South Florida Ecosystem Restoration Task Force

The Strategy and Biennial Report

Task Force Meeting

November 19, 2014

Report Purpose

- **The Strategy**: Congressional direction (House Conference Report 106-479) to outline how the restoration effort will occur and identify resources needed. Organized by three strategic goals*.
- **Biennial Report:** Requirements of the Water Resources Development Act of 1996 to report biennially on Task Force activities and progress made toward restoration.
- **System-wide Ecological Indicators*** are used to assess the current status of the ecosystem and to track how it will respond to the implementation of the suite of restoration projects and system-wide operational changes over time.

*Combined, the strategic goals and system-wide ecological indicators provide a means of assessing restoration progress via both project implementation and ecosystem response.

Four principal audiences:

- United States Congress
- Florida Legislature
- Seminole Tribe of Florida
- Miccosukee Tribe of Indians of Florida

2014 Improvements

- Reduced the narrative and used more bulleted text
- Re-organized information into more digestible categories
  - At a glance
  - Authorities
  - Discussion
- Enhanced the invasive sections
- Improved the indicator section
  - Shorter
  - Focus on audience of Congress, Legislature, and Tribes
  - Summary of indicators
  - Indicators at a glance
  - One page per indicator
  - Case studies/story lines- examples of ecological responses to investments

11 System-wide Ecological Indicators

- Invasive Exotic Plants
- Lake Okeechobee Nearshore Zone Submersed Aquatic Vegetation
- Eastern Oysters
- Crocodilians (American Alligators & Crocodiles)
- Fish and Macroinvertebrates
- Periphyton
- Wading Birds (White Ibis and Wood Stork)
- Southern Estuaries Algal Blooms
- Florida Bay Submersed Aquatic Vegetation
- Juvenile Pink Shrimp
- Wading Birds (Roseate Spoonbill)

Drawn largely from longer list of measures from RECOVER

Fish and Macroinvertebrates

Status	Previous	Current
	WY2012	WY2014
System-wide		

The stoplight color for the fish and macroinvertebrates assessed in ENP (Shark and Taylor Sloughs) and WCA 3A and WCA 3B remains red for WY2014. This summary is based on the density of all small fish and crayfish collected in monitoring programs using a 1-m^2 throw trap in these areas. This method effectively captures aquatic animals between 0.5 and 3.5 inches in length, which is representative of key food species for apex predators in the region. Production of these animals is affected by hydrology, nutrient status, and abundance of their predators, but they are particularly impacted by marsh drying events (hydrology). They are assessed by comparison of observed densities to densities predicted based on rainfall for that year. Stoplights are assigned based on how many times densities are above or below rainfall-based values after accounting for key aspects of model uncertainty {link to full report}. This stoplight also incorporates assessment of non-native fish species.

The WY2014 red assessment was based on fewer fish than expected at multiple sites in Shark River and Taylor Sloughs, as well as WCA 3B and WCA 3A north of I-75. Three out of six sites in Shark River Slough had markedly fewer fish than expected based on rainfall, and three of five sites in Taylor Slough. Northeast Shark River Slough and the southern reaches of Taylor Slough (Craighead Pond, for example) dried more than expected based on rainfall, leading to fewer fish than expected. Everglades crayfish were frequently more abundant than expected based on rainfall at the sites where there were too few fish. This crayfish increases in frequency in dry conditions.

Non-native fishes have increased in numbers since their decline immediately following the January 2010 cold temperature event. We have observed an increase of non-native fish in Shark and Taylor Sloughs and the ENP Panhandle region, though they have not passed the arbitrary cut-off of 2% that yields a red value for that component of the stoplight. Mayan cichlids remain the most commonly collected non-native fish, though jewelfish are increasing in frequency of capture at some sites. Swamp eels and spotfin spiny eels were also common at times in Taylor Slough.

Persistent patterns of drying in Shark River Slough and Taylor Slough, may explain a general trend in declining fish and crayfish biomass in these areas. This long-term trend is observed after accounting for annual drying events and may be the result of a loss of recovery capacity in communities experiencing recurrent disturbances. This is discussed in more detail in the *RECOVER System Status Report {Link}*.

Lake Okeechobee Nearshore Zone Submerged Aquatic Vegetation (SAV)

Status	Previous	Current
	WY2012	WY2014
System-wide		

The stoplight color for the Lake Okeechobee Nearshore SAV indicator changed from red in WY2012 to yellow in WY2014 primarily because SAV coverage met the 50% or greater vascular taxa composition performance measure during WY2013 and WY2014. The other part of the measure, total SAV acreage, did not show a consistent increasing trend from WY 2012 to WY2014. Also, some sites in the nearshore region were too deep to sample during WY2014, as the lake stage was at 16 feet NGVD during the annual August SAV survey. Because lake stages during the winter and spring of WY2014 were within the ecologically beneficial zone for SAV, continued increases in SAV coverage are anticipated, barring any impacts from tropical systems or the occurrence of drought conditions.

