

COMMITTEE MEETING EXPANDED AGENDA**APPROPRIATIONS SUBCOMMITTEE ON THE
ENVIRONMENT AND NATURAL RESOURCES****Senator Bradley, Chair
Senator Book, Vice Chair****MEETING DATE:** Wednesday, January 11, 2017**TIME:** 10:00 a.m.—12:00 noon**PLACE:** 301 Senate Office Building**MEMBERS:** Senator Bradley, Chair; Senator Book, Vice Chair; Senators Braynon, Hukill, Hutson, Mayfield, and Stewart

TAB	BILL NO. and INTRODUCER	BILL DESCRIPTION and SENATE COMMITTEE ACTIONS	COMMITTEE ACTION
Workshop - Discussion and testimony relating to the options for reducing harmful Lake Okeechobee discharges and Everglades restoration:			
1	Presentation on Lake Okeechobee Discharges by Senate Staff		Presented
2	Presentation by the U.S. Army Corps of Engineers		Presented
3	Presentation by the Department of Environmental Protection		Not Considered
4	Presentation by South Florida Water Management District		Presented
5	Presentation of the findings of the University of Florida Study on Options to Reduce High Volume Freshwater Flows to the St. Lucie and Caloosahatchee Estuaries and Move More Water from Lake Okeechobee to the Southern Everglades		Presented
6	Presentation by Environmental Advocates		Not Considered
7	Presentation by Representatives of Agricultural Landowners in the Everglades Agricultural Area		Not Considered
8	Presentation by Environmental Engineering and Water Resources Management Scientist		Presented
9	The committee intends to provide 30 minutes for public comment, time permitting. Each speaker's time may be limited based on time restrictions.		Discussed

Other Related Meeting Documents

COMMITTEE MEETING EXPANDED AGENDA

Appropriations Subcommittee on the Environment and Natural Resources
Wednesday, January 11, 2017, 10:00 a.m.—12:00 noon



Lake Okeechobee Discharges

Appropriations Subcommittee on the
Environment and Natural Resources

Senator Bradley, Chair

January 11, 2017

Ashley Istler

Environmental Preservation and Conservation Committee

CENTRAL & SOUTHERN FLORIDA PROJECT

Historic flow

From about 5,000 years ago until the early 1900s, fresh water covered the lower half of Florida, flowing unimpeded from the Kissimmee River into Lake Okeechobee, then south through the Everglades to Florida Bay.



Current flow

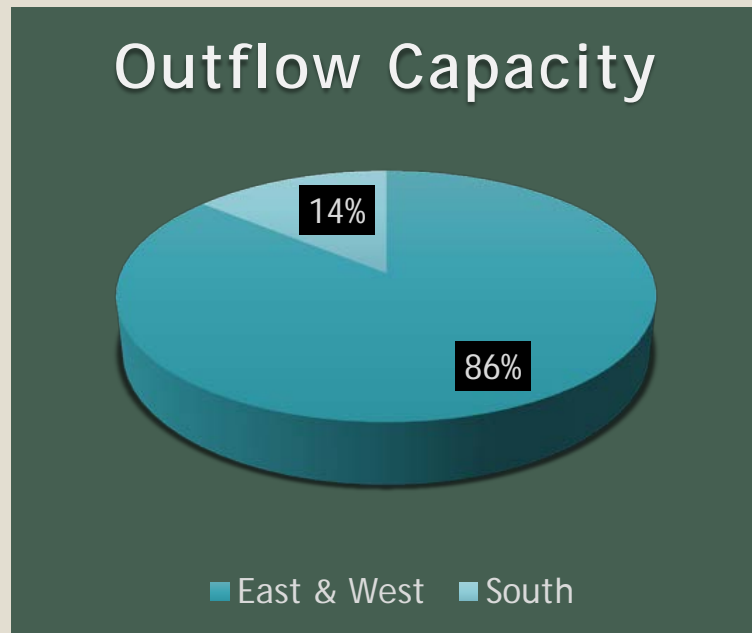
During the past century, the U.S. Army Corps of Engineers dug hundreds of miles of canals and drained over half of the 11,000-square-mile Everglades to meet the demand of developers and farmers for dry land, fresh water and flood control. The drastically altered system resulted in unnatural and harmful flow ways that include sending water from Lake Okeechobee through the St. Lucie Canal and Estuary and the Caloosahatchee River.



CENTRAL & SOUTHERN FLORIDA PROJECT

Inflow vs. Outflow Capacity:

- The lake fills up much faster than it can drain

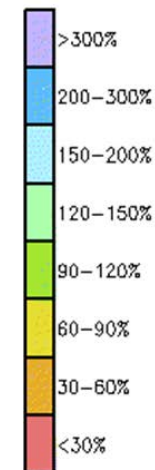
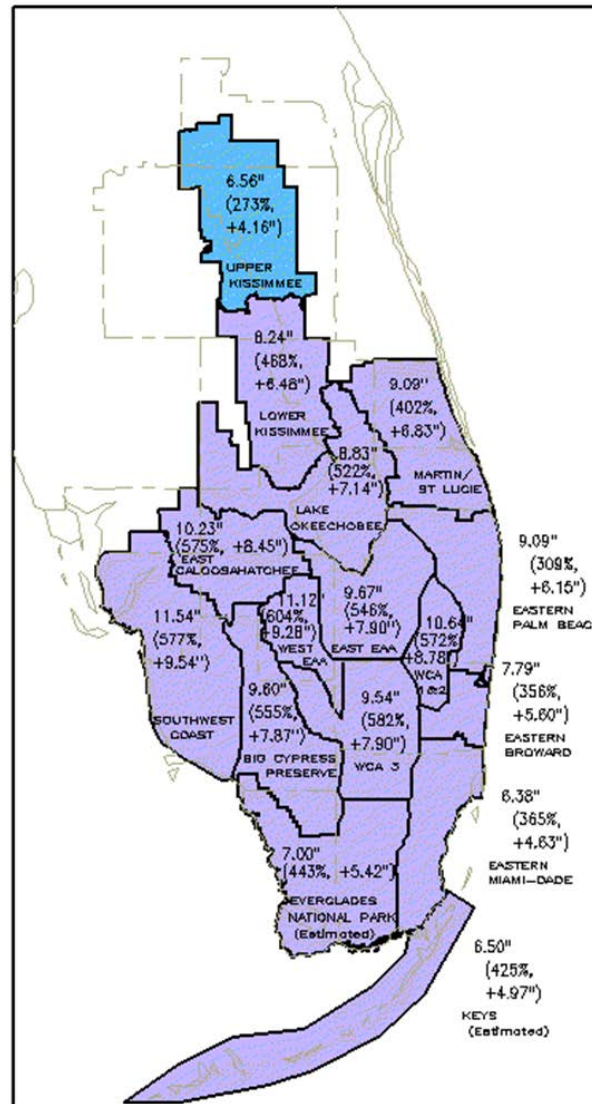


Unintended Consequences:

- Extreme fluctuations in high and low water levels in Lake Okeechobee
- Extreme fluctuations between too much and too little freshwater discharged into the coastal estuaries
- Detrimental hydrological conditions in freshwater wetland habitats
- Unsuitable freshwater flows to Florida and Biscayne Bays and the Lake Worth Lagoon

RECORD RAINFALL

SFWMD Rainfall
02-jan-2016 to 01-feb-2016



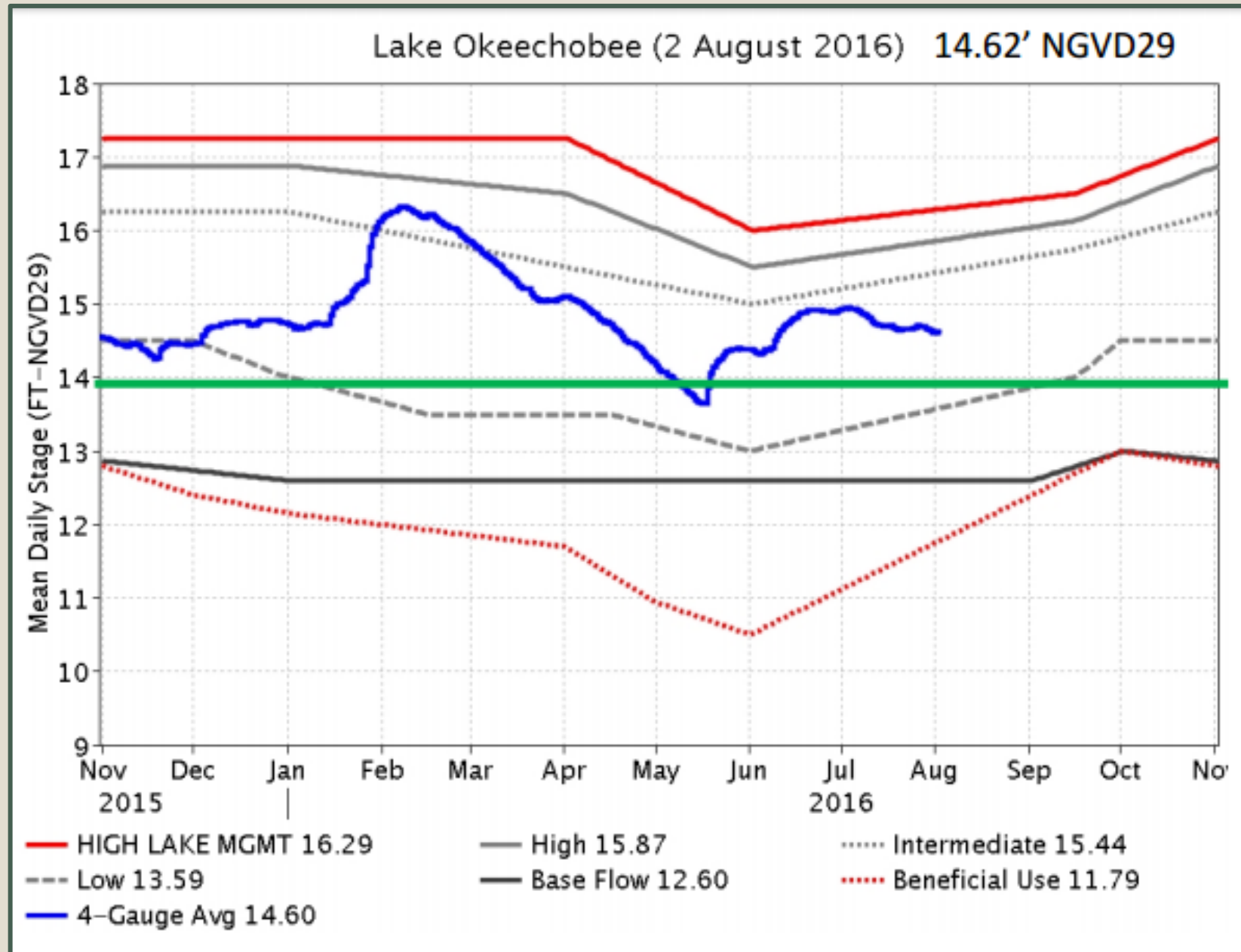
Measured
(% of Avg,
Diff From Avg)



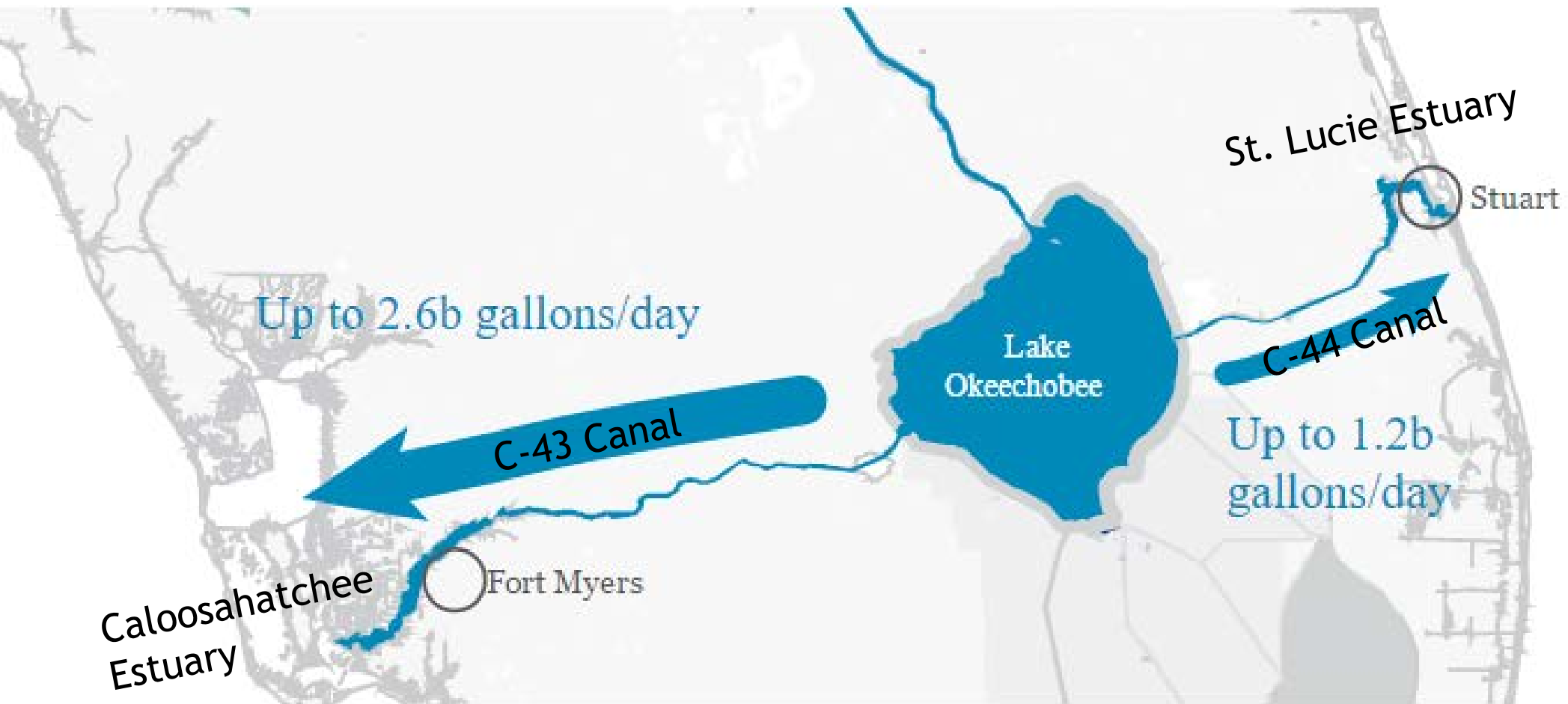
DISTRICT-WIDE: 9.18" (476%, +7.25")

GRADS: COLA/IGES

LAKE OKEECHOBEE LEVELS



DISCHARGES BY DESIGN



ST. LUCIE INLET



St Lucie Inlet 5-10-16

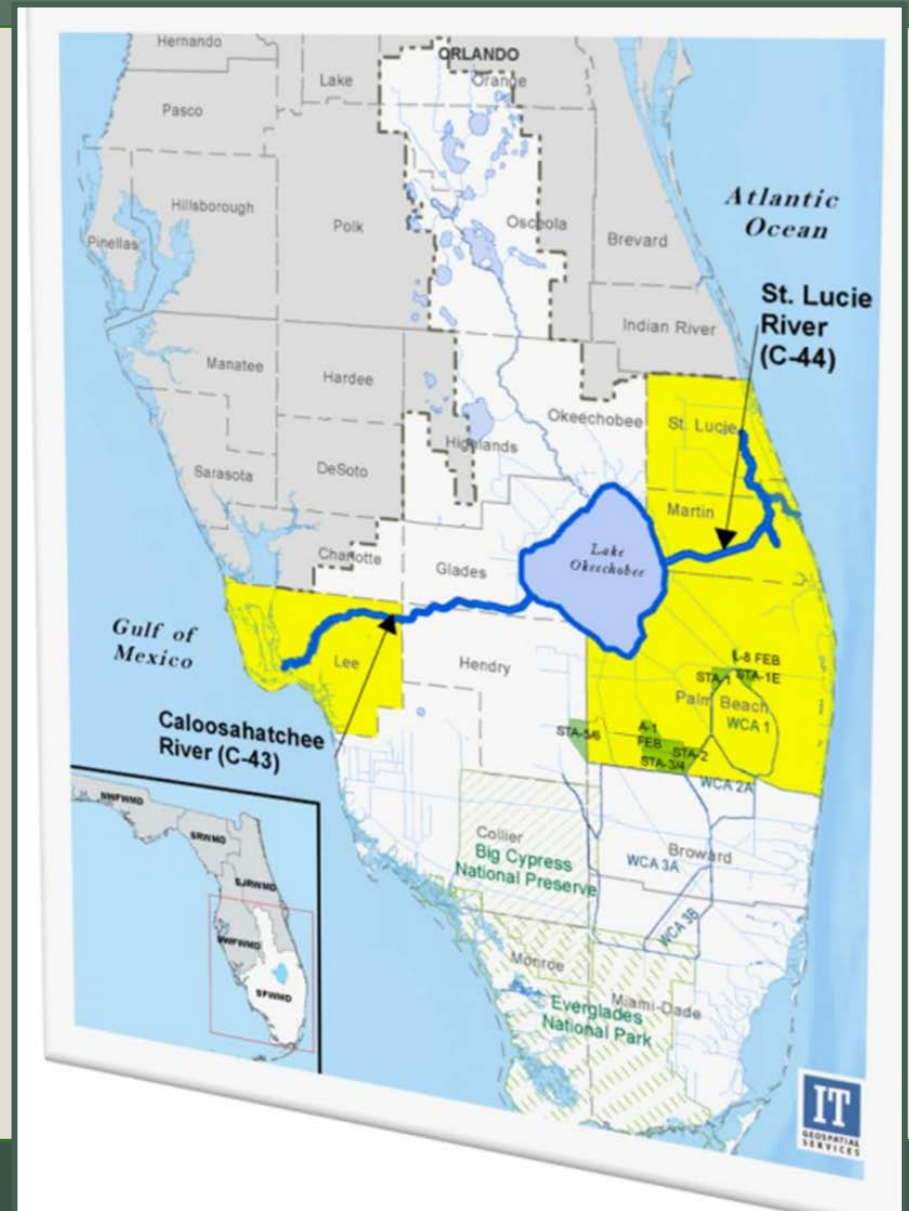
CALOOSA HATCHEE



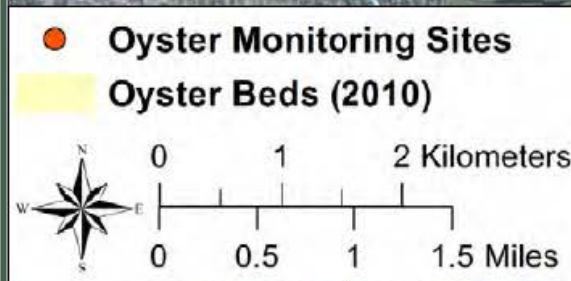
Sun-Sentinel, Draining Problem, 3/11/16

EFFECTS OF DISCHARGES

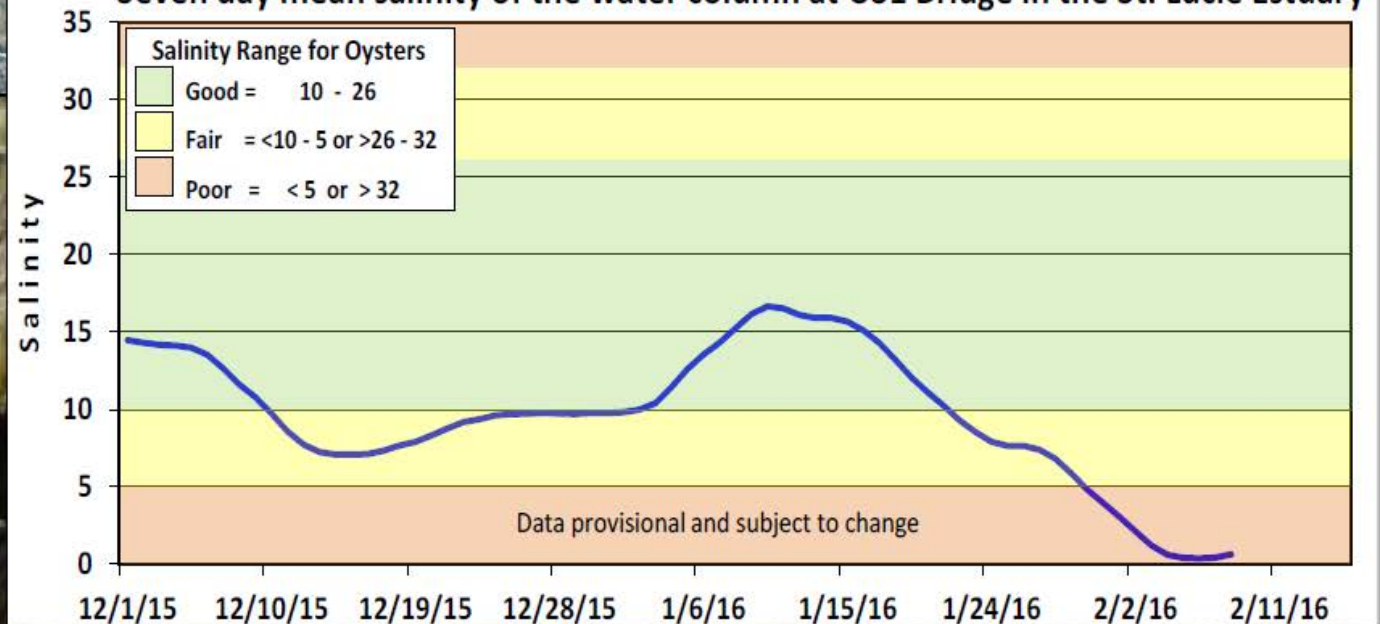
- Low salinity conditions
- Accumulation of muck-like sediments
- Loss of seagrass habitat
- Decline in oyster populations



