



REstoration, COordination, VERification (RECOVER)

CERP 101

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RECOVER Executive Committee

RECOVER TOPIC WORKSHOP
July 19 & 20, 2023

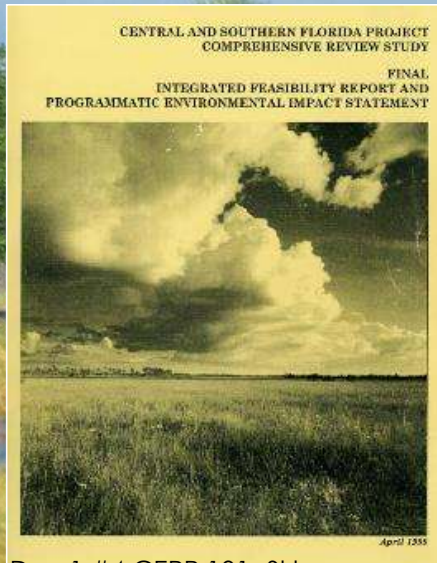




Public Law 106-541 dated December 11, 2000

Title VI – Section 601 - Comprehensive Everglades Restoration Plan (CERP)

- Authorized 50-50 cost-share
- Requires protection of water for the natural system
- Must maintain existing level of service for water supply and flood protection (*savings clause*)



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Integrated Delivery Schedule

- The IDS guides projects and maximizes the benefits of all Comprehensive Everglades Restoration Plan (CERP) efforts
- Schedule is reviewed each year and has yielded significant Everglades restoration progress
- Brings predictability to project budgeting and decision-making
- Developed through an extensive public process with participation of the South Florida Ecosystem Restoration Task Force and its Working Group
- Projects and planning timelines organized so that the beginning of one element coincides with progress or completion of others

<https://www.saj.usace.army.mil/IDS>

INTEGRATED DELIVERY SCHEDULE (IDS) UPDATE 2020 - TASK FORCE FINAL

SOUTH FLORIDA ECOSYSTEM RESTORATION (CERP) - CENTRAL AND SOUTHERN FLORIDA (CSF) COMPREHENSIVE EVERGLADES RESTORATION PLAN

The Comprehensive Everglades Restoration Plan (CERP) is the largest wildlife restoration program in the United States and is designed to restore the health of more than 3 million acres. The Integrated Delivery Schedule (IDS) is a forward-looking schedule of approved planning, design, and construction activities and programmatic work to be done by the South Florida Ecosystem Restoration Task Force in support of the CERP. It provides a high-level overview of the CERP program and is intended to be updated annually. It includes information on project status, funding, and other key information. The IDS is a living document that is updated annually to reflect changes in the program and to provide a more accurate picture of the CERP program. It is a key tool for the South Florida Ecosystem Restoration Task Force and is used to guide the CERP program. It is also a key tool for the public and other stakeholders who are interested in the CERP program. The IDS is a complex document that contains a large amount of information. It is organized into sections that correspond to the different components of the CERP program. It includes information on project names, locations, and fiscal years. It also includes information on project status, funding, and other key information. The IDS is a key tool for the South Florida Ecosystem Restoration Task Force and is used to guide the CERP program. It is also a key tool for the public and other stakeholders who are interested in the CERP program.



Key CERP component projects by region

Lake Okeechobee Watershed:

- Lake Okeechobee Reservoir Component A (LOCAR) –in planning
- Lake Okeechobee Watershed Restoration Plan (LOWRP) – in planning
- Lake Tributary Sediment Dredging/Phosphorous Removal

Caloosahatchee:

- C-43 West Basin Storage Reservoir

St. Lucie, South Indian River Lagoon:

- Indian River Lagoon South (IRL-S) project
 - E.g., C-44, C-23/24, and C-25 reservoirs/STAs, estuary sediment removal & habitat augmentation, natural lands restoration areas

Loxahatchee:

- Loxahatchee River Watershed Restoration Plan (LRWRP)
 - E.g., hydrologic/wetlands restoration, reservoir, pump station
- Lake Worth Lagoon Restoration



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Note: projects vary in implementation/planning state. Not all CERP components listed here. See IDS for status information

Key CERP component projects by region

Water Preserve Areas

- Broward County Water Preserve Areas (BCWPA)
- C-11 & C-9 Impoundments

Miami/Dade, Biscayne Bay

- Biscayne Bay Coastal Wetlands (BBCW) Phase 1
 - E.g., culverts, pumps, wetlands rehydration
- Biscayne Bay Southeastern Everglades Ecosystem Restoration (BBSEER)- in planning

Florida Bay and the Keys

- Florida Keys Tidal Restoration



Note: projects vary in implementation/planning state. Not all CERP components listed here. See IDS for status information



Key CERP component projects by region

Southwest Florida:

