



GLOBAL EDITION
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Diving
Timor Leste

Communing with
Cuttlefish

Ecuador
**Manta
Rays**

Israel
Dead Sea

Newfoundland
**Bell Island
Wrecks**

Papua New Guinea
Zero Wreck

BROTHERS ISLANDS & ELPHINSTONE

The Red Sea

DIRECTORY

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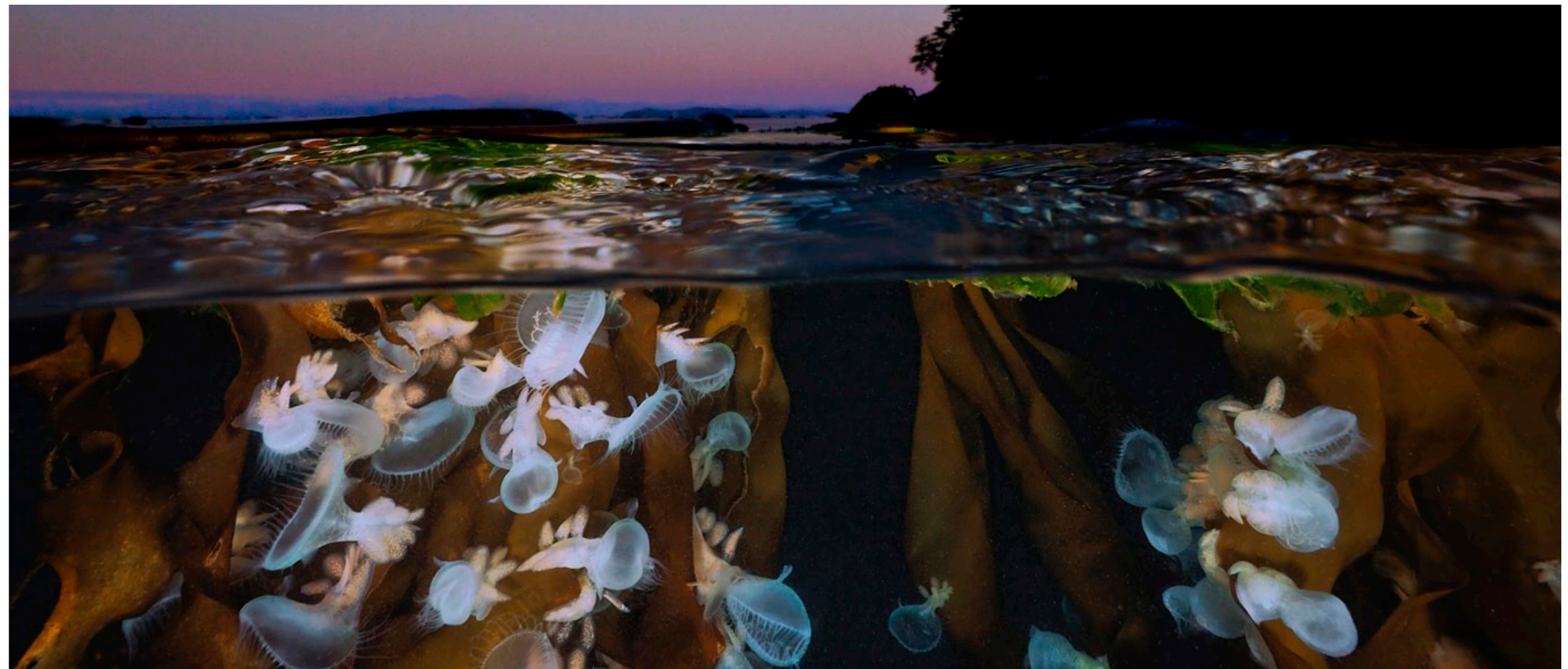
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COVER PHOTO: Australian giant cuttlefish (*Sepia apama*)
Stony Point, Whyalla, South Australia. Photo by Seanna Cronin

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Hooded nudibranch. Photo by David Hall



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Holy Sidemount!

Judging from the recent spate of PADI ads, we're in the midst of a new "Tec Revolution". The last one was reportedly when the training behemoth launched its TecRec program 2000, or so the blog said. This of course makes for good copy for the uninitiated—diving companies have long used tech sizzle to sell gear and training to recreationalists—but the fact is, it's a bit of marketing hyperbole.

Full disclosure: I was there for the original stage bottle toting, trimix breathing, nitrox and oxygen decompressing, deep diving technical revolution in the late 80's early 90's. In fact, my magazine *aqua-CORPS Journal* covered the revolt—from the first shots fired in places like Wakulla Springs and Key Largo, Florida, to later developments that enabled explorers to splash down on wrecks like the *U-Who* or *HMHS Britannic*, and PADI was not in the mix!

But don't get me wrong. Privately held PADI Inc., the self-proclaimed "Way the World Learns to Dive", is indeed fomenting a revolution! But it's not about tech diving. It's aimed at PADI's traditional base of recreational divers and instructors, so call it what it is: a "Rec Revolution". Furthermore, 2012 may well represent the tipping point.

Historically, PADI has been slow to adapt to technology innovations. While enriched air nitrox (EAN) diving was introduced to sport divers in the late 1980s, PADI waited until 1995 to introduce its own EAN program. Similarly, throughout the 90's the company watched the development of tech diving from the sidelines, but didn't launch its TecRec program until a decade later, and then only after several tech-training agencies launched competing recreational courses. PADI was also one of the sponsors of Rebreather Forum 2.0, which I organized with Tracy Robinette in 1996, but essentially has remained out of the

loop on rebreather technology, which until recently, had been for the most part an exclusive tool for high end technical divers.

But now the marketing juggernaut, which boasts nearly 6,000 affiliated dive centres and more than 135,000 members, is taking the lead in helping to create a market and aggressively promote rebreather diving recreational divers. Granted, PADI is also offering a tech diving program, but it does not represent a notable change from what's already available. Conversely, the coming of recreational rebreathers has been prophesied for nearly 50 years—ever since Walter Stark invented the "Electrolung" in the late 60's. Judging from history, it's a task far easier said than done, and not without controversy!

Proponents like James Roberton, executive VP of sales at Poseidon Diving Systems AB which manufactures a recreational rebreather, says that offering well-heeled divers the ability to dive in silence while doubling or more their no-stop bottom times will revolutionize sport diving market and reverse its declining numbers. He compares recreational rebreathers to the introduction of snowboards in the late 70's, which reinvigorated the then stagnant skiing industry and helped it grow by a factor of 60 times over the following 25 years.

However, critics like Jarrod Jablonski, CEO of Global Underwater Explorers, and Halcyon Inc., which makes a rebreather for tech divers, are concerned that with their complexity, main-

tenance requirements, and a fatality rate that may be as high as 5-10 times that of open circuit scuba (no one knows for sure), the benefits of closed circuit rebreathers, which are statistically 20 times more likely to fail than a twin set, simply don't justify the risks for recreational divers who lack the necessary skills and experience. They worry that a rash of recreational rebreather deaths would hurt the diving business as a whole.

At the heart of the issue is whether manufacturers, like Poseidon and others can successfully build a new generation of easier-to-use, fault tolerant rebreathers—Type R machines in PADI parlance—that can monitor and analyse the user's breathing gas and other on-board systems better than a well-trained diver, and in case of a problem, alert the diver and act to keep her alive.

The ultimate test will likely be whether rebreather fatality rates can be kept at levels approaching that of open-circuit diving. PADI and others believe this is achievable by standardizing on smarter, "idiot-resistant" machines and limiting their use to the traditional recreational envelope i.e. no-stop diving to 40m or less.

Viva la Rec Revolution? My hope is that these issues and others will be vigorously debated, and at some length, at the upcoming Rebreather Forum 3.0 conference, which PADI is organizing with Divers Alert Network and the American Academy of Underwater Scientists (AAUS), 18-20 May 2012 in Orlando, Florida. Clearly, the 'breather' is in their court!

—Michael Menduno



POSEIDON.COM
Poseidon MKIV Rebreather

Diver using sidemount configuration



News edited
by Peter Symes

NEWS *from the deep*

Mobile marine reserves may be a better solution

Some of the world's most endangered marine life could be saved from extinction by establishing mobile nature reserves that would protect vulnerable species as they moved around the oceans, scientists say.

The idea that only fixed areas of ocean can be designated as no-catch zones is out-dated, and does not reflect the very dynamic behaviour of some ocean creatures, delegates at the recent science festival in Vancouver, Canada, held by the American Association for the Advancement of Science, were told.

Marine experts said the huge volumes of data from animal tracking studies demand new approaches to conservation in our seas. All manner of creatures are being tracked over vast distances, using increasingly sophisticated devices. These devices not only record where the animals go, but they also return information about

the ocean state. Making marine reserves mobile could provide safe havens for endangered loggerhead and leatherback turtles, albatrosses, sharks and other travelling species, and sea life that is abandoning its historic territories in response to climate change.

Under the proposals, trawlers would agree to avoid certain stretches of the sea at set times of the year when endangered species are mating, spawning or passing through. Those ocean regions might move with the seasons, ocean currents and long-term environmental events like El Niño, the researchers said.

Yelloweye rockfish are one of two rockfish species considered overfished in Oregon



ANDY MURCH

Madagascar plans new marine reserve

A road map for preserving marine life around the famously biologically rich island of Madagascar has been proposed in a new study, setting aside 10,000 square kilometers of protected marine areas around the Island.

Madagascar has proposed to create more than one million hectares of protected areas to provide for the long-term conservation of its marine resources, including coral reefs and mangroves. A new study conducted by the U.S. University of California-Berkeley, the Wildlife Conservation Society and others, used what is called a "diversified portfolio" approach, to identify what areas need protection and use a variety of strategies to protect them. These options include implementing strict no-take zones (where fishing is completely banned) to areas that would allow fishing. ■ SOURCE: DISCOVERY NEWS

Oregon to get new marine reserve

The legislature of the U.S. state of Oregon appears poised to add three no-fishing marine reserves off the coast, designating what amounts to 38-square-miles of ocean wilderness despite continued concerns from fishing groups.

Oregon's territorial sea covers a roughly three-mile strip off its coast and is home to kelp forests, pinnacles and rocky reefs hosting hundreds of species. If approved, the three new reserves would cover about four percent of the territorial sea. About five percent would be placed in "marine protected areas," including 52-square-miles of new areas. The new reserves would join two smaller reserves: Redfish Rocks, near Port Orford, and Otter Rocks near Depoe Bay. ■ SOURCE: OREGONLIVE.COM

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Half of Bahamian territory to become MPA

The Bahamas National Trust (BNT) is expected to designate half of the 100,000 square miles of Bahamian territory as Marine Protected Areas.

A recent coral reef research expedition, involving nine Bahamian scientists, revealed that Bahamian coral reefs are threatened with extinction due to overfishing and climate change conditions. The Bahamas National Trust Act was amended, and the government recently passed a Planning and Subdivision Act and a Forestry Act. A declared policy will set aside 20 percent of the land and water of the Bahamas in permanently protected areas. "We are likely to have, under permanent protection, based on the regulatory environment, as much as 50 percent of the Bahamas," said Minister of the Environment, Earl Deveaux. ■ SOURCE: THEBAHAMASWEEKLY.COM



Fish have favorite hangouts

Big fish show a marked preference for sheltering under large, flat table corals, as opposed to branching corals or massive corals, Australian scientists have found.

In a study that covered 17 separate locations round Lizard Island in far North Queensland, researchers from the ARC Centre of Excellence for Coral Reef Studies at James Cook University videoed the behaviour of large reef fish, allowing them to identify the kind of habitat they most preferred and depended on.

"The reason for the fishes' preference is not yet clear—but possibilities include hiding from predators such as sharks, shading themselves from ultraviolet sunlight, or lying in ambush for prey. The importance of this finding is that table corals are among the types most vulnerable to climate change," Profes-

or David Bellwood explained. "In shallow waters and on the tops of reefs, they are often the main source of cover for these big fish. If they die back as a result of bleaching or disease, or are destroyed by storm surges, this would strip the reef of one of its main attractions, from a coral trout's viewpoint."

While the team is planning further experiments to clarify the reasons for the fishes' shelter preferences, their early findings may provide a useful insight to reef managers, about the importance of trying to maintain a range of structures and shelters as climate change bears down on the Great Barrier Reef, including the highly susceptible tabular corals. ■

"Like human beings, fish have strong preferences on where they like to hang out—and it appears that they much prefer to shelter under overhanging table corals.

This tells us quite a bit about how important these corals are to the overall structure of the reef and the large reef fish that live there.



Division remains over proposal for a Coral Sea conservation zone off Queensland

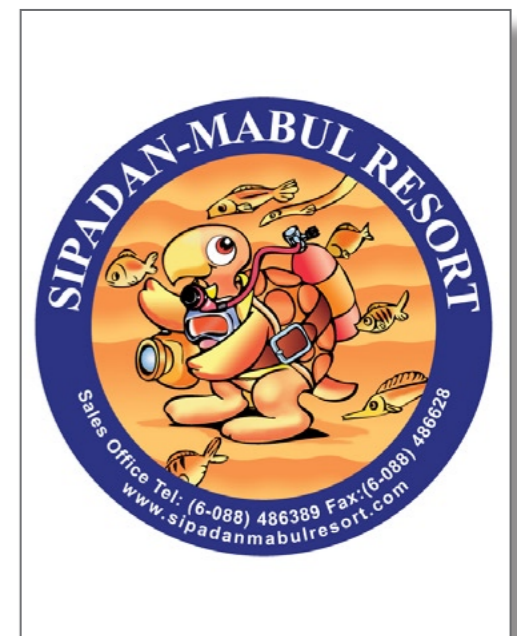
Located adjacent to the Great Barrier Reef off Australia, the reserve would encompass approximately one million square kilometres. The government is proposing to designate 51 percent of the area as a no-take zone and enforcing a seabed trawling ban.

The Australian Marine Conservation Society (AMCS) is already concerned the existing proposal will not offer enough protection. AMCS spokeswoman, Daisy Barham, stated that the organization desires to see the boundary extended further west and south. "We're asking the Minister to include all of the coral reefs and underwater volcanoes, as well as the Queensland and Townsville troughs in the marine national park zone," she said.

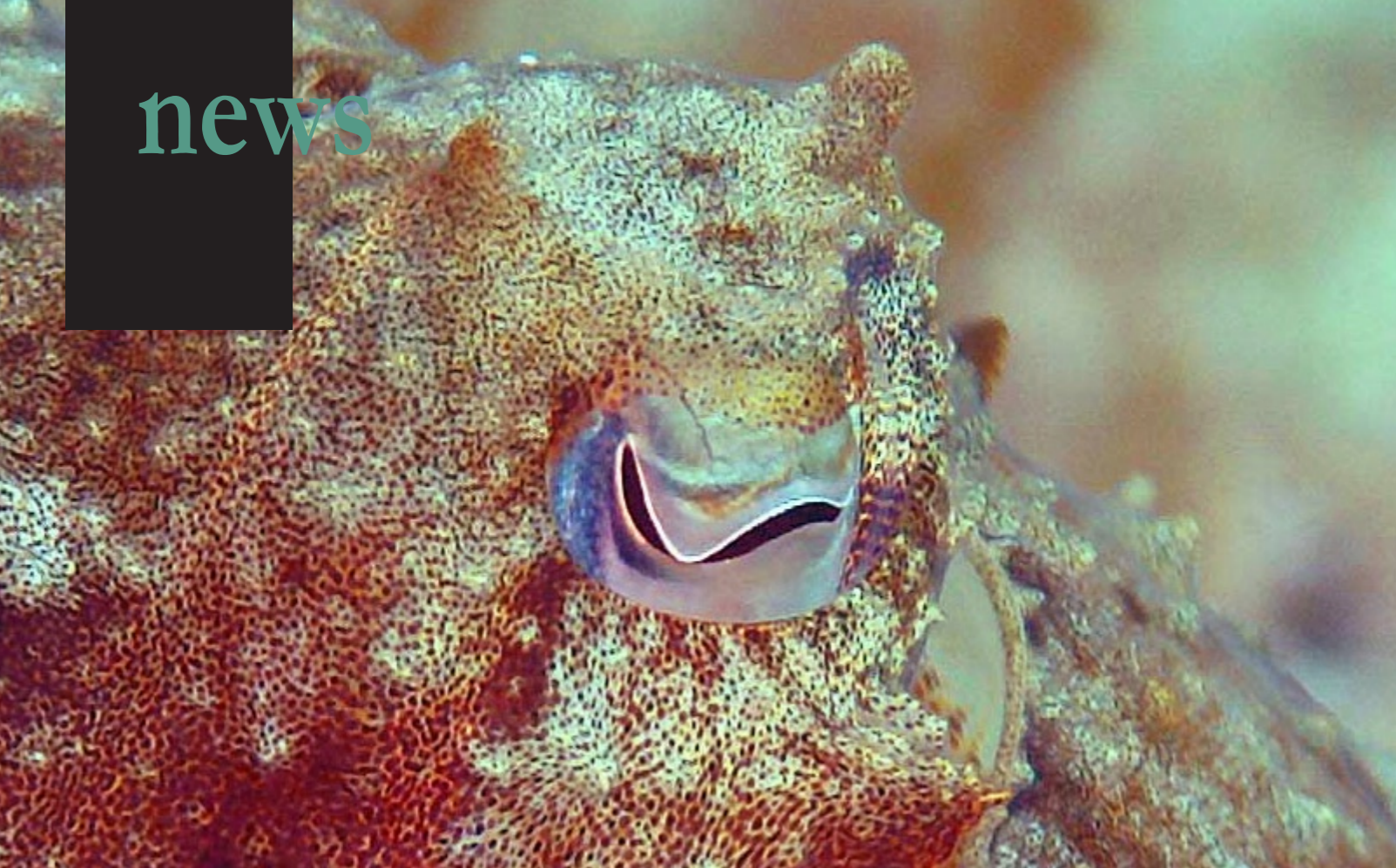
However, Queensland Seafood Industry Association president, Geoff Tilton, is worried the concerns of trawler operators will not be taken into account. "From the time they came with the original

maps to the time they came with the consultation maps, there's absolutely no change in their attitudes towards bottom trawling," he said. "As I said before, we're talking about potentially less than 1,000 square kilometres out of one million—put it in the calculator."

If the proposal goes ahead in its current form, Tilton believes commercial fishers will be worse off. "They've done a risk assessment on the trawling within the Great Barrier Reef Marine Park, and it's acceptable practice," he said. "All of a sudden the conservationists are saying, 'oh, we crossed this line here and it's not acceptable in this new bigger, much, much bigger marine park.' It defies logic to be quite honest about it—stupidity in the highest order." ■



WIKIMEDIA COMMONS



Curiously, for all their colourful display and skills at camouflage cephalopods are actually colourblind

Cuttlefish see polarized light

Polarization vision is used to break the countershading camouflage of light reflecting silvery fish researchers suggest.

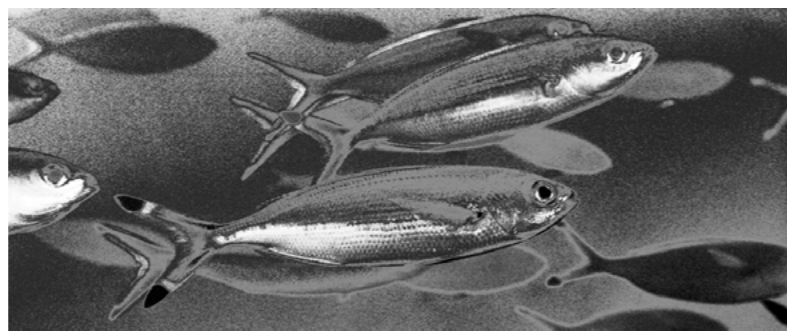
Cephalopods are sensitive to the linear polarization characteristics of light. To examine if this polarization sensitivity plays a role in the predatory behavior of cuttlefish, scientists from the University of Bristol, England, examined the preference of cuttlefish *Sepia officinalis* when presented with fish whose polarization reflection was greatly reduced versus fish whose polarization reflection was not affected.

Reflections

Cuttlefish preyed preferably on fish with normal polarization reflection over fish that did not

reflect linearly polarized light implying that polarization sensitivity is used during predation.

In addition to measuring the limits of polarization vision in the cuttlefish, the team also modelled how underwater scenes might look to an animal that has such high-resolution polarization vision. Using colours instead of changes in polarization



How does a cuttlefish see the world?

angle, they created images of the polarized world that humans can see and showed that there is much more information available in the polarization dimension than was previously known. ■

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Fish & hot water

Australian scientists have discovered that some tropical fish have a greater capacity to cope with rising sea temperatures than previously thought—by adjusting over several generations.

The discovery, by researchers at the ARC Centre of Excellence for Coral Reef Studies, James Cook University and CSIRO (Commonwealth Scientific and Industrial Research Organisation) sheds a ray of hope amid the rising concern over the future of coral reefs and their fish under the levels of global warming expected to occur by the end of the 21st century.

"When we exposed damselfish to water temperatures 1.5 degrees and three degrees above today's, there was a

marked decline in their aerobic capacity, as we'd expected," explained lead researcher, Jennifer Donelson. "This affects their ability to swim fast and avoid predators ... However, when we bred the fish for several generations at higher temperatures, we found that the second generation offspring had almost completely adjusted to the higher temperatures. We were amazed—stunned, even," she said. "It shows that some species can adjust faster than the rate of climate change." ■

Line Arrow Necklace
a stylish statement about your passion for Cave Diving.
- Szilvia Gogh



One of the "supergiant" specimens caught in the Kermadec oceanic trench near New Zealand



Giant amphipod discovered

An expedition to one of the deepest places in the ocean—the Kermadec Trench, north of New Zealand—has discovered one of the most enigmatic creatures in the deep sea—the ‘super-giant’ amphipod.

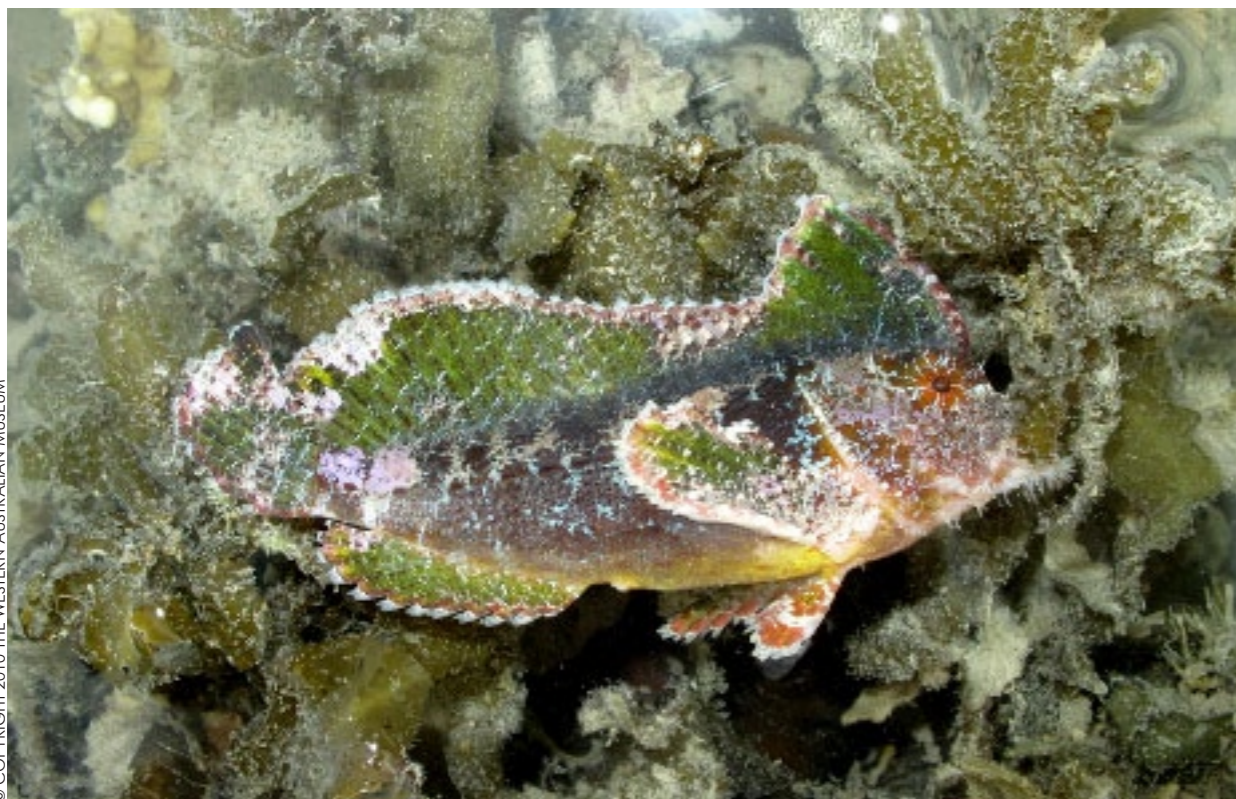
tem and a large trap. At depths of approximately 7,000 meters, the team were hoping to recover specimens of deep sea snailfish, which they have photographed before but have not captured since the early 1950s.

Voyage leader, Dr Alan Jamieson from the University of Aberdeen's Oceanlab, said: "The moment the traps came on

deck, we were elated at the sight of the snailfish, as we have been after these fish for years. However, seconds later, I stopped and thought 'what on earth is that?' whilst catching a glimpse of an amphipod far bigger than I ever thought possible. It's a bit like finding a foot long cockroach." ■

SOURCE: OCEANLAB, UNIVERSITY OF ABERDEEN, UK

New species of velvetfish



© COPYRIGHT 2010 THE WESTERN AUSTRALIAN MUSEUM

Fish curators Sue Morrison from the Western Australian Museum and Jeff Johnson from the Queensland Museum have identified a new species of fish as a result of the recent field work they undertook in the far north Kimberley. Over both locations, they found a total of nine specimens of the previously unidentified bearded velvetfish. This species had not been found before due to the remoteness of the region and the fish's ability to camouflage itself within its surroundings. Using its sinuous body and fins, the bearded velvetfish camouflages itself in shallow rock pools amongst the weedy surrounds of the brown macroalgae, *Padina* species.

The discovery was made during a joint U.K. and New Zealand expedition. Using specially designed ultra-deep submergence technology designed by the University of Aberdeen's Oceanlab, the team deployed a camera sys-

Coral inflate to free itself from sand

New time-lapse footage shows how a mushroom coral inflates itself to escape a sandy burial.

Many mushroom corals live on the sand bed and have quite a unique lifestyle. Most corals are attached to the limestone substrate that makes up the reef, but mushroom corals can actively move around and find themselves better habitats.

To move around, the corals "inflate and deflate" parts of their body. And, as the footage that Dr Pim Bongaerts from the University of Queensland, captured showed, they use

a similar technique to free themselves from a covering of sand.

"The corals inflate and deflate their entire body in a series of rhythmic pulses, which allows them to effectively shed the sediment in a

matter of hours, Bongaerts told BBC Nature. ■



Mushroom coral, *fungia scutaria*

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DEMA comments on national ocean policy draft implementation plan

Association recommends having sound, peer-reviewed and unbiased science and economic research prior to implementation of the National Ocean Policy.

...the plan, as presented, could harm individuals and communities that depend on economic contributions from aquatic-oriented activities...

DEMA submitted comments on the National Ocean Policy draft Implementation Plan on 27 February 2012. As part of President Obama's National Ocean Policy impacting all U.S. federal waters and the Great Lakes, the National Ocean Council (NOC) released this draft Implementation Plan as a means by which the NOC intends to implement nine separate and over-arching objectives of the policy. The comments were submitted by Tom Ingram, DEMA's executive director, who sits on the National Ocean Council's panel of recreational users, on behalf of the diving industry.

In the submitted comments, the dive industry expressed concern that the plan, as presented, could harm individuals and communities that depend on economic contributions from aquatic-oriented activities and that more harm could come to environmental resources if collecting the necessary scientific information is not made the first priority. The plan currently calls for first creating new layers of bureaucracy.

"While noting the administrative buildup, the plan incorporates inadequate congressional oversight," commented Ingram.

"There is scant incorporation of coastal, lake and ocean user groups. The plan calls for establishing federal 'zoning' boards and regulations, which will likely hamper the growth of commercial and recreational interests, while excluding many of these groups from discussion.

"In addition, the plan itself acknowledges that there are already conflicts with existing federal laws, which must be resolved before moving forward. These issues are likely to undo productive legislative efforts of the past and create legislative and bureaucratic conflicts, which delay implementation and create additional economic uncertainty." Ingram concluded,



The public comment period on the National Ocean Policy Implementation Plan is extended to 28 March 2012.

"The dive industry recommends a balanced approach to preserving the health of aquatic resources, and to maintaining the public's right to access to aquatic and submerged cultural resources. DEMA also advocates the need for having sound, peer-reviewed and unbiased science and economic research prior to implementation of the National Ocean Policy. As the National Ocean Policy was created by Executive Order (13547), we strongly suggest that the Policy and this Implementation Plan should have considerable Congressional oversight."

The dive industry looks forward to constructively engaging with the present Administration in helping to create a balanced perspective and policy, which acknowledges the needs to all user groups as well as the need to protect aquatic resources.

On February 27, the National Ocean Council extended the public comment period on the National Ocean Policy Implementation Plan through 28 March 2012. To submit your comments visit www.whitehouse.gov/webform/submit-comments-draft-implementation-plan. ■



Left to right: Jeff Nadler, Vice President, Stephen Ashmore, President, Jenny Collister, Tim Webb, Treasurer, Darcy Keiran, Bonnie Borkin Filippi, Vice President, William Cline, Scott Daley, Tom Leaird, Werner Kurn, secretary

DEMA's new board of directors convenes in San Diego

If you are interested in serving on future committees please contact June French, DEMA Membership Coordinator, at jfrench@dema.org or contact a member of the current board using the contact information found by [clicking here](#).

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The Zero wreck sits serenely in its final resting place in Kimbe Bay, Papua New Guinea

Text and photos by Don Silcock

As the story is told around the bar at Walindi, the day the wreck of the Zero fighter was found was soon after a small plane had crashed on take-off from Hoskins Airport at Kimbe Bay. So, when local villager, William Nui, saw the wreck laying on the sandy sea floor, he thought he had found the wreckage of the recent crash—not that of a WWII Japanese fighter plane that had remain undisturbed for nearly 60 years!

That the wreck was actually spotted in the first place is an interesting story in itself, because William was freediving for sea cucumbers at the time and noticed what seemed to be a large shadow on the sea bed.

Like many people in Papua New Guinea (PNG), William is very superstitious and thought that he was looking at a ghost lying face up with its arms outstretched, soaking up the sun. Terrified he shot to the surface and to the relative safety of his canoe, eventually summoning up enough courage to go back down to take a closer look, realizing that it was actually the wreck of a plane rather than some demon of the deep.

William took his story to the local authorities, and word of the discovery made it to Max Benjamin, the owner

of Walindi Plantation Dive Resort, who was rather dubious but felt that the story should be checked out, and the rest, as they say, is history...

A legendary aircraft

The Mitsubishi Zero fighter was to the Japanese military during WWII what the

Spitfire, or Hurricane, was to the British, or the Grumman F4 Wildcats and F6 Hellcats were to the United States, a remarkable fighting machine.

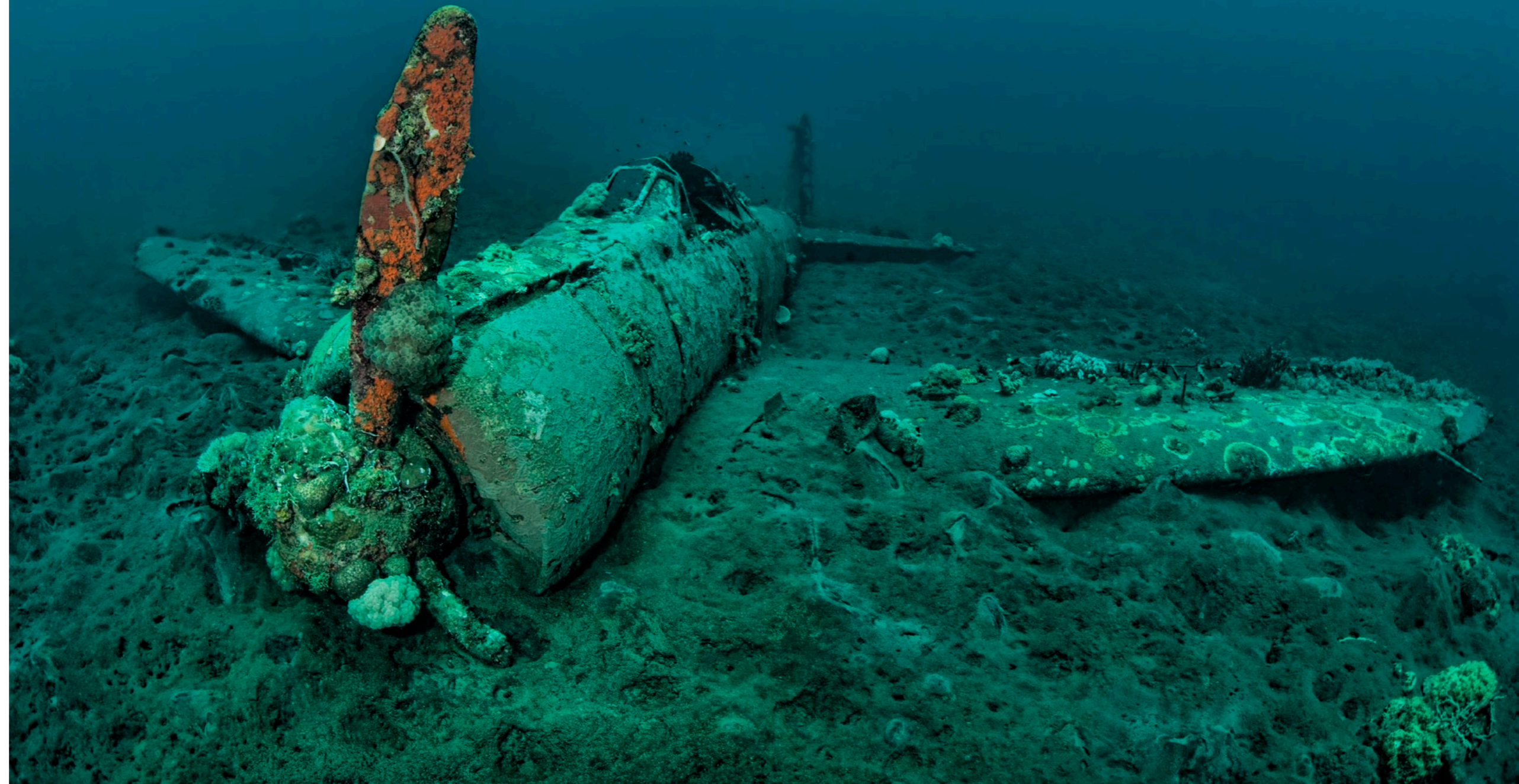
It achieved legendary status initially because of its role during the Japanese surprise attack on Pearl Harbour on 7 December 1941. At that time, the

United States had nothing that could out-fight it because of the Zero's exceptional speed and manoeuvrability. But it was the Zero's eventual role as the transport of choice for the infamous Kamikaze (Divine Wind) suicide pilots that ingrained it into the psyche of a generation.

More than 3,000 volunteer pilots, some

as young as 17, gave their lives in what they believed were divine missions to protect Japan. It was a devastating and demoralizing strategy, but one that eventually failed due to the rapidly declining manufacturing capability of Japan compared to the overwhelming capacity developed by the United States.

Kimbe Bay's Zero Wreck





Zero

A fully restored Mitsubishi Zero in flight (left). The location of the Zero Wreck in Kimbe Bay (below)

IMAGE COURTESY OF THE AVIATION HISTORY MUSEUM



VISIBLEEARTH.NASA.GOV

Front end of Zero wreck; Koreans drafted into service as Kamikaze suicide pilots (below)

Initially, the Kamikaze attacks were on an ad-hoc basis when Japanese planes were hit and then deliberately crashed into Allied ships in a final attempt by the pilot to inflict as much damage as possible. But in October 1944, the Japanese Naval Air Force deployed specially modified Zeros from Air Group 201 in the Philippines in the Battle of Leyte. Before the war ended, a total of 49 Allied ships had been sunk by Kamikaze attacks.

History

When Max Benjamin first dived the Zero, he found it in quite remarkable condition, especially since it had

been underwater for almost 60 years at that point in time. There were no signs of bullet holes or other combat damage that would have indicated the plane having been shot down, rather the 'off' position of the throttle lever and the pitch control set to reduce air speed clearly pointed to a controlled landing in the sea.

The probability being that the pilot had got lost and ran out of fuel—a relatively common occurrence as WWII progressed—a fact



WIKIPEDIA / PUBLIC DOMAIN

confirmed by Japanese records showing that in 1942 only ten Zero pilots had been shot down in air combat, while 16 had disappeared due to "unknown causes".

Max and his wife, Cecilie, are both very knowledgeable about the history of WWII in PNG and were fascinated by the newly found wreck in their backyard. So, they tried to piece together the history of the plane using a combination of factual Japanese military war time records and anecdotal stories from local villagers.

The aircraft's serial number and date were still visible on the wreck,



WIKIPEDIA / PUBLIC DOMAIN
A Kamikaze Zero about to crash into an Allied vessel in WWII



and military records showed that the plane went missing during the battle of Cape Gloucester on West New Britain on 26 December 1944. The pilot on that day was Tomiharu Honda, but his fate remains a mystery, although a local story suggests that the native people helped get him to the nearby village of Talasea. What happened after that remains a mystery.

Given the sacrifices made by the Kamikaze Zero pilots and the way the Japanese military venerated them, losing a plane due to navigational errors would have been a very significant loss of honour, and one theory is that the pilot could not face this and spent the rest of his life in the jungles of New Britain. An alternative, but slightly more gruesome theory is that he ended up as the main course of a ceremonial feast for a head hunting tribe—a practice still common in those days.

Either way, while Tomiharu Honda's navigation skills may not have been per-

fect, there is no doubt that he could certainly fly the Zero well and performed a flawless ditching, which inflicted virtually no damage to the plane and brought it to rest just 50m from the shoreline. As divers, we can be thankful for those skills because the Kimbe Bay Zero wreck is a superb example of the genre.

Diving

The Zero wreck is located off the northern end of the Willaumez Peninsular—which affords much of Kimbe Bay its protection from the elements—in a small bay close to the popular South Emma's dive site. Laying in just 17m of water, the wreck is easily dived, and bottom time is not a big issue, although its location close to the shore means that it is best dived when there have been several days of no rain, as run-off can make the visibility fairly limited.

The plane sits serenely on the sandy bottom and is covered with a light marine growth with numerous small

barnacle-like hard coral growth on the wings and fuselage. The three blades of the single propeller are still very much intact and have a rich covering of sponges and some colourful coral. The fish life is concentrated around the open cockpit, which hosts a large anemone and a small colony of nemos just behind the pilot's seat.

The total length of the fuselage is just less than 10m, and the tip to tip wing-span is 12m. So, it's not a particularly big wreck.

The Zero is dived regularly by Walindi's day boats and the resort's liveaboard, *Febrina*, also visits the wreck from time to time.

Photography

If you are only going to dive the Zero wreck once, make it a fish-eye lens day, and if you don't have one, take your widest lens. The day I dived the wreck was four days after the last rain, so the water was quite clear. The very nice

ABOVE: Front and side views of the Zero wreck in Kimbe Bay, Papua New Guinea

American divers with whom I shared the boat that day kindly let me have 15 minutes on the site by myself before they entered the water. While other divers add a sense of scale to the wreck and an additional touch of drama, they are also highly likely to kick up the soft sand around the wreck as they explore it, and you can quickly see your National Geographic cover shot disappearing in the resulting gloom.

Good buoyancy control and no finning is the order of the day if you do get in first and head for the front of the plane near the propeller, get low (carefully) and fill the frame. I shot at ISO 500 on my D700 to allow me to use a small f stop for good depth of field with a reasonable shutter speed. ■

For more information, contact Don Silcock at: www.indopacificimages.com

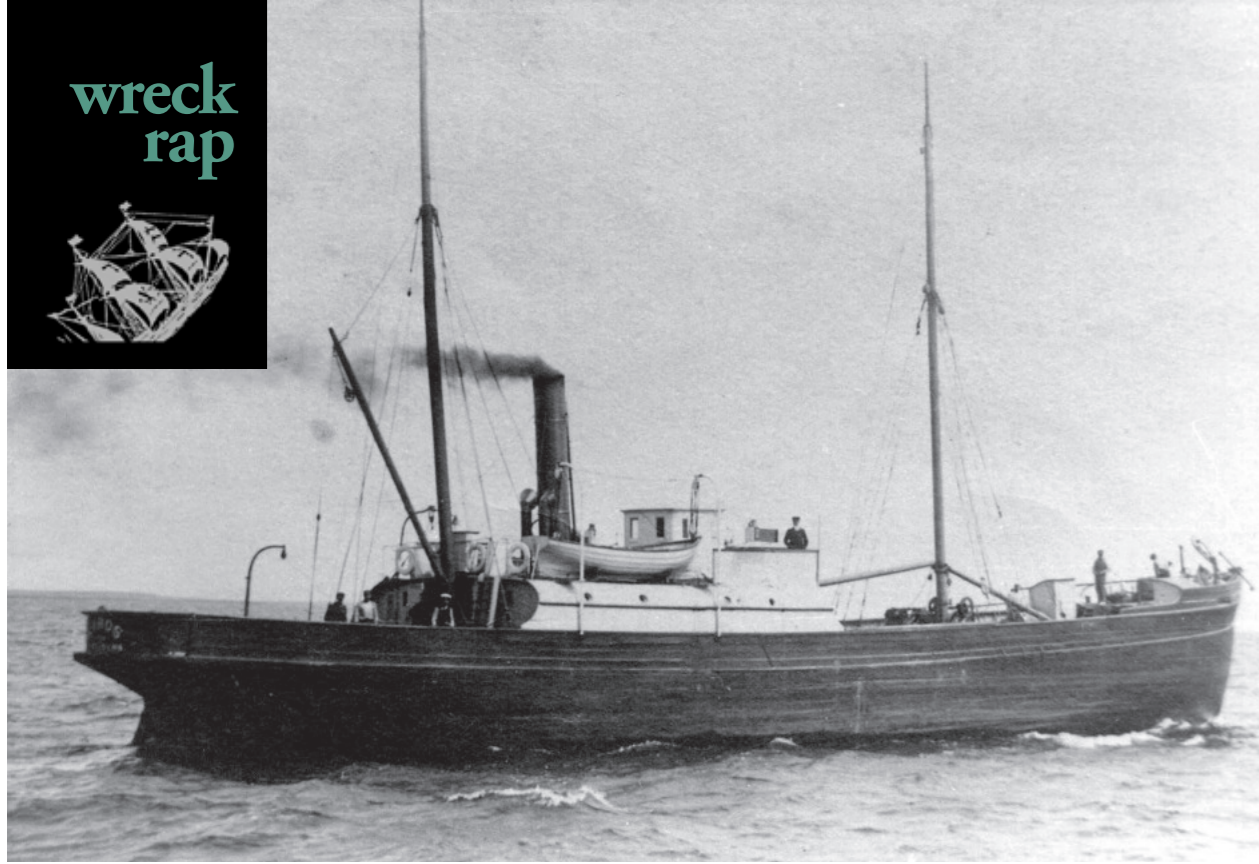
THE MITSUBISHI ZERO

The Mitsubishi A6M Zero-Sen was a very well designed aircraft that initially appeared to be almost invincible because of its tight turning radius and ability to outmanoeuvre Allied fighter planes.

As early as 1937, Claire Chennault, who later became the leader of the Flying Tigers warned the U.S. Air Force about the capability of the Zero and later told his wartime pilots, "Never try to turn with a Zero. Always get above the enemy and try to hit him with the first pass."

However, the Zero actually possessed many shortcomings, which were only to be revealed in mid-1942 when a virtually intact specimen was obtained by the U.S. military. A detailed analysis of that plane led to multiple improvements to the American planes the Grumman F4 Wildcat and the F6 Hellcat, which eventually meant that the Zeros were no longer the dominant plane in air combat.

More Mitsubishi Zeros were produced than any other wartime Japanese aircraft, with a total 10,094 fighter planes being built together with the 844 trainer and floatplane variants. ■



A German U-boat sank the Swedish steamship *SS Kyros* in 1917 while she was transporting a precious cargo of cognac

Wreck with cargo of precious cognac located in the Baltic

The 220-tonne Swedish steamship, *Kyros*, that was carrying hundreds of bottles of cognac and liqueurs when it was torpedoed by a German U-boat in 1917 has been located by Finnish divers.



The vessel rests at a depth of 80 meters and appears to be free of sediment. According to some reports, it was carrying a mixed cargo including steel products and as many as 1,000 bottles of cognac and 300 bottles of liqueur.

The wreck was located by divers from the Finnish group, Raumanmeren Hylky-Team, who say the vessel has remained quite intact. They will decide whether to try to raise the contents after closer examination. "The conditions down there

are extremely difficult," said diver Pasi Rytkönen, quoted in the Norwegian dive magazine, *Dykking*. "The ship is quite intact, but has slowly begun to collapse, and there is also much silt. In other words, it is not a simple matter retrieving any artefacts."

