

# North Sulawesi

## unplugged



WOLFGANG PÖLZER

Text by Wolfgang Pölzer  
Photos by Wolfgang Pölzer  
and Andy Ferrari

I can't help likening this island to a chromosome. It's contorted shape not only looks like one, but also has its different features spread out along different points even when you zoom in. Our focal point is the northern region. On the western side of the tip, we find Bunaken national park with its majestic drop-offs, on the top of the area around Gangga Island, and on the eastern side, Lembeh, famous for its critter diving.

Previously known as Celebes, Sulawesi is Indonesia's fourth largest island, and it is at its northeastern tip where we find the region famous for having a number of the best dive spots in the world. It can only be the most ignorant or newly minted divers who haven't heard the names Manado, Bunaken or Lembeh uttered somewhere. Lesser known is it that this region is called

the Minahasa, and the inhabitants, the Minahasan. Originally inhabited by Malay-speaking peoples, the region was first colonized in the 16th century by the Portuguese. It was the Portuguese who first to referred to



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Sulawesi as 'Celebes'. The meaning of this name is unclear, but originally, it did not refer to the entire island as the Portuguese thought Sulawesi was not one island but an archipelago.

The modern name, 'Sulawesi', possibly comes from the words sula ('island') and besi ('iron') with

reference to the historical export of iron from the rich iron deposits at Lake Matano in the Southern end of the island.

The Portuguese were soon followed by the Dutch who left the most

significant imprint on the area. Manado, the regional capital and cultural center of the Minahasa people is a former Dutch stronghold and the center of the Dutch settlement in colonial times for which reason North Sulawesi still retains many traces of Western influence. The Minahasa identify themselves strongly with the Dutch

language and with 97 percent of the population being denominated as Christian—most are protestant, Lutheran—North Sulawesi stands out as a Christian enclave in an otherwise predominantly Muslim Indonesia. It is said to have the highest density of church buildings in Indonesia, with

CLOCKWISE FROM LEFT: Red coral and diver at Bunaken; Sunset over North Sulawesi; Clownfish guarding their sea anemone home

ANDY FERRARI







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approximately one church for every 100m of road.

For a long time, Manado prospered through trade with the nearby Philippines and the spice trade with the rest of the world, but was badly damaged by bombing during the Second World War. In any case, most divers would head directly from the airport to the nearby resorts along the coast and on the surrounding islands, so let's get on with it, and dive right in...

**Bunaken National Park**

The boat stops right in front of the reef. The surface is as smooth as glass, and the top of the reef is densely covered by hard corals.

On the outer side of the reef, the water seems clear as crystal, and suddenly, we realise that our fins are dangling over an endless dropoff. I find myself longing for having my own twin tank, wing jacket and deco tank with me here—that would have been ideal. Fans of deeper diving will be thrilled at this spot.

Since there is no continental shelf here, the depth rapidly reaches more than 200 metres where there is a small plateau before it continues down into the deep blue of the open ocean. This unique topography is the cause behind the often strong currents and good options for encountering big

pelagics.

As we slide in, we marvel at the protruding fan corals, huge sponges and big bushes of black corals that are covering the wall. At 30 metres, we stop our descent. The current gently pushes us along the wall.

I suddenly note a large green turtle sleeping right next to me under an overhang on the reef. She does not seem to be the slightest perturbed by my presence. Right here in the heart of the national park, she appears to be neither afraid of intrusive divers trying to grab, or touch her, or of fishermen trying to catch her. Patiently, she bears with the repetitive flashes as I take series of turtle portraits. She

doesn't even seem to

acknowledge my presence with a blink of an eye—what an amazingly relaxed turtle.

Suddenly, Monica, the diveguide, is trying to grab my attention by waving her hands vigorously. It turns out that she has spotted quite a rare nudibranch on the wall. It is a really nice specimen, but unfortunately, I have chosen to bring my wide angle setup today.

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CLOCKWISE FROM ABOVE: Harlequin pipefish at Lembeh; White sandy beach and blue waters at Walea; Anthia school on the reef; Seahorse





Instead, I focus in the hanging gardens of soft corals, blazing red whip corals, huge gorgonians and pretty barrel sponges—one motif is followed by the next. And, fortunately for me, it is apparent that is not the first time Monica has worked as an underwater model. She not only guides me in a very professional manner but is also a perfect model.

Wherever I turn my gaze, there is some sort of action. While two sharks on patrol glide past underneath us, we watch as an understandably apprehensive school of tunas hurry in the opposite direction.

As our air reserves drops towards the 50 bar mark, the current push gently into a shallow bay. It is a region where in former year's invasions of the predatory starfish Crown of Thorns laid waste to huge swathes of coral leaving the reef dotted with white patches of dead coral half a meter across.

To remedy the damage, artificial reef structures have been set down to encourage new growth of coral in the region. These three dimensional structures are made from a special open-pored ceramic that doesn't react chemically with sea water and serves as an optimum substrate for the coral larvae. An ingenious but rather costly fix.

**Conservation**

Environmental protection, especially as regards to the reefs, goes back a long time on Sulawesi. The highly regarded Bunaken National Park was created 17 years ago as one of



