

# EVERGLADES ECOSYSTEM RESTORATION PROGRAM

PRESENTED TO SAME, JACKSONVILLE

ERIC BUSH, CHIEF, PLANNING DIVISION  
U.S. ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT

24 SEPTEMBER 2014







Pre-development  
"River of Grass"



mid 1800s

Extensive Agricultural  
Development of  
Muck Lands



early 1900s

Settlement Continues



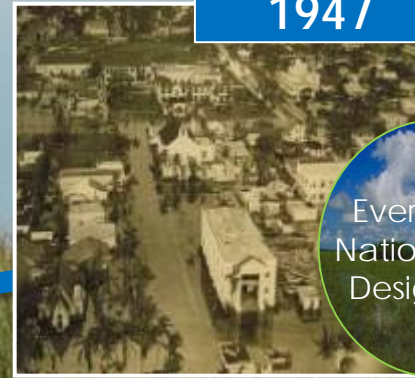
1926 & 1928

Catastrophic  
Hurricanes



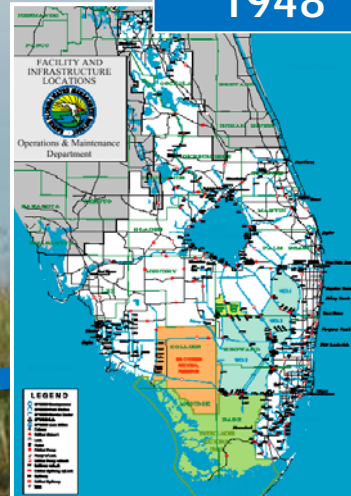
1930s

Muck Fires



1947

Extensive  
