SOUTH FLORIDA WATER MANAGEMENT DISTRICT

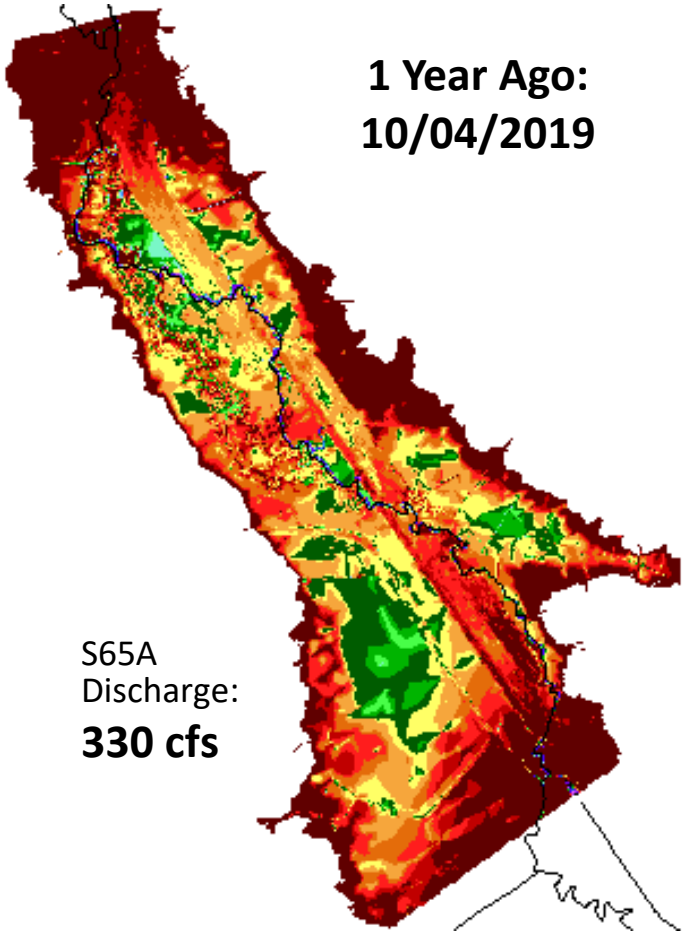
Governing Board Meeting
October 8, 2020

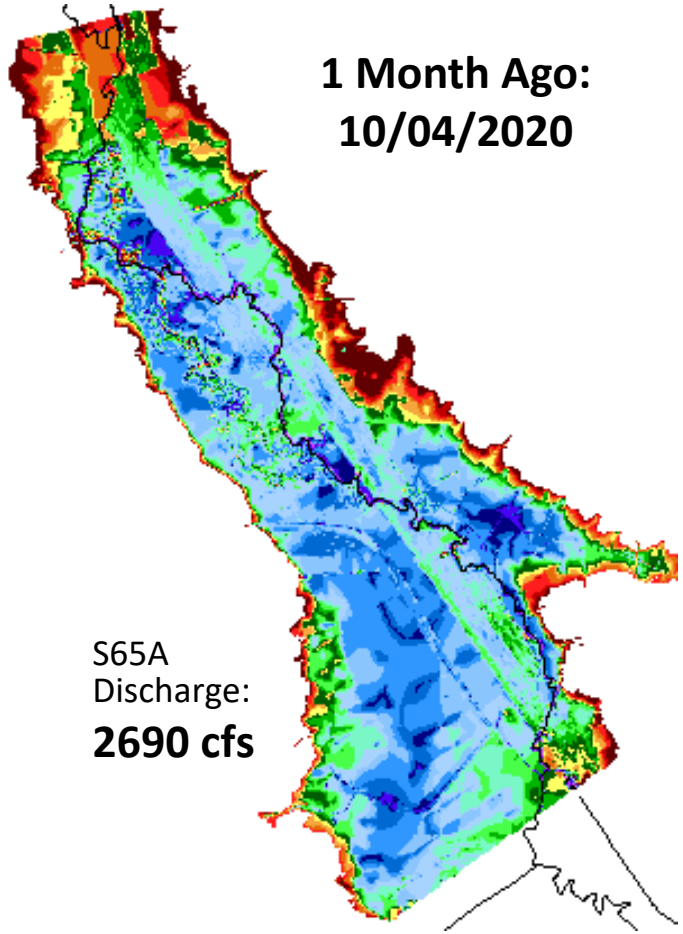
Ecological Conditions Update

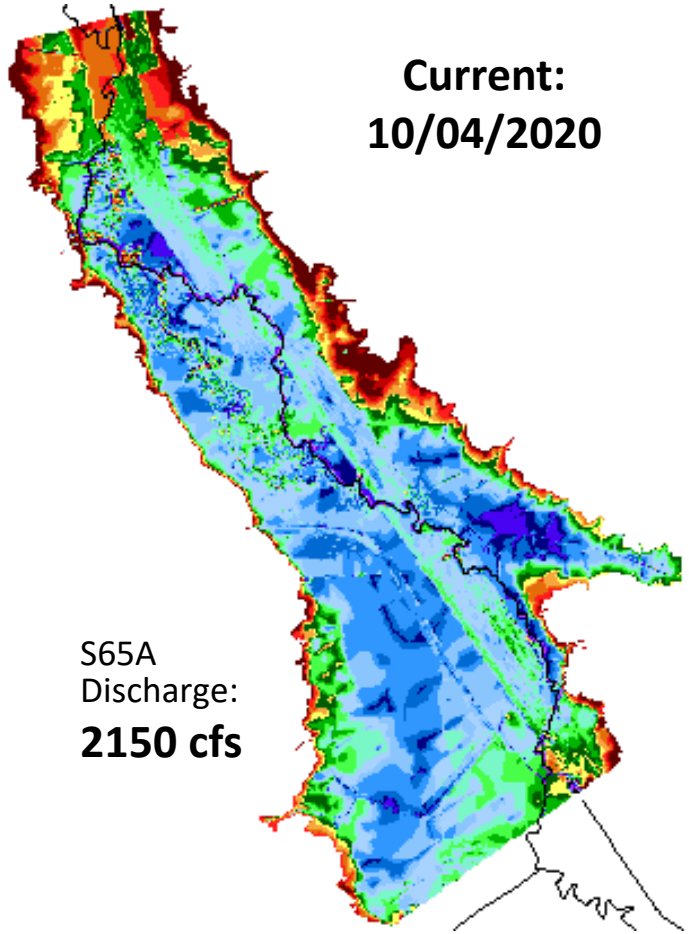
Lawrence Glenn
Division Director,
Water Resources

