

Text by Cindy Ross
GirlDiver.com
Photos by Bill Battan
and Chris Padilla

The Girl In the Bubble

Time travel becomes reality, as I descend beneath the waterline in a 1944 Mark V Hard Helmet, the standard U.S. Navy dive equipment used for undersea salvage operations in World War II.

"So, what's under the water?" I asked Maurice, the aged Greek instructor from a local training facility for commercial divers. I was 19 years old, and my only experience with the underwater realm was a five-minute dive in a college swimming pool. He told of the brilliant sea life inhabiting the chilly waters of the Puget Sound in the northwestern corner of the U.S. He explained what the guys were doing underwater, welding and cutting, and how they would eventually use it to work in the offshore oil fields.

"I want to learn how to dive!" I exclaimed. Maurice just shook his head and in a thick accent said, "Girls like you... you no dive. Girls like that, (pointing to a tall, stocky girl on the dock) they dive. Girls like you... you date the divers. Come, I'll introduce you to my boys." And with that, it was done.

I was 19, in college, and so the introduction to the boys on the dock sufficed. In the four months following, I helped the guys get in and out of their dive gear, learned about the dockside diving bell, rinsed and stored the commercial dive equipment. But I knew I could never dive, for I wasn't big enough, or strong enough. It took a full decade for my entry into the

scuba world—recreationally, not commercially.

I sought out dive gear made for small women, found easier methods to don the heavy equipment and slowly developed the "dive specific" muscular structure by hauling countless tanks to and from dive sites. I honed my instructional skills to ease the entry of other women into the sport.

Now, I'm taking the plunge as a hard helmet diver. Using "modern equipment" from another century. Descending to the depths in an authentic Mark V helmet.

This level of helmet was produced by the Diving Equipment and Salvage Company (now known as DESCO) for the U.S. Navy from 1927 until the Mark XII surface supplied system in the late 1970's.

Donning the Gear

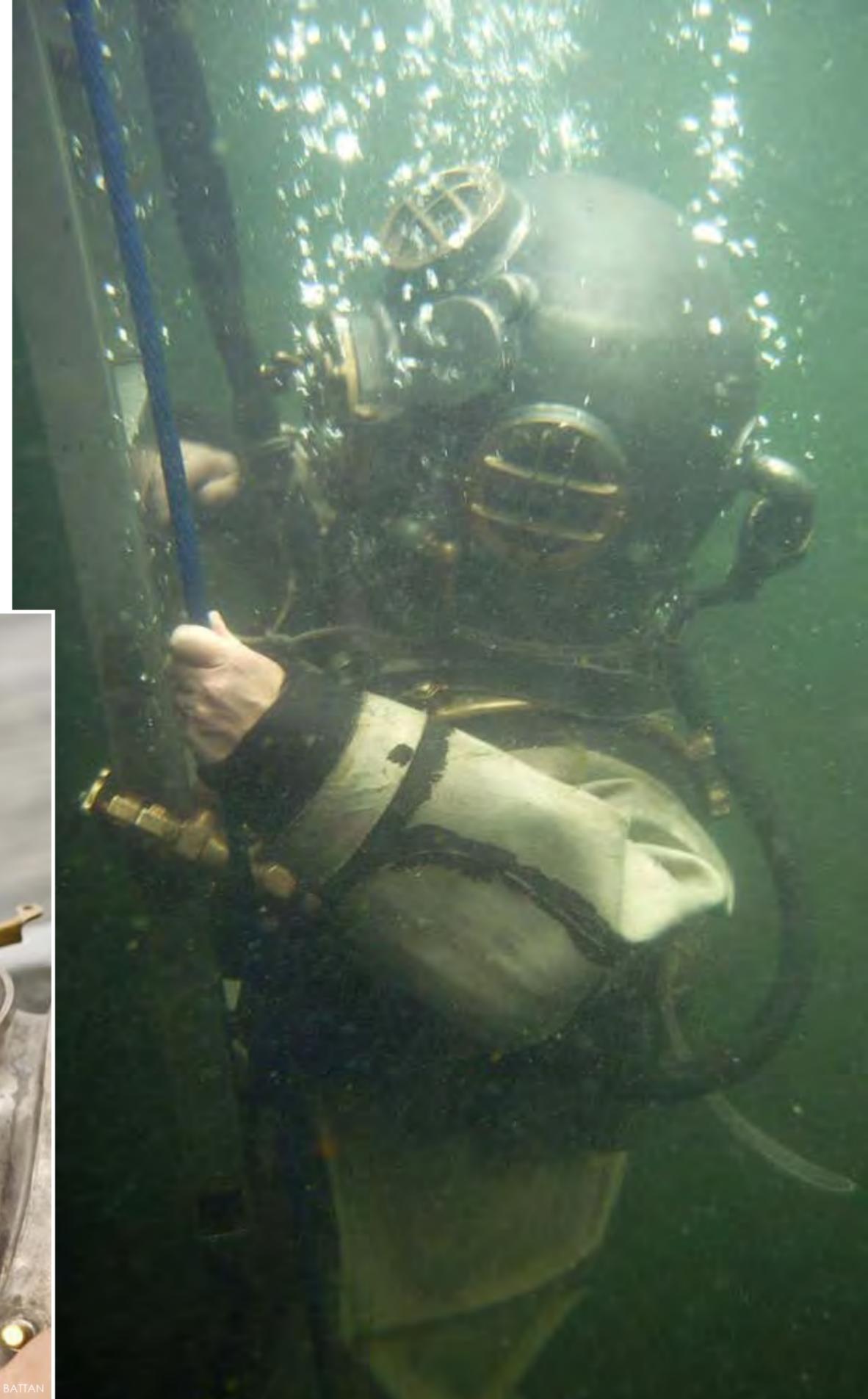
The dive was coordinated by Tim and Steve King of Smokey Point Diving. As members of the Historical Diving Society, they

are collectors of diving helmets and equipment from our past. The suit I dived in was a "Men's Large" size—the smallest available suit size.

With enough lacing and strapping, pull-



RIGHT INSET: Mark V Girl Cindy Ross dons the hard helmet breast plate
FAR RIGHT: Underwater – Feeling what it was like to do work underwater. Robotic and difficult to move. Definitely a respect builder!



BILL BATTAN

CHRIS PADILLA



BILL BATTAN

The smallest suit available was a men's large. How does a five foot tall girl fit?

ing and tugging, they fitted me into the rubber coated canvas suit, promising no leaks in a suit manufactured the year after Jacques Cousteau took his first experimental dive in his Aqua-Lung.

The diving helmet was bolted to the

suit brales, with a weight of 56 pounds (25 kilos) alone. Underwater, the top heavy helmet configuration, even with air added, would turn divers on their heads. So, to counteract the tipsiness, boots weighing 17 pounds (8 kilos) each, and a weight belt of 85 pounds (38.5 kilos) was added to the standard diving dress. Total weight of the equipment is 190 pounds (86 kilos)—almost two times my weight!

As the donning of equipment commenced, the suit engulfed my frame, and my two dive attendants began the task of strapping the leather laces and belts.

My canvas clad feet were slipped into the brass tipped boots with flat wooden insoles. The legs were laced in the back to avoid over inflation once below the surface. Ergonomics and comfort were definitely not in the design phase on this equipment.

They stood me upright (definitely not moving anywhere with the metal slippers on my feet) and finished tightening the lower part of the suit to fit my small frame. I'm sure

the Desco Company never expected a five foot nothing (152 cm) girl to don this outfit.

The rubber seals at the end of each arm were pushed up my forearm to find a thick enough place to seal. (Dainty wrists



BILL BATTAN

were not in the plans either, apparently.) Next, the breastplate was attached to the suit with wing nuts. I can feel the weight on my shoulders, but it's not as bad as I thought it would be. Movement is definitely getting difficult, no yoga today.

Now for the final touches. First, the leather harness was suspended from my shoulders holding 85 pounds (38.5 kilos) of lead weight around my waist. This would counteract the internal lift from the air, as well as help my center of balance underwater.

They released the weight onto my shoulders... "I'm standing! Ok, I can do this," I thought to myself. "This is not that tough."

At this point, my tenders had me sit on the dress platform. It was time for the helmet. As I was sitting on the platform, the belt started to take its toll. I had been

able to maintain correct posture, but as the weight beared down, my spine began to bend. In my mind, I was secretly wondering if the two inches of compression my spine was undergoing would be able to be undone.

The helmet

"Ok, here we go," said Steve, as he lowered the "brass helmet" onto my head. The helmet of an authentic Mark V is not actually brass, but rather spun copper with tin plating, and all of the original helmets were spun by a single individual who had mastered the craft. The helmet, complete with brales and wing

nuts, had a weight of 56 pounds (25 kilos), and this became the final piece.

As the faceplate on the bonnet closed and sealed, my world changed to a sepia toned view of what early salvage divers were faced with using the "modern equipment" of their time.

Final instruction included operation of the chin button (purge valve) to release the air as it flowed into the suit. My surface air supply was connected to a turn valve mounted on the front of the suit, to which I could increase or

The breast plate is attached to the suit with wing nuts

Hard Helmet

decrease flow by turning the knob with my left hand.

Overhead, a communication unit, made of telephone wiring, allowed me to speak with my "dive guide" on the surface. His voice would be guiding me on my journey, and my responses would assure him that I was both safe and composed underwater.

Taking the plunge

Hoisted up, and six heavy steps later, I was on the edge of the dock ready for a giant stride into the water. While the Mark V had four "lights" (windows) in the hel-



BILL BATTAN



Giant Stride entry - Unable to see the water but trusting the voice in the hood saying, "Just one step with your right foot."



Just Waiting – With the heavy shoulder harness and helmet, waiting for entry is challenging on the spine

met, the suit only allowed a diver to see directly ahead, to the sides or above, not down. The giant stride was made without any visual reference to the water below, trusting, for the first time, the voice coming through the speaker overhead. As I splashed in, I took a quick look about the helmet.... no leaking. Sigh of relief. The voice overhead told me to turn and find the blue rope. Using my hands for mobility, as I have no fins, I turned and held the blue nylon rope.

Giving the ok, I lowered down the rope to the bottom. Theoretically, you are supposed to clear your ears by pressing your nose against the side of the helmet and blowing through it. I tried, but to no avail.

As I lowered down, the pressure built up. However, I landed on the bottom with the pain diminished.

Now, it's time to "work". Walking in the Mark V suit is a challenge. We all believe the water makes us weightless, however, not so in a suit designed for walking on the bottom. Each step entrenches the boots into the soft mud, and the suction must be overcome with each lift of the leg.

My safety divers directed me, along with the voice in the helmet, to turn and walk in the suit.

Hard Helmet



Definitely the shortest hard hat diver they've put in the water —190 pounds, and I'm walking!

Hard Helmet



Climbing the ladder

were dressed in recreational scuba outfits, with full face communication masks on. They could easily retrieve the mask. But what if I, in my robotic attire, wanted to reach down and get the mask?

"Go ahead and sit down," the voice in the helmet directed. Against my better judgement, I fell slowly back into a seated position on the sticky bottom.

"Now stand up," the voice offered. Right. Stand Up. I'm stuck in the mud, and he says stand up?

I rolled to my front and push deeper with my hands into the bottom silt. "This isn't working," I informed my

dive safety officer.

"Try adding some air," he suggested. I found the valve on the front of the suit, turned for higher air output into the suit and sprang to my feet.

Chin on the exhaust control valve on the side of the bonnet, I released the excess air, turned the

air demand knob back down, and I was once again on my feet.

