

# Photographing Sharks

Text and photos by  
Andy Murch of  
[elasmodiver.com](http://elasmodiver.com)

It's 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





## shark tales



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



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

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 wobbegong, 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. Wobblies 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

## Photography

Grumpy blue shark?

## shark tales

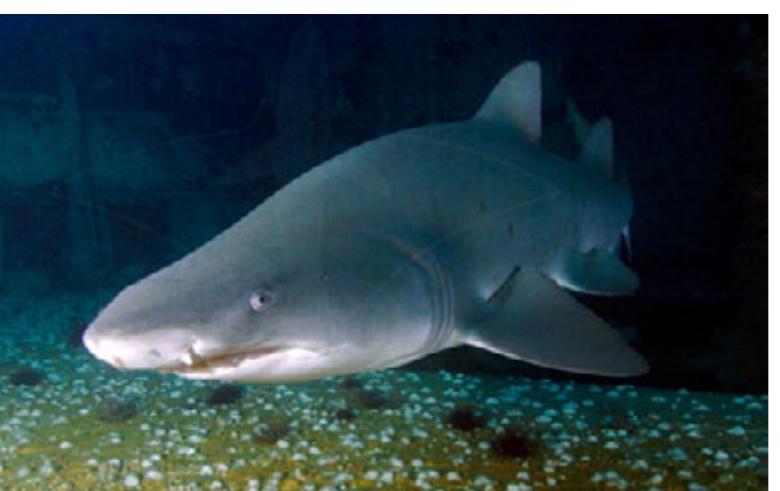
Creature of beauty



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.elasmidiver.com](http://www.elasmidiver.com) ■

Photography



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### Shark Project App for iPhone and iPad

The Sharp 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](http://itunes.apple.com)

**SHARKPROJECT**

## Why do sharks lurk around swimming spots?



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 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

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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.

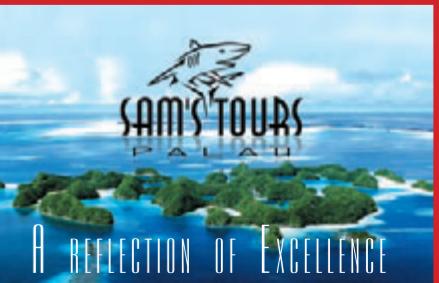
The roughly 4,000-kilometers (2,500-mile) journey from California to Hawaii is the farthest ever recorded for a basking shark in Pacific waters.

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. ■

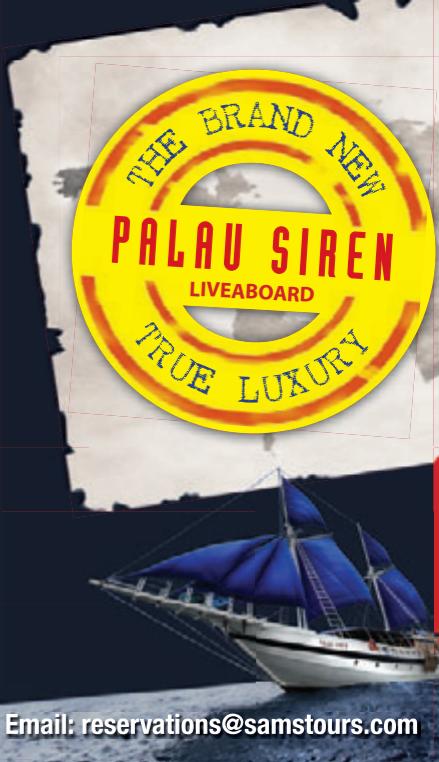


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## Shark Stewards launches Shark campaign in Texas

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 ( $\beta$ -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



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



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 mind 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

