



Coquina BayWalk at Leffis Key

Demonstrating Practical Tools for Watershed
Management Through the National Estuary Program

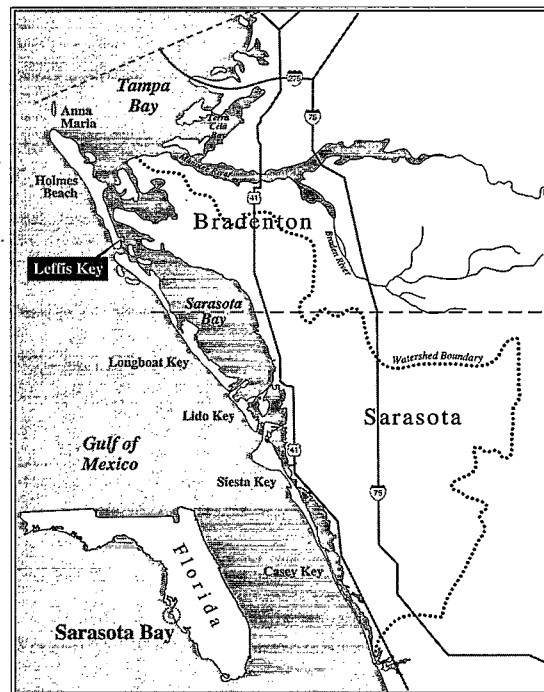
Sarasota Bay, Florida

Characteristics:

- The Sarasota Bay watershed comprises about 150 square miles of land and 52 square miles of water surface.
- Nearly 500,000 people live in the Sarasota Bay area.
- Land use in the watershed is 42 percent residential, 10 percent commercial, 8 percent agricultural, and 40 percent open space.

The Problem:

- Wetland loss, including encroachment of non-native plant species, is one of the major problems threatening Sarasota Bay.
- Since 1950, the Sarasota Bay watershed has lost 39% of its intertidal habitat. Freshwater and non-forested wetlands have also declined dramatically, more than 45% in the past 20 years.
- Only 20 percent of the shoreline remains in its natural state.
- Non-native plants have invaded 66% of mangrove wetlands in the bay.



The Project:

The Coquina BayWalk at Leffis Key Restoration Project was designed to create native habitat on 30 acres of public land. Project objectives also included improving water quality, increasing public access to the bay, and providing opportunities for public education and participation.

The National Estuary Program

Estuaries and other coastal and marine waters are national resources that are increasingly threatened by pollution, habitat loss, coastal development, and resource conflicts. Congress established the National Estuary Program (NEP) in 1987 to provide a greater focus for coastal protection and to demonstrate practical, innovative approaches for protecting estuaries and their living resources.

As part of the demonstration role, the NEP offers funding for member estuaries to design and implement Action Plan Demonstration Projects that demonstrate innovative approaches to address priority problem areas, show improvements that can be achieved on a small scale, and help determine the time and resources needed to apply similar approaches basin-wide.

The NEP is managed by the U.S. Environmental Protection Agency (EPA). It currently includes 28 estuaries: Albemarle-Pamlico Sounds, NC; Barataria-Terrebonne Estuarine Complex, LA; Barnegat Bay, NJ; Buzzards Bay, MA; Casco Bay, ME; Charlotte Harbor, FL; Columbia River, OR and WA; Corpus Christi Bay, TX; Delaware Estuary, DE, NJ, and PA; Delaware Inland Bays, DE; Galveston Bay, TX; Indian River Lagoon, FL; Long Island Sound, CT and NY; Maryland Coastal Bays, MD; Massachusetts Bays, MA; Mobile Bay, AL; Morro Bay, CA; Narragansett Bay, RI; New Hampshire Estuaries, NH; New York-New Jersey Harbor, NY and NJ; Peconic Bay, NY; Puget Sound, WA; San Francisco Bay-Delta Estuary, CA; San Juan Bay, PR; Santa Monica Bay, CA; Sarasota Bay, FL; Tampa Bay, FL; and Tillamook Bay, OR.

Introduction to Sarasota Bay

Sarasota Bay is located on Florida's fast-growing southwest coast. Although bay resources have been significantly affected by habitat modifications over the past 50 years, Sarasota Bay still supports an abundance of aquatic life.

Rapid residential development has caused major changes in the bay's ecosystem.

Natural shorelines have been replaced by seawalls, bulkheads, and riprap. Large-scale dredge and fill projects, completed during the 1950s, dramatically altered the bay's shoreline and bottom habitat.

The Sarasota Bay National Estuary Program has focused habitat restoration efforts on bettering both intertidal and bottom habitats through improvements in water quality, restoration of wetlands, and creation of artificial reefs for juvenile fish. The Leffis Key project is one of many restoration projects completed in the bay to restore lost wetland habitat. And many more are planned or under construction.