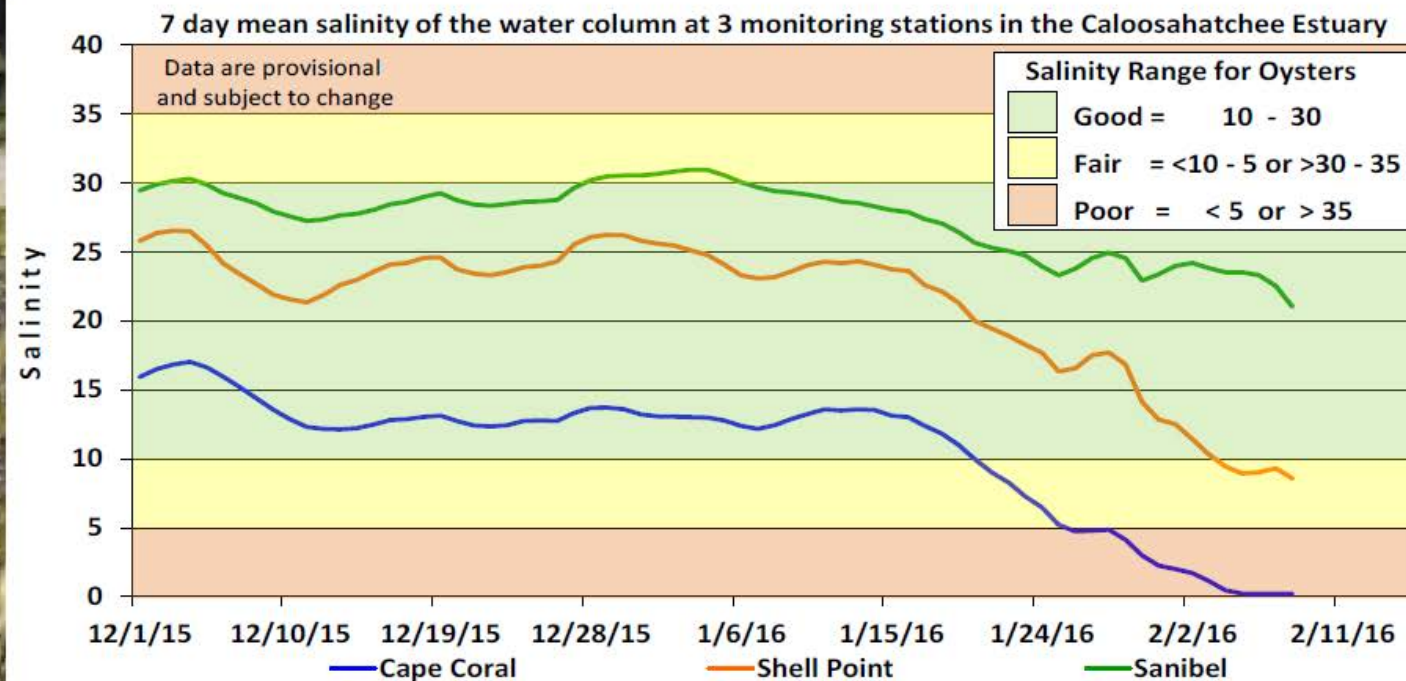
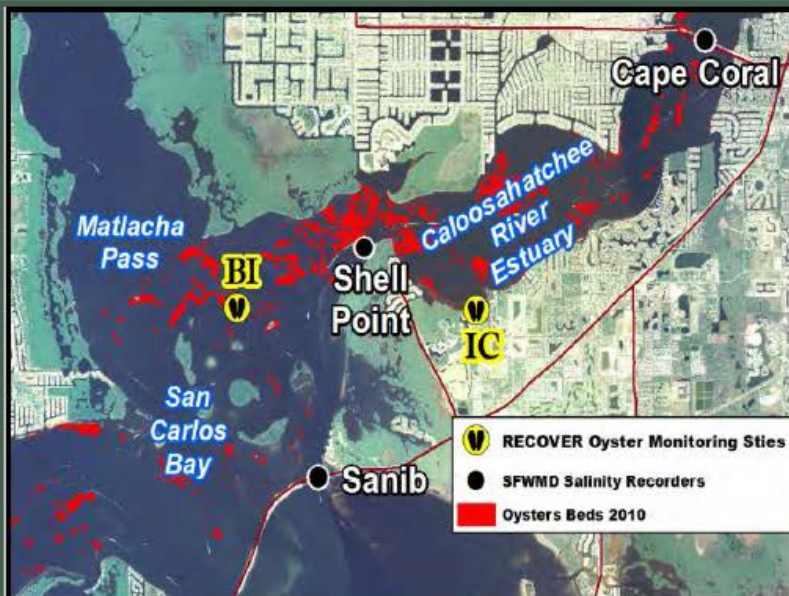
St. Lucie Estuary - Oysters



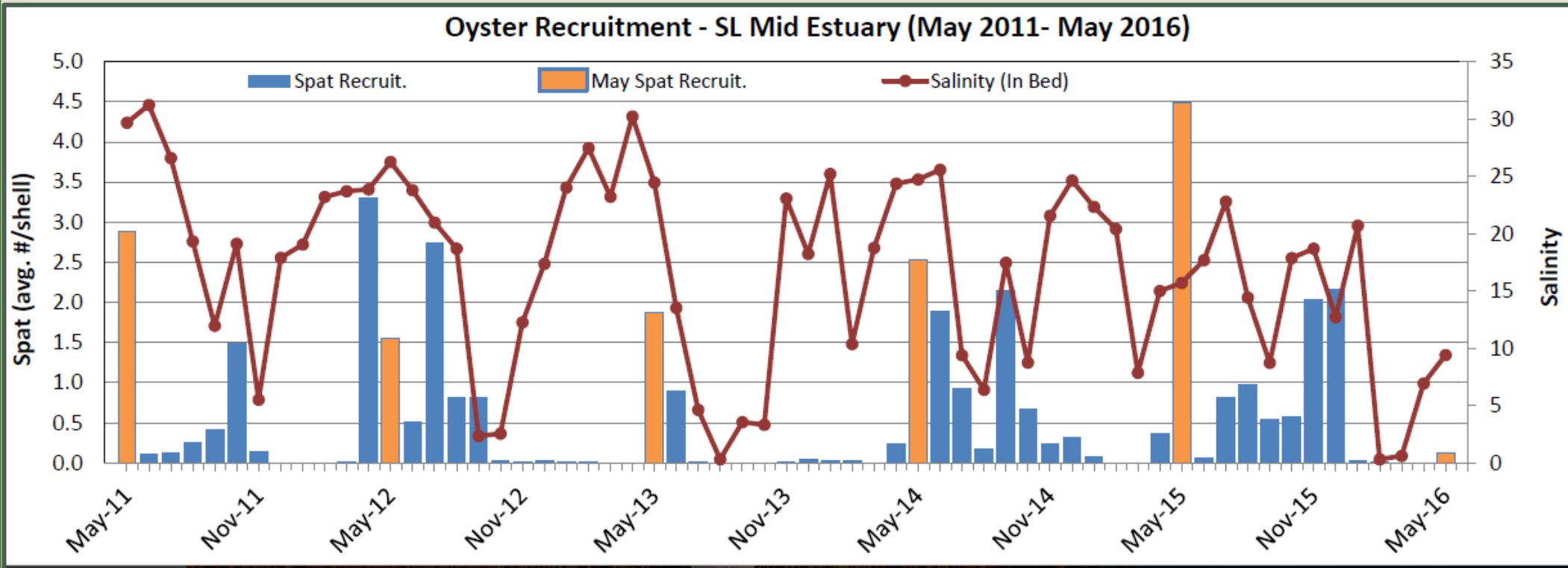
Seven day mean salinity of the water column at US1 Bridge in the St. Lucie Estuary



Caloosahatchee Estuary - Oysters



ST. LUCIE ESTUARY



LAKE OKEECHOBEE ALGAE BLOOM



NASA Earth Observatory images of algae bloom on
Lake Okeechobee July 2, 2016.

ST. LUCIE RIVER



S-80 STRUCTURE



ST. LUCIE ESTUARY



Photos by MCTV's Bob Hogensen

CENTRAL MARINE



Photos by MCTV's Bob Hogensen

CENTRAL MARINE



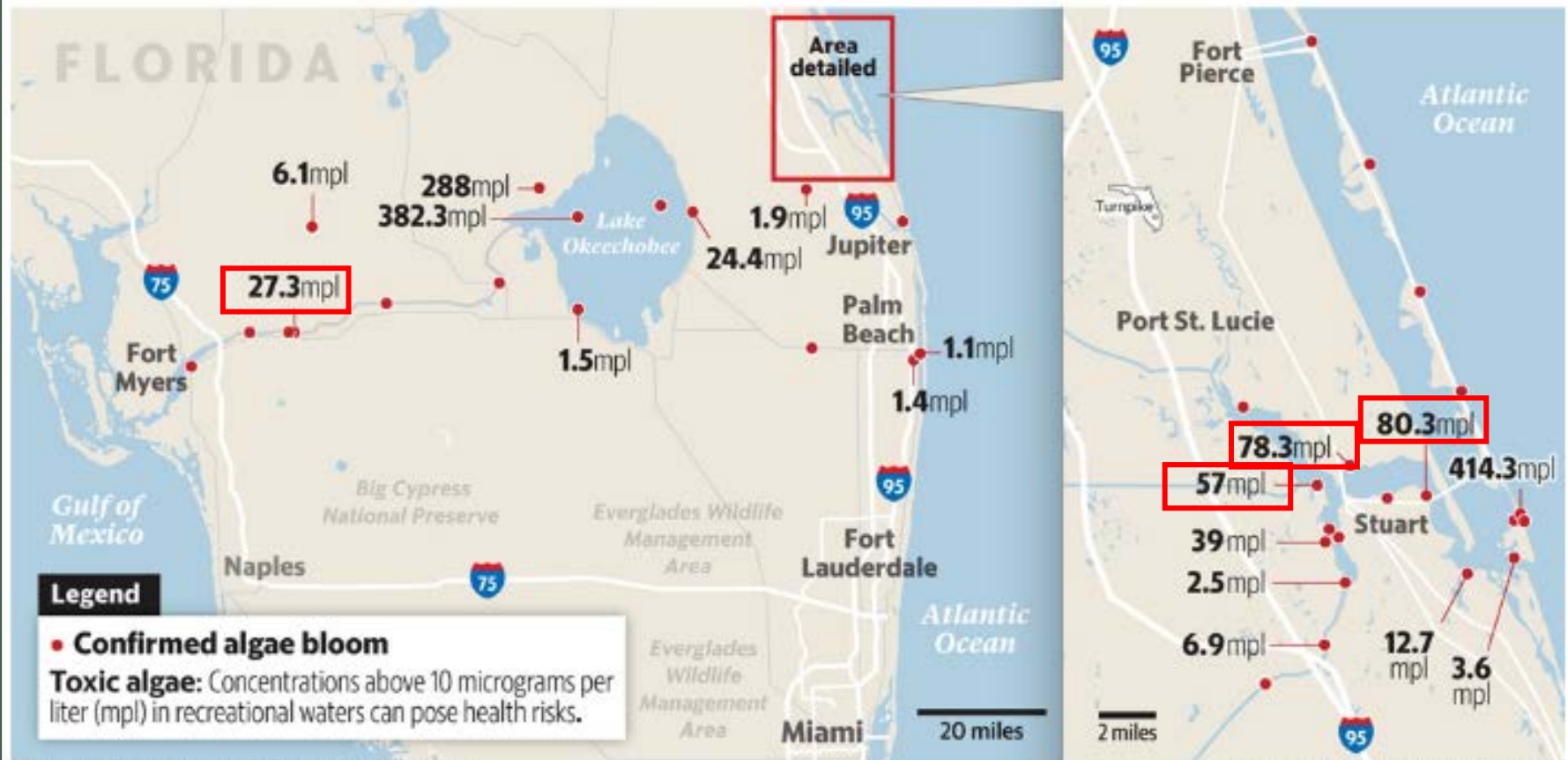
CENTRAL MARINE



TOXIC ALGAE SAMPLING & RESULTS

Where the slime is

From May 18 to June 30, the latest data available, state survey crews have confirmed algae blooms in at least 44 locations across a swath of South Florida, with the worst conditions in waterways linked to the St. Lucie River, which has been fouled by a steady flow of fresh, nutrient-laden water from Lake Okeechobee.



Miami Herald, Where will the green slime go? Florida tracks its spreading algae, 7/7/16

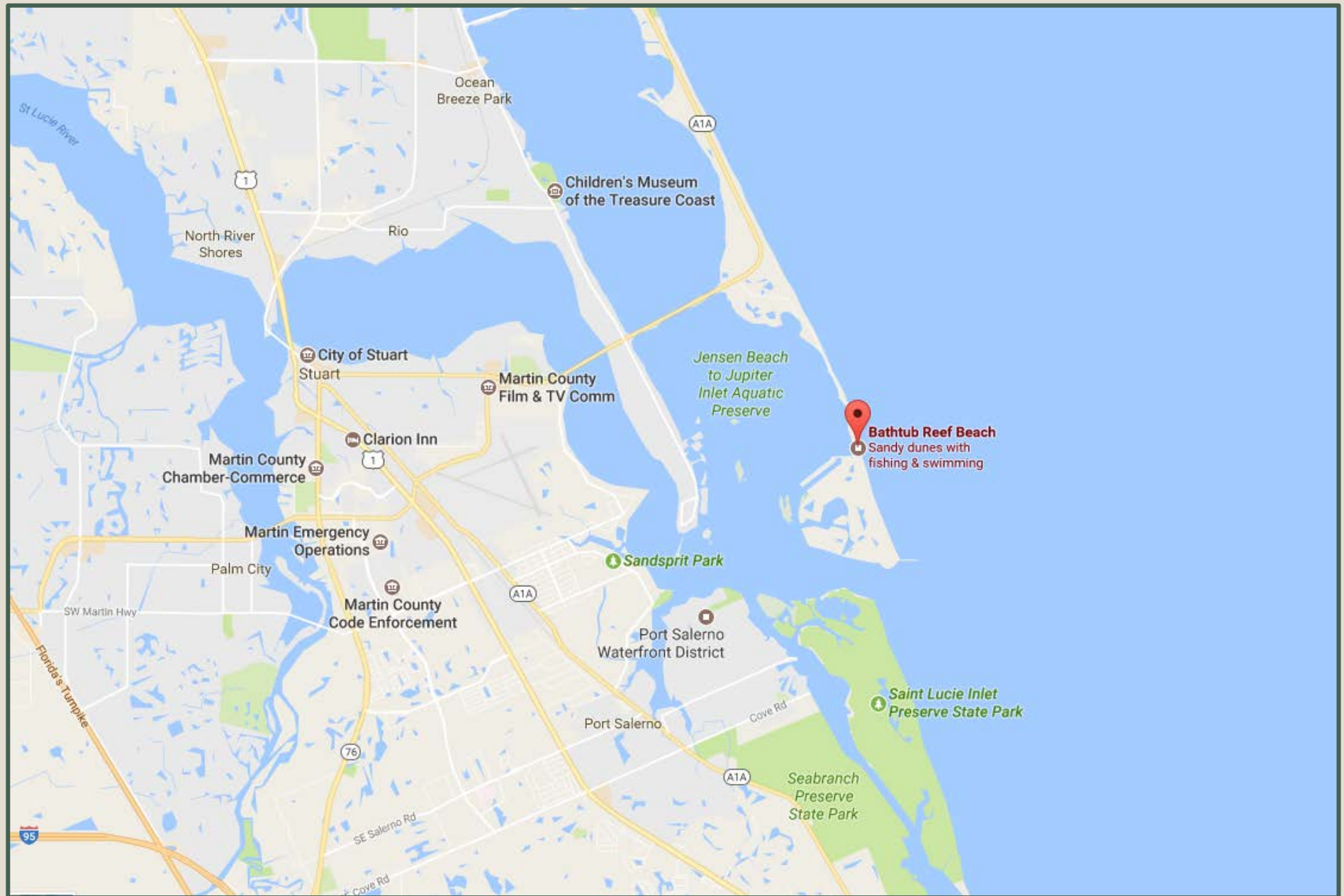


LOOKING OFFSHORE



Photos by MCTV's Bob Hogensen

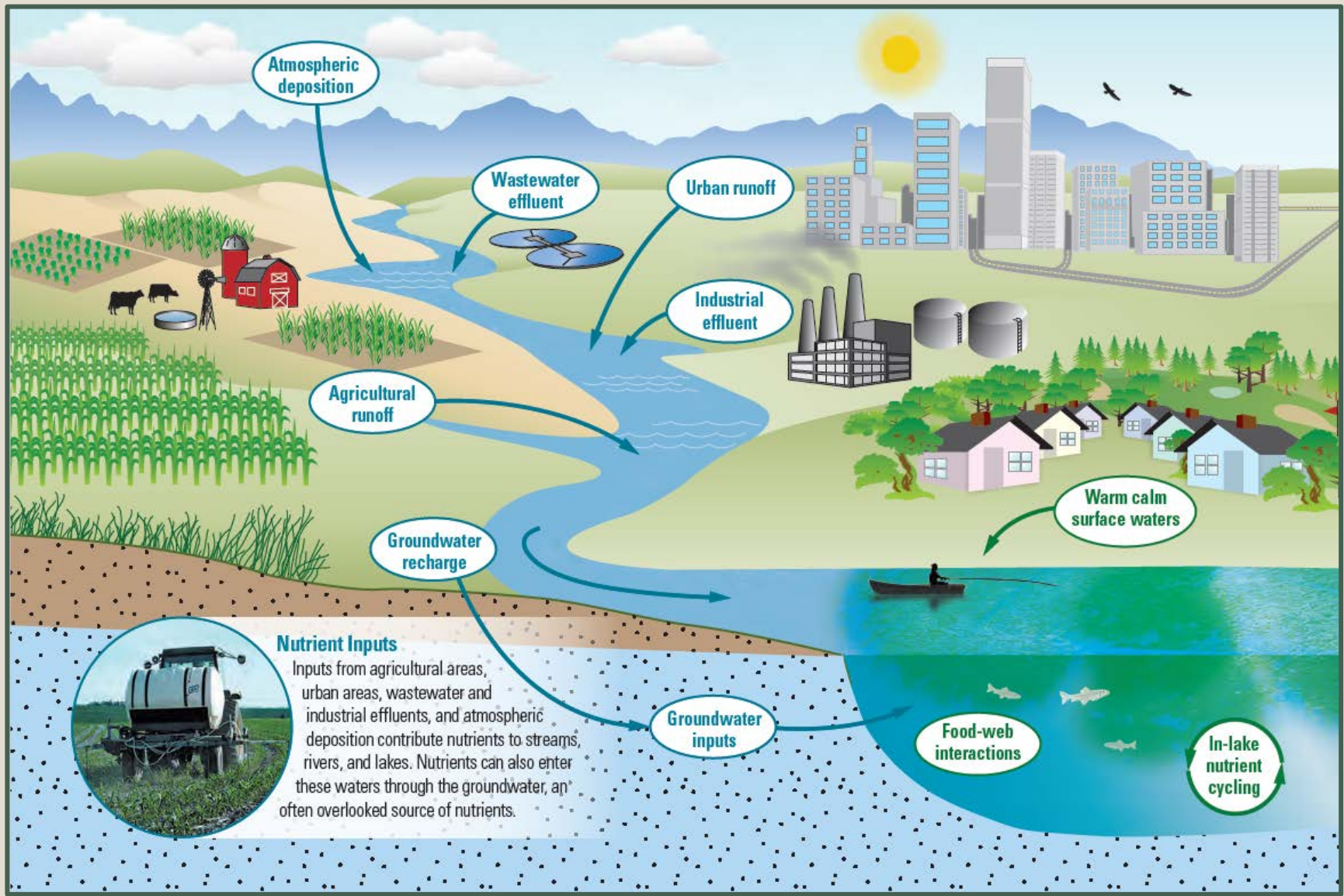
BATHTUB REEF BEACH



BATHTUB REEF BEACH



CAUSES OF ALGAE BLOOMS



EFFECTS OF ALGAE BLOOMS

Public Health

- Exposure to toxins may occur through consumption of tainted water, fish or shellfish; recreational activities; or inhalation of aerosolized toxins.
- Known to cause illness immediately after exposure
 - Headaches, sore throat, vomiting, nausea, stomach pains, blistering, and pneumonia.