Floods



1948

C&SF Authorized

WRDA 2000  
CERP  
Authorized

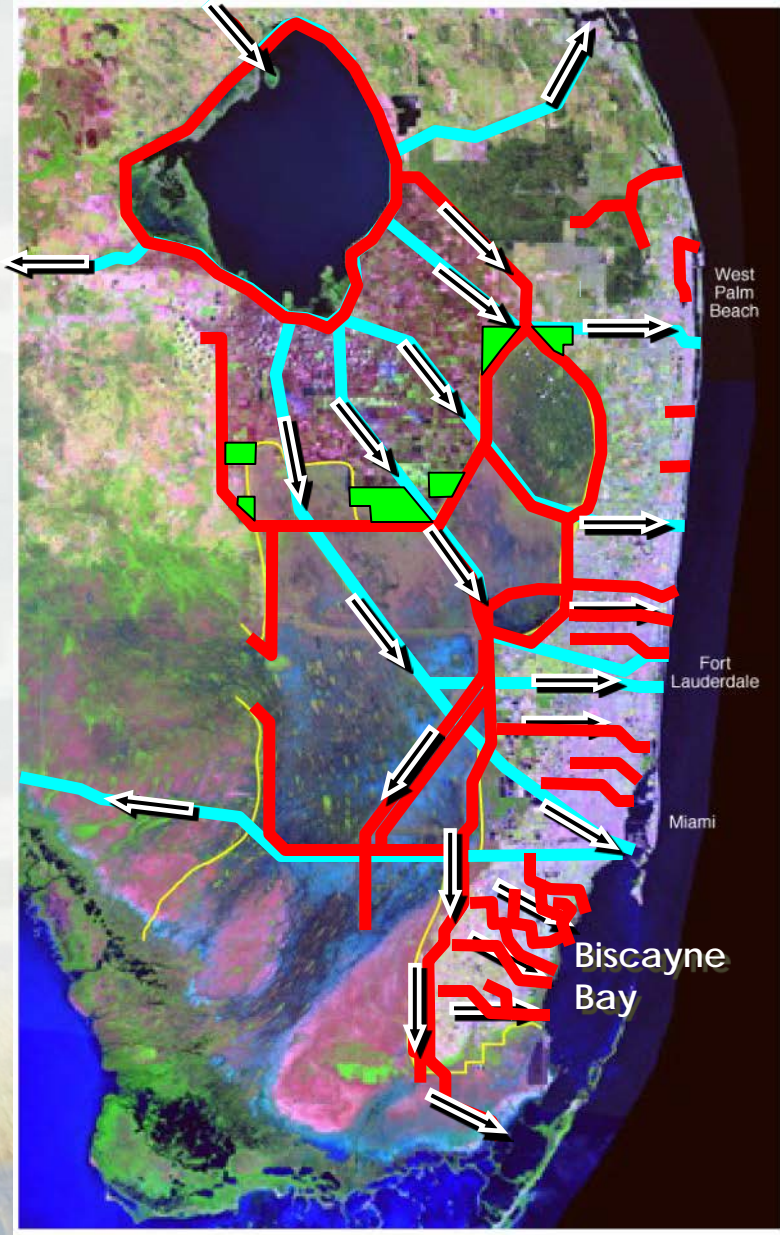


Everglades  
National Park  
Designated

# CHANGES



# CHRONOLOGY OF WATER MANAGEMENT CHANGES



## Pre-Central & South Florida Projects

- Caloosahatchee/Kissimmee Rivers 1881-93
- East Coast Canals/St. Lucie Canal 1905-24
- Tamiami Trail 1915-28
- Lake Okeechobee HH Dike 1932-38

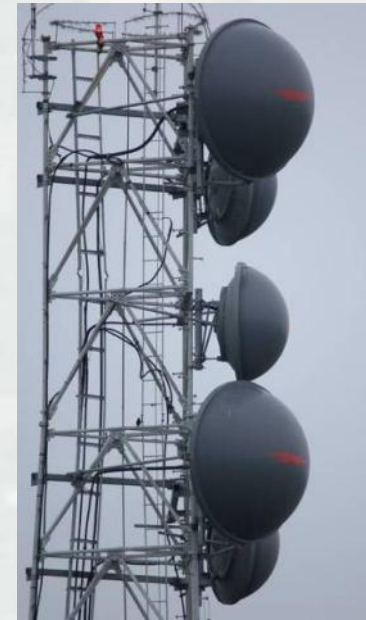
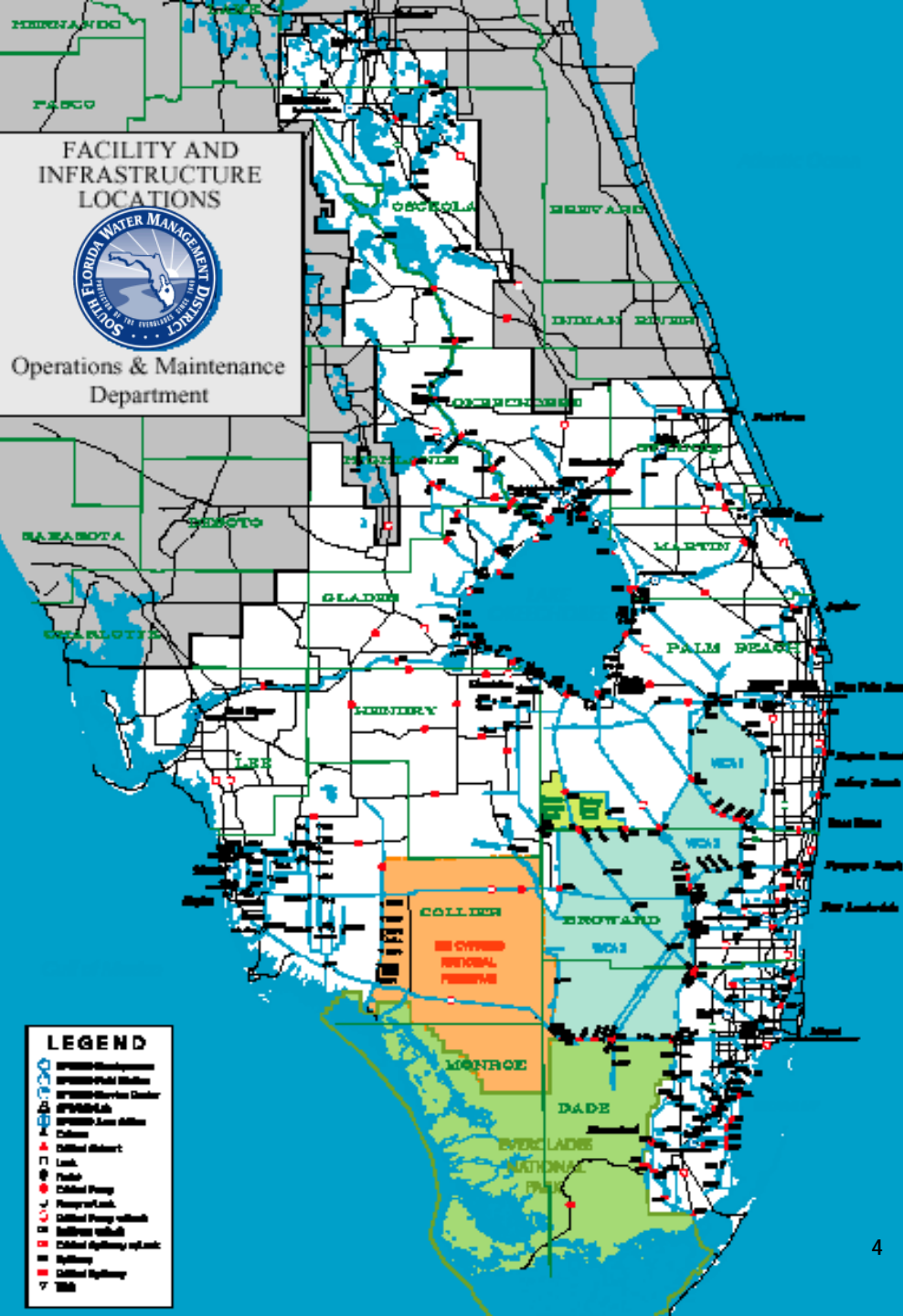
## Central & Southern Florida Project