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

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

# feature



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

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

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



# feature



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

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

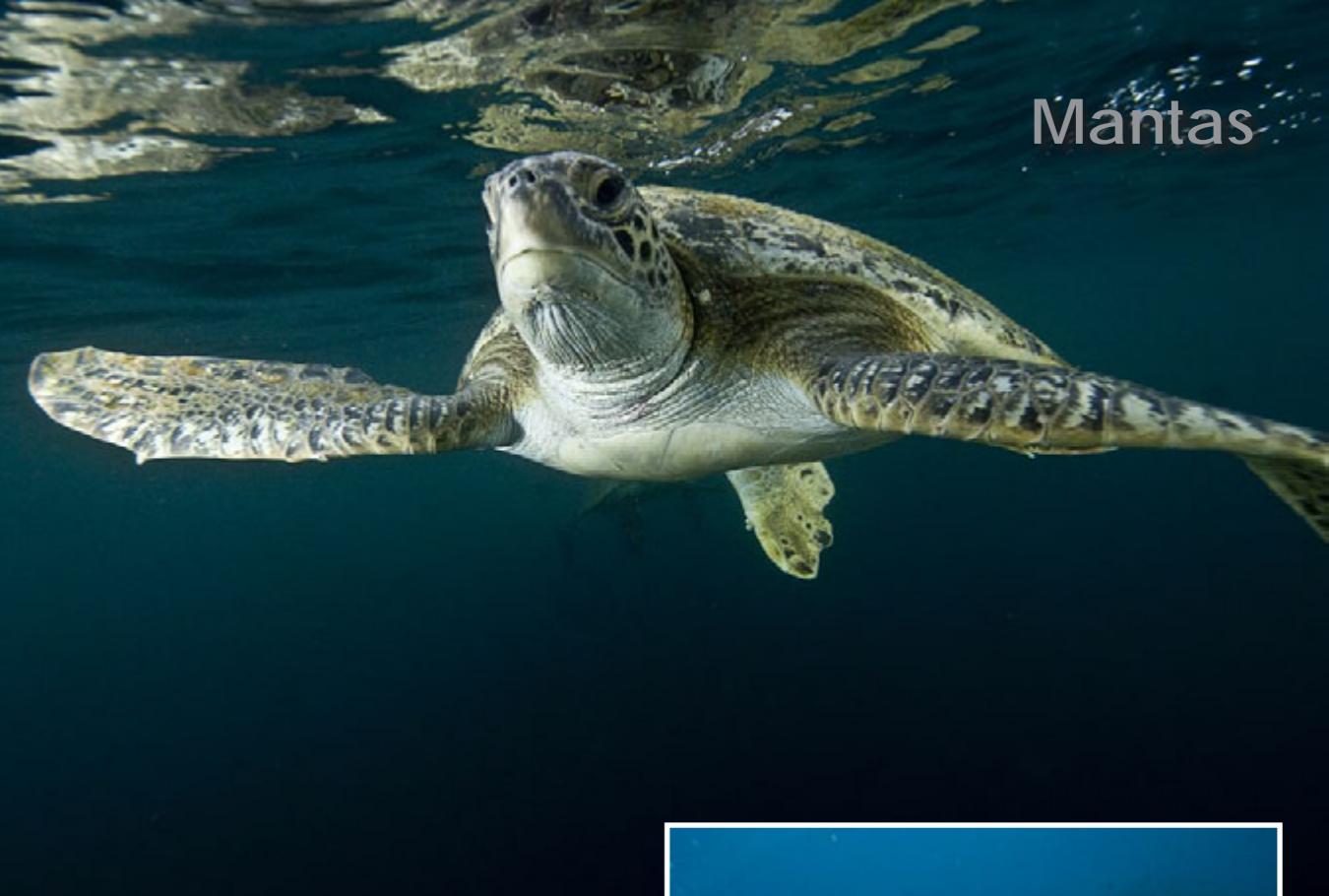
Back at the computer and I was keen to make my findings available to other manta scientists around the world, and a few eyebrows were raised at what I had found. The lack of repeat sightings and number of new mantas found each day (14 new individuals was my best day in 2009) was pointing to a population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