As the voice overhead melded with the bubbles, each inhale and exhale, I walked the floor of the sea. I experienced, for a moment, what the pioneers of underwater work went through. I imagined going 240 feet down a line, as the rescuers in May of 1939 reached the sunken U.S. submarine, *Squalus*, and saved 33 crewmen from the bottom of the Atlantic. The slow, deliberate movement, each reach and step carefully thought out, as the suit was difficult to travel or maneuver in.

I am thankful to those who pioneered the modern day self contained breathing gear we used. Men like Hans Hass and Jacques Cousteau, who enabled common people to be able to experience the underwater realm without donning 190 pounds (86 kilos) of gear. Allowing us to use adaptive equipment in a foreign environment, rather than shield ourselves in a rubberized canvas balloon.

I thought of the female commercial divers worldwide who, even with lighter helmets and gear, are still operating in a world where a "Mens' Size Large" is the smallest dive suit available, and who walk the floor of the sea, the tanks of nuclear power plants or inspect hazardous sites in full suits.

Still very much a man's realm, I applaud the women who are reaching into the world of commercial diving, not succumbing to the belief that they are too little or not able to build the strength.

As I climbed the ladder, and again felt the full weight of the gear with each step up the rung, I returned to our modern times. Having made my first surface supplied dive, I knew I had experienced the past in a vivid way. ■

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Diving with WMDs

Divers & dumped chemical weapons in the Baltic

Text by Commander Carl-Gustav von Konow
Photos courtesy of the Swedish Coast Guard



The Swedish Coast Guard is responsible for surveillance of and response to oil and other harmful substances at sea. Why do we have these problems today? While a complete history is beyond the scope of this article, I will discuss dumping at sea from German stores. Before and during the Second World War, the Germans produced a lot of different chemical weapon agents, and in December 1944, they had about 65,000 tons

in storage. When the war was over, none of the chemical weapons had been used on the German side, so everything was still in stored. The large number of chemical weapons was a problem for the allied countries. According to the Potsdam agreement "all munitions shall be destroyed". The most functional way to get rid of them, was to dump them at sea.



In Skagerrack (see map on next page) off the Swedish west coast, fully loaded ships were dumped and sunk in rather deep water, 200-700m. Today, the ammunition is still on the ships, or underneath in the clay on the sea bottom. The

LEFT TO RIGHT: Hulls of boats take a beating in the Baltic; Map of areas in the Baltic Sea at risk for chemical weapons agents and other dangerous objects; INSET: On the seabed in dumping zones, one can find artillery shells, a complete bomb, or a lump of mustard gas with a hard surface, but 'fresh' mustard gas inside

focus

The total amount of dumped ammunition with and without chemical weapons agents was approximately 300,000 tons.



most problematic areas are in the Baltic where the dumping was in more shallow waters at an approximate depth of 30-90m. In the Baltic, chemical weapons were dumped as well as artillery shells, air-mines or bombs—either one by one, or in containers. Even containers with pure agent were dumped. They were even dumped by hand, mostly by war prisoners (Germans). The total amount of dumped ammunition with and without chemical weapons agents was approximately 300,000 tons.

ABOVE: The Swedish Coast Guard patrols the Baltic Sea. LEFT INSET: Rotting fish tainted with chemical weapons agents. TOP RIGHT: Map of dumping zones where there is a risk of finding chemical weapons agents

Please have a look at the map on the previous page.

Today the risks are:

- in the dark blue areas, where there is a high risk of finding dangerous objects like mines, oxa and chemical weapons agents;
- in the light blue areas, where there is a moderate risk of finding chemical weapons agents;
- in the white areas, where it is possible that one can find dangerous objects when exploring the seabed for laying cables, pipelines, drilling, building wind power stations or doing scientific research.

The explorer must be prepared to meet these threats.

Fishermen never know when they may catch war gas or a bomb. Today, the dumped ammunition is spread all over the southern Baltic.

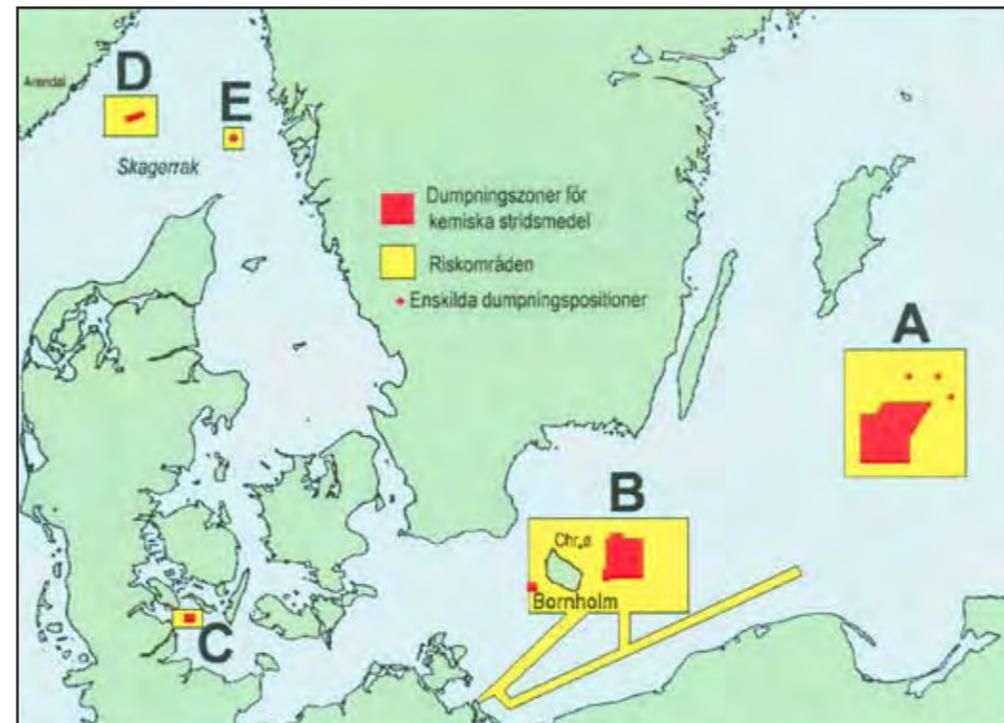
The diver doesn't know if he or she will meet dangerous objects, especially when digging into the bottom sediment. Perhaps the diver does not see the object.

Divers taking samples risk contamination. Seabed ploughs, ROV, SONARS and their umbilical cables can be contaminated.

What can you find on the seabed?

- Artillery shells, a complete bomb. The bomb shells are made of thin material and are often completely corroded by now. The mustard gas has solidified (slow oxidation) but we don't know what it looks like on the inside. The dumped ammunition was normally not armed—it could have detonators— but the main charge is always there.
- A lump of thickened mustard gas. The surface is hard but can break, and then there is "fresh" mustard gas inside. Mustard gas does not react with water, so even after a rather long time in water, it will not be destroyed. It will only wash away slowly and oxidize. The same goes for findings of sneezing and tear gas. Approximately 90 percent of the findings in the southern Baltic is mustard gas.

Divers can't rely on help from the SCG or other rescue units for some hours. So, one has to take care of oneself. The surface crew and other personnel or divers must also be protected against the threat.



They have to build a decontamination station before diving. They must check that everything works beforehand, because in case of an accident, they will have a very short time for minimizing the injury—within 20 minutes, if it's mustard gas. The surface organisation must be protected. Don't think that water will minimize the threat from mustard gas.

The diver must have help with decontamination and must be 100 percent clean before he takes off his breathing device (helmet or diving mask). Other personnel have to wear protective clothing. Even very small amounts of mustard gas can give symptoms after 24 hours or more. If a diver is contaminated, check the diver with the use of indication equipment! It must be 100 percent clean before the diver can leave the decontamination line. Remember, if a contaminated diver goes indoors, there is a risk of contaminating other persons, too. Don't forget that when it's cold outdoors, some war gases will become more dangerous when reaching higher temperatures. Mustard gas starts gassing at approximately +14°C. The influence of temperature is important to know. Don't forget the diver could have contaminated the lift or ladder.

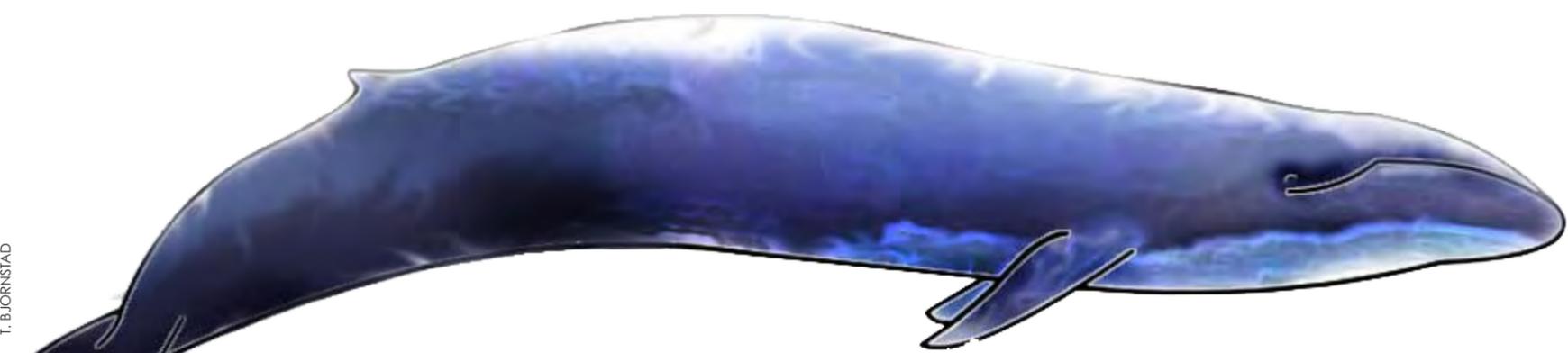
Indication equipment is simple and reliable. AP2C is a very good field instrument for this purpose. Common indicating paper is easy and cheap.

Commander Carl-Gustav von Konow is head of responders, Swedish Coast Guard: carl-gustaf.von.konow@coastguard.se ■



Edited by
Peter Symes

Blue whale calls have mysteriously grown deeper



Calls and songs have been steadily dropping in frequency for seven populations of blue whales around the world over the past 40 years.

Scientists at the Scripps Institution of Oceanography, among others, have analysed data collected with hydrophones and other tools, and found that the songs, which they believe are by males advertising for mates, had lowered in frequency by as much as 30 per cent in certain populations. Much of the songs are at frequencies too low to be detected by the human ear.

The study, as yet unpublished, has been reviewed by several experts in the field who called the global decline both significant and unequivocal. Scientists cannot explain why blue whales from places as disparate as the northern Pacific and the

Southern Ocean, which surrounds Antarctica, would drop the pitch of their songs. Each blue whale population has a distinct tempo and tone-set to its vocals.

A male thing

It is believed that only male blue whales sing, with female blue whales choosing their mates based on size. This selection process has therefore led to the species' great size. And deeper songs might signal bigger.

John Hildebrand, professor of oceanography at Scripps and an author of the study, said the drop might signal a rebound in the population of blue whales since commercial whaling bans began to take effect in the 1970s. When populations were smaller, whales may have had to be louder to make their calls heard. Now, the males might be competing to make their calls deeper.

A matter of evolution?

It is thought that we can expect the mating display to change

because, as density increases, there are more individuals competing to find mates. It seems that with the blue whales, the songs are getting both lower and a little less loud. Although it is easier to make a powerful sound at high frequencies, lower-frequency sounds tend to travel farther. However, in the blue whale vocal range, which is 10 hertz to 100 hertz, there is no practical difference in the sound transmission properties in the deep ocean.

