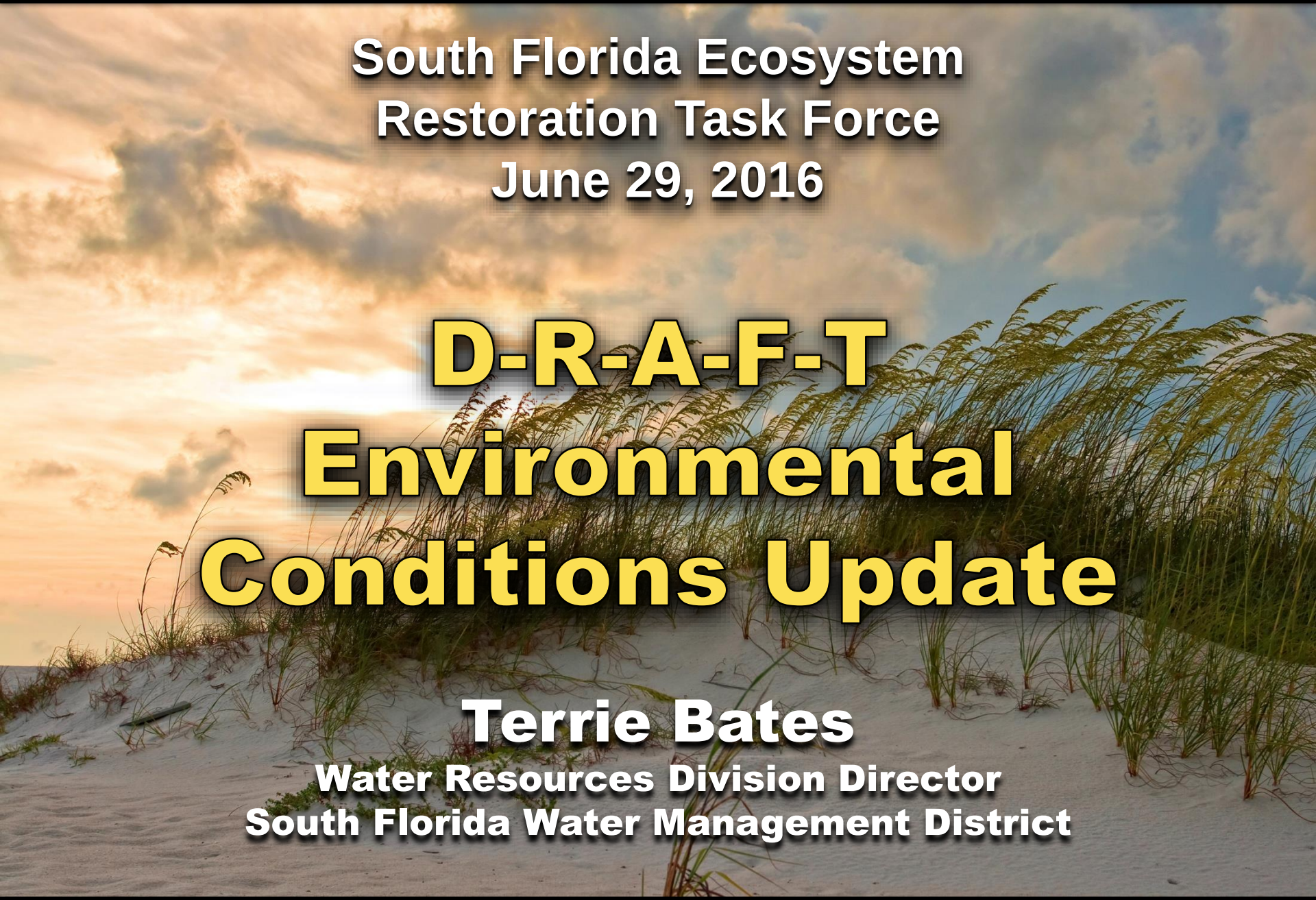


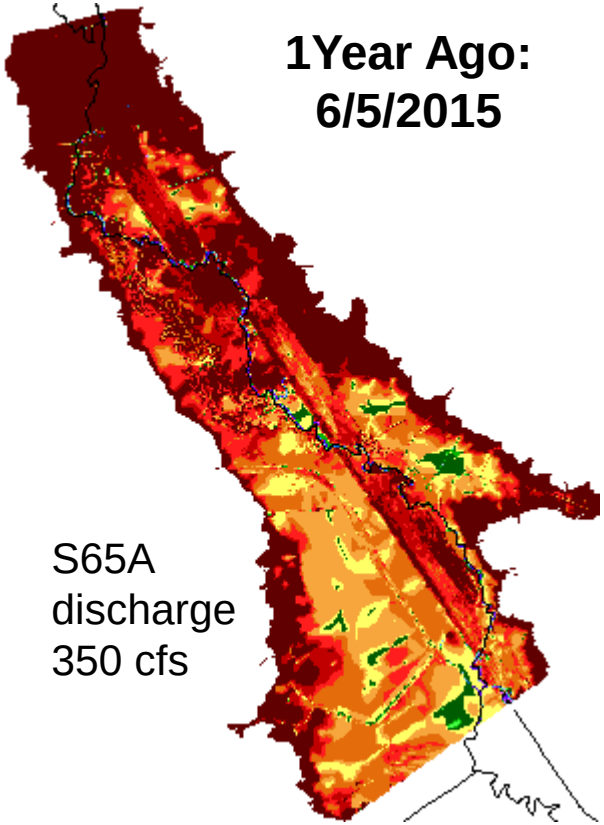
South Florida Ecosystem Restoration Task Force
June 29, 2016

D-R-A-F-T Environmental Conditions Update

Terrie Bates
Water Resources Division Director
South Florida Water Management District

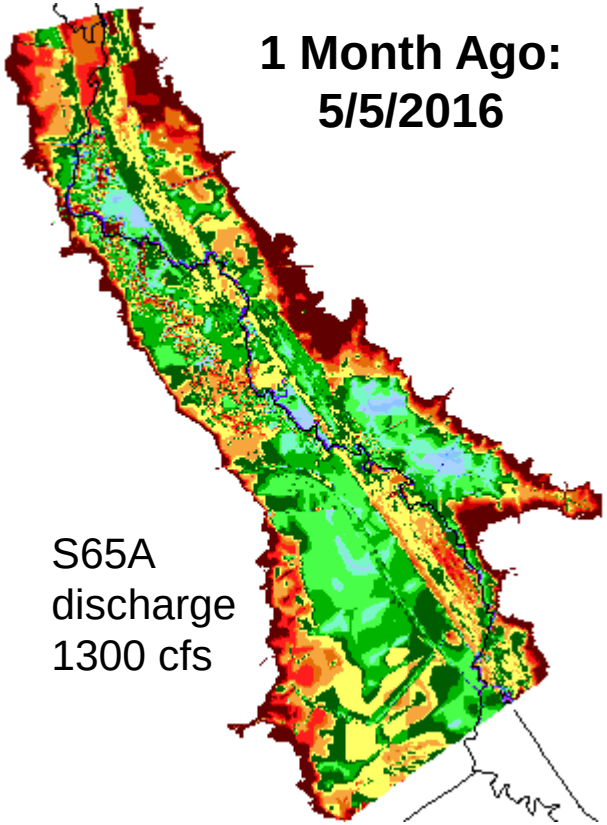
Kissimmee River Phase I Restoration Area
Water Depth Maps