# feature



## 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



## 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

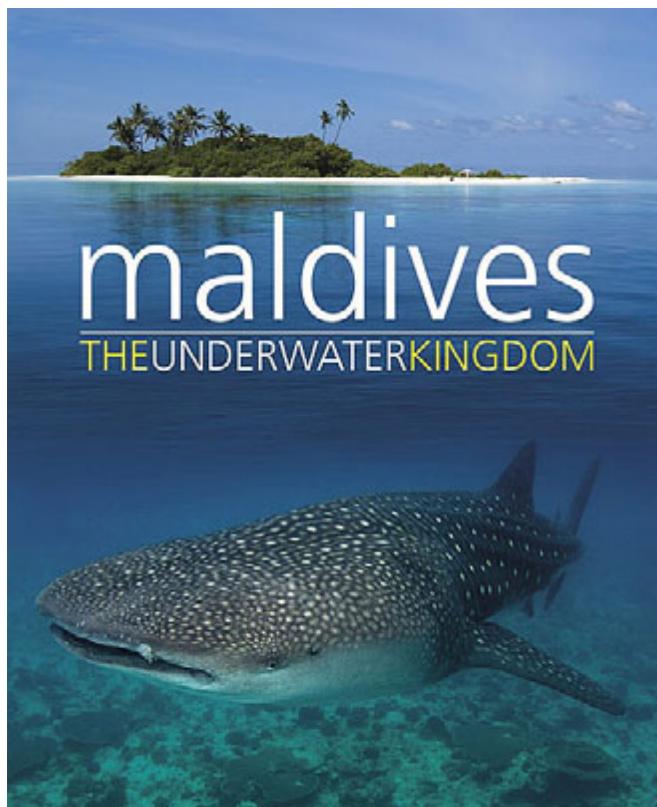
identified a directed manta fishery. The mantas are of the same population, recognised by Peruvian fishermen as coming and going from Ecuador.

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.

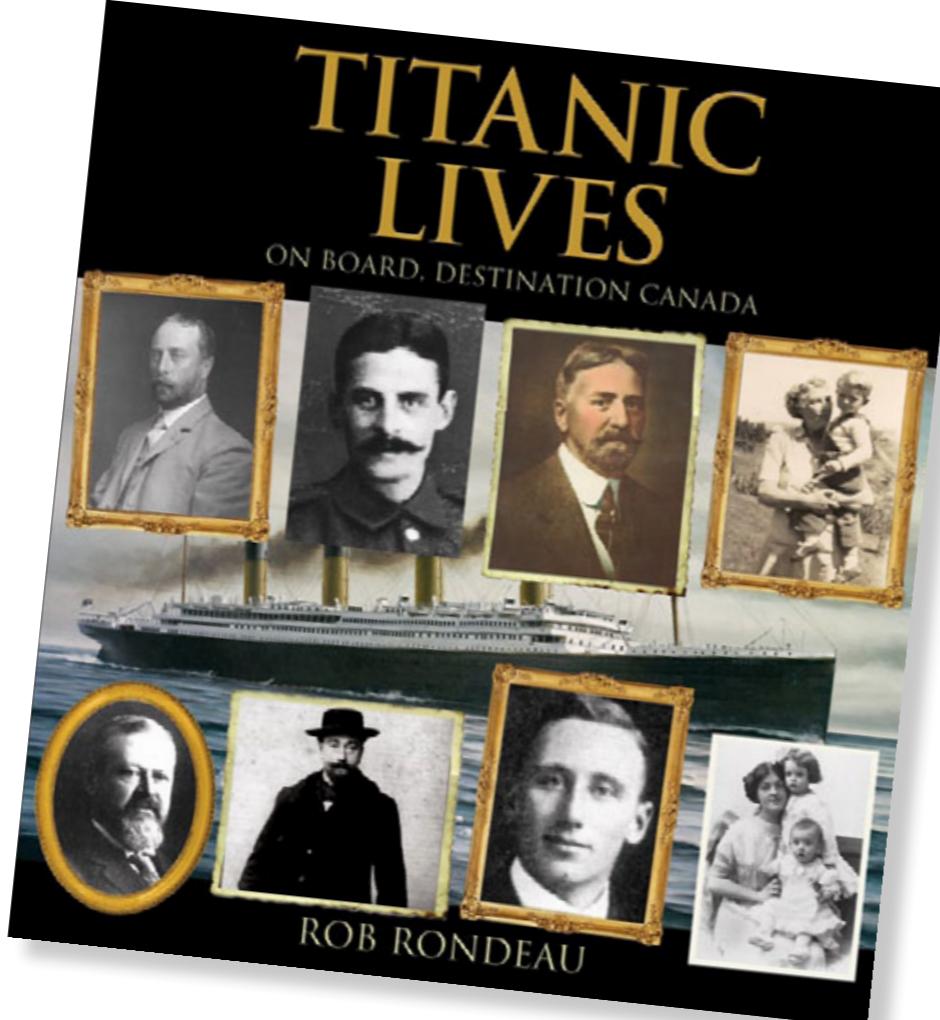
Mark Harding has been working on the Isle of Wight, United Kingdom and internationally as a commercial, underwater and wildlife photographer since 1996. Visit: [Eyemocean.com](http://Eyemocean.com)

