

Implementation Status of Planned Restoration Projects

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Florida Keys National Marine Sanctuary
Advisory Council
April 19, 2016

Core Mission

- Five Water Management Districts were created by Water Resources Act in 1972
 - Flood Control
 - Operate & maintain largest water management system in the world
 - Water Supply
 - Ensure sustainable water resources for South Florida's environment and economy
 - Natural Systems
 - Protect and restore the Northern and Southern Everglades
 - Water Quality
 - Improve water quality in the Everglades



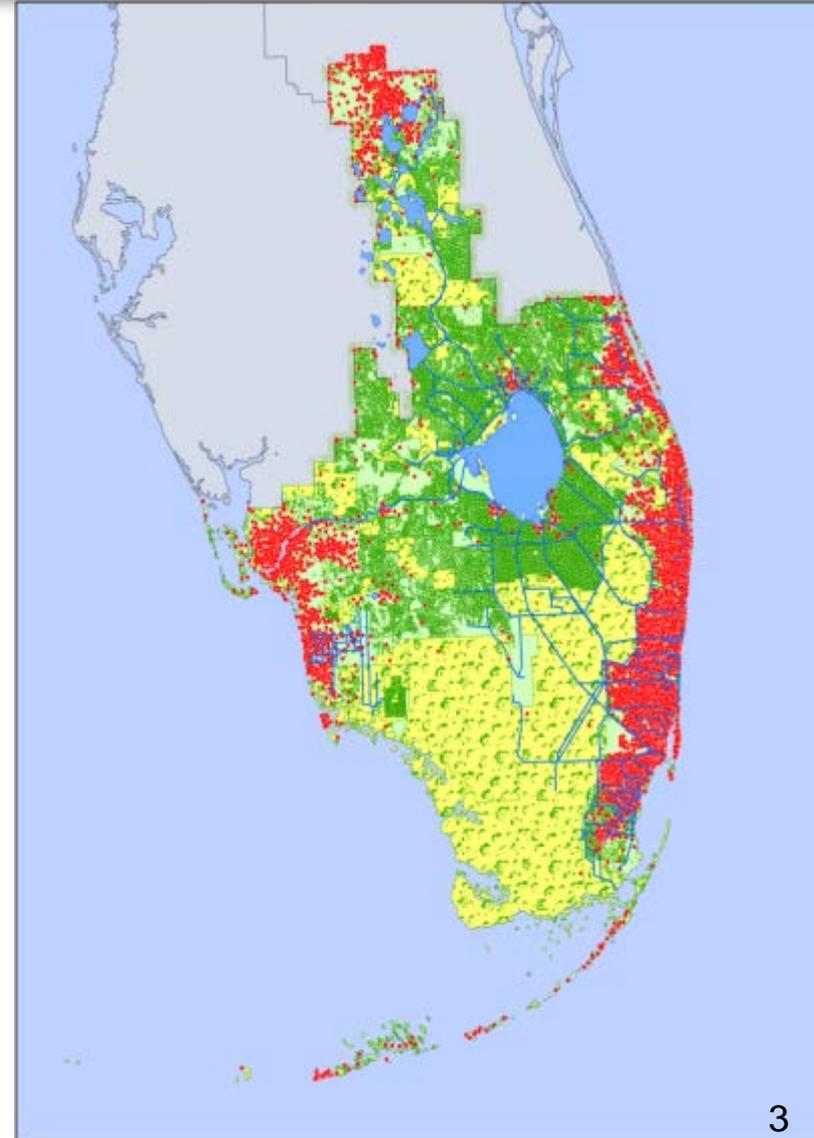
S-356 Water Control Structure in Miami-Dade County



Everglades Ridge and Slough Landscape

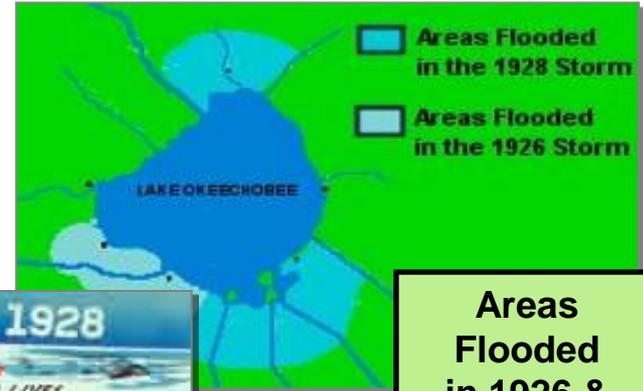
South Florida Overview

- SFWMD lands stretch 240 miles from Orlando to the Keys
- 18,000 square miles, encompassing one of the most diverse ecosystems in the world
 - ~2,000 miles of canals
 - ~2,800 miles of levees
 - More than 650 water control structures and 700 project culverts
 - Nearly 70 pump stations
 - **7.7 million residents**
 - **More than 3 million acres of agriculture**
 - **Florida's commitment: Protected/Managed natural areas**

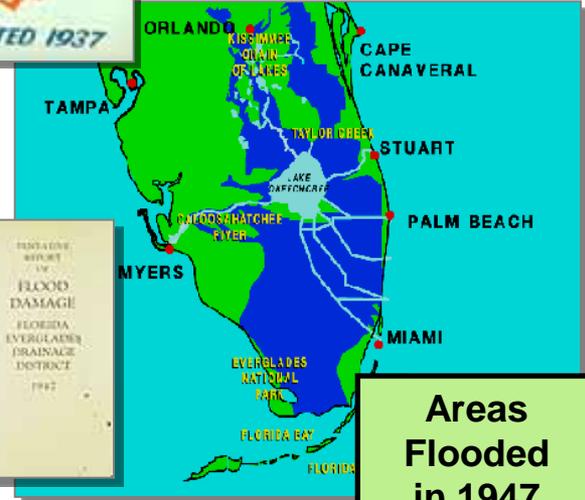


Construction of Central and South Florida (C&SF) Project

- Hurricanes in 1926 and 1928 resulted in extensive flooding around Lake Okeechobee
- Hurricane in 1947 resulted in widespread flooding throughout South Florida
- State of Florida requested federal assistance in 1947
- Congress authorized the C&SF Project in 1948