Ecologic

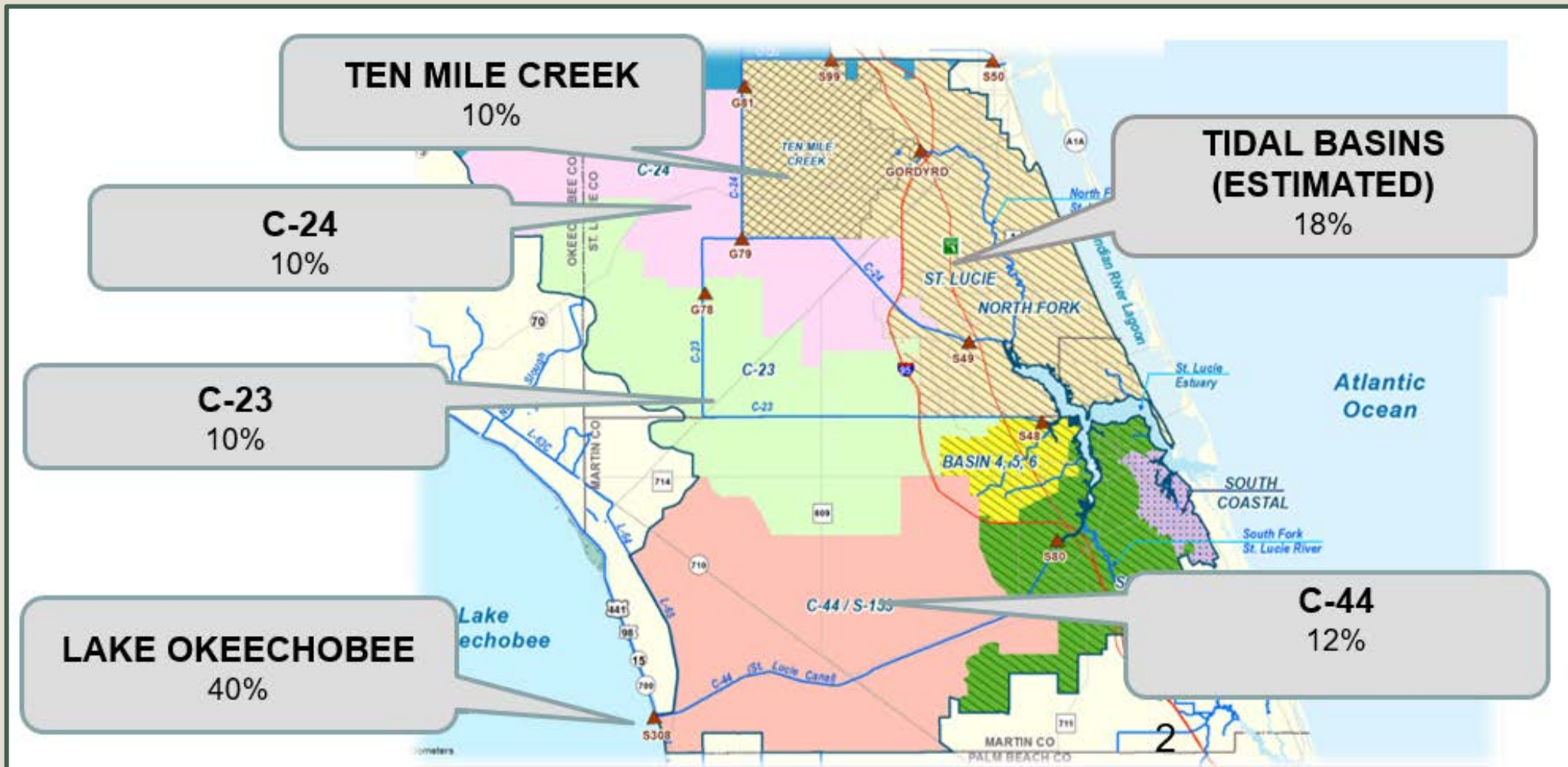
- Cause mortality of aquatic organisms because of low dissolved oxygen or toxins
- Loss of seagrass habitat



Economic

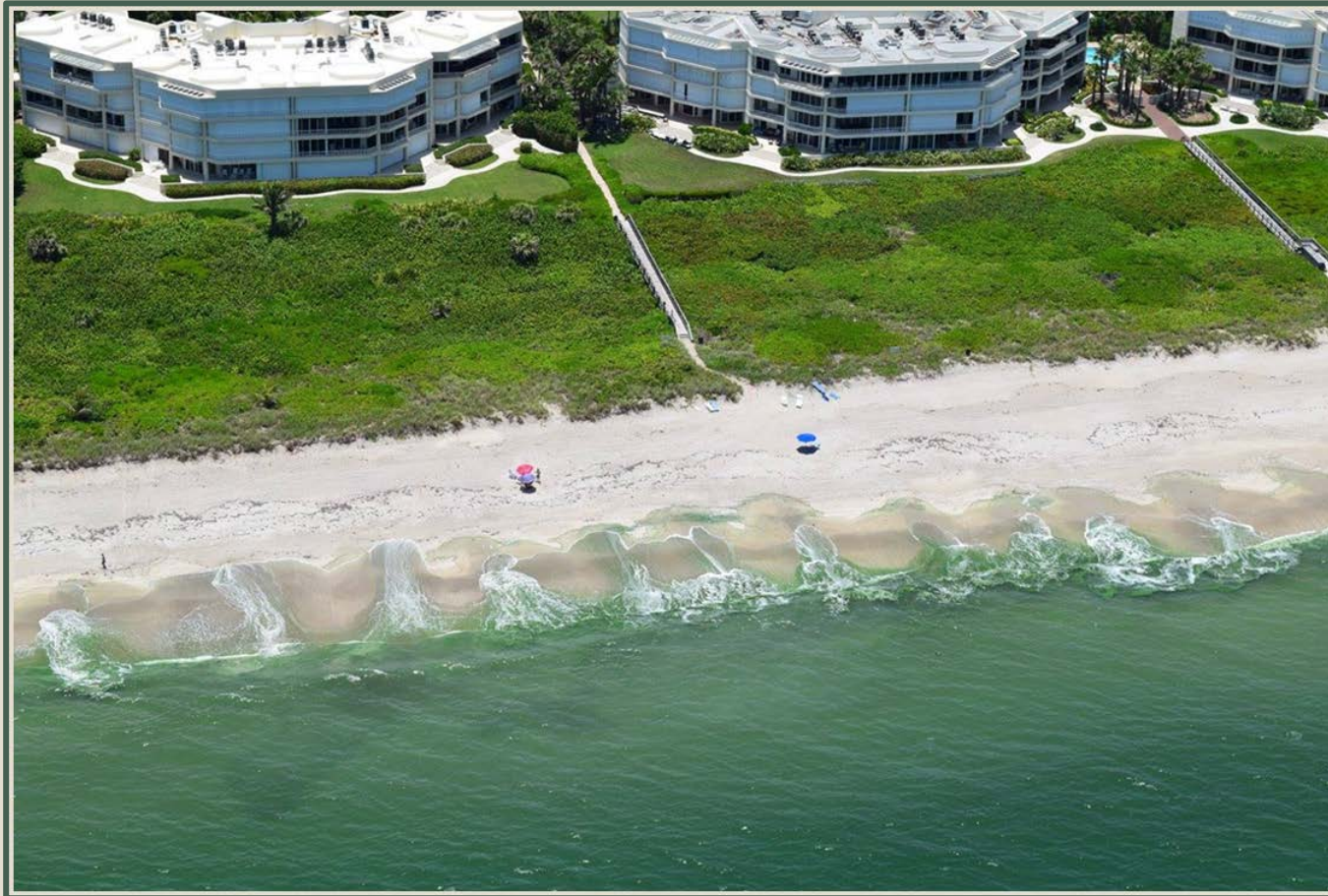
- Loss of recreational revenue
- Loss of aquaculture and fisheries revenue
- Decreased property values
- Loss of business revenue

ST. LUCIE ESTUARY INFLOWS



2016 Calendar Year

CONTACT INFORMATION



Ashley Istler, Attorney
Senate Environmental Preservation and
Conservation Committee
487-5372
Istler.Ashley@flsenate.gov

Lake Okeechobee & Ecosystem Restoration

Lt. Col. Jennifer Reynolds

Deputy District Commander, South Florida

Jacksonville District

U.S. Army Corps of Engineers

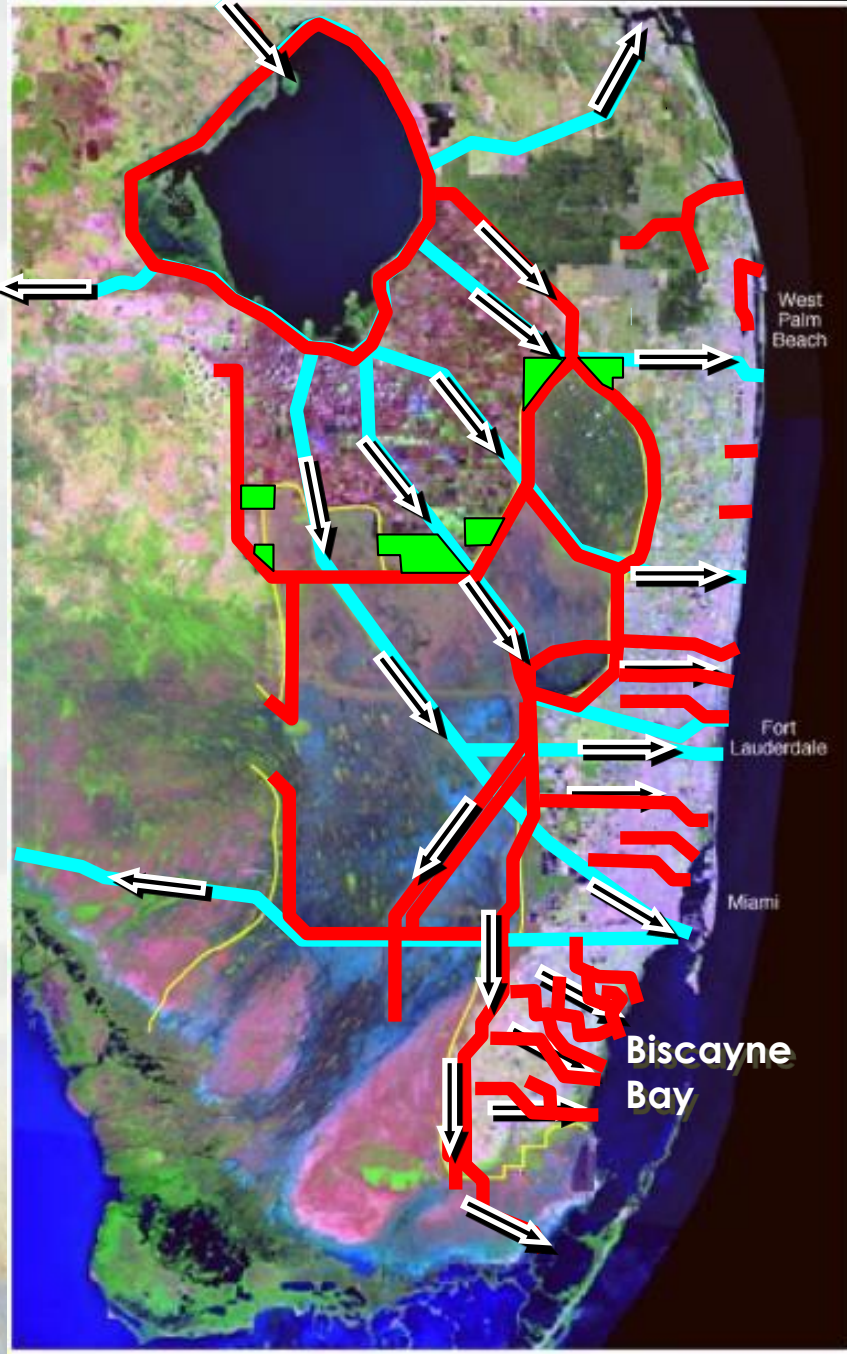
January 11, 2017

***Trusted Partners Delivering Value
Today for a Better Tomorrow***



US Army Corps of Engineers
BUILDING STRONG®





Pre-Central & South Florida Projects

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

Central & Southern Florida Project

- Eastern Protective Levee System 1952-54
- Everglades Agricultural Area 1954-59
- Water Conservation Area Levees 1960-63
- Lower East Coast Canals 1954-65
- Lake Okeechobee Levees 1960-64
- Kissimmee River Channelization 1962-71
- South Dade System 1965-83
- Everglades Restoration 1994-current

Everglades Construction Project

- Stormwater Treatment Areas 1994-2003

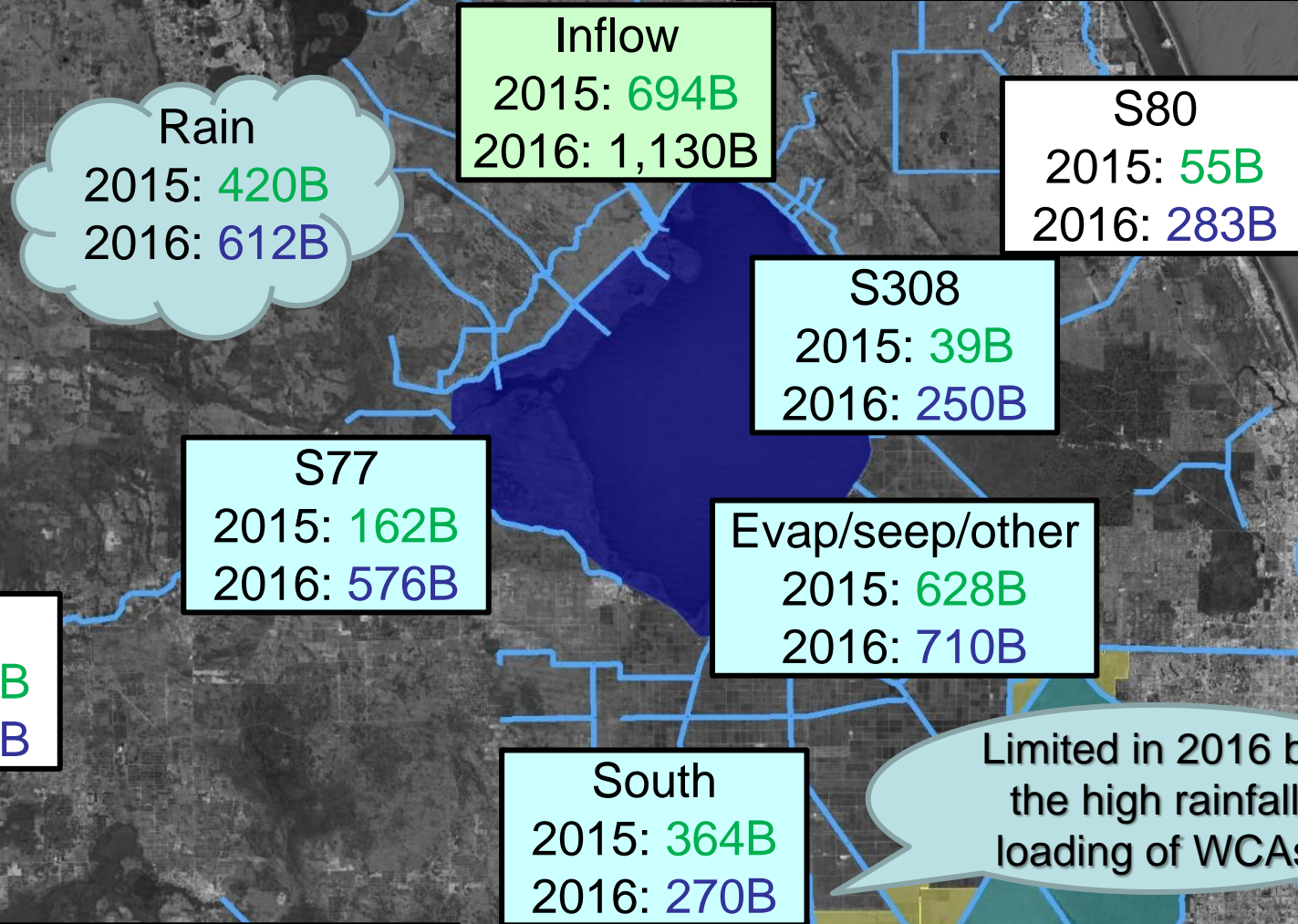


Lake O Flow Comparisons



BUILDING STRONG

Volumes are in billions of gallons



Volumes are in billions of gallons



Decision-Making



BUILDING STRONG

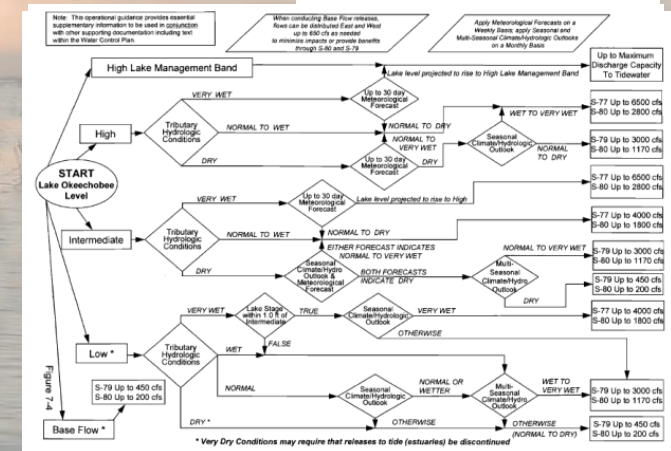
Decisions on potential releases from Lake Okeechobee include consideration of various information.