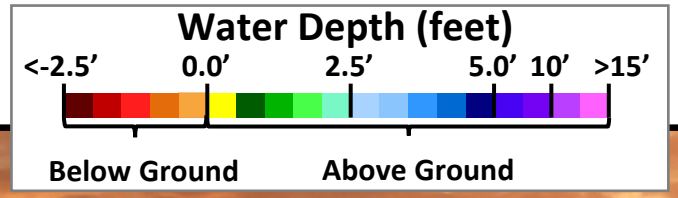
Photograph courtesy of Brent Anderson, SFWMD

Kissimmee River Phase I Restoration Area Water Depth Maps



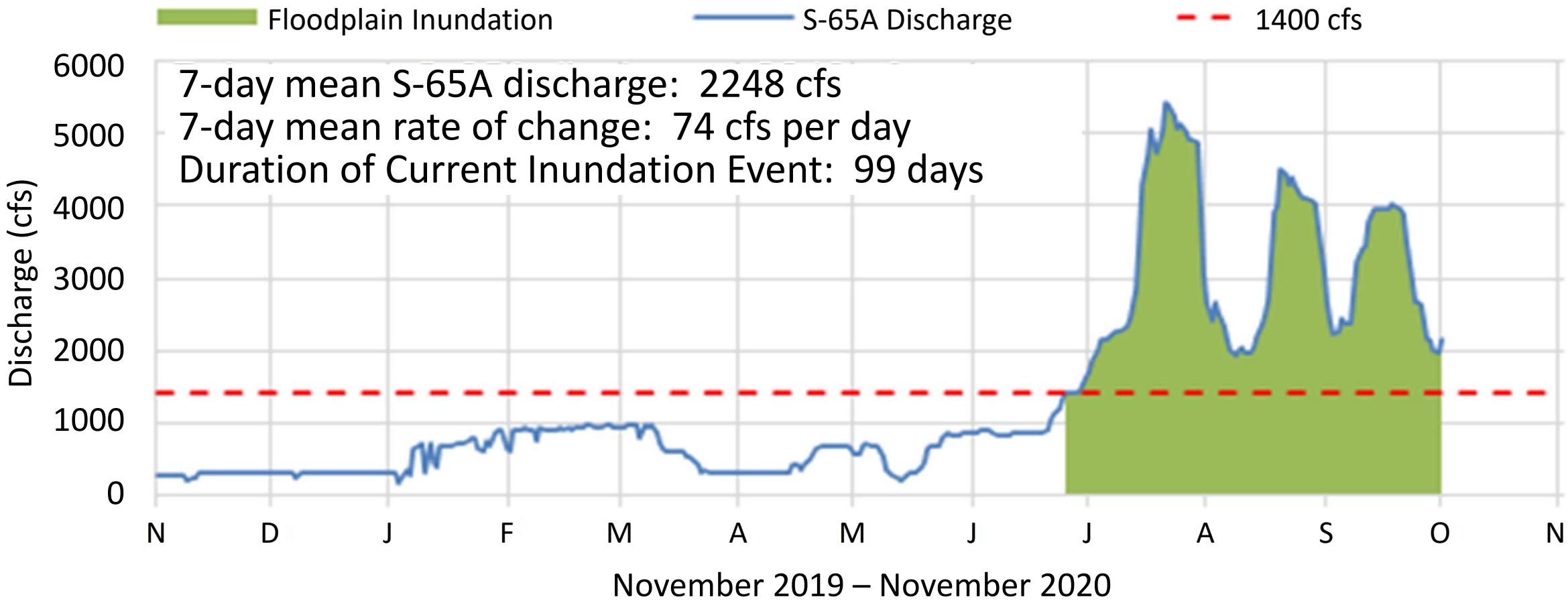