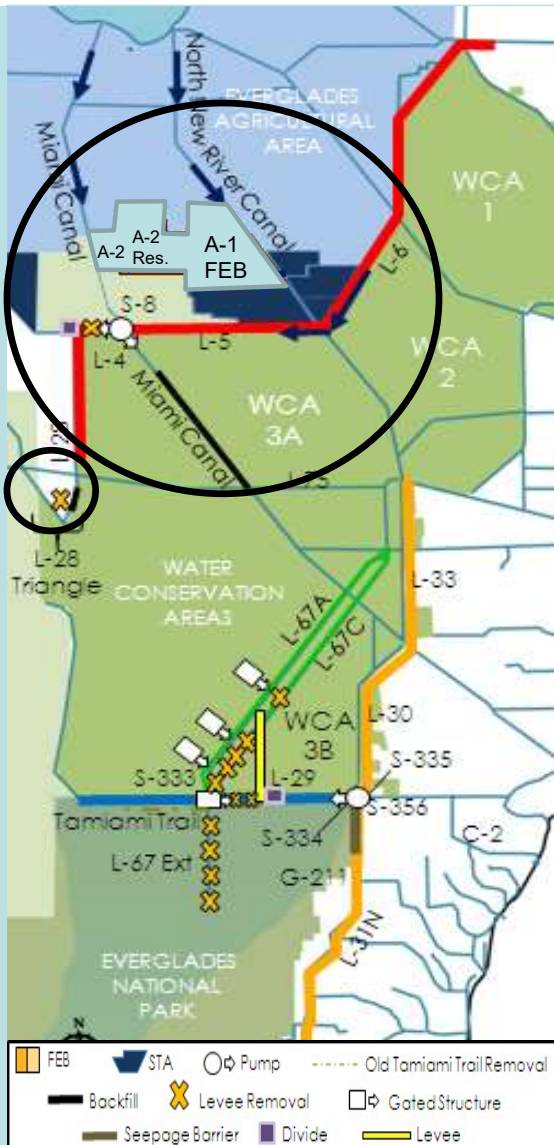
- Southern CREW (Corkscrew) Project
- Lake Trafford Restoration
- Picayune Strand Restoration Project (PSRP)
 - Pumps/spreaders, canal fill, road removal, flood protection feature
- Western Everglades Restoration Plan (WERP)
 - In planning

Central Everglades:

- C-111 Spreader West components
- Central Everglades Planning Project (CEPP)
 - Canal backfills/plugs, pumps, spreaders, seepage management

Note: projects vary in implementation/planning state. Not all CERP components listed here. See IDS for status information





STORAGE and TREATMENT

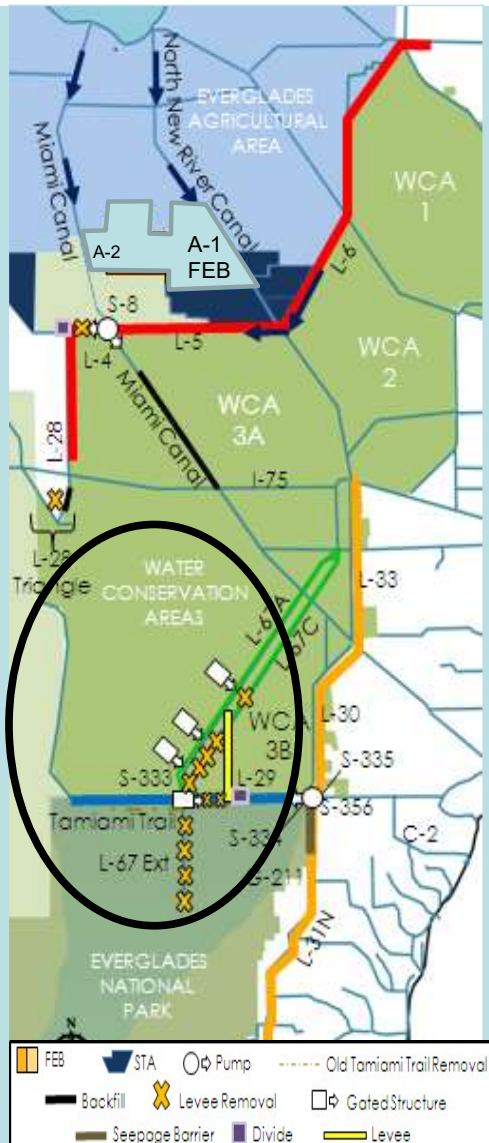
- Construct EAA Reservoir and integrate with A-1 FEB and STA A-2 operations
- Lake Okeechobee operation refinements within LOSOM

DISTRIBUTION/ CONVEYANCE

- Diversion of L-6 flows, Infrastructure and L-5 canal improvements
- Remove western ~2.9 miles of L-4 levee (west of S-8 3,000 cfs capacity)
- Divide structure at western terminus of L-4 levee removal
- Backfill Miami Canal and Spoil Mound Removal ~1.5 miles south of S-8 to I-75
- L-28 Triangle – levee gap and canal backfill (~ 9,000 LF)



