CERP & WERP OVERVIEW

WESTERN EVERGLADES RESTORATION PROJECT

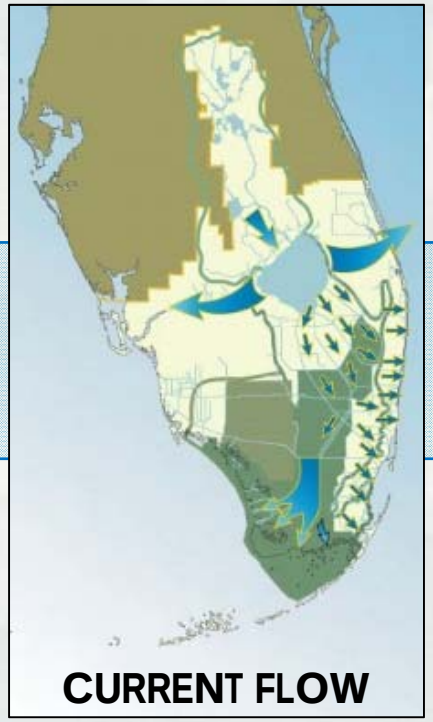
SOUTH FLORIDA ECOSYSTEM PROJECT OVERVIEW

Presenter:

Matt Morrison, Federal Policy Chief,
Everglades Policy & Coordination Chief
South Florida Water Management District (SFWMD)

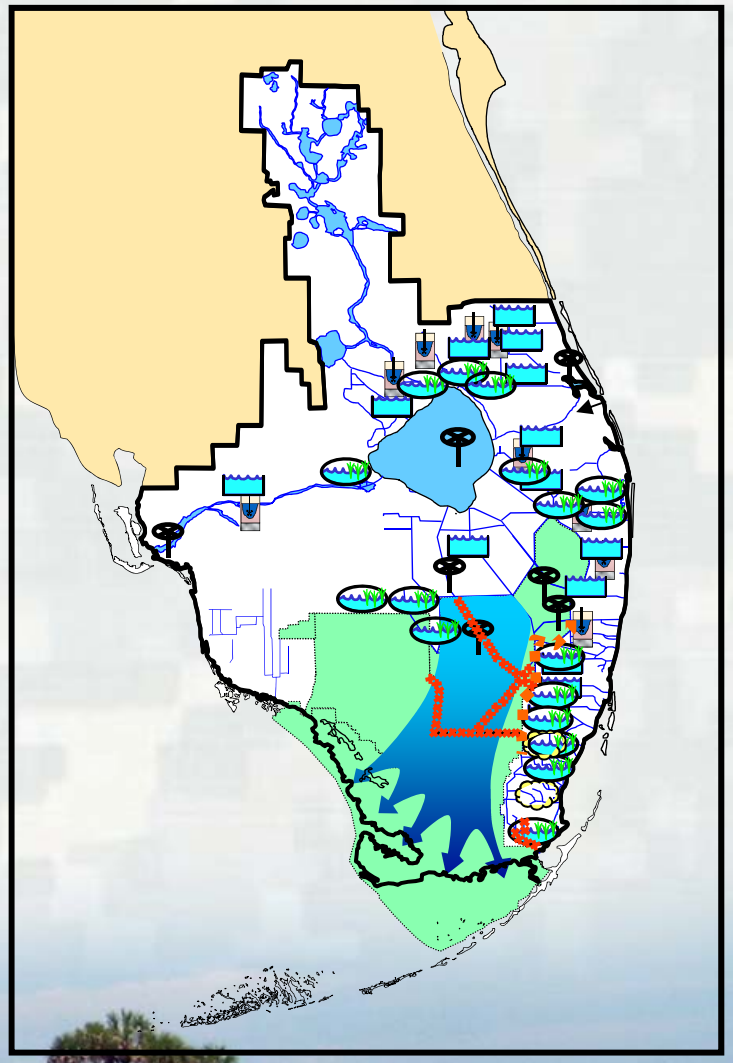
SYSTEM-WIDE PERSPECTIVE

Increased Operational Flexibility = Relief to Estuaries and Restoration of Flows to Everglades

