

**LEMON BAY PRESERVE ECOSYSTEM RESTORATION  
PHASE I**



**Prepared by:**

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The Charlotte Harbor National Estuary Program is a partnership of citizens, elected officials, resource managers and commercial and recreational resource users working to improve the water quality and ecological integrity of the greater Charlotte Harbor watershed. A cooperative decision-making process is used within the program to address diverse resource management concerns in the 4,400 square mile study area. Many of these partners also financially support the Program, which, in turn, affords the Program opportunities to fund projects such as this. The entities that have financially supported the program include the following:

U.S. Environmental Protection Agency  
Southwest Florida Water Management District  
South Florida Water Management District  
Florida Department of Environmental Protection  
Florida Coastal Zone Management Program  
Peace River/Manasota Regional Water Supply Authority  
Polk, Sarasota, Manatee, Lee, Charlotte, DeSoto and Hardee Counties  
Cities of Sanibel, Cape Coral, Fort Myers, Punta Gorda, North Port, Venice and Fort  
Myers Beach  
and the Southwest Florida Regional Planning Council.

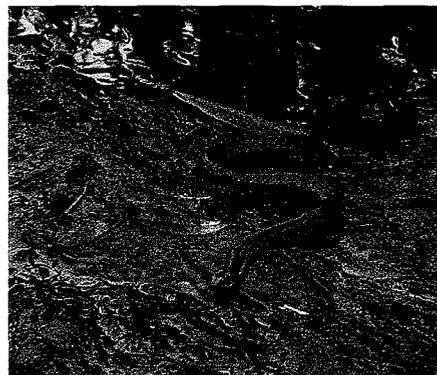
## INTRODUCTION

The Lemon Bay Preserve was purchased by Sarasota County in 1998 because of its high ecological value. This 165-acre coastal scrub and estuarine preserve encompasses approximately 4,480 linear feet of waterfront property along the Lemon Bay Aquatic Preserve (figure 1) and is connected to the south to a series of conservation easements, private preserves, and protected Environmentally Sensitive Lands. Historically, the natural habitats in the Preserve have been impacted by a number of human alterations including dredging, mosquito ditching, roads, and other development in the watershed. The intent of Sarasota County's restoration at the Preserve has been to restore the historic hydrology and ecology of a mangrove, estuarine and coastal ecosystem on the Lemon Bay Preserve.

The Lemon Bay Ecosystem Restoration Project has been part of a coordinated effort to serve local and regional watershed initiatives. The project integrates water resources management, neighborhood preservation and enhancement, and habitat management. As part of this project, Sarasota County's Natural Resources and Environmental Utility divisions have collaborated to reduce flooding level-of-service deficiencies in the Woodmere Creek Drainage Basin, a drainage basin in the Lemon Bay watershed. The primary goals of the Project have been to increase fish and wildlife populations, improve water quality, increase mangrove habitat, reduce exotic plant coverage, and establish a civic involvement program.

## SUMMARY OF BENEFITS

The overall restoration project has focused on the decrease in recreational and commercial fishing in Lemon Bay, by restoring approximately 50 acres of mangrove/coastal wetland systems. At least 230 species of fish depend directly upon the mangrove ecosystem of Lemon Bay for food, shelter, breeding and/or nursery ground. Additionally, 20 species of reptiles and amphibians, 90 species of birds and 20 species of mammals utilize the mangroves as habitat for feeding, roosting, breeding and/or cover. Recent fauna sightings have included the Florida Scrub-jay, gopher tortoise, soft-shell turtle, mangrove snake, leopard frog, common snook, bobcat, osprey, yellow-crowned night heron, and wood duck.



The community outreach component of this project consists of education and stewardship, with emphasis placed on hands-on planting and monitoring aspects. A Neighborhood Environmental Stewardship Team (NEST) was created to encourage both youth and adults to participate in this project.

