%. Internet users: 465,000 (2008)

**Language** Arabic (official), English, Baluchi, Urdu, Indian dialects

### Travel Details

We took the new direct Oman Air flight from London Gatwick to Muscat. Other flights often go through Dubai or the many other hubs then on to Muscat. Oman Air: Omanair.aero

**Visas** Single entry short visits, pay 6 OMR or equivalent on arrival at airport. Caution, some tour operators and visa touts at the airport may try and help while charging double or more.

**Health** No jabs required. Very safe country. Recompression chamber is available at:

**Currency** Oman Rial, OMR (£1 = 0.74OMR). Better exchange rates at Muscat airport or at one of the few currency converters—banks not as good, shops and hotels, poor. Exchange on the credit card was okay, but sometimes had problems using it. In smaller towns, credit cards may not be accepted.

**Time Zone** GMT +4

**Hotels** Not large numbers to choose from, when diving we stayed at: Al Nahda Resort [Alnahdaresort.com](http://Alnahdaresort.com) About a 20-minute drive to dive centre, but near town of Barka, which could be reached by hotel taxi.

Al Sawadi Beach Resort [Alsawadibeach.com](http://Alsawadibeach.com) Has the dive centre, but is a little isolated with only a very small local village, but right on the beach.

In Nizwa for visiting mountains: Falaj Daris [Falajdarishotel.com](http://Falajdarishotel.com) Very pleasant small hotel on the outskirts of Nizwa with rooms set round two courtyards each with a swimming pool. Easy drive into town with its fort and souk to visit.

In Wahiba sands for desert: Desert Discovery [Desert-discovery.com](http://Desert-discovery.com) Desert camp with thatched rooms, can only reach by 4X4. They also have a hotel in Al Qabil which can be reached by salon car and acts as collection point for the camp.

In Muscat: Muscat Diving & Adventure Centre [Holiday-in-oman.com](http://Holiday-in-oman.com) [Omandiving.com](http://Omandiving.com) They have hotel/hostel properties used by participants on their various adventure activities. Proved incredibly helpful to organise our activities.

For smaller hotels, see, *Oman: The Bradt Travel Guide*.

**Opening times** Thursday afternoon and Friday are traditional weekend closing days, but this is slowly changing to Friday and Saturday. Nearly everything will be closed between 1:00 - 4:00pm. Banks are open from 8:00am to noon. Shops and businesses are open from 8:00am - 1:00pm, 4:00 - 7:00pm or later.

Oman Government Tourist Office [www.omantourism.gov.om](http://www.omantourism.gov.om)



# Beating Jetlag

As dive travelers, we occasionally find ourselves traversing many zones in our pursuit of the next great underwater adventure often feeling completely out of sorts on arrival thanks to jetlag. What can the latest research tell us about this annoying condition?

Our daily sleep cycles, behaviour and metabolism are regulated by a powerful master clock, which resides in an area of the brain known as the suprachiasmatic nucleus. This "circadian" clock is regulated by some special brain cells, which in turn, are highly sensitive to daylight. Because the body's biological clock can only shift a small amount each day, it

takes the average person about a week to adjust to the new time zone after a transatlantic flight.

The traditional model stated that the clock and the brain communicated to the rest of the brain via the number of electrical impulses that the brain cells were producing. These impulses would travel around the brain, tell-

ing it what time of day it was. These cells had been thought to be inactive during the day, but the recent research by a University of Manchester team has found the opposite to be true.

The brain seem to keeps the body clock on track by firing more cells during daylight and very few during the night. It is hoped that these new findings will

lead to new approaches of being able to tune our body clocks. This new understanding may also pave the way to combating sleep disorders triggered by body clock malfunctions and help develop drugs to counteract things like jetlag.

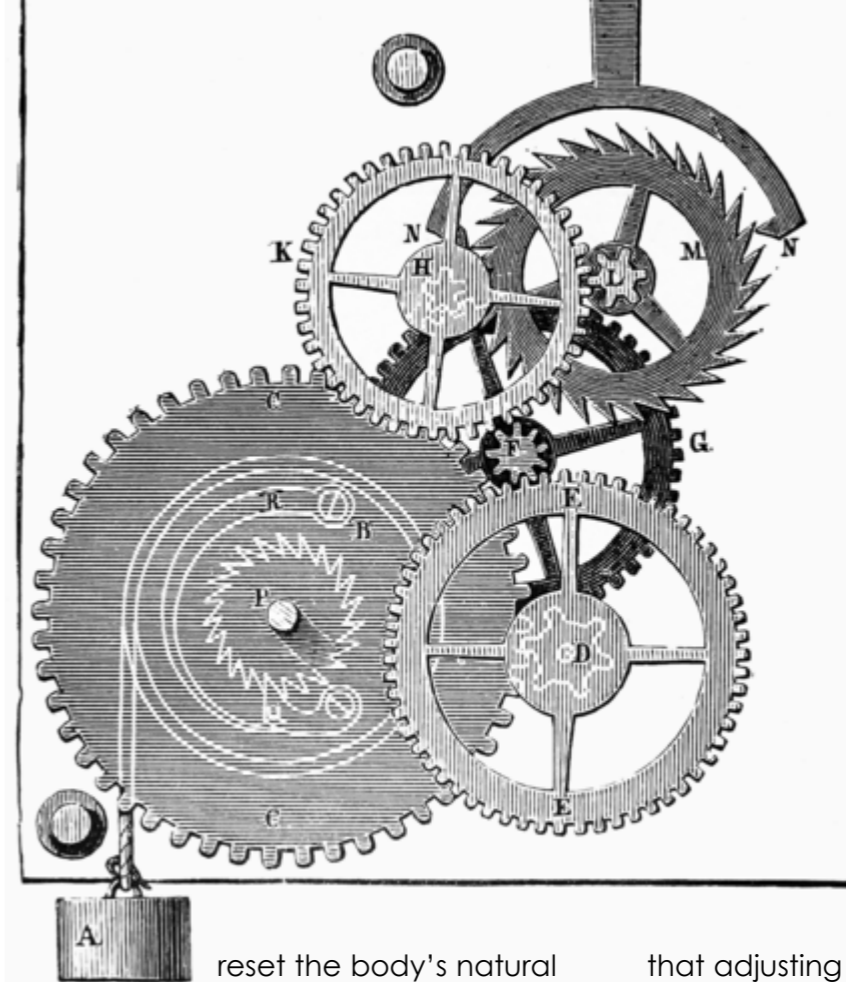
"What we've found is in fact that there are at least two types of cells in this part of the brain." Professor Hugh Piggins, an expert in neuroscience at the university told the BBC World Service's Health Check pro-

gramme.

One such new cure for jet lag could be on the market in the matter of few few years after clinical trials show a pill can

Jet lag may last many days, and recovery rates of one day per eastward time zone or one day per 1.5 westward time zones are mentioned as fair guidelines

There is much debate about whether it is better to fly eastward or westward. It may be largely a matter of personal preference, but there is some evidence that flying westwards causes less jet lag than flying eastwards.



reset the body's natural sleep rhythms.

In trials, published in the esteemed medical journal, *The Lancet*, a drug called Tasimelteon helped troubled sleepers nod off quicker and stay asleep for longer, by shifting the natural ebb and flow of the body's sleep hormone melatonin, which peaks at night.

Experts said the drug would also be a welcome alternative to addictive sedatives.

Natural melatonin is a popular treatment for patients with body clock-related sleep disorders. Various melatonin products are often sold over the counter as non-prescription drugs and researchers warn the potency, purity and safety of melatonin pills is largely unregulated. Also it is inconclusive whether they work in shift-workers and people with jet lag.

The new drugs, which work through the same neuro-receptors and pathways as melatonin, are said to improve daytime performance and alertness without any carryover sedative effect.

**Adjust your meal times**  
Meanwhile, another study suggests

## Showers

During extended stop-overs on a long haul flight, showers are sometimes available. A shower not only freshens you up but gets the muscles and circulation going again and makes you feel much better for the rest of the flight. Trans-Pacific pilots have told us taking a shower in Hawaii helps them recover more quickly from the general effects of jet lag after the flight

that adjusting meal times may also help travellers recover from jet lag.

Harvard University researchers believe the brain has a second clock that keeps track of meal-times, rather than daytime. To understand the relationship between the two clocks, the Harvard team studied mice, which were missing a key clock gene. By observing the behaviour of the mice closely, the researchers discovered that when food is scarce, the feeding clock would override the circadian master clock, keeping animals awake until they had the opportunity to eat.

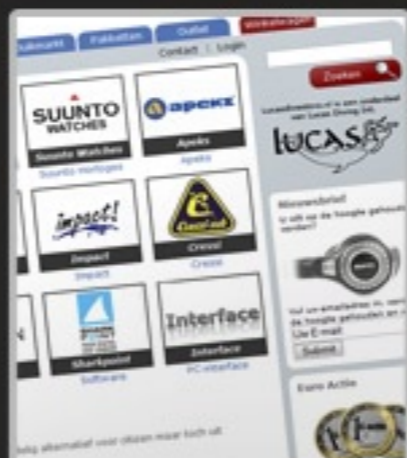
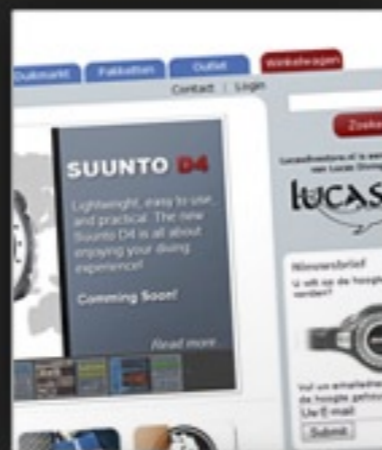
Thus, shift workers and travellers may be able to use the feeding clock to adapt to changes in time zones and keep tiredness at bay by not eating, they suggested in the journal *Science*.

"A period of fasting with no food at all for about 16 hours is enough to engage this new clock," explained lead researcher Clifford Saper. "So, in this case, simply avoiding any food on the plane, and then eating as soon as you land, should help you to adjust and avoid some of the uncomfortable feelings of jet lag. It's never going to make the symptoms disappear entirely, but it could certainly make them a lot more manageable." ■



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AUGUST 16<sup>TH</sup> - 22<sup>TH</sup> DEEP 120 AND DEEP 160M  
AUGUST 23<sup>TH</sup> - 28<sup>TH</sup> ADVANCED NITROX  
DECO PROCEDURE

SEPTEMBER IN TUNISIA TRIMIX  
AND WRECKS EXPLORATION 60 - 100M

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# Crackalackin' Equipment



## Creme de la Cressi

Pairing Cressi's second stage Ellipse Titanium with the first stage hyper-balanced MC9 combines the best of this Italian market. The small size of the second stage, combined with the use of sophisticated technopolymers and various titanium parts allow the weight to be kept to an exceptional minimum. Advanced research on the passage of internal air and a special assistance chamber in the first stage have enabled the drop of pressure upon inhalation to be kept to a minimum, thus guaranteeing high performance in any situation.

[Cressi-sub.com](http://Cressi-sub.com)



## Fishtail

The Fishtail Side-mount Retainer is ideal for Rebreather divers, Open Circuit Technical divers, Cave divers or other exploration divers. It supports side-mount cylinders and holds them securely at their rear in position along the line of the diver's body without either flapping together or drifting outwards. It also offers additional stowage points for other kit such as, lift-bags or buoys, etc. Two elastic cords allow attachment of a surface marker buoy (SMB) or lift bag. [www.apdivingdirect.com](http://www.apdivingdirect.com)



## Iena

Clear simplicity from SeacSub. Two-button buckles on the skirt of hypoallergenic liquid silicone makes it easier to adjust the strap, the possibility of assembling corrective lenses, make it look modern and appealing on most faces.

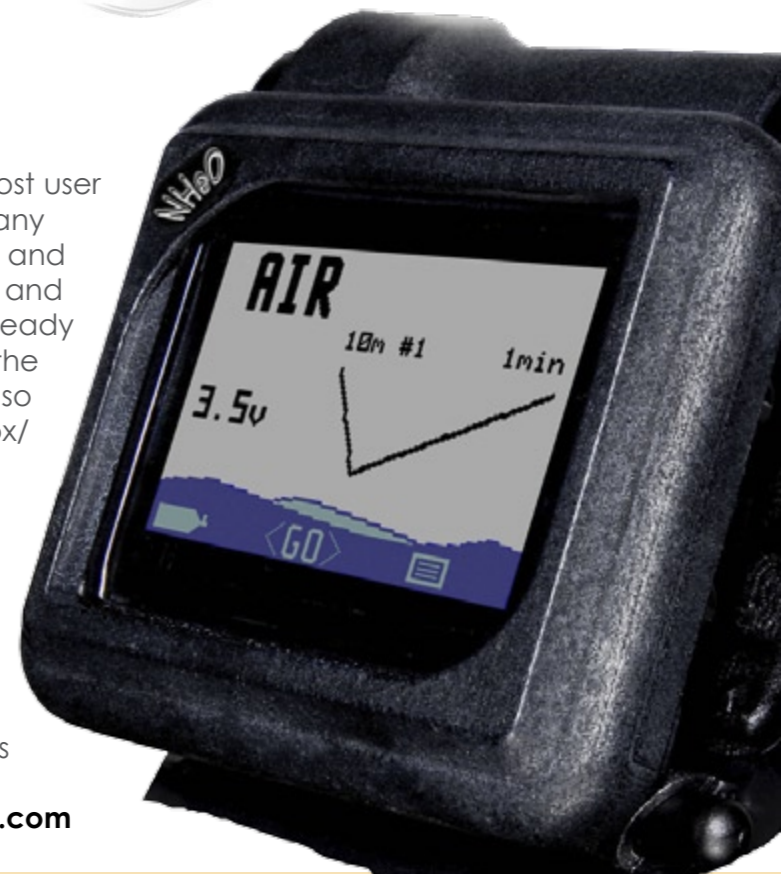
[www.seacsub.com](http://www.seacsub.com)



## NHeO

The NHeO from VR Technology is the most user friendly interface of any mixed gas computer and makes programming and diving more simple. Ready to use straight out of the box, the NHeO can also be bought as Air/Nitrox/Trimix or upgraded by pin. The multi-profile, multi-gas algorithm has full decompression look ahead and you can also switch or add gasses underwater at any time whilst the NHeO calculates this new profile.

