Protecting Water for the Natural System, Upper East Coast Planning Area

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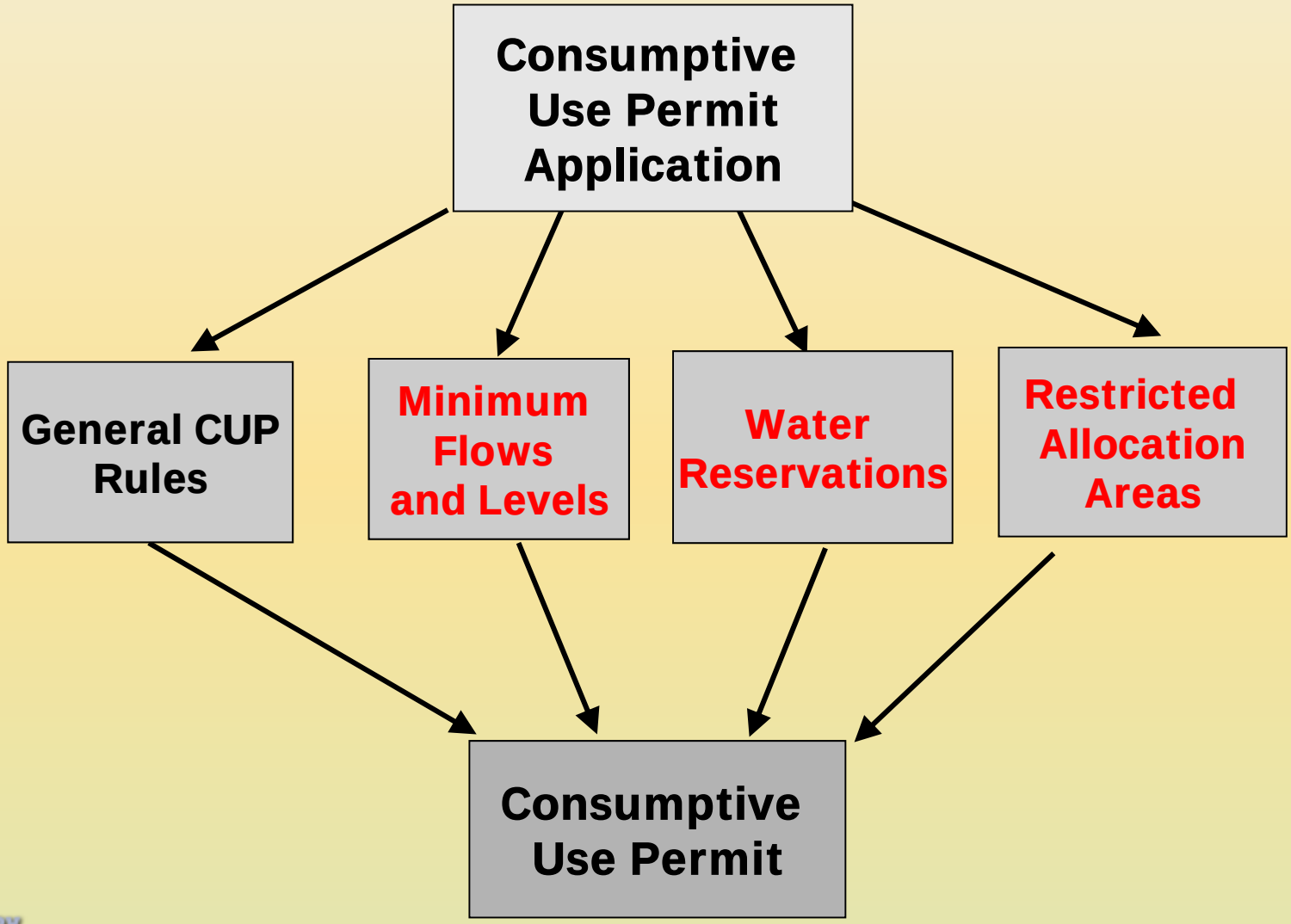
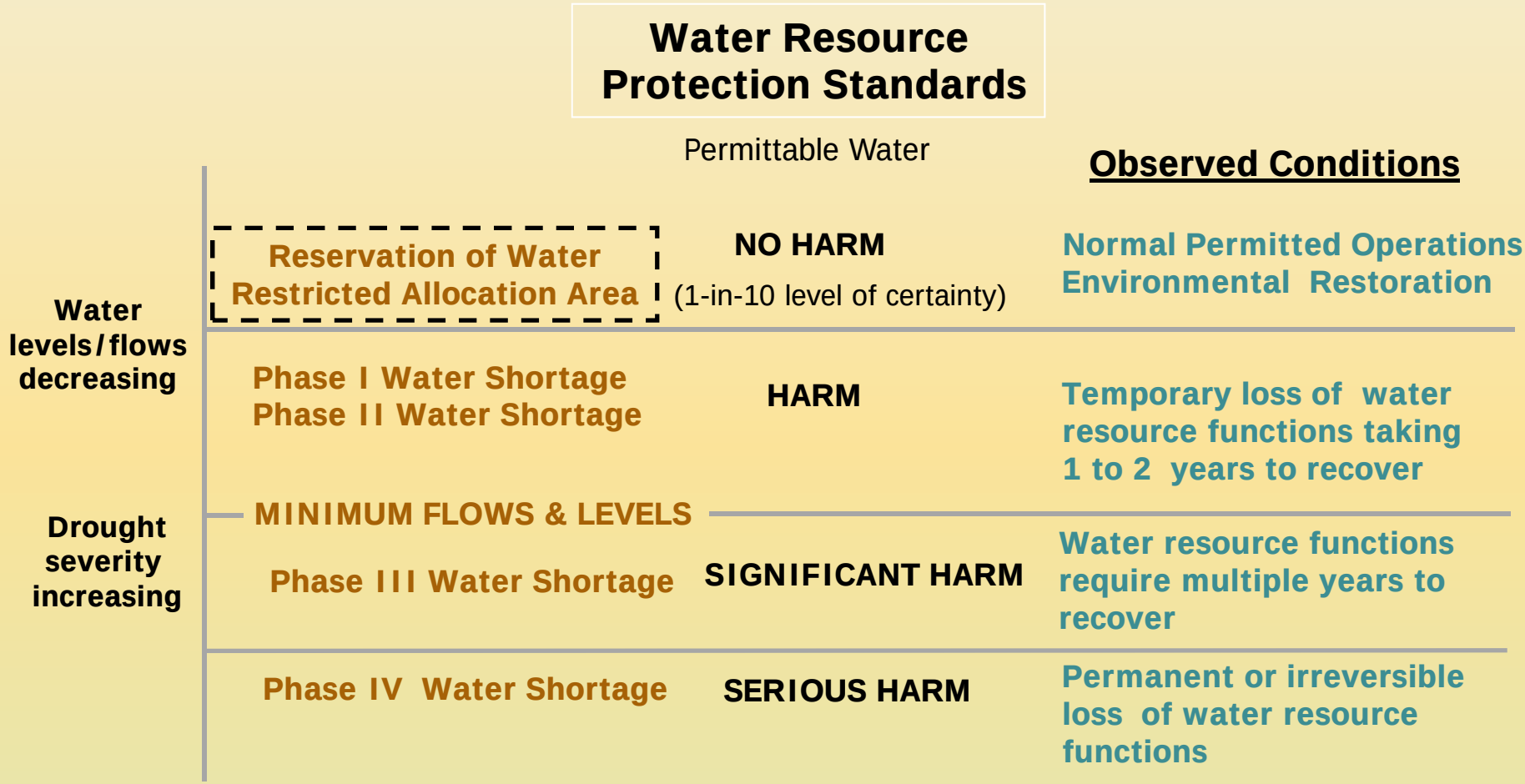
What tools does the District have to protect water for the natural system?