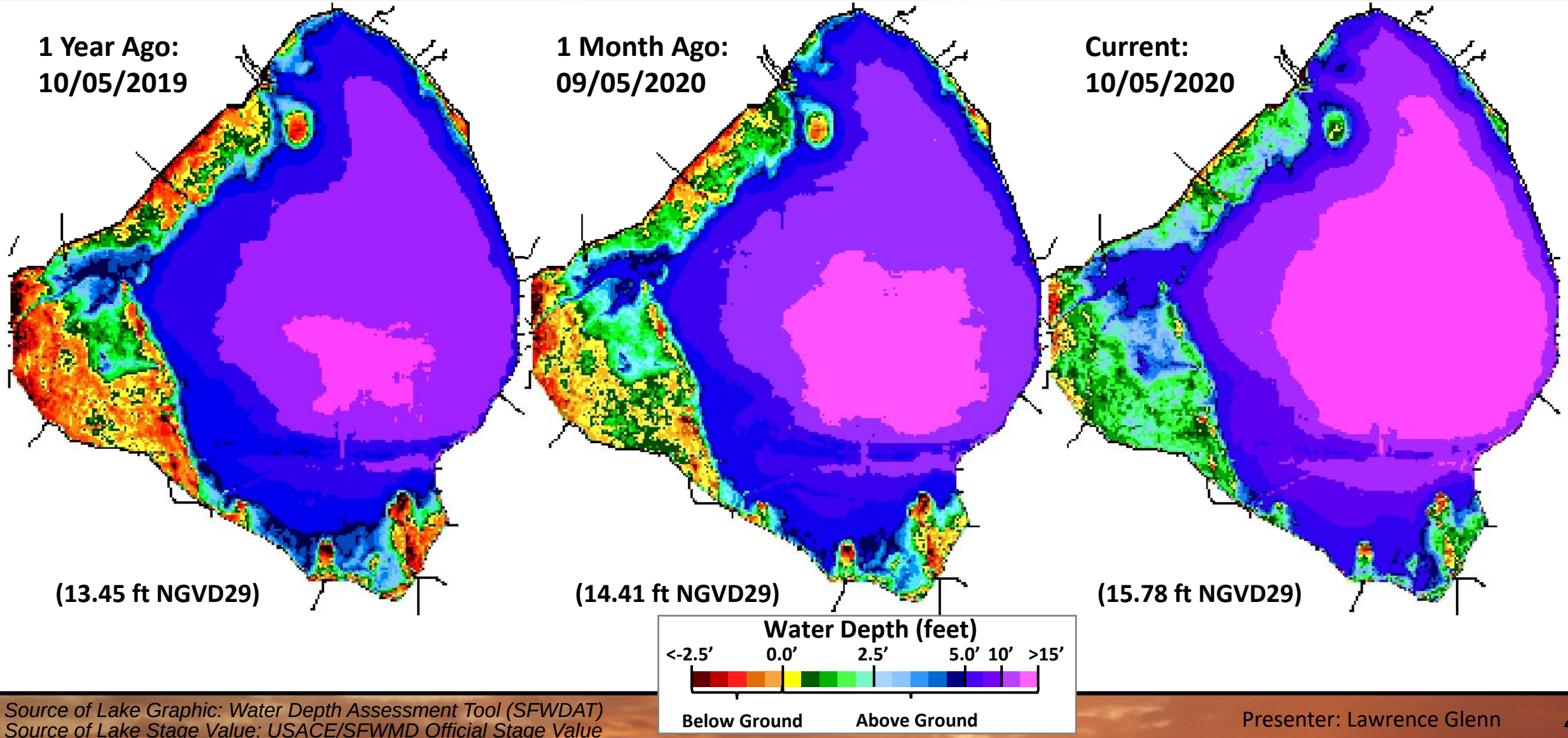
Kissimmee River Floodplain Inundation

S65-A Discharge to the Kissimmee River



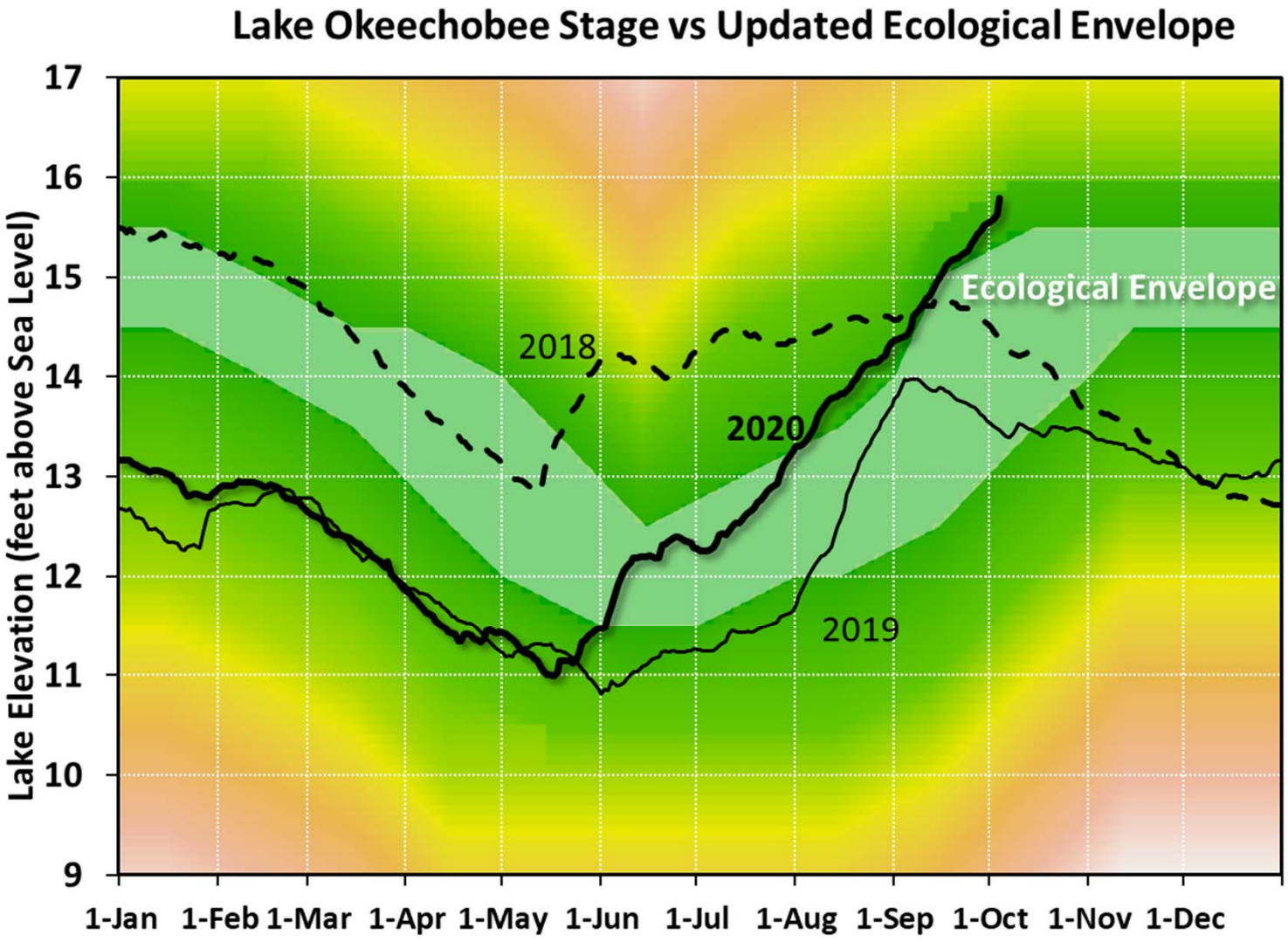
Report Date: 10/6/2020; data are through: 10/4/2020