[www.technologyindepth.com](http://www.technologyindepth.com)



## It is a...?

It deceptively looks like just another wireless modem for your laptop, but no. This little USB-fitted thingy contains Ambient Pressure Diving's Projection Dive Planner which is said to possibly be the most powerful CC/OC dive planner available, quickly calculating the necessary decompression for all types of gasses, dives and series of dives featuring the Hahn Delayed Surface Desaturation developed for multiple dives. [www.apdivingdirect.com](http://www.apdivingdirect.com)



Edited by  
Robert Sterner

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## See if you're turned on

It's easy to see whether a tank is turned on if its valve knob has been replaced with a Vindicator tank valve handle from Scuba Stik. The replacement accessory displays a red ring when the valve knob is in the closed position and a green ring when it is open. It's even evident if the valve is partially open, since portions of both the red and the green rings will be visible. The Vindicator knob is available in various sizes that match those of valve knobs that are shipped with tanks. To install, the user simply replaces the existing knob with a Vindicator knob. The red- and green-ring model shown at DEMA is intended for use with tanks holding typical compressed air. In the wings are Vindicator knobs with green accents for use with pure oxygen tanks and yellow and green accents for use with nitrox tanks. Price breaks are available for dive shops and individuals who wish to upgrade multiple tanks in their inventories. [www.scubastik.com](http://www.scubastik.com).

## Add a little zip to your dive

Innovative Scuba shrank the scooter to a packable size with the Bladefish it unveiled last month at the Diving Equipment & Marketing expo in Orlando, Fla. Its 5000 and 3000 models weigh only 10.2 pounds and 9.2 pounds respectively including their 18-volt lithium ion batteries. Besides weighing much less than lead-acid counterparts, the batteries charge quickly. Batteries are sealed to prevent flooding and are said to be capable of hundreds of charges. A full charge for the 5000 model takes four hours, while two hours provides an 80 percent charge. The 3000's battery can be topped up during a one-hour surface interval between dives. Fully

charged, the 5000 can zip a diver at up to 3.75 miles per hour during run times of 70 to 120 minutes depending on which of three speeds a diver uses the most, the company says. The single-speed 3000 goes 3 mph for up to 40 minutes on a full charge. The 5000 is slightly negatively buoyant and the 3000 is slightly positive. Both have ergonomic soft-grip handles with dead-man switches that turn off the unit if the grip is lost. The units are shipped with a handy backpack that's perfect for toting the scooter through airports. [www.innovativescuba.com](http://www.innovativescuba.com).



## Don't be a roll model

No matter how much you love rock and roll, it can be dangerous when the rhythm is created by scuba tanks banging around in a car trunk or pick-up bed. Tank Rak is designed to stabilize from one to four cylinders, depending on the model. Single-, double-, triple- and quad-tank holders are made of aluminum and coated with a thermoset polymer that looks like it should last for decades. They are available with 7 1/4-inch wells for 80-cubic-foot aluminum tanks and 8-inch wells for 100- and 120-cf tanks. The company welcomes custom orders that would allow individuals to get Tank Raks designed to fit their specific gearing configurations. The company also produces aluminum license plates that tell everyone on the highway that you're a diver. [Tankrak.com](http://Tankrak.com).



## Whuzzup buddy?

Keeping a finger on your buddy can be easier than ever with Buddy-Links from Affinity Devices. The modules attach to a finger-sized corner of a dive mask, just within peripheral-vision sight. When you see something you want to share, just tap the device to activate a four-color LED display in your mate's Buddy-Link. A flash of light and an electronic chirp from your Buddy-Link will let you know the message was received. A series of taps will create an "I need help now" light pattern in your buddy's unit. Distance between buddies is indicated by different colors of light, and the units are designed to alert each diver if the team is drifting beyond the range of its ultrasonic signals. The units are said to work well in confines of wrecks or caverns and through vision-obstructing kelp or soft corals. Units can be synchronized on any of 500 frequencies, so multiple teams can use the devices without activating others' units. Synchronizing multiple units to one frequency can allow a dive master to call his guppies together. Batteries sealed into the units are warranted for five years or 3,000 hours of usage. Buddy-Links are shipped in a mini-Pelican case with a charging station, an AA battery charger and lanyards for each unit. [www.buddy-link.com](http://www.buddy-link.com).



# The ONE

Text by Fredrik Isakson

Photo by Stefan Hogeborn

review

During one of my research trips for a new article, I got the chance to try out a new Scandinavian drysuit. The name of the suit is ONE, and the development of it was a collaboration between The Oceanic Tech dive shop in Stockholm, Sweden, their staff and instructors, and the companies, Arctic Diving and Ursuk. Ursuk is one of the biggest and best selling suit makers in Scandinavia.

The goal of Arctic Diving, who made the design, is to achieve the perfect mix between function and price. The development team made a lot of changes to the original design and reworked many of the panels that make up the suit.

So, what did I find out when I used it? I found a suit that felt a lot like the DUI suits, but at the same time, had a lot of the similarities to my own suit—a Diverite 905—but slimmer and tighter-fitting on the body.

“Our goal has been to get the maximum amount of ‘mobility’ in the suit,” Mattias Vendlegård from the company Arctic Diving told us, “Without making the suit bulky and too big in some areas. We choose the material with three goals in mind: toughness, mobility and weight. From that standpoint, we reached the conclusion that it should be made out of a trilaminate; first a layer of nylon, then rubber, and then, nylon again fused together.”

## The weight issue

“We added weight as an important factor for us, since many divers today travel with their suit, and then weight is a big issue,” said Vendlegård.

The suit is considerable lighter than my own, which was a pleasant aspect when I was packing. Those among you that have been on dive trips abroad know there are a lot of things to bring, so you want to keep the weight down. The suit comes in standard “tekkie” black, which is no surprise, since they want this to be the suit for technical divers to choose. The idea is to produce a suit that delivers all the stuff technical divers want but with a slightly lower price tag than for other similar suits.

The suit comes with a lot of neat extra features. There are the big pockets that are easy to handle, because of a bit of bungee cord that's been sewn into the lid. There are Cordura enhancements in sensitive areas like the butt, crotch and the front of the legs, shoulders and arms. Arms and legs are made to measure and the turbo soles come in different sizes. The hood is separate, and there is a warm neck on the suit. When you buy it, you can add extra features to the standard package.

You can get the overlay (the top part of the suit) in two different colors, blue and red. You can get a ring glove system, and/or a pee valve, fitted before delivery, and the suit can be delivered totally made to measure.

## Try out time

It was time to try it out. Putting it on, I found that I really liked the tighter fit, but I still thought they could make it even a bit more tighter on the upper body. Arm movement is really good in this suit, and there is no problem reaching the manifold or tank handlers. The latex seals on the arms are glued onto the arms in a smart way, and they are not of the bottle neck variety, which I find important for easy donning of dry gloves.

The boots don't feel that good at first; they are of the soft type. I have never really liked the turbo soles of DUI suits, but these have a little more stability and are more boot-like than the ones on the DUI.

After a week, I have gotten used to it and think nothing of it. But be advised: if you want to buy one of these suits, your fins will feel big. You might even want a smaller size of fins. So, be sure to check that out properly.

## Into the water

When I finally got into the water, it felt really good, no large air wanderings or anything like that, just a snug fit. At first, I had a bit of a problem finding the inlet valve, which is very low-placed, below the drysuit zipper. That felt really strange at first, but one gets used to it. The outlet is very well placed on the side of one of the suit's arms, which makes it easy to empty the suit. On some suits that can be a

big problem. As the test week progressed, it turns out that I really liked this suit.

Getting up out of the water, I found one thing that was a little annoying. In the corners of the Cordura reinforcements, there are gaps in the stitching to let water escape more easily from under it, and that's a good idea, if you want the suit to dry up fast. But back on the dive boat when you remove your dry gloves, the water that's been trapped under the reinforcements tends to end up on your inner gloves resulting in wet gloves.

All in all, there are few things I really can criticize about the suit, this is a good buy. If you can't afford the DUI and want to have that snuggler fit, the ONE suit is a candidate. The suit is sold through Arctic Diving.

## SUMMARY

- Snuggler fit
- Really good mobility
- Lightweight material
- Strange placement of inlet valve
- Water drains on your inner gloves ■



# Buoyancy Control Device Guide

*The latest on new BCD styles straight from the manufacturers*

Edited by Arnold Weisz

Regardless of what style BCD you choose, make sure to look for these five features:

- It must hold enough air to give you and your equipment ample buoyancy at the surface.
- It must have a large-diameter inflation/deflation hose, so air can be released easily.
- It should have a low-pressure inflation system to make it possible to slowly fill your BCD with air directly from your tank. In addition the low-pressure inflation system should be easy to locate and operate.
- It must have an over-pressure relief valve to prevent the BCD from rupturing if it is accidentally overfilled.
- It should have a configuration and harness that makes wearing the BCD comfortable and keeps it from riding up around your neck when inflated.



## Prestige MRS Plus

Mares' new Prestige MRS Plus uses Cordura 1000 as both the internal and external material for the air cell of the BC. There are two big pockets and two trim weight pockets, plus four stainless steel D-rings and four heavy duty technopolymer D-rings. Sizes range from XXS to XL. The lift capacity of the XL is 235 N or 24kg / 52.9lbs. Weighs 4.4 kg. There are two exhaust valves and an ERGO integrated weight system of two back leather trim weight pockets with velcro and buckle closure that hold 2.5kg max. plus two MRS+ optimal ballast with a mechanical release system that holds 6kg max. Two year warranty.

## AVID BC

Sherwood Scuba's AVID BC air cell materials has an exterior of 1000 Denier Nylon TPU and an interior of 420 Denier Nylon TPU. Other materials include Silver Ripstop Nylon TPU, Thermal Polyurethane (TPU) fabric, multi material pockets and shoulders. There are two main pockets have zipper closures, one specialty storage pocket on the right side for optional folding snorkel or flashlight. There are six stainless steel D-rings, four Nylon, and one Nylon accessory clip on the left side. Sizes range from XS to 3XL. Lift capacity ranges from 20lbs on the XS to 36lbs on the 3XL. Weighs 8.6lbs. There are three exhaust valves—two pull dump OPV's upper/lower and one pull to dump airway.

There is an integrated weight system of two removable pouches that can hold 10lbs maximum and two rear non-dump pockets which can hold 5lbs each. The Pro-Kit is ready to add optional accessories such as retractor, devices, flashlight and knife for additional cost.



## Pro QD

Aqua Lung's Pro QD is the new, proprietary backpack that has a built in traction pad to reduce tank slippage and a built in carrying handle. There is depth compensation on the waistband that compresses at depth along with your wetsui. Positioning strap allows you to set the Pro QD at the perfect height each time. Large pull bobs on dump valves are easy to locate and grip with thick gloves. The exterior is fade resistant and abrasion resistant. The outer bladder is made of 500D Amor™ Cordura®. The inner bladder is made of 420D urethane coated nylon. Other materials of the BC include Tough Tec on the high wear areas and assorted fade-resistant polyesters. There are three pockets in total including two large lobe pockets secured with heavy-duty zippers and an octo-pocket inside the right lobe which prevents dangling octopuses. There are six stainless steel D-rings to which one can attach accessories. Sizes range from XS to XXL. Weighs up to 32lbs or 14.5 kg. There are three exhaust valves and an integrated weight system; the SureLock™ II (patented) weight pockets align themselves and lock into place without even looking. Just insert the pocket until it "clicks". A simple, single-pull release is all that is needed to jettison the weights in an emergency. Includes a limited lifetime warranty and 30-day satisfaction guarantee.

## Infinity

The Halcyon Infinity offer single-tank divers the performance of a back mounted harness and the easy adjustability of a jacket BC. Halcyon's Cinch Quick-adjust provides rapid adjustment of the diving harness. The also new deluxe Harness Pads are specially designed to allow extra comfort without sacrificing any of the technical features and comes with a Storage Pak for convenient stowage of lift devices. The Infinity BC features Halcyon's popular Eclipse wing; the long, narrow profile supports a diver's tank along his or her entire length, preventing unnecessary drag and minimizing in-water effort. The Stainless steel Single-Tank Adapter with two cam straps accommodates a weighted insert



## Commando

Buddy's Commando BCD has an anti-bacterial-coated high-frequency welded polyurethane inner bladder. Other materials include fade, fray, abrasion and puncture resistant Endura FX100 (1000 denier double-coated nylon) — a unique, bespoke material developed specifically for the A.P.Valves/BUDDY outer jacket. It has two zippered main pockets, two velcro, and one stowage pouch at rear for SMBs or lift bags. There are eight steel 50mm D-rings—two pre-bent to stand-off at the shoulders—and two 25mm D-rings inside the main zippered pockets. Sizes

range from S to XXL with lift capacity up to 33kg. Weighs 5.12kg. It has two exhaust/over-pressure valves—the shoulder dump-knob sinks and the lower-rear knob floats for easy location—and a third exhaust/over-pressure valve built into the inflator/hose assembly operated by pulling on the valve. Integrated weight system is optional; The quick-release mechanism is fitted with Cargo Clips as standard (for stowage of SMB, torch etc if integrated weights are not desired). The pouches hold 5kg each (hard or soft lead). There is a Lifetime Warranty on the inner bladder and three year warranty on other materials and workmanship. Other interesting upgrades and custom fitting available.