Jump out of bed and dive right in



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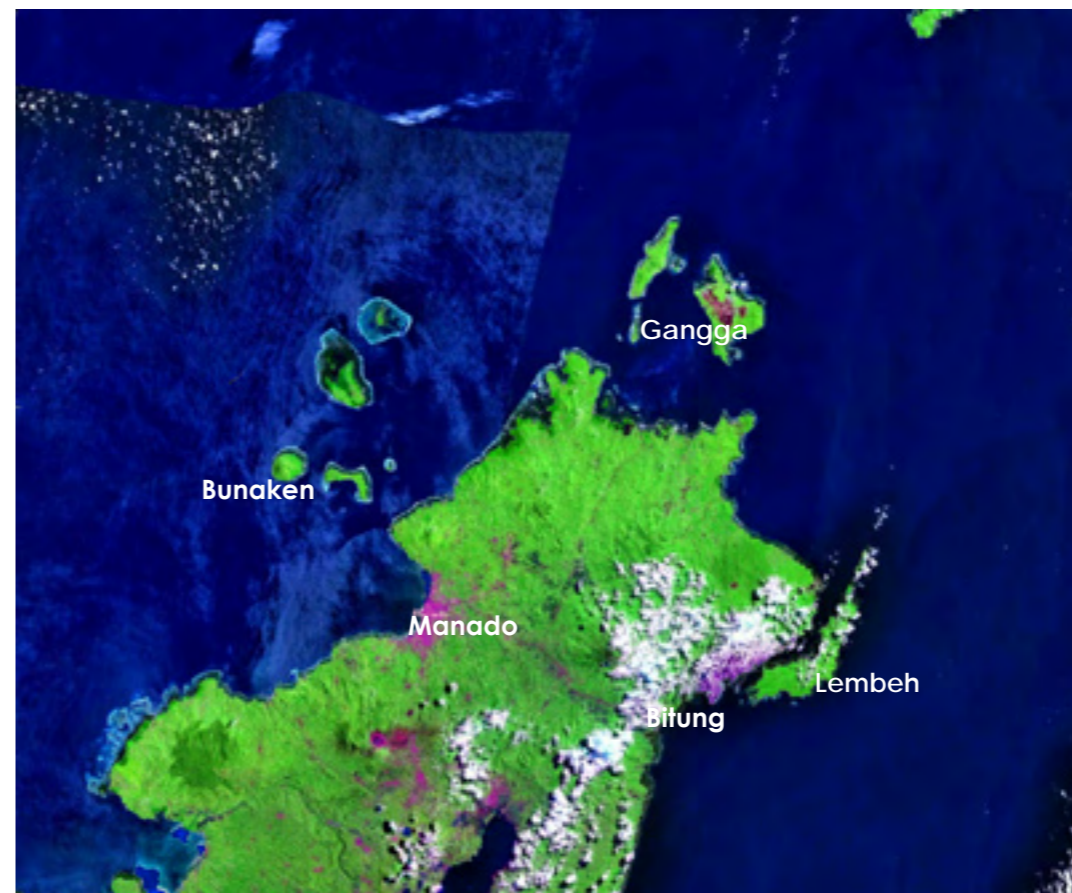




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- \* Minahasa Lagoon Resort
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- \* Two Fish Divers



doesn't feel quite right to highlight just a few, but on any given trip, you can only pick out so many sites from the huge buffet of great locations on offer here. Nonetheless, on the basis of my own restricted experience, I can

only speak warmly about the following sites...

### Bunaken – Lekuan 2

At the southwestern corner of Bunaken, we find the most frequented and best dive sites of the island. The dives here lead you along a fantastic covered drop off from shallow water down to a maximum depth of 50 metres. In a depth of 20 to 30 metres, you will find some nice overhanging reef and crevices.

On morning

dives, many green turtles can be seen here. In the blue water along the drop-off, schools of mackarel, tuna, fusiliers can be seen passing by as well as napoleon wrasses, and from time to time, stingrays and blacktip reefsharks. This is a good place for lazy drift dives as the current is mostly slight. During ascent, you can enjoy huge fields of hard corals in the shallows.

### Bunaken – Muka Kampung

This spot is in many ways similar to Lekuan, but due to its position at the southern cape of Bunaken, it is exposed to strong currents, which you have to be able to handle safely. The drop-off, which is absolutely vertical, boast a selection of all kinds of huge fan corals and soft corals. Visibility is usually in excess of 30 metres. Lots of turtles and schools jackfish tend to hang around here.

### Manado Tua – Pangulingan

Situated between Bunaken and the volcano islands of Manado,

the first protected marine areas in Indonesia.

This unique area of 790 km<sup>2</sup> includes Bunaken, four neighbouring islands and two larger parts of the Sulawesi coastline. At the center lies the horseshoe-shaped island of Bunaken. It is also here we find most of the divespots.

This part of Sulawesi boasts an amazing bio-diversity. More than 70 genera (families) of coral and

over 2000 species of fish with many more awaiting discovery. It was, for example, here that the pygmy seahorses were first discovered.

### Diving

With so many great spots to choose from, it



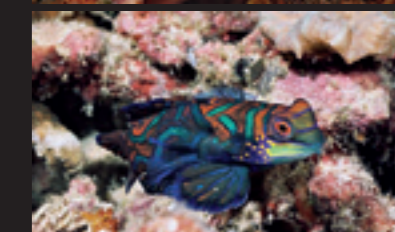
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Pangulinga is a tricky but very rewarding site for those who can handle the extreme and descending currents on this location... Tua. The dive starts in the slight current at the dropoff. Past the wall the current gets stronger, heading down and away from the wall towards the big blue. Those able to maintain position at about 20 meters depth will be rewarded by masses of fish. Barracudas, mackarels, big snappers and hundreds of batfishes seem to congregate here. Occasionally, mantas will be passing by, and predators as black tip sharks and hammerheads are hunting here. The dive boat is going with the current, taking everybody on board in the open water.

