

# Protecting Water for the Natural System Lower West Coast Planning Area

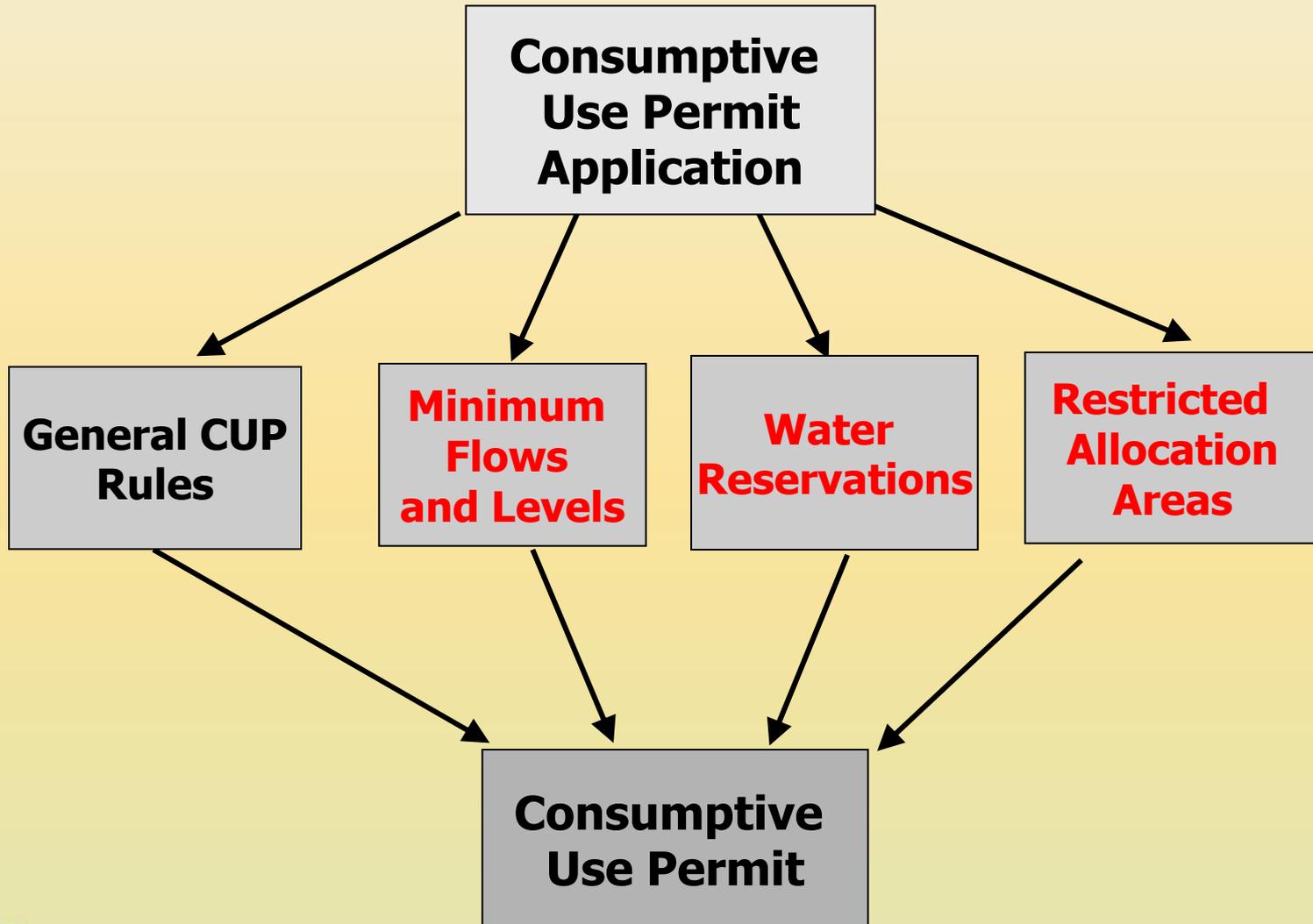
**March 5, 2010**

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Federal & State Policy Division  
South Florida Water Management District*