DISTRIBUTION/ CONVEYANCE



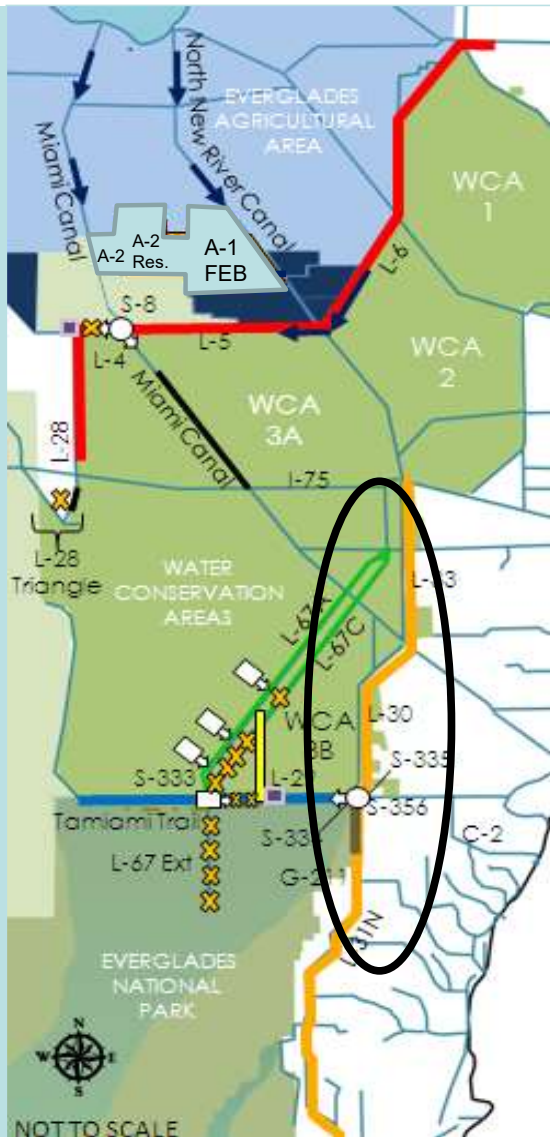
- Increase S-333 capacity to 2,500 cfs
- Two 500 cfs gated structures in L-67A, 0.5 mile spoil removal west of L-67A canal north and south of structures
- Construct ~8.5 mile levee in WCA 3B, connecting L-67A to L-29
- Remove ~8 miles of L-67C levee in Blue Shanty flowway (no canal back fill)
- One 500 cfs gated structure north of Blue Shanty levee and 6,000-ft gap in L-67C levee
- Remove ~4.3 miles of L-29 levee in Blue Shanty flowway, divide structure east of Blue Shanty levee at terminus of western bridge
- Tamiami Trail western 2.6 mile bridge and L-29 canal max stage at 9.7 ft (FUTURE WORK BY OTHERS)
- Remove entire 5.5 miles L-67 Extension levee, backfill L-67 Extension canal
- Remove ~6 mile Old Tamiami Trail road (from L-67 Ext to Tram Rd).



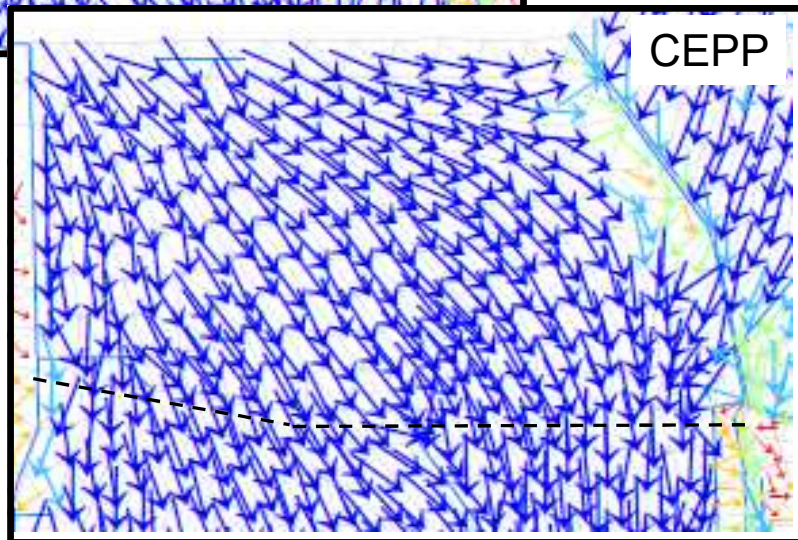
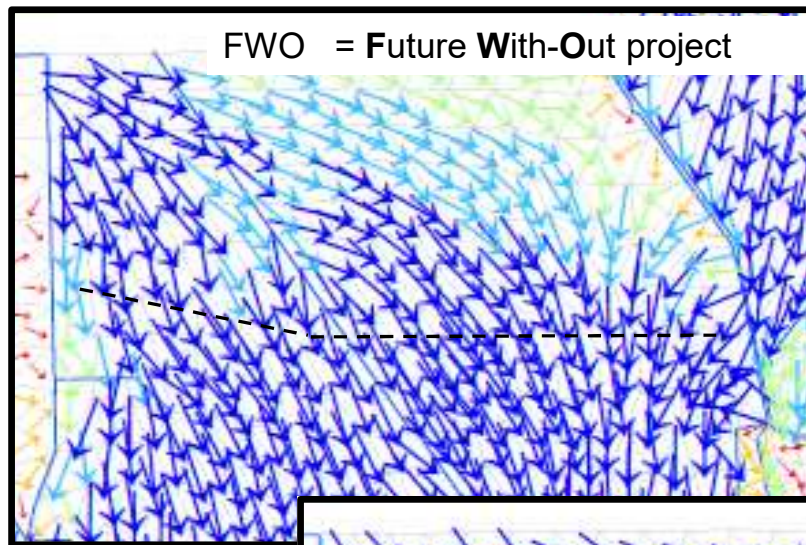
SEEPAGE MANAGEMENT

- Increase S-356 pump station to ~1,000 cfs
- Partial depth seepage barrier south of Tamiami Trail (along L-31N)
- G-211 operational refinements; use coastal canals to convey seepage

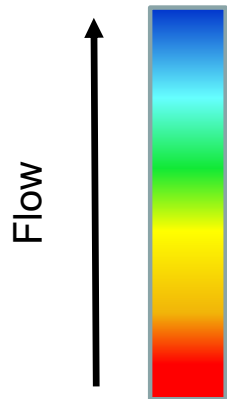
Note: System wide operational changes and adaptive management considerations will be included in project