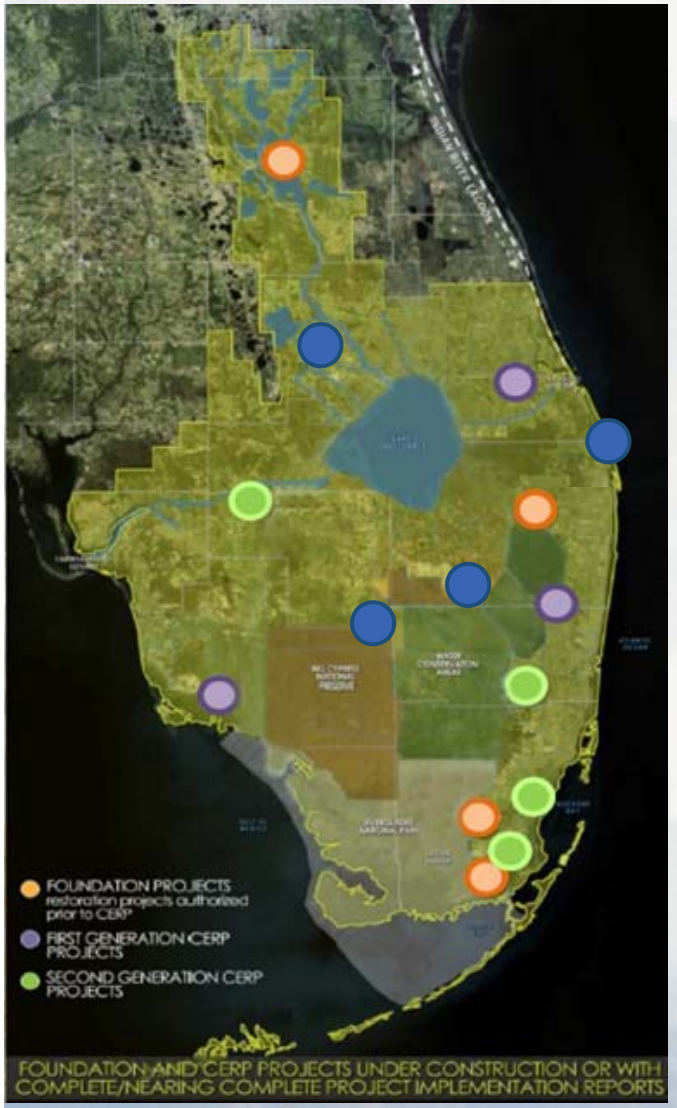


COMPREHENSIVE EVERGLADES RESTORATION PLAN

- 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



SOUTH FLORIDA ECOSYSTEM RESTORATION



Pre-CERP Foundation Projects

- **Kissimmee River Restoration**
- **Modified Water Deliveries**
- **C-111 South Dade**

Significant Progress/ Nearing Completion

1st Generation CERP

- **Melaleuca Eradication Facility** Completed
- **IRL-South** Under Construction
- **Picayune Strand** Design

2nd Generation CERP

- **C-43 Reservoir**
- **Broward County WPA**

Under Construction

- **C-111 Spreader Canal Western Features** Operational
- **Biscayne Bay Coastal Wetlands** Partially Constructed & Operational

Completed and Active Planning Studies

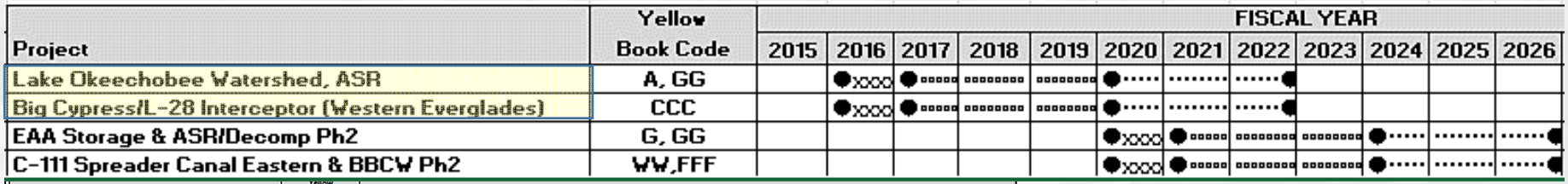
- **Central Everglades Planning Project** Authorization Pending
- **Loxahatchee River Watershed Restoration** Planning Underway
- **Lake Okeechobee Watershed Project** Planning Underway
- **Western Everglades Restoration Project** Planning Underway

WHY WERP? WHY NOW?