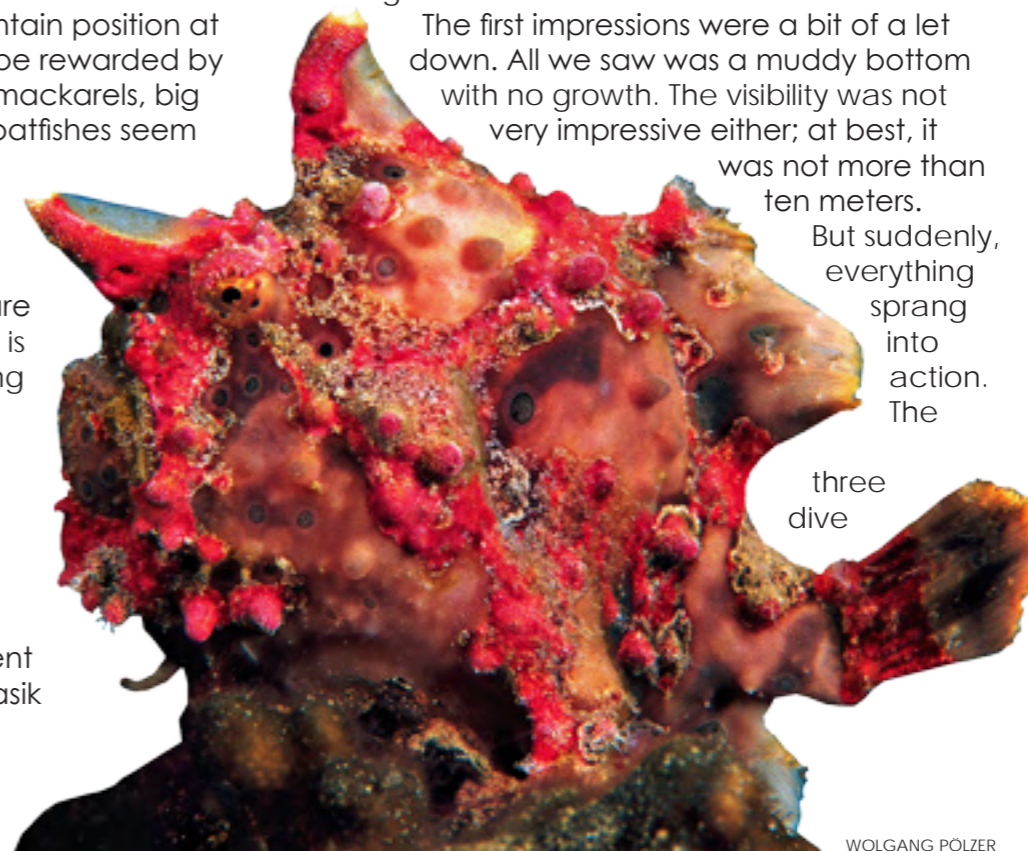
**Critter capital of the world**  
Transferring all the participants of the photo-shootout and their equipment across the peninsula from Tasik

Spot the fish... if you can

Ria Resort Manado on the western side to the Kungkungan Bay Resort (KBR) at the Lembeh Strait took two hours by mini bus. After that ordeal, it only took us ten minutes after reaching this well known resort built in traditional style, to get into the dive boat and enter the water. The first impressions were a bit of a let down. All we saw was a muddy bottom with no growth. The visibility was not very impressive either; at best, it was not more than ten meters.

But suddenly, everything sprang into action. The

three dive



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The walls are dramatic

Cuttlefish



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guides had disappeared in different directions, and now they each signalled vigorously with their metal shakers to draw our attention to them. A little orange frogfish was sitting on a sponge and seeming wanting to pose for our cameras. A perfect subject and a patient model! Two photos later, I heard another next signal: Wow, this time it was a couple of the rare Halimeda Ghostpipefish. I wasn't done with this subject when we heard the next signal. And so it went on all through the dive.

The dive guides were clearly accustomed to working with underwater photographers and

famous because of the huge concentrations of rare and bizarre creatures, or "critters", attracting photographers from all over the planet looking for spectacular macro motives. It is difficult to write about diving in this region without getting carried away—for

Making friends

were able to present an impressive palette of first class subject—there was hardly enough time to take all the pictures. Which brings me straight to the main point... Those who love nudibranchs, crabs, rare cephalopods and fishes will find a paradise here.

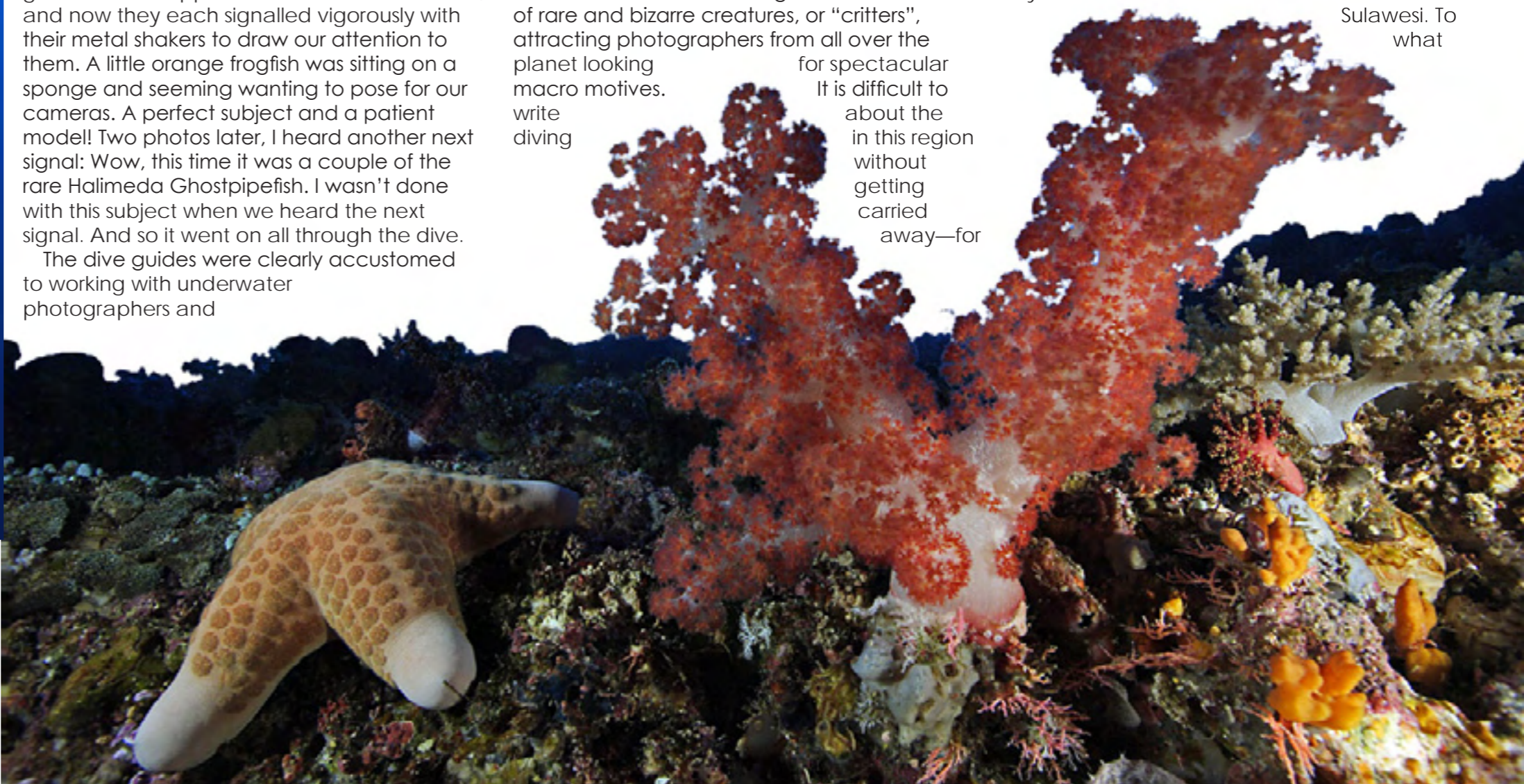
The region around Lembeh Strait at the northern coast of Sulawesi became