- Water Resource Protection Tools Available:
  - Minimum Flows and Levels (MFL)
  - Water Reservations
  - Restricted Allocation Areas (RAA)
- How are these tools applied?
- How do these tools interact?

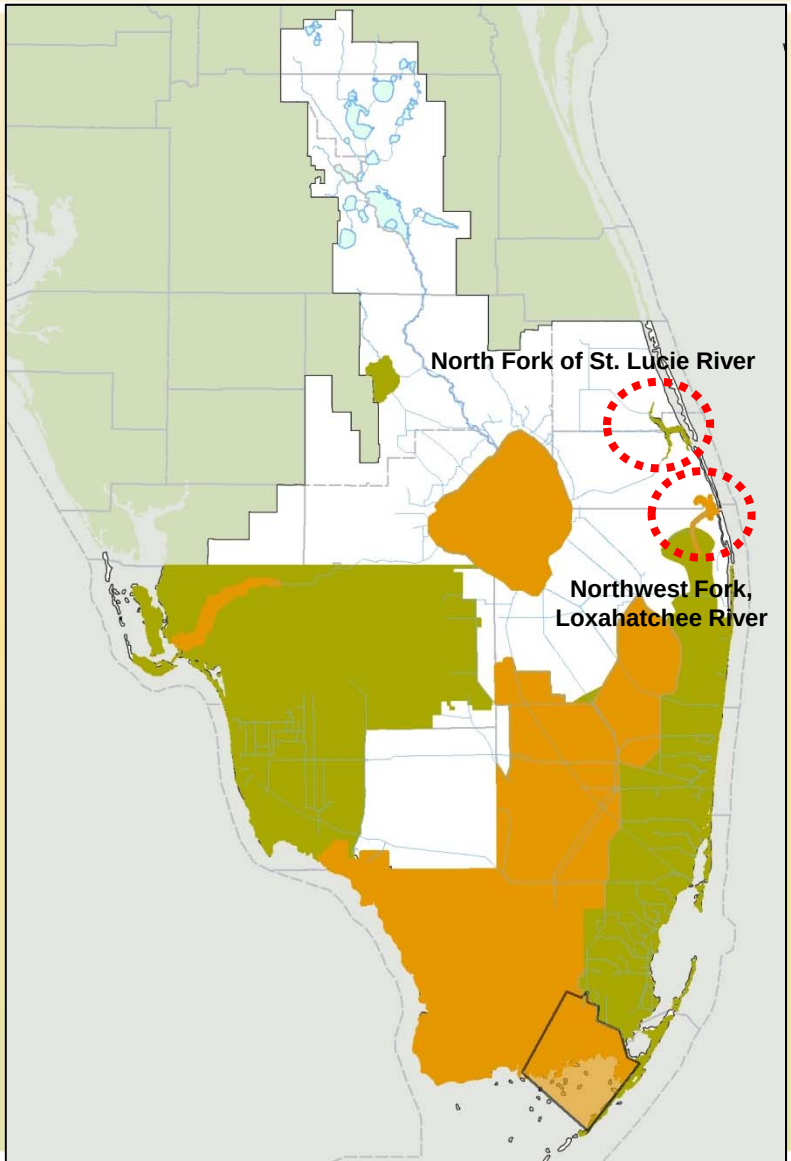
Factors considered in a permit application



Conceptual relationship among harm, significant harm and serious harm standards



Minimum Flows and Levels waterbodies



- **MFL Prevention Waterbodies**
  - Biscayne aquifer
  - Lower West Coast aquifers
  - North Fork St Lucie River
  - Lake Istokpoga
  - Northeastern Florida Bay
- **MFL Recovery Waterbodies**
  - Lake Okeechobee
  - Everglades
  - Caloosahatchee River
  - Northwest Fork of Loxahatchee River

Why select minimum flows and levels to protect water for the natural system?