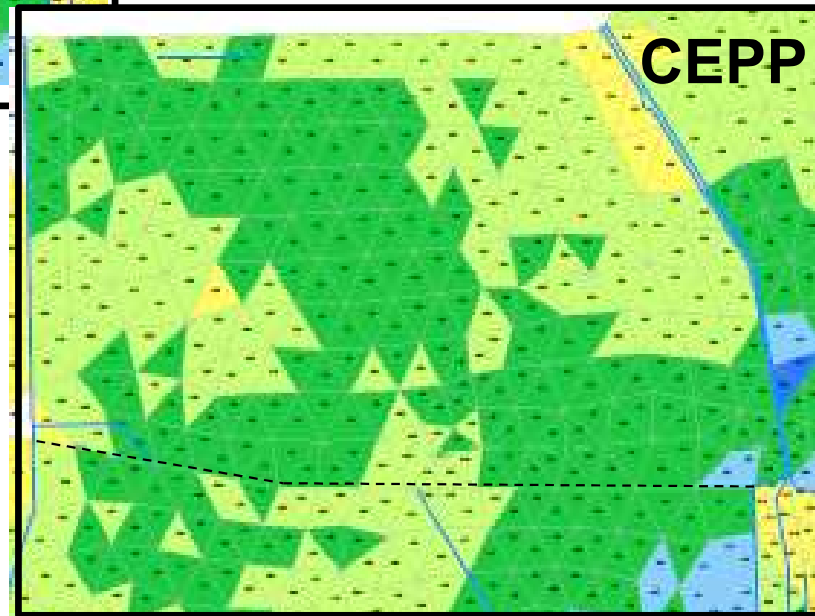
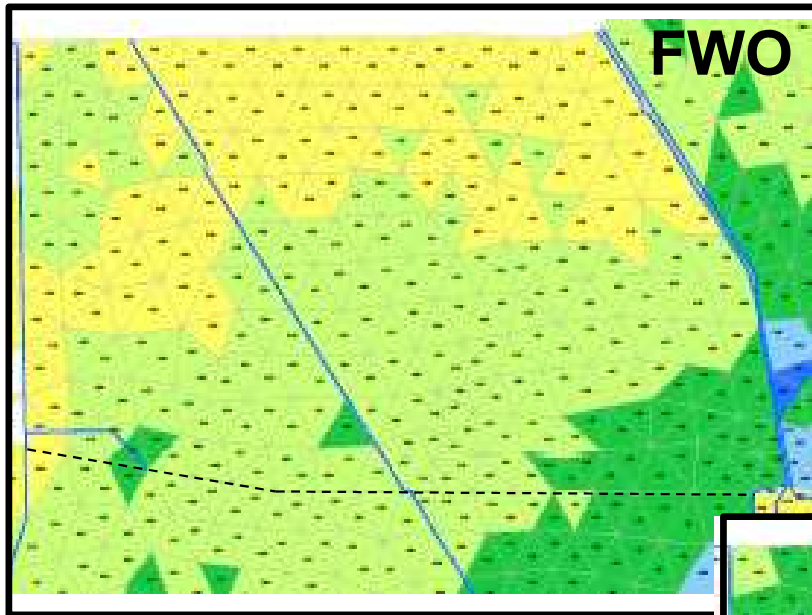


Northern WCA-3A Flow Vectors 1995, Wet Year (Wilcox and HSM Section)



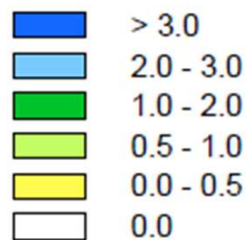
1. High soil loss in the NE creates a strong west -> east hydrologic gradient.
2. A spreader canal in the NW of WCA3A is effective at re-hydrating the northern Everglades.