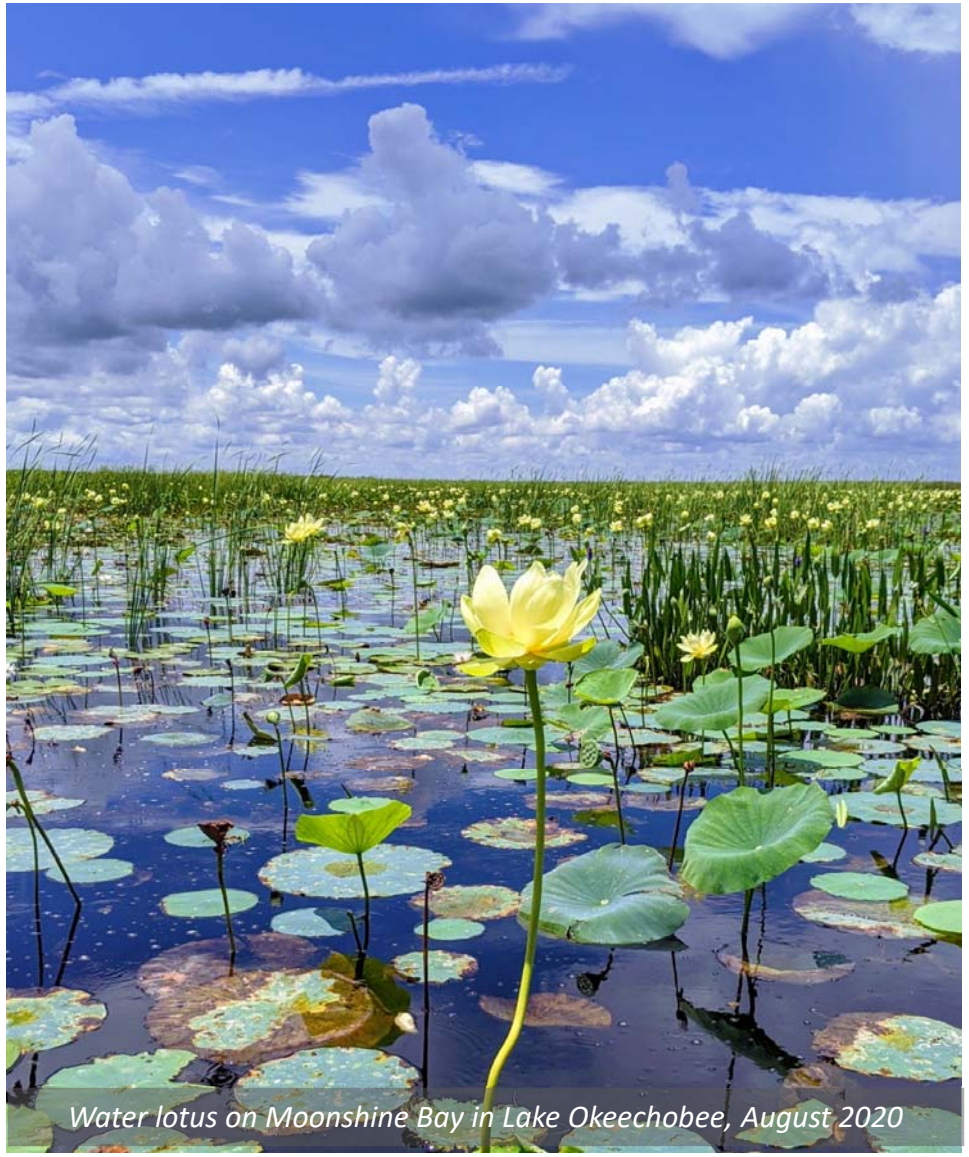
Lake Okeechobee Water Depth Maps



Source of Lake Graphic: Water Depth Assessment Tool (SFWDAT)
Source of Lake Stage Value: USACE/SFWMD Official Stage Value

Lake Okeechobee Stages and Ecological Envelope

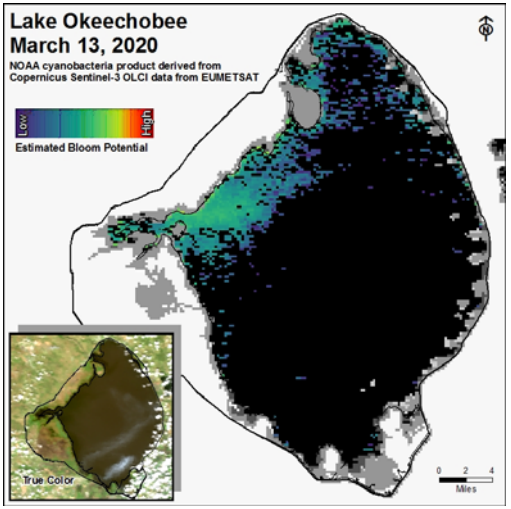


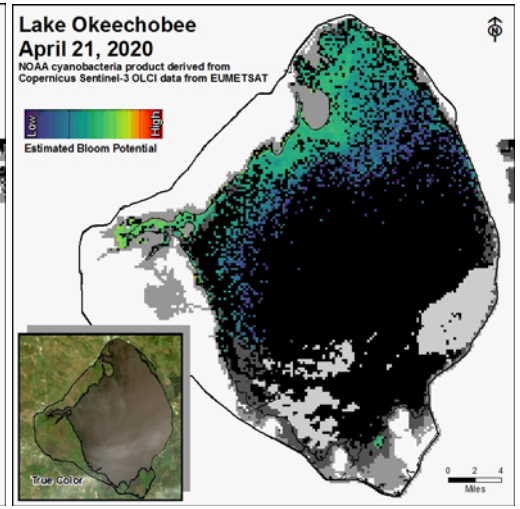


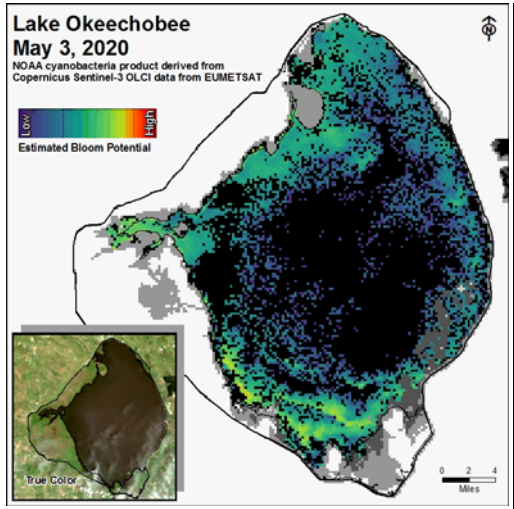
Water lotus on Moonshine Bay in Lake Okeechobee, August 2020

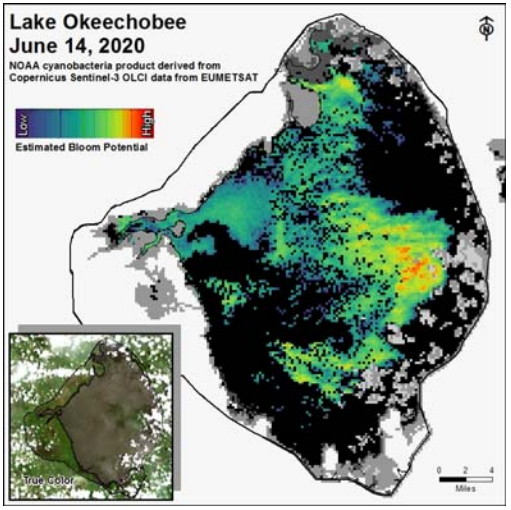
Presenter: Lawrence Glenn

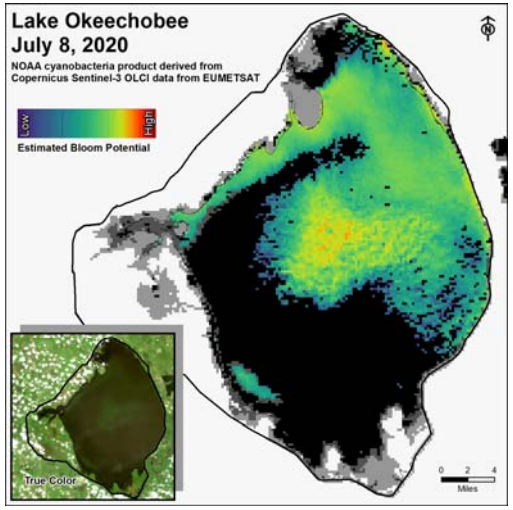
Lake Okeechobee
Cyanobacteria Bloom Potential

