

**Governing Board Meeting
January 13, 2011**

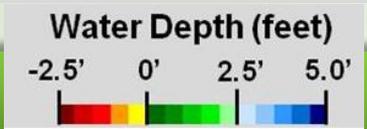
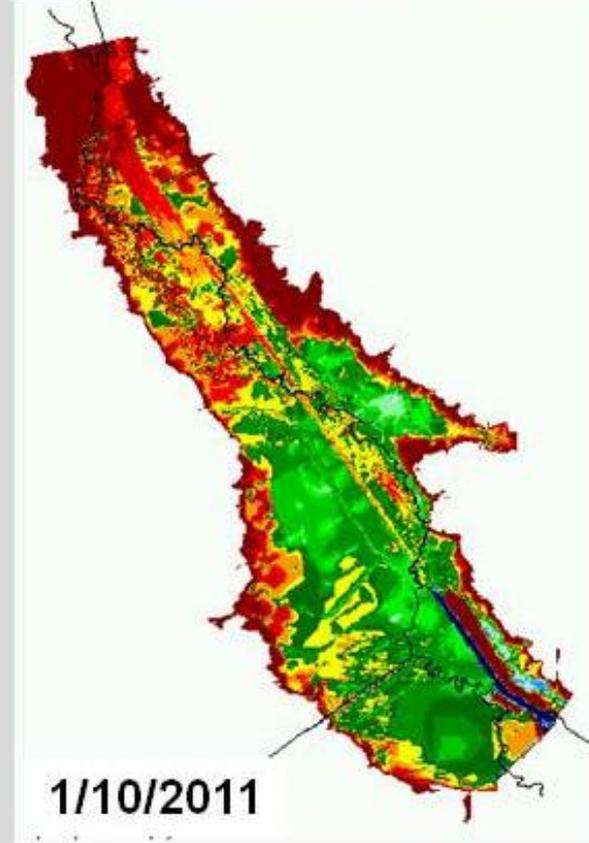
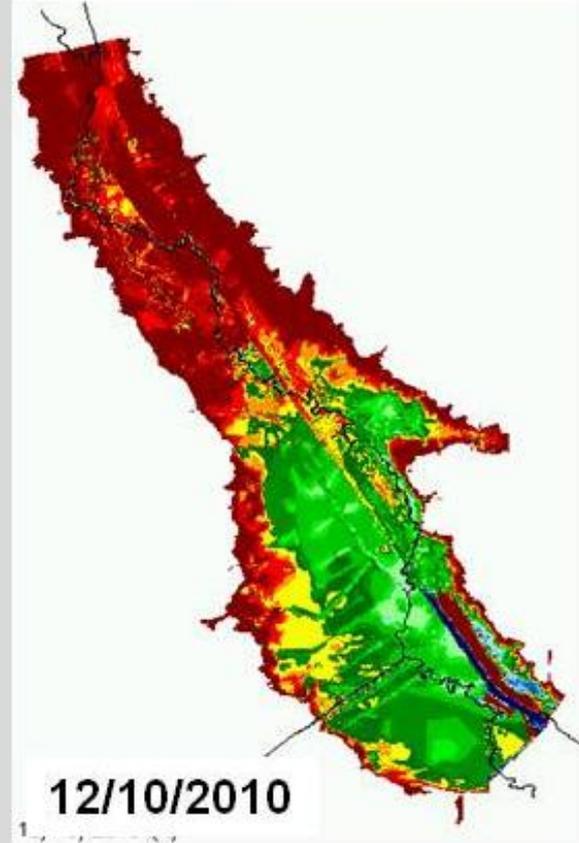
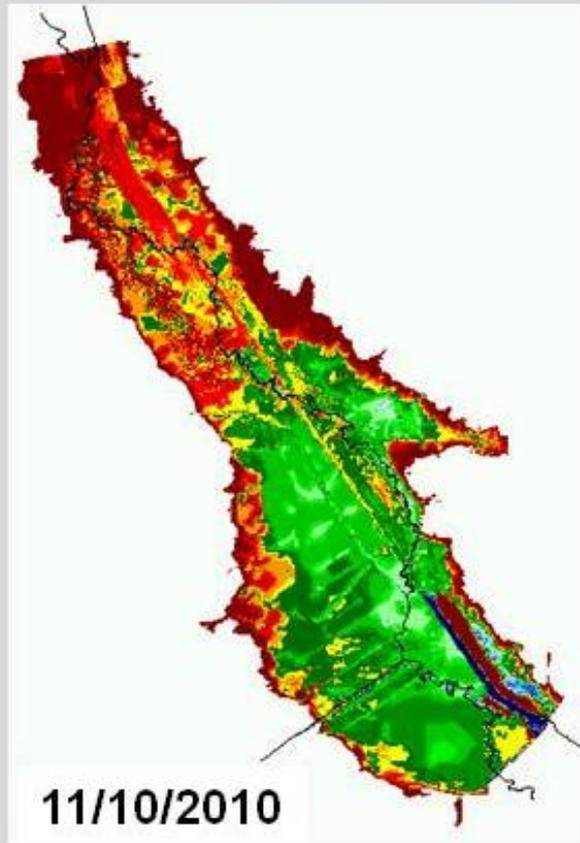
**Ecological Conditions Update
and Dry Season Outlook**

Linda Lindstrom, P.G.

