



## **“SOUTHEAST PENINSULA MARINE ECOSYSTEM SURVEY WEEK”**

APRIL 24 – 29, 2007

ST. KITTS AND NEVIS, WEST INDIES

The following is a preliminary summary from notes of a debriefing of those involved in “Peninsula Marine Ecosystem Survey Week” April 24 – 29, 2007 St. Kitts and Nevis, West Indies. Formal reports will be prepared within a few weeks.

Two expert organizations, REEF ([www.reef.org](http://www.reef.org)) and Reef Relief ([www.reefrelief.org](http://www.reefrelief.org)) from the United States led local divers in both classroom and in-water trainings and surveys. A third organization, Earth Echo International ([www.earthecho.org](http://www.earthecho.org)) documented the relationship of current land-use on the Southeast Peninsula to coral reef health in nearby waters.

### **SUMMARY**

#### **NEAR SHORE DIVES**

- Slightly better visibility and live coral near shore than further out
- This suggests runoff and sewage from Basseterre Harbor and Nevis traveling in currents (lack of adequate sewage treatment) and having an impact on reefs further offshore
- Healthy recruit corals ideal for transplanting as a coral nursery

#### **OVERALL OBSERVATIONS**

- Observations relate to Caribbean side (60 ft. and shallower), not Atlantic side
- Problems at all depths observed
- Serious physical damage from anchors and anchor chains, urgent need for mooring buoys
- Fishing Related Observations:
  - Signs of overfishing, including healthy herbivore populations, lack of large predators (grouper, snapper), lack of species diversity, resulting in a bottom-heavy, incomplete food web
  - Only a couple of abandoned fish traps (ghost gear items)
  - Some trash, appeared to originate from boat-based sources, ie. plastic cups
  - Many & large piles of conch shells and only 1 live conch observed (evidence of heavily impacted fishery)
- Coral Related Observations
  - Soft corals and sponges are more abundant than hard coral

- There is a great deal of coral stress/ bacterial infection / algal overgrowth on both the hard and soft corals as well as on the sponges
- Additionally sedimentation fills in the algae making it unappealing to herbivorous fish
- Healthy diadema
- Lots of nuisance algae as expected
- Mucus on soft corals
- Some bleaching, not as much as expected
- Some blushing (early stage of bleaching) too early in the year, which may indicate the early stages of a larger bleaching event
- While a lot of infections were observed, there not as much known disease (from known pathogens) as expected, certainly no ongoing epidemics
- The source of the nutrient loading is so extensive it appears there are additional causes to the goats, and probably has been going on for a long time. We need to determine the direction of the ocean currents around the island. Pollution from Charlestown and Basseterre harbors, as well as from anchored overnight vessels, may be having an influence on the coral reefs near the peninsula judging from the direction that the trade winds blow. Sewage and storm water pollution from towns is also a major contributor to the algae we saw on the reefs that we monitored. The bottom line is that there appears to be too much algae for it to be blamed on just goats, but removing the goats will limit one stressor.

### **SCHOOL VISITS**

DeeVon of Reef Relief did three school visits and a booth at the Dept. of Agriculture Annual Fair to teach local children about coral reefs and to give copies of educational materials for future use by those schools.

Bemmy Granados of TOF attended SKF grantee BSHS ROC-90 scholarship/mentoring program to participate in interactive session with students and local community leaders.

### **TURTLE WATCH**

Three TOF staff joined a local non-profit in sea turtle nesting beach monitoring – 3 leatherback nestings observed in one night

### **DONATION**

Reef Relief donated \$550 of camera and GPS equipment to Clarence Fitzroy Bryant College on St. Kitts for use to continue monitoring the coastal and offshore coral reef ecosystem. The students from the college were part of the Opening Symposium and the Saturday (28<sup>th</sup>) snorkeling trip

### **OPPORTUNITIES:**

Mooring buoys—as quickly as possible

Alert dive industry to monitor blushing

Compare existing maps of prevailing currents around Southeast Peninsula and with our observations

Identify ways to get sewage treatment plant or upgrades for Charlestown and Basseterre

Connect reef and ecosystem restoration to ecotourism opportunities

Constituency building: Engage fishermen, Ross students, Bryant college students, k-12 teachers, island scientists, as well as local and foreign resident community members

Create clubs: diving, fish survey, beach cleanup, etc.

Build capacity of Bryant College – needs books and equipment

Bring follow-up REEF beginner course and REEF expert training course to St. Kitts in 2008 or 2009

Swimming/snorkeling lessons and dive safety courses

Set up reef and fish monitoring program

Need to match local names for species with official American Fisheries Society taxonomy

Need more live fish data, not just data from counting fish from fishery

Artificial reefs – use abandoned barge as part of compromise in creating some no-fish zones

Undertake a prototype no fish zone similar to our grazer exclusion fence

Help found a marine field lab

Establish Federation-wide recycling, start with aluminum

Ban plastic bags & plastic cups throughout the Federation, but especially on boats

Living On Earth and Earth Echo International radio expedition program airing

Dive Training magazine article

Recommendations for possible Peninsula Company action:

- Donate land on peninsula for park space and connect it to near shore marine protected areas
- Include a pump out facility in marina, and make it available to dive operators and mega yachts
- Establish a coral nursery to move and save corals during restoration of White House beach
- Developer should use local biologist as an advisor