According to information on the Finnish Wikipedia, the wreck was already located in 1996 by a team led by Rytkönen, but the find was not publicised until February 2012. So far, the wreck has only been examined by a Remote Controlled Vehicle (ROV) ■

Does WWII wreck contain \$3 billion worth of platinum and whose is it?

Treasure hunter Greg Brooks of Maine is confident that he has located the shipwreck of the *Port Nicholson*, a British freighter, which secretly carried 71 tons of platinum when it was torpedoed by a German U-boat in 1942 off the coast of Cape Cod.

American treasure hunter Greg Brooks of Sub Sea Research in Gorham, Maine, announced that a wreck found sitting in 213 meters (700 feet) of water 80 kilometers (50 miles) offshore is that of the *S.S. Port Nicholson*, and said that a U.S. Treasury Department ledger shows that a huge fortune of platinum bars were on board, as part of a payment from the Soviet Union to the United States for war supplies when it was sunk by a German U-boat during WWII.

Doubts

However, some doubt his claim. Anthony Shusta, an attorney representing the British government, said it is unclear if the

ship carried platinum. "We're still researching what was on the vessel," Shusta told the Associated Press news agency. "Our initial research indicated it was mostly machinery and military stores." And if it was laden with precious metals, he said, who owns it could become a matter of international dispute.

Others believe that if it was indeed carrying such a fortune, it was most likely salvaged a long time ago. But Brooks said he has underwater footage, which he said shows a platinum bar surrounded by 30 boxes that he believes hold platinum ingots.

Maritime law on ownership are complicated and owner-

ship rights are still unsettled. Sub Sea Research filed an admiralty claim in Portland and was named custodian of the wreck by the U.S. Marshal Service. In early 2009, the treasure hunters fulfilled their obligation to buy legal notices in newspapers across the country announcing that they'd found the *Port Nicholson* and offering a 30-day window for anyone with a legitimate claim to the ship to step forward, Brooks said.

To the BBC, Shusta has stated that the United Kingdom will wait until salvage operations begin before deciding whether to file a claim on the cargo. ■



File photo of the *SS Port Nicholson*, sunk in 1942, which Greg Brooks of Sub Sea Research believes he has now found, sitting 50 miles (80km) off the U.S. Atlantic coast



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Autonomous Diver EN 14153-2/ISO 24801-2



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File photo of the now former Portuguese corvette *Oliveira e Carmo*, which is one of four decommissioned Navy vessels to be sunk off the Algarve coast

Four warships destined as artificial reefs wrecks off Southern Portugal

The four decommissioned Portuguese warships will form the largest single artificial reef structure in the world and provide an ideal substrate for new marine life.

The Ocean Project Revival has created with two main objectives: to promote biodiversity and to create an exceptional diving destination. To this end and for the first time, four vessels connected by a common history will be deliberately sunk in the same place.

Marked by buoys, the Ocean Revival reef will consist of four decommissioned vessels from the Portuguese Navy.

- The 45-meter-long ocean patrol vessel *Zambeze*
- The 85-meter corvette *Oliveira e Carmo*
- The 64-meter hydrographic survey vessel *Almeida Carvalho*
- The 102-meter long frigate *Hermenegildo Capelo*

The artificial reef will be situated approximately one mile off the coastal town of Portimao in southern Portugal at depth between 26 and 32 meters. This location has been selected because the diving conditions are usually very good with good diving more than 300 days a year.

In addition, the local infrastructure is well suited to support diving including a hyperbaric chamber. Portimão's harbour and marina offer excellent facilities and lies close to a number of other prime diving sites such as shipwrecks of the 18th century, or WWI and WWII wrecks, natural reefs and walls.

The vessels are scheduled to be sunk over a period of 14 months period, with a sinking every three to four months. Each

sinking will be an attraction in itself and will be accompanied by a show of fireworks.

The area will also feature an exhibition center, where the history of the sunken fleet will be documented with drawings, photos and films of the ships, the chronology of its career and documents about its historical context.

Southern Portugal is reached from most of Europe in less than three hours by plane and well connected by motorways, so the organisers have high hopes that the new artificial wrecks will make the region a new highlight for diving enthusiasts from all over the world. ■

Sixteenth century wreck discovered off Brazil

A team of Brazilian archaeologists and divers who discovered the remains of a Spanish vessel off the southern state of Santa Catarina say the recovered fragments correspond to a shipwreck that occurred in 1583, the *Latin American Herald Tribune* reports.

The first recovered fragment from this latest find was a stone with a high-relief shield of two lions and two castles with a Portuguese symbol in the center. That shield dates back to the kingdoms of Leon and Castile and the 1580-1640 Iberian Union, when the monarchies of Spain and Portugal

were unified. The divers also recovered a triangular plaque dated 1582 and containing the name of Spain's King Philip II. According to investigators, the plaque may have been an emblem that navigators used to lay claim to territories they had explored for the first time. ■

SOURCE: THE LATIN AMERICAN HERALD TRIBUNE

Half-billion dollar treasure makes it to Spain—after 300 years

After five years of legal wrangling, the treasure is finally going back—treasure that the Florida-based Odyssey Marine Exploration salvaged from the wreck of the Spanish frigate *Nuestra Señora de las Mercedes*, which was sunk by British warships near the port of Cadiz in 1804 killing 249 people and taking a treasure with

an estimated value of half a billion dollars with it to the seabed. Spain had argued in court that it, not the salvage company, was the rightful owner of the cargo and the ship. On February 17, a U.S. judge ordered that the coins be returned to Spain from Florida.

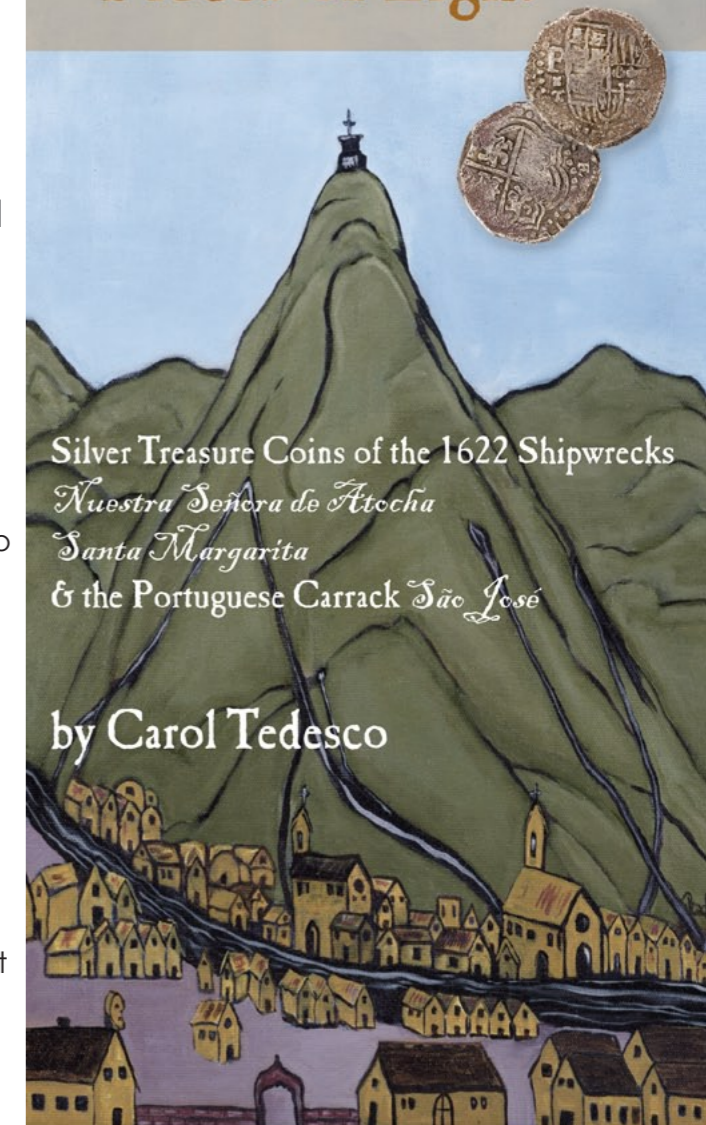
■ **Full story**

First *HMS Victory* to be raised—after 300 years

This is another treasure wreck that was discovered by Odyssey Marine Exploration four years ago. The vessel, predecessor of Nelson's famous flagship, which some believe was carrying £500m of gold coins, went down in a storm off the Channel Islands in 1744, tak-

ing more than 1,000 sailors to their deaths. According to the *Sunday Times*, the wreck is to be handed over to the Maritime Heritage Foundation, which is expected to employ Odyssey Marine Exploration to carry out the recovery. ■

Pieces of Eight



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

by Carol Tedesco

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

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



New flights link Borneo's best dive attractions

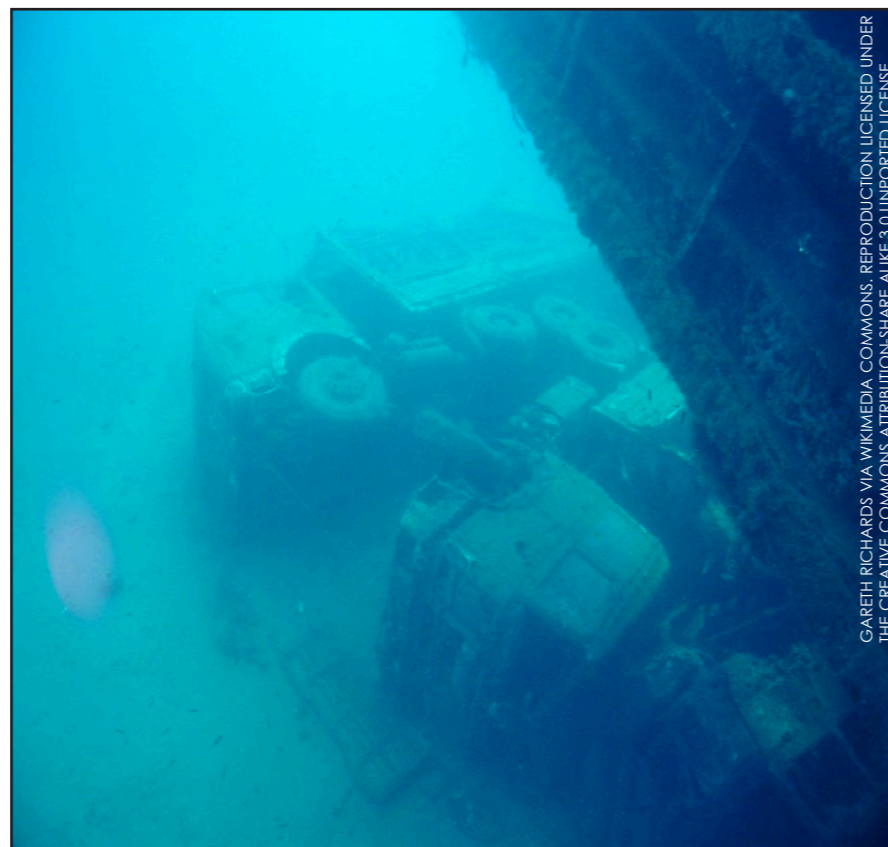
New Tawau-Kalimantan air link opens up expansion of eastern Borneo dive industry.

According to Sabah Tourism Board (STB) chairman, Tengku Zainal Adlin Mahmood, divers from around the world frequent both Sabah and Indonesia's East Kalimantan province. STB has drawn up plans with its East Kalimantan counterpart to promote the two dive regions.

With such renowned locations as Mabul and Sipadan islands, Eastern Sabah encompass more than 100 dive sites featuring barracuda, hammerhead sharks and a wealth of macro species such as nudibranchs. East Kalimantan is popular for its Sangalaki, Derawan, Kakaban and Maratua islands famed for manta rays and non-stinging jellyfish.

With MASwings now flying between Tawau and Tarakan three times weekly, dive operators can now package sites in both eastern Sabah and East Kalimantan, making it easier for divers to experience the region's multitude of attractions. Some 46,000 divers visited Sabah in 2011. ■

Zenobia diving ban revoked



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In what was seen as a devastating blow to the local dive industry, diving on Cyprus' famous Zenobia wreck was banned by port authorities citing liability issues only to be recanted few days later citing 'miscommunications'.

The Cyprus Ports Authority (CPA) lifted the diving ban following a massive negative reaction from the diving community, the Larnaca Municipality and the Cyprus Tourism Organisation (CTO). *Zenobia* in one of Larnacas

main attractions, and the dive centres and schools were extremely angry and alarmed by the ban announcement, which directly affected their livelihoods. It is now understood that the CPA will issue temporary licenses to diving

schools (also organised bodies and individuals) for the rest of 2012.

The 12,000 tonne 178-metre-long RO-RO ferry, *MS Zenobia* capsized and sank near Larnaca, Cyprus, in June 1980 while on her maiden voyage, taking with it €250 million worth of lorries, industrial machinery and other cargo. Since then, the vessel has become popular, the country's premier dive site and frequently named one of the world's top wreck dives. The *Zenobia* provides a range of dive options, from the ship's 16-metre-long starboard side for newly qualified divers, to a more advanced dive inside the upper car deck and accommodation block, right up to extremely adventurous dives within the lower car deck or the engine room. Although everyone was evacuated from the ship before she sank, four divers have since lost their lives on the wreck.

One of these divers was Catherine Vicar, 33, who was found unconscious in the engine room in October 2010. According to port authority's general director, Yiannakis Kokkinos, her family was "considering legal

action against port authorities, because they consider us responsible for her death".

Larnaca Mayor Andreas Louroudjiadis called the port authority's decision "rushed and arbitrary". Meanwhile, head of the Cyprus Tourism Organisation (CTO), Alecos Orountiotis, said that port authorities had not actually consulted them, and that he had been "informed by the press".

The CTO had also paid around €50,000 for four ships to be sunk in other spots, including Paphos, Paralimni and Limassol in order to promote marine tourism such as diving, Orountiotis said. He is now unsure what would happen to those plans. "Sea sports bring in some €150 million in tourist revenue each year." ■



MS Zenobia listing in June 1980 prior to her sinking

Airfare Junkie's Guide

Figuring out how to accrue the most air miles is like solving a puzzle. First, head to FlyerTalk to learn the basic jargon (Flyertalk.com/glossary). Then pick the airline frequent-flyer-miles program you're going to use. Once you're ready, search for cheap flights from your home city. Next, check out the forum, "Miles Buzz on FlyerTalk". There you'll find over 250,000 posts about promotions available, all updated by airfare junkies in real time. ■

Unlogged

Going diving to Egypt and want to hear what others have to say about your planned destination beforehand? A new website called, Unlogged, may provide the answer. The diver's equivalent of Tripadvisor, the site provides detailed coverage of each diving destination in Egypt. Covering everything from dive sites to nightlife, the website encompasses the Red Sea from Hamata and El Gouna to Sharm el-Sheikh to Taba. In addition, browsers can check out videos showcasing a day's diving in each destination as well as useful tips for making the most of your journey. www.unlogged.co.uk.

Smart Traveler App

Smart Traveler, the official U.S. State Department app for travelers, provides easy access to frequently updated official country information, travel alerts, travel warnings, maps and other info that is also useful for other than just U.S. citizens. **Smart Traveler on iTunes**





'Elite' passengers allowed to bypass screening in U.S. airports

U.S. Transportation Security Administration announces expansion of streamlined screening program.

Super-size airline passengers beware

Airline passengers may soon have to endure an additional queue prior to check-in—the weigh-in queue. Former Qantas group chief economist, Tony Webber, has proposed a 'weight surcharge' to help airlines cover rising costs.

Airline costs have increased since 2000 not only due to higher fuel prices, but because "passengers are carrying a bit more heft". An associate professor at the University of Sydney Business School, Tony Webber, calculated that the increase in average weight of passengers means 3.72 extra barrels of jet fuel are burnt on the average Sydney to London flight. "When you add it up over all flights for a year, the extra cost can all but wipe out an airline's profits," added Webber.

Although Australia's Qantas and Tiger Airlines were quick to state they had no immediate 'fat tax' plans, KLM and Air France are considering a proposal to oblige larger passengers to pay for not just one seat, but 75 percent of the adjacent seat. However, there was no mention as to whether thin passengers would be offered the rest of the seat for a quarter of the price. ■

A select few of us may keep our shoes and belts on next time we transfer through a U.S. airport. By the end of March, select passengers departing from Kennedy, O'Hare and Reagan National airports in the United States will be able to breeze through security checkpoints without having to remove shoes, outer coats or laptops from their cases. Highest-status elite customers chosen by the airlines will qualify to participate in the PreCheck expedited security program. Since initial testing by the Transportation Security Administration (TSA) in the fall of 2011, eight airports are now participating in the PreCheck program, with an additional 27 planned by year's end.

There are two ways travelers can take part. The first is to be invited by one of the participating airlines. Routine personal background information on their elite fliers will be sent to TSA, which will determine on a trip-by-trip basis which passengers will receive boarding passes, allowing them to use PreCheck lanes.

The other way is through the Global Entry program operated

by the Customs and Border Protection agency. After passing background checks, enrolled international travelers designated as low-risk passengers will be given expedited entry.

Highest-status elite customers chosen by the airlines will qualify to participate in the PreCheck expedited security program.

According to TSA's administrator John S. Pistole, select passengers are still subject to random full-security checks. "We've had nearly 350,000 people go through by now," stated Pistole.

"There is clear public support for moving away from the one-size-fits-all concept in checkpoint security, toward a multilayered approach partly based on intelligence," Pistole said. "Just from a policy standpoint, we wanted to validate that," he added. ■



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Having the area (almost) to yourself. Red Sea operators are reeling from the effects of the recent changes as travellers opt for other destinations

ing for the CDWS [Chamber of Diving and Watersports] in Egypt directly after the revolution and the subsequent jail term of the then Minister of Tourism—Zuhair Garranah. (Read article here >>>). The scene was set for dwindling quality in and supervision of the scuba industry in Egypt.

Out of control

One year later, the situation is spinning out of control. A recent example of this is that scuba introductory courses are being performed on the wreck of the *Thistlegorm* (at +40m depth) with only the so-called “instructor” wearing scuba gear!

The CDWS still has a mandate—checking diving operators for conformity and subsequently, with approval, an operation receives its license from the Ministry of Tourism—but how can the CDWS adequately perform their duties if we are now talking about one lonesome inspector serving the

entire Egyptian coastline, which houses approximately 700 scuba operations? Even if this lone ranger would interdict an unsafe scuba operation, there is no police force to enforce any decisions, at present.

Generally, there has been a big drop in tourist income for Egypt in 2011, from EG£12 billion the previous year to £9 billion; and this is expected to drop even more in 2012. There are less flights, and in recent decisions by some European foreign affairs agencies, negative travel advisories have resulted after several reported kidnappings in Sinai and a surge of criminal activity all over the country.

Although this kind of criminality is nothing out of the ordinary in western countries, here in Egypt, with the current situation of the media looking for stories to tell, every news article spins out of control—again impacting the tourism and scuba industries. ■

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Impact of revolution on Egyptian scuba industry

Text by Henri Hemmerechts

One could start by saying, *same-same-but-different*, when talking about the diving industry in Egypt—*same-same* as previous periods like the '97 Luxor assassination, the 2004 bombing and the shark attacks in Sharm el Sheikh in 2010. Each of the above events brought subsequent periods of drought in customers and tourism. Prices dropped and people went out of business. The professional and long-established businesses survived. The new and not so professional businesses did not.

So, why is it different this time around? Besides the fact that,

politically, the country is generally divided into pro-Mubarak military regime proponents and the obviously growing number of anti-military regime adepts, there is a political vacuum that has led to lawlessness and a dramatic increase of criminality never before experienced in the tourist areas. There's still an unknown end point for the Egyptian tourism industry, in general.

Wave of nationalism

One thing is sure—a wave of nationalism has swept the coun-

Same-same-but-different

try, including the diving industry. A gradual evolution has been accelerated by anti-ghawaga (anti-foreigner) sentiments to a point that even some of the old, weathered scuba professionals hesitate to come out of their houses for fear of their personal safety. The general outlook is that the Egyptian dive professionals should reclaim the scuba industry, which has been dominated by foreigners.

In a previous article that I wrote for IADP members [International Association of Dive Professionals], I addressed the loss of fund-

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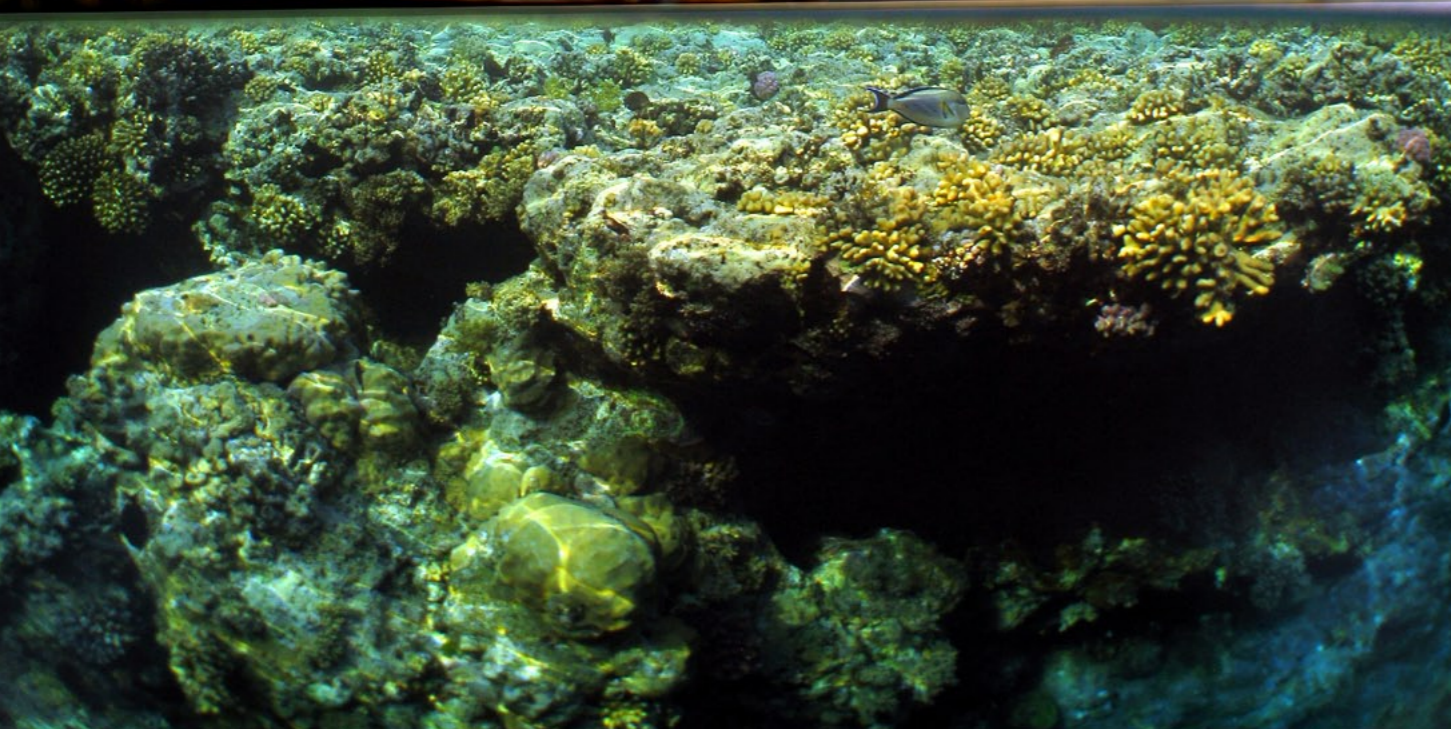
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Red Sea Liveaboard
Brothers Islands

Text and photos by
Christopher Bartlett
Additional images
by Peter Symes



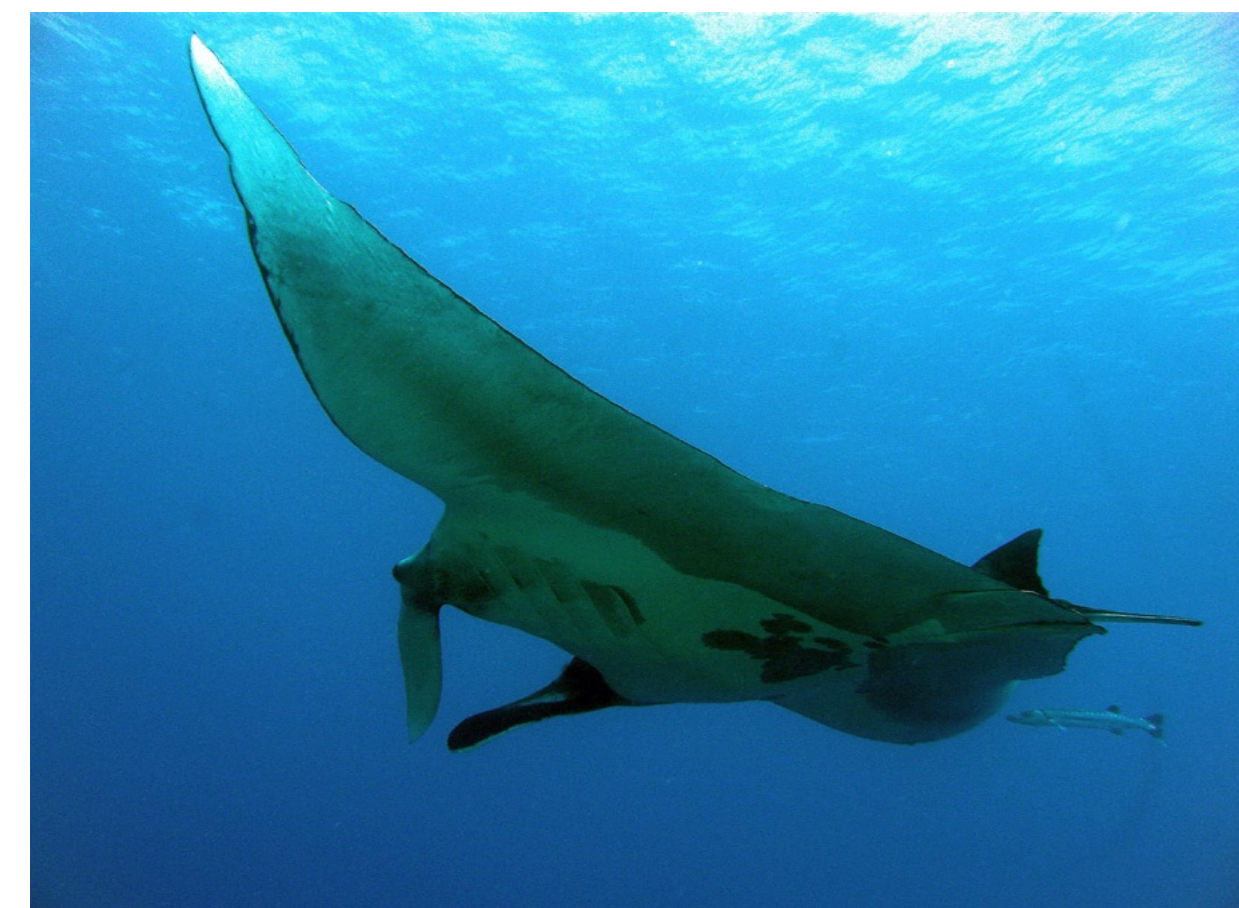
After six years of almost only diving from RIBs and spreading my clothes around my house, villa or hotel room, I decided it was time to see if I would enjoy a week on a boat with a bunch of strangers. As a frequent solo traveller, I wondered whether the close confines of a cabin with a random snorer would see me sleeping on the deck

by the second night. The allure of remote dive sites, unreachable by day boat, was strong enough for me to give it a go. Forty-two miles off the Egyptian coast, the Brothers Islands rise up from the floor of the Red Sea 800 metres below, forming two small, flat tabletops surrounded by steeply sloping fringing reefs.

The Brothers Islands have the only reefs around washed by strong nutrient-rich currents. I was attracted by their reported features combining soft corals, pelagics, sharks and two wrecks in good condition.

The larger of the two sea mounts—cunningly named Big Brother—is approximately 300 metres long and one kilometre away from its sibling. It has a lighthouse and a 12-man army garrison. It would be a great location for a back-to-basics television series, such as the reality TV show of the same name.

Split image with above and below surface views of Big Brother with lighthouse and garrison; Bannerfish and grouper (top right). PREVIOUS PAGE: Diver hangs in the void along a wall off Brothers



CLOCKWISE FROM TOP LEFT: Returning to *Blue Pearl* on RIB; Buddy James over soft coral; Longnose hawkfish on gorgonian; Giant manta on Big Brother

I was the last to arrive at the harbour in Hurghada the night before the departure of the liveaboard. All the other guests had gone to their cabins already. I was greeted and briefed by one of the dive guides, Mimo, with a shining pate and wide smile.

sooner had I littered the spare bed with camera bits, books and t-shirts, when I was introduced to Karim who kindly informed me that some dinner had been kept for me and was waiting for me in the dining area. Splendid.

Over a welcome glass of fresh fruit juice, he explained where to stow my dive gear and gave me some welcome news. The 20-guest boat only had 12 passengers, and so, I would have one of the eight below-deck twin cabins to myself. No

Covering six metres of the eight-metre width of the *MY Blue Pearl*, the mid-ship dining area was an open plan affair adjoining the lounge that led onto the outdoor dive prep area at the stern. In the wall towards the bow was a magic hatch through which Karim or his brother Karemi, the other steward, would receive platter after platter of food from Chef Wael in the kitchen. Before the bow on the 36-metre long main deck were the crew quarters and rope storage area, and a small deck used at prayer time.

After having a read the safety notices and emergency action plans pinned up



in good condition, the briefings friendly but to the point.

Pia laid out the itinerary in her "best Bavarian English, ja?" It was simple. Today would be spent on the coast diving at Gota Abu Ramada to check our gear, buoyancy and to get to know our buddies, as habitually strong currents off the

isolated Brothers Islands would be no place for faffing, and to do a night dive before heading east overnight.

An artificial shark stuck on a knife—part

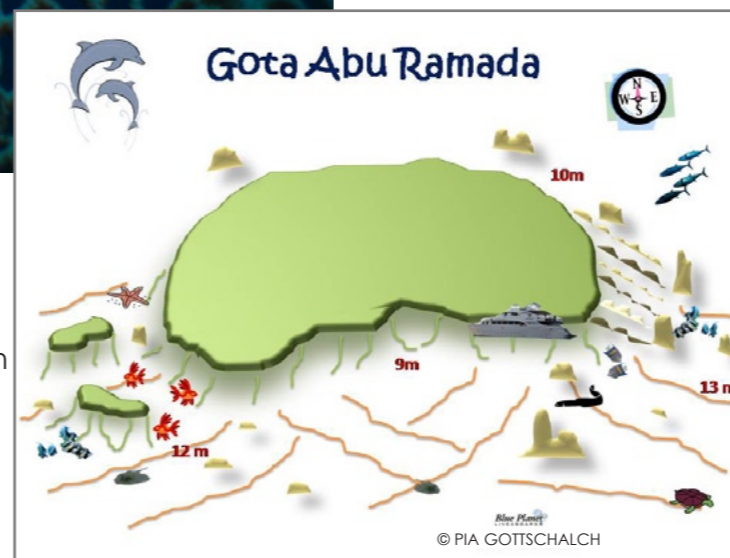
of blackspotted sweetlips and spottin squirrelfish, morays, crocodilefish and a large school of yellowtail barracuda and goatfish upon which to get reacquainted with camera settings.

Gota Abu Ramada
Gota Abu Ramada is a shallow site, no deeper

than 13 metres, with a large Australia-shaped reef with two large bommies off what would be the Perth coast (to the WSW). It was ideally suited to its purpose with no current, clear waters, small schools



CLOCKWISE FROM TOP LEFT: Gorgonian forests on Little Brother; *Numidia* wreck; Giant moray defends lair; Map of Gota Abu Ramada



next to the flatscreen TV in the lounge, I went outside and up the stairs to the shaded rear chill-out deck, did a circuit passing the portside double cabin, the bridge, the front sundeck, the starboard double cabin, back astern and then further up to the flybridge. Even if I had had to share, there was actually plenty of room to find some personal space.

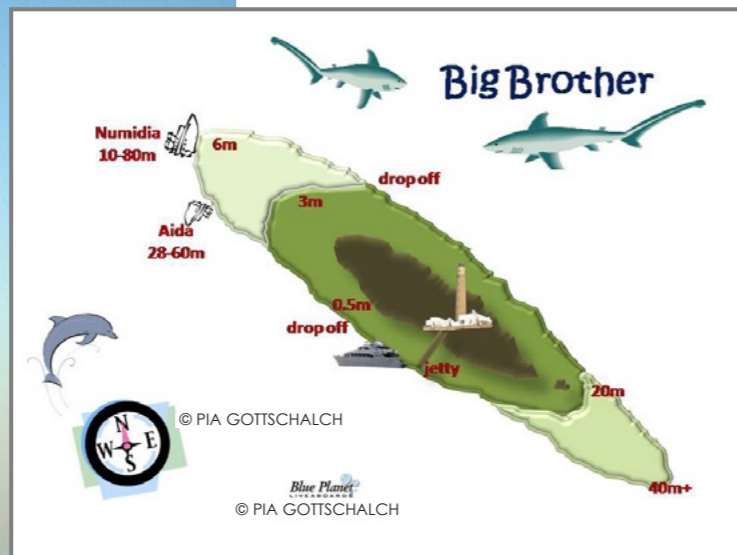
As Karim asked me how I would prefer my breakfast eggs the next morning, I took in my fellow shipmates, all liveaboard veterans and mostly return customers. We were an eclectic, if slightly Germanic, bunch—a German-Dutch couple, two German father-and-son combos, an

Austrian quartet made up of a father, his son, the son's wife and a friend. The 12th man was James, a middle-aged, Libyan-based Scottish teacher, and naturally, my buddy.

Seated in the lounge, Pia, the trip leader and diving instructor, took us through the boat and dive safety briefings. Given that we'd be at least five hours from the coast, the equipment was reassuringly plentiful and

Masked butterflyfish on Big Brother





Brothers

Two-bar anemonefish on Panorama, Safaga

absent from the surface, but we did a negative buoyancy entry and went straight down to ten metres, meeting up above the



ability to use an SMB competently.

The night dive was my first from a live-aboard and was enhanced by the deck lights on the boat, which created a full moon effect underwater, illuminating the bommies and the shark sculpture, hence providing visual markers for reference points.

After a warming shower to wash away the goose bumps from a third hour-long dive in 24°C water, we were greeted by the aromas of a giant buffet. Once dinner was over, the captain set a course eastwards, as some sat on the top deck watching the stars, and Karim and Karemi did a few card tricks in the lounge.

SS Numidia

I awoke to the sound of water lapping gently on the hull below my open cabin portholes, the early-morning light peeping in. From the deck, Big Brother and its Victorian lighthouse took on a red-brown hue as we boarded two RIBs and headed to the northern tip of the island.

The legendary currents appeared

beginning of the wreck of the SS Numidia, claimed to be one of the best wrecks in the Red Sea. She certainly looked huge and in good condition, given that she had spent more than a century exposed in her current-washed resting place.

Built in Glasgow in 1901, the 140-metre long, 6,400-ton Numidia was on her second voyage out of Liverpool bound for Calcutta with 7,000 tons of railway and general cargo. In the early hours of July 20, Big Brother's lighthouse was sighted off the port bow, and the captain ordered a slight change of course

to continue south passing alongside the island before retiring to his cabin. His orders were misinterpreted, and the ship ploughed straight into the northern tip

of the island. No lives were lost, much of the cargo was salvaged, but the ship went down, her keel digging into a rocky ledge. Now, she sits on a steep slope, her bow melded into the top of the reef, her stern some 72 metres below.

Hanging back, I let the other divers descend and incorporated them into a few shots to try to add some scale to my pictures. I captured the lifeboat davits and the remains of the foremast in the centre of the deck with a wide-angle lens, as the group inspected the remains of the bridge and the engine room. Yet, no image could convey quite how impressive this wreck was, dropping into the deep blue depths.

Descending to join the group and getting close to the wreck, I saw it was covered in soft corals and awash with burgundy and white striped Red Sea anthias and lionfish—accustomed to strong cur-



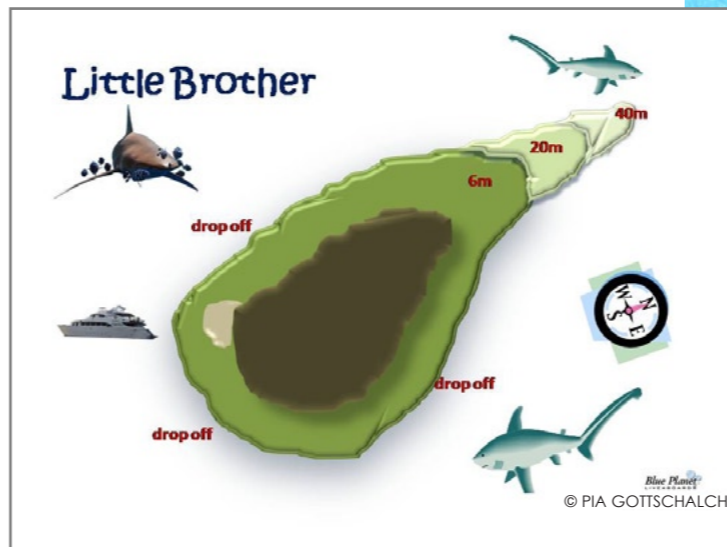
Thresher shark off Big Brother's southern plateau

Point of Big Brother, Blue Pearl moored, Little Brother in distance

of HEPCA's (Hurghada Environmental Protection and Conservation Association) shark protection awareness campaign—five metres below the surface also amused the divers, who took turns sitting on the sculpture's back during the safety stop once we had all demonstrated our

the hull below my open cabin portholes, the early-morning light peeping in. From the deck, Big Brother and its Victorian lighthouse took on a red-brown hue as we boarded two RIBs and headed to the northern tip of the island.





CLOCKWISE FROM LEFT: *Aida* wreck; Little Brother map; Male Napoleon wrasse and divers; Pregnant grey reef shark and oceanic whitetip with pilotfish at Little Brother

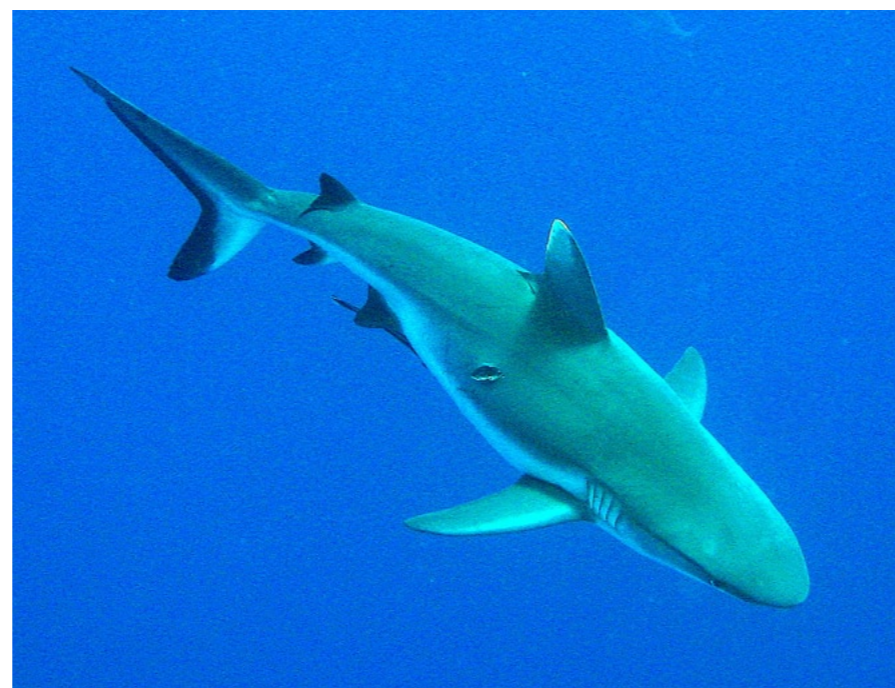
The plateau started at a depth of 20 metres and sloped down to 40 metres. It was a hot spot for thresher sharks. As we reached 25 metres, Mimo's arm shot out, finger extended

times before ascending to the top of the reef where we chilled out with the sohail surgeonfish before being invited to stuff ourselves again on board.

The next five days followed the same pattern: dive – breakfast – relax – dive – lunch – relax – dive – dinner – relax.

Due to the normally strong currents, the isolated nature of the location and the considerable presence of sharks, there was no night diving on the Brothers. In fact, on most nights we didn't need to get in the water to see them anyway.

Whether you agree or not, it is accepted practice on liveaboards to throw organic waste overboard in the evening, and the sharks seemed to be in on it, especially at Little Brother. Leaning over the side rails with the crew after dinner, we often saw oceanic whitetip and silky sharks patrolling around the boat.



rents—sheltered inside. On this day, there was no need. With no current and good viz, conditions were ideal, and we spent the whole dive there, ascending past some coral-encrusted rolling stock bogies at ten metres, before being picked up by the RIBs and taken back for breakfast.

After catching a few rays on the sun-deck, Pia and Mimo said it was time for a shark hunt on the southern plateau. As we were moored off the southern tip where there was no current, we would giant stride off the rear deck and return to the boat at the end.

towards the unmistakable scythe-like tail of a thresher shark swimming through a school of fusiliers. It stayed within view for a couple of minutes before we lost it.

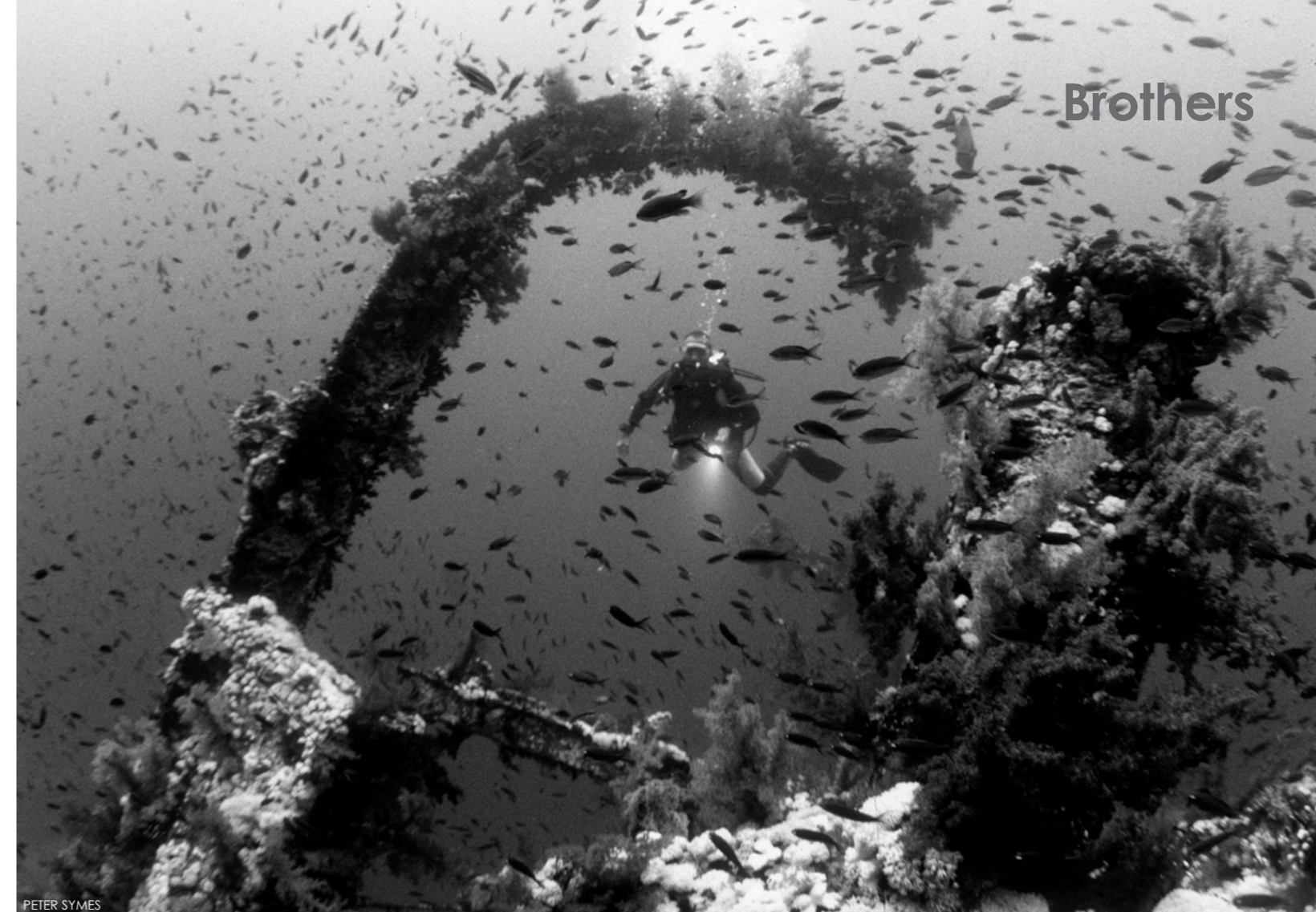
We hung around 28 metres as long as our 30 percent nitrox mix would allow us, spotting a distant Thresher two more

Aida

Big Brother's other iconic dive site is the wreck of the *Aida*, a 75-metre supply vessel built in France in 1911, which sank on 15 September 1957 when resupplying the lighthouse and Egyptian army garrison stationed there. Approaching the jetty in heavy seas, she was slammed onto the rocks and abandoned immediately. After drifting north slightly, she went down south of the *Numidia*, just past the end of the island. Her bows no longer exist, but from her midships at 25 metres to her stern at 60, she is excellent condition,



PETER SYMES



PETER SYMES

THIS PAGE: Scenes from *Aida* wreck

adorned with purple soft corals and hard corals, anthias, morays and the usual reef dwellers.

