



REstoration, COordination, VERification (RECOVER)

Second Periodic CERP Update (SPCU): Evaluation Methodology

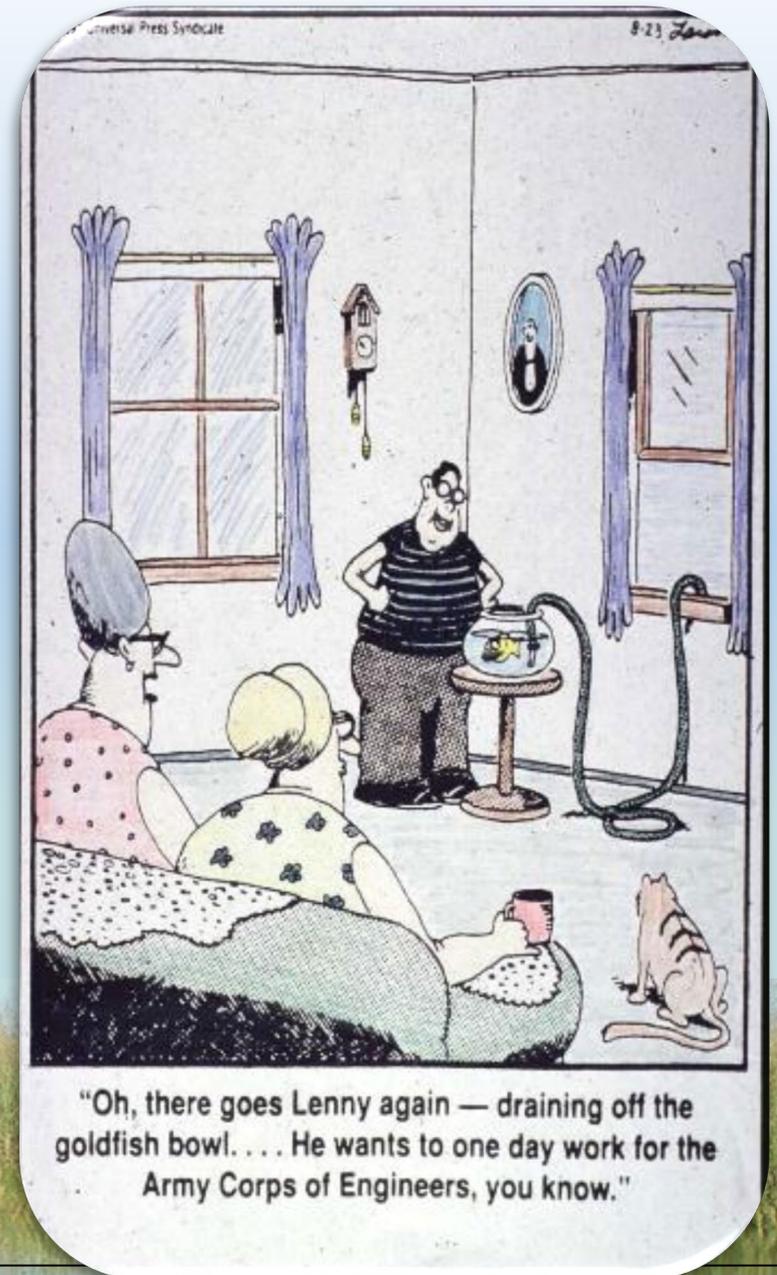
Gina Paduano Ralph, Ph.D.

April 24, 2025
Greater Everglades Ecosystem
Restoration Conference, Session 48



PRESENTATION OUTLINE

- RECOVER'S Mission & SPCU Role
- Overarching Questions to Address
- Evaluation Methodology



RECOVER'S MISSION



- Ensures CERP implementation is guided by the best available science
- Three Major Missions:

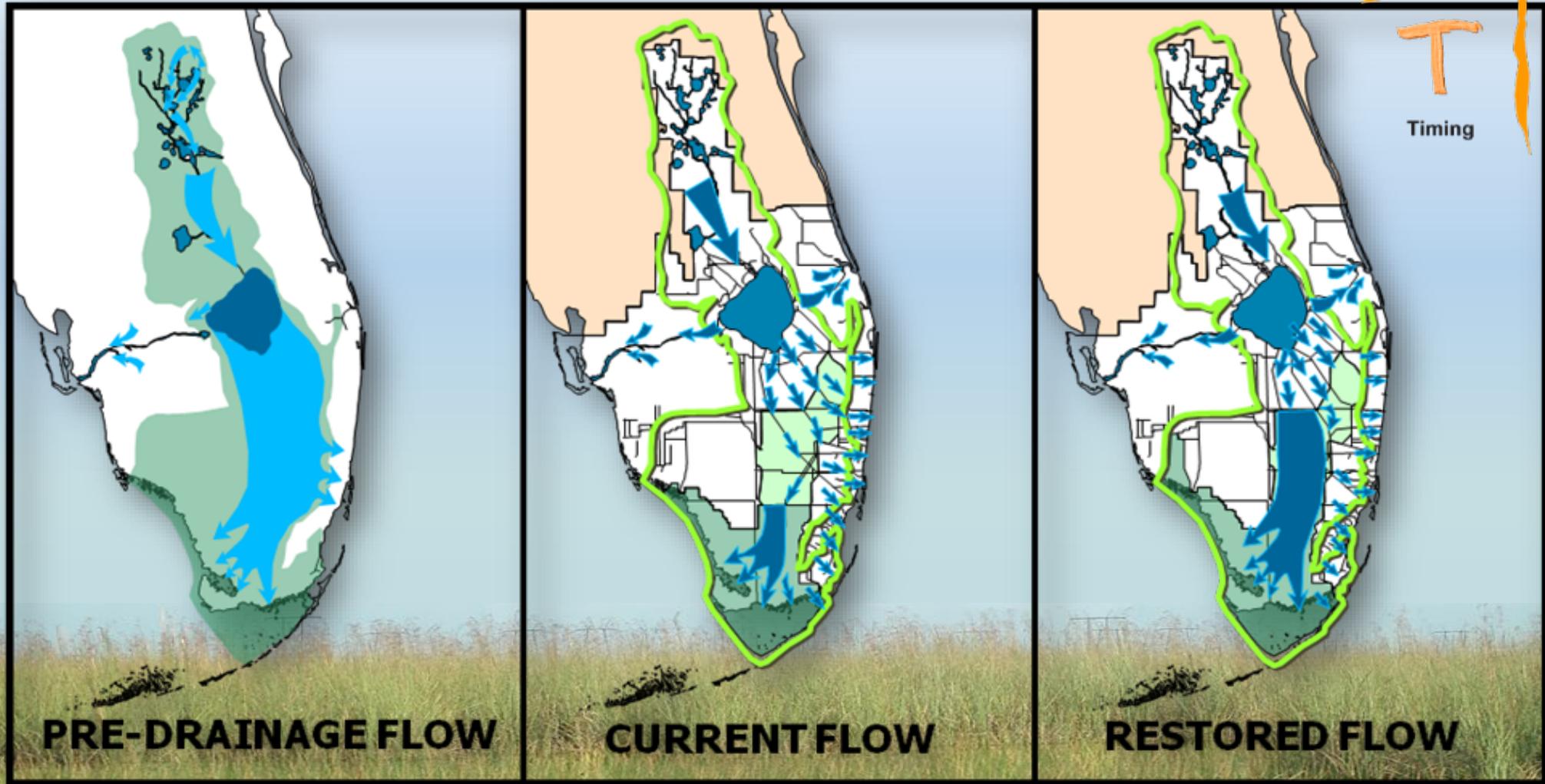
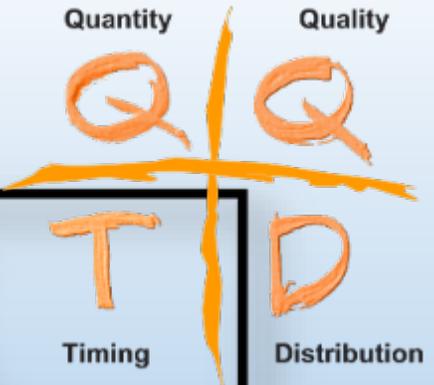
- **Assessment**: measuring performance of projects through research and monitoring

★ **Evaluation**: forecasting project performance through predictive modeling and performance measures

★ **Planning**: integrating RECOVER with planning and operation of the system



RECOVER'S SPCU ROLE



QUESTIONS TO ADDRESS

Are the CERP goals and objectives as identified in the Yellow Book achieved in the FWP condition? Regionally? Systemwide?

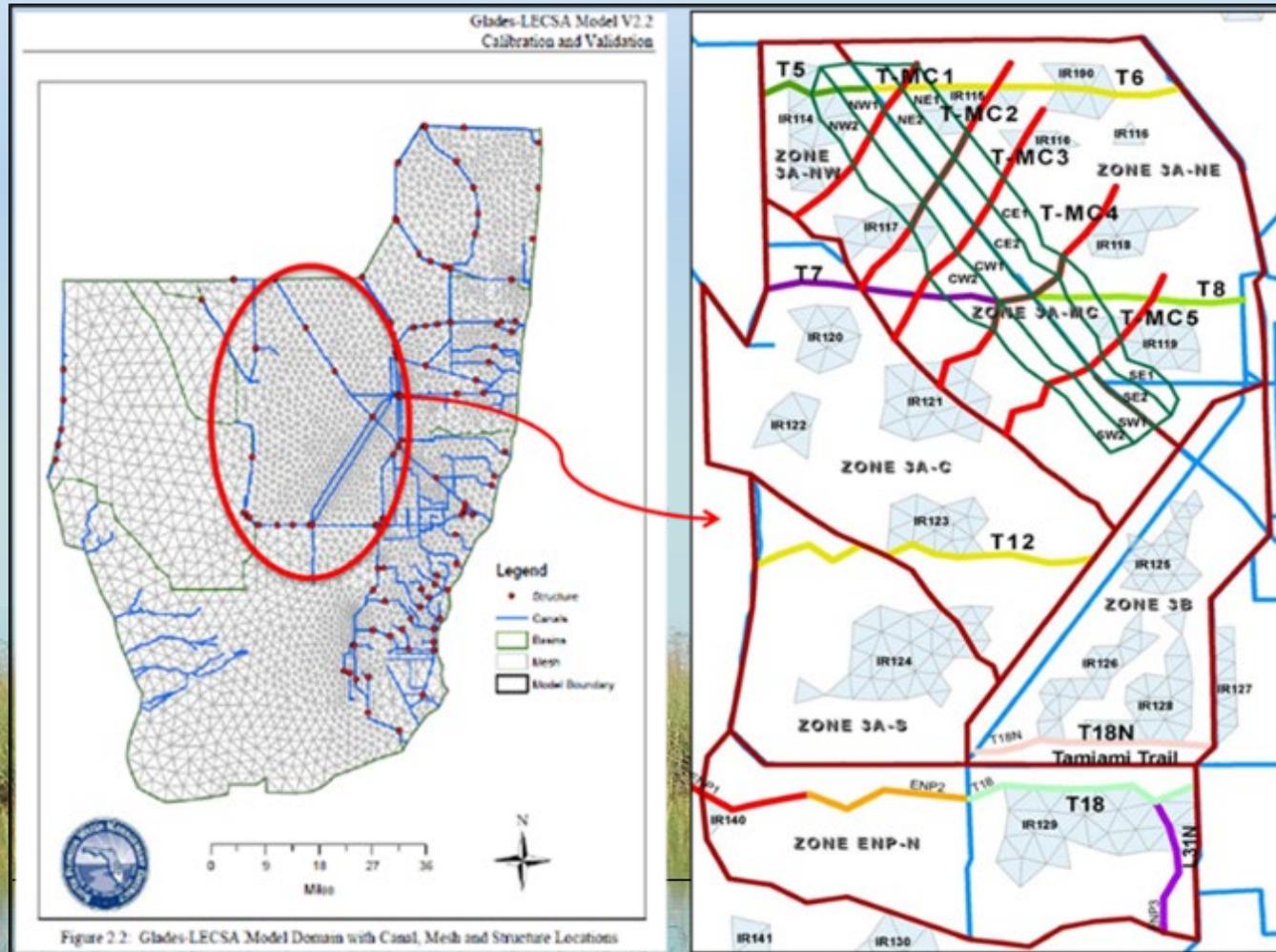
Table 1. CERP Goals and Objectives (USACE 1999)