WERP IS A KEY COMPONENT OF EVERGLADES RESTORATION

- National and State-level interest in initiating western basins restoration now
- Important Tribal contributions to Central Everglades Planning Project (2012 Minority Opinion)
- Following Integrated Delivery Schedule (IDS)
- May increase operational flexibility of Lake Okeechobee
- Need to examine inflows into Tribal Reservations Water Conservation Area 3

SYNCHRONIZING PRIORITIES
INTEGRATED DELIVERY SCHEDULE (IDS)



Project	Yellow Book Code	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Federal Construction Cost (SFER)		41	138	142	190	204	141	212	192	195	221	213	186	200	144	151	100	0	0	0	0	0
Non-Federal Construction Cost (SFER)		43	139	161	161	77	119	55	39	142	141	141	210	192	192	192	123	123	0	0	0	0
Total Construction Cost (SFER)		84	277	303	350	282	260	267	231	338	362	354	396	392	336	343	223	123	0	0	0	0
Modified Water Deliveries to Everglades National Park*																						
Herbert Hoover Dike*																						
Seminole Big Cypress*	OPE																					
Restoration Strategies*																						
Tamiami Trail Next Steps Phase 1*																						
Kissimmee River Restoration																						
West Palm Beach Canal/STA-1E																						
C-111 South Dade Contract 8 & 9																						
C-111 South Dade PACR																						
Picayune Strand Restoration	OPE																					
Merritt Pump Station																						
Faka Union Pump Station																						
Manatee Mitigation and Flood Protection Features																						
Miller Pump Station																						
Remaining Features - Road removal & canal backfill																						
Site 1 Impoundment	M																					
Phase 1																						
Indian River Lagoon-South																						
C-44 Intake Canal	B																					
C-44 Reservoir	B																					
C-44 STA & Pump Station	B																					
C-23/24 Reservoir North	B																					
C-23/24 Reservoir South	B																					
C-23/24 STA	B																					
C-25 Reservoir	B																					
C-25 STA	B																					
Natural Lands	B																					
Decomp Physical Model	Q																					
Caloosahatchee River (C-43) West Basin Storage																						
Pump Station & Cell 1	D																					
Cell 2	D																					
Broward County Water Preserve Areas																						
C-11 Impoundment	Q																					
WCA 3A&3B Seepage Management	O																					
C-9 Impoundment	R																					
Biscayne Bay Coastal Wetlands Phase 1	FFF, OPE																					
L-31 East Flowway																						
Cutler Wetlands																						
C-111 Spreader Canal Western Project	WW																					
Central Everglades Planning Project (Authorization WRDA 2016)																						
PPA South: LRR & PPA Execution	AA, FF, H, QQ																					
Remove Old Tamiami Trail (CNTX)																						
L-67A Structure 1 & Gap in L-67C Levee (CNT 3)																						
Increase S-356 (CNT 4)																						
L-29 Gated Spillway (CNT 4b)																						
Increase S-333 (CNT 4a)																						
L-67A Structures 2 & 3 (CNT 5)																						
Removal L-67C & L-67 Ext, Constr L-67D Levee (CNT 6)																						
Removal L-29 Levee & Backfill L-67 Ext (CNT 7)																						
PPA North	QQ, II, G																					
PPA New Water	V																					
Loxahatchee River Watershed Restoration Project	X, Y, K																					
Lake Okeechobee Watershed, ASR																						
Big Cypress/L-28 Interceptor (Western Everglades)																						
EAA Storage & ASR/Decomp Ph2																						
C-111 Spreader Canal Eastern & BBCW Ph2																						

- Developed through a public process
- Based on technical information
- Integrated Delivery Schedule (IDS) was completed in November 2015
- Identifies two upcoming CERP planning efforts

BUILDING STRONG

WESTERN EVERGLADES RESTORATION PROJECT OVERVIEW

Presenter:
Dr. Kelly Keefe
Restoration Biologist, Planner
U.S. Army Corps of Engineers (USACE)