- Required by Legislation since 1973. All water management districts are required to establish MFLs based on their annual MFL Priority Water Body List submitted to FDEP
- The water bodies on list are potentially affected by a consumptive use impact or other changes to the water resource
- A technical relationship can be established between violations of the MFL and potential impacts to the water resource
- The District's regulatory program uses MFL criteria as a basis for evaluating consumptive use permitting (CUP) applications
- MFL criteria have also been used as performance measures in CERP* and Regional Water Supply planning efforts

***** = *Comprehensive Everglades Restoration Plan***

Minimum Flows and Levels criteria

- Authority: 373.042 and 373.0421, F.S.
- **Minimum Flows and Levels** identifies the point at which further withdrawals will cause "significant harm" to the water resources or ecology of an area
- **Significant Harm** means the temporary loss of water resource functions, which result from a change in surface or ground water hydrology, that takes more than two years to recover, but which is considered less severe than serious harm....” (Chapter 40E-8.021(24), F.A.C.)

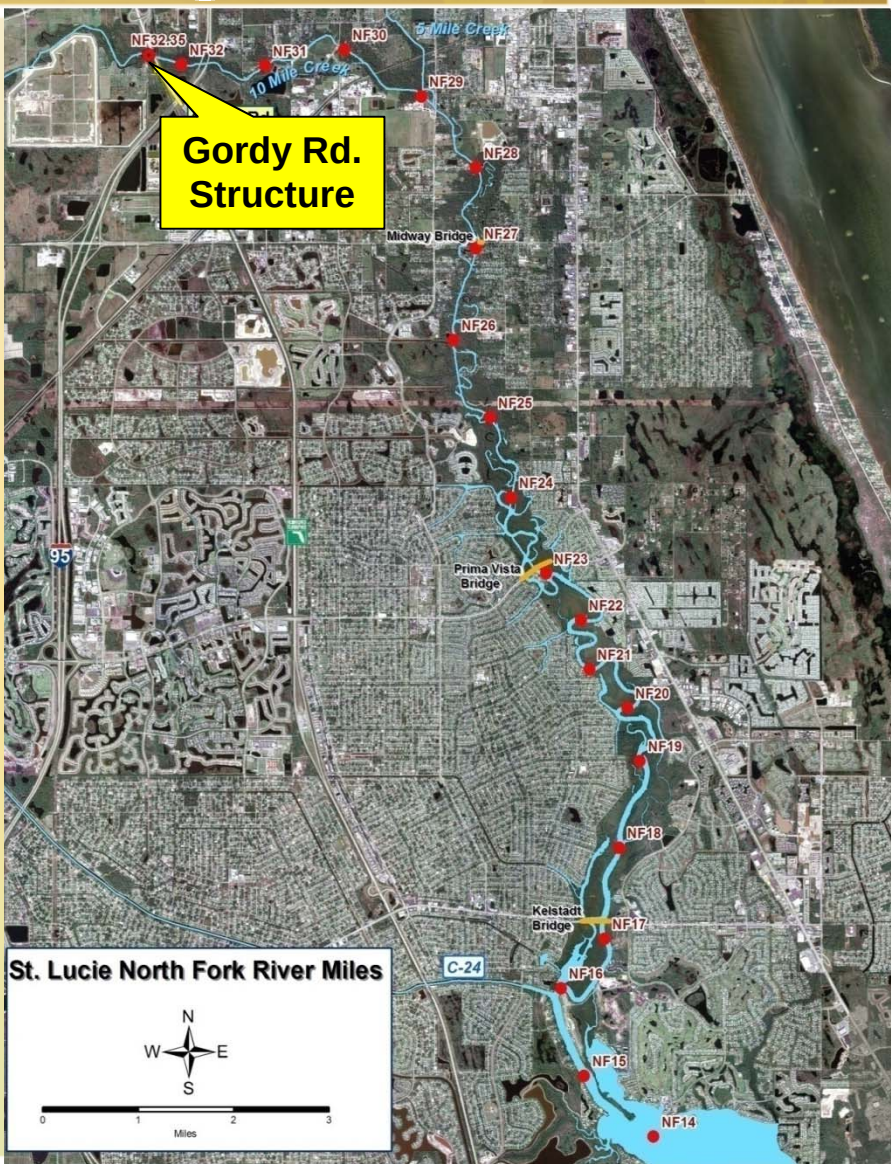
Process for Establishing MFL

1. Identify fish and wildlife resources that need protection from "significant harm"
2. Identify technical relationships that equate to "significant harm" based on best available data; define MFL criteria for water body
3. Document all methods, data, models and assumptions used to define the MFL in a draft technical document
4. Conduct independent, scientific peer review of draft document
5. Based on findings of the technical document, draft rule language
6. Schedule rule development workshop meetings with stakeholders and public to provide comments on draft rule
7. Final draft is presented to WRAC, approved by Governing Board and published in F.A.W.

MFL Criteria Established within Upper East Coast Planning Area

North Fork St. Lucie River

- Mean monthly flows to the St. Lucie Estuary should not fall below 28 cfs as measured at the Gordy Road structure, North Fork St. Lucie River for two consecutive months during a 365-day period, for two consecutive years



MFL Criteria Established within Upper East Coast Planning Area (Cont.)