throughout every dive I did on this trip, I was constantly fascinated by what this hotspot of biodiversity could throw at me.

Divers who have no eye or sense for small parts of life and who prefer drifting and passing colourful reefs and drop-offs looking for the big animals, would have come to the wrong place. Also, you should not complain about the various items of human civilisation you may encounter on the sea bottom. There are some dive spots where old car tires, soda cans, bottles and plastic cups are the most remarkable structures on the sandy bottom.

Ironically, these artefacts have been welcomed as shelters for fishes, crabs and other animals. The pollution stems from the more than 200,000 inhabitants of the nearby city of Bitung, the most important harbour city

of North Sulawesi. To what



Sulawesi





Sulawesi

degree the marine population is influenced or negative impacted by this city, has not been documented, and I am not sure what to make of it. Due to the strong tidal currents, the daily water exchange in Lembeh Strait is very significant. In any case, the diving centers in this area are

working closely together to designate the area a "Protected Marine Area". The regional diving centers are in a continuous dialogue and working close together. Those days are over when the local dive guides, in hope for a good tip, presenting the critters to the clients by taking them out of their habitats holding them up in front of the cameras.

This led to the decision to disallow the use of diving gloves. Touching things can be dangerous, and even the casual touch of a random object might cause difficulties,

because there is no region in the world where you will find so many poisonous animals as on the bottom of the straits of Lembeh. On the other hand, you will rarely find other dive regions, were it is as easy as here to obtain perfect photo results.

Back on the diving ship, everybody seemed pleased with their resulting photographs. The participants of the photo competition were given three days to take the pictures for their competition portfolio. All along the way, the professional photographers on the jury offered their support and generously shared their extensive experience and knowledge. ■



The colours and shapes you can find is here are unsurpassed. Cuttlefish have a remarkable ability to rapidly alter their skin color at will. This color-changing function is produced by groups of red, yellow, brown, and black pigmented chromatophores with up to 200 of these specialized pigment cells per square millimeter.

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# *Biorock* Electrifying Sulawesi

Text by Sebastian Ferse  
Photos by Sebastian Ferse  
and Wolfgang Pölzer

The northernmost tip of the odd-shaped island of Sulawesi, an area aptly named “land of the waving coconut trees”, lies in the heart of the region with the highest marine biodiversity found anywhere on this planet. This so-called South-East Asian Triangle of Biodiversity spans from the

Philippines in the North to the island of Borneo in the west, and over to Papua and the Solomon Islands in the east, and is home to over 700 species of hard coral and more than 2000 species of coral reef fishes.

A recent survey in Bunaken National Park found 390 species of stony corals, a diversity similar to that of famed locations like Wakatobi and Milne Bay in Papua New Guinea. The

researchers were baffled by the exceptionally high diversity at single locations throughout the park. This amazing diversity underwater is matched by a confusing mix of human cultures in North Sulawesi, where sea-faring Bajau sea gypsies have settled to build their stilt homes on some of the smaller islands that dot the waters north of the peninsula, while more agricultural peoples such as the Bolaang Mongondow or Minahasans inhabit the rich highlands, farming spices like cloves and vanilla. This host of

cultures mixes in the capital of North Sulawesi, the bustling city of Manado.

Visitors to the area immediately notice the coexistence of several cultures and religions—although Christian churches dominate the city, picturesque mosques and even some colorful Chinese temples can be found in Manado.

The marine realm of North Sulawesi has made headlines a number of times in recent years with the discovery of several very unusual

creatures, such as the mimic octopus, a species of pygmy seahorse and another related minute critter, apparently a new genus, which was discovered in Lembeh Strait in 2006.

Arguably, the most widely publicized discovery was that of a local population of Coelacanths, an ancient group of fishes that has been around for over 400 million years. Don't get too excited about meeting one







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The Colubrine sea krait or yellow-lipped sea krait *Laticauda colubrina* is a species of sea snake found in tropical oceanic waters. It is extremely poisonous, but not aggressive and its mouth not big enough to bite a human except perhaps on the hand.

est has not been able to guarantee the well-being of the coral-covered walls, gentle turtles, multi-hued swarms of fishes, intricate nudibranchs, bizarre sand-inhabiting critters, and other marine creatures that people come from all over the world to see.

front of the palm-fringed beaches and thick stretches of mangroves, several private initiatives have sprung up.

**Restoring and building reefs**

On Bunaken Island, dive operators have worked together with NGOs and scientists to restore damaged reef area with snow-flake shaped ceramic modules. These 'EcoReefs' mimic the branches of staghorn corals and provide habitat for fish to live in and substrate for corals to grow on. A lot of the local dive guides were involved in the construction, learning a great deal about the importance of the coral habitat—and about the amount of work needed to restore a reef once it has been damaged. But Bunaken is not the only place where dedicated people are working to preserve the reefs.

About 50km to the north of Manado lays Gangga, smallest of a group of three islands that form the beginning of the Sangihe-Talaud island chain, which stretches all the way north to the Philippines. Gangga Island Resort & Spa, perched on the southern tip of the

the region: the enormous potential for marine tourism.