- Eastern Protective Levee System 1952-54
- Everglades Agricultural Area 1954-59
- Water Conservation Area Levees 1960-63
- Lower East Coast Canals 1954-65
- Lake Okeechobee Levees 1960-64
- Kissimmee River Channelization 1962-71
- South Dade System 1965-83

## Everglades Construction Project

- Stormwater Treatment Areas 1994-2003

# THE C&SF PROJECT (1948)



One of the world's largest and most complex water management systems



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# UNINTENDED CONSEQUENCES



The Kissimmee River was turned into a canal



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# UNINTENDED CONSEQUENCES





# UNINTENDED CONSEQUENCES



**Soil subsidence  
in the  
Everglades  
Agricultural Area**





# UNINTENDED CONSEQUENCES



**The addition of phosphorus causes cattail problems  
in Everglades marshes**





# UNINTENDED CONSEQUENCES





# AN ECOSYSTEM IN TROUBLE....



- Too much or too little water for the South Florida ecosystem
- 50 percent reduction in spatial extent of natural system
- Declining estuary health
- Massive reductions in wading bird populations
- Degradation of water quality
- Loss of native habitat to invasive exotic vegetation
- 68 Federally-listed threatened and endangered species
- Repetitive water shortages and salt water intrusion





# WHAT WE ARE DOING ABOUT THE PROBLEM



***GETTING THE WATER RIGHT***



**Rescuing an Endangered Ecosystem:  
The Plan to Restore America's Everglades**



**The Central and Southern Florida  
Project Comprehensive Review  
Study (The Restudy)**

**July 1999**

**On December 11, 2000, the President signed the Water Resources Development Act of 2000 approving:**

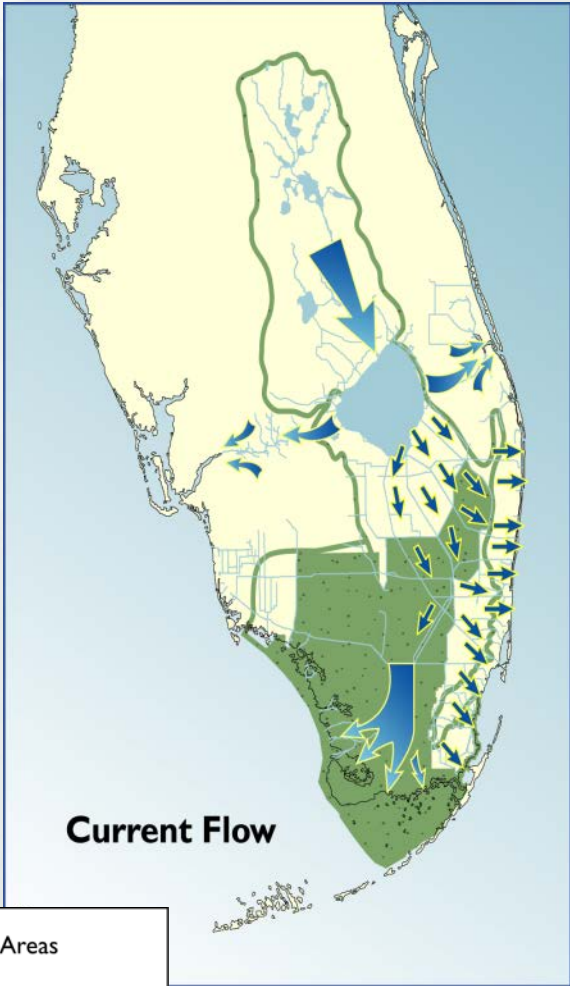
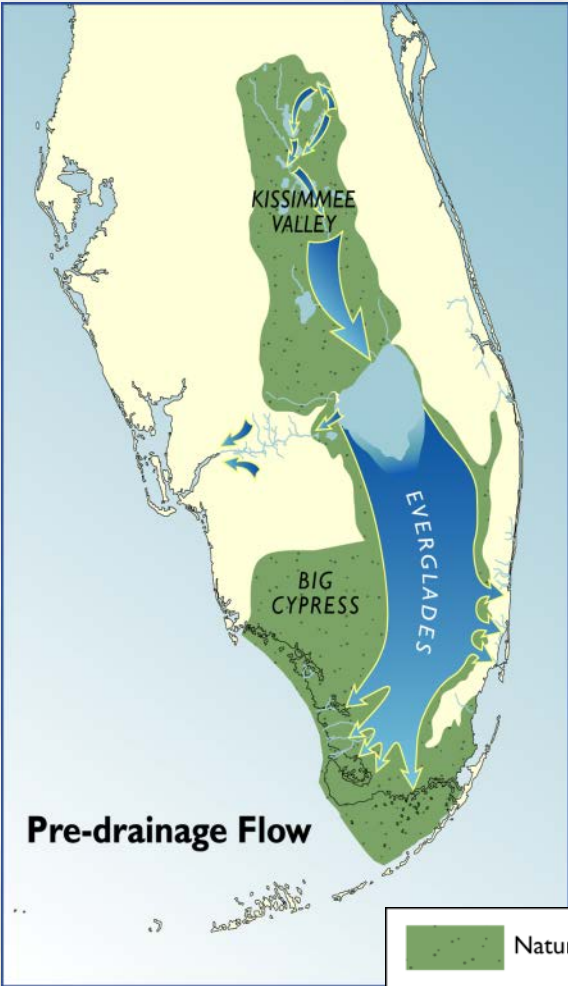
# **Comprehensive Everglades Restoration Plan (CERP)**




**A program providing for the restoration, preservation, and protection of the south Florida ecosystem while providing for other water-related needs of the region.**





# CERP GOAL

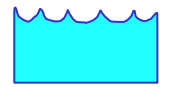


-  Natural Areas
-  Water Flows
-  Pre-drainage Boundary

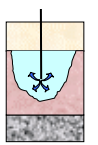




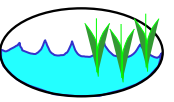
# 68 CERP Components



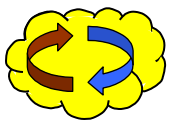
Surface Water Storage Reservoirs – 180,000 acres