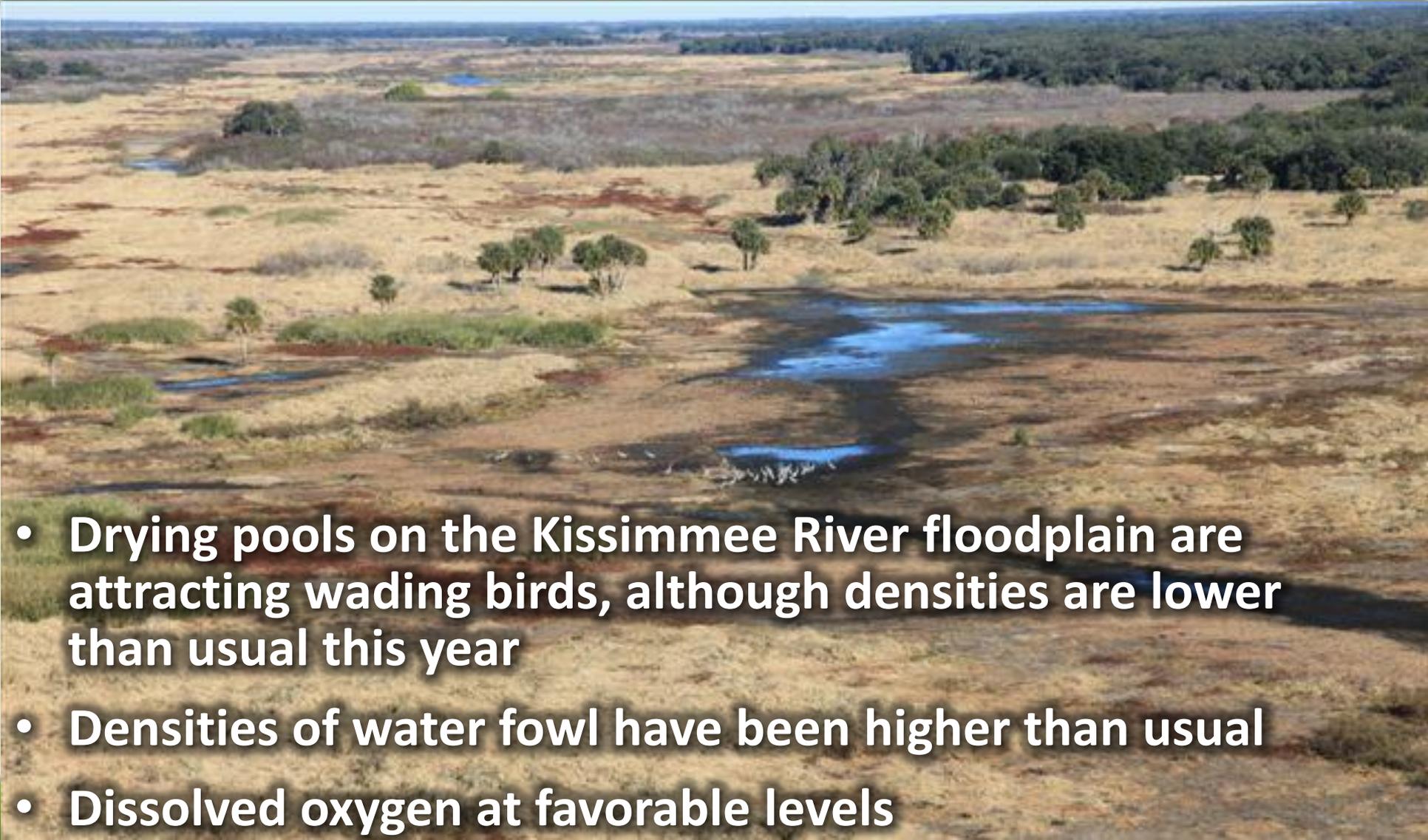
**Director, Restoration Sciences Department
Everglades Restoration and Capital Projects**

Kissimmee Basin

Water Depth Monthly Snapshots
It's been a dry dry season for the Kissimmee Basin



Kissimmee Basin

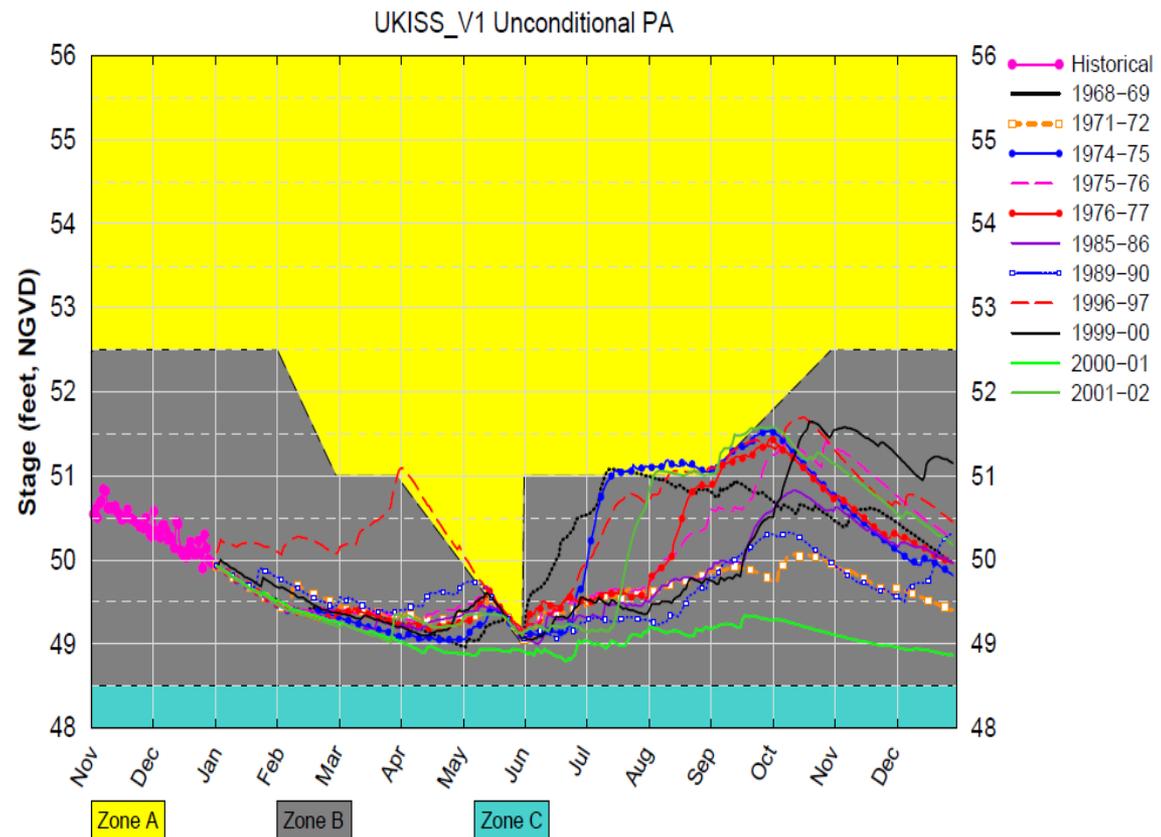


- Drying pools on the Kissimmee River floodplain are attracting wading birds, although densities are lower than usual this year
- Densities of water fowl have been higher than usual
- Dissolved oxygen at favorable levels

Kissimmee River and Chain of Lakes – JANUARY TO MAY 2011 OUTLOOK

- January position analysis suggests that stage in Lake Kissimmee may decline to 49 feet or below this year
- Stage below 48 feet can have negative effects on littoral zone habitat in Lakes Kissimmee, Cypress and Hatchineha
- At 48.5 feet, releases from S-65 must be stopped per the regulation schedule, interrupting flow to restored sections of the Kissimmee River