1Year Ago:
6/5/2015



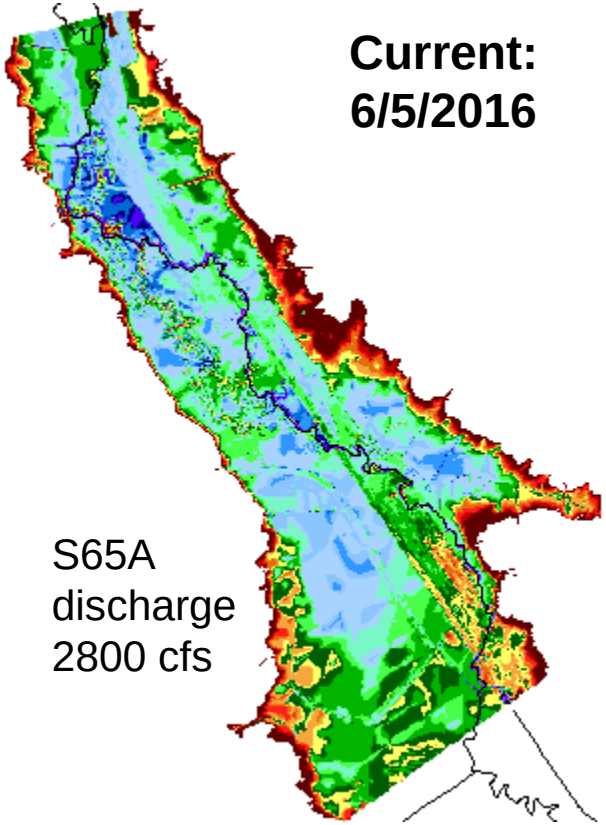
S65A
discharge
350 cfs

1 Month Ago:
5/5/2016

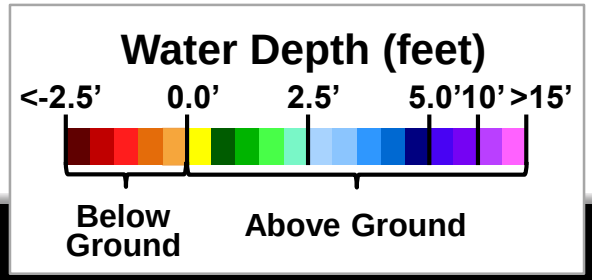


S65A
discharge
1300 cfs

Current:
6/5/2016

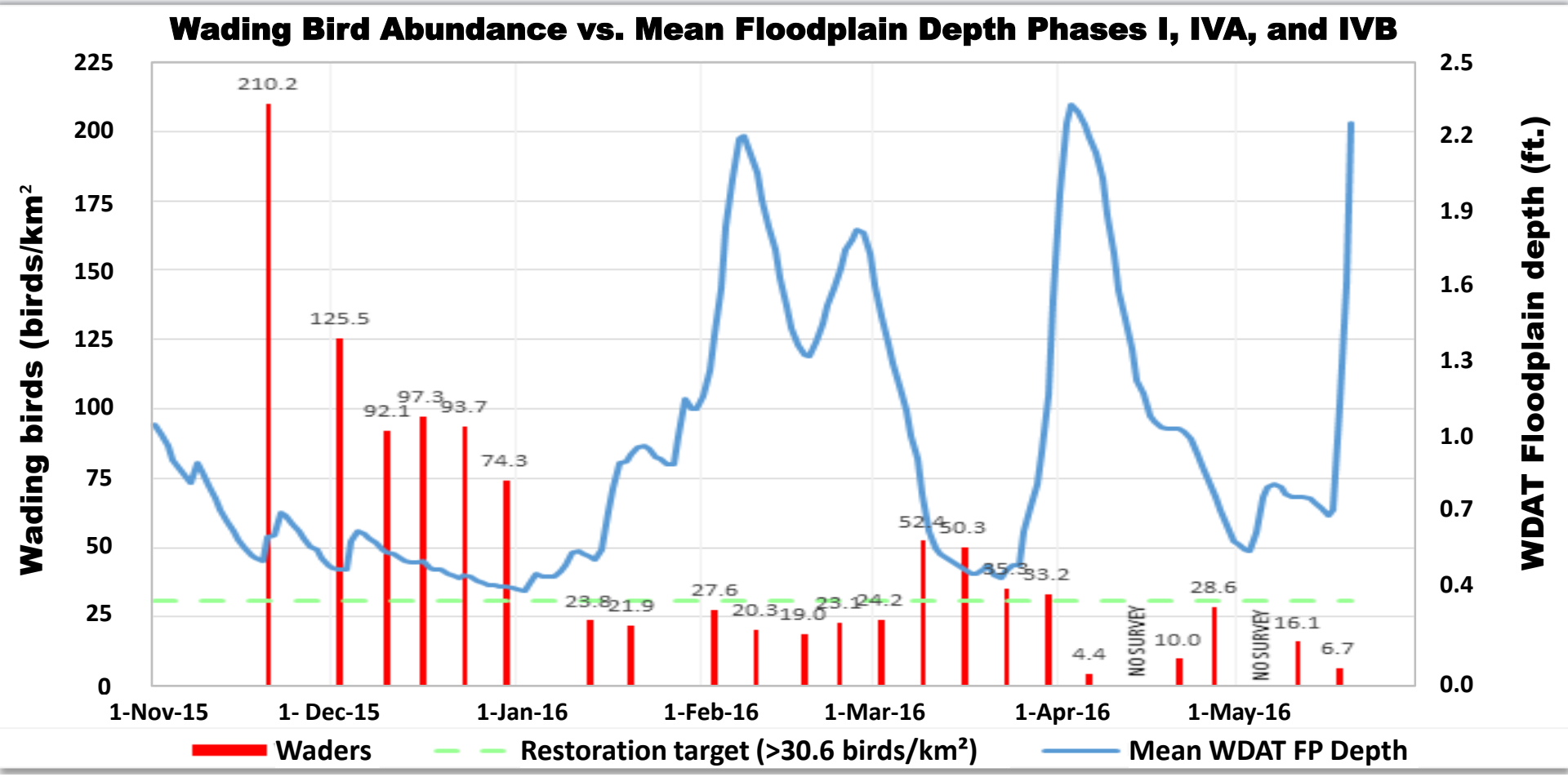


S65A
discharge
2800 cfs



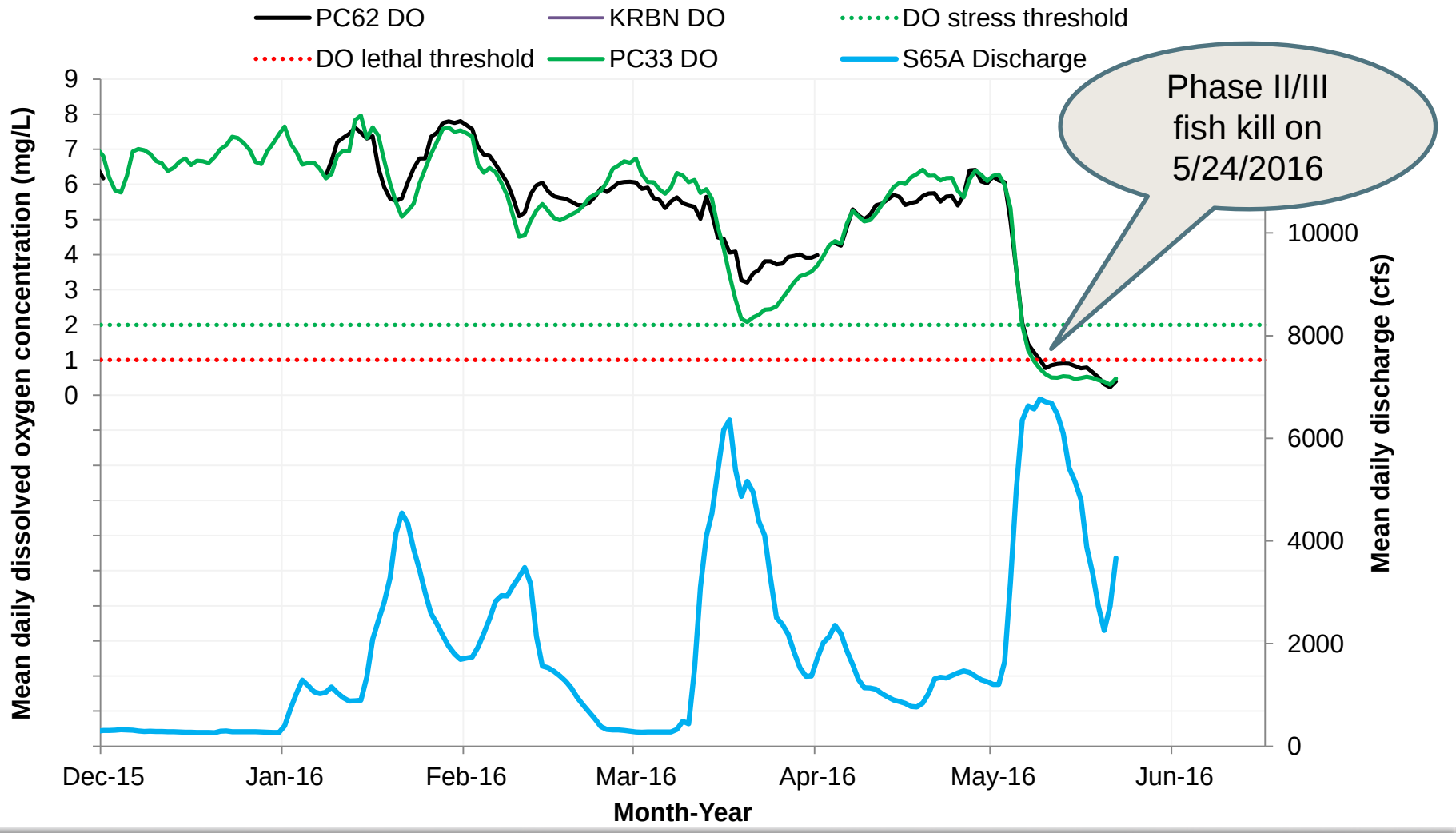
sfwmd.gov

Kissimmee River
Dry Season Wading Bird Abundance

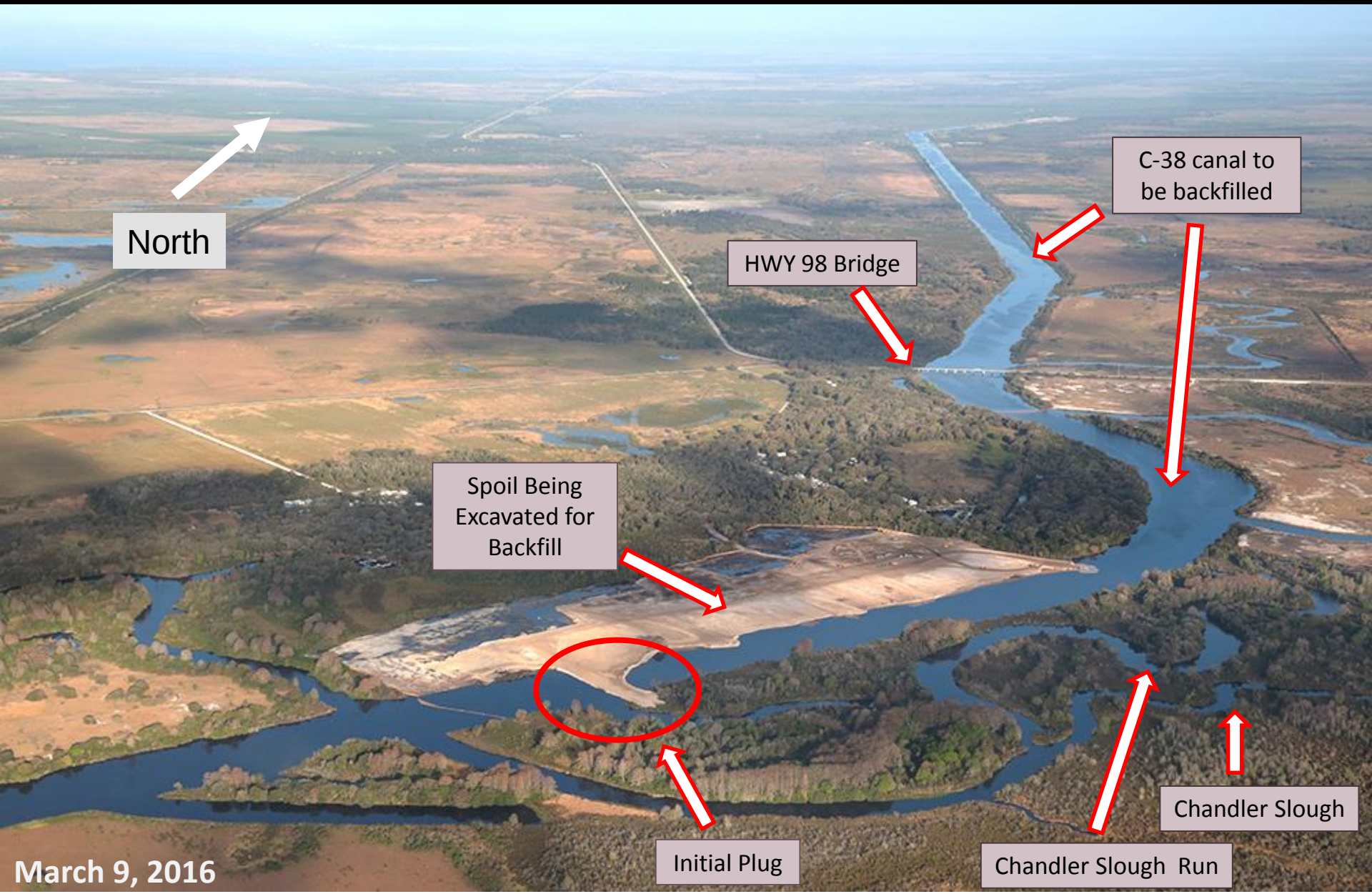


- Stage reversals (increases in water depth) on the Kissimmee River floodplain are caused by increases in flow at S65/S65A following rainfall
- Increases in floodplain water depth affect the ability of wading birds to use floodplain habitats because they cannot forage in water that is too deep

Kissimmee River Phase I Area Dissolved Oxygen Sag



SOUTH FLORIDA WATER MANAGEMENT DISTRICT



Kissimmee River Phase/Reach 3 restoration area looking northwest. Contractors have successfully completed the initial plug of C-38 reach 3 backfill. They will now continue their way northwest backfilling the canal. Phase/Reach 3 continues upstream to HW98 bridge. Phase/Reach 2 will continue further upstream to connect with Phase/Reach 1 backfill completed in 2001

Kissimmee River Reach 3 restoration area.

Kissimmee River Reach 3 restoration area looking north up the C-38 where a plug is being placed at the north end of reach 3 just south of the HW98 bridge.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

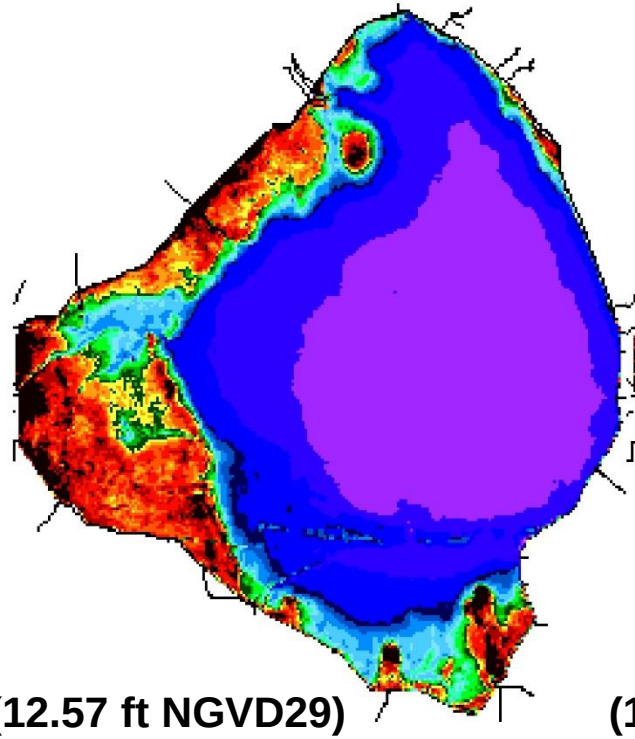
Phase II/III Floodplain
First Flood Event in 45 Years and Fish Kill

Looking across the Phase II/III floodplain on 5/25/2016

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

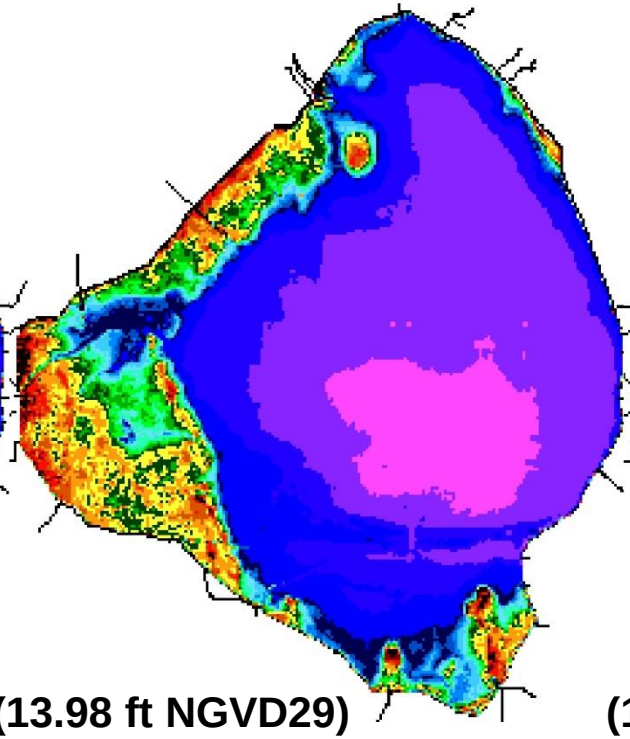
Lake Okeechobee
Water Depth Maps

1 Year Ago: 06/06/2015



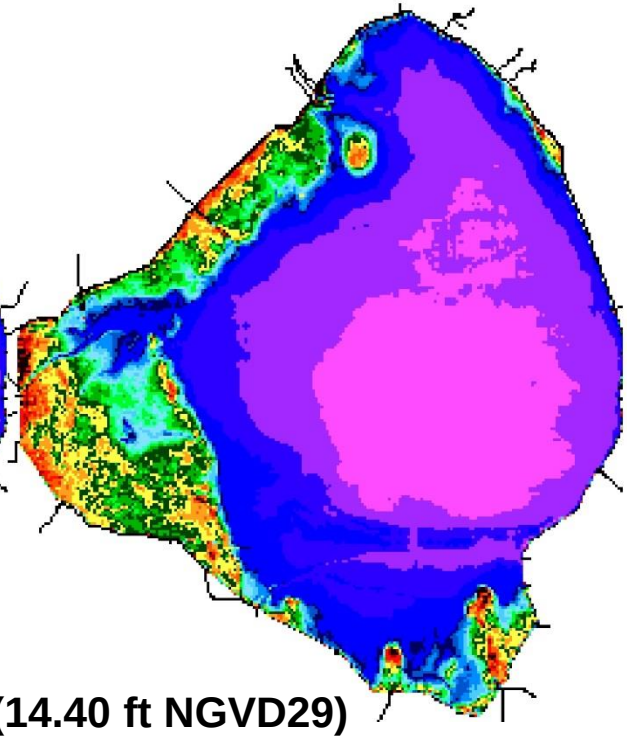
(12.57 ft NGVD29)

1 Month Ago: 05/07/2016

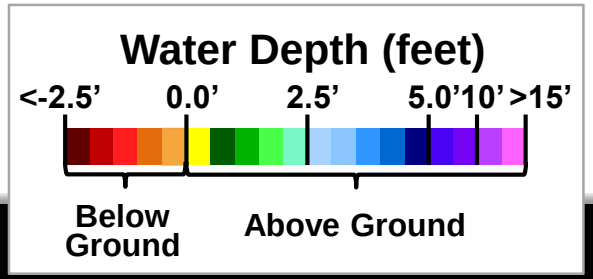


(13.98 ft NGVD29)

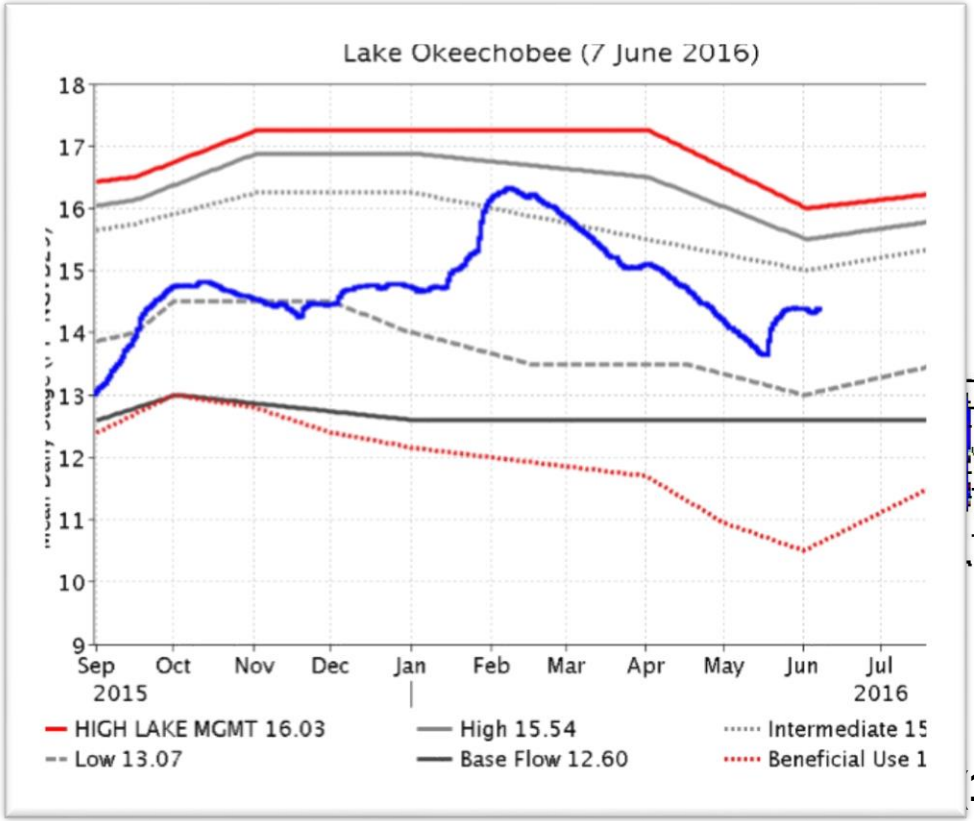
Current: 06/06/2016



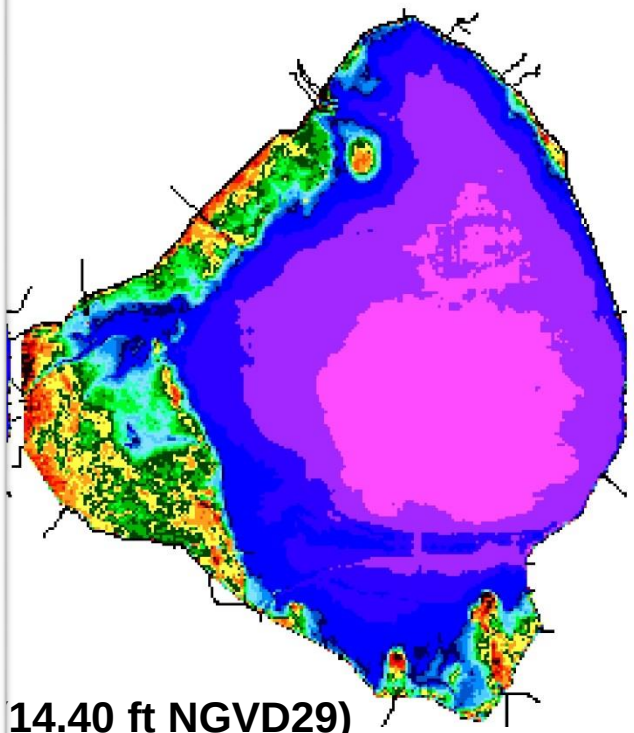
(14.40 ft NGVD29)



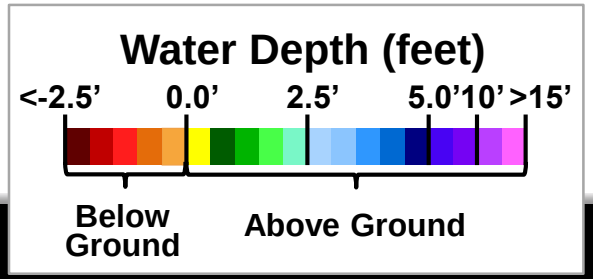
Lake Okeechobee
Water Depth Maps



Current: 06/06/2016

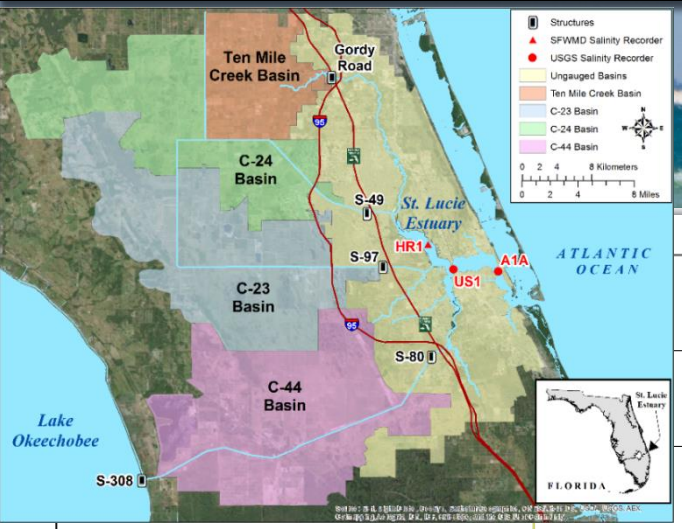


14.40 ft NGVD29)