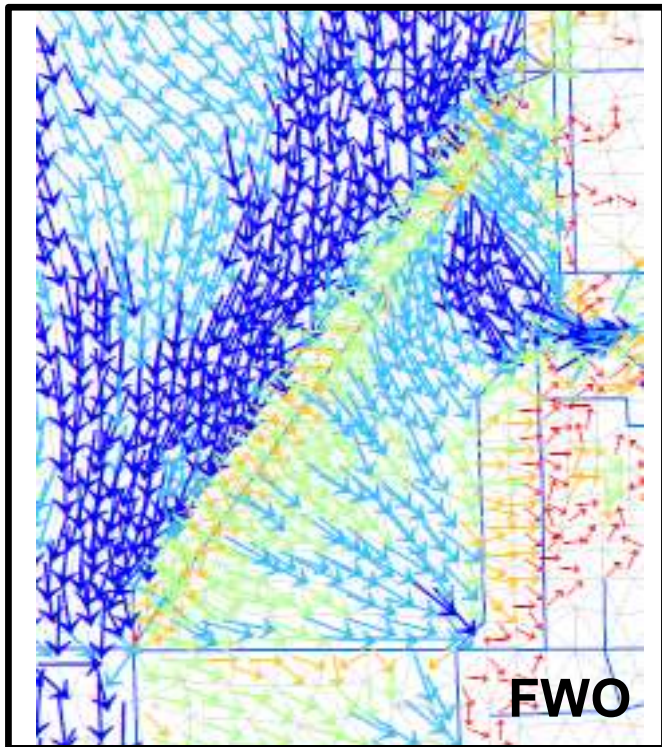




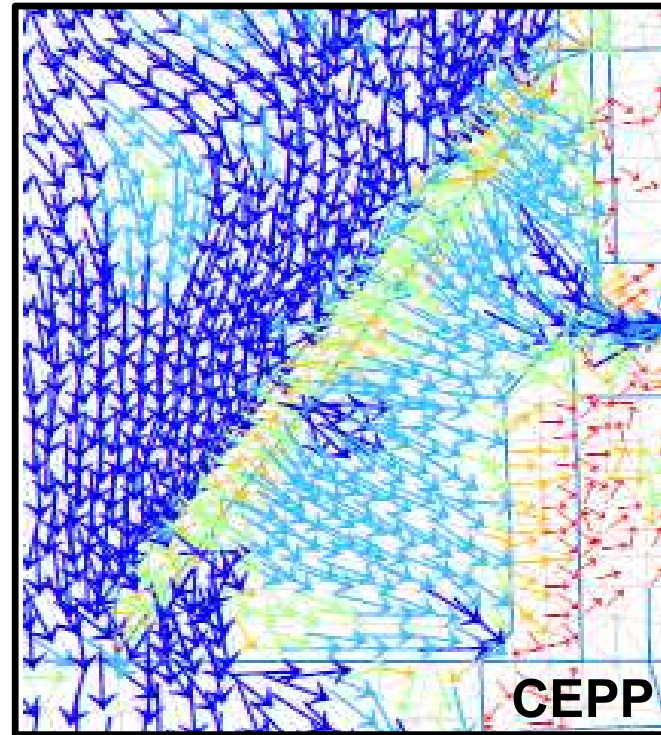
Northern WCA-3A Depth (Mean Annual)

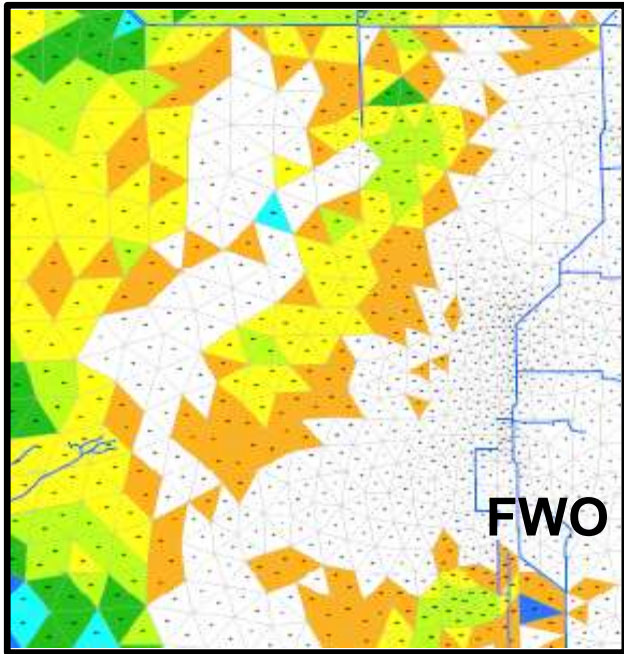
Ponding Depth (ft)



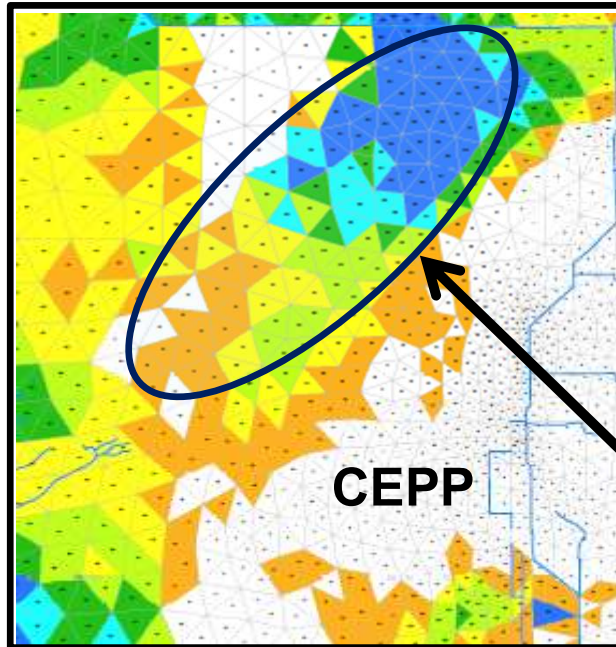


WCA-3B – Flow (Mean Annual)





Shark River Slough (SRS) Hydroperiod 1989 (Dry Year)

