
REEF CURRENTS

NEWLETTER FOR THE NORTHERN MARINE RESERVE MANAGEMENT UNIT

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Editor's Note: Communities and Marine Protected Areas

Globally, marine protected areas face many challenges that influence their effectiveness. The complex science of managing our coastal resources in a sustainable manner is influenced by physical, social and economic issues. In Northern Belize this is clearly evident given the many natural and anthropogenic threats we currently face coupled with the current global economic crisis.

Therefore, Stakeholder involvement in our management activities is vital. We have emphasised this through our education and outreach program. In 2009 we involved neighbouring communities in several of our educational activities including beach cleanups, development of an environmental club, the Responsible Tour Guiding seminar, Reef week and our mooring buoy program.

An important factor we need to consider is to develop and maintain communication lines between stakeholders and resource managers through outreach programs. This will foster positive synergies that improve compliance of existing regulations and develop active participation for development of new policies that can result in the overall betterment of management.

Caye Caulker: Mooring Buoy Program

By Nidia Chacon



In mid October 2009 the Caye Caulker Marine Reserve staff through the support of various entities began placing five mooring pins in the fore reef of the Southern channel. The area where pins were placed, were chosen through consultation with dive shops in Caye Caulker Village. These moorings were placed in the conservation zone; a highly visited area by snorkelers, divers and cruise ship visitors.

These mooring buoys were very much needed to provide infrastructure for recreational Scuba diving in the Marine Reserve. No longer will the boat captains have to throw anchor when conducting a dive in the fore reef, and coral destruction will be greatly reduced due to unsustainable practices.

We are grateful to the kind assistance of the local tour guides, the Belize Fisheries Department, The Hol Chan Marine Reserve and our staff at Caye Caulker. We are especially thankful to our local guides Mr. Albert Pacheco Dive Master of Scuba Sensations, Mr. Shedrock Ash from French Angel and Tico Requenía from Big Fish for their valuable assistance in placing down the mooring buoys in the fore reef.

Our Mooring buoy program is now ongoing and we ask the community to come to please return any buoys that they have found to the Marine Reserve office. If pins are located underwater we would appreciate for the tour guides to mark them so that mooring buoys can be replaced.

INSIDE THIS ISSUE	
1	Caye Caulker: Mooring buoys
2	Bacalar Chico: Mooring Buoys
2	Hol Chan: Coral Nurseries
3	Education Program
3	CSI for Coral Reefs In Belize
4	Green Reef
4	Reef Facts

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Bacalar Chico Marine Reserve: Mooring Buoy Program

By Miguel Alamilla



In late October staff of the Northern Marine Reserve Management Unit installed a total of eight mooring buoys in the Basil Jones area of the Bacalar Chico Marine Reserve. Basil Jones, located in north Ambergris Cay, is a popular recreational area for divers, snorkelers and sport fishermen.

Three mooring buoys were installed in the fore reef between Robles Point and Basil Jones. These sites were selected after consultation with resorts and dive guides that currently use the area. Five moorings were installed in the shallow back reef of the Basil Jones Channel, which has become a popular snorkelling site for tourist coming from San Pedro Town and nearby resorts.

Before the establishment of these mooring areas, tour guides used anchors to secure their vessels while engaged in snorkelling or diving. Anchor use has been proven to greatly increase the incidence of damage to corals. These moorings will greatly reduce if not eliminated coral breakage from anchor use. Furthermore, by installing mooring systems in a specific area limits recreational use to that area rather than having it spread in different parts of the reef.

This coming year we plan to continue consultation with resorts and tour guide that use the area to identify new recreational site for snorkelling and diving. This program will improve infrastructure in the Marine Reserve and will encourage sustainable recreational practices.

Tour guides with knowledge of the area are encouraged to make their recommendations known to the management of the Reserve. Additionally, we encourage anyone willing to assist in installing or learning the techniques used for mooring buoys to contact us at the Hol Chan office in San Pedro Town. Tour guides are especially encouraged.

