SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

MARTIN COUNTY BOARD OF COUNTY COMMISSIONERS

2 December 2025

MAJ Cory Bell, PMP

Deputy Commander for South Florida

Jacksonville District

US Army Corps of Engineers

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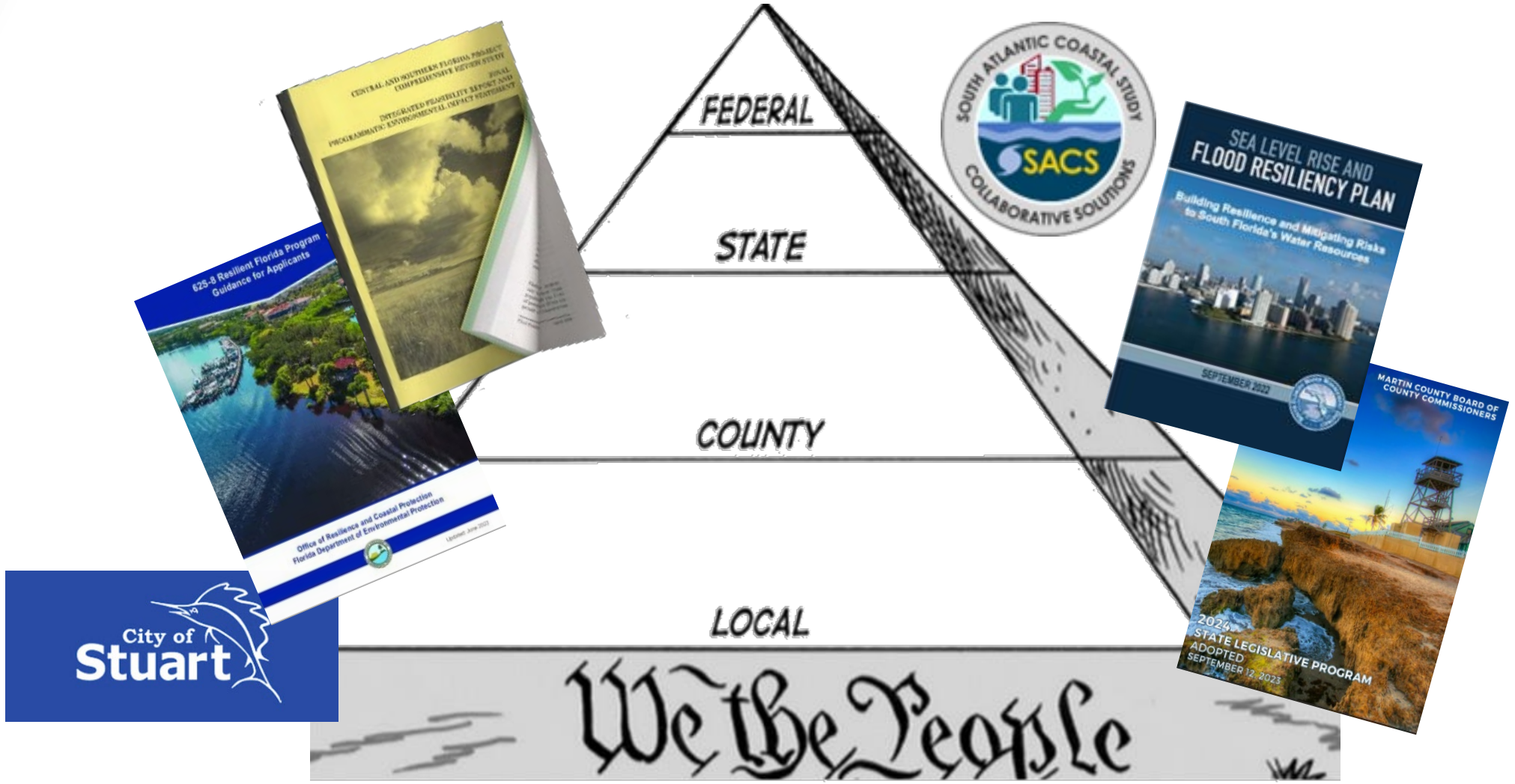
BUILDING COMMUNITY RESILIENCE

A COMPREHENSIVE AND COLLABORATIVE APPROACH



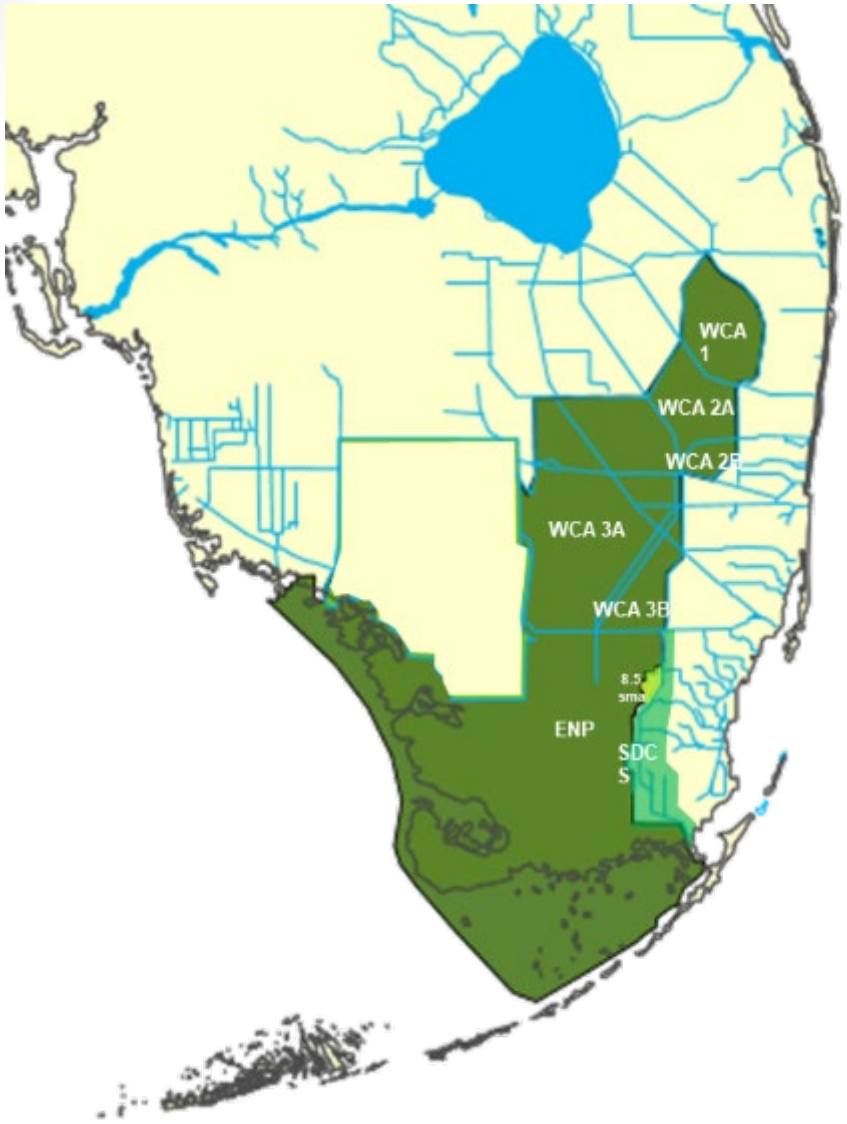
Water Resource Infrastructure is the Connector

