



March 1, 2024

2024 SOUTH FLORIDA ENVIRONMENTAL REPORT HIGHLIGHTS

Water Year 2023 (May 1, 2022–April 30, 2023) • Fiscal Year 2023 (Oct. 1, 2022–Sept. 30, 2023)



The **South Florida Environmental Report** (SFER) documents an important year of restoration, scientific and engineering accomplishments in the Kissimmee Basin, Lake Okeechobee, Everglades and South Florida coastal areas. The report also provides extensive peer reviewed research summaries, data analyses, financial updates and a searchable database of environmental projects. The report covers environmental information for Water Year 2023 (WY2023; May 1, 2022–April 30, 2023) and project budgetary and construction information for the South Florida Water Management District (SFWMD or District) for Fiscal Year 2023 (FY2023; October 1, 2022 –September 30, 2023).

This year's **SFER Highlights** also cover the many achievements and progress made over the past five years in accelerating key water quality improvements and Everglades restoration projects, in line with the Executive Order 19-12 (Achieving More Now for Florida's Environment, January 2019) and Executive Order 23-06 (Achieving *Even More* Now for Florida's Environment, January 2023). The full 2,991-page report is available at [SFWMD.gov/SFER](https://www.sfwmd.gov/sfer).

PROGRESS CONTINUES IMPLEMENTING EXECUTIVE ORDERS 23-06 AND 19-12

Achieving Even More Now for Florida's Environment – Executive Order Continues Momentum for Everglades Restoration and Water Quality



Governor Ron DeSantis announces Executive Order 23-06 in Bonita Springs on Jan. 10, 2023.

The South Florida Water Management District (SFWMD) continues to implement Executive Order 23-06 to carry on the significant progress for the resiliency and restoration of Florida's water resources and to accelerate Everglades restoration and water quality projects.

On January 10, 2023, Governor Ron DeSantis signed Executive Order 23-06 (*Achieving Even More Now for Florida's Environment*) to enhance ongoing efforts to expedite restoration projects and further advance the protection of Florida's natural resources. Executive Order 23-06 aims to secure a record-setting \$3.5 billion over four years to protect our water resources and further restore America's Everglades. The Governor's announcement came exactly four years to the day after he signed Executive Order 19-12 (*Achieving More Now For Florida's Environment*) that resulted in record environmental funding, expedited Everglades projects, and water quality improvements.

The SFWMD and the Florida Department of Environmental Protection (DEP) continue to accelerate critical Everglades restoration projects that protect our water resources and increase water storage north, south, east and west of Lake Okeechobee. More than 65 Everglades projects have been completed, broken ground or hit a major milestone since January 2019. These projects are making a measurable difference for water quality and the ecological health of South Florida's natural resources.

KEY MILESTONE COMPLETED FOR THE EAA RESERVOIR PROJECT

Historic Momentum Continues for Sending More Clean Water South and Reducing Harmful Discharges

Under the leadership of Governor Ron DeSantis, DEP Secretary Shawn Hamilton and the SFWMD Governing Board, the Everglades Agricultural Area (EAA) Reservoir Project is coming to life and will help restore the natural flow of clean water south to where it is needed most.

Governor DeSantis joined the SFWMD at a ribbon cutting ceremony on January 25, 2024 to begin filling the EAA Reservoir Project's Stormwater Treatment Area (STA), marking a historic milestone for our River of Grass and the protection of Florida's water resources.

The EAA Reservoir is a critical component of Everglades restoration and will help reduce harmful discharges to the St. Lucie and Caloosahatchee estuaries and improve the resiliency of our water resources. The project will provide many ecological benefits, including nourishing the Everglades, replenishing Florida's aquifers and supporting the health of Florida Bay.

The SFWMD Governing Board expedited this important project in 2019 after Governor DeSantis signed Executive Order 19-12.

"The EAA Reservoir is the crown jewel of Everglades restoration, ensuring that we are sending water south and reducing harmful discharges into our waterways," said Governor DeSantis. "The opening of this stormwater treatment cell is a key milestone in the EAA Reservoir project and will help ensure the health of the Everglades for generations to come."



SFWMD began filling the EAA Reservoir Project's STA on Jan. 25, 2024.



Governor Ron DeSantis at the EAA Reservoir STA Ribbon Cutting.



Governor Ron DeSantis and SFWMD Chairman Chauncey Goss at the EAA Reservoir STA Ribbon Cutting.



DEP Secretary Shawn Hamilton at the EAA Reservoir STA Ribbon Cutting.



EAA Reservoir STA Ribbon Cutting on Jan. 25, 2024. L-R: USACE - Jacksonville District Col. James Booth, SFWMD Board Members Ben Butler and Jay Stein, SFWMD Director Drew Bartlett, SFWMD Board Member "Alligator Ron" Bergeron, SFWMD Chairman Chauncey Goss, Governor Ron DeSantis, DEP Secretary Shawn Hamilton, SFWMD Board Members Charlette Roman and Charlie Martinez, Everglades Foundation Chairman Carlos de la Cruz, Jr., Captains for Clean Water Co-founder and Executive Director Capt. Daniel Andrews, Everglades Foundation CEO Eric Eikenberg, Chief Resilience Officer Dr. Wes Brooks, U.S. Department of the Interior Assistant Secretary Shannon Estenoz, USACE - South Atlantic Division Brig. Gen. Daniel Hibner, Everglades and Dry Tortugas National Parks Superintendent Pedro Ramos and FWC Director Roger Young.



C-43 Reservoir Pump Station.



C-43 Reservoir Pump Station Ribbon Cutting on Dec. 19, 2023. L-R: Hendry County Commissioner Ramon Iglesias, LaBelle Commissioner Hugo Vargas, Hendry County Commissioner Emory "Rowdy" Howard, Hendry County Vice Chair Mitchell Wills, Hendry County Chairperson Emma Byrd, SFWMD Chairman Chauncey Goss, Rep. Adam Botana, Florida Senate President Kathleen Passidomo, SFWMD Director Drew Bartlett, Sen. Jonathan Martin, SFWMD Board Member Charlette Roman, Sanibel Councilwoman Holly Smith, Hendry County Commissioner Karson Turner, LaBelle Mayor Julie Wilkins, DEP Deputy Secretary Adam Blalock, USACE - Jacksonville District Maj. Cory Bell and SFWMD Board Member Ben Butler.

SIGNIFICANT PROGRESS CONTINUES ON THE CALOOSAATCHEE (C-43) RESERVOIR

Major components of the Caloosahatchee (C-43) Reservoir Project in Hendry County continue to advance. On December 19, 2023, the SFWMD joined federal, state and local officials to celebrate the completion of a new, massive pump station that will move water from the Caloosahatchee River (C-43 Canal) into an 18-square-mile reservoir and reduce harmful flows of water from reaching the downstream Caloosahatchee Estuary.

The Caloosahatchee (C-43) Reservoir provides water storage and supports healthy salinity levels in the Caloosahatchee Estuary. It will reduce harmful flows of water to the Caloosahatchee Estuary from Lake Okeechobee and the local watershed during the wet season and provide beneficial freshwater flows to the estuary during the dry season. It will hold approximately 170,000 acre-feet of water, which is around 55 billion gallons. The reservoir is expected to begin initial operations in 2025.



DEP Deputy Secretary Adam Blalock at the C-43 Reservoir Pump Station Ribbon Cutting.



Florida Senate President Kathleen Passidomo at the C-43 Reservoir Pump Station Ribbon Cutting.



SFWMD Director Drew Bartlett at the C-43 Reservoir Pump Station Ribbon Cutting.

EVERGLADES RESTORATION IS WORKING TO PROTECT SOUTH FLORIDA'S WATER RESOURCES

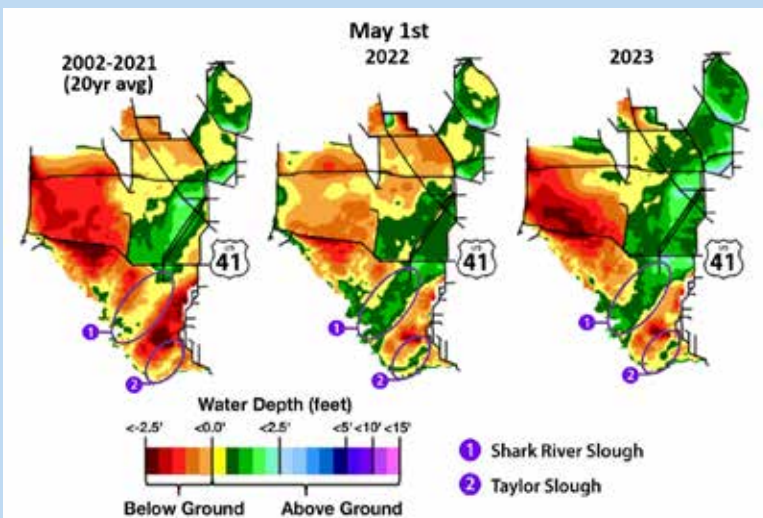
Recent data demonstrate the continued success of restoration projects – proving increased investments and unprecedented momentum are restoring America's Everglades.

Working together with our federal, state, and local partners, the SFWMD continues to accelerate Comprehensive Everglades Restoration Plan (CERP) projects to improve the quantity, quality, timing and distribution of water within the Greater Everglades Ecosystem.

Unprecedented state funding and momentum are making a real difference to protect Florida's precious natural resources, support our economy and restore America's Everglades.

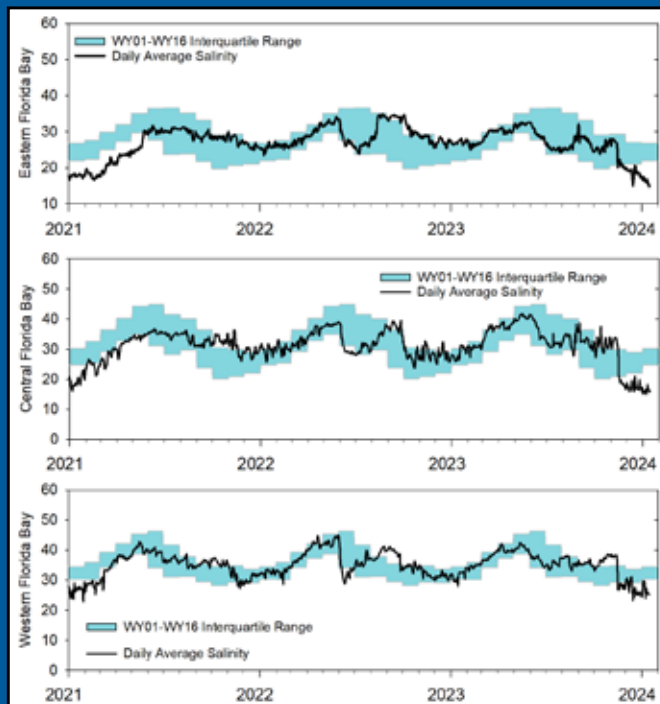
Record Hydration in the Everglades

End of the wet season water depths in two key locations, Shark River Slough and Taylor Slough, demonstrate that restoration projects and operations work well together to nourish the Everglades and send water south to support the health of Florida Bay.



