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quick facts on...

LILA
An Everglades Living Laboratory

FEBRUARY 2008

The South Florida Water Management District *is a regional, governmental agency that oversees the water resources in the southern half of the state. It is the oldest and largest of the state's five water management districts.*

Our Mission *is to manage and protect water resources of the region by balancing and improving water quality, flood control, natural systems, and water supply.*

The science behind Everglades restoration is keeping researchers busy at a unique outdoor laboratory: the Loxahatchee Impoundment Landscape Assessment (LILA) in Boynton Beach, Florida.

LILA is a working 80-acre model of the Everglades ecosystem on the grounds of the Arthur R. Marshall Loxahatchee National Wildlife Refuge. This "living laboratory" gives experts an opportunity to research and apply restoration techniques on a small, controlled scale before taking them into the 1.7 million-acre Everglades ecosystem. The unique facility was built in 2003 as a partnership between the South Florida Water Management District, U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers.

Water control is at the heart of LILA where electric pumps capable of moving more than 45,000 gallons of water (the volume of three swimming pools) per minute can simulate a variety of natural conditions in four enclosed marshes. Each of the 20-acre "macrocosms" simulates various landscape conditions and contains three key habitats found in the natural Everglades system:

- Tree islands – the highest points in the Everglades marsh. These slightly raised "islands" provide drier habitats across the vast wetland. Tree islands support woody vegetation and are critical to wildlife survival.
- Ridges – long, slightly elevated sections of the marsh landscape that are dominated by sawgrass. Ridges are too wet for tree species.
- Sloughs – lowest in elevation, they are like streams within the marsh. Sloughs contain water lilies and submerged aquatic plants.

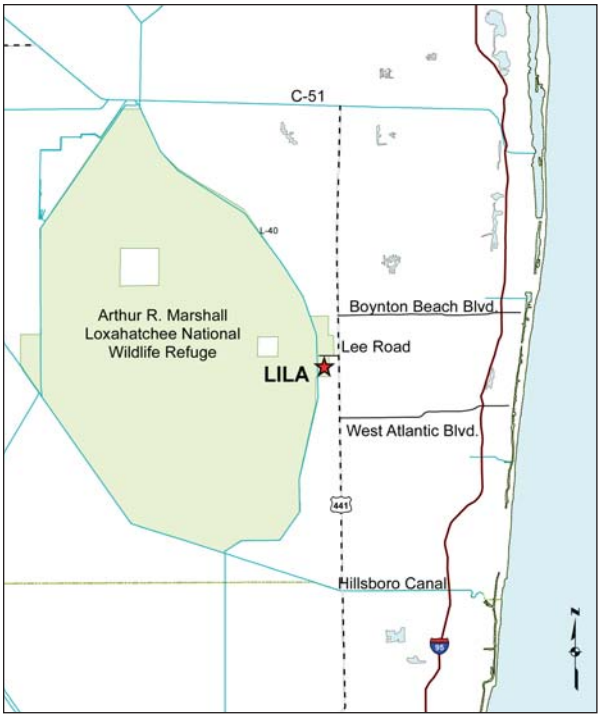
Planting water lilies in the sloughs at LILA creates a healthy aquatic environment for study in the Living Laboratory.

At LILA, water depths and flows in each macrocosm can be controlled independently so that scientists can study the effects on the system. Data from these studies help researchers develop recommendations for improving water management (depths, flows, timing) for the Everglades ecosystem.

Research at LILA remains crucial to Everglades restoration success. Studies have included:

- Manipulating water levels while using bird decoys to draw birds in for closer study. This helps determine the optimum water levels for bird feeding.
- Monitoring how fast water must flow to move soil particles downstream. This will determine the critical velocity needed to sustain differing soil elevations or depths within the Everglades, factors that also affect water quality.
- Planting 6,000 trees on the created tree islands. This study will identify the necessary hydrology for tree survival and growth. It will also determine the range of water levels tolerated by tree species found in the Everglades.

Visitors to the Arthur R. Marshall Loxahatchee National Wildlife Refuge will find LILA located on the birding trail. Visiting LILA provides an opportunity to spend a morning watching a flock of wading birds at the same time scientists are collecting valuable information that will ultimately be used to restore the Everglades.



LILA (Loxahatchee Impoundment Landscape Assessment) at the Arthur R. Marshall Loxahatchee National Wildlife Refuge.

The kiosk explains the purpose of and research being conducted at LILA.

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