

WHO and What are the REEF GARDENERS

The Reef Gardeners are a team of young people recruited from the various fishing organizations in Pemuteran and trained to maintain and protect the reefs of Pemuteran Bay.

In 2006, funds were obtained via the AusAID sponsored program called the BRF Bali Rehabilitation Fund set up by the Australian Government after the Bali Bombs to help create new jobs for the local people. The Reef Gardeners project was accepted for this program and is now one of the few programs that has continued on long after the initial funds were used up.

The young men, all with a passed down knowledge of the sea by previous generations, were trained as scuba divers up to PADI Rescue Diver. They were then trained in methods of protecting and repairing the coral reefs of the area. This included the removal of the coral destroying menaces of the Crown of Thorn Starfish (*acanthaster planci*) and the Drupella Shell (*Drupella cornus*). At the same time they learnt how to repair broken corals that had been damaged, either by careless boat anchoring, nets, divers as well as natural causes like storms and waves etc. Much like regular gardeners on land, the Reef Gardeners help the "Underwater Gardens" here to grow better.

The AusAID funding also allowed the Reef Gardeners to purchase over a dozen local wooden ships and sink them on two sites on an off-shore reef - Tankad Jaran. The local effort created two excellent dives Canyon Wreck and Ships' Graveyard. At the first site, a massive 30m Bugis wooden vessel rests at 28 meters in a natural coral canyon. While bottom time passes quickly at this depth, the return to the surface includes the best and most extensive hard coral cover to be found in Bali. At Ships' Graveyard another 24m Bugis plus nine *prahu* are sunk in depths varying from 25-14 m.

Ships Graveyard also includes two "Bio Wrecks" alongside of the largest single species coral (*povaris* sp.) "bommie" in Bali. A 9 meter long Madurese *prahu* is at the shallowest depth, and at low tide its distinctive curved prow is only 5 metres below the surface. The other "BioWreck" structure is made from building steel and is 12 metres long by 3 metres wide, shaped like a boat and sits on the sand between 7 and 10 metres deep. Power for the biorock structures was originally provided by a generator but now solar panels have been installed on a raft to provide a cleaner and environmentally friendly source of power. The third new dive site in Pemuteran is the aptly called "Taman Pura" The Temple Garden. Somewhat of an engineering feat with over ten large stone statues resting on stone plinths

and a 4 meter high Balinese *candi bentar* gateway it is found at a depth of 29 meters. It also incorporates a cleaning station with schooling batfish. The "garden" is covered in gorgonian fans and must be seen to be believed. In 2006, a second stage to these Temple Gardens was constructed at a depth of 15 meters to allow less experienced divers to be able to dive the location.

WHY are the REEF GARDENERS

The work done here with the Reef Gardeners was not the start, nor the end, of the efforts here to protect the reefs of Pemuteran. Since dive centers started here in 1991, they and the villagers have worked hard to protect the reefs and educate the local villagers as to why, and how, they need to protect the reefs for their own survival. Often putting themselves in possible physical danger, they chased off, and had arrested by the local police, fishermen from other areas collecting aquarium fish with cyanide, dynamite fishermen and boats that used illegal "jaring macan" (tiger nets) that took almost everything off the reefs. Between 1996 and 1998, over 75,000 Crown of Thorns starfish were removed from the Pemuteran Reefs and, with the repair of broken corals etc, what would probably add up to hundreds of years of coral growth was saved. This not just saved the remaining corals and marine life habitat in the area but helped to enable the amazing "comeback" of many of the onshore and offshore reefs of the area. All in a totally environment friendly way.

This work to protect the local reefs was designed to be simple and, although needing lots of man hours in, and out of the water, easily effected. Unfortunately, as the reefs got better, the dive centers got busier and had less time to do this maintenance. It was decided that a dedicated team be put together, and who better than members of the local fishing community. As well as maintaining their own "workplace" they are also better positioned to educate their fellow fishermen. It is hoped to be a shining example for other dive locations and communities, not just in Bali, but around the world, to be able to follow.

The idea and name of the Reef Gardeners came about many years ago when a visiting journalist nicknamed the reef in front of one of the dive centers as "Kebun Chris" Chris's Gardens writing that the owner of this dive center looked after this area of reef as if it was his own front garden. The name stuck and so was born a new era of "using and maintaining the reefs" as against "using and abusing the reefs" as unfortunately happens in so many dive locations.