North Sulawesi has firmly

Part of the problem is that a large part of the local population traditionally comprises farmers rather than fisher folk, and that an appreciation for the unique

diversity and vulnerability of the submarine realm has not been firmly established yet. In order to address this issue, increase environmental literacy, and foster the



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on your dives—these gentle oldtimers live at depths between 100 and 1000 meters. The Coelacanth was 'discovered' by mere coincidence—a marine biologist living in Manado took a stroll over one of the crowded fish markets when he spotted the unusual specimen.

The fish markets of Manado (the two biggest markets are the one next to the harbor basin at Calaca and the market at Karombasan bus terminal) are an exhilarating experience, albeit not for the faint-hearted. The mix of high temperatures under the tarpaulin roofing, the intensive smells of fresh fish and other produce, and the excitement of vendors and visitors alike certainly are not everybody's cup of tea, but they make for a truly memorable experience. Who knows, you may even make an unexpected dis-

covery... Even the non-divers can catch a glimpse of the richness of the local reefs.

**Cyanide and dynamite**

Unfortunately, the markets also give a pretty good impression of the problems these reefs are facing. Colorful small coral fishes are testimony to the fact that indiscriminate fishing among the fragile coral branches is still widespread, utilizing explosives, cyanide, or fine-meshed nylon nets. In either case, damage to the corals is inevitable.

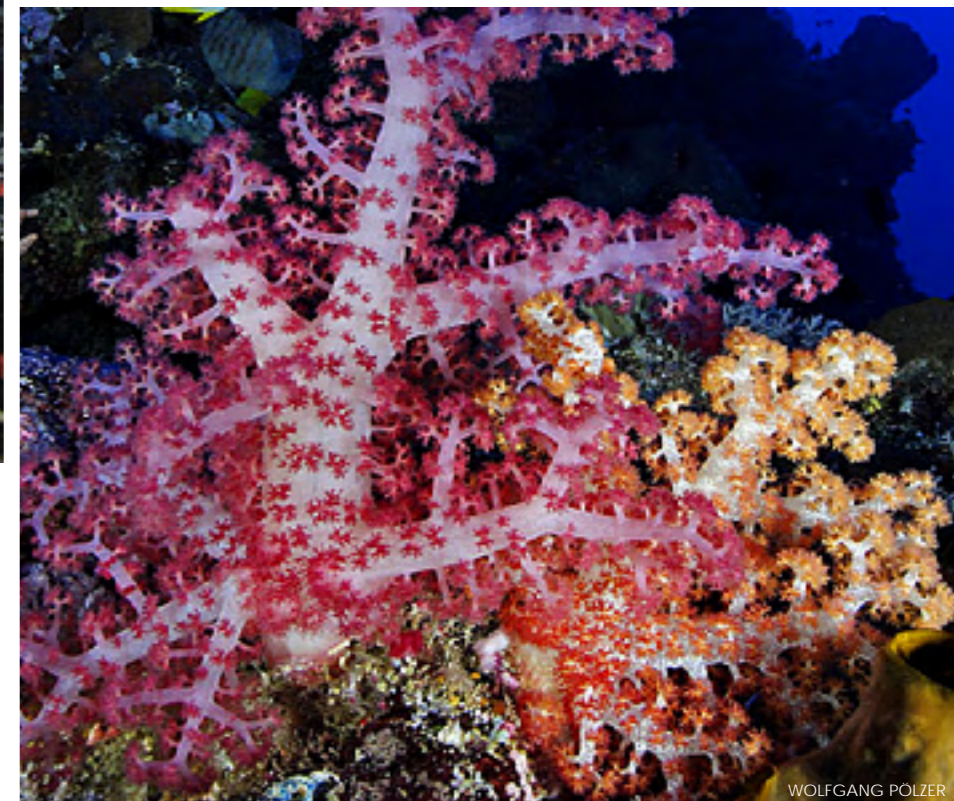
Other items for sale are similarly disquieting: humphead wrasses are sold alongside large sea turtles. Although illegal, the trade in these animals still continues. These activities pose a considerable threat to one of the biggest assets of

established its reputation as one of the prime dive destinations in the world—the breathtaking walls of Bunaken and the fables muck dives in Lembeh Strait are well known in the diving world and feature in countless articles, documentaries and photo books.

In the last two decades, a large number of hotels and resorts have appeared on the scene, most of them particularly catering to divers. Alas, this surge in inter-

appreciation of the treasure trove right in

Healthy natural soft corals as we like to see them



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## Biorock

Building reefs. Coral settlement and growth are being catalyzed through sending a weak current through the metal grid

Davi have agreed to give a controversial restoration method a try. In the so-called 'BioRock' technology, a low electrical current is sent through a metal construction submerged in the reef.

Similar to industrial electrolysis, a titanium anode is placed close to an iron cathode, and both are connected by sealed cables to a regular car battery charger in a small shack on the beach.

The electrical current causes a rise in pH at the cathode, making the water around the surface slightly more alkaline, and results in the slow but steady precipitation of calcium carbonate (sim-

munity are gladly accepted, and a selection of literature on the environment together with knowledgeable staff ensure adequate information and education about the environment for those seeking it.

### Trying a new approach

Not afraid of unconventional approaches, Hanne and her husband Gaspare



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island amidst a grove of coconut trees swaying gently in the tropical breeze, appears worlds apart from the busy hectic of Manado City. However, excessive fishing and increased pollution have begun to make their mark on the reefs around this paradise island as well.

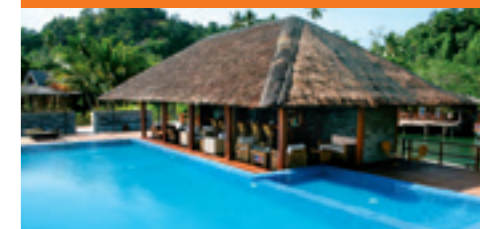
Hanne Darbøl, the Danish-born manager of the resort, is determined to stem the tide of reef degradation and to try and preserve the coral reefs in the vicinity. An avid diver herself, she has lived and worked in other exotic places such as Nepal and Bali. She knows well that people will only preserve what they value—and so she is working to install a sense of ownership and an appreciation of the intrinsic value of the local reefs in the people from the neighboring villages.

