



# **Environmental Plan for Kissimmee Okeechobee Everglades Tributaries (EPKOET)**

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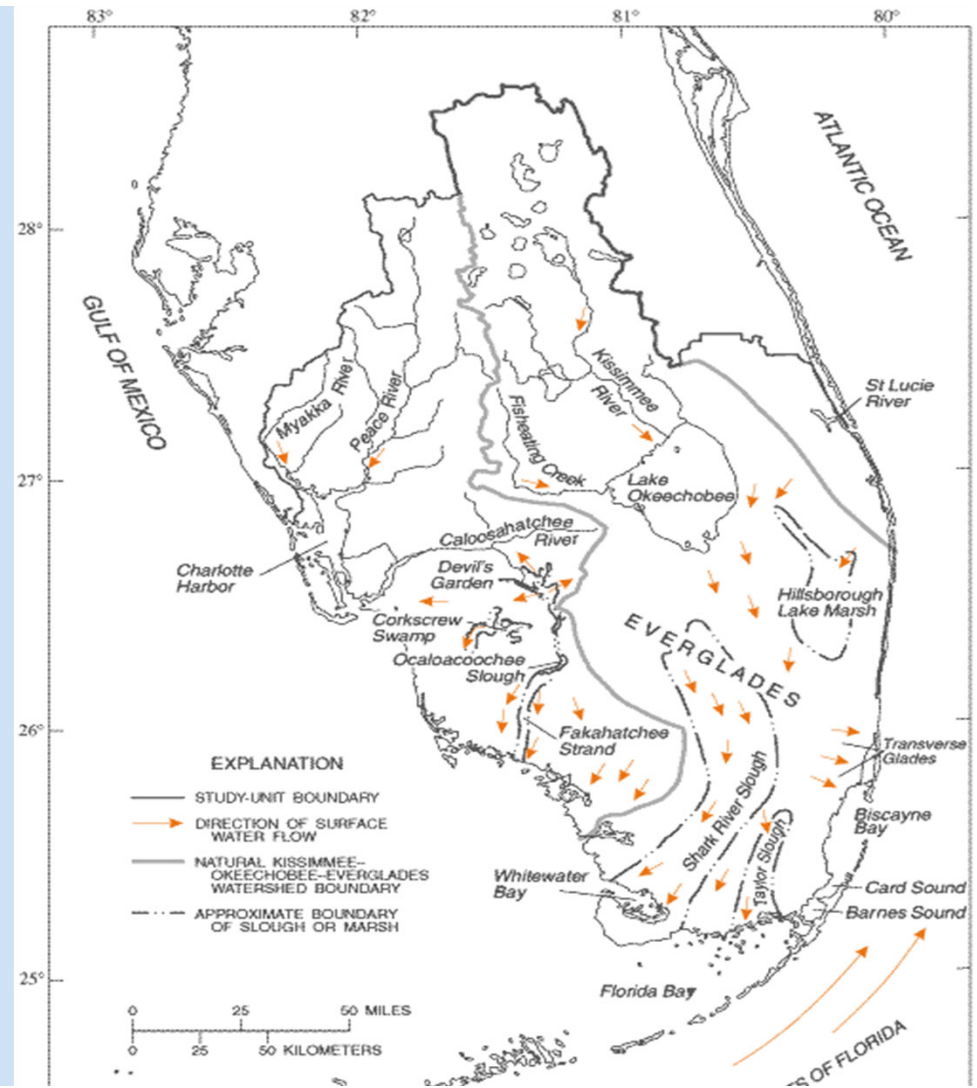
# Outline

1. Background and History
2. Mission Statement
3. Governance
4. Federal, State, and Local Policies
5. Problems
6. Goals
7. Schedule
8. Conclusions and Recommendations
9. References



# Background and History

- About 9,000 sq. mi
- Encompasses the Kissimmee River and Lake Okeechobee, the largest freshwater lake in Florida.
- Diverse ecosystem home to many endangered plant and animal species
- Major site for tourism and recreation





# Background and History

## Changes to the Land:

- Pre-settlement: The Kissimmee river was a slow moving river that drained into Lake Okeechobee. It is home to a diverse selection of wildlife and plant species.
- Post settlement (1950s): The Kissimmee river was straightened and widened to prevent flooding of the surrounding development. The length of the river was shortened and the building of the C-38 canal altered water flow. Floodplains south of the canal dried out.
- Nutrient runoff from farms surrounding the watershed severely polluted Lake Okeechobee and surrounding river systems.
- Issues with algal blooms along the Florida coast and pollution in the Everglades