The *Aida* was the last dive of the second day, and the first dive the next morning when a gentle current helped us onto the *Numidia* and then along the wall past a large school of black snapper hanging on the corner of the reef.

The walls of Big Brother were also home to a friendly, 90-centimetre female Napoleon wrasse called Mousie. After another successful Thresher-spotting trip over the southern plateau, Mousie and I flirted for a few minutes, as if eyeing each other across a bar, until she sidled up, posing, tilting onto one side like she wanted to be petted. Our 15-minute infatuation was sadly cut short by my dive computer and my

buddy's air consumption dwindling.

On our last Big Brother dive, we had a slightly stronger south to north current. No sooner had we dropped in when we were greeted by a juvenile giant manta, approximately four metres across, riding the current and flanked by a barracuda, closely followed by three grey reef sharks. But the action wasn't over yet.

As we loitered expectantly, a 1.2-metre male Napoleon came amongst the divers creating a scene akin to a publicity-starved celebrity (quite appropriate given the location) willingly posing for the paparazzi. He left abruptly, diving fast to chase off a small grey reef shark sniffing around his patch.

As we slowly moved north, corner fish hugged our tanks, using us for streamlining and cover, as they

WHEN TO GO

September and October are the busiest months of the year with warm seas. Even remote reefs can have several boats on them. May and June are the next busiest months, for the same reasons.

July and August are quiet due to hotter ambient temperatures. However, this is also when the water is warmest, and there is often a cooling breeze on deck. Boats are fully equipped with air-conditioning throughout.

March and April are also quiet, and with water temperatures in the mid-20s at the Brothers, it is a good time to go.

During the quiet months of March, April, July, and August, solo travellers and unromantically involved pairs have a good chance of being given a cabin to themselves on arrival. ■



CLOCKWISE FROM LEFT:
Pipefish; Blackspotted sweet-
lips; Scribbled filefish; Foster's
hawkfish on reef at Little
Brother; Spottfin squirrelfish

gorgonian forest, home to a longnosed hawkfish, round the corner from a section of wall festooned with broccoli-like soft corals. In the normally washing machine-like shallows, we off-gassed with black-tongue unicornfish having parasites removed by cleaner wrasse, pufferfish, moray eels, orangespine unicornfish, barracudas and an octopus, thanks to the remarkably still waters. The icing on the considerable cake was provided by an oceanic whitetip and its accompanying

pilot fish that came by to say hello.

It would've been unfair to expect the final day's diving in Safaga to compare, but Panorama reef had interesting seven-metre high, mountain-like dome coral

Brothers

formations, anemonefish and two turtles. The snorkelling boats at Tobia Arba'a (a.k.a. The Seven Pillars) also provided much amusement from above and below the surface, and the shallow waters of the goldie-covered coral bommies were also home to blue spotted stingrays and lionfish. Rather than being a let-down, these two sites, two of the best in the area, served as a reminder of how spoilt we had been.

The whole experience had been excellent. There was plenty of room on the boat and I spent so little time in my cabin awake that sharing would have been no problem. The constant sound of the ocean was soothing and we never had to share a dive site with another group. In fact each buddy team often went at its own pace and James and I were frequently alone at the end of a dive, hanging out with the fish. In short, I can safely say that I am a liveaboard



convert and would thoroughly recommend a trip to the Brothers.

Christopher Barlett travelled with Oonas Divers. www.oonasdivers.com

it did not disappoint. After an uneventful 15 minutes deep in the blue looking for sharks, we moved closer to the wall. A quarter of an hour later, we had seen a male grey reef shark, two threshers, a curiously unshy silky shark, and an obviously pregnant grey reef shark, and had been entertained by an even bigger male Napoleon wrasse.

The last four dives were just as impressive. The

male napoleon wrasse was often under the boat waiting to tag along on a dive, the pregnant reef shark (*Carcharhinus amblyrhynchos*) seemed to live near the mooring site, threshers milled around to the south below a magnificent

looked for prey to ambush amongst the schools of anthias while we found pipefish amongst the gorgonians. As we moved closer to the surface, a manta cruised along below to bid us farewell. Big Brother had been excellent—could Little Brother follow suit?

Little Brother

It had two days to outdo its sibling, and



fact file

Brothers Island



SOURCES: US CIA WORLD FACT BOOK, SCUBADOC.COM, E-MED.CO.UK

History One of the world's great civilizations developed in Egypt fostered by fertile lands and regularity of the annual Nile River flood, as well as the relative isolation found between the deserts to the east and west. Around 3200 B.C., a unified kingdom evolved, followed by ruling dynasties reigning in Egypt for the next 3,000 years. In 341 B.C., the Persians conquered the last native dynasty. Then came the Greeks, Romans and Byzantines. It was the Arabs who, in the 7th century, introduced Islam and the Arabic language. They reigned over Egypt for the next 600 years. Then, around 1250, the Mamluks, a local military caste, took control and continued to govern after the Ottoman Turks conquered Egypt in 1517. In 1869, Egypt became an important world transportation hub after the Suez Canal was completed, but also accrued a lot of debt. In order to protect its investments, Britain took control of Egypt's government in 1882. However, allegiance to the Ottoman Empire continued, in name only, until 1914. Egypt was partially independent from the United Kingdom by 1922, and in 1952 the country got full sovereignty after the overthrow of the British-backed monarchy. In 1971, the completion of the Aswan High Dam and the creation of Lake Nasser altered the long-held role

of the Nile River in the ecology and agriculture of the country. Resources were overtaxed and society stressed as the population experienced rapid growth. In addition, there was limited arable land and continued dependence on the Nile. In order to face these challenges, the government implemented economic reform and major increases in investment in physical and communications infrastructure. Events in Tunisia leading to overthrow of the government there, inspired the Egyptian youth and opposition groups to protest. They organized a "Day of Rage" campaign on 25 January 2011 (Police Day) involving non-violent demonstrations and marches, as well as labor strikes in Cairo and other cities across the country signalling what is now known as the Arab Spring. Government: republic. Capital: Cairo

Geography Egypt is located in Northern Africa. It borders the Red Sea north of Sudan and the Medi-

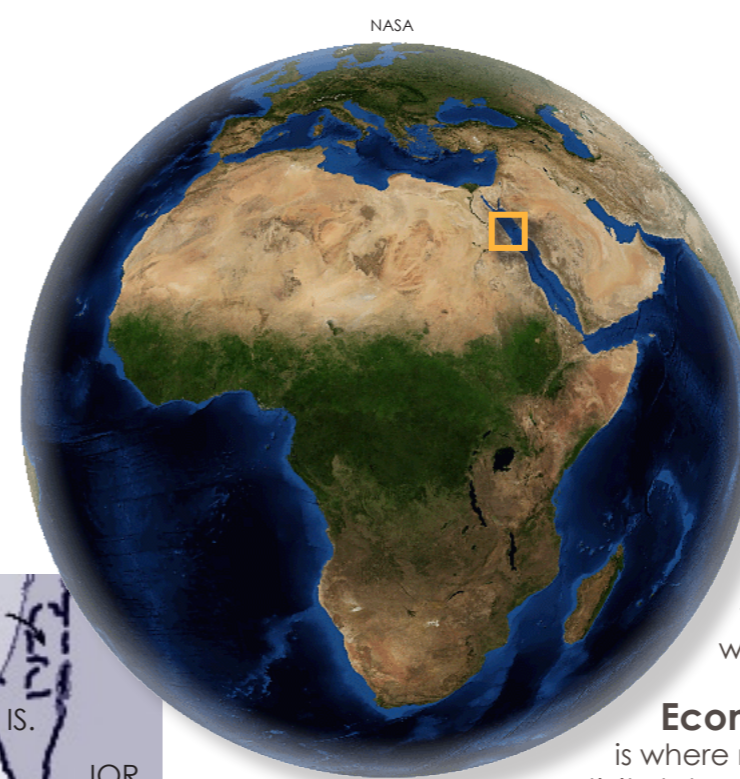
terranean Sea, between Libya and the Gaza Strip. It also includes the Asian Sinai Peninsula. Coastline: 2,450km. Terrain: Cut in half by the Nile valley and delta, Egypt is primarily a vast desert plateau. Lowest point: Qattara Depression -133m. Highest point: Mount Catherine 2,629m. Note: Egypt controls the Suez Canal—a sea link between the Indian Ocean and the Mediterranean Sea—as well as the Sinai Peninsula, which is the

RIGHT: Location of Brothers Islands on global map
BELOW: Location of Brothers Islands on map of Egypt



only land bridge between Africa and the edge of Eastern Hemisphere. Natural hazards: droughts; earthquakes; flash floods; landslides; dust and sand storms; and *khamsin*—a hot, driving windstorm that occurs in spring. Environmental issues: urbanization and windblown sands decreasing agricultural lands; soil salination increasing below Aswan High Dam; desertification; coral reefs, beach-

es, marine and aquatic habitats threatened by oil pollution, agricultural pesticides, raw sewage, and industrial run-off. Egypt is party to the following international agreements: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropi-



cal Timber 94, Wetlands.

Climate Egypt has a desert climate—hot, dry summers with moderate winters

Economy Nile valley is where most economic activity takes place. Highly centralized during the rule of former President Gamal Abdel Nasser, Egypt's economy opened up significantly under former Presidents Anwar El-Sadat and Mohamed Hosni Mubarak. From 2004 to 2008, Cairo pursued economic reforms aggressively in order to attract foreign investment and foster GDP growth. However, living conditions for the average Egyptian stayed poor and exacerbated public discontent despite the increase of economic growth in recent years. Unrest took place in January 2011 and the Egyptian Government dramatically increased social spending to ease public dissatisfaction. However, economic growth slowed significantly due to political uncertainty, which reduced government revenues. The hardest hit sectors were tourism, manufacturing, and construction. Economic growth is most likely to stay slow through 2012. Foreign exchange reserves are being used by the government to support the Egyptian pound.

Population 83,688,164 (July 2012 est.) Ethnic groups: Egyptian 99.6%. Religions: Muslim (mostly Sunni) 90%, Coptic 9%, other Chris-

tians 1%. Internet users: 20.136 million (2009)

Currency Egyptian pounds (EGP)

Language Arabic (official), English and French

Health There is an intermediate degree of risk for food or water-borne diseases such as bacterial diarrhea, hepatitis A, and typhoid fever; vectorborne disease such as Rift Valley fever; and water contact disease such as schistosomiasis. H5N1 avian influenza has been identified in the country but poses low risk to tourists.

Decompression Chambers

SHARM EL SHEIKH Sharm International Hospital (+20) 69 366 0318
Hyperbaric Medical Center (+20) 12 212 42 92

DAHAB Hyperbaric Medical Center (+20) 693 640 536 / 101 433 325
Dahab Deco International (+20) 12 219 0372

HURGHADA
Naval Hyperbaric Medical Center (+20) 65 3449 151 / 065 449 150
Hypermed (+2) 12 218 7550

SAFAGA Safaga General Hospital (+20) 122 190 383

MARSA ALAM Port Ghalib Hospital (+20) 122 190 383 / 653 700 122
Marsa Alam Baromedical (+20) 12 436 2222

Web sites
Egypt Tourism
www.egypt.travel ■



Red Sea Safari

Journey from Cairo to El Quseir



Text and photos by Barb Roy

Octopus (left); Beduin led camel train in Dahab (above)

In spite of Egypt's current turmoil, I feel this exceptional country is still a place of interest and worth while including in anyone's holiday itinerary. I recall enjoying the opportunity to tour many of the countries monuments, museums and being able to touch one of the huge pyramids that have surpassed the adversity of historical challenges. The beautiful

golden glow of desert sunsets, the fertile green fields of the Luxor valley and the enchanting Nile River scenes as breaking dawn begins another serene day still stir in my mind. But most of all, I was captivated by the beauty and diversity of the marine inhabitants that flourished within the Red Sea.

My journey

When I found out I would be travel-

ing to Egypt for three weeks in June, I immediately began making regular visits to a local sauna to prepare my body to withstand the heat for which northern Africa is famous. Coming from British Columbia, Canada, blessed with mild climate and cool temperate water, I knew this trip to Egypt would be a very different experience.

In New York, I met up with adventure videographer Gary Knapp, who creates and produces dive travel DVD's for sale, all filled with helpful tips, activities and an underwater glimpse of what





Red Sea Safari



Sharm El Sheikh

Sharm El Sheikh is a popular dive destination on the southern tip of the Sinai Peninsula. From Cairo, it took around 50 minutes to fly on Egypt Air. The view from the plane showed how remote this hub, with a population of approximately 35,000, really is.

Steve arranged our first dive on a local dive boat, Abu Hara, operated by Pharaoh Divers. Since first dives are also checkout dives, travelers have the opportunity to become

CLOCKWISE FROM ABOVE: Scenes from the journey through Egypt — Russian Friendship Monument on the Nile River at Aswan; Riding camels at the Pyramids; Pyramid at Giza; Veggie stand in Hurghada; Areas of Sharm el Sheikh and nearby mountain range

explore the various dive holidays offered to entice traveling divers.

Our host for the journey was Steve Rattle, owner of Pharaoh Dive Club in El Quseir (on the Red Sea). Steve and several other industry associates have formed a group allowing them to offer a unique experience for traveling individuals and groups while in Egypt as a whole.

"From the time a diver lands in Cairo," said Steve, "We take care of everything, including airport transfers, land tours, accommodations, diving and all domestic flights, until the time they depart."

With the help of Afifi El Shimy, from Learning Through Travel, the Cairo portion was a breeze. A majority of visitors arrive in Cairo when coming from North America and many from Europe. Afifi

El Shimy arranged for Gary and I to visit the Giza Pyramids within two hours after landing! Camels were actually added into the equation for Gary, giving into the hungry faces of the younger Egyptian entrepreneurs. Needless to say, I pulled out my camera to take advantage of the opportunity while Steve laughed at us both.

Cairo is a city full of history and intrigue, but with over 16 million people, you can

imagine what traffic is like. Visitors should always try to arrange their tours before arriving, if possible, to save time, sanity and to make things hassle-free, especially if you don't speak the language or know your way around. After hearing nonstop honking in the streets and observing only a handful of stop signs and lights, I would advise the hire of a driver or taxi, no matter where you want to go.

The Cairo Museum, in Tahrir Square, was one of my favorite places because of the antiquity collection it contains, totaling over 120,000 items. Although taking pictures and video is no longer permitted, just walking among the towering statues in the exhibit halls gives a glimpse of what life might have been like when Cairo was in its infancy.

familiar with rental gear or for adjusting their buoyancy and weights to the Red Sea's higher salinity levels. With current airline restrictions on baggage, I always like to use rental gear from a reputable dive facility. Most dive operations throughout Egypt provide cylinders and weights anyway, with other items available upon request.

The water was warmer than expected, but my thin shorty wetsuit worked fine



Red Sea Safari

waved back and forth in the mild flow, creating pleasant background settings for wide-angle shots when photographing dive partners. Clusters of hard corals growing in all shapes and sizes were dispersed on the sloping reefs from nine to over 30 meters (30-100 feet) in depth. On many occasions, Steve pointed out turtles, stingrays and other large colorful fish cruising by us while diving on the walls. Like giant bouquets of flowers, orange, yellow and purple soft coral branches were at most sites, adding to their artistic picturesque surroundings.

Between dives, Steve explained that he and Osama Rushdie, originally opened Pharaoh Divers



THIS PAGE: Scenes from dive sites near Dahab; Fish on reef (above); Banded anemone fish (right); Giant clam (far left)

to keep me warm in the 26°C (80°F) degree water. Like many coastal places, the Red Sea is subject to currents, which provide nutrients to an assortment of life. As a photographer, the colorful resident lionfish and odd-looking crocodilefish made perfect models because they rarely moved far. Millions of tiny orange, yellow and red fish seemed to encompass each coral head throughout the reefs, with noctur-



Sea star

nal fish crowding for space under the overhangs.

Ras Umm Sid, the Temple and Jackson Reef in the Straits of Tiran were our next three dives over a period of two days. Here, colorful gorgonian sea fans gently

over 17 years ago in Sharm. Since then, Steve and his wife Claire moved to El Quseir five years ago and opened Pharaoh Dive Club. Osama still runs the Sharm operation though, working with Steve to provide visiting divers with a variety of locations to explore.

When asked why El Quseir, Steve



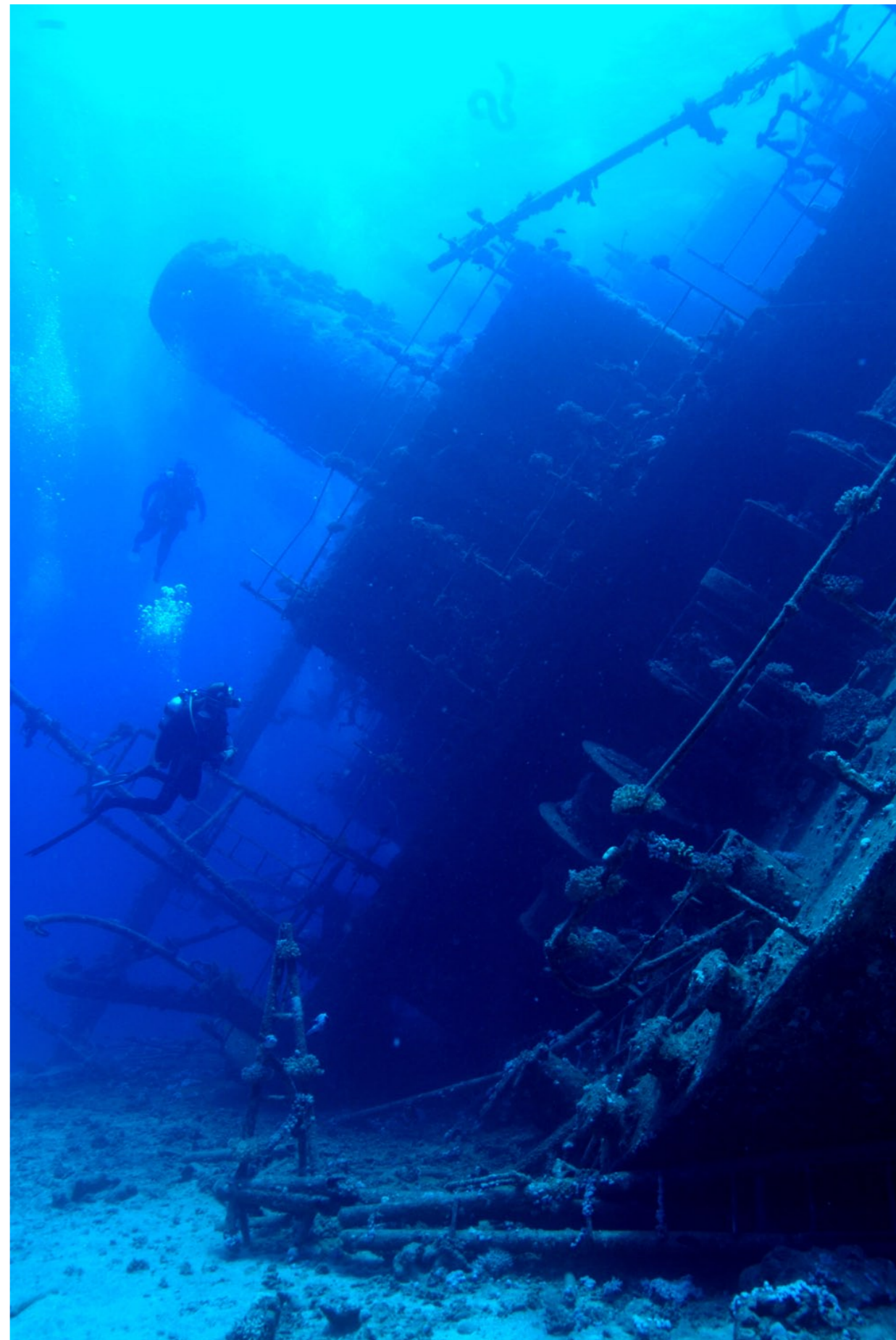
A pair of masked butterflyfish (left) on reef near Sharm el Sheikh; Diver and moray eel on reef (below)

Trainer, Leah Cunningham, from the United Kingdom, before leaving Sharm. He informed me that there were many deeper dives offered with several wrecks available as well. Apparently, most facilities offering technical diving and boat operators catering to this group can provide gear and appropriate gas blends. After hearing Leah talk about a half dozen deep wrecks, walls and pinnacles frequented by local tech divers, I yearned for my deep diving gear.

Dahab

Dahab was our next stop, located in north Sinai. Rather than using boats, most of the diving in this area was from shore. In some locations, camels were used to transport people and dive gear

Diver explores *Ghiannis D* wreck (right)



(originally from the United Kingdom) replied, "I've been diving all over the world and keep coming back to the Red Sea. I just liked the feel of El Quseir, and the area has some of the best diving around. There's great diving in the Straits of Terran and in Dahab, but our area is extraordinary."

That evening, we met up with Osama for dinner. Being Egyptian, he knew the best restaurants in town. Osama selected a freshly caught snapper from a display table and told the cook how it was to be prepared. When traveling to a new country, part of the total experience should include local cuisine, spices and drink. This Egyptian seafood feast was unforgettable!

A few days later, Abu Hara

took us to Ras Mohammed, a national park with steep cliffs stretching high above azure blue waters. Although Steve warned us of possible currents, none were present during our dive. The terrain reminded me of the majestic structures found in many of Egypt's temples.

We descended down to the wall to discover more large anemones, each with their own pair of brave little anemonefish to match. Some pairs were bright orange and white, while others were tan and white. The highlight of the dive was finding an immense sea fan, at least ten feet across and six feet high!

Curious if there was any tech-



nical diving offered in the area. I had the opportunity to interview Technical Dive Instructor

for an interesting experience across a stretch of desert to reach choice beaches. Some



Red Sea Safari



CLOCKWISE
TOP LEFT: World
Heritage Site
Saint Catherine's
Monastery at
Mount Sinai;
Camp; Pharaoh
Dive Club boat,
the Amelia; Roots
by Stuart

sites have tents set up to provide shaded rest areas, offering beverages for sale and restroom use for a nominal fee.

On the outer wall of the Blue Hole, Gary and I found several pairs of anemone fish, nudibranchs, young giant clams and numerous moray eels. Although the life seemed small, it was abundant in the variety of invertebrates. The tiny white and pink hydrocorals were exceptional for a 50mm macro lens.

The Canyon was a calm-water dive site, clear and full of hard smaller invertebrate residents. Like the name suggests, the reef structure forms a narrow passage where a diver can enter at around 20m (65ft) and



swim down to 30m (98ft) along the 'canyon'. For a photographer, the silhouetted shots can be incredible when using the jagged edges of the reef to frame a diver swimming above. Add in a few colorful fish and the setting is awe-inspiring.

One of my favorite dives for close-up shots was at a place called The Islands, where numerous submerged islands of hard coral covered a wide stretch of ter-

rain, providing a maze-like setting. This also provided shelter for stingrays, larger eels, fish, more anemones and nudibranchs.

Before leaving Dahab, Steve took us to Saint Catherine's Monastery at the foot of Mount Sinai, which is now a World Heritage site and one of the oldest Christian working monasteries in the world. Now a major tourist attraction, the place reminded me of a movie set. Even the trip to get there through the mountains was pleasing to the eye, as it revealed a colourful geology and more roadside vendors.

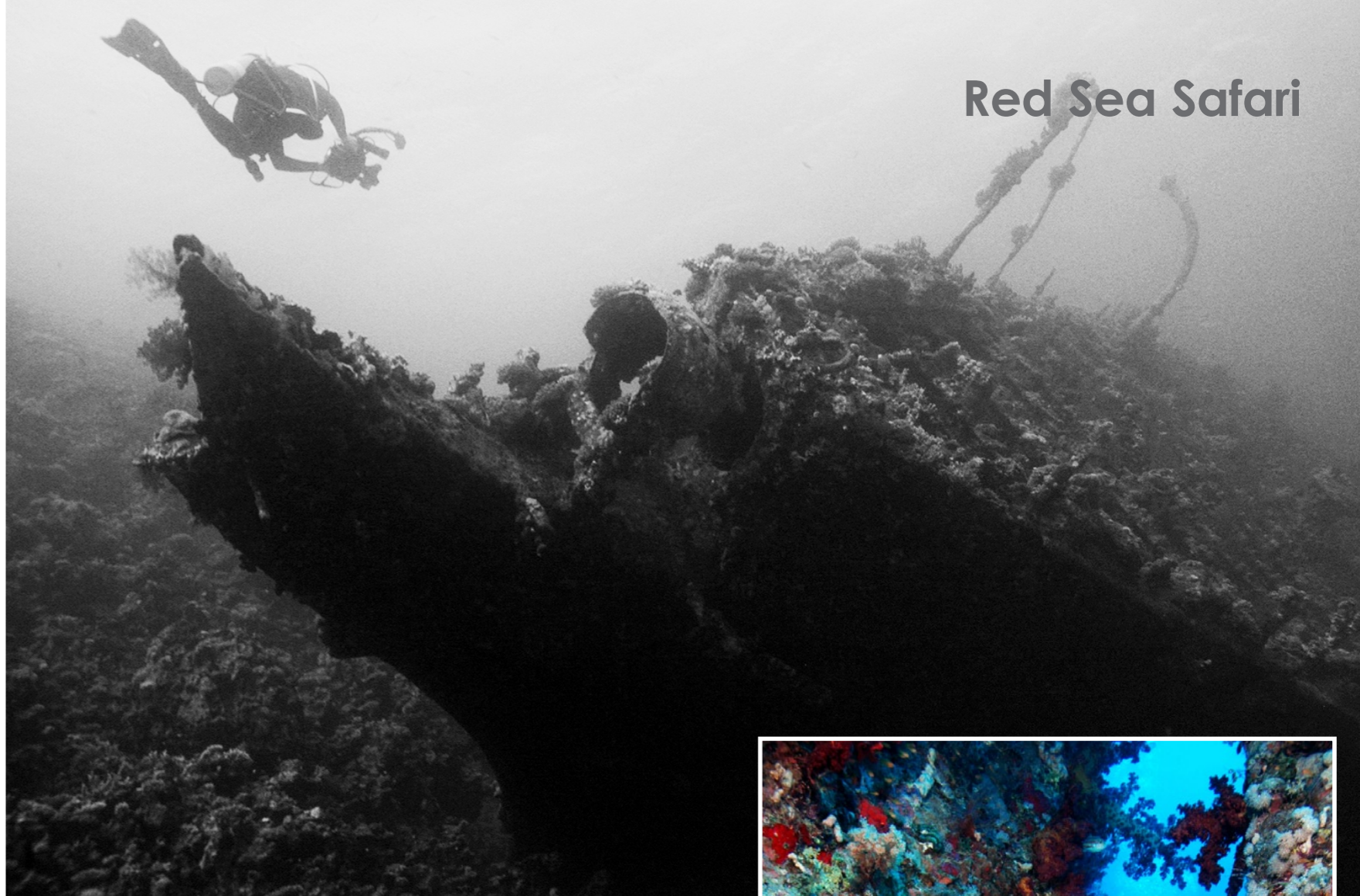




COUNTER-CLOCKWISE FROM LEFT: Diver on *Thistlegorm* wreck; BSA motorbikes on *Thistlegorm* wreck; *Dunraven* wreck; *Carnatic* wreck

to and from the sites. I greatly enjoy the history of the shipwrecks, often told by the dive-masters giving the briefings, but covered more in depth by dive books like Lonely Planet's *Diving & Snorkeling the Red Sea*. Topside photography of the wildlife and coastal shoreline proved to be as rewarding as the underwater opportunities.

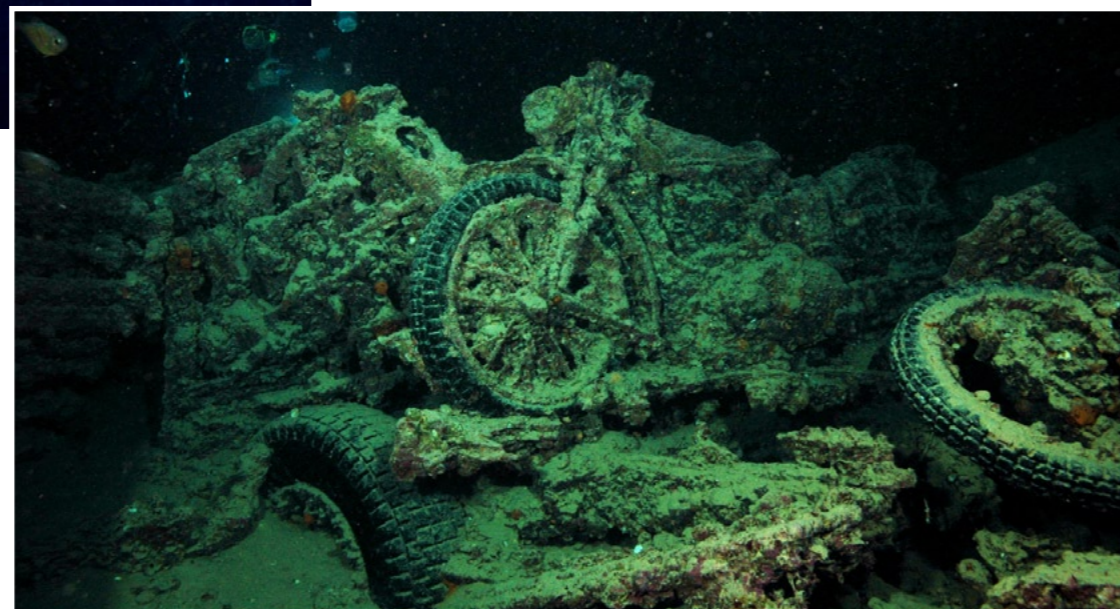
At one of the larger wrecks, I remember sitting on the sand with my camera in about 80 or 90 feet of water, looking up in awe at this massive ship lying on its side before me. Visibility was good enough to allow a full view of the wreck. Tiny divers hovered about at varying depths checking it out. I turned my strobes off and changed the settings on my camera to accommodate natural light. It was truly a tranquil feeling.



Red Sea Safari

Another immense wreck was the *SS Thistlegorm*, sitting upright in 30 meters of water. The 126-meter-long (415-foot) ship was hit by a German bomber in 1941, with a hold full of military supplies. Some areas of the ship have been damaged, but most are still intact, complete with old cars and motorbikes stored below deck. While exploring the outer decks, Gary and I found a crate of ammunition, large metal bowls and more fish than we could count. Even a truck fuel tanker trailer was sitting on the outer deck.

Of all the wrecks though, I really enjoyed a shallow un-named wreck towards the end of the boat adventure. Most of the wreck had collapsed in on itself leaving the hull and some railing left. But what was left was literally covered in colorful marine life. On the outside of the wreckage, we found a small brown octopus that stayed



Liveaboard dive boats

Part of our journey was to experience what a liveaboard dive vessel on the Red Sea was like. Steve arranged for Gary and me to try a week aboard the *Bella* while on a shipwreck tour.

We both found the food onboard to be outstanding and the boat crew very helpful, friendly and fluent in English. The cabins each had toilets, showers and two beds. The dive area was adequate for preparing gear, with nitrox available upon request for an additional fee. A small inflatable boat was used for transporting divers



Red Sea Safari

Hurghada, where the airport is. Seeing all the street vendors with their wagons, carts and donkeys brought a humble smile to us, as we headed down the road.

Located south of Hurghada and east of Luxor on the Red Sea, El Quseir is a quaint laid-back area offering visitors reasonable prices, good local food and friendly people.

Our first dive yielded a small



with us for as long as we wanted to film or photograph it.

On the top of the hull and inside the wreck were three scorpionfish! Although dangerous if you land on one due to faulty buoyancy on the part of the diver, they are actually easy subjects to photograph. They are large enough to use a wide-angle lens and place a diver behind for a different effect. You can also do this with moray eels, lionfish and any other large critter hovering or resting on the edge of a wreck.

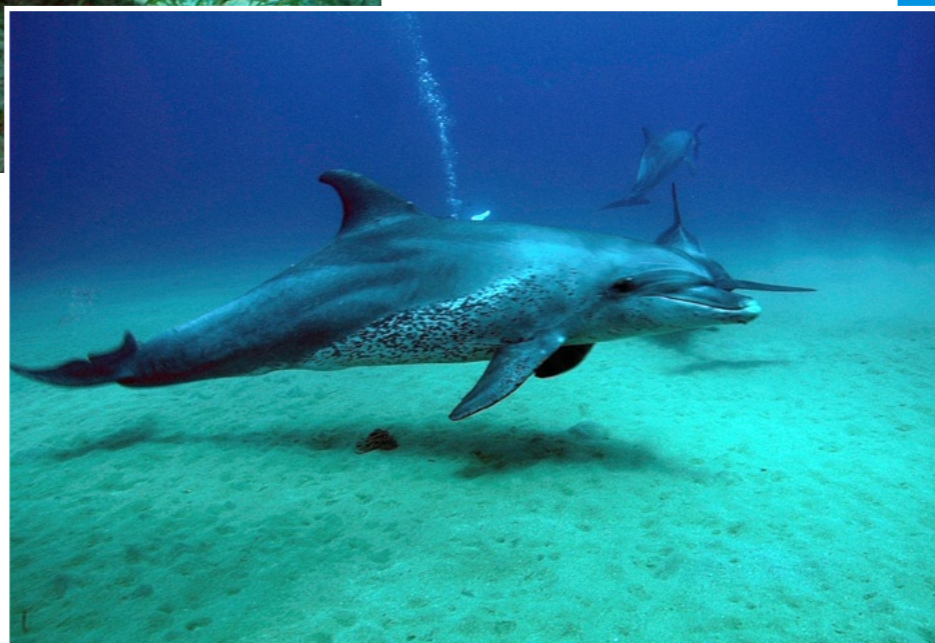
One last note I will add about my liveboard experience and some trouble I had with the two divemasters/guides. Quite often, they did not stick to the briefing plan or would change things in-water. As a photographer, this proved hard to adapt to. They would also become upset when I chose not to enter the wrecks,



feeling many of them were unsuitable without proper gear. Later, Steve informed us for future trips visiting divers can request European divemasters. Other than that, the trip was worth seeing all of the wrecks.

El Quseir

The last part of our journey was spent in El Quseir, where Steve and Claire treated us to an array of boat and shore diving after a short stint touring



group of dolphins who spent over 20 minutes playing with us. They must have been

THIS PAGE: Scenes from El Quseir COUNTER-CLOCKWISE FROM LEFT: Hawksbill turtle; Scorpionfish; Dolphin play; Shovelnose shark; Diver enjoys colorful reef near El Quseir



Gary Knapp filming dolphins (left); Coral gardens from Dahab (right top and bottom); Little egret on the Nile River (bottom left)

and shallow pinnacles with a healthy variety of colorful soft and hard corals. Claire was gracious enough to act as my model at most of the sites. Although a close-up lens would have worked, I found the wide-angle lens to be the most versatile. Visibility was excellent in most places, and the water temperature was always in the low 80's.

When asked about expanding his business, Steve told us that they have. "Yes," he said,

"We are now embedded in Roots Luxury Camp just north of El Quseir. The diving is the same as El Quseir, as we use the same boat, zodiac and shore sites, but it offers an easy, unlimited access to a house reef for guests.

"The *camp* is not really a camp. We have two types of accommodations—modern Hill Side Chalets with views of the sea and Eco Huts, which have mountain views. The camp has been in operation for five years, but we have taken it over completely and have made many changes including doubling the staff, improving the food quality by bringing in an excellent chef. By doing this, we are about to expand from 24 to 40 rooms."

El Quseir was our last dive destination before returning inland for a brief stop in Luxor, then onto Cairo to return home. Overall, I would say this was an enjoyable journey around the northern part of Egypt. During my return visit, I hope to see more of the southern part of the country with even more diving and topside exploration.

"I hope you don't expect every dive to be like that," Steve told us. "We have some pretty good diving here, but seeing dolphins was a special treat."

Indeed it was special, but I thought the other shore dives were just as nice, especially the dive in front of their shop. Claire found scorpionfish, stonefish, crocodilefish, blue-spotted sting-rays and several pairs of angelfish for me to photograph and Gary to videotape.

At another shore dive, we were able to dive with five different turtles, as they grazed upon patches of lush green eelgrass on a sandy bottom in six meters (20ft) of warm water. While checking out a small stretch of reef, a guitarfish swam over to see what we were. Since it was my first, I followed it to observe what it was up to and, of course, get a few shots. A long silver fish joined it, and the pair went off feeling for things in the sand. Every now and then, it would scare up a fish or two to eat.

During the boat dives, we were introduced to both deep

Red Sea Safari



What to bring

If you are comfortable with a particular dive mask, bring it, especially if it has prescription lenses. Memory cards can be expensive and selections limited, so bring two to three times what you think you will need. Check the tourism website for electrical hook-up and current exchange rates. They will also list what travel documents and which airlines fly into Egypt. Bring plenty of sun block and don't drink the water. Most of the hotels offer bottled water, and if you do come down with 'Pharaoh's Revenge', just pop into a pharmacy and explain your symptoms for some quick acting relief. Stay safe and good diving. ■

REFERENCES
 • DIVE TRAVEL DVD'S BY GARY KNAPP
 • LONELY PLANET'S BOOK DIVING & SNORKELING RED SEA



fascinated with my camera and Gary's video system, because they seemed to be looking at their reflections in the housing ports. Swimming alongside of them, I never knew they could be so big! They left as quickly as they arrived leaving us with a very delightful first dive.

Elphinstone

Text and photos by JP Bresser

Grand Canyon of Southern Egypt

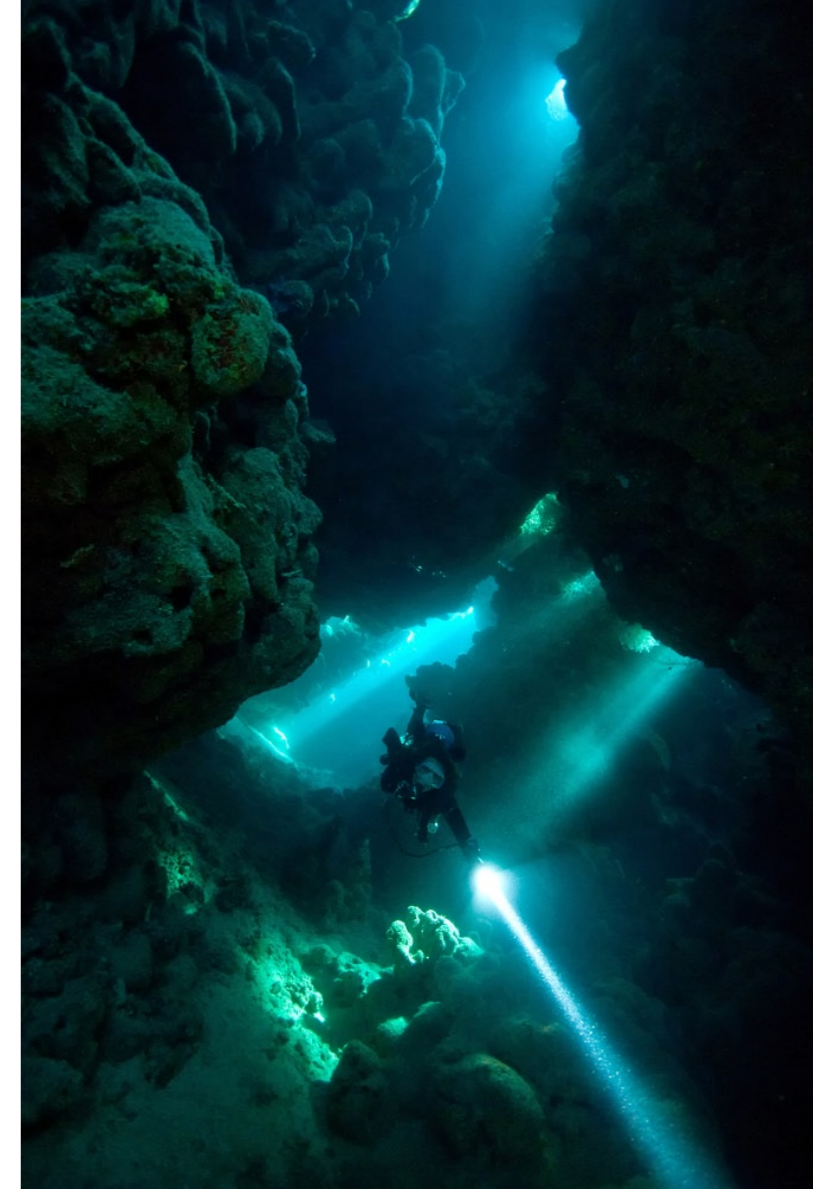
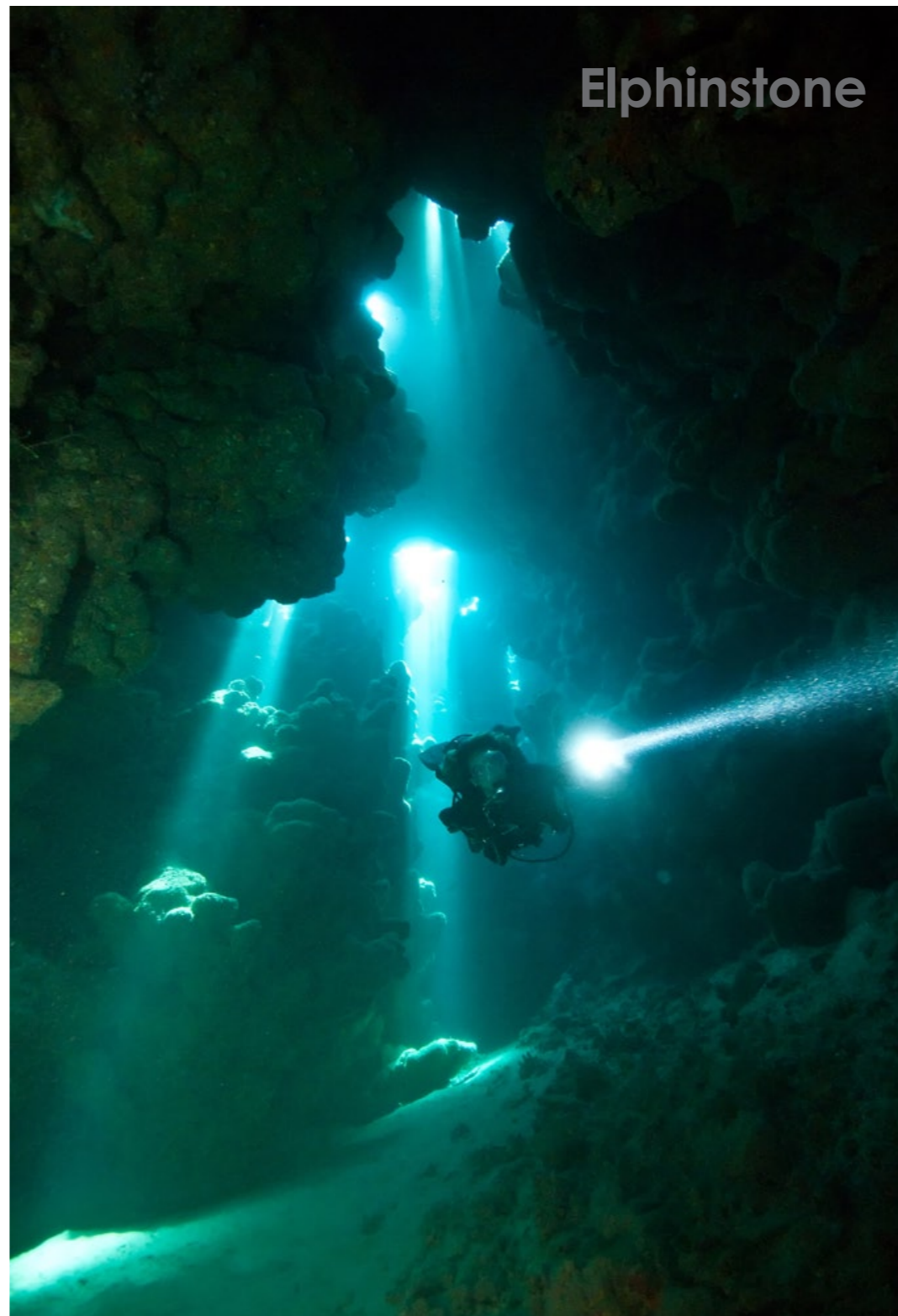


THIS PAGE: Diver entering the secret cave chambers and exploring its "canyons"

We started talking about technical diving and cave diving, and I showed him some of my photographs on the display of my dripping underwater housing. "So, you like caves, eh?" he asked, obviously unaware about my regular sub-terra activities. I decided to keep a low profile and just tell him that I did. He started looking around, moved a little closer while lowering his tone and whispered, "Are you interested in a very special dive?" I almost felt like I was being



It was 6:30 in the morning, and my dive buddy and I were hauling our gear back from the big zodiac speedboat after a thrilling midnight dive on the famous Elphinstone reef in the Red Sea near Marsa Alam, Egypt. While rinsing my gear, Ahmed—the local dive guide—started talking to me because I was diving a back plate, wing and long hose just like him, and he probably felt some kind of connection.



offered an indecent proposal, but I responded that as an editor for several dive magazines I was always interested in very special dives.