CURRENT CONDITIONS

- Central and Southern Florida Project conditions
- Current climate conditions
- Water Conservation Area water levels
- Stormwater Treatment Area available capacity
- Historical lake levels
- Estuary conditions/needs
- Lake ecology conditions/needs
- Climatic forecasts
- Hydrologic outlooks
- Projected lake level rise/recession
- Water supply conditions/needs

ANTICIPATED CONDITIONS/ FORECASTS

2008 Lake Okeechobee Regulation Schedule (LORS)

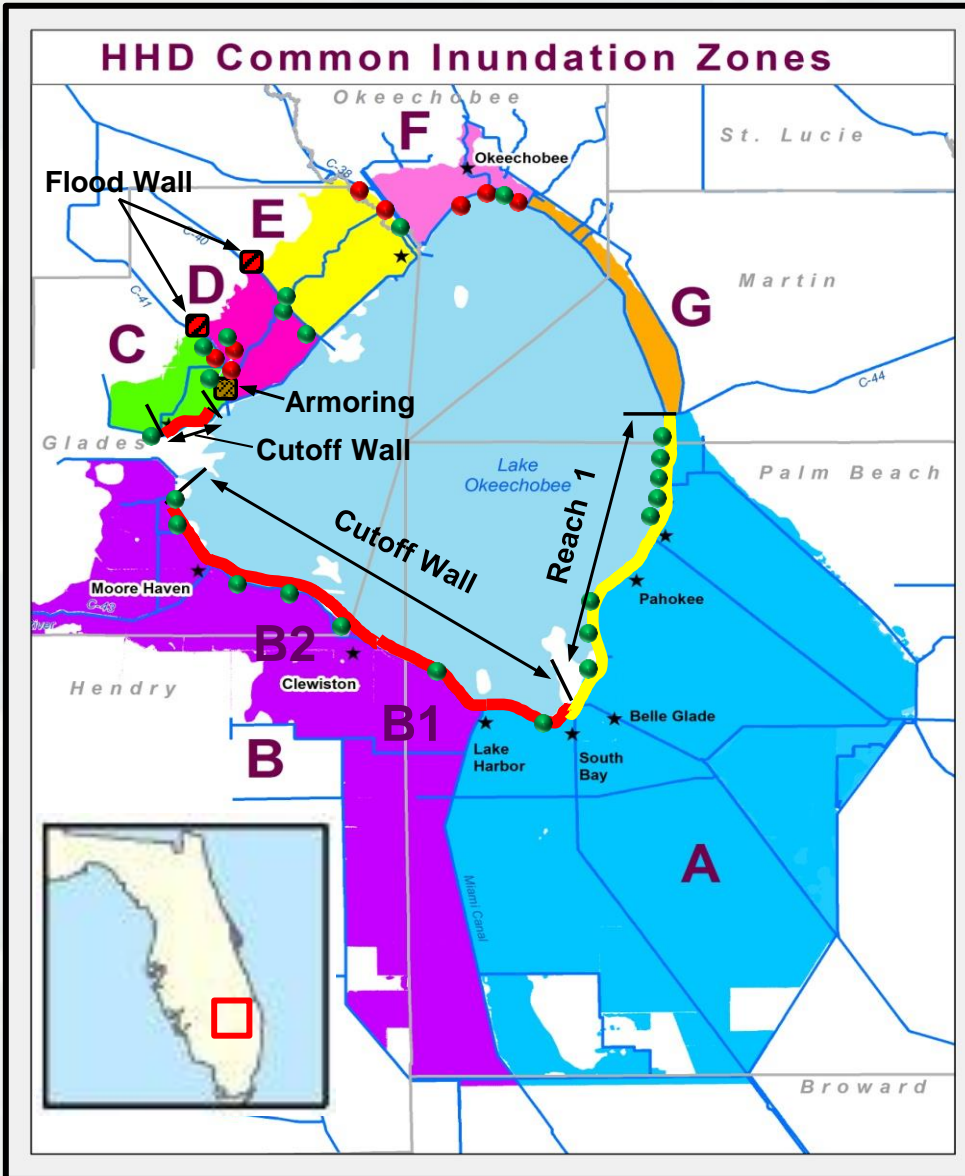




Herbert Hoover Dike



BUILDING STRONG



Since 2001, USACE has invested over \$870 million in rehabilitation

Completed/Ongoing

- 21.4 miles of cutoff wall in Reach 1
- 23 culvert replacements and 1 removal

Future

- 35 miles of cutoff wall
- Floodwall at two structures north of lake
- 5 culvert replacements; 3 abandonments
- Embankment armoring at SR 78 bridge
- Recommend for FEMA accreditation

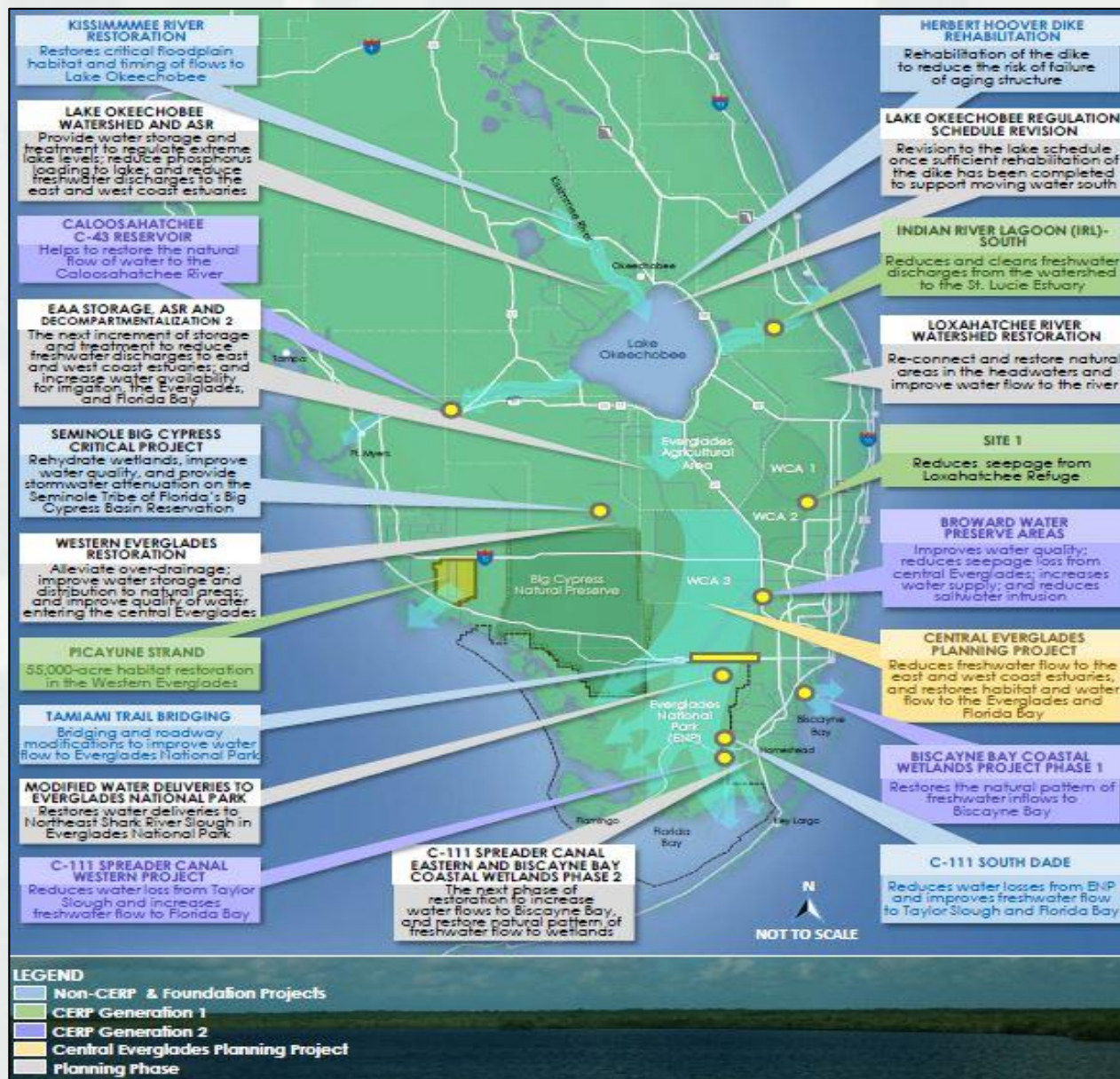
- Cutoff Wall Completed
- Future cutoff wall
- Culvert Replacements Ongoing
- Culvert Replacements/Abandonments Planned



S Florida Ecosystem Restoration



BUILDING STRONG



Team of Professionals Making Tomorrow Better



Kissimmee River Restoration



BUILDING STRONG



In-progress construction



Restored portion of river



Picayune Strand



BUILDING STRONG



In-progress construction



Rehydration of wetlands

INTEGRATED DELIVERY SCHEDULE (IDS) 2016 UPDATE

AS OF DECEMBER 2016



SYNCHRONIZING RESTORATION EFFORTS

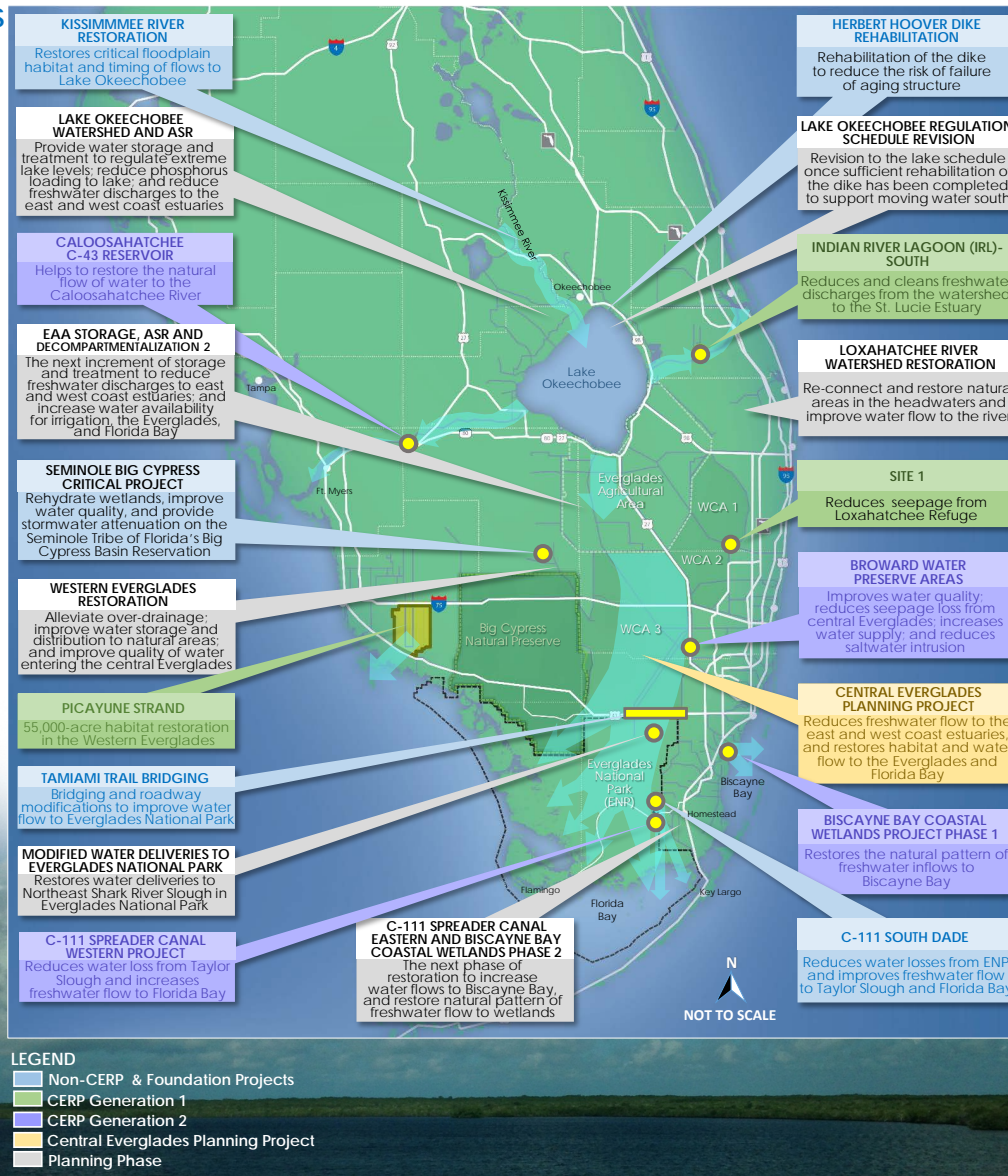
- The Integrated Delivery Schedule provides the sequencing strategy for planning, designing and constructing federal projects cost-shared with local sponsors as part of the South Florida Ecosystem Restoration Program, based on ecosystem needs, benefits, costs and available funding.
- The IDS does not require an agency action or a decision document, it is a tool that provides guidance to decision-makers for scheduling, staffing and budgeting.
- It is a living document that is updated as needed to reflect progress and/or program changes.
- The IDS synchronizes program and project priorities with the State of Florida and is needed to request required funding to plan and build South Florida Ecosystem Restoration Program projects.

PROCESS

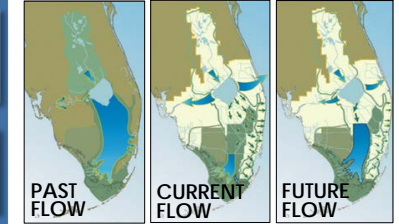
- The IDS is required as part of the Comprehensive Everglades Restoration Plan (CERP) Programmatic Regulations.
- Regular updates to the IDS are required.
- The process is done in consultation with the South Florida Ecosystem Restoration Task Force.
- Public workshops sponsored by South Florida Ecosystem Restoration Task Force Working Group were utilized to engage stakeholders during the development of the IDS in 2015.



U.S. ARMY CORPS OF ENGINEERS® | JACKSONVILLE DISTRICT



ACHIEVING RESTORATION BENEFITS



Maximizes holistic benefits to regional system as early as possible

- Ensures continued stream of construction, which provides for steady increase in regional ecosystem benefits
- Provides beneficial storage to the Caloosahatchee and St. Lucie estuaries while infrastructure that is needed to open up the system for additional flow south is being implemented
- Improves conditions and flow through WCA-3 and provides more water to Everglades National Park and Florida Bay as early as possible
- Advances projects with the greatest potential to avert ongoing degradation and considers implications of climate change and sea-level rise

Ensures additional projects will be ready to continue progress on restoration

- Includes most of the planning efforts for projects identified by stakeholders as priorities
- Prioritizes planning studies for Lake Okeechobee Watershed and the Western Everglades

Consistency with project dependencies and constraints

- Maintains 50/50 cost-share
- Commitment to complete construction on projects where construction has been initiated
- Consistent with project dependencies for moving water south
- Modifications to downstream infrastructure, Restoration Strategies, etc.



BUILDING STRONG®



INTEGRATED DELIVERY SCHEDULE (IDS)

2016 UPDATE

AS OF DECEMBER 2016

Changes from the November 2015 IDS

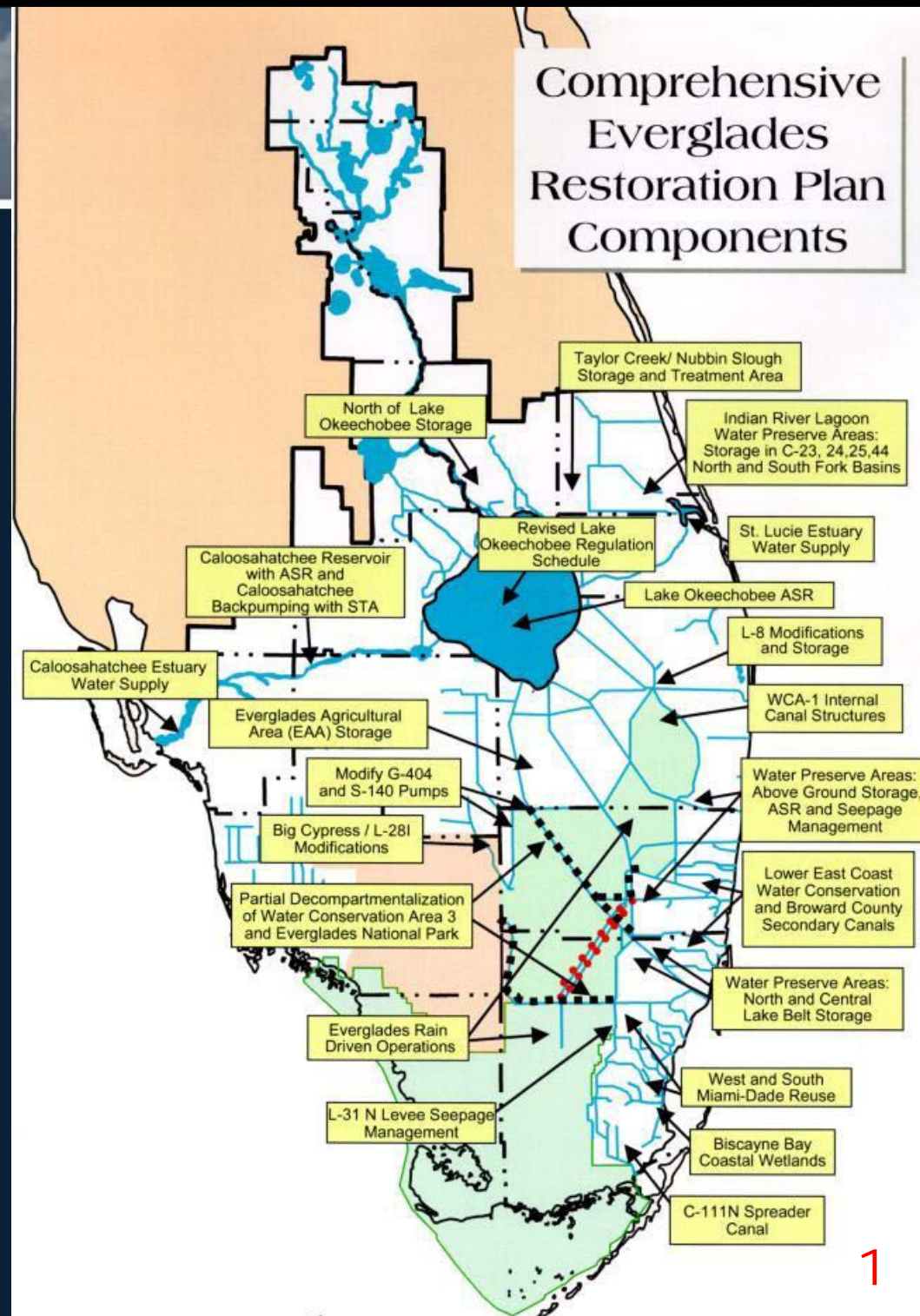
- Initiation of both the Lake Okeechobee Watershed and Western Everglades Restoration planning studies one year earlier since funding and approval to initiate planning was obtained in FY16.
- Picayune Road removal & Canal plugging construction moved to FY19 due to the need to have the Flood Control features completed and Congressional authorization of the Post Authorization Change Report for the increased total project costs.
- Re-occurring Legacy Florida funding will become available in FY17. Construction of the Caloosahatchee River C-43 West Basin Storage will now be completed in FY22..
- The Broward County Water Preserve Area project has been impacted due to no funding included in the USACE FY17 budget. The C-11 Impoundment now reflects design completion in FY18 and construction in FY19 through FY23.
- Construction of the Biscayne Bay Coastal Wetlands Phase 1 – L-31 East Flow-way was extended out to complete in FY21 due to limited design and construction funding in the USACE FY17 budget.
- Planning for CEPP – PPA South: LRR & PPA Execution shifted from FY17 to FY18 due to no funding in the USACE FY17 budget.
- Design and construction related to removing the Old Tamiami Trail and the L-67A Structure 1 & Gap in L-67C Levee contracts under CEPP shifted from FY18 to FY19 due to the requirement to complete an LRR before Plans and Specifications can begin. However, the USACE and the SFWMD have executed a Pre-Partnership Crediting Agreement to enable crediting to the SFWMD to conduct the work.
- The Hoover Dike Rehabilitation construction completion extended to FY25 to account for work approved in the Dam Safety Modification Report.

