

Supporting Ecological Functions in South Florida with the Minimum Flows and Levels Program

An aerial photograph of a coastal wetland system. A large, irregularly shaped pond with murky, light-brown water is the central feature. It is surrounded by dense, vibrant green vegetation, likely mangroves or marsh grasses. The water extends to the horizon under a clear blue sky with a few wispy clouds. The overall scene depicts a healthy, natural ecosystem.

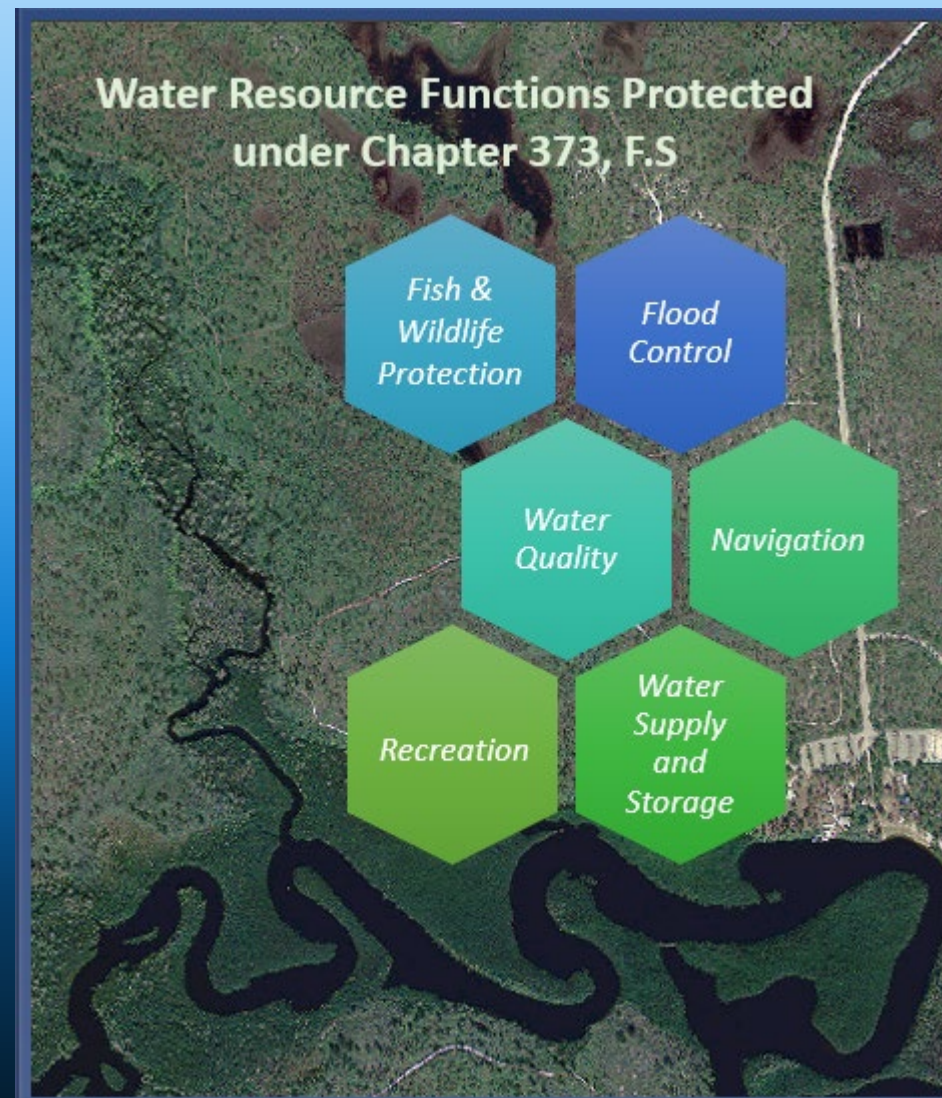
GEER

April 23, 2025

James Beerens, PhD
Lead Scientist

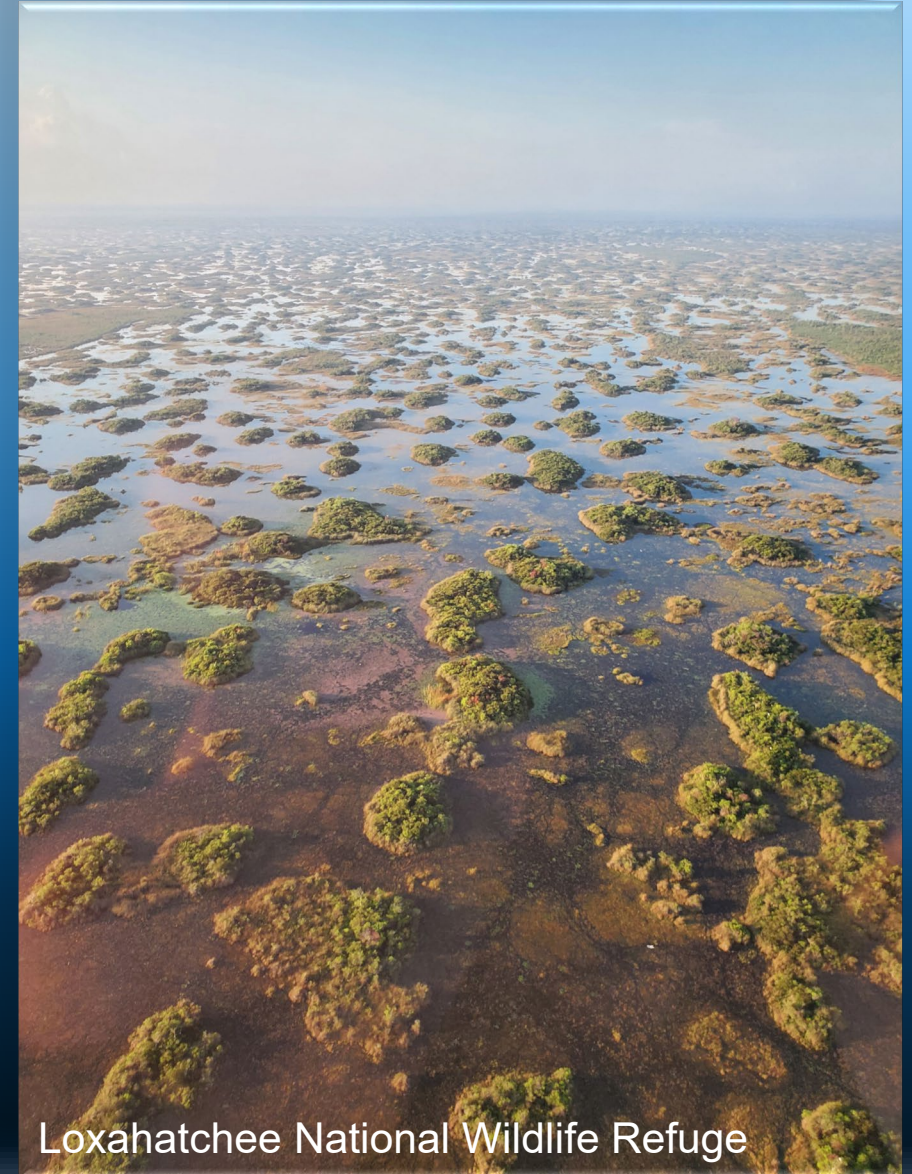
The Applied Sciences Bureau working with the Office of Counsel:

- 1) develops water resource protection criteria for water bodies whose ecosystems are *at risk of ecological degradation*
- 2) identifies hydrologic thresholds where further withdrawals would result in *significant harm* to the water resources or ecology of the water body.



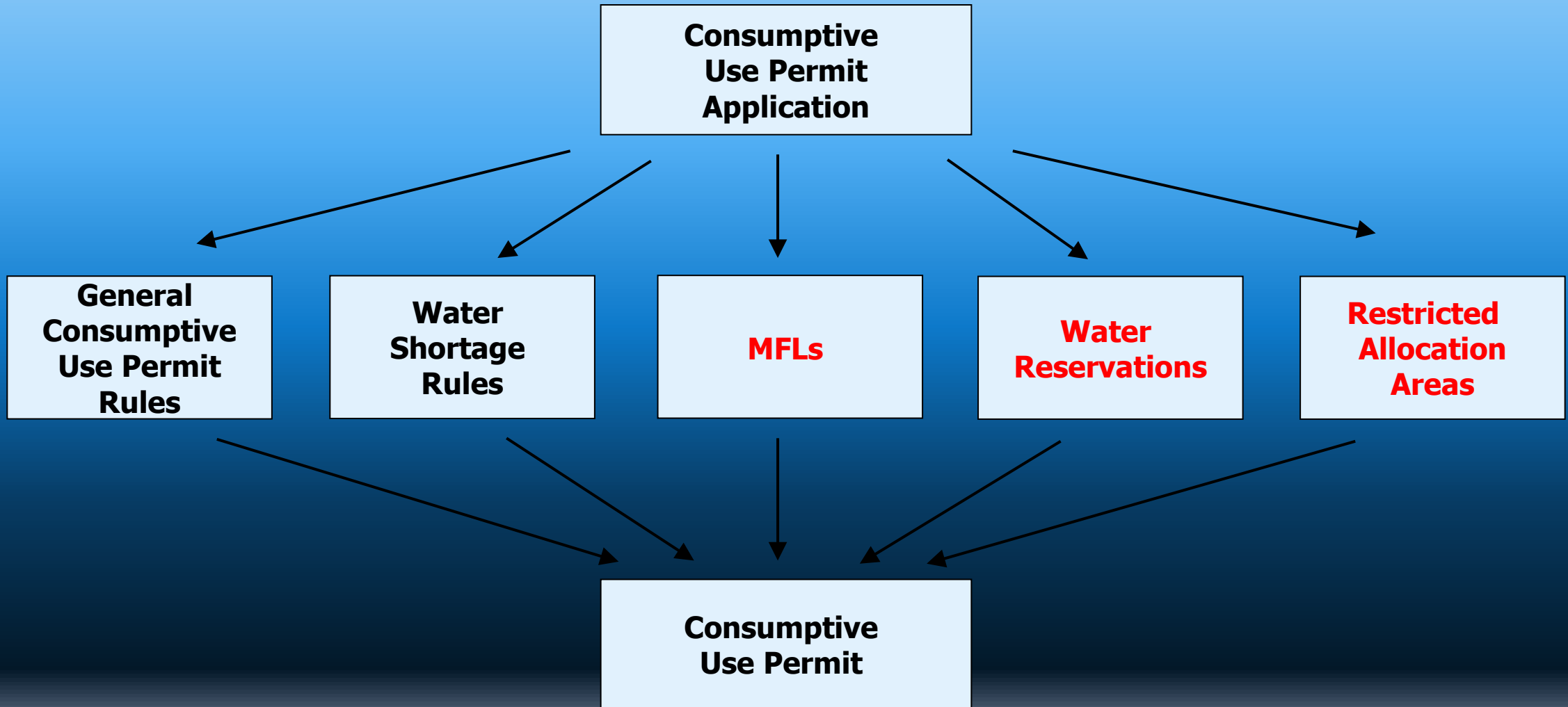
Water Resource Protection Tools

- Minimum flows and minimum water levels (MFLs)
- Water reservations
- Restricted allocation areas (RAAs)
- All three tools are adopted by rule in the Florida Administrative Code (F.A.C.)
- More than one tool can protect a waterbody