RESILIENCY THROUGH PROJECT INTEGRATION

Contributing to a Collection of Measures that Can Help Communities Adapt to Changing Conditions and Become More Resilient

CENTRAL & SOUTHERN FLORIDA (C&SF) PROJECT

THE BACKBONE OF THE WATER RESOURCE SYSTEM



- Congressionally authorized by the Flood Control Acts of 1948 and 1954
- Large multi-purpose water resources project
- System includes canals, levees/berms, pump stations and water control structures
- Tied together by operational plans contained in system operating manuals

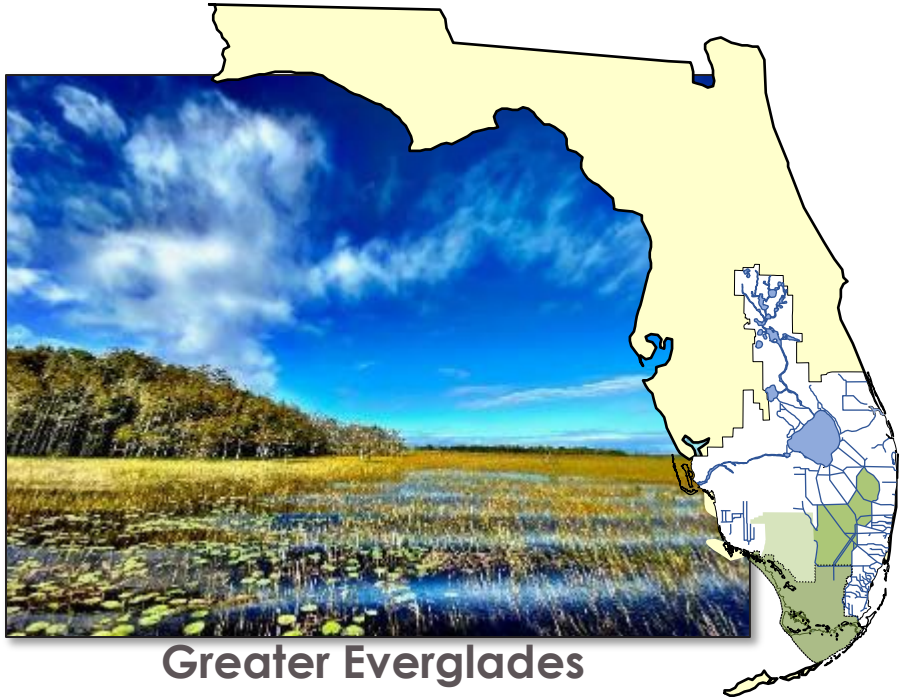
<u>Balance</u> multiple congressionally-authorized project purposes:

- Flood control
- Navigation
- Water supply
- Enhancement of fish and wildlife
- Recreation

ECOSYSTEM RESTORATION

Kissimmee River

Lake Okeechobee



Greater Everglades

- The goal of the South Florida Ecosystem Restoration Program is to improve the health of 2.4 million acres of the everglades including Lake Okeechobee.
- Everglades restoration provides critical benefits to improve the health of the ecosystem including endangered species habitat, improves water supply, manages flood risk, and improves resilience to climate change.
- Modifications to elements of the C&SF project

SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

PROGRAM STRUCTURE

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- Modified Water Deliveries to Everglades National Park — Everglades Expansion Act 1989
- Kissimmee River Restoration Project — WRDA 1992
- Everglades & South Florida (E&SF) Critical Restoration Projects — WRDA 1996
- Central & Southern Florida (C&SF) Project — Flood Control Act of 1948, as amended
  - Herbert Hoover Dike / Lake Okeechobee System Operations Manual (LOSOM)
  - C-111 South Dade — WRDA 1996, 2020
  - C&SF Flood Resiliency Study (Section 216) — Flood Control Act 1970
  - Comprehensive Central and Southern Florida Study — WRDA 2022
  - Northern Estuaries Ecosystem Restoration (NERP) — WRDA 2022
  - **Comprehensive Everglades Restoration Plan (CERP)** — WRDA 2000
    - CERP Update

LEGEND:
- Construction Ongoing
- Construction Complete, In Operations
- In Operations, Construction/Replacement ongoing
- CERP Project Implementation Report (PIR)
- Foundation Projects
- Investigations

WRDA 2007
- "Generation 1"
  - Picayune Strand
  - Indian River Lagoon South
  - Site 1 Impoundment
  - Melaleuca Eradication

WRRDA 2014
- "Generation 2"
  - C-111 Spreader Canal
  - Biscayne Bay Coastal Wetlands
  - Broward County WPA
  - C-43 WB Storage Reservoir

WRDA 2016
- Central Everglades Planning project
  - South Phase
  - North Phase
  - New Water Phase
  - EAA Phase

WRDA 2018
- EAA Reservoir — WRDA 2020

WRDA 2020
- Loxahatchee River Watershed Restoration Project

WRDA 2024
- Western Everglades Restoration Project (WERP)
- Lake Okeechobee Component A Reservoir (LOCAR)

FUTURE WRDA
- Lake O Watershed
- BBSEER
- Southern Everglades
- Pending Yellow Book Components

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SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

FY26 EXECUTION FOCUS

FEASIBILITY **VALIDATION/PACR/OTHER** **JOINT OR SFWMD-LED CONSTRUCTION** **OPERATIONAL PLANNING**

- **Program-level Activities**
  - National Academies of Science Review (CISRERP)
  - Interagency Modeling Center (IMC)
  - Integrated Delivery Schedule (IDS)
  - RECOVER (Restoration, Coordination, VERification)
  - Adaptive Assessment and Monitoring
  - Second Periodic CERP Update
- **Design and Construction**
  - C-111 South Dade (C-111SD)
  - Picayune Strand Restoration (PSRP)
  - Indian River Lagoon – South (IRL-S)
  - Biscayne Bay Coastal Wetlands (BBCW)
  - Central Everglades Planning Project (CEPP)
  - Broward County Water Preserve Areas (BCWPA)
  - C-43 West Basin Storage Reservoir
  - Loxahatchee River Watershed Restoration Project (LRWRP)
  - Western Everglades Restoration Project (WERP)*
  - Lake Okeechobee Component A Reservoir (LOCAR)*
    - *WRDA 2024 authorizations
- **Planning**
  - Biscayne Bay and Southeastern Everglades Ecosystem Restoration (BBSEER)
  - Lake Okeechobee Watershed Restoration Project (LOWRP) (TERMINATED)
  - Indian River Lagoon – South (IRL-S)
  - Central Everglades Planning Project (CEPP)
  - C&SF Flood Resiliency (Section 216) Study Miami River Basins
  - Shingle Creek & Kissimmee River Study
  - C&SF Flood Resiliency (Section 203) Study Broward Basins
- **Water Management and Operations and Maintenance**
  - Kissimmee River Restoration (KRR)
  - Indian River Lagoon – South (IRL-S)
  - Modified Water Deliveries, Combined Operational Plan (COP)
  - Lake Okeechobee System Operating Manual (LOSOM)
  - Central Everglades Planning Project Operational Plan – CEPP 1.0
  - Central Everglades Planning Project Operational Plan – A-2 STA
  - C-43/C-44 Reservoirs Operational Plan
  - Operations, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R)