NOTE: The funding shown for FY17 and beyond is only notional, representing approximate funding levels that would be needed to sustain the work displayed in the IDS for any particular FY. The funding does not represent a commitment by the Administration to budget the amounts shown.

No materials for this item.

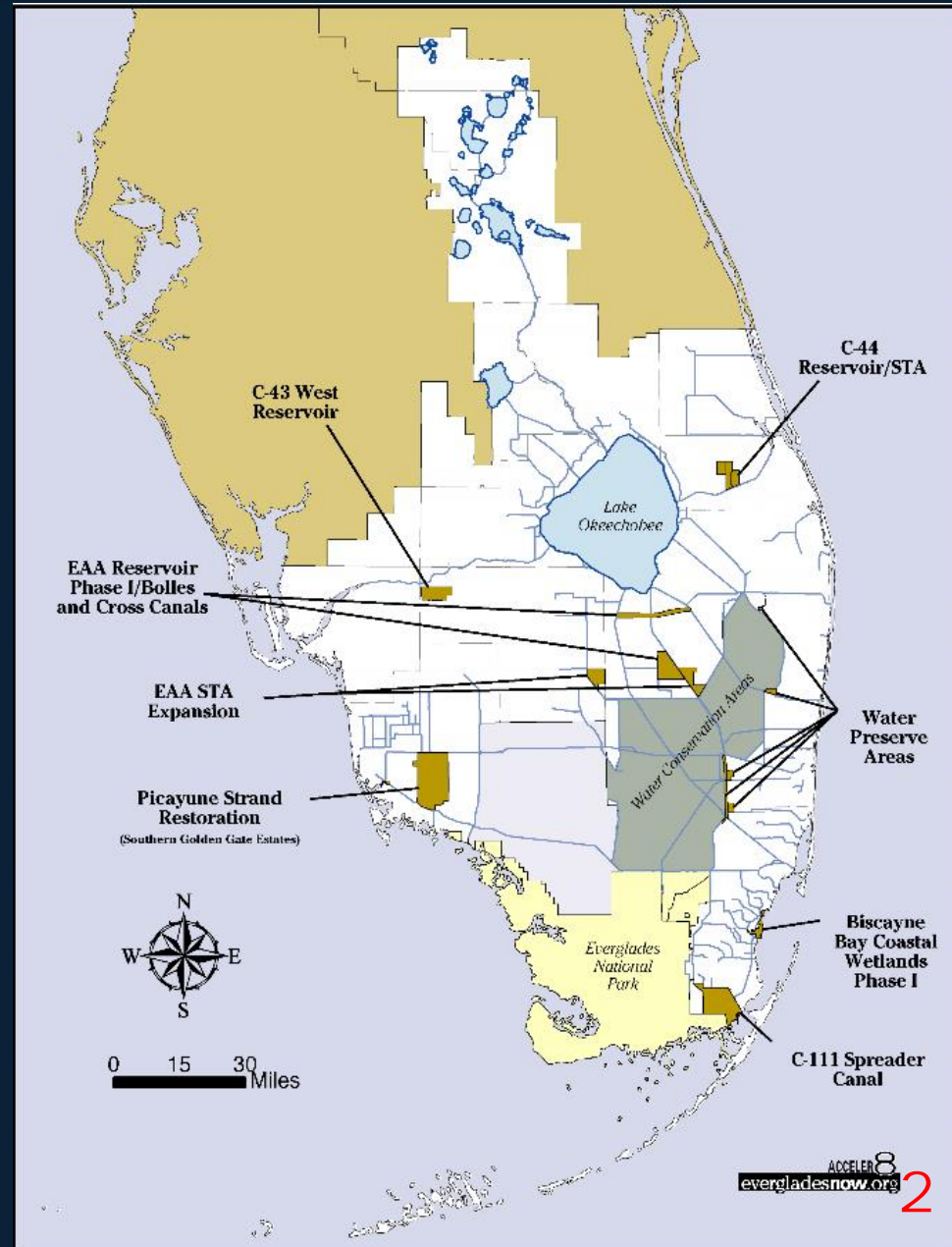
CERP

- 68 projects
- Authorized in Water Resources Development Acts (WRDA) of 1992 and 1996
- Plan approved as a framework for restoration in WRDA 2000

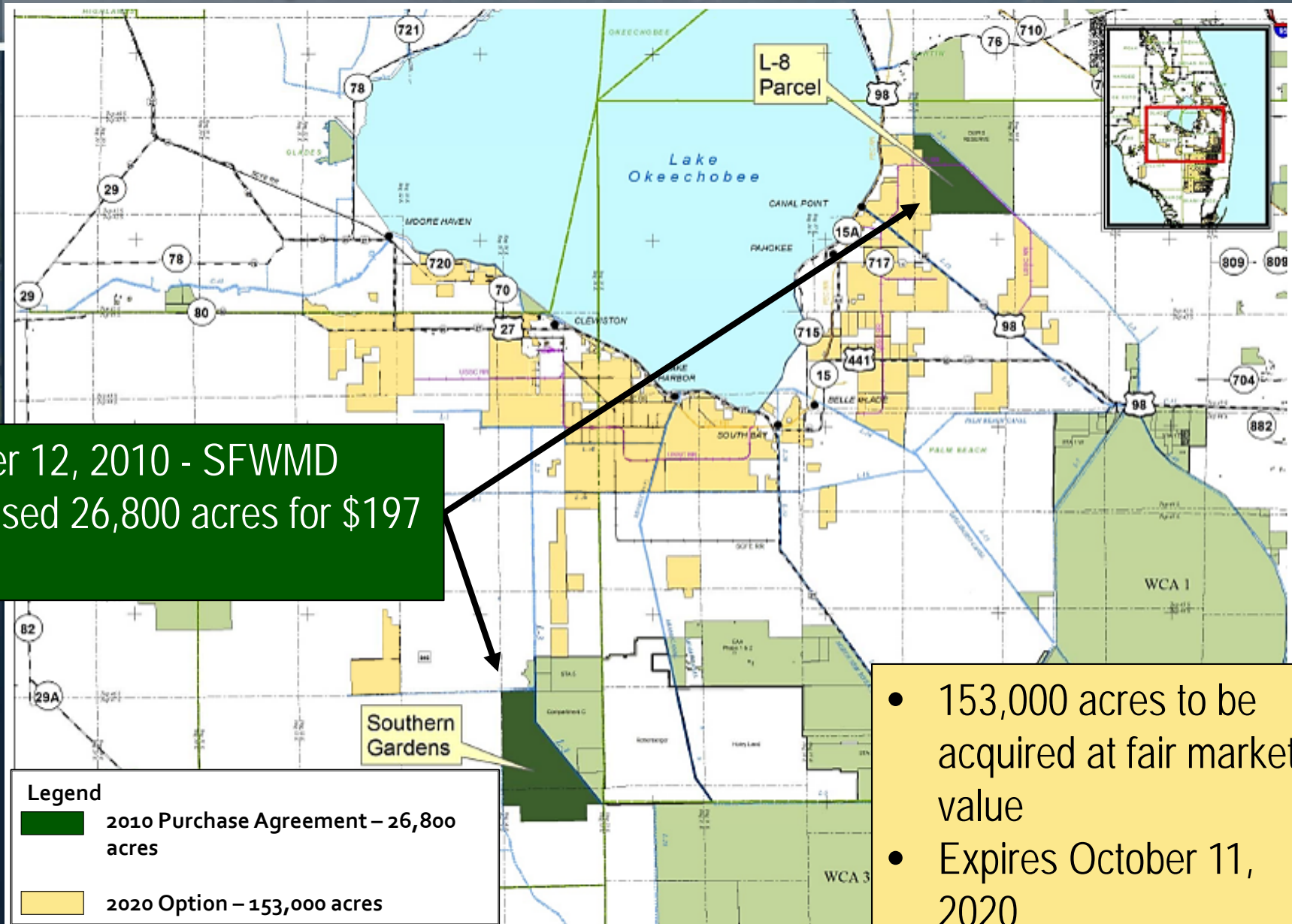


Acceler8

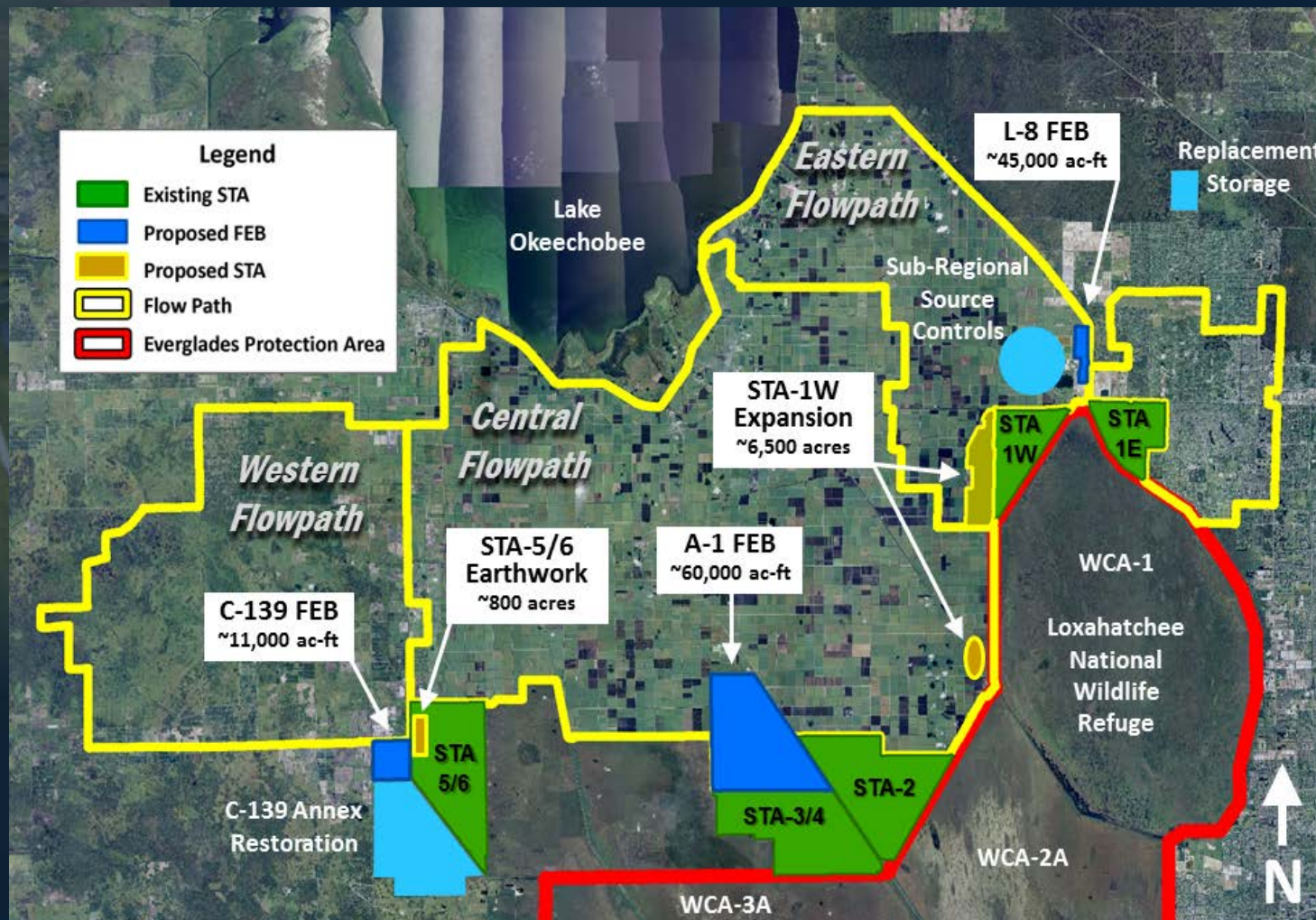
- Announced by Governor Bush in October 2004
- Accelerated State funding, design and construction of several CERP projects



Land Acquisition South of Lake Okeechobee



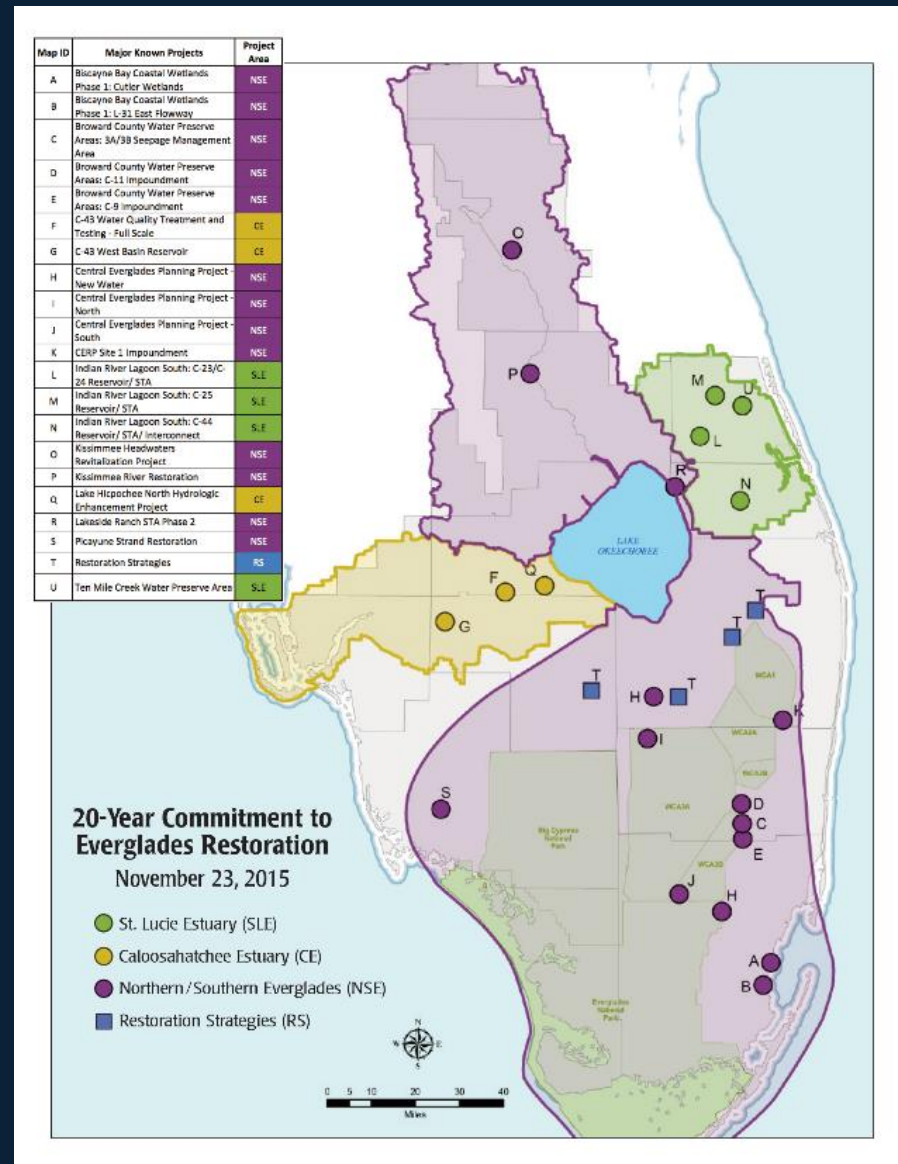
Restoration Strategies



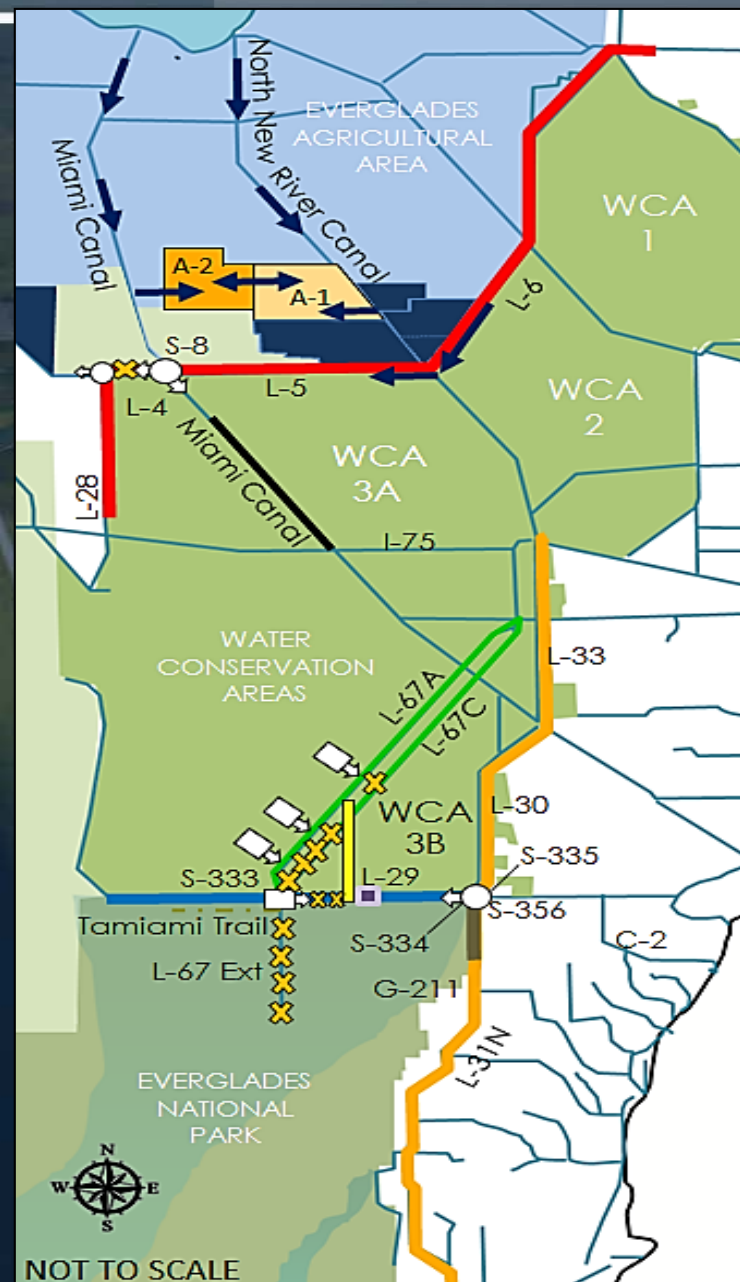
- \$880 Million Program
- Provide Water Quality Treatment and Storage through Flow Equalization Basins (FEB)
- A-1 FEB is in operational testing
- L-8 FEB is near Substantial Completion

Legacy Florida

- Signed by Governor Rick Scott in April 2016
- Includes dedicated, ongoing funding source for Everglades restoration projects
- Eliminates “stops and starts” that have impeded progress in the past
- When complete, projects will deliver critical benefits across entire South Florida ecosystem



Central Everglades Planning Project (CEPP)



- Increases storage, treatment and conveyance of water south of Lake Okeechobee
- Sends ~210,000 ac-ft of water south from the Lake
- Removes and/or plugs canals and levees within the central Everglades
- Improves hydroperiod and flow through Everglades National Park while protecting urban and agricultural areas to the east from flooding

Everglades Restoration: A Project Chronology

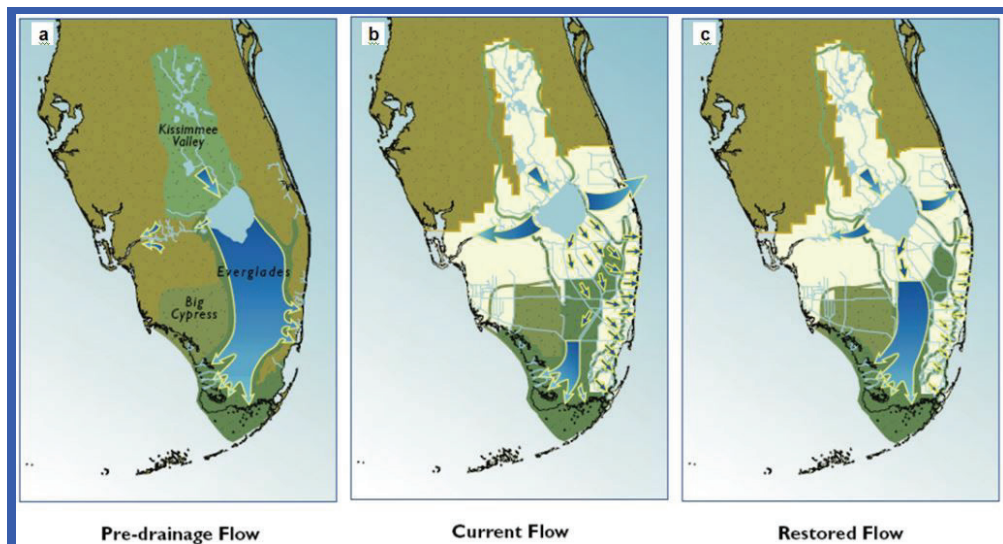
Since the 1992 settlement of the USA vs. Florida water quality litigation and the ensuing Everglades Forever Act, the State and Federal governments have embarked upon several huge capital efforts designed to improve water quality and continue to offer flood protection and restore the Everglades ecosystem. These efforts have included the purchase of over 100,000 acres south of Lake Okeechobee and construction of storage and stormwater treatment areas at a cost of over \$2.5 billion by the State.