## Blac Jac XP

Seemann's Blac Jac XP is made of 500 Denier Cordura. The BC has two large pockets with zipper and a small one at the cummerband. Comes with stainless steel D-rings and ranges in size from XS to XL with a lift capacity up to 25.5kg. Weighs 4.2kg. Has three exhaust valves and an integrated weight system including dumpable and counter weight. Two year warranty. Additional features include a Scuba buckle at the shoulders, special air cell (wraps around the tank for high lift), and a padded back plate with carrying handle

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Dive Rite's Travel EXP BC weighs a mere 7 lbs (3.2kg), yet has 27lbs/12kg of lift and a streamlined profile. Built like a mountaineer's backpack, it reduces unnecessary strain by dispersing weight across the back and hips. Donut-style inflation helps keep divers steady and trim underwater and never cause face-down flotation at the surface. Includes two cam straps and a removable crotch strap. The black outer bag is made of abrasion- and tear-resistant 1680 Denier ballistic Nylon. The inner bladder is made of strong, thick 15-mil polyether aromatic polyurethane, which is resistant to abrasion and chemicals and resists the growth of microorganisms. The TransPac® Harness is also constructed of 1000 Denier ballistic Nylon fabric. Shoulder straps and waistband are made of two-inch

## Travel EXP

(50mm) nylon webbing rated at 7,000 lbs breaking strength. Optional Daisy Chain

Pockets come in horizontal or vertical bellows, horizontal two-zip or thigh pocket. It has four adjustable two-inch D-rings on each shoulder strap of the TransPac, slightly bent for improved access and placement. Attachment points for light canisters, pony bottles, lift bags and other equipment are provided by six one-inch D-rings on each side of the harness. All hardware is marine-grade stainless steel. Sizes range from XS to XXL, and tall sizes, M to XXL. Divers have a choice of 16lb or 32lb QLR weight pockets and a choice of 16-inch rapid exhaust (pull dump), 16-inch or 12-inch elbow exhaust hose along with either 15-inch, 22-inch or 27-inch low pressure inflation hose. A standard over pressurization valve is located on the inside, lower left of the wing. Limited lifetime warranty. Made in the U.S.A.

[www.diverite.com](http://www.diverite.com)

## Equator

Scubapro's Equator is made of 420 Denier Nyl n and tough Duck material. It has two zippered cargo pockets, two large and two small metal D-rings on pockets for added accessories and convenience. Sizes range from XS to XL with a lift capacity up to 170 N. Weighs 3.26kg or 7.2lbs. Its perfect for circling the world where ever divers' adventures lead. Its lightweight design is clean and lean without compromising comfort or performance. Has a release front adjustable design with rotating quick-release shoulder buckles and fully adjustable cummerbund for custom fit. Smaller back-pack allows BC to fold easily. Includes a proprietary quick-release integrated weight system, soft neck trim and padded backpack. Features a five-point deflation system with three dump valves. SCUBAPRO's Balanced Power Inflator included.



## Resort

Preformed jacket with an anatomic cut, studied and designed for a mainly recreational user who prefers simplicity and comfort but is beginning to demand a bit more. Made in PU-coated Nylon 420 D and designed to meet the needs of a wide range of users thanks to smaller sizes. It is particularly well-suited for young divers just starting out. Equipped with three dump valves and total of six D-rings.

[www.seacsub.com](http://www.seacsub.com)

*Naked Beauties*  
Underwater Photographs of Nudibranchs  
by Scott Bennett



*Strigata Chromadoti, Masticus Marine Reserve, Tanzania by Scott Bennett*

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# The 8th Continent: In Search of the Great Pacific Garbage Patch

Text by Bonnie McKennah  
Image courtesy of NOAA

— Part 2 in a two-part series on the Great Pacific Garbage Patch. See previous issue for Part 1: Plastic Soup, by McKennah.

**Marine litter is a global concern affecting all the oceans of the world. The scale of contamination of the marine environment is enormous. The United Nations Environmental Program (UNEP) recently published two papers, *Marine Litter: A global challenge* and *Out in the Pacific Plastic is Getting Drastic* drawing together scientific research on the distribution of marine debris and its impacts on wildlife. To further highlight the ever increasing problem of marine debris, Indonesia hosted the World Ocean Conference and Coral Triangle Initiative Summit in Manado with delegates from 87 countries in an effort to address, among other concerns, the increasing problem of litter in the marine environment.**

The seriousness of the situation concerning the world's oceans has been graphically illustrated this summer by three intensive and exhaustive research expeditions to the Northern Pacific Subtropical Gyre, or as it is more commonly known, the Great Pacific Garbage Patch, to examine and study the rubbish collecting there.

The three expeditions: Algalita Marine Research Foundation, SEAPLEX (Scripps Environmental Accumulation of Plastic Expedition), and Project Kaisei (Japanese for 'ocean planet'), although working independently, each focused on the accumulation of rubbish in the NPSG, its effect on marine life, the health of the ocean and what, if anything, can be done to cleanup the collection of plastic rubbish.

Charles Moore, founder of the Algalita

Marine Research Foundation, ten years ago accidentally sailed into the gyre. Although not the first to site the rubbish patch, Moore was the first to start bringing information to the public on what was happening in this area of the Pacific Ocean. The Algalita research team was also the first to develop a standard methodology for sampling and processing the samples of the ocean surface for micro-plastic.

Algalita has just concluded a three part, four-month journey to the NPSG. The first leg of the expedition focused on the collection and quantification of surface water and fish tissue samples. The second leg was a major media initiative with Peligro Pictures and Prickett Films in conjunction with Billabong and ScubaDrew Video to help bring public awareness to the growing problem of plastic pollution in the ocean.

The third leg, the return trip from Hawaii to California, will resample the same transects as Algalita's original 1999 summertime gyre crossing. The collected data will be then be compared to the levels found ten years ago.

For additional information on the Algalita Marine Research Foundation, go to [www.algalita.org](http://www.algalita.org).

## Research expeditions

The SEAPLEX expedition aboard the Scripps



research vessel New Horizons carried a host of scientists and graduate students from the University of California at San Diego, each from various scientific disciplines.

"During the SEAPLEX cruise, we are going to try to target the highest plastic areas we see to begin to understand the scope of the problem," said Miriam Goldstein, chief scientist of the expedition. "The team of graduate students will be studying everything from phytoplankton to zooplankton to small midwater fish."

Darcy Taniguchi, a third-year Ph.D. oceanography student at Scripps said the thing that amazed her most while on the expedition was, "How much impact humans have on the ocean so far away from areas of where people are living."

During the expedition the researchers not only collected samples of plastic debris, but also encountered free floating fishing nets and tangled ropes with various marine organisms trapped within the net and attached to the lines.

For additional information on SEAPLEX, go to <http://sio.ucsd.edu/Expeditions/Seaplex>.

Project Kaisei, in support of SEAPLEX, was, at the same time, sailing in the region examining the gyre, collecting and studying plastic debris to showcase new technologies that are designed to figure out the best way to clean up and

GUNILD SYMES

SEAPLEX science:

- Survey of plastic distribution and abundance along a 2,200 km (1,360 mile) cruise track.
- Investigation of floating plastics as a transport mechanism for invasive species.
- Assessment of the impacts of plastic debris on phytoplankton, zooplankton and mesopelagic fishes.
- Study of persistent organic pollutant (POP) on plastic particles.
- Observations of the distribution of microplastic debris in the water column.

Project Kaisei science:

- Study and document the marine debris found in this area of the Pacific Ocean.
- Test catch methods for removing the debris.
- Conduct research on the chemical interaction of marine debris in the gyre and select fishes and wildlife related to persistent organic pollutants (POPs).
- Understand the needs required to undertake an eventual large scale cleanup of the waste material.
- Test technologies for the conversion into an economically viable by-product: diesel fuel.

recycle the plastic, which are converging in the Pacific Ocean forming an 'eighth continent'.

If Kaisei's research expedition is successful, they are planning to return to the gyre within 18 months with a full clean-up operational plan.

Project Kaisei was founded in 1979 by a group of international sailors, educators, and conservationists with a mission of teaching maritime arts and sciences and researching and preserving the world's oceans.

For additional information on Project Kaisei, go to [www.projectkaisei.org](http://www.projectkaisei.org). ■



ILLUSTRATION

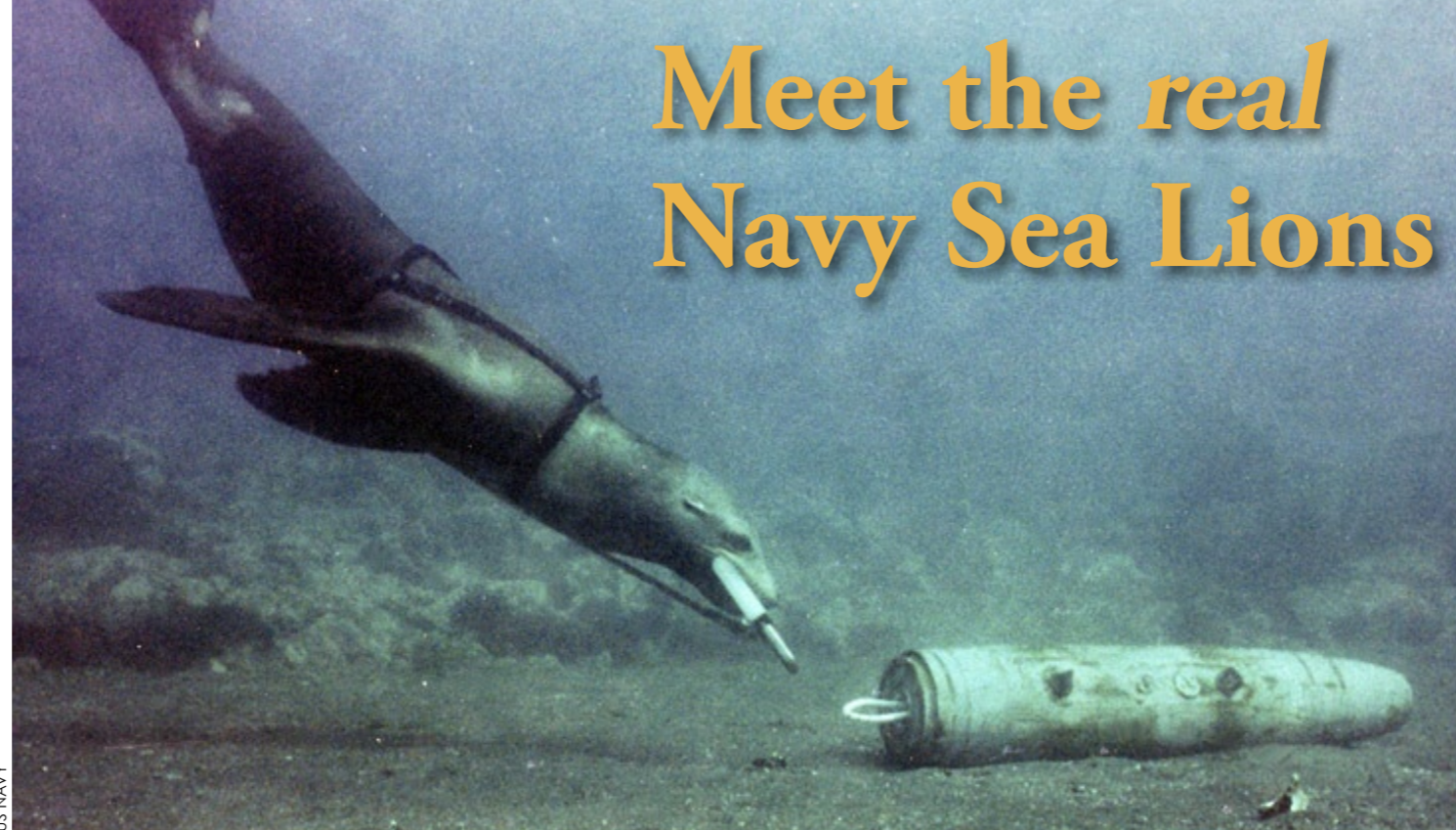
The Great Pacific Garbage Patch has been estimated to be roughly twice the size of Texas and has been referred to as the 'eighth continent'.





## sea mammals

Edited by Scott Bennett



US NAVY

# Meet the real Navy Sea Lions

While the U.S. Navy SEALs have a reputation for being amongst the bravest of servicemen, their exploits pale when compared with the newest recruits who are able to swim between live mines and detain terrorist divers underwater. However, these are no ordinary sailors: they are sea lions, specially trained to assist the Navy.

Their natural maneuverability and speed make them ideally suited for the work. Also, marine mammals can tolerate colder temperatures and dive to great depths repeatedly without getting 'the bends', unlike human divers.

"We have trained sea lions to attach a leg cuff, just like hand cuffs, but fitted on a diver's thigh," said Tom LaPuzza from the Biosciences Division of SSC

Pacific. "The device works in the same way as hand-cuffs. Once they are on, they cannot come off." In addition, they are taught to recognize various shapes of water mines.

When they are not helping to find explosives, sea lions patrol harbours to stop enemy divers trying to sneak into friendly waters undetected. The American forces first began training marine mammals in the early 1960s, being put to use between 1970-71 during the Vietnam War where they were brought in to protect the US Army ammunition pier in Cam Ranh Bay. The U.S. Navy currently has 28 California Sea Lions, 80 Atlantic and Pacific Bottlenose Dolphins and one Beluga whale in service. ■

In a jaw-dropping feat, the US Navy's fleet of trained California sea lions is even able to detain intruder divers whilst underwater.

