

THE GILI'S BLUE THUMB



> DELPHINE ROBBE MIGHT BE SEEN ON ANY GIVEN DIVE PULLING A SET OF CHOPSTICKS OUT FROM HER BCD POCKET AND DIGGING INTO A BATCH OF STAGHORN CORAL. IT'S ALMOST COMICAL TO SEE HER WRESTLING TO RIGHT AN OVERTURNED TABLE CORAL, HEAVING A HEAVILY LOADED BASKET ALONG THE SEA FLOOR OR STUFFING HER FAVOURITE VARIETIES OF BROKEN ACROPORA INTO HER POCKET. THERE IS, HOWEVER, METHOD TO HER MADNESS. DELPHINE, WHO LIVES ON GILI TRAWANGAN IN LOMBOK, INDONESIA, IS AN ENVIRONMENTALIST, PADI INSTRUCTOR AND CORAL GARDENER.



: TEXT BY AMY REID, IMAGES BY FOUED KADDACHI & DELPHINE ROBBE COURTESY OF BIOROCK®

*Above: Community effort to sink largest Biorock®. Each flotation must be cut at the same moment to ensure that the Biorock® will position correctly on the ocean floor.
Top right: Lush thriving Biorock® after only 4 years of growth.*

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Coral gardening is a term that is gaining popularity of late as people look to find new ways to preserve our reefs against increasing environmental threats. Much like managing a vegetable patch, gardeners must constantly maintain against predators. Delphine's favourite tool for removing coral-gobbling *Drupella* snails is a good set of chopsticks. *Drupella*s aren't the only enemy our reefs are up against though; choking rubbish, crown of thorns,

and of course storms, also claim their victims. Smothering algae created by land-based sewage is also a problem, and Delphine and her team are frequently seen, toothbrushes in hand, gently scrubbing away areas that have grown to overwhelming proportions!

Delphine and the Gili Islands, however, have found an innovative and proactive way to try and make a difference to the coral reefs surrounding the picturesque, white sand fringed islands. Delphine

heads an organization called the Gili Eco Trust, founded 10 years ago by the dive centres on Gili Trawangan, and the organization's first order of business was to stop irresponsible fishing practices. By talking to the local fishing community and getting them to sign a Fisherman's Agreement, the Gili Eco Trust has managed to stop them using dynamite and cyanide as a method of catching fish, as well as keeping appropriate fishing methods contained to certain areas and away from most of the diving

locations surrounding Gili Trawangan.

A Gili Eco Trust tax has been implemented throughout the island, predominantly via the dive shops but also with the participation of member hotels, which finances this endeavour along with several other environmental causes the Trust has initiated: there are ecology education classes going on at the local school; several environmental awareness projects for both tourists and locals alike consistently take place, such as beach

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and water clean ups; and twice a month there's a free clinic for the horses used to pull the taxi carts, both improving their condition and keeping the Gilis a motorized-transport-free-zone; the largest of these initiatives, however, has been an active coral farming and gardening project using an innovative and cutting-edge technique called Biorock® technology, which was introduced to the Gili islands in 2004 by Tom Goreau and The Global Coral Reef Alliance.

The Biorock® method was invented, developed, and patented by the late Professor Wolf Hilbertz and Dr Thomas J. Goreau. Using safe, low voltage direct currents of electricity passing through a steel structure, electrolysis occurs when two metals (the anode and the cathode) conduct electricity between them in water. When doing this in sea water, the result is the accretion of solid limestone. Limestone is what the

exoskeleton of hard coral is made from and it also forms the basis of coral reef substratum. When broken or damaged hard corals are attached to this mineral quickly adhere and the resulting growth is two to six times faster than in natural conditions; within a few days, definite signs of fusing can easily be observed.

Corals on the Biorock® reef have exceptionally bright colours and are densely branched, heal from physical damage at least 20 times faster and have up to 50 times higher survival rate from even the most severe high temperature bleaching events.

Every year the Gili Eco Trust hosts large international workshops where people from all around the world can learn about Biorock® technology and be a part of putting more structures in the water, as well as learning how to coral garden on

their own resident reefs. In addition to physically building the structures, there's instruction on the technical aspects of how it works, as well as lectures on the theory of mineral accretion, reef reconstruction, coral transplantation, shore protection and global warming, as well other how to handle other treats to the world's coral reefs such as marine pest control.

In addition to all this, Delphine has teamed up with Trawangan Dive on the island to offer the PADI Biorock® Specialty Course, a program that runs all year round, where people of any level can come and stay with Trawangan Dive for anywhere from two to 10 weeks, and receive the appropriate scuba diving training (course levels from Open Water Diver to Dive Master) suited specifically to each individual's level and time requirements. Along with this comes the exciting opportunity to do the PADI Biorock® Distinctive Specialty with

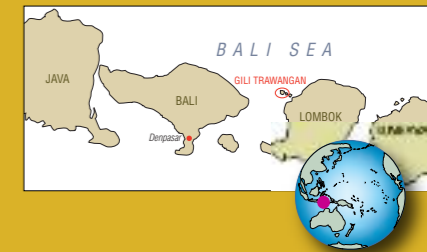
Delphine herself. Students will work with Ms Robbe to design their own Biorock®, participate in its construction and help to deploy it, truly getting a hands-on experience of this innovative reef restoration process. They will also see, monitor and maintain the existing structures around Gili Trawangan, giving them a clear understanding of how they work, what they can become and how important to the local marine life this extraordinary technology is.

During their stay students will also take part in unlimited diving devoted to coral surveying, conservation and gardening (yes, chop sticks and toothbrushes are included!). And all this with the stunning scenery and tropical island life of Gili Trawangan thrown in for all to enjoy – it doesn't get much better than this!

Left (l-r): This is the largest Biorock® ever created. It was designed to have swim throughs so instructors could use it as a training site for Peak Performance Boyancy; Artist's have designed various Biorocks® around the islands. Here we see Trawangan Dive putting in their turtle; Divers work together to submerge a tunnel shaped Biorock®

Below left (l-r): The first 2 Biorocks® were put in during 2004; The same Biorock® thriving in 2007; It is now completely covered.

Below: Drupella snails do their damage, devastating coral where ever they are found.



To find out more about Trawangan Dive and this incredible chance of a lifetime project visit www.trawangandive.com. To be a part of the next International Biorock® workshop this coming November visit www.biorock-workshop.org. To learn more about Biorock® technology and projects visit www.globalcoral.org.