Northwest Fork Loxahatchee River

- An MFL violation occurs when an exceedance, as defined below, occurs more than once in a six-year period. An MFL exceedance occurs when:

  (a) Flows over the Lainhart Dam decline below 35 cfs for more than 20 consecutive days; or

  (b) The average daily salinity concentration expressed as a 20-day rolling average exceeds two per thousand (ppt) at river mile 9.2

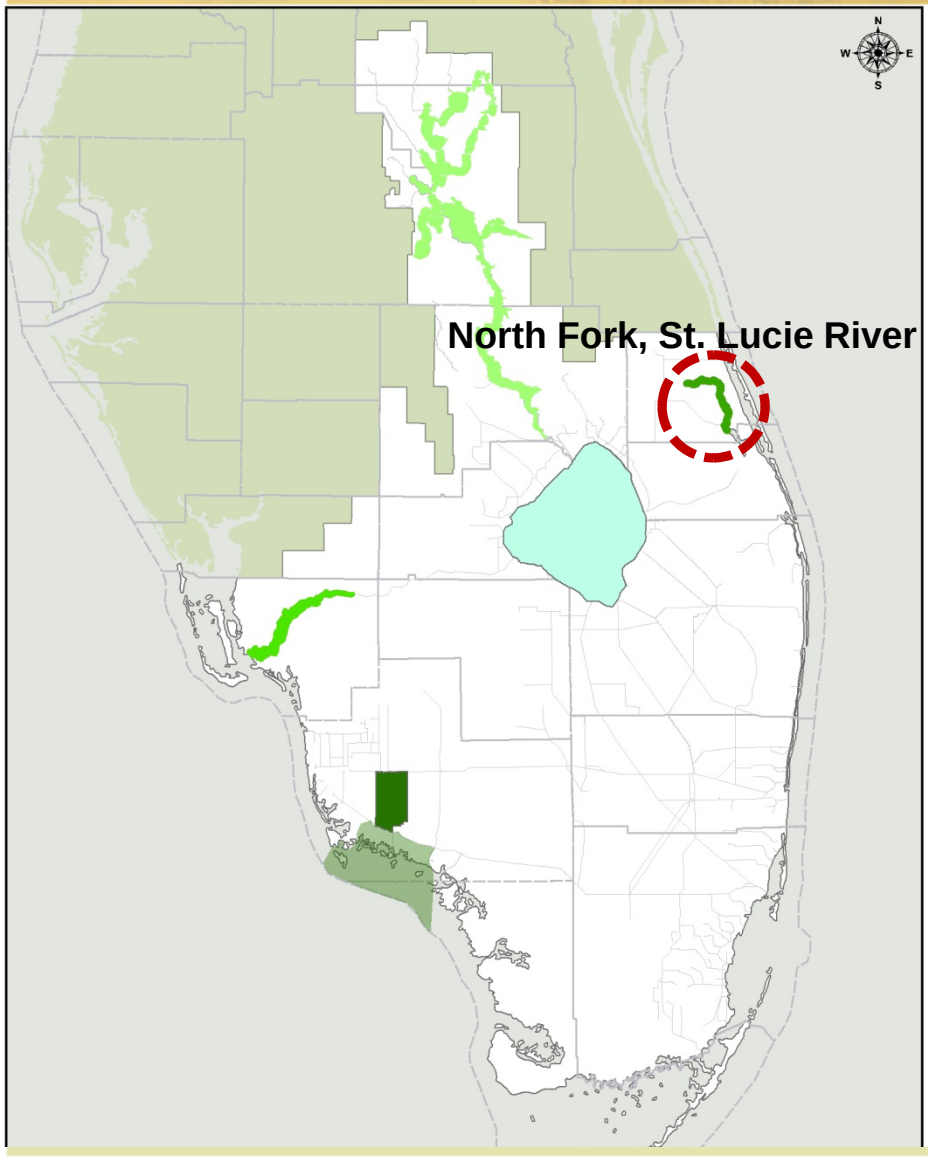
Requirements for MFL Recovery Plan or MFL Prevention Strategy

- Section 373.0421(2), F.S. states that if water levels or flows currently fall below the established MFL, or are projected to not meet the MFL over the next 20 years, then the water management district must develop and implement an MFL Recovery Plan or Prevention Strategy
- The 20-year period should coincide with the regional water supply plan horizon. The strategy will be developed in concert with that planning process

MFL Current Status

- MFLs are not currently being exceeded within the North Fork of the St. Lucie River
  - The prevention strategy will be updated in the Upper East Coast Water Supply Plan and will include components of the CERP's IRL-South Project
- Under current conditions (2003 – present), MFLs are being exceeded within the Northwest Fork of the Loxahatchee River
  - The MFL Recovery Plan will be updated in the Upper East Coast Water Supply Plan and will include the CERP North Palm Beach County Part 1 Project

Water Reservation Waterbodies



Rules in place:

- Picayune Strand and Fakahatchee Estuary
- North Fork of the St. Lucie River

Rules in development

- Caloosahatchee Estuary
- Kissimmee Basin Chain of Lakes and River

What Does a Water Reservation Do?


North Fork St. Lucie River

- Authority: 373.223(4), F.S.
- Sets aside water for the protection of fish and wildlife or for public health and safety
- Protects existing legal uses, unless contrary to the public interest
- Prevents new consumptive uses from accessing reserved water needed for the protection of fish and wildlife

What a Reservation Doesn't Do?

- Establish an operating regime by rule
- Drought-proof the natural system
- Ensure that fish and wildlife goals are achieved

Why Select Water Reservations to Protect Water for the Natural System?