Goals	Objectives
Enhance Ecologic Values	Increase the total spatial extent of natural areas
	Improve habitat and functional quality
	Improve native plant and animal species abundance and diversity
Enhance Economic Values and Social Well Being	Increase availability of fresh water (agricultural/municipal and industrial)
	Reduce flood damages (agricultural/urban)
	Provide recreational and navigation opportunities
	Protect cultural and archeological resources and values



QUESTIONS TO ADDRESS

In what area/Indicator Region within the CERP footprint are CERP goals and objectives as envisioned in the Yellow Book achieved/not achieved in the “Future with CERP” condition?



Indicator Regions:

- Depth
- Distribution
- Duration

Transects:

- Timing
- Distribution

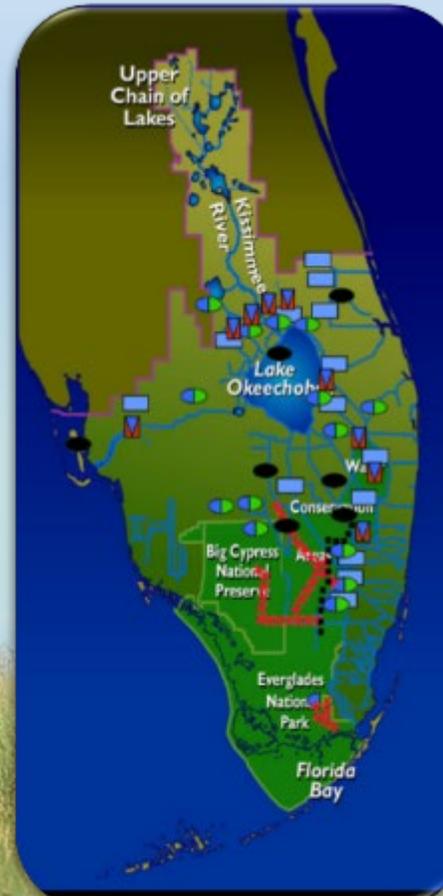
Example Indicator Regions and Transects within Regional Simulation Model- Glades LECSA Model Mesh



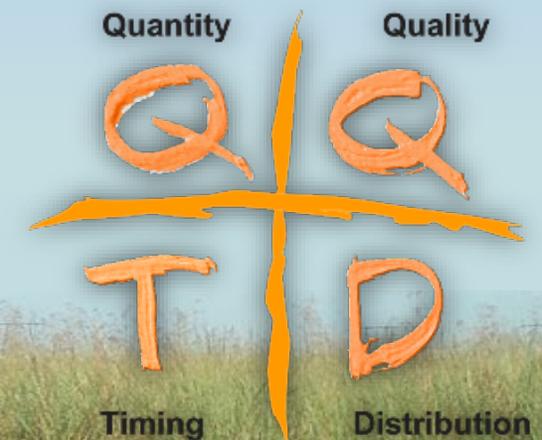
QUESTIONS TO ADDRESS

In areas/Indicator Regions within the CERP footprint in which CERP goals and objectives as envisioned in the Yellow Book are not achieved in the “Future with CERP” condition, what is the primary reason?

- Surface Water Storage Reservoir
- Aquifer Storage and Recovery
- Stormwater Treatment Areas
- Seepage Management
- Removing Barriers to Sheetflow
- Wastewater Reuse
- Operational Changes