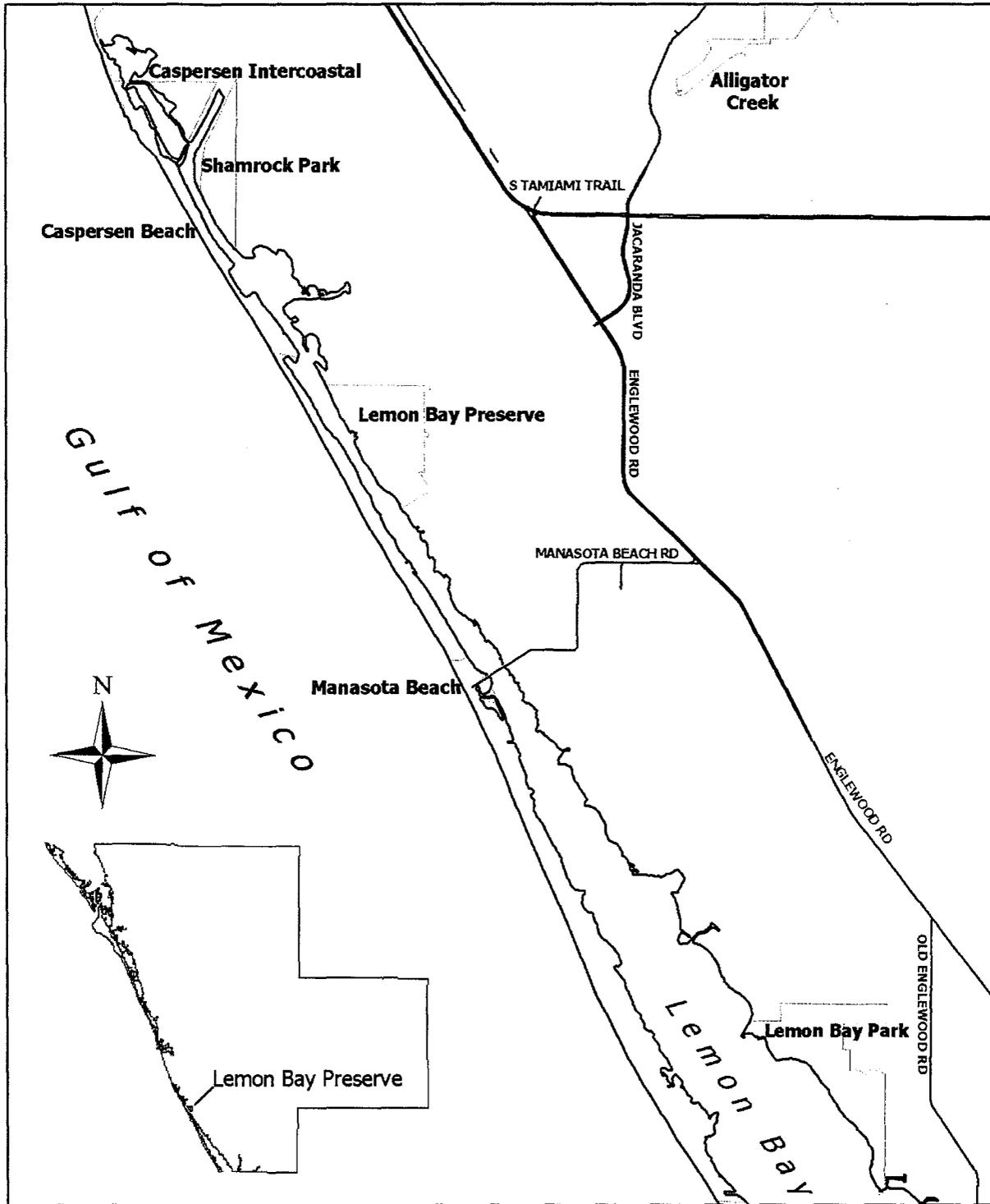


Figure 1. Lemon Bay Preserve Locator Map

- Major Roads
- ▭ Sarasota County Boundary
- ▨ Water Features
- ▭ Major Public Lands

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## **SUMMARY OF WORK**

Earthmoving activities on the Preserve were completed on March 1, 2004. Native plant installation within the restored wetlands was completed by June 2004. The following year was spent monitoring the restoration area and performing exotic treatment. However, it was realized at the beginning of the project that large monocultures of Brazilian pepper occurred within the Preserve but outside of the proposed restoration area. These areas were not funded as part of the original restoration effort.

Phase I of the follow-up restoration effort consisted of herbicide treatments and manual removal of exotic vegetation from the Preserve. This effort focused on Wetland C (figure 2). Phase II, scheduled for completion later this year, will continue to manage exotic vegetation within the preserve focusing specifically on Wetland B.

To date, approximately 78.5 acres of exotic vegetation have been treated on the Preserve as part of the overall restoration effort. An additional 25 acres will be treated this year as part of Phase II. In most instances, Brazilian pepper has been the predominant species treated. Where appropriate, biomass has been reduced (mulched) to the ground level. This work has been performed by hand, with specialized equipment and using wetland-approved chemicals. Reduction of biomass allows for breaks in canopy and opening of ground for re-vegetation and recruitment. The Phase I (and Phase II) follow-up treatments will assist with the ongoing elimination of the seed source from the Preserve and will greatly increase the success of the overall Lemon Bay Preserve Ecosystem Restoration effort.

# Lemon Bay Preserve Phase 1 Exotic Control



## Legend

- Lemon Bay Preserve Trails**
- Access Gate
  - ☪ Pond
  - ☪ Wetland B
  - ☪ Wetland C
  - ☪ Alternative Crossing Area
  - ☪ Maintenance Trails
  - ☪ Existing Public Trails
  - ☪ Future Trail Creation/Enhancement
  - ☪ Proposed Boardwalks

0 250 500 750 1,000 Feet