### Involving the locals

Many villagers from Gangga Satu, just a short stroll to the north, are employed in the resort, and the children from the village frequently are invited for sessions of environmental education, drawing contests, and the like. When diving in front of the village, a site frequently used for dive training, a shimmering forest of TV antennas mounted on bamboo poles shows the guests that their money spent at the resort is helping to increase the well-being of the local community.

On the other hand, guests at the resort are kindly reminded of the role they play in this mutualistic relationship. Collection of shells and use of gloves are discouraged, small donations for the local com-

A new reef is being created



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# Biorock

Corals attached to these structures have been observed to grow and survive better than other corals in the vicinity

Thousand Islands, Lombok, Makassar, and, since 2005, in North Sulawesi.

The method itself is not without controversy among scientists, partly because of a lack of published studies, and partly because the mechanisms that could be responsible for better coral growth are not really understood.

Are corals able to tap into the energy of the electrical field, or is it easier for them to form their skeleton in the water layer with elevated pH that surrounds the surface of the BioRock structures? The mystery is not likely to be solved very

soon, but that there is something about these structures that makes them attractive for corals is obvious to anyone diving around them. A more detailed study on photosynthesis, growth and survival rates of corals grown on and around one of the BioRock structures at Gangga has shown that two corals that look almost identical to the untrained eye respond very different to the method.

While we do not yet know what exactly is happening to the hot-wired corals and whether we can save our coral reefs by wiring them up like a garden in a frenzied neighbor-

hood Christmas competition, one effect should not be forgotten.

**Any shape you like**  
Similar to other artificial reefs, the BioRock structures serve to attract a rich host of marine life, especially in reef areas that have already lost a lot of their natural coral cover. Compared to old cars, scrap tires and other pieces of junk sometimes sunk in the water under the guise of 'artificial reefs', these structures have a unique adventure: they can be made into almost any shape and size! This is especially

ilar to natural limestone) on the iron cathode structure. If electrocuting a reef doesn't sound like a good idea to you, you may be surprised to learn that corals attached to these structures have been observed to grow and survive better than other corals in the vicinity.

**Tried elsewhere too**  
Dr. Thomas Goreau, one of the inventors of the method, enthusiastically envisioned this technology as a means of helping stressed corals to cope with increased temperatures caused by climate change.

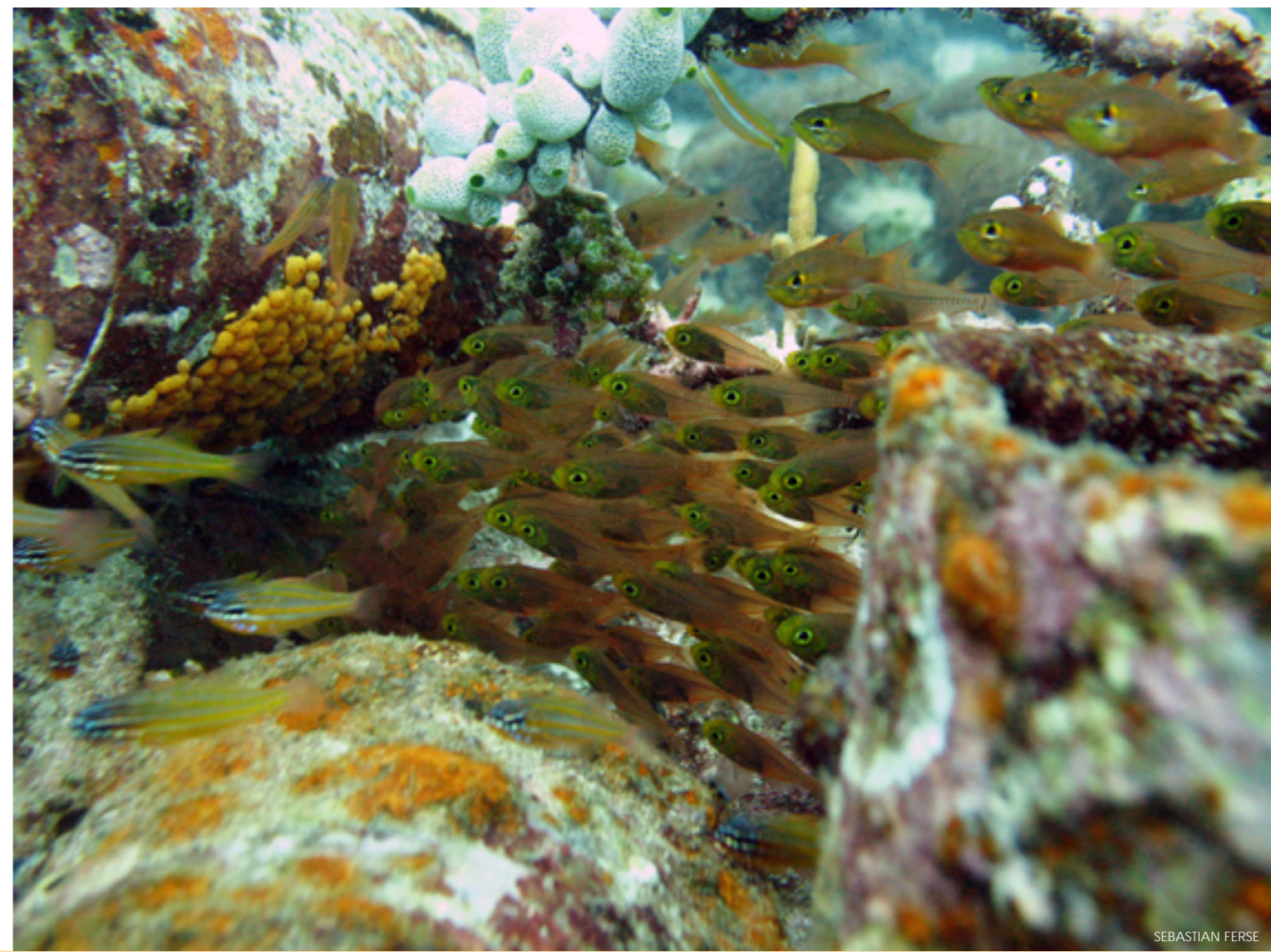
In Pemuteran on the north coast of Bali, local resorts have teamed up with Goreau to create a huge assortment of oddly shaped iron structures, covering an area of several hectares. After several years in the water, the structures are home to a colorful array of corals and



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fishes, and have become a new attraction for divers and snorkelers in the bay, which was almost completely destroyed by destruc-

tive fishing a decade ago. Since the success of Pemuteran, BioRock structures have been built in a number of places in Indonesia—the



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Creating small oasis's of life

## Biorock

directly from the beach and providing some nice photo opportunities for the patient observer.