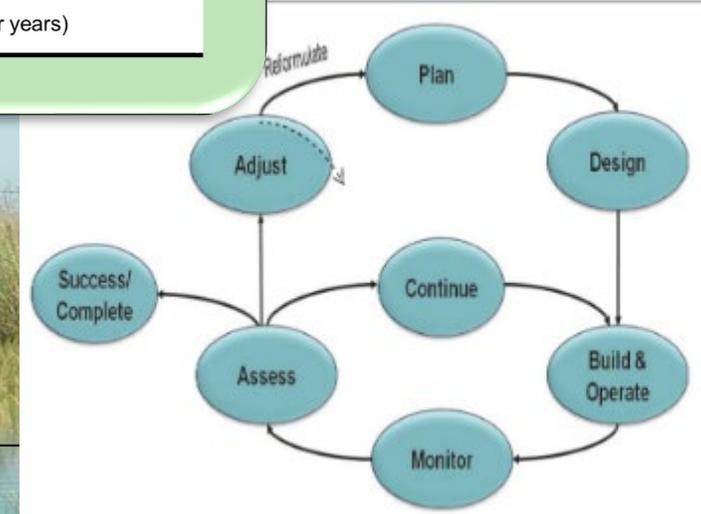
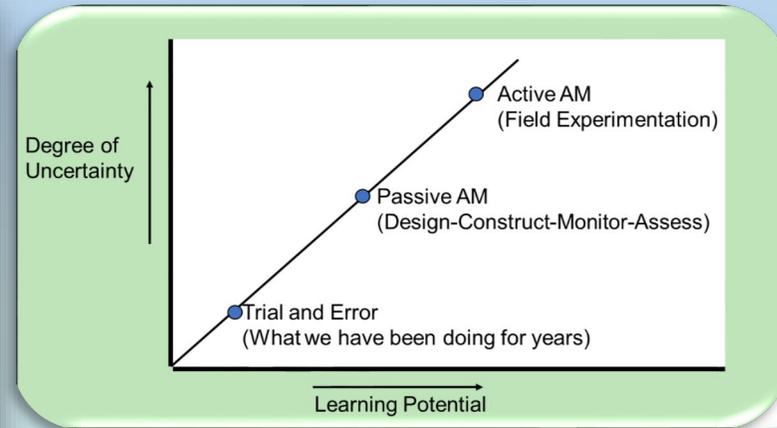
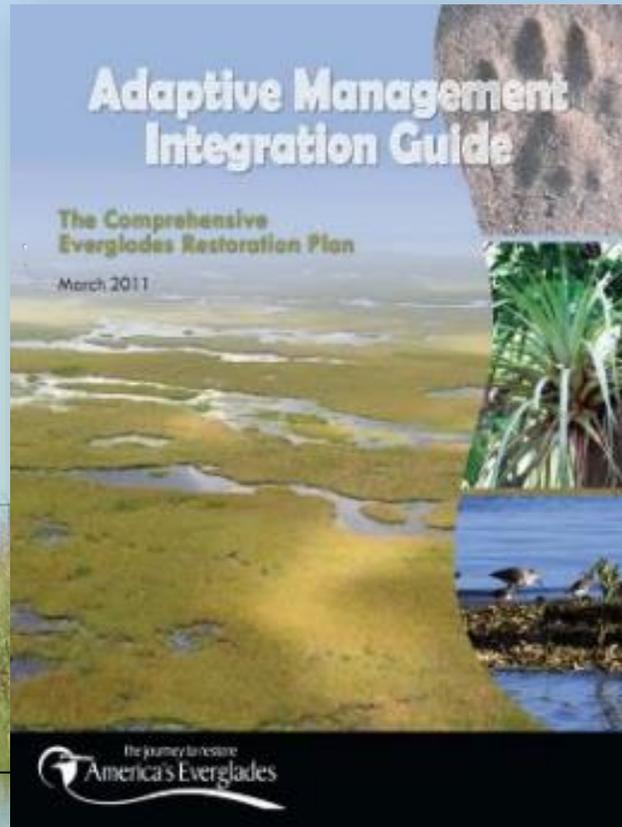
GETTING THE WATER RIGHT



QUESTIONS TO ADDRESS



What parameter(s) need to be considered for potential additional management measures (structural/operational) in areas where CERP goals and objectives are not achieved in the “Future with CERP” condition?



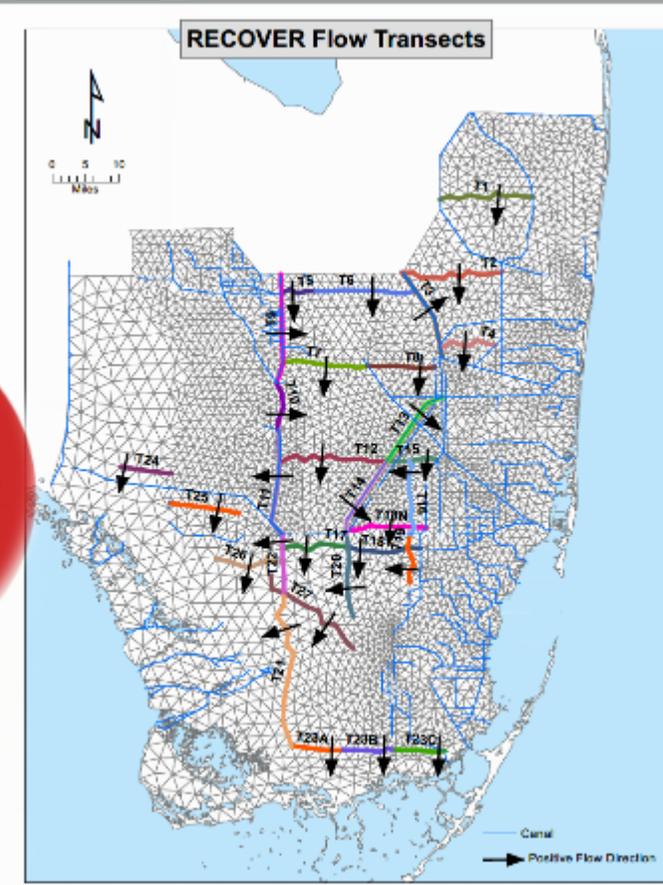
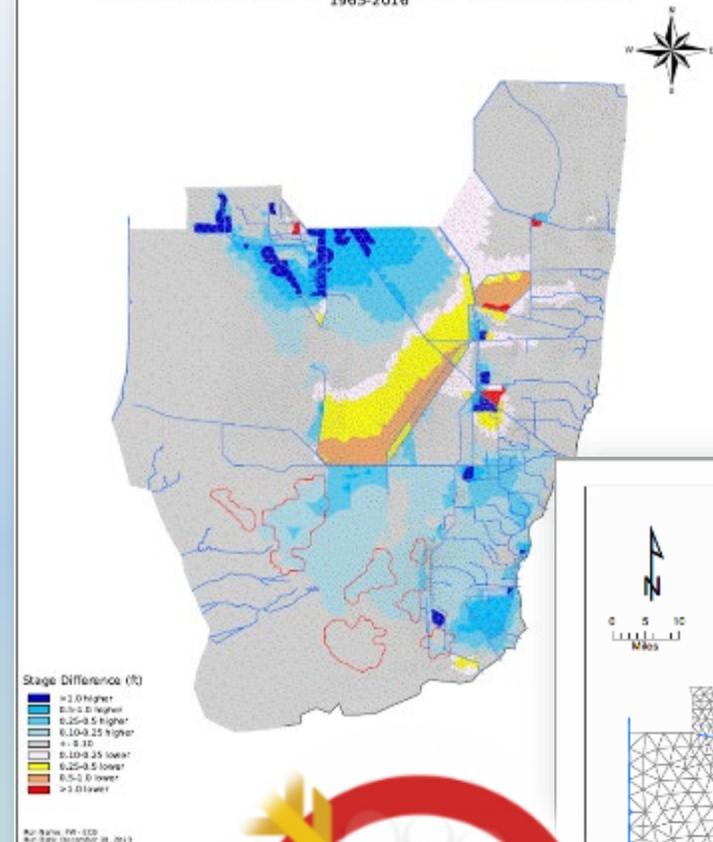
CERP GOAL 1: ENHANCE ECOLOGICAL VALUES



