

Sounding Line

News from Florida Keys National Marine Sanctuary

Winter 2007-Spring 2008

Reef Resilience Program Surveys Reefs from Martin County South

Rowena Garcia, *The Nature Conservancy*

South Florida's coral reefs are approximately 3,000 years old and serve as the foundation of our biological and ecological seascape. In 2001, reef-related activities including fishing and diving generated almost \$4.4 billion in revenue and employed about 81,000 people. However, these coral reefs are threatened by coral diseases, overfishing and fishing gear impacts, pollution, coastal development, boat groundings, diver and swimmer impacts and global climate change.

Global climate change impacts include warmer and more acidic oceans, rising sea levels and more powerful and frequent storms. In response to global climate change and other stressors, the Florida Reef Resilience Program (FRRP) was formed in 2004. The FRRP is the product of discussions between the State of Florida, NOAA, The Nature Conservancy and the Great Barrier Reef Marine Park Authority, where a parallel program is in progress. The FRRP is a multi-year effort to build awareness, consensus and collaboration around the importance of resilience concepts to the understanding, management and restoration of Florida's and the world's coral reefs.



A diver surveys the reef for bleached corals.
Photo: Erich Bartels, Mote Marine Lab

In the face of an ever changing and sometimes harsh environment it is believed that resilient reefs can withstand or recover from the impacts of stress and disturbance without suffering permanent damage. On the other hand, reefs that are not resilient suffer and cannot recover from the same stresses and disturbances. In the worst cases, the living coral reef may be replaced by a different and less desirable natural community. Florida divers are all too familiar with the classic example of the proliferation of algae-covered rock where vibrant, living coral once held sway.

The FRRP is designed to improve understanding of reef health in the Florida Keys and southeast Florida region and to identify factors that influence the long-term resilience of corals, reefs and the entire marine ecosystem. With this knowledge in hand, coral reef managers and users can work toward resilience-based management strategies that maximize the benefits of healthy reefs while seeking to improve the condition of those that are less healthy. Ultimately the FRRP seeks to improve ecological conditions of Florida's reefs, economic sustainability of reef-dependent commercial enterprises and continued recreational use of reef resources.

A focus of the program is monitoring coral bleaching along the reef tract from Martin County to the Dry Tortugas. Reef managers and scientists, coordinated by The Nature Conservancy, surveyed coral bleaching during the hottest months in 2005 and 2006. The large number of survey sites (>130) combined with the large geographic range has required the involvement and coordination of 12 teams and over 40 divers from multiple agencies, universities and non-governmental organizations. Results from these surveys are revealing patterns in coral bleaching, diseases and mortality. They demonstrate how some reef types may be more vulnerable to disturbance than others.

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Hello *Sounding Line* Readers,

It is a pleasure to introduce this edition of our web-based *Sounding Line* series that recaps the highlights of an incredibly eventful year in working to sustain this special place that is our Florida Keys National Marine Sanctuary (FKNMS). I hope you will share my sense of pride in the vision, accomplishments and important work undertaken by a tremendously dedicated group of individuals towards a common purpose. It was a year of new beginnings built on the strong foundation of the committed Florida Keys community. While we embarked on many new initiatives in 2007, we also honored the past accomplishments of a distinguished sanctuary veteran who ended a 50 year career of science and service to our marine environment. "Reef Doctor" Harold Hudson begins a new chapter in retirement and we thank him for all he has done and is yet to do.



The cover introduces the concept of reef resilience, which has emerged as a focus for both scientists and managers. The research to develop associated management strategies and alternatives is on the cutting edge in South Florida with the Florida Keys Sanctuary playing an important integration role. Recognizing that we cannot wait for the perfect solution, we highlight several projects focused on making a difference now. These include the valuable contributions of the Green Living Energy Education initiative, revisiting the status and goals for important large-scale restoration projects, and recognizing the valuable contributions of volunteers.

As this year comes to an end, we are happy to report that after a full and comprehensive evaluation of the 1996 sanctuary management plan we have adopted an updated plan with the full concurrence of NOAA and the state of Florida. Compelling and important is that the process to update the plan fully engaged the public and subject area experts with an outcome that the substantive information, goals, and objectives of the document remain unchanged. The 1996 plan was the result of an extremely involved seven-year process. This review validates that the outcome of that effort was valuable and continues to be relevant today. We have a large responsibility, and many challenges ahead of us. I look forward to meeting with you and encourage you to take the time to review the updated plan on the sanctuary's Web site, <http://floridakeys.noaa.gov>, and get involved to implement it.

Stay tuned in 2008 as we work to bring you the best available information on the status of our resources with the publication of a sanctuary "condition report", launch a redesigned Web site, conduct a comprehensive evaluation of our marine zones and regulations, and continue to sustain our strong partnerships focused on education, conservation, and restoration of the Florida Keys ecosystem.

Thanks for your interest, time and dedication.

Sincerely,

CDR Dave Score, NOAA
Superintendent

“Reef Doctor” Dedicates Decades to Coral Reefs



Hudson’s extensive reef restoration work earned him the nickname “Reef Doctor”. Photo: Jeff Anderson

Harold Hudson was a young man when he made the commitment to pursue a lifelong career studying and working in the marine environment. But Hudson didn’t just want to learn about the environment. He wanted to do more, and that is just what he has done. Hudson’s awards and accomplishments during his 48-year career as a federal government scientist, including the past 18 years as a sanctuary resource biologist, are too numerous to list in full.