# media



## 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](http://Scubazoo.com)

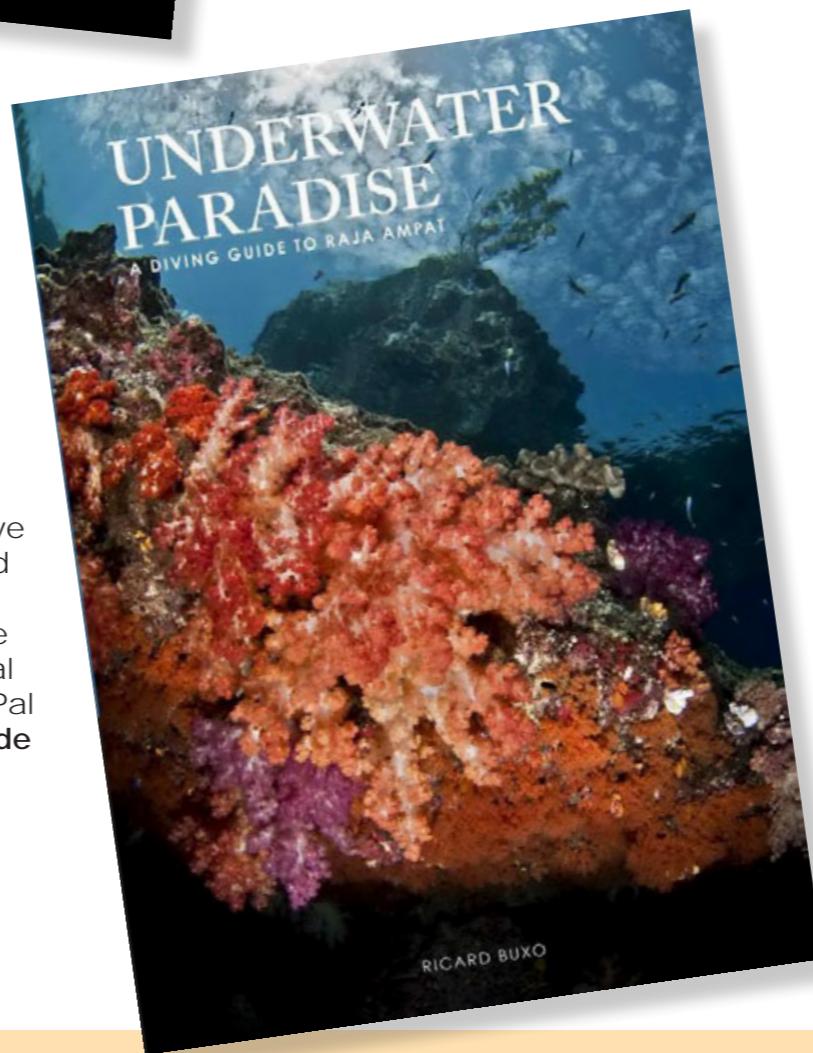


## Underwater Paradise — A diving guide to Raja Ampat

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.