Hanne Darbol is quite fond of the small habitats the resort has been able to create in its house reef, but she is also aware of the grim future the local reefs may be facing. Yet, she remains hopeful. "We have to do what we can do for both the people and the reef if we're

and the resort has helped to set up a recycling scheme for plastic bottles from the village.

For Gangga Island, this concept is beginning to bear fruits: people from nearby villages have already approached the resort, asking for possible co-operations to sustainably use their coastal resources.

### Government support

However, the future of the reefs in North Sulawesi also depends on the course the local government is setting. Manado is slated to become a 'World Tourism City' by 2010, and there are ambitious plans to host

appealing for dive resorts, as they can create an underwater trail customized to cater to the need of their guests, e.g. with large swim-throughs or domes for buoyancy training, or provide artificial habitat for certain kinds of reef fauna that would otherwise be rare in the area. Additionally, coral larvae seem to love this human-made substrate, and after several months in the water, the structures have become dotted with a colorful mix of small corals.

The artificial reefs at Gangga Island have become small oases of life, teeming with juvenile wrasses and damselfish, and frequently visited by cuttlefish and batfish. While other tiny gems such as pygmy seahorses, blue-ringed octopuses, nudibranchs and frogfishes are at home in the reefs of Gangga as well, the BioRock structures have added another attraction to the house reef, accessible



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here to stay," she explains, her eyes shining with joyful determination.

Thus, fish for the restaurant (no reef fish, of course) are bought from local fishermen rather than the markets in Manado,

a global conference on marine and ocean issues in 2009. The government has begun a number of measures to enhance the tourism value of the city: the harbor area has been

rebuilt, streets are being improved, and waste removal has been made a priority.

However, it sometimes seems that there is confusion about what draws most visitors to Manado. The rapid construc-

tion of ever new shopping malls appears to be more important to some decision makers than, say, increased environmental education to reduce the ongoing degradation of the local reefs.



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Pillow stars

# Biorock

approach chosen now, and it is up to the visitors to the region to let local decision makers know where this focus should be. North Sulawesi deservedly ranks among the world's top dive spots, but only if this potential is fully appreciated and protected will the dives in that area continue to be what they are now—truly electrifying. ■

What can be more rewarding than restoring or creating coral reefs to their colourful natural beauty?

## Spending the money wisely

A few strange plans have surfaced as well. Rumours of a 200,000 US\$ coral transplantation scheme circulated the city—such an enormous amount of money would be much better spent on environmental education or waste water treatment, given the negative impact that large-scale removal of corals from one reef area has on that reef, together with the poor performance of transplanted coral in many cases.

Another idea, fortunately abandoned, was to connect the lush island of Bunaken with the mainland by a huge bridge for automobiles (never mind that there aren't even streets on Bunaken). Not abandoned and still very much alive is the plan to build a bridge connecting Lembeh Island with the city of Bitung, which is certainly going to spell disaster for the unique underwater wonders of Lembeh Strait.

Thus, the future of North Sulawesi currently is on a knife's edge. The next few years will decide whether a harmonic balance can be struck between an intact ecosystem, sustainable tourism and a lasting opportunity to utilize the coastal resources, or whether a priceless natural asset will be sacrificed for the sake of short-term shopping mall tourism.

Many of the local resorts, dive operators and others working in the tourism sector are committed to operating sustainably and educating guests, staff and neighbors about the value of an intact environment, because they understand that their own future depends on it. Sometimes this effort takes unusual forms, like wiring up corals to create a new habitat where the old one has been lost.

In the end, the future of North Sulawesi's marine environment will be decided by the focus and



WOLFGANG POLZER





## Asian Diver's Ocean Odyssey Digital Shoot Out 2007

### OVERALL WINNERS (PORTFOLIO). Joint judgment of 6 competition photos from both Tasik Ria and KBR.

1. Brad Cox (Australia) – prize: Nikon D80 Camera plus UW housing by Ikelite
2. Maria Rivarola (from Paraguay, residency in Jakarta)
3. Chris Doyle (USA)

Tasik Ria Resort:  
CATEGORY: WIDE-ANGLE "MARINE LIFE"

1. Maria Rivarola (from Paraguay, residency in Jakarta) – prize: Mares Proton Ice-Atomic Regulator
2. Chris Doyle (USA)

CATEGORY: WIDE-ANGLE  
1. Michael McEvoy (Australia, residency in Jakarta)

– prize: Citizen Promaster Dive Watch  
2. Chris Doyle (USA)