Population rebound

It is estimated that there are now up to 25,000 blue whales, compared with perhaps 300,000 before whaling. The number may have risen from a low of about 10,000 animals with blue whale populations growing by up to 5 percent each year.

The population-rebound explanation, while speculative, is compelling to David Mellinger, a professor at the Hatfield Marine Science Center at Oregon State University. He said that it is hard

to see anything that would have impacted all of those populations and made them all decrease frequency other than the increase in the population.

The global blue whale population was thought to have been around 200,000 animals, but numbers fell to just a few hundred by the 1960s when a hunting ban was introduced. The population has since recovered to around 4,500 animals.

Dialects

Professor Hildebrand has also discovered that blue whales in different parts of the world use different "dialects" in their songs.

Only the males sing, and it is thought that they are attempting to attract mates or to communicate to other males during the mating season.

But other researchers believe whale song is a more complicated form of communication than simply trying to attract a female. ■



Hungry seals navigate by the stars

It has been discovered that seals can identify a single star in the night sky.

Navigating in the open ocean is essential for seals to move between foraging grounds that may be hundreds of kilometres apart and this is the first evidence that marine mammals, like humans, use stars to navigate in open water.

The European team of researchers, headed by Dr Guido Dehnhardt of the University of Rostock in Germany, simulated a night sky above two captive male seals and monitored the movements of the animals through six hidden infrared cameras. Initially, the seals were guided to one of the brighter stars by a laser pointer, and encouraged to swim towards it.

Once the seals got the hang of navigating by the one star, the night sky above them was swivelled around and the seals were watched to see if they could still orientate themselves. With a little practice the seals swam in the right direction 100 percent of the time.

In the wild, the foraging trips of seals can take several days and

so they often find themselves in open water with no visible landmarks for nights on end. How these seals learn the relationship between a star and their feeding ground is still unknown. It is suggested that seals might learn the position of the stars relative to foraging grounds during dawn and dusk when they can see both the stars and landmarks on the coast.

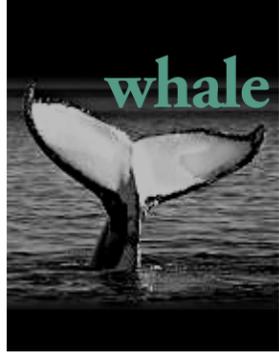
The researchers think that marine mammals might use star paths, or *kaveingas*, as Polynesian seafarers call them. These people navigate by heading towards a star on the horizon until it moves too high, and then swap over to follow another star, and so on, guiding their way until dawn.

Seals, sea lions and whales are often seen elevating themselves out of the water as they swim in the open ocean. This act of coming out of the water vertically and staying above the surface momentarily, in the same way a human treads water, could allow marine mammals to set their course, the researchers speculate. ■

PETER SYMES

T. BJORNSTAD





First Humpback Whale in the Baltic in 30 years

In the past century and a half there have been exactly three documented sightings of living humpback whales in German waters. A recent sighting of a humpback whale off the German island of Rügen in the Baltic Sea can therefore be considered a sensation.

The last time a living humpback whale was spotted in German waters was nearly 30 years ago, in August 1978, also off the coast of Rügen. But to find a prior documented sighting, you have to go back another 127 years to 1851.

The sighting was clearly a humpback whale; it had the typical long white pectoral fin, which can make up a third of the animals' bodies. The whale was estimated to be around 12 meters long.

It is believed that the animal might have got lost, swimming first into the North Sea and then into the Baltic Sea by following a swarm of fish during its usual trip to

spend the summer in the Arctic. Although the animal will probably remain in the Baltic Sea for a few more weeks, it is likely it will look for other hunting grounds, as it will struggle to find enough food in those waters.

The whale is only the latest unusual sighting in the Baltic Sea in recent years. A giant swordfish stranded itself on the Darss Peninsula in the German state of Mecklenburg-Western Pomerania earlier this month. In September 2007, several dolphins were spotted between Darss and the island of Hiddensee. And seals began appearing on Baltic Sea beaches in August 2007.

According to Greenpeace, humpback whales live in all the world's oceans. In the summer, they tend to flock to the polar regions and, in winter, to subtropical waters. The animals, which can grow to 18 meters and weigh up to 40 tons, live off small fish and krill. Their world population is estimated to number between 35,000 and 40,000.

Humpback whales are also known as "singing whales" because they compose intricate compositions that can last longer than ten minutes. ■



An arrest warrant has been made for the Japanese whaling fleet

In four months time, the Sea Shepherd ship, *Steve Irwin*, will depart from Australia for Sea Shepherd's fifth major mission to confront the illegal activities of the Japanese whaling fleet.

The Sea Shepherd Conservation Society intends to intervene against the continued illegal whaling activities of the Japanese fleet in the Antarctic Whale Sanctuary. They intend to stop the killing of endangered species of whales in the sanctuary—whales that are being killed in violation of the global moratorium on whaling. It is intended to enforce the orders of the Australian Federal Court that has banned Japanese whalers from killing whales in the waters of the Australian Antarctic Territory. The objective is to arrest the *Nisshin Maru* and its fleet of hunter killer boats.

Campaign matter

In 2005-6, the whalers were 84 whales short of their quota because of the Society's interventions. In 2006-7, they only took half their quota and in 2007-8, they took zero Humpbacks, zero Fin whales and only half their Piked whale quota. They have lost tens of millions of dollars, and the Institute for Cetacean Research is over 50 million dollars in debt on loans from the Japanese government.

Whaling fleet deep in debt

The Japanese whaling industry is

Sea Shepherd Conservation Society
 Warrant for Arrest for International Poaching
 Issued August 5th, 2008

The Sea Shepherd Conservation Society
 hereby
 issues an arrest warrant
 authorizing the crew of the *Steve Irwin*
 to intervene and
 shut down the illegal whaling activities
 of the Japanese whaling fleet inside
 the waters of the Southern Ocean Whale Sanctuary.

The Sea Shepherd Conservation Society is operating in accordance to the principles established in the United Nations World Charter for Nature (1982)

The violations of the Japanese Whaling fleet are:

1. Killing and targeting of endangered whales in violation of the Convention of Trade in Endangered Species (CITES)
2. Killing whales in a Whale Sanctuary in violation of International Whaling Commission regulations
3. Killing whales in violation of the global moratorium on whaling in violation of the IWC regulations
4. Re-fueling in Antarctic waters in violation of the Antarctic Treaty
5. Using firearms in Antarctic waters in violation of the Antarctic Treaty
6. Operation of a factory vessel to kill Piked Whales in violation of IWC regulations
7. Intentionally ramming other vessels in violation of the International Maritime Organization (IMO)
8. Conducting commercial exploitation in Antarctic Treaty waters
9. Operating unsafe vessels with the potential to pollute Antarctic waters

Authorized by: Captain Paul Watson
 President of the Sea Shepherd Conservation Society
 August 5th, 2008.

becoming increasingly more frustrated because of the annual interference with their operations and the rising debt they are incurring. The society suspects that they will be more violently defensive of their illegal activities this next season than they were last season.

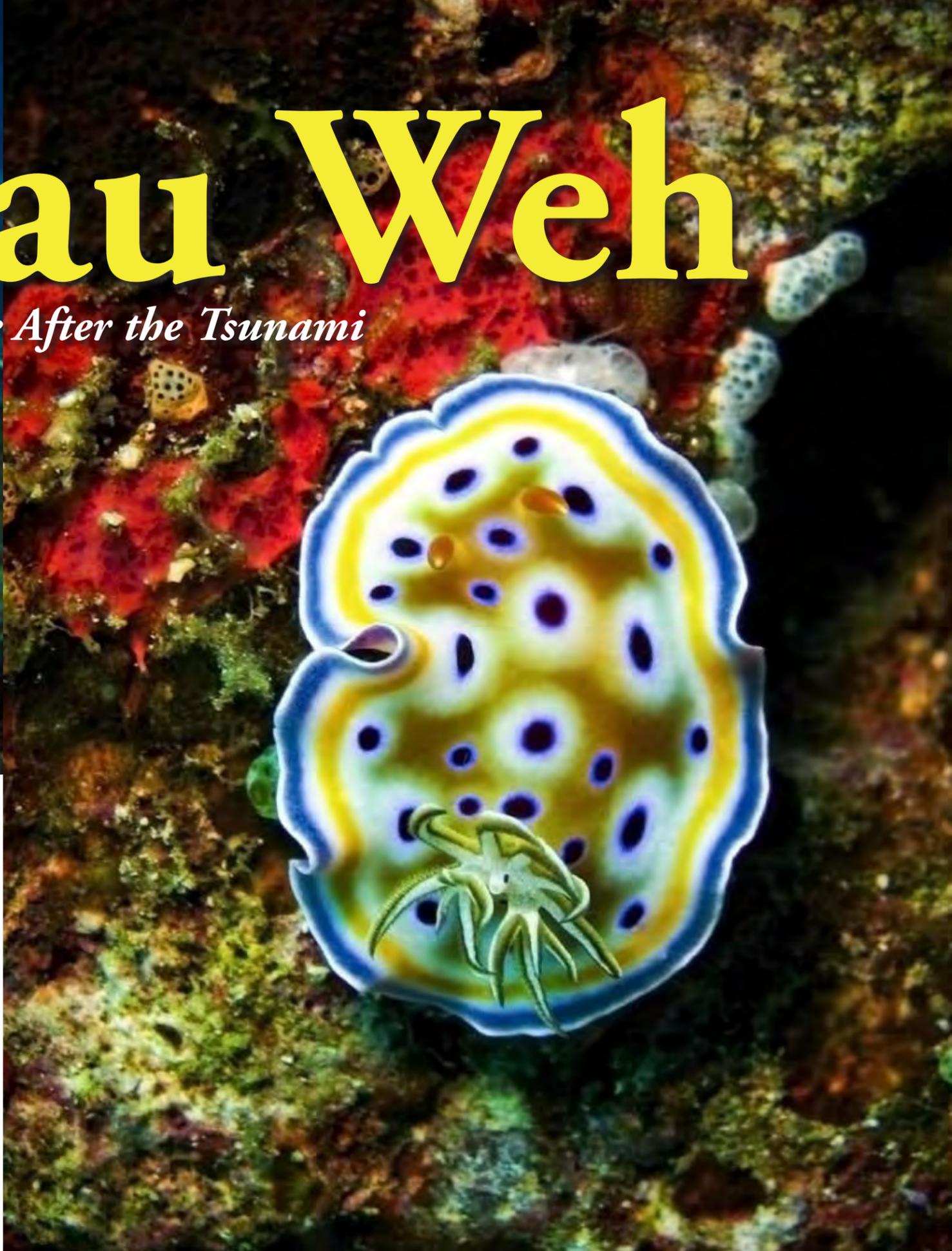
There is talk of sending a Japanese warship to the Southern Ocean, and if that happens, it will be a violation of the Antarctic Treaty. There is talk about physically assaulting the *Steve Irwin* and capturing the crew and taking them back to Japan

as prisoners. If that happens, it will certainly be an international incident involving numerous nations, because the crews of Sea Shepherd ships are usually citizens of a dozen different countries.

No amount of intimidation will deter Sea Shepherd from returning to the Southern Ocean this year. Every single crew member onboard the ship understands the risks. Far better to risk one's life for the protection of the whales and the oceans than to die for some oil well somewhere, or over some asinine conflict over real estate. ■

Pulau Weh

Rebirth of Paradise After the Tsunami



On a beautiful day just like any other, divers in the water were enjoying the underwater scenery and rich marine life around Pulau Weh in Aceh, Indonesia. All of a sudden, they heard a loud and painful noise forcing all of them to cover their ears. Many thought it was a tanker passing overhead, but the sight of all the moray eels swimming out of their holes must have been something totally unimaginable and bewildering.