WERP'S PURPOSE

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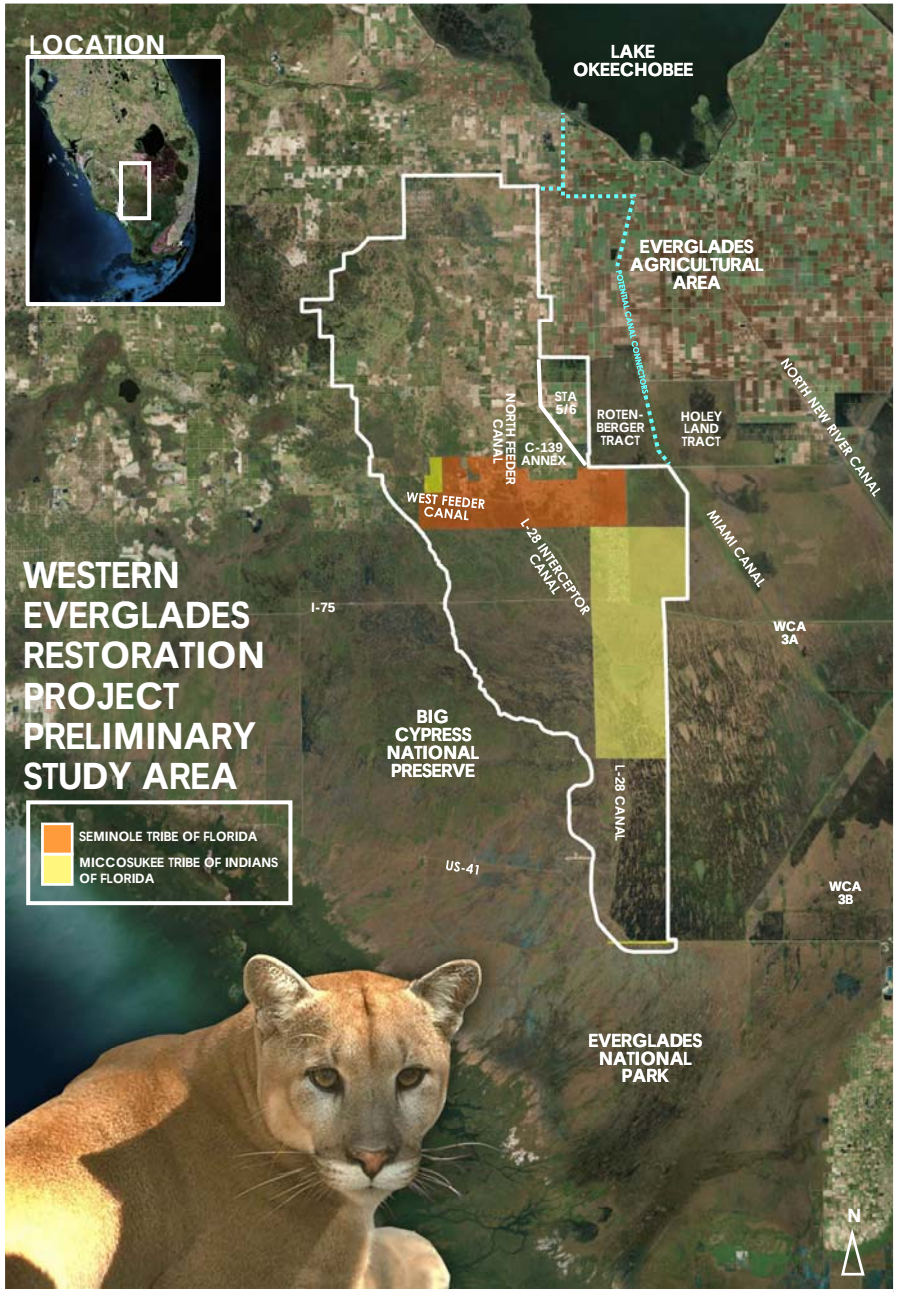
The overall purpose of the Western Everglades Restoration Project is to improve the quantity, quality, timing, and distribution of water needed to restore and reconnect the western Everglades ecosystem.