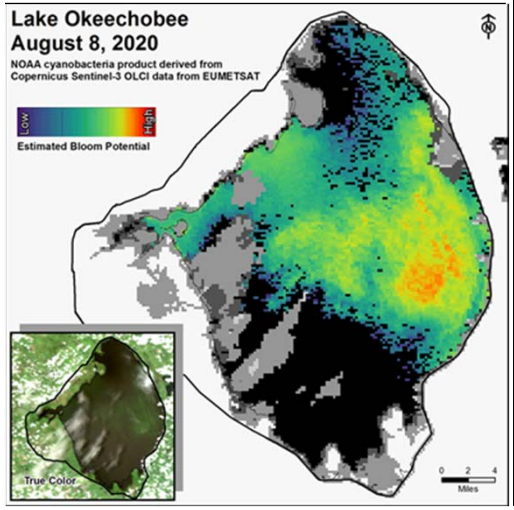


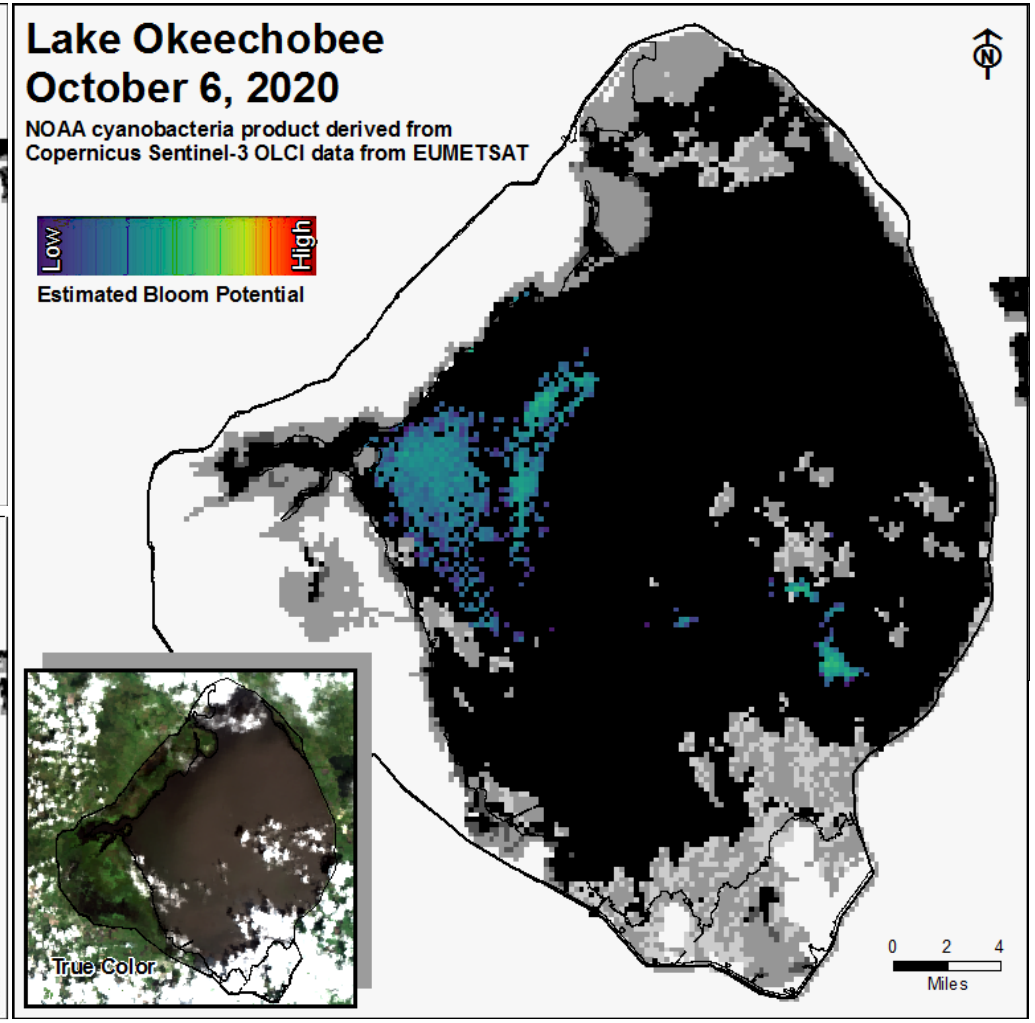












NOAA cyanobacteria product derived from Copernicus Sentinel-3 OLCI data from EUMETSAT

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Lake Okeechobee Water Quality

Provisional Data

Collection Date: September 24-25, 2020

Station	CHL*a* (ug/L)	TOXIN (ug/L)	TAXA
FEBIN			*NS*
FEBOUT			*NS*
KISSR0.0	7.8	BDL	*mixed*
L005	51.7	**0.4**	*Microcys*
LZ2	32.2	BDL	*mixed*
KBARSE	54.3	**2.2**	*Microcys*
RITTAE2	17.5	**0.4**	*mixed*
PELBAY3	5.0	**0.5**	*mixed*
POLE3S	14.2	**0.5**	*mixed*
LZ25A	10.8	**0.3**	*mixed*
PALMOUT	37.7	**4.3**	*Microcys*
PALMOUT1	7.1	**0.6**	*Microcys*
PALMOUT2	8.8	**0.5**	*NS*
PALMOUT3	10.4	**0.4**	*mixed*
POLESOUT	57.2	**0.4**	*Cylindro*
POLESOUT1	89.8	BDL	*Micro/Cylin*
POLESOUT2	56.8	**1.6**	*Micro/Cylin*
POLESOUT3	19.7	20.0	*Microcys*
EASTSHORE	26.9	**7.5**	*Microcys*
NES135	30.8	**3.2**	*Microcys*
NES191	10.8	BDL	*mixed*