Salinity Levels in Florida Bay Hit Goals

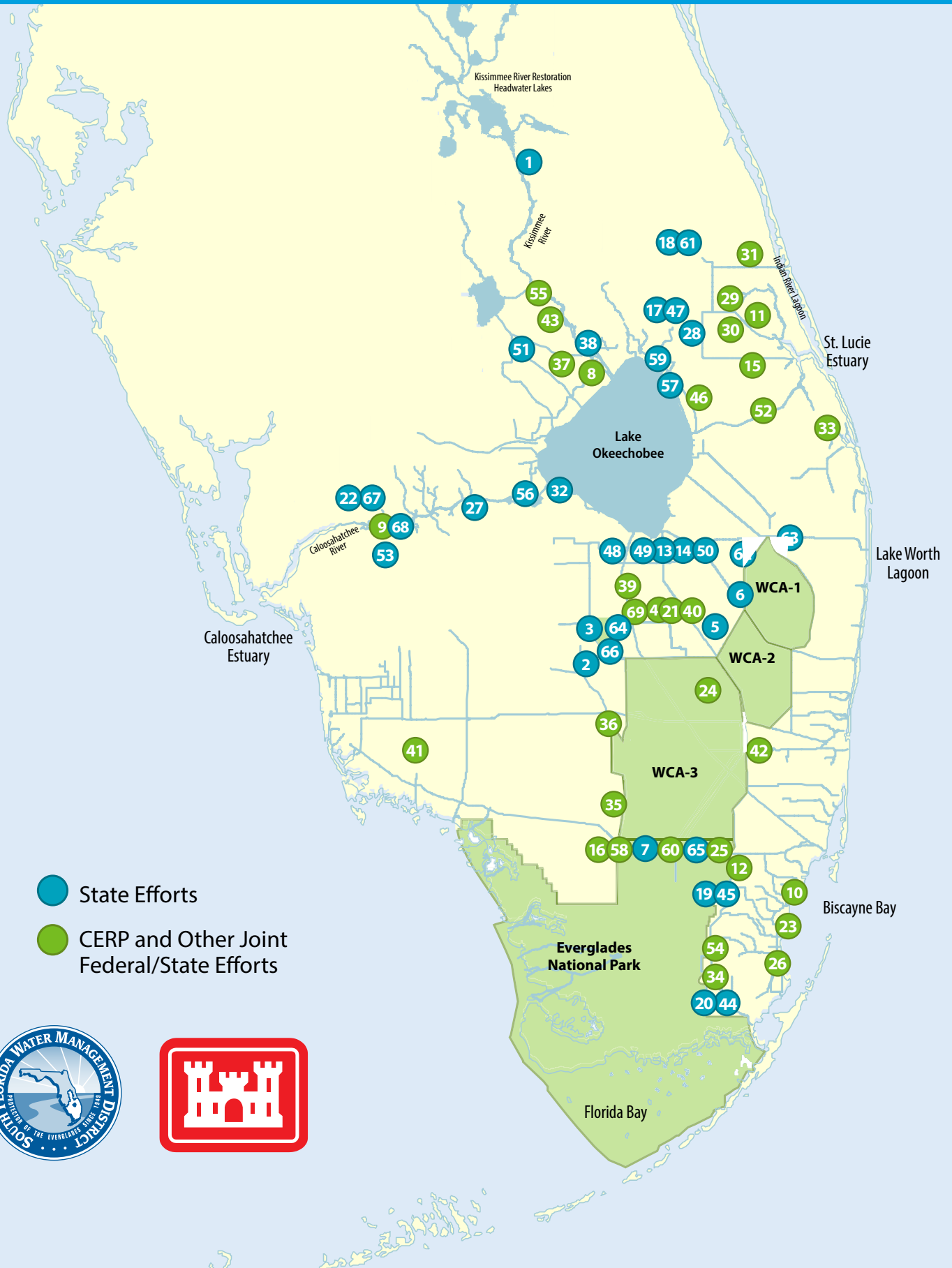
Record water flows and water depths in the Everglades coupled with rainfall demonstrated that restoration can support healthy salinity levels in Florida Bay. Balanced salinity supports sea grass and spawning fish.



What is a RESERVOIR?

Reservoirs are human-made water bodies used for water storage above or below ground.

EVERGLADES RESTORATION PROJECTS





Governor Ron DeSantis at the signing of the EAA Reservoir Project Partnership Agreement.

Groundbreaking Ceremony for the EAA Reservoir on Feb. 22, 2023.



✓ Indicates these projects have been completed.

GROUND BREAKING SINCE 2019

| # | PROJECT | EFFORT | GROUND BREAKING | COMPLETION DATE (EST.) |
|----|--|--------|-----------------|------------------------|
| 1 | El Maximo Dispersed Water Management | State | 2022 | 2024 |
| 2 | C-139 Abiaki Wetland Restoration - Phase II | State | 2021 | 2027 |
| 3 | C-139 Water Storage Basin (FEB) | State | 2021 | 2024 |
| 4 | EAA Reservoir Project's Treatment Wetland | Joint | 2020 | 2024 |
| 5 | STA-2 Refurbishments | State | 2020 | 2023 |
| 6 | STA-1W – Expansion No. 2 | State | 2020 | 2024 |
| 7 | Raising Tamiami Trail, Florida Department of Transportation (FDOT) | State | 2021 | 2024 |
| 8 | Lake Okeechobee Watershed – Aquifer Storage & Recovery Wells | Joint | 2021 | 2030 |
| 9 | Caloosahatchee (C-43) Reservoir – Final Phase of Construction | Joint | 2019 | 2025 |
| 10 | Biscayne Bay Coastal Wetlands - L-31E Flow-way | Joint | 2020 | 2026 |
| 11 | C-23/C-24 Treatment Wetland | Joint | 2022 | 2025 |
| 12 | Everglades Nat'l Park Seepage Containment Wall – CEPP New Water | Joint | 2022 | 2024 |
| 13 | Bolles Canal Improvements – Segment 4 | State | 2019 | ✓ |
| 14 | Bolles Canal Improvements – Final Segment | State | 2022 | ✓ |
| 15 | C-23/C-44 Canal to Divert Harmful Discharges to St. Lucie River | Joint | 2022 | 2025 |
| 16 | Old Tamiami Trail Roadbed Removal | Joint | 2020 | ✓ |
| 17 | Bluefield Grove Water Storage Farm | State | 2020 | ✓ |
| 18 | Scott Water Storage Farm | State | 2020 | ✓ |
| 19 | Everglades Nat'l Park Seepage Containment Wall – Phase I (8.5 SMA) | State | 2021 | ✓ |
| 20 | Taylor Slough Hydrologic Improvements | State | 2023 | ✓ |
| 21 | EAA Reservoir | Joint | 2023 | 2030 |
| 22 | ALJO Four Corners Rapid Infiltration Project | State | 2023 | ✓ |
| 23 | Biscayne Bay Coastal Wetlands – Cutler Wetlands | Joint | 2023 | 2025 |
| 24 | Central Everglades Planning Project (CEPP) North | Joint | 2023 | 2029 |
| 25 | Central Everglades Planning Project (CEPP) South | Joint | 2020 | 2031 |

MAJOR MILESTONE SINCE 2019

| # | PROJECT | EFFORT | RECENT ACCOMPLISHMENT | COMPLETION DATE (EST.) |
|----|---|--------|---|------------------------|
| 26 | Biscayne Bay and Southeastern Everglades Ecosystem (BBSEER) | Joint | Began Planning Efforts | TBD |
| 27 | Boma Water Storage Basin (FEB) | State | In Design | 2027 |
| 28 | C-23/C-24 Interim Water Storage | State | Began Planning | 2025 |
| 29 | C-23/C-24 North Reservoir | Joint | Completed Final Design | 2028 |
| 30 | C-23/C-24 South Reservoir | Joint | In Design | 2030 |
| 31 | C-25 Reservoir and Treatment Wetland | Joint | Completed Land Acquisition, Started Design | 2028 |
| 32 | Lake Hicpochee Restoration – Phase II | State | In Design | 2026 |
| 33 | Loxahatchee River Watershed Restoration | Joint | Authorized by Congress, Started Design | TBD |
| 34 | S-332B Pump Station Replacement | Joint | Started Design | 2028 |
| 35 | Western Everglades Restoration-South Features | Joint | Started Construction | 2028 |
| 36 | Western Everglades Restoration-Remaining Features | Joint | Began Planning | TBD |
| 37 | Lake Okeechobee Watershed – Wetland Restoration | Joint | Began Real Estate Acquisition | TBD |
| 38 | Lower Kissimmee Basin Treatment Wetland | State | Began Initial Planning and Design | TBD |
| 39 | EAA Reservoir Project Conveyance Improvements | Joint | Started Construction | 2029 |
| 40 | EAA Reservoir Project Partnership Agreement Signed | Joint | Agreement Executed | 2032 |
| 41 | Faka Union Pump Station/Picayune Strand Wetland Restoration | Joint | Began Partial Rehydration of Drained Wetlands | 2025 |
| 42 | C-11 Water Storage Impoundment | Joint | Began Final Design | 2028 |
| 43 | Lake Okeechobee Component A Reservoir (LOCAR) | Joint | Began Planning | TBD |

COMPLETED SINCE 2019

| # | PROJECT | EFFORT | YEAR |
|----|--|--------|------|
| 44 | Taylor Slough Hydrologic Improvements | State | 2023 |
| 45 | Everglades Nat'l Park Seepage Containment Wall – Phase I (8.5 SMA) | State | 2022 |
| 46 | Allapattah Flats Wetland Restoration | Joint | 2021 |
| 47 | Bluefield Grove Water Storage Farm | State | 2021 |
| 48 | Bolles Canal Improvements – Segment 3 | State | 2020 |
| 49 | Bolles Canal Improvements – Segment 4 | State | 2022 |
| 50 | Bolles Canal Improvements – Final Segment | State | 2023 |
| 51 | Brighton Valley Dispersed Water Storage and Management | State | 2020 |
| 52 | C-44 Reservoir and Treatment Wetland | Joint | 2021 |
| 53 | Caloosahatchee (C-43) Reservoir Water Quality Improvements Study | State | 2021 |
| 54 | Improved Water Deliveries for ENP (COP) and C-111 South Dade Project | Joint | 2020 |
| 55 | Kissimmee River Restoration | Joint | 2021 |
| 56 | Lake Hicpochee Restoration – Phase I | State | 2020 |
| 57 | Lakeside Ranch Treatment Wetland | State | 2019 |
| 58 | Old Tamiami Trail Roadbed Removal | Joint | 2021 |
| 59 | S-191A Pump Station | State | 2021 |
| 60 | S-333N Structure for Everglades Nat'l Park Water Deliveries | Joint | 2020 |
| 61 | Scott Water Storage Farm | State | 2021 |
| 62 | STA-1W – Expansion No. 1 | State | 2020 |
| 63 | STA-1E Improvements | State | 2022 |
| 64 | STA-5/6 Improvements | State | 2020 |
| 65 | Bridging Tamiami Trail, Florida Department of Transportation (FDOT) | State | 2019 |
| 66 | C-139 Wetland Restoration – Phase I | State | 2019 |
| 67 | ALJO Four Corners Rapid Infiltration Project | State | 2023 |
| 68 | Caloosahatchee (C-43) Reservoir S-470 Pump Station | State | 2023 |
| 69 | EAA Reservoir Project's Treatment Wetland | Joint | 2024 |



DEP Secretary Shawn Hamilton at the Taylor Slough Flow Improvement Project Ribbon Cutting.