Text by Simon Kong
Photos by Asther Lau

The divers then surfaced and headed back to the dive shop, not knowing what to make of the strange phenomenon until they started seeing brand new bungalows floating on the sea.

Back at Gapang Beach, almost all the wooden houses and restaurants had disappeared, and Lumba Lumba Diving Centre had its front façade smashed away. The divers had to wait two hours until the surge was safe enough to land the boat. It was the day of the 2004 Tsunami.

Fortunately and miraculously, the tsunami that hit Aceh on December 26, claimed very few lives on Pulau Weh located only

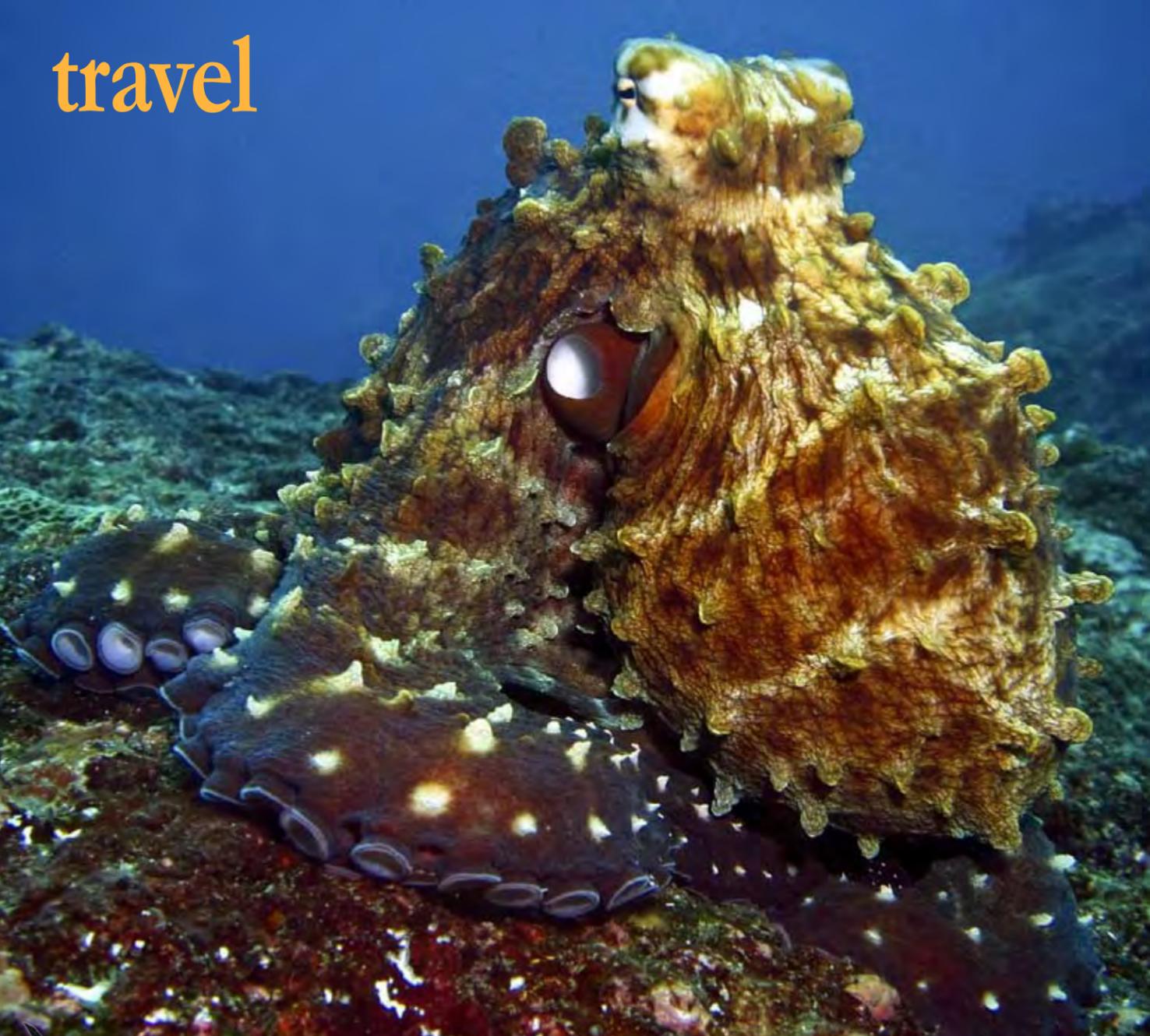
one hour north of Banda Aceh. The owners of the dive center, Ton and Marjan Egbers, survived by standing atop the dive gear rinsing shed and a tree located just beside the shop.

Most of the destructive power of the tsunami was the strong pulling power of the receding wave, where everything was swept out to sea including fins and masks prompting the owners to later joke that they were the dive shop with the mismatched fins.

Today, there are hardly any signs that this terrible tragedy

TOP: Freckled hawkfish are a common sight. RIGHT: Nudibranchs are rare in Pulau Weh





Octopus; Flat worm crawling along bottom; Red spotted coral crab

of meeting mantas, whale sharks and mola molas plus the ultra slim chance of seeing a megamouth shark. This island was the site of one adult sighting and one discovery of a dead juvenile mega-mouth shark right on the beach in front of Lumba Lumba Diving Centre! With any luck, I could very well be the next guy to brag about a sighting.

At the Ulee Lheue ferry terminal, it is easy to see why the tsunami had such a devastating effect; the terrain is flat making it very easy for the tsunami to flow right through. You can also see the black domes of the Grand Mosque in Banda Aceh where in pre-tsunami times, the view was totally blocked by tall

had ever happened, save for a thin blue line on the dive shop's window to indicate the height of the tsunami wave. The resilient Acehnese have picked up their lives and Pulau

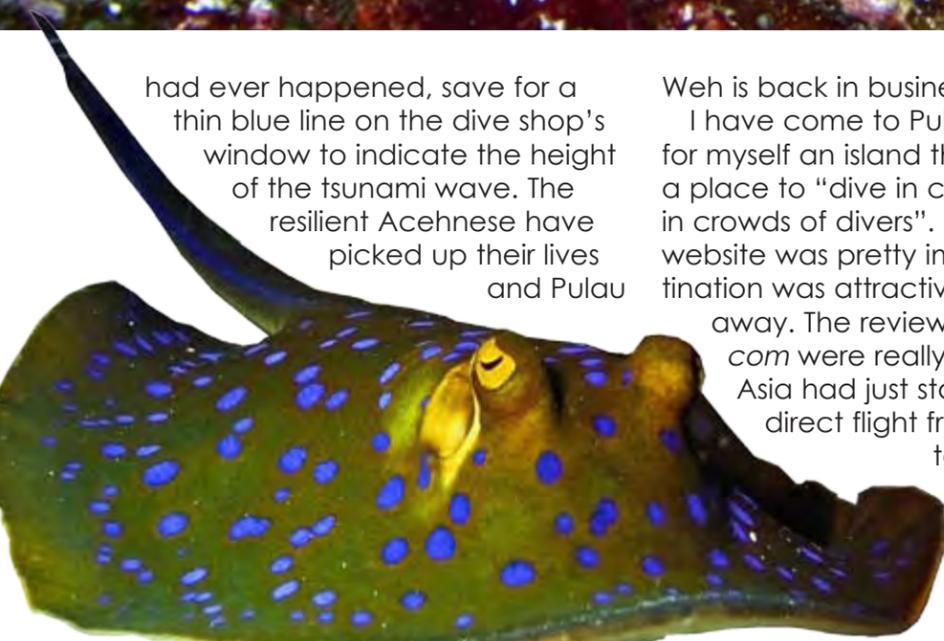
Weh is back in business. I have come to Pulau Weh to discover for myself an island that is touted as a place to "dive in crowds of fish, not in crowds of divers". Lumba Lumba's website was pretty impressive, the destination was attractive and not too far away. The reviews on *Scubaboard.com* were really good, and Air Asia had just started a convenient direct flight from Kuala Lumpur to Banda Aceh. So, I asked myself, why not? There was the chance

and hassle free flight, a pass through a very primitive immigration line, and a hunt for my bags in a pile of luggage just dumped on the floor, my traveling partner, underwater photographer Asther Lau, and I were on our way to the Ulee Lheue ferry terminal. On the way, we stopped by a solemn remnant of the tsunami—a mass grave. There were no grave stones there, just an empty grassy field where all the unidentified victims were buried. The place is peaceful, and a few Acehnese can be seen praying and weeping.

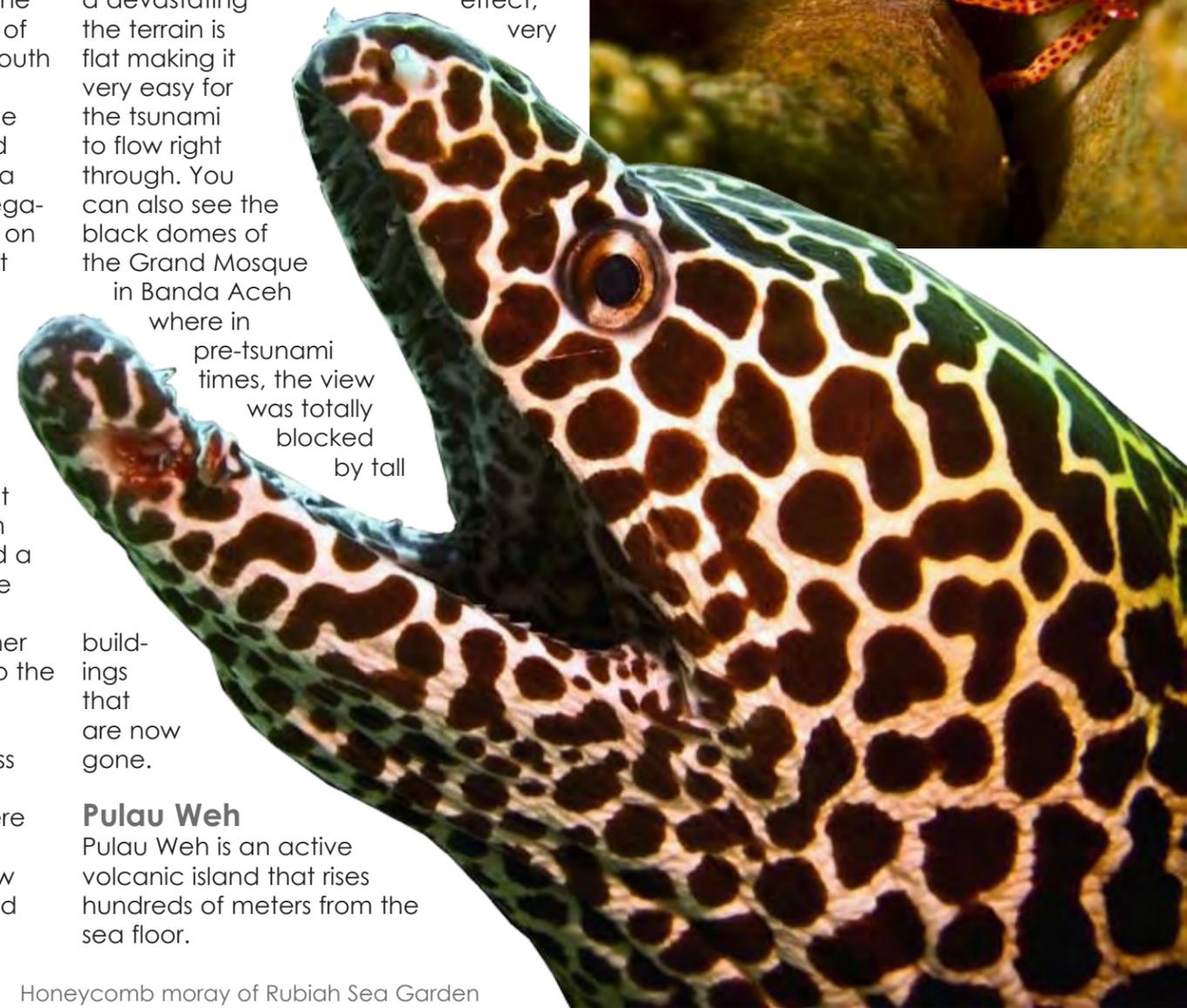
buildings that are now gone.