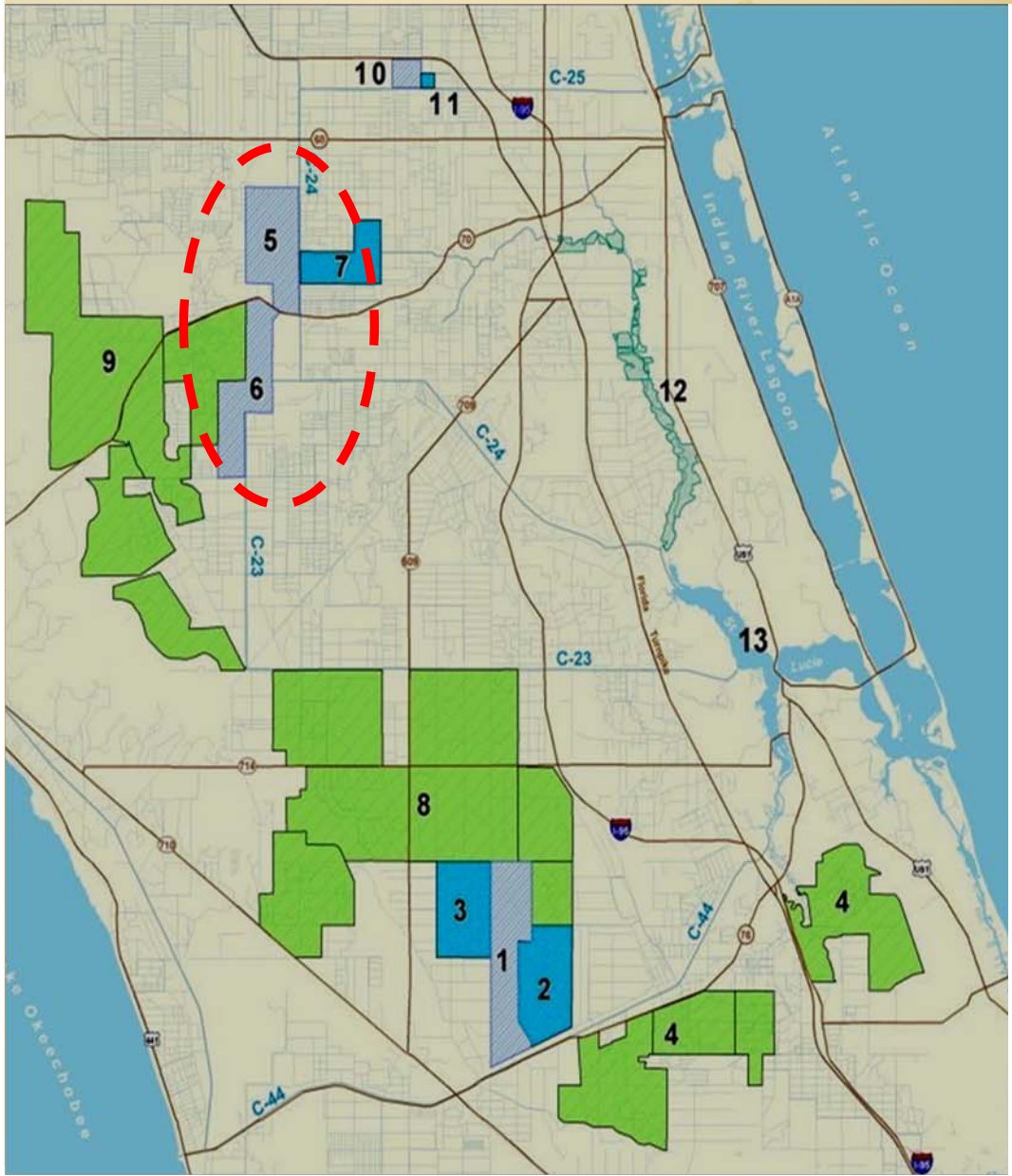
1. Florida Statutes and Federal law requires the District to **reserve** or allocate water for natural systems as identified in the CERP project implementation report prior to executing a Project Partnership Agreement with USACE

2. Clear choice for protection of fish and wildlife resources based on a “No Harm” standard (restoration)

3. Establishes a linkage between watershed hydrology and protection of fish and wildlife resources

4. All methods, scientific data and models used to quantify the volume of water to be reserved are documented in a technical report and peer reviewed by an independent, scientific panel

Indian River Lagoon-South Recommended Plan



C-44 Basin

1. C-44 Reservoir
2. C-44 Stormwater Treatment Area (East)
3. C-44 Stormwater Treatment Area (West)
4. Palmar Complex – Natural Storage and Water Quality Area

C-23/C-24 Basins

5. C-23/C-24 - North Reservoir
6. C-23/C-24 - South Reservoir
7. C-23/C-24 - Stormwater Treatment Area
8. Allapattah Complex – Natural Storage and Water Quality Area
9. Cypress Creek/Trail Ridge Complex - – Natural Storage and Water Quality Area

C-25, North Fork & South Fork Basins

10. C-25 Reservoir
11. C-25 Stormwater Treatment Area
12. North Fork Natural Floodplain Restoration
13. Muck Remediation & Artificial Habitat

Reservoir

Stormwater Treatment Area

Natural Storage & Water Quality Area

Process for Establishing a Water Reservation
(e.g., North Fork of the St. Lucie River)

Resource-based approach:

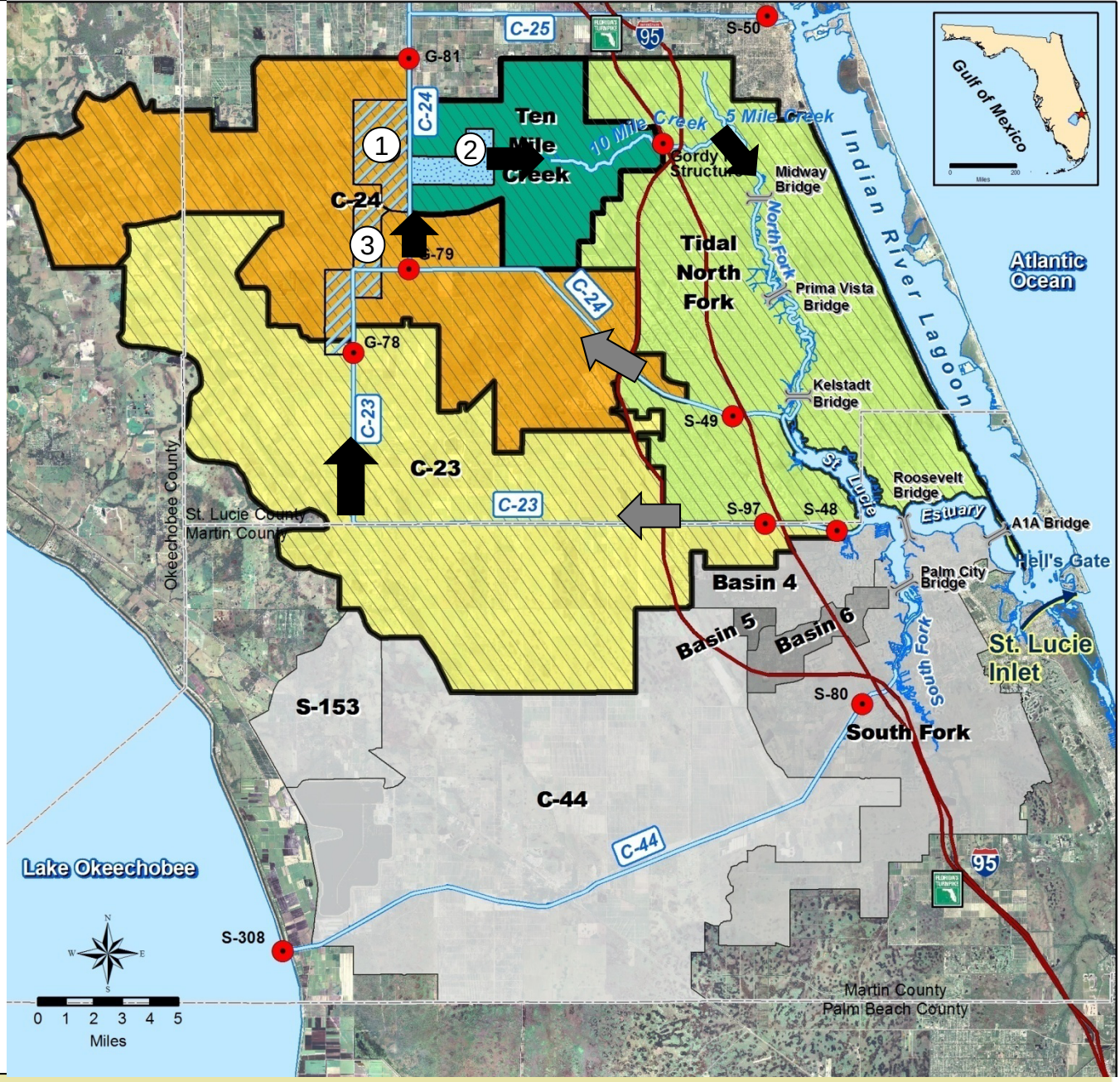
1. Identify ecological compartments sensitive to a water reservation
2. Identify fish and wildlife resources to be protected
3. Identify performance measures and flow targets
4. Using models, quantify the volume of water made available by the IRL-South Project
5. Identify the quantity of water that needs to be reserved to protect fish and wildlife

Fish and Wildlife Resources to be Protected

North Fork, St. Lucie River

- 17 linear miles of low salinity habitat, important as a nursery area for estuarine and marine organisms. Sensitive to dry season flows provided by IRL-South Project deliveries
- The **Low Salinity Zone** of the North Fork of the St. Lucie River provides:
  - Important nursery habitat for larval and juvenile fishes and protection from marine predators
  - Habitat and forage for life cycles of many recreationally important fishes (Gilmore 2007)

Watershed Basins Contributing to North Fork of St. Lucie River – Future Flow Paths



