

COMPREHENSIVE EVERGLADES RESTORATION PLAN

2014 SYSTEM STATUS REPORT

Key Findings

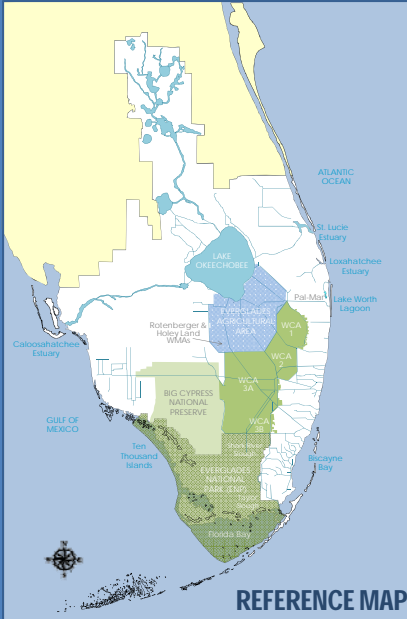
THE SYSTEM STATUS REPORT AND THE COMPREHENSIVE EVERGLADES RESTORATION PLAN

The 2014 System Status Report (SSR) provides an in-depth assessment of the monitoring data provided through the Restoration Coordination and Verification (RECOVER) Monitoring and Assessment Plan (MAP) (RECOVER 2009) in conjunction with historical data and data from partner agencies.

RECOVER monitoring data assess the status and trends in hydrology and water quality affected by restoration projects, as well as in ecological parameters (e.g., wading birds) that respond to changes in the quantity, quality, timing and distribution of water. This information is measured against established pre-Comprehensive Everglades Restoration Plan (CERP) reference conditions and ultimately helps to determine if the goals and objectives of CERP are being met.

OVERALL KEY FINDINGS

Although the CERP program has demonstrated a number of small restoration successes, continued trends in altered hydrology and degraded ecology necessitate further authorizing, constructing, and operating of more CERP restoration projects to achieve system-wide goals and objectives.



REFERENCE MAP

REGIONS

- Lake Okeechobee**
- Northern Estuaries**
 - St. Lucie Estuary
 - Caloosahatchee Estuary
 - Loxahatchee Estuary
 - Lake Worth Lagoon
- Greater Everglades (WCA) 1, 2 and 3**
 - Everglades National Park
 - Holey Land and Rotenberger Wildlife Management Areas (WMA)
 - Pal-Mar
- Southern Coastal Systems**
 - Biscayne Bay
 - Florida Bay
 - Southwest Florida Coast
 - Ten Thousand Islands

PUBLIC REVIEW PERIOD FOR DRAFT REPORT:
March 17 through April 15, 2014
Final Report Available June 30, 2014 (anticipated date)

CONTACTS:

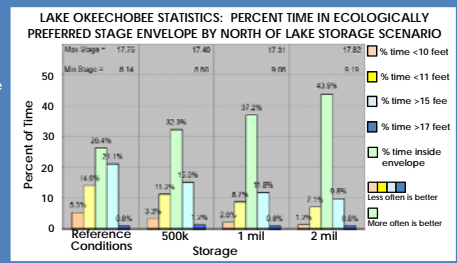
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REGIONS

LAKE OKEECHOBEE

Lake Okeechobee ecology has improved over the 2009-2013 period compared to 2004-2008 due to favorable climatic conditions and the Lake Okeechobee Regulation Schedule reducing high lake stages (no high stage exceedence).

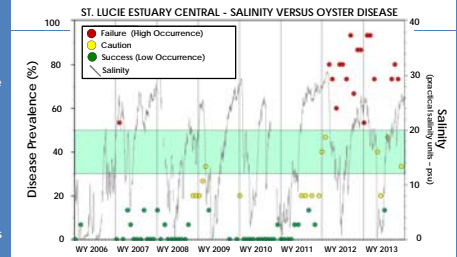
Modeling of three storage scenarios north of the lake indicated that all three scenarios incrementally improved lake conditions (over the existing 41-year baseline) by increasing the amount of time the lake was within the "stage envelope" (i.e., ecologically preferable range).



NORTHERN ESTUARIES

Although high flows cause the most severe damage to the Northern Estuaries, new data suggests supplemental freshwater inflows to the St. Lucie Estuary during extreme dry events (back to back dry years) may be needed to maintain healthy oyster populations in the middle estuary.