Areas Flooded in 1926 & 1928



Areas Flooded in 1947

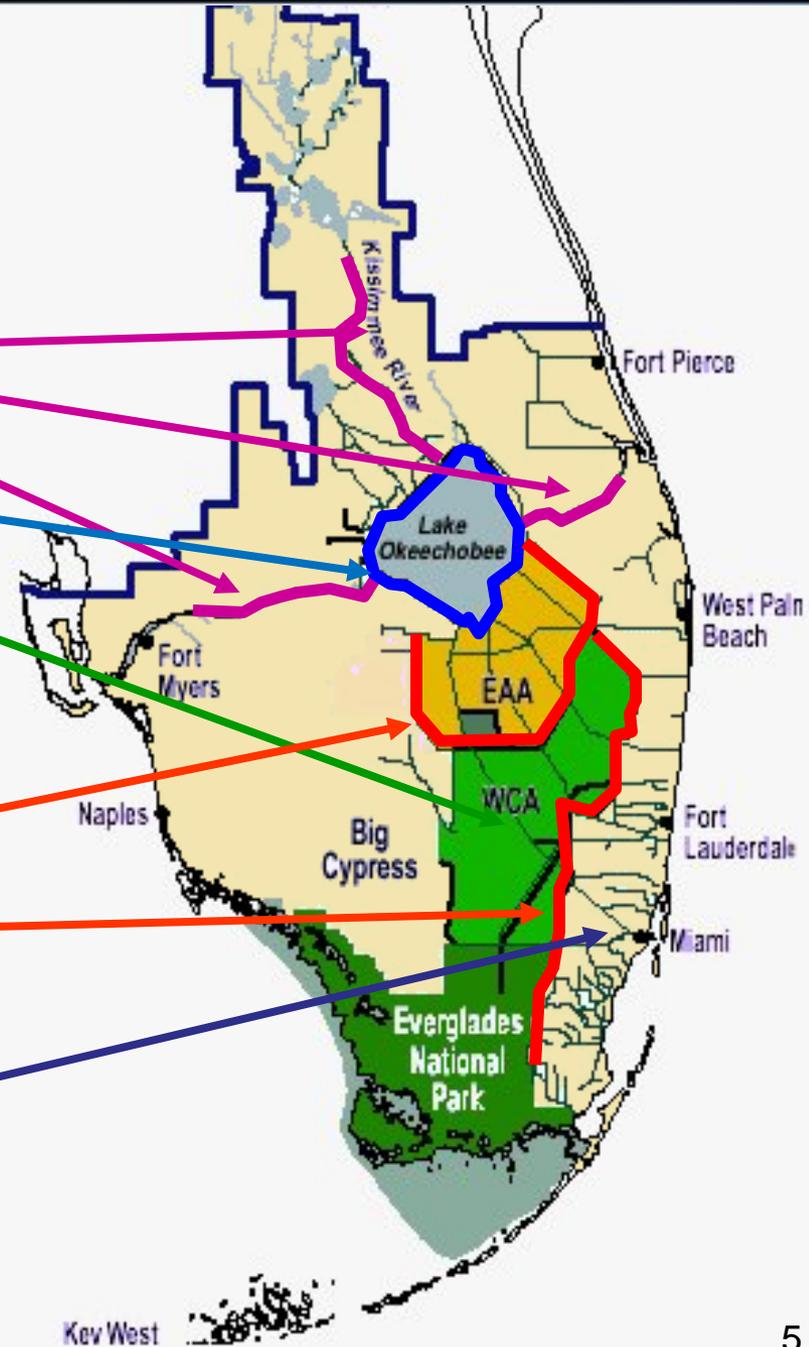


PROBABLE REPORT OF FLOOD DAMAGE FLORIDA EVERGLADES DRAINAGE DISTRICT 1947



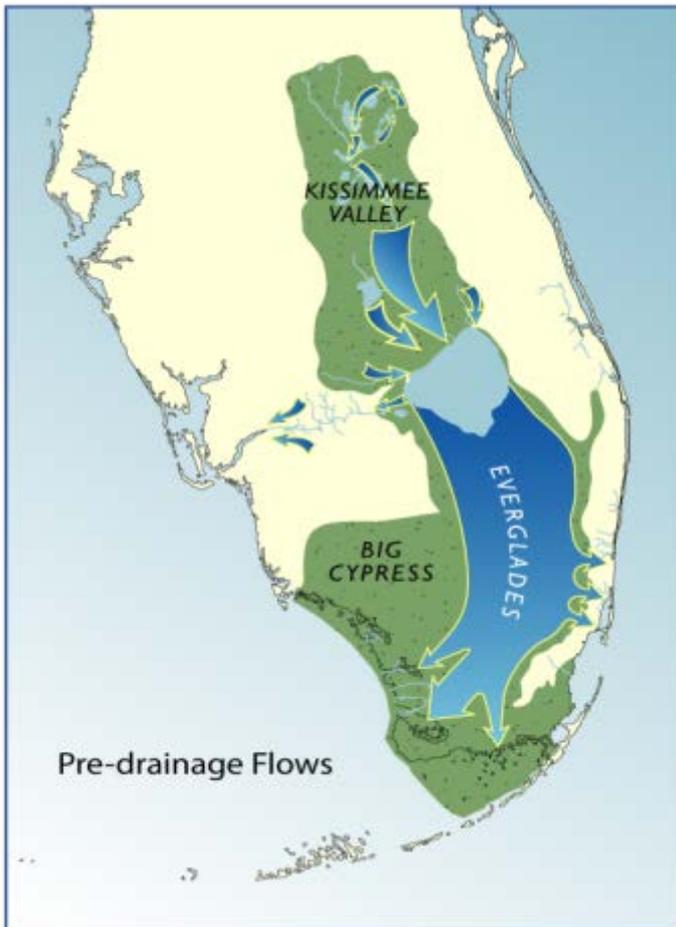
Major C&SF Project Components

- River Channelization
- Herbert Hoover Dike
- Water Conservation Areas
 - Everglades Agricultural Area
 - Lower East Coast
- Protective Levees
 - Salinity Structures

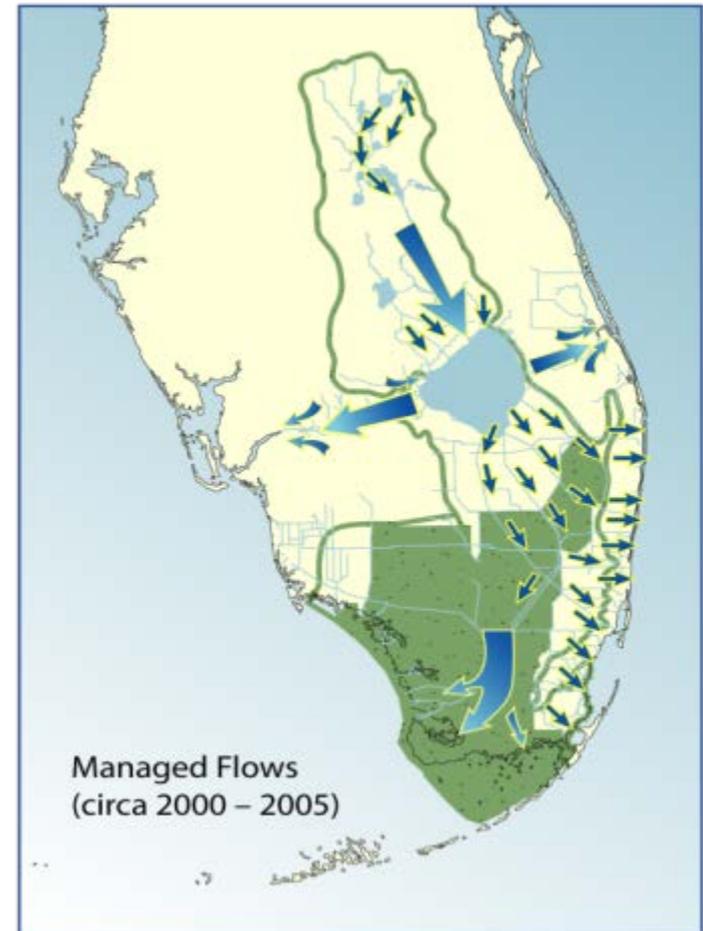


Changes in Hydrology

Pre-drainage Flows



Managed System Flows



Project Implementation Restoration Strategies: Key Projects

2012

- 57,000 ac of STA

2012-2016

- L-8 FEB (45,000 ac-ft)
- A-1 FEB (60,000 ac-ft)

2013-2018

- STA (4,700 ac)