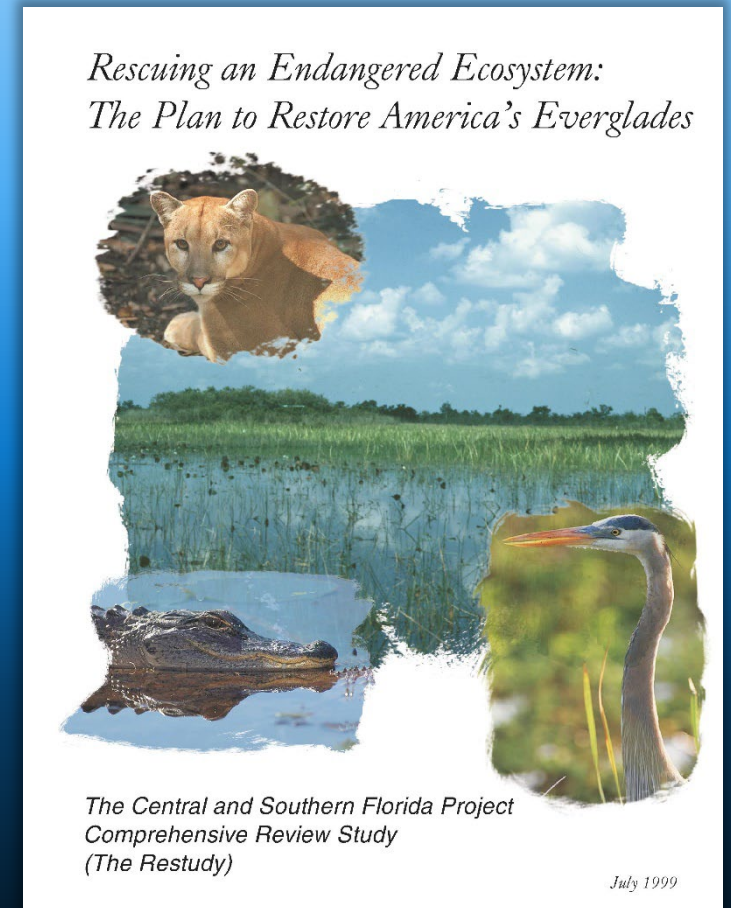
Loxahatchee National Wildlife Refuge

Factors Considered in Consumptive Use Permitting



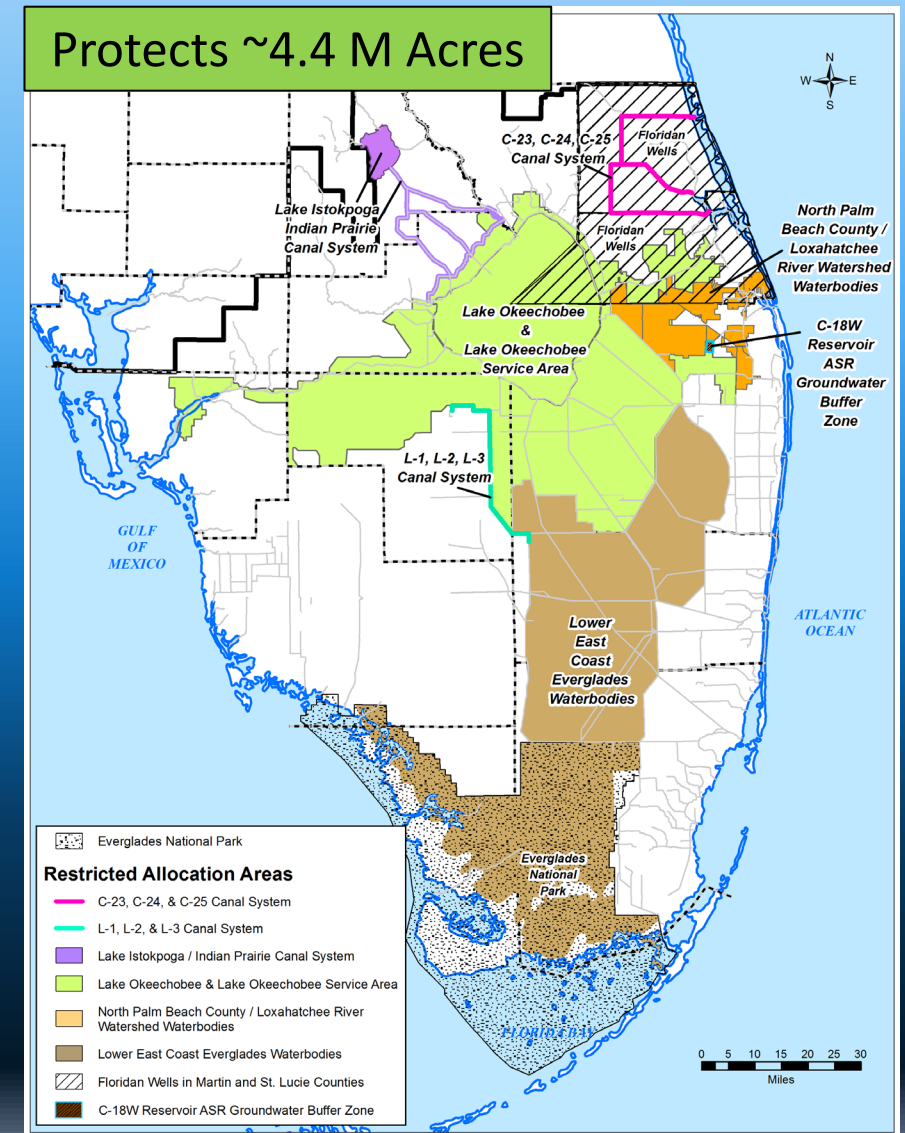
Water Resource Protection Tools and Everglades Restoration