"I will talk to the management and see what I can arrange," whispered Ahmed and walked away in the direction of the dive

manager's office leaving me and my buddy behind with about a 100 questions unanswered.

Later that evening, Ahmed sneaked up to us during our dinner and told us to be at the jetty at 8:30AM the next morning with all our gear assembled. He would take us to an unknown reef he used to dive

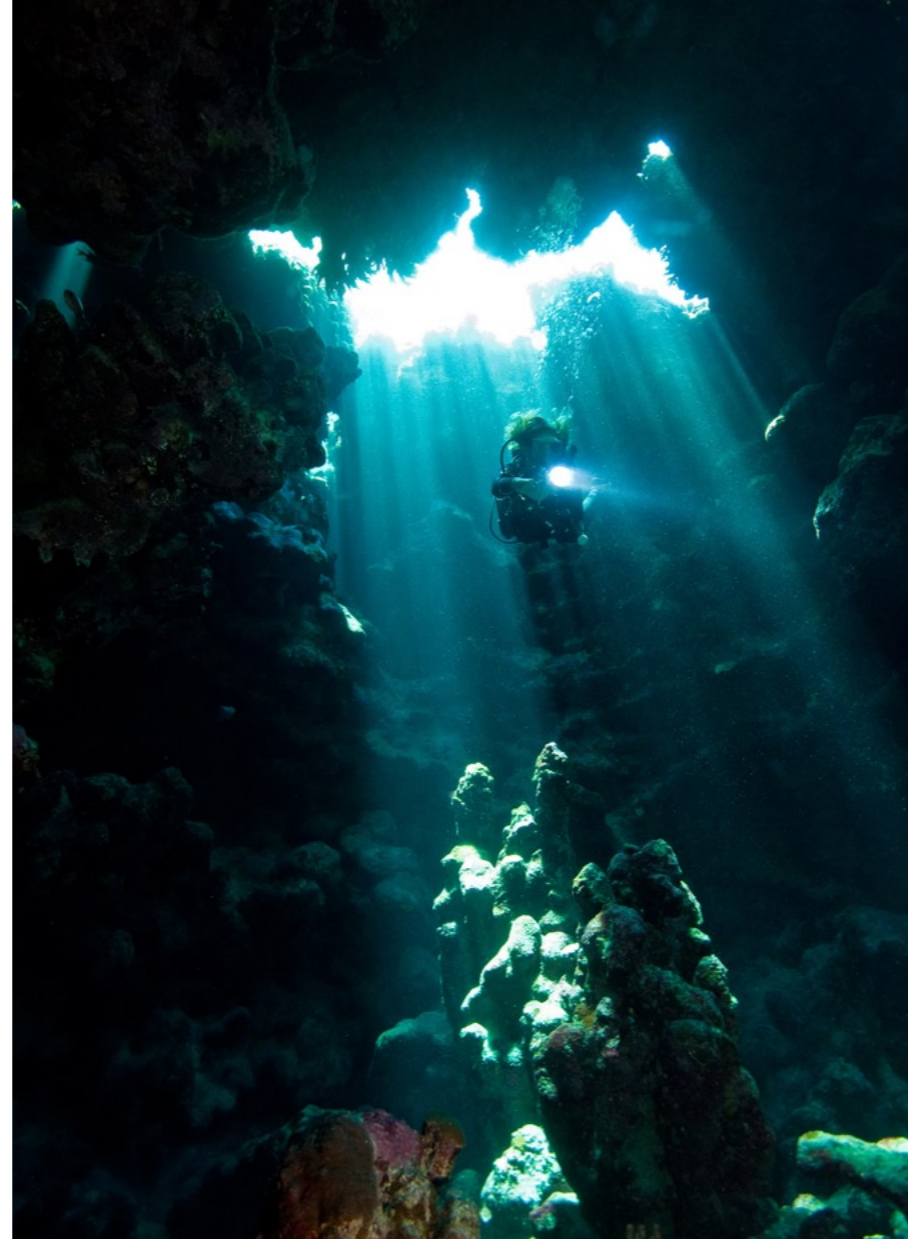
occasionally, he said he took some very skilled divers out there to amaze and impress them with his secret location, and we were the lucky ones.

As we retired to our lodgings that night, my partner and I talked and fantasized about the dive to come. I already had images of big underwater canyons with radiating beams

regularly when he was working for another dive center. He told us that he had been keeping it kind of private because it was an easy place to damage and stir up. On rare

of light streaming through, but we decided that this secret site would probably be another silty and sandy cavern area somewhere in the middle of nowhere.

At 8:30 the next morning, we were at the jetty. We got our briefing. The reef was six miles away and two miles out from the coast. It consisted of several connected pool areas. The connections between those pools were sort of like canyons, which could differ in size from really small to ballroom dimensions. Ahmed told us that the tour through the canyons would last at least 45 minutes. My buddy and I looked at each other, imagining what swimming for almost an hour



through coral canyons would be like.

The very bumpy, high-speed zodiac ride lasted for about 30 minutes when we reached a shallow reef in the middle of the sea. The water was crystal clear, and the submerged reef sparkled with an array of colors. After our checks, we rolled backwards into the warm water of the Red Sea and followed Ahmed through a small entrance into the reef.

The beginning of our little journey was quite restricted, and we took our time working through the small tunnels trying not to touch any part of the environment. Occasionally, Ahmed stopped us and pointed to a corridor, or room, which was of exceptional beauty. I looked for a good position and directed my partner to where I wanted her to position herself as a

model in the next shot.

The light, entering from all sides, was spectacular and a real challenge for me to capture on the CCD (image sensor) of my digital SLR camera. A huge room led into another one, and the light effects were starting to have an almost hallucinating affect upon us. I had flashbacks from my cave dives in Mexico where some of the cenotes offered a similar sensation.

After about an hour of playing hide and seek in the hidden labyrinth, we exited the canyons and swam with our eyes half closed to protect them from the sudden sunlight. We were drifting over a very healthy and pristine coral reef covered with huge shoals of tropical fish. It was the icing on the cake of a magical dive.

Back on board the zodiac, we

thanked Ahmed from the bottom of our hearts for this amazing experience and promised him that we would keep this location a secret.

On one hand, it's a shame that I can't share this location with others. On the other hand, imagine the excitement you will feel if one day you are approached by a dive guide who starts whispering in your ear about a special secret dive. ■

Read the whole story of JP Bresser's trip to southern Egypt in an upcoming edition of X-RAY MAG. Bresser is a Dutch cave diver and member of EKPP—a European cave exploration team. He is also a Technical Course Director for NAUI Netherlands and active as an Instructor for GUE. Find more photographs at: www.jpbbresser.tv

THIS PAGE: Scenes from the secret cave chambers and canyons

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POINT & CLICK ON BOLD LINKS



Equipment *in the news*



Edited by Peter Symes & Rosemary 'Roz' Lunn



Mares bungee

An alternative to steel spring straps, this novel item relegates adjusting a fin strap to the past. Mares state that bungees exceed steel springs in all aspects: higher elastic properties, unaffected by sun, salt and chemical agents, light weight and economically priced. Mares.com



Mini-Explorer

The Mini-Explorer is a natty high performing LED light from Halcyon. It's roughly the size of a smart phone with a burn time of approximately 4.5 hours, which will appeal to

both recreational and technical divers. The Delrin casing is pretty much indestructible, whilst the innovative handle can be adjusted for left or right hand operation, and it folds to protect the LED and lens for travelling. Halcyon mini-explorer



Twin-Rescuer

This double linecutter from Mac, an Italian knife specialist, makes quick work of ropes, lines and monofilament. The quick release sheath can be easily mounted on a BCD or webbing. Mac-coltellerie.it



Travelwing

The BuddyTravelwing is a lightweight BDC that only weighs a travel-friendly 2.7kg. It comes with integrated weight pouches, which hold up to 5kg of hard or soft lead and are secured with a 25mm buckle and large velcro flap. Also standard is the time-proven integrated shoulder-dump, which dumps at a slower rate than the other two dump valves, making it ideal for (one-handed) fine-tune buoyancy control. According to A.P.Valves the new wing is extremely comfortable with or without a suit, with very generous padding at shoulders, waist and back. It also features a cummerbund that is size adjustable at front and rear to perfect the fit and has a waistband that can be tightened with either hand. The Travelwing offers 14.5kg of lift and can be used with all cylinder sizes up to 15 litres. AP Valves

Retro from Poseidon

The Jetstream Mk3 is an updated version of the classic Jetstream regulator where Poseidon has connected a Jetstream second stage with an Xstream first stage, thus creating a high performing regulator.

Jetstream Mk3



Lanyard

Safety is a key issue in all freediving. These new safety lanyards has been designed by no other that the freediving world record holder Stig Åvall Severinsen. There are two different lengths (50cm and 100cm) and two different carabineers (steel and aluminium) – to meet the requirements from all athletes and disciplines. The new lanyard has been approved by AIDA international.

Breatheology



Squid LED

Green Force's new Squid video light is encased in aluminium that has been processed three times to produce a hard corrosion resistant surface. It's bright too - Green Force state that this 1850 light produces a 1.850 lumen strong / 120° wide beam at a colour temperature of 4.000K with no hotspots. Naturally it's compatible with all Green Force Flexi battery packs plus the Hybrid 8 and 12 battery packs. **Green Force**



1Tb USB pocketknife

An object of desire that works. Swiss Army knives have always been a handy tool to stash in your repair kit box. Victorinox have now added a 1 TB solid state USB drive, giving you peace of mind that you have something to hand to save those precious underwater shots. The company states it is the world's smallest high-capacity SSD drive available. Currently the release date is slated for August with a price point of approx

US\$2,500 - 3,000 for the 1 TB model. For those of us with less deep pockets, Victorinox have augmented their Slim flash USB line with a USB 3.0. This will be available in 16GB, 32GB, 64GB, and 128GB capacities.

Victorinox.com

T9 Backpack

Weighing in at 3.5kg the T9 Roller Backpack from Aqua Lung meets most airline size requirements for checked luggage. The lightweight aluminium handle extends and the bag is additionally equipped with back straps for convenience. Aqua Lung have also remembered to add a very handy rigid handle to the bottom of the bag to aid in loading / unloading.

Aqualung T9



Cyberglove

There is always a compromise when designing equipment. Oceanic have somehow managed to push this when designing the Cyberglove. It has maximum dexterity, thermal qualities and is abrasion resistive, whilst feel and touch has not been compromised.

The result is a premier super stretch glove that benefits from rubberized reinforced palms and fingers.

Oceanic cyberglove

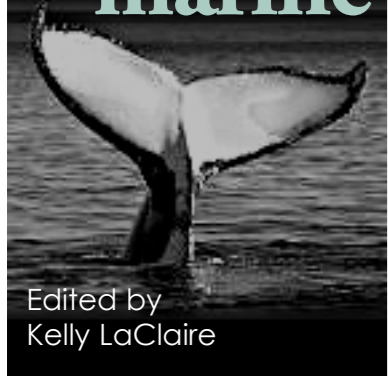


Seac 3D

Seac has launched the '3D' BCD. It features an innovative bladder which Seac state "improves buoyancy and because it's detached from the back plate, reduces the 'sail effect' ". Weighing in at just under 4kg (size large), the 3D also has 'Soft Comfort' reverse-stitched shoulder straps, and a super-comfortable anatomic back plate cover.

Seacsub.com





Edited by
Kelly LaClaire

Federal judge refuses to halt anti-whaling activity

A federal judge in the U.S. city of Seattle declined to restrain the anti-whaling activities of the Washington state based, Sea Shepherd Conservation Society.

Saying that he would write an official ruling at a later date, Judge Richard Jones made it clear that he is inclined to deny a request for a legal injunction—a court order prohibiting someone from engaging in certain actions—made by Japanese whalers against the environmental group.

"It is a victory for Sea Shepherd," said Charles Moure, an attorney with the Seattle firm of Harris & Moure

representing the activists. "It's a victory for the whales."

The Institute for Cetacean Research, the Japanese whaling group, claims Sea Shepherd has repeatedly attacked their ships during the whaling season in Antarctica, essentially hindering its ability to harvest cetaceans for what the whalers say is purely research.

Sea Shepherd activists proudly admit to throwing glass bottles filled with paint or butyric acid (a nausea inducing repellent) at the whaling vessels, using stink bombs, prop foulers and many other nonlethal means to interfere with the whale hunts. But

the conservation group says that they have never rammed Japanese ships and have never once caused an injury to whaling crew members.

Sea Shepherd president, Paul Watson, argues that it is the whalers who have resorted to the most dangerous tactics—ramming conservation boats; throwing concussion grenades, bamboo spears or heavy nuts and bolts at the environmentalists; as well as using high-propulsion water cannons.

Sea Shepherd also asserts that their activities are not prohibited by international law and that the court doesn't have jurisdiction in the Southern Ocean.

Each hunting season runs from about December through February, and during that time, Japan whaling fleets kill up to 1,000 whales.

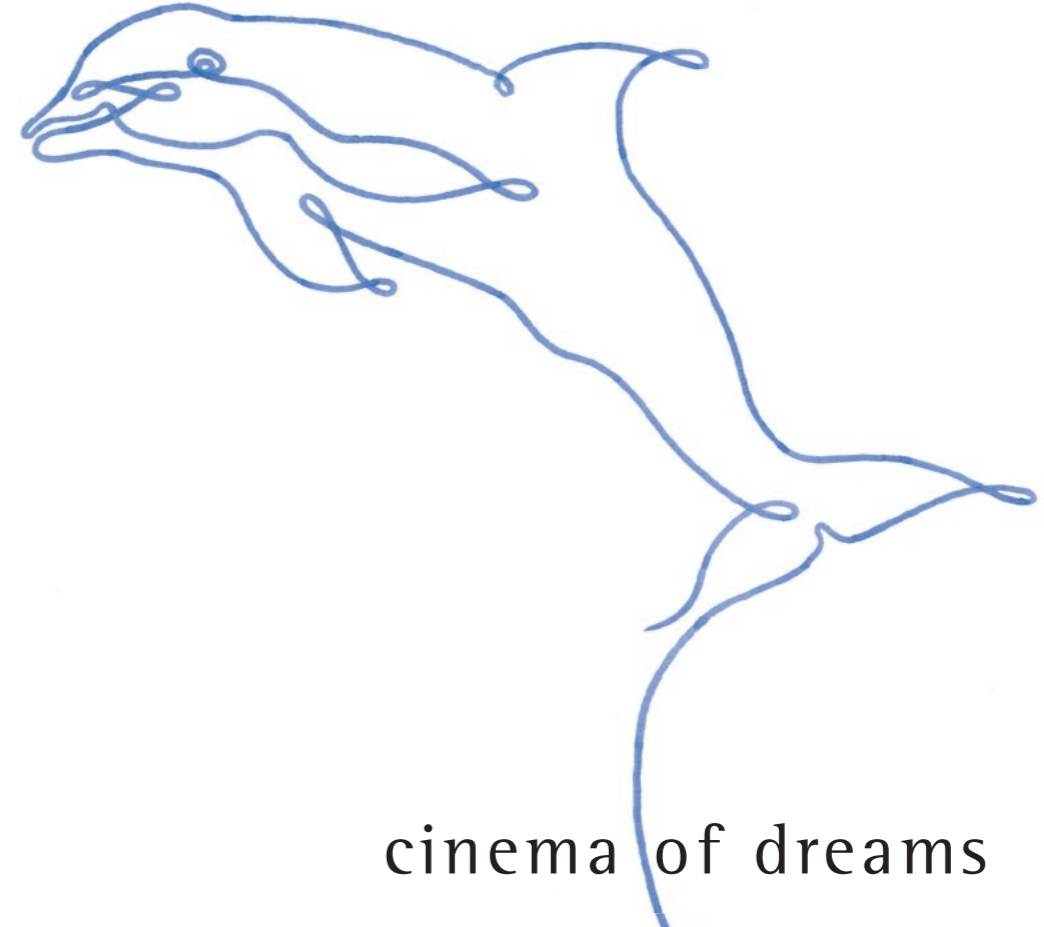
Sea Shepherd has sent boats to Antarctica for the past several years in an attempt to harass the whalers and stop the harvest. Violent clashes have sometimes occurred, including an incident involving the sinking of a Sea Shepherd vessel.

Watson says nothing will stop Sea Shepherd from continuing its anti-whaling activities, and the group considers the judge's ruling a successful victory. ■ SOURCE: SEA SHEPHERD, SEATTLE TIMES



Sea Shepherd crew throw stink bombs at a whaling vessel

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Edited by
Kelly LaClaire

Shepherd's beaked whale



AU.WHALES.WILDAIRIES

Ultra rare Shepherd's beaked whale caught on video

Tasmanian scientists have captured video footage of the extremely rare and almost never seen Shepherd's beaked whale. The film, taken by a research team working in the Eastern Bass Strait off the coast of Tasmania, is the first ever recorded since the whale was discovered in 1937. Very little is known about this species. Only a handful of people have ever seen one, and even fewer have been lucky enough to get a picture.

"To encounter this group was amazing, but the fact that they remained at the surface for so long that we could get many minutes of footage is unique," said lead researcher, Michael Double. "I've never seen any other footage of Shepherd's beaked whale, and since we've come back, we've been doing a fair bit of research on this, but really there are so few photographs even, never mind about footage."

The film is several minutes long and shows a small pod of about a dozen of the black and cream colored beaked whales interacting with a pod of pilot whales and a group of bottlenose dolphins. Researchers were shocked to see the cetaceans and even more thrilled to actually get live footage of the animal in the wild.

Shepherd's beaked whales, or Tasman whales, are one of the largest of the beaked whales (7m / 21ft) and have a very distinctive melon-shaped forehead and quite a prominent beak. They live only in very deep, isolated waters.

The last study done on them in 2006 was brief, and scientists are hoping the new film can add much needed insights into the life and behavior of this rare and illusive species. ■

SOURCE: ABC NEWS

Bangladesh declares wildlife sanctuaries for endangered freshwater dolphins

The Bangladesh government has officially announced that three new wildlife sanctuaries have been established in the world's largest mangrove ecosystem—the Sundarbans. The sanctuaries were adopted, in part, to protect the last two remaining species of freshwater dolphins left in Asia—the Ganges River dolphin and the Irrawaddy dolphin, which both share habitat in the area.

Both species have seen greatly declining populations worldwide over the last few decades, but a surprisingly moderate number still exist in the Sundarbans, which may act as a future safety-net against their possible extinction.

The three protected areas will cover 19.4 miles (31.4km) of rivers and waterways where human activities and Ganges River and Irrawaddy dolphin contact are most intense.

The locations and sizes of the dolphin safe havens were determined according to a study conducted by the Wildlife Conservation Society (WCS) and the Bangladesh Forest Department.

"A critical component will be to engage local human communities," said Dr Tapan Kumar Dey of the Bangladesh Forest Department. "The wildlife sanctuaries will be used as a natural laboratory for developing management practices

that balance wildlife conservation with the resource demands of a large and growing human population."

Over fishing seems to be the dolphin's greatest threat. Fine-mesh fishing and shrimp nets used in the areas often ensnare enormous quantities of by-catch (species not meant to be caught) and are rapidly depleting the waters of the dolphin's natural prey.

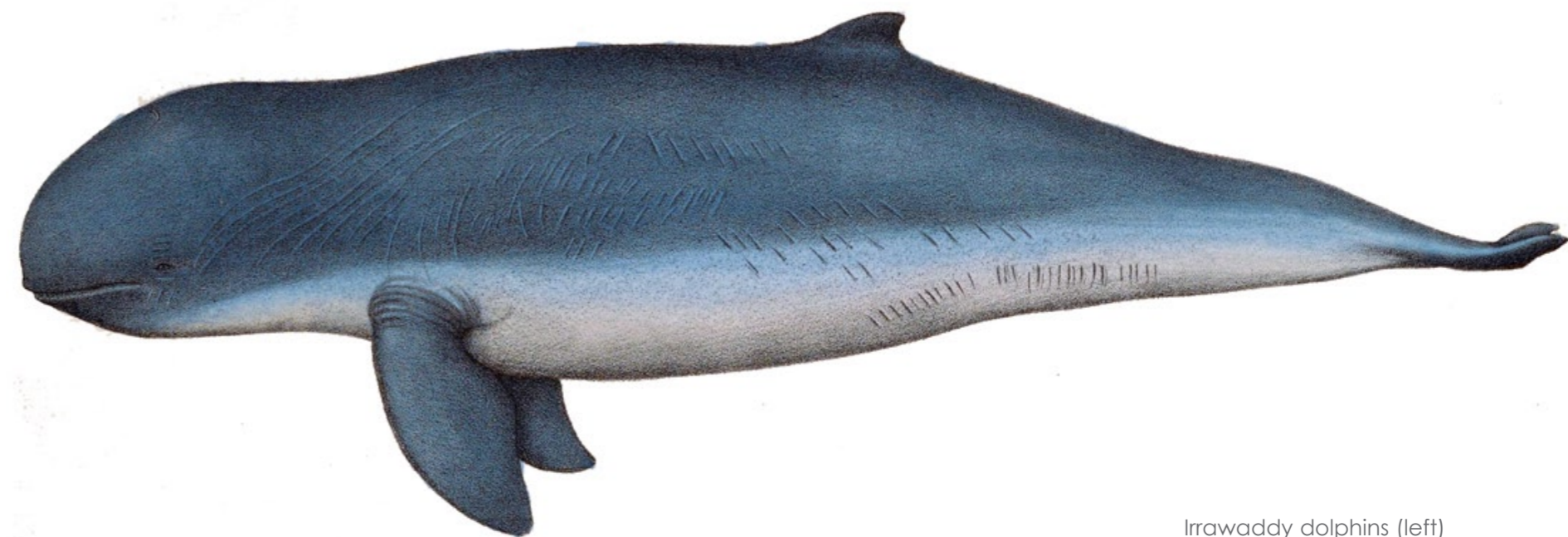
Unfortunately, freshwater dolphins are among the most threatened sea life on earth; their hunting and breeding grounds are enormously impacted by human activities and pollution. As such, environmentalists greeted the news with enthusiasm, hoping to stop another catastrophe like the recent extinction of the Chinese Yangtze River dolphin. Over fishing and habitat degradation killed off this freshwater species in 2002 after having lived in the Yangtze River for more than 10 million years.

The WCS, through its Bangladesh



WORLDWILDLIFE.ORG

Cetacean Diversity Project, will begin a traveling dolphin exhibition called, The Shushuk Mela, which will be brought to local communities bordering the Sundarbans mangrove forest. Their aim is to raise awareness about the new sanctuaries and engage local fishermen and other community members in important discussions on species conservation and water management. ■ SOURCE: WCS.ORG



BERJEAU / PUBLIC DOMAIN

Irrawaddy dolphins (left)
Ganges River dolphin (top)





Edited by
Scott Bennett

Amazon.com no longer selling whale meat

Yes, you read the headline correctly—there is nothing wrong with your eyesight.

Amazon.com was found to be selling over 147 different cetacean products on its Japanese language site, including canned whale meat, whale bacon, whale jerky and whale stew.

But after only one day of public backlash resulting from a report issued by the Environmental Investigation Agency (a non-profit group that engages in undercover investigations of wildlife and environmental abuses) the e-commerce giant, Amazon.com, has removed all products containing whale and dolphin meat from its Japanese language website, which generates around 15 percent of Amazon's total sales.

It is unclear if Amazon headquarters was aware that these items were being sold or not, but they have yet to announce a complete ban on whale meat for its web sites and conservation groups, such as the Humane Society, are calling for them to immediately change their policy,

asking Amazon customers to contact the company and stop using the site until they do.

According to the Environmental Investigation Agency's report, they purchased eight products from the Japanese web site and found that six of them exceeded safe mercury levels, and one contained

mercury levels 50 times higher than safety regulations permit.

Moreover, since many products were listed as coming directly from Taiji, where almost ten times as many dolphins are killed as whales, it is safe to assume that a good number of whale meat products are mislabeled and actually contain dolphin meat. ■ SOURCE: SEATTLE POST, EIA



Whale burgers sold on Amazon? Not anymore

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Achim Schlöffel



Text by Peter Symes
Photos courtesy of Tourism Unlimited

The founder of Innerspace Explorers (ISE), Achim Schlöffel, talks to X-RAY MAG about diving across the English Channel, explorations and running a dive training agency.

X-RAY MAG: You have announced that you are going to cross the English Channel underwater. What is the status on that project?

AS: We are now in a period where we focus on daily physical training and testing equipment. One of the most important devices will be a Bonex scooter. However, it is not one of the models that you will see on display here at the expo (BOOT — ed.) but a highly modified model that is not yet commercially available. The current speed is up to 140m per minute, which is so fast that you need to have a windscreen in order to hold onto it.

X-RAY MAG: How come you decided to dive the English Channel? Is it an adventure or promotional event?

AS: It was never planned as a promotional thing. The idea dates back to when I was a teenager, when I realised that people were swimming across the Channel, and my immediate thought was if they can swim it, I can dive it. But until a few years ago when better technology emerged, especially in the field of scooters, it was not

feasible, because you had to switch scooters and have surface support that could handle change of gear. In my opinion, that doesn't mean that you dive through the Channel. You have to descend in France, ascend in England, and there should be nothing in between.

X-RAY MAG: You said the scooter is fast. How long do you expect it will take you to do the crossing?

AS: The crossing is about 34km as the crow flies, but the diving distance is about 50km. As we will make good use of the tidal currents, we estimate it will take 7.5 to 8.5 hours followed by 3-4 hours of decompression.

In the middle of the Channel, there is an approximately ten-mile-wide shipping lane with major traffic where I will be at a minimum of 35 meters deep to avoid any issues with big ships. Approaching that, I will be at about 15m and then drop down to 35m. Once I have passed the shipping lane, I will ascend to about 25m. From a logistical viewpoint, it is planned much like a cave dive.

X-RAY MAG: Will there be any means of communicating with you during your crossing?

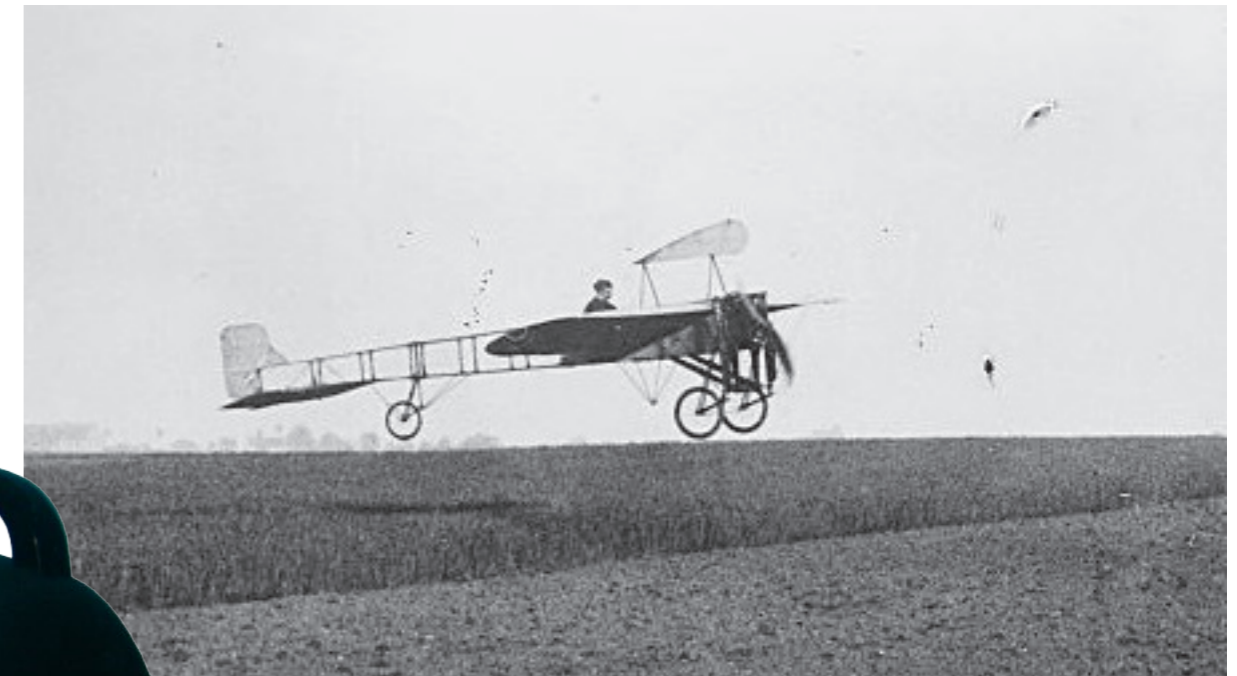
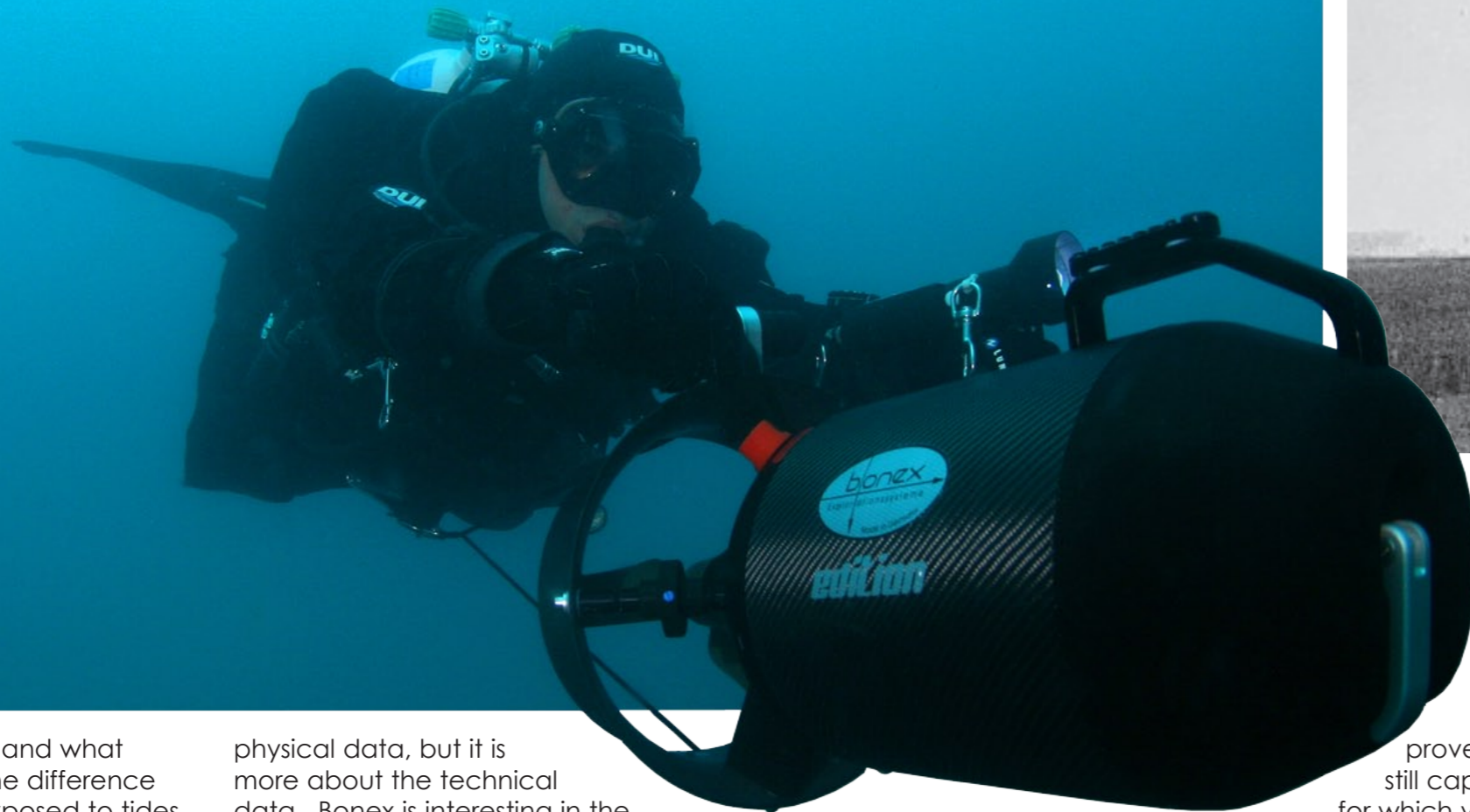
AS: I will have access to some GPS data to make sure that I am on track.

X-RAY MAG: So while you are down deep, nobody will know where you are?

AS: That is correct. But there will be a boat following my projected course with a GPS, and I will have Nautilus Lifeline beacon as an emergency backup. There will be a boat on each side of the shipping lane, so it should only take five—perhaps ten—minutes to get to the location should anything happen. The shipping lane is one of the busiest in the world, so we are not permitted to have a little boat following me into the area.

X-RAY MAG: So you will be all alone?

AS: There is a big difference in how you look at it. A lot of other people who have attempted something similar have been afraid of going deep and having decompression, of loosing



It has already been over a century since the French aviator Louis Blériot in 1909 became world famous for making the first flight across the English Channel in a heavier than air aircraft, winning the prize of £1,000 offered by the Daily Mail newspaper.

contact with the surface and what not, and that made all the difference because then you are exposed to tides and wind, which made it hard for them. But if you consider it like a cave dive, you take most of these problems out of the equation. The idea of being alone in the dark is not an issue because, as a cave diver, you are used to it. We do that all the time. It is more about the configuration.

The idea of being alone in the dark is not an issue because, as a cave diver, you are used to it. We do that all the time.

X-RAY MAG: *Is there any scientific aspect or research involved?*

AS: We are in negotiation with both Aquamat and DAN regarding the collection of data, but since we are only doing one dive, which is not going to be repeated, it can hardly be called scientific. We will collect a range of

physical data, but it is more about the technical data. Bonex is interesting in the performance of their scooters, and I will bring along some computers to test their performance during long exposures and see how they correlate to our calculations.

X-RAY MAG: *Do you have any way of determining what the current will be at depth? It may be different from that on the surface.*

AS: We have a pretty good understanding of the water flow and what goes on and when. Once again, it is one of the busiest shipping lanes in the world, so we have a pretty good idea of the currents.

I would also like to mention that the WDCS—The Whale and Dolphin Conservation Society—has shown

considerable interest in the outcome. While there are not many marine mammals in the channel—they seem to be located up farther north—the organization would like to have a first witness account about what the environment is like when you are surrounded by big vessels in terms of noise and other disturbances.

X-RAY MAG: *I understand that you also head a training agency. What is the difference between yours and all the others?*

AS: First of all, we have a couple of unique points in the training program. For example, certifications are limited to three years, after which you have to renew, and you cannot do that by email. You have to meet with an instructor and

prove to him or her that you are still capable and possess the skills for which you are certified. Especially in technical diving, that is important. It is no good when somebody who is trimix certified and hasn't been diving for perhaps ten years just jumps into the water, endangering himself and those who are diving with him. The same principle applies to instructors. They also have to renew every three years and prove to us that they are still able to teach at the required levels.

Secondly, we emphasise critical skills. We strongly believe that technical diving training should be tough. We want the student to figure out during training whether he or she is mentally and physically capable and able to handle the stresses involved. We do not want them to figure that out at a depth of 80m but in three meters, with an instructor beside them.

X-RAY MAG: *So, are you saying that your courses are also some kind of stress test?*

AS: Yes, absolutely. When you are purposely put under a lot of stress, you will learn how to handle this. During training, we will give you experiences in all the potential problems you could face in a real dive. For example, if I clap you on your shoulder to signal that we are pretending that your regulator is not working anymore, what is the experience worth if you are still breathing from it? What is the point? However, if I make you switch on a dead regulator, you will have the experience that it is not working, that you cannot breathe from it and you have to figure out what to do. Perhaps you will reach back and switch it on rather than reach out for your buddy or race to the surface. If we do this three times, and you freak out every time, we will be obligated to tell you that this is not for you.

The major structural difference between our organisation and the others is that we firmly believe in exploration. It may be a somewhat overused term, but who is really exploring? But if somebody invests all the time and money required to become a technical diver, it means that he or she has some dreams of seeing a virgin wreck or exploring a cave passage where nobody has been before. But if you look at the state of the industry in the past ten years, it has usually meant ending up in the same quarry as before but with three stages more, and in turn, that means that divers lose interest, and they quit, which is a shame. So, I think that the organisation also has a duty to make sure that these divers are also able to participate in the type of diving

that they are trained for. So, Inner Space Explorers are also involved in setting up all kinds of projects and trips on a regular basis in collaboration with partners and centres all over the world. And then we make our students participate in these expeditions.

X-RAY MAG: So, your philosophy is that technical diving is more means to this end—a way of making exploration possible?

AS: It is a tool, yes. For example, we had this course in Denmark, and in the area, there were two wrecks in only five meters of water. Everybody knew where they were, and the local PADI centers used them for their navigation training. But when I asked around what the wrecks were and for how long they had

been there, nobody knew. So there was the project: figure it out. We then spent a week doing measurements and a photo-mosaic, and in the end, we learnt that the wrecks were of two vessels that had collided. We also did some carbon dating and found out that they must have gone down around 1640, and suddenly there was a lot of interest. A university then became interested in the matter, and all of a sudden, it became a big project.

Another project that we have coming up is the Dive and Kayak Expedition in Palau, where you do not have to be a technical diver, though there is a going to be a cave and wreck dive. It is going to be a small group led by me, but the whole idea is to follow the ecosystems from the inner lagoon where we can see fish nurseries to the outer reefs, so you get a better understanding of the unique corals and geology of Palau. This is a good example of exploration that doesn't require any advanced or technical diving but is something everyone can enjoy.

There is no trimix or deco involved, but we go into fine tuning of skills and trimming that we promote and teach. These ecosystems are delicate, so it is

essential that divers are properly trimmed so that they do not disturb the environment. It makes a big difference. In is regard, I should emphasise that some of the courses, such as Basics of Exploration, is open to everyone, and it doesn't require any technical equipment or training.

During the course, which will focus on buoyancy skills, there will also be some exposure towards different types of equipment and configurations, so you will understand what happens if you change your gear into a more technical direction. The first entry course is for anyone who wants to have better skills underwater and not be reliant on a buddy. It is also great for photographers.

X-RAY MAG: You say entry level, but it is not a basic scuba diving course?

AS: No. You have to be a certified diver. It is more akin and comparable to GUE's Fundamentals but has a more practical approach and is focused on skill refinement. In fact, we accept the Fundamentals course as an entry requirement for the subsequent classes.

X-RAY MAG: Is there any minimum requirement to join these courses?

On our last course, we had divers ranging from Open Water divers to Trimix Instructor Trainers, and the funny thing was that in

the end, they all said that they learned a lot. So, it's about filling the gaps in the existing training.

X-RAY MAG: How long does such a class take?

AS: It is a 3½- to 4½-day course. The extended course takes a day more because it includes Tri-ox—hyperoxic trimix but on a no-decompression recreational level—so you can take a single tank and stay at a 36m depth and still get the benefits of the 70 percent nitrox and the 30 percent helium.

X-RAY MAG: So divers can come in with an entry level course, and you will let them do mixed gases in the end?



Sure. No problem. It is a wrong assumption that just having a different mix of gases in your tank makes it dangerous. It is not. The question is where and how do one use that mix. Tri-ox can be beneficial in 20 meters if one is taking pictures of fish. I often take pictures at such depths, and when I compare the images taken on nitrox or trimix, I can see a difference. It is just about being more aware.

X-RAY MAG: Being a Devil's advocate, I ask you why do we need yet another agency to do all this?

AS: Because we offer something that is not on the market.

X-RAY MAG: Couldn't these courses be offered from within some of the existing agencies?

AS: I did. I worked for ten years in GUE, and I think when we started, we were pretty much where we are now—except perhaps for the exploration part of it—and people really appreciated it. But then, it just took a different path—one could say more commercial—and I didn't want to follow that road. The growing number of students choosing InnerSpace Explorers for their training proves me right in that people want this kind of harsh kind of training and that they appreciate being a real part of a team.

We also offer courses in a proper context. It is like when you had your drivers licence for ten years and your driving school came back to you and offered you a course in driving in icy conditions. But if you live in Dubai, what is the use of that? In InnerSpace Explorers, we will also actually take you to Norway, for example, where you will get a real opportunity to use your skills. That is another significant difference.

X-RAY MAG: How big is InnerSpace Explorers?

AS: We are in our fourth year. We have about 600 certified divers and 18 instructors. We keep growing but slowly. I get a lot of requests from instructors, but out of some 10-15 requests about instructorships, there is probably just one I would seriously consider. It's because they would be representing my name. I have over the years trained more than 3,000 divers, and they are all healthy and in good spirits, and I want to keep it like that.

X-RAY MAG: Where do the majority of your students come from? Germany?

No, from all over the world, but mostly Europe and the Middle East have been growing fast recently.

X-RAY MAG: If you are concerned about instructors not representing you properly, does that mean that you have to train each one personally?

AS: I have trained them all up to now. I have been quite concerned about what goes on when you inject all these intermediary layers with instructor trainers and instructor trainer trainers that you see in bigger organisations because, all of sudden, you completely lose overview and control of what is going on. So right now, we are considering just having one instructor trainer for each region, i.e. one for the Middle East, one for Europe and one for the United States.

Right now, the instructor candidate needs to obtain two signatures from the board of directors, which consists of five members. One instructor trainer

and one from headquarters cannot certify an instructor on their own. This is to avoid having friends and such being appointed instructors without the necessary qualifications. At least two from HQ need to sign off on the candidate. So, either there is a second director on location during the Instructor Training Course (ITC) or the candidate has to see one of them at another meeting. This assures the quality that we aim for in instructor training, and it prevents "mass production".

X-RAY MAG: Aside from diving the English Channel, do you have any other grand projects in the pipeline?

AS: There are lots of places I personally would like to see—Bikini atoll, some deep stuff off Palau and various

wrecks around the world, but coming up soon are some new wrecks and some caves off Sardinia we want to explore. We will be quite busy the next two to three years just with these plans.

X-RAY MAG: Do you have any role models?

AS: When I was seven, I was asked what I wanted with my life, and I replied that I wanted to be like Jacques Yves-Cousteau, and (giggles) it is funny that we are now not far off in terms of diving and exploration.