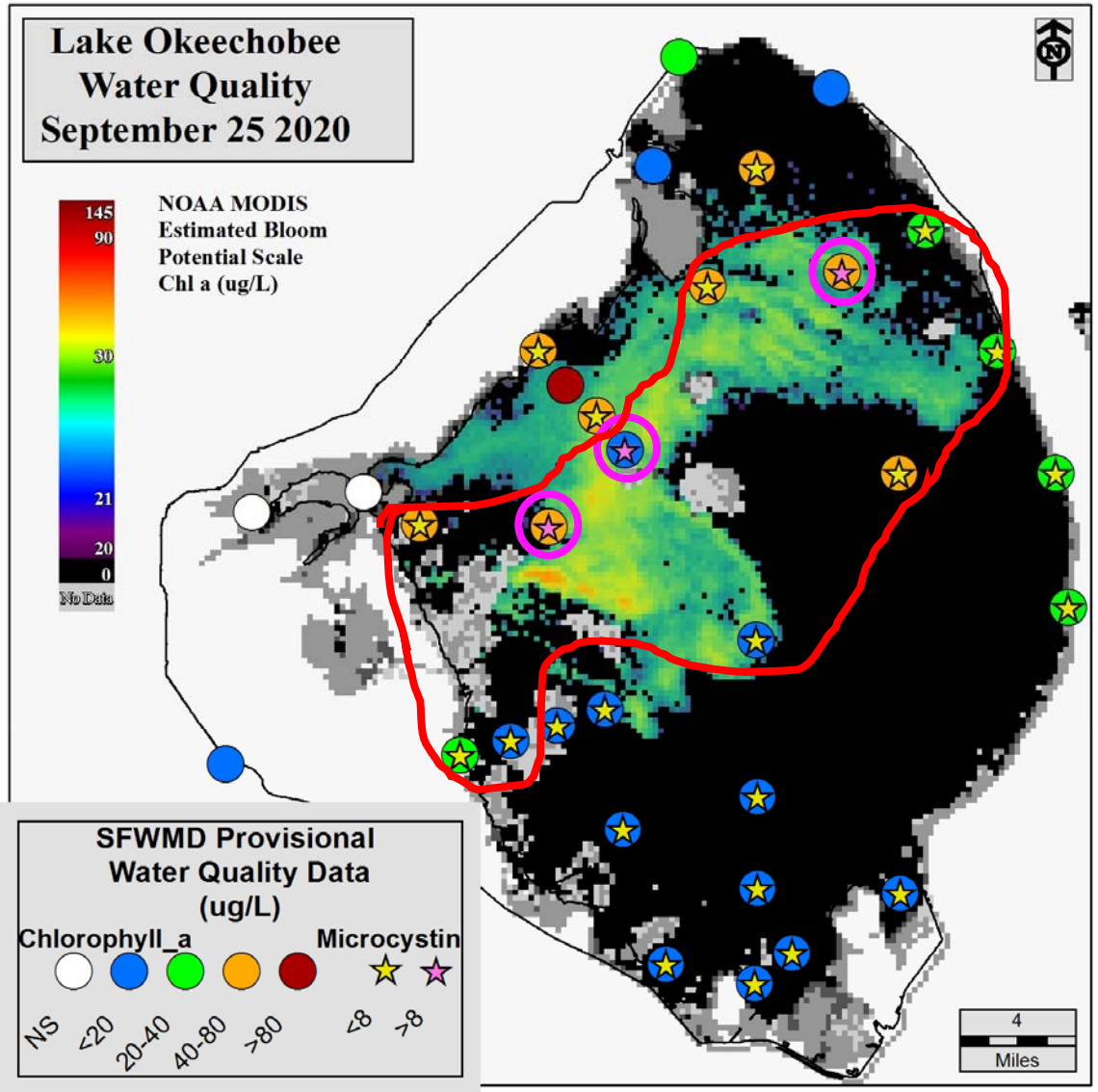
Station	CHL*a* (ug/L)	TOXIN (ug/L)	TAXA
L001	55.9	**0.3**	*mixed*
L004	40.6	**0.3**	*Microcys*
L006	6.9	**0.5**	*mixed*
L007	4.8	**0.3**	*mixed*
L008	40.0	12.0	*Microcys*
LZ30	10.7	**0.5**	*mixed*
LZ40	12.7	**2.9**	*Microcys*
CLV10A	20.2	**0.4**	*mixed*
NCENTER	45.6	46.0	*Microcys*

Sampled 9/21

S308C	38.8	**0.6**	*mixed*
S77	14.0	BDL	*mixed*

- SFWMD considers >40 µg/L Chlorophyll *a* (Chl*a*) an algal bloom
- BDL – Below Detectable Limit of **0.25** µg/L
- ND – No Dominant taxa
- P – Pending
- NS – Not Sampled
- Bold – crew observed possible BGA
- Chlorophyll *a* analyzed by SFWMD
- Toxin and Taxa analyzed by FDEP

Cylindro = Cylindrospermopsis
Planktol = Planktolyngbya
Dolicho = Dolichospermum



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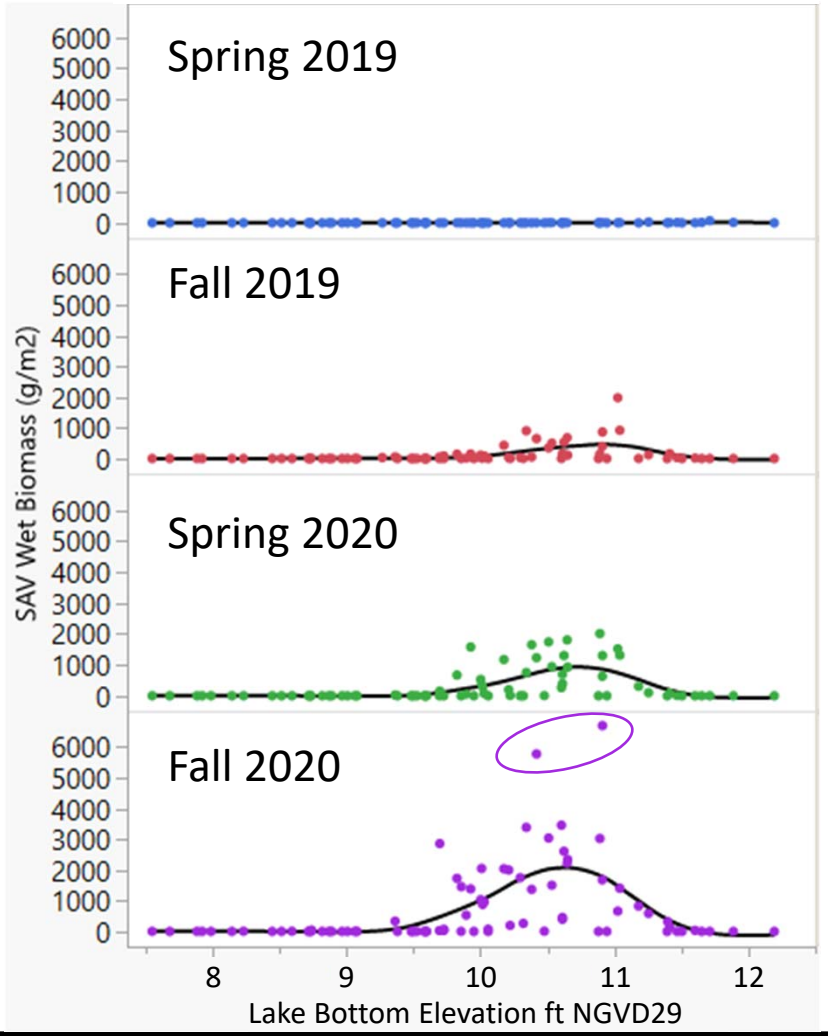
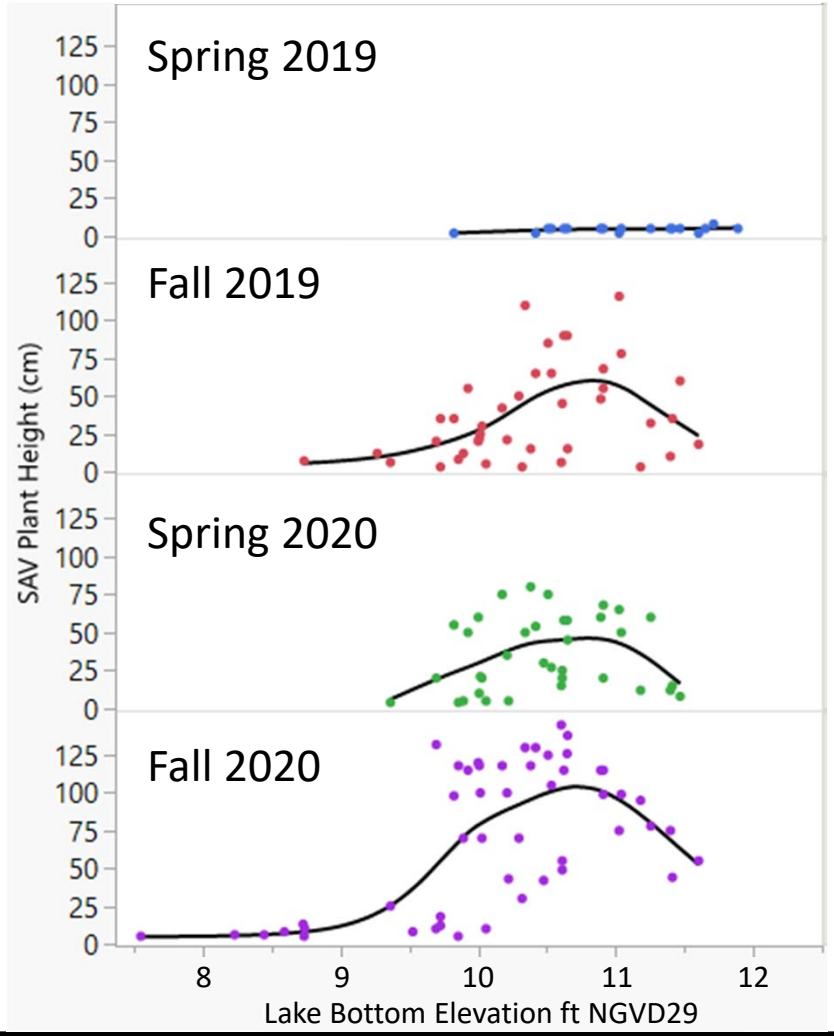
SAV Recovery along Western Shorelines