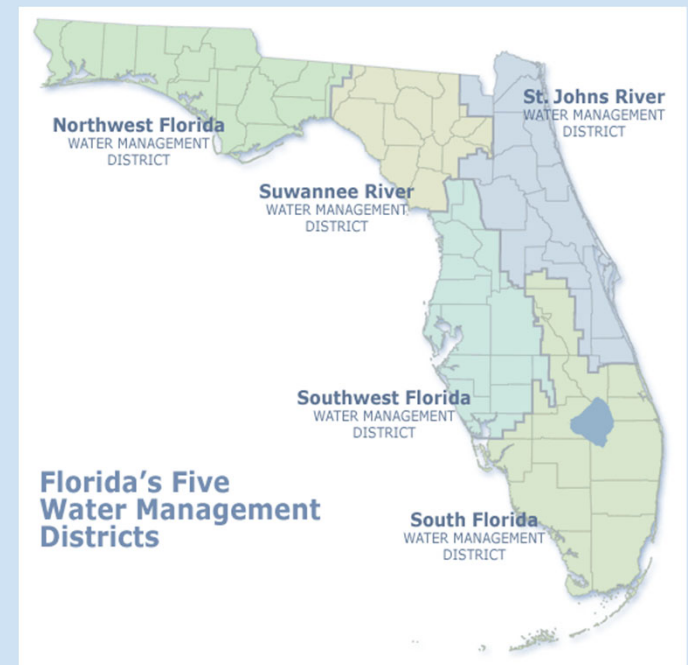


## **Mission Statement**

EPKOET's mission is to achieve a 50% improvement in the restoration of the Kissimmee Okeechobee Everglades watershed in southern Florida by the year 2050.

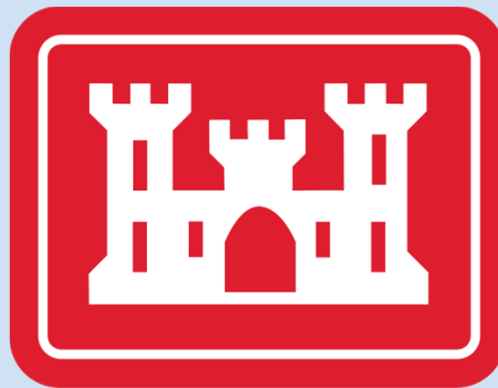
# Governance: South Florida Water Management District

- Spans 16 counties from the Florida Keys up to Orlando encompassing Okeechobee Basin and the Big Cypress Basin.
- Comprised of a Governing Board of 9 members
- Water Resources Accountability and Collaboration groups (WRAC)



# Governance: South Florida Water Management District

- Partnerships with stakeholders
- Water Resources Accountability and Collaboration groups (WRAC)
- Public Forums
- Annual budget sourced from taxes



# Federal, State, and Local Policies

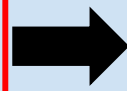


**US Army Corps of Engineers®**

NATIONAL PARK SERVICE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

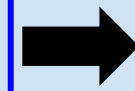
This block contains three logos: the US Army Corps of Engineers logo (a red square with a white castle), the National Park Service logo (a brown arrowhead with a tree, mountains, and a bison), and the United States Environmental Protection Agency logo (a blue circle with a green flower and a blue sun).



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

HOUSE OF REPRESENTATIVES FLORIDA

This block contains two logos: the Florida Department of Environmental Protection logo (a circular seal with a sun, water, and a tree) and the Florida House of Representatives logo (a circular seal with a landscape scene and the text 'HOUSE OF REPRESENTATIVES FLORIDA').



MARCO ISLAND City of

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

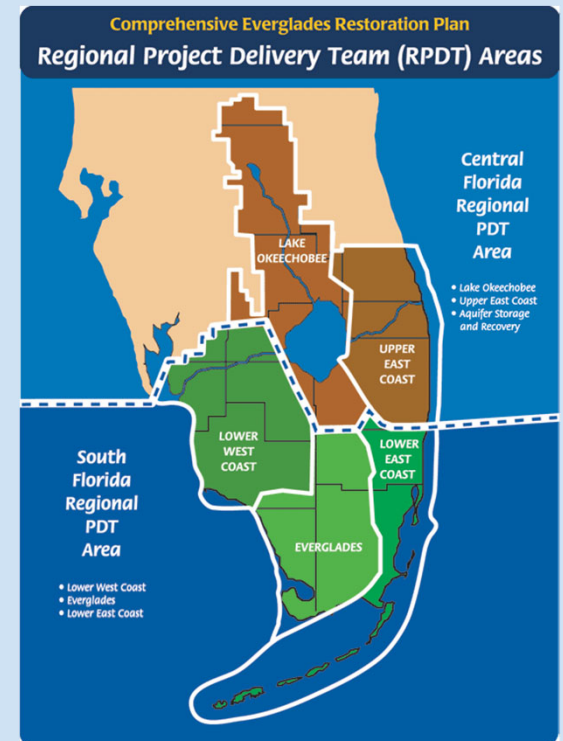
CONSERVANCY of Southwest Florida  
OUR WATER, LAND, WILDLIFE, FUTURE.

This block contains three logos: the City of Marco Island logo (a circular seal with a sun, water, and palm trees), the South Florida Water Management District logo (a circular seal with a map of Florida and water), and the Conservancy of Southwest Florida logo (a square with a white bird and a blue river).