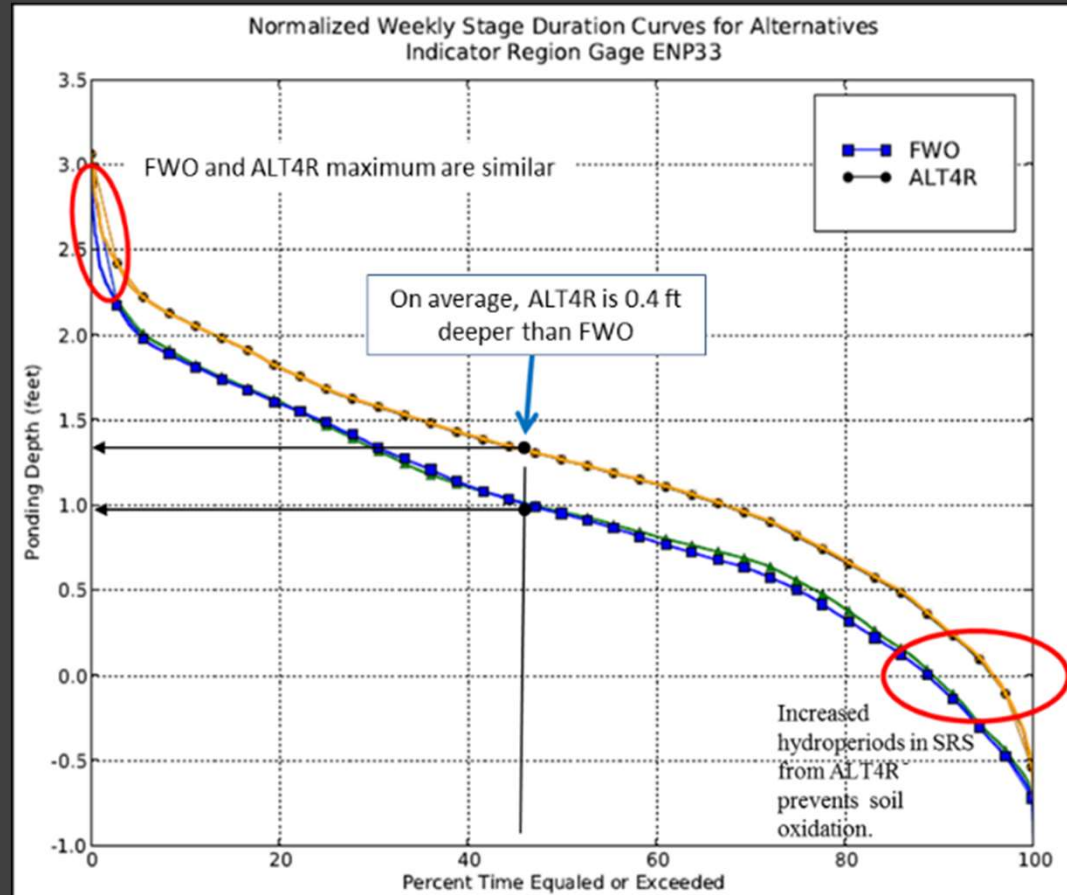


Hydroperiod Class

- 0 to 60 days
- 60 to 120 days
- 120 to 180 days
- 180 to 240 days
- 240 to 300 days
- 300 to 330 days
- 330 to 365 days

CEPP had the longest hydroperiods over the largest area of any alternative

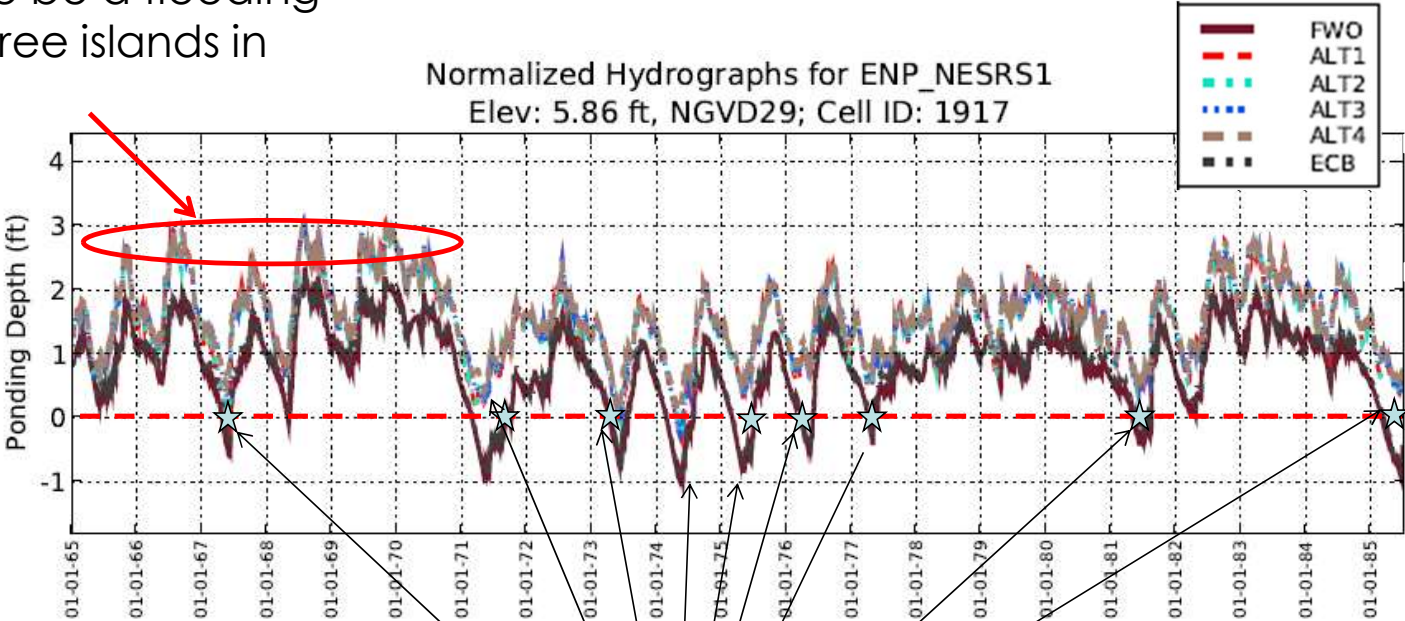
Shark River Slough (SRS) will significantly improve with CEPP because CEPP adds about 0.4 ft. of ponding depths to the entire stage duration curve and because it increases the marsh hydroperiod by about 10%.