Hudson’s expertise was critical in developing the mooring buoy system that is used throughout the world to protect coral reefs from anchor damage, and he has designed everything from undersea geodetic markers to museum exhibits. All of this would be enough for most people, but in the last 18 years, Hudson, nicknamed the “Reef Doctor”, has pioneered reef restoration techniques designed to restore the lost infrastructure of coral reefs severely damaged by vessel hulls in grounding accidents. Cement and carefully chosen limestone rocks are his favorite materials for creating the reef restoration modules.

Today, several sites restored under Hudson’s direction have shown signs of healing and boast a myriad of corals and other marine life. Each restoration project was individually planned to meet the needs of that site and to address the damage being repaired. Over time, the restoration techniques and process used by Hudson have evolved to produce a natural looking module of cement and limestone designed to replace the lost reef and support marine life.

Not to worry, Hudson didn’t really hang up his mask. He’s back with the sanctuary as a volunteer continuing his life’s work.

Council Meets Regularly to Discuss Management Issues

At its December 2007 meeting held in Key West at the Florida Keys Eco-Discovery Center, the Sanctuary Advisory Council (SAC) heard presentations from experts about projects of interest to the Florida Keys National Marine Sanctuary. Topics included: the proposed ocean current turbine project designed to generate electricity, the regulations and review process of the NOAA Office of General Counsel regarding violations in sanctuary waters, the outreach programs offered by Crane Point Nature Center and Museum and the research results from the Florida Reef Resiliency Program summarized by scientists from The Nature Conservancy. At the conclusion of the meeting, members of the Education and Outreach and Ecosystem Restoration SAC working groups provided updates about educational initiatives and projects associated with the restoration of the Everglades and Florida Bay, respectively.



The SAC Ecosystem Restoration Working Group sponsored a workshop on climate change and energy held at the Board of County Commissioners meeting room in the Harvey Government Center in Key West. The workshop was televised on closed-circuit television throughout the Keys.

The SAC meets on a bimonthly basis to discuss issues related to the management of natural and maritime heritage resources within the nearly 2,900 square miles of sanctuary waters. Most meetings are held in Marathon. They are open to the public and a public comment period is held twice per meeting. Bruce Popham serves as the chair and Ken Nedimyer serves as the vice-chair. Lilli Ferguson is the sanctuary advisory council and volunteer coordinator.

The Department of Commerce established the Florida Keys National Marine Sanctuary Advisory Council to advise the sanctuary superintendent and the director of the Office of Coastal and Aquatic Managed Areas in the Florida Department of Environmental Protection regarding the management of the sanctuary, including providing assistance in developing and implementing the sanctuary’s management plan. Council members apply for their positions and are appointed by NOAA in consultation with the state of Florida. To read the resolutions passed by the SAC, find out about upcoming meetings and workshops, or contact a SAC member, please visit <http://floridakeys.noaa.gov>.

Shout for GLEE--Green Living is Here in the Keys

Michael Welber, GLEE Steering Committee



While people in the Florida Keys have been concerned about the quality of the water surrounding the islands, many of the other issues that concern climate change have not received much attention. Concerns such as reducing personal and business energy usage, recycling cans and bottles, or tapping the plentiful energy of the sun to heat water or produce energy have been on the public back burner.

Volunteers for Trash Pickup



Nearly 30 dedicated Team OCEAN volunteers paddled along the mangrove shoreline of the Western Sambo Ecological Reserve, collecting mounds of trash they found along the way. The reserve is a fully protected zone within Florida Keys National Marine Sanctuary and is the focus of research projects comparing lobsters and fish found in protected zones with those found in areas that are fished. Marine cleanups are a regular feature of the Team OCEAN volunteer program. On this day, volunteers picked up over 1500 pounds of trash. The Sanctuary Friends Foundation of the Florida Keys donated three kayaks for use in cleanup projects. Photos: Jacqueline Laverdure



During the last year a Keys organization – Green Living Energy Education (GLEE) – has stepped into this breach in a major way. GLEE, which began its life by organizing an annual energy expo, took on the critical issue of climate change and has already begun to make a significant difference.

One of the first steps was to organize a Keys-wide conference of elected officials and other major players to call attention to the profound need to take action. This conference, called the Keys Sustain-Ability Project, attracted an impressive roster of people including Monroe County Commissioners Mario DiGennaro, George Neugent and Sylvia Murphy. Mayors from several Keys cities attended as did representatives from Florida Keys Aqueduct Authority, Florida Keys Electric Cooperative and the Monroe County Schools.

The session featured an impressive array of speakers who explained the serious problem facing everyone and provided guidance on what both municipalities and individuals can do toward addressing climate change and making the Florida Keys greener.

As a result of this effort, all of the city mayors and the county mayor in the Keys have signed the U.S. Mayors Climate Protection Agreement. Now GLEE is strongly encouraging these governmental entities to take the next steps by inventorying their current energy usage and then finding ways to reduce it to meet the U.S. Mayors agreement guidelines.

As impressive as these efforts are GLEE has not restricted its advocacy to encouraging government to move on climate change. The group has also launched an initiative to increase the very low rates of recycling in the island chain. Estimates vary, but most put the participation rate at well below 20 percent. The GLEE recycling committee has implemented a local recycling campaign that includes local seminars, an educational program and official proclamations by each city.

GLEE has also launched a monthly electronic newsletter to help educate local citizens, facilitate certification for green lodging, provide guidance on water conservation, and, yes, stage another successful expo on May 9-11, 2008.

Its all a tall order, but the planet depends upon this kind of local action. For more information, visit www.keysglee.com.