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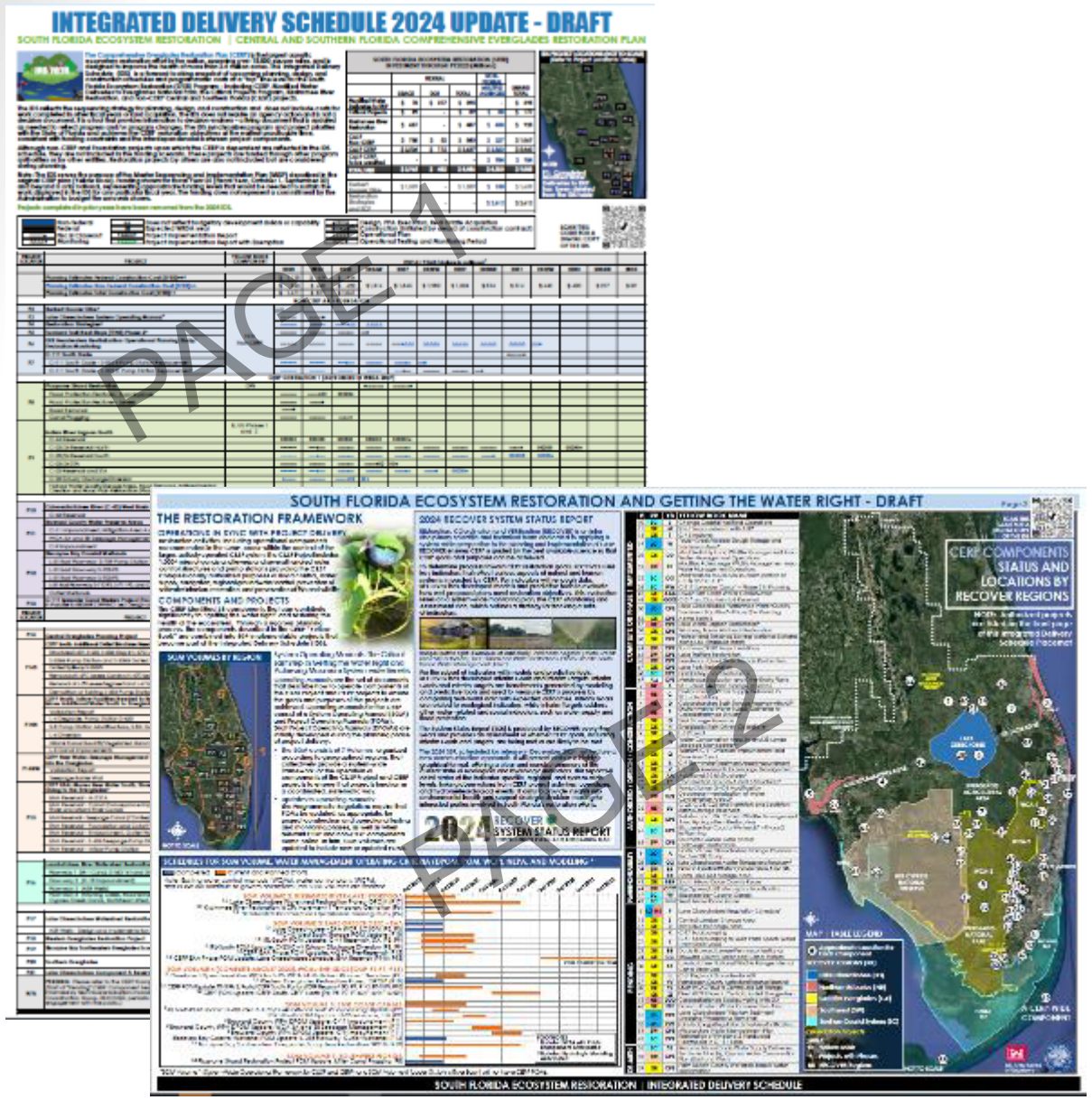
SOUTH FLORIDA ECOSYSTEM RESTORATION PROGRAM
PROGRAM LEVEL ACTIVITIES

Today's Highlights:

- Integrated Delivery Schedule

INTEGRATED DELIVERY SCHEDULE



- **7 October 2025**: Integrated Delivery Schedule 101 and Stakeholder Listening Session (virtual)
- **14 October 2025**: Integrated Delivery Schedule, 68 CERP Components Overview and Listening Session with Stakeholders (virtual)
- **19 November 2025:** Release of Working Draft 2024 IDS Update at SFER Task Force Workshop (SFWMD Auditorium, West Palm Beach)
- **December 2025**: Release of Final 2024 IDS (Date and location TBD)

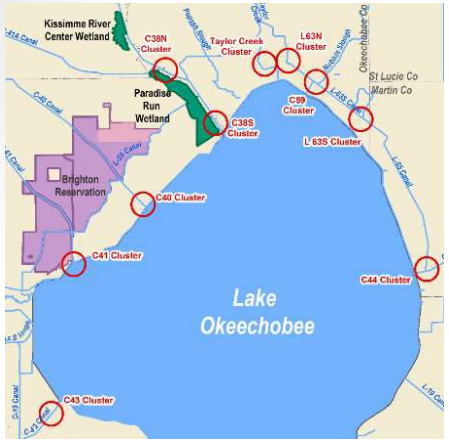
SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

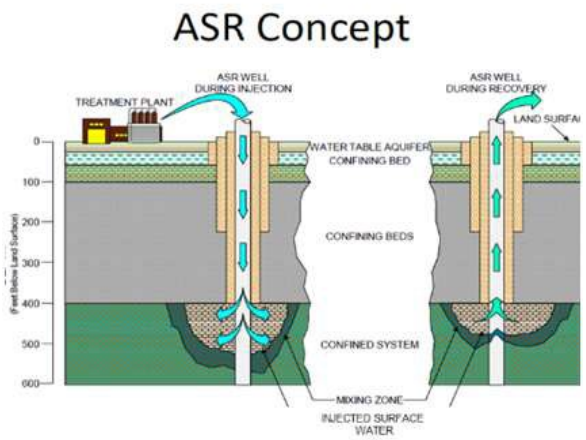
PLANNING

Today's Highlights:

- Lake Okeechobee Watershed Restoration Project (LOWRP)
- C&SF Resilience Authorizations

LAKE OKEECHOBEE WATERSHED RESTORATION PROJECT





COMPONENTS:

- AQUIFER STORAGE AND RECOVERY (ASR) WELLS
- WETLAND RESTORATION SITES

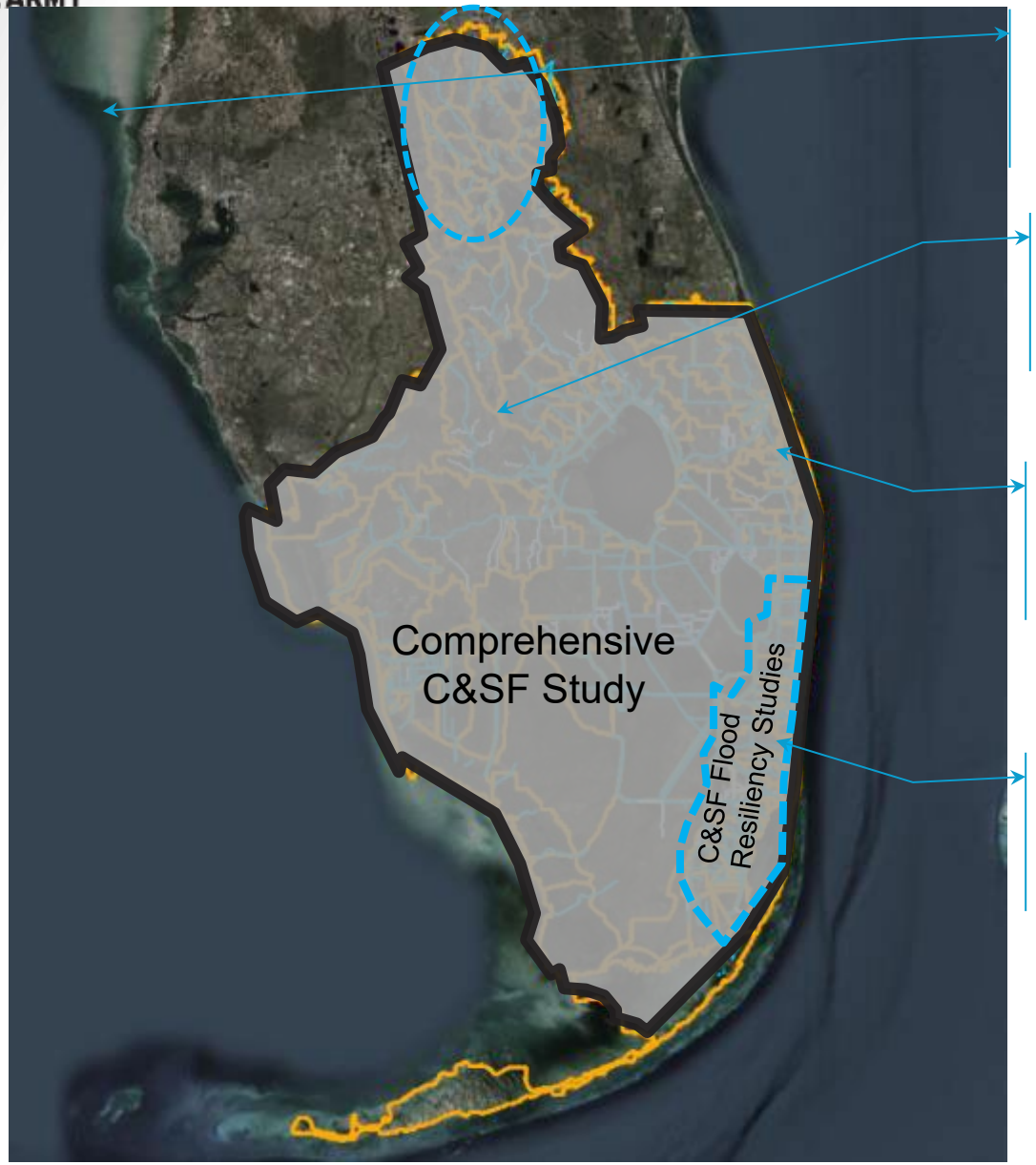
PURPOSE:

- Improve water levels in Lake Okeechobee; improve the quantity and timing of regulatory releases to the St. Lucie and Caloosahatchee estuaries; improve water supply for existing legal users of the Lake Okeechobee Service Area; and increase the spatial extent and functionality of wetlands

STATUS:

- CECW-SAD memo dated 27 May 2025 non-concurred with the 5th request for additional resources to develop engineering design for wetland restoration features and provided direction to proceed with study termination procedures
- Study termination efforts will complete Q1 FY2026
- USACE-ERDC research is ongoing for four critical aquifer storage and recovery (ASR) uncertainties identified for resolution in the lab:
  - Water Quality Uncertainty
  - Construction Cost Uncertainty
  - O&M Cost Uncertainty
  - Well Recovery Performance Uncertainty
- ERDC research is scheduled to complete in FY2027 at which point information will be used to inform path forward on ASR wells

CENTRAL & SOUTHERN FLORIDA (C&SF) RESILIENCY



Shingle Creek & Kissimmee River FRM Study

- Focus on flood risk management in Osceola County
- Flows into and out of Lake Tohopekaliga and S-61

Comprehensive C&SF Study

- Multipurpose Project focus on short term and long-term solutions for community resiliency
- 18 Counties – inland and coastal areas
- ~9 Million Population
- ~18,000 Square Miles

Section 8215 Northern Estuaries Ecosystem Restoration

- Caloosahatchee Estuary and Charlotte Harbor on west coast
- Indian River Estuary, St. Lucie Estuary, and Lake Worth Lagoon on east coast
- Focus on estuary health and eliminating harmful “discharges”
- All receive flows from Lake Okeechobee

C&SF Flood Resiliency Studies (Section 216 and Section 203)

- Focus on coastal salinity structures for flood resilience
- 2 Planning Reaches (Broward Basins and Miami River Basins)
- 2 Counties/ Many municipalities
- > 3 Million Population
- ~ 600 Square Miles

Authorizations

Feasibility

SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

DESIGN AND CONSTRUCTION

Today's Highlights:

- Indian River Lagoon – South (IRL-S)
- Central Everglades Planning Project (CEPP)

INDIAN RIVER LAGOON - SOUTH

C-23/C-24 STA S-432 Box Culvert Construction

C-23/C-24 North Reservoir Construction

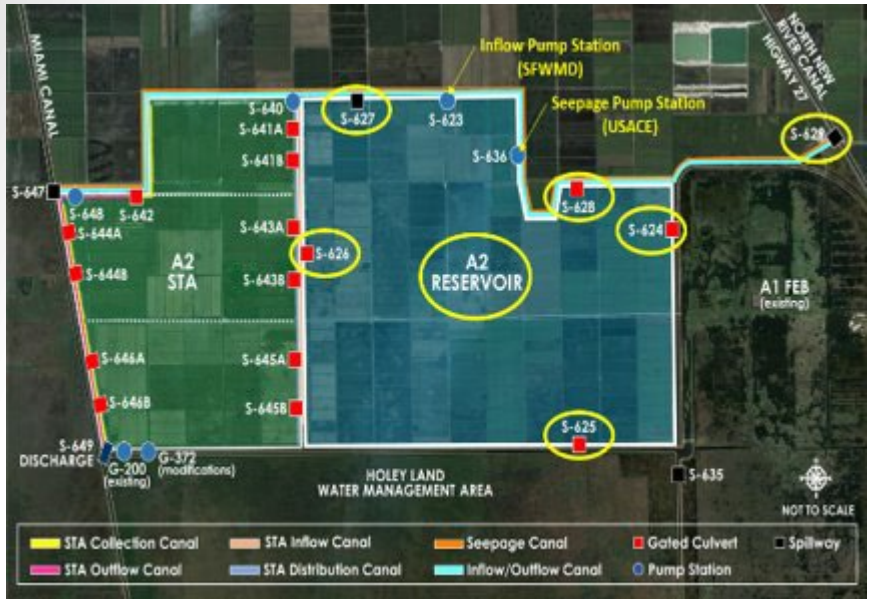
PURPOSE:

- The Indian River Lagoon and St. Lucie Estuary are two of the country's most productive and most threatened estuaries; the project will reconnect and restore natural areas in the headwaters and improve water flow to the river.