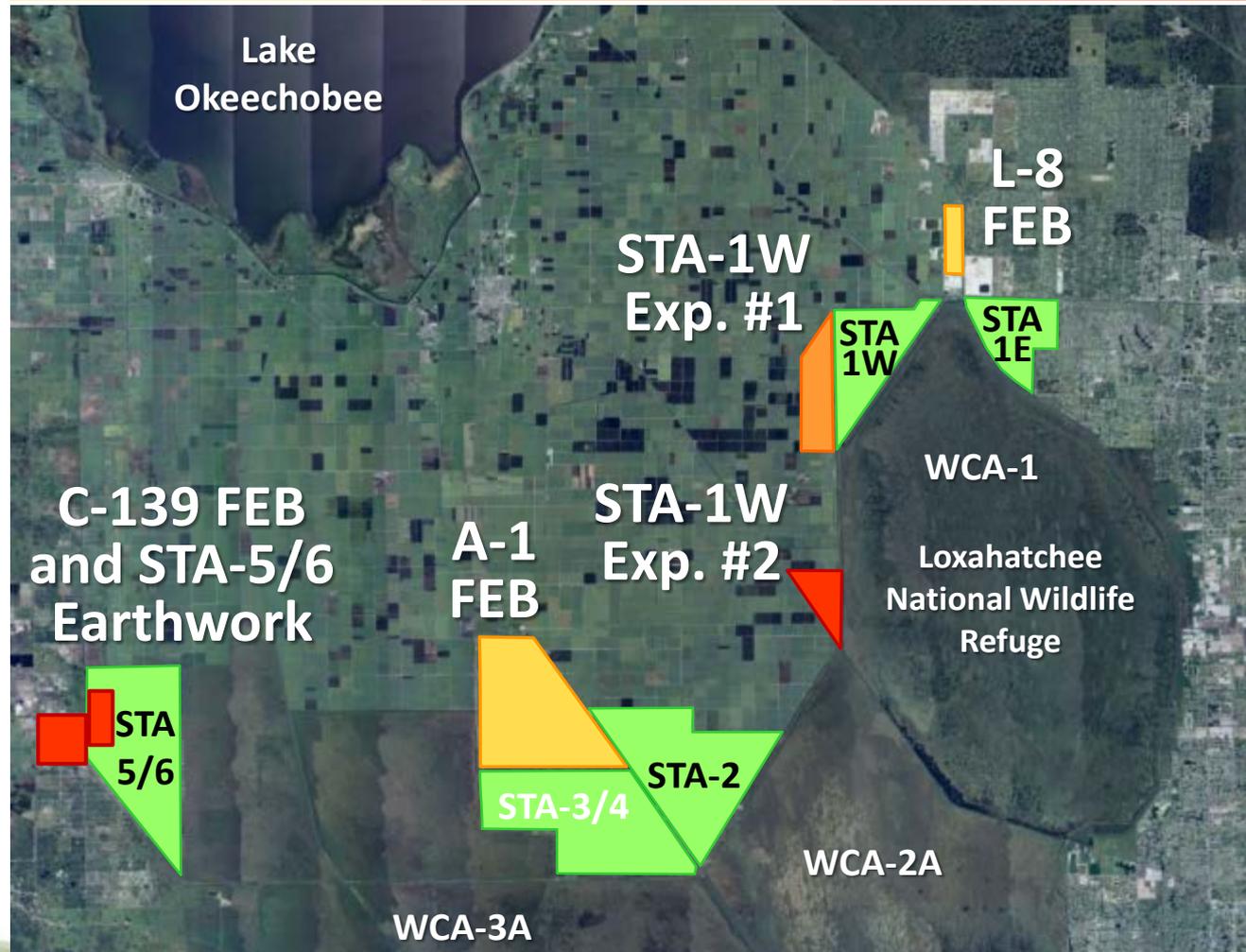
2018-2024

- STA (1,800 ac)
- C-139 FEB (11,000 ac-ft)
- STA Earthwork (800 ac)

2012-2016

2013-2018

2018-2024



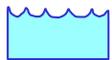
Comprehensive Everglades Restoration Plan (CERP)

➤ Includes 68 components to be implemented over 30+ years

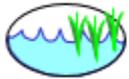
➤ Features include:



Aquifer Storage & Recovery



Surface Water Storage Reservoirs



STAs for Water Quality

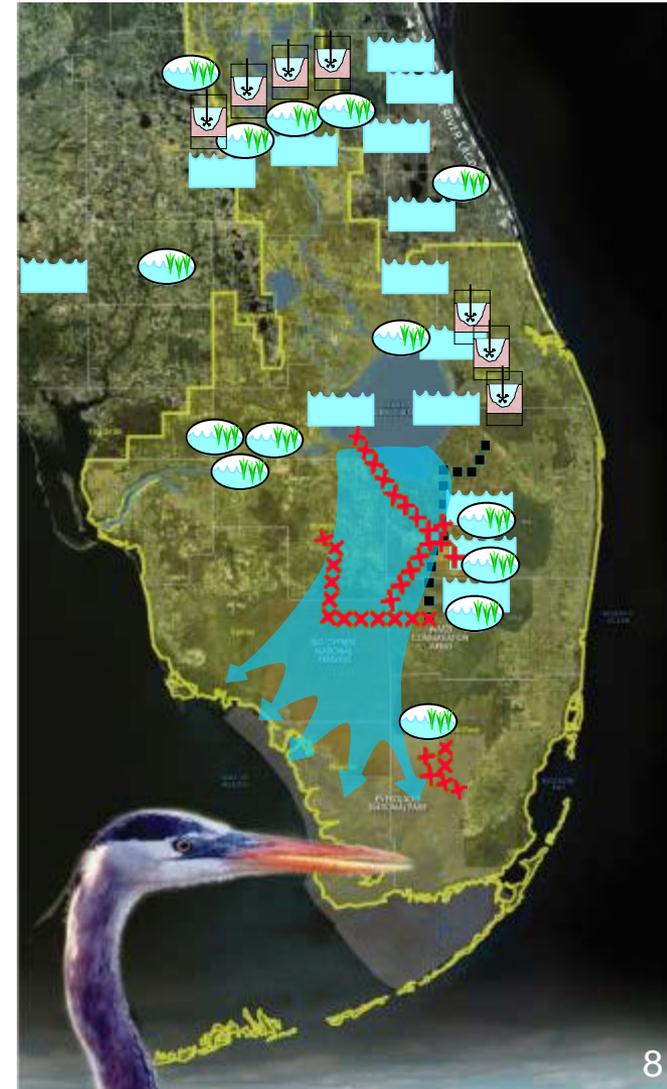


Seepage Management

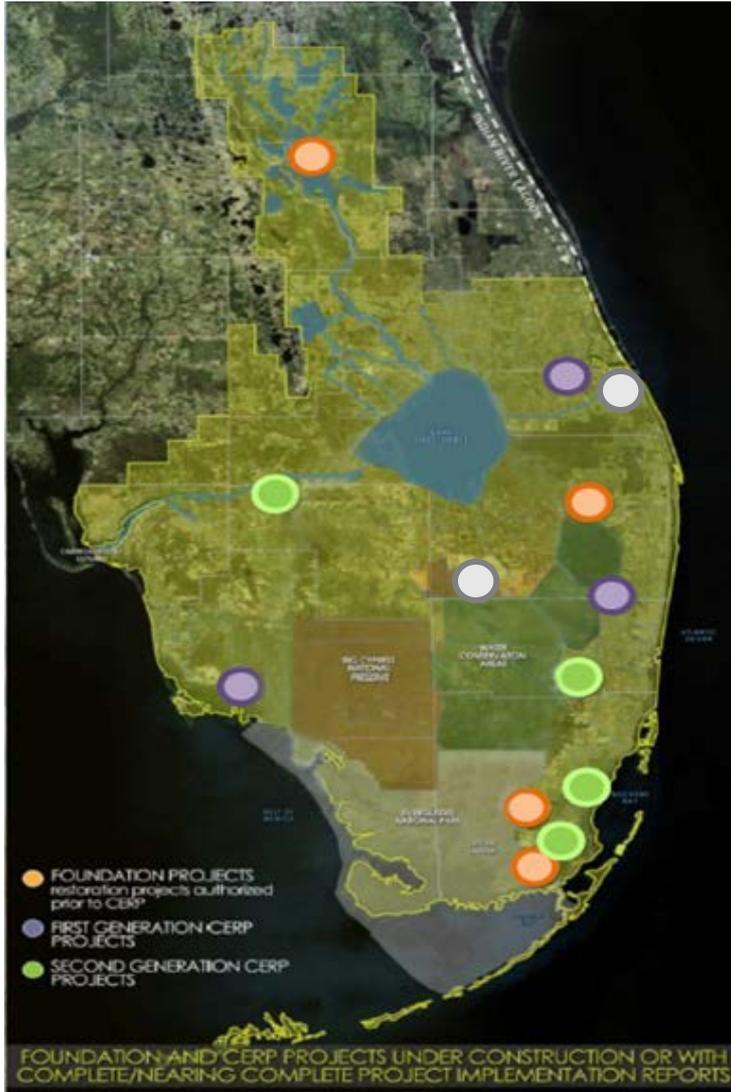


Removing Barriers to Flow

Revised Operations



Project Implementation



- Pre-CERP Foundation Projects**
 - ▶ Kissimmee River
 - ▶ C-111 South Dade
 - ▶ Modified Water Deliveries} Nearing Completion

- 1st Generation CERP**
 - ▶ Picayune Strand
 - ▶ IRL-South
 - ▶ Site 1 Impoundment} Under Construction

- 2nd Generation CERP - Authorized 2014**
 - ▶ C-43 Reservoir - Under Construction
 - ▶ Broward County WPA
 - ▶ C-111 Spreader Canal - Operational
 - ▶ Biscayne Bay Coastal Wetlands - Partially Constructed and Operational

