

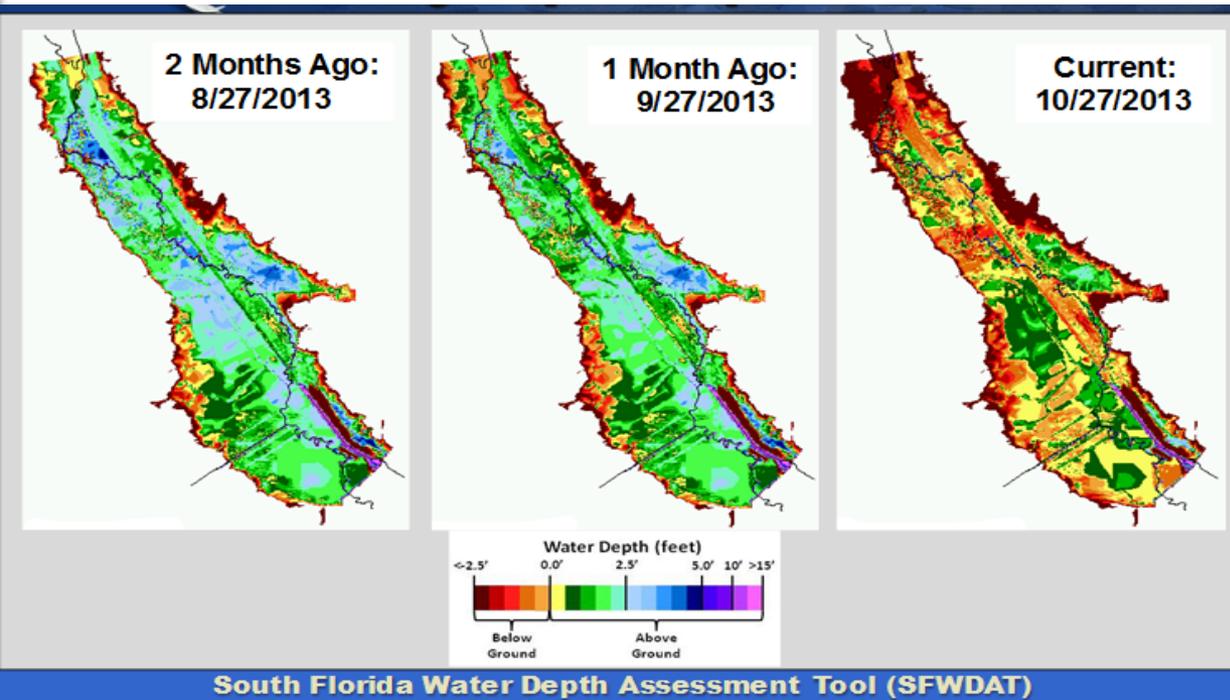
# Adaptive Protocols for Lake Okeechobee Operations

**Ecological Retrospective**  
*May, 2013 – November, 2013*  
*and Near Future Expectations*

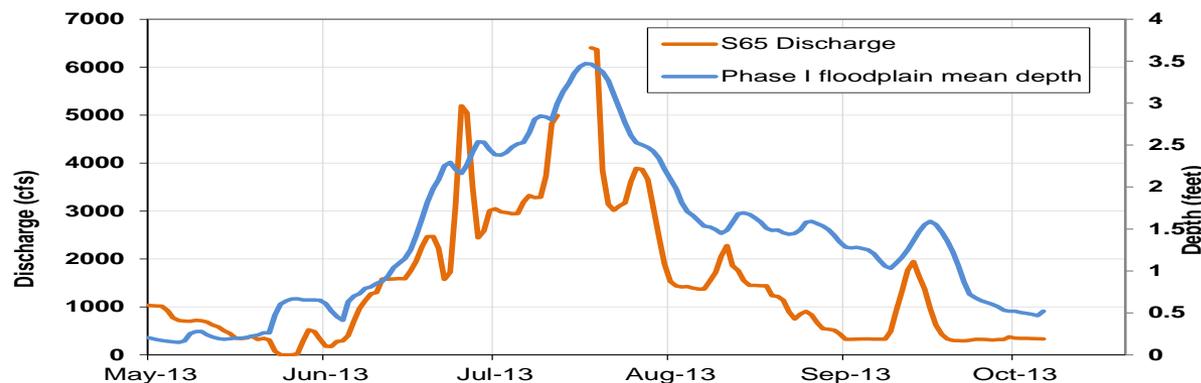
Susan Gray, Ph.D.  
Chief Environmental Scientist  
Applied Sciences Bureau



# Previous Six Months Kissimmee River Floodplain



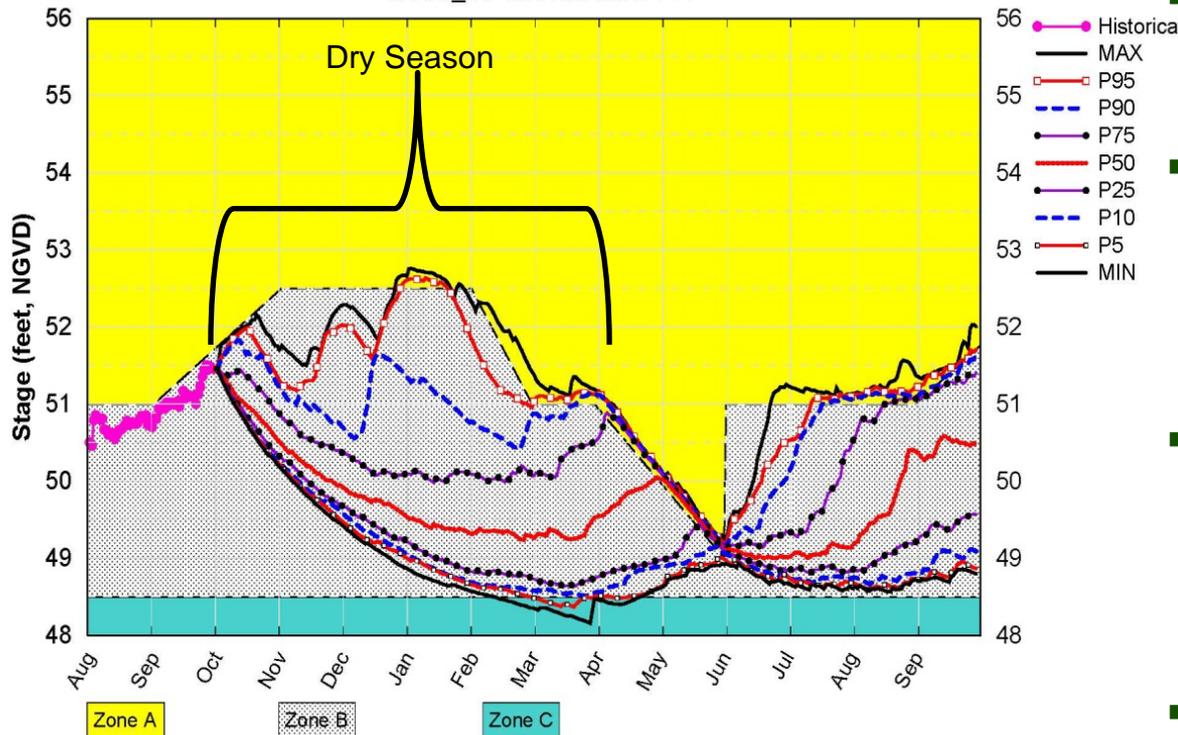
- High flood control releases to manage lake stage provided good floodplain inundation over much of the summer
- Wet floodplain conditions provided foraging habitat for wading birds
- . . . and was a factor in use of the northern floodplain by a large group of foraging snail kites



