

The Sarangani Bay Reef Dome Project

Story and Photos by Stan de la Cruz

The Sarangani Bay reef dome project was conceived by two scuba diving friends, Chris Dearne (a British expat) and John Heitz (an American expat), who while having a drink one afternoon, were lamenting the state of local coral reefs and it's lack of protection. For a region that pride's itself as the Tuna Capital of the Philippines, and with the bay noted for being home to some rare and exotic creatures, this was a sad state of affairs indeed. A few bottles of San Miguel later it was decided that if anything was going to be done to restore and improve the local marine environment, the private sector (meaning Chris and John), would have to be the ones to take the lead. A few more bottles of San Miguel later they remembered a discarded cement hollow block in one of their dive sites that had sprouted some coral, and from this they drew inspiration.

Research turned up a diverse set of ideas being tried out. Ceramic "snowflake" reef modules were being used in a bid to stabilize the substrate, provide instant shelter for marine life, and promote recovery of the reef . "Biorock", using metal structures

connected to an electrical supply powered by solar panels, was being used to accelerate growth of corals and supposedly make them resistant to bleaching. In Thailand, "Reefballs" made of a special cement mixture poured into fiberglass molds, were being used. A giant spider like structure dubbed the "Acanthasia" project was also being tried out. The Nature Conservancy (TNC) had a low-cost reef rehabilitation initiative using piles of rocks to stabilize rubble fields and provide substrate for new coral growth in Komodo, Indonesia.

The prohibitive cost, scarcity of materials, lack of local technical help, and the research/experimental nature of the above mentioned projects, prompted the design team to think of a different approach. The artificial reefs had to be constructed of readily available materials; heavy enough not to be blown away by currents; light enough to be manhandled by divers; large enough to stabilize the substrate they were placed on; must provide room to be used as shelter by marine creatures; must be of a profile that approximates the reef formations in the area; and had to be cheap enough so that plenty of units could be fabricated to be spread over the damaged areas of the bay. Over the next few



A transplanted coral with cementing "growth" ring



Nemo's new home



The concrete block that started it all

weeks, the domes were designed and constructed at the Cambridge Farm Hotel, using funds from Chris and John's own pockets. Materials used were cement, sand, bamboo, and a couple of tubs made



Newly deployed domes

from industrial plastic to serve as molds. Total cost for a reef dome module came out to PhP 200.00 (roughly equivalent to the cost of a bag of cement or a t-shirt) on the average! The first domes were deployed 17th of April 2005, with the volunteer help of the Tuna City Scuba Diving Club.

Nearing the target of 5000 reef dome units deployed after 3 years, I was invited by Chris and John to see for myself how the project was progressing. The promise of exotic creatures, tons of tuna, and contributing toward a better environment proved too much to resist. Being an active diver for more than a decade, I decided it was time to give something back.

What I saw was quite astonishing. The vast majority of the domes had successfully been encrusted by corals, sponges, barnacles, tunicates, bryozoans and algae; although a few domes didn't have a speck of life attached to them. Juvenile reef fish hid within the structures. Crinoids and



Colorful encrustation captured with the help of a Magic filter

sea stars (I refuse to call them starfish as they are not fish) crawl over them and even the bigger fish graze on the algae cover. According to experts and textbooks, hard corals take many years to grow. It was therefore notable that a large number of natural accretions of hard corals could be seen growing on the reef domes. Transplanted corals also showed vigorous growth by spreading out and cementing their positions as shown by "growth rings" around their bases. Fish and other marine creatures now

inhabit areas where there have been none for a long time.

Posing a big danger to the success of the reef dome project are destructive fishing methods, especially fine mesh nets. It was noted that new coral growths and transplants had been ripped up and destroyed by people fishing with nets. Domes had even been upended by spear fishermen wanting to get to their prey. There are laws in place which prohibit net fishing with mesh smaller than 3 cms. knot to knot; and even laws which state that fishing methods which cause damage to corals are totally illegal. Enforcement of these laws is, however, an altogether different matter ['nuff said].

As of this writing, there are now 4,850 reef dome units deployed in the waters of Sarangani Bay, over 14 different areas. It is probably the largest, fastest growing, and most cost-effective project of its kind in the country. It is hoped that the continued success of this project will help ensure that there will be coral reefs for our future generations to see and enjoy. According to Chris and John, all they could hope for is to be able to show that such an ambitious project can be done even with limited resources, and they look forward to the time when other coastal communities take a proactive stance and start their own artificial reef programs.

If you want to donate and or volunteer for this worthwhile project, log on to www.tunadive.com or e-mail dvgensan@yahoo.com.ph.

Stan de la Cruz

Guidelines for contributors

The response to UwP has been nothing short of fantastic. We are looking for interesting, well illustrated articles about underwater photography. We are looking for work from existing names but would also like to discover some of the new talent out there and that could be you! UwP is the perfect publication for you to increase your profile in the underwater photography community.

The type of articles we're looking for fall into five main categories:

Uw photo techniques - Balanced light, composition, etc

Locations - Photo friendly dive sites, countries or liveaboards

Subjects - Anything from whale sharks to nudibranchs in full detail

Equipment reviews - Detailed appraisals of the latest equipment

Personalities - Interviews/features about leading underwater photographers

**If you have an idea for an article,
contact me first before putting pen to paper.**

E mail peter@uwpmag.com

How to submit articles

To keep UwP simple and financially viable, we can only accept submissions by e mail and they need to be done in the following way:

1. The text should be saved as a TEXT file and attached to the e mail

2. Images must be attached to the e mail and they need to be 144dpi

Size - Maximum length 15cm i.e. horizontal pictures would be 15 cm wide and verticals would be 15cm.

File type - Save your image as a JPG file and set the compression to "Medium" quality. This should result in images no larger than about 120k which can be transmitted quickly. If we want larger sizes we will contact you.

3. Captions - **Each and every image MUST have full photographic details** including camera, housing, lens, lighting, film, aperture, shutter speed and exposure mode. These must also be copied and pasted into the body of the e mail.