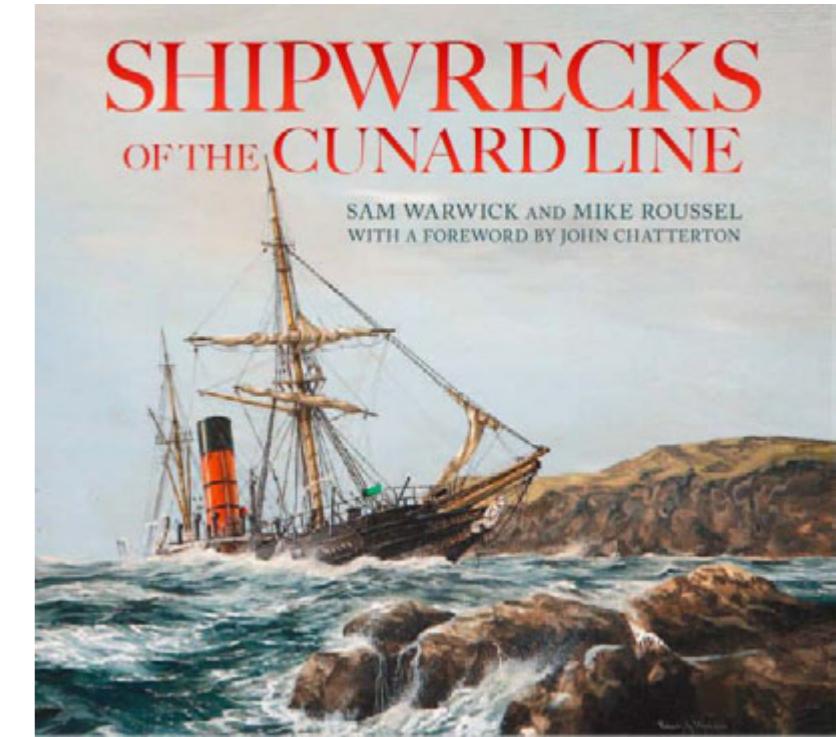
*Underwater Paradise* will be available through diving centers and dive shops in Jakarta, Bali, Manado and Sorong, plus Periplus book shops.

Internationally, it will be available through Amazon and a personal dedicated website with a PayPal facility. [New Raja-Ampat-guide](http://NewRaja-Ampat-guide)



## 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](http://www.Formac.ca)



## 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](http://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





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.

## 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



Food vendors at Avenue de Portugal prepare for the evening

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.



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

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

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.



Cape Fatucama



## 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

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,

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

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 dive 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

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 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

Tasi Tolu enjoys

### 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—



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



LEFT TO  
RIGHT:  
Beautiful  
bommie  
at Marble  
Rock east  
of Dili;  
Stunning  
soft corals  
and sponges  
at Mauba-  
ra 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 dive 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



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-

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'uuro

The large and visibly stunning island of Ata'uuro 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'uuro 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 At'auro 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



Schooling Anthias at Dirt Track east of Dili



Commensal Shrimp at the Pertamina Jetty

## 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

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.

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,



Sea Star at Dirt Track east of Dili

## Timor Leste

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,



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

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



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

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



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

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

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,



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 Mialszygrosz, 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.

