Preserve America Grant Funds Sanctuary-Mote Partnership to Study Keys' Wreck Sites

Several wreck sites in the Upper Keys will be documented by volunteers as part of a new maritime heritage project.
Photo credit: Brenda Altmeier

Mapping and photographing is well underway on several wreck sites as part of an underwater archaeology project that forges a new partnership between Florida Keys National Marine Sanctuary's maritime heritage team, Mote Marine Laboratory and the Sanctuary Friends Foundation of the Florida Keys. In June 2007, *Upper Keys Shipwrecks: Archaeological Site Assessment of Shipwrecks in the Florida Keys National Marine Sanctuary* was selected for funding by Preserve America, a White House initiative that supports community efforts to save the country's priceless cultural and natural heritage.

After receiving training, sanctuary volunteers are involved in data collection in the field. Once trained, volunteers also become part of the sanctuary's volunteer maritime heritage resource inventory team for this and future projects. The inventory began back in the early 1990s when volunteers began assembling a database of wreck sites and artifact locations in the waters of the sanctuary by recording important site information and taking photographs. The inventory database proved very useful when selecting which sites to study in this newest maritime heritage project.

A composite photograph, known as a photo-mosaic, was created for each of the five sites surveyed thus far. The photo-mosaic technique produces an image that allows the entire wreck site to be viewed as one image by stitching together consecutive images.

All information collected from these efforts will be recorded in the state of Florida Master Site File and sanctuary database for future management of these heritage resources. Archival research will be carried out to determine what information, if any, is known or can be gleaned from the site.

For more information on NOAA's Maritime Heritage Program, visit **http://sanctuaries.noaa.gov/maritime**. For more information about Preserve America, visit **http://preserveamerica.gov**. To find out how to become a sanctuary volunteer, contact Sanctuary Advisory Council and Volunteer Coordinator Lilli Ferguson at Lilli.Ferguson@noaa.gov or (305) 292-0311.

Mote Marine Laboratory Creates *The Living Reef* at Florida Keys Eco-Discovery Center

***The Living Reef* exhibit, created and maintained by Mote Marine Laboratory staff, provides an opportunity for visitors to the Florida Keys Eco-Discovery Center to see live corals, queen conch, urchins and other marine life.**
Photo: Leigh Espy

Thanks to Mote Marine Laboratory, the Florida Keys Eco-Discovery Center has *The Living Reef*, a new exhibit featuring a 2,400-gallon aquarium, five smaller aquaria and interactive activities. *The Living Reef* highlights important areas of research being conducted by scientists and introduces the visitor to the private and public collaborations that are needed to preserve and enhance our complex marine environment.

The theme of the main aquarium is the living coral reef itself, and three of the smaller aquaria feature queen conch, long-spined urchins and coral restoration, respectively. Two aquaria with living soft and hard corals flank the entrance to the exhibit room.

One area of research for Mote scientists involves the culturing of reef corals for restoration projects at Mote's Tropical Research Laboratory on Summerland Key, 24 miles north of Key West. Mote's main laboratory is located in Sarasota, Fla.

Visitors may view *The Living Reef* exhibit during regular Eco-Discovery Center hours, Tuesday through Saturday from 9 a.m. to 4 p.m. The Eco-Discovery Center is located at the Dr. Nancy Foster Environmental Complex at 33 East Quay Road in Key West.