S65 UKISS Jan 2011 Position Analysis



(See assumptions on the Position Analysis Results website)

Lake Okeechobee

Wading Bird Habitat Suitability Index

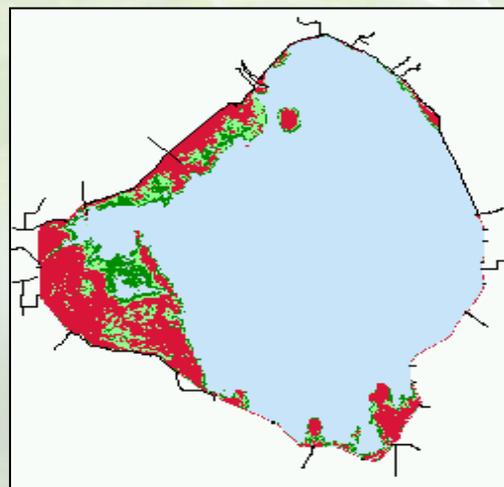
1 Year Ago: 01/11/2010

Current: 01/11/2011

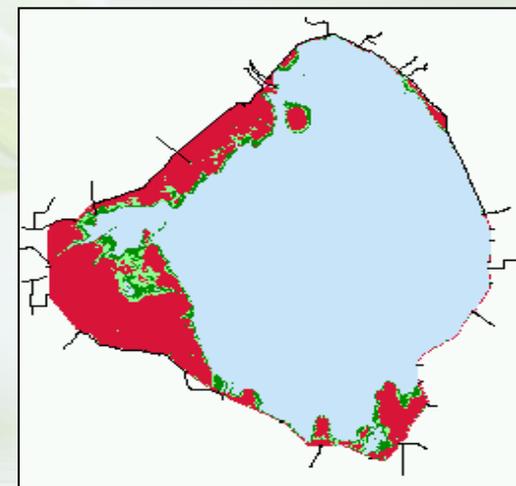


Photo by Chuck Hanlon

**LO-Indian Prairie Marsh-
2.5 miles out from levee- Dec. 2010**



(13.41 ft NGVD29)



(12.46 ft NGVD29)

Although ecological conditions remain good along the Lake's littoral fringe and in the nearshore zone, much of the interior marsh is now dry



Lake Okeechobee

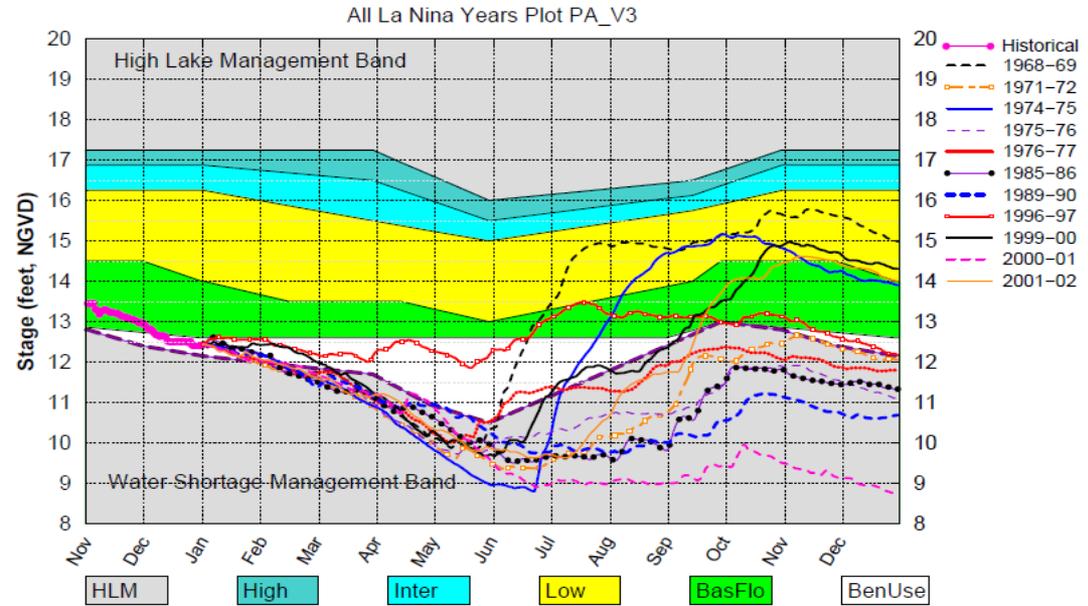
JANUARY TO MAY 2011 OUTLOOK

Stages at or below MFL (11 feet NGVD)

Negative consequences to:

- wading bird foraging/nesting
- apple snail survival and reproduction (impacts Snail Kites)
- submerged vegetation community survival
- sport and commercial fishing stocks
- controlling terrestrial and invasive exotic vegetation

Lake Okeechobee SFWMM January 2011 Position Analysis



(See assumptions on the Position Analysis Results website)

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Some positive impacts:

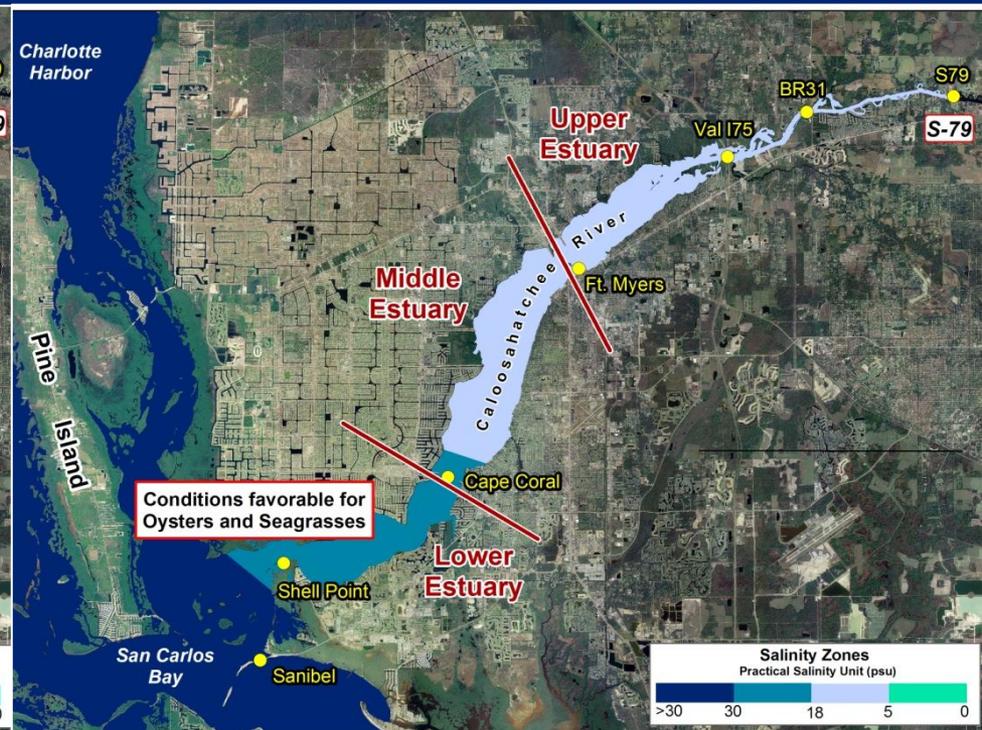
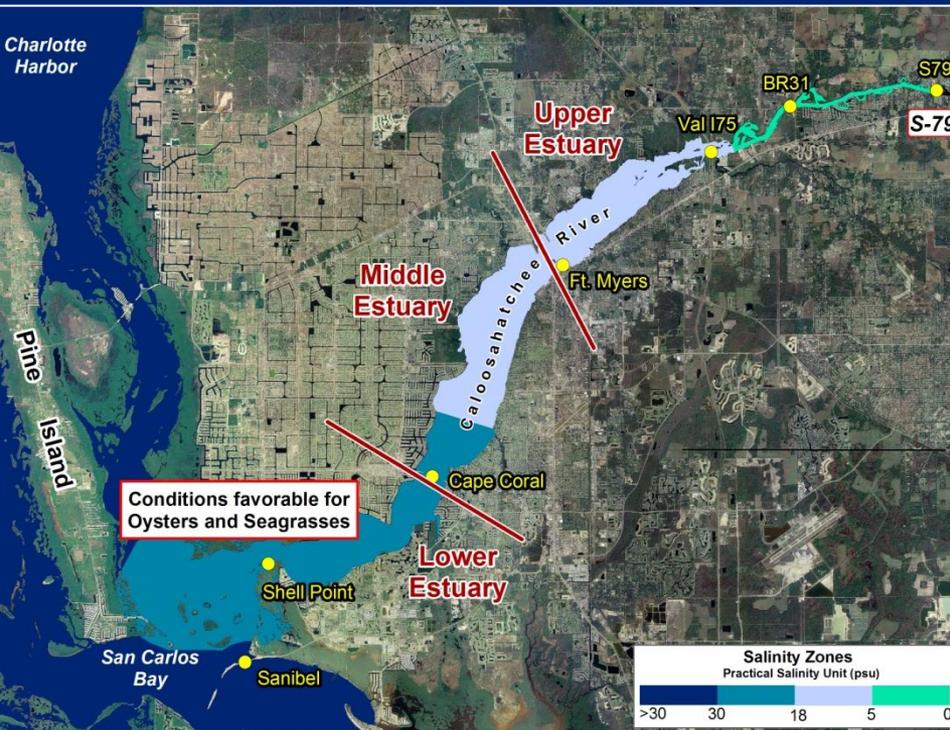
- natural oxidation of exposed bottom muds
- spread of bulrush and spike rush
- restoration/mitigation opportunities

Caloosahatchee Estuary

Salinity Conditions

December 6, 2010 Conditions

January 10, 2011 Conditions



Caloosahatchee Estuary

JANUARY TO MAY 2011 OUTLOOK

- Salinity in upper estuary will continue to increase and tape grass beds between Ft. Myers and I-75 would be significantly impacted
- Salinity at S-79 would increase above 10 psu within next month, resulting in the loss of the low salinity zone (0.5 to 10 psu) needed for fish nursery function
- Pulse-designed Lake releases of average 250 cfs (assuming 100 cfs tidal basin inflow) possibly beneficial; however, without continued discharges throughout rest of dry season, significant impacts anticipated



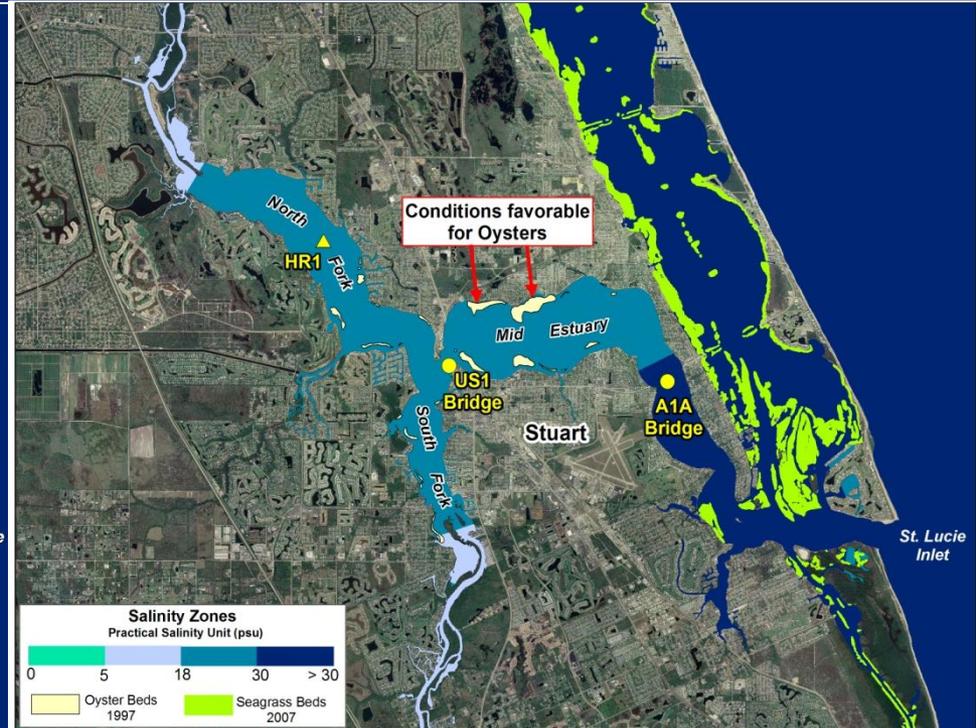
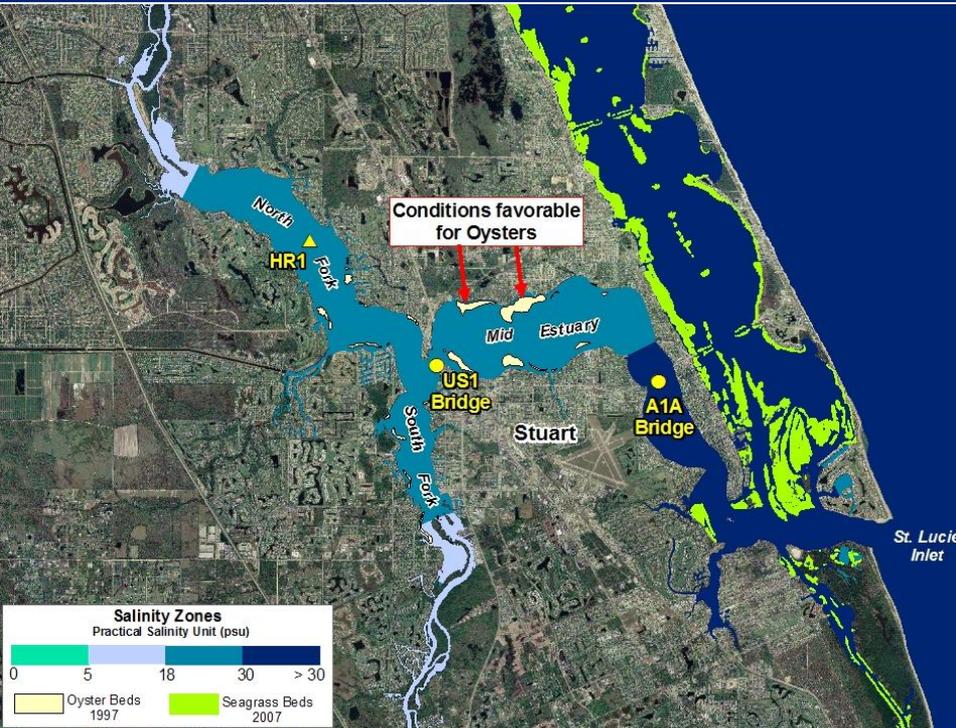
- Environmental Lake releases of 250 cfs made in 2006-2007 helped maintain salinity at 10 psu at I-75, but were not successful in preventing tape grass die off between Bird Island and Ft. Myers