Aquifer Storage & Recovery – 330 wells



Stormwater Treatment Areas (STAs) – 36,000 acres



Reuse Wastewater – 2 Regional plants



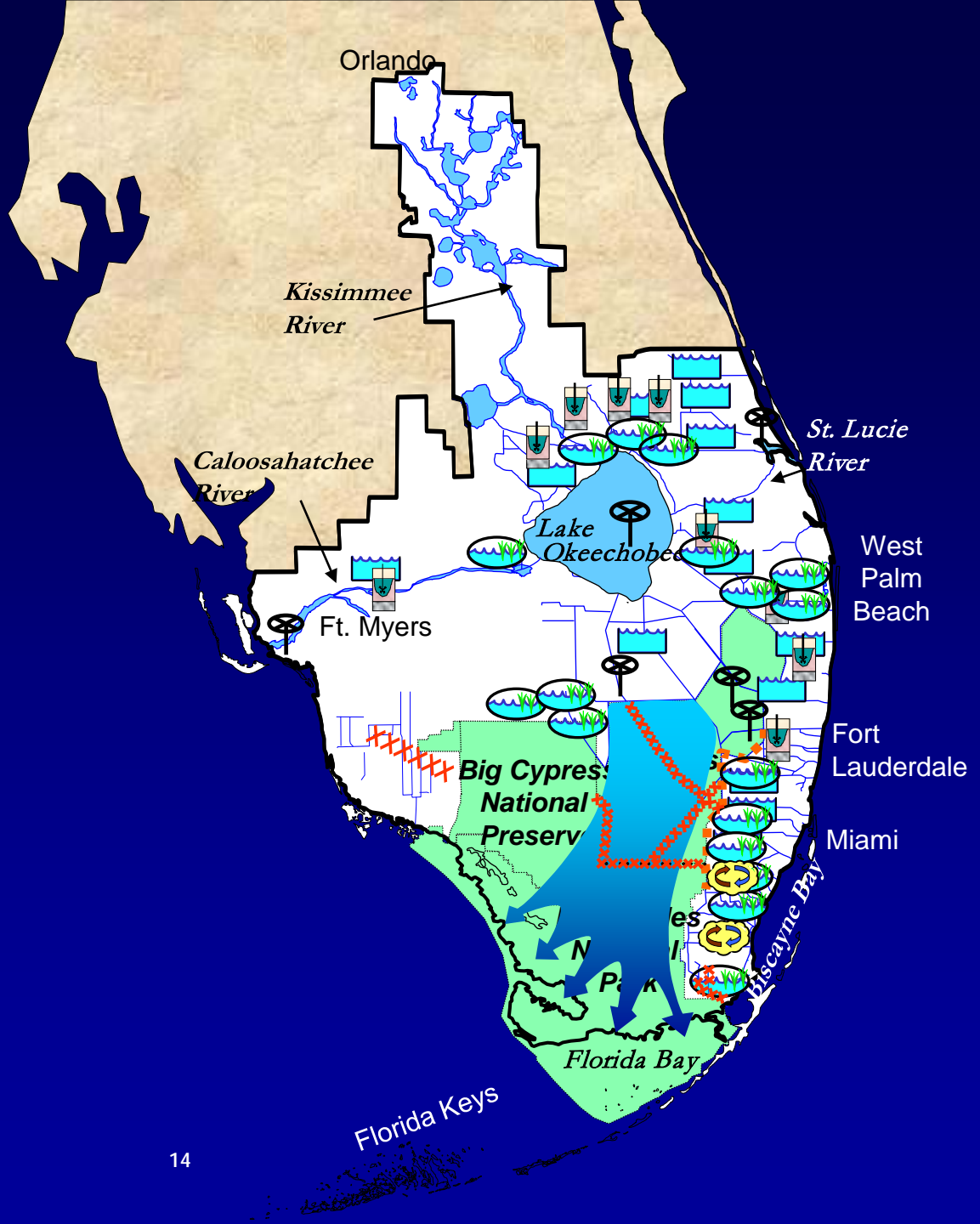
Seepage Management



Removing Barriers to Sheetflow – 240 miles