# Clash of the Titans

For the first time, nature's greatest animal battle has been caught on camera.

For the first time ever, a BBC natural history crew has filmed the "humpback whale heat run", where 15m long, 40 tonne male whales fight for mating rights with even larger females. The footage was recorded for the BBC natural history series, *Life*. Male humpbacks swim at high speed behind the female, vio-

lently jostling for access. Up to 40 males swim behind a single female at speeds of up to ten knots, each jostling to obtain a dominant position. Up to 40 males swim behind a single female at speeds of up to ten knots, each jostling to obtain a dominant position. The collisions between the males can be violent enough to kill.

Even though this is one of the most common of the large whales, very little is known about its actual sexual behaviour," says *Life* producer Dr Ted Oakes. "It's the closest we're ever going to get to dinosaurs fighting. It's the largest battle in the animal kingdom and it feels like something out of Jurassic Park," says Dr Oakes. ■



This short clip from the BBC series *Life*, shows the journey of a female Humpback whale from the Antarctic to the Pacific Ocean to give birth to a calf, and how the males battle it out to be her mate

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NAVY'S MARINE MAMMAL PROGRAM



# Technical Diving Paradise

## *In the Northern Pacific*

Text by Ron Akeson

Photos by Ron Akeson and Barb Roy

**I often raise a few eyebrows when I exclaim, “I’ll take diving in the Pacific Northwest over anyplace else in the world.” And it’s true. We have a great variety of diving off the northwestern coast of Washington State, USA, and British Columbia, Canada. There are fabulous walls full of thriving marine life, historic shipwrecks and huge retired Canadian Navy ships placed as artificial reefs of steel. The drift diving is unmatched, complimented with a rich diversity of unique marine life including wolf eels, giant Pacific octopus, and six-gill sharks. Although recreational diving opportunities are also unsurpassed, technical diving is equally as good throughout the Pacific Northwest.**

So what makes this area one of the best technical diving hotspots in the world? I personally am partial to our deep 300-foot walls adorned with ancient sponges and populated by immense lingcod and healthy schools of rockfish. But my real passion lies in the opportunity to explore such a selection of very different deep wrecks, few have seen. Many of these wrecks often attract technical divers from around the world for exploration, research, or just the challenge of facing our temperate environment. Whatever the reason, the Pacific Northwest seems to fully accommodate a technical diver’s needs.

Although many tech sites in the Pacific Northwest are easily accessible from the shore, most of the choice sites require a boat for access. Browning Wall near Port Hardy on Vancouver Island in British Columbia (BC) is a local favorite and arguably one of the best dives on the Pacific Coast for any level of certified diver! You can easily spend an entire dive trying to find a single square meter of rock not adorned with red soft corals or yellow bread-of-crumb sponge. This current-bathed wall stretches from the surface down to 73 meters (240 feet), where we often find 20-25 centimeter (8-10 inch) tall pink and white gorgonian

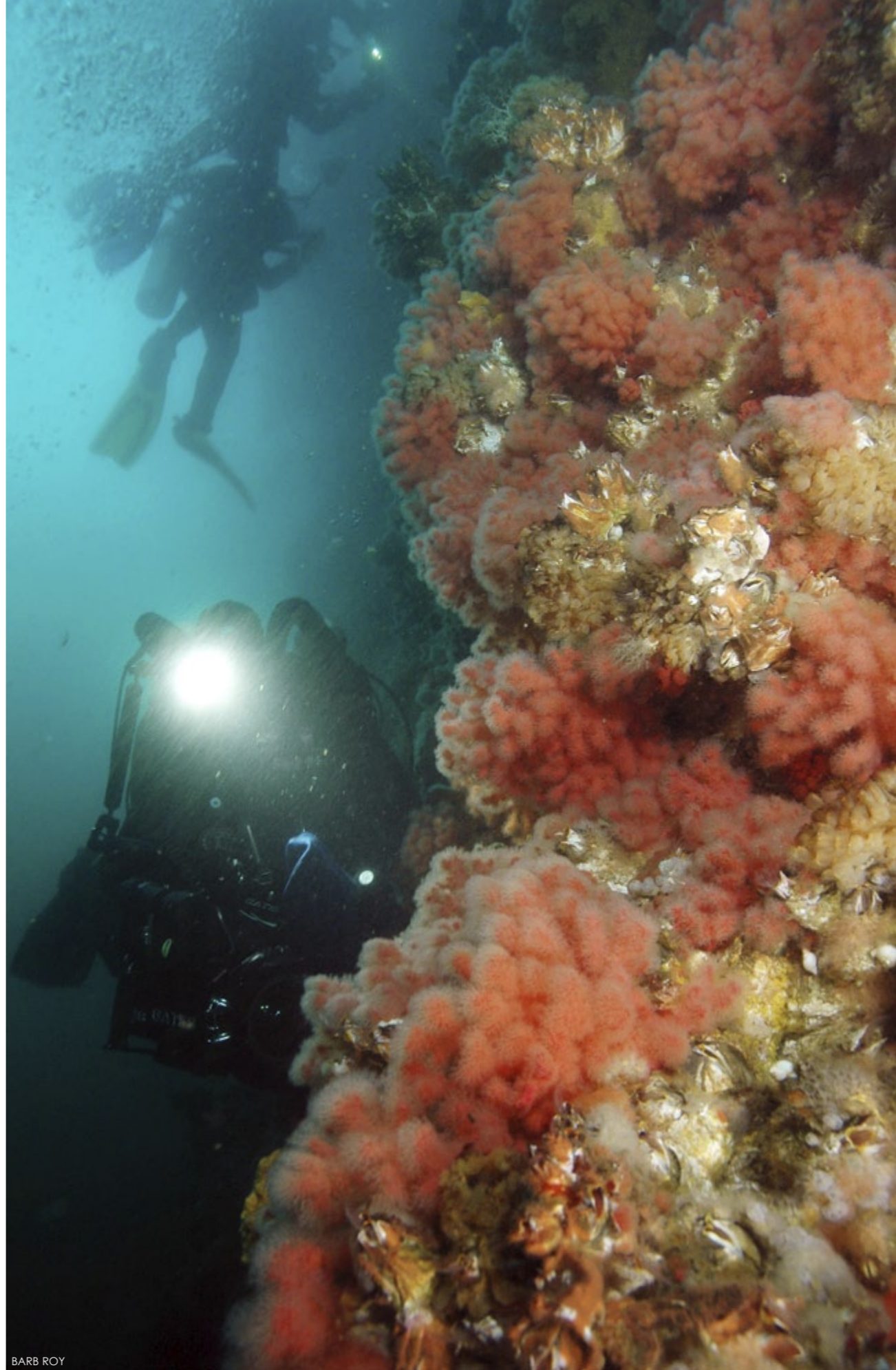
sea fans intermingled with the other soft corals, anemones, and basket sea stars.

At this point the ocean floor slopes off into deeper water with little to see. I like to dive the deepest parts of the wall with Trimix, but extended range and decompression procedure-trained divers can pick their depth based on their comfort level.

Two other popular deep walls are; beneath the power lines in Agamemnon Channel and at Whytecliff Park, both in BC. Agamemnon Channel is located on the Sunshine Coast, north of Horseshoe Bay and the town of Sechart. Here, we find huge yellow and white cloud sponges starting at 15 meters (50 feet) and 1.2 meter (4-foot) high red gorgonian sea fans at 56 meters (185 feet). The deeper you go the bigger the gorgonians get, but watch your depth, as this wall bottoms out around 182 meters (600 feet)!

Underwater photographers also enjoy this dive because it hosts an array of different rockfish. You can often find juvenile yellow-eye rockfish hiding in the cloud sponge openings and along the rocky terrain. Adult tiger rockfish are very colourful and quillback rockfish bravely hold their ground.

The wall at Whytecliff Park is popular among shore divers for parking, entry/



BARB ROY

Divers explore Browning Wall at Port Hardy



RON AKESON



BARB ROY

bring the whole family. So, when diving here on weekends, make sure to arrive early for parking. The wall is a short walk down a paved road and then a relatively short swim from the shore.

### Historical sites

While the marine history of the Pacific Northwest isn't as lengthy as the East Coast's, nor did our coast have the maritime military action of

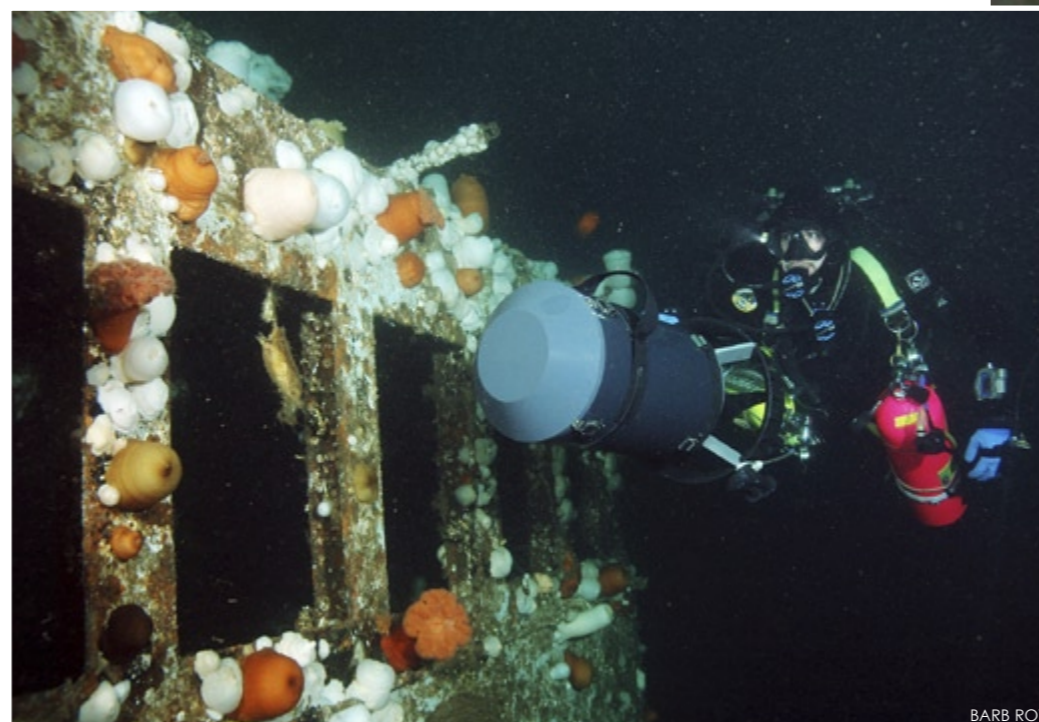
World War II, we still have a good selection of technical diving shipwrecks. But what sets us apart from the eastern US coast and the rest of the world are the extensive training sites we have.

British Columbia has four retired Canadian Destroyer Escorts (111 meters/366 feet in length) for both recreational and techni-

cal divers to enjoy. Add to this a 53-meter (175 foot) freighter, a 30-meter (100 foot) tugboat, a 122-meter (400 foot) Victoria-Class ship (equivalent to a US Liberty Class ship), and a 737 jet plane, all within recreational depths, and you have an endless playground to explore or train on!

These artificial reefs are commonly used by serious wreck divers to stage practice penetration

dives and learn in a semi-controlled environment. With outside entry to almost all deck levels, depths range from about 26 meters (85 feet) on the main decks to over 42 meters (140 feet) within the belly of the *HMCS Cape Breton*. For those looking to challenge their skills, the *HMCS Chaudiere* is located in Sechart Inlet positioned on



BARB ROY

Diver with scooter on *Cape Breton* wreck



## Pacific Northwest

BARB ROY

THIS PAGE LEFT TO RIGHT: Barb Roy, with underwater camera, prepares to dive a deep wreck; Divers at *Gulf Stream* wreck; Diver on *Capilano* wreck

its side. This provides a different and often disorienting perspective when penetrating.

Unfortunately, none of the natural wrecks in Washington State or British Columbia are accessible from shore, but most are only a short boat ride from a local port of call. My favorites in BC include the wreck of

the *MV Gulf Stream*, a 44-meter (147-foot) vessel with its bow at 33 meters (110 feet) and the stern in approximately 50 meters (165 feet), near Dinner Rock off Powell River. Visibility is often excellent, particularly at depth. While the *Gulf Stream* can be done on air, a light Trimix makes the dive more enjoyable.



The *Capilano* is a 36-meter (120 foot) steamer located near Mitlenatch Island. Although this may not be a hardcore technical site at 42 meters (140 feet) of depth, it is worth a visit to see the amount of resident marine life, particularly the large lingcod and rockfish. While diving here last September we had over 30 meters (100 feet) of visibility—about as good as it can get.

A reel and lift bag is recom-



BARB ROY

mended for this dive as a back-up for safely doing decompression stops if the main ascent/descent line is not located. Be sure to check out the prop if gas permits.

Mitlenatch Island is also an enjoyable dive, especially if the curious Stellar sea lions come out to play. Across Georgia Strait near Comox is the wreckage of the *Scepter Squamish*, a 54-meter (180-foot) long barge, previously owned by the company Candive. There are many things living on the deck and various pieces of machinery for visiting divers to see.

The *Black Dragon* is a 45-meter (150-foot) freighter used as an illegal Chinese migrant ship transporting illegal people from China to British Columbia. It now lies in 45 meters (150 feet) of water near BC's capitol city of Victoria, on southern Vancouver Island. The *Black Dragon* is a great training site for some of the deeper more current laden wrecks, as there seems to always be a mild to moderate current present at some depth between the surface and the wreck.

These are just a few of the great natural shipwrecks in BC.

### Depths of wrecks

Washington State shipwrecks tend to range in depth with the deepest feasible site at 106 meters (350 feet). The majority are only accessible with Trimix.