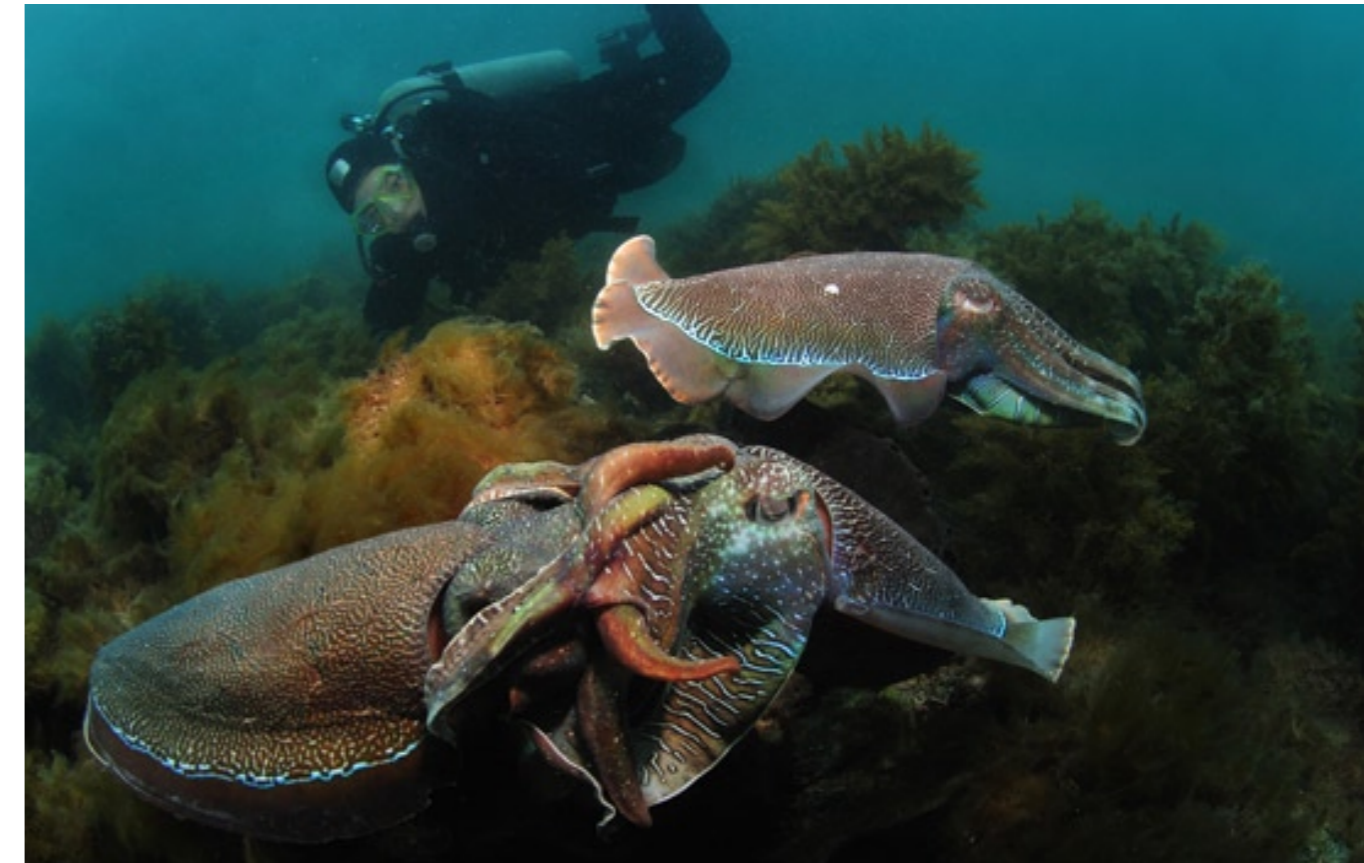
X-RAY MAG: What about teaching philosophy?

AS: We are a DIR-minded training agency, and we stand for tough training but fair training. We will tell you if technical diving is not for you. ■



Communing with the Cuttlefish

One of Australia's most unique underwater events is facing a new challenge. The Australian giant cuttlefish mating aggregation—the world's only large-scale cuttlefish gathering—has seen the first major decline in numbers since the event was protected from commercial fishing nearly 14 years ago. Warmer than average water temperatures are believed to be the cause, and with the construction of a desalination plant becoming increasingly likely, the future of this rare phenomenon is in jeopardy, Seanna Cronin reports.



Text and photos by Seanna Cronin

Each winter the sleepy industrial town of Whyalla becomes a bustling regional center. Divers, scientists, documentary filmmakers and tourists armed with snorkel gear flock to the dusty red South Australian mining town to see one of the world's most unique marine spectacles. Each winter thousands of Australian giant cuttlefish (*Sepia apama*) migrate from the reaches of the Upper Spencer Gulf to the shallow rocky reef between Fitzgerald Bay and False Bay to participate in the penultimate event of their short lives. The annual gathering, starting in May and ending in August, is their one chance to mate and pass on their genes to the next generation.

It's a three-month marathon of competition and complex courtship, which sees these normally solitary and shy animals gather in concentrations as high as one cuttlefish per square metre. The cuttlefish throw caution to the wind in their attempts to mate, completely ignoring divers and snorkelers.

In just a few metres of water, smaller males can be observed outsmarting their stronger rivals by cross dressing as females. It's a sneaky but effective strategy, thanks to the amazingly diverse array of colors, patterns and tex-



CLOCKWISE FROM TOP LEFT: A male does his best to guard a female he recently mated with from other males; Distracted by their need to mate, the cuttlefish allow divers to get very close; Australian giant cuttlefish use their specialised chromatophores to communicate and blend in with their surroundings

tures made possible by specialised skin cells called chromatophores.

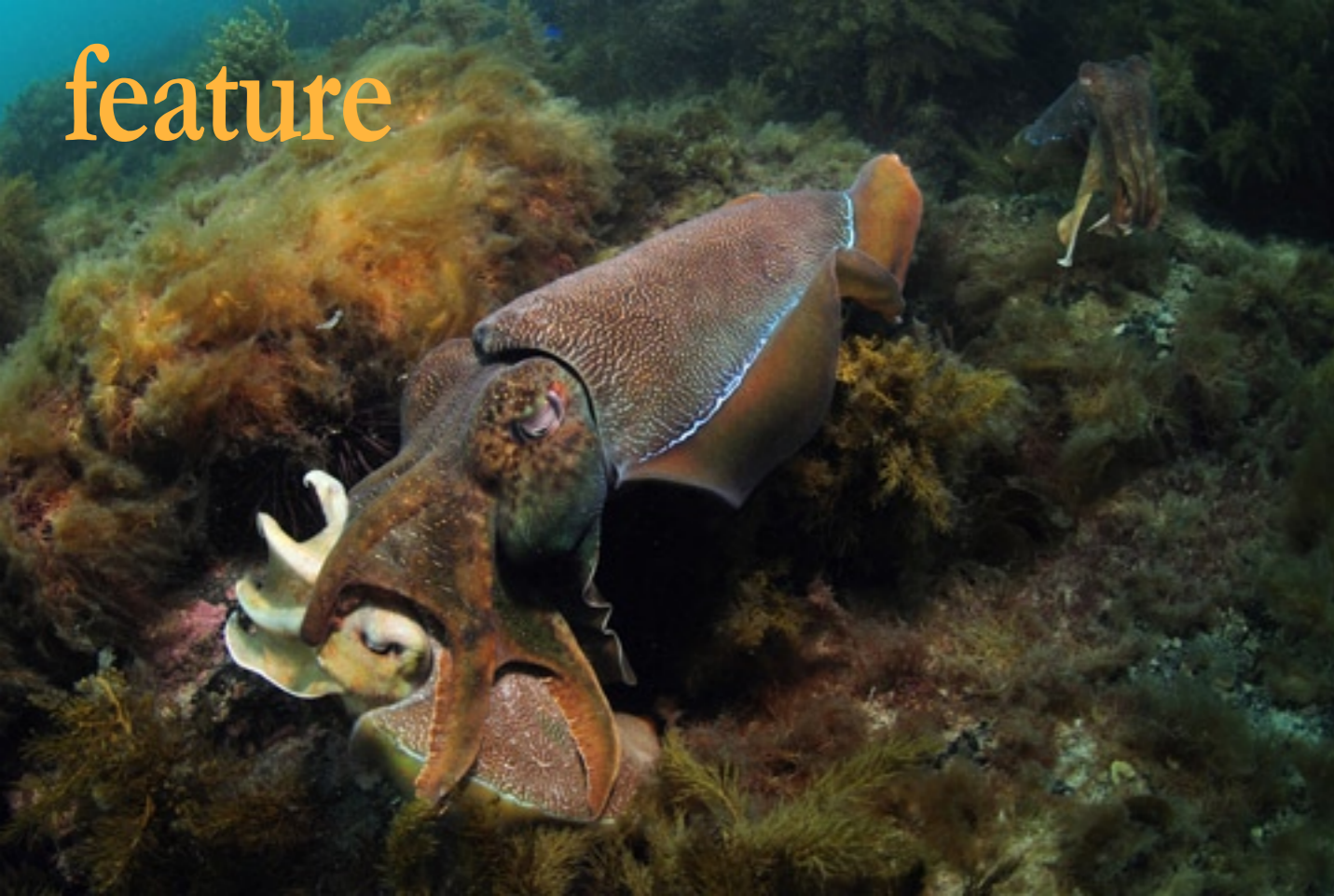
Whyalla Diving Services owner, Tony Bramley, knows the cuttlefish better than anyone. He has been nicknamed, the Godfather of Cuttlefish, because of his experience diving with the mating aggregation since 1979.

Bramley estimates only 20

percent of the cuttlefish from the 2010 season were seen in 2011. In the early 1990's there was a small amount of fishing during the mating season, mostly for bait, but when demand for cuttlefish in Asia ramped up in the mid '90s the aggregation was specifically targeted by commercial fishing operations.

Bramley and other divers successfully campaigned for protection for the cuttlefish after the aggregation was nearly fished out in 1998. The number of cuttlefish at the annual mating aggregation has been steadily



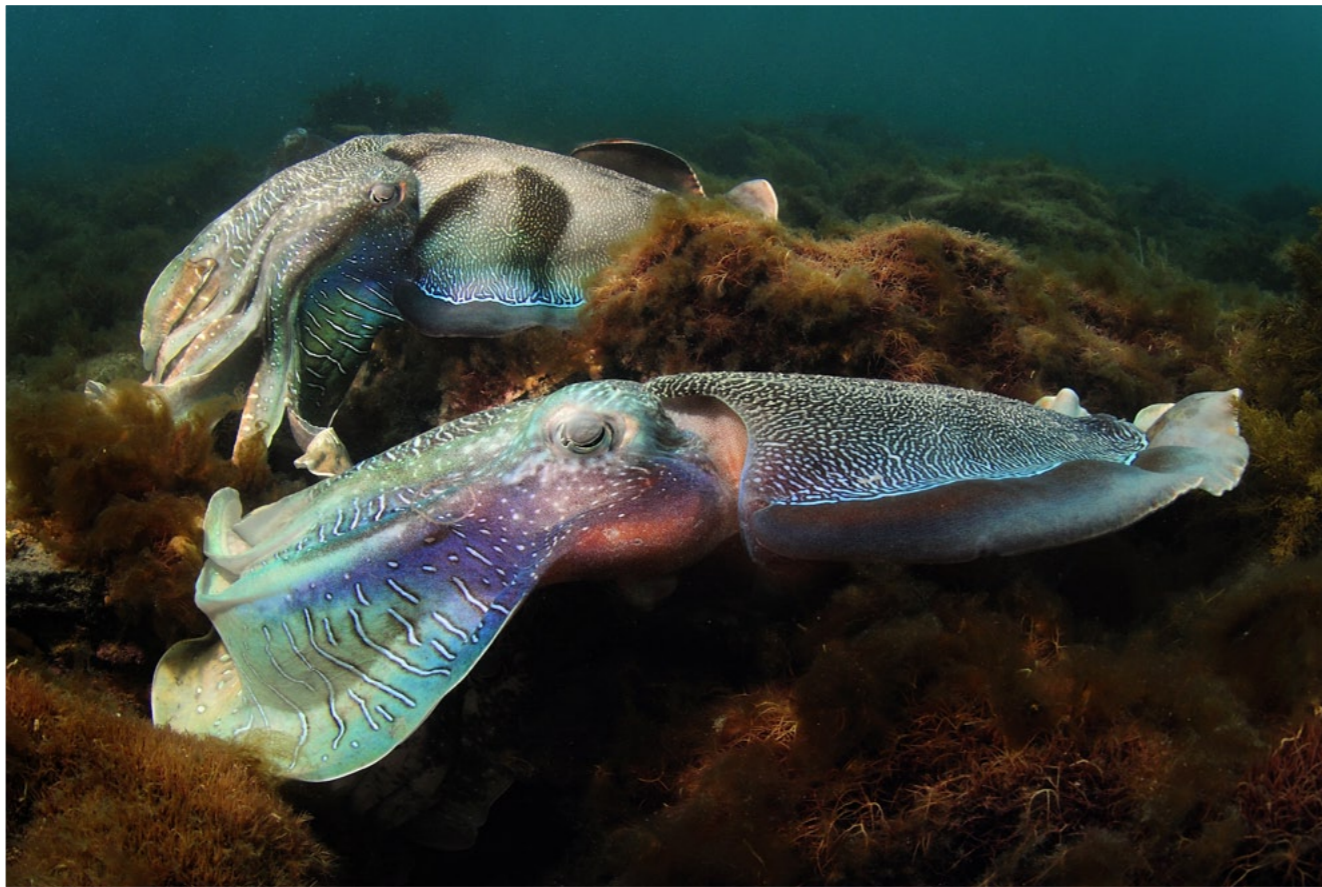


increasing ever since.

The 2005, 2006 and 2007 events were bumper seasons, still not as abundant as when Bramley first started diving with the cuttlefish, but a healthy increase on the first official government counts of 2002. There was a slight dip in 2008, and the 2009 and 2010 seasons appeared to plateau but showed no signs of decrease or widespread ill health in the population.

This past year's season was the first time cuttlefish numbers had declined significantly since intensive commercial fishing in 1998. Bramley believes warmer than average water temperatures are the most likely culprit.

"There was no difference to any activity that I know of in the gulf last year," he said. "It's not like there was some development or dredging or new industry coming online. As far as I know,



other than the temperature difference, it was just another season. Right up into the middle of June the water temperature was up

around 17°C. Normally, it gets below that by May."

The giant cuttlefish in the Upper Spencer

Gulf are particularly vulnerable to fishing and other pressures, like increased water temperatures, because of their dense concentra-

CLOCKWISE FROM TOP LEFT: A male gets a bit rough with a female when she tries to sneak off after mating; Cuttlefish locked in their lovers' embrace as the male passes spermatophores to the female; Cuttlefish lay their ping pong ball-sized eggs under rocky ledges; Two large males put on a dramatic display as they try to impress nearby females



tions during the mating season and their short life cycle.

After hatching, juvenile cuttlefish move out into the gulf where they lead solitary lives, taking shelter under ledges from predators such as dolphins. Less than a year later, they return to the shallow rocky reef of their birth to mate and then die shortly afterwards. Thus, each year's population is directly dependent on the success of the previous year's aggregation. The fewer adults that are able to mate, or the less eggs that survive to hatching, the fewer adults there will be to mate the following year.

"Those two years where we had full com-



Cuttlefish

CLOCKWISE FROM FAR LEFT: A moment of cuttlefish intimacy; The regional town of Whyalla. Whyalla is known as the place where the South Australian outback meets the sea; Divers and snorkelers must negotiate Point Lowly's rocky shore to see the cuttlefish



while fishing efforts can be regulated, it's much harder to do anything about water temperature.

"It's very worrying, but we'll know a lot more at the beginning of this season," Bramley said.

Man-made threats

Last year's disappointing season came just a few months before the approval of the expansion of BHP Billiton's Olympic Mine Dam, which increases the chances of a desalination plant being built at Point Lowly—ground zero for cuttlefish.

"The Point Lowly area is one of the few areas in the Upper Spencer Gulf that has rocky reef habitat that's suitable for Australian giant cuttlefish to lay their eggs," said Dr Bronwyn Gillanders from the University of Adelaide.

BHP was under pressure to find an alternative location for the desalination plant to protect not only the cuttlefish but the overall health of the gulf, which is also an important nursery for South Australia's snapper. Yellowtail kingfish are also thought to migrate to the Upper Spencer Gulf annually as part of their spawning migration.

"That whole gulf region is quite unique," said Gillanders. "It's referred to as a reverse estuary, which means that it's got much higher salinity at the head of the estuary and then you get to marine salinities out towards the mouth."

The South Australian and federal govern-



ments approved the expansion, which would be a multi-billion dollar economic boost for the area, in October but imposed 150 conditions. Divers and conservationists are now waiting to see what BHP decides. The mining giant is expected to make its final decision by the middle of this year. If the desalination plant goes ahead at Point Lowly, then it could make it harder for the gulf's cuttlefish population to recover from last year's drastically smaller mating aggregation.

In her research, Gillanders found that even small increases in salinity negatively affect the survival of cuttlefish eggs. Increasing the salinity from the gulf's current levels of 38 to 40 parts per thousand to 50 parts per thou-

sand in the laboratory resulted in total mortality of the eggs.

"Each generation is totally dependent on the previous generation," Gillanders said. "So if you have reduced numbers up there then potentially you'll get reduced numbers the following year, so it becomes a slippery slope of decreasing numbers."

There are concerns the desalination plant, and the dredging required for deep-water access for ships to transport the mine's copper and uranium, could also negatively affect the gulf's aquaculture industry as well as the seasonal tourism generated by the cuttlefish.

mercial fishing, in 1997 and 1998, the flow-on effect was really noticeable right up through 2002," Bramley said. "There was no recruitment in those two years."

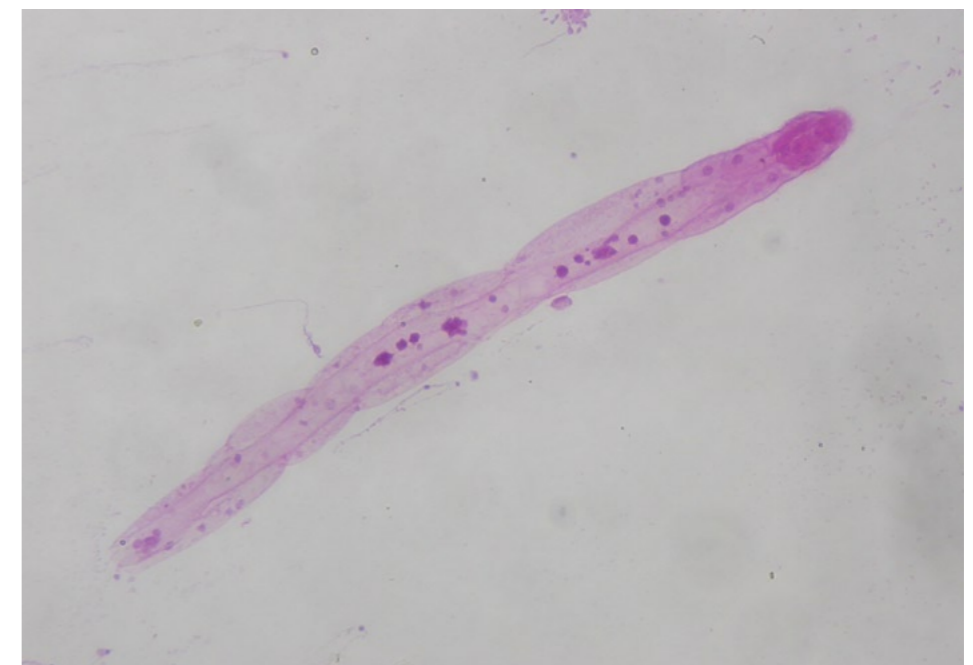
There is hope that since the cuttlefish suc-

cessfully recovered from those fishing pressures, they should also be able to bounce back from last year's unseasonably warm temperatures. But that's only if temperatures return to the normal 12-15°C range, and



Cuttlefish

Location of Spencer Gulf in South Australia on global map (left); The popular dive site of Stony Point near Point Lowly (below); A glass slide of a stained dicyemid parasite viewed under a compound microscope (bottom)



CLOCKWISE FROM ABOVE: Divers need not go far or deep to witness a range of behaviors including mating at the annual aggregation (above); University of Adelaide PhD student, Sarah Catalano, collecting sediment samples at Stony Point (right)

Ongoing research

If the Upper Spencer Gulf's population of cuttlefish can be shown to be genetically distinct from other giant cuttlefish, then there would be greater need for more protections of the mating aggregation.

Adelaide University PhD student, Sarah Catalano, is using parasites to find out more about the population structure and species status of the Australian giant cuttlefish in southern Australian waters.

Dicyemid mesozoan parasites are found in the kidneys of cephalopods and generally each species of parasite only infects one host species. So, by studying the genetics of the parasites found in Australian giant cuttlefish, Catalano should be able to show if the cuttlefish of the Upper Spencer Gulf are more genetically distinct than previously thought.

A genetic study by Gillanders, one of Catalano's supervisors, and Dr Steve Donnellan from the South Australian Museum showed that the cuttlefish from the Whyalla mating aggrega-

tion were a distinct gene pool from their Lower Spencer Gulf counterparts. Catalano's research, which continues this year, could provide further evidence towards the genetic separation of this population. The South Australian Research and Development Institute (SARDI) will also be carrying out more research at Whyalla this year.

After divers observed the unexpected drop in cuttlefish numbers last year, researchers from SARDI came to Whyalla in September to take DNA samples from the remaining cuttlefish. The South Australian government has given SARDI a \$115,000 grant to gather more data at this year's mating aggregation.

As for the future of the cuttlefish, the next few months will be a waiting game. The flow-on effect of last year's drop will become evident as cuttlefish begin to gather in late May or early

June. And sometime during the mating season, BHP should also announce its decision on the Olympic Dam Mine expansion. In many ways, 2012 is shaping up to be the year that makes or breaks this remarkable natural event. ■

Text by Robert Osborne
Photos by Debbie Stanley
and George Sharrard

Just knowing that Vikings started a settlement here a thousand years ago and that the first fishermen from Europe began arriving in the 1500's adds to a sense of history that cloaks the Canadian province of Newfoundland and Labrador. It's a sense that I'm acutely aware of on this sunny day in June on board the vessel, *Ocean Quest*, as the skipper, Bill Flaherty, navigates across Conception Bay towards Bell Island. I'm on my way to dive on what are known as the "Bell Island Wrecks". These are not artificial reefs. These are ships that were part of a catastrophic historic event, four World War II cargo ships that were sunk by German U-boats. It's a history that Bill is only too happy to talk about as we motor along.

The incident began on 4 September 1942. On a moonless night, *U-513* crept into the convoy anchorage in Conception Bay. How it got in is reminiscent of a plot from an old Hollywood war movie. *U-513* tucked itself under the stern of the *SS Evelyn B* and followed her into the anchorage.

Ships came to this harbor to load up on iron ore from the mines on Bell Island. The cargo was important for making steel crucial for the war effort. Naturally, German U-boats were interested in stopping that effort.

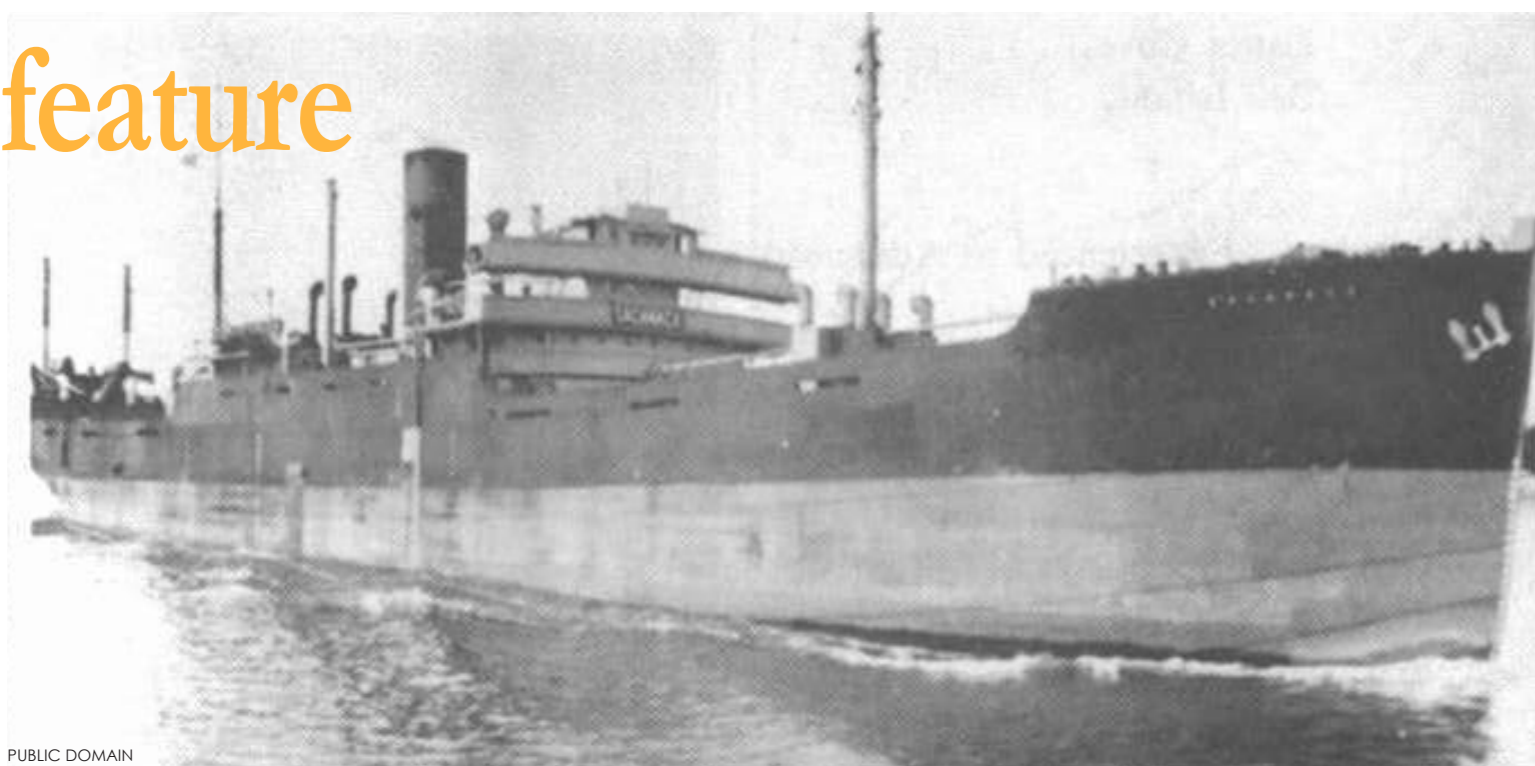
Bell Island in
Conception Bay

WWII Battles in Conception Bay

Bell Island Wrecks

DEBBIE STANLEY





PUBLIC DOMAIN

CLOCKWISE FROM LEFT:
The SS Saganaga; Diver in tor-
pedo hole in the side of the
wreck of PLM-27; U-513; U-518;
Captain Rolf Rueggeberg

went down in minutes.

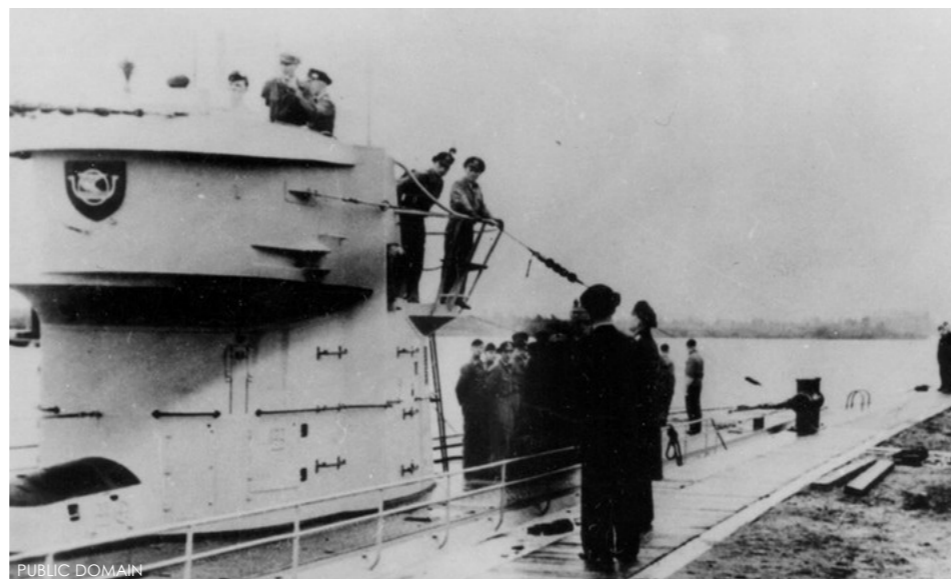
The water was now teeming with injured sailors—the anchorage filled with their cries. Shore guns, ineffectively positioned, attempted to come to bear on the action. Ships were still trying to get out of the bay even as small boats were setting out from Bell Island to rescue survivors. In the confusion, *U-513* slipped out into the Atlantic and disappeared.



PUBLIC DOMAIN

Evelyn B, the same ship *U-513* had followed into the harbour. The *Evelyn B* opened fire with its deck gun, forcing *U-513* to dive. From its submerged position, *U-513* selected another target—the *SS Saganaga*. She fired quickly. This time, there were no mistakes. Both torpedoes hit the ship. Filled with iron ore, the *Saganaga* went down in minutes.

The entire anchorage erupted in chaos. Ships were frantically trying to get underway to escape the U-boat. Rueggeberg selected another target. But in the confusion of the battle, as *U-513* maneuvered to get into position, the ship it had targeted—*SS Lord Strathcona*—swung around and hit the U-boat's conning tower. Though slightly damaged and



PUBLIC DOMAIN

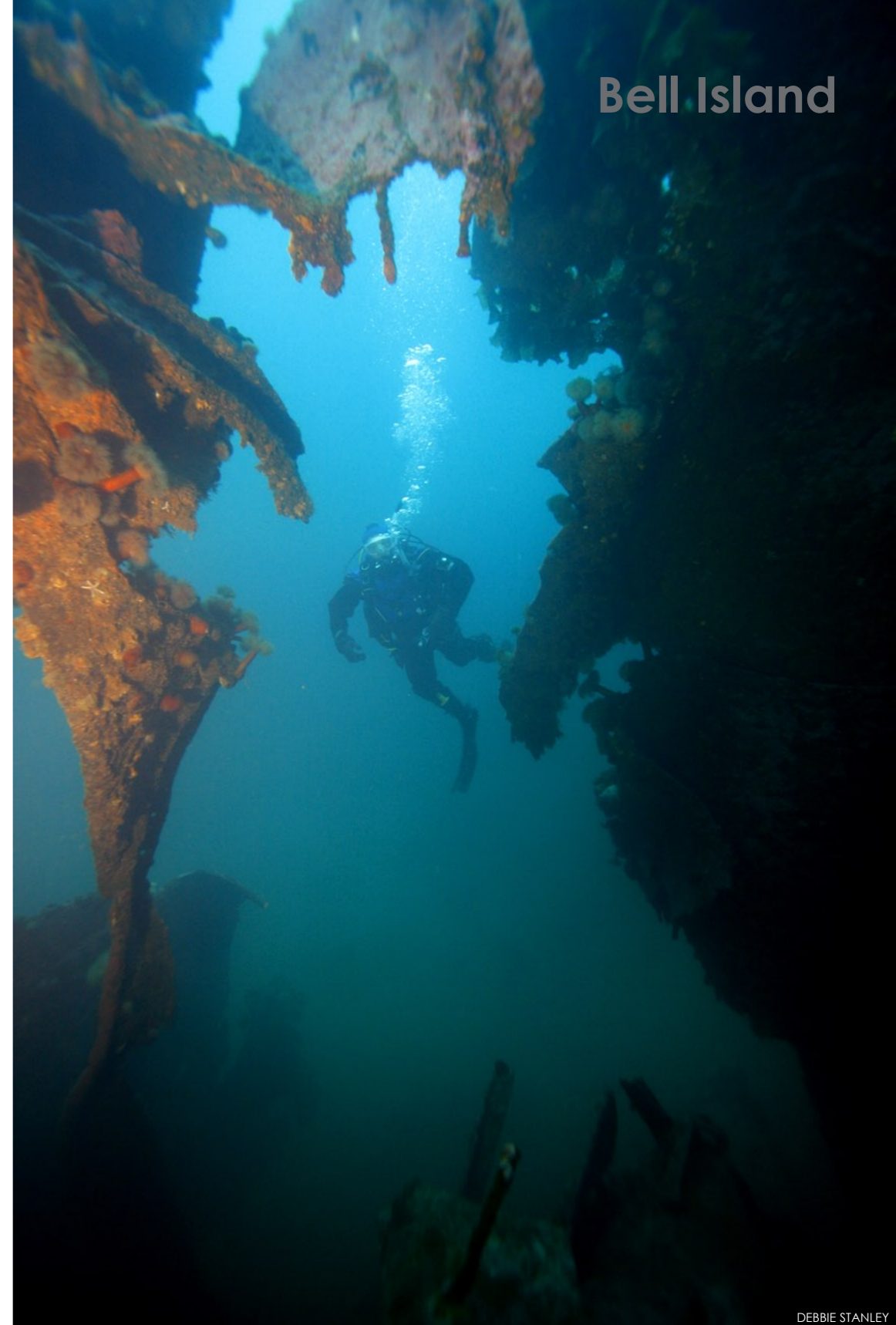
forced to the bottom, *U-513* recovered quickly. Without hesitation, she fired two torpedoes from her stern tubes. The *SS Lord Strathcona* was hit twice and also

Twenty-nine men died as a result of the attack—all from the *Saganaga*.

Diving

Today, the consequences of those attacks lie underwater like broken and discarded toys waiting to be reclaimed. And I was about to dive down and explore them.

My guide was Debbie Stanley, one of the co-owners of Ocean Quest—a dive lodge on Conception Bay that specializes in diving the wrecks. She and her husband, Rick, have taken on



DEBBIE STANLEY

After arriving in the bay, Captain Rolf Rueggeberg of *U-513* decided to wait until the following day to attack. In the morning, Rueggeberg surfaced, selected a target—the *SS Lord Strathcona*—and fired. But the two torpedoes misfired. *U-513*'s crew hadn't armed their detonation switches. The torpedoes merely ran out of fuel and sank to the bottom. The sub was spotted ironically by the



PUBLIC DOMAIN

the role of unofficial custodians of the site. Though the wrecks are not designated as protected by Canada's federal government, every diver on board has been warned politely, but firmly to "take nothing but pictures and

leave nothing but bubbles". These wrecks are, after all, graves for dozens of sailors killed in action.

Rick and Debbie are fighting to have the wrecks declared National Historic Monuments in order to stop the occasional



DEBBIE STANLEY



PUBLIC DOMAIN

The SS Lord Strathcona (left); Sunset at Conception Bay (far left)

Bell Island

way, I was shown a machine gun that sat on the deck, but I was not too keen to linger, my body was starting to get really cold. Nevertheless, after an hour surface interval, I was chomping at the bit to go down again.

The next dive was on the *Lord Strathcona* but not as deep and not as cold. This time, we headed straight for the bow. I got my picture taken doing my best "I'm the king of the world" imitation, poked my head into the room where an old Marconi radio was still attached to the wall and spent a few minutes playing with a flat fish.

As we neared the ascent line, we encountered a large jellyfish called a Lion's Mane. With their venomous sting, they're usually given a wide berth. But this one has drifted into the wreck and

pillaging. "Every time I swim past a box of bullets on the deck, there's a few more bullets missing," Rick explained. "And the brass plaque on the lifeboat was pried off last year."

SS Lord Strathcona

Deb and I geared up and dropped over the side and down the mooring line towards the *SS Lord Strathcona*—a Canadian ship of 7,335 tons some 406 feet long. She sat between 90 and 125 feet, and as we approached, my first thought was that it looked as though I was swimming towards a coral reef. Of course, I knew that was absurd. But on this sunny day the light penetrated down, dappling the ship with bands of light and creating an explosion of gold, pinks, oranges and purples—all different-colored sea anemones. They encased large parts of the super structure creating the appearance of a wreck covered with coral.

The visibility was surreal. As I hovered just above what would have been the super structure, I was able to see half way to the stern of the ship. Remember, this was a 400-foot-long cargo ship. I'm

guessing the visibility was at least 100 plus feet.

Deb signaled to me, and we descended a few more feet where she introduced me to one of the resident lumpfish.

Now, there may be uglier fish in the ocean, but if there are, I've yet to see them. Think the Hunchback of Notre Dame—this fish looks as if it's survived a seriously disfiguring accident some time in its life. Then Debbie panned her light across the creature, and the beast

transformed into a beauty—vibrant colors, pinks and greens lit up on the lumpfish. Something about ugly ducklings and fairy tales coming true sprang to mind. Debbie signaled me again, and we headed towards the stern.

By the way, did I mention that the water was brisk? Perhaps brisk isn't the right adjective, possibly bone numbing is more accurate. The average temperature on this day was around 39°F.

Later, I would find out that it could get even colder. For example, when I was

deep in the *SS Rose Castle*, I experienced temperatures as low as 36°F. Some of the tech divers report 28°F deep in the holds where the water doesn't move. Dry

suits are a must, serious undergarments recommended. The bottom line is that the temperature is the price you have to pay for these sensational dives.

Fifteen minutes into the dive and Debbie had taken me to the stern. An old 4.7-inch deck gun sat covered with multi-colored sea life. I could still make out the unmistakable shape of a weapon, but the shawl of plumose anemones removed any threatening qualities. We circled the gun a couple of times and headed back to the ascent line. On the



GEORGE SHARRARD



DEBBIE STANLEY

Ammunition on deck area (right); Diver and lumpfish (far right)





GEORGE SHARRARD

become entangled. We swam in for a closer look. Moments later, I was also introduced to another local denizen—the Ocean Pout. I was immediately struck by its uncanny resemblance to the rock star, Mick Jagger, or perhaps Steve Tyler?

As we headed back into port (stuffing our faces with homemade moose meat stew to warm up), past the sheer cliffs of Bell Island, weaving among a couple of tankers anchored in the bay, the sun beating down, I was beginning to sense that this was going to be a very special week of diving.

SS Saganaga & PLM-27

The following morning, the skies were blue once again, and the seas were calm. We headed out to explore a couple of different wrecks. In the morning, we would dive the shallowest of the wrecks, *PLM-27* (Paris, Lyon, Marseilles)—a Free French ship I was told was caught in the second round of U-boat attacks; and in the afternoon, we would dive the *SS Saganaga*. Once again, on the way out Bill gave me the history.

It was 2 November 1942, only two months after the first attack. If people thought the first attack had been an anomaly, they were sadly

CLOCKWISE FROM LEFT: Ocean pout; Radio room on the *Rose Castle*; Divers check out a lion's mane jellyfish tangled in the wreckage

mistaken. This time, *U-518* slipped quietly into the bay. To avoid detection, she hugged the cliffs of the mainland so closely that her bridge crew reported seeing cars driving along the roads of the mainland. This time, the captain—Captain Friedrich Wissmann—decided on a night attack. But his first shot was no truer than that of his earlier counterpart. *U-518* fired at a coal boat moored near the Scotia Pier. The torpedo missed and instead hit the pier causing substantial damage. Wissmann's second two shots would not go astray. *U-518* swung around and lined up a shot on the *SS Rose Castle*. Two torpedoes were fired in quick succession. Both found their marks—one in the stern and one in the bow. The *Rose Castle* went down in minutes. The attack was unexpected and, of the 43 crew,

28 men lost their lives.

U-518 continued its attack. The Free French ship, *PLM-27*, was moored near the *Rose Castle*. She had fired flares to help survivors from the torpedoed ship. *U-518* used the light to line up a perfect shot. *PLM-27* took a torpedo dead amid ship. She was split almost perfectly in two and sank in seconds. Twelve men



GEORGE SHARRARD



DEBBIE STANLEY

died.

This time, it was snowing and cold when the attacks took place. There were no rescue boats in the area. Eighty-six-year-old, Gordon Hardy, survived the attack on the *Rose Castle*. He painted a picture of a Dantesque Hell. He remembers being in his bunk amidships

when the first torpedo struck. He jumped into the frigid water in his underwear just as the second torpedo hit. He spent hours clinging to a raft listening to the screams of other men around him in the dark. The cold was almost unbearable. He told of seeing some men die even as they were being pulled from the water. Once again, in the confusion, *U-518*, slipped out of the bay and back into the Atlantic.

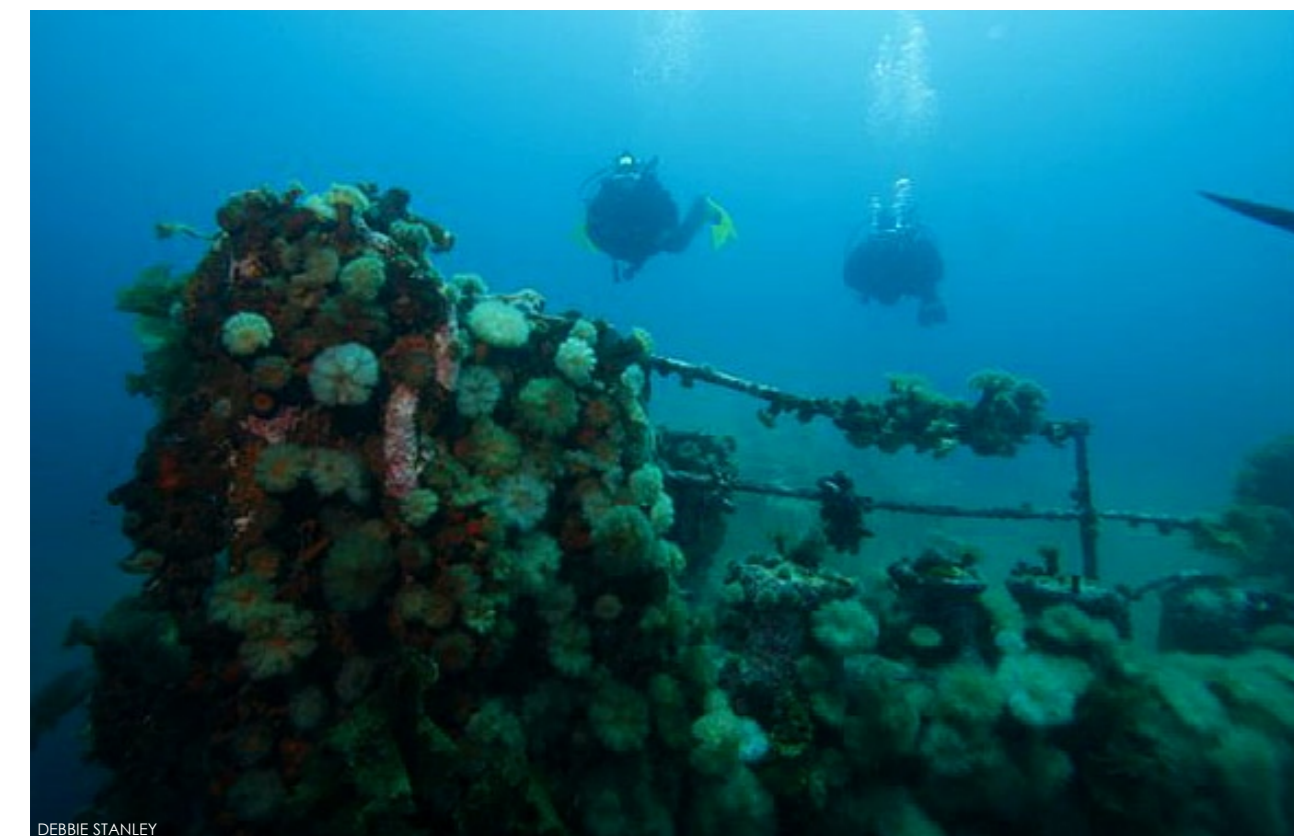
It's a horrifying story, but hard to imagine on a warm sunny spring morning. However, that was about to change. Deb and I suited up and quickly descended to the wreck of the *PLM-27*. As with the other wrecks, *PLM-27* sat upright on the bottom. She was relatively shallow, sitting in only 60 to 80 feet of water. After a quick look at the propeller, we worked our way forward from the stern towards amidships. Debbie swam through a



DEBBIE STANLEY



DEBBIE STANLEY



DEBBIE STANLEY

gap in the side of the ship, stopped and gestured for me to look around. At first I was puzzled. Look at what? I was floating in the middle of a large hole in the side of the ship.

Then, it dawns on me. This was a wound from a torpedo. The two-inch steel hull was jagged and peeled back like so much aluminum foil. I was awestruck by the scale of the destruction. To be in the vicinity of an explosion capable of ripping a ship open like a cardboard box must have been a terrifying experience. How anyone lived through this explosion is beyond my comprehension. I felt a deep sadness for the sailors who were caught

in this attack. Particularly when I remembered that many floated and died in the freezing water after surviving the explosion. It's little wonder Deb and Rick are fighting so hard to get this area declared protected. I understood it as a debt owed the men who died on these ships.

A sober feeling followed me for the rest of the day. I enjoyed exploring the wreck of the *SS Saganaga*, but I couldn't get the image of that torpedo hole out of my mind. In fact, that haunted sensation was only reinforced when I was shown the anchor of the *Saganaga*. A massive piece of iron, it must have weighed a couple of tons.



DEBBIE STANLEY

CLOCKWISE FROM ABOVE: Divers at the bow, interior, deck gun and anchor of the *SS Saganaga*



DEBBIE STANLEY

Bell Island

COUNTER-CLOCKWISE FROM TOP LEFT: A diver explores the *PLM-27*; The *Rose Castle*; Diver inside the *PLM-27*; Writer Robert Osborne

Robert Osborne is a Canadian writer and based in Toronto, with 25 years as a journalist in television news and seven years as a dive writer. Visit: www.canadiandiver.ca



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PUBLIC DOMAIN

And yet it lay discarded half way along the ship, blown from the bow some 275 feet away as casually as a letter tossed across a table.

SS Rose Castle

Day three and we were exploring the deepest of the wrecks—the *SS Rose Castle*. She was also the most intact. In fact, it was a little eerie to swim among

the upright masts and cranes that looked almost ready to use. She was also the coldest dive and bottom time (at well over 110 feet to the deck) was fairly limited for recreational divers. But we did have just enough time to reach the massive stern gun.

By the end of the week, I had managed to put in four days of diving on the wrecks. I was struck by three

thoughts. First of all, that anything I thought I knew about diving in Newfoundland and Labrador was wrong. I had imagined Newfoundland and Labrador's waters to be dark and cold, with low visibility and not much to see anyway. I was right about the cold, but dead wrong about what was there to explore and how clearly it could be seen. I've dived tropical waters that would be put to shame by the stunning viz and rich life of Conception Bay.