In 2015, Governor Rick Scott proposed a plan to fund the restoration of Florida's Everglades over the next 20 years. An ongoing source of revenue for Everglades restoration will eliminate the "stops and starts" that have repeatedly impeded Everglades restoration progress in the past. A dedicated funding plan, known as Legacy Florida, recognizes the international significance of Everglades restoration and its importance to Florida's economy and the quality of life for millions of Florida residents.

A synopsis of large, capital project initiatives over the last two decades follows.

Comprehensive Everglades Restoration Plan (CERP)

The Comprehensive Everglades Restoration Plan is a framework for restoring, protecting and preserving the greater Everglades ecosystem. The plan is a 50-50 cost partnership between the State and Federal governments. The Florida Legislature and the South Florida Water Management District have to date invested approximately \$2 billion in CERP-related land acquisition, project design and construction. The implementation of the CERP Plan is guided by the Integrated Delivery Schedule, a sequencing timeline for project completion.



Authorized in the Water Resources Development Act of 2000, CERP consists of 68 components as a plan to "restore, preserve, and protect the south Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection."

CERP Included 10 Initially Authorized Projects:

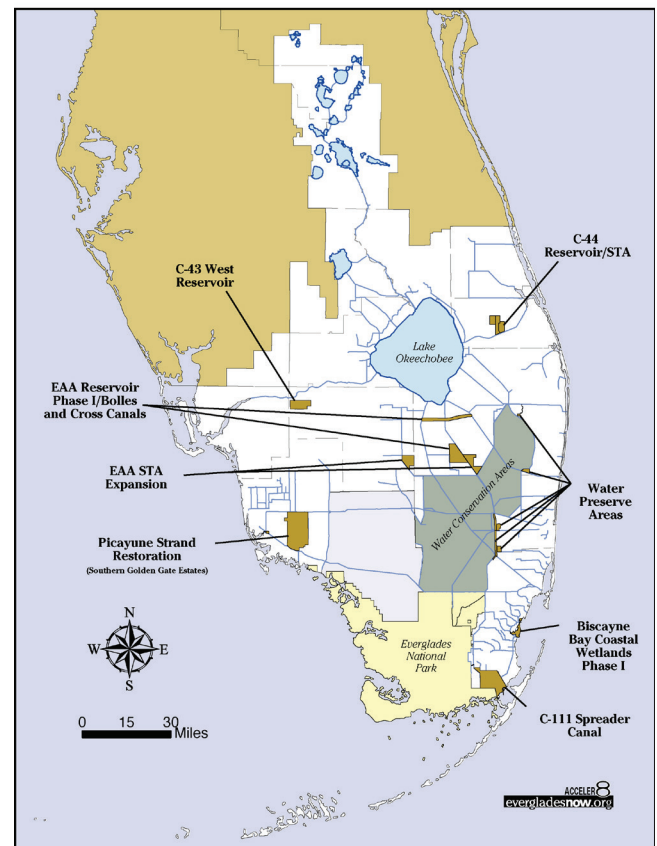
- C-44 Basin Storage Reservoir
- Everglades Agricultural Area Storage Reservoirs, Phase 1
- Site 1 Impoundment
- Water Conservation Areas 3A/3B Levee Seepage Management
- C-11 Impoundment and Stormwater Treatment Area
- C-9 Impoundment and Stormwater Treatment Area
- Taylor Creek/Nubbin Slough Storage and Treatment Area
- Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within Water Conservation Area 3
- North New River Improvements
- C-111 Spreader Canal

Acceler8

Announced by Governor Jeb Bush in October 2004, the program, utilizing all State funds to expedite or advance projects, accelerated the funding, design and construction of a number of CERP projects. This was done through the use of bonds that were issued by the District (over \$380 million of that debt is still outstanding).

Implementation of the Acceler8 Projects would have provided approximately 50% of the CERP Plan Surface Water Storage. The funds were used to implement the following:

- Construct test cells for the C-43, C-44 and EAA reservoirs
- Complete detailed project designs for the reservoirs
- Complete more than 17,300 acres of expansion for STA-2 and STA-5/6
- Initiate construction of the EAA Reservoir, which was later used for storage under Restoration Strategies (A-1 FEB)



Accelerated CERP projects

EAA Reservoir Phase A1 as Part of Acceler8

The project consisted of the construction and operation of a 12-foot deep, above ground reservoir with a storage capacity of 190,000 acre-feet located on 16,000 acres in the Everglades Agricultural Area. Project design was completed in 2006; construction began soon after and was suspended in 2008.

The Acceler8 Program was terminated after environmental organizations filed lawsuits in federal court to stop construction of the EAA Reservoir Phase I.

Timeline for EAA Reservoir Phase A1

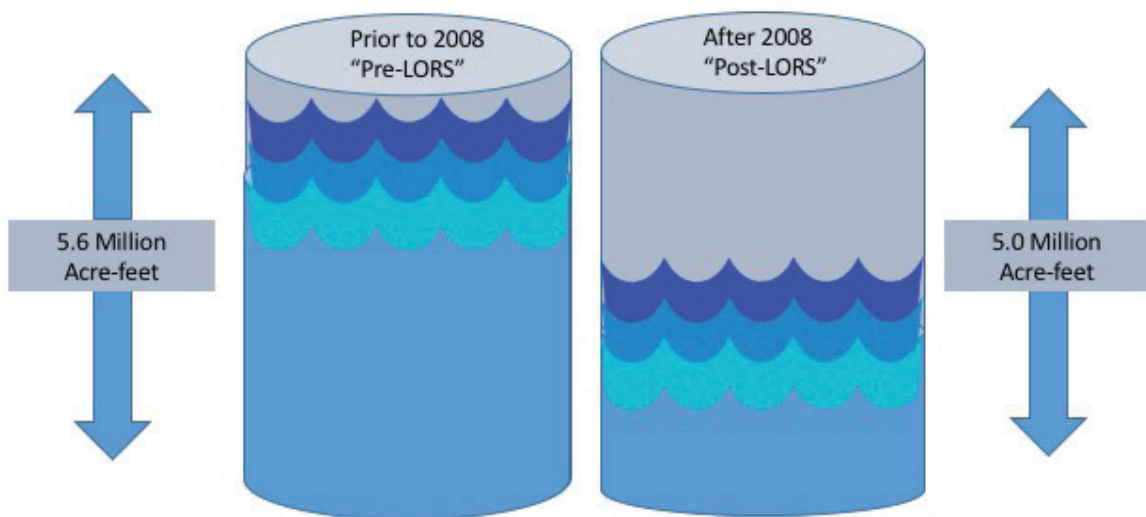


Lake Okeechobee Regulation Schedule (LORS2008)

From 2004 through 2006, Lake Okeechobee inspections revealed severe deterioration of the Herbert Hoover Dike (HHD). As a result, the HHD was listed as a high hazard dam in the U.S. Army Corps of Engineers Dam Safety program as it posed a severe risk on life and property. Since then, the U.S. Congress has authorized comprehensive dike repair committing over \$1 billion to secure the dike. This project should be complete in 2022. Until then, prudent management requires lowering lake levels to minimize risks to communities surrounding the Lake.

A new, interim regulation schedule for the management of Lake Okeechobee water levels was approved by the U.S. Army Corps of Engineers in 2008. The new Lake Okeechobee Regulation Schedule, named LORS2008, replaces the prior regulation schedule known as WSE (Water Supply/Environmental) and lowers the Lake level by over 1 foot. The Lake schedule is planned for revision between 2022 and 2025.

Lake Okeechobee Storage Volumes



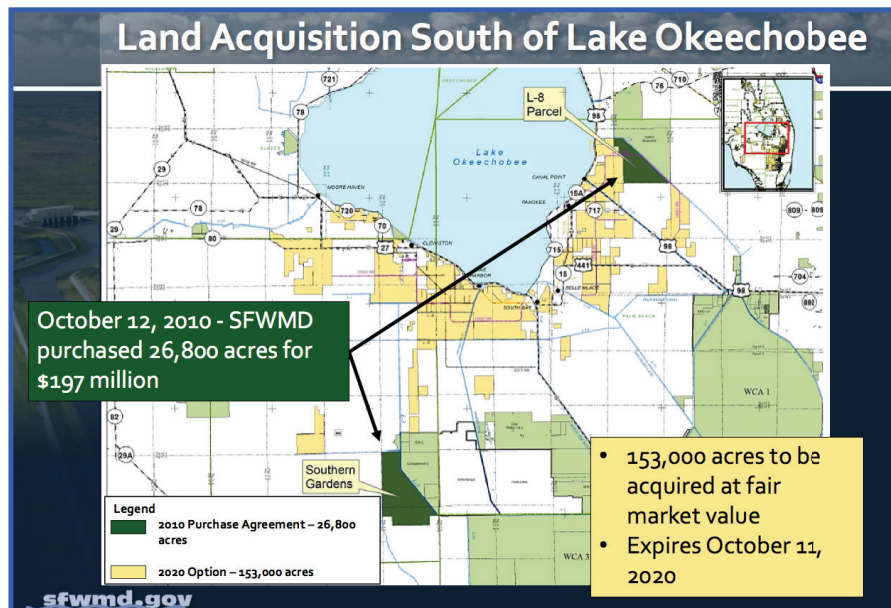
Approximately 600,000 Acre-Feet Lost

Contractual Options for Purchase of Lands South of Lake Okeechobee

Negotiations with U.S. Sugar began in 2008 under Governor Charlie Crist. Initially, the South Florida Water Management District (SFWMD) was to acquire all land and company assets, including 187,000 acres of land in the EAA, for an estimated \$1.75 billion. In October 2010, after several unsuccessful attempts to close deals for portions of U.S. Sugar land, SFWMD closed on the purchase of 26,000 acres for \$197 million.

The 2010 purchase agreement included an option to acquire an additional 153,209 acres at fair market value. SFWMD may execute this option before October 11, 2020, or may assign it to the Trustees of the Internal Improvement Trust Fund. The 2010 purchase agreement and option contract is complex and not favorable to the State. Notable provisions include:

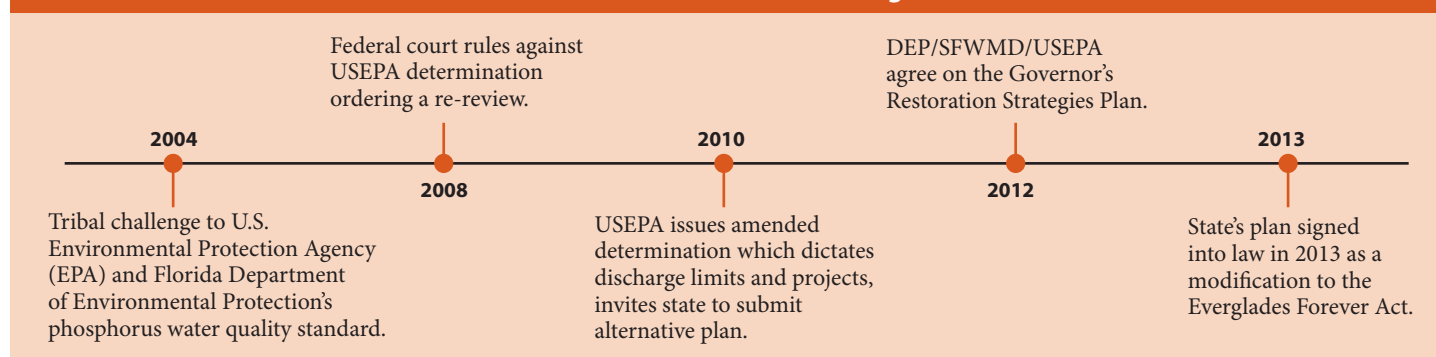
- SFWMD may not exercise its right of eminent domain to acquire acreage less than 153,209 acres, and if such eminent domain proceeding ensues, the purchase and contract prevails over eminent domain.
- If lands are purchased, they must be leased back to U.S. Sugar for a 20-year term.
- To construct a project, additional land, not owned by U.S. Sugar, may be needed.



Restoration Strategies for Clean Water for the Everglades

In June 2012, the State of Florida and the U.S. Environmental Protection Agency (EPA) reached consensus on new Restoration Strategies for further improving water quality in the Everglades, building on the success of the existing 57,000 acres of stormwater treatment areas. Based on months of scientific and technical discussions, Restoration Strategies expands water quality improvement projects to help achieve phosphorus water quality standards established for the Everglades.

Timeline for Restoration Strategies

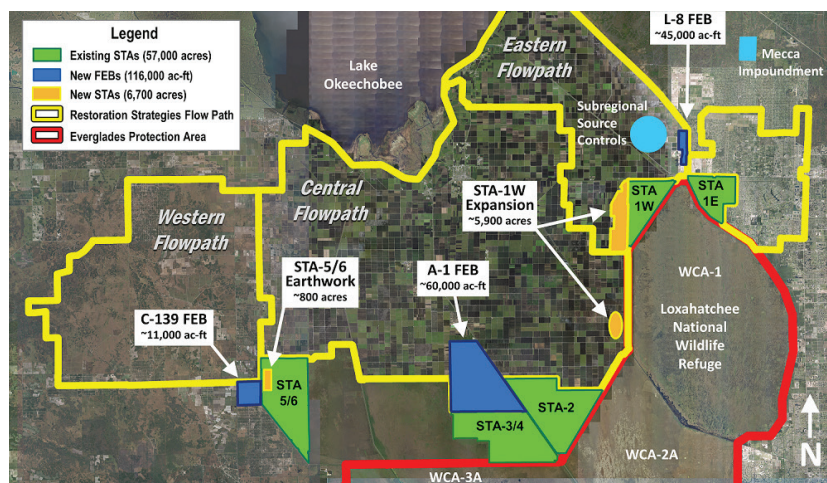


\$880 Million Restoration Strategies (\$225 Million expended):

142,000 acre-feet of storage and 6,500 additional acres of treatment

Construction Highlights:

- A-1 Flow Equalization Basin (60,000 acre-feet of storage) – complete and operational
- L-8 Flow Equalization Basin (45,000 acre-feet of storage) – partial completion and operation
- STA-1 West (4,700 acres of expanded treatment capacity) – under construction
- Construction of all components to be completed by 2025



Restoration Strategies: Stormwater Treatment Areas and Flow Equalization Basins

As a result of the State's investment in water quality projects, over 90% of the Everglades Protection Area now meets water quality standards.

Central Everglades Planning Project (CEPP)

The Central Everglades Planning Project identifies and plans for projects on lands already in public ownership to allow more water to be directed south of Lake Okeechobee in the central Everglades, Everglades National Park and Florida Bay while protecting the Caloosahatchee and St. Lucie estuaries. Authorized by the U.S. Congress in 2016, the focus is additional storage and distribution of water south.

Of the 68 projects included in the Comprehensive Everglades Restoration Plan (CERP), the Central Everglades Planning Project (CEPP) includes six of the projects in one plan.

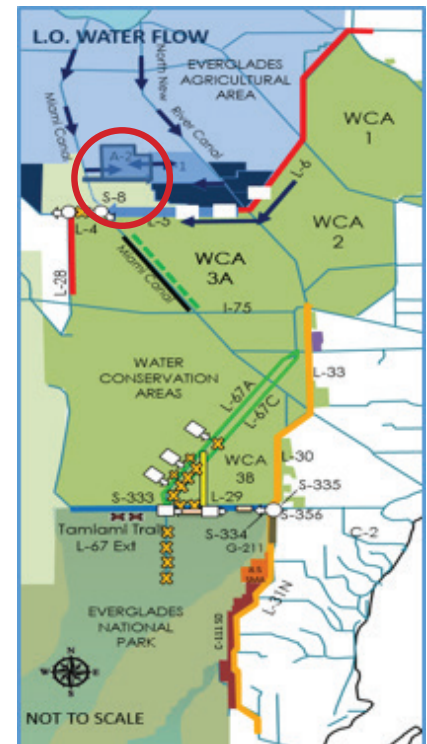
Components include:

- Everglades Agricultural Area Storage Reservoirs
(circled in red on map)
- WCA 3 Decompartmentalization and Sheetflow Enhancement
- S-356 Pump Station Modifications
- L-31 N Improvements for Seepage Management
- System-wide Operational Changes – Everglades Rain-Driven Operations
- Flow to Northwest and Central WCA 3A

Benefits of CEPP:

Environmental improvements to approximately 1.5 million acres in the Northern Estuaries, Water Conservation Area 3, Everglades National Park and Florida Bay include:

- Increasing storage, treatment and conveyance of water south of Lake Okeechobee
- Removing canals and levees to enhance sheetflow, restoring Everglades' wetlands, hydrology and connectivity
- Delivering more fresh water to Everglades National Park and Florida Bay
- Protecting urban and agricultural interests to the east from flooding



Options to Reduce High Volume Freshwater Flows to the St. Lucie and Caloosahatchee Estuaries and Move More Water from Lake Okeechobee to the Southern Everglades

An Independent Technical Review by the University of Florida Water Institute

Wendy Graham, Ph. D.
Water Institute Director
Swisher Eminent Scholar in Water Resources



Background

- The 2014 Florida Senate requested the UF Water Institute to conduct an independent technical assessment to
 - Review existing documents, plans, projects
 - Identify constraints to implementing plans and projects
 - Identify options for accelerated protection of the estuaries and protection of the Everglades

Review Team Findings

- Relief to the estuaries and the ability to move more water south of Lake Okeechobee can be accomplished using existing technology
- The solution is enormous increases in storage and treatment of water north, south, east and west of the lake
- Currently authorized storage and treatment projects are insufficient to achieve these goals
- The path forward requires significant, consistent long-term investment in the infrastructure of the South Florida hydrologic system

Estimates of Needed Storage

400,000 acre-feet within the Caloosahatchee River watershed.

170,000 acre-ft C-43 reservoir under construction

Note: Increasing height of water in Lake Okeechobee by 1 ft provides ~450,000 acre-ft of storage



200,000 acre-feet within the St. Lucie River watershed.