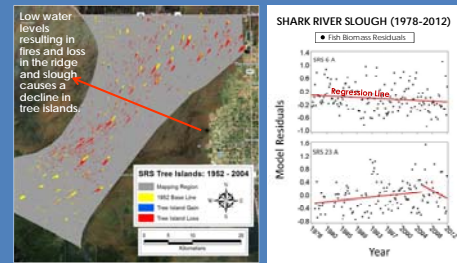
The graph to the right depicts the percent of oysters infected with disease in the St. Lucie middle estuary: daily salinity (from the surface) at the U.S. 1 Roosevelt Bridge; and the favorable salinity range (wide colored band) at the same location from water years (WY) 2006 - 2013.



GREATER EVERGLADES

Between 1954 and 2004, Shark River Slough (SRS) exhibited a 50% loss in tree islands (image to the right), similar to WCA 3 trends. Yellow indicates the 1954 baseline and Red indicates the tree island loss.

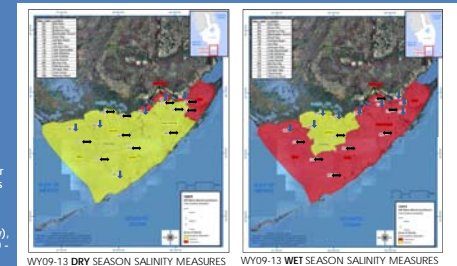
Outputs of two models (far right) illustrate the trend in fish biomass (decreasing) in Shark River Slough, Everglades National Park (ENP). The same trend is seen in WCA 3A and 3B.



SOUTHERN COASTAL SYSTEMS

Overall, Florida Bay salinity conditions have moved further away from the restoration target over the past 4 years (compared to the last Systems Status Report) - this and other contributing factors have led to large patches of dead seagrass in Florida Bay.

The figures to the right illustrate salinity conditions in water years 2009-2013 based on the RECOVER salinity performance measure for Florida Bay. Red indicates that performance is far away from targets, yellow indicates it is between 33 and 66% of the target, and trend arrows reflect whether the results have moved further away (down arrow), closer to (up arrow), or have not changed when compared to 2000 - 2008 data.



SYSTEM-WIDE HYDROLOGY

South Florida, on the most part, was drier than normal from water year (WY) 2009 to WY 2013 based on below average rainfall years (WY 2009, WY 2011 and WY 2012) compared to the historical 41-year average.

SYSTEM HYDROLOGY SUMMARY

(From the South Florida Water Management District Area Basin Average Annual Inflows and Outflows - Current versus Historical Flows)

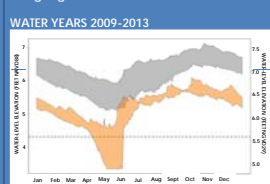
WATER BODY	CURRENT (WY 2009-2013) AVERAGE FLOWS (ACRE-FEET)	HISTORICAL (1972-2013) AVERAGE FLOWS (ACRE-FEET)
Lake Kissimmee Outflows	704,045	704,329
Lake Istokpoga Outflows	220,135	214,868
Lake Okeechobee Inflows	1,852,004	2,073,208
Lake Okeechobee Outflows	1,009,482	1,422,072
St. Lucie Canal Inflows (S-308)	136,946	252,139
St. Lucie Canal Outflows (S-80)	143,367	298,688
Caloosahatchee Inflows (S-77)	368,500	511,963
Caloosahatchee Outflows (S-79)	996,286	1,202,746
WCA-1 Inflows	266,654	477,534
WCA-1 Outflows	314,339	443,383
WCA-2 Inflows *	826,410	631,274
WCA-2 Outflows	671,586	637,225
WCA-3 Inflows	1,125,389	1,172,139
WCA-3 Outflows	1,063,156	1,004,772
Everglades National Park (ENP) Inflows **	1,184,953	977,031

* Trend toward higher inflows into WCA-2 most likely due to efficiency of stormwater treatment areas (STAs) in the Everglades Agricultural Area (EAA)
** Trend toward higher inflows into ENP most likely due to the operation of the C-111 South Dade Project

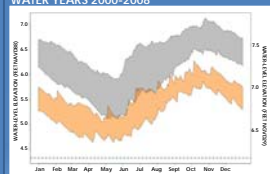
GREATER EVERGLADES WATER LEVELS

(2009 to 2013 percentiles)

Measured water levels (light orange ribbon) are compared to water levels estimated by the Natural System Model (NSM 4.6.2) (grey ribbon) at gauge station NESRS1 (Northeast Shark River Slough). The dark orange areas represent an overlap of observed data and the NSM benchmark. The green dashed line represents the average ground elevation at the gauge.