- CERP: Comprehensive Everglades Restoration Plan is a federal/state 50:50 cost-share partnership
- Protection of water for the natural system required prior to project construction agreements
- Chapter 373 requires natural system water and any new water supplies from CERP projects be protected or allocated using State authorities
 - ★ - Restricted Allocation Rules
 - ★ - Water Reservation Rules



Restricted Allocation Areas (RAA)

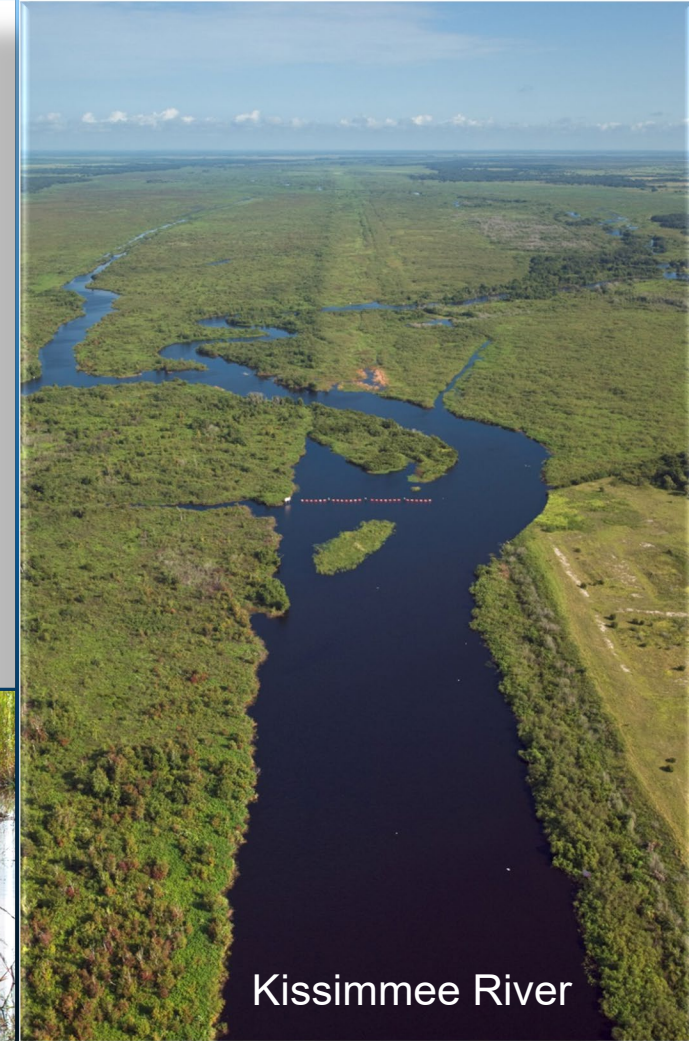
- Implemented where there is a lack of water available to meet projected needs of the region
- Restricts new or increased consumptive use allocations
- Large geographic areas covering multiple ecosystems (Everglades, Lake Okeechobee, Loxahatchee)
- Public interest considerations by Governing Board determination
- Protects future water made available for natural system by CERP projects



Water Reservations

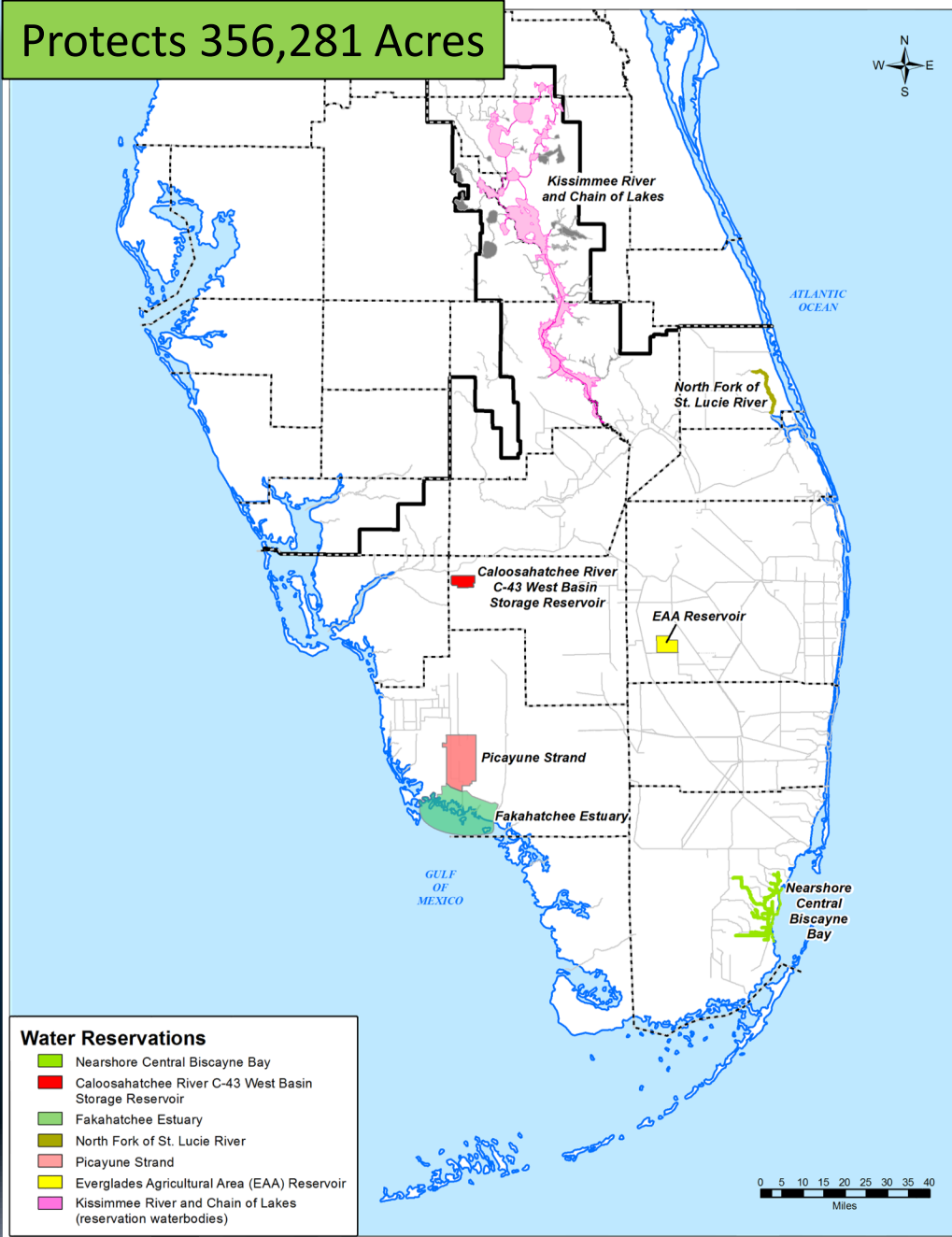
Sets aside water for the protection of fish and wildlife (or public health and safety)