SAV Biomass by Depth



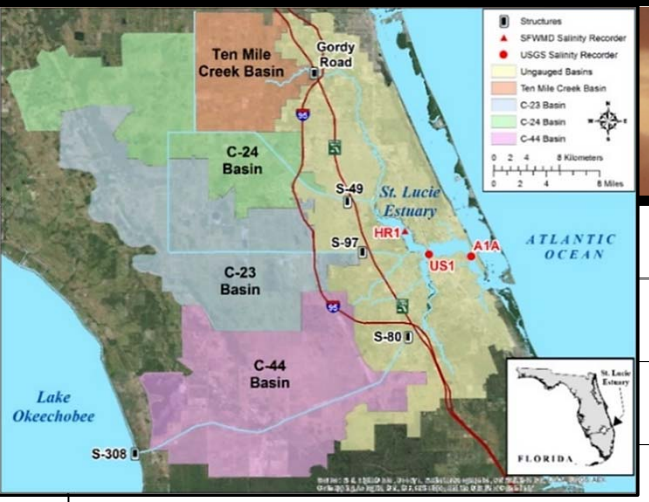
SAV Plant Height by Depth



Transect Locations

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

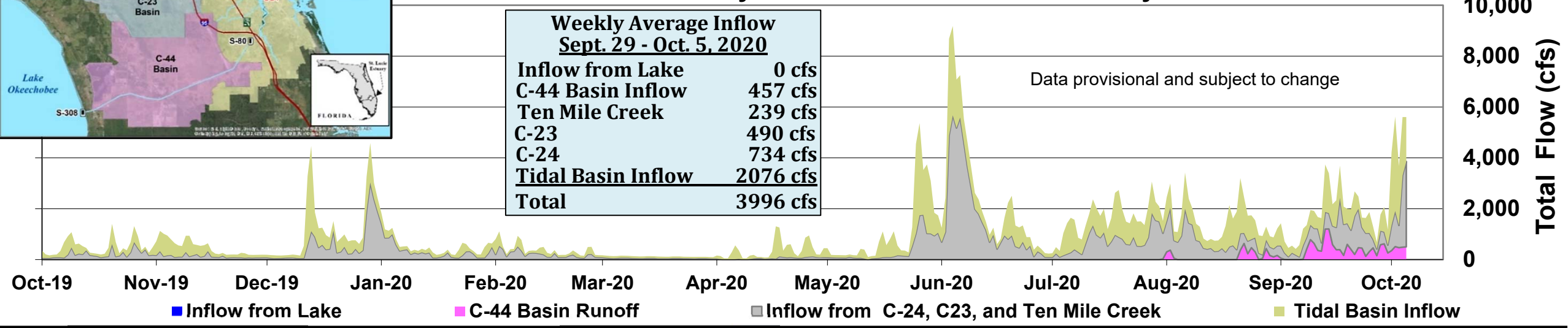
St. Lucie Inflows and Salinity Conditions