Operational Changes



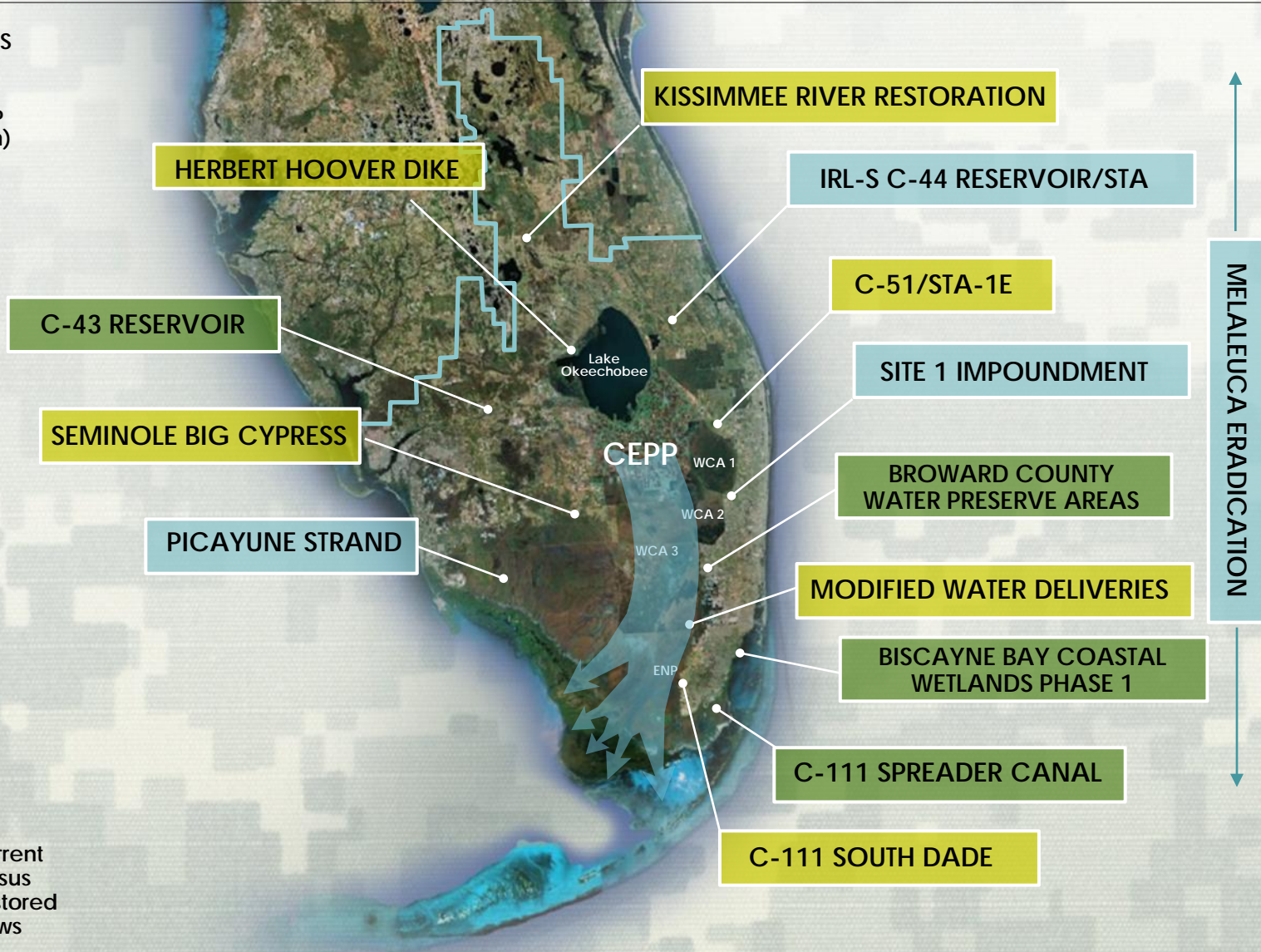


# FOUNDATION PROJECTS

- FOUNDATION PROJECTS
  - 1<sup>ST</sup> GENERATION CERP
  - 2<sup>ND</sup> GENERATION CERP (awaiting authorization)
- CEPP: Central Everglades Planning Project