St. Lucie Estuary

Salinity Conditions

December 6, 2010 Conditions

January 10, 2011 Conditions



St. Lucie Estuary

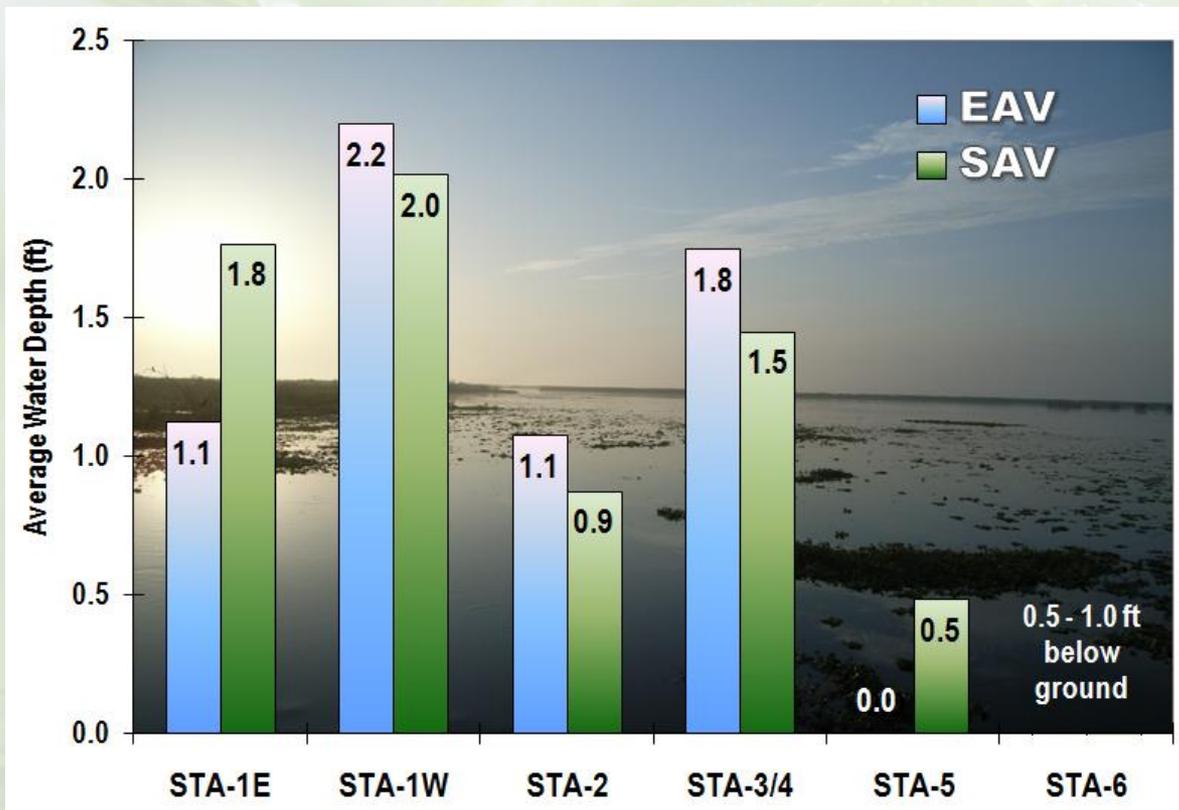
JANUARY TO MAY 2011 OUTLOOK

- The St. Lucie Estuary salinity gradient remains at the high end of the desired range
- Water clarity should continue to be good
- Conditions should remain favorable for oysters



Stormwater Treatment Areas

Water Depth Conditions as of January 10, 2011



- Current water levels range from below ground to above target stage
- Dry-out conditions:
 - STA-2 Cell 1
 - STA-5 Cells 1A, 2A, 3A and 3B
 - STA-6
- Supplemental water deliveries began December 10, 2010

As of January 9, 2011, ~ 8,000 ac-ft of supplemental water has been delivered to the STAs from Lake Okeechobee

Stormwater Treatment Areas

JANUARY TO MAY 2011 OUTLOOK

- No discharges from the STAs for the remainder of the dry season
- Routine site inspections conducted with FDEP representative to identify dry cells
- Permit compliance water quality monitoring in dry cells has been suspended
- An increase in stilt nesting within the STAs is expected
- Potential for snail kite nesting
- Dry season enhancements in planning phase