My second thought was that not only had I dived some of the best wrecks of my life, but I had been touched by a sense of profound history that had given added meaning to the experience. My final thought was for the men who endured those two nights back in 1942. I was left with a deep respect for anyone who lived and died in the battles around Bell Island. ■



DEBBIE STANLEY





Hooded Nudibranchs

Weird creatures from inner space

Text by Peter Symes
Photos by David Hall

This strange-looking creature, *Melibe leonine*, is one of the most characteristic members of the Opisthobranchia. Its most notable feature is the large expandable muscular oral hood, fringed with sensory tentacles, which it opens and throws forward in order to catch food in a manner similar to a fisherman with a catch net. It is also known as the Lion Nudibranch because of the hoods' likeness to that of a lion's mane.

This species feeds on just about anything that is unfortunate enough to swim in front of its gaping head, and its diet includes copepods, amphipods and ostracods, as well as small post-larval molluscs. This species hunts mainly attached but is a good swimmer when harassed or dislodged. The animal stands attached to the substrate (often a blade of eelgrass or kelp) and expands the oral hood ahead of itself to trap prey. It then sweeps the hood left and right or downward. When the ventral surface

of the hood contacts a small animal, the hood rapidly closes, and the fringing tentacles overlap, holding the prey in. The whole animal is then forced into the nudibranch's mouth.

This spectacular nudibranch can seasonally be found in large numbers on kelp—particularly in kelp beds south of the Puget Sound—and sometimes 'swimming' in coastal waters. When swimming, it is usually upside-down, and thrashes or undulates back and forth. It is often seen swimming near the water's surface in the summer, or after fall and winter storms disturb the eelgrass.

The wide flattened cerata (fringes) of this species are easily detached when disturbed by fish or predators, as a defensive mechanism, inviting the predator to follow the detached body part drifting in the current, rather than stay around and hassle the animal itself. Animals are often found with some or all the cerata missing or in a state of regrowth. Predators may include fish, kelp dwelling crabs and sea stars.



This species occurs on the west coast of North America, from Alaska to Baja California. Eggs can be found in the Washington state area at any season. The eggs are attached to kelp and eelgrass in long, wide yellow or cream-colored ribbons, which form tight coils or wavy folds.

Melibe leonina has a sweet fruity aroma, which you can smell throughout the room when a number of them are in a tank. It tends to 'get to you' like a bad perfume. They are gregarious animals and probably use it to keep together. ■



Photographing Sharks

Text and photos by
Andy Murch of
elasmodiver.com

Its quite natural to want to capture your shark encounters on film, and I would much rather see divers carrying cameras than spear guns, but occasionally the camera toting divers are even more destructive. If you want to share your experiences by recording them, then make sure you're not doing so at the expense of the environment.

Getting the shot should not come at all costs. I spend a lot of time underwater with a camera, and I have shaken my head at many blundering divers, only to look down and notice my fins crushing something precious. It happens, and when sharks are the subject, it is even harder to concentrate on protecting the reef, especially when currents and surge are compounding the difficulty.

Ask yourself this, as you compose each frame: Am I prepared to kill or irreparably damage the reef to get this shot? How much destruction is my personal satisfaction worth? Maybe if you vocalize the question to yourself, it will improve your buoyancy a little.

Banded wobbegong
at Fish Rock, New South
Wales, Australia, which
I think is one of the best
dives on the planet





Great hammerhead shark. It's been a long time since I've seen a great hammerhead in the wild. This one was photographed at Tiger Beach, Bahamas, over six years ago

Photography

If a megamouth shark appeared on the far side of a cave filled with delicate fan corals, I think the mental struggle between breaking my way through to photograph the shark and watching it from a distance to protect the fragile ecosystem might bring on an aneurism. I hope I'm never faced with that dilemma.

What about the mental and physical effects on the sharks themselves? You need to ask yourself what the sharks are doing and why? And, what will the effect be on that behavior if I swim over and start blinding them with my strobes?

Apparently, dolphins do things for fun. Cool. To my knowledge, sharks don't. That means that whenever you approach a shark, you are

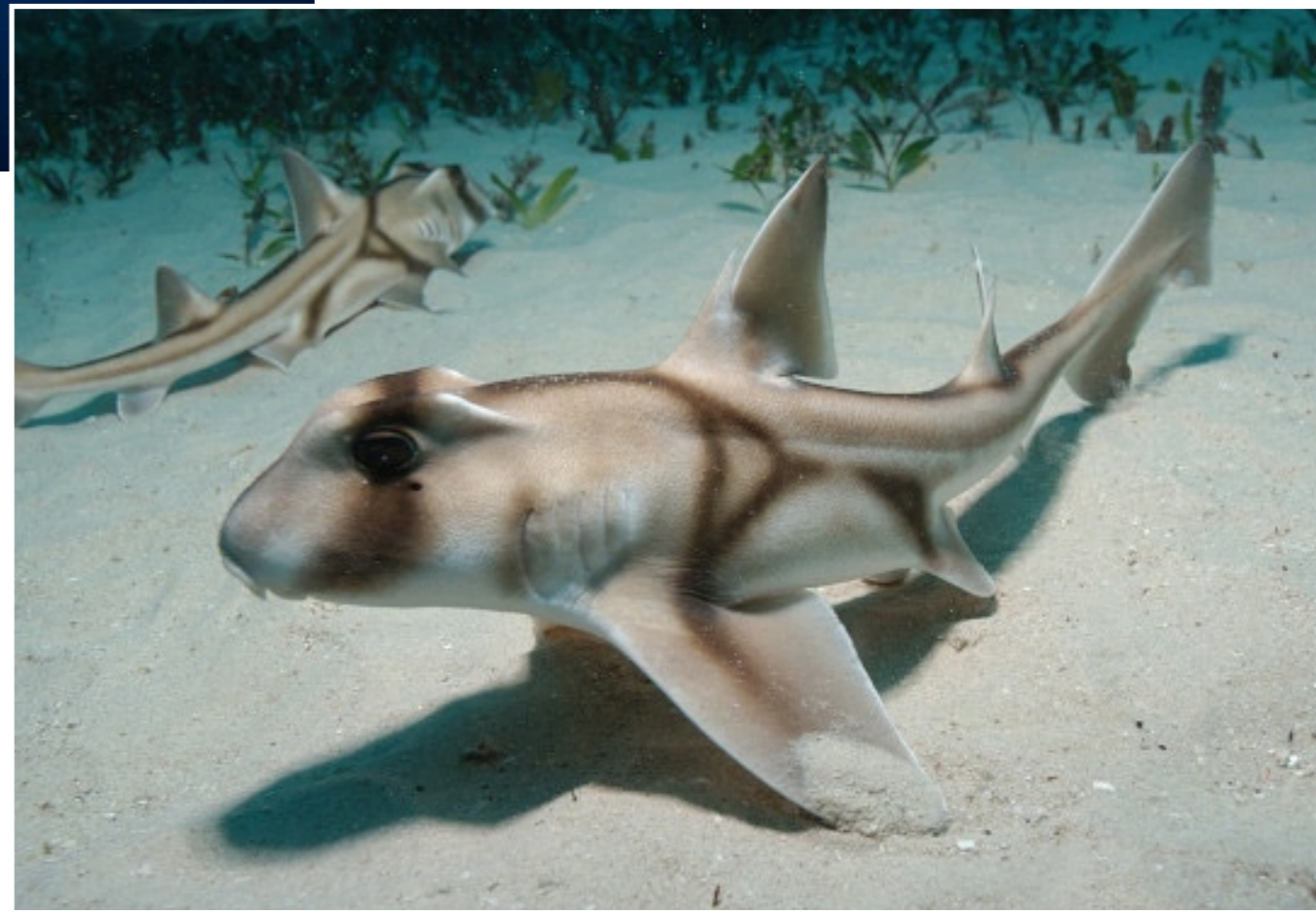
disturbing some activity that it needs to do, be it mating or merely sleeping. It's going too far to say, that because of this, you should never photograph a shark (then I'd have to get a real job), but you can minimize the impact that your intrusion has on the animal.

I was pretty close to a wobegong, but I didn't position my strobes right in front of its face, and I kept enough distance to avoid spooking it into leaving its resting place. Wobies are known for their bad tempers, so if I had pushed my luck, I could easily have been bitten.

Pushing and prodding sharks into a better position, or cornering them to get the shot, is, plain and simple, harassment. If the sharks decide that you've

So, there I was at Guadalupe Island, hanging out of the cage as far as my umbilical would allow. I was busy waiting for the money shot, and I'm sad to say that the most profitable shots are still the scary ones. The beauty and grace of sharks are still somewhat lost on the general public. While pursuing a hang bait, this particular white shark finally swam straight towards the cage, mouth gaping. I framed the shot, hoping for the best, and presto—another goofy shot of a grinning white shark saying "Hey, let's play". The moral of the story is that unless you get the perfect angle, great white sharks just aren't that scary, but they're SO cute!

Juvenile Port Jackson sharks (right) are members of the bullhead shark family



Grumpy blue shark?

Creature of beauty



Photography



Shhhh! She's had a long day (above). Actually, this tiger shark was not sleeping but just winking as she pushed her snout into my dome port; Photographer positions himself on sand to avoid damaging the reef (top)



Creature of nightmares

Sandtigers are often used on the covers of books because they look so ferocious. But not this guy (left). Who could possibly be afraid of a goofy, lovable sandtiger shark like this one?



crossed the line, you only have yourself to blame. Try to have some respect.

Our responsibility to the sharks goes further than avoiding direct harassment. The pictures that we show the world influence the way people view sharks in general. The blue shark (top left) is recognizable by its beautiful lines and silky skin, and by shooting it at this angle with the sun shining on its back, those characteristics are accentuated. The snaggle-toothed grin of the sandtiger (center left) is frequently used to portray the murderous intent of sharks in general. Now, let's see if we can swap these

characteristics. Maybe not quite, but now we have a grumpy looking blue shark (above) and a not so intimidating sandtiger (left).

There's no doubt that ferocious looking sharks make for exciting photographs, and I talk about how to produce 'in your face' images on the shark photography composition article coming up, but it's worth giving some thought to the impact that your work will have on the fate of sharks, if all that people are allowed to see are pictures of blood thirsty monsters. Get your *Jaws* look-alike shot, if that's what you're after, but step back and see if

there is a way that you can beautify your subject as well. Then you can present both angles to your audience.

To chum or not to chum, that is the question. Whether it is nobler to not see and photograph a shark rather than risk habituating it to the presence of humans who may next time show up with big hooks. Hmm... That's a subject for further discussion.

Andy Murch works as a freelance photojournalist specializing in sharks and rays. For more information, visit: www.elasmodiver.com ■



Shark Project App for iPhone and iPad

The Shark Project App, which includes an encyclopedia of more than 70 species, is now available in German and English in the iTunes app store. French, Spanish and Italian is in translation and more species will be added with free updates. itunes.apple.com



Why do sharks lurk around swimming spots?



WOLFGANG LEANDER

Australian scientists are trying to find out why some sharks are attracted to popular coastal beaches.

Dr Jonathan Werry, a shark research scientist with the Queensland Large Shark Tagging Program, said the movement of sharks into shallow coastal areas was not random. Bull sharks, tiger sharks and great whites are generally deep-ocean dwellers. But every so often, they lurk around popular swimming and surfing spots. Now, scientists aim to find out why.

Tagging

The Queensland Large Shark Tagging Program was initiated under the directive of the Queensland Premier Anna Bligh as is a long-term tagging program, which aims to tag up

to 150 large sharks. Selected sharks will also be satellite tagged. The program will provide data on the occurrence of tagged sharks at key sites (primarily beach areas) along the east coast of Queensland.

The program also aims to determine the migratory movements of large sharks both within and beyond the region of study.

Large shark species currently monitored in this program include the great white, *Carcharodon carcharias*, the tiger shark, *Galeocerdo cuvier*, the bull shark, *Carcharhinus leucas*, and the dusky whaler, *Carcharhinus obscurus*. ■

2011 Worldwide shark attack report published

Shark attacks in the United States declined in 2011, but worldwide fatalities reached a two-decade high, according to the University of Florida's (UF) International Shark Attack File report.

The 2011 total of 75 unprovoked attacks for the year was lower than the 81 unprovoked attacks recorded in 2010. However, the number of worldwide unpro-

voked shark attacks has grown at a steady pace since 1900, with each decade having more attacks than the previous.

The numerical growth in shark



HAMMERHEADS - TIGER BEACH - SPERM WHALES
HUMBOLDT SQUIDS - SAILFISH BAITBALLS - MANTAS
WHALE SHARKS - HUMPBACK WHALES - SANDTIGERS
DOLPHINS - SOUTH AFRICA - CROCODILE ENCOUNTERS

interactions does not necessarily mean that there is an increase in the rate of shark attack; rather it most likely reflects the ever-increasing amount of time spent in the sea by humans, which increases the opportunities for interaction between the two affected parties.

"We've had a decade-long decline in the number of attacks

and a continued decline in the fatality rate in the United States," said ichthyologist, George Burgess, director of the file housed at the Florida Museum of Natural History on the UF campus. "But last year's slight increase in non-U.S. attacks resulted in a higher death rate. One in four people who were attacked outside the United States died." ■



Basking shark swims across the Pacific

On February 2, a basking shark tagged with a tracking device near San Diego in June 2011 suddenly was spotted near Hawaii—after eight months of silence. The tagged shark was one of only four basking sharks ever tagged in the eastern Pacific, and the only shark to keep its tag for such a long time.

The roughly 4,000-kilometers (2,500-mile) journey from California to Hawaii is the farthest ever recorded for a basking shark in Pacific waters.

In addition to revealing where the sharks may go when they leave coastal waters, the tracking device also revealed somewhat startling information about where the sharks like to hang out. Near Hawaii, the colossal fish spent all its time in surprisingly deep seas at around 500 meters (1,600 feet) during the day, and commuting up to a depth of 200m (650 feet) at night.

A few days earlier, another of the few tagged sharks were registered by a satellite, this time about 800km (500 miles) off the coast of Baja, Mexico. The location was a bit of a surprise for the researchers in California, where

a team tagged the 5-meter (16-foot) shark in August 2011. They had expected the shark to have travelled south and not so far out to sea.

Meanwhile, Brunswick researchers have tracked basking sharks from Canada's Bay of Fundy to the southern seas around Cuba and Bermuda. The marine biologists are still determining what the sharks are doing in the southern waters. Laurie Murison, the executive director of the Whale and Seabird Research Station, said it's hard to say whether the sharks are migrating or just continually roaming the ocean. ■

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Shark Stewards launches Shark campaign in Texas

Shark Stewards, a non-profit shark conservation organization based in San Francisco, USA, announced today that it is launching a new chapter to support ocean conservation efforts in Texas.

The local chapter of Shark Stewards will be leading the shark campaign to engage citizens by raising awareness and introducing legislation to ban the trade, sale and consumption of shark fin in the state of Texas.

Shark Stewards is presently creating a legislative tool kit to support volunteers for similar legislation in other states. ■

Eating shark fins may lead to brain damage

High concentrations of neurotoxin found in shark fins is linked to Alzheimer's and Lou Gehrig's disease.

The consumption of shark fin soup and cartilage pills may pose a significant health risk for degenerative brain diseases, the journal *Marine Drugs* reports. Researchers from University of Miami, USA, sampled fin clips from seven different species of sharks collected in South Florida coastal waters and analyzed its contents. Upon examination, they detected cyanobacterial neurotoxin BMAA (β-N-methylamino-L-alanine)—a neurotoxin linked to neurodegenerative diseases in humans including Alzheimer's and Lou Gehrig's disease (ALS). ■



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Diver takes a photograph for manta identification

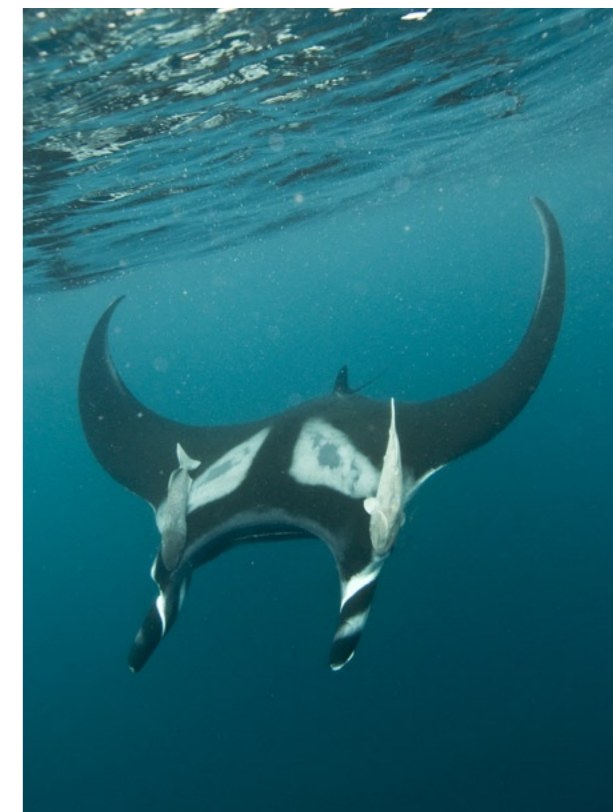
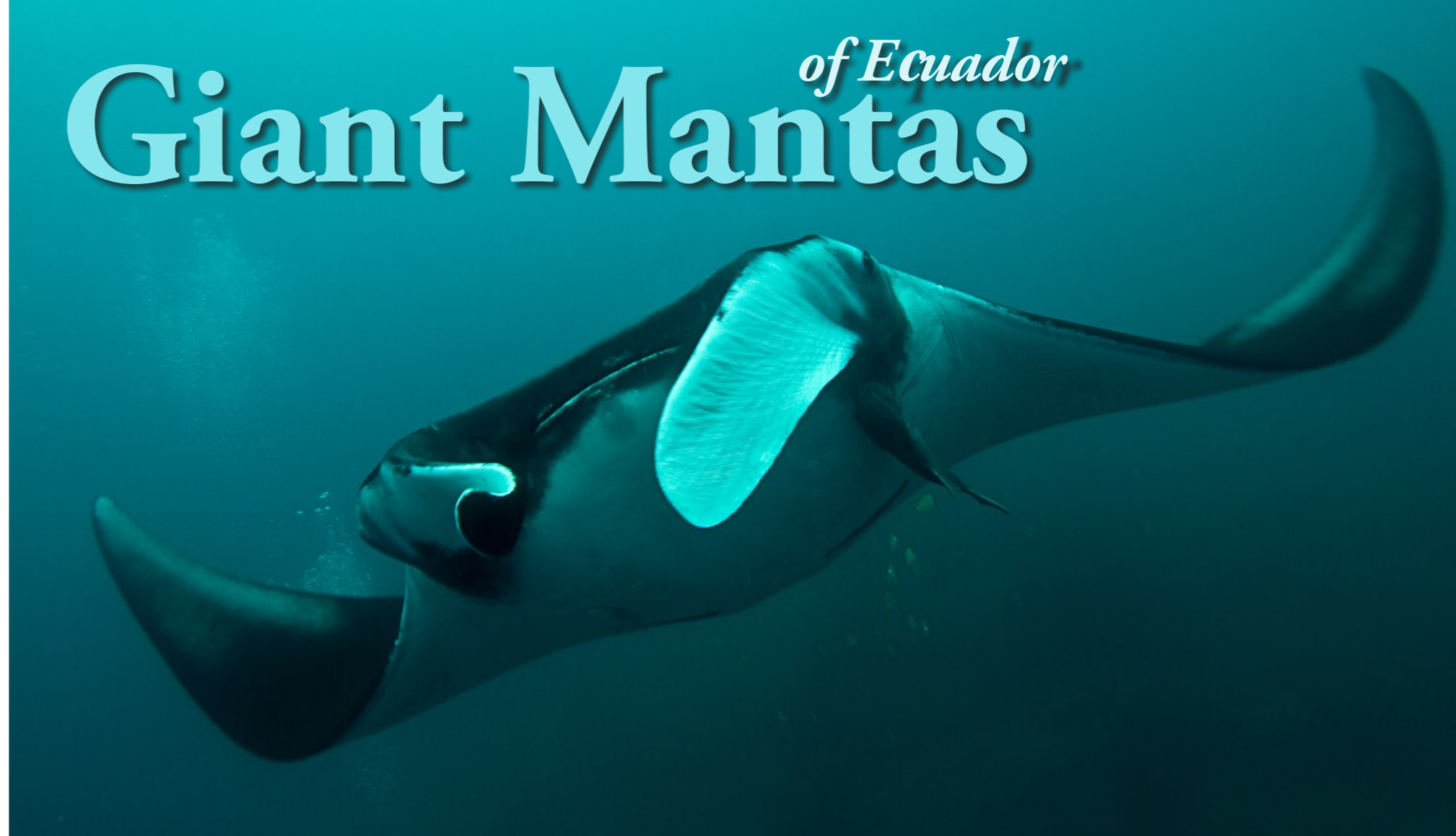
Giant Mantas *of Ecuador*

Text and images by Mark Harding

There is a recently developed term making its way into common use amongst the wider dive community, and that term is, *citizen scientist*. The science community is waking up to the fact that the common man and woman are valuable resources for acquiring many missing pieces in the jigsaw puzzle that is marine research, particularly for migratory species. This is the story of my own purely accidental, but now entirely purposeful brush with citizen science and the incredible journey I have been on since discovering what could possibly be one of the largest populations of giant mantas anywhere in the world.

Thousands, if not hundreds of thousands, of divers enter the water every day all over our planet. It seems a waste of a valuable resource not to make use of these myriad eyes, and more importantly, cameras to record what is going on when and where. A prime example is the ECOCEAN database that encourages divers from any walk of life to submit their images. The database lays out the methodology, and the data collected helps piece together sightings worldwide.

In 2004, for a number of reasons, I decided to sell everything, take a leap into the unknown and go and do something ridiculous. To begin my adventure, I was looking for a country where I could expand my underwater and terrestrial wildlife portfolio and also follow something of a long standing (unrelated) desire to learn the Spanish language. After considering most possibilities, I settled on Ecuador, which fitted both prerequisites perfectly, being as biodiverse as at least any other Latin American country and also one



Manta with remora at the surface





CLOCKWISE FROM FAR LEFT: Black manta with a couple of remora hitching a ride; Diver and manta at the surface; Manta portrait

of the smallest to travel between interesting zones. The coastline seemed at least partly dive-able, and Ecuador was one of the most cost effective places to embark on a long Spanish speaking course. So it was then, and after a rather intensive initial set of weeks in the language classroom, that I decided to take a break to the coast and go diving.

Not having dived many exotic places before, the diving on Ecuador's coast seemed considerably better than that of my murky home waters of the United Kingdom, so I quickly decided this was the place to begin and develop my professional diving career. Although I lived in Quito where I had just met my future wife, I began PADI divemaster and instructor training with one of the coastal dive schools, readily accessible by a short internal flight or not so easily reached by any of the frequently robbed or crashed national bus services.

Meeting a manta

During 2005, I dived quite a lot at Isla de la Plata and quite by chance sighted a giant manta. I shall never forget it.

Some of the local guys had said there might be a chance to see them there, but I was expecting something a lot smaller. I distinctly remember that individual. It was one of the less common melanistic or black mantas. Its cephalic fins were unfurled in front of its almost indistinguishable eye, giving it something of an elephantine appearance. It swung about us in two or three sweeping, purposeful passes. It seemed so immense, when it went over our heads it felt like night had fallen. There was an almost ominous, overbearing sentiment to its presence. Then it was gone. The sound of my regulator returned to my senses, hissing and wheezing—a comforting sound after the shattering boom of emotion that had wrung my head of any other thought when I saw that giant black

shape.

Once I had settled back on the boat after that dive, my minded drifted back to my childhood when I had first learned of manta rays on television. Jacques

Cousteau had described one saying that it appeared to him as a ghost, coming to him out of the gloom from who knows where, and going off to some equally mysterious and unknown place. His words

could not have been better spoken. I was mesmerised, not only by the manta's presence, but also the questions that came to my head.

This huge animal, quite obviously not a local resident and by all accounts only ever seen around that area for a couple of months, was full of mystery. I searched in Internet for any information that I could find on them and started to take photos of each individual. Their ventral surface is uniquely marked and if enough information is gathered, population estimates can be made by measuring sightings and comparing re-sightings against new individuals.

Local knowledge was indeed slim on the subject of these mantas, and the general consensus was that there may be something between 20 and 30 individuals (even to this day, it is very unusual to see more than a handful of these mantas at the same time).

Each time I dove the area, I would look



THIS PAGE: Portraits of mantas at depth and at the surface

Mantas

could supply some funding by paying a cost covering fee, and they would also bring some much needed biology knowledge to the field.

Identifying mantas

In 2009, Jim put me in contact with my first volunteer, Stacy Bierwagen who was taking a semester break from her marine biology degree course. During that summer, we got on whatever boat space that was available and spent as many hours on the key sites as we could.

Those early days were simply incredible. On occasions, there were more mantas than we could ID sensibly. Mostly though, the days were a little quieter.

Back then, dive tourism operated off the back of whale watching and walking tours to Isla de la Plata, with divers hitching a lift and diving when the walk-

ers were on the island. Stacy and I were often the only divers in the water, with the mantas to ourselves. Our evenings were spent wading through ID shots collected on these diving days, and at the end of the 2009 season, we compiled a report that was submitted to the Machalilla National Park and Ministry of Environment.

Our conversations during that period were mostly raw and intense. Arguments over reasoning were common as we gleaned what little information we could from sparse Internet articles and the few scientific papers that we had access to.

In the few short years since 2009, it now seems ridiculous how little we knew, or even the world at large knew, about manta rays. One thing we did know was that there were a lot more than 40 mantas in that population. We had collected

101 new ID's in 2009 alone and had not seen one single manta ray from previous years. Our recent accounts showed that we did not re-sight any one manta at the site for more than a handful of consecutive days, meaning each individual was not hanging around for very long.

Our driving force was always what was happening on the beaches, as we made our way from the scruffy streets of Puerto Lopez to the boats. The fisherman's landing zone is in the same place as where all the whale watching tourists board their various craft. The looks on the western faces as they view the carnage is invariably either one of new romanticism beholding the rustic life of the local fisher folk or aghast environmentally aware travellers who are horrified to see row after row of shark and ray bodies hauled from the fibreglass pangas to feed local



out for and capture photos of the mantas, and my excitement soon mounted. After two seasons of casual attempts at identity shots, I had recorded no less than 40 individuals, and what everyone considered to be the 'one' black manta, turned out to be one of three melanistic mantas at that time. There had to be more.

I recounted my findings to a visiting

scientist from the United States, Dr Jim Lehmann who was in the area working on whale migration with local whale researcher, Dr Cristina Castro. Jim was highly supportive of my initial enthusiasm and suggested one way to fund further investigation was to look out for volunteers recently graduated from university, or those looking to volunteer for a gap year. These newly qualified biologists



LEFT TO RIGHT: Mobulas fished in Ecuador lay on the beach; Catch of sharks, a daily sight on Ecuador's main fishing beaches; Green sea turtle; Diver removes net from reef off Ecuador



Mantas

The most interesting aspect of the 2010 data was that it appeared to support our 2009 observation that individual mantas did not hang around for long, again staying for only a few days, with most of them being sighted only the one time.

During that year my British team of marine biology volunteers helped mount a simple plankton trawl experiment and we monitored currents, wind direction and noted tide times and moon phases as well as other environmental conditions. These recordings showed

and international trade.

Although manta rays had not been targeted in Ecuador and are now officially protected since 2010, my own feeling back at the outset of my activity was that should the local fisheries decline sufficiently, and should other global manta fisheries also decline, the Ecuadorean artisanal fleet would soon find reason to start tackling the giant mantas on their doorstep.

Discovery

Back at the computer and I was keen to make my findings available to other manta scientists around the world, and a few eyebrows were raised at what I had found. The lack of repeat sightings and number of new mantas found each day (14 new individuals was my best day in 2009) was pointing to a population far greater than the 140 or so we had on our database.

In 2010, I was proud to have attracted the attention of Save Our Seas foundation who funded my project for the first time. I also received three international manta researchers on the project, one of whom was Andrea Marshall who tagged three of our rays as part of her global



manta tagging program. A handful of diehard manta fanatics also joined the project that year, and more cameras in the water proved useful. My small team and I managed to capture a further 170 or so new ID's swelling our database to around 320 individuals.

interesting results. The mantas in the area definitely respond to one or more key environmental factor influencing either them directly or their food source. This seemed to potentially be one of a number of plankton classes borne on a current system or temperature front.

Whatever that factor was, it was significant enough to divert such a huge number of mantas away from the study sites for a significant number of days, or even months. There were either fantastic numbers of mantas in the area, or none at all. There was nothing in between.

In 2009, with the help of local fishermen, Stacy and I found another cleaning site some 65 kilometres to the south of Isla de la Plata. Significantly, if the mantas depart from Isla de la Plata they also depart from this newly found site within a very short space of time.

The year 2011 was again interesting. In contrast to the previous year they arrived later in the season with no mantas seen at all in July, arriving only in mid August. (The previous year 2010 was the opposite with mantas arriving and leaving earlier). Luckily when the mantas did arrive, we were ready for them.

With even more volunteers arriving on the project, each with a camera this time, the database had reached almost double its number the previous year, and although we have increased our year on year re-sightings to a handful now, the in-year re-sightings remain very low, with most individuals staying around for one



day, and a mere handful staying on for a just a few days at a time. There is no doubt that there are a lot of mantas in the area when the migration arrives for its short period. The overriding question now is where does that population go for the rest of the year?



Mantas

CLOCKWISE FROM FAR LEFT: Curious manta; Diver takes image to identify manta; Example of image that identifies an individual manta and its sex—in this case, male; Manta portrait

identified a directed manta fishery. The mantas are of the same population, recognised by Peruvian fishermen as coming and going from Ecuador.

The purpose of this article is not to hail my own success, but to hopefully encourage anyone who is reading this to pick up the gauntlet and run headlong into any project that can help grow wider community support for ocean conservation. My own efforts started, and continue, with nothing more than a deeply held belief that passionate attempt does yield result. There are plenty of people out there that will tell you that you are not good enough to carry out that initiative, but it is important only to listen to the tiny handful of people, including yourself, that tell you that you can. ■

Many thanks to the staff and officials of Machalilla National Park, particularly CMS focal point, Julia Cordero, for mobilising the efforts of Ecuador's CMS panel at such terribly short notice. I would also like to thank my dedicated team of marine biologists, mostly from the United Kingdom—Emma Tripp, Katherine Burgess, Tim Reynolds, Christine Skippen—and Stacy Bierwagen from the United States. I would not have been able to do any of this without their ongoing support as well as the support of the Puerto Lopez fishing and diving community.

Mark Harding has been working on the Isle of Wight, United Kingdom and internationally as a commercial, underwater and wildlife photographer since 1996. Visit: Eyemocean.com

Conservation

Although now protected in Ecuador, the mantas are still exposed to considerable risk from indiscriminate fishing practices. Their migration seems to also coincide with the arrival of the Wahoo fishery, and the high speed trolling method that is used by the artisanal fishermen leave many mantas with deep wounds, gouging by large hooks and many are left trailing hundreds of yards of heavy monofilament or braided lines. We have even seen mantas towing 25 litre drums used as floats.

It also remains to be seen how the authorities will deal with the growth of tourism around the mantas. Already in 2011 I saw three diving boats on the sites, with up to 20 divers in the water, a huge increase over 2009 when it was just two of us. The sites most frequented by the mantas at the island are only three main points, and the coral patches on those sites that hold the cleaning fish amount to probably less than two football pitches in total. It is clear that over-diving by too many people

will soon trash the sites, as is reported to have happened at other sites around the world. However, some development must be allowed to allow the local communities to benefit from this important resource, lest demand for fishing revenues beat upon the doors of local officialdom.

Ecuador is undergoing something of a political renaissance recently with the stabilising socialism of President Rafael Correa. This new feeling of stability is



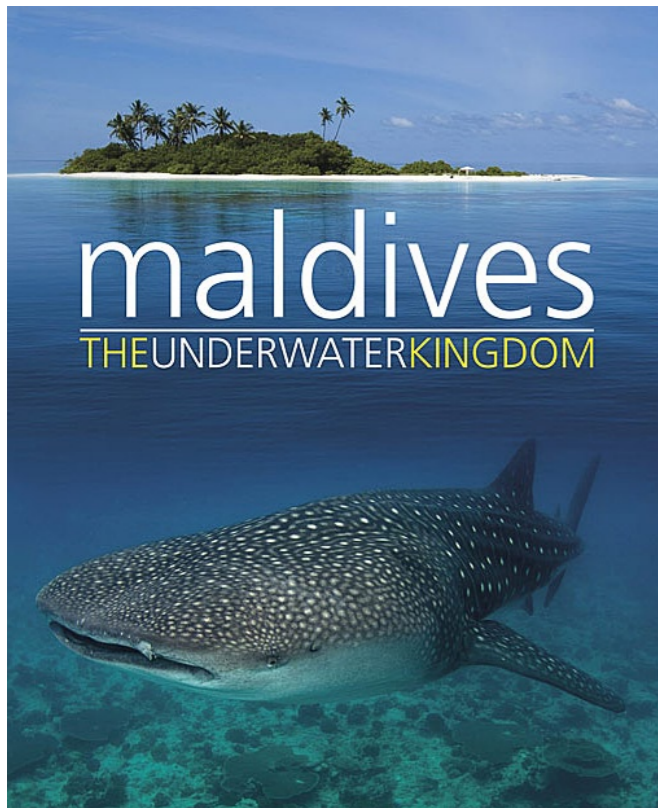
creating something of a power wave amongst the lower political ranks, and policy enforcement is happening all across the board. It is only hoped at this stage that decisions made in favour of manta ray conservation can be effectively enforced, and any development of the situation can occur without being dogged by the spectre of corruption that has plagued much of the country's history.

As for me, my work in Ecuador has

gone some way to protecting mantas around the world, having provided data for the recent IUCN re-assessment of *Manta birostris*, and data and essential communication for the CMS appendix I & II listing for this species. I also contributed to the significant body of work for the Manta Ray of Hope project authored by Shawn Heinrichs and colleagues, which was released just a few weeks ago.

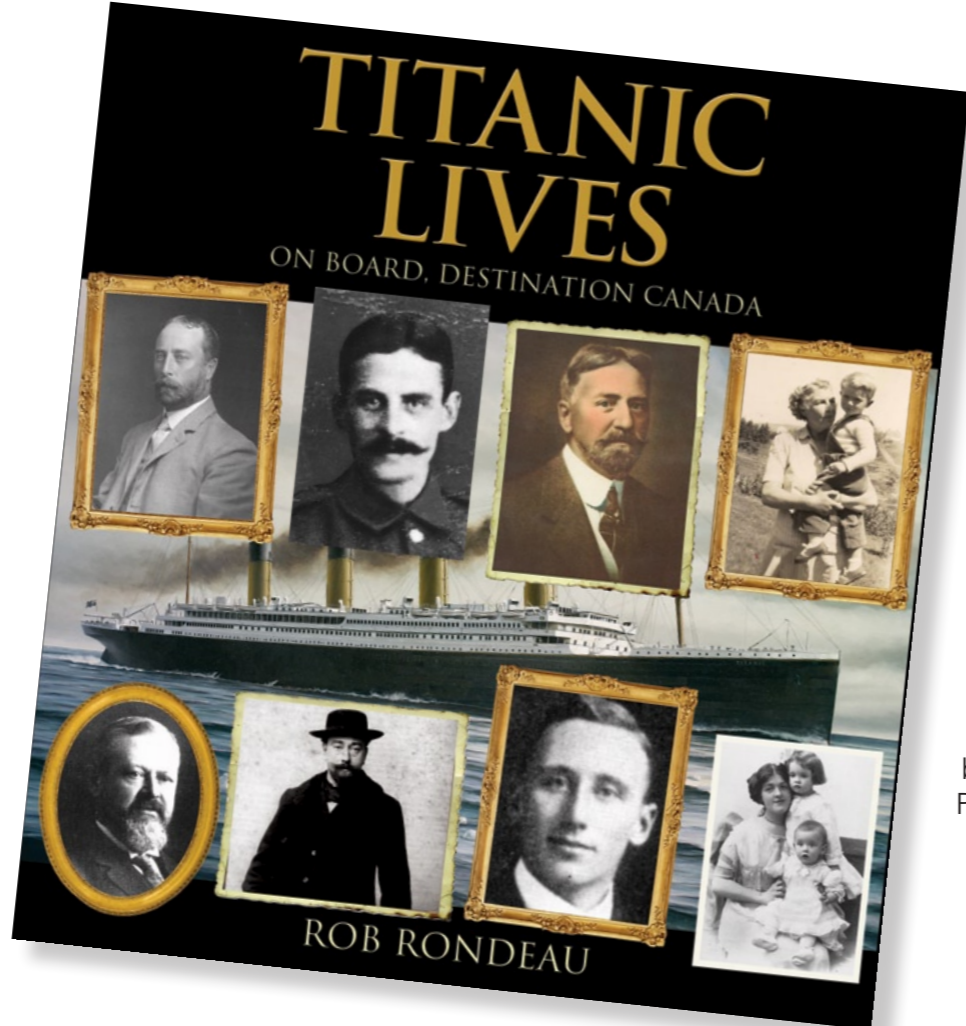
I am currently busy forging new working relationships in Peru, where we have





Maldives —The Underwater Kingdom

The Maldives is home to one of the world's most beautiful marine environments. The country's waters are blessed with abundant life, including sharks, dolphins, turtles and whales. The Maldives is also home to the charismatic whale shark and manta ray. Released in early December, Scubazoo's latest coffee table book, *Maldives – The Underwater Kingdom*, captures the wonder of the Maldivian underwater world—a world that needs protecting, to ensure our aquatic treasures are preserved for future generations. The book is 268 pages long and includes a DVD insert, which closely follows the book. Scubazoo.com

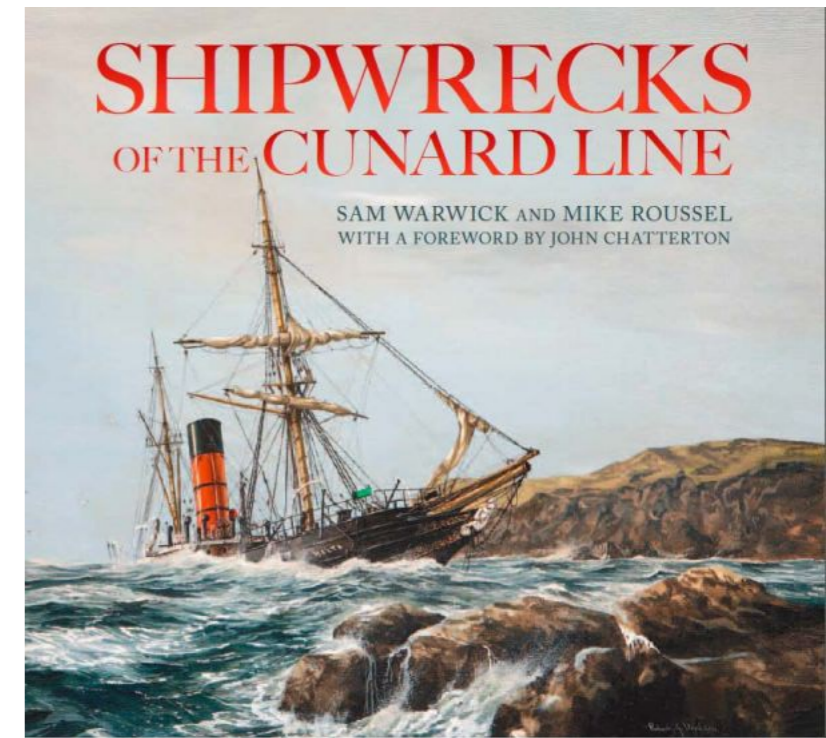
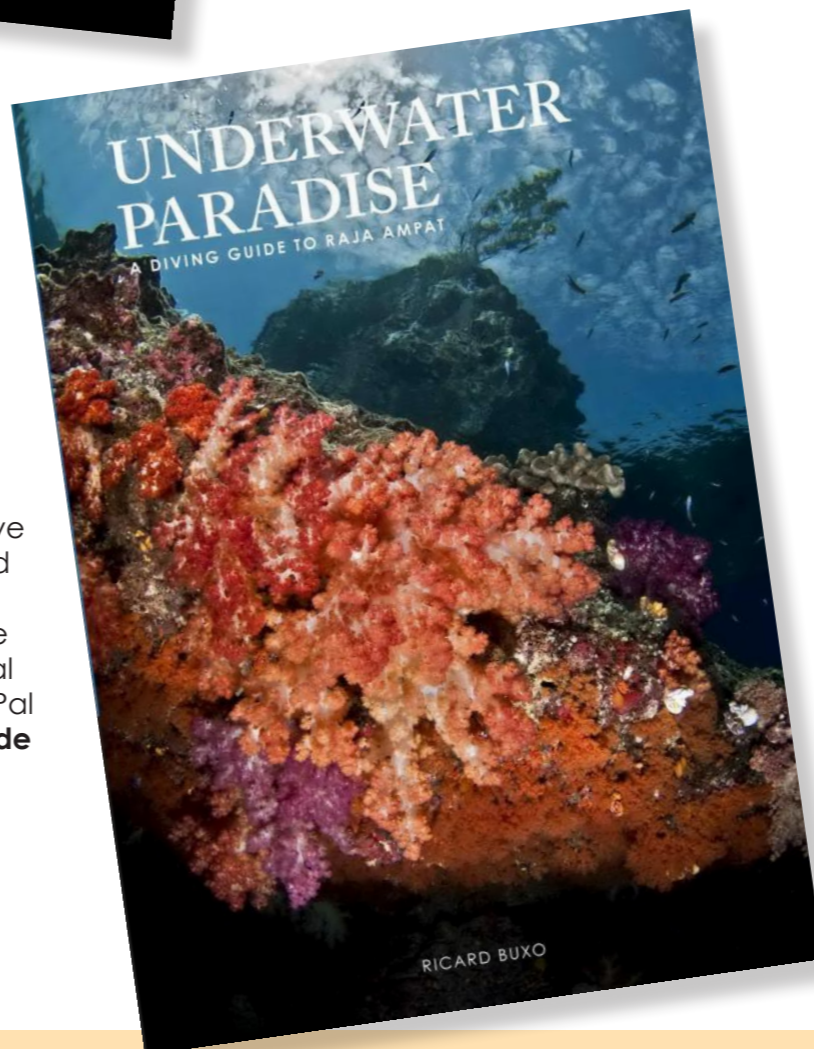


Titanic Lives

This book by X-RAY MAG contributor Rob Rondeau will be available 16 April 2012, almost on the day 100 years after *Titanic* sank and can pre-ordered on the link below. Rob Rondeau is a senior marine archaeologist who has been studying shipwrecks for almost 20 years. His love for the *Titanic* is the root of his passion for marine study. Rob lives in Nova Scotia, where he is the president of Procom Marine Survey & Archaeology. 112 pages, will be available both in paperback and as a PDF. www.Formac.ca

Underwater Paradise — A diving guide to Raja Ampat

The new book will be in the A5 format and contain detailed descriptions of 24 of Raja Ampat's best divesites with 30 maps and a total of 180 pictures and is self-published by Ricard Buxo. *Underwater Paradise* will be available through diving centers and dive shops in Jakarta, Bali, Manado and Sorong, plus Periplus book shops. Internationally, it will be available through Amazon and a personal dedicated website with a PayPal facility. **New Raja-Ampat-guide**



Cunard Shipwrecks

Shipwrecks of the Cunard Line by Sam Warwick and Mike Roussel features write-ups on 18 wrecks. The first book dedicated to documenting and bringing to life the histories and sites of Cunard shipwrecks, with a foreword from diving legend John Chatterton, providing a unique history and record of the final underwater resting places of ships of the Cunard Line, whose rich history spans nearly two centuries, this book charts the period from 1843-1974. Events surrounding the wrecking of each vessel are thoroughly explored and unique accounts are incorporated from divers who have explored the wreck, along with never-before-published underwater images of the wrecks. Finishing off with practical data for interested divers, this unusual history offers a fresh analysis of maritime history. Amazon.co.uk

Land of the Sleeping Crocodile Timor Leste

Text and photos
by Don Silcock

The juvenile salt-water crocodile was near to death when the small boy found it stranded in a swamp far from the sea. Although greatly afraid, the boy decided to try and save the crocodile and eventually managed to get it back to the sea where it quickly recovered. The two became best friends and went on to travel the world together, with the boy riding on the back of the crocodile as it swam across the seas. But as the crocodile grew older, and the time came for it to die, it told the young man it would transform itself into a beautiful island where he and his children could live until the sun sank into the sea...