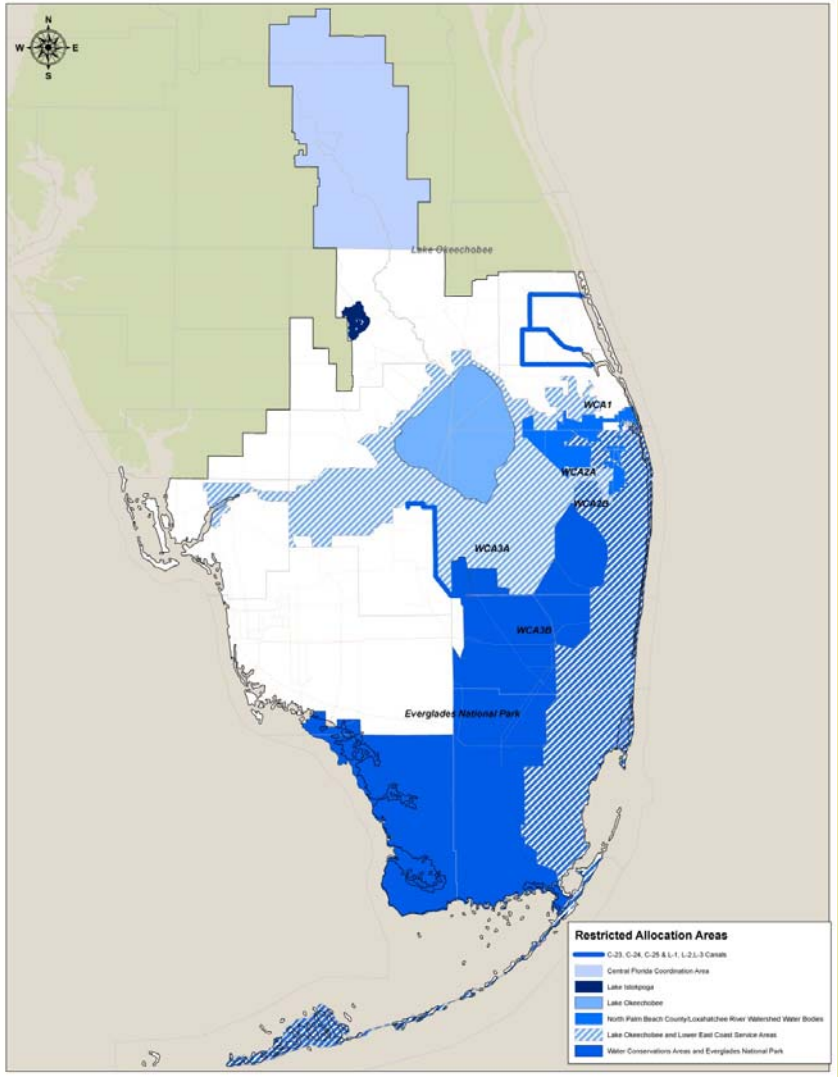
- Water Reservation Basins
- Non-contributing Basins
- Water Control Structures
- Major Canals
- Bridges
- Open Water
- Major Highways
- County Boundaries
- STAs
- Reservoirs
  - (1) C-23/24 North Reservoir
  - (2) C-23/24 STA
  - (3) C-23/24 South Reservoir

Water Reserved for North Fork St. Lucie River

- Mean monthly flows of 130 cfs at Gordy Road Structure during the dry season (November 1 to May 31) are necessary for the protection of fish and wildlife in North Fork of St. Lucie River
- Delivering flows equating to a mean monthly flow of 130 cfs provides environmental benefits to both North Fork St. Lucie River and downstream oyster communities in the estuary
- Rule adopted by Governing Board on February 11, 2010

Gordy Road Structure

Restricted Allocation Areas (RAA)



- Everglades & Loxahatchee River watershed
- Lower East Coast Service Area
- Lake Okeechobee Service Area
- Central Florida Coordination Area
- C-23,C-24 & C-25 Canal system
- Lake Istokpoga /Indian Prairie Canal
- Flowing Floridan Wells (Martin & St. Lucie Counties)

What is a Restricted Allocation Area?

- Florida Statutes and Federal law requires the District to reserve or allocate water for natural system identified in a CERP project implementation report
- Applies to large spatial area covering multiple ecosystems
- Protects existing water and future restoration project water from consumptive use
- Timing – rules are already in effect

Restricted Allocation Areas Rules

- Criteria for Permit Issuance – 373.223(1), F.S.
  - Reasonable-beneficial – “economic and efficient utilization”
  - Does not interfere with presently existing legal use
  - Consistent with the public interest
- Identifies specific geographic areas and/or canal conveyance systems from which allocations are restricted
- Multiple situations where applicable

Restricted Allocation Areas Rules (Cont.)

- Found in Basis of Review for Water Use Application within the SFWMD
- Examples:
  - Everglades and Northern Palm Beach/Southern Martin counties - effective April 23, 2007
  - Lake Okeechobee Service Area - effective October 14, 2008
  - No additional surface water allocated from C-23, C-24 and C-25 Canal System

