

Christmas in July?

Snowflakes carpet Manado Tua and Bunaken reefs

Divers visiting Bunaken National Park this year are excused for any confusion caused by the winter wonderland scene on two reefs off Manado Tua and Bunaken Islands. Not to worry – the large snowflake-shaped ceramic EcoReef modules are part of a reef rehabilitation program run by park villagers and dive operators from the North Sulawesi Watersports Association (NSWA) and sponsored by the Seacology Foundation (www.seacology.org)

The Manado Tua rehabilitation was conducted over the course of 3 weeks in early 2004, with villagers working in close coordination with 13 dive operators from the NSWA and the staff of USAID's NRM project to transport, assemble and install 620 EcoReef modules (www.ecoreefs.com) in front of Negeri village. Seacology awarded the EcoReefs grant to Manado Tua villagers in recognition of their strong commitment to preserving their reef systems and the fisheries that depend upon them by setting up a series of five "no-take" fish sanctuary zones around their island. The villagers requested that Seacology fund a reef rehabilitation program for a roughly one hectare stretch of reef that was once the most productive fishing area on the island before blast fishers leveled the reef over 15 years ago. Sadly, there has been no natural recovery in this vast rubble field, though the placement of 33 clusters of EcoReef modules is meant to stabilize the substrate, provide an



immediate shelter for reef fishes, and promote recovery of this reef area into a productive fishery area once again.

After dive operators donated boat and staff time to transport 900 boxes of ceramic components to Manado Tua, the villagers set up two enormous outside workshops to assemble the non-toxic ceramic modules. Men, women and

GANGGA ISLAND RESORT & SPA
Nordsulawesi - Manado

The ideal island for Honeymooners, Snorklers, Divers and Beachcombers, directly on a pure white beach we have 15 double bungalows for a total of 30 rooms surrounded by a tropical garden and coco palms. Of course, the wonders are to be found in the biodiversity of the underwaterworld. Thanks to Gangga's ideal location between the National Marine Park of Bunaken and the world famous Lembeh Straights, some of the world most renown diving spots can be easily reached. At the "Pasung SPA" we have introduced some wonderful SPA treatments combining rare therapies from the Minahasa families on Gangga Island and Bali.

www.ganggaisland.com e-mail: ganggais@indosat.net.id



MAPIA RESORT

The right place
for a diving holiday
in Manado

10 AC cottages in a
tropical garden on sea

Italian-Indonesian
restaurant

Jl. Raya Tanawangko
Kalasey, west Manado
tel. +62 (0)431 826582
fax +62 (0)431 826581

e-mail
celebes@kudalaut.com

web: www.kudalaut.com



Dive the diversity
of Indonesian seas

Bunaken Marine Park,
Manado Bay,
Lembeh Strait

Marine biology lab

Celebes
Divers



children worked side by side for 3 days to assemble and epoxy the modules. Upon completion of the assembly, approximately 60 NSWA divers then donated several hundred hours of dive time to install the modules on the barren rubble field.

While the Manado Tua villagers have pledged patience in allowing 3-5 years for the rehabilitation project to increase coral cover and fish abundance in the area, the results after just 5 months have amazed divers and villagers alike. Both coral-dwelling and schooling fishes have rapidly moved in to the once barren area, and the modules are now covered with encrusting coralline algae, bryozoans, tunicates, and the first coral recruits. Even more exciting, coral transplants have biologically cemented themselves to the modules and resumed growth in less than a month. Given this outstanding initial progress, it is hoped that within five years the area will once again support a thriving

reef and associated fisheries.

NSWA operators have been so impressed with the results that they will be assisting a second installation of approximately 300 EcoReef modules, also funded through Sea-cology, on Bunaken Island in late July 2004. Divers and snorkellers interested in assisting with the assembly and installation should enquire with any NSWA operators (full list at (www.bunaken.info) or (www.divenorthsulawesi.com)). Assembly will start by 16 July, with installation following during the 20-24 July time period.

••• **Dr. Mark Erdmann** is the North Sulawesi Provincial Advisor for USAID's Natural Resources Management Project and a 2004 Pew Fellow in Marine Conservation.