# 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

		<b>Water Resource Protection Standards</b>		
		Permittable Water		<u><b>Observed Conditions</b></u>
<b>Water levels/flows decreasing</b>	<b>Reservation of Water</b> <b>Restricted Allocation Area</b>	<b>NO HARM</b>	(1-in-10 level of certainty)	<b>Normal Permitted Operations</b> <b>Environmental Restoration</b>
		<b>Phase I Water Shortage</b> <b>Phase II Water Shortage</b>	<b>HARM</b>	<b>Temporary loss of water resource functions taking 1 to 2 years to recover</b>
<b>Drought severity increasing</b>	<b>MINIMUM FLOWS &amp; LEVELS</b>			
		<b>Phase III Water Shortage</b>	<b>SIGNIFICANT HARM</b>	<b>Water resource functions require multiple years to recover</b>
		<b>Phase IV Water Shortage</b>	<b>SERIOUS HARM</b>	<b>Permanent or irreversible loss of water resource functions</b>

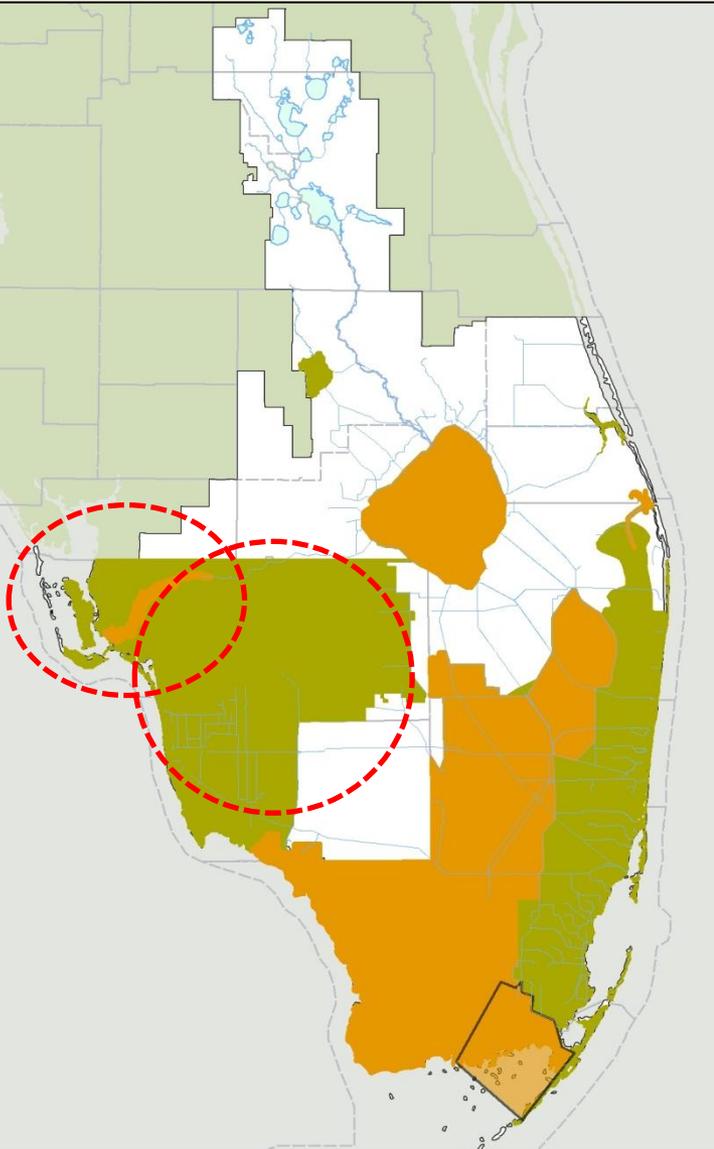
# Minimum Flows and Levels Waterbodies

## ■ 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



# 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.)



# 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 waterbodies 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
- MFL criteria have also been used as performance measures in CERP\* and Regional Water Supply planning efforts