- Based on scientifically defensible determination of water needed for protection of fish and wildlife
- Reserves water from allocation to consumptive uses
- Required for Comprehensive Everglades Restoration Plan (CERP) projects.



Kissimmee River

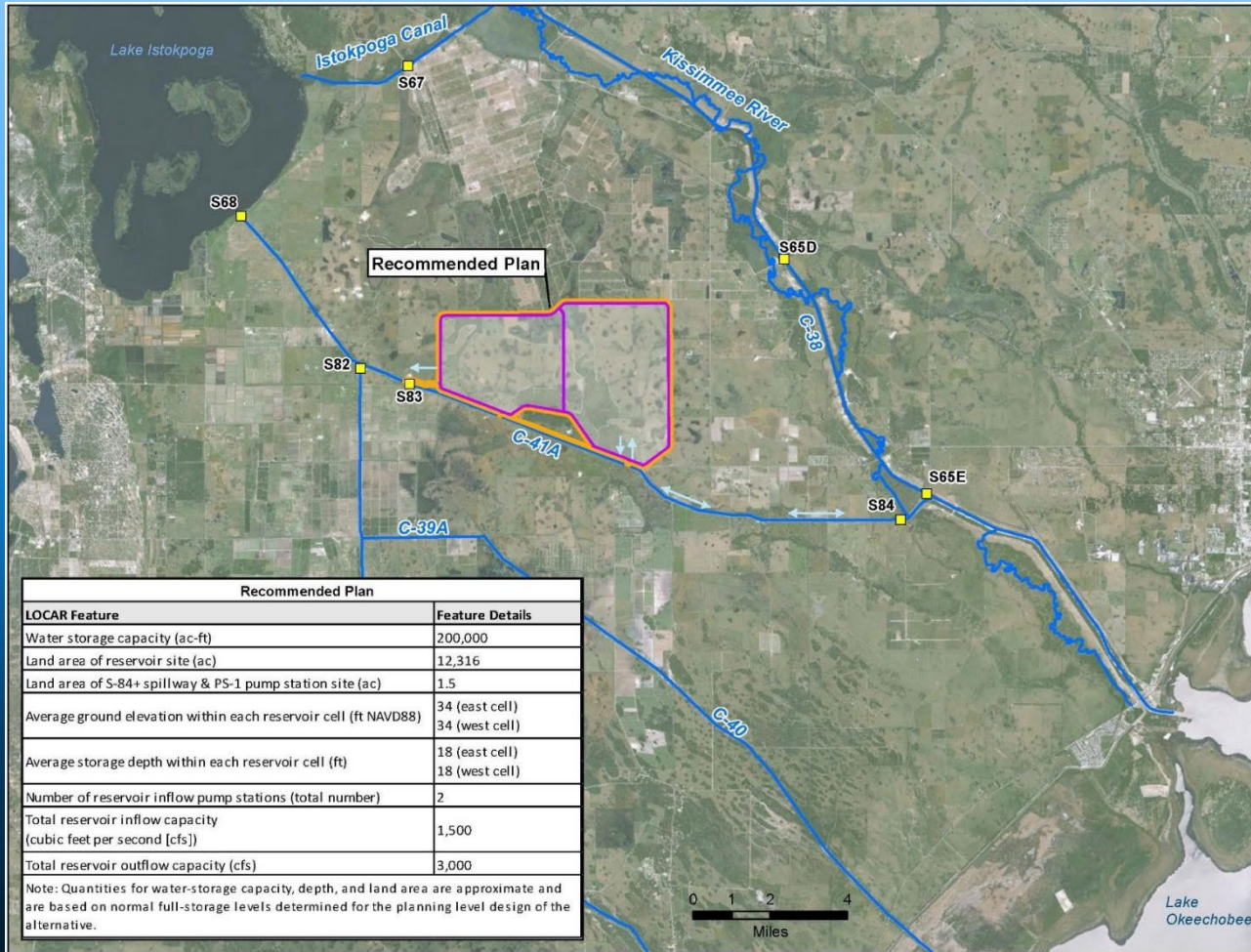
Protects 356,281 Acres



Water Reservations in the SFWMD

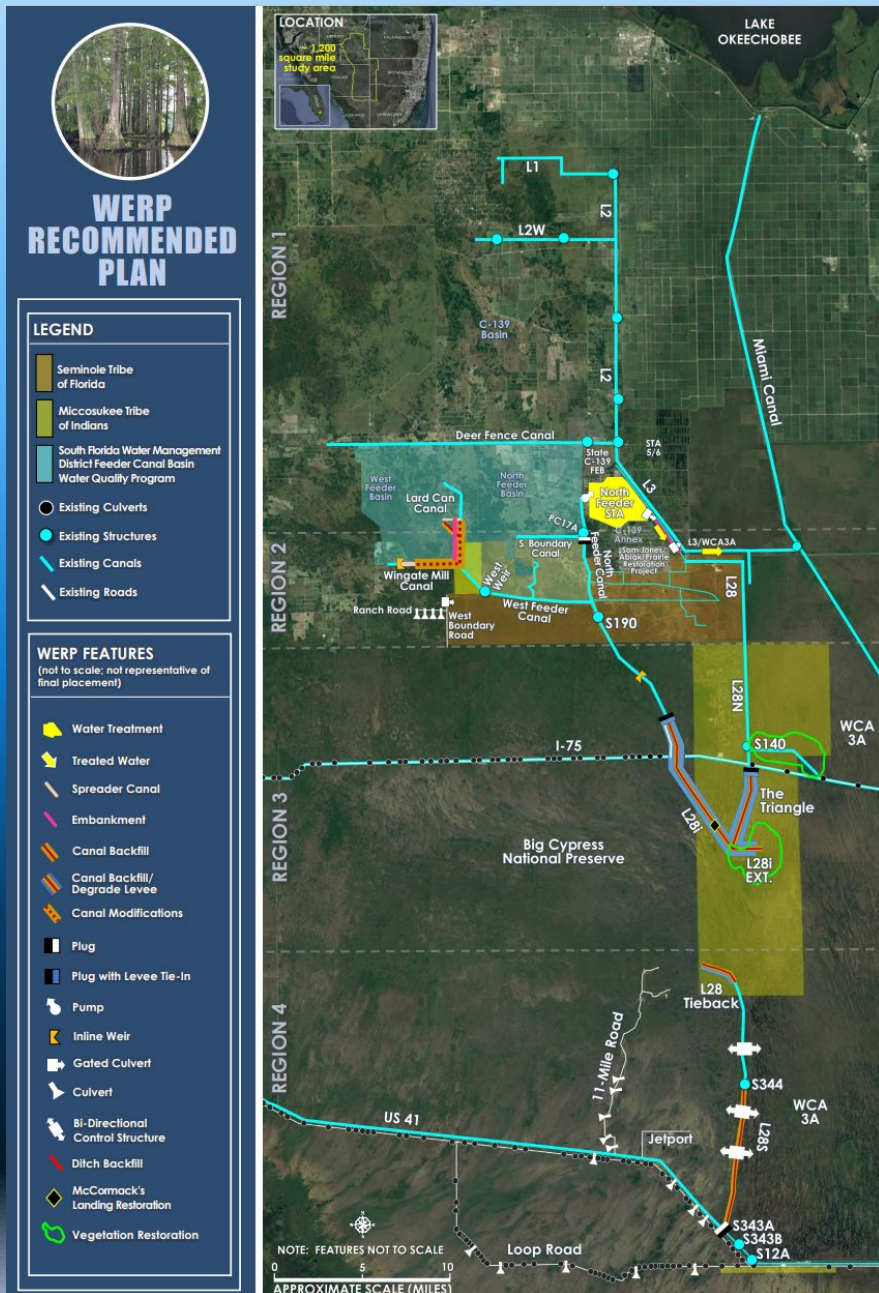
- Picayune Strand – 2009
- Fakahatchee Estuary – 2009
- North Fork of the St. Lucie River – 2010
- Nearshore Central Biscayne Bay – 2013
- Caloosahatchee River (C-43) West Basin Storage Reservoir – 2014
- EAA Reservoir – 2021
- Kissimmee River & Chain of Lakes – 2021

CERP Water to be Protected - LOCAR



- Improve quantity, timing, and distribution of flows into Lake Okeechobee to maintain ecologically desired lake stage ranges more often.
- Improve the timing and volumes of freshwater flows from Lake Okeechobee to improve the salinity regime and the quality of habitats for oyster, submerged aquatic vegetation (SAV), and other estuarine communities in the Northern Estuaries.