Hol Chan Marine Reserve: Coral Nurseries

By Kirah Forman



Hol Chan has recently started working with Ms. Lisa Carne on a project to strengthen the resiliency of corals to withstand climate change by setting up coral nurseries. Some corals survive after changing conditions much better than others because of being more resilient. Gathering samples of these and placing them in nurseries is a means of preserving these genetically important traits. The nurseries also serve as a source of obtaining coral for restoring an area after it has been damaged either by hurricanes or groundings.

The project mainly focuses on the *Acroporids* (Elkhorn, Staghorn, and Fused Staghorn Coral) since these are faster growing corals in the Caribbean, and their branching structure creates good habitat for reef fish. While the project focuses on these species, there are others that are being experimented with.

Two nursery sites have been established inside Hol Chan in the backreef area as "seed corals". The coral samples taken were planted on to metal frames that were set on the reef and secured using cement blocks. In Hol Chan 11 genotypes were planted on each identical frame and space left for more to be added.

This project has lots of potential to improve coral health in many areas. The nursery will eventually be harvested to provide Corals to restore damaged areas.

After setting up the frames a meeting was held in San Pedro to inform the public about the project and how they could become involved. The following day tour guides along with others from the community were taken to the reserve to see the nursery, and they got a chance to ask Ms. Carne more questions.

Education Program

By Mariela Archer

Responsible Tour Guiding Seminar:



What have we been up to? Well first of all, a big thank you to all the dive shops that participated in the yearly tour guide sessions. We look forward for your participation next year in our conservation efforts.

Throughout October, Hol Chan hosted the annual "Responsible Tour Guide Session" in San Pedro Town and Caye Caulker Village. This year the guides were briefed on the new zoning for Hol Chan, and its rules and regulations that apply to it. A new addition to this year's session was presentations on the rules and regulations of Caye Caulker and Bacalar Chico Marine Reserve. Furthermore, the guides were also briefed on Belize's new fisheries regulations and were each given a copy of it along with a copy of the map and rules and regulation of each reserve. In San Pedro 15 dive shops with 65 tour guides participated. In Caye Caulker 9 dive shops and 38 tour guide took the seminar.

Environmental Club:



Hol Chan has created an environmental club "Reef Guiders" with students from around the island. Regularly meetings are held on every other Thursday at the Hol Chan office. The students have received presentations on the reserve and coral ecology, and are now looking forward to explore the underwater world of Hol Chan. Other activities conducted by the group has been a beach cleanup at the turtle nesting beach for the National coastal cleanup day, where a total of 30 bags of trash was collected from the beach and brought to town to be properly disposed at the San Pedro dump site.

CSI for CORAL Reefs in Belize Investigative and Enforcement Forensics Field Training Workshop

By Valentine Rosado



Coral reef ecosystems around the world are impacted by a variety of illegal activities. Vessel groundings, poaching, destructive fishing, pollution and runoff, oil spills, garbage dumping, and the introduction of alien species can all have devastating consequences for reefs. The good news is that perpetrators of these activities are liable to prosecution, penalties, and restoration or mitigation costs. The bad news, though, is that these crimes often slip through the cracks if no one is able to properly assess and document the damage.

Coral reefs in Belize will now have a much better chance of winning in court, thanks to an intensive five-day training held in San Pedro this October. **CSI for Coral Reefs**, a workshop sponsored by the US State Department, Healthy Reefs Initiative and the Coral Reef Alliance, helped coral reef managers and conservation organizations build their capacity for responding to marine injuries. Workshop participants included representatives from the Belize Fisheries Department and Coast Guard, a number of Belize's marine protected areas, and many non-profit organizations.

Participants in the coral CSI workshop learned the ins and outs of coral reef forensic investigations from international professionals in the fields of marine ecotoxicology, coral reef ecology, and marine natural resource investigation. Lectures provided background information and techniques that were soon put into practice in the field. During "dry runs," participants rehearsed the vital investigative procedures that will allow them to gather the evidence required to put together a compelling case, such as taking notes underwater, using Rapid Ecological Assessment techniques, marking off a crime scene, photographing the crime scene, and preserving the "chain of custody" so that defence attorneys can't argue that evidence has been tampered with.