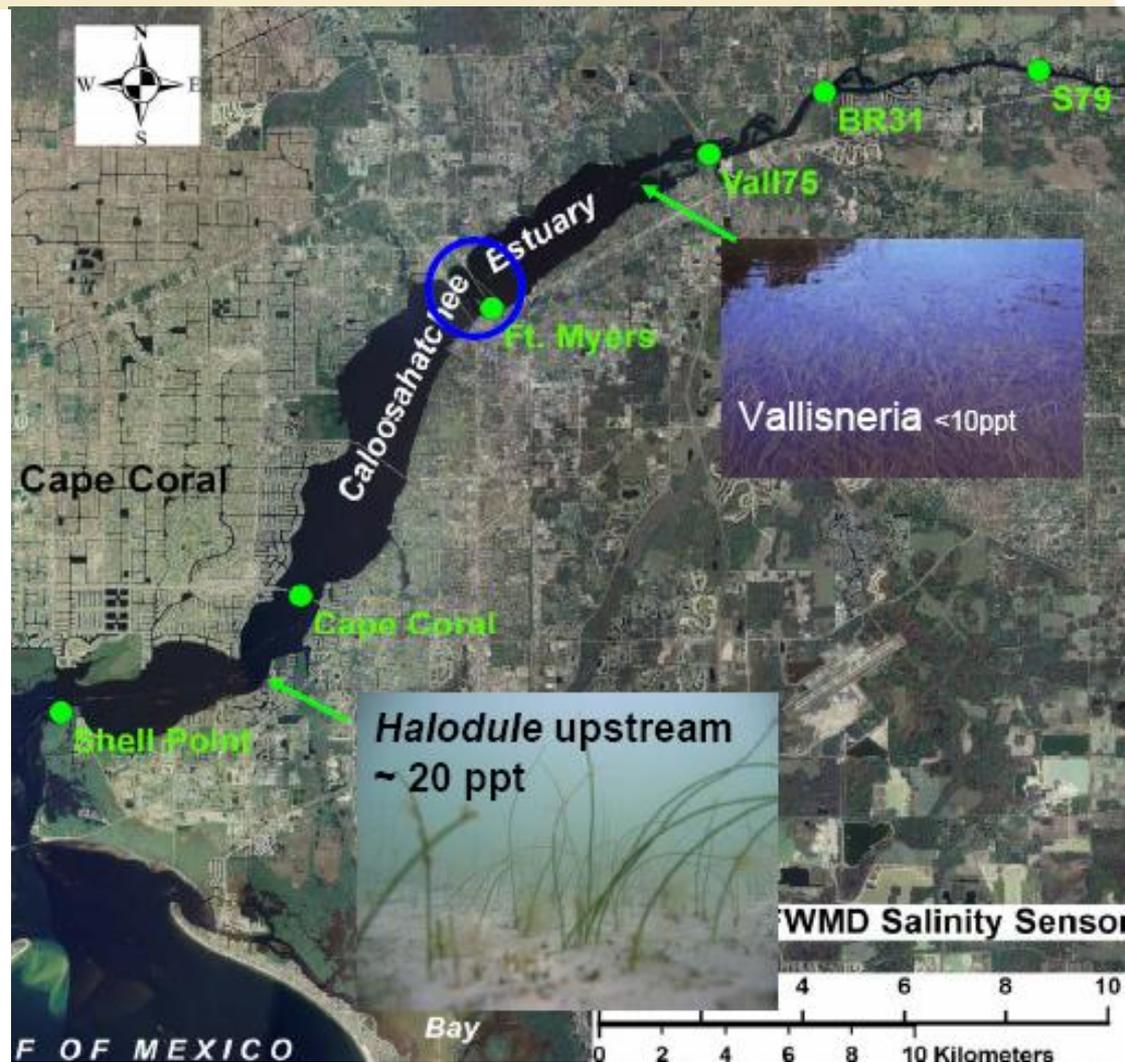
\* = *Comprehensive Everglades Restoration Plan*

# 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, considered by Governing Board and published in F.A.W.

# Caloosahatchee River MFL

- Protect Tape Grass, *Vallisneria americana*, from significant harm
- Salinity Criteria:
  - 30-day average salinity exceeds 10 psu at Ft. Myers salinity station
  - Daily average exceeds 20 psu at Ft. Myers salinity station
- Violation: Either criteria exceeded for two consecutive years