A family of
anemone fish
at Bob's Rock
east of Dili





CLOCKWISE FROM FAR LEFT:
The view from the top of
Cape Fatucama towards
Dili; Arte Moris art commune
in Dili; Painted crocodile
model at Arte Moris

Timor Leste

Declaring itself independent on the 28 November 1975 as the Democratic Republic of East Timor, the country was invaded and annexed just nine days later by its large western neighbor

Indonesia, and another 24 years of often brutal colonial rule was to follow.
The end of the Suharto era in Indonesia ultimately lead to self-determination and the newly independent Republic of Timor Leste finally joined the global community on the 20 May 2002.
Lead by the charismatic former guerilla leader Xanana Gusmao, and the urbane and articulate Nobel Peace Prize winner, Dr Ramos Horta, the country more commonly known by its anglicised name of East Timor remains one of the world's poorest nations, but its large reserves of natural gas and oil promise a much brighter future.



The tale of the boy and his cold-blooded friend is told often in Timor to explain the island's crocodile-like shape and why the Timorese have a special affinity with the large reptile that is said to inhabit the creeks and pools along much of the south coast of the country.



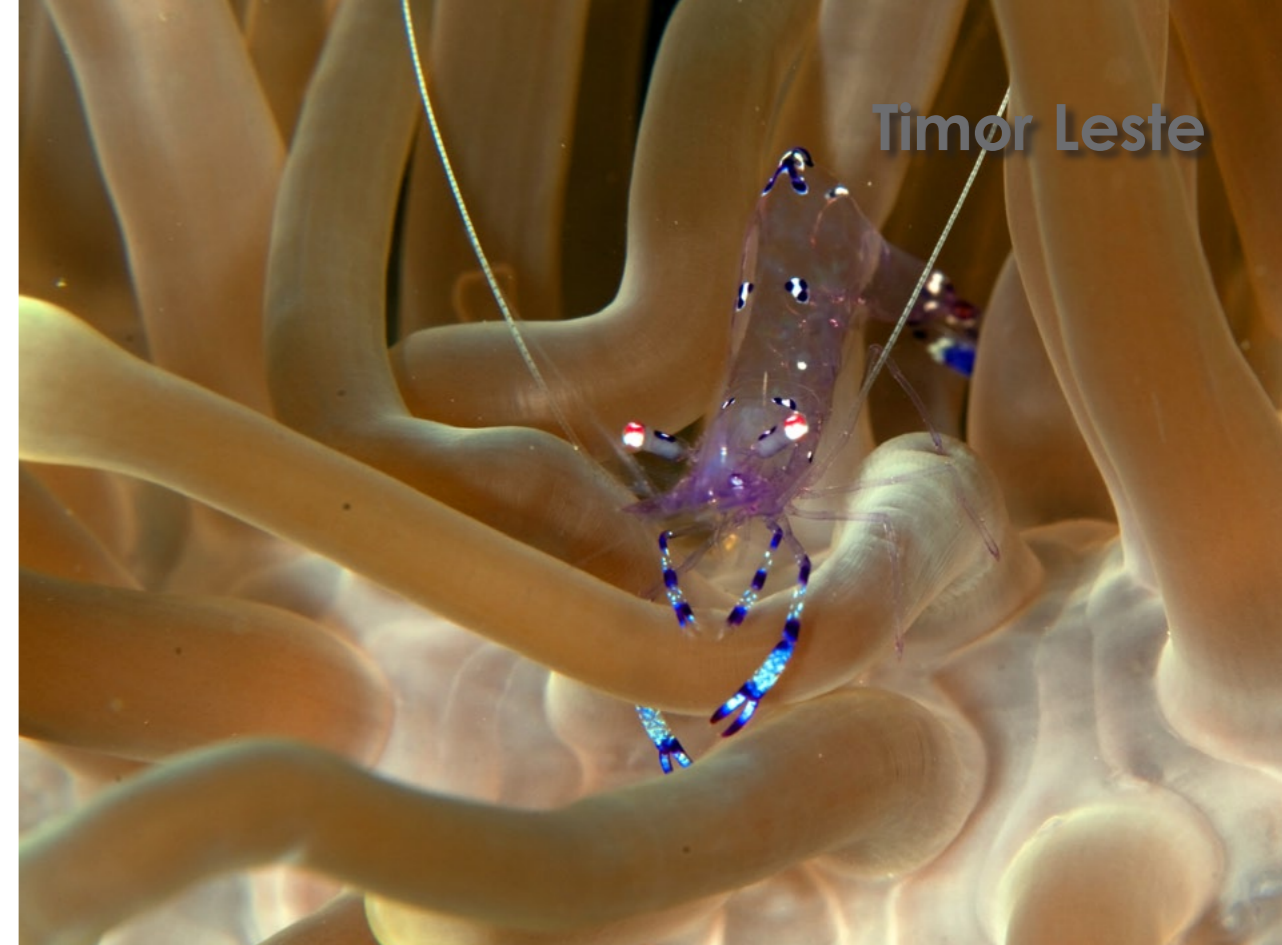
Food vendors at Avenue de Portugal prepare for the evening

A new country—twice
The island of Timor has a long history of colonial rule dating back to the early 16th century when the Portuguese and Dutch sailing ships first arrived in search of the source of the incredibly lucrative Spice Trade.
Divided into eastern and western halves by the Europeans, Dutch West Timor eventually became part of the new Republic of

Indonesia in 1949 when the Dutch formerly withdrew from their East Indies colonies.
However, East Timor remained under Portuguese rule until 1975 when political turmoil and a military mounted coup d'état in Lisbon resulted in the Portuguese abruptly leaving and effectively abandoning the territory after 455 years of colonial rule.



Cape Fatucama



Timor Leste



TOP LEFT TO RIGHT: Scorpionfish, hawkfish and mantis shrimp at the Pertamina Jetty and anemone shrimp at Dili Rock; Commensal Shrimp at the Pertamina Jetty (above); Hairy Crab at Dili Rock (left)

the north-east coast of Bali flourish from their exposure to those nutrient rich waters, so does the north coast of Timor hold considerable promise.

To the north of Timor Leste are the remote islands of Alor and Wetar—the most easterly of the chain of islands called the

Lesser Sundas, which form the southern boundary of the huge Indonesian archipelago.

Further north above Alor and Wetar are the deep basins of the Banda Sea,

and as the rich waters of the Throughflow surge their way south and approach the Lesser Sunda shelf, upwellings are created that suck up the phosphorus and nitrogen-laden detritus of the sea so rich in nutrients.

The Ombai Strait between Alor, Wetar and Timor Leste is one of the three main passages for the Indonesian Throughflow through the Lesser Sunda islands, which means two things: big currents and the chance of some great diving!

Add to this mix the fact that recreational scuba diving simply did not exist in Timor Leste ten years ago, and the known dives sites are simply a fraction of what are still to be discovered.

Main diving locations

Currently the main diving locations in Timor Leste can be broken down into four areas: those in and around the capital of Dili; the coastal locations up to two hours' drive to the east and west of Dili; the large island of Atauro to the north of Dili; and

Diving Timor Leste

A quick look at the map and a basic understanding of the Indonesian Throughflow is enough to tell you that just as North Sulawesi, Raja Ampat and



Timor Leste



CLOCKWISE FROM TOP LEFT: Paddleflap rhinopias, thorny seahorse, tozeuma shrimp, tiger shrimp and porcelain crab at Tasi Tolu



the smaller uninhabited island of Jaco at the far eastern tip of the country.

a somewhat legendary status both as Timor Leste's version of the Lembeh Strait, which is rather overstating the situation

Dili

There are three main sites that are dived regularly in Dili—the Pertamina Jetty near the center of the city, Tasi Tolu on the western outskirts and nearby Dili Rock. All are shore dives. Pertamina Jetty and Tasi Tolu are muck diving and critter sites, while Dili Rock is a mixture of critters and coral gardens.

Tasi Tolu enjoys

as it is just one site—albeit a very good one—compared to the multiple sites in Lembeh. It owes its actual existence as a dive site to the direct intervention of the country's president.

Tasi Tolu takes its name from the three fresh water lakes just below the nearby foothills, which fill to capacity during the rainy season and then overflow, flooding the roads and villages in the general area. To prevent this, the government commissioned a project to install a drainage channel so that the overflow could run off into the sea—the subsequent design for which took the most logical path and would have dumped the outflow right on to the Tasi Tolu site.

The local diving community waged a campaign to get the drainage channel relocated and ultimately got the issue on the radar screen of Dr Ramos Horta, the President of Timor Leste. Horta sees tourism as part of the potential solution to one of Timor Leste's most pressing problems—





LEFT TO RIGHT: Beautiful bommie at Marble Rock east of Dili; Stunning soft corals and sponges at Maubara west of Dili; Yet another beautiful Bommie, this time at One Tree east of Dili



lack of employment opportunities—and accepted that destroying one of the best critter dive sites in Dili was not a great idea and was eventually able to stop the project.

I did several dives at Tasi Tol and eventually got to know it like the back of my hand, but I have to say that I would have missed the site completely if I had not been shown it by the dive guides from Dive Timor Lorosae, the dive center with which I dived in Timor Leste.

Not that the site is particularly hard to find. Rather, it looks nothing like a photogenic one, as it's just a flat patch of marine growth. But in amongst it, you will find a

wide variety of photogenic critters.

East of Dili

There are numerous dives sites heading east from Dili, all of which are shore dives reached by short paths from the main road and involve getting kitted up under whatever shade is available and walking down the beach. All the sites have sheltered entries, so actually getting in to the water is easy and exposure to the strong currents of the Ombai Strait is gradual and manageable. My personal favorites to the east of Dili were Secret Garden, Marble Rock and One Tree—with Secret Garden standing out because its

small, but superb, sponge garden filled with resident colonies of photogenic purple anthias and silvery glass fish.

West of Dili

There are two main dive site areas to the west of Dili—Bubble Beach and the picturesque town of Maubara.

Bubble Beach is reputed to be one of the best dives in Timor Leste. Unfortunately, access from the shore is not possible anymore, as the area had been fenced off as the “bubbles” are believed to be natural gas leaking up from the deep water gas reserves that hold the key to Timor Leste's future



ing, but as you go deeper at around 15m, they come to life and positively abound with marine life that is nourished by the strong currents that sweep the site.

My favorite bommie was about 200m to the north-west of the main entry point straight down from the car parking area near the church. It is at around 19m in depth and was simply teeming with life.

Ata'uro

The large and visibly stunning island of Ata'uro is located 30km due north of Dili. For me, it was a case of, "so near, but oh so far". The island is right in the path of the Indonesian Throughflow, as it rushes south into the Ombai Strait. Tales of schools of pelagics and pods of whales and dolphins abound. Alas, not for me, as that basic logistic detail—a boat—required for such diving was not available. So, all I could do was note the many stories from people I met who have dived there and resolve to get back in the future.

Ata'uro suffers from a lack of rainfall, which

means that life is hard for the permanent residents of the island, and development is significantly slower than on the mainland. But the lack of run-off from the island means that the visibility around Ata'uro is exceptional.

Jaco Island

At the very eastern tip of Timor is the area of Los Palo and the National Park of Jaco Island. Boasting brilliant white sand beaches, turquoise seas and apparently pristine reefs, the diving around the island is reputed to be exceptional, as the area is effectively completely unspoiled because the island is uninhabited and rarely visited by commercial fishing boats. But the only real option to dive Jaco Island is from a liveaboard, which simply was not available when I was there. But all that will change in 2012 when the highly regarded Worldwide Dive and Sail will conduct several back-to-back trips in Timor Leste with its liveaboard the *SY Oriental Siren*.



CLOCKWISE FROM TOP LEFT: Stunning bommie at Dirt Track east of Dili; Is this the best bommie in Timor Leste? Maubara west of Dili; Another incredible bommie at Maubara; Shy Goby on a sea whip at Bob's Rock east of Dili

prosperity. A fenced-off area is the site of a proposed gas processing facility.

There are two sites at Maubara—the Church and the Fort, with the former offering some superb diving around the numerous bommies on the sloping coral slope. First impressions should be ignored, because the shallower parts of the slope are not particularly appeal-



Schooling Anthias at Dirt Track east of Dili



Commensal Shrimp at the Pertamina Jetty

Timor Leste

second. The best way to visualize a sverdrup is to think of a river 100m wide, 10m deep and flowing at four knots. Then imagine 500 of those rivers all combined together, and that is one sverdrup.

with an estimated 200,000 losing their lives during the 24 years the country was the 27th province of Indonesia. Comprised of 16 ethnic groups, each with its own language, but dominated by the Tetuns from the western part of the country, Timor Leste is one of only two staunchly Roman Catholic countries in Asia—the Philippines being the other.

While the country's oil and gas reserves holds the promise of a brighter future, Timor Leste remains amongst the poorest countries in Asia. After ten years of independence, the grinding poverty is clearly making patience wear rather thin.

A very interesting facet of Timor Leste culture is *tara bandu*, a form of *adat*, or traditional customary practice, found among specific ethnic groups in Malaysia, Indonesia and the southern Philippines. In the absence of a formal law and order system, *adats* are used by these ethnic groups to regulate and control overall village life and its social order. During the occupation,

It is estimated that the total amount of seawater that passes through the ITF is 20-22 sverdrups, or 10,000 of those rivers.

The people

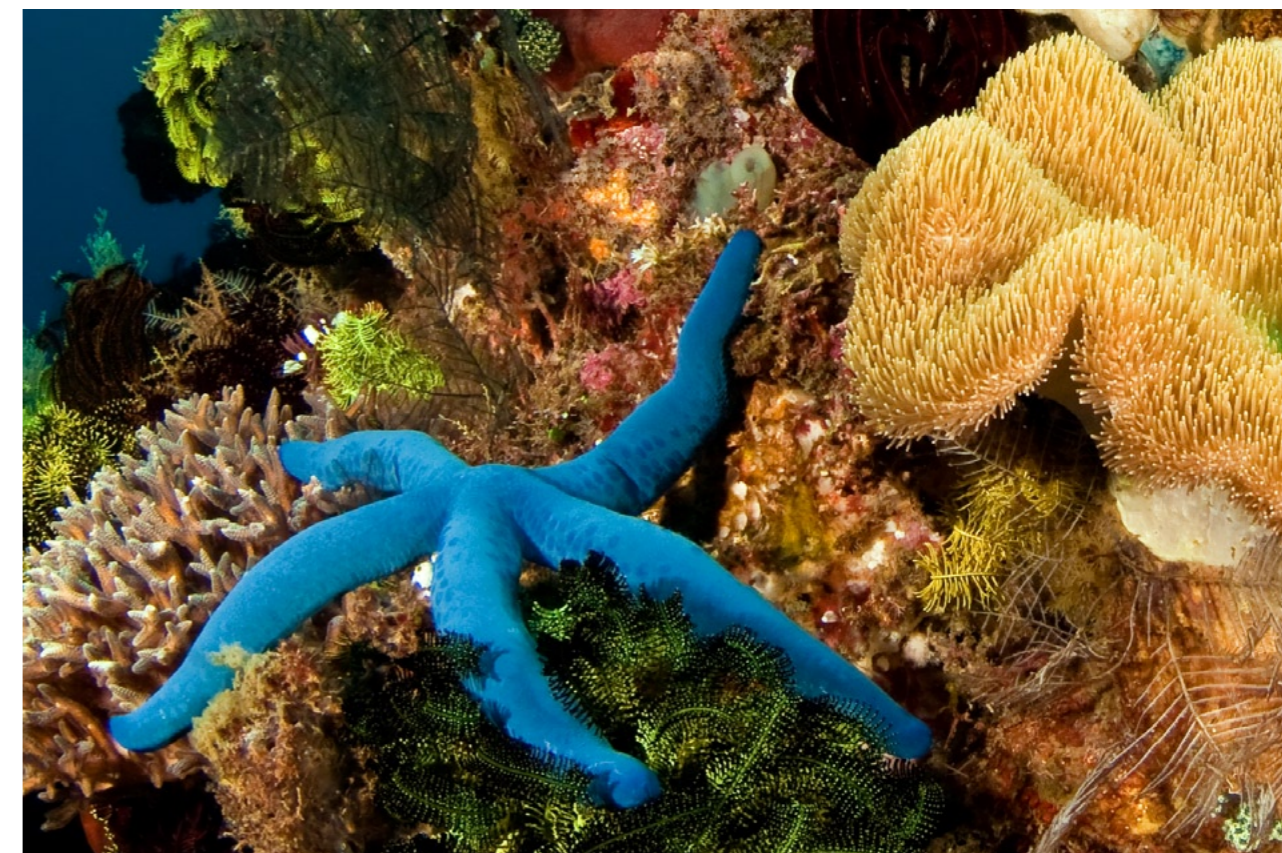
Timor Leste's people are fiercely independent. They have paid a very heavy price to achieve independence,

The Indonesian Throughflow

A basic understanding of the Indonesian Throughflow (ITF) and *sverdrups* is essential if you want to know why the scuba diving can be so good in certain parts of the vast Indonesian Archipelago and less-so in other areas.

The *Readers Digest* explanation of what causes the ITF is a disparity in sea levels. The Pacific Ocean to the northwest of the Indonesian archipelago has a sea level of 150mm (6 inches) above average, whilst the Indian Ocean to the south has a sea level 150mm below average. This disparity is caused by the trade winds and associated oceanic currents that act in opposite directions in the northern and southern hemispheres. The overall consequence of this disparity is the largest movement of water on the planet, which flows through the Indonesian archipelago from the Pacific Ocean to the northeast to the Indian Ocean in the southwest.

So huge is the volume of water associated with the ITF that traditional measurements such as cubic meters and gallons are inadequate to describe it in an easily understandable way. So, the Norwegian scientist, Harald Sverdrup, invented the sverdrup—one million cubic meters of water per



Sea Star at Dirt Track east of Dili



LEFT TO RIGHT: Statue of Christ at Cape Fatucama; Catholic monument in Dili; Fast food shop, Timor Leste style

prohibition, which can cover anything from protecting an area of the local environment—such as cutting trees or fouling a water source—to stealing vegetables from other people's gardens. Valuable animals are sacrificed during the ceremony. People

caught breaking the prohibitions are required to provide the same number of animals to restore the balance of the tara bandu. But perhaps the most effective, and certainly the most controversial, element of the prohibition are the magic spells

that are cast that call upon the souls of the village ancestors to assist with the protection. NGO's saw the tara bandu as an excellent way to help restore some of the environmental damage caused by excessive deforestation during the occupation and a way to introduce localized law and order, given the scant availability of police and legal resources in the new country.

Fast food
There are two really nice side



Timor Leste

the Indonesian legal system was applied and all Adat customs were prohibited. However, since the new country emerged in 2002, tara bandu has enjoyed a revival under the sponsorship of several non-governmental organizations (NGO's) active in Timor Leste.

Tara bandu means "hanging

prohibition". Contrary to the literal interpretation a westerner might take, the hanging part refers to the fact that whatever is prohibited is hung (displayed) in a prominent position as a warning to potential thieves and poachers.

A fairly elaborate ceremony is conducted to initiate the specific



Local kids watch the divers gear up at Bob's Rock east of Dili



creating a beautiful backdrop to the crystal waters of the Ombai Strait.

The other side benefit is the Timor Leste version of fast food, which is readily available at the side of the road. Villagers of Timor Leste supplement their income by selling freshly caught grilled fish and packages

benefits to diving the coastal sites to the east and west of Dili. The first is the drive itself, which is quite spectacular and vaguely reminiscent of the Big Sur area in California, as the coast road hugs the shoreline and winds around the many bays and headlands along the way. The mountainous hinterland of Timor Leste starts at the coast and rise dramatically,

of very tasty yellow rice wrapped in leaves.

Dive operators

There are currently three options available if you are looking to sample what Timor Leste has to offer—two land-based and one liveaboard.

The two land-based operators are Dive Timor Lorosae and





Timor Leste

their new one had not arrived from Australia, so all my dives were all shore dives either in the Dili area or to the east and west, and I was unable to dive

Excursions

I used to do it on every trip—dive up to the very last possible minute and then spend the remaining time packing my gear and

reviewing my underwater images, completely ignoring the above water scenery. Writing for *X-RAY MAG* has changed all that, and now I dare not return from an assignment without spending at least one full day exploring as much of the locale as possible.

Dili and the immediate countryside have much to offer, and you can either be adventurous

by hiring a motorbike and drive yourself or mitigate the traffic accident risks by going for a car and a driver. I went for the low-cost adventurous option and really enjoyed the freedom of finding my own way around. Here is my list of must-see places in the order that I did them in.

Avenue de Portugal. An early morning walk down the main thoroughfare of Dili is a pleasant way to start the day and you will

see the local fishermen bringing in their catch on the beach and laying it out for sale on the roadside wall. The avenue follows the coast most of the way through Dili, and you will find much to see, ranging from the new high-tech and closely guarded Chinese Embassy to hotels and cafés serving breakfast.

Cape Fatucama. Mid-morning is a good time to check out the huge statue of Christ on the headland at the eastern end of Dili and the fantastic view its location offers. Reminiscent of the one in Rio de Janeiro, the statue was built by the Indonesians during their occupation of the country in an attempt to get the strongly Roman Catholic Timorese on side. It's quite a hike up the hill to the base of the statue, but the view once there is well worth it, and there are a couple of cafés near the beach on the way back into Dili where you can get a local coffee and restore your metabolism.

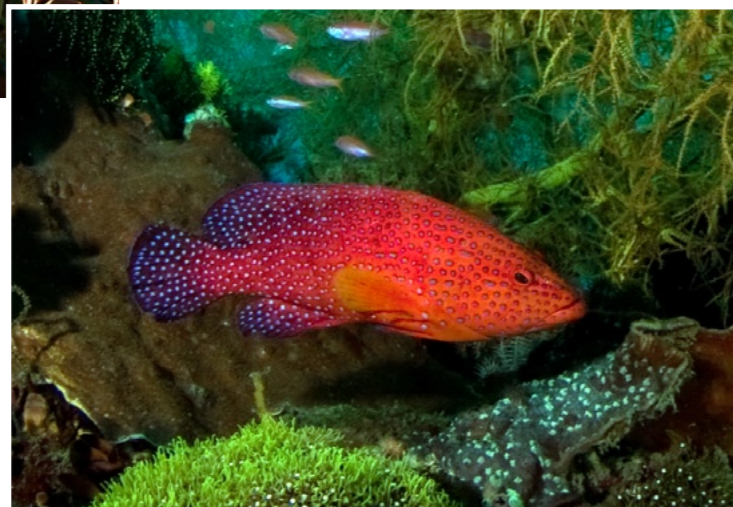
The mountains. If you've dived the coastal sites, you've driven the coast road. So, why not

Free Flow Diving, both of which are located right across from the beach on Avenida de Portugal, the main street of Dili.

My trip was organized with Dive Timor Lorosae, or DTL as it is usually referred to, which is started back in 2002 by Darwin based Australian Mark Mialzygrosz, who first went to Timor Leste in 2000 to assist with the rebuilding of the country's infrastructure after the bloody transition to independence.

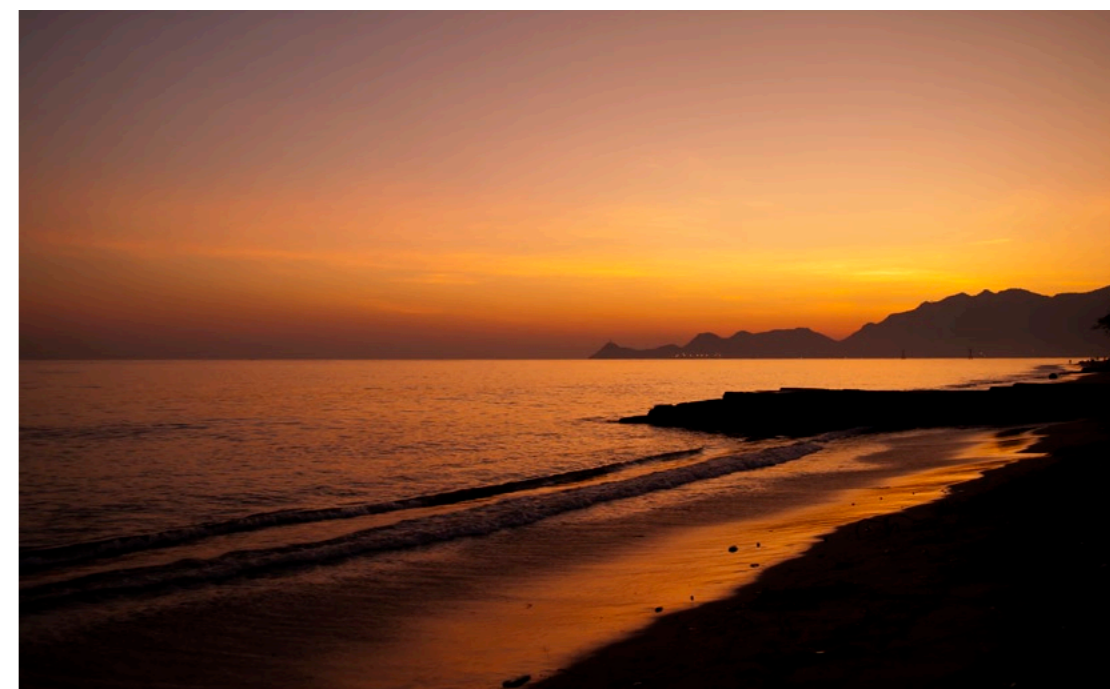
Mark is an interesting guy to talk to and is very passionate about Timor Leste and its people, plus he has some great tales about the exploratory dives in the early days after independence diving places that simply had never been seen before.

When I dived Timor Leste DTL were in between boats and



Atauro. But all that has changed now that the boat has arrived and DTL dives Atauro regularly, so I am planning my next trip as I write this article.

The third option is Worldwide Dive and Sail liveaboard the *SY Oriental Siren*, which will conduct several back-to-back trips in Timor Leste from August 2012 and will dive the best of the Dili and coastal sites (including Bubble Beach) and both Ata'uro and Jaco Islands.



CLOCKWISE FROM TOP LEFT: Dive Timor Lorosae; Ata'uro Island; Mountains south of Dili; Dili sunrise; Secret Garden dive site; Coral Grouper



CLOCKWISE FROM FAR LEFT: Schooling anthias at Secret Garden, east of Dili; Duban hinge-beak shrimp at Pertamina Jetty; Superb shallow water bommie at Secret Garden, east of Dili; Goby at Dili Rock; Moray eel at Pertamina Jetty

spectacular mountain scenery.

Santa Cruz Cemetery.

Not what you would normally consider to be top of one's list of tourist attractions, but 30 minutes wandering around the site of the 1991 massacre of more than

100 people by the Indonesian Army will endear you to the sheer determination of the Timorese people. Caught on film by two western journalists and smuggled into Australia at great personal risk, the film alerted the world to the suffering and injustice that the Timorese were experiencing.

Xanana Reading Room.

Dedicated to Xanana Gusmao—the former guerrilla leader and now prime minister of Timor Leste—this part library, part museum and part cultural centre is an essential stop for visitors to Dili in search of information and advice about Timor Leste.

Arte Moris. In many ways, this kind of artistic commune set in the remains of an Indonesian

era museum personifies all that is weird and wonderful about Dili. Art students live here while they are trained in a variety of mediums, and their works are on display throughout the buildings and grounds.

Avenue de Portugal. As the sun starts to set, it's time to go back to where you started the day and join the many locals who dine and drink at the beachside stalls, which spring up late in the afternoon. Freshly grilled fish and ice cold beer rarely tasted so good.

Afterthoughts

As divers, we are constantly looking for new and exciting places to try. Timor Leste offers an interesting mix of things

to see above and below the water. Very much in the mode of a developing country, Timor Leste's rough edges add to its charm. The sheer determination of its people to overcome the country's colonial past and the brutal years of the Indonesian occupation is simply admirable. The known diving locations justify a trip in themselves, but the thought of what waits to be discovered is tantalizing. If you do decide to go, do yourself a favour and allow some extra time to do some land-based exploring and enjoy the country as it is now because it won't stay this way forever. ■

For more information please visit Don Silcock's website at: Indopacificimages.com



head inland and check out the mountainous interior? Eat before you do, as facilities are few and far between.

Midday is the best time to do this trip, as it is much cooler as you climb out of Dili towards the old hill towns of Aileu and

Maubisse, which are the centre of the main coffee growing area of Timor Leste. If you make it all the way to Maubisse, you will find that the former government rest house has been converted into a hotel called the Pousada and boasts 360 degree views of the

fact file

Timor Leste



SOURCES: US CIA WORLD FACT BOOK, STARFISH.CH

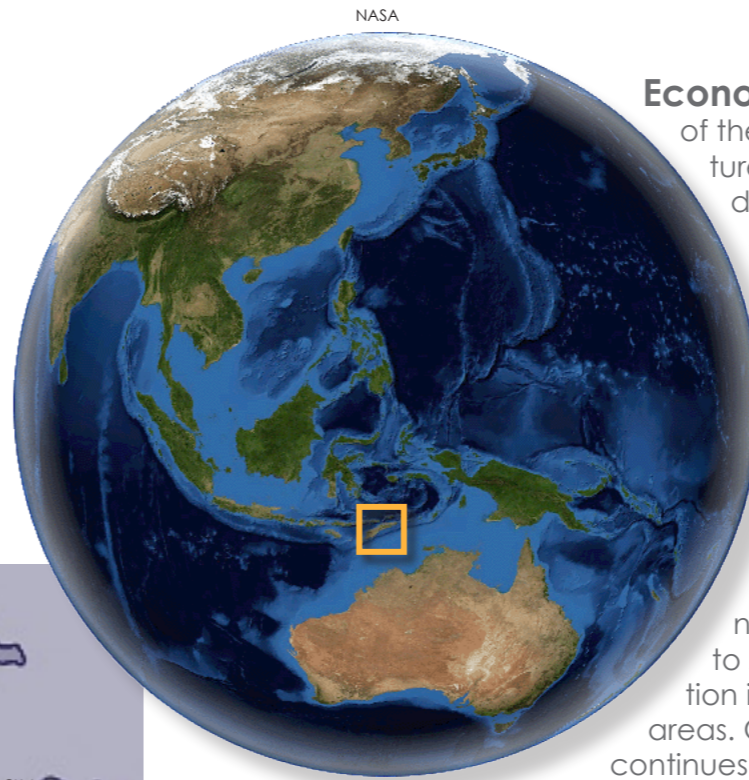
History In the early 16th century, the Portuguese began to trade with the island of Timor and colonized it by the mid-century. After clashes with the Dutch in the area, Portugal ceded the western portion of the island to them in a treaty in 1859. From 1942 to 1945, imperial Japan occupied Portuguese Timor, but after the Japanese defeat in World War II, Portugal resumed colonial authority. On 28 November 1975, East Timor declared itself independent from Portugal. Nine days later, it was invaded and occupied by Indonesian forces. In July 1976, Indonesia incorporated it and designated the region a province of Timor Timur (East Timor). Over the next 20 years, an unsuccessful campaign of pacification followed. An estimated 100,000 to 250,000 individuals lost their lives during this period. On 30 August 1999, an overwhelming majority of the people of Timor Leste voted for independence from Indonesia in a popular referendum supervised by the United Nations. In retribution, Indonesian militias supported by the country's military began a large-scale scorched earth campaign as the Timorese awaited the arrival of a multinational peacekeeping force in late September 1999. Around 1,400 Timorese were killed by the militias and 300,000 people were forcibly pushed into western Timor as

refugees. Destruction was rampant and affected most of the country's infrastructure, including nearly all of the country's electrical grid as well as homes, irrigation systems, water supply systems, and schools. The violence was brought to an end on 20 September 1999, when an Australian-led force of peacekeeping troops—called the International Force for East Timor (INTERFET)—were deployed to the country. Timor Leste was internationally recognized as an independent state on 20 May 2002. However, internal tensions threatened the new nation's security again in 2006, when a military strike sparked violence leading to a breakdown of law and order. Once again an Australian-led peace-keeping force—this time called the International Stabilization Force (ISF)—was deployed to Timor Leste at the request of Dili. In addition, an authorized police presence of

over 1,600 personnel was organized and deployed in Timor Leste by the U.N. Security Council in what was called the U.N. Integrated Mission in Timor-Leste (UNMIT). Stability was restored in the region by the ISF and UNMIT, thereby allowing peaceful presidential and parliamentary elections to be held in 2007. Since then, the country has experienced stability except for one incidence in 2008 when a rebel group tried and failed to stage a coup. Government: republic. Capital: Dili

Geography Timor Leste is located in Southeastern Asia, north-

RIGHT: Global map with location of Timor Leste
BELOW: Detail map of Timor Leste



west of Australia. It lies at the eastern end of the Indonesian archipelago in the Lesser Sunda Islands. The country includes the eastern half of the island of Timor, the Oecussi (Ambeno) region on the northwest portion of the island of Timor, as well as the islands of Pulau Jaco and Pulau Atauro. Terrain: mountainous. Lowest point: Timor Sea, Savu Sea, and Banda Sea 0m. Highest point: Foho Tatamailau 2,963m. Coastline: 706km

Climate Timor Leste's climate is tropical, humid and hot, with dry and rainy seasons. Natural hazards include earthquakes, tsunamis and tropical cyclones; floods and landslides are common.

Environment Deforestation and soil erosion have developed as a result of widespread use of slash and burn agriculture. Timor Leste is party to the following international agreements: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification

Economy About 70 percent of the economic infrastructure of the country was devastated by Indonesian troops and anti-independence militias by late 1999. Refugees numbering 300,000 fled westward. A massive international program of 5,000 peacekeepers (up to 8,000) and 1,300 police officers helped to stabilize the country over the next three years. This led to significant reconstruction in both rural and urban areas. Challenges the country continues to face includes generating jobs for young people entering the work force, rebuilding its infrastructure and strengthening the civil administration. Oil and gas resource development in offshore waters has helped to increase government revenues, but not jobs, since there are no production facilities in the country. The economy continues to improve despite the outbreak of violence and civil unrest in 2006. By 2009, most of an estimated 100,000 internally displaced persons came back home. Government increased spending signifi-

cantly in 2009-2010, for the most part on basic infrastructure, roads and electricity leading to first time national debt in late 2011.

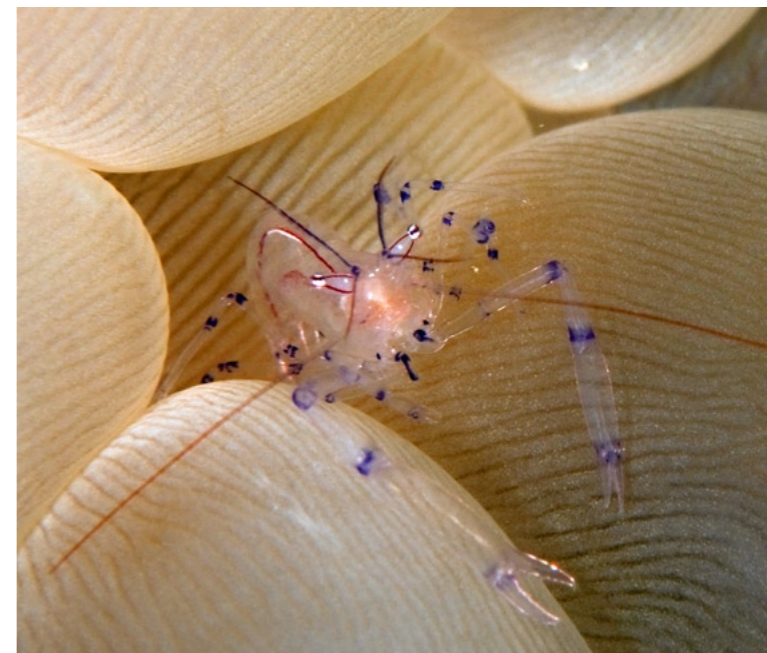
Population 1,177,834
Ethnic groups: Austronesian (Malayo-Polynesian), Papuan, small Chinese minority. Religions: Roman Catholic 98%, Muslim 1%, Protestant 1% (2005). Internet users: 2,100 (2009)

Currency U.S. Dollar

Language The official languages are Tetum and Portuguese. Indonesian, English and about 16 indigenous languages are spoken. Tetum, Galole, Mambae and Kemak are spoken by a large part of the population.

Health There is a very high degree of risk for food or waterborne diseases such as bacterial and protozoal diarrhea, hepatitis A, and typhoid fever as well as vectorborne diseases such as chikungunya, dengue fever and malaria (2009)

Decompression Chambers
BALI: Sanglah General Hospital Hyperbaric Medical Department. Tel: 62-361-227911



MAKASSAR (SULAWESI): Rumah Sakit Umum Wahidin Sudirohusodo. Tel: 62 - 0411 (584677) or 584675

Web sites
Discover Dili
www.discover-dili.com ■

Anemone shrimp at Dili Rock



John Cronin

— *PADI co-founder on the business of marketing the diving world*

Text by Michael Menduno
Photos by Scott Bennett, Kate Clark
Peter Symes and Arnold Weisz

Authors note: I interviewed the late PADI CEO, John Cronin, in his office in 1995 just as the training juggernaut was rolling its new Enriched Air Nitrox program. We talked about the founding of PADI, his vision of the diving business, the impact of tech diving on the market, PADI's new enriched air nitrox courses and his thoughts on tech training and rebreathers and where he believed the market was headed. At the time, PADI's entry into nitrox was a big deal heralding nitrox's entry into mainstream diving, and so we ended up making the interview the cover story of aquaCORPS #12 SURVIVORS issue that was published in October 1995. Since that time, more than a decade and a half ago, PADI has doubled the number of affiliated stores and resorts and nearly doubled its membership base from 70,000 to over 135,000 members and enriched air nitrox has become the company's #1 selling specialty course. Here is the original introduction, interview and a couple of the pictures that ran with it. Mr. Cronin passed away in July 2003.

aquaCORPS #12 — October 1995

Having sold that first aqualung in 1956, PADI co-founder and chief executive officer, John Cronin, may well have earned the distinction of being scuba's most successful travelling sales-

man. True story. The 67-year-old Irish diving mogul, Harley Fat Boy owner, sustaining member of the National Republican Committee, former Boy Scouts of America director, ex-marine, and angel for a dozen charitable ventures, was reportedly the first person to rack up \$1,000,000 in sales in the fledgling U.S. scuba diving industry while teaching scuba to Joes and Bettys on the side. Five years later, Cronin was promoted to the big desk at US Divers—the big blue of 60's sport div-

ing—which he manned for more than a decade and a half while concurrently building his privately-held dream, PADI Inc.—the largest dive training company on the planet. A perennial tough guy—it's fair to say that nobody knows the business of marketing diving like John Cronin. Just look at the house that John built.

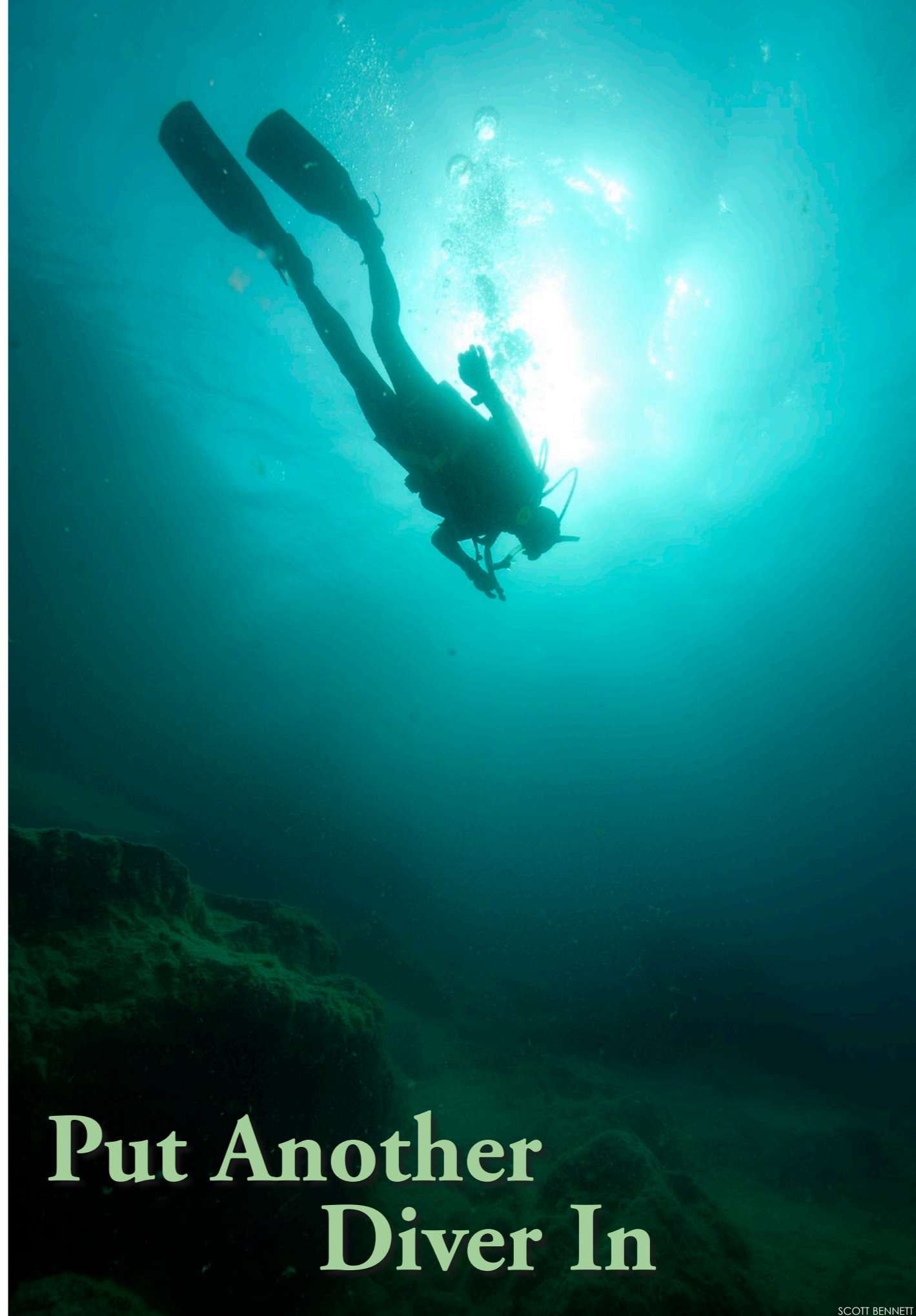
Launched in 1966 on big vision, a few bucks, a bottle of scotch, and a belly full of frustration with an industry that was turning away potential users instead of training them, Cronin's PADI has become a near ubiquitous institution that occupies a unique position in the diving world. Having captured roughly 60-70 percent of the training market—accounting for over 625,000 diver certifications in 1994—there's a diver certified every minute. Representing nearly 70,000 professional dues-paying members, 2,500 dive centers and 500 resorts world wide, PADI has made diving accessible to the masses on a global scale. A fact that its competitors and vocal detractors are not easily able to forget!

In Europe, PADI is aggressively reshaping the federation system world where the "busi-



PHOTO COURTESY OF AQUACORPS

John Cronin



Put Another Diver In

SCOTT BENNETT





SCOTT BENNETT

ness of sport diving" is still a dirty word. Reshaping? Its clubby competitors are scrambling to revamp their lengthy not-for-profit training schemes, while PADI continues to rack up share with its "Do It Today" motto—American Express welcome here. "Brash promoters flaunting their wares!" one diving exhibition organizer admonished.

Meanwhile the "Pee—A—Dee—Eye" is reportedly growing gangbusters in Asia, and has just begun to roll out its spectrum of products in South Africa in hopes of a business to beat the band. The Microsoft of diving? What works, works! (As long as they don't try to reinvent the wheel. Just kidding!)

Long the technology leader, PADI, along with the rest of the blue chip recreational establishment, were caught with their nappies down by the mix revolution and the resulting shifts in the balance of power and underwater cool. As a result, PADI's claim to fame strategy—diving for the masses, not the classes—appeared to lose currency as new power-player hopefuls—the fledgling tekkie training companies and others—tripped over themselves to woo the classes. But as the Microserfs know, today's classes become tomorrow's masses. It all depends upon on your perspective and how you play the game.

Not a company to miss the beat (for long), PADI finally announced their long awaited enriched air program, which will be rolled out at tek.96 conference in San Francisco. Nitrox for the masses? Modular 'breather courses may not be too far behind. And then there's the new CD-ROM, the first of a series of new multimedia products, and a crowning Cronin marketing deal to put diving on the desktops of 30,000,000 new Windows 95 users. Fun's just a click away.

How do you grow a diving business when you've already acquired the lion's share of the market? That's what we asked John Cronin.

aquaCORPS: Some people say, "P-A-D-I: Put Another Dollar In." How do you respond to that?



PHOTO COURTESY OF AQUACORPS

JC: It was coined by one of our illustrious competitors; I know which one. It's bullshit, because if you look at what we charge our members for our products—and we do this every year and analyze it—we're a better buy. There's no doubt that someone who's a PADI retailer spends more money with PADI than somebody who is with Brand X. The reason is we've got a name brand identification of 60 to 75 percent—more people come in and ask for PADI certification than any other brand.

The other reason that they spend more with PADI is because we've got a good product line. Everything in our product

line is the state of the art.

aquaCORPS: Build what the market buys?