WATER YEARS 2009-2013



WATER YEARS 2000-2008



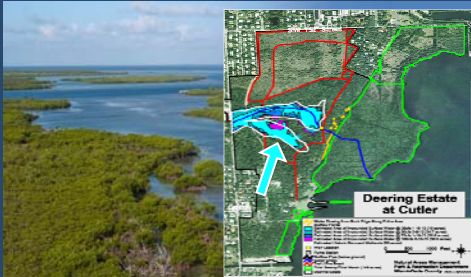
PROJECT SUMMARY

- Projects constructed:**
- Region: Southern Coastal Systems
 - Picayune Strand Restoration Project
 - C-111 South Dade
 - C-111 Spreader Canal Western Project
 - Biscayne Bay Coastal Wetlands

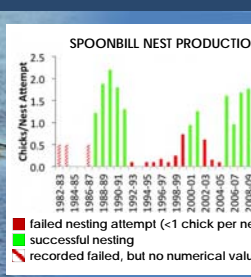
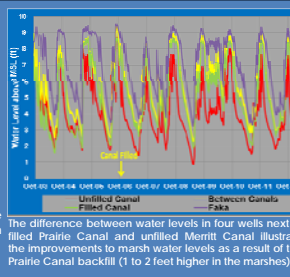
Restoration success in other regions would benefit from further CERP project implementation, including the following:

- Northern Estuaries Region (Caloosahatchee Estuary) : C-43 West Storage Reservoir
- Northern Estuaries Region (St. Lucie Estuary) : Indian River Lagoon - South
- Lake Okeechobee Region: Lake Okeechobee Watershed and Aquifer Storage and Recovery
- Greater Everglades Region (particularly WCA-3A and B): Broward County Water Preserve Areas
- All Regions (particularly WCA 2, 3A, 3B and Everglades National Park in the Greater Everglades Region): Central Everglades Planning Project (CEPP); all of CERP

PROJECTS AND OPERATIONS

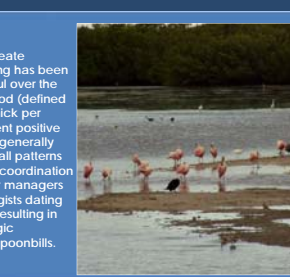


BISCAYNE BAY COASTAL WETLANDS (BBCW)
The arrow to the left indicates areas of hydrological improvement due to implementation of the Deering Estate flow way component of the BBCW project.

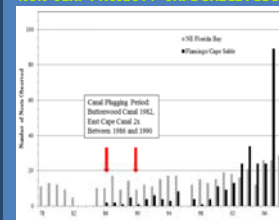


OPERATIONS

Florida Bay roseate spoonbill nesting has been more successful over the 2009-2013 period (defined as at least 1 chick per nest). The recent positive trend is due to generally favorable rainfall patterns and improved coordination between water managers and field biologists dating back to 2005, resulting in better hydrologic conditions for spoonbills.



NON-CERP PROJECT: CAPE SABLE PLUGS



The table to the left illustrates the number of American crocodile nests per year found in the Flamingo/Cape Sable area (Buntwood and East Cape canals) and northeastern Florida Bay (Little Madeira and Joe Bays) from 1978 to 2012. Crocodile nests were first discovered in the Flamingo/Cape Sable area after Buntwood and East Cape Canals were plugged in the early 1980s. Since then the number of nests per year has increased more rapidly in the Flamingo/Cape Sable area compared to northeastern Florida Bay. The lag in increase after canal plugging is due to the time required for hatchlings from late 1980s cohorts to reach sexual maturity.

NON-CERP PROJECT: C-111 SOUTH DADE

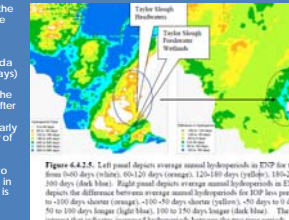


Figure 4.4.2. Left panel depicts average annual hydroperiods in EOP for the SOP period (2000-2012). Hydroperiod classes range from 0-50 days (white), 60-120 days (orange), 120-180 days (yellow), 180-240 days (light green), 240-300 days (light blue), and 300-360 days (dark blue). Right panel depicts average annual hydroperiods in EOP for the pre-SOP period (1962-1999). Center panel depicts the difference between average annual hydroperiods for EOP pre-SOP period. Hydroperiod difference classes include: <150 to <100 days shorter (orange), <150 to <100 days shorter (yellow), <100 days to 0 days shorter (light green), <100 days longer (dark green), <100 to 100 days longer (light blue), 100 to 150 days longer (dark blue). The shaded area in each figure represents the same area of interest that indicates increased hydroperiods between the two time periods.

American crocodiles continued to show a positive response to a non-CERP hydrologic restoration project in Everglades National Park.