# Lower West Coast Aquifer MFL

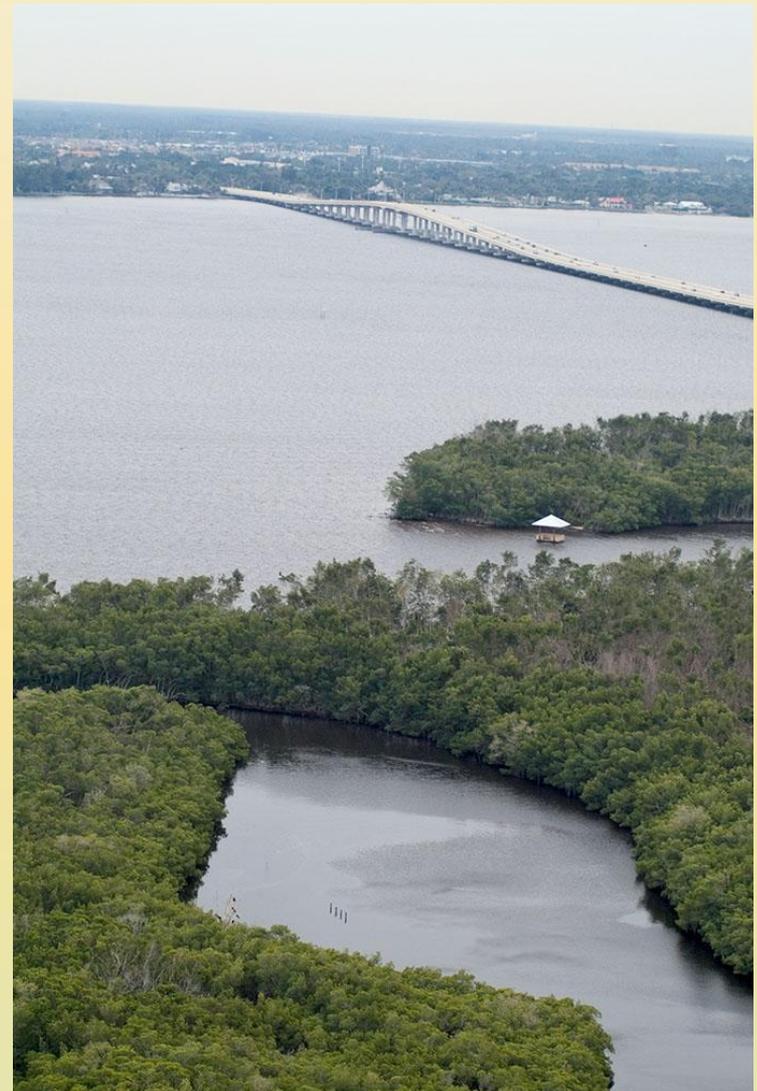
- The minimum levels in the Tamiami aquifer, the Sandstone aquifer and the mid-Hawthorne aquifer shall equal the structural top of the aquifer.
- A violation of this criteria occurs when the water levels drop below the top of the uppermost geologic strata that comprises the aquifer, at any point in time.
- Water level measurements that are made to monitor conditions of the aquifers for the purpose of this rule shall be located no closer than 50 feet from any existing pumping well.

# 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

# Conditions in Caloosahatchee Estuary

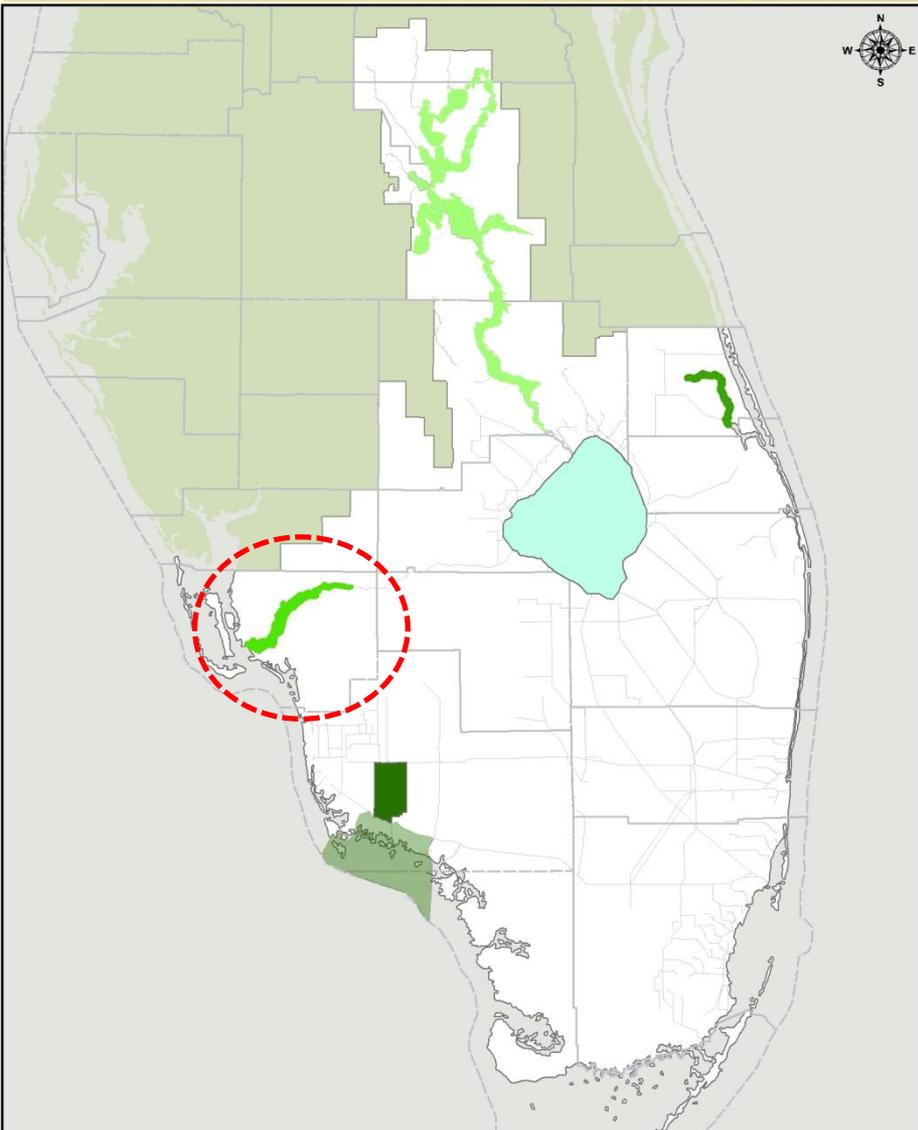
- 30-day average salinity criterion of 10 psu was exceeded in 2002, 2004, 2006, 2007, 2008 and 2009
- The daily average criterion of 20 psu was exceeded in 2006, 2007 and 2008