### 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.

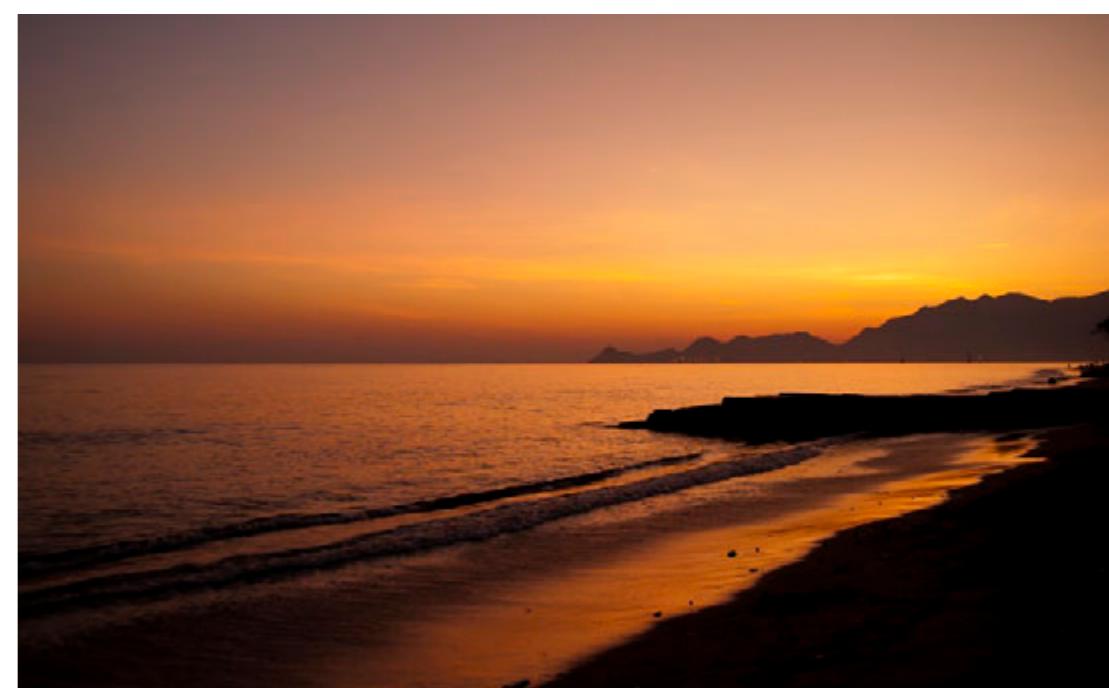
Dili and the immediate countryside have much to offer, and you can either be adventurous by hiring a motorbike and drive yourself or mitigate the traffic accident risks by going for a car and a driver. I went for the low-cost adventurous option and really enjoyed the freedom of finding my own way around. 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





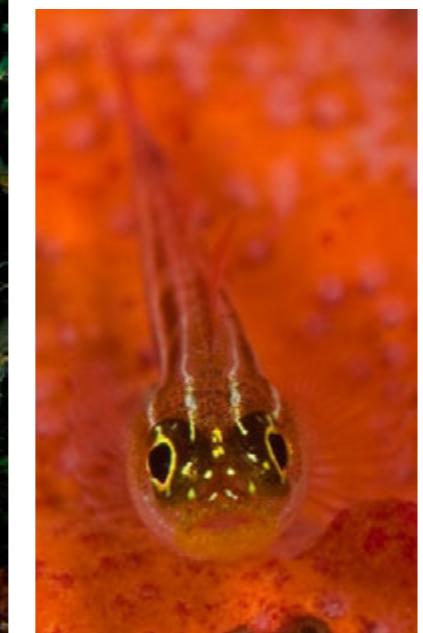
head inland and check out the mountainous interior? Eat before you do, as facilities are few and far between.

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



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



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.



