

The large snowflakes twist and turn as they descend gently. If this were Switzerland in December, there would be nothing remarkable about this scene. But I am two degrees north of the equator just off the island of Sulawesi, Indonesia. These snowflakes are almost one metre in diameter and they are not coming down through the sky but are being lowered through the water. If you think this is unusual, consider this: these snowflakes will help transform a dead coral reef into a reef teeming with life. No, this is not some low-budget science fiction movie. These snowflakes are actually EcoReef modules, the most promising tool available to rehabilitate damaged coral reefs.

Snowflakes in Sulawesi

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ASIAN GEOGRAPHIC

Number 26, Issue 4/2004



Photo: Cary Yenny

I have come to Northern Sulawesi as director of Seacology, the world's premier non-governmental organization with the sole purpose of preserving marine and terrestrial island environments throughout the globe. Seacology (www.seacology.org) specializes in "win-win" projects where islanders receive a critically needed benefit they request in return for making an important sacrifice on behalf of the environment.

My destination is Bunaken Marine Park, an 89,000-hectare park in the waters off of Manado, Sulawesi. The excellent diving here and in the nearby Lembeh Strait have made this one of the world's top dive destinations. While most of the reefs in this area are in terrific shape, before the marine park was established some of the reefs were reduced to rubble by fishermen throwing bombs in the water and harvesting the fish that then floated to the surface. Among the many problems with this method of fishing is that it permanently destroys the nearby reefs. That is why the villages of Manado Tua Duo and Alung Benoa asked Seacology to provide funding for the world's first EcoReef installations in exchange for establishing and policing no-take (no fishing) marine reserves. I am here to help install an EcoReef off Bunaken Island and inspect the EcoReef installation that Seacology funded off of the beautiful island of Manado Tua in January, 2004.

According to Dr. Michael Moore, president of EcoReefs, these ceramic modules "help jumpstart the reef recovery process" because the combination of the module design which mimics the growth form of branching corals and the ceramic materials "meet the need of fish and corals and help communities of herbivorous fish get established, which in turn keep the structures clear of algae so that corals can grow."

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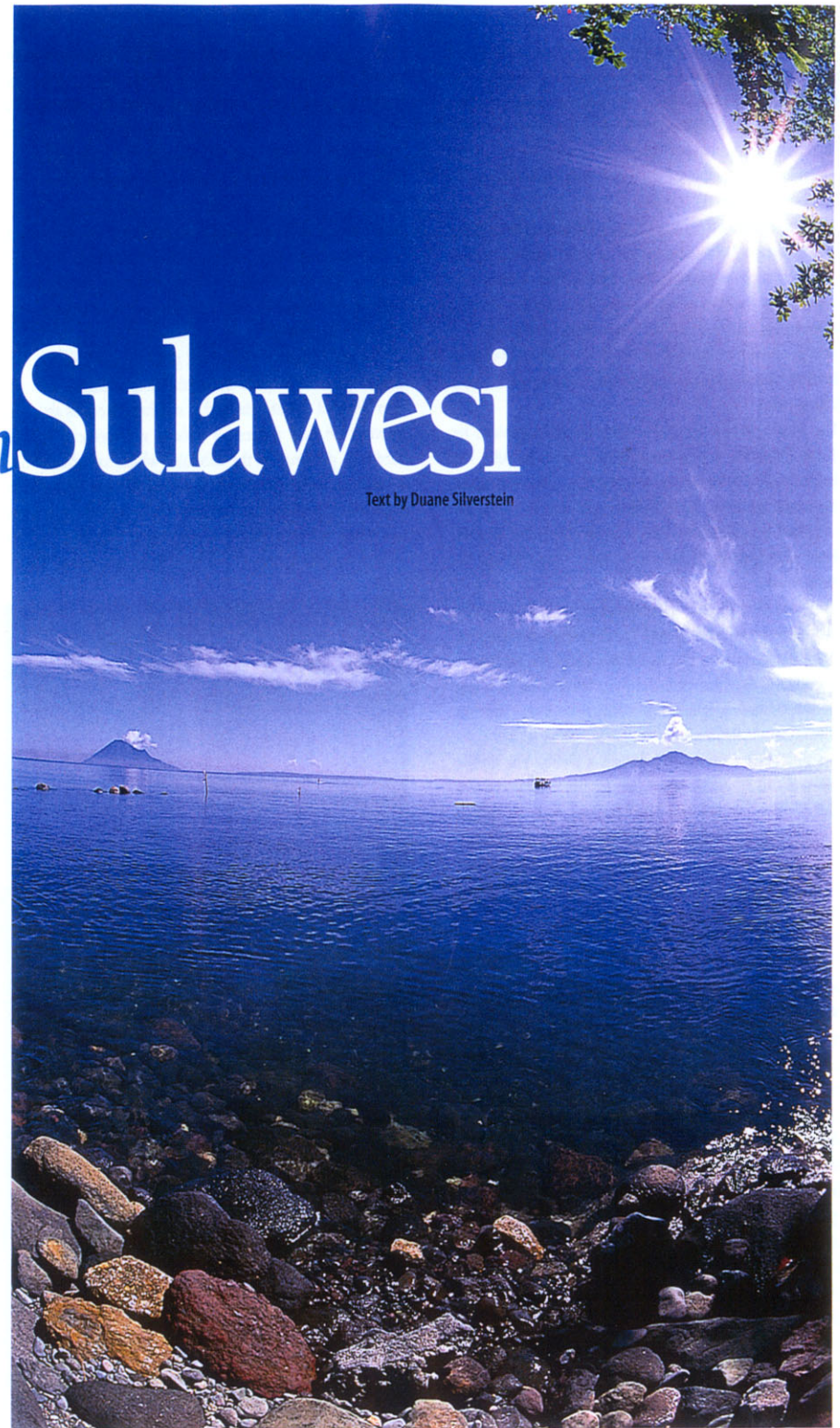