# Federal, State, and Local Policies

- Clean Water Act, Water Resources Development Act, Comprehensive Everglades Restoration Plan
- TMDLS & BMAPs, Fracking ban
- Fertilizer Ordinances, Lake level regulation



# Problems

## 1. Saltwater Intrusion

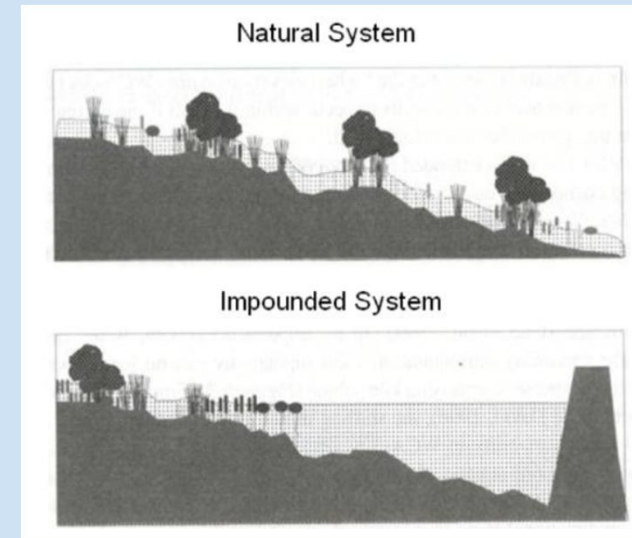
- a. Sea level rises and infiltrates underlying limestone bedrock
- b. Freshwater diverted for agricultural irrigation
- c. Sea water seeps into Biscayne aquifer

## 2. Extreme Flooding and Water Level Fluctuation

- a. Water-control measures disrupted hydrologic connectivity
- b. Drainage canals and levees lowered water levels

## 3. Pollution

- a. Urban/suburban and agricultural runoff containing phosphorus and nitrogen
- b. Can lead to algal growth, eutrophication, hypoxia, and harmful algal blooms



# Goals

## 1. Remove Impervious Surfaces and Buy Lands

- a. To prevent lowering of the water table and saltwater intrusion
- b. Buy “sugarlands” to replenish the watershed

## 2. Decrease Channelization

- a. Remove channels, levees, drainage works, and canals
- b. Restore natural conditions to minimize irregular flooding and water level fluctuation

## 3. Decrease Pollution

- a. Discourage development in the floodplain
- b. Prohibit draining for agriculture
- c. Partner with Friends of the Everglades to form policy for minimizing nutrient loadings



## Conclusions and Recommendations

- Completion of 3 EPKOET goals by 2050
  - Improve drinking water quality, ecosystems' habitats, and create hypoxic algae blooms
- Management by South Florida Watershed Management District
- Communication & collaboration with existing organizations





# References

“South Florida Water Management District.” *Sfwmd.gov*, [www.sfwmd.gov/](http://www.sfwmd.gov/).

Stein, Kate. “Lake Okeechobee Reservoir Gets Approval From Federal Budget Officials.” *LRN*, 11 July. 2018, <https://www.wlrn.org/post/lake-okeechobee-reservoir-gets-approval-federal-budget-officials#stream/0>

“Kissimmee River.” *South Florida Water Management District*, [www.sfwmd.gov/our-work/kissimmee-river](http://www.sfwmd.gov/our-work/kissimmee-river).

“Challenges to the Everglades.” *Friends of the Everglades*, 1 Dec. 2019, [everglades.org/challenges-to-the-everglades/](http://everglades.org/challenges-to-the-everglades/).

Joyce, Christopher. “Rising Seas Push Too Much Salt Into The Florida Everglades.” *NPR*, NPR, 25 May 2016, [www.npr.org/2016/05/25/477014085/rising-seas-push-too-much-salt-into-the-florida-everglades](http://www.npr.org/2016/05/25/477014085/rising-seas-push-too-much-salt-into-the-florida-everglades).

Kristin, and Gregory. “Impact and Mitigation of Nutrient Pollution and Overland Water Flow Change on the Florida Everglades, USA.” *MDPI*, Multidisciplinary Digital Publishing Institute, 14 Sept. 2016, [www.mdpi.com/2071-1050/8/9/940/htm](http://www.mdpi.com/2071-1050/8/9/940/htm).

Sun Sentinel Editorial Board. “Stop Letting Florida Agriculture Dictate Clean-Water Policy: Editorial.” *Sun*, South Florida Sun-Sentinel, 27 Dec. 2019, [www.sun-sentinel.com/opinion/editorials/fl-op-edit-clean-water-agriculture-florida-20191227-r3zqdvwurvg65npjddja6gvze-story.html](http://www.sun-sentinel.com/opinion/editorials/fl-op-edit-clean-water-agriculture-florida-20191227-r3zqdvwurvg65npjddja6gvze-story.html).