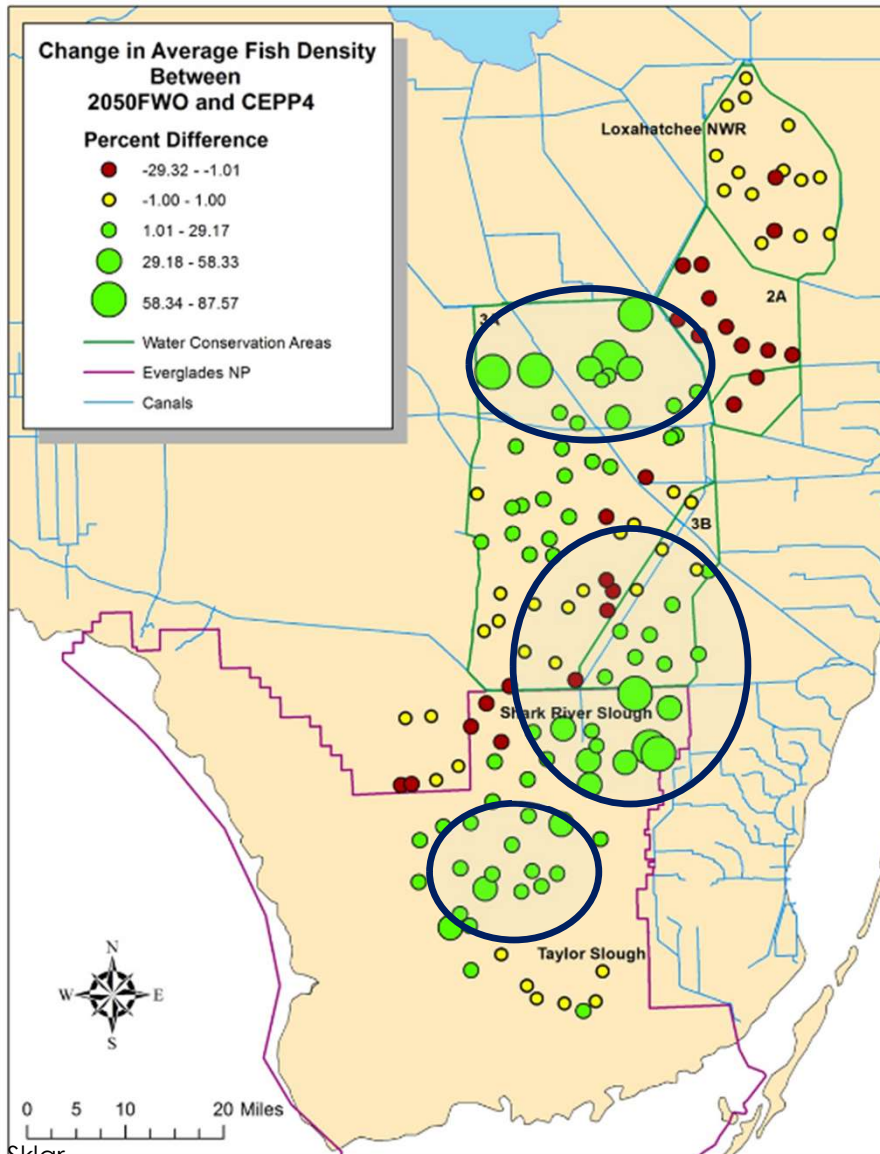
Note: Indicator Region Gage ENP33 is in the center of SRS, some 30 km south of Tamiami Trail.



CEPP increases Max ponding depths, but not enough to be a flooding stress for tree islands in ENP.



Between 1965 and 1985, CEPP prevented NE-SRS from going completely dry nine times.



Small Fish

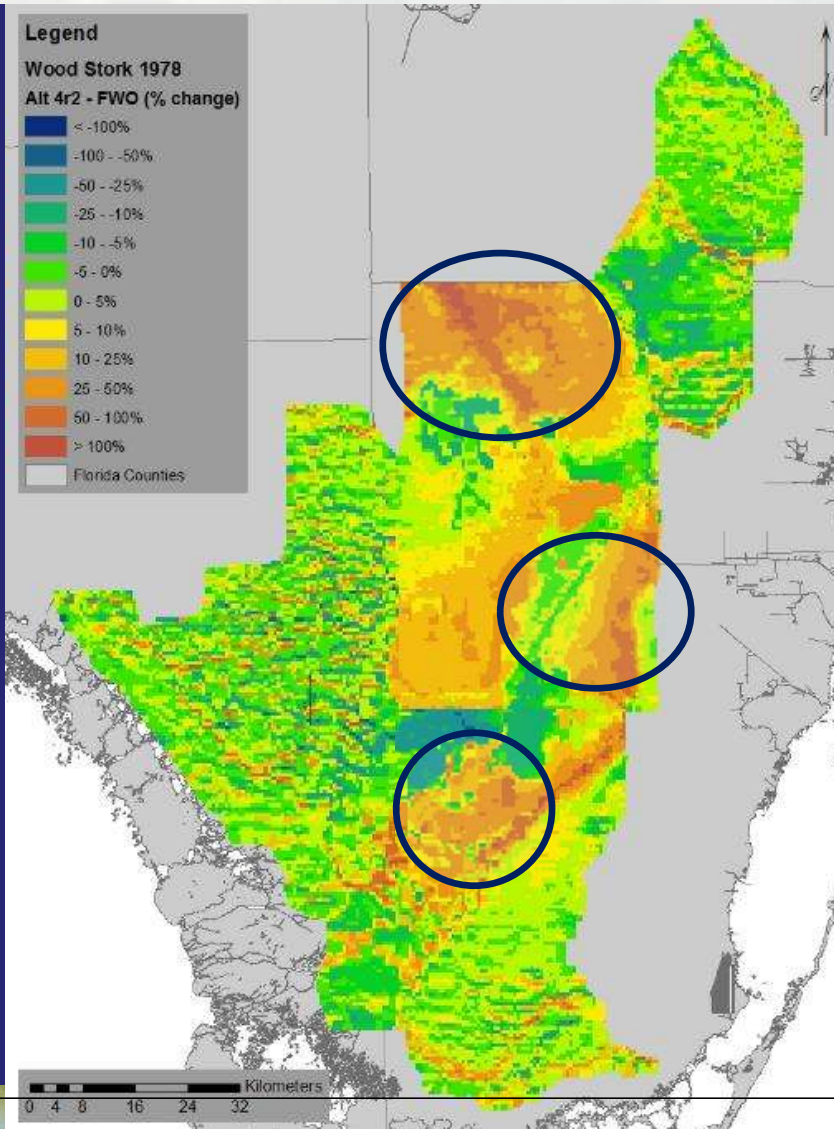
Difference between FWO and CEPP (Trexler):