Green Reef: National Conservation and Management Plan for Sport fishing in Belize

By Mito Paz

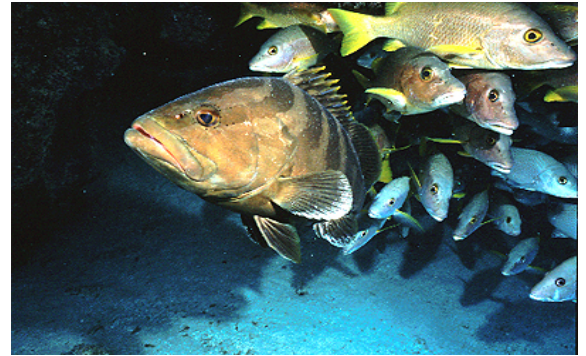


The many lagoons and wetlands adjoining the coastal marine waters of Ambergris Caye also comprise valuable ecosystems that support an enormous range of marine life; serve as natural flood protection systems; and provide extensive opportunities for low-impact recreation. These combined unique and uncommon attributes have fostered increasing eco-tourism related development on the Caye, which in turn has increased land demand, cutting and filling of mangroves, loss of critical nursery habitat, and increased fishing pressures on the Belize Barrier Reef Reserve System-World Heritage Site (BBRS-WHS).

Consequently, the advent of eco-tourism development and its subsequent pressure on sport fish habitat quality threatens the loss of income that is now being realized from sport-fishing opportunities by former reef-fishermen. The loss of this income will cause these fishers to once again re-direct their livelihoods toward the capture of reef fishes from the Belize Barrier Reef System WHS, and thereby directly impact its long term sustainability.

Green Reef Environmental Institute in collaboration with the Fisheries Department will be conducting research on critical ecological attributes of the three popular and economically important sport fishes. This project proposed herein has the primary objective of developing and implementing a national management plan for Bonefish, Permit and Tarpon that can be readily adopted by Belize's 22 marine protected area managers; and a secondary objective to insure most if not all of Belize's critical sport fish habitat receives specific / long term conservation management. The activities of the proposed project are designed to develop and integrate a national conservation strategy not originally envisioned in MPA management and boundary schemes, thereby insuring these important biological and economic resources are not ruined by development or unmanaged extraction. This project is being funded by the Protected Areas Conservation Trust (PACT).

Reef Facts: Nassua Groupers (*Epinephelus striatus*)



Description: Overall body color varies from five diagonal olive brown bars from snout to start of dorsal fin to a lighter background. A characteristic feature is a black saddle spot on the base of the tail.

Distribution: Nassua Groupers occur from New England in the East Coast on Continental US to Southeastern Brazil through the Bahamas, Gulf of Mexico and the Caribbean.

Life History: They mature at approximately 48 cm in total length and 180 grams and generally grow 1.92 to 4.55 mm per month. Nassau groupers reproduce by forming Spawning aggregations of several thousand individuals at specific reef promontories around the full moons of December and January.

Habitat: Nassua Groupers are considered cryptic commonly occupying crevices and caves along ledges and reefs. Juveniles have been found in seagrass beds.

Threats to Species: For many years Nassua groupers have been targeted by commercial fishermen. Inadequate management of this fishery has led to drastic reduction in its population. They are fished commercially and recreationally by hand line, long line, traps, spear guns and gill nets.

Throughout the Caribbean including Belize several spawning aggregation sites are now considered to be commercially extinct. Due to the considerable decline of Nassua Grouper along its range it has been classified as "Endangered" by the IUCN (World Conservation Union) Red List of Threatened Species.

Management Actions: In April of 2009 the Minister of Fisheries enacted new legislation setting a minimum and maximum of 20 and 30 respectively. Additionally Nassau Grouper need to be landed whole and fillet of any other species need to have a patch of 1 by 2 inches.