Current versus Restored Flows





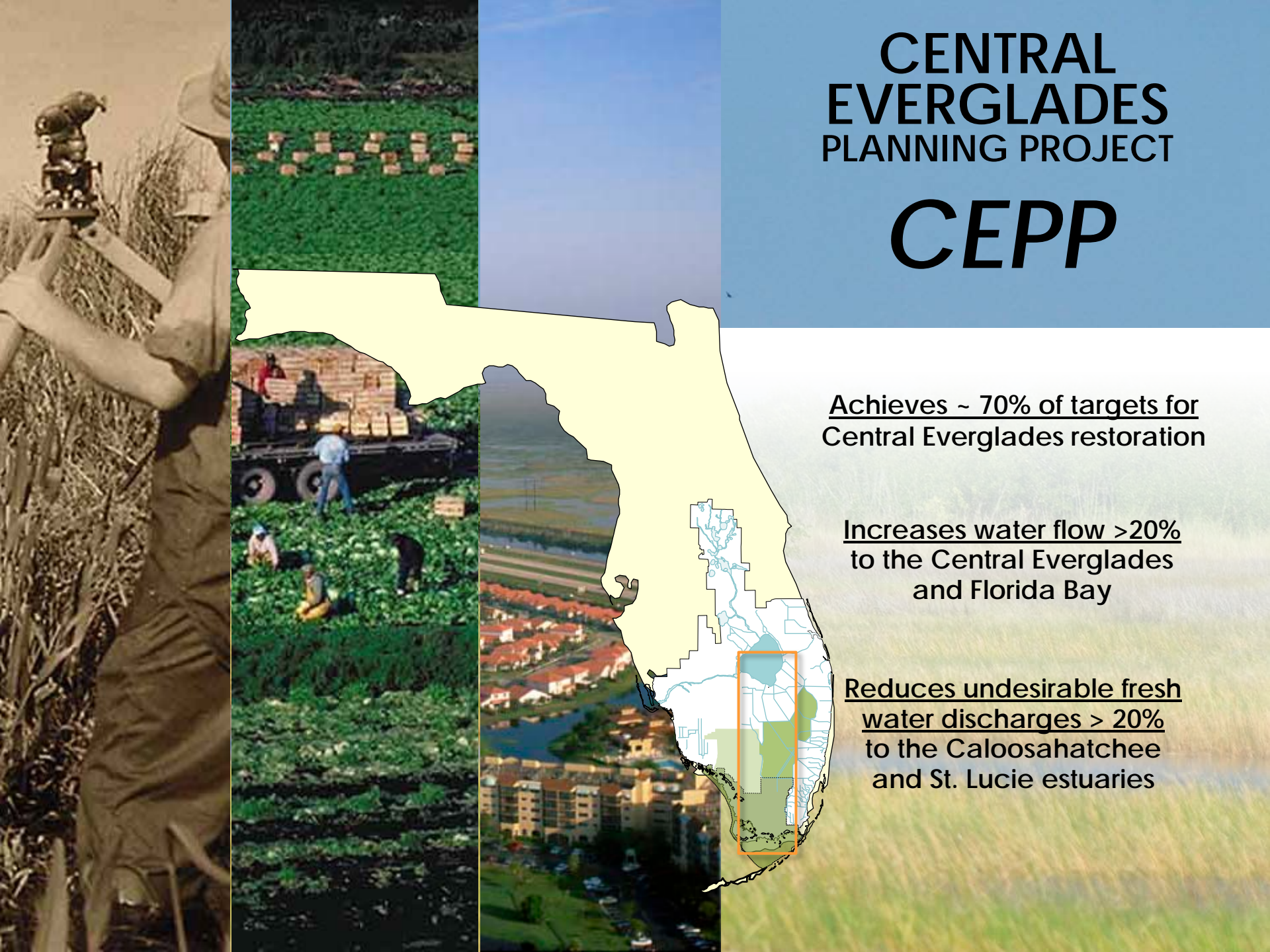
# CENTRAL EVERGLADES PLANNING PROJECT

## CEPP

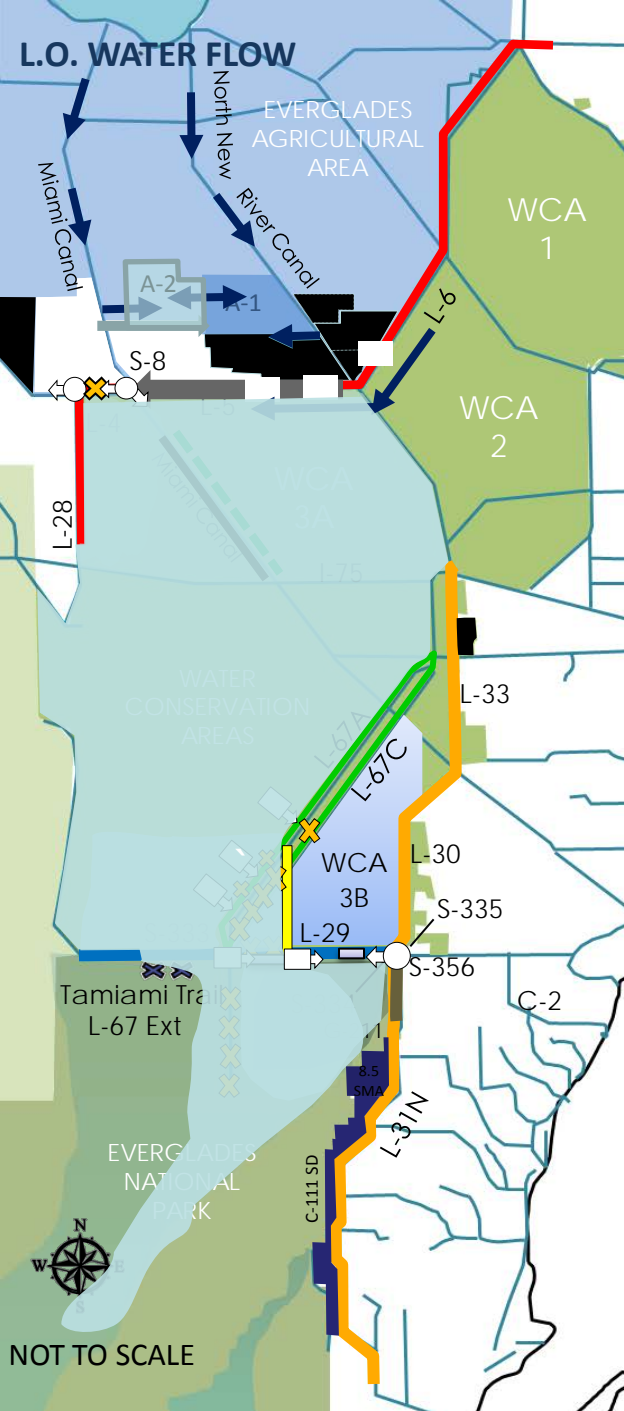
Achieves ~ 70% of targets for  
Central Everglades restoration

Increases water flow >20%  
to the Central Everglades  
and Florida Bay

Reduces undesirable fresh  
water discharges > 20%  
to the Caloosahatchee  
and St. Lucie estuaries







## CEPP RECOMMENDED PLAN

### STORAGE AND TREATMENT

- A flow equalization basin, or shallow reservoir, that will be integrated with the state's water quality treatment facilities to increase the amount of clean water flow to the Everglades from Lake Okeechobee

### DISTRIBUTION/CONVEYANCE

- Increasing the L-5 canal capacity and modification to the S-8 pump station to convey water west
- Construction of a 360 cfs pump station to maintain water supply to the Seminole Tribe and western basin
- Removal of 2.9 miles of the L-4 levee to distribute inflow to WCA-3A and backfilling 13.5 miles of the Miami Canal

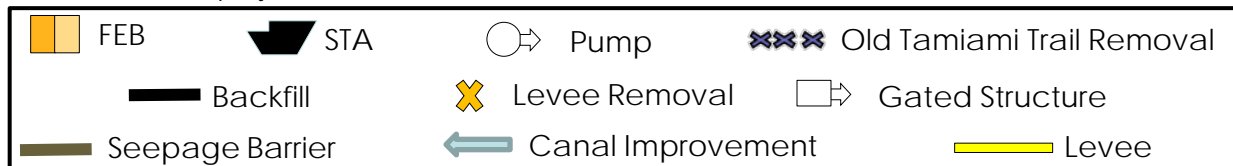
### DISTRIBUTION/CONVEYANCE

- Construction of 8 miles of new levee and removal of 12 miles of existing levees to create a flowway through WCA-3B;
- Two 500 cfs gated culvert structures will provide inflow to the flowway and an 1150 cfs spillway will provide deliveries directly to eastern Shark River Slough;
- A 1,230 cfs spillway will maintain flow to the east of the flowway
- Additional 500 cfs gated culvert structure outside of the flowway to rehydrate the eastern portions of WCA-3B
- Removal of 5.5 miles of the L-67 extension levee and canal; and 6 miles of the Old Tamiami Trail within ENP

### SEEPAGE MANAGEMENT

- A 1,000 cfs pump station and 4.2 miles of seepage barrier wall along the protective levee south of Tamiami Trail

Note: System wide operational changes and adaptive management considerations will be included in project



NOT TO SCALE



# WHAT'S NEXT FOR CEPP?

- Chief of Engineer's Report
- Congressional Authorization
- Implementation Agreements
- Appropriations
  - ▶ Fed, Non-Fed
- Construction
  - ▶ 7 Years (unconstrained)

[www.evergladesplan.org/pm/projects/proj\\_51\\_cepp.aspx#final\\_eis](http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx#final_eis)



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# Questions?