Senator Ben Albritton at the Ribbon Cutting for the Brighton Valley DWM Project by Lykes Bros. Inc. in Highlands County.



SFWMDC Chairman Chauncey Goss at the C-43 Reservoir Pump Station Ribbon Cutting.

COMPLETION OF KEY RESTORATION PROJECT INCREASES FLOW OF CLEAN, FRESH WATER THROUGH EVERGLADES NATIONAL PARK

On May 30, 2023, the SFWMD and the National Park Service celebrated the completion of the Taylor Slough Flow Improvement Project in Everglades National Park, which increases the flow of clean, fresh water through the park and into Florida Bay, where it is needed to balance salinity levels and promote ecological health.

The Taylor Slough Flow Improvement Project was completed in just four months and included the installation of 18 culverts at nine locations along a 3.2-mile section of Old Ingraham Highway in Everglades National Park to improve the distribution of freshwater flows and restore natural plant communities and wetlands.

Taylor Slough is located in the southeastern part of Everglades National Park and was historically a major contributor of fresh water to Florida Bay. The duration, timing and extent of wetland inundation of Taylor Slough's interconnected wetlands and freshwater flows through Florida Bay are a critical component of the Everglades ecosystem.



Taylor Slough Ribbon Cutting on May 30, 2023. L-R: National Parks Conservation Association Everglades Restoration Senior Program Manager Cara Capp, SFWMD Board Member Ben Butler, Former SFWMD Board Member Jacqui Thurlow-Lippisch, Miami-Dade County Chief Bay Officer Irela Bague, USACE - Jacksonville District Col. James Booth, DEP Secretary Shawn Hamilton, SFWMD Director Drew Bartlett, U.S. Dept. of the Interior Assistant Secretary Tanya Trujillo, SFWMD Chairman Chauncey Goss, Everglades and Dry Tortugas National Parks Superintendent Pedro Ramos, Everglades Foundation CEO Eric Eikenberg, SFWMD Board Members Charlette Roman and "Alligator Ron" Bergeron, Miami-Dade County Commissioner Sen. René Garcia and FWC Director Roger Young.



CEPP North Groundbreaking on May 18, 2023. L-R: National Parks Conservation Association Everglades Restoration Senior Program Manager Cara Capp, SFWMD Director Drew Bartlett, SFWMD Board Member "Alligator Ron" Bergeron, Former USACE - Jacksonville District Lt. Col. Todd Polk, SFWMD Chairman Chauncey Goss, SFWMD Board Member Charlette Roman, DEP Deputy Secretary Adam Blalock and SFWMD Board Members Jay Steinle and Cheryl Meads.

CEPP NORTH PROJECT BREAKS GROUND: ANOTHER PIVOTAL MILESTONE FOR EVERGLADES RESTORATION AND THE RESILIENCY OF WATER RESOURCES

On May 18, 2023, the SFWMD and the USACE joined federal, state, and local officials to break ground on the Central Everglades Planning Project (CEPP) North. This important Everglades restoration project is vital to restoring the hydrology of the Central Everglades and sending water south to Florida Bay, while improving resource resiliency in South Florida.

The CEPP North Phase is a component of the larger suite of projects within CEPP. CEPP restores water levels in the Central Everglades (Water Conservation Areas), which make up nearly half of the land mass in Broward County, and ultimately help deliver more water south to replenish our aquifers and nourish the Everglades and Florida Bay.

CEPP is being implemented in four phases: CEPP North, CEPP South, CEPP EAA, and CEPP New Water. CEPP North includes the construction of seven new structures and one new canal as well as the improvement of 18 miles of existing canals to improve the flow of water.

CONSTRUCTION BEGINS ON THE FINAL COMPONENT OF MAJOR BISCAYNE BAY RESTORATION PROJECT

On March 21, 2023, the SFWMD, the USACE, Miami-Dade County and many federal, state and local officials celebrated the groundbreaking of the Biscayne Bay Coastal Wetlands (BBCW) Project - Cutler Wetlands Component with the start of construction of the Cutler Flow Way Phase 1 Pump Station S-701. Once complete, the S-701 Pump Station will deliver fresh water from the C-1 Canal to slowly rehydrate coastal wetlands to Biscayne Bay.

This project will improve the health of Biscayne Bay and will aid in wetland rehydration - building coastal resiliency and improving water quality in this area of Miami-Dade County.

The Cutler Wetlands Component is the final component of the Biscayne Bay Coastal Wetlands Project. All components of the Biscayne Bay Coastal Wetlands Project will be complete by 2026.



Biscayne Bay Coastal Wetlands – Cutler Wetlands Groundbreaking on March 21, 2023. L-R: Miami-Dade County Parks, Recreation and Open Spaces Director Maria Nardi, Audubon Florida Director of Everglades Policy Kelly Cox, Chief of the Water Resources Coordination Division for Miami-Dade County DERM Craig Grossenbacher, Biscayne National Park Superintendent Penny Del Bene, Miami-Dade County Commissioners Danielle Cohen Higgins and Sen. René Garcia, Miami-Dade County Mayor Daniella Levine Cava, Cutler Bay Mayor Tim Meerbott, USACE - South Atlantic Division, Brig. Gen. Daniel Hibner, USACE - Jacksonville District Col. James Booth, Miami-Dade County Chief Bay Officer Irela Bague, SFWMD Director Drew Bartlett, SFWMD Chairman Chauncey Goss, DEP Secretary Shawn Hamilton, Biscayne Bay Commission Chairman Noah Valenstein and SFWMD Board Members Ben Butler and Charlie Martinez.

LAKE OKEECHOBEE WATERSHED RESTORATION PROJECT (LOWRP)

The SFWMD continues to implement the Lake Okeechobee Watershed Restoration Project (LOWRP) in accordance with its science plan in addition to supporting aboveground storage opportunities north of Lake Okeechobee.



SFWMD C38-S and C38-N drill rigs.



SUBMITTED PLAN FOR WATER STORAGE NORTH OF LAKE OKEECHOBEE

The SFWMD conducted a Feasibility Study for the North of Lake Okeechobee Storage Reservoir (LOCAR) Section 203 Study. The Feasibility Study explored opportunities for aboveground water storage north of Lake Okeechobee with an estimated water storage capacity of 200,000 acre-feet. The study area covers a large portion of the Lake Okeechobee Watershed north of Lake Okeechobee and will provide ecological benefits to the lake and the northern estuaries.

The purpose of this reservoir is to store excess water in the northern watersheds and release the excess water at times when it is beneficial for the region. This increased storage capacity will reduce the duration and frequency of both high and low water levels in Lake Okeechobee, which are harmful to Lake Okeechobee's ecology. With these improvements to Lake Okeechobee levels, the reservoir will help reduce the likelihood of harmful discharges from Lake Okeechobee to the northern estuaries.

MAJOR PROGRESS CONTINUES ON THE PICAYUNE STRAND RESTORATION PROJECT

Major components of the Picayune Strand Restoration Project in Collier County continue to advance. This project restores the natural water flow across 85 square miles in western Collier County that were drained in the early 1960s in anticipation of extensive residential development. The restoration involves plugging 48 miles of canals, removing 260 miles of crumbling roads, and constructing three major pump stations, all of which will restore more than 55,000 acres of natural habitat.

All three Picayune pump stations, along with the Miller Tram and road removal, are now complete. Construction of the Southwest Protection Feature and the plugging of canals are in progress.

The project will rehydrate drained wetlands in the Picayune Strand State Forest, enhance habitat for fish and wildlife, and restore the area's natural sheet flow. The project will also improve flows of water into Collier Seminole State Park, Ten Thousand Islands National Wildlife Refuge and the Rookery Bay National Estuarine Research Reserve.

The SFWMD and the USACE are working to complete this project, which is a part of the Comprehensive Everglades Restoration Plan (CERP). When complete, this project will help restore the ecosystem connectivity of the region.



Rehydration of wetlands at the Picayune Strand Restoration Project.

DISPERSED WATER MANAGEMENT PROJECTS

The SFWMD's continued commitment to proactively manage the regional water management system is exemplified by several operational Dispersed Water Management (DWM) Projects including the Brighton Valley DWM, Bluefield Grove Water Farm, Scott Water Farm, and the ALJO Four Corners Rapid Infiltration Project. These projects provide water storage on private property by holding stormwater or even pulling excess water from a regional canal system. In addition, these projects also help improve water quality and enhance plant and wildlife habitat. All four projects below are complete and operational.

Brighton Valley DWM Project

The SFWMD and Lykes Bros. Inc. celebrated the completion of the Brighton Valley DWM Project in Highlands County on September 17, 2020. This 8,100-acre project pumps excess water from the C-41A Canal and is estimated to store more than 11,000 acre-feet of water per year and remove approximately 3 metric tons of phosphorus and 27 metric tons of nitrogen annually before it enters Lake Okeechobee.

During its first three years of operation, the project continued to show improved results. In WY2023, the project stored 19,151 acre-feet (165% of anticipated storage) and removed 1.0 metric tons of total phosphorus and 19.9 metric tons of total nitrogen.

Bluefield Grove Water Farm

The SFWMD and Evans Properties, Inc. celebrated the completion of the Bluefield Grove Water Farm in St. Lucie County on August 18, 2021. The project can capture over 9 billion gallons of regional stormwater before it enters the St. Lucie Estuary and makes a difference in water quality.

This 6,100-acre water farm pumps excess water from the C-23 Canal and is estimated to store more than 28,000 acre-feet of water per year and removes approximately 5 metric tons of phosphorus and 25 metric tons of nitrogen annually from the C-23 Basin. In its first complete water year of operation, the project stored ~36,000 acre-feet, 127% more than anticipated, and removed 14.2 metric tons of total phosphorus and 70.4 metric tons of total nitrogen.