JC: People don't have to buy our products. If you were a PADI dive center, you might only buy books and never buy another thing. Of course, that would be your mistake; customers are dying for this stuff. That's why smart guys are buying a lot from us. Because they're making a piece of profit, a good enough profit that they can run a good operation and offer better services to their customers. That's what it's about. It's business.

Diving is a sport. It's an industry. And it's a business. We look at all three. Consumers want to do the sport and have fun, but they want to do it safely, too. If you want to get your cylinder filled, a retailer's gotta be there, and make at least a reasonable profit. And the instructor has to be paid.

Being of reasonable size and magnitude in the industry, we research a new technology carefully before we jump into it. So when we do something, our decision is a responsible one. We're not going to make a knee-jerk reaction before we find out what we're doing in the market.

aquaCORPS: Technical diving is getting a lot of press these days. Do you think it has been good for the overall business of diving?

JC: It's opened up a new avenue, a new tangent. I don't think every diver is going to be a technical diver. I believe that one of

the biggest challenges in technical diving is educating the public, which PADI is into. The second is

John Cronin

also educating the industry and building the addition to the infrastructure, so that everyone that wants to participate will have the opportunity.

There has long been a perception that PADI has been against nitrox diving. We don't like to jump into things. We want to be sure that PADI belongs there and that it's responsible to be promoting it.

Being of reasonable size and magnitude in the industry, we research a new technology carefully before we jump into it. So when we do something, our decision is a responsible one. We're not going to make a knee-jerk reaction before we find out what we're doing in the market. We want to understand the dynamics

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tech talk

of what's happening and why it's happening.

aquaCORPS: What's happening with nitrox...umm...enriched air?

JC: As far as PADI is concerned, we're in. We're thoroughly convinced that it is going to be an important part of our sport, a part of our industry.

Hell, a lot of us have been involved in portions of that technology. There's no magic to it. It was around before WWII. We wanted to understand how the transition was going to take place, going from air to enriched air. What was the infrastructure going to be? What were the courses? Was it going to be a viable part of our industry?

We researched it, talked to manufacturers, saw where it was going, then did a lot of surveys and stuff before we decided that we were going to enter the field. Once we made that decision, we decided that we would only be comfortable with a program that we had designed from scratch. We're going to kick it off big-time at tek.96 and DEMA.

aquaCORPS: A lot of people in the business believe that PADI's entry will help legitimize the market for alternative

It is a unique sport, an opportunity to explore a different environment, a different world ... It defies gravity. You're flying. It is a special sport, an activity where you can touch the edge of science and adventure.

breathing gases.

JC: I don't think that's a

cheap shot at what exists; I think people say that because we have a good reputation, and that whatever we come up with will be well thought out, educationally valid, and even more important, that the content of the course will be appropriate from a physiological and technical standpoint.

I'm not going to say anything derogatory about anybody else's courses, but I think you'll find when our enriched air courses come out that you'll be impressed—they're top-drawer. They'll address the customer.

aquaCORPS: How fast do you see the market for enriched air growing?

JC: Slowly at first. The more adventurous divers have already taken to enriched air diving. From here out, it will be a promotional and educational process. Within the next five years, it could easily be 20-35 percent of the market.

aquaCORPS: Like dive computers. Hmm. How about the retailer trying to get set up?

REBREATHING FORUM 3

The most significant rebreather event in a decade!

JC: There's many ways to go about it. We've done our research and plan to give them the resources and ways to go about it. That's our job.

aquaCORPS: Do you have plans to offer training products in other areas that have been considered technical, like deep diving or rebreathers?

I think we've only tapped the surface. You read surveys about how many people would like to try diving. It's phenomenal. Most of the people I talk to who're not divers say, "I've always wanted to do that."

JC: I can tell you that our DSAT (Diving Sciences & Technology Division) division is actively researching what our next role will be in the tech area.

aquaCORPS: I'm sure it will turn a few heads when you figure it out. Let me switch gears on you a little. What makes diving so special from a marketing perspective?

JC: It is a unique sport, an opportunity to explore a different environment, a different world. Cousteau coined it—"The

Silent World". It really is, especially the first time in. It defies gravity. You're flying. It is a special sport, an activity where you can touch the edge of science and adventure. I think we've only tapped the surface. You read surveys about how many people would like to try diving. It's phenomenal. Most of the people I talk to who're not divers say, "I've always wanted to do that."

aquaCORPS: You hit the nail on the head. The way I look at it, we have tremendous opportunities to grow. And it's incumbent for all of us involved to find ways to introduce more people to diving. The opportunity is there.

JC: Diving is in vogue. Look at TV advertising. Somebody's selling something and a guy, or a guy and a gal, are jumping into the water with a snorkel, or they're going scuba diving. It's an in-thing to do. We have to make it available to them, make it easy to become a diver. It's not that difficult; it's not strenuous. You can go to any level you want. I'm not saying, "Don't train 'em properly." I'm saying



make it easy, accessible.

Do it today. That's our motto. Make the technology accessible. Make it easy.

True story: There was an outfit in New York that sold hiking and climbing equipment. They had a good location, great parking lot, and they moved to a new location—bigger place, better looking store, but they were a block from the parking lot, and their business went down. There are guys who walk 17 miles on a Saturday and climb up a goddamn mountain, but they're not going to walk a block to shop. What does that tell you? It better be easy, it better be accessible.

If we want the industry to grow, we have to make the sport appetizing, easy, accessible and relatively safe. But it has to be easy to get there. I think the job of all of us in the industry is to make diving more accessible.

aquaCORPS: How effective has DEMA been in that regard?

JC: I think that they're at a crossroads. They formed a new organization: The Diving Equipment and Marketing Association (DEMA), and if it goes in the right direction, it could do a great deal of good. Isn't that supposed to be part of DEMA's mission—to promote diving to society at large?

If I were writing the charter for that organization, which I'm not,

Promote diving to new customers and... I just coined it. D-A-R. Diver Acquisition and Retention. That should be the goal.

I would tell them to pick out two things to do: one would be promotion, and two would maybe be liability within the industry. Promote diving to new customers and... I just coined it.

D-A-R. Diver Acquisition and Retention. That should be the goal. Stop all the other bullshit. Stop worrying about 58 different programs because pretty soon you dilute your efforts.

Our job is to make it easier for more people to dive. Last year, 100,000 people responded to our Discover Diving promotion over a 12-month period. That's just with PADI. Most of the people weren't involved with any kind of diving program before. Think about it.

Underwater world, here we come

There's another opportunity—the snorkeling business. It's part of our market. Our job is to show people that snorkeling is fun and initiate them to the underwater world. We don't have to convert every snorkeler. The smart guys in the snorkeling business are selling a lot of snorkeling stuff, and now people are used to coming into their stores and dive centers and so are their children. They're buying snorkels, masks, suits and travel. They're not second-class citizens; they're in a different area of our realm. The dive center people who treat these

John Cronin

customers like first-class citizens rather than second-class citizens will be the big winners. This is a big market. Start treating them well.

The retail thing

It all comes together at the retail level. We need to realize that the retailer is the center of the diving industry. They do a pretty good job now, but there's always room for improvement. Retailers are looking for new and innovative ways to keep their customers. I think the survivors will be the guys with the Marshall Fields or Nordstroms mentality. It's all about customer service.

When I return my Hertz [rental] car, I don't have to clean it. It's their goddamn car. They should clean it up, because I don't care if it's clean for the next guy or not. Just think about that mentality. Do you clean up your car at Hertz? No. Why do we do it with scuba? It's archaic to make customers wash their gear. They rented it from you. This kind of thinking will enhance our sport: make it easy, pleasant, accessible. I come out of the retail business and sold to retailers for many years.

Do you clean up your car at Hertz? No. Why do we do it with scuba? It's archaic to make customers wash their gear. They rented it from you. This kind of thinking will enhance our sport: make it easy, pleasant, accessible.

aquaCORPS: When did you start selling scuba?

JC: 1954. I was working for a big outfit called Gold Stocks, in Schenectady, selling skis, hunting and fishing equipment. We were Head Ski's second largest customer and the largest Weatherby rifles dealer, an ultra, ultra rifle—really expensive. In fact, we were the largest weapons dealers on the

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East Coast and second largest Browning shotgun dealer on the Atlantic seaboard, which was amazing considering we had this small business in Schenectady and Troy; we were really in the ski business.

I was the store manager, and one day a good customer came in and said, "I wanna buy an Aqualung,"

and I asked, "What the hell's an Aqualung?" He gave me all this bullshit, "It's great. You dive underwater." I said, "Why would you want to do that?"

He was a good customer, so I started calling around. I called a place called Aqua Gun in Yonkers, run by Ben Holderness, and said, "I wanna buy an Aqualung." [Aqua Gun was bought by US Divers Corporation about two years later.]

He said, "You gotta buy three."

What in hell am I gonna do with three? So, I told him, I'd call him back. Then the customer came back in, and so I ordered three Aqualungs. Later, Jerome, the owner, came in and said, "What the hell's that?"

"An Aqualung."

He says, "What's an Aqualung? Who the hell'd buy that?"

"Lennie Jones," I said.

He knew Lennie Jones. Every week after that, Jerome would come by and ask me, "What're you gonna do

The Silent World was released and won an award in 1956. It was the first shot in the arm this business ever had. The second great shot in the arm was the Sea Hunt series with Lloyd Bridges

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with the other two aqua-lungs?" A month later, he came by and said, "There's another one gone. Who bought it?" I told him that I did.

Lennie had talked me into going diving up at Lake George. He was an engineer,

had his own compressor and made his own weight belt. I had read the 17-page booklet 14 times and ended up making my own wet suit out of quarter-inch neoprene and cement. It took about six hours. The kit was called an Artico. I think it was \$29.95 for the whole thing.

The place was called Bolton Landing. We climbed out of the boat and went down the anchor line to 130ft (40m). I wasn't the least bit worried because it was so clear. We went down a sheer wall. It was

like riding an elevator. Cold but clear. That was the first time I went diving.

aquaCORPS: And you kept selling scuba...

JC: I eventually got a distributorship from Healthways/Voit in 1956. Voit was buying from US Divers, who were making the valves and stuff. They wouldn't sell to me direct, but I had Healthways/Voit. I was selling diving equipment wholesale, some ski stuff, and a lot of shooting supplies. I started calling on the dive shops, and a few sporting good stores—it was all just getting started.

aquaCORPS: Is that when you started teaching?

JC: I started diving in '54, started teaching in '56. I was putting on free diving classes in one of the big Playboy pools up there. I had eight tanks. We'd get all these people in their bathing suits—it was summertime up there—and let 'em swim up and down once. Fifty, sixty people a night. Unbelievable. Then we'd sign them up for our six-day, six-night course.

We climbed out of the boat and went down the anchor line to 130ft (40m). I wasn't the least bit worried because it was so clear. We went down a sheer wall. It was like riding an elevator. Cold but clear. That was the first time I went diving.

aquaCORPS: Wasn't that about the time Cousteau's first film were being released?

JC: *The Silent World* was released and won an award in 1956. It was the first shot in the arm this business ever had. The second great shot in the arm was the *Sea Hunt* series with Lloyd Bridges, which got started a couple of years later.

In fact, that was about the same time, late '57, early '58, I finally got... funny story: The Healthway salesman that I was jobbing for was a guy named Harry Marr, who lived in Boston. He came in one day and said, "I want my spring order." He did a good job of selling me. Then he said that he might be back in a couple of weeks, so I said, "Okay." I was always glad to see Harry. We were pretty good friends.

About two weeks later, he came back and asked me if I'd like to buy US Divers direct as a jobber? I used to write to them at least once a month asking them to sell to me. They wouldn't. I said, "I'd love to, but why the hell would you help me? You're the Healthways salesman."

"Not any more," he said. "I'm your

new US Diver salesman, and I'm going to put you on because I know you can move some mer-

John Cronin



KATE CLARK



PETER SYMES

chandise." By the end of 1959, we were the second largest distributor US Divers had, second only to New England Divers.

aquaCORPS: Is that when you went to work for US Divers?

JC: US Divers offered me a job as a marketing manager. I moved from Albany to New York City and ran one of the first dive stores, the Aqualung Center, and did a good job for them. I was supposed to promote diving in general, so I was running around talking to distributors, telling them how to sell diving equipment. In the meantime, I rented the Hotel Sutton pool, in Manhattan, Tuesday and Thursday nights and Saturday mornings, and was teaching diving. YMCA was around, but I wasn't affiliated with them. NAUI was nonexistent in the Northeast. The next year, US Divers asked me to move to Chicago, where I became a regional salesman travelling the Midwest and Canada.

aquaCORPS: How long was a

scuba course in 1960?

JC: Six lessons. Two checkout dives in one day. That was it. I had a

The guy that worked with me, Jim McNamara, was a young guy who just got out of the Marine Corps. He was with the underwater demolition team, and we had a tough time toning him down so that he would realize that we weren't training these folks from New York to attack Jersey.

classroom at the Aqualung Center and the Hotel Sutton pool. You had to come to the classroom at a certain time because it wasn't a modular course. The guy that worked with me, Jim McNamara, was a young guy who just got out of the Marine Corps. He was with the underwater demolition team, and we had a tough time

toning him down, so that he would realize that we weren't training these folks from New York to attack Jersey. You have to remember that I was out there trying to raise four kids and pay my rent selling diving equipment. I was frustrated.

aquaCORPS: The militaristic approach to training?

JC: Ralph Erikson [PADI co-founder] and I talked about it for years. I had met Ralph at a banquet. We went diving a few times. We both felt that these UDT-type courses taught by people with military

backgrounds were chasing people out of the sport.

I used to go to the YMCA after I had hit the stores in a town. I remember running into this guy. I knew him. I won't tell you where because everybody would know who it is. I said, "How are you doing?" He said, "Fine." Blah-blah-blah. He says, "I run the best course in the Midwest." I said, "Yeah, how come?" He said, "I had 22 people in my last course and only eight of 'em made it. What'd ya think of that?" I said, "I think you're a horse's ass. You're what's wrong with diving." I asked him, "Did you take their money? You took their money to teach 'em, not decide if they were qualified or not qualified. That's what's wrong with this god-damn sport." I walked out on the guy.

The problem.

JC: Ralph Erikson was a swimming coach. He was the guy who really saw the problem with the military. We talked about it all the time. So many people wanted to dive. They'd go to some of these courses, and we'd hear horror stories. They'd lose people the first two nights.

"Can you swim 500 yards?" What the hell do I look like? Tarzan? It was ludicrous. A lot of the criteria was ludicrous. A lot of people had their own criteria.

The YMCA had a course that

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W30 SHORTY



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aquaCORPS: That's why you started PADI?

JC: Ralph and I started PADI in 1966 out of frustration.

aquaCORPS: I heard that it got launched on \$20 and a bottle of Scotch.

JC: Fifteen dollars and a bottle of Scotch, and Ralph has yet to pay me for his half of the bottle. I had just come off the road, and I was so pissed off about this stuff. I

wasn't bad. NAUI had a course. It wasn't a bad course. They used outlines, and the people teaching them were left to their own devices. That was the problem. If the guy was a good teacher, he taught a good course. But then there would be some guy who was trying to prove that he was the only guy in the pool who could do it and that everybody else was a wimp. He really didn't care how many people he taught or if he taught anyone. That was a major problem in this industry. Ralph and I talked about this for a couple of years.

called up to Ralph's apartment and he said, "I just got a bottle of Scotch. C'mon up." I said, "Ralph, it's time, if we're going to do it." We sat there that whole night, brainstorming. One of us had a five dollar bill, the other a ten. We threw it in the kitty.

Our first office was my basement. My son Brian [recently appointed a PADI Vice President] said the only thing he could remember about PADI was that I used to say, "Shut up and lick." He was licking stamps and envelopes. Ralph produced the *Undersea Journal*. We had it

printed at an orphanage in Chicago.

I swapped them diving equipment, and got the kids into the pool occasionally. That's how we got it

printed cheap. We really got going in '67, and I used to come home on weekends and type all the PIC [certification] cards.

aquaCORPS: That was the birth of the PADI system?

JC: Ralph always said that everybody should be teaching the same thing. I agreed. That's why I hooked up with him. I believed we had something universal—we didn't say modular in those days—a course that everybody taught the same way that would be limited to the important things. Cause and effect.

I can remember people teaching not only how to change from Fahrenheit to Centigrade, but how to calculate heat loss in a wet suit, and the difference

between 3/16's, 3/8's and 1/4-inch, which is bullshit. I mean, that's fine, if you've got a bunch of GE engineers in Schenectady.

aquaCORPS: Or a bunch of tekkies.

JC: Those were the tech divers. But you take an average guy or gal and tell them, "Before you can really be a good diver, you

Ralph always said that everybody should be teaching the same thing. I agreed. That's why I hooked up with him. I believed we had something universal—we didn't say modular in those days—a course that everybody taught the same way that would be limited to the important things.

have to know how to compute your heat loss." What the hell does that have to do with it? Do they ask you if you can compute the compression in your engine before they

let you drive a car. It's the same thing.

For the masses, not the classes

JC: We wanted to bring diving to the public. We wanted to make it fun, and we wanted the courses to be effective. When the people got out of the courses, they realized, yes, there are certain things that are dangerous. Number two, this is what you can do; this is what you can't do. Number three, these are the ground rules—the physics and the physiology. And number four, it's fun. That was our goal, and we took a lot of heat when we started. A lot of people made fun of us. The NAUI and YMCA people called us the Irish Diving Association.

We wanted to bring diving to the public. We wanted to make it fun, and we wanted the courses to be effective.

aquaCORPS: How did you actually create the program?

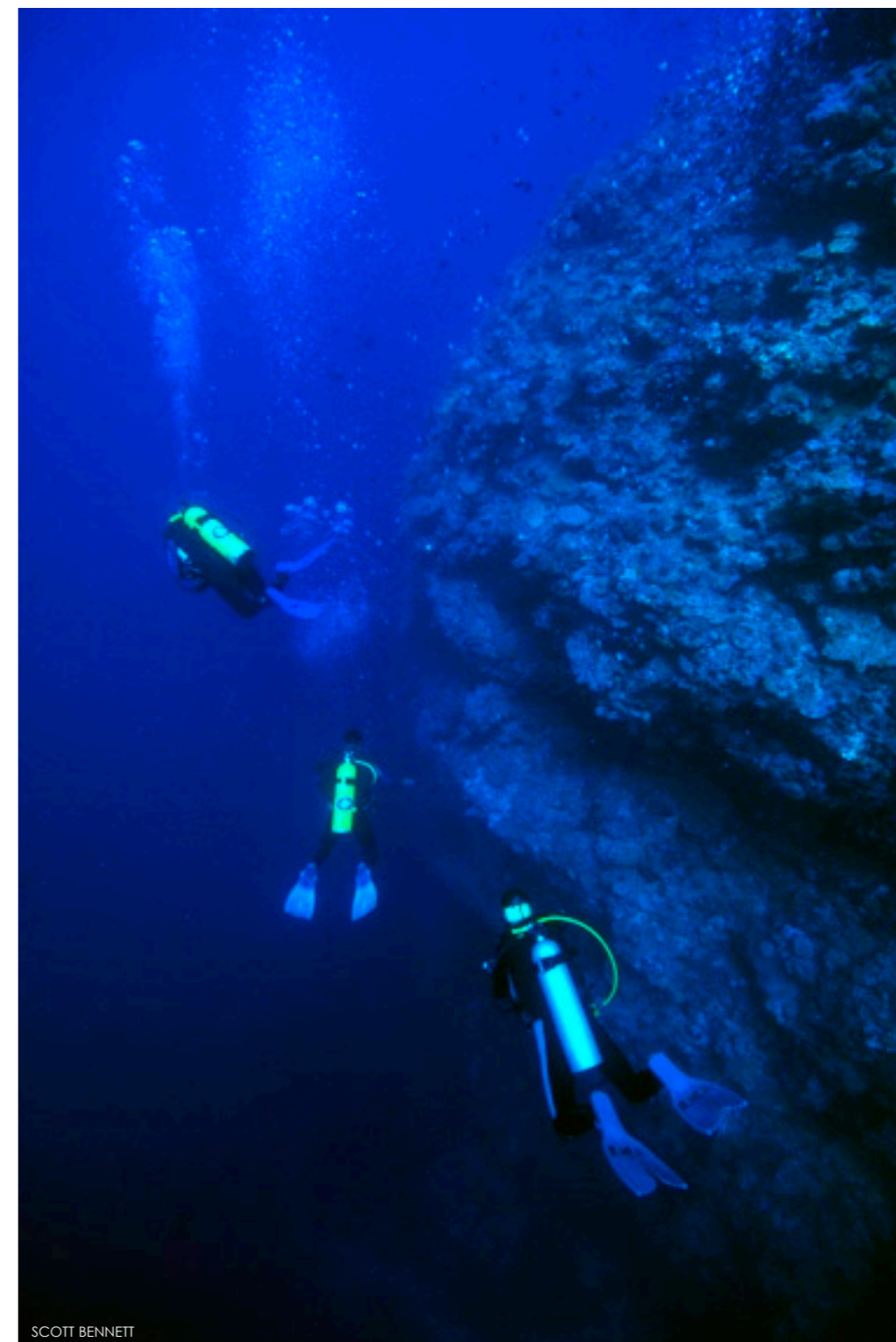
JC: We designed our first program with about ten, 12 guys.

We outlined it in a brainstorming session. Ralph was working on it while I was out developing customers. I was travelling in mid-West and Canada, and I talked about PADI and explained where we're going. We became mid-

west based because we didn't have any money to advertise, so the advertising was Ralph on the phone and John Cronin on the road when I travelled for US Divers. US Divers looked at this with a jaundiced eye.

aquaCORPS: I'll bet. It amazes me that they let it go on.

JC: I got called out in 1967 by the president of the company, who wanted to know in plain language, "What the [bleep] I was doing?" Someone had come to



SCOTT BENNETT



John Cronin

him and raised hell, suggesting that US Divers were going to be embarrassed, and that this Cronin was competing. I got flown to California for two days and called on the carpet. I said, we're in the diving business. As far as I'm concerned, nobody is doing the job in education. We talked.

I can't say I made a convert of him, but I did get him to say, "You do it on your own time and don't embarrass US Divers. US Divers has nothing to do with this, does not condone it, and we're not endorsing it." I said, "Fine."

aquaCORPS: Because you were their top dog as far as sales went?

JC: That's right. Then, in 1969, I was offered the job of national sales manager and asked to move to US Diver's headquarters in Santa Ana, California.

That created a problem at PADI. The problem was that I wasn't there anymore, and Ralph was only interested in the training and *Undersea Journal*. People used to call me at my house, and now they were calling

him. He called me several times, "I'm sick of this bullshit." Ralph said, "You gotta do something."

So, in 1970, I went down to Costa Mesa and rented a big room—about 500 square feet worth—and hired June Nelson; she was our chief cook and bottle-washer. That was the year they made me CEO at US Divers.

PADI grew from one room to two rooms, then three rooms. I asked Nick Icorn, a design draftsman with US Divers who had retired, "Would you like to take a stab at running this for a couple a years?" So, he did. He left two or three years later, and Sonny Whisenand took over. Then, we moved from five rooms and went down to a place on Bear Street in Costa Mesa. There must have been 2,000 square feet down there. We were really cookin'. We just kept growing and growing and growing. Then, we moved to Bush Street with 6,000 square feet, and then to 10,000 square feet on Warner. We eventually moved here in 1988, where we have 50,000 square feet.

aquaCORPS: You retired from US Divers in 1985?

JC: I can't believe it's ten years already.

aquaCORPS: I'd like to know how you managed to run PADI and US Divers at the same time?

JC: It was structured. I always had a goal, and the goal was to improve our courses and increase our market equity, like any business. And I had a propensity for marketing and sales. I always figured the best thing is to have the right product.

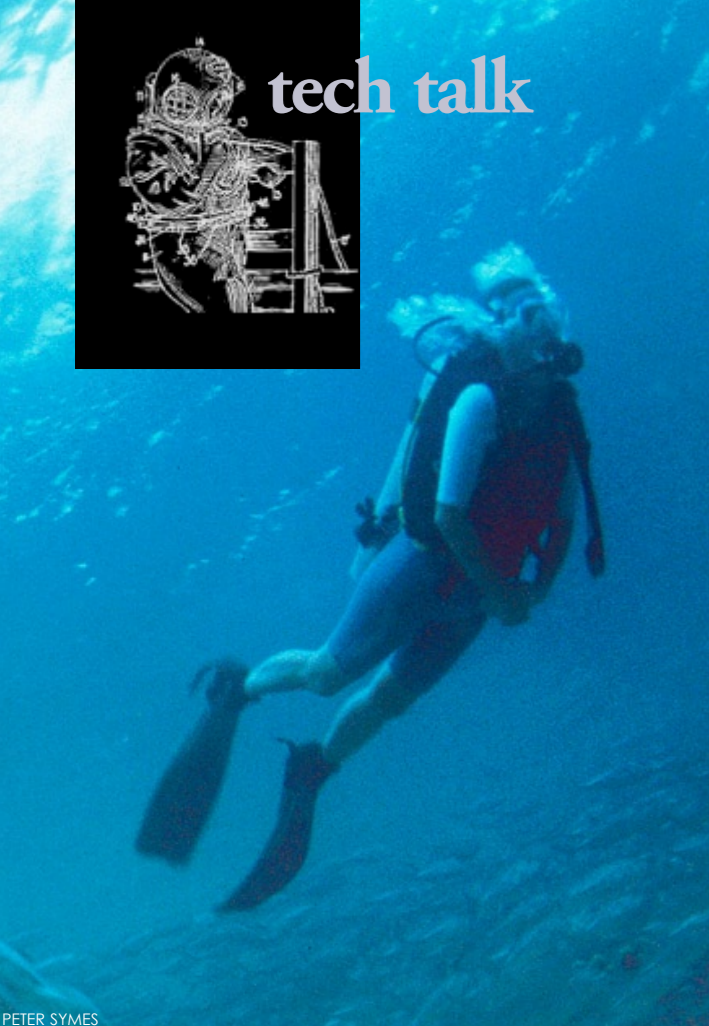
aquaCORPS: And then PADI took off?

JC: We were really starting to be accepted. Everybody woke up in the early- to mid-70's and said, "This PADI—they've got something." After that, we increased our business 10-20 percent each year and concentrated on products and programs. By the mid-80's, we became the largest dive training agency in the world.

aquaCORPS: Is that what made PADI successful?

JC: Products and programs, that's





PETER SYMES

what we're all about. It's a complex company. Professionally, we have nearly 70,000 members.

I think we have to be one of the four or five largest professional associations in the United States—I'm taking a guess. Besides being a professional association, we're also the largest trade association in the industry—between PADI Retail Association (PRA) with over 2,500 dive centers around the world, and PADI International Resort Association (PIRA). Between the two, we have over 3,000 members. So, we're a major trade association besides.

aquaCORPS: What is your model for this?

JC: There isn't any in this industry. You watch the demographics of the market and ask where is there a need. In '78, we saw nobody was looking out for the retailers. So, we said, there's a need for that, and we formed the PADI retail Association. We had a

lot of resorts that wanted to join, but they didn't qualify. You looked at the criteria; they couldn't join. So, we thought there was a need, and we formed PIRA. It was a natural. We initiated that about three years ago. We got close to 600 resorts in three years.

Then a few years back, we looked at travel and started the PADI travel network, because there was a need for it as a member service. So, we opened up a wholesaling agency just for PADI retailers where they can send their members through our membership, and they can get a benefit for this and some remuneration.

We've made a major commitment to customer service. It permeates everything we do.

aquaCORPS: How does your recent deal to put PADI on Windows 95 fit into your grand scheme of things?

JC: It's one facet of a major diver acquisition program to bring new people to diving, to dive centers and resorts, and promote diver education. We hope to reach 30,000,000 computers. It's the right demographics.

aquaCORPS: 30,000,000 desktops.

JC: It's a nice kickoff.

aquaCORPS: They'll find their way to the PADI home page.

JC: We'll have PADI dive centers,

We've made a major commitment to customer service. It permeates everything we do.

People can say Cronin's a tough sonuvabitch, but in the same breath they're gonna say, he's an honest son of a bitch. That means something to me.

resorts on there. Again, our goal is to make information on diving accessible.

aquaCORPS: Is PADI the Microsoft of diving?

JC: I wouldn't say that; I don't know.

aquaCORPS: How would you define the corporate culture at PADI?

JC: You could say we have the lowest turnover rate in the industry, and I know we have one of the lowest turnover rates in the state of California. Because everybody enjoys what they're doing. Like a family atmosphere, yet everybody gives it their damndest. We've brought in a lot of professionals. I've been in the business 40-some years, and I would say there isn't a better team in the industry than the PADI team—spiritually committed, dedication to the sport and where we're going. It's family. No politics, no BS; get the job done.

aquaCORPS: Some of your competitors think that you're doing too well.

JC: Any time you attain a position up there in an industry, you know you're going to have your detractors. But you know what? None of 'em could ever say that we weren't responsible. Nobody can ever say that we're dishonest. We tell the truth. Any time we give someone our word, we keep it. People can say Cronin's a tough sonuvabitch, but in the same breath they're gonna say, he's an honest son of a bitch. That means something to me. ■

John Cronin



PETER SYMES





photo &
video

Text and photos by Lawson Wood

Muck diving is now a recognized broad term for (generally) close up photography, usually in terrible visibility and a dark muddy bottom resulting primarily in low light conditions, which may or may not be polluted, too! As the name implies, you are searching in a 'muddy', 'mucky' or 'murky' environment, moving slowly with additional lights to try and spot all of the weird and wonderful creatures that we used to miss in the search for larger weird and wonderful creatures! Do not let the name, muck diving, fool you; it is one of the best dive photography trips that you can do to obtain quite unique photographs. This form of photography encompasses all of your skills, particularly buoyancy as you will be working close to the seabed, if not on it. By its very nature, the muck does get everywhere, and special care must be taken with cleaning your equipment after every dive.

Indian walker or spiny devilfish (*Inimicus didactylus*), Lembah Straits, Indonesia.
60mm lens, ISO 100, Sea & Sea YS180
flash, 100th Sec at F:11

Muck Diving





Snake eel with cleaner shrimp



Muck Diving

Long-clawed squat lobster (*Munida rugosa*) and leopard-spotted goby (*Thorogobius ephippiatus*) St. Abbs, Scotland. 60mm lens, ISO 100, Twin Sea & Sea YS110 flash, 100th Sec at F:8

BELOW; Snake Pipefish (*Entelurus aequorus*) Scotland. 60mm lens, ISO 100, Twin Sea & Sea YS110 flash, 100th Sec at F:8

close to the seabed, which is invariably silty, so great care must be taken on entering and leaving the scene, so as

It is only in the last ten years or so that the term was first coined in the Lembeh Straits, and more specifically, at Kungkungen Bay Resort, which discovered a wealth of hitherto rarely seen or unheard of species in staggering numbers, hidden in the garbage strewn seabed nearby a major sea port in northern Sulawesi, Indonesia.

Muck diving need not be confined to tropical waters, as most of us have had to learn our photographic techniques over many years in British waters, and for me specifically, I personally enjoy exploring the muddy depths of Loch Long and Loch Fyne in Scotland where exotically coloured dragonets, gobies and blennies are framed in multi-coloured anemones and long-clawed squat lobsters.

However, many of us have already experienced forms of muck diving, underneath the Town Pier and Salt Pier in Bonaire; Frederikstad Pier in St. Croix; Tulamben Beach in northern Bali; and Papua New Guinea. Areas of the South China Sea, Red Sea and in fact any location NOT usually well known for its wide angle, clear waters, have inevitably been revisited, re-explored and reinvented. Now new and excit-

ing areas have become popular such as Raja Ampat in Irian Jaya; Mabul and many other exotic locations in the South China Sea.

The following subjects from Scottish waters illustrate that there are weird and colourful fish and crustaceans in colder waters. You will be working very

not to disturb the silt and perhaps ruin the site for other photographers waiting to take photographs of the subject that you have found.

What makes the creatures of the Lembeh Straits stand out so much (apart from their weird and wonderful shapes) is their vivid colours juxtaposed





photo &
video

Yarrel's Blenny (*Chirolophis ascani*), St. Abbs, Scotland.
60mm lens, ISO 100, Twin Sea & Sea YS110 flash, 125th Sec at F:11



Great Weaver (*Trachinus draco*), Malta.
105mm lens, ISO 100, Twin Sea & Sea YS110 flash, 125th Sec at F:16

Pygmy Seahorse (*Hippocampus pontohi*) 105mm lens, ISO 100, Twin Sea & Sea YS110 flash, 125th Sec at F:16

as the seabed under them is always strewn with rubbish, which makes perfect homes for little critters and fish. What you are doing is a slowed-down version of macro photography, but with the option of seeing and photographing larger critters as they come along.

A friend of mine, Max Hillier, always used to say to students, "stop and smell the roses". Well, we are doing the equivalent

with the almost black volcanic sand. It is only with the use of flashlight that we can pick up any of the colours before we photograph them.

You can really go muck diving anywhere. One of the best locations is under piers, new or old. Old ones are always well encrusted with marine life, but new ones are equally as exciting,

Dragonet (*Callyonimus lyra*), Loch Fyne, Scotland.
60mm lens, Fuji Velvia ISO 50 (scanned), Sea & Sea YS50 flash, 60th Sec at F:11



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Muck Diving



Octopus (*Octopus cyanea*), Lembeh Straits, Indonesia. 105mm lens, ISO 100, Twin Sea & Sea YS110 flash, 60th Sec at F:11

underwater—stop, slow down and examine every single tiny little bit of sea floor, as something may well be hiding under it, eating something on it, hopping, crawling or walking over it or swimming by, just minding their own business.

Muck diving etiquette

Remember that other photographers diving with you will also have spent a fair amount of money and time to reach their desired destination and many can be quite aggressively eager to get as much—if not more—from the trip than anyone else.

1. As mentioned many times now, backscatter is the major problem we all face in low visibility conditions. We either try and avoid it by getting in ultra close, or we use it as part of the photograph and accept the back-scatter as a necessary element in the composition.

2. Do not monopolize a subject, as the subject may be light sensitive, and others may well be waiting in the sidelines to photograph the same subject, particularly if a guide has discovered your critter in the first place.

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Juvenile painted frogfish (*Antennarius pictus*), Lembah Straits, North Sulawesi, Indonesia. 105mm lens, ISO 100, Twin Sea & Sea YS110 flash, 125th Sec at F:16



Pygmy Seahorse (*Hippocampus denise*) 105mm lens, ISO 100, Twin Sea & Sea YS110 flash, 125th Sec at F:16


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3. Similarly, if you find another photographer in the midst of a 'shoot', do not intrude on the scene; this is not only extremely bad manners, you may also spook the subject, and therefore, really annoy the other photographer as well as lose the chance to photograph it, too. So, stay well away, have patience and wait your turn; better still, find another subject nearby to be more productive than just copying someone else.

4. Be careful of your buoyancy at all times, as kicked up particulate may

drift away from you, but can spoil someone else's scene. Some areas have heavy sand or rocky substrates, but many have fine sand or mud, which acts like waterborne talcum powder and gets absolutely everywhere. Treat your exit from a photo opportunity the same way as you enter the scene, with great care and awareness of the critter and your fellow photographers.

5. Many of the muck diving favourite locations are also keen conservation areas and have strict rules of con-

duct, particularly about handling subjects. Unsurprisingly, some guides may be less than subtle about inducing behavioural responses from subjects in the quest for greater kudos and gratuities. Please do not encourage this behaviour, as it totally makes a mockery of any conservation logic in place. ■

Sharptail snake eel (*Myrichthys breviceps*), Virgin Islands. 60mm lens, Fuji Provia ISO 100 (scanned), Sea & Sea YS120 flash, 125th Sec at F:8





photo & video



Nikon D800 and D800E

The D800 is an FX-format, full-frame camera with a 36MP sensor that takes 7360 x 4912 resolution images and also features 1080p video with manual exposure controls that records at 30, 25, and 24 fps and the ability to feed uncompressed video to a monitor or recording device via HDMI as it's being captured. The D800E has the same sensor as the D800, but with the industry standard Anti-Aliasing, integrated low-pass filter removed. The AA filter is used to reduce the moire effect in some images



Canon EOS 5D Mark III

Canon has announced the release of its new Canon EOS 5D Mark III full-frame DSLR camera. The EOS 5D Mark III is the latest in its enthusiast full-frame 5D series and successor to the popular EOS 5D Mark II. The new camera is based around a 22MP full-frame sensor and can shoot 6 frames per second and features a 61-point AF system much like the EOS-1D X. It can also capture 1080p movies at 24, 25 or 30 fps and offers high quality intraframe (All-I) video compression amongst a host of movie-related improvements. The Canon EOS 5D Mark III will be available from the end of March with an MSRP of \$3499 / €3299 / £2999.99



E-M5

Included in the accessories package for the Olympus E-M5 mirrorless camera is a new polycarbonate underwater housing. The PT-E08 housing is rated to a depth of 45 meters and has a total of four strobe flash cable connections - two for electronic cables and two for optical cables. Olympus states that two ports will be available, consisting of a dome port suitable for use with the Zuiko 8mm (or equivalent Panasonic) fisheye and the 9-18 wide-angle zoom plus a flat port for the Zuiko 50mm macro lens.



BS Kinetics Negev

The camcorder is operated by a cable and/or infrared remote control in the housing. It is suitable for Sony, Panasonic, Canon und JVC camcorders. All camcorders can be operated with this flexibility. If one wishes to change camcorders during a dive, the controls can simply be switched to the new camcorder as required. The Negev has a broader range of controls compared to the Gobi because of the greater number of buttons available, which allow access to the camera's entire menu of options. A 3.6" TFT colour display gives a preview of the shot. The display is battery-powered and lasts for up to 8 hours.

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Adobe Photoshop Lightroom 4 Now Available

Adobe has announced the release and availability of the latest version of its photo editing software. Lightroom 4 is a major release, adding significant new capabilities and innovations. New adjustment controls maximize dynamic range from cameras, recovering exceptional shadow details and highlights. The software features new and improved auto adjustments to

dynamically set values for exposure and contrast, and additional local adjustment controls including Noise Reduction, Moire and White Balance. The estimated street price is US\$149 for new users or US\$79 for upgrades.

For more detailed information about product features, upgrade policies, pricing and language versions, please visit www.adobe.com/go/lightroom.



Unique Dive Site

The Dead Sea

Text by Michel Braunstein
Photos by Michel Braunstein
and Peter Symes

Having dived in plenty of spots around the world, I am always on the lookout for an unusual destination with unusual dives. It goes without saying that diving in the Dead Sea is not commonly found on the list of classic dives, and that's what attracted me to it. The inland sea is located 425 meters below sea level. It is the deepest place on Earth.

Salinity reached 35 percent! Not an easy thing to overcome in order to get down to depth. You need 40 to 50kgs (80 to 100lbs) of lead, according to your size. These are divided into weights blocks attached around the waist and the front of the body as well as on

the straps of the BCD.

The water of the Dead Sea is rather oily. Drops on gear and suits do not dry easily. You really need to have a good rinse and dry after a dive. Water drops not rinsed away may remain for several weeks.

The visibility underwater is often not conducive to diving, although there are brighter days. Diving in the Dead Sea can only be done with a full face

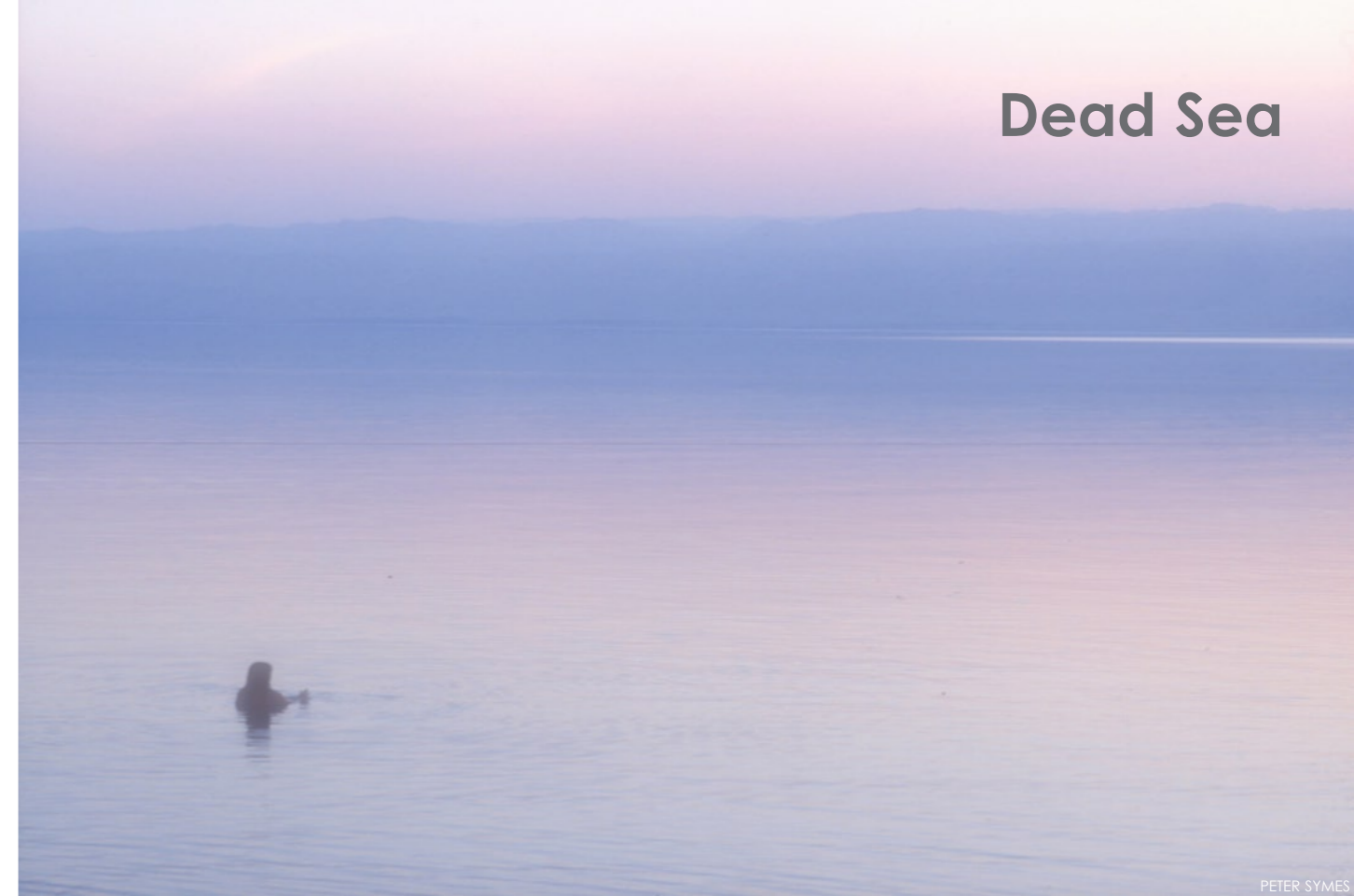
mask to protect the eyes, face and mouth from unfavorable waters. A first dive with a full face mask is organized in a pool a few days before the date of the dive. When that day came, my dive buddy and I met the instructors. We were equipped with our 5mm wetsuits. After a short briefing and a refresher drill in the use of the masks, we climbed down the few salt encrusted rocks that still separated us from the



THIS PAGE: Underwater scenes with salt formations in the Dead Sea



MICHEL BRAUNSTEIN



Dead Sea

PETER SYMES

sea. We put on our heavy weights belts, BCDs with complements of lead around the waist and added even to pockets, which felt really full and very heavy on the front of the body. It was not very comfortable.

We placed our impressive full face masks on. It was important to remember not to get even one little drop of Dead Sea water in the eye, because it is very embarrassing, which I found out later.

We got in for a first dive to get used to the awkward waters of the Dead Sea. It was not easy to descend, despite all the weight. It was also not easy to fin around in these dense waters. We were rapidly reaching eight meters deep.

Being an avid photographer, I took a look at the bottom of a pillar of salt in order to find the best angle to place



© Michel MICHEL BRAUNSTEIN



MICHEL BRAUNSTEIN

CLOCKWISE FROM TOP LEFT: Over-under shot of the Dead Sea; Guest enjoys a tranquil dip; Diver examines salt formation; Closer look at salt crystals





PETER SYMES

myself when I came back later with my camera. It was just my luck, then, that a drop of salty water seeped into my mask and into my left eye. This was *not* a pleasant experience.

I couldn't open my eye, and I couldn't do anything underwater to repair the situation. So, I signaled to the instructor, and we went back to the surface. After rinsing my eye with fresh water, I felt much better, and we returned to the water to finish this first dive.

Here, there are no corals as I am used to seeing in the Red Sea or in other warm seas. There's no life, just field after field of white salt, the color of bleached coral. Sometimes a salt cathedral would break up the relief. Sometimes walls of a canyon or a cave appeared. But certainly, it was an otherworldly underwater landscape and a very unique experience. ■



MICHEL BRAUNSTEIN

CLOCKWISE FROM TOP LEFT: Steps lead guests to the Dead Sea under a serene sunset; Strange salt formation on floor of the Dead Sea; Diver investigates mound of salt crystals



MICHEL BRAUNSTEIN