# Expected Conditions - Next Six Months Kissimmee Chain of Lakes & Kissimmee River

## S65 UKISS Oct 1 2013 Position Analysis

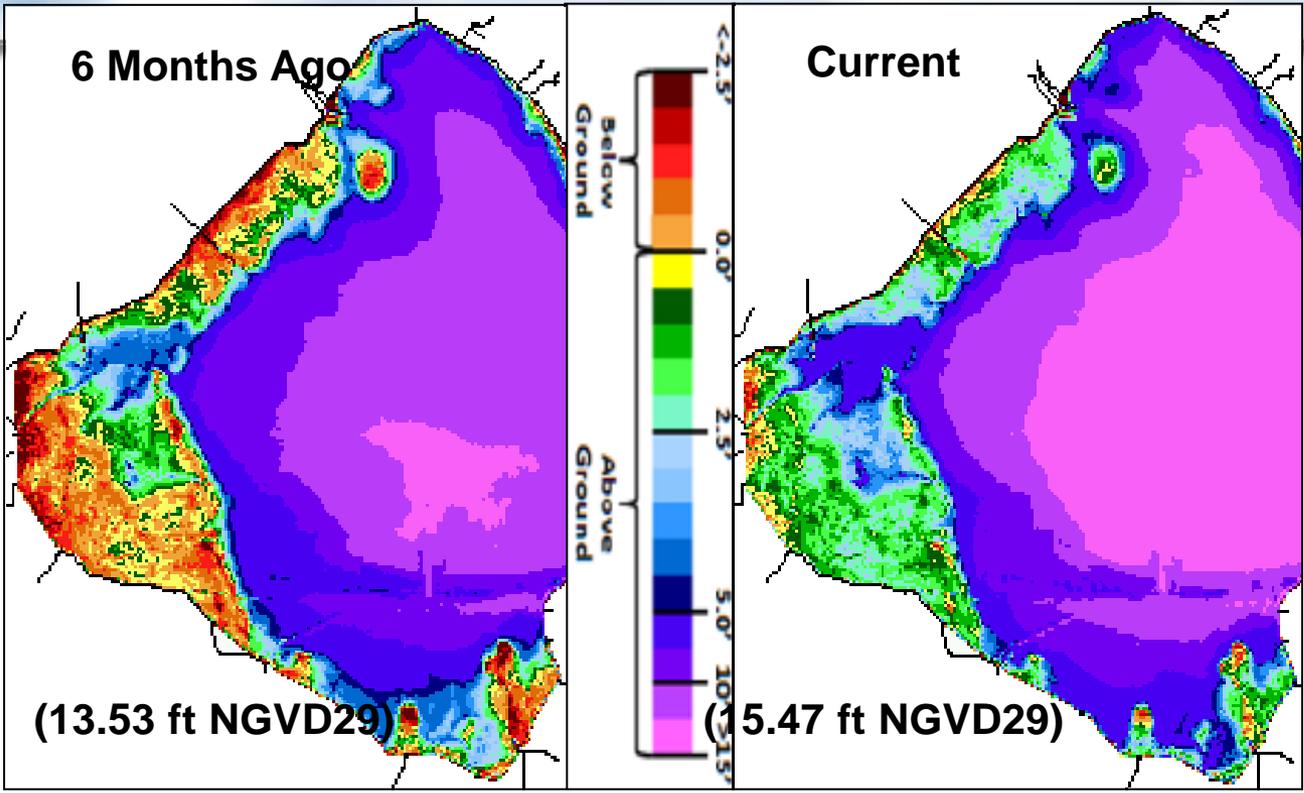
UKISS\_V9 Unconditional PA



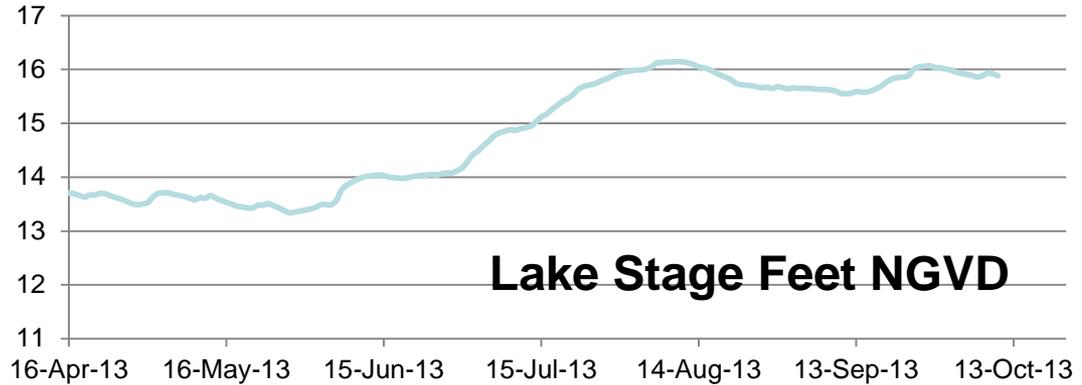
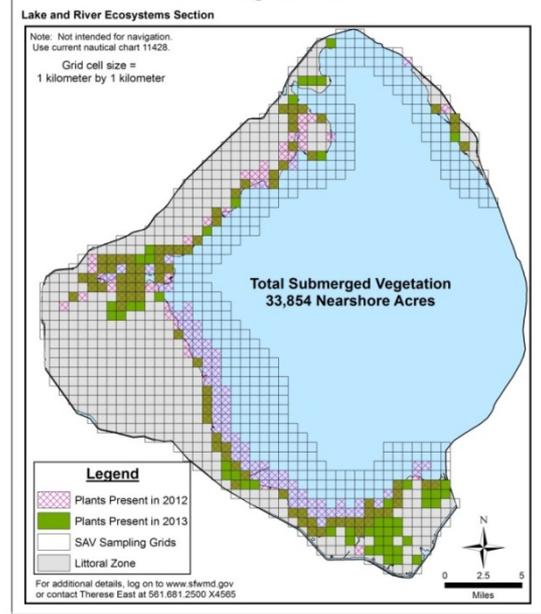
- The Position Analysis projects lake stages into the dry season
- There is a greater than 25% chance that flows to the Kissimmee River will continue through the dry season
- There is a very small chance (5 to 10%) that flow to the Kissimmee River may not be sustainable through the dry season
- Whether this happens this year depends on rainfall in coming months