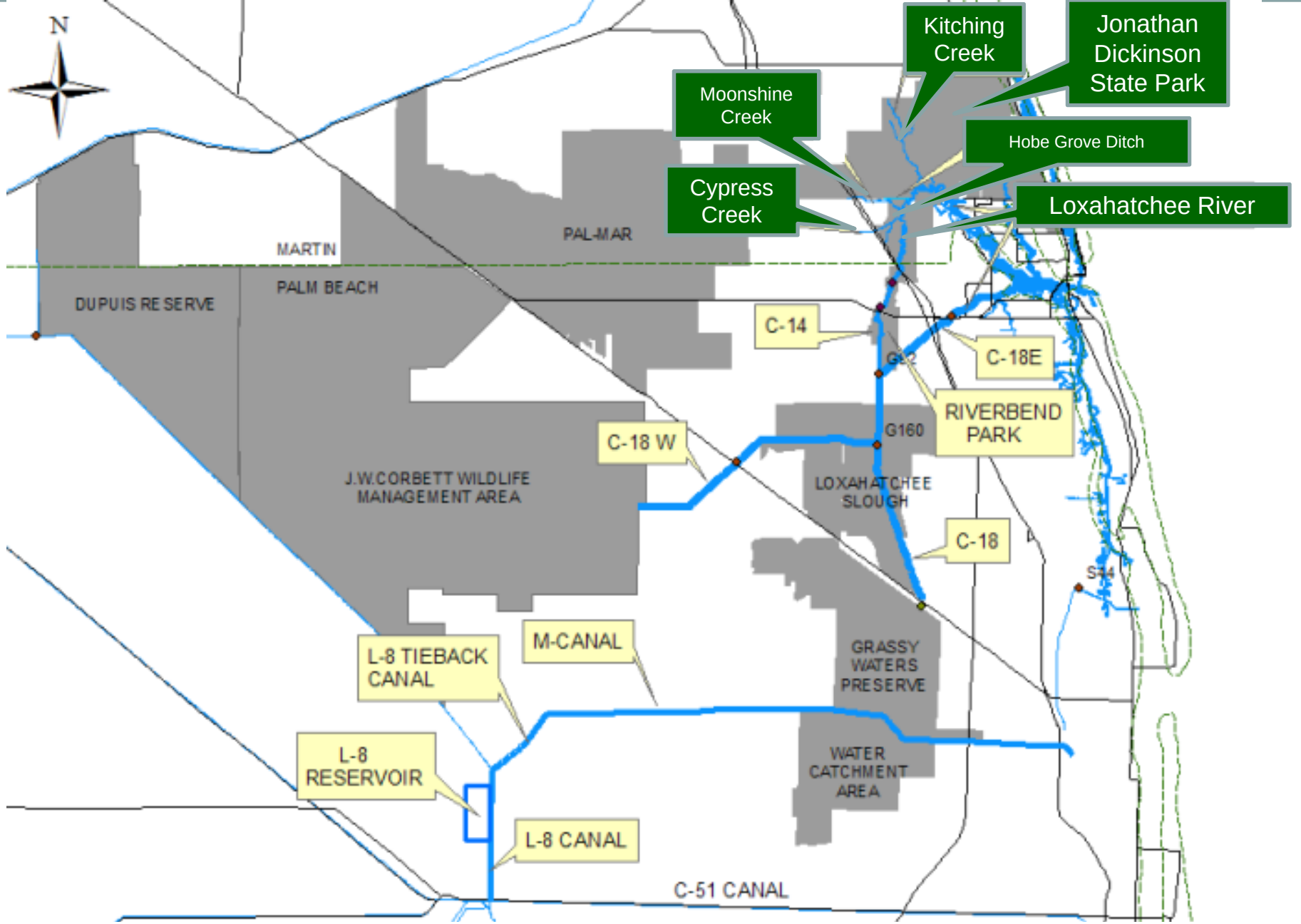
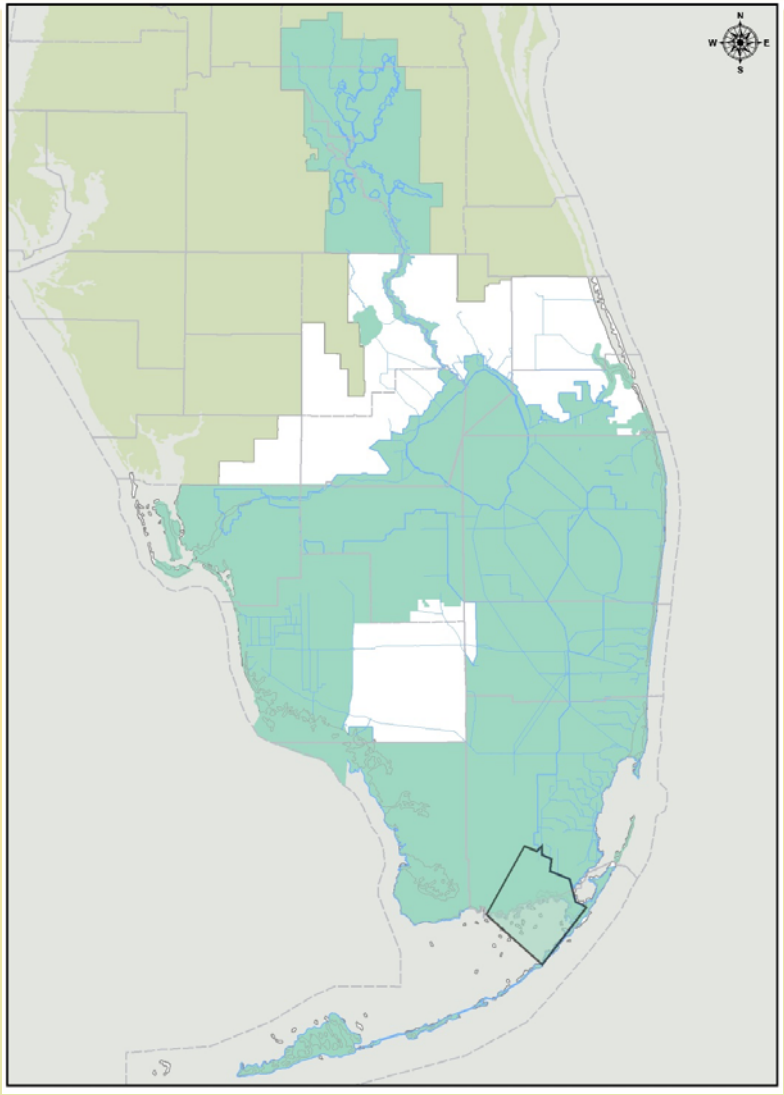


Figure 2. Natural Areas (shaded in grey) covered by Regional Water Availability Rule in Northern Palm Beach & Martin counties

Tool Selection

- More than one tool can apply to a water body
  - Northwest Fork Loxahatchee River: MFL and RAA
  - Water Conservation Areas & ENP: MFL and RAA
  - St Lucie River/Estuary: MFL and Reservation
  - Lake Okeechobee: MFL and RAA

Areas covered by rules protecting water for the natural system from consumptive uses



- Minimum Flows and Levels
- Water Reservations
- Restricted Allocation Areas


Questions?
sfwmd.gov