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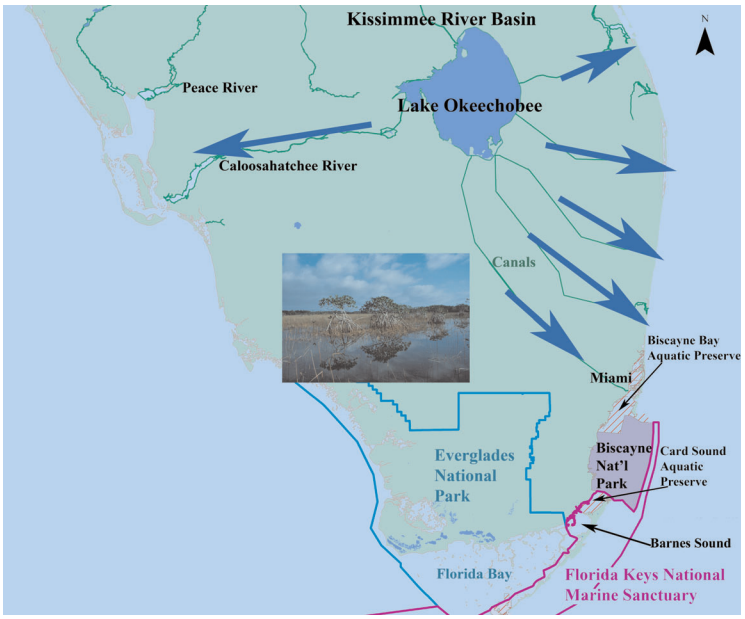
The goal of restoring the Everglades ecosystem, which begins north of Lake Okeechobee with the Kissimmee River system and ends downstream at the reef in the Florida Keys, involves getting the right amount of good-quality water in the right places at the right time. This restored sheet flow will help recharge the aquifer and sustain the wetlands. To accomplish this restoration, Congress passed the Water Resources Development Act (WRDA) of 1992, authorizing the U.S. Army Corps of Engineers to work in partnership with the South Florida Water Management District and other local, state and federal agencies and tribal entities to develop a restoration plan for the entire Everglades ecosystem.

CERP and the Sanctuary

The Comprehensive Everglades Restoration Plan (CERP) provides the framework for restoring the system and was adopted by Congress in the reauthorization of WRDA 2000. A main feature of CERP involves re-engineering the extensive canal drainage system managed by South Florida Water Management District to restore sheet flow through wetlands, creating more natural water delivery and fostering estuarine conditions along the coast. It also mandates that flood control be maintained to protect South Florida communities. Congress recently passed WRDA 2007, which authorizes new projects under the 30 year CERP and includes language to fund previously authorized projects at today's costs.

CERP includes projects designed to help restore central and southern Biscayne Bay, which is part of Biscayne National Park. The restoration will affect nearby Barnes and Card Sounds at the southern end of the Bay. Card Sound is part of the Biscayne Bay Aquatic Preserve under Florida's Department of Environmental Protection, and both Barnes and Card Sounds are within the boundaries of Florida Keys National Marine Sanctuary.



The watershed begins north of Lake Okeechobee and ends in the Keys. The canal system drains much of the surface waters before they reach the Everglades wetlands in the south or Biscayne Bay. Most of Biscayne Bay is within the boundaries of Biscayne National Park and the Biscayne Bay Aquatic Preserve. Map: Alicia Farrer

The proximity of the proposed restored areas to Florida Keys National Marine Sanctuary is one reason why National Marine Sanctuary Program Regional Director Billy D. Causey is a member of the working group that advises the South Florida Ecosystem Restoration Task Force, an interagency body with tribal and government representatives charged with overseeing restoration activities. Sanctuary Superintendent Dave Score sits as Causey's alternate on the working group. Sanctuary representatives also participate in the Biscayne Bay Regional Restoration Coordination Team, a stakeholders group established to advise the working group about CERP projects that affect Biscayne Bay and related waters, including Card Sound and Barnes Sound.

The Florida Keys Sanctuary Advisory Council (SAC) has played a role in the mainland restoration process since the beginning. After the onset of algal blooms in Florida Bay in the late 1980s and early 1990s, the council took a leadership role in urging state and federal authorities to investigate the bloom's effects on marine life and to restore the ecosystem. Today, the council's Ecosystem Restoration Working Group, chaired by Dr. Jerry Lorenz, director of Audubon of Florida's Tavernier Science Center, keeps the SAC informed about restoration activities on a regular basis.