Scott Water Farm

The SFWMD and Evans Properties, Inc., along with many state and local partners, celebrated the completion of the Scott Water Farm in Indian River and Okeechobee counties on February 11, 2022. The project can store more than 9 billion gallons of local stormwater runoff and was designed to reduce harmful estuary discharges. Scott Water Farm is estimated to store more than 29,000 acre-feet of water per year.

The water farm retains onsite rainfall and pump water from the C-25 Canal and stores it on approximately 7,500 acres of privately-owned land. The project has the capability to reduce more than 3 metric tons of phosphorus per year and over 13 metric tons of nitrogen per year. In its first complete water year of operation, the project was able to store ~34,000 acre-feet, 127% of its anticipated storage volume, and removed 11.6 metric tons of total phosphorus and 69.8 metric tons of total nitrogen, greater than the expected reductions.

This project is a joint effort between the SFWMD, DEP, Florida Department of Agriculture and Consumer Services (FDACS), and Evans Properties, Inc.

ALJO Four Corners Rapid Infiltration Project

The SFWMD, DEP, FDACS, and ALJO Groves, L.C., celebrated the completion of the ALJO Four Corners Rapid Infiltration Project in Lee County on July 25, 2023. The project stores excess water from the local watershed to help support the balance of fresh and salt water in the Caloosahatchee Estuary. It will increase water and nutrient retention by operating a 22-acre rapid infiltration area, 97-acre seepage area, 3 inflow pump stations and associated water control structures and ditch improvements. It is the latest of several public-private partnerships to be utilized by the SFWMD to create immediate water storage and improve water quality.

During its first 6 months of operation, the project stored ~23,000 acre-feet, 115% of the expected storage. The project is expected to retain 39.3 metric tons of total nitrogen.



Brighton Valley DWM Project.



Bluefield Grove Water Farm Ribbon Cutting, Aug. 18, 2021. L-R: Former SFWMD Board Member Jacqui Thurlow-Lippisch, Evans Properties Project Manager HM Ridgely, SFWMD Director Drew Bartlett, Evans Properties CEO & President Ron Edwards, Rep. Toby Overdorf, St. Lucie County Vice Chair Frannie Hutchinson, and SFWMD Board Member Ben Butler.



Scott Water Farm Ribbon Cutting, Feb 11, 2022. L-R: St. Lucie County Chair Sean Mitchell, Indian River County Commissioner Laura Moss, SJRWMD Board Member Doug Bournique, Indian River County Vice Chairman Joe Earman, Evans Properties CEO & President Ron Edwards, Okeechobee County Vice Chairman David Hazellief, SFWMD Director Drew Bartlett, Former SFWMD Board Member Jacqui Thurlow-Lippisch, Rep. Toby Overdorf, SFWMD Board Member Charlette Roman, DEP Deputy Secretary Adam Blalock, County Coalition Chairperson Karson Turner and SFWMD Board Members Cheryl Meads and Ben Butler.



ALJO Four Corners Rapid Infiltration Project Ribbon Cutting on July 25, 2023. L-R: SFWMD Board Member Ben Butler, Joe Beale Sr., Joey Beale, SFWMD Chairman Chauncey Goss, FDACS Commissioner Wilton Simpson, SFWMD Director Drew Bartlett, DEP Deputy Secretary Adam Blalock, Sanibel Councilwoman Holly Smith, SFWMD Board Member Charlette Roman, Lee County Commission Chairman Brian Hamman and ALJO Representative and Former SFWMD Executive Director Henry Dean.

UNDERGROUND SEEPAGE WALL SUPPORTS EVERGLADES RESTORATION AND MITIGATES FLOODING



Groundbreaking of the CEPP New Water Seepage Barrier Wall, Dec. 12, 2022. L-R: SFWMD Board Member Ben Butler, Former USACE - Jacksonville District Lt. Col. Todd Polk, SFWMD Board Member "Alligator Ron" Bergeron, SFWMD Director Drew Bartlett, Superintendent of Everglades and Dry Tortugas National Parks Pedro Ramos, SFWMD Board Member Charlette Roman, Everglades Foundation CEO Eric Eikenberg and DEP Deputy Secretary Adam Blalock.

CEPP New Water Seepage Barrier Wall Project

Construction is nearing completion on the CEPP New Water Seepage Barrier Wall Project – the second phase of the underground wall that was built as part of the 8.5 Square Mile Area Seepage Wall Project. SFWMD completed the 2.3-mile first phase of the wall in 2022 and the project is demonstrating success. During heavy rain events, water that typically would flood communities remained inside Everglades National Park to support the park's historic hydrology.

The second phase adds five new miles of the underground seepage wall along the L-357 Levee to support restoration flows of water south and flood mitigation for communities.

The projects support ongoing restoration efforts to move water south through the Everglades and into Florida Bay while mitigating potential flooding impacts in communities outside of Everglades National Park. By supporting restoration flows of water through the Greater Everglades Ecosystem, the new underground wall supports the Combined Operating Plan (COP) and new infrastructure being put in place throughout the Everglades that delivers more water into Everglades National Park and Florida Bay – two key areas that need increased flows of water.



Groundbreaking of the CEPP New Water Seepage Barrier Wall, Aug. 20, 2021. L-R: Former USACE - Jacksonville District Lt. Col. Todd Polk, SFWMD Director Drew Bartlett, Congressman Carlos Gimenez, Lt. Governor Jeanette Nuñez, SFWMD Board Member "Alligator Ron" Bergeron, Miami-Dade County Commission Chairman Jose "Pepe" Diaz, Superintendent of Everglades and Dry Tortugas National Parks Pedro Ramos, Everglades Foundation CEO Eric Eikenberg and DEP Southeast District Director Jason Andreotta.



8.5 SMA Seepage Wall - Phase I Ribbon Cutting, Sept. 15, 2022. L-R: Superintendent of Everglades and Dry Tortugas National Parks Pedro Ramos, SFWMD Director Drew Bartlett, Miami-Dade County Commission Chairman Jose "Pepe" Diaz, SFWMD Board Members Charlette Roman, "Alligator Ron" Bergeron and Charlie Martinez, SFWMD Board Chairman Chauncey Goss, DEP Deputy Secretary Adam Blalock, Everglades Foundation CEO Eric Eikenberg and Former USACE - Jacksonville District Lt. Col. Todd Polk.



UNDERGROUND WALL IN ACTION

Heavy rain events demonstrate the success of the underground seepage wall.

On the left side of the photo, water is staying inside Everglades National Park.

On the right side of the photo, adjacent communities are dry, even after heavy rains.

THE KISSIMMEE RIVER RESTORATION PROJECT

Supporting the goals of one of the largest restoration projects in history

Construction on this Kissimmee River Restoration Project was completed in 2021, making it one of the largest successful restoration projects in history. This monumental restoration effort has reestablished the physical form of the Kissimmee River and floodplain, and reestablished flow to more than 40 miles of river channel and intermittent inundation of 25,000 acres of the river's floodplain.

The Kissimmee River and its Upper Chain of Lakes forms the headwaters of the Everglades, and the Kissimmee River Restoration Project is vital to restoring the Greater Everglades ecosystem.

The historic Kissimmee River once meandered for 103 miles through Central Florida. Its floodplain, reaching up to two miles wide, was inundated for long periods by heavy seasonal rains. Recurring and prolonged flooding impacted local residents and resulted in congressional authorization of the Central and Southern Florida Project, which included channelizing the Kissimmee River and floodplain.

Construction of the C-38 Canal achieved flood reduction benefits, but it also harmed the river-floodplain ecosystem. The decline of the ecosystem spurred federal, state and local partnerships to embark on one of the world's largest riverine restoration efforts: the Kissimmee River Restoration Project.



Kissimmee River Restoration Project Ribbon Cutting, July 29, 2021. L-R: Former USACE - Jacksonville District Col. Andrew Kelly, SFWMD Director Drew Bartlett, SFWMD Board Member Charlette Roman, Acting Assistant Secretary of the Army for Civil Works Jaime Pinkham, U.S. Department of Interior Assistant Secretary for Fish and Wildlife and Parks Shannon Estenoz, SFWMD Water Resources Director Lawrence Glenn, SFWMD Board Chairman Chauncey Goss, DEP Secretary Shawn Hamilton, County Coalition Chairperson Karson Turner, Former SFWMD Board Member Jacqui Thurlow-Lippisch, USACE Major General William (Butch) H. Graham, SFWMD Board Member Ben Butler and Rep. Toby Overdorf.



KISSIMMEE RIVER HEADWATERS REVITALIZATION SCHEDULE (HRS)

The completion of construction for the Kissimmee River Restoration Project in 2021 set the stage for gradual implementation of the new HRS, which regulates water levels in the Kissimmee River. The Kissimmee River HRS is the last piece of the Kissimmee River Restoration Project, which was jointly developed and constructed by USACE and the SFWMD over the last 30 years.

The HRS will be implemented in phases to hold more water in Lakes Kissimmee, Cypress and Hatchineha to allow historic flows to the Kissimmee River while maintaining the same level of flood protection.

Intensive monitoring will occur to assess the affects of modifying water levels. Phased updates to the management plan will allow successively higher stages in the Headwaters Lakes (Lakes Kissimmee, Cypress, and Hatchineha) until approximately 2026, when the HRS will be fully implemented.

The objective of the HRS is to provide sufficient water storage to reestablish historical (pre-channelization) flow patterns to the Kissimmee River through the increased flow capacity for the S-65 structure. The higher stages allowed by the schedule are also expected to improve littoral zone habitat in the lakes.

HRS INCREMENT 1 DETAILS:

- ▶ Increment 1 is the first phase of the HRS.
- ▶ Proposed as a deviation to the current Interim Regulation Schedule.
- ▶ Development started in 2021 and it is anticipated to be approved in 2024.
- ▶ Increment 1 proposes raising the regulation schedule elevation approximately 0.5 feet higher than the current regulation schedule in summer and winter.
- ▶ After Increment 1 is approved and implemented, it will remain in effect until a subsequent increment is implemented, or upon implementation of the full HRS.

RESILIENCY EFFORTS

The SFWMD is committed to ensuring the resilience of South Florida's water resources and ecosystems, today and in the future.

The SFWMD continues to work with local governments, stakeholders and communities in the region to address the impacts of a changing climate on the SFWMD's critical assets, water management operations, water supplies and water resources.

As a key part of its resiliency strategy, the SFWMD evaluates the status of its flood control infrastructure and advances adaptation strategies necessary to continue providing flood protection for South Florida under current and future conditions. Advanced flood vulnerability assessments, supported by robust integrated hydrologic modeling efforts that are part of the SFWMD's Flood Protection Level of Service (FPLOS) Program, provide the basis for the compilation of a list of priority resiliency projects, with the goal of increasing community resiliency to flooding and sea level rise impacts throughout South Florida.