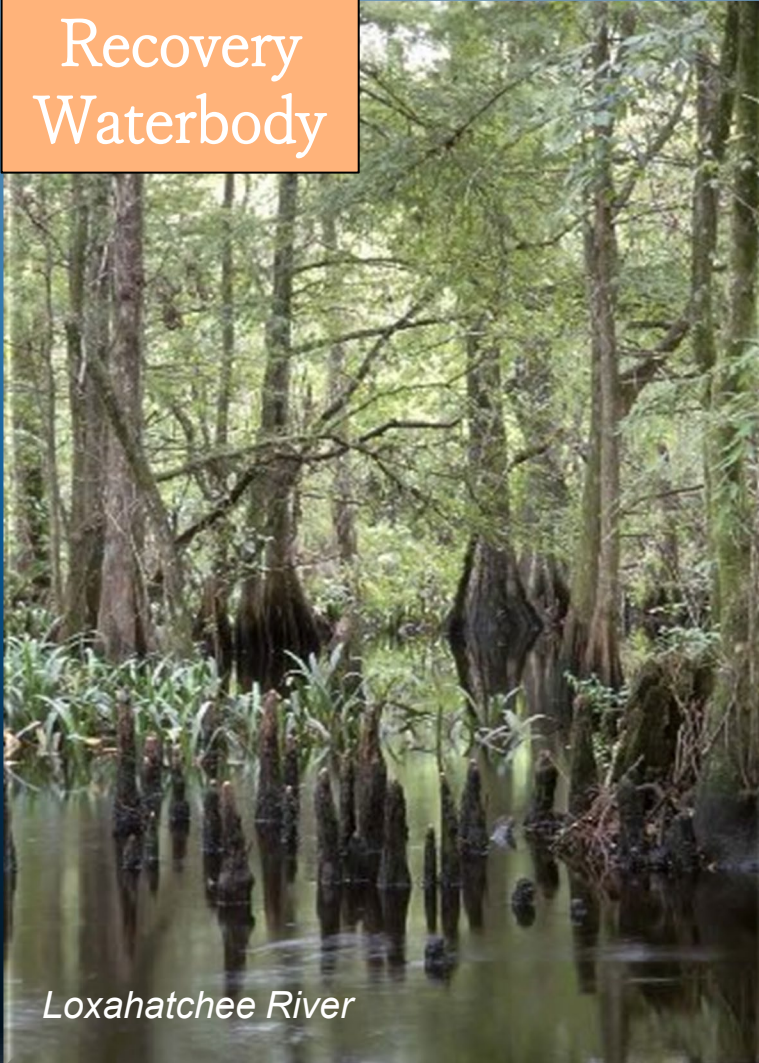
CERP Water to be Protected - WERP



- Restoring freshwater flow paths, flow volumes & timing, seasonal hydroperiods, & historic distributions of sheetflow, to re-establish ecological connectivity and ecological resilience of the historic wetland/upland mosaic.
- Restoring water levels to reduce wildfires associated with altered hydrology, which damage the underlying geomorphology and associated ecological conditions of the western Everglades.

Minimum Flows and Minimum Water Levels

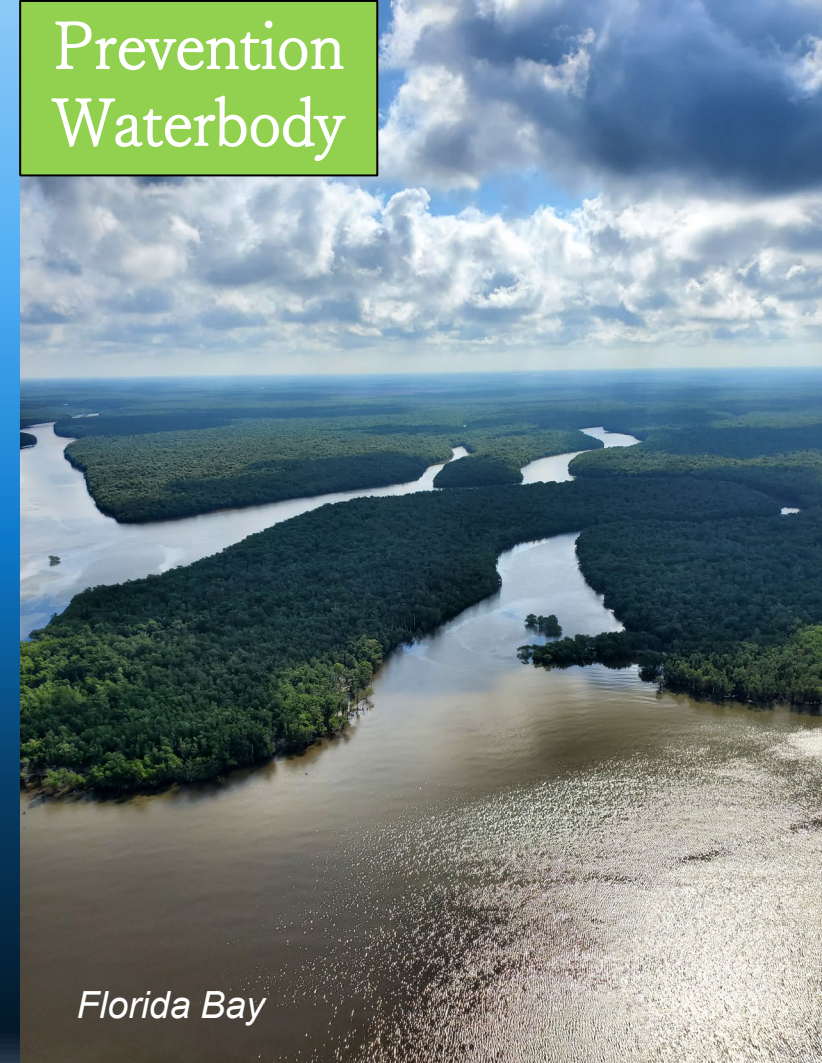
Recovery Waterbody



Loxahatchee River

- Annual MFL Priority Waterbody List
- Identify the point at which *further withdrawals* cause significant harm to the water resources
- Recovery or Prevention Waterbodies