photo: Michael AW

My first step on this journey is Alung Bena Village on Bunaken Island. As my boat approaches the village I am greeted by the site of ten dive boats stacked with row upon row of the snowflake shaped modules. I am here in July, which is one of the busiest times of the year for all of the dive operators that comprise the North Sulawesi Watersports Association (NSWA). Yet every one of these diver operators is foregoing business on this busy day and donating their boats and the services of their dive guides to voluntarily help with this installation. Many divers have also agreed to help out. But the biggest sacrifice of all is being made by the villagers of Manado Tua Duo and Alung Bena who have assembled the EcoReef modules, have given up their traditional fishing rights in the surrounding area, and who will enforce the new no fishing rules.

The whole process has been painstakingly organized by Dr. Mark Erdmann, a prominent marine biologist who has worked with NSWA for the last several years. This installation has particular meaning for Erdmann and his family as the new EcoReef is dedicated to the memory of his late brother Stephen, who had dived this region many times before his untimely death.

Before the installation begins there is a formal ceremony in the village. When asked to speak I mention that many cultures and religions throughout the world talk about the miracle of resurrecting the dead and bringing them back to life. It is just such a miracle that we will witness today as we begin to bring a dead and barren reef back to life.

It is now time to make this miracle a reality. The flotilla of boats and the 70 volunteers depart for the nearby EcoReef installation site. The site has been marked with 15 yellow flags driven into the reef rubble. We are to place 15 EcoReef modules around each flag. The EcoReefs are gently lowered by line over the side of the boats and down below the surface of the water. Volunteers must unhook each module and then move them into one of the designated locations. Sound easy? It isn't. These modules are heavy and it usually takes more than one volunteer to move each module. A pipe is placed in the central hole of each module and it must be pounded into the substrata with a mallet. Next time you need to hammer a nail into a wall in your home, picture doing this while swimming under ten metres of water and you will get an idea of how much effort and coordination this takes.

After a few hours the Stephen Erdmann Memorial EcoReef is complete. The village treats the exhausted volunteers to a feast of traditional Sanggir food. We are all pleased to have played a small part in today's important work. But the unspoken question remains. Do EcoReefs really work?

To answer that question, the next day I visit the nearby gorgeous volcanic island of Manado Tua. In January 2004, Seacology funded the world's first EcoReef installation here. Before we can check on the progress a ceremony is held to mark the official opening of this EcoReef. The Vice-Governor of Northern Sulawesi, the honorable Freddy Sualang, and the

Energy Secretary of the Philippines, the honorable Vincent Perez, Jr., are here for this occasion. We are greeted by the school children of Manado Tua Duo who perform a traditional Pato-Pato dance for us. In the speeches that follow, Vice-Governor Sualang and I both thank the village for the leadership it has shown by having its traditional fishing area be the site of the world's first EcoReef installation. Energy Secretary Perez is here because Palawan Island in the Philippines will be the site of the next Seacology funded EcoReef installation and marine reserve. The Vice-Governor, Energy Secretary and I board a boat and symbolically lower an EcoReef to officially dedicate the EcoReef reserve.

Now it is time to don scuba gear and see first hand what progress has been made in the six months since the EcoReef was installed. We are gratified to see that the corals are already starting the slow process of making a comeback. There are tunicates growing on the modules which are already home to pufferfish and parrotfish. A school of blue fusiliers swim by. While this might not be a rare sight for a diver, it is most gratifying knowing that this area was a wasteland of coral rubble with no fish at all for over 20 years between the time

the reef was destroyed by blast fishing and the installation of the EcoReefs. In the words of Dr. Mark Erdmann, "Although we had prepared the Manado Tua villagers for a five year wait to see the results of the rehabilitation, the progress underwater in just six months has amazed us all."

Dr. Erdmann states that "the EcoReefs rehabilitation has been enthusiastically received by Manado Tua's villagers, as it has brought life back to a reef area that has been barren for the past 20 years. This has only strengthened their resolve to prevent any further destructive fishing practices on the reefs on which they depend for a sustainable livelihood."

The world's reefs are being destroyed at an alarming rate. The continued practice of bomb and cyanide fishing remains a significant threat to these invaluable marine ecosystems. It is of critical importance that the world puts a halt to cyanide and bomb fishing. We can not afford to wait until these destructive fishing practices come to a halt before we begin the process of rehabilitating the reefs that have already been destroyed. Seacology's experience in the jewel that is Bunaken Marine Park shows that EcoReef installation along with a community based marine reserve may indeed bring a dead reef back to life. AG

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photo: Cary Yanny