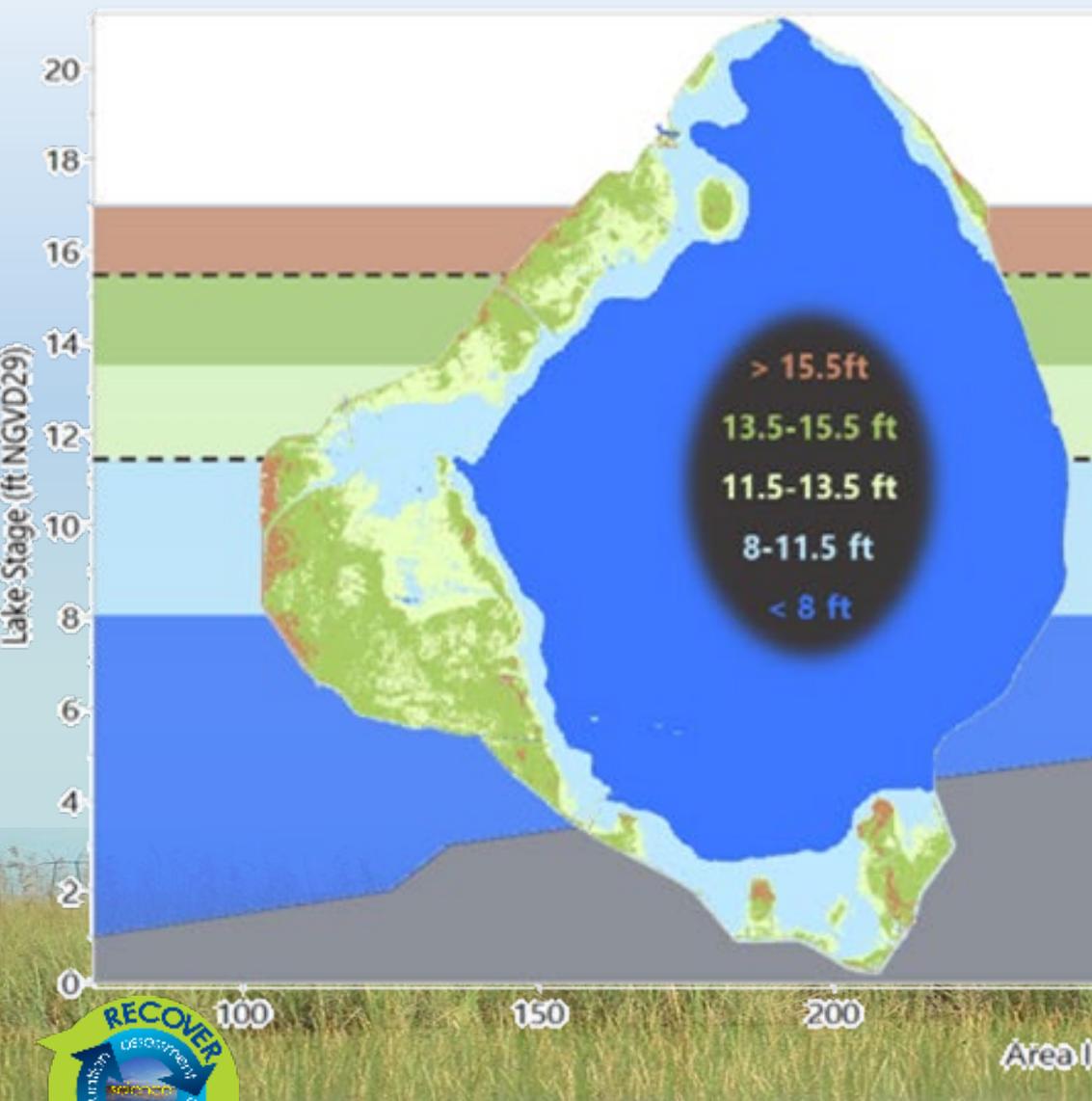
SYSTEMWIDE



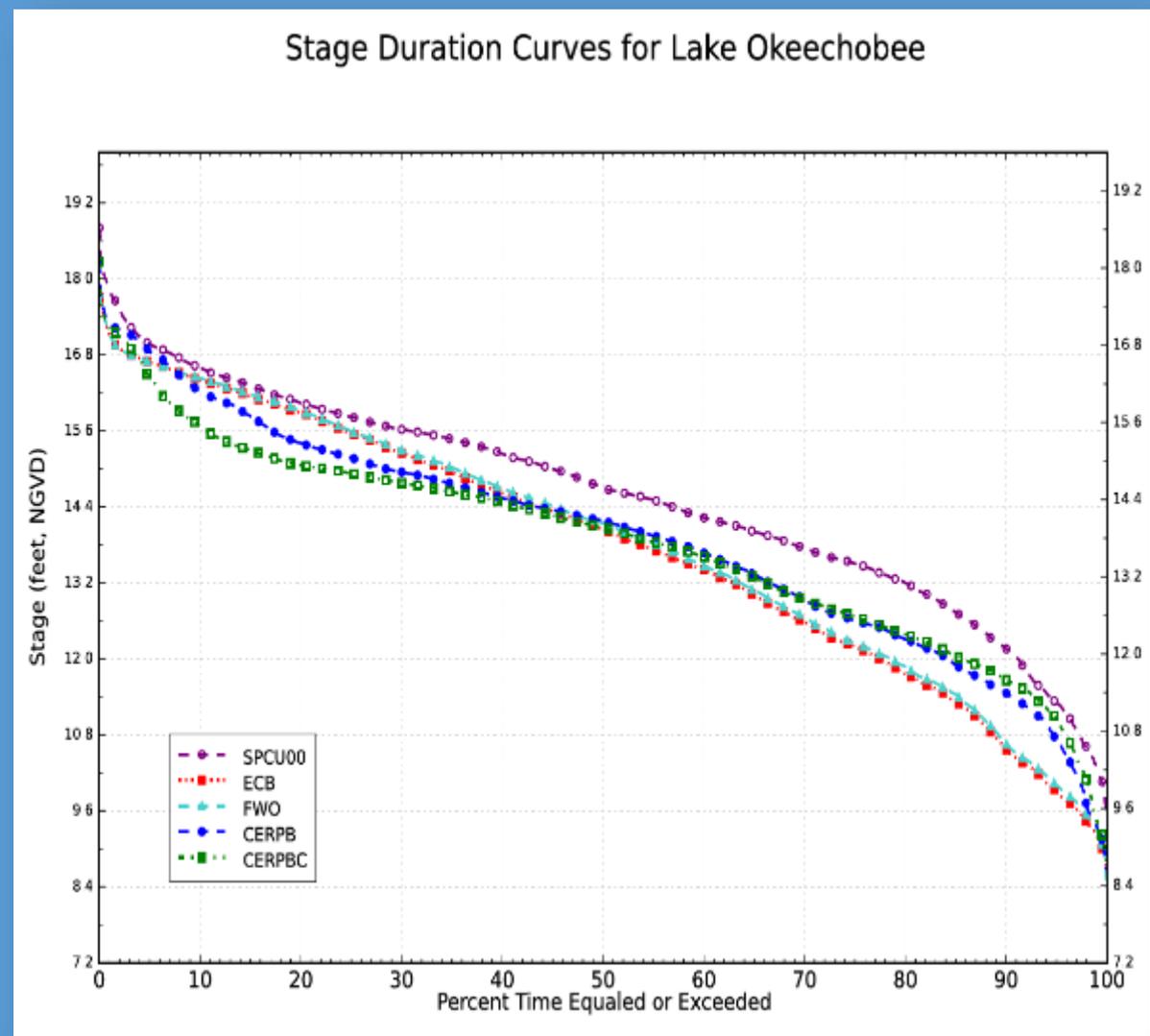
Average Annual Stage Difference in POS
1965-2016