Aerial view of Leffis Key

Overview of the Coquina BayWalk at Leffis Key

Leffis Key is a 30-acre site, owned by Manatee County, located along the Sarasota Bay shoreline on the southeast tip of Anna Maria Island, just north of Longboat Pass. The site is directly adjacent to Coquina Beach. It is estimated that more than two million people visit Coquina Beach annually, making it one of the most

heavily utilized recreational areas in the Manatee-Sarasota county region.

The disposal of material from the dredging of the Intracoastal Waterway during the 1950s covered a small mangrove island and created the peninsula known as Leffis Key. The site had become vegetated

by non-native plant species such as Australian pine and Brazilian pepper. Seagrass beds were also covered during dredged material disposal in the 1950s.

Since the site was in public ownership and was heavily modified, it became a prime candidate for restoration.

Project Objectives

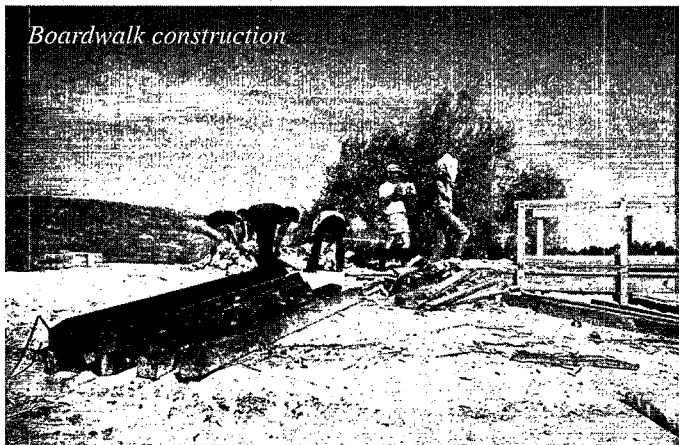
The objectives of the Coquina BayWalk project were to:

- restore one of many dredged material disposal sites in Sarasota Bay as a model for other projects;
- increase the area of functional mangrove, wetland, and shallow water habitats;
- improve bay circulation;
- increase levels of managed access to the northern sections of Sarasota Bay and its resources;
- increase available spawning and juvenile fish habitat; and
- increase bay educational and interpretive facilities available to both local residents and tourists.



Sorting the exotic non-native Australian Pine through the chipper.

Boardwalk construction



Implementing the Project

The Sarasota Bay National Estuary Program drafted the initial proposal for funding in concert with the Florida Department of Environmental Protection and Manatee County. The project design was initially developed by the staff members of the Florida Department of Environmental Protection and reviewed and influenced by the Sarasota Bay National Estuary Program Technical Advisory Committee. Manatee County Public Works staff members also participated in surveying, topographic mapping, and final design of the site, as well as constructing the project.

During construction, the first step was to remove exotic species. This was followed by excavation of intertidal pools and tidal inlets and construction of boardwalks and walkways for public access.

The overall plan was to recreate the island through excavation of a channel through the peninsula, thus re-establishing tidal circulation around the area. A footbridge was installed to provide visitor access to the BayWalk. Fill material from the key and adjacent north and south shorelines was used to create dunes to serve as visual and sound barriers to road traffic. Volunteers planted more than 50,000 native saltmarsh, intertidal, and upland plants and trees. Interpretive signage was

installed, and an educational brochure was produced to inform visitors to the site about the ecological importance and interdependence of the mangrove forest and other surrounding habitats.

The site is monitored regularly for plant survival. Maintenance is provided by the Manatee County Department of Recreation and Parks.

Success Stories

The project re-established over 30 acres of wetland habitat previously disrupted by human activities. As such, it becomes a significant part of the larger program to restore intertidal and freshwater wetlands in Sarasota Bay.

The project has received positive media reviews. It won an Environmental Excellence Award from the Florida Marine Research Institute, was featured in Good Housekeeping magazine, and is now included in the Florida Wildlife Viewing Guide.



The project made it possible to draw together a wide range of active participants and funding sources directed toward a common goal. These included Manatee County, Florida Department of Environmental Protection, the City of Bradenton Beach, Florida Sea Grant, and the US Environmental Protection Agency. The

Sarasota Bay National Estuary Program provided technical assistance and citizen input to the project. The US Environmental Protection Agency provided \$75,000 as Early Action Demonstration Project Funds. Manatee County provided significant in-kind services including design, site preparation, and excavation, as well as \$9,000 from the county pollution-recovery account. The Florida Department of Environmental Protection provided approximately \$250,000 and the Florida Department of Natural Resources provided native plants. Overall cost of the Coquina BayWalk project totaled approximately \$350,000.

Lessons Learned

The Sarasota Bay National Estuary Program has identified areas throughout the region which are suitable for wetland restoration and is working hard to meet goals established as part of their planning process.

Specific lessons include:


- Dredged material disposal areas can be successfully restored into productive habitats with recreational and educational value.
- Tourists and local residents have been attracted to the site in significant numbers.
- Volunteers are more than willing to participate in planting. They indicate that it is fun and rewarding.
- Restoration efforts are excellent media events.
- Funds are generally available for habitat restoration.



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