In the Straits of Juan de Fuca leading in from the Pacific Ocean, is the wreck of the 99-meter (326-foot) freighter *Diamond Knot*. The *Knot*, as local divers fondly call it, was inbound from Alaska with a full load of canned salmon when it collided with the *Fenn Victory* in a thick fog. Sitting in approximately 42 meters (140 feet) of water, the *Knot* can be quite a challenge due to strong currents and unpredictable weather. However, it is one of the wildest dives on the coast. Be sure to bring the camera on this one.

At the top of Admiralty Inlet, where the Straits of Juan de Fuca and Puget Sound meet, we have the wreck of the 125-meter (412-foot) passenger steamer *SS Governor*, in 70 meters (230 feet) of water which sank in 1921. This is often considered the toughest technical dive in the Pacific Northwest, if not in North America. It requires special US Coast Guard permission, as do most of Washington's deeper wrecks, because they are located in active shipping lanes.



BARB ROY



BARB ROY

## Pacific Northwest

THIS PAGE LEFT TO RIGHT: Ron Akeson with camera checks out a gorgonian fan at *Agamemnon*; Divers with John deBoeck; Diver Wayne Grant at *Saskatchewan*



The complexity increases from here due to the very treacherous currents to deal with, which have been known to be moving in layers of opposite directions at the surface and on the bottom. The *Governor* is truly the 'Mount Everest' of Pacific Coast technical diving, fueling the drive even more.

The 91-meter (300-foot) wreck of the *Bunker Hill* is another challenging dive due to low visibility conditions. The oil tanker sank in two separate pieces in 86 meters (285 feet) of water after an explosion in an empty cargo hold blew the ship apart while in transit to Anacortes. This left the bow and stern sections about one and a half nautical miles apart.

I have been on the bow section numerous times and due to low visibility (typically 4.5 meters/15 feet) and currents, I have yet to identify the mid ship bridge, if it survived the explosion. This is an advanced Trimix dive not for the faint of heart.

The *SS Admiral Sampson* is at the bottom of Admiralty Inlet, in 99 meters (325 feet) of water off Point No Point near Seattle, due to a collision in the fog. This



RON AKESON

85-meter (280-foot) passenger steamer is only visited by a handful of local technical divers due to its depth and location.

The *Sampson* was commercially salvaged with the ultimate goal of retrieving the Purser's safe (still waiting to be found, as is the *SS Governor's* safe). As with the *Governor*, the *Sampson* is in the shipping lanes and not only requires permission from the Coast Guard to dive it, but permission from the individuals who own salvage rights.

### Wreck alley

Elliott Bay, bordered by the Seattle waterfront, is often referred to as 'wreck alley'. Here a large number of wrecks can be found at various depths, some still waiting to be discovered.

I routinely dive a 69-meter (229-foot) long ship here with a group of fellow tech divers, on a wreck believed to be the *AJ*

*Fuller*. At 73 meters (240 feet), the *Fuller* is an easier technical Trimix dive because currents are not always an issue (but visibility can be). Also found in the Bay are the *Multnomah*, an old paddle wheeler



BARB ROY

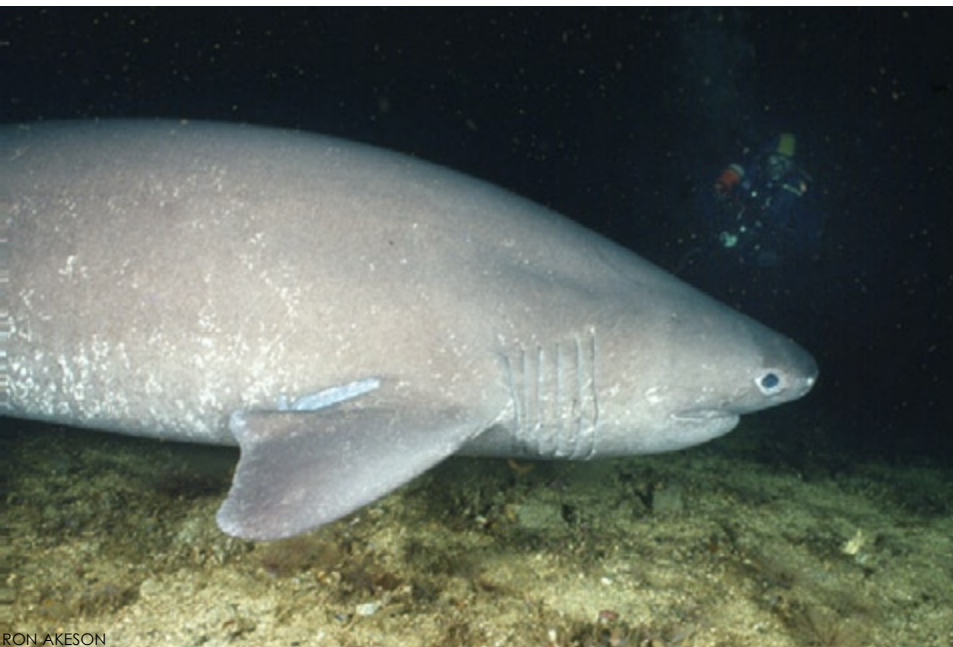
that sunk in 88 meters (290 feet) with livestock still chained to the deck.

An easier training dive in this area is the *MT6* barge sitting in 61 meters (200 feet). This barge was a railway barge sunk during a collision in 1949. The *MT6* actually carried Teddy Roosevelt's personal train

## Pacific Northwest

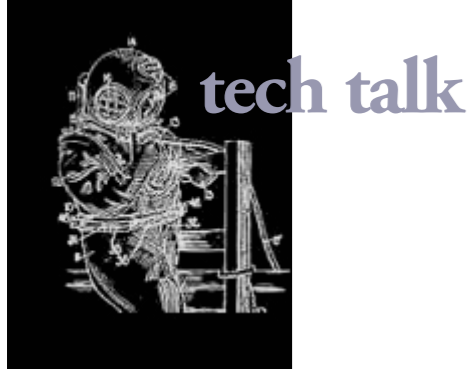


BARB ROY



RON AKESON

CLOCKWISE FROM FAR LEFT: Six gill shark; Captains bath tub on *Governor* wreck; Browning Wall at Port Hardy; Tiger rockfish (inset)



BARB ROY

across the Columbia River when he visited the Washington territory—before it was a state.

**Practical information**

It should be noted that while a number of dive charter operators run trips to BC's technical sites, there are not many open-boat charters offered to the wrecks within Puget Sound, Washington State, except through qualified technical dive organizers. Currently, only Adventures Down Under in Bellingham and Northwest Sport Divers in Bothell do such trips.

While many of the above sites can be done on air, many charter operators require Trimix to be used due to the complexity of currents, low visibility, and cold water. As with most

temperate locations with water temperatures ranging from 5.6-9.4°C (42-49°F), the length of time underwater suggests the use of a dry suit. Many of the dive locations also only offer a handful of suitable current diving times throughout the year.

So, no matter what type of technical diving you prefer, the Pacific Northwest has something to offer both resident and visiting technical divers. You can bring your rebreathers or doubles, scooters, and find mixed gas

fills at many shops in the Pacific Northwest. Don't forget the photography or video systems because you will not be disappointed in what you find. Limited technical rentals are available through dive stores (usually double tanks) but it is wise to check first. A bit of logistical homework ahead of time will save numerous headaches or perhaps an entire dive trip. ■

*Ron Akeson is a technical diving Instructor Trainer for several training agencies and commonly organizes trips to the various technical diving sites in Washington State and British Columbia (for over six years). He can be reached by phone at 1+360-676-4177 or via email at [ron@adventuresdownunder.com](mailto:ron@adventuresdownunder.com). Ron's technical diving experience spans over 14 years with close to 4500 cold-water dives.*

**Travel Links**

- Adventures Down Under [www.adventuresdownunder.com](http://www.adventuresdownunder.com)
- Dive Industry Association of British Columbia (DIABC) [www.diveindustrybc.com](http://www.diveindustrybc.com)
- Tourism British Columbia [www.hellobc.com](http://www.hellobc.com)



BARB ROY



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Mamro charter boat at Port Hardy



BARB ROY



BARB ROY

CLOCKWISE FROM TOP LEFT: Underwater descent; Porthole Charters dive boat in Washington State; Divers at Sunshine Coast; Diver Craig Linburgh diving in Washington State





photo &  
video

Edited by  
Peter Symes  
& Scott Bennett

# Going Wide

Text and photos by Kurt Amsler  
Translation by Peter Symes

**The notion that wide-angle lenses can only be used for large subject matter is common, but erroneous. Wide-angle lenses are truly all-around lenses that can be used both for frame-filling shots of Sperm whales as well as capturing the fine details of delicate coral branches.**

Wide-angle lenses can be divided into three categories: 1) standard wide-angle with focal lengths from 28 to 40 mm (film equivalent); 2) super wide-angle with focal lengths from 17 to 24 mm; and 3) a special type of super wide-angle: the fish-eye, which covers angles of 180 degrees and above.

The great advantage of wide-angle lenses is that they make it possible to include a lot of the background in the image even at close distances to the subject.

A wide-angle lens should not be forgotten. Always go as close to the subject as possible to minimize the loss of colour and brilliance from absorption and diffusion in the water.

## Placing the flashes

The wider angle a lens covers, the more care needs to be taken to ensure proper illumination with flash. Modern underwater strobes are capable of illuminating an angle of approximately 100 degrees, so if you use a wide-angle lens of, say, 17mm

Go as close to the subject as possible to minimize the loss of colour and brilliance



Text and photos by Tony White



With any large sceneries flash can only be used to add touches to specific areas



(film equivalent), which covers an angle of 105 degrees across the diagonal, dark areas will appear in the corners unless two strobes are used. To avoid backscatter from suspended particles, there needs to be a substantial distance between the flash unit(s) and the camera—about 80 cm (a little less than three feet) is good.

If you are using one flash only, it is best to position it along the camera's vertical axis, but if you are using two, place them along the camera's horizontal axis to ensure proper illumination of the whole image.

A good wide angle image will inevitably contain a lot of ambient light, and this must be taken into account if we want to bring out all the colours of a reef in their full splendour against a beautiful blue background.

### Composing the image

Shipwrecks, landscapes or large marine animals (whales, for example) will always

primarily be illuminated by ambient light, as obviously these objects are too large to light up by artificial means. In these case, flash can only be used to add touches to specific areas. It also recommended, in these cases, to shoot at an angle of 30 degrees towards the surface in order to add some perspective and depth to the image. Avoid shooting straight down.

When shooting portraits of divers in wide angle—such as a diver with fish or coral behind her—the best shooting distance is from 0.8 to 1.5 meters. In these ranges, the light of the flash will be stronger than the ambient light, so measure the background light at an angle of about 45 degrees towards the surface and set the exposure accordingly. This will produce a nice deep blue background.

*TIP: In order to avoid too much flash in manual mode, you can take the reading from TTL-system, but then add a diffuser, so that the light is softer.*

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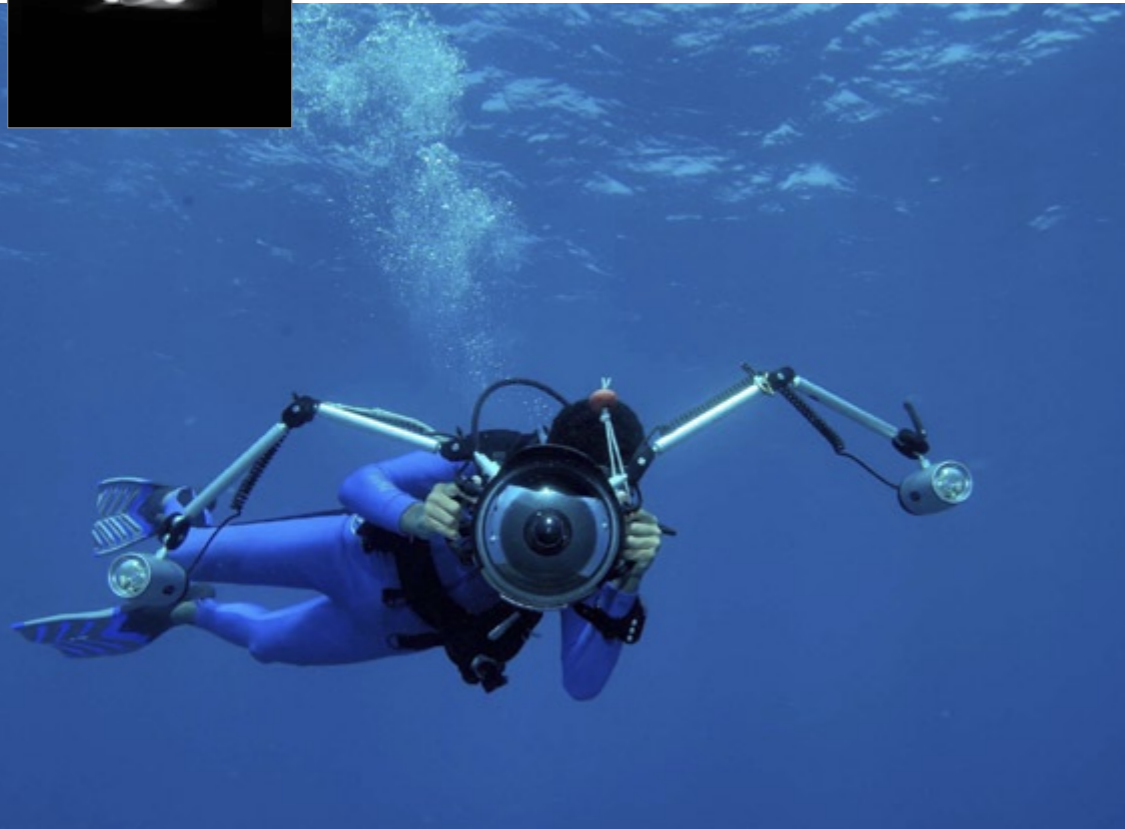


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photo & video

Below: When using two strobes they should be aligned along the horizontal axis. Right: Note how the lighting helps create a 3-D effect



Wide-angle close-ups allow for a very short shooting distance. With a 20 mm lens, it is approximately 20 to 25 cm, and a fisheye only 10 cm. Although it can be challenging to find the proper perspective, get the composition right, and the illumination, even at such short distances it is often worth the extra effort. Practice the technique, because there will still be a big area in the image beside the main subject matter.