Forward pump assist gravity structure to discharge stormwater at S-26, Miami-Dade County.



S-59 structure, Osceola County.



Miami skyline over the MacArthur Causeway and Biscayne Bay.

RESILIENCY PROGRAM HIGHLIGHTS

Water and Climate Resilience Metrics

Advancing relevant data and science on observed changing conditions and future projections to support resiliency planning strategies, and making it available to the public and partner agencies.

Regional Consistency in Assessing Vulnerability and Adaptation Planning

Advancing tools, techniques, and models to support local and regional vulnerability assessments and adaptation planning, through continuous implementation of the Flood Protection Level of Service (FPLOS) Program, water supply plans, and ecosystem restoration efforts.

Sea Level Rise and Flood Resiliency Plan

Characterizing a comprehensive list of priority resiliency projects with the goal of reducing the risks of flooding, sea level rise, and other climate impacts on water resources and increasing community and ecosystem resiliency in Central and Southern Florida.

Resiliency Projects Implementation

Implementing relevant, funded projects to enhance infrastructure to current and future conditions, improve storage and conveyance capacity, increase operational flexibility, maximize the integration of nature-based solutions, enhance coastal wetlands and other ecosystem services, along with piloting innovative technologies that aid in protecting water systems in Central and Southern Florida.

Resiliency Coordination Forum

Promoting regional coordination and partnership opportunities by holding proactive discussions, leveraging technical knowledge and exchanging information, and fostering a constructive environment to discuss tangible asset-level solutions and support decision making on water resource management.

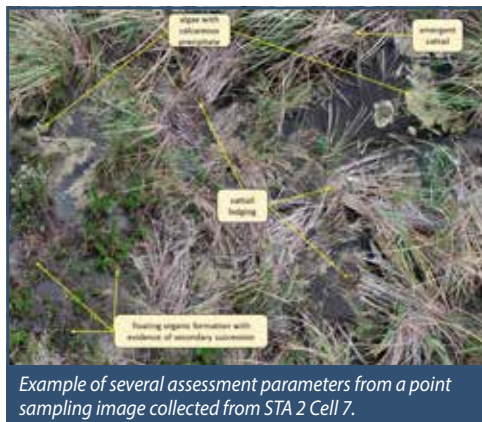
SCIENCE PLAN STUDIES RECENTLY COMPLETED

The Science Plan was developed by the SFWMD and its state and federal partners to support Restoration Strategies and the design, operation, and management of STAs.

Three scientific studies were recently completed to support these efforts.

Tussock Study

This study evaluated methods to locate tussocks in the Everglades STAs and determined factors that contribute to their formation. Tussocks are floating wetlands formed when the buoyancy of aquatic vegetation exceeds the capacity of their roots and soil to hold them in place, which typically occurs when water levels are too deep for too long and the soils and roots are shallow.



Example of several assessment parameters from a point sampling image collected from STA 2 Cell 7.

In the STAs, tussocks are primarily made up of cattail, and can disrupt surrounding vegetation communities, increase turbidity (cloudiness or opaqueness; usually with suspended sediments), reduce light in the water column, and block downstream flow structures, all resulting in decreased phosphorus retention.

Using an unmanned aerial vehicle (i.e., drone), high resolution aerial images of STA emergent aquatic vegetation (EAV; wetland plants that extend above the water surface) cells were taken to document tussock coverage. Historical environmental data from the STAs were analyzed to identify predictors of tussock formation across EAV cells. A buoyancy model was developed that could provide guidance on mechanisms of tussocks formation and identify potential management practices to minimize the spread of tussocks. Regular use of drones to survey EAV cells could provide early detection, allowing management activities to prevent further tussock expansion.

SAV Resilience Study

This study investigated the effects of operational and environmental conditions on the health of submerged aquatic vegetation (SAV) in the Everglades Stormwater Treatment Areas (STAs). Evaluation of literature and past SAV surveys in the STAs indicated water depth and soil conditions can affect SAV's ability to recover from or adjust to change. Sub-studies evaluated soil type (mineral or organic), phosphorus loading, water depth, and herbivory (the eating of plants) in the field and in mesocosms.

SAV grown in mesocosms on marl soils had similar growth rates to SAV grown on farm muck soils indicating shallow accumulations of marl soils do not prevent SAV growth.

In another controlled experiment, the density of muskgrass increased as phosphorus inputs increased, which resulted in lower dissolved oxygen and reduced light conditions at the soil surface. Phosphorus removal occurred for all combinations of external and internal phosphorus loads except one, which was low external phosphorus load and high internal phosphorus load from phosphorus rich soils, demonstrating the importance of internal phosphorus loads. No collapse of SAV was observed by the end of this mesocosm study; however, anoxic (no or little oxygen) conditions were associated with reduced phosphorus removal and stress to SAV.

Results of soil drying studies suggest temporary low water levels may enhance germination of some SAV species such as muskgrass but not others like southern naiad, which is an important rooted SAV species. Field soil conditions in a series of enclosures found that muskgrass and spiny naiad grew after low water conditions, but southern naiad and Illinois pondweed did not.

A study of the influence of SAV herbivory by large-bodied fish added to some enclosures of mixed SAV (southern naiad and spiny naiad) resulted in decline of southern naiad.



Enclosure used for herbivory experiments.

RESTORATION STRATEGIES

The design and construction of Restoration Strategies projects is ongoing with completion of all projects expected by December 2025. In WY2023, three milestones were completed on three projects: (1) L-8 Flow Equalization Basin (FEB) Long-term Operations, (2) G-341 Related Improvements, and (3) C-139 FEB. The L-8 FEB project commenced long-term operations in December 2022. This transitioned the FEB from a multi-use function, including providing water to the Loxahatchee River, to being fully dedicated to the Everglades Stormwater Treatment Areas.



G-341 conveyance and related improvements; segment #4 construction.

Advective Transport Study

One potential source of phosphorus loading is upward seepage from groundwater into the Everglades Stormwater Treatment Areas (STAs). To determine if this potential source is important, the recently completed Advective Transport Study evaluated the influence of vertical advection (upward seepage) from groundwater on total phosphorus within the outflow regions of STA cells.

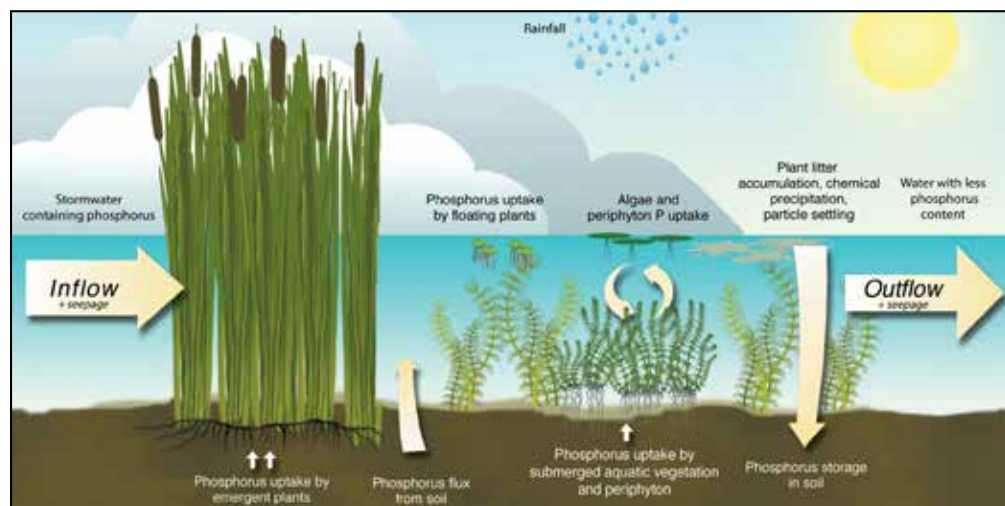
A literature survey of groundwater influences in wetlands found seepage contributes a small percentage to the overall water balance, typically less than 6%.

Nutrient and water budget analyses of outflow regions of STA cells did not find any indication that seepage affected total phosphorus in STA outflow. A simple model to evaluate the influence of advection on total phosphorus in an STA found marginal effects of increased groundwater total phosphorus concentration on the total phosphorus in the STA water column.

Attempts to reduce upwelling advection by increasing cell water depths or reducing seepage canal water levels will not affect STA outflow total phosphorus concentrations.

EVERGLADES STORMWATER TREATMENT AREAS (STAs)

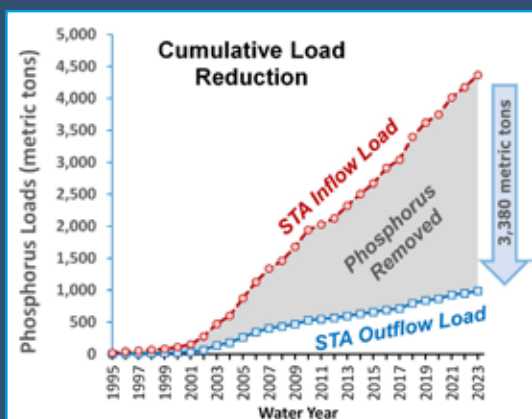
STAs are large, constructed wetlands with emergent and aquatic plants that remove and store nutrients.



THE ROLE OF VEGETATION

The plants remove and store nutrients such as phosphorus that are found in stormwater runoff before it is moved out of the STA and into the Everglades. SFWMD has built 62,000 acres of STAs to restore Everglades water quality.

- ▶ Provides surface for periphyton/microbial colonization and activity.
- ▶ Nutrients are retained through uptake, settling and burial.
- ▶ Provides nutrient storage.



Cumulative phosphorus load reduction of all STAs combined over the last 28 years.

WHY FLORIDA BUILT STAs

- ▶ The State of Florida has invested more than \$3 billion in water quality improvements, including the construction of STAs to treat water before it reaches the Everglades.
- ▶ STAs remove excess nutrients in the water, such as fertilizer, through plant growth and accumulation of dead plant material in the soil. These excess nutrients, if not removed, can cause undesirable plants such as cattails to grow in the Everglades, crowding out native wetland plants and degrading the ecosystem.
- ▶ Nutrient concentrations, particularly phosphorus, were naturally ultra-low in the Everglades. The STAs have dramatically reduced the concentrations of phosphorus in Everglades-bound water.
- ▶ STAs are continually monitored and maintained to maximize water treatment capacity.
- ▶ SFWMD has also constructed shallow storage features called flow equalization basins (FEBs) that further optimize the ability of Everglades STAs to treat water.