(See assumptions on the Position Analysis Results website)

# Previous Six Months- Lake Okeechobee



**Submerged Aquatic Vegetation Map  
For Lake Okeechobee  
August 2013**

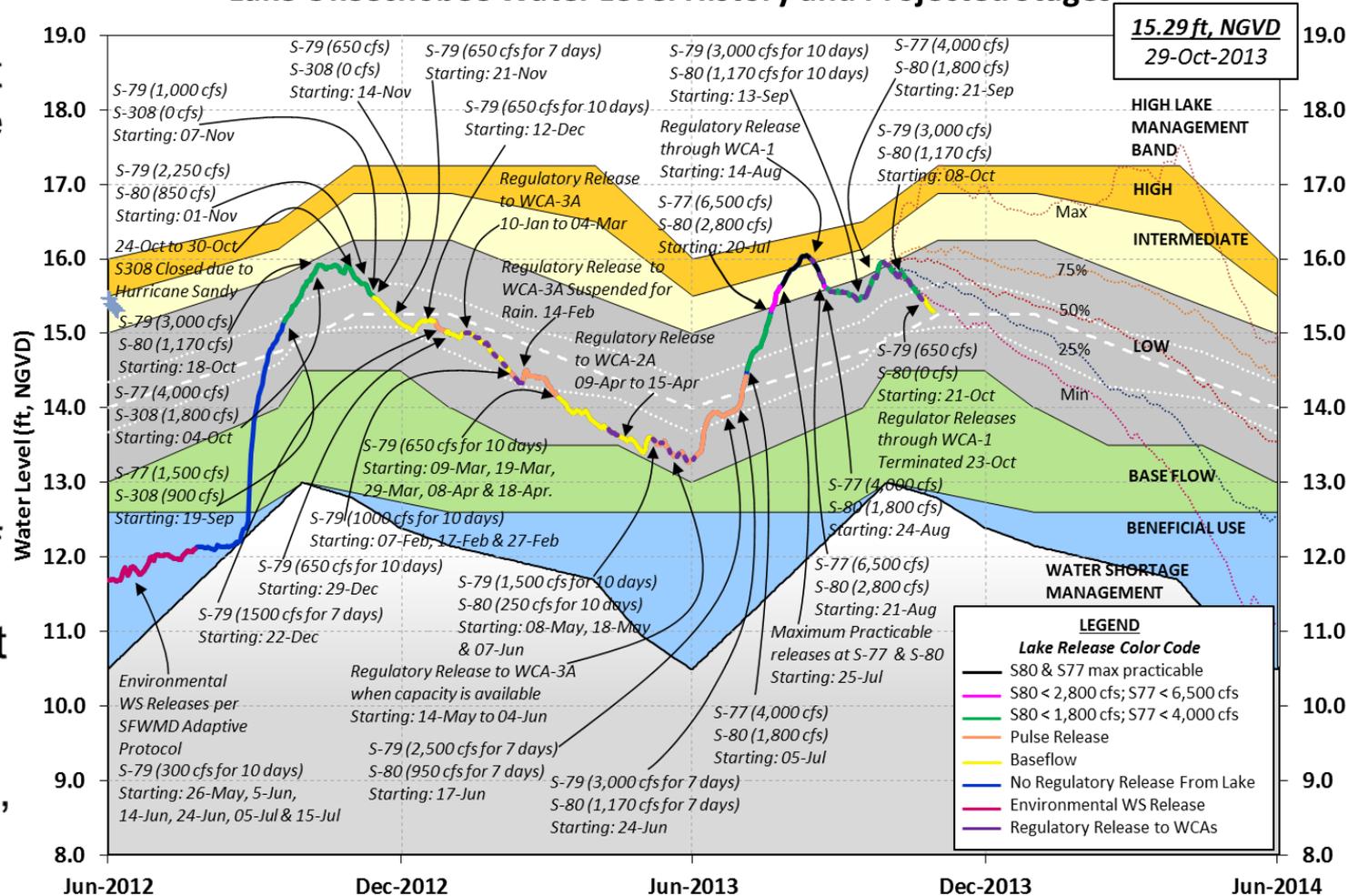


# Lake Okeechobee – Next Six Months

Water levels for next 6 months highly dependent on severity of the dry season and date of onset of the rainy season.