Pulau Weh

Pulau Weh is an active volcanic island that rises hundreds of meters from the sea floor.

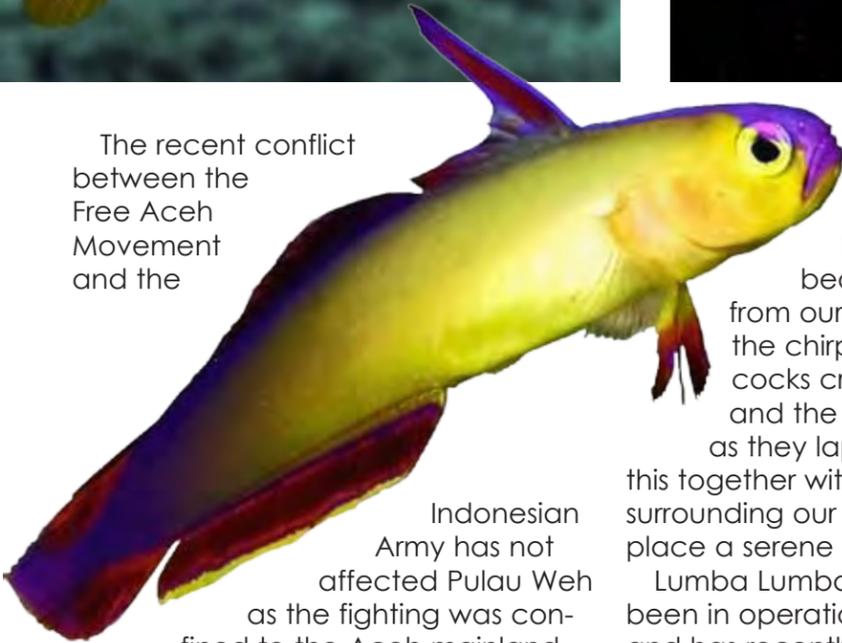


Blue spotted stingray



Honeycomb moray of Rubiah Sea Garden





Gapang

The recent conflict between the Free Aceh Movement and the

Indonesian Army has not affected Pulau Weh as the fighting was confined to the Aceh mainland.

Under martial law, a blue book system was implemented. Foreign visitors had to get a 14-day visa in Medan before proceeding to Banda Aceh, and from there, were escorted by police all the way to Pulau Weh.

Since the 2005 peace agreement, all fighting has stopped, and divers have started to return. The new Air Asia flight now makes it really easy to get here. Whereas in the past, the only flights to Pulau Weh were from Medan or Jakarta.

From the ferry terminal in Balohan, it's an hour ride on a bumpy and twisty mountainous road to Gapang. We occasionally got glimpses of the sea and some very interesting wildlife such as monkeys, wild boars, monitor lizards, goats, cows and buffaloes.

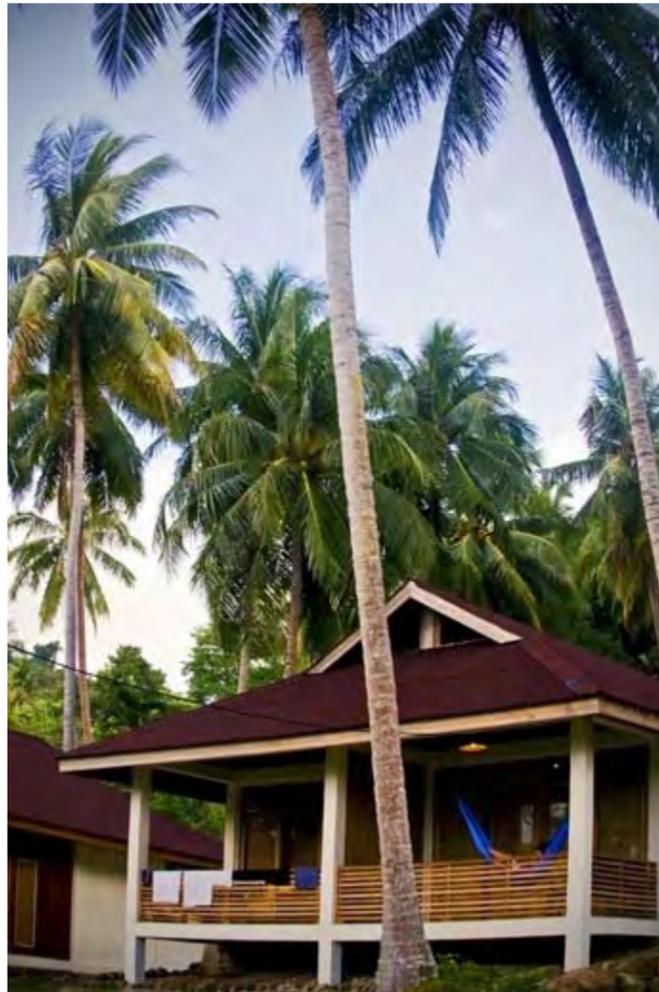
We stayed at a brand new bungalow overlooking the beach. In the mornings from our balcony, I could hear the chirping of birds, insects, cocks crowing in the distance and the sound of the waves as they lapped the beach. All this together with tall coconut trees surrounding our bungalow gave the place a serene atmosphere.

Lumba Lumba Diving Centre has been in operation for ten years now and has recently completed the last of seven new bungalows. They also have very ambitious plans to upgrade all the bungalows with air conditioning, hot water, wireless internet and even a new swimming pool.

It's an easy hop to the dive shop where the Acehnese dive masters love to hang out between dives. Out in front of the shop is a nice area where you can sit around to fill up your log book.

We went to Dangdangna Restaurant for breakfast, located just next door, where the resident top dog 'Cheeky' came over and sat under our table on the sand. I buried my feet in his nice fur and gave him a massage with my feet. He really loved it. Here, the food came in big portions and was very tasty, too.

CLOCKWISE FROM FAR LEFT: Elegant dartfish; Clownfish; Leaf scorpionfish; Longnose hawkfish; Fire dartfish; Acehnese children playing on the beach; Bungalows at Lumbalumba Diving Centre





The friendly donut lady

The owner of Dangdangna, Syukur, was the man who found the Megamouth shark lying on the beach. He actually wanted to sell the shark in the market and called Ton and Marjan to have a look. "We were surprised to find a shark with a big mouth and contacted scientists to help identify it," said Marjan. That shark later became the 21st confirmed sighting of the rare megamouth shark. In the end, Shukur was paid a finder's fee, and the shark is now



Loyal little customer

I was told that she managed to put her children through university just by selling her delicious donuts. She is somewhat of a celebrity here; it seems everyone survives on her donuts!

Gapang Beach is a very nice and quiet place. It's easy to relax here without being pestered by souvenir sellers. The only time it is noisy is during the weekends when locals and NGOs come for a break.

A pack of friendly dogs roam the beach everyday. The Muslim Acehnese are surprisingly very tolerant of the dogs and don't mind them one bit. Occasionally, the dogs will get into fights and disturb the peace, so we had to play policeman.

Mouthwatering donuts make a great snack after diving

in a museum near Jakarta.

Back at the resort, the donut lady comes over with her basket of freshly made donuts everyday.

As I ate my breakfast and admired the view of Sabang harbour in the distance, I could not but also admire a very ingenious invention made by our boatman. It was a simple but very effective boat landing system. Ropes were tied to the



Cheeky, the top dog

Lumbalumba's diveboats moored at the line

base of a large tree on the beach leading out 100m into the bay where they were anchored to a buoy. Whenever a dive boat needed to land, all the boatman had to do was tie the boat to metal rings at the bow and stern, ride along these ropes, and just back up onto the beach. This way, the boatman was able to land the boat in rough weather, at night and at different tides without damaging the corals. Brilliant!

The house reef

The house reef was beautiful and had a lot of diversity in flora and fauna. It was a place with a varied landscape. Wading out from the beach along the line, it was recommended to wear booties, as stepping on the rocks was quite uncomfortable.

Heading straight out, we came across the resident Hawksbill turtle resting in the corals. Over at a sandy area, were garden eels. I swam over to some staghorn corals. From a distance, it looked like I had come across some swaying grass, but it was actually schools of razor fish dancing above the staghorns.

At a spot with an artificial reef ball and beer bottles, lived the resident ornate



Razorfish dancing in the staghorns



CLOCKWISE FROM TOP LEFT: Scorpion fish; Ornate ghost pipefish; Cockatoo waspfish; Portrait of a Scorpion fish; Peacock mantis shrimp; Batfish



Whip goby

ghost pipe fish. Scorpion and lion fishes loved to hang out here, too. Past a field of mushroom corals was a small coral outcrop teeming with fishes. It was pleasant just lying there looking at all the schools of juvenile snapper, cardinal fish, anthias, goat fish, trumpet fish and grouper.

Nearby, was a lone 3m long whip coral, the home of some whip gobies. Everywhere scorpion fishes and moray eels were quite common, and I spotted my first octopus. Since I started diving, the only octopus I had ever seen was the one connected to my regulator!

The day was coming to an end when we spotted an unusually large longhorn cowfish that was about to go to sleep. Ending the dive, we looked up at the darkening sky and saw huge bats flying as high as eagles. Very nice for a first dive...

On the second dive, we spot-



ted cockatoo waspfish doing their usual thing swaying in a make-believe surge. I also just managed to catch a glimpse of a comet longfin's tail just before it disappeared in some coral. Going back to the tunicate infested line, we saw some big sized needle fishes, sergeant majors and a juvenile spiny lobster.

Coming back for a night dive,

one can find the razor fishes sleeping among the staghorns and the very hairy red reef lobster that only comes out at night. Other than that, the house reef is also good for frog fish, sea moth and the elusive mimic octopus.



Batee Tokong

This was a huge place; we only managed to explore one side of it. Batee Tokong was a round plateau with rocky slopes and walls.

There were tons of fish here. It was like diving in bouillabaisse! Mostly anthias, red tooth trigger fish and fishes that love current, because this place tumbled like a washing machine. The current was very fierce, unpredictable and came from all directions making where you went all depend on the current's strength and direction.

There was even a place called Arus Paleh meaning 'bastard current' in the local dialect. A dive here, or at its close neigh-



bor's, Rubiah North, will indeed make you come up swearing at the current. You will either love it or hate it. For me, it was the latter, because I usually dive only in mild currents.

And I couldn't help thinking that this would be a great place in which to lose your evil step mother. The surge was wild, and the fishes loved it. It was a trade off to see such variety and numbers, yet many a time, we would



Pulau Weh



have to fight the current to seek shelter and hold on for dear life. It was during this time that we discovered more fishes under the rocks: Squirrel fish, grouper, sweetlip and the occasional sting ray.