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

St. Lucie Estuary



Weekly Average Inflow
May 31 - June 6, 2016

Inflow from Lake	1742 cfs
C-44 Basin Inflow	66 cfs
Tenmile Creek	109 cfs
C-23	166 cfs
C-24	247 cfs
Tidal Basin Inflow	312 cfs
Total	2642 cfs

Data provisional and subject to change

15,000
13,500
12,000
10,500
9,000
7,500
6,000
4,500
3,000
1,500
0

Total Flow (cfs)

1-Jun 1-Jul 1-Aug 1-Sep 1-Oct 1-Nov 1-Dec 1-Jan 1-Feb 1-Mar 1-Apr 1-May 1-Jun

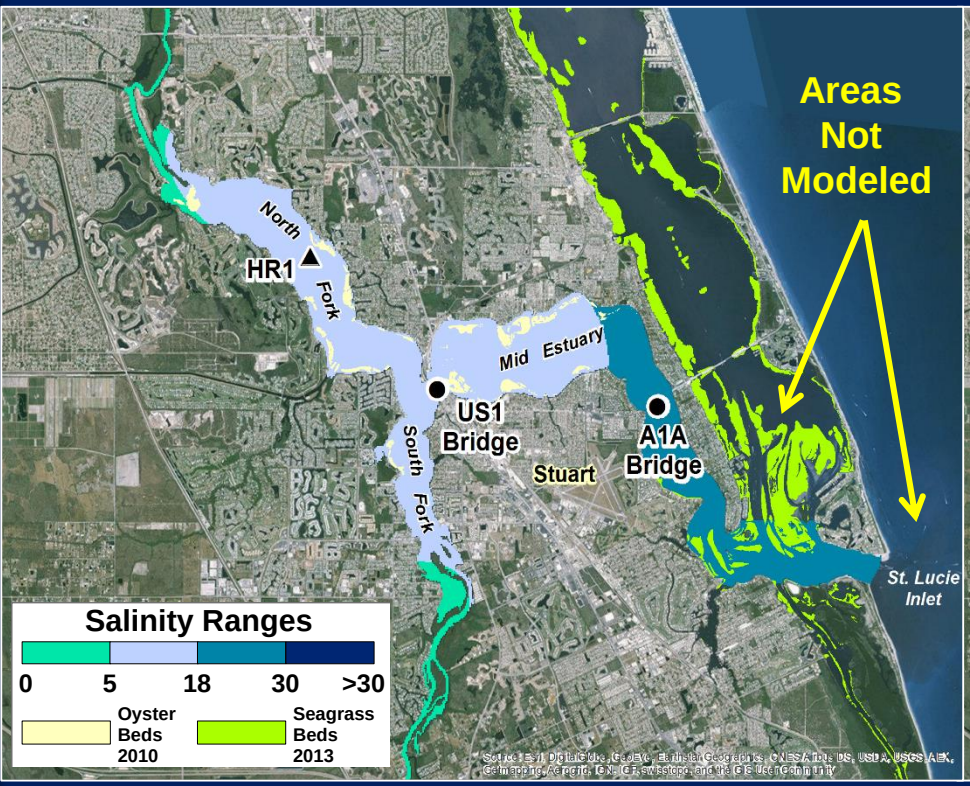
Inflow from Lake* (using downstream gauge)
C-44 Basin Runoff
Inflow from C-24, C23, and Tenmile Creek
Tidal Basin Inflow