Currently Lake is trending below the minimum probability line suggesting that if current conditions persist the Lake will remain within, or fall slightly below, the preferred stage envelope

Lake Okeechobee Water Level History and Projected Stages

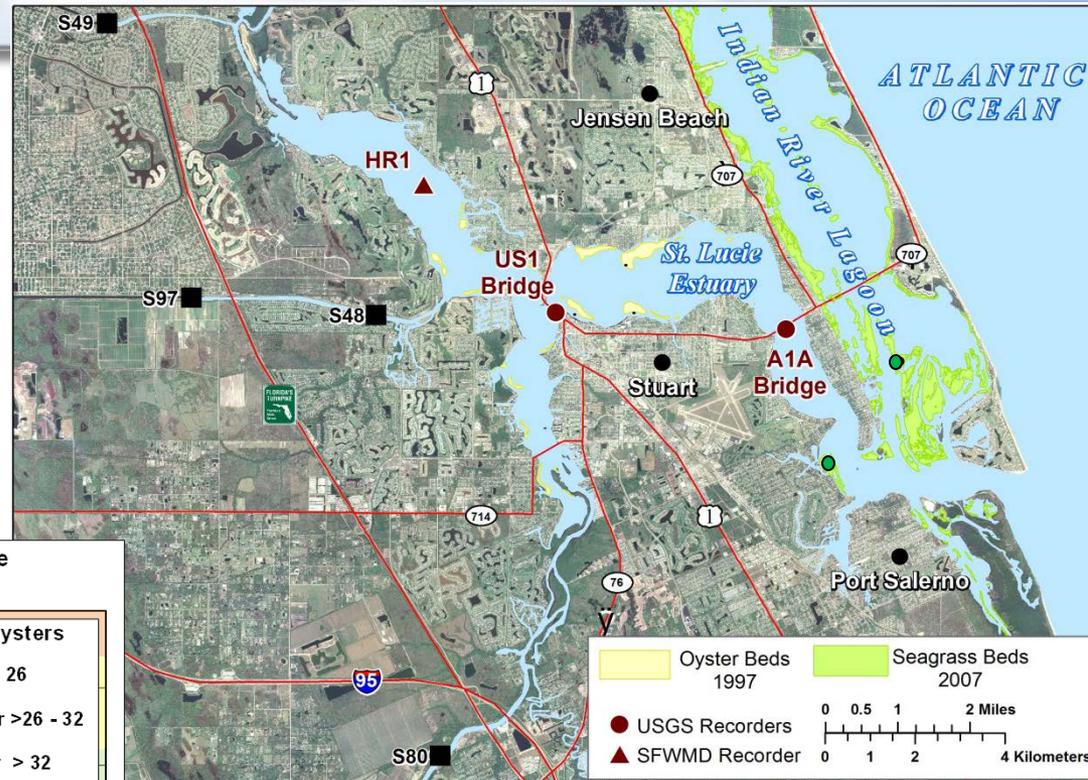


LORS-2008  
Adopted by USACE 28-April-2008

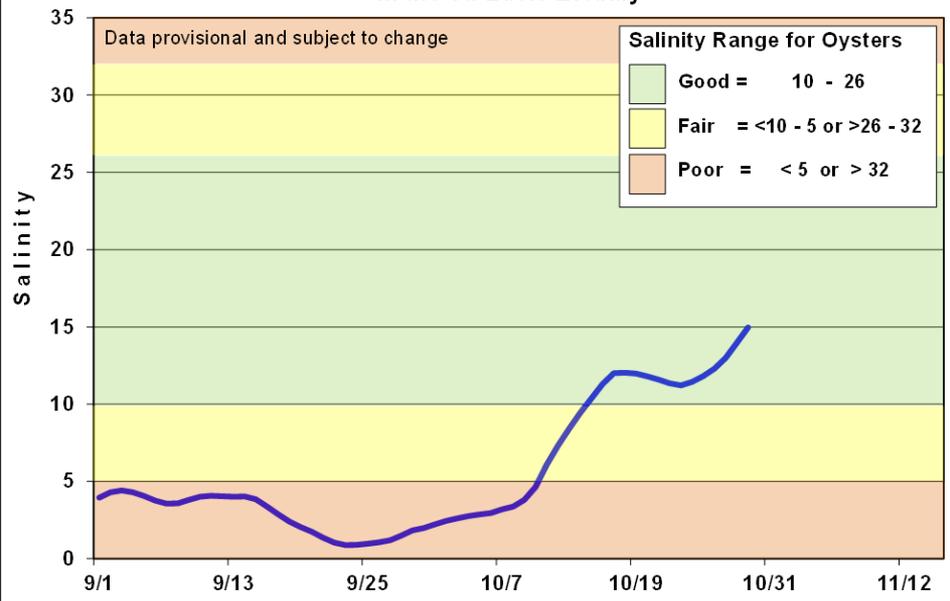
Projected Stage Percentiles From  
SFWMD-HESM Position Analysis