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



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

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](http://Indopacificimages.com)

# fact file

## Timor Leste



SOURCES: US CIA WORLD FACT BOOK,  
STARFISH.CH

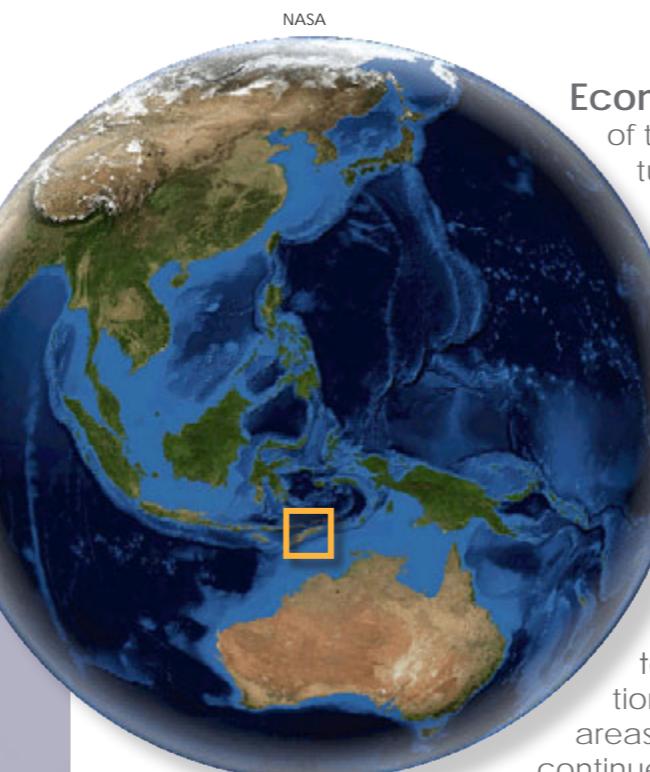


**History** In the early 16th century, the Portuguese began to trade with the island of Timor and colonized it by the mid-century. After clashes with the Dutch in the area, Portugal ceded the western portion of the island to them in a treaty in 1859. From 1942 to 1945, imperial Japan occupied Portuguese 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

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



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

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-

**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 peace-keepers (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

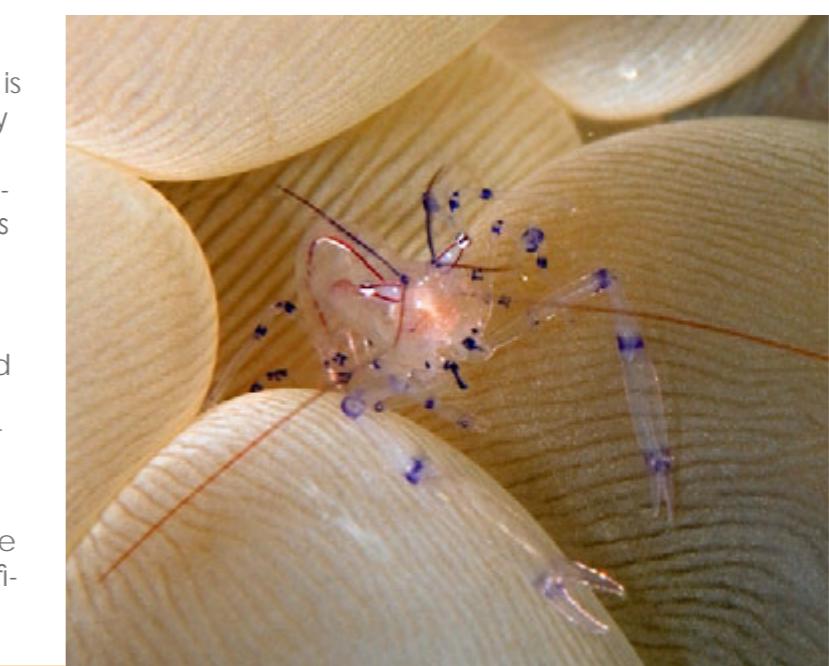
U.S. Dollar

**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](http://www.discover-dili.com) ■

Anemone shrimp at Dili Rock