Be aware that even if the camera is close to the subject, the flash may not be, in which case, you should not switch the flash into macro mode if it has a such. The main issue here is the distance from the subject to the flash, which might be positioned well above or beside on a long strobe arm.

### Three dimensions

The biggest challenge in wide-angle photography is recreating a sense of depth and capturing all three spatial dimensions. For this, lenses with an image angle of 100 to 180 degrees are ideal.

To achieve a three-dimensional effect, the image must be defined along all three optical axes: from the extremely close focus, starting in the corner of the image, to the main subject, which should be located approximately in the centre of the image, to the background, which rounds off the picture.

If all three image planes are incorporated correctly, it will create a vivid effect that cannot be achieved with any other focal length. The difficulty of this technique lies in unifying sharpness, lighting and composition into a complete

whole, but as is often the case: practice makes perfect!

These techniques are not reserved for owners of expensive, housed, single lens reflex cameras. Modern compact digital cameras also come with wide-angle capabilities. Several manufacturers such as Sea & Sea, Epoque and Inon also offer wet lenses and adaptors offering image angles of up to 165 degrees. These relatively affordable gadgets can turn the standard 35mm, which comes with the camera, into a super wide-angle with a focal length of 20mm, thanks to their multiplication factor of 0.56. Another benefit is that these adaptors, or wet lenses, are mounted on the outside of the housing, making it possible to change focal length under water. The downside is that the



Wide-angle close-ups allow for a very short shooting distance



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When using a single flash it should be aligned with the camera's vertical axis

light on the film or CCD sensor. Secondly, it also allows for the use of smaller and lighter flash units.

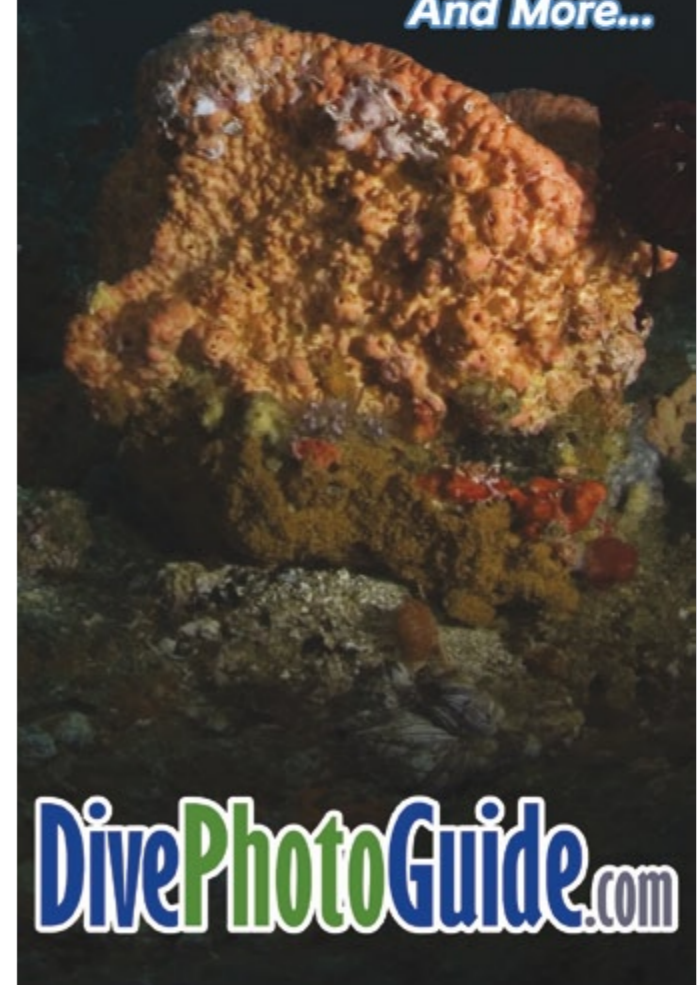
In wide-angle photography, the ambient light always plays a very important role, as flash will only be capable of illuminating a smaller part of the big picture. The flash can illuminate the foreground and the main subject, while the ambient light will constitute the background and the blue water.

To ensure that we capture enough ambient light, we adjust the shutter speed to match the aperture, pretending for a moment that we have no flash. Then we use the built-in camera light

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perspective, saturated true colours, and a superior image quality.

Having the overall image in mind, it is important to consider the position of the flash in order to obtain a uniform illumination, so that the image is not marred by a cloud of suspended particles. Here the rule applies: the wider the angle, the further away from the camera the flash must be positioned. With a picture angle of 100 degrees, that means at least 80cm.

quality is never as good as what you get with a housed single reflex camera.

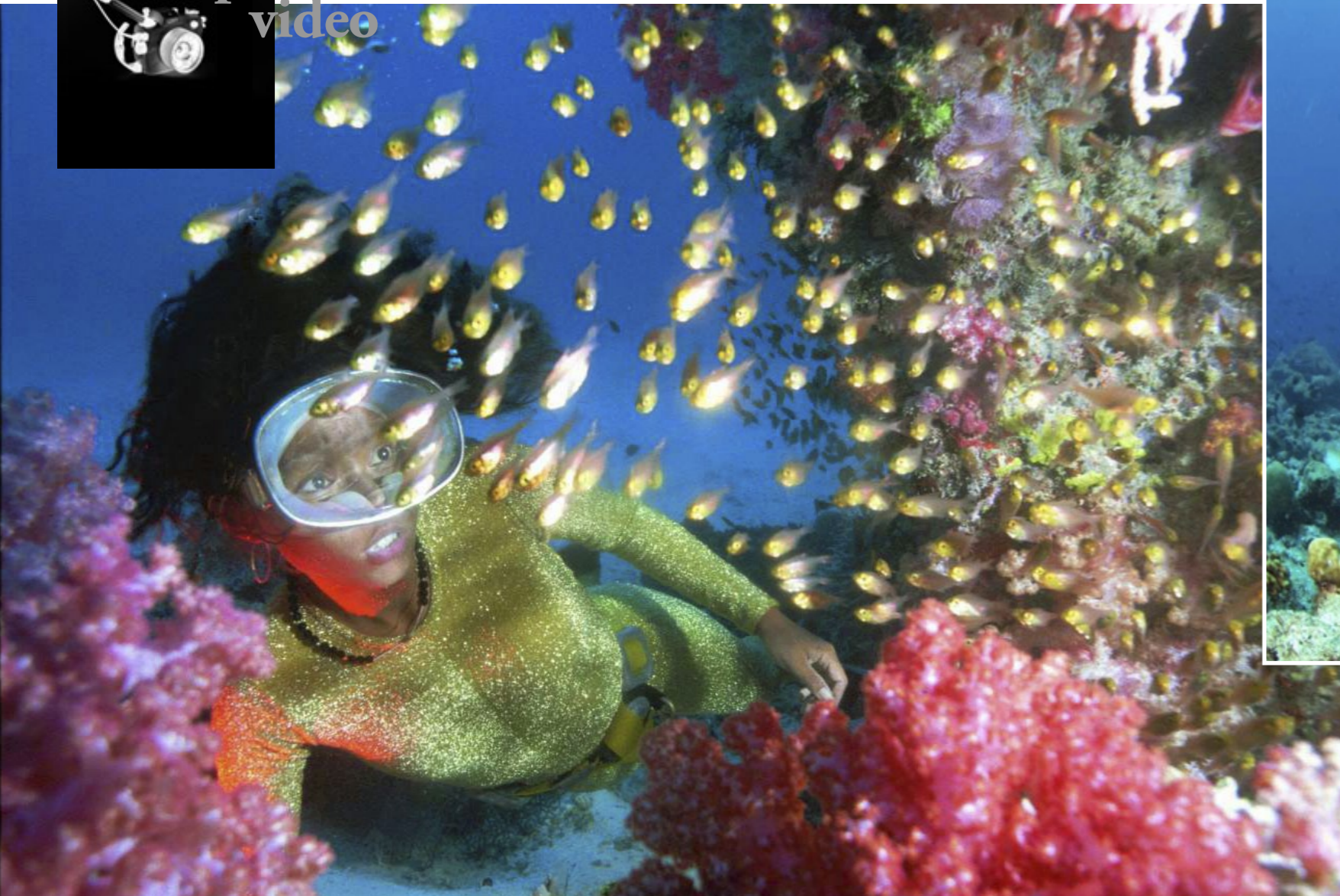
Using a wide-angle lens at the same distances as standard lenses makes no sense in underwater photography. Move close to the subject to achieve a dynamic

depth of field in contrast to standard and macro lenses. It is therefore possible to work with smaller apertures than f:8. This has two advantages. Firstly, using apertures from 5.6 to 8 enables you to use faster shutter speeds and still get enough ambient



If your main subject is a diver, using angles of more than 90 degrees may result in gross distortion of proportions.

This turtle would be distorted if it came any closer



meter to establish the proper flash power setting corresponding to this particular combination of aperture and shutter speed. It will often be listed on an attached table glued onto the side of the unit.

### Good planning is paramount

Clear water and abundant sunshine make for the best conditions when shooting wide-angle. If the weather is bad, it is probably better to use the day for macro photography.

Wide-angle lenses are ideal for recording distances from 0.8 to 1.2 meters, but be aware that if your main subject is a diver, using angles of more than 90 degrees may result

in gross distortion of proportions.

Composition is especially important in the wide-angle photography, and the general rules are the same as on land. A wide-angle image must include three parts: a near foreground, the golden mean, and a background.

Wide-angle lenses also make it possible to make high quality pictures in turbid waters. These kind of circumstances often produce stunning high-contrast imagery. When shooting in cloudy waters, less light must be used if we are to obtain better and clearer pictures. In other words, never shoot in TTL mode, but use manual flash mode, using

only the 1/4- or 1/2-power settings instead.

Wide-angle photography is arguably the most sophisticated technique in underwater photography. The equipment does not allow room for much compromise and many important factors must be considered simultaneously. For this reason, it is important to become familiar with the equipment in steps and not set out by putting an 180 degree fish-eye lens in front of the camera in the first try.

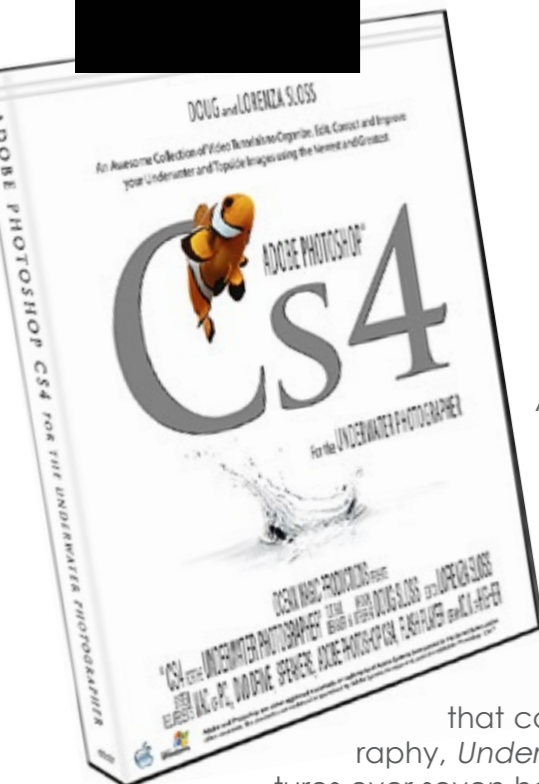
For more information on underwater photography workshops, please visit Kurt Amsler's website at: [www.photosub.com](http://www.photosub.com) ■

In confined spaces it easy to stir up particles

When shooting in cloudy waters, less light must be used if we are to obtain better and clearer pictures



photo &  
video



**CS4**  
Acclaimed underwater photographers Doug and Lorenza Sloss have released *Underwater Photoworkshop*, an instructional DVD. The tutorials are geared towards the underwater photographer with tips on RAW conversion and output that can be applied to all photography, *Underwater Photoworkshop* features over seven hours of video instruction, and can be viewed on any DVD player.



## Ikelite DS161 Movie Substrobe

As more new digital SLR's come equipped with HD video capabilities, there has so far been a dearth of lighting products that provide both flash and continuous lighting. The DS161 features three high-power LEDs providing an output of 500 lumens at 5000-5500K with a 45° beam angle. While not wide enough for shooting wide-angle video, it is more than adequate for fish portraiture or macro. The continuous lighting beam runs for five hours on a charge and has nine power levels. Ikelite will offer an upgrade for existing DS-160 owners, but not for DS-125 owners. The strobe is available for pre-order for a retail price of \$950 and ships in late December, 2009.

[www.ikelite.com](http://www.ikelite.com)



## Hasselblad

The Ultima digital housing for the HASSELBLAD H3DII medium format digital camera has made it possible for underwater photographers to experience the legendary Hasselblad quality land-based photographers have enjoyed for years. Tested to a depth of 250 feet, the sturdy cast aluminum construction features a manual focus wheel, adjustable handgrips, twin flash connectors and easy access to camera functions. A variety of ports are also available including a 9.25" optical glass domeport, 5.7" optical domeport and a 5.7" optical flatport.