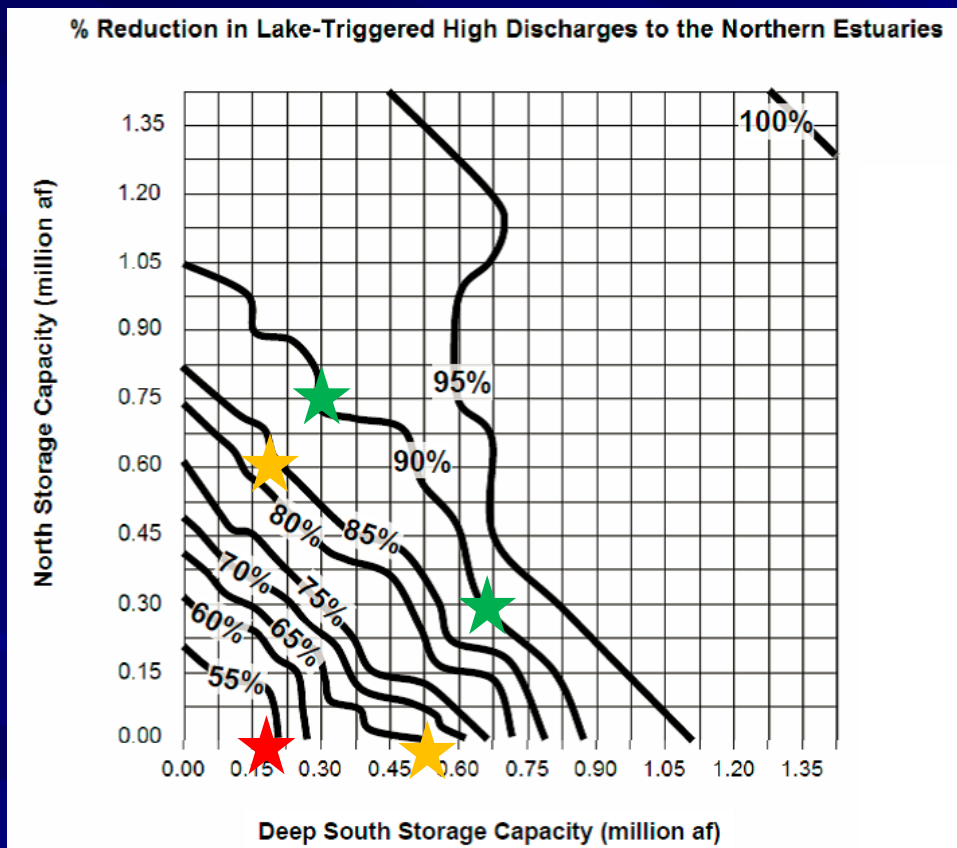
50,600 acre-ft C-44 reservoir under construction

1,000,000 acre-feet distributed N and S of Lake Okeechobee.

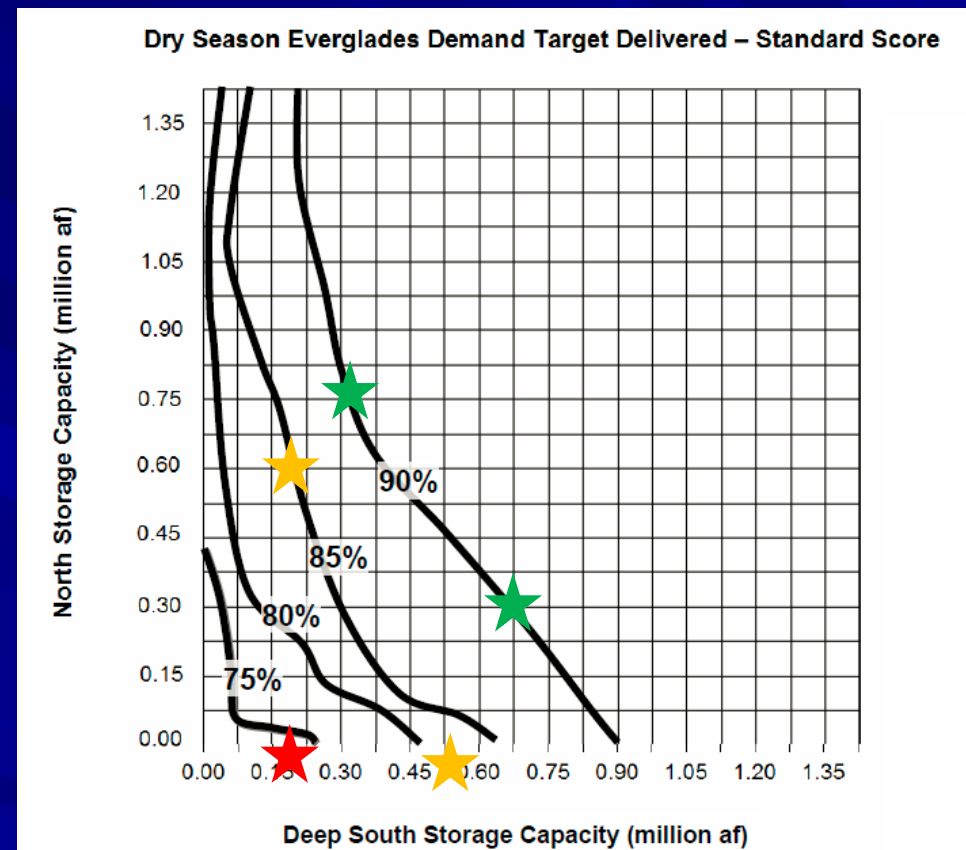
172,000 acre-ft FEBs under construction/planned S of Lake

What combinations of north-south storage achieve goals?

Reducing Estuary Discharge



Rehydrating Everglades



Results based on SFWMD RESOPS Screening Model (SFWMD, 2009)

What Path Forward?

- Accelerate existing projects
- Revise LO regulation schedule as warranted by Herbert Hoover Dike rehabilitation
- Provide storage and treatment north of lake
- Provide additional storage, treatment and conveyance south of lake
- Consider deep well disposal as emergency measure

Technical Review Team Members

Wendy D. Graham

Director, Water Institute, Professor and Carl S. Swisher Eminent Scholar Chair in Water Resources
University of Florida

Mary Jane Angelo

Director, Environmental and Land Use Law Program, Professor, Levin College of Law, University of Florida

Thomas K. Frazer

Director, School of Natural Resources and Environment, Professor, School of Forest Resources and Conservation,
Institute of Food and Agricultural Sciences, University of Florida

Peter C. Frederick

Research Professor, Wildlife Ecology and Conservation, Institute of Food and Agricultural Sciences, University of
Florida

Karl E. Havens

Director, Florida Sea Grant, Professor, School of Forest Resources and Conservation, Institute of Food and Agricultural
Sciences, University of Florida

K. Ramesh Reddy

Graduate Research Professor and Chair, Soil and Water Science, Institute of Food and Agricultural Sciences,
University of Florida

A serene landscape photograph of a sunset over a body of water. The sun is a bright, glowing orb positioned just above the horizon line, casting a long, horizontal band of orange and yellow light across the sky. The sky transitions from a deep orange near the horizon to a dark, deep blue at the top. The water in the foreground is dark and still, reflecting the colors of the sunset. In the immediate foreground, there are several clumps of tall, thin, dark reeds or grasses that are slightly out of focus. The overall mood is peaceful and contemplative.

Questions ...Comments?

No materials for this item.

No materials for this item.

Options for Reducing Harmful Lake Okeechobee Discharges and Everglades Restoration

The Florida Senate Appropriations Subcommittee on the Environment and Natural Resources

January 11, 2017 – Gary Goforth, Ph.D., P.E., Gary Goforth, LLC



Discussion Points

1. The State of Florida suffers significant economic, public health and environmental damages resulting from harmful Lake Okeechobee discharges to the estuaries.
2. The single most important project that can be implemented to reduce damaging discharges to the estuaries and restore flow to the Everglades is completion of the EAA Storage Reservoir, which has been an integral component of Everglades restoration for more than 20 years.
3. Multiple combinations of location, configuration, land area and water depth can achieve the storage and flow objectives of the EAA Storage Reservoir.

Economic and Ecologic Impacts

Economic impacts

- 27,000 jobs and \$840 million per year in water-related businesses around the St. Lucie Estuary
- 50,000 jobs and \$3 billion per year in Lee County; \$40 million lost revenues in 2005 high flows
- Florida Realtors 2015 report: loss of property values associated with large Lake discharge events
 - \$428 million around St. Lucie Estuary
 - \$541 million around Caloosahatchee Estuary; 2016 real estate sales down 22% from 2015

Ecologic impacts

- Estuaries:
 - loss of oysters, seagrass, habitat and associated impacts in food chain (fish, turtles, etc.)
 - deposition of muck, high nutrients and toxic algae
- Everglades, Gulf of Mexico and Florida Bay: loss of flow and associated impacts

1980-2016 average annual discharges to Caloosahatchee and St. Lucie

- 242 billion gallons of harmful Lake discharges
 - could satisfy water supply demand for 4.4 million people
 - about \$850 million/yr to replace this wasted water
- 3.3 million pounds nitrogen
- 222,000 pounds phosphorus
- 31 million pounds suspended sediment

2016 – about 3 times average annual flows and pollution

- Martin/St. Lucie septic tanks estimated to contribute <2% of nutrient loading

2016 – Toxic Algae Blooms in St. Lucie and Caloosahatchee Estuaries from Lake Okeechobee



Toxic Algae Blooms - Only occur during years with high Lake discharges to St. Lucie Estuary

- Causes acute human health problems – respiratory and skin – over 100 cases documented in Martin County in 2016
- Linked to chronic public health problems – Alzheimer's, Parkinson's and ALS
- Cattle and pet deaths

Unprecedented public and media response

“Store it - Clean it - Move it south!”



Additional storage is needed in all regions

The science is clear, consistent and unambiguous – additional storage is needed south of the Lake

- **Eastern storage** of Lake being accomplished through authorized and on-going CERP Project; C-44 Reservoir designed to capture basin runoff – not Lake discharges
- **Western storage** – C-43 Reservoir and other basin projects
- **Northern storage** – benefits dry season water supply north of lake; limited ability to reduce harmful discharges to estuaries: after filling, majority of discharges flow to Lake

- **Southern storage**

Discharge is to the south; can operate 12 months of the year and significantly reduce harmful discharge to estuaries

- Water Year 2015: 191 billion gallons sent south to Everglades; more than 10 fill/drain cycles
 - 184 billion gallons still went to estuaries
 - Proved that southern storage is effective even though Lake is high and that STA performance doesn't suffer
- 2016: 80 billion gallons sent south to Everglades; 740 billion gallons to estuaries

2009 SFWMD identified a goal of 228 to 358 billion gallons of storage south of Lake (River of Grass)

2014 Central Everglades Planning Project (CEPP) – **storage greater than 120 billion gallons is likely needed**

2015 Univ. of Florida Water Institute Study

- Achieving substantial reduction in lake-triggered discharges to the estuaries and substantial improvement toward the dry season Everglades demand target will require additional land between the lake and the Everglades
- Recommended between 43-165 billion gallons , on between 11,000 – 129,000 acres

2016 National Academies of Science, Engineering and Medicine – **more storage needed**

- Historical rainfall greater than assumed in CERP -> more storage would likely be needed to accommodate future changes in the quantity and intensity of runoff.
- At the same time, over 325 billion gallons of the originally envisioned storage has been lost due to design changes, new understanding of project feasibility (e.g., ASR wells) and changes to Lake Okeechobee's operating schedule.

EAA Storage Reservoir – The Unfinished 60-yr Old Project

Combined shortfall for EAA Storage Reservoir = 100 billion gallons

1923 – first reported discharges from Lake Okeechobee to the St. Lucie Estuary

1930 – Martin County Commission sends first of many requests to State requesting a stop to the discharges

1955 – US Army Corps evaluates new outlet and flow-way south of Lake

1980s - The concept of Regional EAA Reservoir Storage was formalized through the late 1980s and early 1990s

1996 – Governor’s Commission for a Sustainable South Florida: A Conceptual Plan for the C&SF Project Restudy

- Stakeholders unanimously agreed to storage reservoirs in the EAA

1999 - C&SF Restudy - identified EAA Storage Reservoirs as Component G – 120 billion gallons on 60,000 acres

- **Land acquired from willing sellers prior to planning and design completion**

2000 - The EAA Storage Reservoir was authorized by Congress as part of initial set of CERP projects

- A-1 Reservoir – 62 billion gallons, 12 feet deep on 17,000 acres
- A-2 Reservoir – 55 billion gallons, 12 feet deep on 16,000 acres
- 2006 cost estimate: \$913 million – delay has cost the taxpayers hundreds of millions of dollars

2006 - Construction of A-1 Reservoir began; anticipated construction completion 2009-2011

2008 – Construction of A-1 Reservoir stopped after expenditure of more than \$500 million

2012 – A-1 footprint converted to a shallow water surge basin to provide additional water quality treatment for predominantly EAA runoff, and secondarily, for Lake releases (Restoration Strategies)

2013 – Central Everglades Project (CEP) –

- A-1 reservoir was removed from CERP – loss of 62 billion gallons of storage
- A-2 reservoir was reduced from 55 billion gallons to 18 billion gallons, a loss of 37 billion gallons

2016 – Sen. Negron proposes acquisition of up to 60,000 acres and construction of EAA Storage Reservoir

- 60,000 acres is less than 15% of the EAA

Benefits of EAA Storage Reservoir

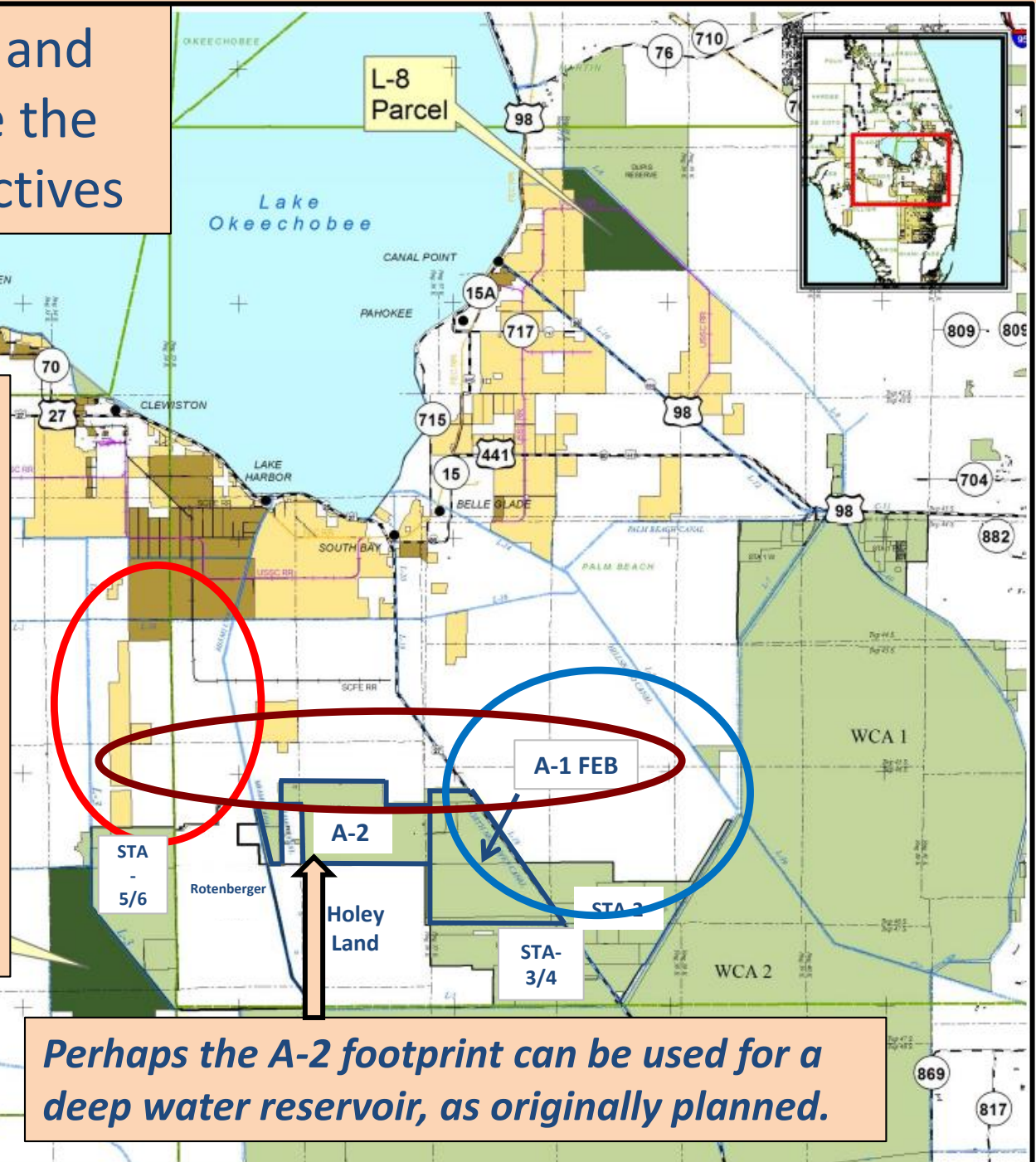
- Create construction jobs and long-term jobs and inject money into the local economy
- Reduce the damaging discharges to coastal estuaries and reduce risk of health problems
- Provide additional water to meet Everglades and agricultural water demands, improving the timing of environmental deliveries of clean water to the WCAs, Florida Bay and the Gulf of Mexico
- Provide additional water to the Florida east coast well fields and combat sea level rise
- Reduce extreme high and low levels in Lake Okeechobee
- Reduce the potential for flooding in the EAA, and reduces the need for emergency flood control back-pumping into Lake Okeechobee
- Improve operational flexibility to move water within the EAA, including flow equalization and optimization of STA performance to further reduce phosphorus inflows to the Everglades
- Provide public access and recreation opportunities

Many configurations and locations can achieve the storage and flow objectives

From SFWMD 2012:

“Value and productivity of land in the EAA decreases with distance from Lake Okeechobee”

“Southern portion of EAA demonstrated better cost effectiveness on a cost per ac-ft of storage when compared to other locations.”



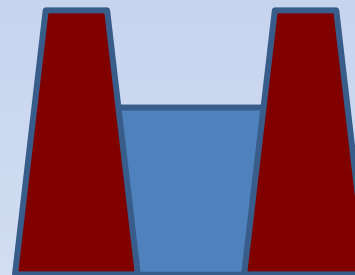
Many combinations of area and depth can achieve the storage and flow objectives

Alternative	Storage Depth (feet)	Land Area (acres)	Storage Volume (billion gallons)
1	6	60,000	120
2	10	36,000	120
3	12	30,000	120
4	14	25,715	120

Note: alternatives evaluated during planning process for initial EAA Storage Reservoir (2006)



Alt. 1. 6-ft deep,
60,000 acres



Alt. 3. 12-ft deep,
30,000 acres

Potential Socioeconomic Benefits of EAA Storage Reservoir Project

Jobs and training for local residents:

- Over \$1 billion construction program
 - \$500,000 expenditures in Tri-cities area
- Estimated over 650 direct jobs:
 - Construction craft workers
 - Heavy equipment operators
- Long-term employment opportunities

SFWMD briefing, April 20, 2007

Potential Next Steps

1. Land acquisition
2. Accelerate planning and design (coordination with Corps)
 - evaluate alternatives, incl. use of A-2 footprint as deep water reservoir
3. Continue stakeholder meetings, including identifying socioeconomic opportunities
4. Construction
5. Revise Lake Okeechobee regulation schedule
6. ***Celebrate completion of CERP EAA Storage Reservoir!***

On a parallel path

- Improve Lake Okeechobee water quality
- Begin health sampling of Glades communities and estuary regions affected by potentially toxic algal blooms

Take Home Messages

1. The State of Florida suffers significant economic, public health and environmental damages resulting from harmful Lake Okeechobee discharges to the estuaries.
2. The single most important project that can be implemented to reduce damaging discharges to the estuaries and restore flow to the Everglades is completion of the EAA Storage Reservoir, which has been an integral component of Everglades restoration plans for more than 20 years.
3. Several combinations of location, configuration, land area and water depth can achieve the storage and flow objectives of the EAA Storage Reservoir.