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

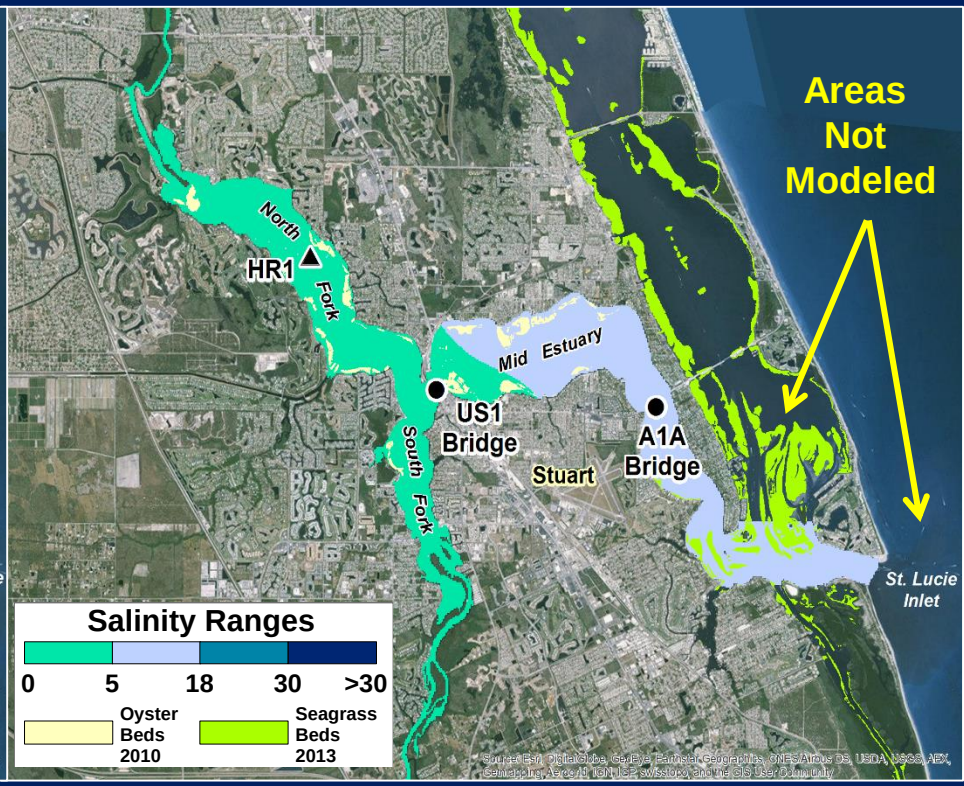
St. Lucie Estuary

Salinity Conditions

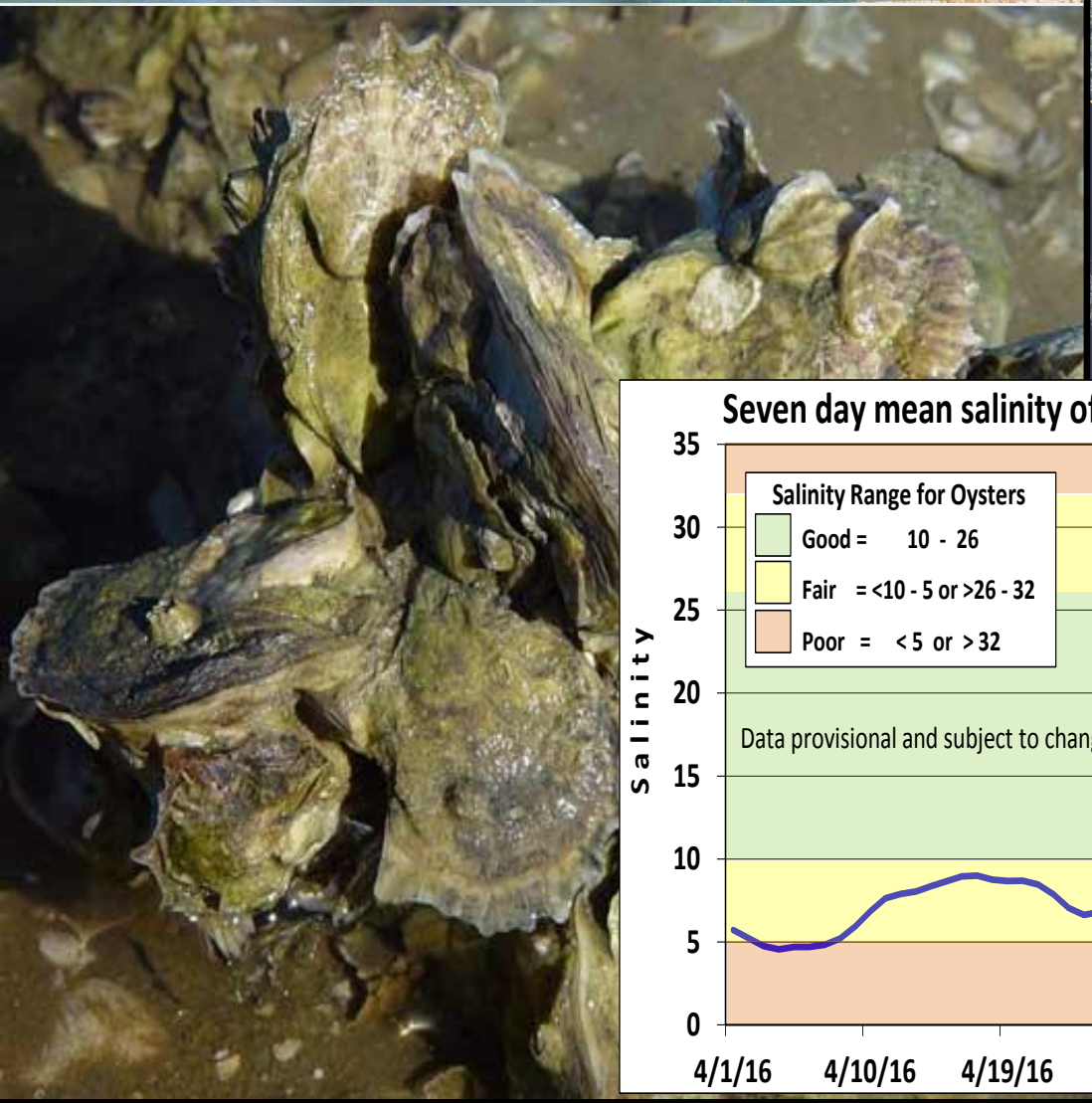
May 9, 2016

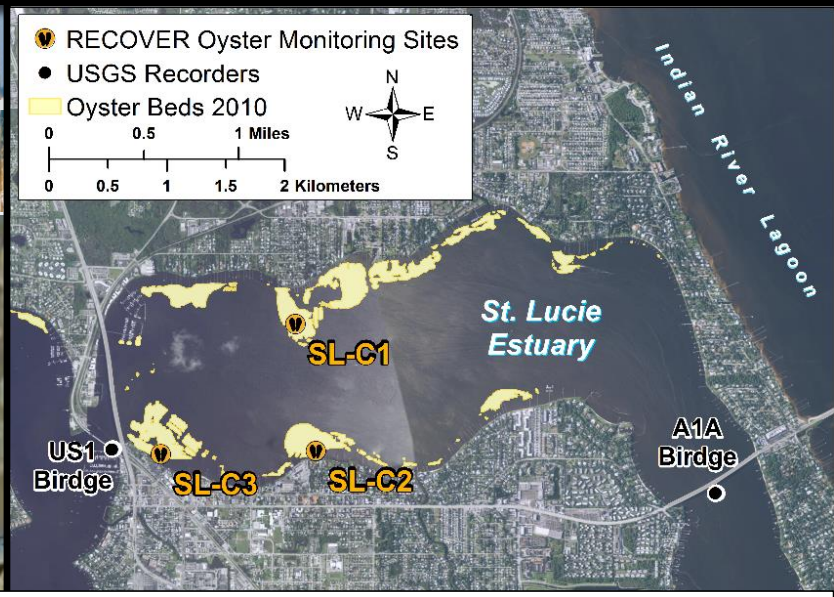


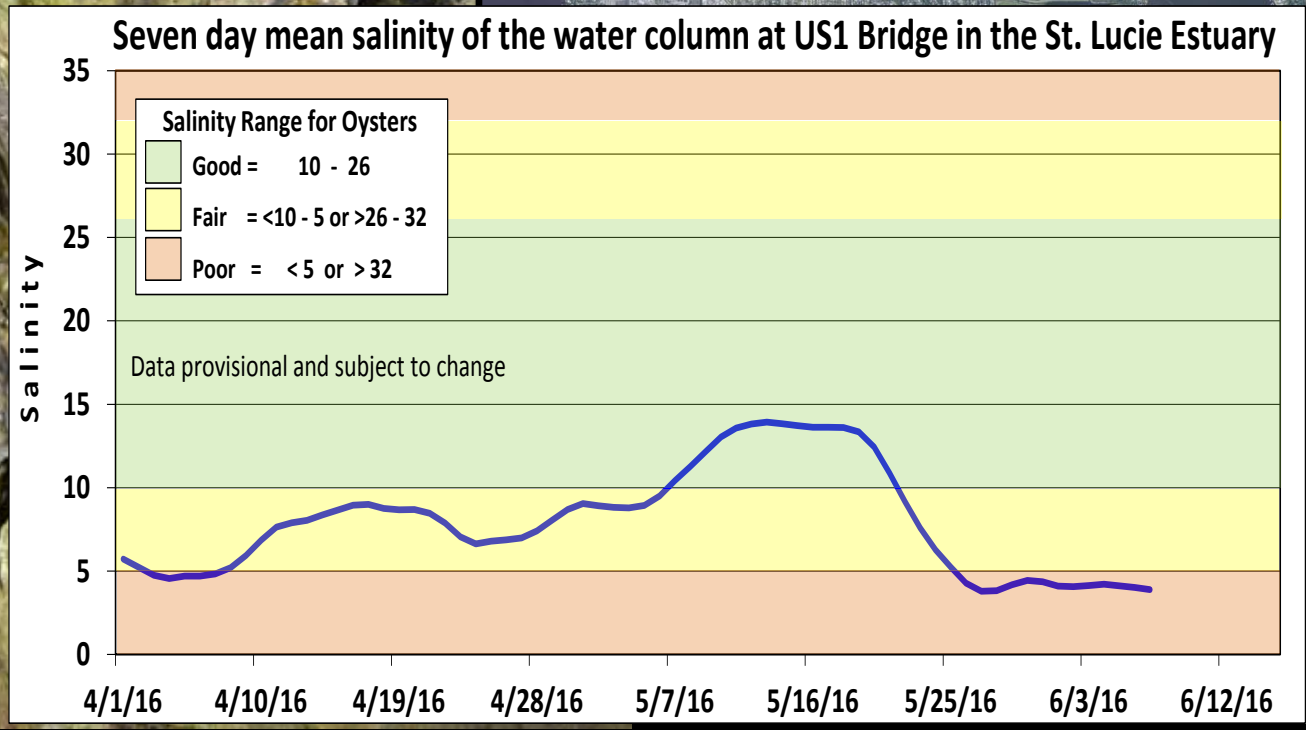
June 6, 2016



St. Lucie Estuary Salinity

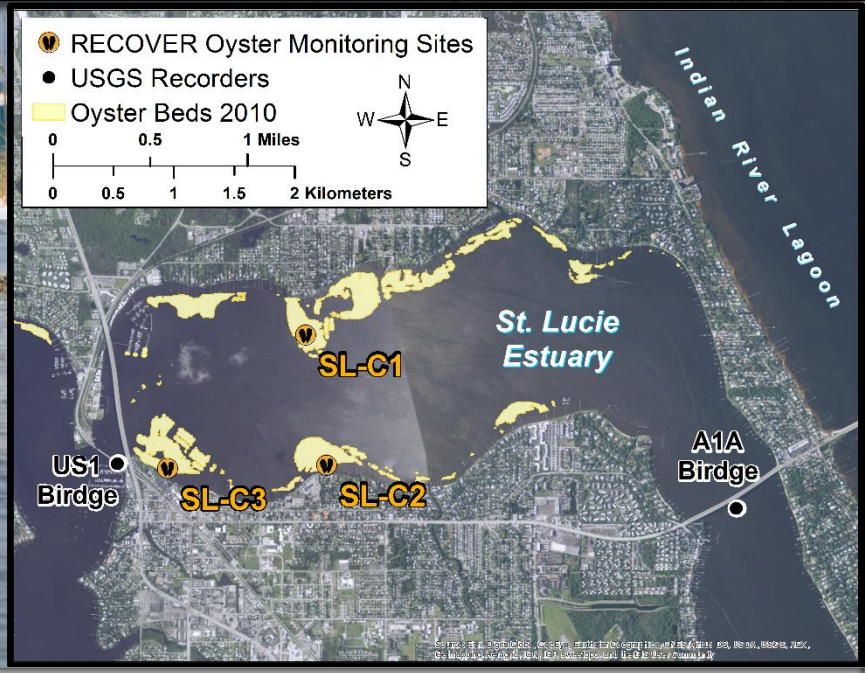




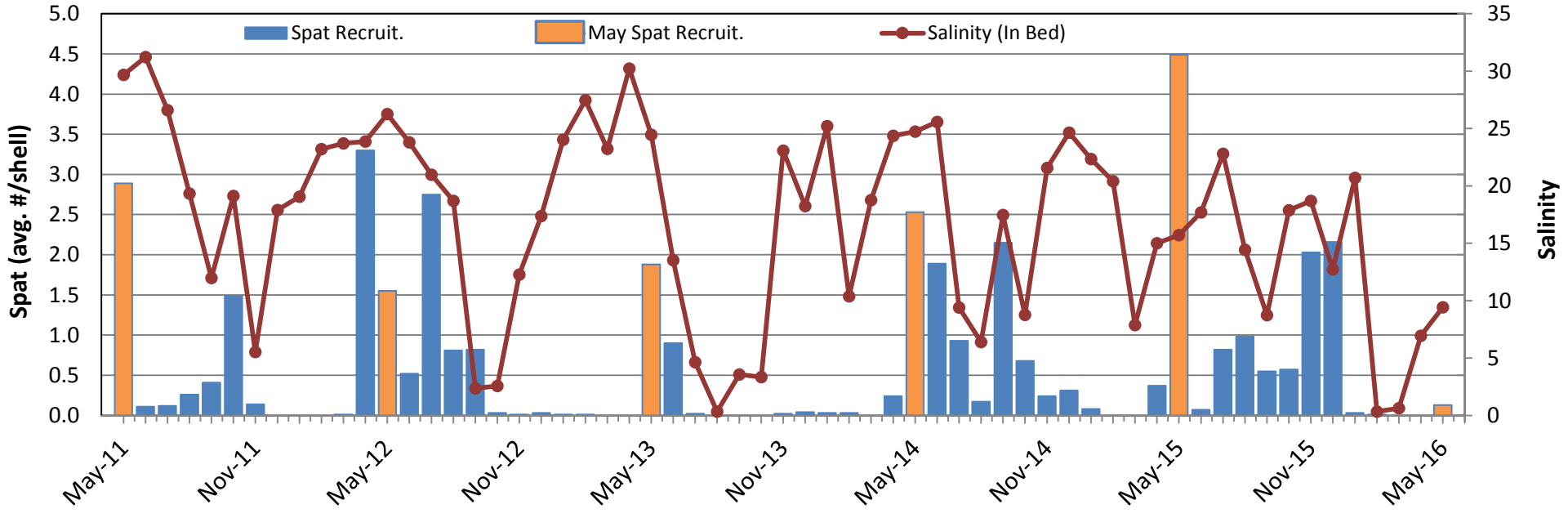


Live Oysters

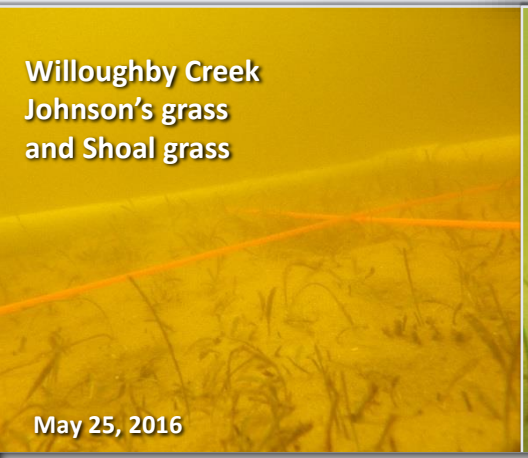
St. Lucie Estuary – Oyster Spat Recruitment

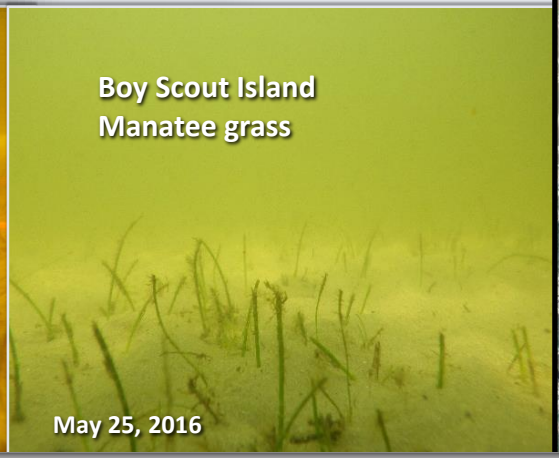


Oyster Recruitment - SL Mid Estuary (May 2011- May 2016)

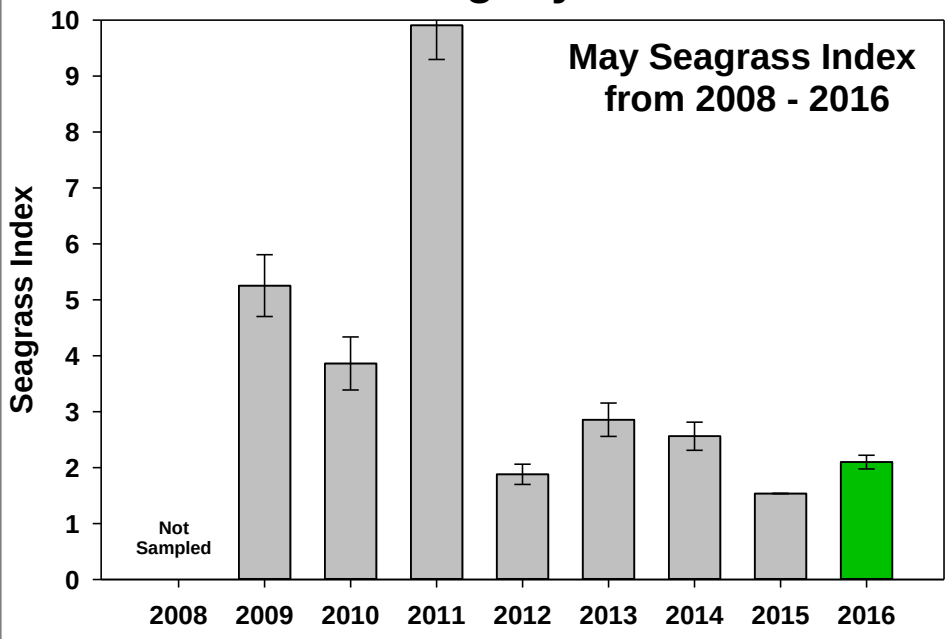


St. Lucie Estuary – Seagrass

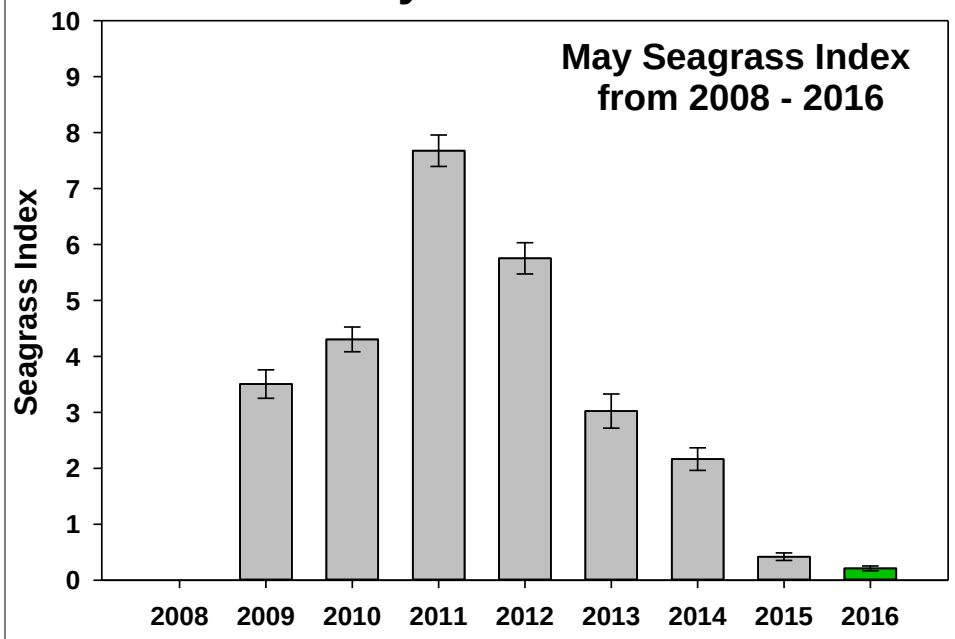




Willoughby Creek

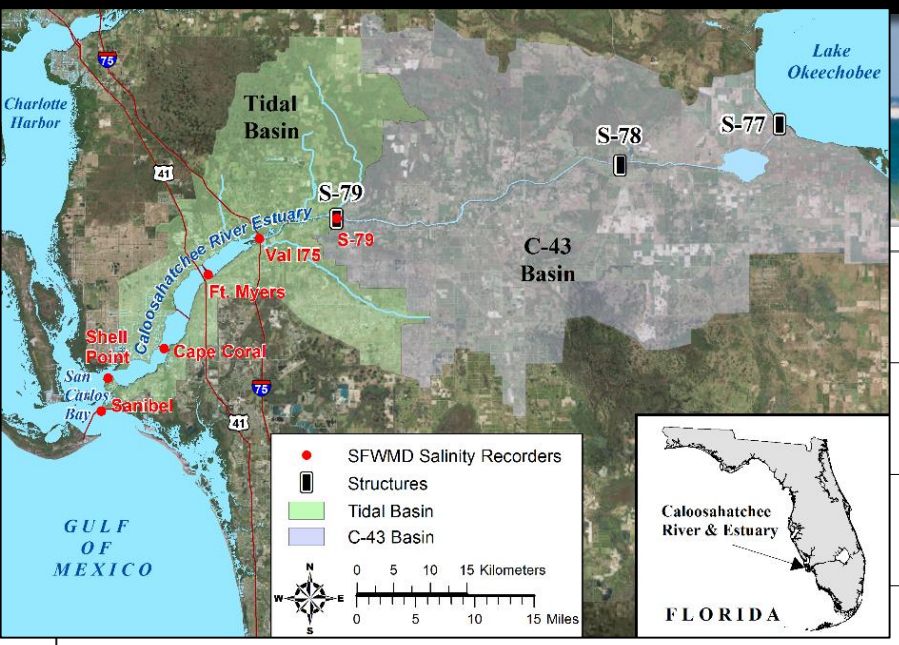


Boy Scout Island



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Caloosahatchee Estuary



Weekly Average Inflow
May 31 - June 6, 2016

Inflow from Lake:	3521 cfs
C-43 Basin Inflow:	1300 cfs
Tidal Basin Inflow:	381 cfs
Total :	5202 cfs

Data are provisional and subject to change

Total Flow (cfs)

18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0

1-Jun 1-Jul 1-Aug 1-Sep 1-Oct 1-Nov 1-Dec 1-Jan 1-Feb 1-Mar 1-Apr 1-May 1-Jun

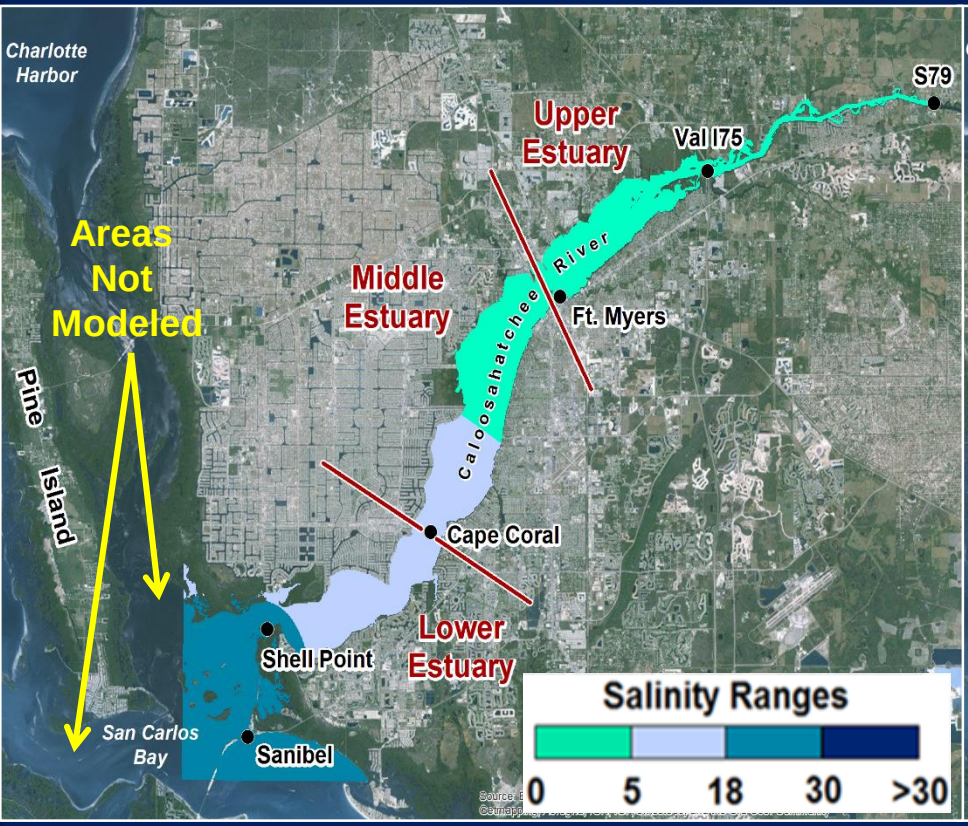
Inflow from Lake* (using downstream gauge) C-43 Basin Inflow Tidal Basin Inflow (downstream of S79)