[www.ultimadigital.com](http://www.ultimadigital.com)



## Aquatica D7

Hot on the tail of their newly released D300s housing comes Aquatica's latest addition, a housing for the new Canon 7D. With an 18MP APS-C CMOS sensor and 1080p HD video recording with manual controls, the 7D housing features easy access to the vital video function controls while retaining its ease of operation. Being introduced on Aquatica housings for Canon are the options of Optical Fiber and/or regular Nikonos and Ikelite bulkhead. The bayonet mounting is compatible with all Aquatica accessories and ports.



## Subsea magnifier

ReefNet's

SubSee Magnifier is a high-quality close-up lens specifically designed for underwater photographers and videographers. Used on its own or mounted in a SubSee Adapter, it is available in either +5 or +10 diopter versions. The +10 version can increase camera lens' magnification by up to 3.5x. The 52mm diameter lens offers a wide field of view compatible even with full-frame DSLR cameras (36mm x 24mm sensors).





## Nauticam, D90 D700 and D7

Nauticam's new housing for the Nikon D90 is the first to bring the D90's live view and ok/record buttons to the right handle in a single control. Convenient switching from still photo to live view/video eliminates the awkward reach required by other housings in order to start recording video clips. Along with the rugged aluminum construction, each housing comes with Nauticam's unique port latch mechanism. Rotating the port release lever rotates the locking bayonet tabs while the port remains stationary. [www.nauticamusa.com](http://www.nauticamusa.com)



## Remora Remote

The Remora Remote by Bluewater Camera offers remote or time lapse controls for any housing. With SLR focus and fire as a standard controls, the 3-button remote is waterproof to 100 metres and can be easily customized to suit any job. Easily integrated with Bluewater's IR and USB camera control modules, cable connectors are available in Ikelite, Nikonos or S6 configurations. [www.backscatter.com](http://www.backscatter.com)

## Sea and Sea YS-01

Sea & Sea has revealed a prototype for its brand new strobe brand new strobe, the YS-01. Although 1/3 stop less powerful than the YS-100a, it is more compact and supports DSTTL for optical flash TTL. The YS-01 has done away with wired sync, supporting fiber optic sync only. Priced at US\$430.00, the release date will be sometime in January. The YS-02 strobe is a manual-only, 8-power version of the strobe and will be priced even lower. The YS-02 should be available in March.



## FIX

(Fisheye Japan) has released their new housing for the Canon G11. The super-compact but robust design features an ergonomic shutter release and easy access to all camera controls. The housing zoom control features a unique 'screw-down' limiter to prevent accidentally zooming the camera when using the wide angle converter. Adapters for the popular 67mm wet mount macro lenses or Inon AD mount macro lenses add even more versatility, or go really wide with the FIX UWL-04 Fisheye conversion lens.

## Ultramax

Be it shooting on land, snorkeling or scuba diving, UltraMax's UXDV-1 High Definition Video Camera fits the bill. Rated to depths up to 185 ft (55m), photographers will enjoy the choice between high definition video or 8 Mega Pixels still images. The camera is protected by a silicone jacket that acts as a second stage in the event of failure of the polycarbonate housing. The jacket alone will protect the camera during snorkeling, white water rafting or the effects from dust, mud or rain. [www.ultramaxincorp.com](http://www.ultramaxincorp.com)



## Ikelite Design announces changes to DSLR Port System

As of 1 November 2009, all Ikelite housing port systems will come equipped with a simple and reliable port system featuring four locks for added user confidence and fail-safe assembly. All existing port components with the exception of the #5510.10 Superwide Port Body are fully functional with the new port system. Housings shipped after November 1 will also feature a new 1/4-20 threaded mounting point for the attachment of a focus light, video light or other lightweight accessories.



ERIC CHENG



# *Unique Dive Site* **Moscow River**

Text by Alexander Petrov

Translation by Svetlana Murashkina

Photos by Mikhael Semenov

“Moscow—Port of Five Seas” is written on the banner of the north river terminal in Moscow. It’s true; the city sits on the banks of the Moskva River (Moscow River), which leads to several large bodies of water via canals including the Caspian Sea, the Black Sea and the Baltic Sea. But I think, the slogan also reflects the city’s inhabitants’ love of diving. Just looking at the sheer number of dive centers in the city, Moscow is “in front of the entire planet” among world capitals. And it all begins with a modest spring, which trickles out from under a pretty, little chapel at the 148th kilometer of Minsk Highway.





PREVIOUS PAGE: The Moscow River banks are very diverse. Inside the megalopolis, the river is rimmed with concrete coasts

## Moscow River

reaches 5-6 meters, so one can see an abundance of freshwater sponges, river mussel (*Dreissena*), fish and crayfish. Only recently can one also often meet representatives of the sturgeon family, which were specifically re-released into the Moscow River. (They used to

reside here at one time, but disappeared long ago.) Sponges and mollusks filter the water perfectly, which perhaps explains the high clarity.

Sometimes one can meet spearfishers with a full "Kukan" (a special net bag for fish); but I always



On weekends the river attracts lots of divers. LEFT: Brushes of water plants, *rogolistnik*, that grow in the silent creeks, create graceful images

want to say to them: "Guys, do not kill the fish in the river, hunt on the plateaus!"

Downstream is Stroginski Bay, the center of water sports and spearfishing. On its shores, there is a yacht club, dive center, and a water-skiing base. Conditions for diving are very good, and there is even a wreck to explore. Here, regular spearfishing contests for the prize from the mayor of Moscow are organized, always followed with releasing juvenile fish in the water. Once I was present at the event, and was

The birthplace of the river is marked by a chapel; 200 years ago, the first Moscow water pipeline was constructed there

The chapel was built by Muscovites in 2004—a tribute of love to the main water artery that feeds their native city. Prince Yuri Dolgoruky was rather perspicacious to found a settlement on the banks of this beautiful river, which in the future, gave its name to the capital city. Four picturesque tributaries flow into the river in the urban landscape, giving it a special scenic view.

Despite a relatively short length—473 kilometers—the Moscow River plays an enormous role in city life. On its upper course is a favorite vacation place for Muscovites, perfectly suited for a weekend of hiking and canoeing. Outside the city limits, the water

is pretty clean and transparent. Here, you can meet representatives of various freshwater fish fauna. There are 25 species of fishes as well as lots of crayfish and different molluscs.

In the Myakinino–Rubleva area, just near the intersection of the Moscow Ring Road and Novorizhskoe Highway, Zhivopisnaya (Picturesque) Bay is located. On one side, is the town beach Rubleva; on the other, is the "Myakinino" mooring site. This is one of the best dive sites of the capital.

Here, at a depth of 12 meters, there are various bottom reliefs, outcrops of water-bearing clay layers with fantastic shapes. Visibility sometimes



Mollusk Zhivorodka



CLOCKWISE FROM FAR LEFT: Although the river is mostly polluted in the industrial zone, life is still lush in other areas of the river. "Toothless" shells are natural filtration organisms. Due to them, the water in the river is clear; River crabs are found only in freshwater; Small fry rests on the riverbed littered with string; Upper end of the river is very picturesque; Round goby, a populous newcomer from the Caspian Sea

of hydraulic structures is used; they are opened in sequence, and an artificial flood clears the channel.

More than 90 tributaries join the Moscow River, and there are more than 370 rivers and 500 streams in the river basin. Many tributaries also have dams which form reservoirs. All these structures are combined into a united water system.

After construction of the channel named after Moscow in 1932-37, the Moscow River began to receive water from the Volga River, and some species of the lower Volga fauna came into our waters, including Caspian gobies, who are now widely spread in the Khimki Reservoir and the Moscow River.

In the coastal zone at depths of up to four meters, there are many species of plants; water lilies and Potbelly, [кувшинки, кубышки], are found along the banks of waterways, as well as aquatic birds such as ducks, geese, herons, gulls, etc.

The depth of the Moscow River is not more than six meters, although in the reservoirs it reaches 30 meters. But eternal darkness and cold reigns there. Even in the hottest summer, there is a strong thermocline. The water temperature below ten meters does not rise above 10°C. The sun does not penetrate here in reality, and the bottom is covered with a layer of silt easily stirred.

Diving in these conditions requires special security requirements and related equipment. Dives are conducted at the Istra, Pirogov and Khimki reservoirs. The most comfortable conditions for diving are in the Derivation channel, which connects the Khimki Reservoir



with the Skhodnia, a tributary of the Moscow River.

In the Derivation channel, there's no navigation, depth is up to eight meters, the thermocline is absent, there's good vis (about 6m), and a convenient entrance into the water. All these things allow one to dive anytime during the year when the water is free of ice. During the fall when the floodgates are opened to cleanse the river bed, we can drift. Several kilometers downstream, one can literally fly for 30 minutes without a single wave of the fins.



## Moscow River



really impressed with what won the trophies—pike-perch, including a pike weighing over five pounds!

Most of the water is taken for consumption before the river enters the city, then gradually returns back as waste. After Serebrianyi Bor and Fili Park, visibility becomes less, as the quantity of wastewater increases dramatically. Despite the fact that in the 1990's, most businesses that polluted the river were driven outside Moscow, the environmental situation remains critical.

One can meet just two of the most stable species—roach and bream—in the central part of the city, and also annelid worms, which these species can eat. The bottom is thickly silted, and the water becomes completely unsuitable for diving. In addition, shipping is rather developed in the city-part of the river. In order to clear the channel of mud and strange objects, a special system



Moscow River

One can also dive at the Khimki Reservoir. Especially interesting here is a dive under the ice to see the wreck from which the Cossack hero of Russian lore, Stenka Razin, threw his beloved princess "into the coming wave" [a line from a well-known Russian song] during the shooting of the film based on the song.

In the area of the Central Navy Club, one can also make deep dives up to 30 meters.

After leaving the city, the river begins self-cleaning and becomes more full-flowing. More fishes are found, but also present are an increasing number of ships and barges delivering Oka sand and other payloads to the capital.

Unfortunately, the popularity of the site with townspeople who love to spend free time in the bosom of nature, and sometimes industrial waste, leave a lot of litter in the Moskvoretskaya water system. Natural mechanisms for clearing debris can no longer cope with all this garbage. So, rescue divers come to assist. They collect and remove garbage from the bottom of the river

and transfer it to the city dump on agreement with municipal services. Members of the Moscow dive club, Western Bridge, regard Derivation channel as their "home" dive site, and since 1997, regularly conduct dive training there. Together with the Federal State Unitary Enterprise, "Mosvodostok", they spend time every year cleaning their native pond and are deeply convinced that the future of the Moscow River depends entirely on the attitude of all its residents and city enterprises.

*Alexander Petrov, CMAS, PADI, SSI instructor, is the leader of the Moscow dive & ski club, Western Bridge. He actively promotes diving in Moscow and in the neighborhood. His slogan is: "Every weekend—underwater". He is a fan of cold water diving in the Russian North, and in winter, he coaches ice-diving.*

*Mikhael Semenov is a diver with extensive experience (including professional and Navy diving). Now, he is an underwater photographer, journalist, and author of a unique photo-album, Russia: underwater insight, published in early 2009.*



Alexander Petrov

Mikhael Semenov

CLOCKWISE: Distances in dives are sometimes long, so one can use underwater scooters; On weekends and holidays, one can meet groups from various dive shops. Many carry out training and also open water dives here; The Influence of humans upon the river is very remarkable. Each dive brings up something new;

# Dailan Pugh



P O R T F O L I O





## Dailan Pugh

Text edited  
by Gunild Symes  
All images courtesy  
of Dailan Pugh

LEFT: *Resting Wobbegong* by Dailan Pugh, 2007, oil on canvas, 92x92cm. A Spotted Wobbegong rests in a hole in an old shipwreck (*Tassie III*) off Byron Bay and awaits the night to go hunting while Moon Wrasse, Jansen's Wrasse, Stripey, a school of Eastern Pomfred, Banded Scalyfin, Red Morwong and an Eastern Kelpfish keep company

FAR LEFT: *Octopus' Garden* by Dailan Pugh, 2009, oil on canvas, 90x60cm. A Gloomy (Sydney) Octopus off the Lennox Headland has come out of his lair to hunt for crabs and eyes a couple Swift-footed Rock Crabs. Crimson-banded Wrasse, Pearly Wrasse, Gunther's Wrasse, Eastern Kelpfish, Jumping Blenny, Horned Blenny, Padong Frill Goby, Black-cheeked Threefin, Eastern Fortescue nudibranchs, seashells, chiton, seastars (*Patriella calcar*), and sea urchins accompany the octopus

PREVIOUS PAGE:  
*Clam Garden*, by Dailan Pugh 2009, oil on canvas, 92x183cm. On the Great Barrier reef, a Giant Clam is accompanied by Bicolor Parrotfish, Orange-blotch Surgeonfish, Blue-stripe Snapper, Gold-band Fusilier, a group of Scalefin Anthias, Foxface, Masked Rabbitfish, Chameleon Parrotfish, Yellow Boxfish, Six-banded Angelfish, Ornate Butterflyfish, Blue-dash Butterflyfish, Triangular Butterflyfish, Blue-spotted Wrasse, Checkerboard Wrasse, New Guinea Wrasse, Slingjaw Wrasse, Yellowtail Coris, Banded Thicklip, Red-ribbon Wrasse, Lined Sweetlips and Beaked Leatherjacket

**Australian artist and painter, Dailan Pugh, knows the underwater realm. He captures its vivid colors and dynamic diversity of life on canvas like no one else. X-RAY MAG's Gunild Symes interviewed the artist to learn more about his approach to art and his thoughts on conservation and the**