The American crocodile depends upon estuarine conditions for its young. Photo: Everglades National Park

Biological Monitoring of Key Species

Biological monitoring of key estuarine species is planned to determine how well CERP is accomplishing its goals. Pink shrimp, American oysters, silver perch and the American crocodile have been selected as indicator organisms to see if conditions are returning to the more natural state as CERP projects are put into place.

To read the resolutions and actions of the SAC, visit the SAC link on the sanctuary's home page, **http://floridakeys.noaa.gov**. To find out more about the South Florida Task Force, working group, restoration plans and public meetings, visit **www.sfrestore.org** or **www.evergladesplan.org**.

CERP Projects Restore Estuaries Adjacent to Sanctuary Waters

CERP Projects Involve Wetlands to the North

The Comprehensive Everglades Restoration Plan (CERP) includes many projects that are designed to restore sheet flow to wetlands in the Kissimmee-Okeechobee-Everglades Watershed, which begins north of Lake Okeechobee and ends in the Florida Keys. This watershed is managed by the South Florida Water Management District, a key agency involved in CERP. The US Army Corps of Engineers, responsible for providing flood control for developed area, also plays a key role. Two projects, summarized below, involve wetlands adjacent to the Keys or Florida Bay. Project updates are available on a regular basis by visiting the CERP website **http://www.evergladesplan.org**.

Biscayne Bay Coastal Wetlands

The targeted areas of restoration for the Biscayne Bay Coastal Wetlands are the freshwater wetlands, tidal creeks and nearshore habitats of Biscayne Bay. The project calls for a collection of water management features in south Dade County that will improve the quantity, timing and distribution of freshwater flows to both the altered and natural system. The first phase of the Biscayne Bay Coastal Wetlands is being implemented as a state of Florida's Acceler8 project. This phase includes pump stations, flow ways and culverts that will redirect flows away from existing drainage canals towards coastal wetlands at Deering Estates, Black Point and along L-31E adjacent to Biscayne National Park. Construction on some of the project elements is scheduled to begin January 2008.

