



Rebuilding Reefs

By Dr. Deborah Brosnan

With over 4,000 species of fish and nearly 800 of corals, reefs in Southeast Asia are among the most diverse in the world. As a marine scientist who loves diving, I'm drawn to the beauty and mystery of coral reefs. So when I saw the shocking images of the tsunami on TV last year, I felt compelled to do something. Shortly after the killer wave hit, I started a tsunami reef action fund to provide scientific and economic support for affected communities.

Coral reefs are vital to the economies of Southeast Asia,

where dive tourism and fisheries contribute US\$500 billion annually, and where many local communities obtain much of their daily protein from marine products.

The massive force of the tsunami caused extensive damage in some areas, plowing through fields of *Acropora* corals, overturning boulders and other rocks, and ripping out sea fans. While diving in sparkling clear water around Phi Phi Island in Thailand a few weeks after the disaster, for example, I noticed that many of the corals — some the size of small motor cars — were entirely upside down! Other areas were covered by sediment and debris.

Working as One

One of the fund's core objectives was to get scientists and divers to work together to help damaged reefs.

In Thailand, for instance, marine scientists worked with divers to save many corals. Living coral needs sunlight and clear water so that algae in their cells can produce food. Overturned corals are like flowers turned upside down — they'll die. Scientists helped to educate dozens of volunteer divers about the need to turn upended corals right side up. With enthusiastic support from the dive community, we were able to save many affected corals this way.

Sea fans were also affected by the tsunami. Beginning in April, Thai scientists led a team of divers to rescue injured sea fans. Working in teams, divers carefully brought dislodged sea fans onto boats, attached the delicate marine animals to rocks by using quick-drying cement, then re-anchored them to the sea floor. Nearly 200 sea fans were successfully restored through this effort.

Andrew Hewett, a long time resident of Thailand who lost his home to the tsunami, responded to the disaster by setting up a dive camp to remove debris and restore the reefs. With the help of both local and international divers, this effort cleaned up nearly 150 tonnes of debris from Tonsai Bay over a period of four months. Just as importantly, divers recovered many personal belongings such as driving licences and passports, helping to bring closure to many who lost loved ones.



Tree branches entwined with corals

In Sri Lanka we worked with dive operators and conservation groups to organise large-scale clean up efforts involving 132 divers and volunteers.

It's now almost a year since the disastrous waves struck Southeast Asia. What have we achieved? Thanks to the efforts

along the Andaman coast, 95% of the sites we surveyed have been cleaned up. Sea fans have been restored and will continue to be monitored in the coming months. In other parts of Asia there will be more debris removal as well as exciting new efforts for restoration work.

As a scientist I've learned what tsunamis can do to reefs and how corals and fish respond. But perhaps the greater lesson is that I've witnessed what an enormous difference scientists and divers working together can make.

Divers are a generous bunch. In the aftermath of the tsunami hundreds of divers have donated time, equipment, good will and good cheer under difficult circumstances.

The clean up and restoration will continue for a long time, with both divers and scientists lending a helping hand.

To get involved or for information on the reef action fund visit www.tsunamireefactionfund.org or contact Dr. Deborah Brosnan at Brosnan@sei.org.

Left: Healthy coral gardens

Below: Dr. Brosnan examining overturned corals