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

11/11/17

Meeting Date

Bill Number (if applicable)

Topic Lake O - Everglades

Amendment Barcode (if applicable)

Name Michael Foster

Job Title Councilman Village of Islamorada

Address 150 Seminole Blvd

Phone 305-240-5989

Street

Tavernier

FL

33070

City

State

Zip

Email magnite@bellsouth.net

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Islamorada

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

② 1-11-17

Meeting Date

Bill Number (if applicable)

Topic Lake O

Amendment Barcode (if applicable)

Name Melissa McKinlay

Job Title Commissioner, Palm Beach County

Address 301 N Olive Ave

Phone 561 355 2206

Street

WPB

City

FL

State

33401

Zip

Email mmckinlay@pbccgov.org

Speaking: ☐ For ☐ Against ☒ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Palm Beach County

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No
n/a

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1-11-17

Meeting Date

Bill Number (if applicable)

Topic Lake Okeechobee

Amendment Barcode (if applicable)

Name Tammy Jackson-Moore

Job Title Deputy City Mgr. (City of Pahokee)

Address ~~307~~ 207 Begonia Dr.

Phone 561-914-0311 (cell)

Street

Pahokee

FL

33476

City

State

Zip

Email tjackson-moore@city
ofpahokee.com

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing City Tri-Cities (Belle Glade, Pahokee)

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

11/16/13
Meeting Date

Bill Number (if applicable)

Topic Clean Water Projects For Lake O & Recharge

Amendment Barcode (if applicable)

Name David A. Schallert

Job Title Realtor & Vacation Rentals

Address 12331 Summerwood Dr
Street

Phone 239 472 5187

Fort Myers FL 33908
City State Zip

Email David.Schallert@aol.com

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Sanibel & Captiva Association of Realtors

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Jan 11, 2017

Meeting Date

Bill Number (if applicable)

Topic In support of Negron
Name Megan Nichols
Job Title FSU Student

Amendment Barcode (if applicable)

Address 1667 Sherkey St
Street
Tallahassee FL 32304
City State Zip

Phone 321-266-5081

Email mnn10@my.fsu.edu

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☒ In Support ☐ Against
(The Chair will read this information into the record.)

Representing _____

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/11/16
Meeting Date

Bill Number (if applicable)

Topic Lake O Discharge

Amendment Barcode (if applicable)

Name Nyla ~~the~~ Pipes

Job Title Director

Address 332 NW Aurora St.
Street

Phone 772-233-6182

Port St. Lucie FL 34983
City State Zip

Email Nyla@onefloridafoundation.org

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing One Florida foundation

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/11/17
Meeting Date

Bill Number (if applicable)

Topic

Everglades Restoration

Amendment Barcode (if applicable)

Name

Sophia Siegel

Job Title

Address

3015 SE St. Wend Bvd

Phone

Street

Stuart

FL

34997

Email

City

State

Zip

Speaking:



For



Against



Information

Waive Speaking:



In Support



Against

(The Chair will read this information into the record.)

Representing

Appearing at request of Chair:



Yes



No

Lobbyist registered with Legislature:



Yes



No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date

Bill Number (if applicable)

Topic WATER PROTECTS - REDUCING LAKE DISCHARGES

Amendment Barcode (if applicable)

Name JAMES EVANS

Job Title DIRECTOR OF NATURAL RESOURCES

Address 800 DUNLOP RD

Phone 239-472-3700

Street

SANIBEL

FL

33957

City

State

Zip

Email JAMES.EVANS@mySanibel.com

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing CITY of SANIBEL

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

THE FLORIDA SENATE
APPEARANCE RECORD

Submitted @ 9:35 AM

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/11/16

Meeting Date

Bill Number (if applicable)

Topic Reducing harmful Lake Okeechobee Discharges

Amendment Barcode (if applicable)

Name Daniel Andrews

Job Title Fishing Guide

Address 12360 Flintlock Ln
Street

Phone 239-989-9352

Ft. Myers
City

FL
State

33912
Zip

Email daniel.andrews@captainsforcleanwater.org

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Captains for Clean Water

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date _____

Bill Number (if applicable) _____

Topic Discussion & testimony to the extent of reducing harmful lake Oklawaha discharges

Amendment Barcode (if applicable) _____

Name JACQUI THURLOW-LIPPISCHJob Title Citizen/former mayor, Town of Seawall's PointAddress 18 Riverview Dr.Phone 772-486-3818

Street

Seawall's Point, FL34996

City

State

Zip

Email jthurlow@me.comSpeaking: ☒ For ☐ Against ☐ InformationWaive Speaking: ☒ In Support ☐ Against
(The Chair will read this information into the record.)Representing myselfIn support of reducing harmful lake Oklawaha dischargesAppearing at request of Chair: ☐ Yes ☒ NoLobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

9/11/17

Meeting Date

Bill Number (if applicable)

Topic _____

Amendment Barcode (if applicable)

Name Lydia Eldredge

Job Title Graduate TA

Address 2006 Woodstock Ln
Street

Phone _____

Tallahassee
City

FL
State

32303
Zip

Email eldredge.lydia@gmail.com

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☒ In Support ☐ Against
(The Chair will read this information into the record.)

Representing myself

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1-11-17

Meeting Date

Bill Number (if applicable)

Topic _____

Amendment Barcode (if applicable)

Name Adam Morley

Job Title Captain

Address 1205 SR 206
Street

Phone 904 540 7245

St. Augustine FL 32086
City State Zip

Email Capt-Morley@yahoo.com

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Self

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date _____

Bill Number (if applicable) _____

Topic

LAKE O

Amendment Barcode (if applicable) _____

Name

PRISCILLA TAYLOR

Job Title

FORMER STATE REP / FORMER COUNTY CLERK

Address

1448 39TH ST

Phone

561 3462814

Street

WEST PALM BEACH FL 33407

Email _____

City

State

Zip

Speaking:

☒

For

☐

Against

☐

Information

Waive Speaking:

☐

In Support

☐

Against

(The Chair will read this information into the record.)

Representing

MYSELF

Appearing at request of Chair:

☐

Yes

☐

No

Lobbyist registered with Legislature:

☒

Yes

☐

No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

CS-004 (08/14/10)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date _____

Bill Number (if applicable) _____

Topic Clean water / clean air

Amendment Barcode (if applicable) _____

Name Doug Schmidt River Now

Job Title _____

Address 2505 NE Indian River Dr ^{Lot 127} Phone 772-349-6115

Street

Jensen Beach, FL 34957

City

State

Zip

Email TM Parker 740 a
Gmail.com

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Jensen Beach Christian Church

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☒ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/11/17

Meeting Date

Bill Number (if applicable)

Topic Lake Okeechobee Discharges

Amendment Barcode (if applicable)

Name Greg BRAUN

Job Title Ecologist

Address 10370 Trailwood Circle

Phone (561) - 575-2028

Street

Jupiter

City

FL

State

33478

Zip

Email dgregbraun@aol.com

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Guardians of Martin County

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1-11-17
Meeting Date

Bill Number (if applicable)

Topic NEGRON Buy The LAND PLAN

Amendment Barcode (if applicable)

Name EILEEN DU CHA

Job Title _____

Address 1838 NE 23RD AVE

Phone _____

JENSEN BEACH FL 34857
City State Zip

Email _____

① All lives matter
② Everyone needs clean water
3. Buy THE LAND

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing _____

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/11/17

Meeting Date

Buy the Land!

Bill Number (if applicable)

Topic Negro's GREAT PLAN

Amendment Barcode (if applicable)

Name Irene Gomes

Job Title Owner Driftwood Motel

Address 4150 NE INDIAN RIVER DR.

Street

Jensen Beach FL

FL 34957

City

State

Zip

Phone 772-528-4776

Email driftwoodjb@comcast.net

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing DRIFTWOOD MOTEL Jensen Beach FL - Along
the Indian River Lagoon

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

The most diverse Estuary
S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

11/11/2017
Meeting Date

Bill Number (if applicable)

Topic Restoration of the estuaries

Amendment Barcode (if applicable)

Name Jim Harter

Job Title Pres. Stuart Fladders, VP Martin CCA, Rivers Coalition

Address 3360 SW St. Lucie Shores Dr. Phone 772 486-2499

Street

Palm City
City

FL
State

34990
Zip

Email jharter761@att.net

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Everglades Trust

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

01/01/17

Meeting Date

Bill Number (if applicable)

Topic SENATOR NEGRO'S PLAN

Amendment Barcode (if applicable)

Name PAUL LAURA

Job Title SMITHSONIAN MARINE STATION / FLORIDA OCEANOGRAPHIC SOCIETY VOLUNTEER

Address 4492 NE OCEAN BLVD. UNIT D-1 Phone 772.203.6378
Street

JENSEN BEACH, FL 34957 Email PELAHAMBURG@GMAIL.COM
City State Zip

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing PHYSICAL IMPAIRMENT DUE TO TOXICITY OF BLUE-GREEN ALGAE

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Jan 11 2016
Meeting Date

Topic NEGRO'S PLAN TO SEND LAKE O WATER PURCHASE LAND TO SOUTH
Bill Number (if applicable) _____
Amendment Barcode (if applicable) _____

Name SAM HAY

Job Title RETIRED

Address 1397 SW VIZCAYA CIRCLE
Street

Phone 772-678-6511

PALM CITY FL 34990
City State Zip

Email samhay@gmail.com

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☒ In Support ☐ Against
(The Chair will read this information into the record.)

Representing _____

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1-11-17

Meeting Date

Bill Number (if applicable)

Topic Supporting Sen. Negrón's Plan

Amendment Barcode (if applicable)

Name Megan Berame

Job Title Communications Director

Address 6107 S. Dixie Highway

Phone 561-383-1962

Street

West Palm Beach FL 33405

Email megan.berame@gmail.com

City

State

Zip

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Everglades Trust

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

Meeting Date

Topic NEGRO PLAN

Name PATTY McNALLY

Job Title CREATIVE

Address 529 CLEMATIS ST
Street

WEST PALM BEACH FL 33401
City State Zip

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing INDIVIDUAL CITIZEN

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/11
Meeting Date

Bill Number (if applicable)

Topic In support of Megan

Amendment Barcode (if applicable)

Name MacKenzie Vecchio

Job Title FSU Student

Address 224 Hayden Rd apt 215
Street

Phone 561-568-1642

Tallahassee FL 32304
City State Zip

Email Vecchio647@gmail.com

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☒ In Support ☐ Against
(The Chair will read this information into the record.)

Representing _____

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

01/11/16

Meeting Date

Bill Number (if applicable)

Topic Land Aquisition for Everglades Restoration

Amendment Barcode (if applicable)

Name Sophia Fonseca

Job Title student

Address 223 SW 179th Ave.

Phone 954-240-8703

Street

Pembroke Pines

FL

33029

City

State

Zip

Email sophiacf619@gmail.com

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☒ In Support ☐ Against

(The Chair will read this information into the record.)

Representing FSU's Environmental Service Program

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting

S 001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

11/11/17
Meeting Date

Bill Number (if applicable)

Topic Water Projects, Reducing Lake Discharges

Amendment Barcode (if applicable)

Name Chris Davison

Job Title Chairman of Board - Bailey Matthews Shell Museum
General Manager - Island Inn - Director - Sanibel + Captiva Chamber of Commerce

Address 3111 W. Gulf Dr

Phone (239) 247-4161

Street

Sanibel

FL

33957

Email chrisd@islandinnsanibel.com

City

State

Zip

Speaking: ☒ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing Island Inn, Bailey - Matthews National Shell Museum, Sanibel-Captiva Chamber of Commerce

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

1/11/17
Meeting Date

Bill Number (if applicable)

Topic Buying Land in the EAA

Amendment Barcode (if applicable)

Name TRENA MERENDINO

Job Title _____

Address 303 SW Film Ave

Phone 772-626-0863

Street Port St Lucie

TRENA2634953@yahoo.com

City FL State 34953 Zip

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☒ In Support ☐ Against
(The Chair will read this information into the record.)

Representing _____

Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE
APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

Meeting Date

Bill Number (if applicable)

Topic In Support of Negron

Amendment Barcode (if applicable)

Name Lauren Covey

Job Title FSU Student

Address 1835 W Call Street Apt 215

Phone 850 766 6533

Street

Tallahassee

FL

32304

City

State

Zip

Email _____

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☐ In Support ☐ Against
(The Chair will read this information into the record.)

Representing _____

Appearing at request of Chair: ☐ Yes ☒ No

Lobbyist registered with Legislature: ☐ Yes ☒ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting.

S-001 (10/14/14)

THE FLORIDA SENATE

APPEARANCE RECORD

(Deliver BOTH copies of this form to the Senator or Senate Professional Staff conducting the meeting)

01/11/2017

Meeting Date

Bill Number (if applicable)

Topic In Support of Negron's Plan

Amendment Barcode (if applicable)

Name TALIA SAGER

Job Title Student

Address 2408 Escambia Dr

Phone _____

Willahassee FL 32304
City State Zip

Email _____

Speaking: ☐ For ☐ Against ☐ Information

Waive Speaking: ☒ In Support ☐ Against
(The Chair will read this information into the record.)

Representing _____

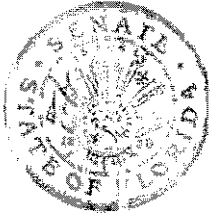
Appearing at request of Chair: ☐ Yes ☐ No

Lobbyist registered with Legislature: ☐ Yes ☐ No

While it is a Senate tradition to encourage public testimony, time may not permit all persons wishing to speak to be heard at this meeting. Those who do speak may be asked to limit their remarks so that as many persons as possible can be heard.

This form is part of the public record for this meeting

CS 001 (10/14/14)



THE FLORIDA SENATE

Tallahassee, Florida 32399-1100

COMMITTEES:

Education, *Chair*
Regulated Industries, *Vice Chair*
Appropriations Subcommittee on the Environment
and Natural Resources
Health Policy
Transportation

JOINT COMMITTEE:

Joint Committee on Public Counsel Oversight

SENATOR DOROTHY L. HUKILL
14th District

January 6, 2017

The Honorable Rob Bradley
Appropriations Subcommittee on the Environment and Natural Resources, Chair
201 The Capitol
404 S. Monroe Street
Tallahassee, FL 32399-1100

Re: Request for Excusal from Committee Meeting

Approved

Dear Chairman Bradley:

Please excuse me from the Appropriations Subcommittee on the Environment and Natural Resources on January 11, 2017 at 10:00 a.m. as I will not be able to attend due to illness.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Dorothy L. Hukill
State Senator, District 14

cc: Giovanni Betta, Staff Director of the Appropriations Subcommittee on the Environment and Natural Resources
Lisa Waddell, Committee Administrative Assistant of the Appropriations Subcommittee on the Environment and Natural Resources

REPLY TO:

□ 209 Dunlawton Avenue, Unit 17, Port Orange, Florida 32127 (386) 304-7630 FAX: (888) 263-3818

Senate's Website: www.flsenate.gov

JOE NEGRON
President of the Senate

ANITERE FLORES
President Pro Tempore

CourtSmart Tag Report

Room: SB 301

Case No.:

Caption: Senate Appropriations Subcommittee on the Environment and Natural Resources

Type:

Judge:

Started: 1/11/2017 10:00:58 AM

Ends: 1/11/2017 12:01:07 PM

Length: 02:00:10

10:01:21 AM Sen. Bradley (Chair)
10:02:03 AM Introduction of Committee Staff
10:03:29 AM TAB 1 - Lake Okeechobee Discharges
10:04:04 AM Ashley Istler, Attorney, Senate Committee on Environmental Preservation and Conservation
10:12:16 AM Sen. Bradley
10:14:34 AM TAB 5 - Options to Reduce High Volume Freshwater Flows to the St. Lucie and Caloosahatchee
Estuaries and Move More Water from Lake Okeechobee to the Southern Everglades
10:15:08 AM Dr. Wendy Graham, Director, University of Florida Water Institute
10:18:06 AM Sen. Bradley
10:18:59 AM W. Graham
10:19:17 AM Sen. Bradley
10:19:27 AM W. Graham
10:28:46 AM Sen. Bradley
10:28:58 AM W. Graham
10:31:02 AM Sen. Book
10:31:10 AM W. Graham
10:31:33 AM Sen. Mayfield
10:31:48 AM W. Graham
10:32:07 AM Sen. Bradley
10:32:17 AM Sen. Mayfield
10:32:29 AM W. Graham
10:33:30 AM Sen. Mayfield
10:34:04 AM W. Graham
10:34:50 AM Sen. Bradley
10:35:01 AM W. Graham
10:35:10 AM Sen. Bradley
10:35:30 AM TAB 2 - Presentation by the U.S. Army Corps of Engineers
10:36:02 AM Lt. Colonel Jennifer Reynolds, Deputy District Commander for South Florida, U.S. Army Corps of
Engineers
10:39:13 AM Sen. Bradley
10:39:27 AM J. Reynolds
10:39:31 AM Sen. Bradley
10:39:46 AM J. Reynolds
10:40:22 AM Sen. Bradley
10:40:30 AM J. Reynolds
10:45:51 AM Sen. Mayfield
10:46:56 AM J. Reynolds
10:51:45 AM Sen. Mayfield
10:52:07 AM J. Reynolds
10:52:25 AM Sen. Mayfield
10:52:44 AM J. Reynolds
10:53:10 AM Sen. Bradley
10:53:29 AM J. Reynolds
10:53:30 AM Sen. Bradley
10:53:37 AM J. Reynolds
10:53:56 AM Sen. Bradley
10:54:49 AM J. Reynolds
10:56:34 AM Sen. Book
10:56:50 AM J. Reynolds
10:58:14 AM Sen. Mayfield
10:58:36 AM J. Reynolds
10:58:57 AM Sen. Bradley

10:59:32 AM	J. Reynolds
11:02:11 AM	Sen. Mayfield
11:03:08 AM	J. Reynolds
11:05:34 AM	Sen. Mayfield
11:05:59 AM	J. Reynolds
11:06:27 AM	Sen. Book
11:06:35 AM	J. Reynolds
11:07:42 AM	Sen. Bradley
11:08:43 AM	J. Reynolds
11:08:52 AM	Sen. Bradley
11:09:32 AM	TAB 8 - Presentation by Environmental Engineering and Water Resources Management Scientist
11:10:02 AM	Dr. Gary Goforth, Environmental Engineering and Water Resources Management Scientist
11:24:07 AM	Sen. Latvala
11:24:56 AM	G. Goforth
11:25:01 AM	Sen. Bradley
11:25:15 AM	G. Goforth
11:26:36 AM	Sen. Latvala
11:26:55 AM	G. Goforth
11:27:28 AM	Sen. Bradley
11:27:42 AM	Sen. Mayfield
11:28:07 AM	Sen. Book
11:28:24 AM	G. Goforth
11:28:42 AM	Sen. Bradley
11:28:54 AM	G. Goforth
11:31:05 AM	Sen. Hutson
11:31:11 AM	G. Goforth
11:31:30 AM	Sen. Mayfield
11:31:37 AM	G. Goforth
11:31:43 AM	Sen. Mayfield
11:31:46 AM	G. Goforth
11:32:03 AM	Sen. Mayfield
11:32:20 AM	G. Goforth
11:33:29 AM	Sen. Bradley
11:33:36 AM	TAB 4 - Central Everglades Planning Project
11:33:52 AM	Sen. Latvala
11:33:52 AM	Peter Antonacci, Executive Director, South Florida Water Management District
11:34:15 AM	P. Antonacci
11:34:32 AM	Sen. Latvala
11:34:42 AM	P. Antonacci
11:44:04 AM	Sen. Braynon
11:44:09 AM	P. Antonacci
11:46:52 AM	Sen. Bradley
11:47:00 AM	P. Antonacci
11:47:33 AM	Sen. Bradley
11:47:43 AM	P. Antonacci
11:50:05 AM	Sen. Bradley
11:50:24 AM	P. Antonacci
11:53:42 AM	Sen. Hutson
11:54:03 AM	P. Antonacci
11:54:46 AM	Sen. Hutson
11:55:19 AM	P. Antonacci
11:55:57 AM	Sen. Bradley
11:56:19 AM	TAB 9 - Public Testimony
11:57:04 AM	Michael Forestor, Councilman, Village of Islamorada
11:59:32 AM	Sen. Braynon
11:59:44 AM	Sen. Bradley
12:00:11 PM	Melissa McKinley, Commissioner, Palm Beach County
12:01:00 PM	Meeting Adjourned