# Previous 6 months - St. Lucie Estuary

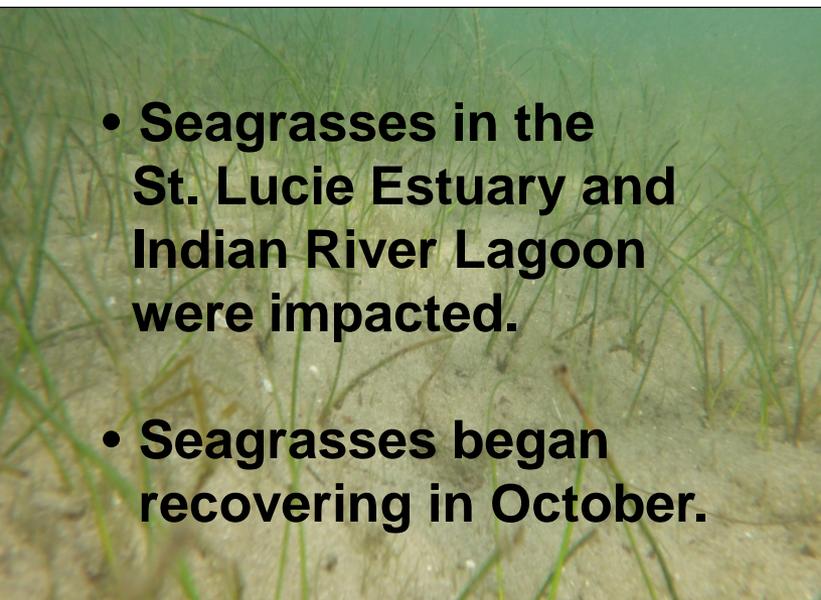
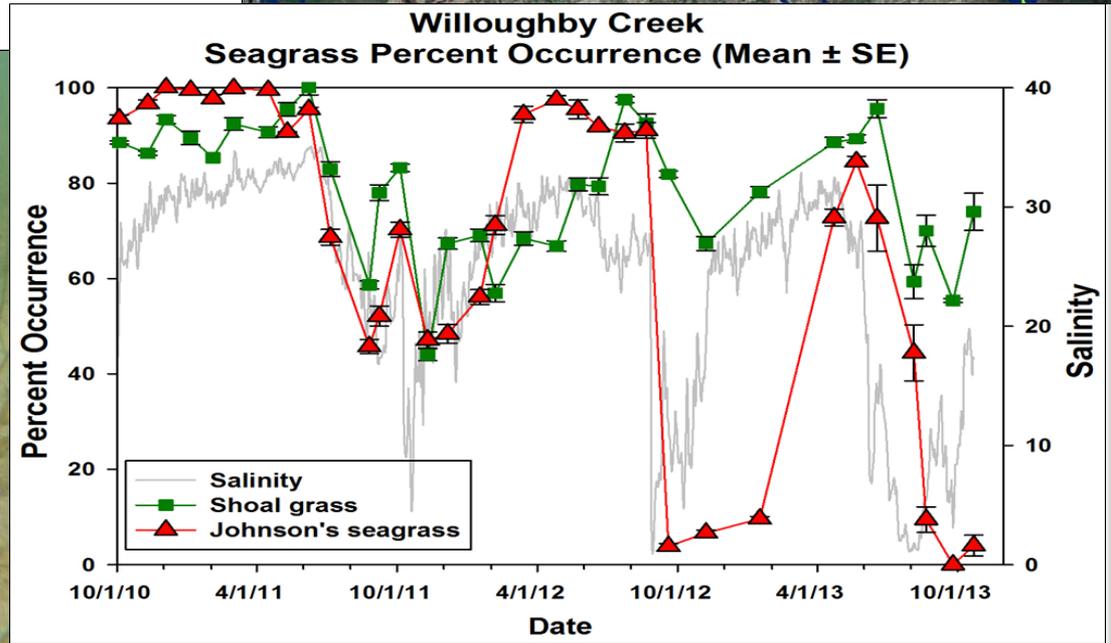
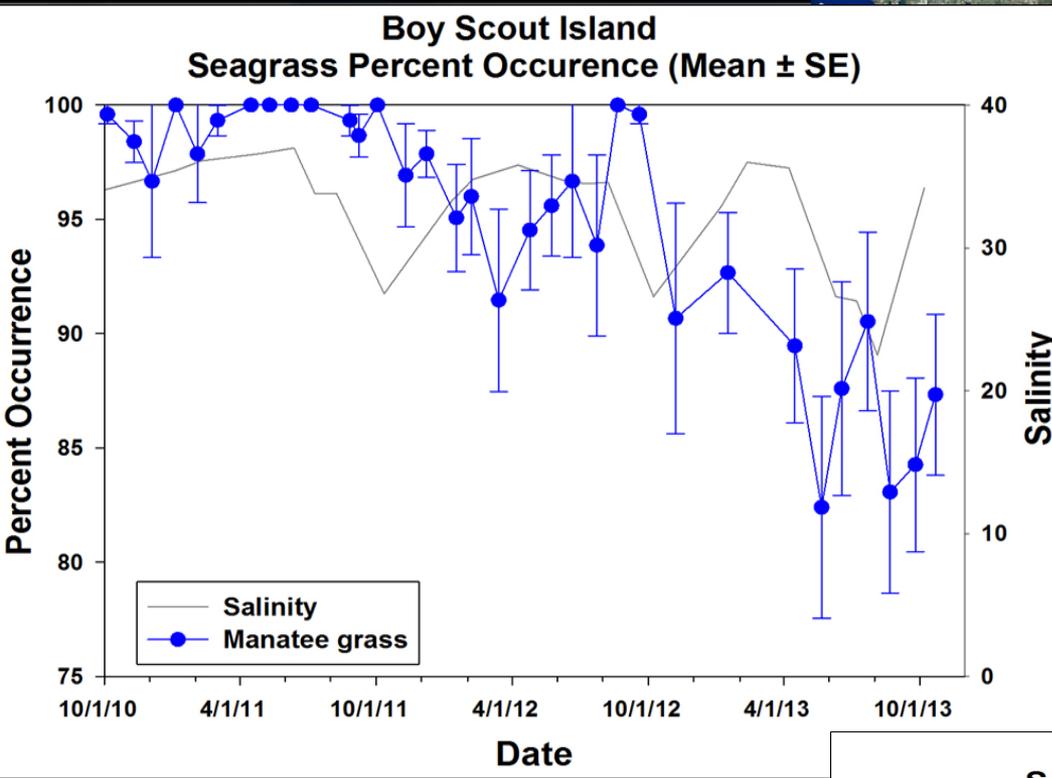
- Due to early rainfall, Lake releases began in early May; ceased on October 21<sup>st</sup>.