LAKE OKEECHOBEE

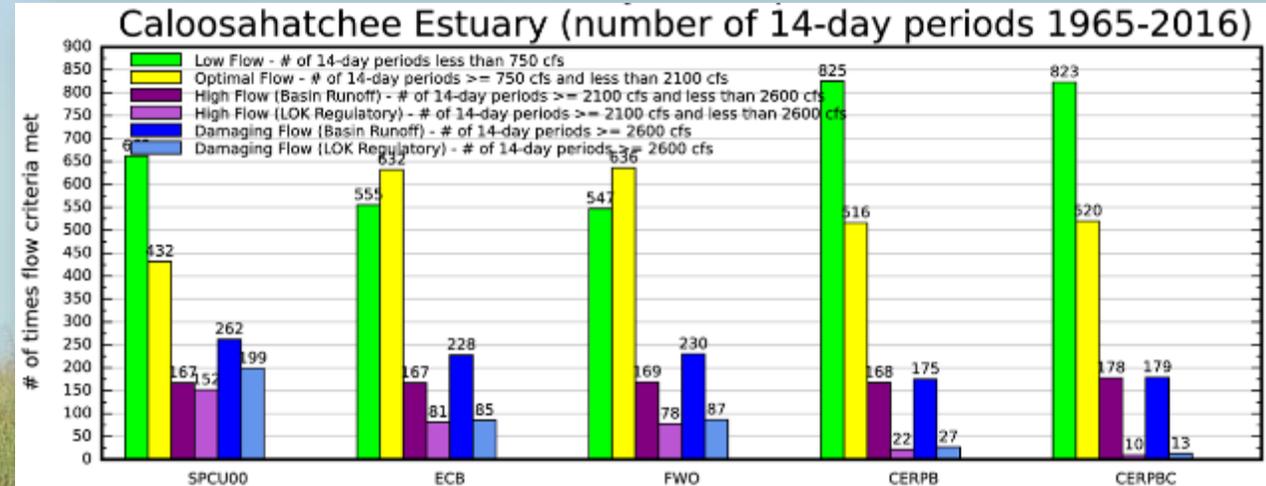
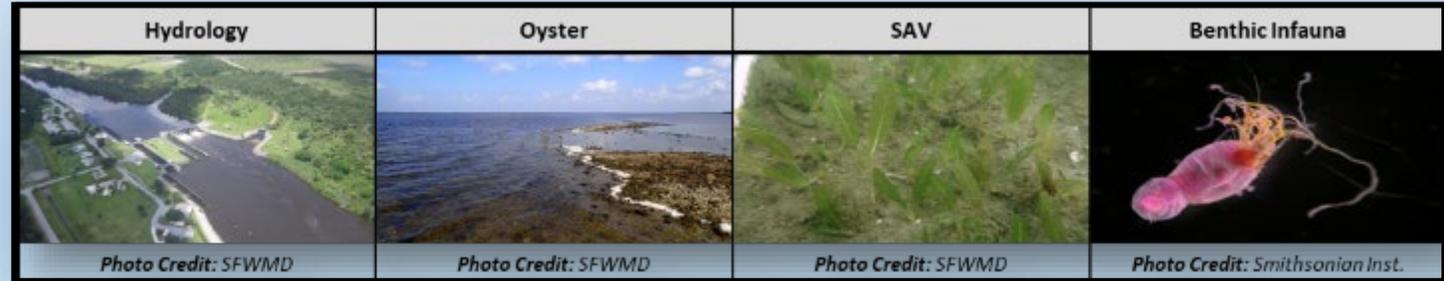
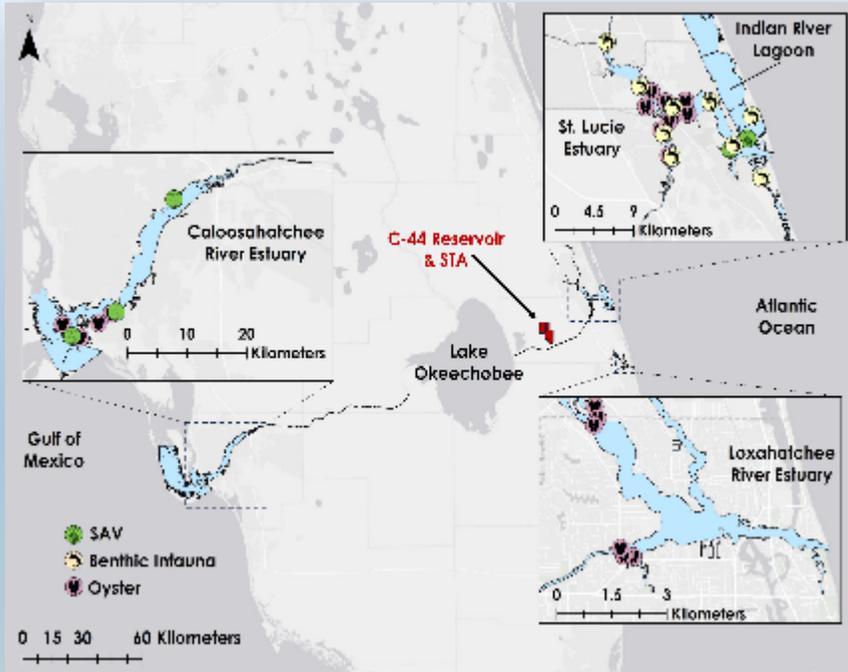