# MFL Recovery Plan for Caloosahatchee Estuary

- CERP Caloosahatchee River (C-43) Storage Reservoir Project
- Lake Okeechobee Adaptive Protocols
- CERP C-43 Aquifer Storage and Recovery
- The MFL Recovery Plan will be updated in the Lower West Coast Water Supply Plan

# 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

# Water Reservation Rules



- Authority: 373.223(4), F.S.
- Sets aside water for the protection of fish and wildlife or for public health and safety
- Protect existing legal uses, unless contrary to the public interest

# 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 (PIR) 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
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

# Caloosahatchee Estuary Water Reservation: Major Milestones for Rule Making

- Initiate rule development
  - December 10, 2009
- Complete draft technical report
  - July 2010
- Scientific peer review of data, analysis, and assumptions used to determine water reservation
  - August 2010
- Public workshops
  - Throughout 2010
- Seek Governing Board approval to publish the draft rule
  - February 2011
- New information, workshop dates will be posted on [www.sfwmd.gov](http://www.sfwmd.gov)

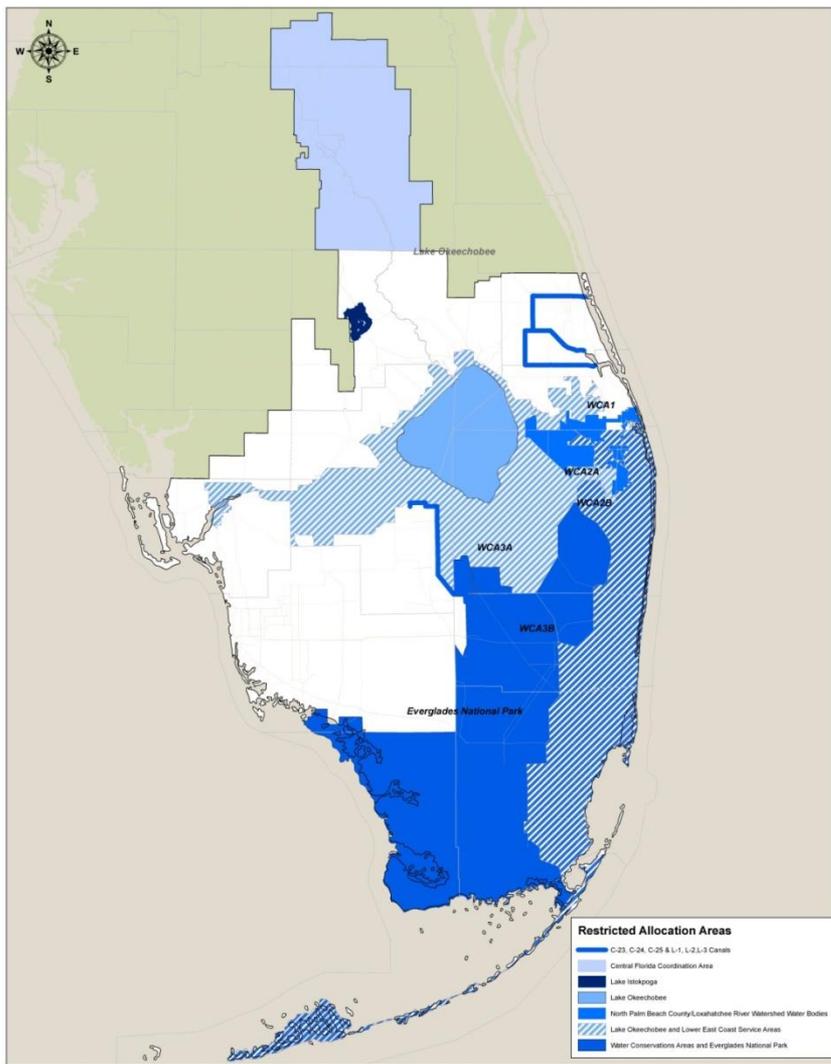


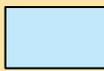
# Process for Establishing a Water Reservation (e.g., Caloosahatchee Estuary)

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 Caloosahatchee River Reservoir Project
5. Identify the quantity of water that needs to be reserved to protect fish and wildlife

# Restricted Allocation Areas



-  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.)



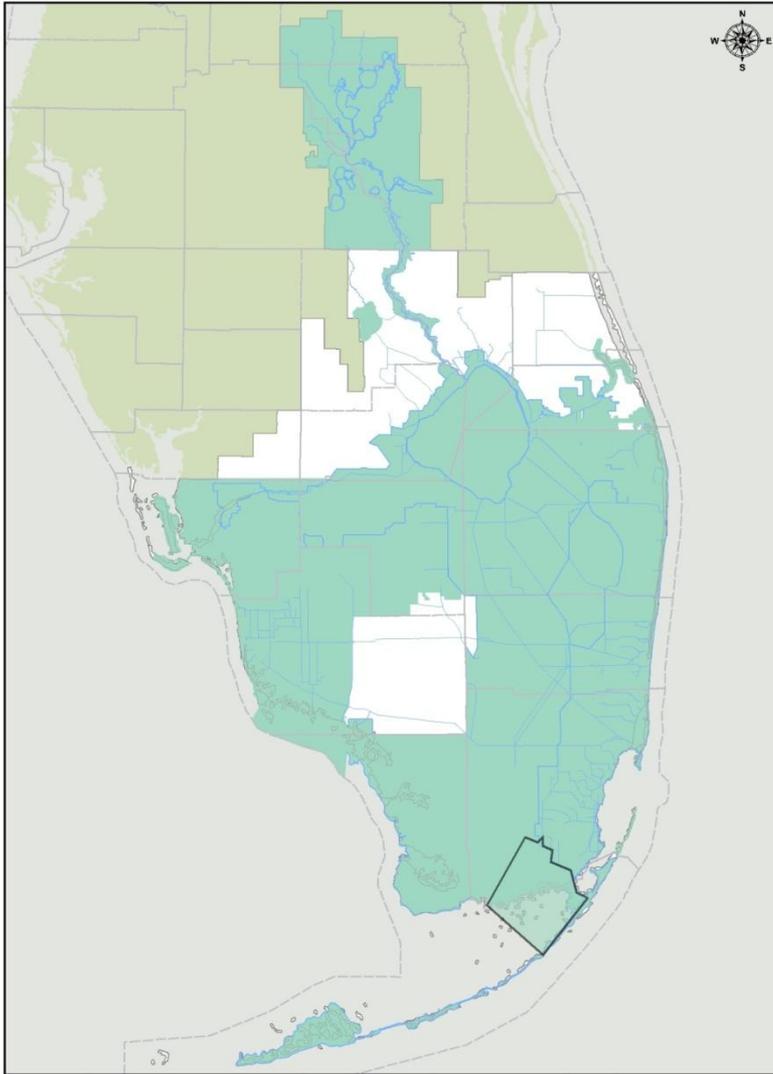
- Found in Basis of Review for Water Use Application within the SFWMD
- Examples:
  - Everglades and Northern Palm Beach/Southern Martin Counties - effective April 23, 2007
  - **Lake Okeechobee Service Area** - effective October 14, 2008

# Tool Selection

- More than one tool can apply to a waterbody
  - 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?**