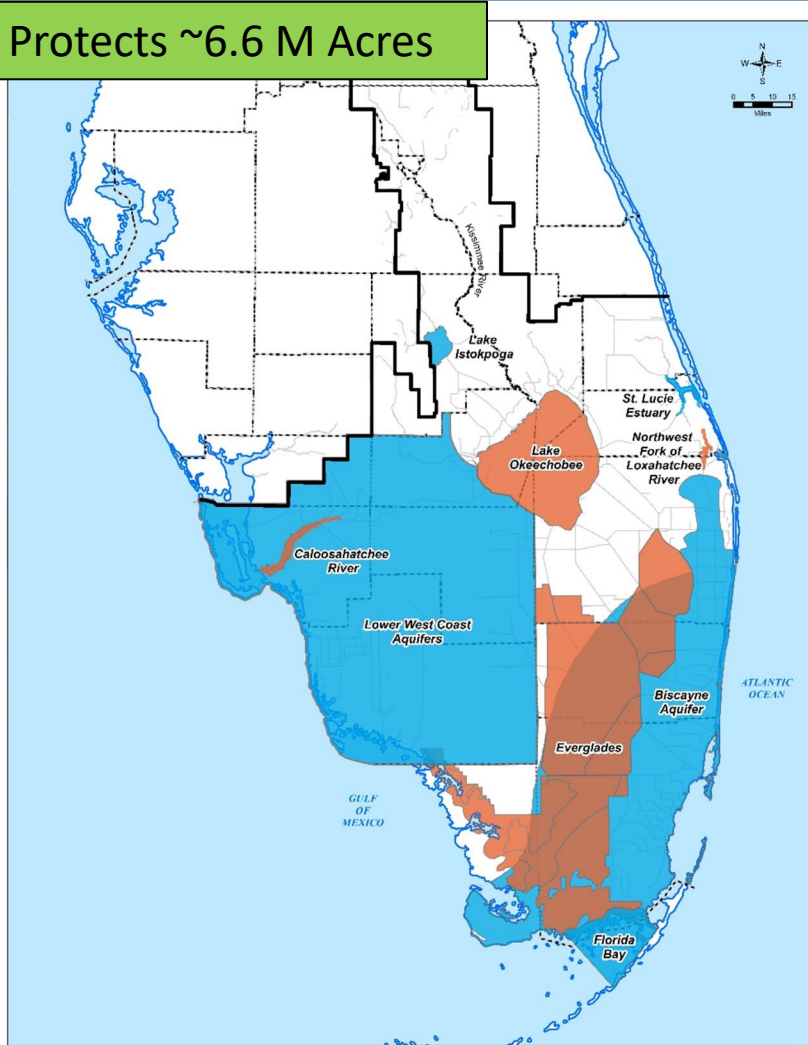
Prevention Waterbody



Florida Bay

Minimum Flows and Minimum Water Levels

Protects ~6.6 M Acres



MFL Prevention Waterbodies

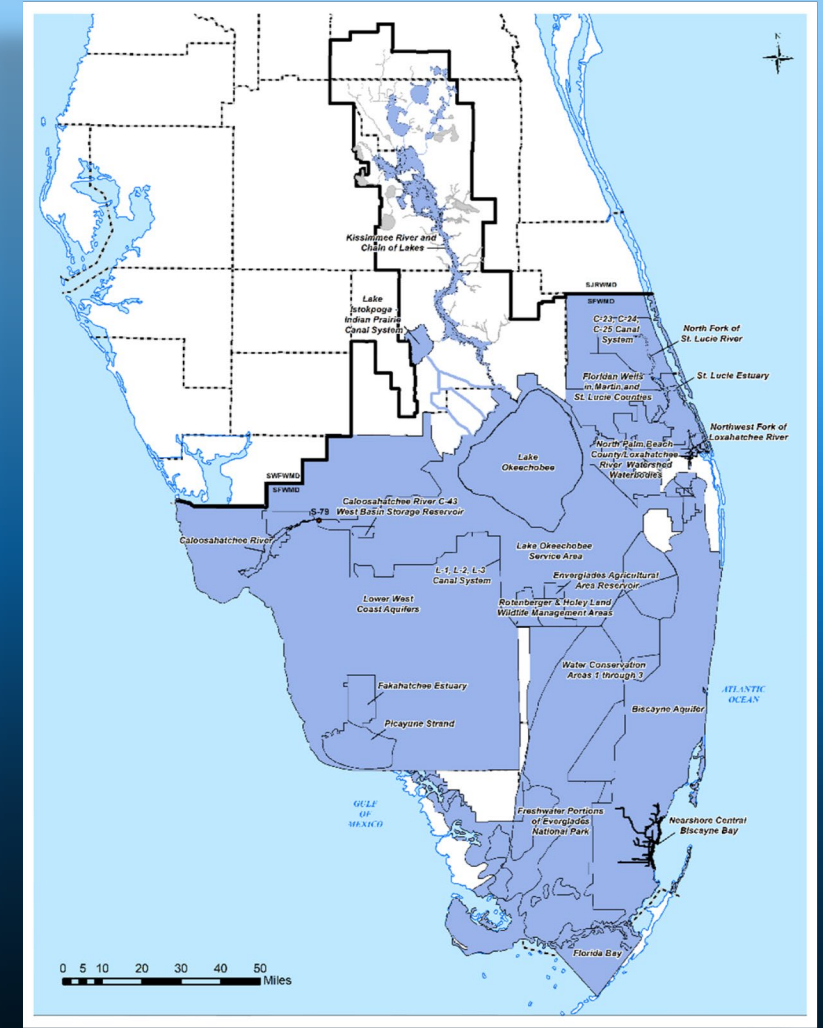
- Biscayne aquifer (2001)
- Lower West Coast aquifers (2001)
- St Lucie Estuary (2002)
- Lake Istokpoga (2006)
- Florida Bay (2006)

MFL Recovery Waterbodies

- Lake Okeechobee (2001)
- Everglades (2001)
- Caloosahatchee River (2001)
- Loxahatchee River (2003)

Composite of All Protection Tools

- Minimum Flows and Levels 6,615,517 Acres
 - Water Reservations 356,281 Acres
 - Restricted Allocation Areas 4,391,433 Acres
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- Total Protected Area 10,435,063 Acres



Setting Priority

South Florida Water Management District 2024 Priority Water Body List and Schedule

Minimum Flows and Minimum Levels:

2024 - 2026 – Northwest Fork of the Loxahatchee River

- Reevaluate Minimum Flows and Levels Criteria for the Northwest Fork of the Loxahatchee River to include changing hydrological considerations including the Comprehensive Everglades Restoration Plan (CERP) and sea level rise over a 20-year planning horizon.

2024 - 2026 – Florida Bay

- Reevaluate Minimum Flows and Levels Criteria for Florida Bay to include changing hydrological considerations including CERP and sea level rise over a 20-year planning horizon.

2025 - 2027 – Biscayne Aquifer

- Reevaluate Minimum Flows and Levels Criteria for the Biscayne Aquifer to include changing hydrological considerations including CERP and sea level rise over a 20-year planning horizon.

Questions?



Mark Cook, SFWMD



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