Stage Duration Curves for Lake Okeechobee



NORTHERN ESTUARIES

- ✓ RECOVER Northern Estuaries Salinity Envelope
- ✓ Oyster Habitat Suitability Index



Salinity



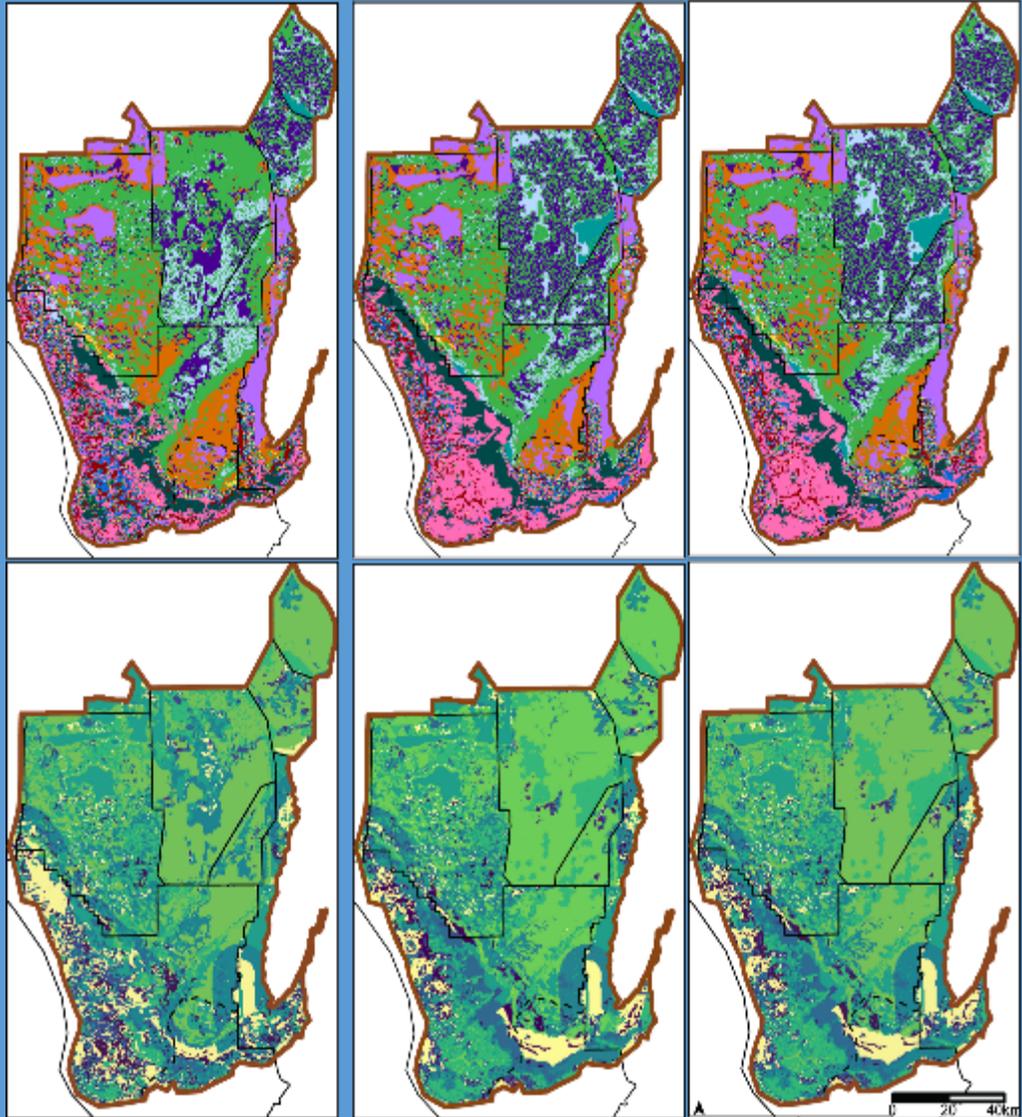
Temperature



Substrate

GREATER EVERGLADES & SOUTHWEST FLORIDA

Everglades Vulnerability Analysis (USGS JEM)