STA SUCCESSES TO DATE

- ▶ Treated approximately 26.7 million acre-feet of water or 8.7 trillion gallons.
- ▶ Retained over 3,400 metric tons of total phosphorus.
- ▶ 77.4% total phosphorus Load Reduction.

Water Year 2023 Performance

In WY2023, the Everglades STAs treated approximately 1.1 million acre-feet of water and retained 160 metric tons of total phosphorus (TP), resulting in an 83% total phosphorus load reduction, and produced an outflow total phosphorus flow-weighted mean concentration (FWMC) of 25 micrograms per liter ($\mu\text{g/L}$).

More than 43,000 acre-feet of the inflow volume this water year came from Lake Okeechobee, of which approximately 27,000 acre-feet were regulatory releases, while approximately 17,000 acre-feet were delivered either as environmental releases for the Everglades or as supplemental water to maintain cell water levels at target stages in all the Everglades STAs.

The outflow total phosphorus flow-weighted mean concentration and percent inflow total phosphorus load retained are shown in the table below. The consistently good annual treatment performance in STA-3/4 is attributed, in part, to it receiving low inflow total phosphorus concentrations over its period of record (101 micrograms per liter) compared to other Everglades STAs.

| STA | Outflow FWMC ($\mu\text{g/L}$) | Inflow TP Load Retained |
|---------|----------------------------------|-------------------------|
| STA-1E | 26 | 82% |
| STA-1W | 20 | 89% |
| STA-2 | 29 | 72% |
| STA-3/4 | 16 | 84% |
| STA-5/6 | 40 | 87% |

What is a METRIC TON?

A metric ton is a unit of weight equal to 1,000 kilograms or approximately 2,205 pounds. In the SFER, it is commonly used to reflect reporting results for nutrient loads.



Everglades Stormwater Treatment Area.

PROTECTING OUR ENVIRONMENT BY MANAGING INVASIVE PLANTS

The effective control of invasive plants is an important part of the SFWMD's mission and our continued ability to protect South Florida's natural resources.

Invasive plants are damaging to South Florida's ecosystems. They often result in the loss of habitat for native flora and fauna, change how water flows across the landscape, shift natural fire conditions, and degrade public lands. Floating and submerged vegetation can also clog waterways and water control structures that move water for flood protection.

To protect communities from flooding and to preserve our natural ecology, the SFWMD works to manage nuisance and invasive species across South Florida. Using an "integrated pest management" or IPM approach includes the following:

- ▶ Prescribed burns
- ▶ Hydrologic restoration
- ▶ Physical (mechanical) removal
- ▶ Selective herbicide application
- ▶ Other natural predators (biocontrol) like Lygodium moth

The use of the IPM approach provides better results than any one method could achieve on its own.

INVASIVE PLANT CONTROL IS A BIG PART OF EVERGLADES RESTORATION

The SFWMD has initiated several major restoration projects via removal of invasive plants including the following:

- ▶ Picayune Strand Restoration Project
- ▶ Loxahatchee National Wildlife Refuge
- ▶ Sam Jones - Abiaki Prairie Mitigation Project

The SFWMD has one of the nation's largest invasive plant management programs. Over 80 species of non-native, invasive plants including Brazilian pepper, melaleuca trees and aquatic vegetation such as hydrilla and water hyacinth. Successfully combating these invasive species is critically important to the SFWMD's strategic goals on advancing Everglades restoration and improving water quality.



Mechanical harvesting of floating plants.



SFWMD scientist studying effects of the Neomusotima Moth Larva on Lygodium (Old World Climbing Fern).

Integrated Pest Management Proves Effective at Managing Invasive Species: A Case Study on Melaleuca

For over 30 years, SFWMD's melaleuca management program has systemically cleared invasive melaleuca from Lake Okeechobee and the Everglades, and land managers are able to maintain these areas with very low melaleuca presence year after year.

The success of this program is largely attributed to sustained funding, close inter-agency coordination and a lot of dedication – all of which contribute to the sharing of new information and technology, improved regional strategic planning and increased public awareness to maintain and protect our public lands.



BEFORE

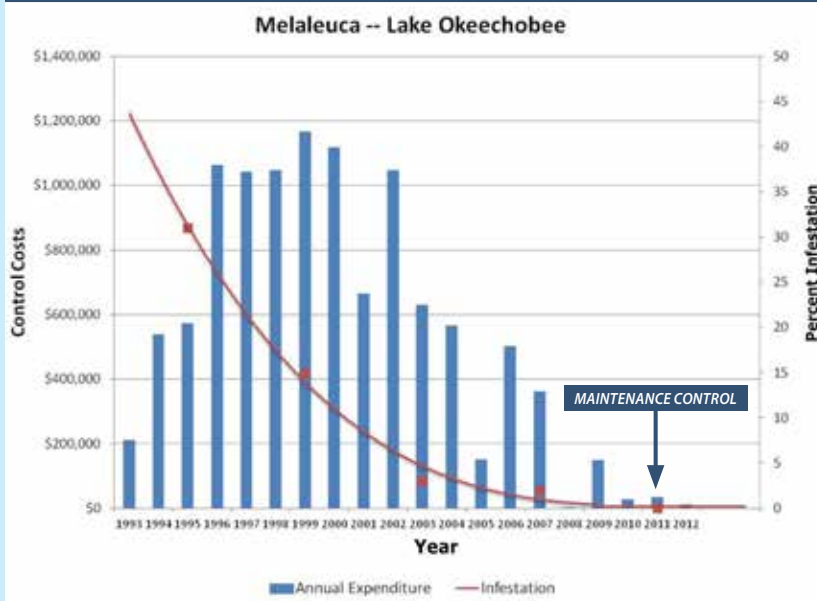
Melaleuca Infested – 1993.



AFTER

Maintenance Control – 2011.

EXPENDITURES AND CONTROL OVER TIME



PROTECTING OUR ENVIRONMENT BY MANAGING INVASIVE SPECIES

Successful Early Detection Rapid Response Efforts



Argentine black and white tegu (photo by University of Florida).

Comprehensive efforts have prevented the establishment and/or spread of several species such as sacred ibis, Nile crocodiles, Asian water monitor, red swamp crayfish, and one population of panther chameleons.

The Everglades Invasive Reptile and Amphibian Monitoring Project provides early detection rapid response efforts for invasive reptiles in the Everglades region, including Comprehensive Everglades Restoration Plan (CERP) project lands.

To date, surveys and trapping efforts have resulted in the removal of over 5,800 invasive reptiles and amphibians within the SFWMD's boundaries. In FY2023, the Everglades Invasive Reptile and Amphibian Monitoring Project continued to increase focus on detecting and removing priority species, including adapting established survey routes to address emerging needs. Two routes, modified during the previous fiscal year to respond to reports of Argentine black and white tegus on the L-67 levees and a sighting along a Lake Worth Drainage District canal near the Arthur R. Marshall Loxahatchee National Wildlife Refuge, were continually surveyed. In addition to visual surveys, camera surveillance was incorporated at the location of these sightings.

Partners in the Everglades Cooperative Invasive Species Management Area participated in ongoing rapid response workdays to eradicate invasive black mangrove from mangroves adjacent to Fairchild Tropical Botanic Gardens in Miami-Dade County and carried out monitoring workdays for missiongrass in Palm Beach County and Wright's nutrush in Broward County. The partners also carried out organized northern African python removal surveys during National Invasive Species Awareness Week.

In addition, removal programs focused on eradicating the local populations of spectacled caimans from Florida have been undertaken, and at present, maximum control of this species is thought to be achieved.

HOW THE PUBLIC CAN HELP

Invasive plants and animals are often introduced into our environment by people. Here are four ways you can help:

- ▶ Never dump unwanted pets or plants
- ▶ Remove invasive plants from your yard and consider landscaping the Florida-Friendly Way
- ▶ Understand local laws and regulations for owning plants and animals that may impact our environment
- ▶ If you come across an invasive species, call 888-Ive-Got1 (888-483-4681) or report it using the IveGot1 app



SFWMD python contractor Kevin Pavlidis (photo by Anthony Flanagan).

TAKING AGGRESSIVE ACTION TO REMOVE INVASIVE BURMESE PYTHONS

To date, over 13,300 Burmese pythons have been removed from the Everglades and the surrounding rural areas.

Pythons are non-native, invasive snakes that pose direct threats to native wildlife. Pythons cause significant impacts to native prey, such as marsh rabbits, deer, wading birds and even alligators. Their aggressive predation negatively impacts the food sources of native species including panthers, raptors, alligators, and bobcats.

A NEW DESTRUCTIVE INVADER, THE ASIAN SWAMP EEL

Non-native Asian swamp eels pose a unique risk to Florida ecosystems because, unlike native fishes, they tolerate loss of surface water. This enables them to prey on species like crayfish and small fishes when native species need the prey for breeding and population growth. Records from monitoring programs and online databases were used to reconstruct swamp eel presence across Florida. From 1997 to 2007, populations in southern Florida remained restricted to canals. From 2007 to 2017 the initial spread across southern Everglades National Park proceeded slowly and covered ~1,500 square kilometers (km²) of southern Florida. From 2017 to 2022, the rate of spread increased as swamp eels spread west and north (~5,800-km² range). Swamp eels are currently spreading unchecked across Florida. Their establishment and ecological impacts are a threat to the restoration of the Everglades.



Asian swamp eel (photo by Florida Fish and Wildlife Conservation Commission).

NORTHERN EVERGLADES AND ESTUARIES PROTECTION PROGRAM (NEEPP)

NEEPP promotes a comprehensive approach to protect the Lake Okeechobee Watershed, St. Lucie River Watershed, and Caloosahatchee River Watershed.

Using a combination of research, monitoring, source controls and construction projects, the NEEPP works to restore and protect surface water resources by addressing water quality and storage in the natural system.