- 3rd Generation CERP**
 - ▶ Central Everglades Planning Project } Authorization Pending
 - ▶ Loxahatchee River Watershed Restoration Project } Planning Underway

Kissimmee River Restoration is Nearing Completion



Kissimmee River Restoration



Kissimmee River Restoration Progress to Date

➤ Status:

- 3 construction phases complete
 - 1 to go with completion expected 2017

➤ Project completion will provide 100,000 ac-ft of storage:

- 30,000 ac-ft in restored floodplain
- 100,000 ac-ft through revised Chain-of-Lakes regulation schedules



McArthur Ditch Restoration July 7, 2015



McArthur Ditch Restoration Dec. 10, 2015



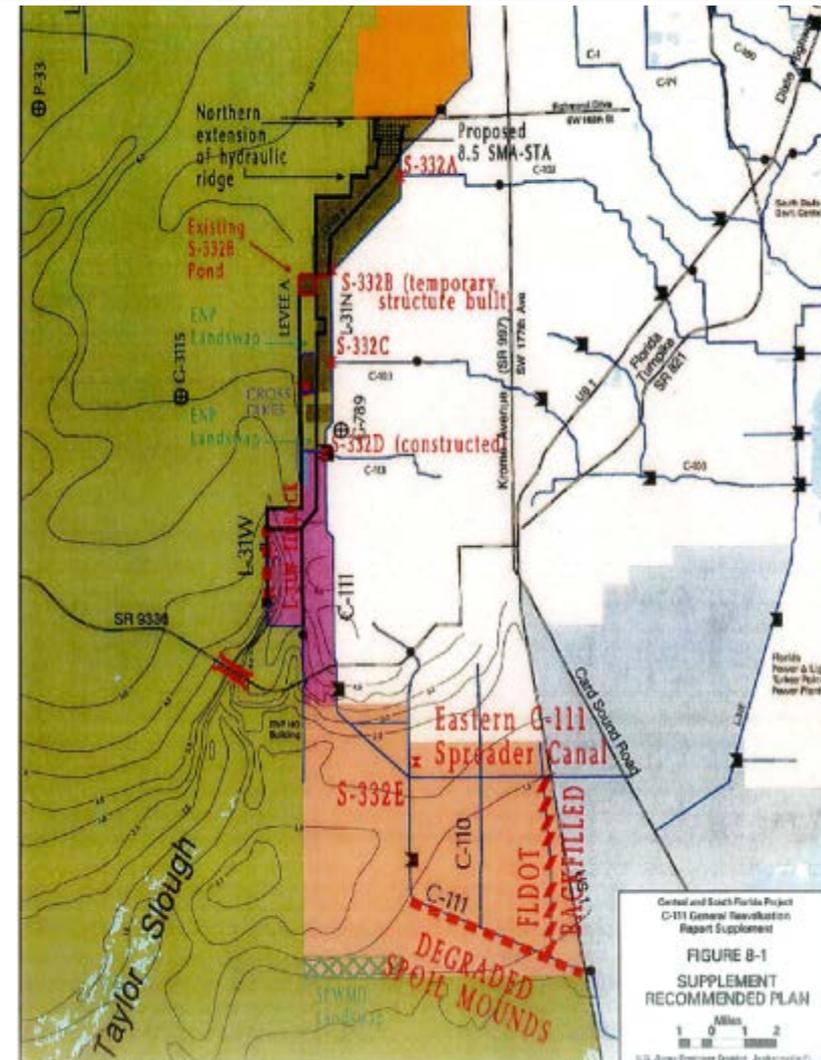
Modified Water Deliveries to Everglades National Park