Vegetation Type

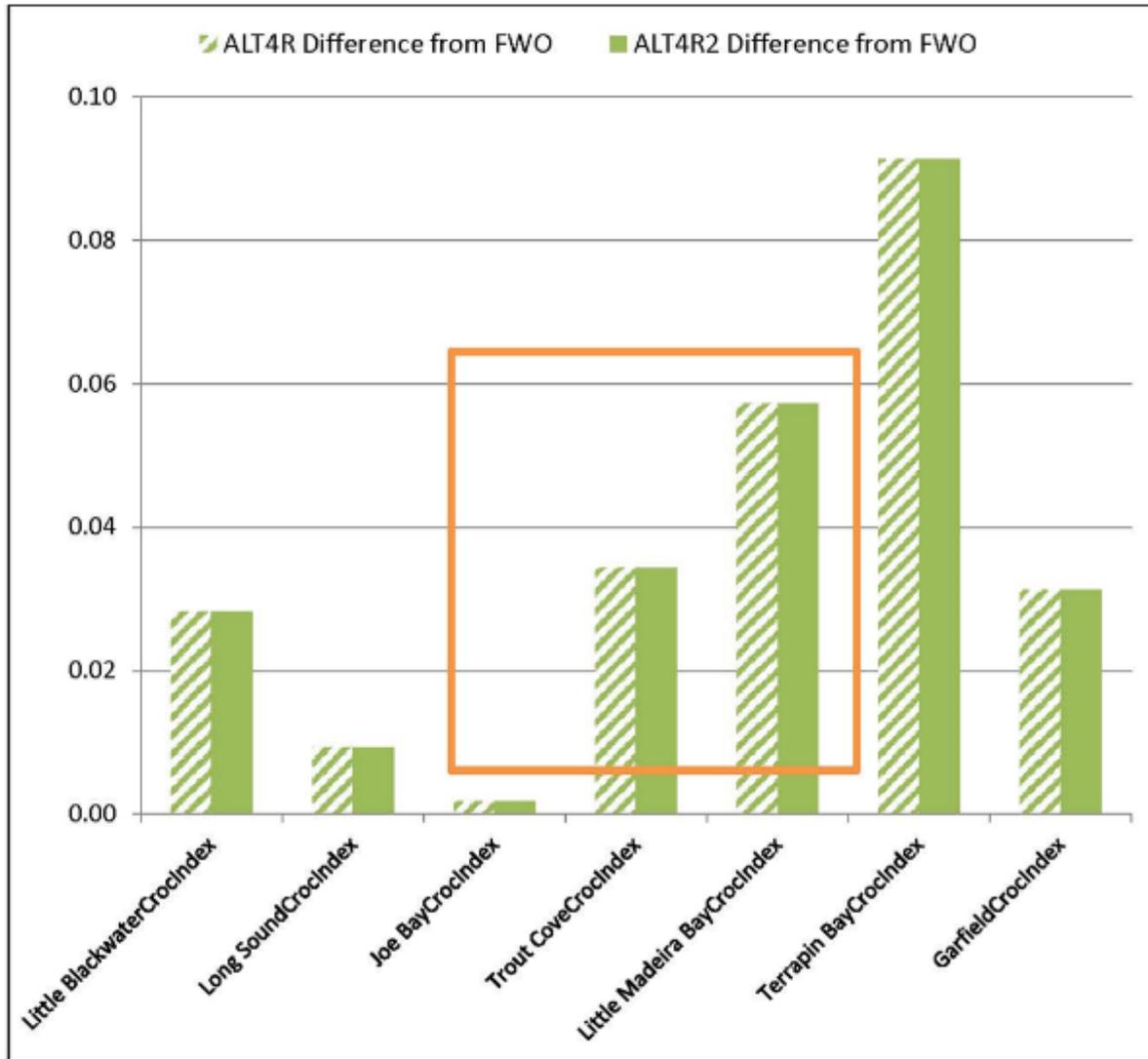
- Cattail
- Cypress
- Freshwater Long Hydroperiod
- Freshwater Prairie
- Freshwater Swamp/Forest
- Mangrove
- Mangrove Shrub
- Marine
- Sawgrass
- Spikerush
- Upland

Certainty Score

- 0.91 - 1.00
- 0.81 - 0.90
- 0.71 - 0.80
- 0.61 - 0.70
- 0.51 - 0.60
- 0.41 - 0.50
- 0.31 - 0.40
- 0.21 - 0.30
- 0.11 - 0.20
- 0.00 - 0.10



SOUTHERN COASTAL SYSTEMS



Juvenile Crocodile Habitat Suitability Index



Figure C.2.2-46. Histogram showing the results of the juvenile crocodile HSI for 7 locations of known crocodile nesting areas across all years within Period of Record (1965-2005). Index values show lift provided by Alt 4R as compared with the No Action Alternative and Alt 4R2 as compared to the no action alternative. (Brandt 2013).

CERP GOAL 2: ENHANCE ECONOMIC VALUES AND SOCIAL WELL BEING



WATER SUPPLY & FLOOD CONTROL

CERP GOAL-2

RECREATION & NAVIGATION

CULTURAL & ARCHAEOLOGICAL RESOURCES



Photo credit: FWC



Photo credit: SFWMD



Photo credit: FWC



Photo Credit: USACE

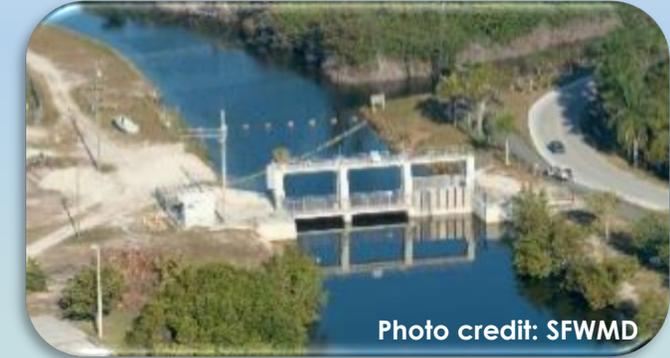


Photo credit: SFWMD



Photo credit: FWC



Photo Credit: USGS



THANK YOU



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