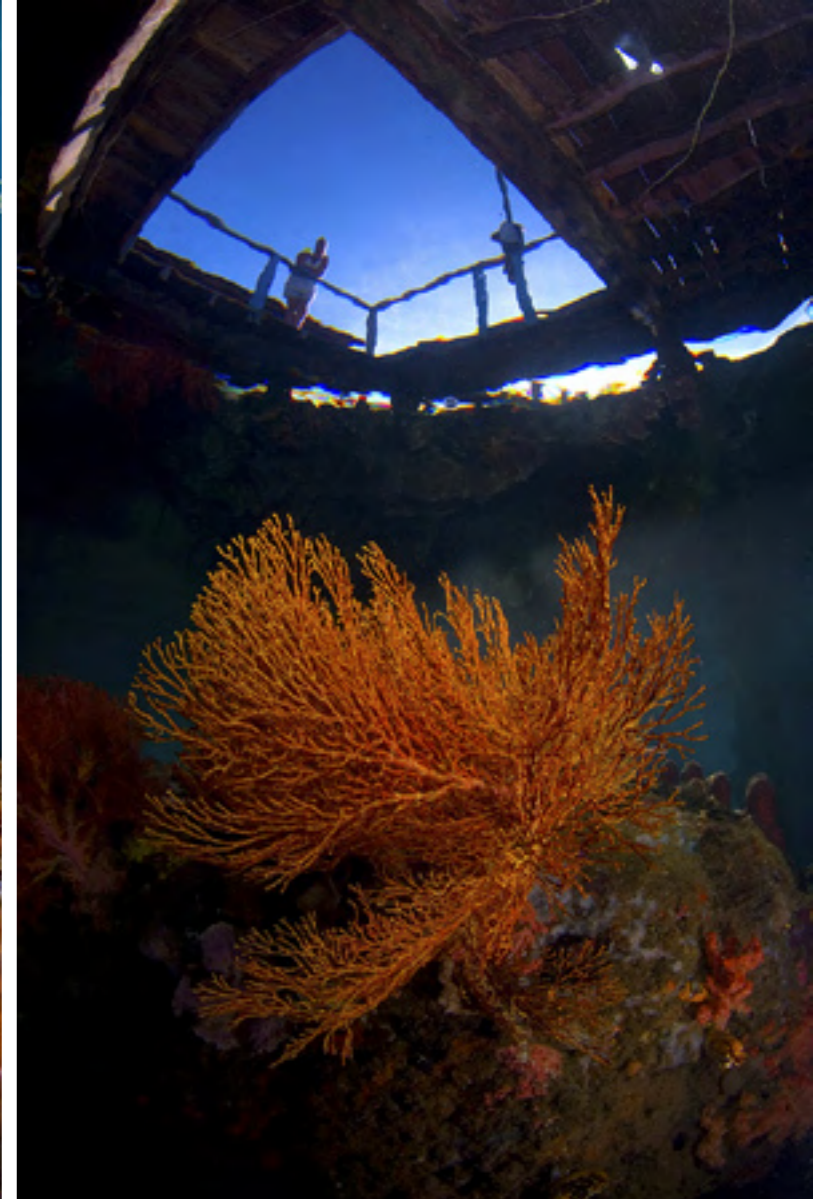
CATEGORY: MACRO  
1. Brad Cox (Australia) – prize: One week all inclusive on Tasik Ria



with diving plus roundtrip flights to Singapore  
2. Caroline Lim (Brunei)

CATEGORY: BEST SHOT  
1. Caroline Lim (Brunei) – prize:

CATEGORY: MACRO „VERHALTEN"  
1. Michael McEvoy (Australia, residency in Jakarta) – prize: Mares Proton Metal Atomic Regulator  
2. Annaka Persson (Sweden)



one week Liveaboard-Safari with South Pacific Aggressor Fleet plus one Oceanic Dive Torch  
2. Michael McEvoy (Australia, residency in Jakarta)

Kungkungan Bay Resort:

CATEGORY: WIDE-ANGLE  
1. Maria Rivarola (aus Paraguay, residency in Jakarta) – prize: Citizen Promaster Dive Watch  
2. Kim Jenkins (South Africa)

CATEGORY: MACRO  
1. Maria Rivarola (aus Paraguay, residency in Jakarta) – prize: One Woche im KBR all inclusive with diving plus roundtrip flights to Singapore  
2. Michael McEvoy (Australia, wohnhaft in Jakarta)

CATEGORY: BEST SHOT  
1. Chris Doyle (USA) – prize: One week Liveaboard-Safari with Emperor Divers Fleet on Roten Meer plus one Oceanic Dive Torch  
2. Kim Jenkins (South Africa)



# fact file



## Sulawesi, Indonesia



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

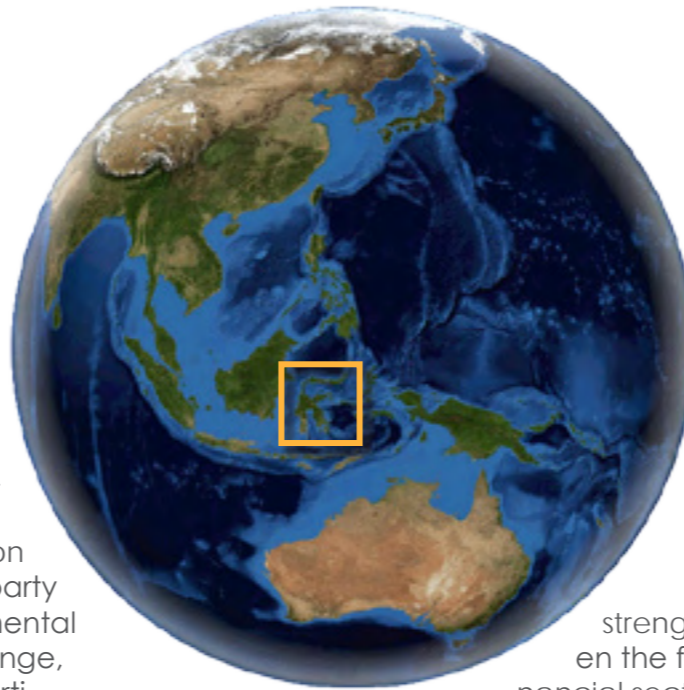
**History** In the early 17th century, the Dutch began to colonize Indonesia. From 1942 to 1945, the islands were occupied by Japan. After Japan's surrender in World War II, Indonesia declared its independence, but four more years passed mired by recurring hostilities and intermittent negotiations before 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

RIGHT: Detail map of Sulawesi  
BELOW: Global map with location in Indonesia of Sulawesi highlighted



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=12,125.85 IDR, 1USD=9,087.04 IDR, 1GBP=17,850.90 IDR, 1AUD=7,354.02 IDR, 1SGD=5,988.11 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 and 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 flue, 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

**Manado (Sulawesi):**  
Malalayang Hospital  
Phone: +62-0812-4302970

**Makassar (Sulawesi):**  
Rumah Sakit Umum Wahidin Sudirohusodo  
Jl. Perintis Kemerdekaan Km. 11  
Tamalanrea Kampus UNHAS Indonesia  
Phone: +62-0411-584677

### Web sites

Indonesia Tourism  
[www.indonesia-tourism.com](http://www.indonesia-tourism.com)  
Indonesia Tourism  
[my-indonesia.info/indexpromo.php](http://my-indonesia.info/indexpromo.php)  
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