- Modifications to the existing C&SF project to improve the natural water flows to Shark River Slough
- Restoration of more natural hydrologic conditions using timing, location and volume of water
- Four major components:
 - 8.5 Square Mile Area (SMA) Flood Mitigation
 - Conveyance and Seepage Control Features
 - Tamiami Trail Modifications
 - Project Implementation Support

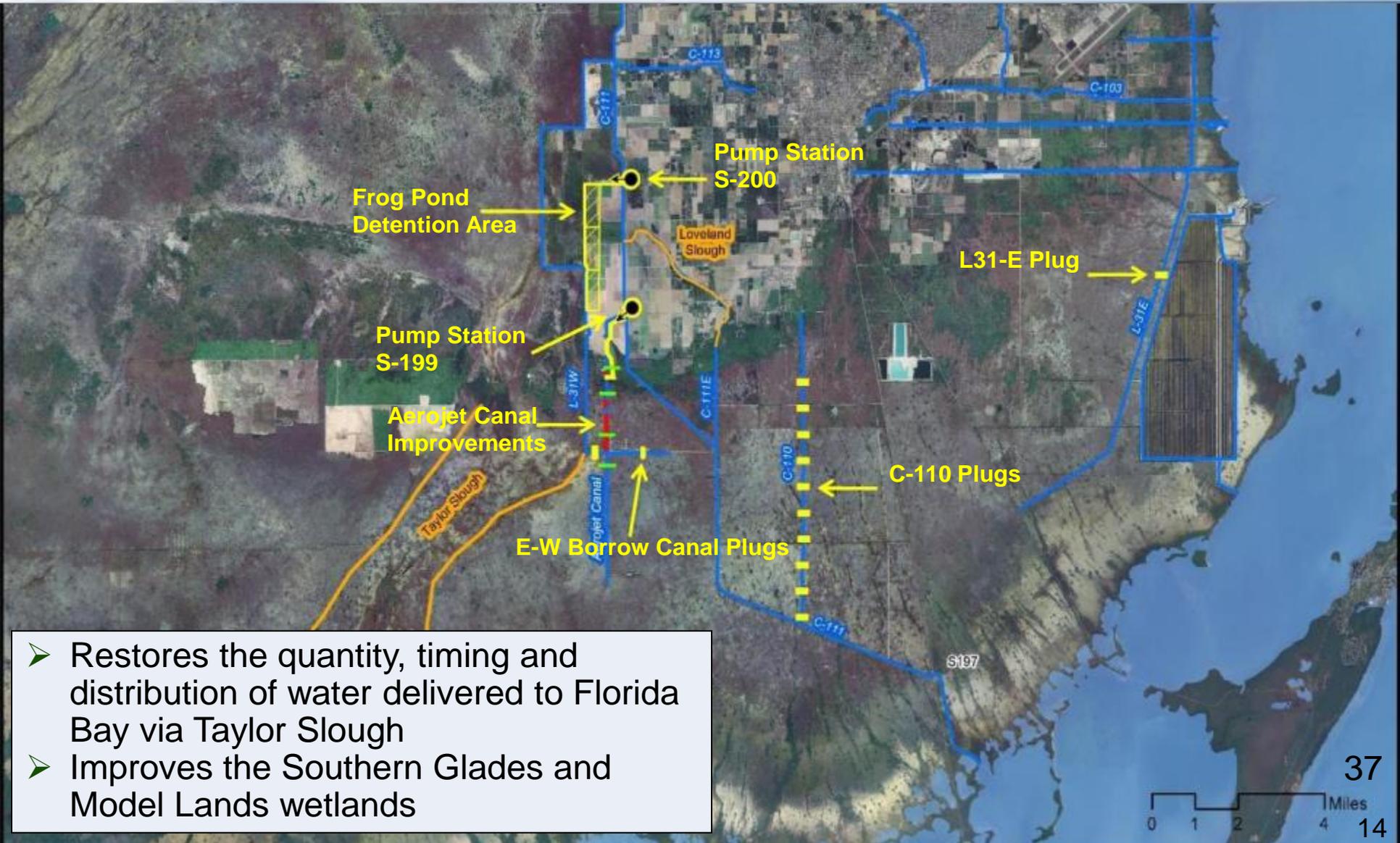


C-111 South Dade Project

- Restores more natural hydrologic conditions in Taylor Slough and the panhandle of Everglades National Park
- Provides flood protection for urban and agricultural lands to the east
- North Detention Area connects C-111 South Dade project to the Modified Water Deliveries Project
- L-31 Canal plugs reduce drainage out of Everglades National Park

