



West Lake Park, Ft. Lauderdale, Florida USA (July 19, 1989); Credit: Robin Lewis

West Lake Park, Ft. Lauderdale, Florida USA (October 22, 1995)

Overview

Mangrove restoration has been attempted in many places around the world, but failures have been common and much money has been wasted. Hydrologic restoration--i.e. planning for restored hydrology and natural colonization of seedlings--appears to be the most cost effective form of mangrove restoration. This project employed that strategy and resulted in the successful establishment of 500 hectares of mangroves at West Lake in Broward County, Florida. In addition to facilitating the cost-effective development of viable mangrove habitat, the modified hydrologic design also included tidal creeks that allowed proper hydrology to support restored fish habitat.

Project Details

X

Lead Entity:

Lewis Environmental Services, Inc.

Lead entity types:

- Private Sector

Adaptive management

Describe adaptive management processes and mid-course corrections taken to address unforeseen challenges and improve outcomes in each of the following categories:

Other:

Proper research into the existing hydrology prior to the design of the final restoration program resulted in a savings of US\$15 million, since the first restoration program was estimated to cost US\$20 million, but the final approved design did more for the ecosystem at less cost.

State of Progress:

- Implementation

Project Start:

1986-05-30

Project End:

1995-05-30

Total budgeted expenses:

- USD 5-10 million

Global Regions:

- Northern America
- Americas
- World

**Countries:**

- United States of America

**Ecosystem Functional Groups / Biomes:**

- Brackish tidal biome

**Ecosystems:**

- Intertidal forests and shrublands

**Extent of project:**

- Other

**Extent of restoration:**

- Other

**Degradations:**

- Other industrial and urban development

**Description:**

The West Lake estuary and watershed is an urban/suburban estuary ecosystem with one of the largest ports in the USA (Port Everglades). Dredging and filling in support of this port have modified both the shallow edge and bottom of the estuary. Home development along the shore was proposed, and portions of the land purchased for US\$20 million and converted to a county Park (total area 600 ha, 500 ha of mangrove and open water), domestic and industrial waste discharges, and habitat loss due to poor management have all contributed to the degradation of the estuary.

**Planning and Review**



**Goals and Objectives**



**Was a baseline assessment conducted:**

UNSURE

**Was a reference model used:**

UNSURE

**were\_goals\_identified:**

YES

**Goals and objectives:**

- Other

**Goals Description::**

The restoration of 500 ha of mangrove forest through hydrologic improvements to blocked mangroves, and the removal of 80 ha of historical dredged material fill.

**Stakeholder Engagement**



**Were Stakeholders engaged?:**

unsure

#### Description of Stakeholder Involvement:

The local government is responsible for the planning, design, implementation, evaluation and oversight of this project.

#### Ecosystem Activities and Approaches



General Activities: \*\*Australian pine areas, growing on higher filled land, are selected for reforestation by mangroves. \*\*The pines are removed from the site. The now-cleared land is ready for heavy equipment earthwork. \*\*The land elevation is lowered to a height suitable for natural seed establishment of mangrove propagules. In West Lake, the desired elevation is from +0.9 to +1.4 feet above sea level. The earth removal stage is known as "scrapedown." \*\*Channels are constructed within the scrapedown sites to assist mangrove seed dispersal by tidal waters. Small fish begin to utilize the channels. \*\*Mangrove seeds of red, black and white mangrove begin floating in immediately to revegetate the site. Wading birds utilize the newly-created wetland to search for fish.

##### Categories of ecosystem restoration activities and approaches utilized:

- Ecological restoration

##### Specific type of rehabilitation and/or restoration approach implemented:

- Reconstruction or heavily assisted recovery (e.g. introduction of nearly all biota, major landform modification, major hydrological modification)

#### Project Outcomes



Eliminate existing threats to the ecosystem: 80 ha of persistent new mangrove forest have been added to the ecosystem, and an additional 420 ha of mangroves have received improved hydrology. Economic vitality and local livelihoods: While the County's major emphasis is on restoring and preserving the environmentally sensitive natural habitats of West Lake, the site ultimately will include minimal facilities aimed at providing public education and recreational amenities. Plans include the construction of the Anne Kolb Nature Center and outdoor classroom, multi-use boardwalks, fishing facilities, small boat launching site, public observation areas, and hiking trails.

#### Monitoring and Data Sharing



##### Does the project have a defined monitoring plan?:

NO

##### Open Access URL:

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#### Long Term Management



#### STAPER