STATUS:

- In Design:
- Under Construction:
  - C-23/C-24 Stormwater Treatment Area schedule completion May 2026
  - C-23/C-24 North Reservoir CNT4A – pump station, access road and canal scheduled completion May 2028
  - C-25 Reservoir/STA Package 1 – clearing and grubbing scheduled completion April 2026
  - C-23/C-44 Estuary Discharge Diversion (SFWMD contract) - Construction of a canal connecting C-23 and C-44 watersheds, including a 250 CFS pump station completion April 2026
  - C-23/C-24 South Reservoir Package 1 (SFWMD Contract) - Improvement of 6.1 miles of the C-23 Canal and replacement of the G-78 water control structure schedule completion July 2026

CENTRAL EVERGLADES PLANNING PROJECT (CEPP)



Everglades Agricultural Area (EAA) A2 Reservoir and A2 STA

Everglades Agricultural Area (EAA) Reservoir, Seepage Inflow/Outflow Canal

PURPOSE:

- The Central Everglades Planning Project (CEPP) focuses restoration on more natural flows into and through the central and southern Everglades by increasing storage, treatment and conveyance of water south of Lake Okeechobee; removing canals and levees within the central Everglades and retaining water within Everglades National Park.

STATUS:

- On July 18, 2025, the Department of the Army and State of Florida executed a Memorandum of Agreement (CERP MOA) for expediting and advancing the restoration of America's Everglades
- CEPP - South:
  - L-67A structures, under construction.
  - Pump Station S-356, final design ongoing, anticipated contract award FY26.
  - Gated Spillway S-355W, final design ongoing, anticipated contract award FY26.
- CEPP - EAA:
  - Seepage and Inflow/Outflow Canal – construction complete
  - Reservoir Foundation and Cut-off Wall, under construction.
  - Reservoir Embankment contract awarded in FY24, construction ongoing*.
  - North New River and Miami Canal Improvements – under construction

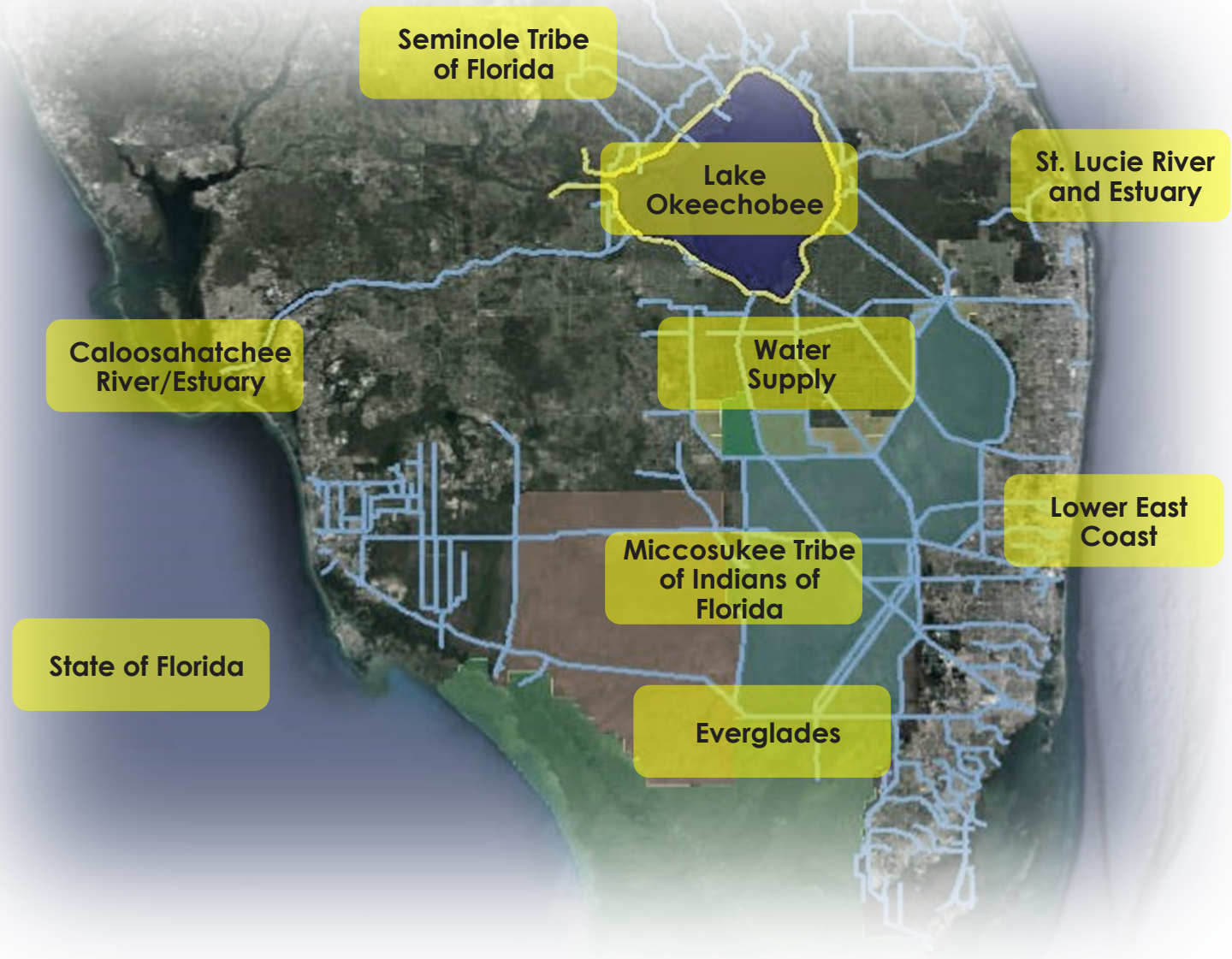
SOUTH FLORIDA ECOSYSTEM RESTORATION AND C&SF RESILIENCE PROGRAMS

OPERATIONS

Today's Highlights:

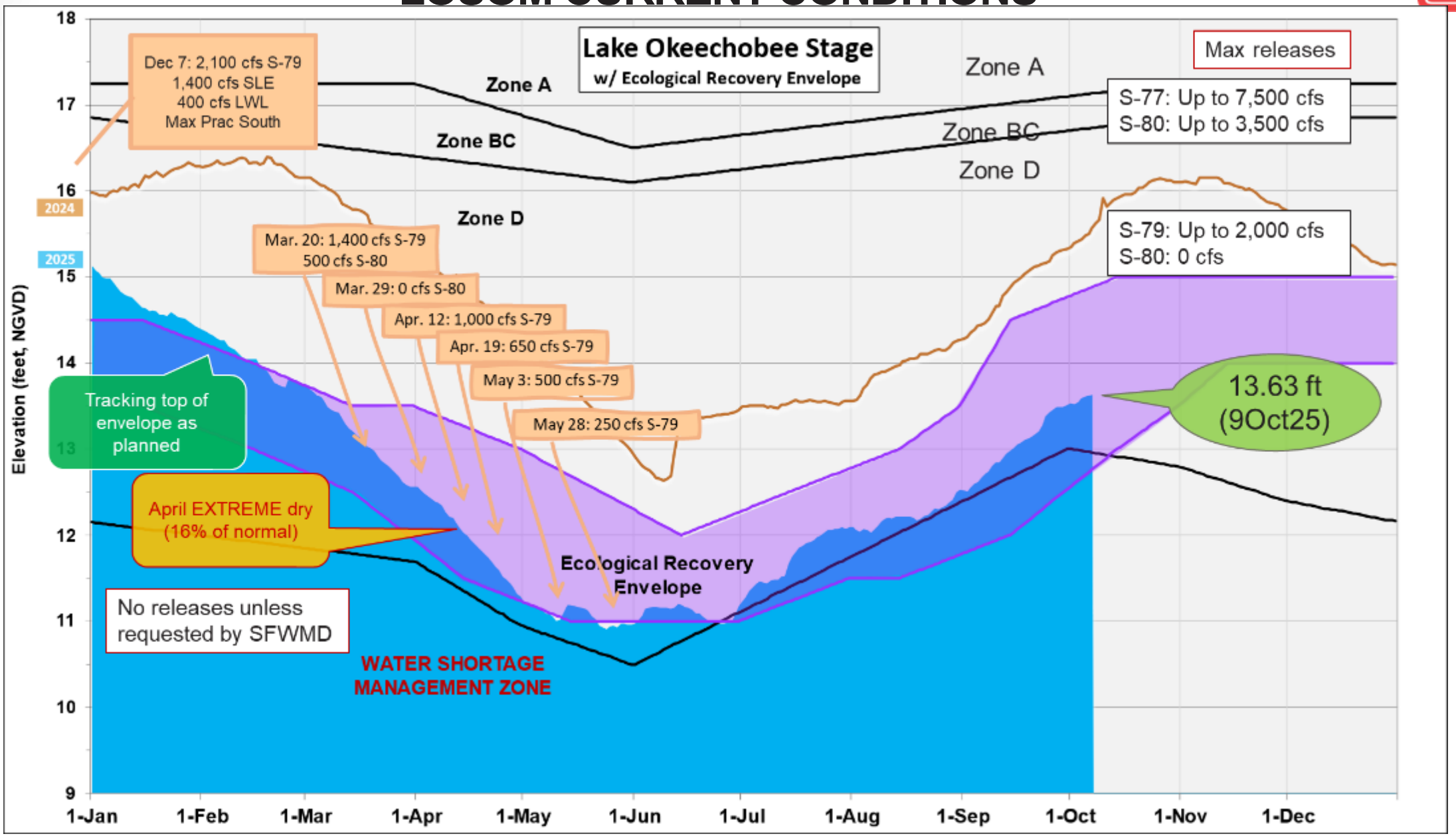
- Lake Okeechobee System Operating Manual (LOSOM)
- Indian River Lagoon – South (IRL-S)
- Kissimmee River Restoration (KRR) Operational Planning

LAKE OKEECHOBEE SYSTEM OPERATIONS MANUAL (LOSOM)



- Benefits-focused.
- System with holistic perspective.
- Will use real time knowledge of climate conditions, weather data, climate projections, and system needs to make educated decisions about how releases are made.
- Key seasonal assessment points to analyze the past, the present, and the anticipated/desired future.

LOSOM CURRENT CONDITIONS



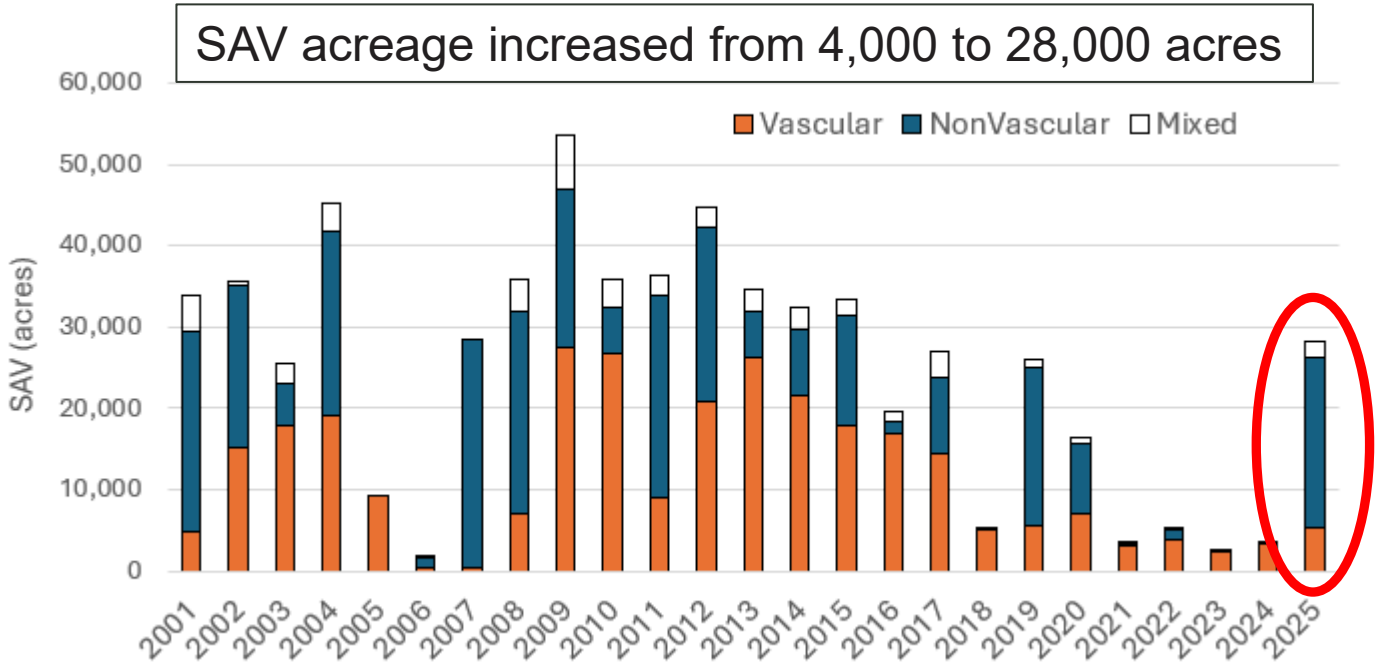
RECOVERY OPERATIONS PERFORMANCE SUMMER 2025