STA 5, cell 1A

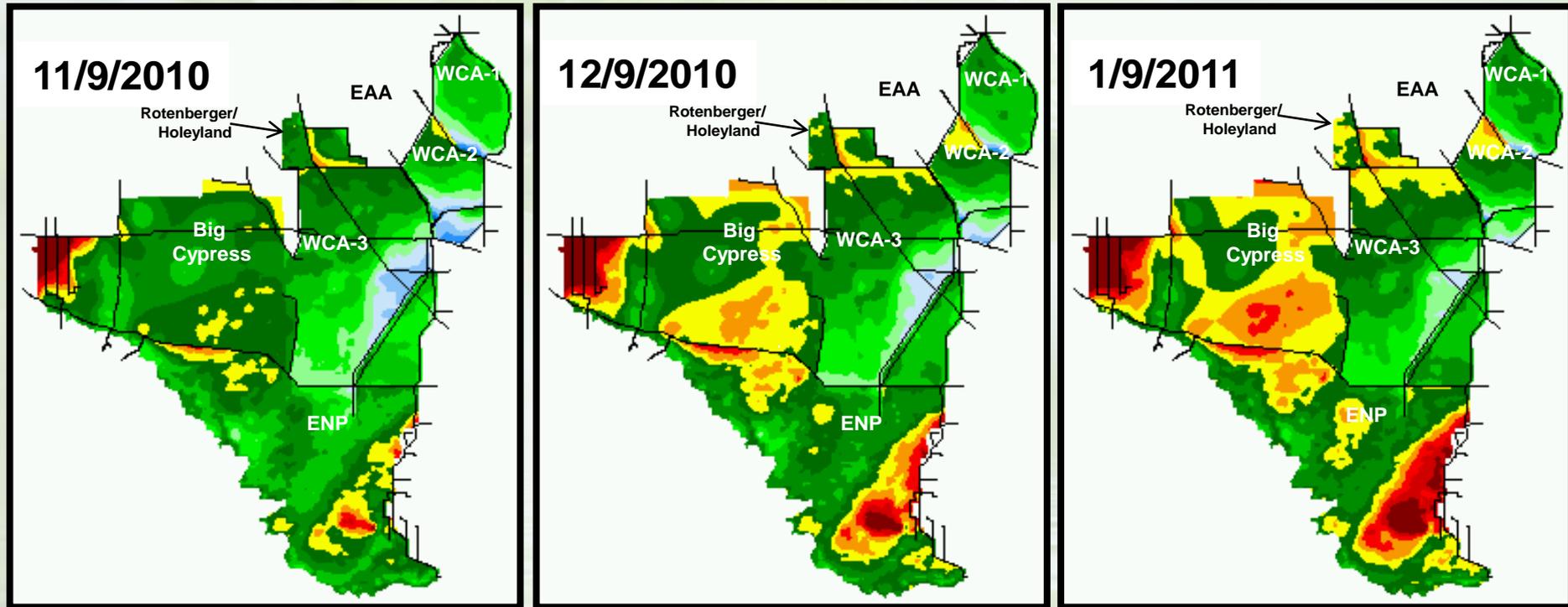


STA 2, cell 1



Greater Everglades

Water Depth Monthly Snapshots



Water Depth (feet)



Wading Bird Update

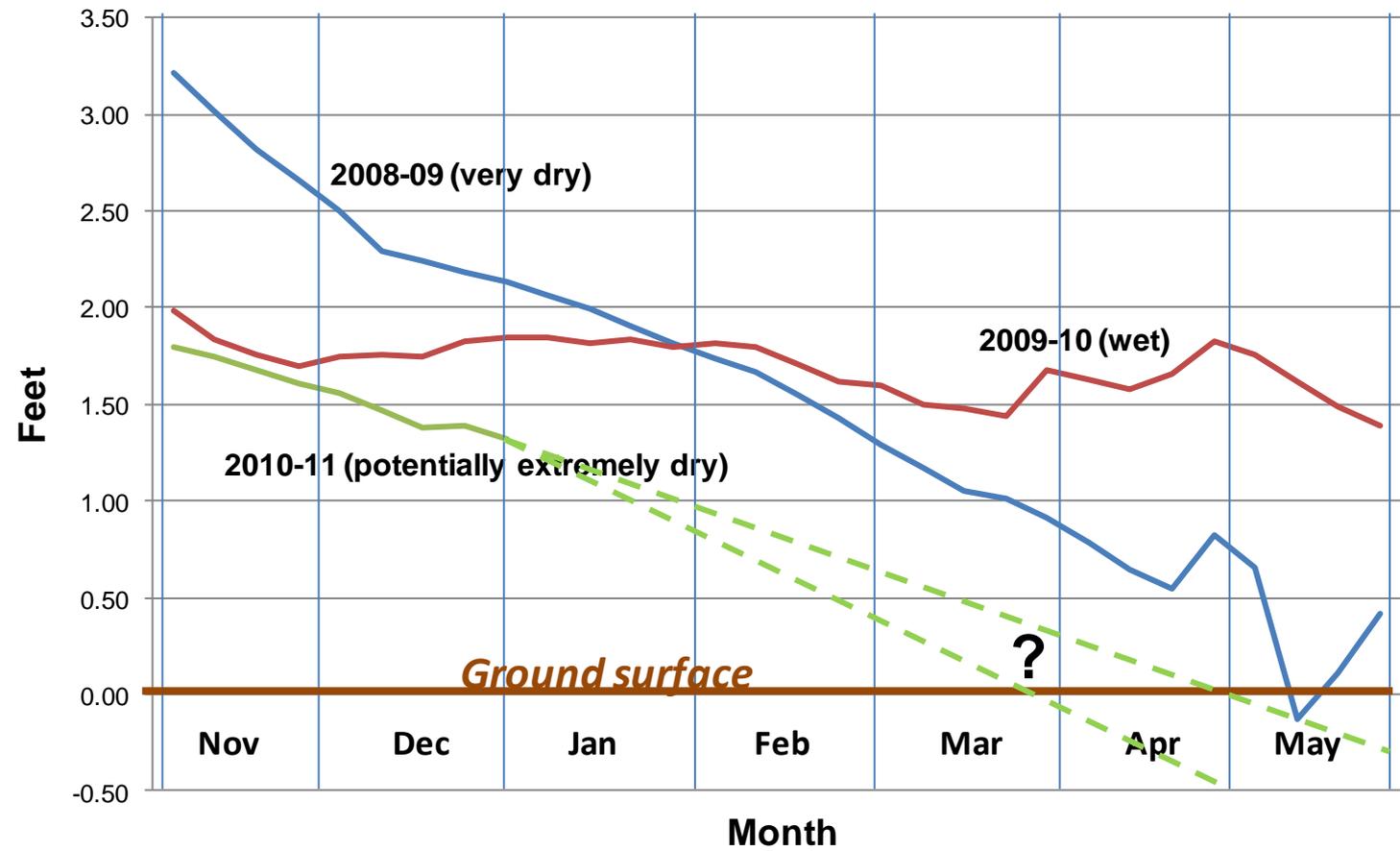


Spoonbill Chicks,
courtesy J. Lorenz

- Many large flocks of wading birds are feeding in northern WCA-3A and some in WCA-2A; include more than 400 Roseate Spoonbills and over 1000 Wood Storks
- Conditions at the largest bird colony (Alley North) in WCA-3A may be too dry this year to support nesting
- If good foraging conditions are maintained in WCAs 1 and 2 until late May, then nesting may succeed in spite of WCA-3A being very dry.
- Roseate Spoonbills are nesting in northwest and central Florida Bay