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

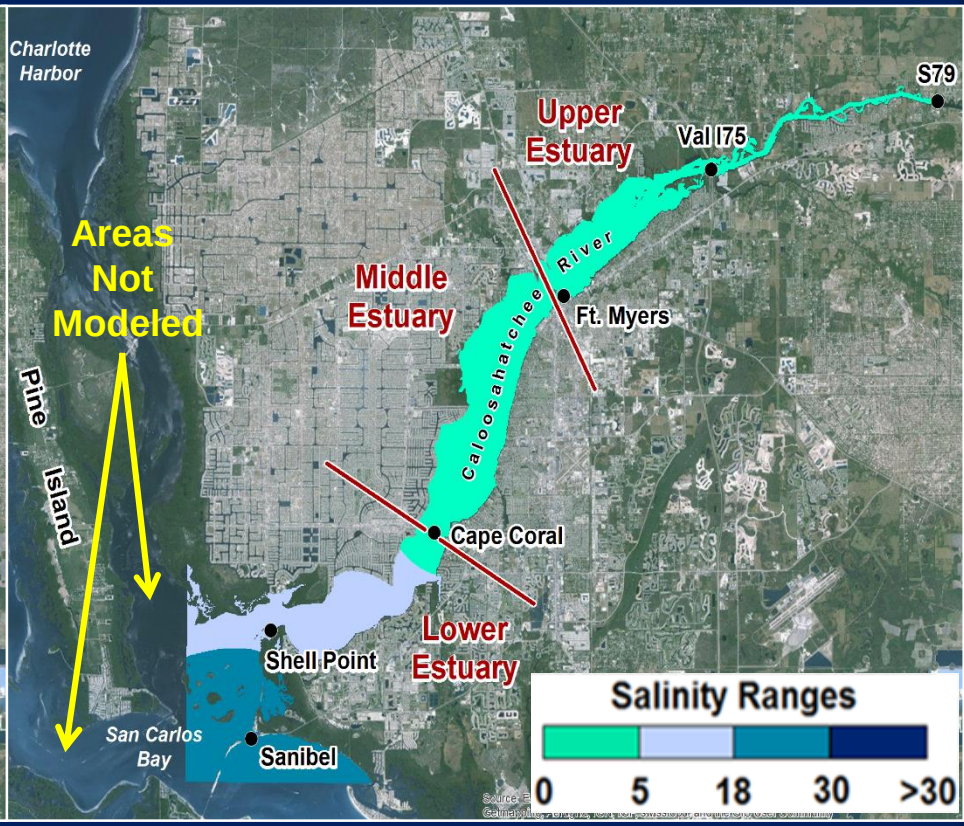
Caloosahatchee Estuary

Salinity Conditions

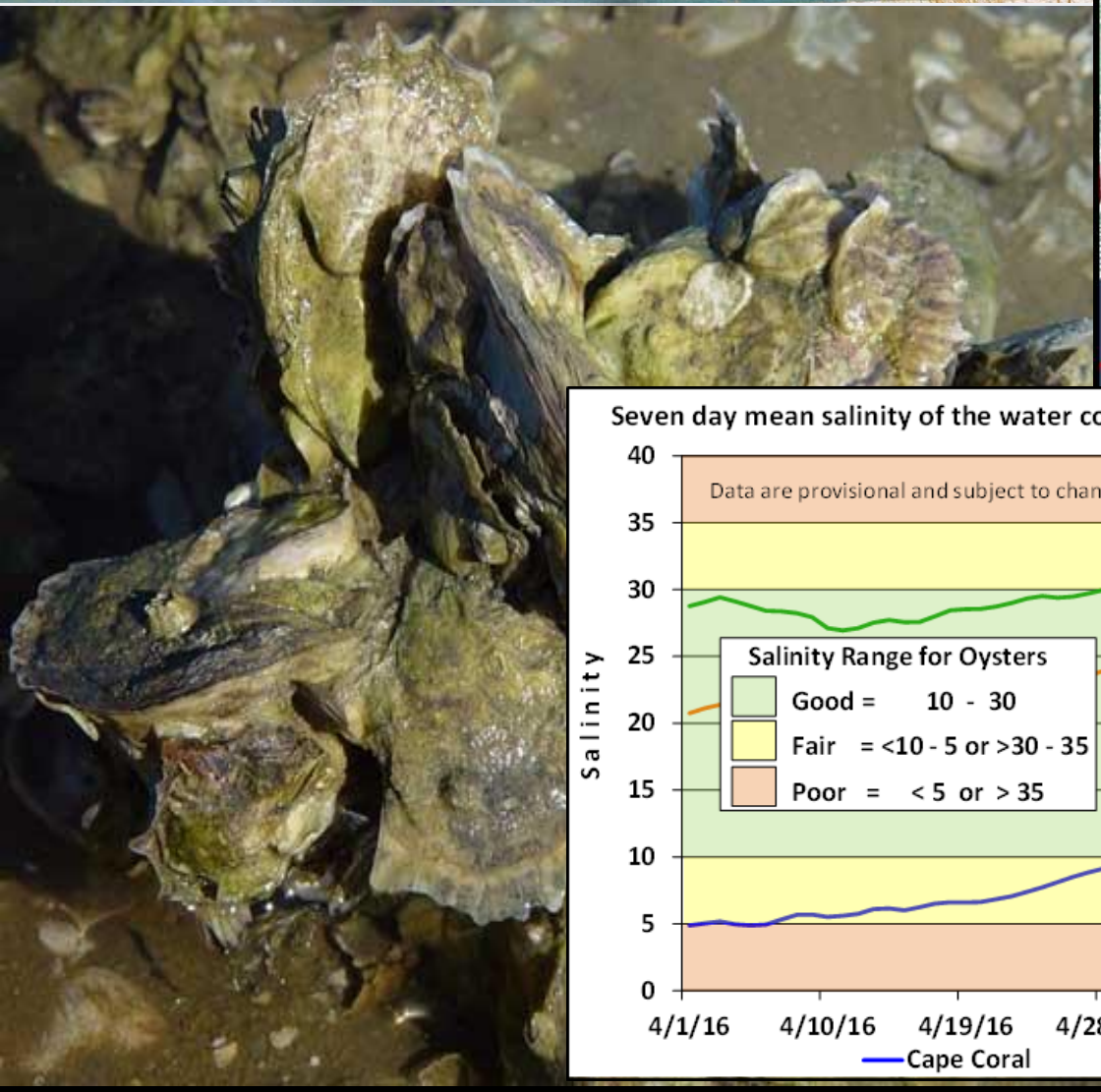
May 9, 2016

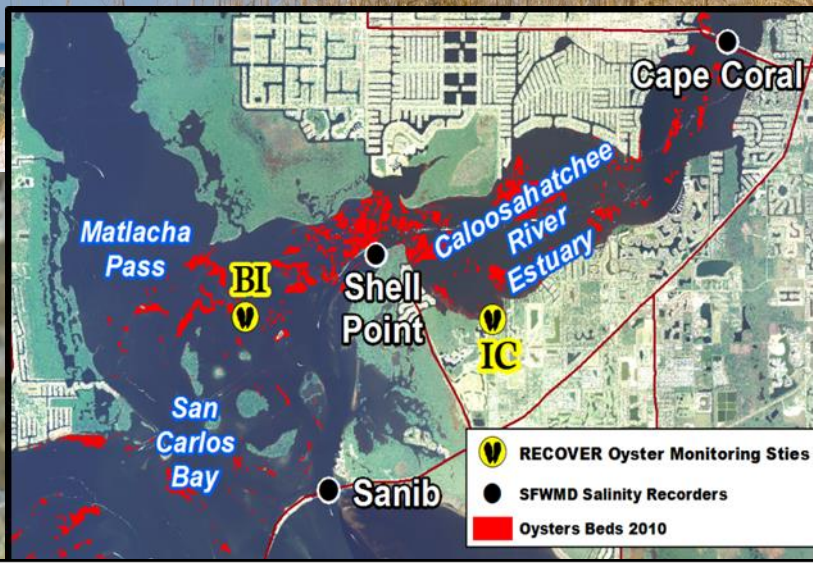


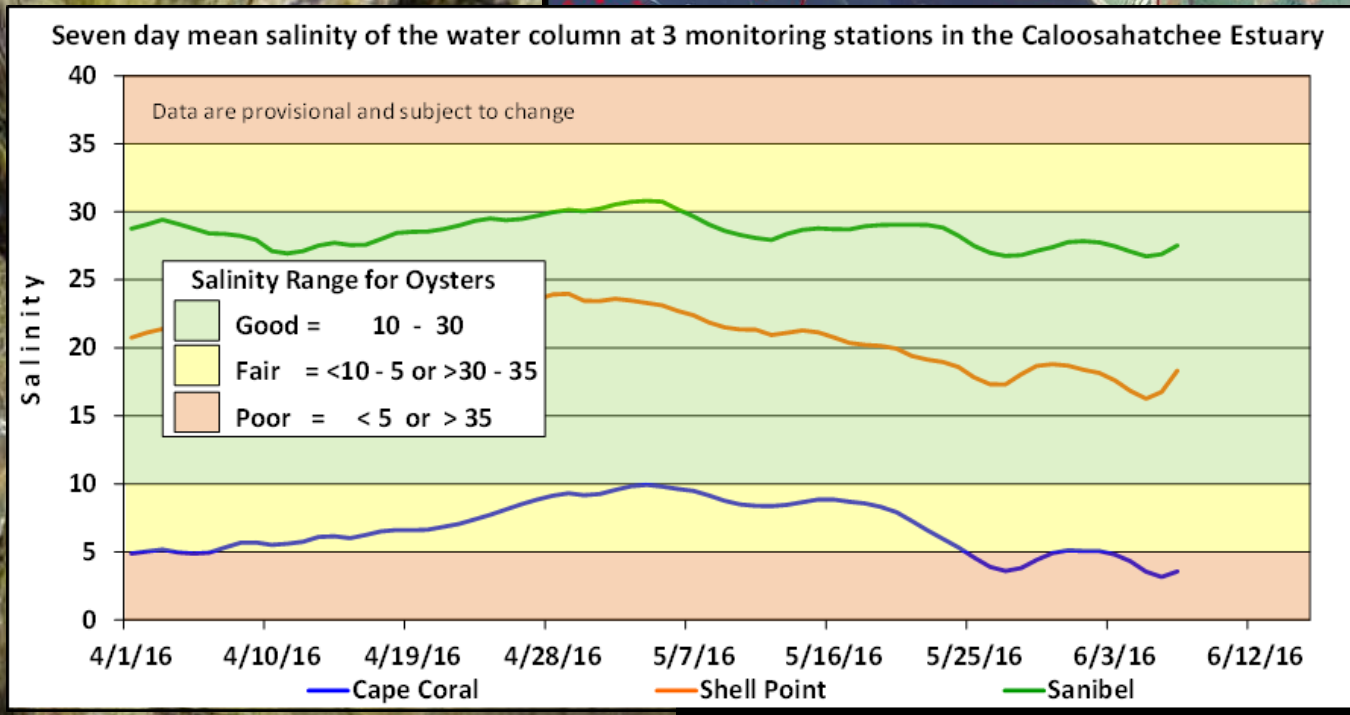
June 6, 2016



Calossahatchee Salinity





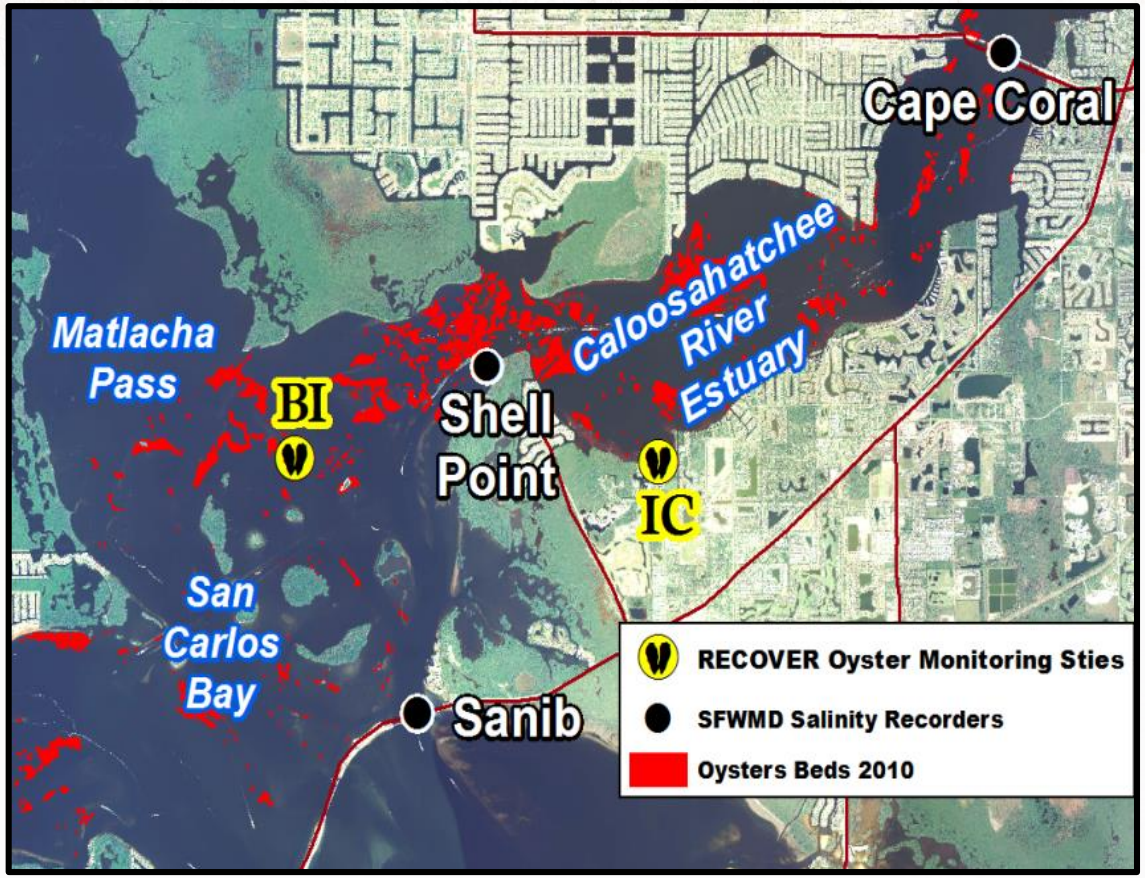


Live Oysters

Caloosahatchee Estuary
Oyster Spat Recruitment

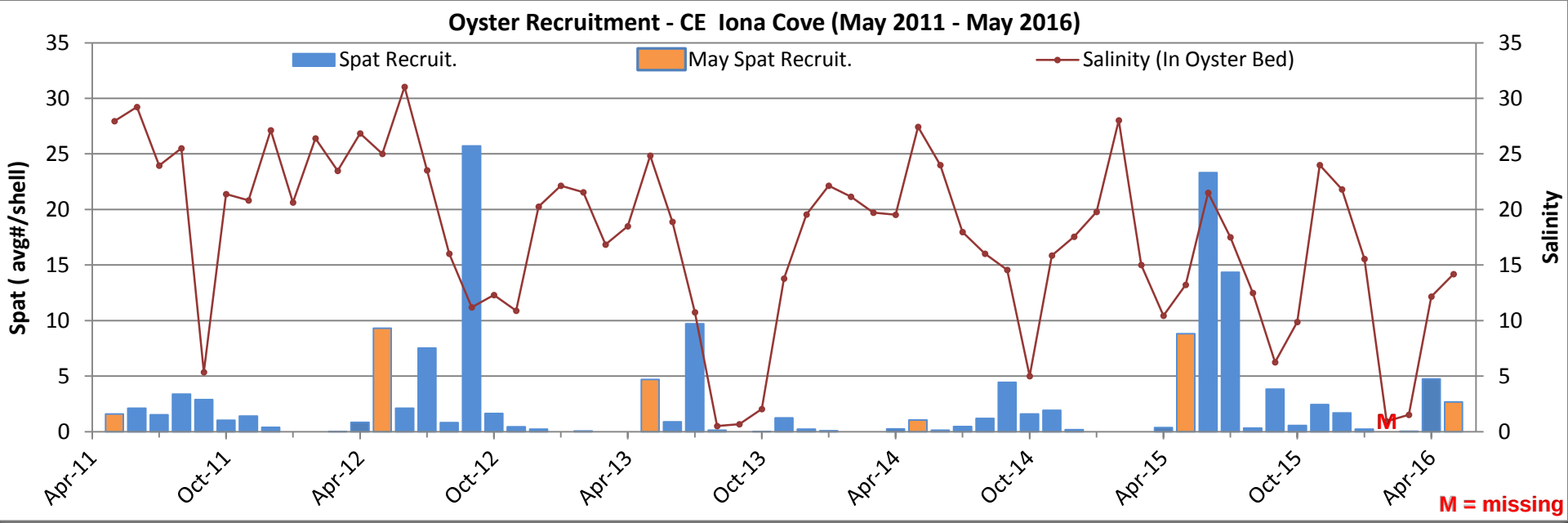
Oyster spat

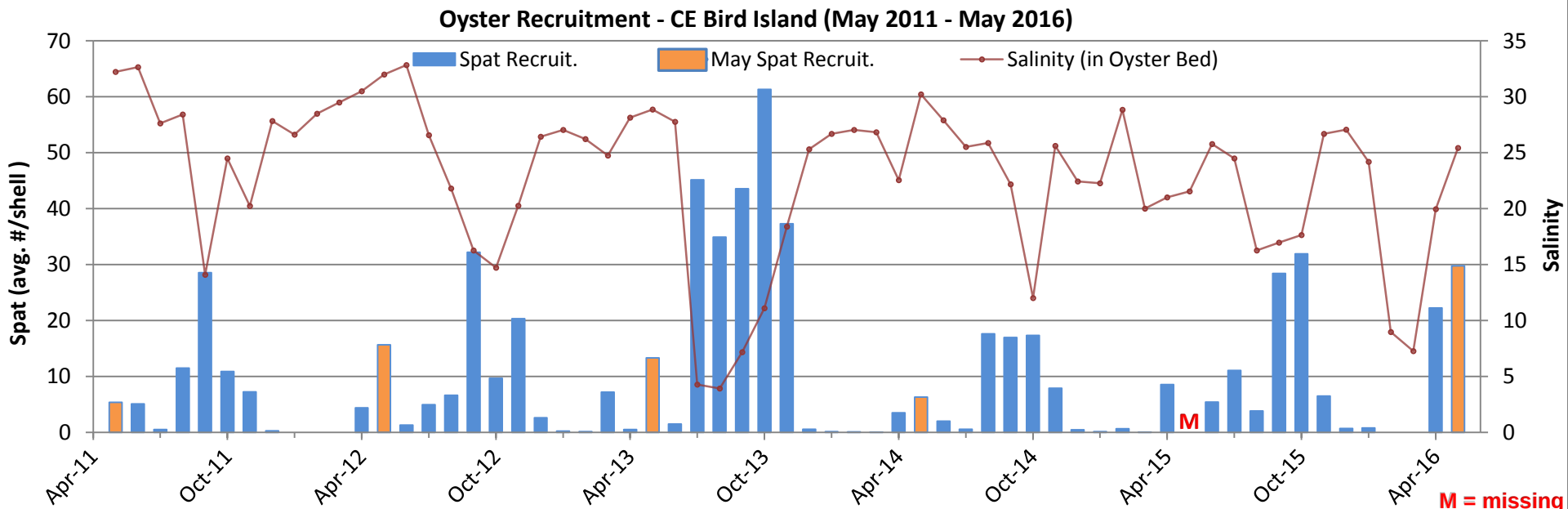
Each month
10 new oyster shells are
hung from sampling T's