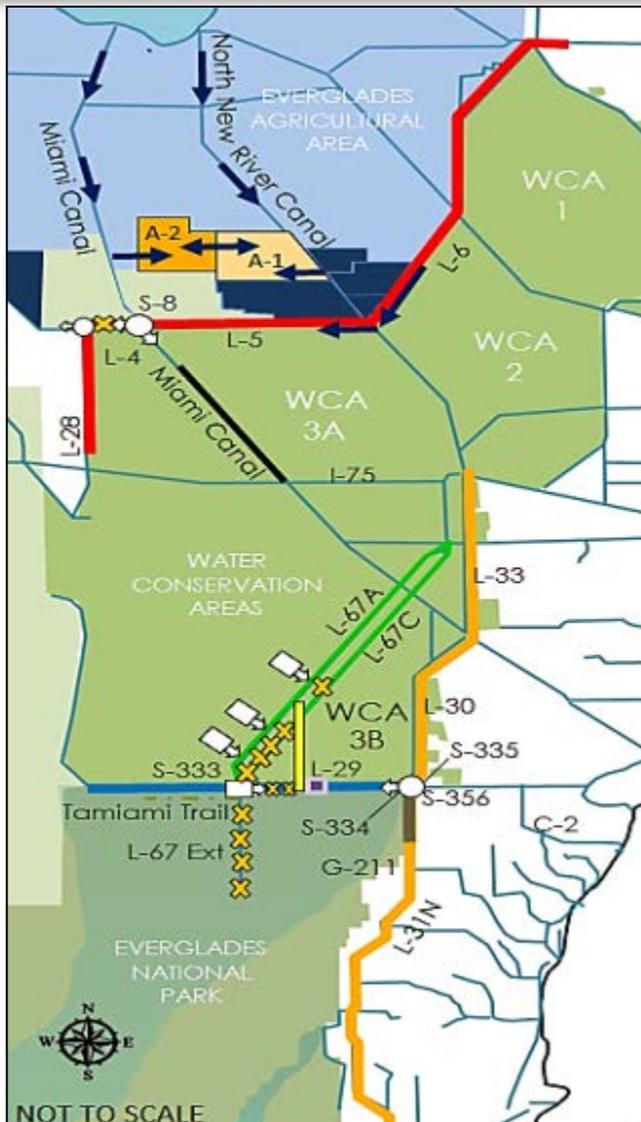


C-111 Spreader Canal Western Project



- Restores the quantity, timing and distribution of water delivered to Florida Bay via Taylor Slough
- Improves the Southern Glades and Model Lands wetlands

Central Everglades Planning Project



- Increases storage, treatment and conveyance of water south of Lake Okeechobee
 - Sends ~200,000 ac-ft of water south from the Lake
- Removes and/or plugs canals and levees within the central Everglades
- Improves hydroperiod and flow through Everglades National Park while protecting urban and agricultural areas to the east from flooding

Next Generation Projects

- Planning Projects in the Integrated Delivery schedule
 - Lake Okeechobee Watershed Project
 - Western Everglades Restoration Project
 - C-111 Spreader Canal Eastern
 - Biscayne Bay Coastal Wetlands Phase II



Lake Okeechobee



Big Cypress National Preserve



Florida Bay



Osprey nest on Red Mangrove in Florida Bay



Islands in Florida Bay



Florida Bay Everglades National Park



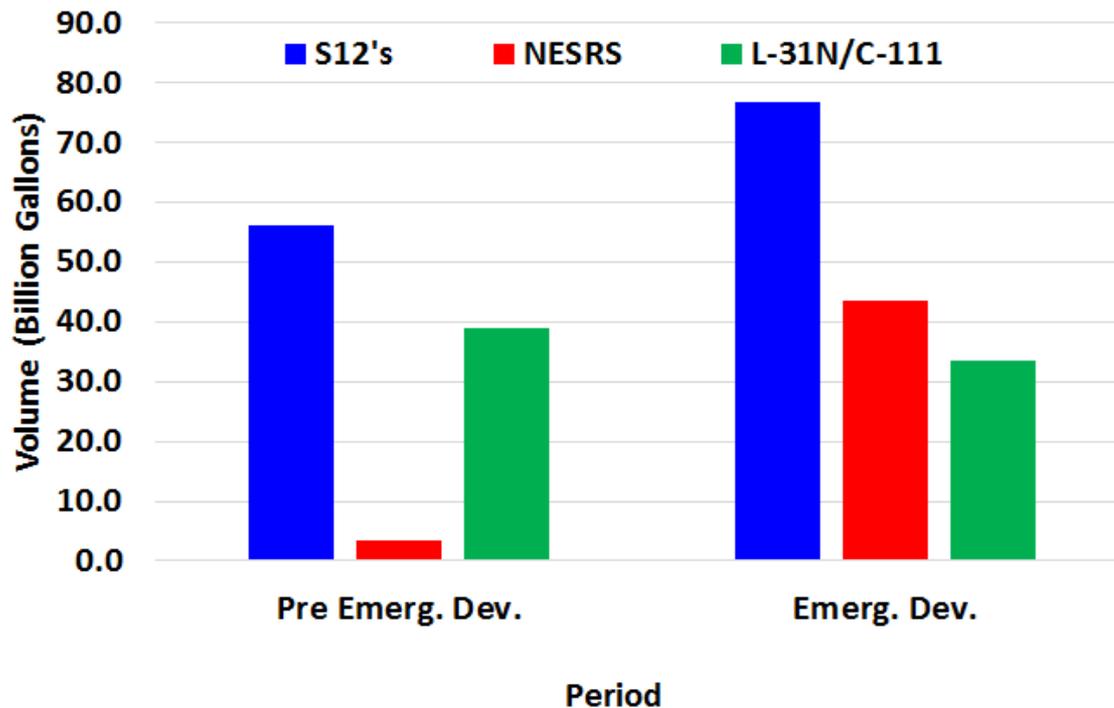
High Water Stages in WCA-3A



- WCA-3A stages have been extremely high.
- District/USACE Temporary Emergency Deviation to lower stages in WCA-3A
 - Raise L-29 stage limit from 7.5 to 8.5 feet
 - Allow higher flows through S-333 into L-29
 - Increase flows to NESRS
 - Use S-334 to moderate L-29
 - S-26 discharge to tide
 - Send WCA-3A releases through the L-30 canal (S-337, S-335)
 - Temporary pumps at S-355B and S-357 seepage collection canal

