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## Reef Brief - by Ann Hayden - Reef Balls - Repairing the Coral Reef Ecosystem

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Last week, Reef Brief covered the importance of biodiversity and reasons why the coral reef should be protected and preserved. In addition to a number of other benefits, reefs provide a rich environment that attracts a multitude of plants and animals, creating an ecosystem that is very high in biodiversity. Unfortunately, this productive environment is also very fragile and in the last few years has become increasingly susceptible to threats, such as pollution, changes in global climate, and direct degradation—all of which decrease the biodiversity of the reef ecosystem. To counteract the damage facing the coral reef ecosystem, the San Pedro Tour Guide Association (SPTGA) began the Habitat Enhancement Project, deploying artificial reef structures, known as reef balls.

If you've been around since last fall, when the project began, you've probably noticed the odd looking cement structures marked with Swiss cheese-like holes, located on the north end of Front Street. These are reef balls, created by filling molds with a cement mixture. After one day, the molds are removed and sprayed down with water so that gravel can be exposed. This gravel allows algae and soft coral to grow more easily on the surface of the reef ball. After completely drying for 28 days, the reef balls are deployed in an area known as Slackchwe, located on the leeward side of Ambergris Caye, along the northern point of Cayo Espanto. Creating the reef balls requires two-three people to complete and thus far, the SPTGA has successfully deployed 30 reef balls. Ultimately, the SPTGA hopes to deploy a total of 50 reef balls, placing them in areas where marine biodiversity is low or where fish stocks have diminished. An additional component of the project involves community awareness and education; the SPTGA has recruited students from the primary schools to participate in the mixing, filling, and deploying of the reef balls. The concept behind the Habitat Enhancement Project is not particularly new. Long ago, fishermen on Ambergris Caye used traditional devices, known as ramas, to attract fish populations to specific sites. Ramas were first constructed of mangrove branches and other vegetation, and later vehicle parts were used. In the marine environment, where the rate of oxidation is high, these materials tend to decay relatively quickly. An alternative material, needed to be found and reef balls, constructed of cement and in use around the world, seemed like the answer.

Reef balls are essentially artificial reef structures that mimic a natural reef system, almost immediately attracting fish and many other marine species because of the protective habitat the structures provide. The SPTGA hopes that the reef balls located along the Slackchwe area will eventually provide an alternative location for guide and recreational fishing, relieving the fishing pressure on the natural reef. In addition, the SPTGA has already received requests from local resorts that are interested in deploying reef balls near their piers to attract fish and other marine species to the area. Another aspect of these artificial reef structures is that over time algae and coral begin to grow on the reef ball surface, further enhancing the biodiversity of the environment.


Thus, the SPTGA plans to deploy reef balls along portions of the Hol Chan Marine Reserve, where the reef is either threatened or damaged.

It is direct action, such as that taken by the SPTGA, that is making a difference in protecting our environment. The SPTGA is always looking for volunteers-those interested can show up at the reef ball construction site (located on the north end of Front Street) on Tuesdays and Thursdays at 3 p.m.

If you have a topic you would like featured in Reef Brief, please call 2833, write [greenreef@btl.net](mailto:greenreef@btl.net).

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