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

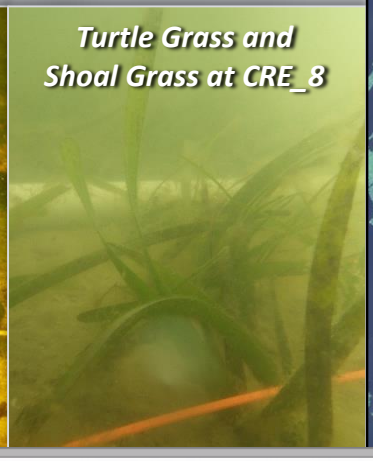
Caloosahatchee Estuary Oyster Spat Recruitment

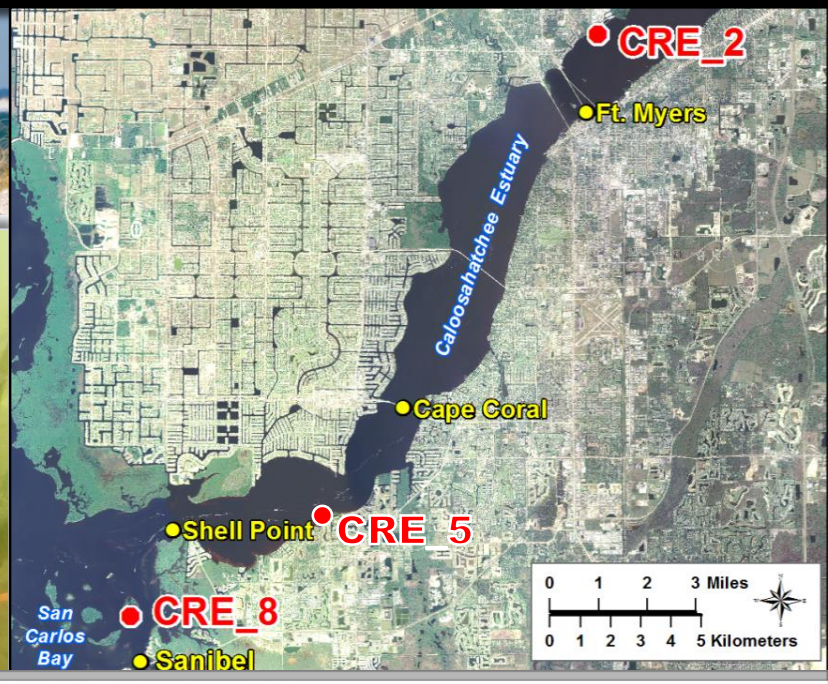




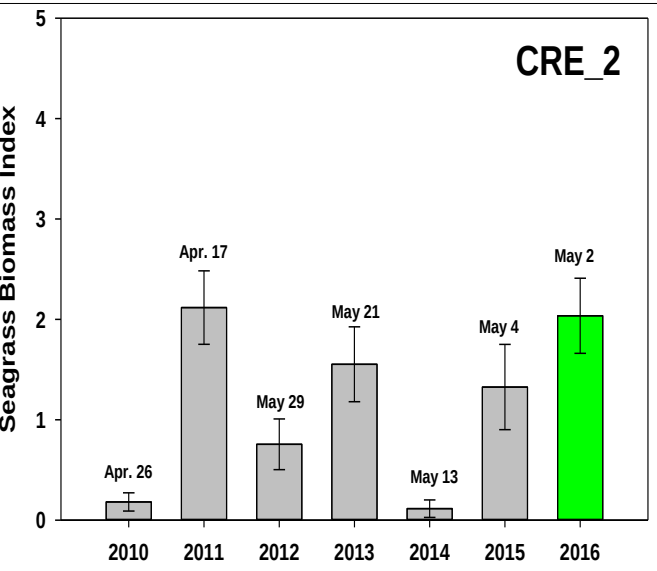
Caloosahatchee Estuary

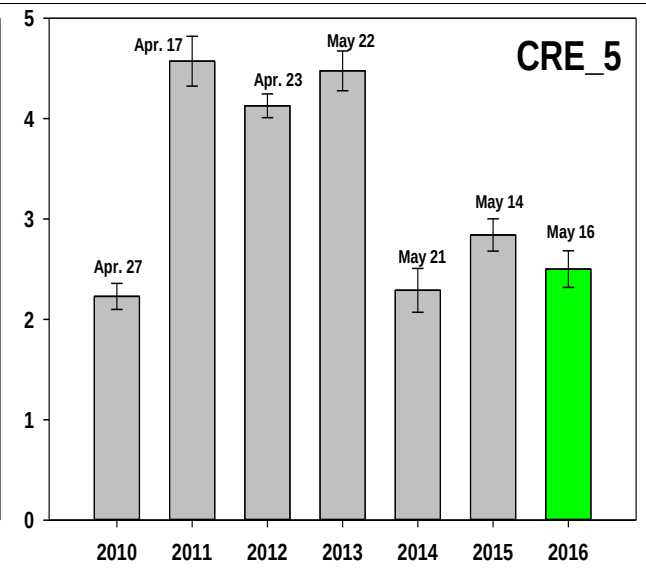
– Submerged Aquatic Vegetation

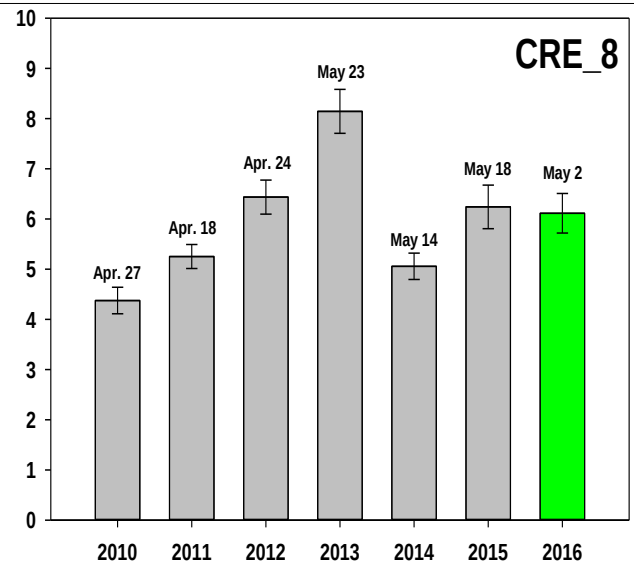




Spring Seagrass Biomass Index from 2010 - 2016







DEP Sampling & Reporting

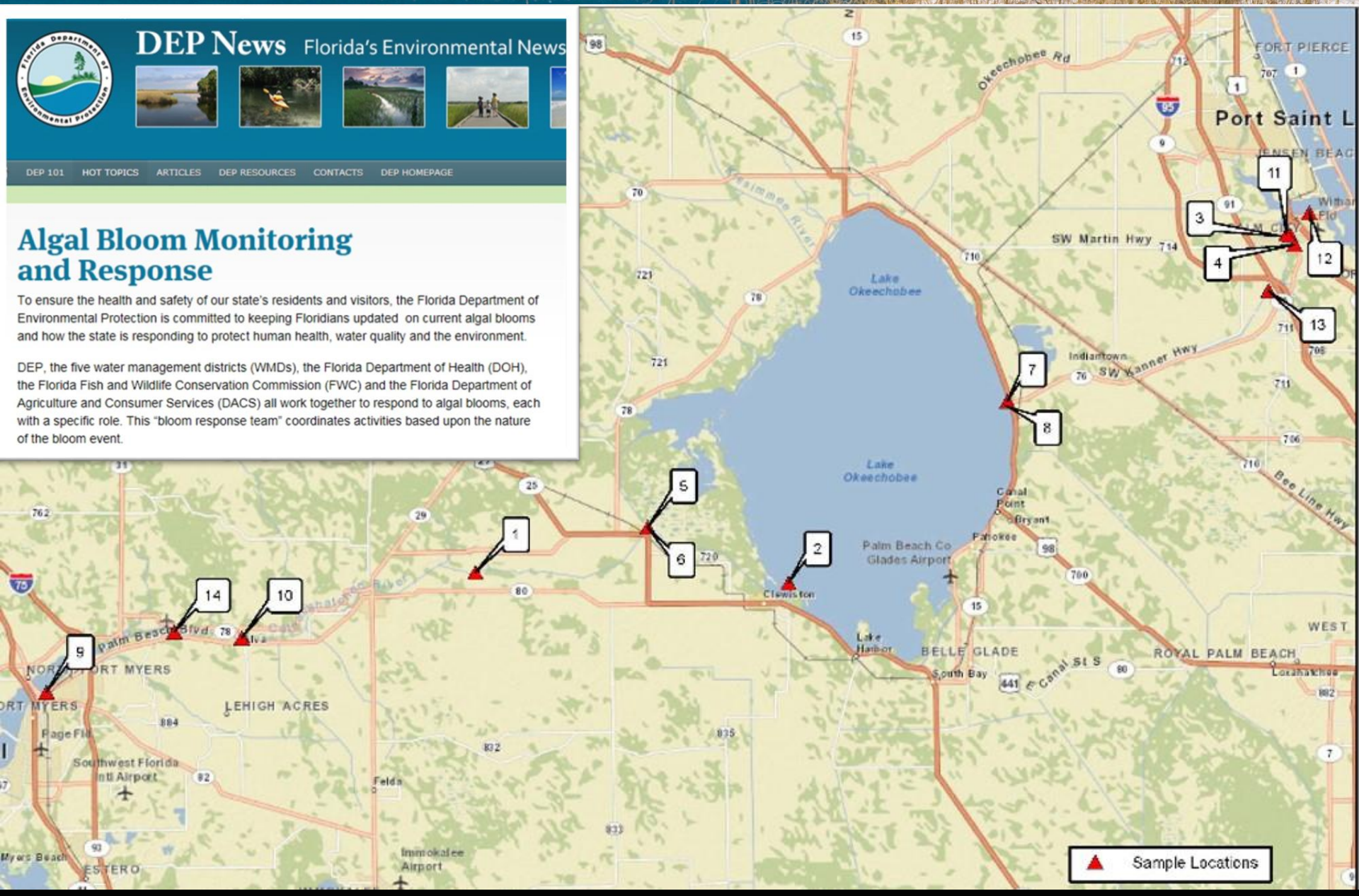
DEP News Florida's Environmental News

DEP 101 | HOT TOPICS | ARTICLES | DEP RESOURCES | CONTACTS | DEP HOMEPAGE

Algal Bloom Monitoring and Response

To ensure the health and safety of our state's residents and visitors, the Florida Department of Environmental Protection is committed to keeping Floridians updated on current algal blooms and how the state is responding to protect human health, water quality and the environment.

DEP, the five water management districts (WMDs), the Florida Department of Health (DOH), the Florida Fish and Wildlife Conservation Commission (FWC) and the Florida Department of Agriculture and Consumer Services (DACS) all work together to respond to algal blooms, each with a specific role. This "bloom response team" coordinates activities based upon the nature of the bloom event.



DEP Sampling & Reporting

X = no toxin detected

Sample Locations

DEP Sampling & Reporting

Relative Probability of Acute Health Effects	Cyanobacteria (cells/mL)	Microcystin-LR (µg/L)	Chlorophyll-a (µg/L)
Low	< 20,000	<10	<10
Moderate	20,000-100,000	10-20	10-50
High	100,000-10,000,000	20-2,000	50-5,000
Very High	> 10,000,000	>2,000	>5,000

Algal Bloom Monitoring and Response

To ensure the health and safety of our state's residents and visitors, the Florida Department of Environmental Protection is committed to keeping Floridians updated on current algal blooms and how the state is responding to protect human health, water quality and the environment.

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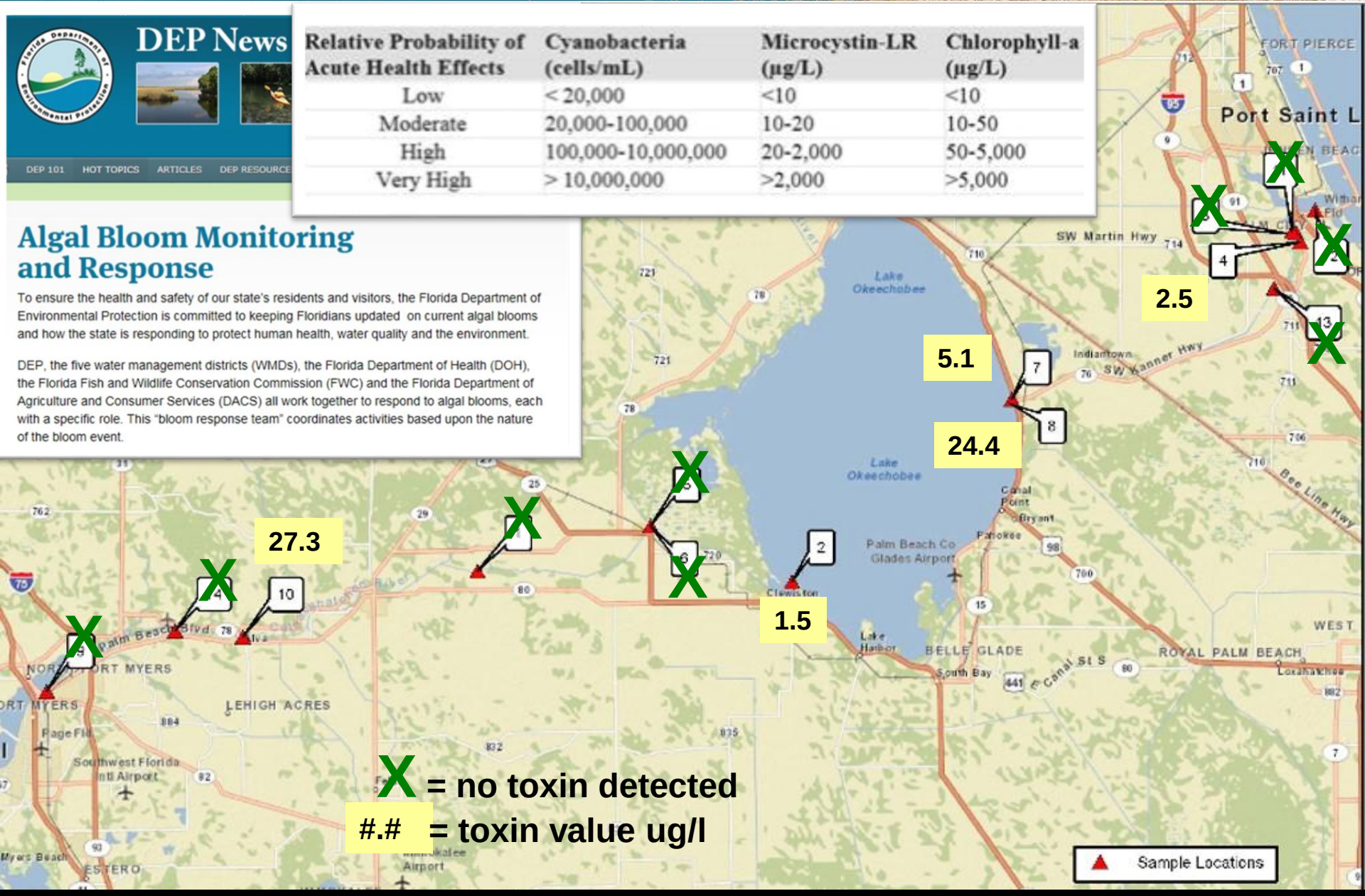
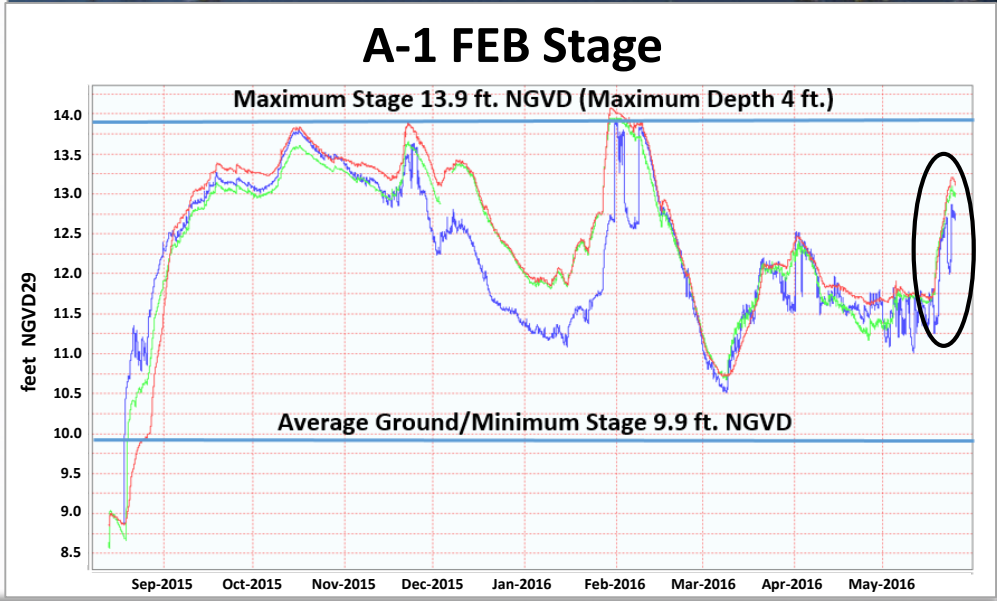