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



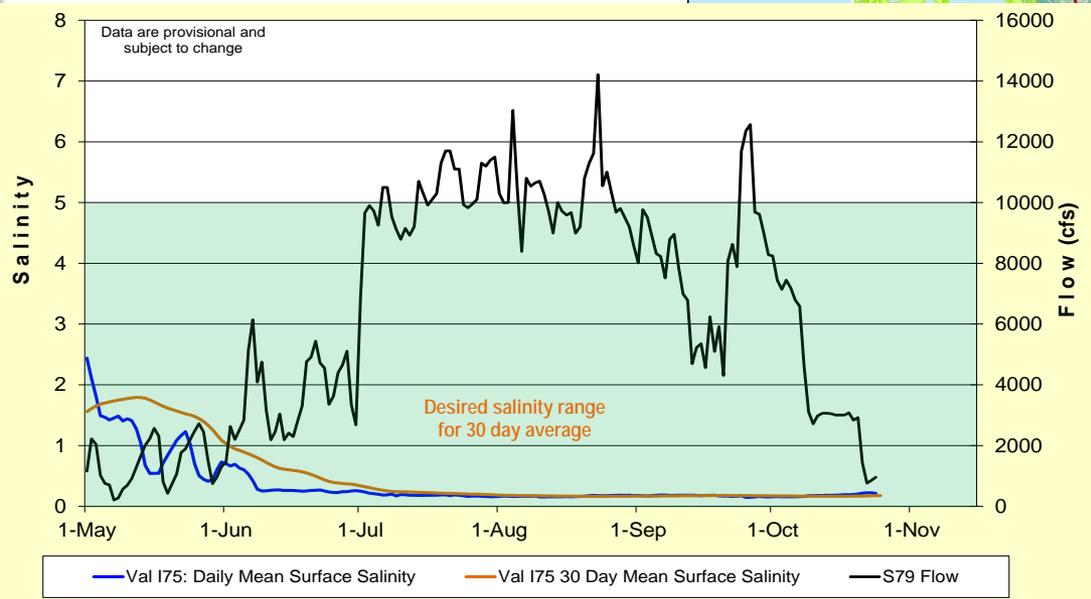
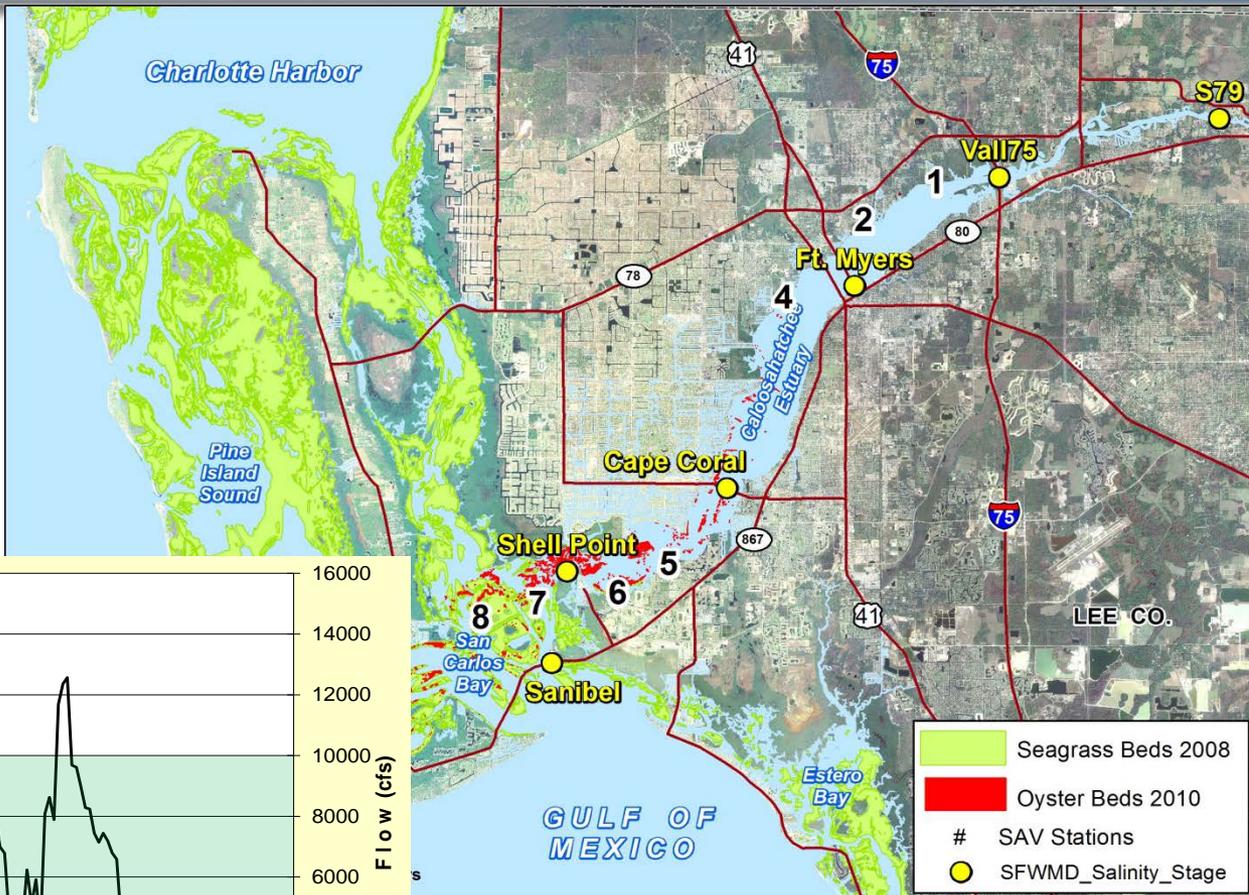
- Salinity returned to a good range for adult oysters (green zone) in mid-October.



- Seagrasses in the St. Lucie Estuary and Indian River Lagoon were impacted.
- Seagrasses began recovering in October.

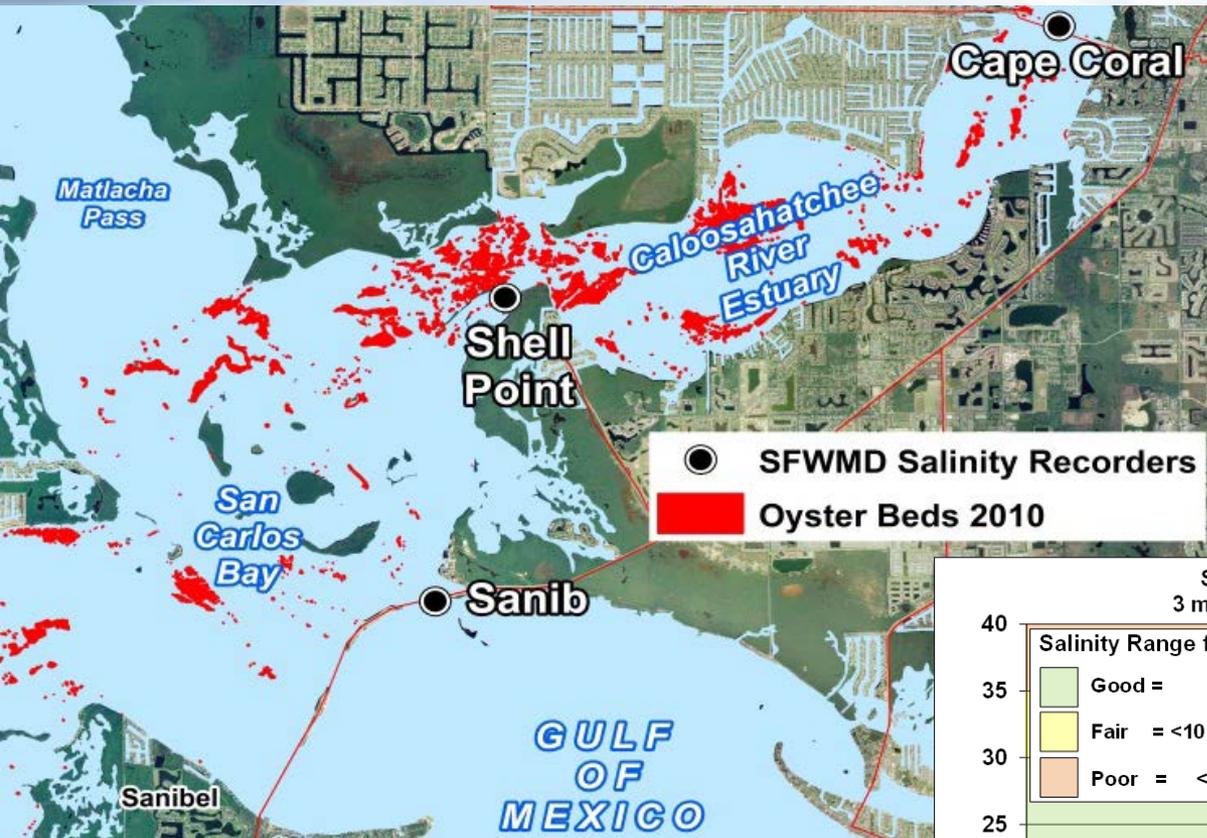
# Previous 6 months - Caloosahatchee Estuary