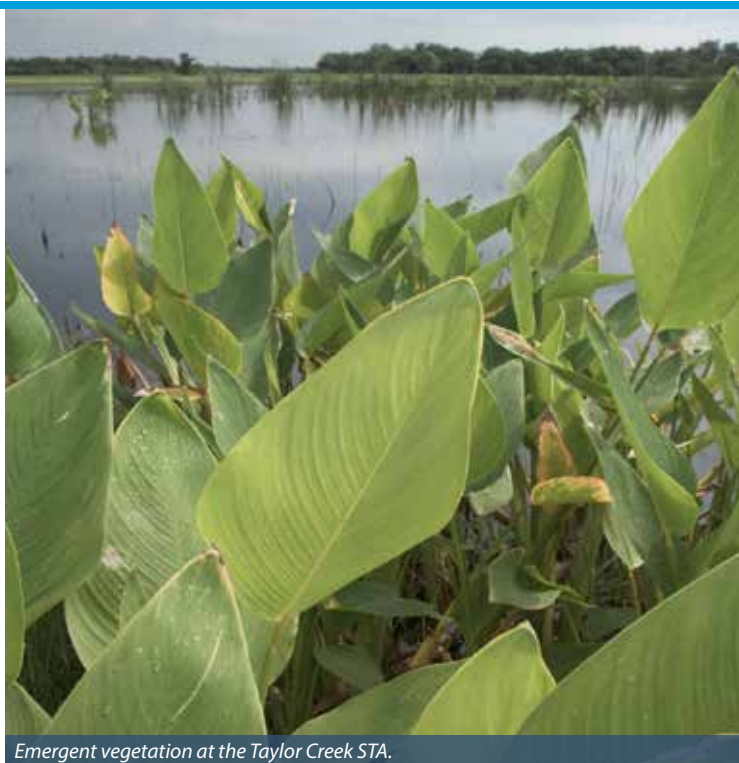
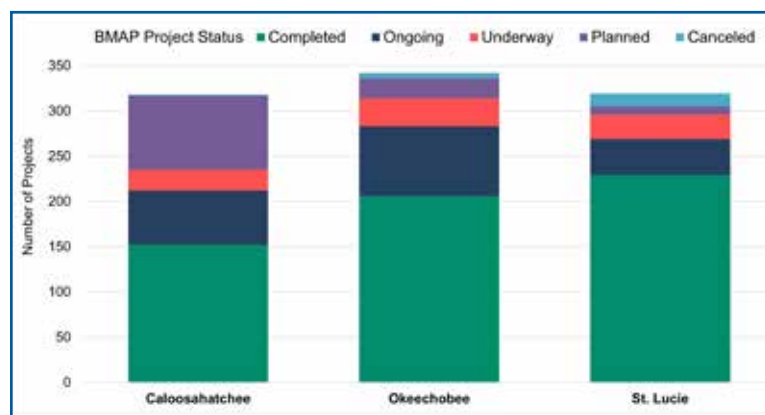
The Coordinating Agencies are jointly responsible for implementing NEEPP, each with specific areas of responsibility.

- ▶ The Florida Department of Environmental Protection (DEP) is the lead on water quality protection measures through the Basin Management Action Plans.
- ▶ The South Florida Water Management District (SFWMD) is the lead on hydrologic improvements pursuant to the watershed protection programs.
- ▶ The Florida Department of Agriculture and Consumer Services (FDACS) is the lead on agricultural interim measures, best management practices, and other measures.

NEEPP requires the watershed protection programs to improve the quality, quantity, timing and distribution of water in the Northern Everglades ecosystem. The programs are watershed specific and comprised of research and monitoring, development and implementation of best management practices, refinement of existing regulations, and structural and nonstructural projects. They are driven by DEP's Basin Management Action Plans, and integrated with DEP and FDACS programs to control nutrient sources at the local, subregional, and regional levels.

BASIN MANAGEMENT ACTION PLAN (BMAP) UPDATES SHOW ONGOING PROGRESS

Progress continues on the DEP Basin Management Action Plans designed to implement nutrient reductions established by the Total Maximum Daily Loads (TMDLs) for the Northern Everglades watersheds (see graph below). The 2022 Statewide Annual Report (STAR) on Total Maximum Daily Loads, Basin Management Action Plans, Minimum Flows or Minimum Water Levels, and Recovery or Prevention Strategies details progress made through December 31, 2022 on implementation of the Northern Everglades and Estuaries Protection Program Basin Management Action Plans.



Emergent vegetation at the Taylor Creek STA.

What is an ACRE-FOOT?

An acre-foot is a volume of liquid needed to cover 1 acre to a depth of one foot. In the SFER, it is commonly used to express large amounts of water (1 acre-foot = 43,560 cubic feet).

LAKE OKEECHOBEE WATERSHED PROTECTION PLAN HIGHLIGHTS

Progress Towards Water Quality and Storage Goals

Twenty-four (24) projects were operational in WY2023 and provided approximately:

- ▶ 80,627 acre-feet of storage
- ▶ 29.7 metric tons total phosphorus retention
- ▶ 161 metric tons total nitrogen retention
- ▶ More than 53,000 acres of hydrated wetlands

NORTHERN EVERGLADES STORMWATER TREATMENT AREAS (STAs)

The SFWMD operates three STAs in the Lake Okeechobee Watershed, including the Taylor Creek STA, Nubbin Slough STA, and Lakeside Ranch STA. These important projects treat water from the Taylor Creek/Nubbin Slough Subwatershed and reduce overall nutrient loading to Lake Okeechobee. Collectively, these projects:

- ▶ Included approximately 2,600 acres of treatment wetlands
- ▶ Treated more than 48,000 acre-feet of pumped inflow in WY2023
- ▶ Retained approximately 17.6 metric tons of total phosphorus and 38.1 metric tons of total nitrogen in WY2023



Construction on El Maximo Ranch.

LAKE OKEECHOBEE WATERSHED PROTECTION PLAN HIGHLIGHTS

Advancing Watershed Construction Projects

Partin Family Ranch: This public-private partnership stores direct rainfall on 3,000 acres near Lake Gentry. Design began in 2023, and the project is expected to be operational in WY2024.

El Maximo Ranch: Construction continued at this 7,000-acre treatment and attenuation project in the Lower Kissimmee Subwatershed. Construction began in August 2022, and the project is expected to be operational in 2024.

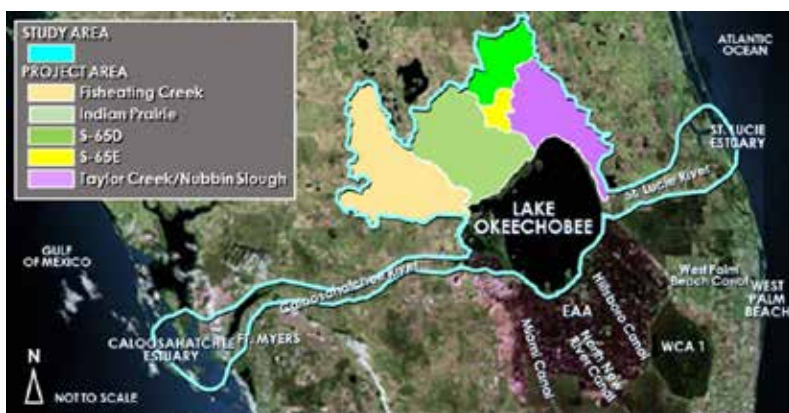
Lower Kissimmee Basin Stormwater Treatment Area (STA): Treatment project at the confluence of the S-154 and S-154C structures and the Kissimmee River. Design was initiated in 2022, and construction is expected to commence in 2025.

Brady Ranch & Grassy Island: Two flow equalization basins (FEBs) to capture peak stormwater flow and hydrate adjacent STAs for improved nutrient removal. Conceptual design is underway and construction is expected to commence in 2025.

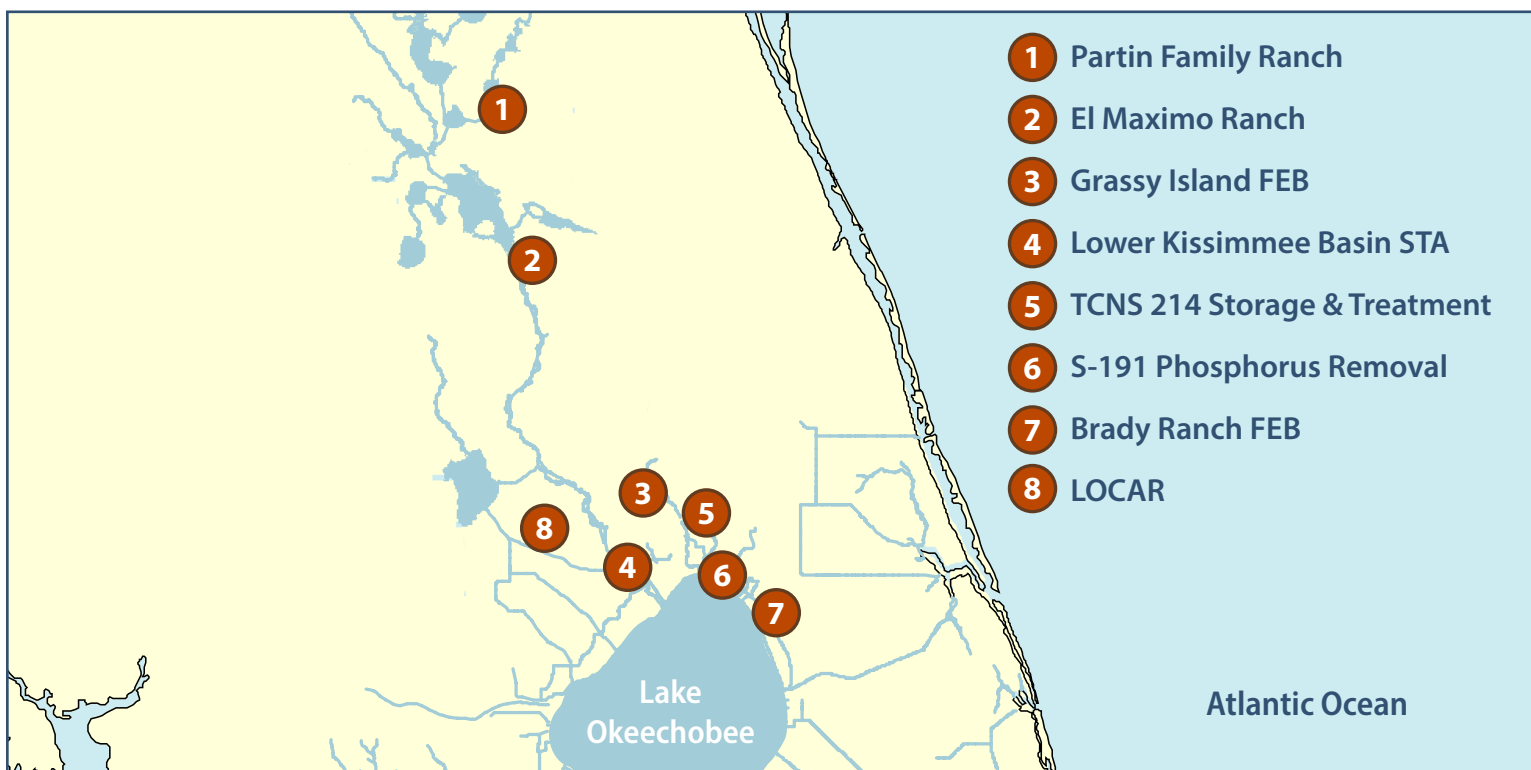
S-191 Phosphorus Removal: Innovative technology to reduce total phosphorus loading from the S-191 Basin to Lake Okeechobee. Construction began in 2023, and operations are expected to start in WY2024.