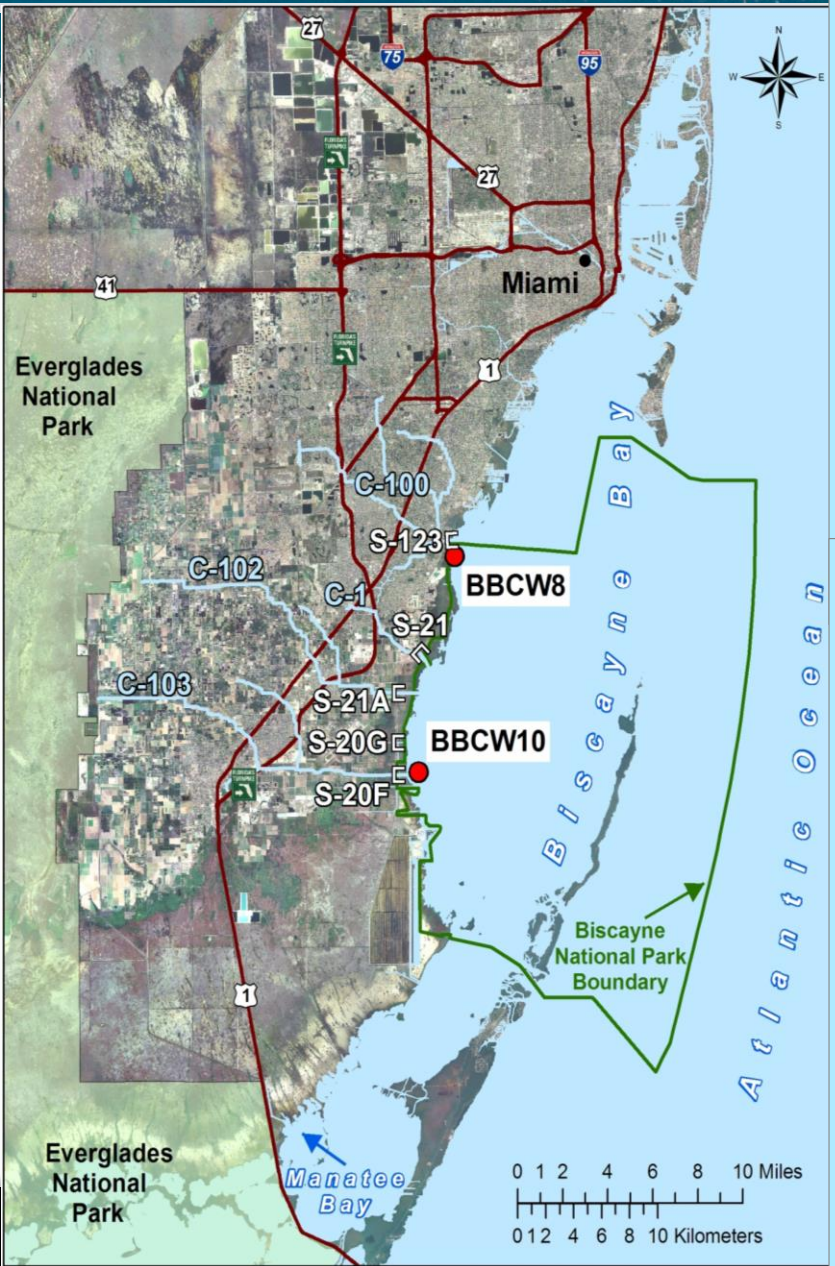
Stormwater Treatment Areas (STAs) Current Conditions

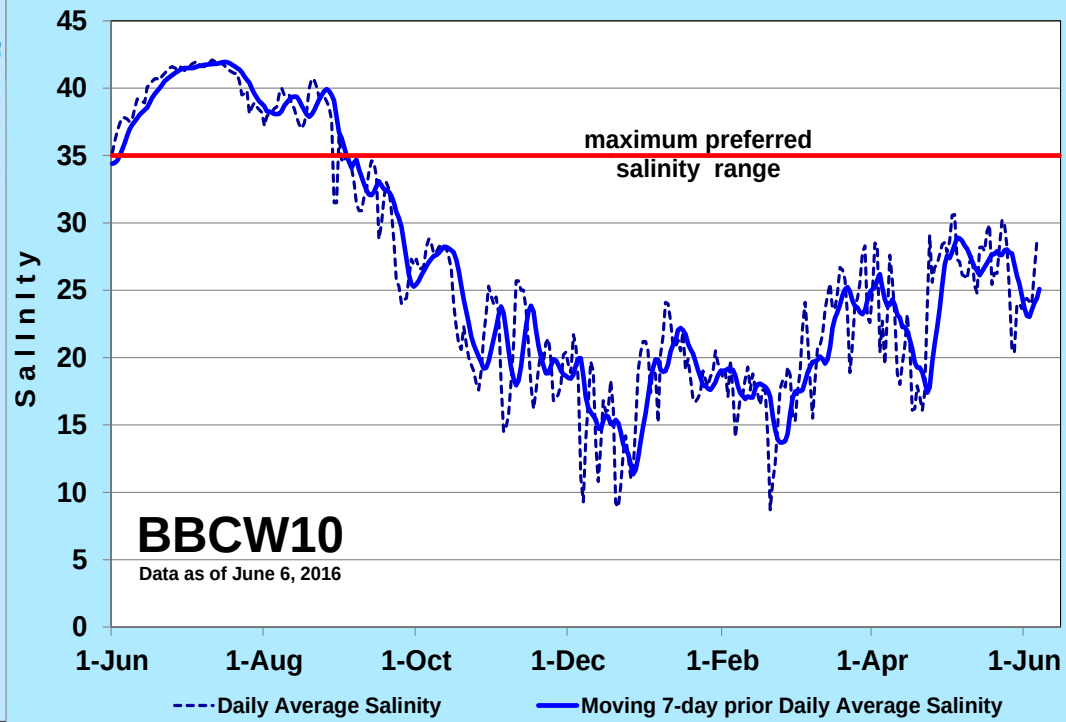
STAs received high inflow volumes in May

- Most cell depths are at or above target
- A-1 Flow-Equalization Basin (FEB) receiving runoff and Lake releases then discharging to STAs for treatment and delivery south
  - A-1 FEB has been reducing TP concentrations by ~60% & TP loads to the STAs by ~80%
- Total Lake regulatory releases to FEBs/STAs in WY2017 ~17,000 ac-ft



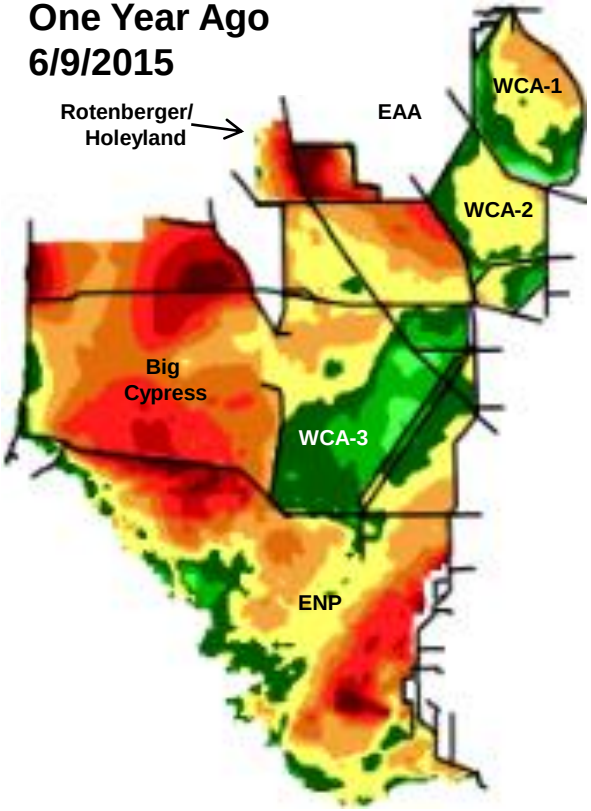
Biscayne Bay Salinity



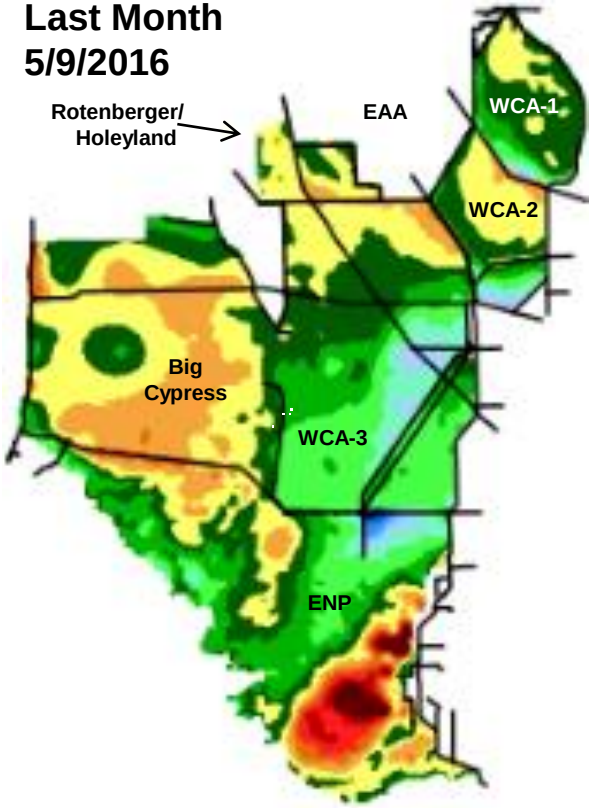


Everglades Water Depths

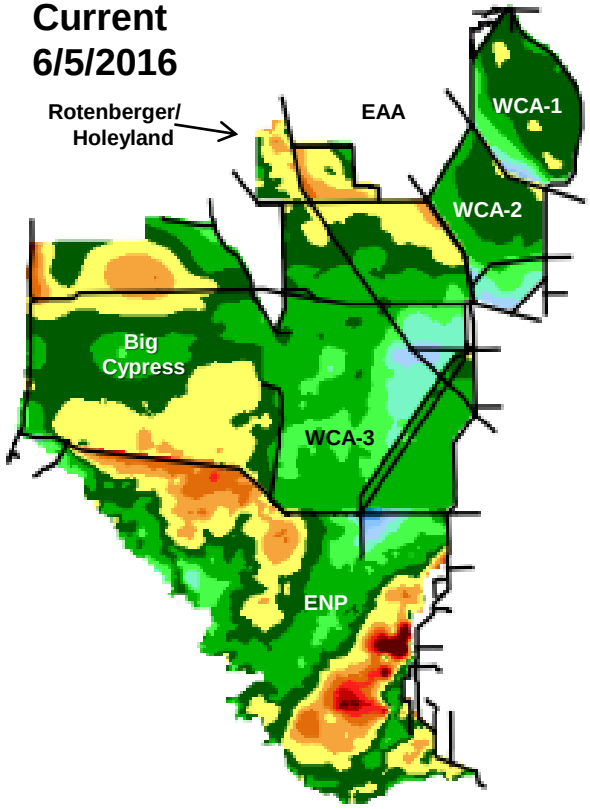
One Year Ago
6/9/2015



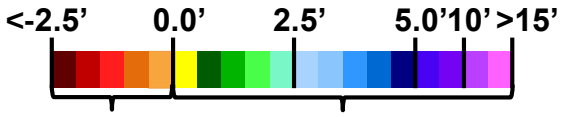
Last Month
5/9/2016



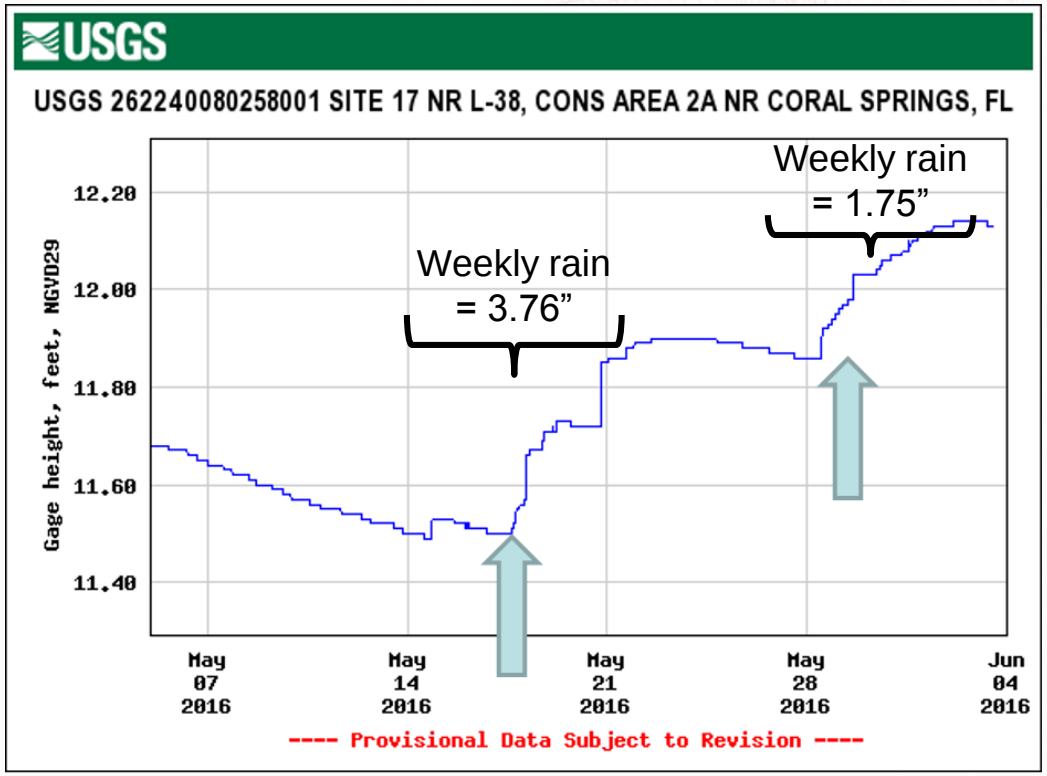
Current
6/5/2016

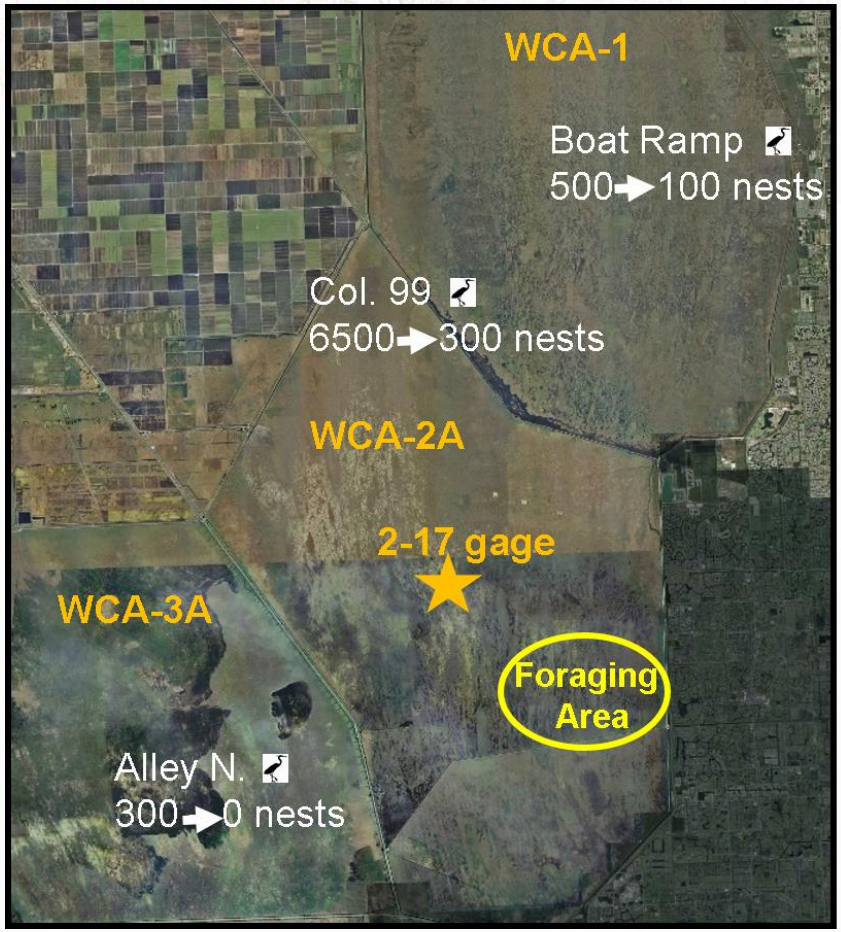


Water Depth (feet)