Recent Dry Season Depths, WCA-3

Dry Season Water Depths, WCA-3A 2008-2011



Greater Everglades

JANUARY TO MAY 2011 OUTLOOK

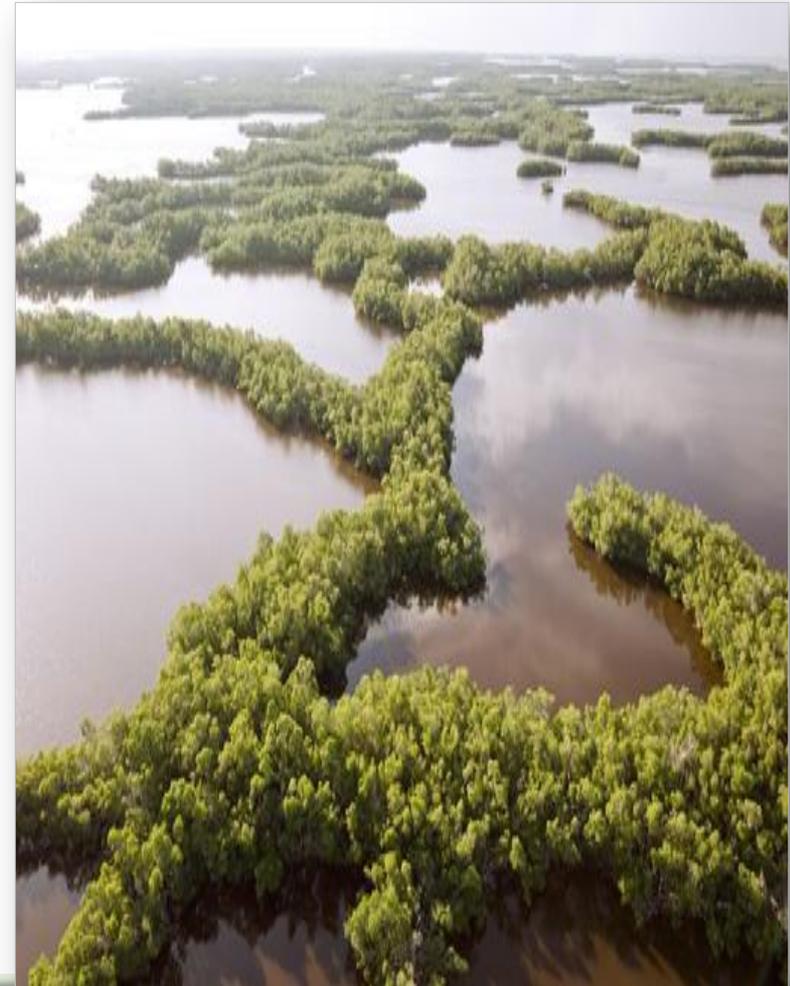


- Moderate to high recession rates
- May or may not be a good year for wading bird breeding (depends on regular recession, good prey base)
- Anticipate significant peat dryout in northern portions of WCAs (loss of peat, microtopography, habitat)
- Increased fire potential for peat soils