WESTERN EVERGLADES RESTORATION PROJECT PRELIMINARY STUDY AREA

RESERVATIONS IN PLANNING AREA

- SEMINOLE TRIBE OF FLORIDA
- MICCOSUKEE TRIBE OF INDIANS OF FLORIDA

- ~589,500 acres (~920 sq. miles)
- Historically dominated by wetlands
- Current land use and land cover include:
  - Natural Land/ Wetlands
  - Agriculture
  - Urban/Infrastructure

DRAFT - WERP RESTORATION PROBLEMS & OBJECTIVES

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Draft Problem 1: Water Quality

Current nutrient levels in water flowing through the Everglades western basins skews species composition to those that thrive in a high-nutrient environment, shifting the ecosystem away from its natural structure and function that relied on a balance of oligotrophic conditions.

Draft WERP Objective 1:

Restore low nutrient levels in the water flowing through the western basins.

Potential "management measures":

- Modify L-28 canal system, potentially degrading some levees and backfilling some canals.
- Restore wetlands on Miccosukee lands (e.g. 100 acre area, L-28 triangle)

DRAFT - WERP RESTORATION PROBLEMS & OBJECTIVES

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Draft Problem 2: Altered timing, amount, and flow paths of fresh water.

Altered seasonal water volumes, hydroperiods, and distribution across the landscape continually degrade the wetland and upland habitat in the Everglades western basins.

Draft WERP Objective 2:

Restore seasonal freshwater volumes, hydroperiods, and distribution across the landscape, including historic flow paths, within constraints of maintaining existing flood protection and water supply for people in the area, to support a natural mosaic of wetland and upland habitat in the western Everglades ecosystem.

DRAFT - WERP RESTORATION PROBLEMS & OBJECTIVES

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Potential management measures for Problem/Objective 2:

- Increase operational flexibility of Lake Okeechobee
- Storage to capture stormwater runoff
- Modify L-28 canal system, potentially degrading some levees and backfilling some canals
- Restore natural flows to Big Cypress National Preserve

DRAFT - WERP RESTORATION PROBLEMS & OBJECTIVES

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Draft Problem 3: Disrupted connectivity of the hydrology and landscape

Disrupted sheetflow, water depths, and connectivity of the landscape are causing loss of peat soils and more frequent, intense peat soil fires.

Draft WERP Objective 3:

Restore water flow and ecological connectivity in the western basins of the Everglades and between the western basins and the greater Everglades.

DRAFT - WERP RESTORATION PROBLEMS & OBJECTIVES

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Potential management measures for Problem/Objective 3:

- Restore flows between L-28 'triangle', WCA-3A, and Big Cypress National Preserve.
- Improve water flows under roads such as southern 11-mile road in Big Cypress National Preserve, I-75 and US 41.
- Restore flows in Jetport area with L-28 modifications.

DRAFT - WERP RESTORATION PROBLEMS & OBJECTIVES

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Draft Problem 4:

Loss of water out of the natural system to prevent over-drainage and improve ground- and surface-water depths.

Draft WERP Objective 4:

Reduce water loss out of the natural system to prevent over-drainage and improve ground- and surface-water depths.

Potential management measures for Problem/Objective 4:

- Retain and recharge surface and ground water to support native wetlands, sloughs, and old growth cypress.

DRAFT - WERP RESTORATION PROBLEMS & OBJECTIVES

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Draft Problem 5:

Degradation in the Everglades western basins caused by drainage and water management have decreased the ecosystem's resilience to future threats and uncertainties, such as climate change.

Draft WERP Objective 5:

Increase resiliency of the ecosystems of the western basins.

Potential management measures for Problem/Objective 5:

- During planning, select management measures that increase operational flexibility and ecological diversity for greater resilience.

DRAFT - WERP RESTORATION PROBLEMS & OBJECTIVES

BUILDING STRONG

Draft Problem 6: Invasive and Nuisance Species

Degradation in the Everglades western basins caused by drainage and water management have fostered invasive and nuisance species.

Draft WERP Objective 6:

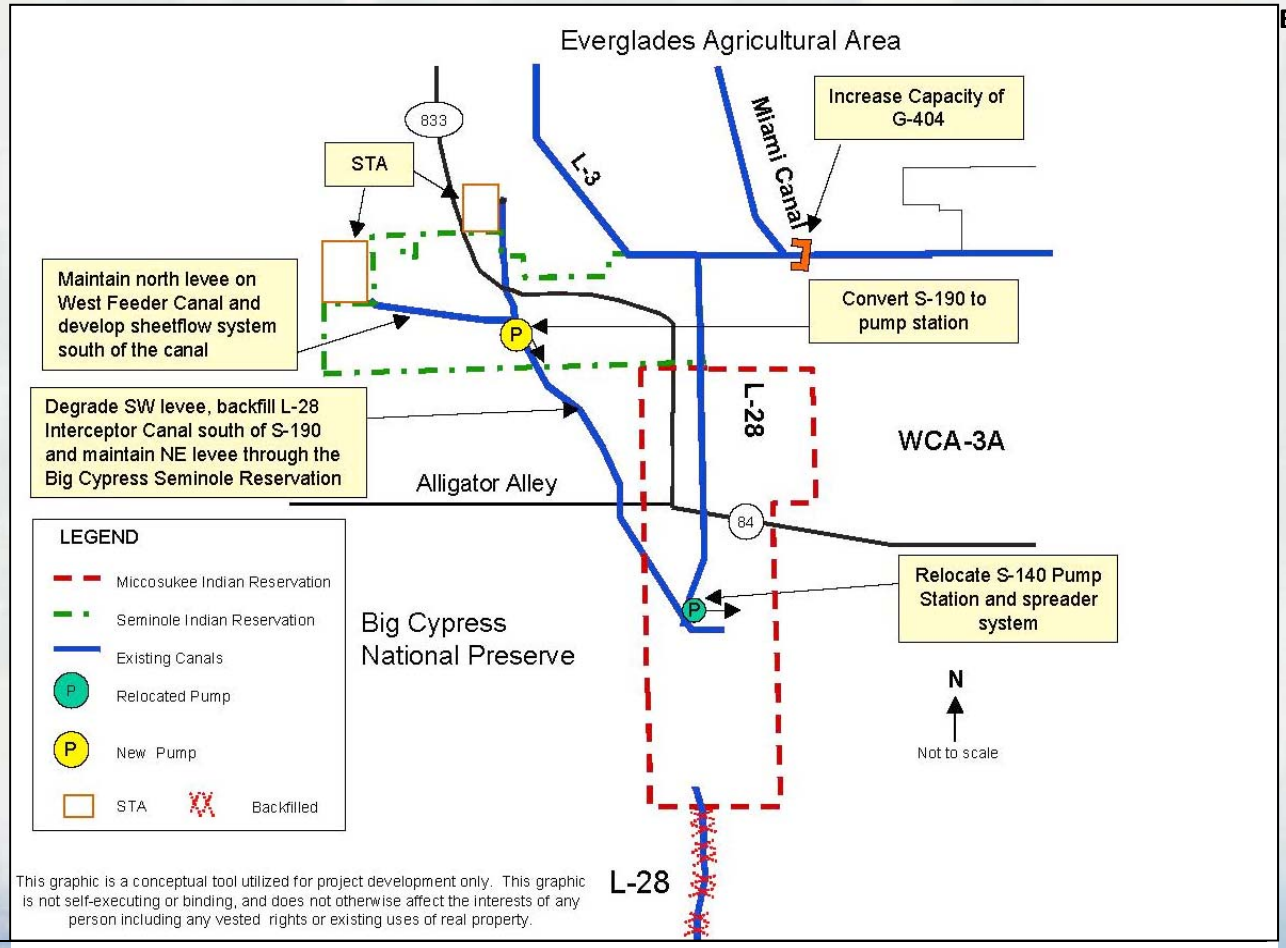
Foster conditions for native species while reducing invasive and nuisance species.

Potential management measures for Problem/Objective 6:

- Measures named above to restore natural hydrology and water quality
- Removal, herbicides, controlled burning in remote areas

CERP 'YELLOWBOOK'

BUILDING STRONG



CERP CONCEPTUAL PLAN FOR BIG CYPRESS/L-28 INTERCEPTOR MODIFICATION PROJECT

DRAFT - WERP OPPORTUNITIES

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- Economic benefits in fishing and recreation industries
- Improve system-wide operational flexibility by bringing more water south from Lake Okeechobee
- Potential additional water supply and flood control benefits
- Coordinate with other, ongoing ecosystem restoration activities

DRAFT - WERP PLANNING CONSTRAINTS & CONSIDERATIONS

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"Saving Clause and Assurances"

- **We must maintain existing flood protection**
- **We must maintain existing water supply**

Also,

- **Avoid and minimize affecting endangered species**