There were lots of freckled hawkfish sitting on green tree corals and fire gobies darting around on the bottom. Neon fusiliers and rainbow runners swarmed by like locust, while red tail butterfly fish

schooled in large numbers. It was also said to be the number one place to see morays, and it was absolutely true. You could find all sorts of species here, such as white eye, giant, spot face, honeycomb, snowflake, whitemouth, zebra and yellow margined. Every other nook and cranny had at least one moray. Under rocks and ledges one may even find two or three of them. And they were all manned by big-sized, well-fed cleaner shrimp.

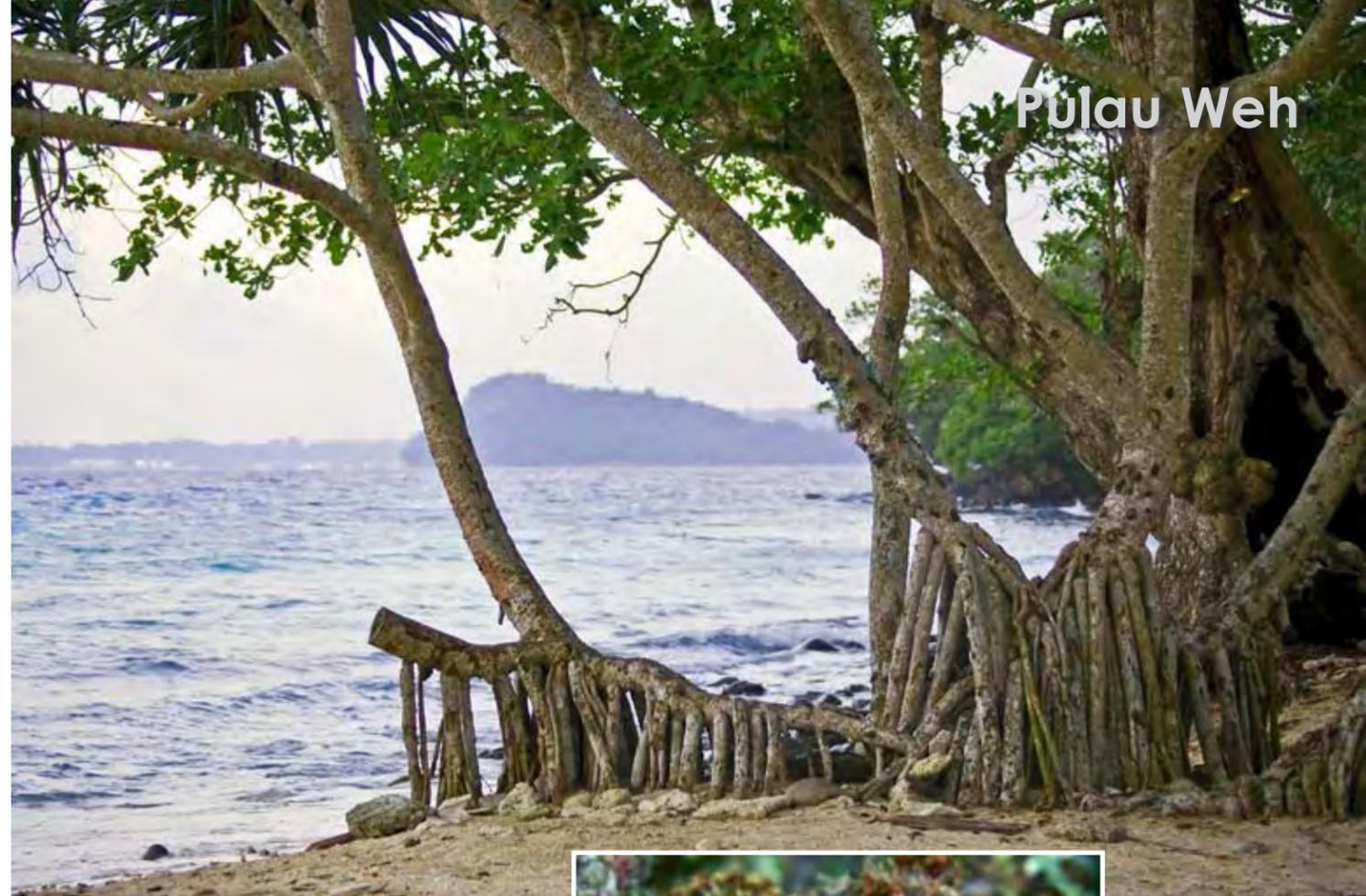
And if there were lots of morays, one would find lots of their favorite prey as well—octopus. This place should have been renamed 'Octopus Garden' after that Beatles' song.

The Canyon

Another great site was the Canyon. It had a unique topography that, not surprisingly, looked like a canyon! Divers usually started at the southern end of big black boulders. The



CLOCKWISE FROM FAR LEFT: Anthias schooling above giant clam; Red reef lobster; Cuttlefish; Lionfish; Hawksbill turtle; Yellow featherstar



CLOCKWISE FROM BOTTOM LEFT: Artificial reef ball at Gapang house reef; The funnel of the tugboat wreck; Underwater hotspring; Serene Gapang Beach; Ubiquitous scorpionfish; Sleeping parrotfish

terrain sloped down to a lot of small rocks and finally to a sandy bottom beyond 30m. Here, the anthias started to school. This time there wasn't much current, but the water clarity was very good.

Heading west, then turning north at the corner, we found a wall that

went down to 50m. At 30m, there was a small cave, and if one shined one's light into it, one could see soft corals and big snappers hiding there. At the bottom was an excellent dense sea fan garden, and divers could spot the special blue variety.

Back to the wall, the fishes started to thicken in numbers until one got that diving in bouillabaisse feeling again. Here, that slogan, "Dive in crowds of fish, not in crowds of divers" really came true.

The colors started to come alive as the fishes danced in the unpredictable current along a wall that was festooned with sponges, tunicates and feather stars.

Scorpion fishes sit on the ledges here, so be careful.

One façade was even blanketed with blue and white little soft corals that made it look like it had just snowed.

On the top, we found schools of yellow goat fish, all sorts of trigger fish, barracuda and star fishes.

The 25-minute boat ride back to the dive shop gave us the opportunity to talk about one big Napoleon wrasse that came only an arm's length from our masks.

Suddenly, it started to rain heavily, and my buddies who had stripped down to their bikinis were shivering from the freezing wind.



As we approached the beach at Lumba Lumba, we saw a scene that could only be described as mystical. We could see the trees at the water's edge, but beyond

it, everything was foggy, obscured by the rain and clouds, and the water had changed to an emerald green. The whole scene looked like a dream, like the misty banks of a lake in winter, and this was the tropics!

As the boat backed up along the line, it was a magical moment. It was truly beautiful, and at the same time, mystical. As suddenly as this scene appeared before our eyes, it disappeared when the rain





Pulau Weh

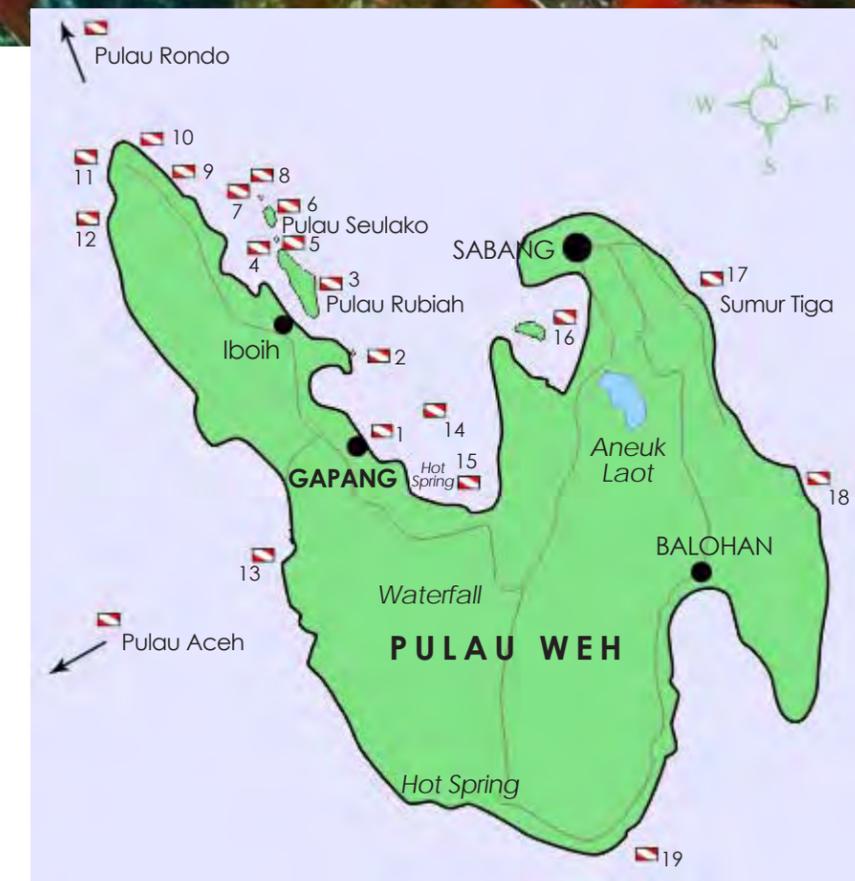
abruptly stopped and the fog lifted. It left a lasting impression in our minds. We saw something really beautiful, and we felt fortunate.

aff deck was the hunting ground of numerous pipe fishes and groupers hid in the open holds. On the top, trumpet fishes swam along the line that led to the buoy. Around the keel, one could find scorpion fish, and on the muddy bottom, lizard fish waited for prey.

Tugboat wreck & underwater hot spring

In Sabang bay, lying perfectly upright in 14m of water was the wreck of a tugboat. It was surprisingly in very good condition with little coral growth. The 17m long wreck made a very relaxing and easy wreck dive in very clear water with no current at all. Believed to have sunk in the 1970s, this wreck was teeming with fish.

Congregations of striped large-eye bream, anthias and damsel fishes could be seen inside and around the wheelhouse. The



PULAU WEH SITES: 1) BATEE DUA GAPANG; 2) BATEE MEURORON; 3) RUBIAH SEAGARDEN; 4) RUBIAH UTARA; 5) ARUS BALEE; 6) SEULAKO'S DRIFT; 7) BATEE TOKONG; 8) SHARK PLATEAU; 9) PANTEE IDEU; 10) BATEE GLA; 11) PANTEE ANEUK SEUKE—THE CANYON; 12) PANTEE PEUNATEUNG; 13) LHONG ANGEN & PANTEE GUA; 14) LIMBO GAPANG; 15) WW II WRECK SOPHIE RICKMERS; 16) WRECK TUGBOAT & UW HOTSPRING; 17) SUMUR TIGA; 18) ANOI HITAM; 19) BATEE MEUDURO



CLOCKWISE FROM ABOVE: Banded cleaner shrimp; School of juvenile snappers; Barrel sponge and Anthias; Squirrel fish; Dive map of Pulau Weh; Giant moray eels and cleaner shrimp



Pulau Weh

LEFT TO RIGHT: Diver and Sea fan; Nudibranch; School of barracudas



A dive to this wreck is usually followed with a dive to one of Pulau Weh's most unique sites. In Pria Laot Bay, there is an underwater hot spring. One cannot escape the unmistakable smell of sulphur as the gas bubbles break the surface of the water.

Underwater, the terrain was

a featureless shallow slope of black sand no deeper than 10m. Bubbles came out from the sandy bottom in steady fast streams to the surface.

Some divers said it looked like a jacuzzi, but I likened it to a boiling kettle. In large holes, the bubbles emerged violently, and

it was possible to feel the heat with one's hands. It was also very surprising to find Moorish idols and goat fish happily swimming around the bubbles. A truly unique diving experience.