U.S. ARMY

Positive Outcomes

- Improved Lake Conditions
  - Water clarity good
  - Decreased dissolved nutrients

- 239 days in RECOVER ecological stage recovery envelope
- 101 days below 12.5 feet
- 78 days below 11 feet



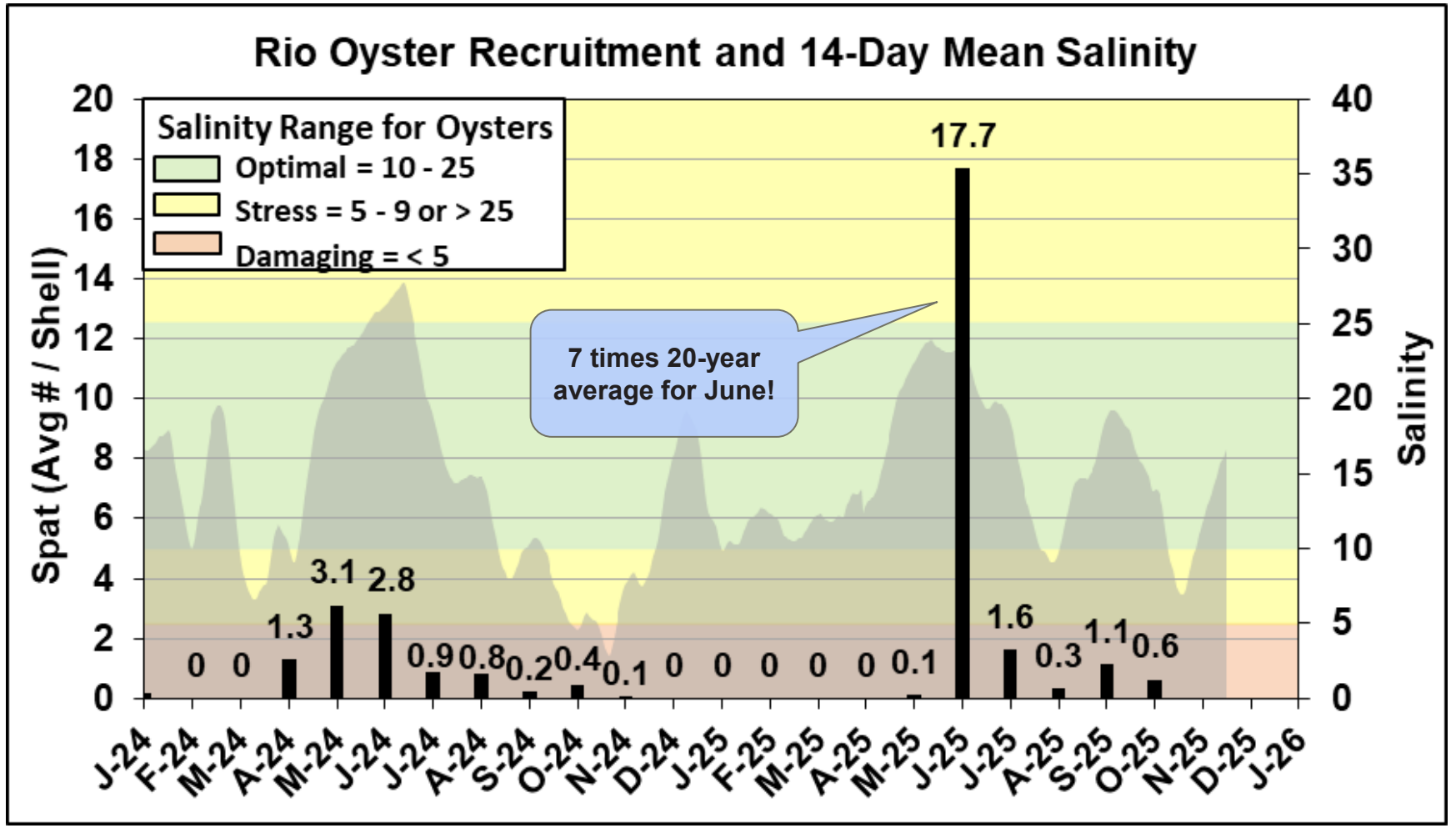
Lake Okeechobee Vegetation Planting 2025

Endangered Okeechobee Gourd

Indian Prairie March 2025

Moore Haven Burn

RECOVERY OPERATIONS PERFORMANCE
OYSTER RECRUITMENT

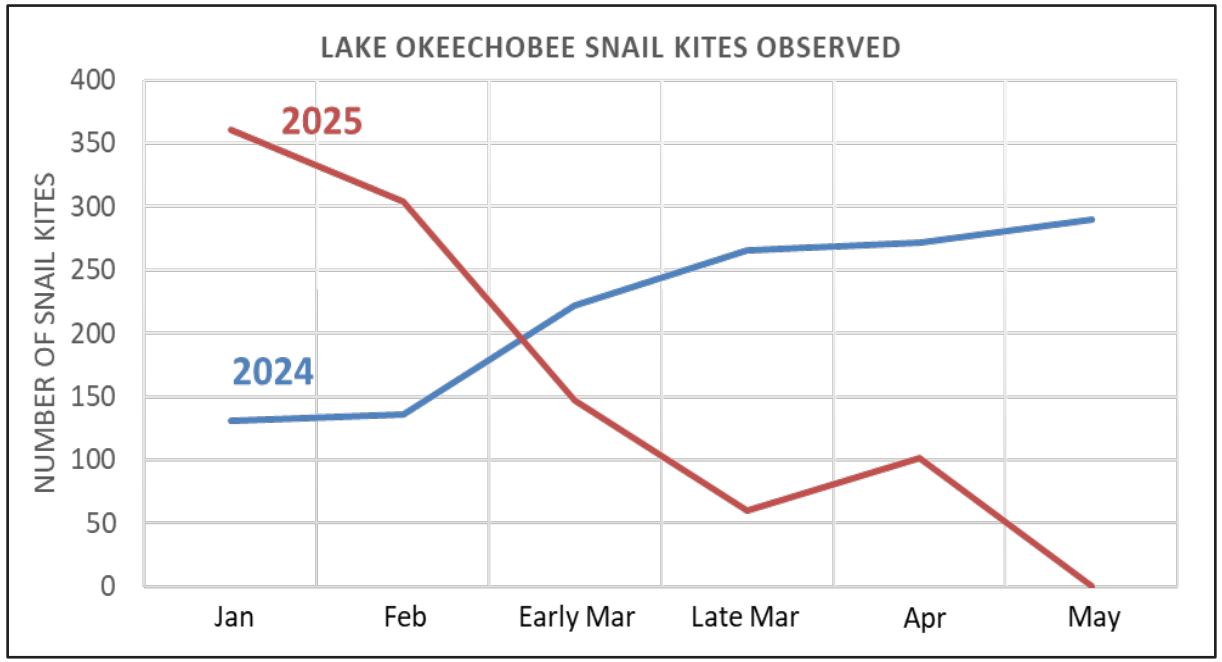


RECOVERY OPERATIONS PERFORMANCE SUMMER 2025

Negative Outcomes

- Navigational impacts with low water in both lake routes, C-44, and C-43
  - 158 days below 12.56 feet