White Ibis Nest Failure

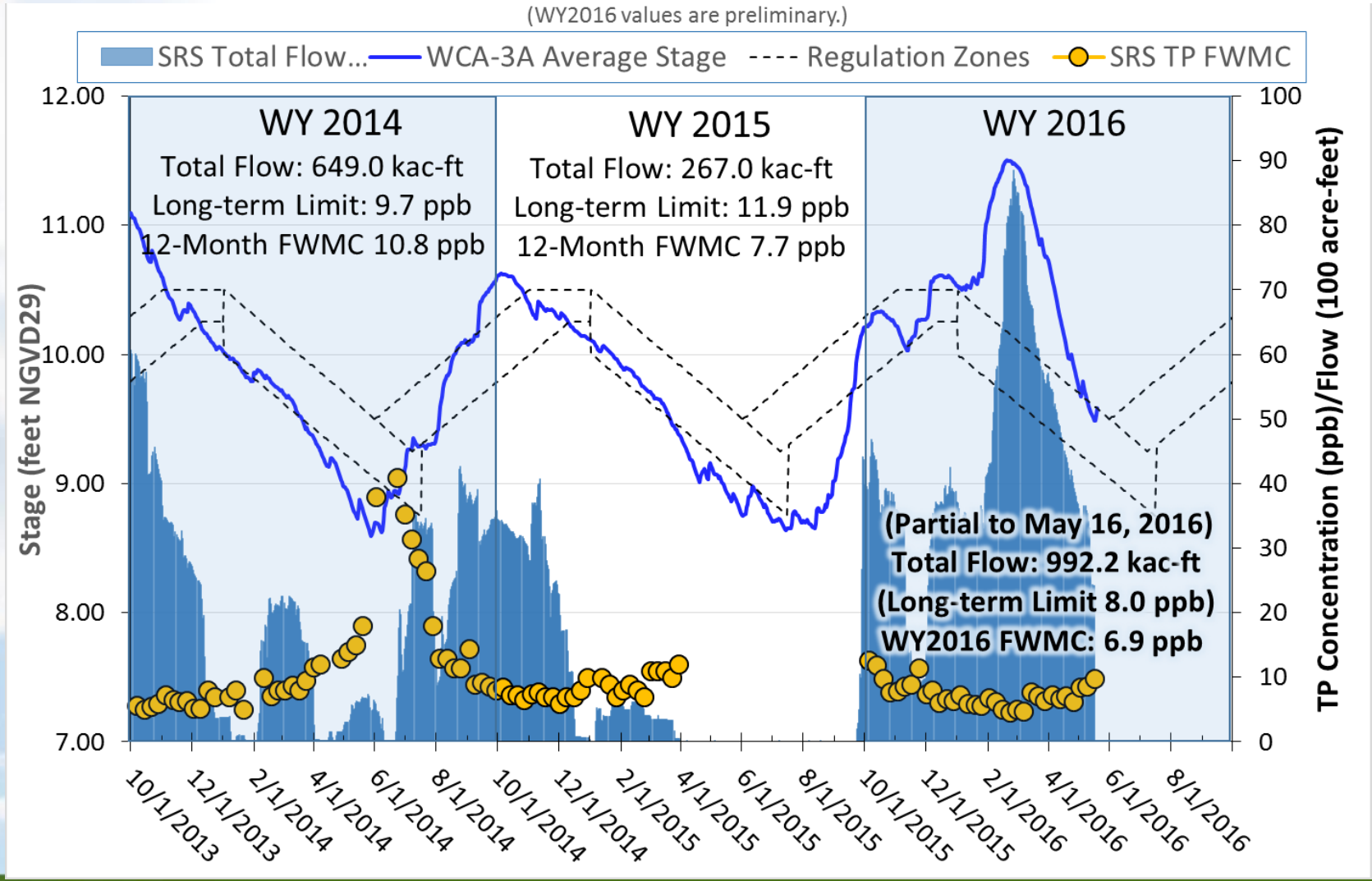




4-8000 foraging birds

0 foraging birds

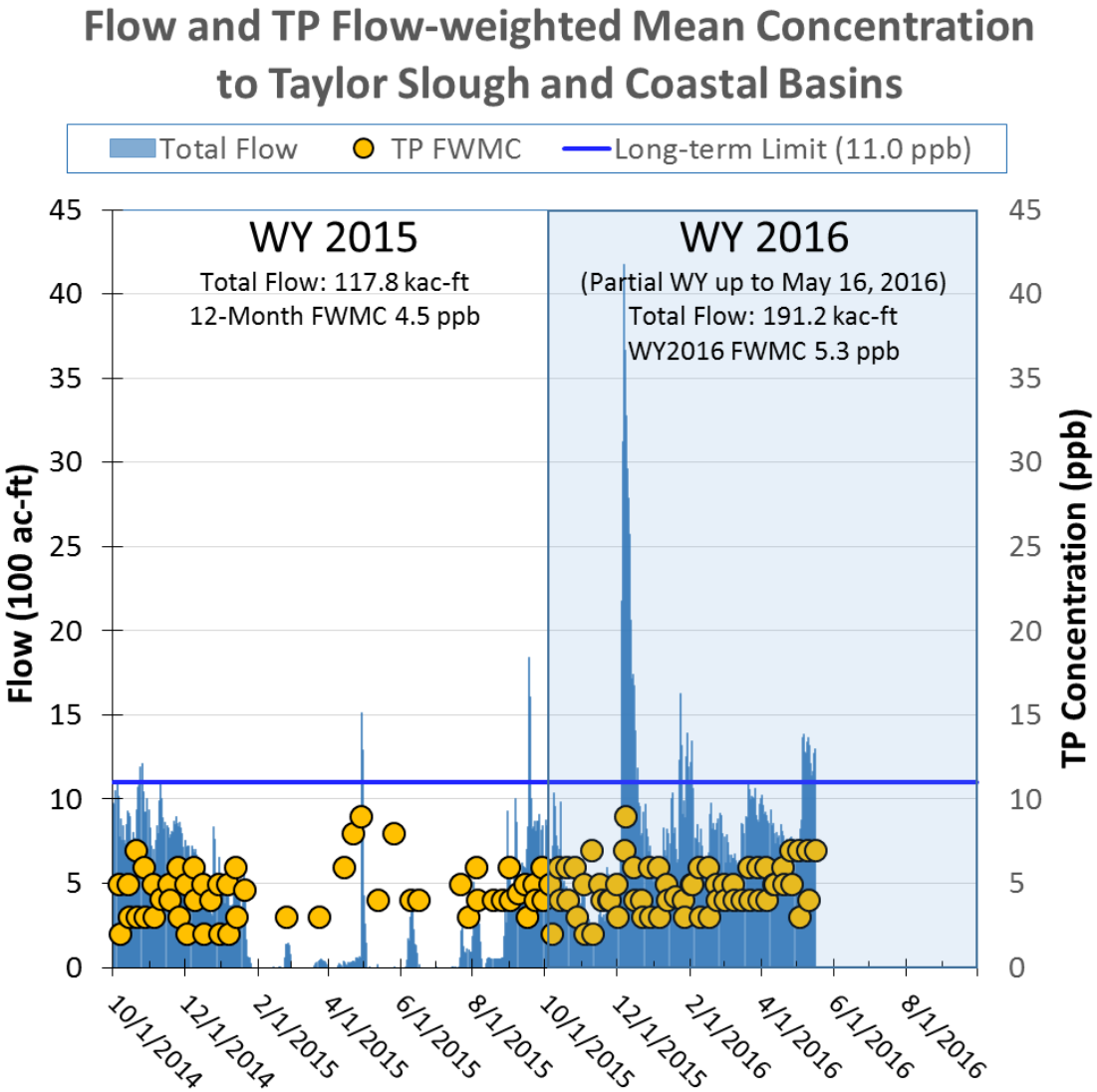
Water Level, Flow & Total Phosphorus Trends
Shark River Slough Water Years 2014 – 2016



Kac-ft = Acre-feet x 1000

WY2016 Provisional data included – Subject to change

Taylor Slough/Coastal Basins
Flow and TP Trends WY2015 – WY2016

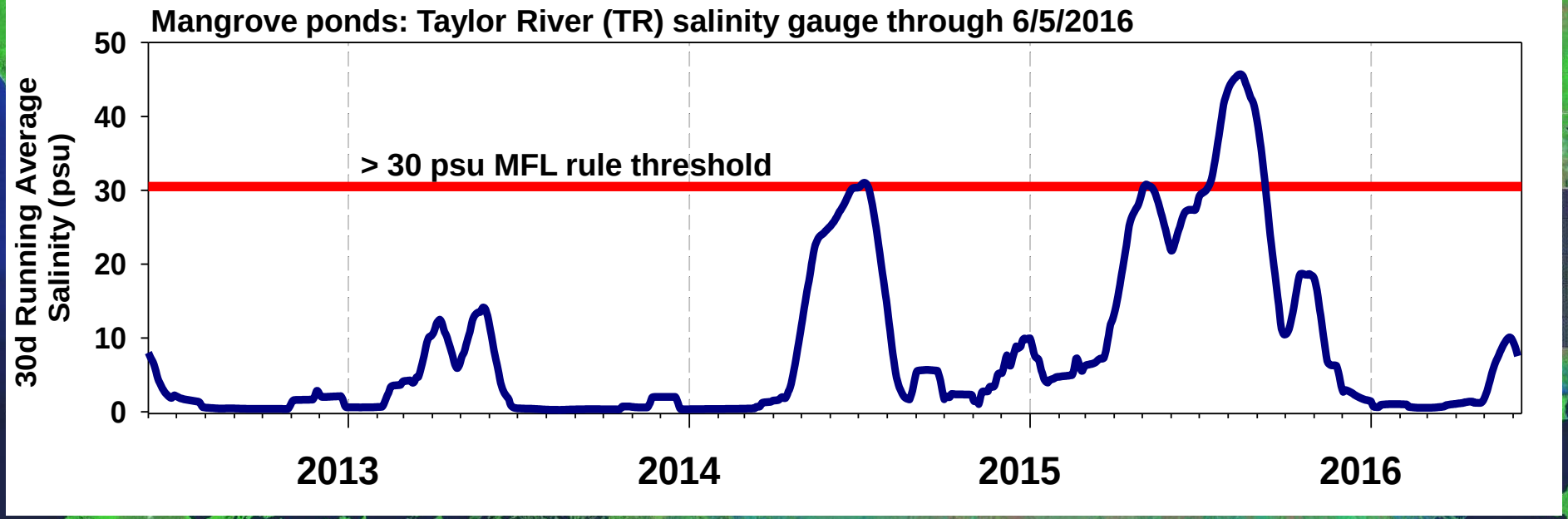


- Consent Decree compliance for Taylor Slough and Coastal Basins based on annual flow-weighted mean TP concentration
- The TP limit fixed at 11 ppb
- TP concentrations appear to be on trajectory for 5 - 6 ppb
- Federal WY2016 ends September 30, 2016 (four months remain in compliance period)

WY2016 Provisional data included – Subject to change
1 ppb = 1 µg/L = 0.001 mg/L
ac-ft = acre-feet, 1 kac-ft = 1,000 ac-ft

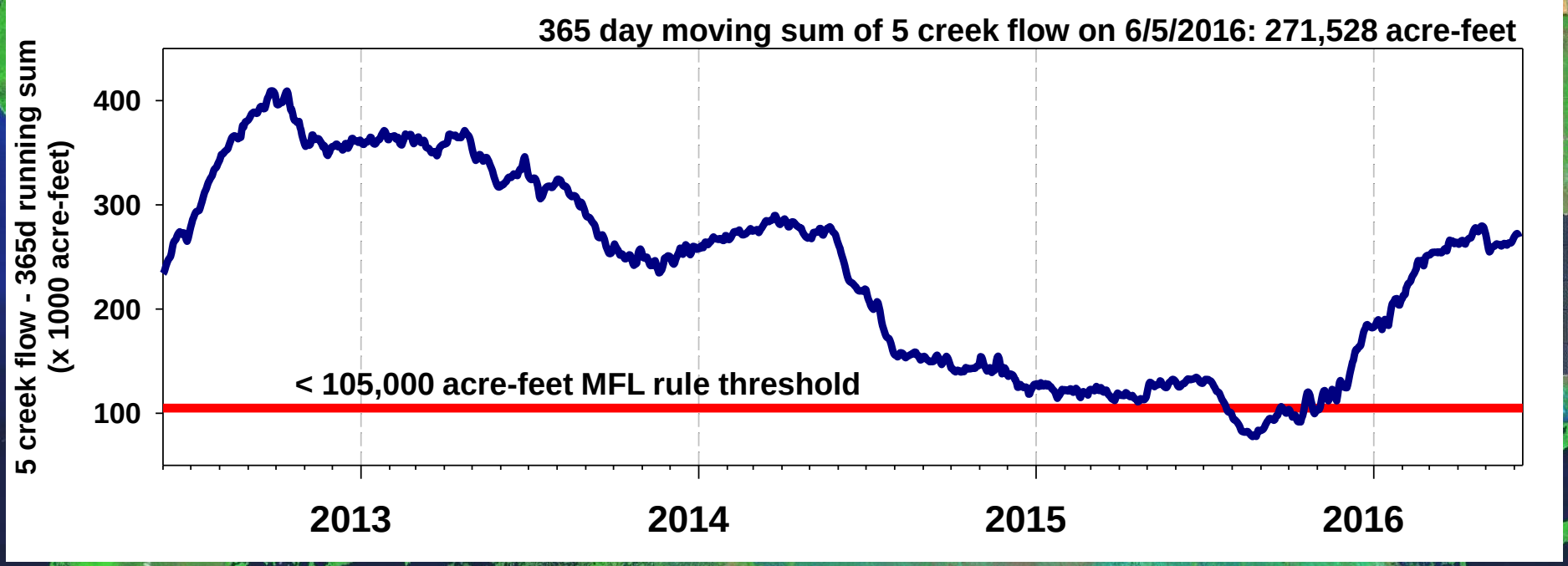
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Florida Bay Salinity Update



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Florida Bay Flow Update



Questions?