Pantee Peunateung & other sites

Located on the western side of the island and just next door to the Canyon, Pantee Peunateung or Rice Paddies, was another favorite of divers. The terrain here was interesting, but the Canyon was much better. Nevertheless, this place was special as it was famous for its big pelagics.

Another group of divers reported dropping down into a school of barracudas and swimming through a massive school of a few hundred big eye trevallies. Then a friendly turtle got really close to the divers, while a giant Napoleon

wrasse swam by. If that wasn't good enough, they were then greeted by some ten mantas!

On the way back, they spotted an odd-looking fin on the surface. It turned out to be a Mola Mola! Talk about luck.

If you want a more relaxing dive with less current, then Rubiah Sea Garden is a good bet. The main attractions here are the very big-sized honeycomb morays and beautiful red bubble anemones. We even saw a honeycomb moray with a twisted jaw. There was also a very friendly Hawksbill turtle, which had apparently been hand fed, because it was always going after someone's fingers.

For experienced deep divers and wreck buffs, there is the impressive German WWII cargo ship *Sophie Rickmers*, which is also located in Pria Laot Bay. It

was scuttled by her own crew to avoid Dutch capture.

The story goes that while her captain was entertaining the Dutch with drinks onboard, his crew was busy making holes in the hull, and that's why it sits upright on the bottom in more than 55 metres of water. This 134m long wreck is the home of large schools of bat fish and a gigantic grouper. A megamouth shark was also spotted here, so keep your eyes sharp.

Conclusion

It's very refreshing to visit a great dive site that is in the opposite direction from the current diving hot spots of Indonesia such as Raja Ampat, Manado, Ambon

and Bali—all of which are located in the east while Pulau Weh is located in the west.

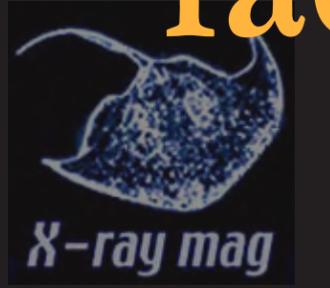
Coming to dive in Aceh helps its economy and reconstruction from the devastating effects of the tsunami.

Overall, the diversity and density of life in Pulau Weh is stunning; the reefs are very pristine and the colors are richer than Sipadan Island's. I'll definitely be back. ■



Crab on the beach

fact file



Indonesia



SOURCES: ANDY FERRARI, US CIA WORLD FACT BOOK, STARFISH.COM



LEFT: Location of Pulau Weh on regional map of Aceh, Indonesia
BELOW: Global map with location of Aceh in Indonesia



History In the early 17th century, the Dutch began to colonize Indonesia. From 1942 to 1945, the islands were occupied by Japan. After Japan's surrender in World War II, Indonesia declared its independence, but four more years passed mired by recurring hostilities and intermittent negotiations before the Dutch relinquished its colony. Indonesia is the largest archipelagic state in the world. It is home to the world's largest Muslim population. Current issues include: poverty, terrorism, strengthening democracy after 40 years of authoritarian rule, financial reforms, corruption, human rights violations by military and police personnel, and avian influenza. Indonesia reached a historic peace agreement in 2005 with armed separatists in Aceh. It led to democratic elections in December 2006. Indonesia must continue to confront a low intensity separatist guerilla movement in Papua. Government: republic. Capital: Jakarta

Geography Indonesia is located in Southeastern Asia. It is an archipelago between the Indian Ocean and the Pacific Ocean, which consists of 17,508 islands, of which 6,000 are inhabited. Indonesia straddles the equator. It has a strategic location along major sea lanes from the Indian Ocean to the Pacific Ocean. Terrain is mostly coastal lowlands with interior mountains on the larger islands. Lowest point: Indian Ocean, 0 m. Highest point: Puncak Jaya ,5,030 m. Coastline: 54,716 km. Natural hazards: floods occasionally, severe droughts, forest fires, tsunamis, earthquakes, volcanoes. Environmental issues: deforestation; water pollution from sewage and industrial wastes, urban air pollution in, smog from forest fires. Indonesia is party to the following international environmental agreements: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Life Conservation, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands

Economy Indonesia is a vast polyglot nation and has struggled to overcome the Asian financial crisis. It still struggles with persistent unemployment and poverty. It has inadequate infrastructure, corruption, a weak financial sector,

poor investment, and unbalanced resource distribution among regions. The country continues to gradually recover and rebuild after the devastating December 2004 tsunami as well as from an earthquake in central Java in May 2006 that caused damages and losses over \$3 billion. The current administration faces declining oil production, lack of new exploration investment, subsidized domestic fuel straining the budget in 2005, weak monetary policy, a run on the currency, a 126% average fuel price hike, lack-luster growth through mid-2006, heavy increases in rice prices, increase in people under the poverty line. Economic reforms aim to improve the investment climate, infrastructure, and strengthen the financial sector. There has been progress in rebuilding Aceh after the 2004 tsunami. Aceh now shows more economic activity than before the disaster. Unfortunately, Indonesia suffered another tsunami in South Java and major flooding in Jakarta in 2006-7 causing billions of additional dollars in damages.

Climate tropical; hot, humid; highlands are more moderate in climate

Population 245,452,739 (July 2006 est.) Internet users: 16 million (2005). Ethnic groups: Javanese 45%, Sundanese 14%, Madurese 7.5%, coastal Malays 7.5%, other ethnic groups 26%. Religions: Muslim 88%, Protestant 5%, Roman Catholic 3%, Hindu 2%, Buddhist 1%, other religions 1% (1998)

Currency Indonesian rupiah (IDR). Exchange rates: 1EUR=13,645 IDR, 1USD=9,235 IDR, 1GBP=17,120 IDR, 1AUD=8,022 IDR, 1SGD=6,536 IDR

Language Bahasa Indonesia is the official language and is a modified form of Malay. Other languages spoken: English, Dutch, local dialects (Javanese is most common)

Health Be prepared. Get your shots before you go to Indonesia. There is a high degree of risk for food or waterborne diseases including bacterial and protozoal diarrhea, hepatitis A and E, and typhoid fever. There is also a risk for vectorborne diseases in some locations. These diseases include dengue fever, malaria and chikungunya. Bird flu, or highly pathogenic H5N1 avian influenza, has been identified among birds in Indonesia. It poses a very low risk, but check with your doctor before you go.

Decompression Chambers
JAVA, Jakarta: Rumah Sakit Angkatan Laut (Navy Hospital) in Jl. Bendungan Hilir No.17, Central Jakarta

MALAYSIA, Lumut (near Pangkor Island): Department of Diving and Hyperbaric Medicine of the Armed Forces Hospital Lumut Naval Base. Phone: 05 - 683 7090 ext 4071

SINGAPORE: The Singapore Naval Medicine & Hyperbaric Center
Phone +65-750 5546

Web sites

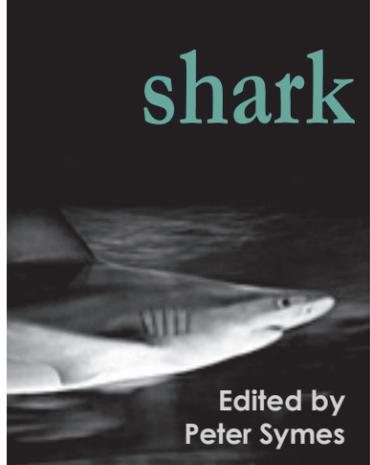
- Lumba Lumba Diving Centre
www.lumbalumba.com
- Indonesia Tourism
www.indonesia-tourism.com
- Indonesia Tourism
my-indonesia.info/indexpromo.php
- Tourism Indonesia
www.tourismindonesia.com ■



Cool and comfy bungalow at Lumbalumba Diving Centre



Local kids lead a carefree life



Edited by Peter Symes

New Species of Manta Ray Discovered

Until recently, it was thought that there was only one manta ray species, but now a second, and possibly a third, species of manta ray has been discovered in the world's oceans. After five years of study, a marine biologist has confirmed that a larger and more elusive manta is in fact a distinct species.



The newly-discovered larger, migratory manta ray

ANDREA MARSHALL

This is the biggest news to date to come out of ray research, and its importance is the marine equivalent of discovering an unknown species of elephant. The discovery however, has implications that go far beyond the breaking news of scientific journals, as it will deeply affect real world conservation ideas and policies.

For the past five years, the Save Our Seas Foundation (SOSF) has sponsored Andrea Marshall, a PhD marine biologist in a quest to make advances in the scientific knowledge of these winged beauties of the sea, whose large triangular pectoral fins can span almost 8m in width and whose weight can reach over 2000kg. Manta rays, which are totally harmless and do not possess a stinging barb, are the largest of over 500 different species of rays and skates, and although divers have noted variations in physical appearance, they were previously believed to be the same kind. ■

The discovery of two distinct species of mantas has huge implications for the conservation management and protection of these mysterious gentle giants. The larger, ocean wanderer knows no borders, making collaboration between countries on its protection essential, whereas protective measure within countries must be enforced to avoid resident manta ray populations crashing. Habitat degradation, harassment by boat traffic and even divers who interact with them at critical habitats such as cleaning stations and breeding areas are other threats that these graceful animals face. They also fall victim to ghost nets and are killed alongside many other marine creatures as by-catch. ■

A magnet a day...

In what is claimed to be a world-first, scientists from the Department of Primary Industries and Fisheries at James Cook University have shown magnets can repel sharks. It is hoped the magnets will keep sharks out of fishing nets. The researchers do not believe the magnetic repulsion will prevent shark attacks on people. ■

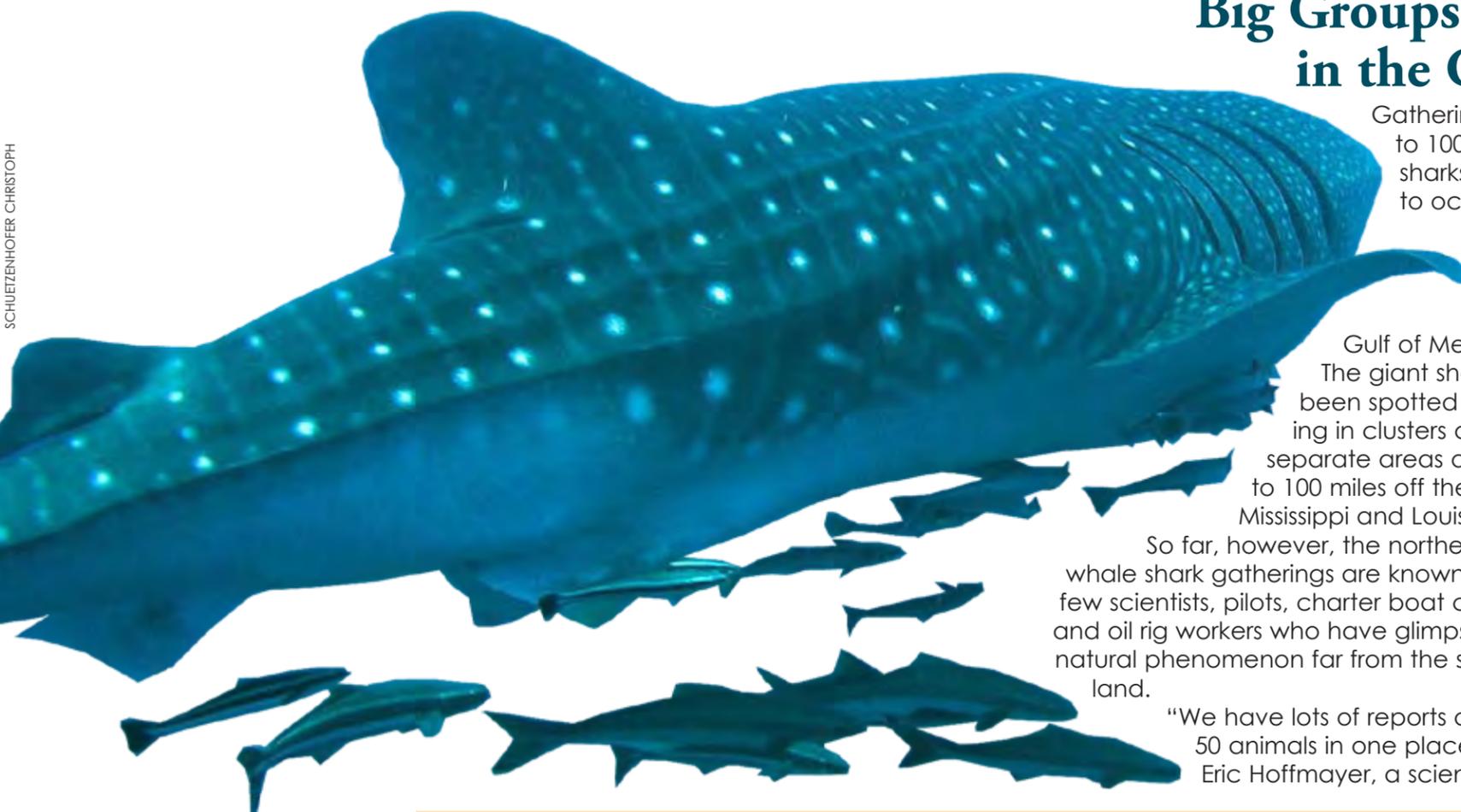
Google finally bans advertising for shark products