Taylor Creek Nubbin Slough (TCNS) 214 Storage & Treatment: Project to capture and treat excess stormwater from Williamson Ditch in a shallow water storage feature. Design began in 2022.

North of Lake Okeechobee Component A Reservoir (LOCAR): The feasibility study was completed and submitted to the Department of the Army to explore opportunities for aboveground water storage north of Lake Okeechobee with an estimated capacity of 200,000 acre-feet.



LOCAR project study area.



Lake Okeechobee watershed construction projects.

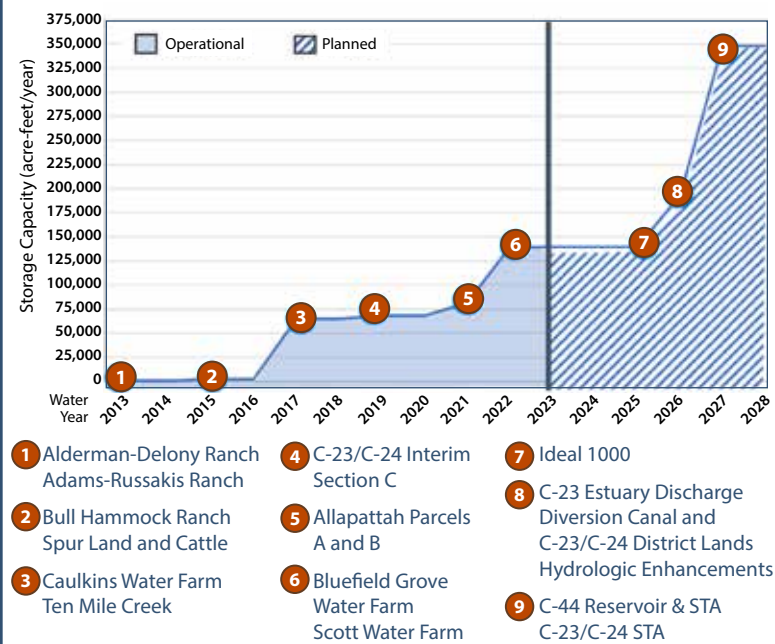
ST. LUCIE WATERSHED PROTECTION PLAN HIGHLIGHTS

Progress Towards Future Storage Goals

Sixteen (16) projects were operational in WY2023 and provided approximately:

- ▶ 128,371 acre-feet of water storage
- ▶ 42 metric tons total phosphorus retention
- ▶ 234 metric tons of total nitrogen retention

Increased Project Storage Capacity In The St. Lucie River Watershed



St. Lucie watershed construction projects.

ST. LUCIE WATERSHED PROTECTION PLAN HIGHLIGHTS

Advancing Watershed Construction Projects

HIGHLIGHTED OPERATIONAL PROJECTS

1. Allapattah Parcels A and B

- Restores 6,621 acres of wetlands
- C-23 Basin
- Operational since FY2021

2. Bluefield Grove Water Farm

- 6,104-acre above ground impoundment (AGI)
- C-23 Basin
- Operational since FY2022

3. C-23/C-24 Interim Section C

- Retains rainfall and excess water pumped from the C-23 Canal on 297 acres
- C-24 Basin
- Operational since FY2019

4. C-44 Reservoir and STA

- Captures rainfall on 3,400-acre reservoir and 6,300-acre STA
- C-44 Basin
- Operational Testing and Monitoring Period since FY2022

HIGHLIGHTED FUTURE PROJECTS

5. C-23/C-24 District Lands Hydrologic Enhancements

- Study evaluating the current site condition benefits with the intention of future hydrologic enhancements
- C-24 Basin
- Status: Planning

6. Ideal 1000

- Improvements to previous water farming pilot project
- C-24 Basin
- Status: Planning

7. C-25 Reservoir and STA

- Capture water from the C-25 Canal on 1,276 acres
- C-25 Basin
- Status: Design

8. C-23/C-24 North and South Reservoirs and STA

- Capture rainfall on 7,110-acre reservoirs and 2,568-acre STA
- C-24 and C-23 Basins
- Status: STA-Construction, Reservoirs-Design

9. C-23/C-44 Estuary Discharge Diversion Canal

- Directs excess water from the C-23 Canal through the C-44 Reservoir & STA and into the C-44
- C-23 and C-44 Basins
- Status: Construction

CALOOSAHATCHEE RIVER WATERSHED PROTECTION PLAN HIGHLIGHTS

Progress Towards Water Quality and Storage Goals

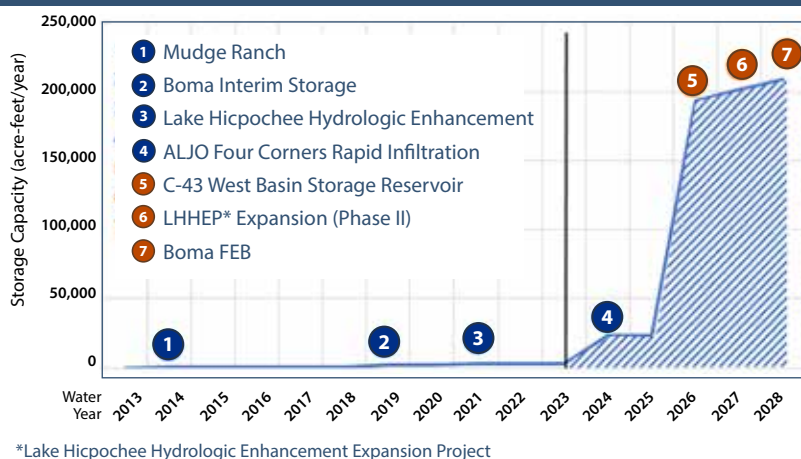
Four (4) projects were operational in WY2023 and provided approximately:

- ▶ 4,989 acre-feet of storage
- ▶ 5.5 metric tons total phosphorus retention
- ▶ 29.3 metric tons total nitrogen retention

The total storage goal for the Caloosahatchee River Watershed in the Caloosahatchee Watershed Protection Plan is 400,000 acre-feet.

In WY2023, total storage was 4,989 acre-feet. By WY2028, total storage is estimated to be 210,256 acre-feet.

Increased Project Storage Capacity In Caloosahatchee River Watershed



CALOOSAHATCHEE RIVER WATERSHED PROTECTION PLAN HIGHLIGHTS

Advancing Watershed Construction Projects

HIGHLIGHTED OPERATIONAL PROJECTS

1. Mudge Ranch

- DWM public-private partnership
- Passive storage project
- West Caloosahatchee Basin
- Operational since WY2014

2. Boma Interim Storage

- Temporary storage until construction begins for the Boma FEB
- East Caloosahatchee Basin
- Operational since WY2019

3. Lake Hicpochee Hydrologic Enhancement Project (Phase I)

- Enhances hydration of the historic Lake Hicpochee
- Phase I captures excess surface water from the C-19 canal
- East Caloosahatchee Basin
- Operational since WY2021

4. ALJO Four Corners Rapid Infiltration

- 366-acre aboveground impoundment, including 22 acres of rapid infiltration basins
- West Caloosahatchee Basin
- Operational since WY2024

HIGHLIGHTED FUTURE PROJECTS

5. Roadrunner C-43 Nutrient Load Reduction Project

- Alum treatment for water diverted from C-43 Canal for nutrient load reduction
- East Caloosahatchee Basin
- Status: Planning

6. C-43 Water Quality Treatment and Testing Project – Phase II, Test Cells

- Study evaluating the effectiveness of constructed wetland treatment systems in reducing total nitrogen at a test scale
- East Caloosahatchee Basin
- Status: Construction

7. C-43 West Basin Storage Reservoir (WBSR)

- Storage to reduce harmful discharges to the Caloosahatchee River Estuary during the wet season and provide freshwater flow during the dry season
- West Caloosahatchee Basin
- Status: Construction

8. C-43 WBSR – Water Quality Component

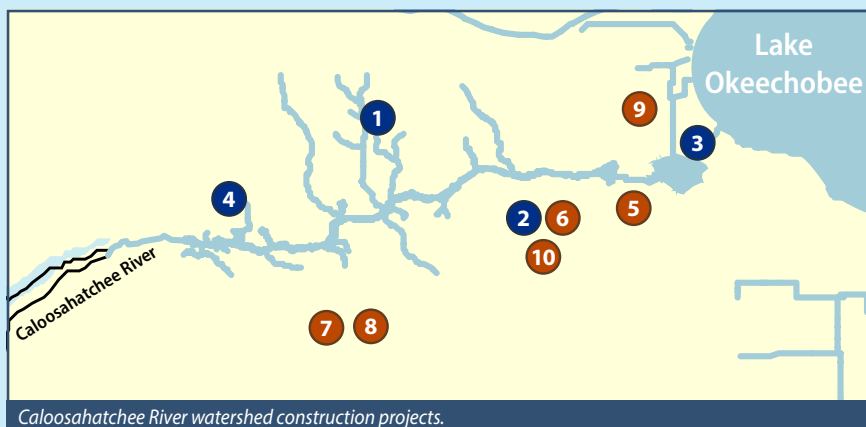
- Inline alum injection system at the C-43 WBSR project
- West Caloosahatchee Basin
- Status: Design

9. Lake Hicpochee Hydrologic Enhancement Expansion Project (Phase II)

- Phase II includes a new 2,200-acre FEB and a pump station to withdraw water from the C-43 canal
- East Caloosahatchee Basin
- Status: Design

10. Boma Flow Equalization Basin (FEB)

- Storage to reduce harmful discharges to Caloosahatchee River Estuary
- East Caloosahatchee Basin
- Status: Design





Great Heron at Everglades National Park.

REQUIRED REPORTING FULFILLED BY 2024 SFER

The Florida Statutes (F.S.) contain specific reporting requirements that the SFER fulfills.

Consolidated Water Management District Annual Report

373.036(7), F.S., requires a consolidated report on the management of water resources be submitted annually. The 2024 SFER fulfills this requirement for SFWMD.

Volume I

- Appendix 1-2 provides the Everglades restoration report.
- Appendix 1-3 provides the Everglades Trust Fund expenditure report.
- Chapters 3, 4, 5A, 5B, 5C, 6, and 7 and associated appendices provide an update on Everglades progress.
- Chapters 8A, 8B, 8C, and 8D provide the Northern Everglades and Estuaries Protection Program annual progress report.

Volume II provides an annual update on the project status during Fiscal Year 2023 and planning for Fiscal Year 2024 for 10 annual reports required of all water management districts.

Volume III of the 2024 SFER provides an annual update on environmental restoration projects to comply with permits issued by DEP. Currently, annual updates are provided for five projects under construction, 23 projects operating, and two projects operating that also had a phase or component under construction during the water year.

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Learn more about Everglades restoration projects in South Florida by signing up for the District's emails. Visit **SFWMD.gov** and click on "Subscribe for Email Updates."

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