- Reduced snail kite and wading bird activity due to decreased foraging area



Final Outcomes are Undetermined

- Monitoring Lake Okeechobee ecological indicators over time will be the true indicator of success
  - SAV coverage
  - Bass fishery surveys
  - Wading bird nesting/foraging
  - Everglades Snail Kite nesting/foraging and Apple Snail population
- Impacts to water supply evaluated over time

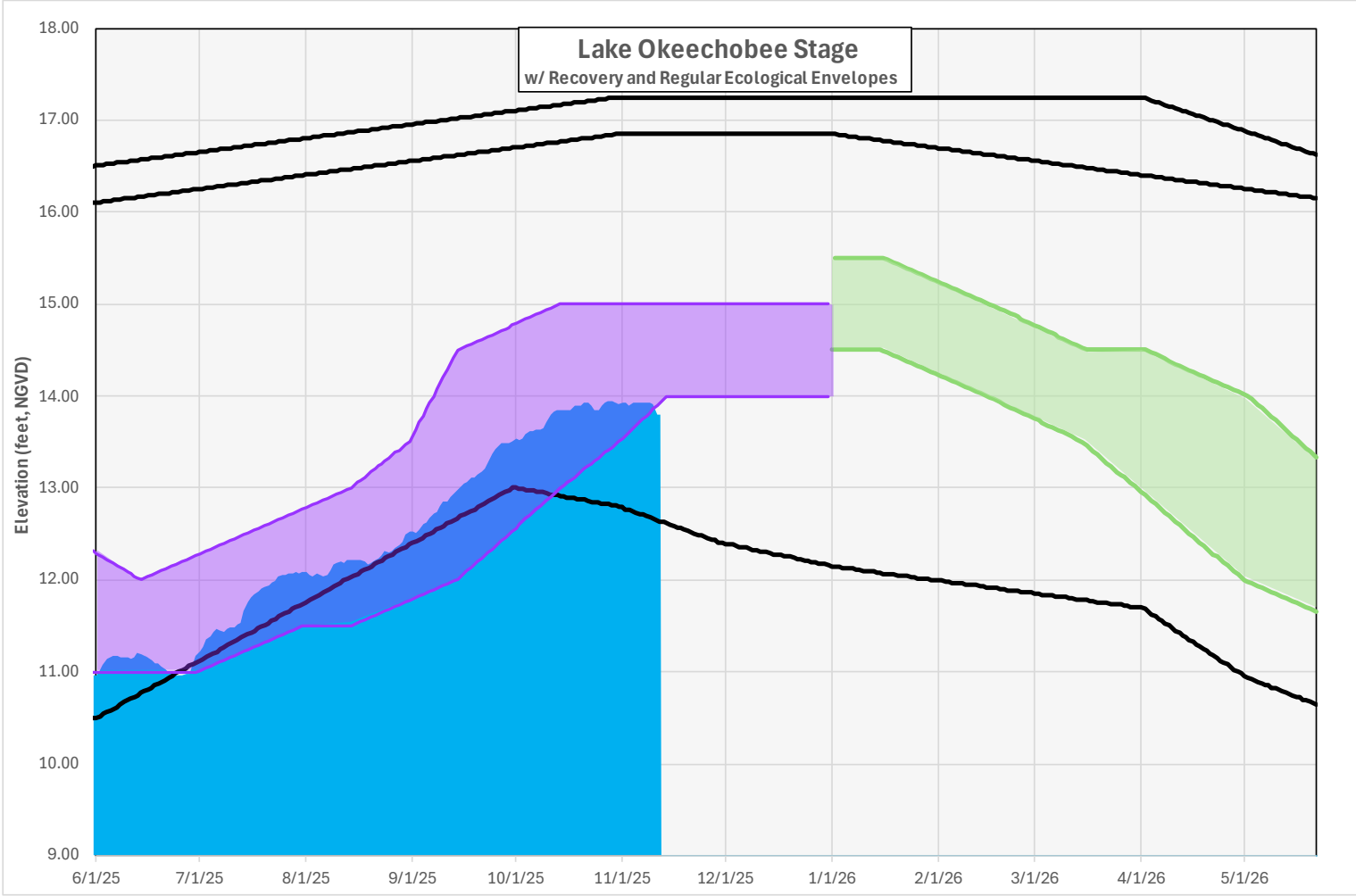
LAKE OKEECHOBEE DRY SEASON

GOALS

- Moderate recession rate above the WSM Zone
- Meet water supply needs throughout the system
- Provide MFL to CRE for as much time as possible
- Provide water south rehydrate Greater Everglades focused on late dry season
- Support additional SAV regrowth

CONSIDERATIONS/CONSTRAINTS

- Dry season began about 14 ft, added risk of entering WSM
- Possibility for a below average dry season



C-44 RESERVOIR AND C-43 RESERVOIR OPERATIONAL PLANNING

C-43 Reservoir July 2025

C-44Reservoir

PURPOSE:

- The C-44 Reservoir and Stormwater Treatment Area (STA) provides clean freshwater to the Indian River Lagoon and St. Lucie Estuary. The reservoir component includes 50,600 acre-feet of storage and delivers water to the 6,300-acre C-44 STA for water quality treatment.
- The 10,700-acre Caloosahatchee (C-43) West Basin Storage Reservoir will store 170,000 acre-feet of water and reduce harmful discharges to the Caloosahatchee Estuary. The reservoir will provide beneficial freshwater flows to the Caloosahatchee Estuary in the dry season..
- Evaluation and development of the C-44 project operating manual (POM) alternatives is being done in conjunction with the C-43 POM due to the interplay with Lake Okeechobee releases between the two systems when evaluating performance metrics.

STATUS:

- C-44 PDT refining alternatives to model; Draft PPOM and NEPA scheduled for January 2026
- C-43 PDT refining alternatives to model; Draft PPOM and NEPA scheduled for February 2026

KISSIMMEE RIVER RESTORATION

Restored Kissimmee River Phase 1 Restoration Area

S-69 Weir during Hurricane Ian

PURPOSE:

- The Kissimmee River Restoration (KRR) restores critical floodplain habitat and timing of flows to Lake Okeechobee.
- Total Project Benefits:
  - Restoration of over 24,000 acres of floodplain habitat
  - Conveyance of 130,000 acre-feet of natural floodplain storage to slow the flow of water into Lake Okeechobee and reduce the impacts of high-volume discharges into the St. Lucie and Caloosahatchee estuaries.

STATUS:

- Currently operating under KRR Headwaters Revitalization: Increment 1
- Headwaters Revitalization Operations Planning (HROPS) underway scheduled completion 2027