Google AdWords has implemented a new policy regarding endangered or threatened species, including sharks. Advertising is not permitted for products obtained from endangered or threatened species. This includes, but is not limited to, the sale of products derived from elephants, sharks, tigers, whales, rhinoceroses, or dolphins. ■

Megalodon bite

The Carcharodon megalodon super-shark swam in the oceans more than a million-and-a-half years ago. It grew up to 16m (52ft) in length and weighed in at 100 tonnes—30 times heavier than the largest Great White shark—and must have been one of the most formidable carnivores to have existed. It is estimated to bite down with a force of between 10.8 to 18.2 tonnes. ■

Big Groups of Whale Sharks Congregate in the Gulf of Mexico



Gatherings of up to 100 whale sharks seem to occur with clockwork regularity in the northern

Gulf of Mexico. The giant sharks have been spotted feeding in clusters at three separate areas about 40 to 100 miles off the coasts of Mississippi and Louisiana.

So far, however, the northern Gulf whale shark gatherings are known only to a few scientists, pilots, charter boat captains and oil rig workers who have glimpsed the natural phenomenon far from the sight of land.

"We have lots of reports of 30 or 50 animals in one place," said Eric Hoffmayer, a scientist with

the University of Southern Mississippi's Gulf Coast Research Laboratory in Ocean Springs. "They are obviously gathering for a reason. But right now, we are not sure what that is, or how they know to show up at these spots."

He theorizes the big sharks get together in the northern Gulf to dine on massive concentrations of fish eggs; bonita, skipjack and tuna spawn in the area. Occasionally, the sharks feed vertically, which means they stop in one spot and angle their bodies at 45-degrees, sucking in water near the surface and hoovering in their tiny prey. The gatherings could somehow be connected to whale shark aggregations near Holbox, which occur at roughly the same time of year.

The Holbox whale sharks have spawned a booming ecotourism business for the small island, where fisherman have a business of bringing tourists offshore to snorkel with the gentle giants. Whale shark aggregations also have created ecotourism businesses in Australia, the Philippines, Belize and a few other locales. ■

SCHUTZENHOFER CHRISTOPH

New found hope for porbeagle sharks



Blue sharks are off the hook because they taste yucky

A recent study on western North Atlantic blue sharks has found out that they escape being hunted because their taste is not liked by consumers in North America. While most other species of sharks are experiencing dramatic population declines of up to 90 percent, new reports estimate that populations of blue sharks have dropped by only 30 percent since the mid 1950s, when large scale fishing practices began in that part of the Atlantic.

A study conducted by Alexandre Aires-da-Silva, John Hoey and Vincent Gallucci from the School of Aquatic and Fishery Sciences at the University of Washington,

Scientists have discovered a new breeding ground for porbeagle sharks off Canada's East Coast, giving hope to a species whose numbers have been steadily declining all over the world. The find of the new mating area on Georges Bank makes it only the second known breeding ground in the Northwest Atlantic.

A research team located the mating area earlier this month after hearing reports from fishermen that they were hauling up the large, blue-grey sharks in their nets.

most vulnerable to swordfish fishing gear, which have hundreds to thousands of baited hooks hanging from a single line. The lines are deployed at shallower depths at night after dusk, when the sharks feed.

Blue sharks sometime become by-catch, but since blue shark meat has historically been regarded as unpalatable due to its soft texture and strong odor of ammonia, targeted fisheries did not develop," explained Aires-da-Silva.

Two other factors also seem to have helped the shark. The first is that they are

Researchers set two lines near the northern edge of Georges Bank, a rich scallop and groundfish fishing ground almost 500 kilometres from the Nova Scotia coast. Within an hour they pulled in 21 sharks—19 of which were large, mature female porbeagles that weighed 200 kilograms each and were about two meters long.

"This is really good news," said Steve Campana, a marine biologist who specializes in the species and heads the Canadian Shark Research Laboratory at the Bedford Institute of Oceanography in Halifax. The Committee on the Status of Endangered Wildlife in Canada recommended the porbeagle be designated as endangered in

Seattle, concluded that blue sharks appear to be

rather hearty fishes and often survive after being caught on a long line. The second is that blue sharks are among the most productive shark species in the world, with females producing an average of 37 pups per litter, with some litters numbering 80 pups or more.

"These pups can nearly double their size over their first year of life to increase their chances of survival," said Aires-da-Silva, adding that it "is not a coincidence that the blue shark has often been described in the scientific literature as the most widespread and abundant of the pelagic sharks in the world's oceans." ■

2004, but the federal government didn't act on the recommendation.

"To have a second mating ground where they actually seem to be more abundant is great news. It is key toward conservation efforts."

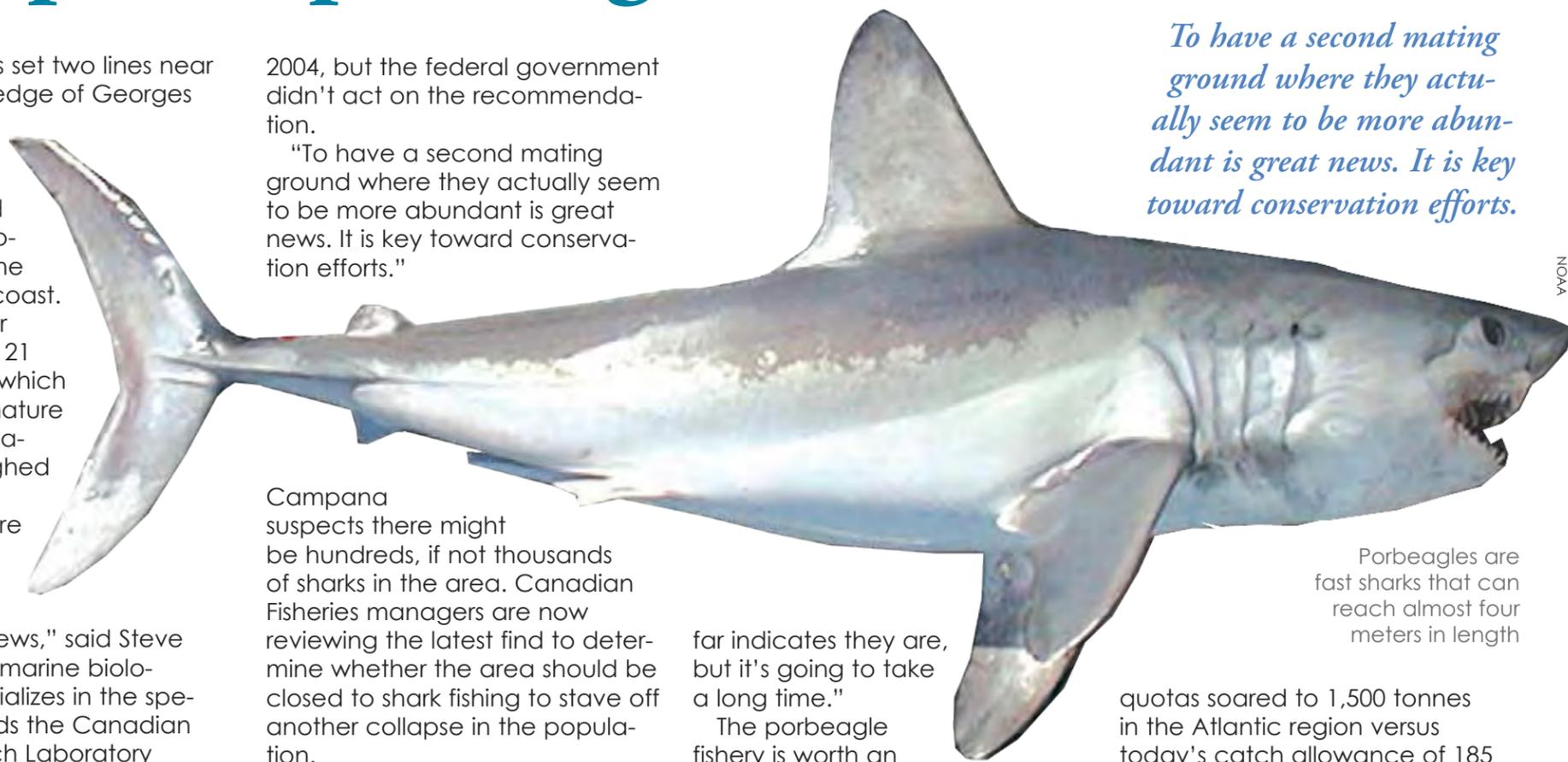
Campana suspects there might be hundreds, if not thousands of sharks in the area. Canadian Fisheries managers are now reviewing the latest find to determine whether the area should be closed to shark fishing to stave off another collapse in the population.

"The discovery of the second mating area which is totally unregulated is of concern. Nobody wants to fool around with this one. We want them to recover, and everything we've seen so

far indicates they are, but it's going to take a long time."

The porbeagle fishery is worth an estimated US\$2 million annually on the East Coast, with 90 percent of it going to markets in Boston. The porbeagle population reached dangerously low levels in the mid-1990s, when

To have a second mating ground where they actually seem to be more abundant is great news. It is key toward conservation efforts.



Porbeagles are fast sharks that can reach almost four meters in length

quotas soared to 1,500 tonnes in the Atlantic region versus today's catch allowance of 185 tonnes. It's estimated that there are about 190,000 porbeagles in Canadian waters—putting the stock at about one quarter of its level in 1961 when the fishery first started. ■

Volunteers asked to count basking sharks off Cornwall coast

The Seaquest Basking Shark project is being run by the Cornwall Wildlife Trust (CWT) and SeaWatch, who will set up shark spotting points at two locations off the Cornwall coast. Basking sharks are the second largest fish in the world, and the collected information can help establish details about their behavior and raise public awareness of the giant fishes and the threats they face.

Tom Hardy, marine conservation officer for CWT, said a number of marine life surveys have been carried out before, but this is the first specifically for basking sharks. "The project is important because basking sharks are a protected species and we know very little about them. www.cornwallwildlifetrust.org.uk ■