Florida Bay

JANUARY TO MAY 2011 OUTLOOK

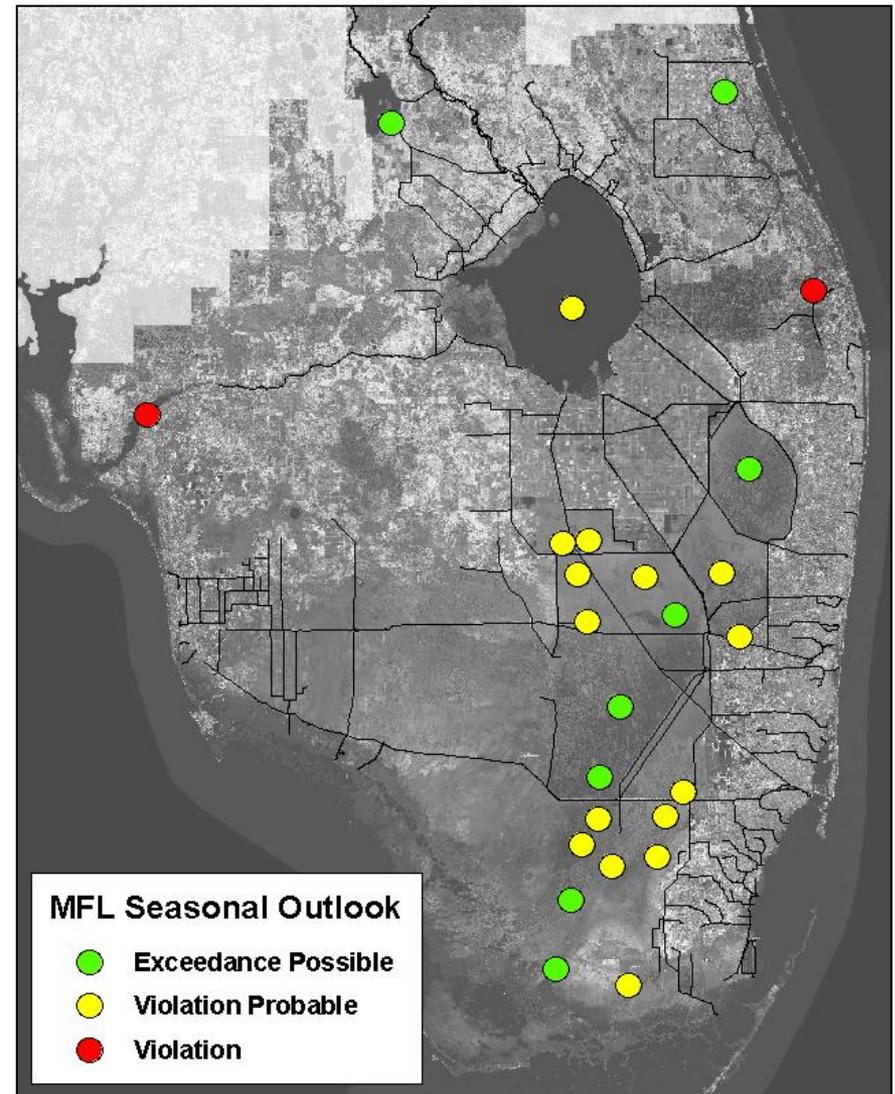
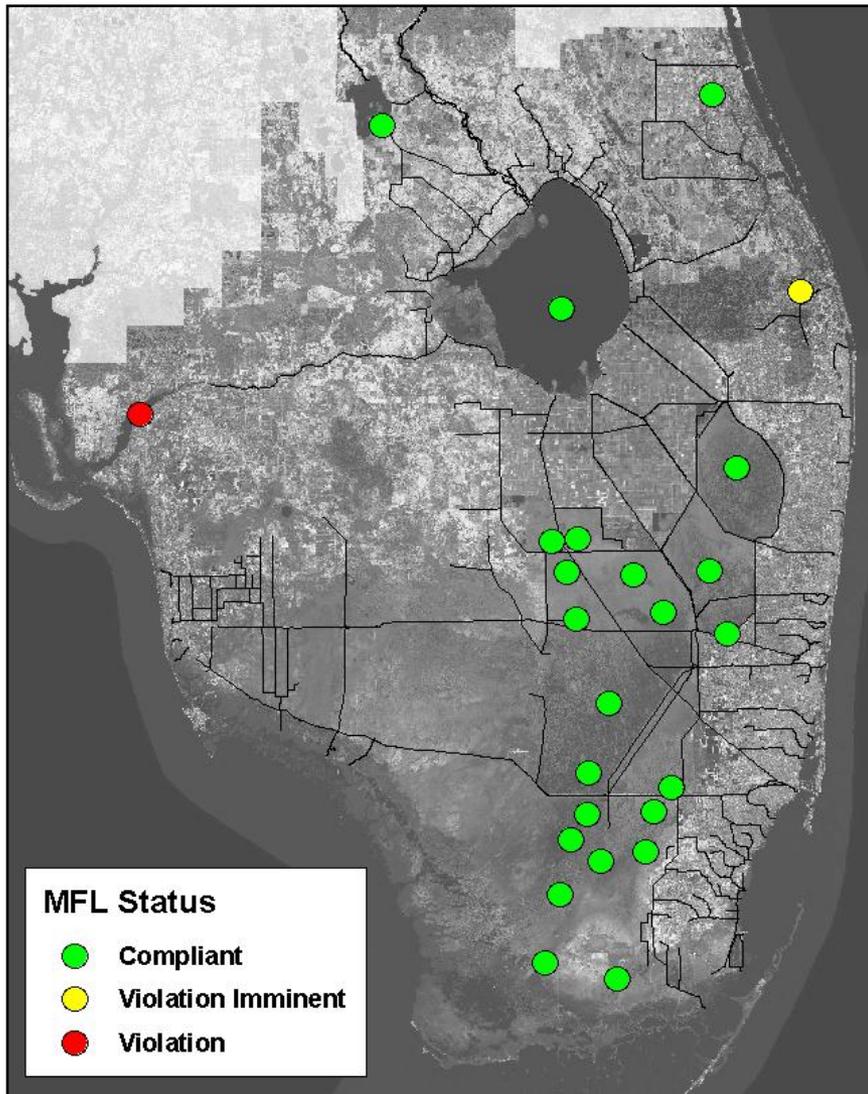
- Good conditions going into dry season (hydrologically buffered)
- Low to average salinities throughout Florida Bay suggest good seasonal conditions
- Upstream dry conditions this year may impact Florida Bay salinity conditions next year



MFL Status and Outlook

	Date of Last Exceedance	Status	30-day Outlook	Seasonal Outlook (May 2011)
Lake Istokpoga	None	Compliant	Compliant	Exceedance Possible
St. Lucie Estuary	None	Compliant	Compliant	Exceedance Possible
Lake Okeechobee	8/3/2008	Compliant	Compliant	Violation Probable
Caloosahatchee River	Present Violation	Violation	Violation	Violation
Northwest Fork of the Loxahatchee River	12/19/2010	Violation Imminent	Violation	Violation
Everglades: WCA-1 (1-7)	None	Compliant	Compliant	Exceedance Possible
Everglades: WCA-2A (2A-17)	5/18/2009	Compliant	Compliant	Violation Probable
Everglades: WCA-2B (2B-21)	7/1/2007	Compliant	Compliant	Violation Probable
Everglades: WCA-3A North (3A-NE)	5/25/2009	Compliant	Compliant	Violation Probable
Everglades: WCA-3A North (3A-NW)	6/1/2007	Compliant	Compliant	Violation Probable
Everglades: WCA-3A North (3A-2)	5/18/2009	Compliant	Compliant	Violation Probable
Everglades: WCA-3A North (3A-3)	6/1/2007	Compliant	Compliant	Exceedance Possible
Everglades: WCA-3A Central (3A-4)	None	Compliant	Compliant	Exceedance Possible
Everglades: WCA-3A South (3A-28)	None	Compliant	Compliant	Exceedance Possible
Everglades: WCA-3B (3B-SE)	5/18/2009	Compliant	Compliant	Violation Probable
Everglades: Rotenberger WMA (Rotts)	5/11/2009	Compliant	Compliant	Violation Probable
Everglades: Holeyland WMA (HoleyG)	5/18/2009	Compliant	Compliant	Violation Probable
Everglades: NE Shark Slough (NESRS-2)	5/12/2009	Compliant	Compliant	Violation Probable
Everglades: Central Shark Slough (NP-33)	5/17/2009	Compliant	Compliant	Violation Probable
Everglades: Central Shark Slough (NP-36)	None	Compliant	Compliant	Exceedance Possible
Everglades: Marl wetlands east of Shark Slough (NP-201)	None	Compliant	Compliant	Exceedance Possible
Everglades: Marl wetlands west of Shark Slough (NP-201)	5/29/2009	Compliant	Compliant	Violation Probable
Everglades: Marl wetlands west of Shark Slough (G-620)	5/29/2009	Compliant	Compliant	Violation Probable
Everglades: Rockland marl marsh (G-1502)	5/18/2009	Compliant	Compliant	Violation Probable
Everglades: Taylor Slough (NP-67)	5/18/2009	Compliant	Compliant	Violation Probable

MFL Status and Outlook



Staff Recommendation

Continue following
Lake Okeechobee Adaptive
Protocols Release Guidance:
No Lake Releases