- The 30-day mean salinity at Val I-75 has remained below 5.
- Tape grass was absent in the upper estuary until recently; currently sparse.

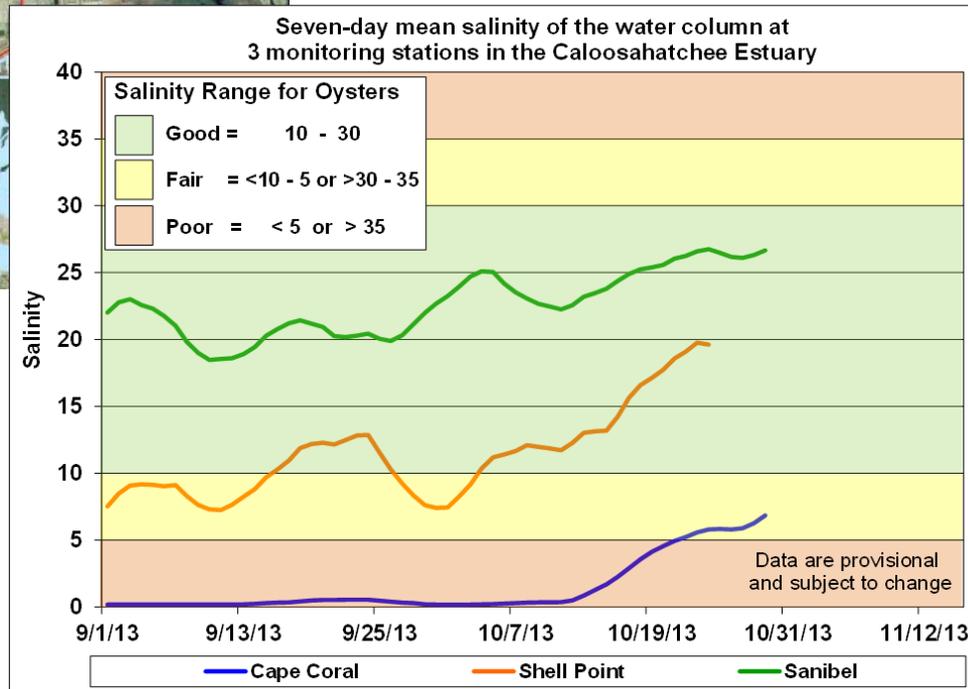


	Seagrass Beds 2008
	Oyster Beds 2010
#	SAV Stations
	SFWMD_Salinity_Stage

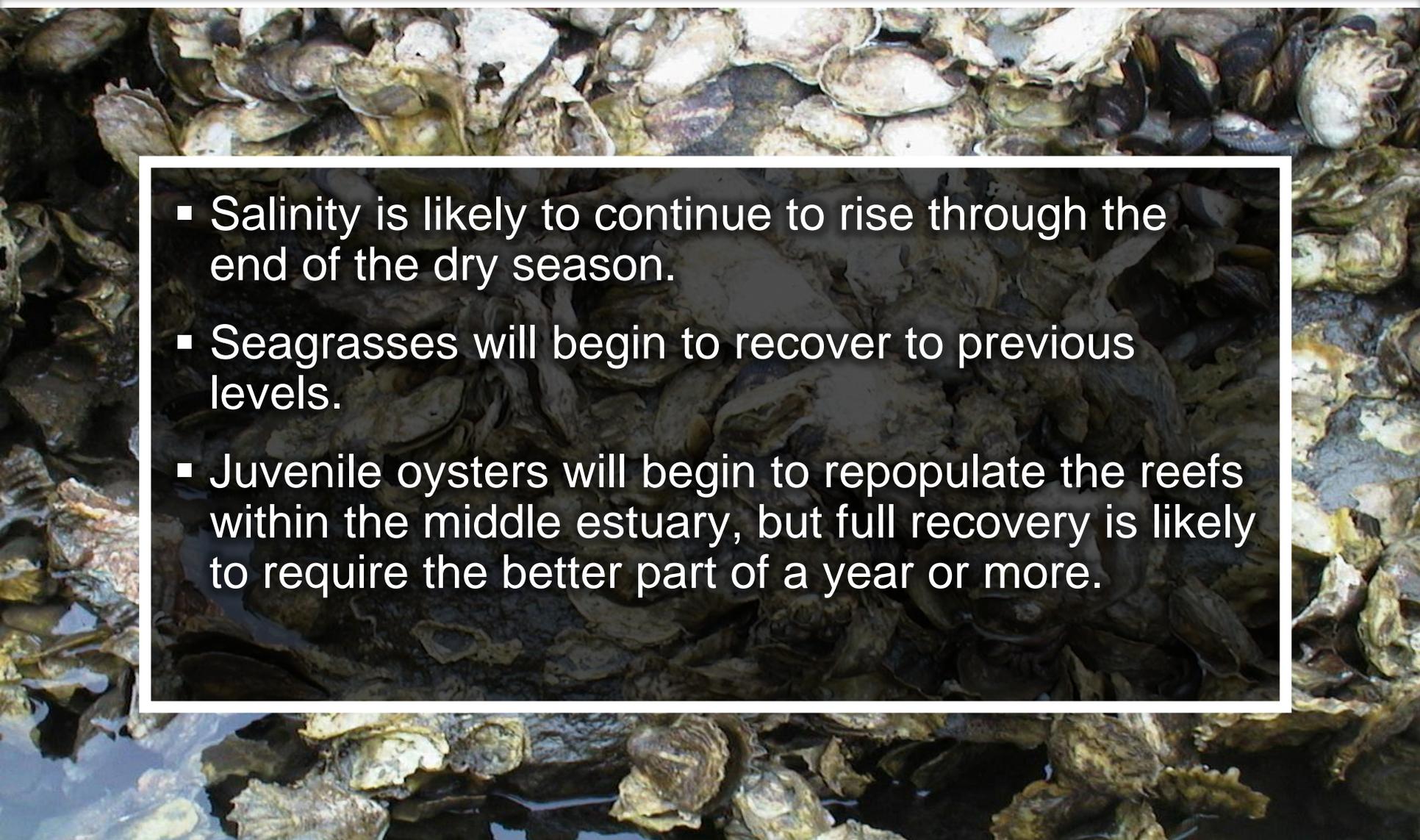
# Previous 6 months - Caloosahatchee Estuary



- Salinity has returned to a good range for adult oysters (green zone) just upstream of Shell Point and now in a fair range at the Cape Coral Bridge.