Volumes Delivered to ENP

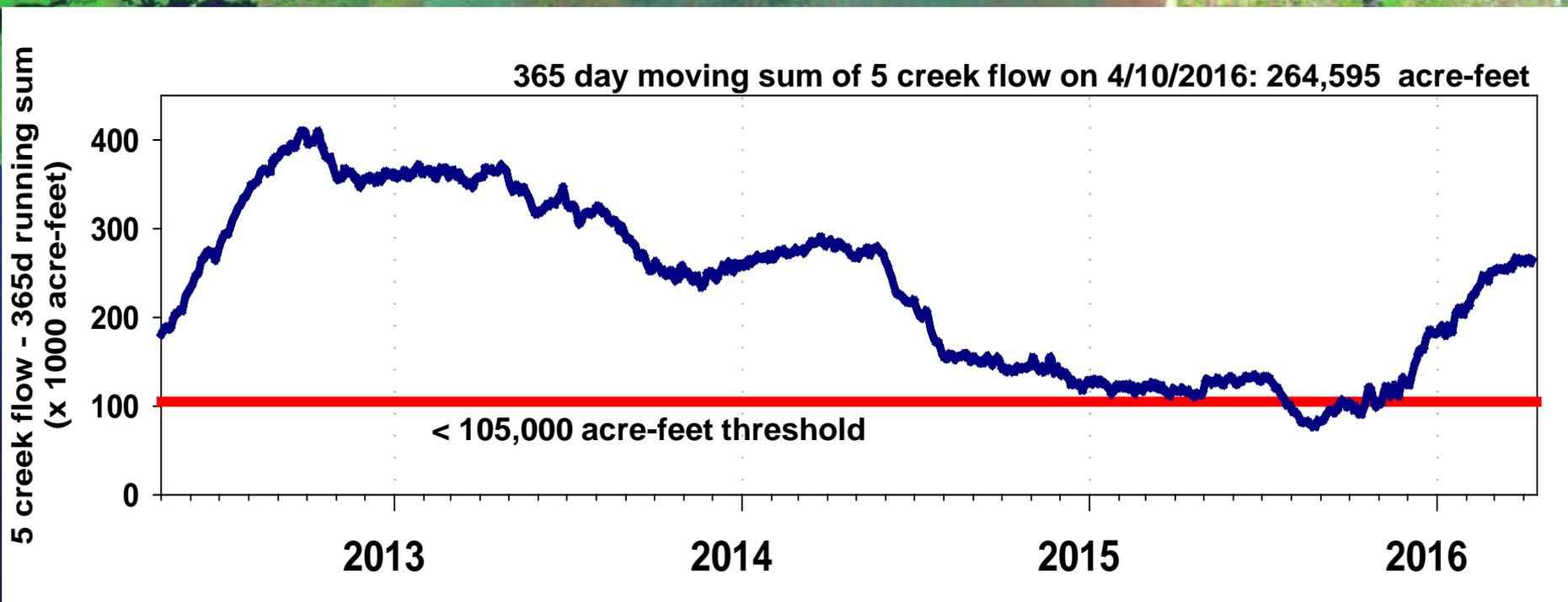
Volumes to ENP 2016



- From 2011 to 2015, the average total volume into the ENP for the period Jan-Mar was 24.7 billion gallons.
- For 2016, the volume for the same three months was 227 billion gallons (~ 9 times).

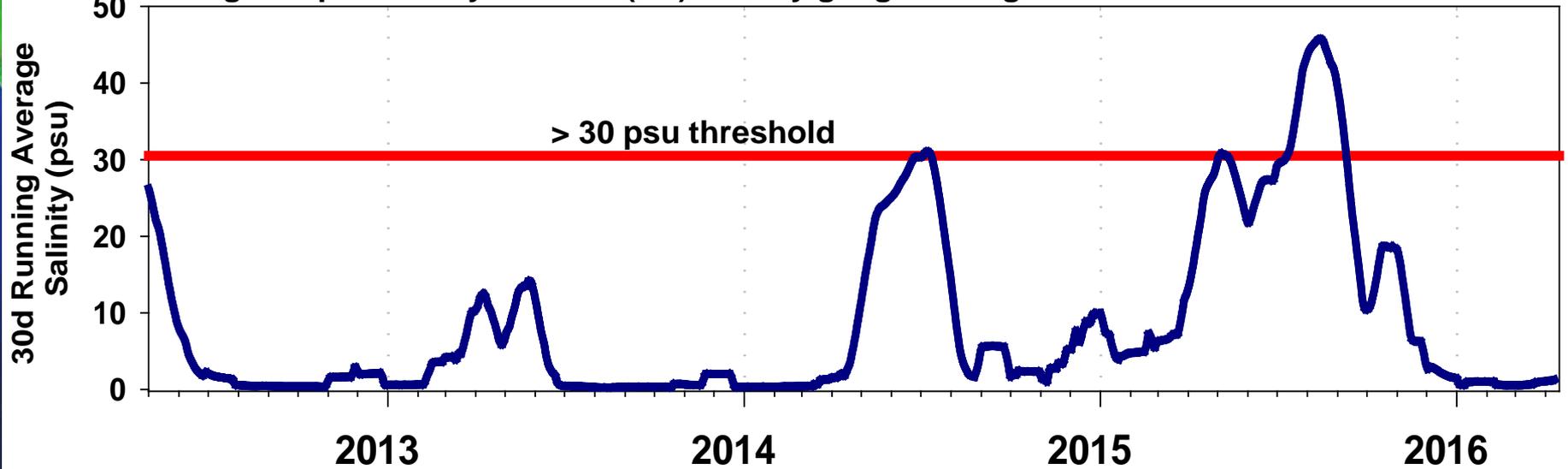


Florida Bay Flow Update



Florida Bay Salinity Update

Mangrove ponds: Taylor River (TR) salinity gauge through 4/10/2016



Questions?

**Turtle in the
Southern CREW area,
Collier County**



**Manatees at S-193,
Miami-Dade County**



**Water Lily in LILA,
Palm Beach County**



Florida Bay Sunset