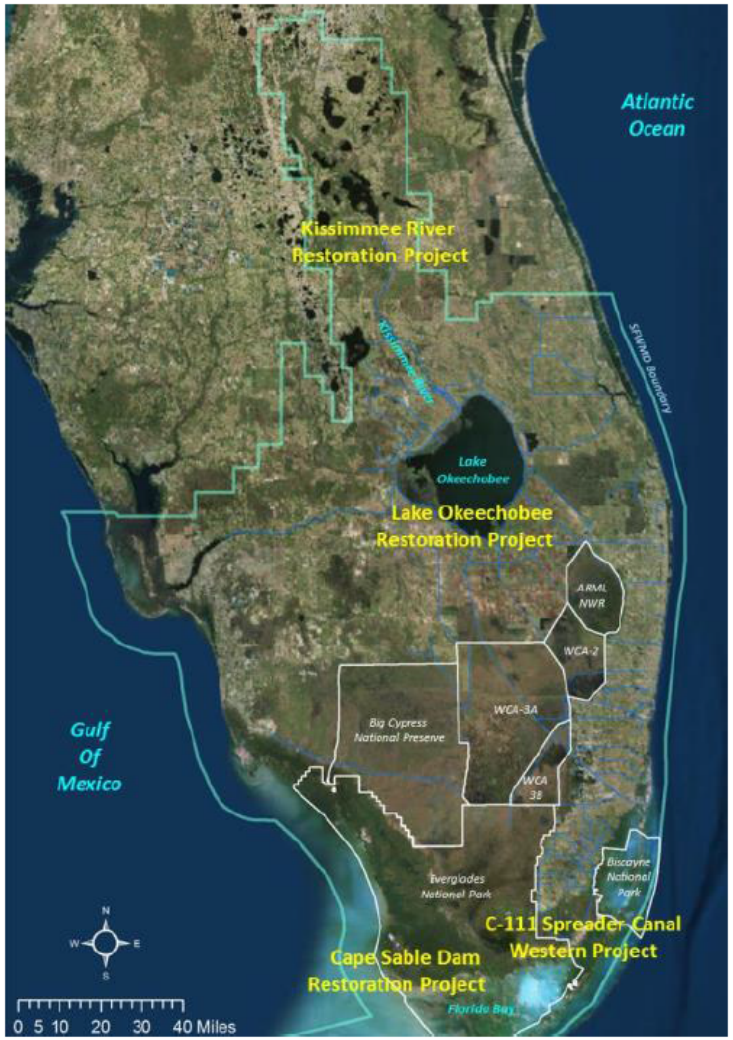
Annual SAV coverage surveys continue. The long-term data suggest that restoration activities that provide bidirectional water storage in the Lake Okeechobee watershed, thereby allowing the lake to more closely follow the depth and temporal components of the ecological beneficial stage envelope, should enhance SAV coverage and density in the nearshore region.

On the basis of annual SAV coverage data collected since 2000, maintaining lake stage within the ecologically beneficial stage envelope, both in terms of depth and temporal ascension and recession rates, provides the best conditions to maximize nearshore SAV coverage *{see Lake Okeechobee Case Study}*. When lake stages have been too high or low, SAV coverage has declined. However, even with better control of lake stage, periodic events such as tropical storms and droughts will continue to influence nearshore SAV coverage.

Four Case Studies

Examples where local restoration actions have resulted in the type of positive ecological responses that we expect to see one day system-wide

- Kissimmee River Restoration Project
- Lake Okeechobee Restoration Project
- C-111 Spreader Canal Western Project
- Cape Sable Canals Restoration Project



- Five of 11 indicators have been modified because of challenges with funding
- Originally developed for system-wide purposes- modifications are compromising the original purpose
- Red and yellow show that we have not made significant progress system-wide
- However; case studies show where local projects are achieving smaller scale benefits

Schedule

- **September 2, 2014**: First draft of the *Strategy and Biennial Report* was distributed to WG and SCG
- **September 30, 2014:** Final *Strategy and Biennial Report* distributed to WG and SCG for acceptance at the October 23, 2014 meeting
- **October 23, 2014**: WG/SCG accepted the Strategy and Biennial Report

Next Steps

- Task Force Approval today
- Sec. Jewell will transmit the report to Congress

DISCUSSION