# Expectations for the St. Lucie Estuary

- 
- Salinity is likely to continue to rise through the end of the dry season.
  - Seagrasses will begin to recover to previous levels.
  - Juvenile oysters will begin to repopulate the reefs within the middle estuary, but full recovery is likely to require the better part of a year or more.

# Expectations for the Caloosahatchee Estuary

- Salinity will likely continue to rise through the end of the dry season.
- Tape grass may start to recover if salinity is maintained at or below five in the upper estuary.
- Marine seagrass will likely recover fully.
- Oyster reefs in the middle estuary should begin to recover.

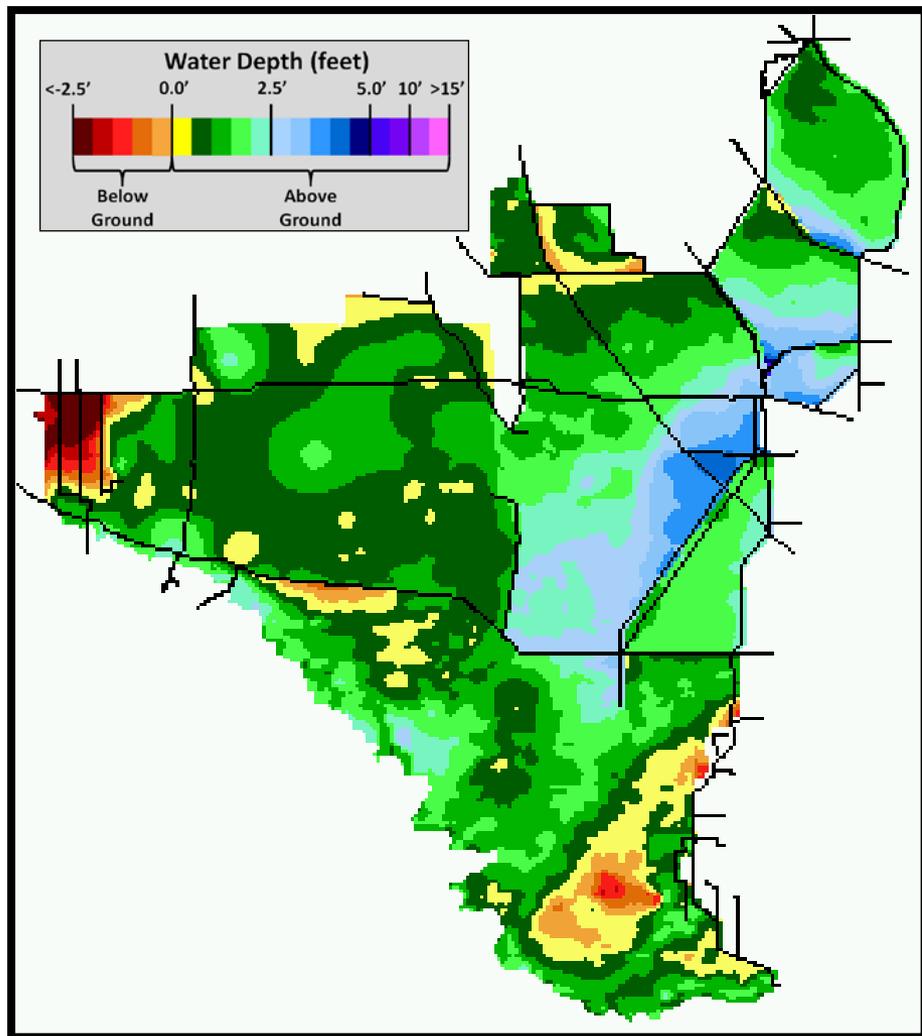
## Previous 4 months – Everglades STAs

- STA water depths have been at or above target due to active wet season
- Lake Okeechobee regulatory releases were treated in STA-1E and STA-1W prior to delivery to WCA-1 (August – October)
- Treatment cells in STA-1E and STA-5/6 have been under stage restrictions due to Snail Kite nesting

## Next 6 Months - Everglades STAs

- Supplemental water may be delivered to the STAs if needed to maintain hydration
- Lake Okeechobee regulatory releases may continue passing through STAs as conditions allow
- Vegetation enhancement activities are planned for the STAs
  - Temporary flow or stage restrictions may be required to accommodate these activities

# Previous Six Months – WCA's



## Wet Season:

- Water levels in the WCAs were generally 6-8 inches higher this year compared to the last few years
- Wet conditions are good for the wetlands but this year's wet season was stressful for some tree species and terrestrial wildlife

# Previous Six Months – Everglades National Park/Florida Bay



## Wet Season:

- Water levels in ENP wetlands were generally 4-8 inches above their long-term seasonal averages.
- Salinities in the near-shore areas of Florida Bay were below their seasonal averages because of elevated rainfall and inflow. Estuarine ecologists consider these conditions favorable.

# Expectations – WCAs



## Dry Season:

- The upcoming dry season rainfall is anticipated to be normal
- Higher water levels increased the prey base, suggesting that it may be a good year for wading birds and endangered species

# Expectations— Everglades National Park/Florida Bay

- Dry Season:
- Water levels in wetlands are expected to be seasonally average
- Salinities in near-shore Florida Bay are also expected to be average this dry season and to remain acceptable at the Florida Bay Minimum Flows and Levels (MFL) site
- Required monitoring of the endangered Cape Sable Seaside Sparrows will continue



Cape Sable Seaside Sparrow  
-Cornell Lab