1. NE-SRS and Northern WCA-3A had the most significant improvement in fish densities
2. CEPP increased fish density by 60% - 90%.

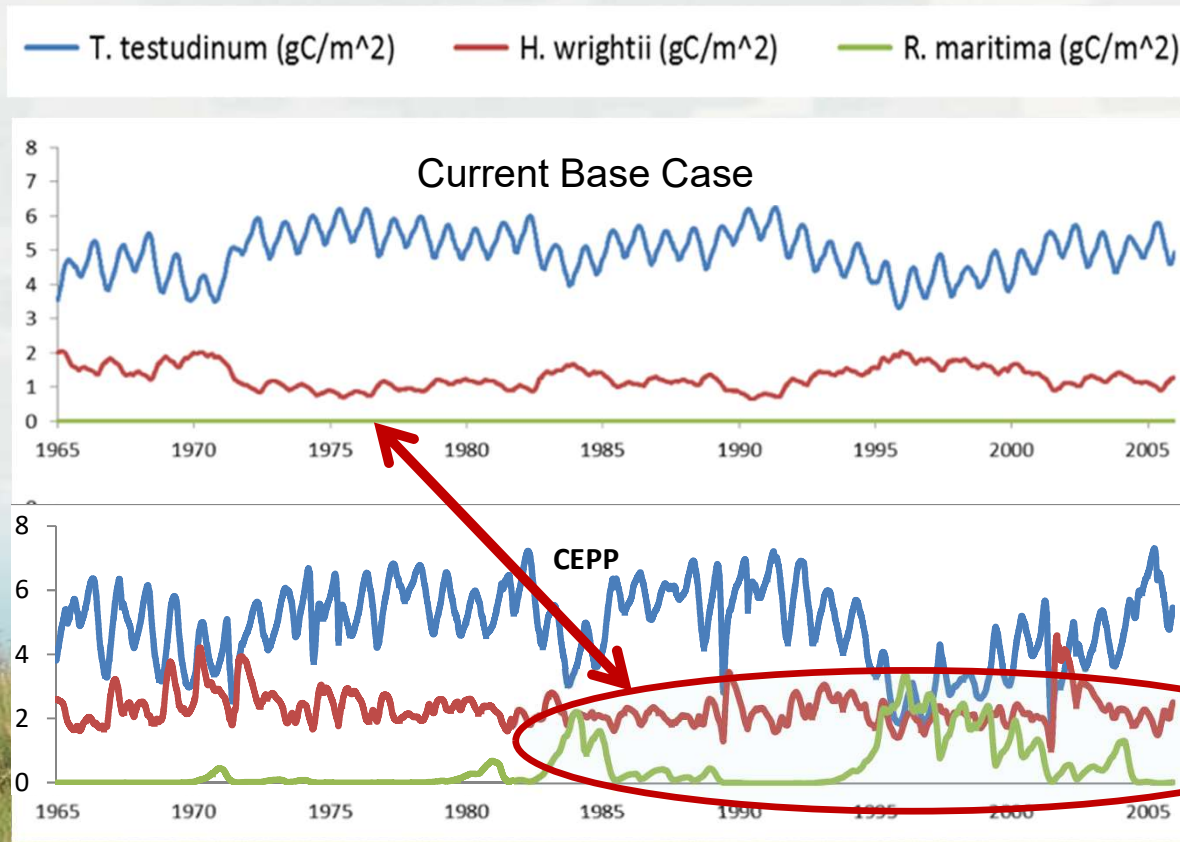
Three regions for the CEPP simulation showed marked improvement for Wood Stork Foraging Success.

Mean percent foraging conditions for an average CEPP year (1978) improved by 25% – 100%.

(Beerens 2014)



Predicted Florida Bay seagrass community at Little Madeira Bay (Madden and McDonald)



CEPP is needed to restore Ruppia to Florida Bay.



Monitoring in the Greater Everglades

BLL (Bottom Line Last): What are the Enhanced Social, Economic, and Ecologic Values associated with an increase of some 350,000 ac-ft to WCA-3A and the Park?

Are we monitoring the right things, at the right frequencies, in the right regions?