### fragile state of our oceans and reefs.

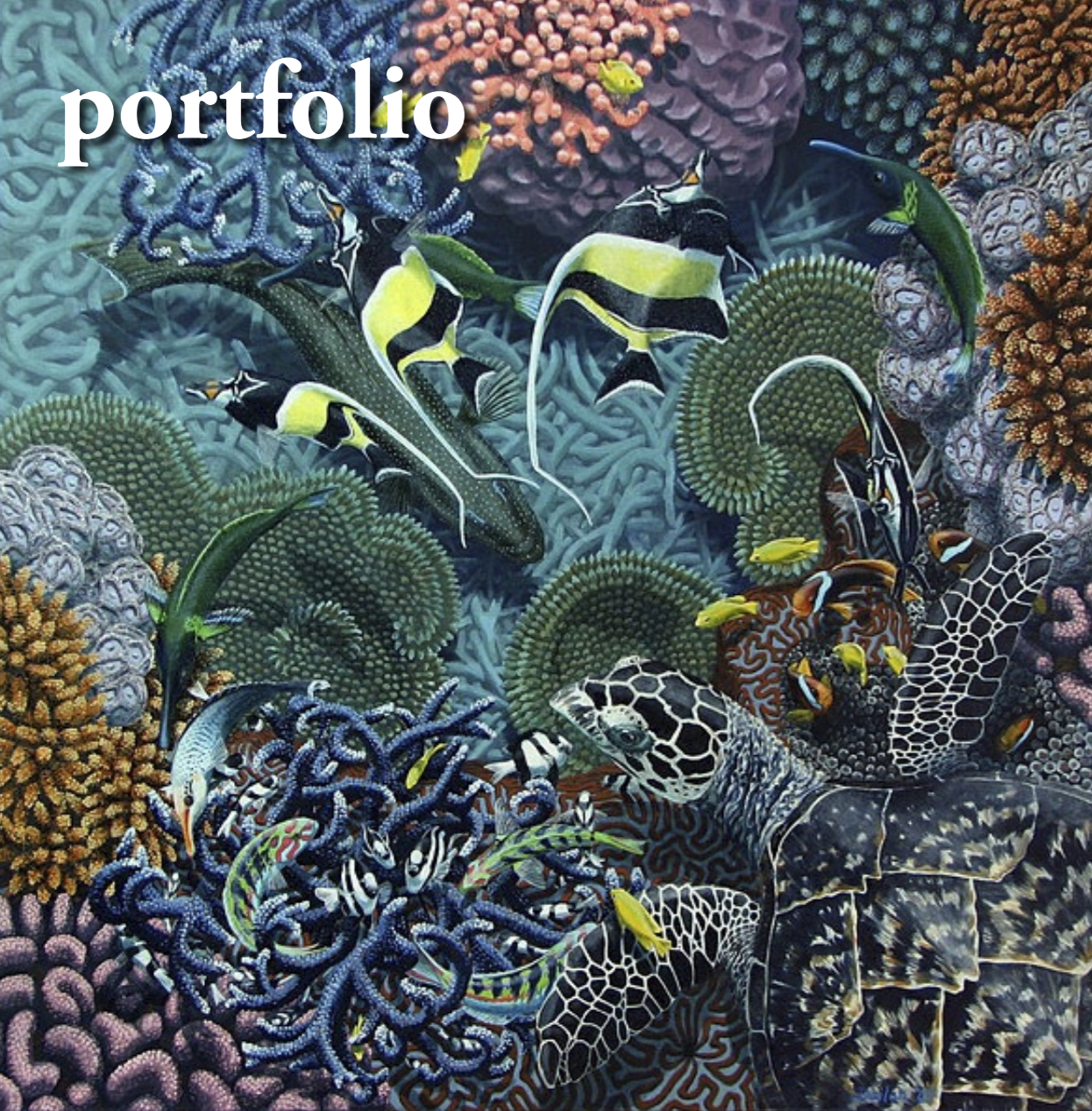
*Tell us how and why you became an artist...*

I grew up in an artistic household in woodland near Melbourne in Victoria, Australia, spending summer holidays playing in temperate rock pools and snorkeling. We cared for orphaned and injured native wombats and kangaroos. This engendered in me a deep love and respect for our natural environ-

ment, which was expressed through my drawing.

In my early twenties, I moved to north-east New South Wales to live near rainforest that I was then drawing. In reaction to my growing concern, I devoted increasingly more of my time progressively to rainforest, old growth forest and vegetation conservation.

It was my involvement in attempts to maximise sanctuary zones in the Cape Byron Marine Park that led me back into my fascination with the marine realm. This



**LEFT:**  
*Hawksbill Idol*, by Dailan Pugh, 2007, oil on canvas, 92x92cm. Above the coral on the Great Barrier Reef, a Hawksbill Turtle glides, scattering Moorish Idol and Bird-nose Wrasse as it swims above Red-and-black Annemonefish, Six-bar Wrasse, Humbug Dascyllus, Golden Damse, and a Blue-spotted Rockcod

**RIGHT:**  
*Stripey Old Wives*, by Dailan Pugh, 2007, oil on canvas, 92x60cm. Stripey and Old Wife hide in the kelp. The only species in their family, Old Wives are endemic to Australia



I start by sketching the key features (often fish) and positioning them to achieve a basic design. I then sketch in additional fish to refine the design and achieve a pleasing composition. I then generally work from the background forward to complete the work.

From the vantage point of a snorkeler, I seek to take the observer's eye on a journey around and into my paintings, while realistically depicting the subjects and their surroundings. My desire is to touch the heart of the viewer.

*What inspires you? What inspires you about the underwater world? Tell us how the sea inspires your work and why you use themes of the underwater realm.*

Nature inspires me, I love its multitudes of patterns, colours, forms and processes... its proliferation of living beings, from the smallest to the largest. The sea is especially inspiring, as in that world, the water is the atmosphere. Being 80 times as dense as our air, it enables the inhabitants to leisurely float around or to wait until diner floats by.

Its inhabitants have thus developed strikingly different from their terrestrial counterparts. The seaweeds, sponges

coincided with my desire to devote more of my time to artwork and to start painting in oils.

*Who were your role models or mentors and how did they affect your artwork/ artistic vision or development?*

Being raised in an artistic environment established a desire to express myself through artwork, and while there are many painters I admire, I use the environment as my muse. I adopted the marine environment as a subject for developing my oil painting because of its strangeness, its atmospheric qualities, its abundance of weird and wonderful wildlife, and its need for promotion and understanding. I thought it could teach me a lot about painting.

*Tell us about your artistic vision and artistic methods, process, techniques, materials, etc., i.e. describe your artistic method and tell us why you chose the medium and methods you use.*

My rekindled interest in the underwater world coincided with my desire to start oil painting, and I considered it provided the perfect muse to develop my methods and style. I take numerous digital photographs when snorkelling and use these as reference material for painting.

While snorkeling, I will usually also develop some ideas for paintings. I initiate the painting process by sorting through my photos to select those appropriate to the locality and concept.



*Blacktip Reef Shark and Bigeye Trevally*, by Dailan Pugh, 2007, oil on canvas, 92x183 cm. A patrolling Black-tip Reef Shark on the Great Barrier Reef scares a school of Big-eye Trevally as Scissor-tail Sergeant, Golden Damselfish, Many-spotted Sweetlips look on

and corals take on a multitude of forms not seen in the terrestrial realm, though it is the vivid colours and intricate patterns of fish I find most alluring. Unlike birds, they often hang around, tantalisingly just out of reach.

*Are you a scuba diver and underwater photographer? If so, what made you become one and where have you dived? What are your favorite dive locations?*

I take numerous photos when I snorkel, though as they are primarily for reference purposes, I photograph just about anything and everything.

I have snorkelled various places

*Green Turtle on Ribbon Reef*, by Dailan Pugh, 2008, oil on canvas. On the Great Barrier Reef, a Green Turtle rests amongst Striped Triggerfish, Saddled Butterflyfish, Rainford's Butterflyfish, Fire Dartfish, Yellowtail Fangblenny, Dick's Damselfish, Freckled Hawkfish, Blue-green Puller, Golden Damselfish, Red-ribbon Wrasse, Six-bar Wrasse, and Tail-fin Batfish

around Australia, though spend most of my time in the nearby Cape Byron Marine Park or, when I can, on the Great Barrier Reef, particularly Lady Elliot Island.

*What are your current artistic and ocean conservation projects?*

I have spent three years immersing myself in the underwater realm, and have learnt a lot in the process. I am now going to focus on the majestic River Red Gums, which follow the rivers into our arid interior. They, and the myriad of cockatoos and parrots which rely on them, have some-

*Bream Hole I*, by Dailan Pugh 2008, oil on canvas, 91x60cm, 1 of a triptych. Black-spot Snapper eye a school of Sergeant Major's with Dusky Butterflyfish, Gunther's Butterflyfish, Red-spot Wrasse, Three-spot Wrasse, Carpet Wrasse, White Ear, Black-cheek Threefin, a young Banded Scalyfin, Silver Bream and Starry Toadfish





*Lioned Catfish*, by Dailan Pugh, 2009, oil on canvas, 92x92cm. Four Red Lionfish hang around In the Lord Howe Island Lagoon with a school of Lined (Striped) Catfish, White-mouth Moray Eel., McCulloch's Anemonefish, young Multi-spine Damsels, South Seas Wrasse, Yellow Moon Wrasse, Surge Wrasse and New Guinea Wrasse



*Bream Hole III* by Dailan Pugh 2008, oil on canvas, 91x60cm, 3 of a triptych. Cook's Cardinalfish, Speckled Rainbowfish (young and old), Three-spot Wrasse, Moon Wrasse, Black-cheek Threefin and Coral-sea Gregory hang out In the Bream Hole at Lennox Head. Black-spot Snapper, Red-spot Wrasse, a Black Spinefoot, Silver Bream, Scissor-tailed Sergeants, and a Mullet pass by

thing to teach me and are also under immense threat due to climate change.

*Any future projects in mind? What are they and how do they relate to the sea or ocean conservation?*

The ocean realm is literally another world. I will always be fascinated with it and believe it contains the most wondrous ecosystems on earth. I am very concerned that as we are warming the oceans, our carbon dioxide is causing their waters to acidify. Their fragile beauty will inspire me to return to them frequently as my painting evolves.

The Great Barrier Reef system is one of the world's natural wonders, and is under imminent threat from bleaching and acidification. On current trends, I don't have long left to experience its full beauty, so I will make the most of it. I hope my artwork can help raise awareness of what we are destroying.

*Why does art matter and how can art help the world?*

I think that the most important thing a person can do is experience something for themselves, though for the marine realm, it is best if it is in a clear sea, in a sanctuary area with abundant fish, and



# portfolio



## Dailan Pugh



*Bream Hole II*, by Dailan Pugh, 2008, oil on canvas, 91x120cm, 2 of a triptych. In the Bream Hole at Lennox Head schools of Blackfish, Stripey and Mullet are attended by Blue-streaked Cleaner Wrasse, Red-spot Wrasse, Gunther's Wrasse, Cigar Wrasse, Silver Bream, Bengal Sergeant, Sand Whiting, Magpie Morwong, schools of Black-striped Wrasse and juvenile Black-spot Goatfish, Coral-sea Gregory, Pearly Wrasse, White Ear, Black-cheek Threefin, Krefft's Goby, Snowflake Eel and Long-finned Cod accompany the creatures



The artist, Dailan Pugh, standing in front of his painting, *Kelpies I*

without too many scary creatures.

Aside from its cultural attributes, art is one means of establishing a viewer's contact with natural ecosystems and may enhance the experience by accentuating an aspect or feeling. My hope is that my art will deepen people's appreciation of the marine realm, and thereby

their concern for it.

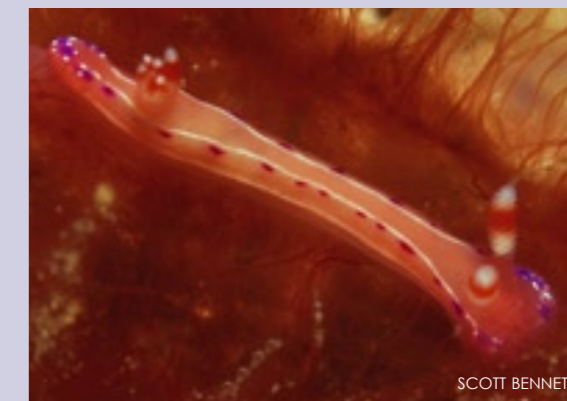
*How can interested buyers contact you?*

I am contactable through my website: [dailanpugh.com](http://dailanpugh.com). At this time I am only selling originals. Prices are according to size and medium, with oil paintings starting at \$2,400 Australian. ■

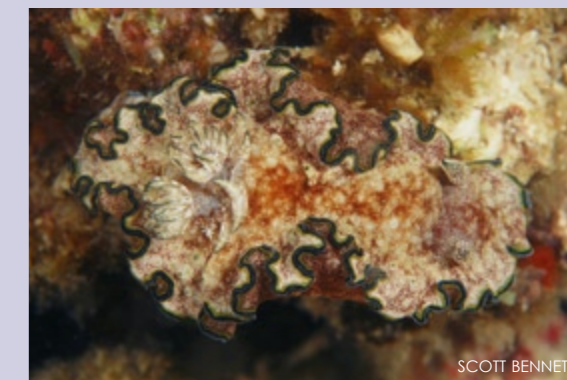
*Swell Sharks*, by Dailan Pugh 2008, oil on canvas, 183x92cm. In the seaweed forests off Tasmania, Spotted Swell Shark patrol the area, watched by Six-spined Leatherjacket and Yellow-tail Kingfish, Blue weed-whiting, Southern Hulafish, and Blue-throat Wrasse move about in the weeds, while a Common Garnard Perch eyes them

## IN OUR NEXT ISSUE

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Arctic Ice Diving*



SCOTT BENNETT



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