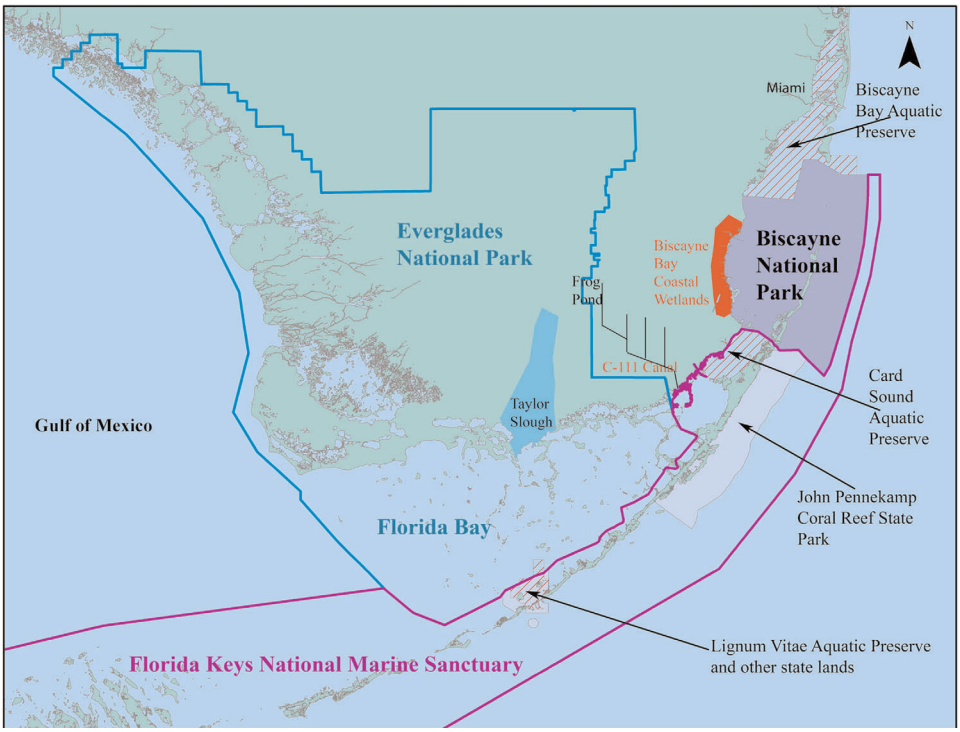
C-111 Spreader Canal Project

The C-111 Spreader Canal Project is also a component of CERP and a State of Florida Acceler8 project. Years ago, the dredging of the C-111 canal redirected water flows to the east, significantly reducing the amount of water that flowed through Taylor's Slough into northern Florida Bay. This reduced water input has impacted Florida Bay fisheries and ecology.

The goal of the first phase of this project is to reduce water loss through the canal system and improve water flows to northern Florida Bay through Taylor's Slough. In December 2007 the Project Development Team recommended alternative 2D to the South Florida Ecosystem Restoration Task Force for the first (Acceler8) phase of this project.

This alternative calls for a 530-acre Frog Pond detention area that will help create a mound of groundwater to the south and west of the detention area. This mound is expected to better hydrate Taylor's Slough by preventing groundwater seepage to the east.

Two other measures are also being implemented as part of alternative 2D: pumping water so that it discharges further west in the aerojet canal and plugging key locations in the canal system. The final design for this phase of the project is expected to be completed by late 2009.



The approximate locations of the Biscayne Bay Coastal Wetlands project and the C-111 canal are shown in red. The sanctuary's boundary (magenta) is adjacent to Biscayne National Park and Everglades National Park (blue), which includes Florida Bay. Other managed lands in the Keys, including state parks and aquatic preserves, may also be affected by restoration activities. Map: Alicia Farrer

Sanctuary Friends is a Friend to Marine Conservation

Sanctuary Friends Foundation of the Florida Keys is certainly a friend to the Florida Keys National Marine Sanctuary. The organization serves as a conduit for funding programs that help protect endangered marine ecosystems of the coral reef, preserving them for current and future generations. The tools necessary to accomplish these goals are education, outreach and preservation. These same tools are an integral part of Coral Reef Classroom, Team OCEAN, Mooring Buoys, Blue Star, the SEE Teacher Awards and other sanctuary programs funded by the Sanctuary Friends.

Sanctuary Friends also supports important scientific research efforts in sanctuary waters. Recently, the organization provided $50,000 for a collaborative program between Bonefish Tarpon Unlimited and the University of Miami's Rosenstiel School of Marine and Atmospheric Science. This program seeks to assess bonefish and tarpon populations and to improve fisheries management decisions by linking scientists, professional guides and leaders with government fisheries managers.

Glenn Patton has been managing director of the organization for the past year. "I am confident that Friends will continue to increase its positive impact on programs that support the sanctuary," he says. "It is a pleasure to work for such a productive organization."

The Sanctuary Friends Foundation of the Florida Keys is a non-profit 501(c)(3) organization. Membership is open to everyone. Officers are elected from the general membership. Monroe County Commissioner George Neugent, who holds the public official seat on the sanctuary advisory council, currently serves as chair of the board of directors.

If you enjoy the coral reefs of the Florida Keys and care about protecting this special place for future generations, join the Sanctuary Friends. For more information, please visit **www.sanctuaryfriends.org**.

The Florida Keys National Marine Sanctuary thanks everyone who contributed their articles, photographs, and editing expertise to *Sounding Line* newsletter. *Sounding Line* is produced by Florida Keys National Marine Sanctuary. For more information or to be placed on the mailing list, e-mail the editor at Nancy.Diersing@noaa.gov.