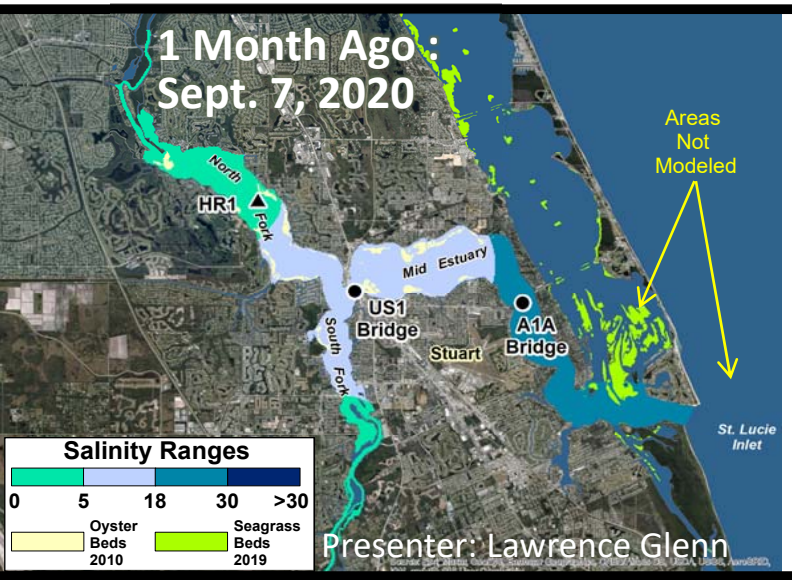


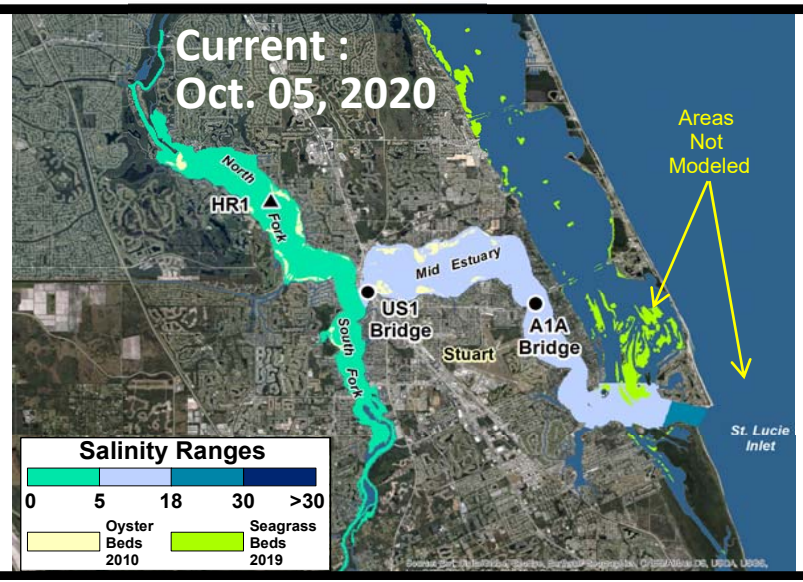
Total Daily Inflow into the St. Lucie Estuary

Weekly Average Inflow
Sept. 29 - Oct. 5, 2020

Inflow from Lake	0 cfs
C-44 Basin Inflow	457 cfs
Ten Mile Creek	239 cfs
C-23	490 cfs
C-24	734 cfs
Tidal Basin Inflow	2076 cfs
Total	3996 cfs







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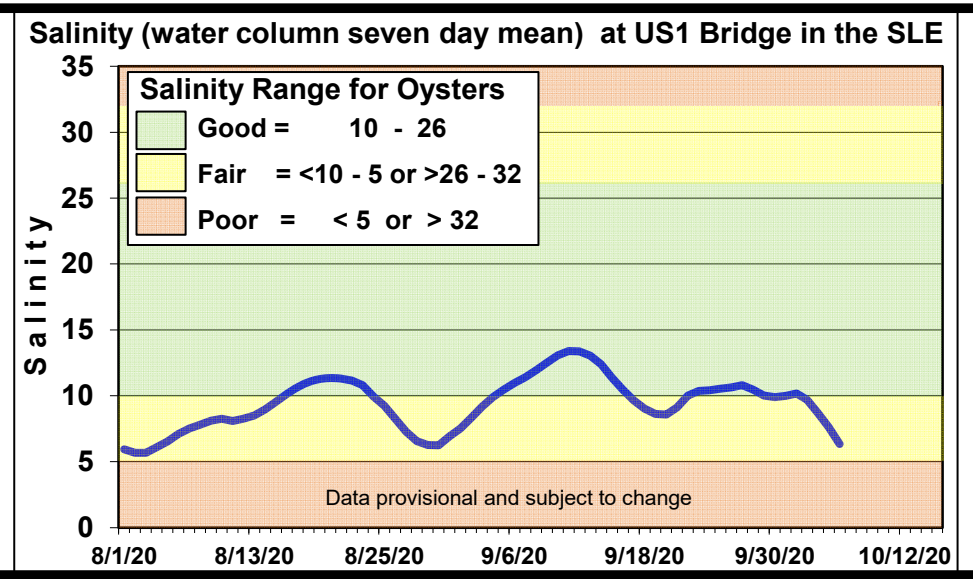
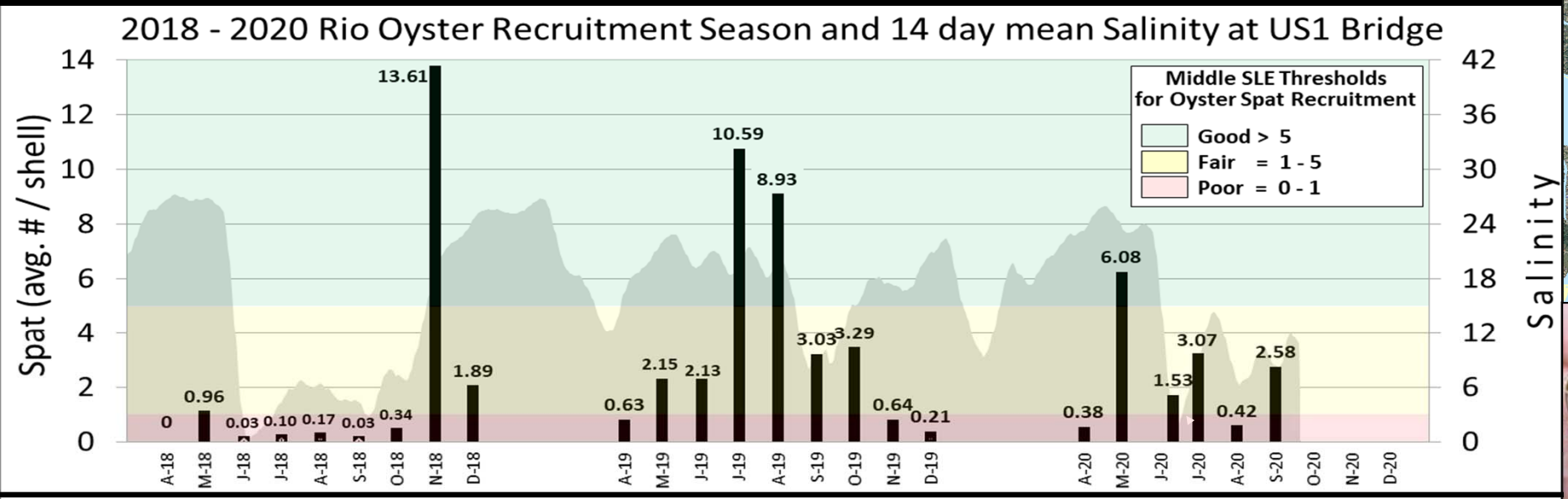
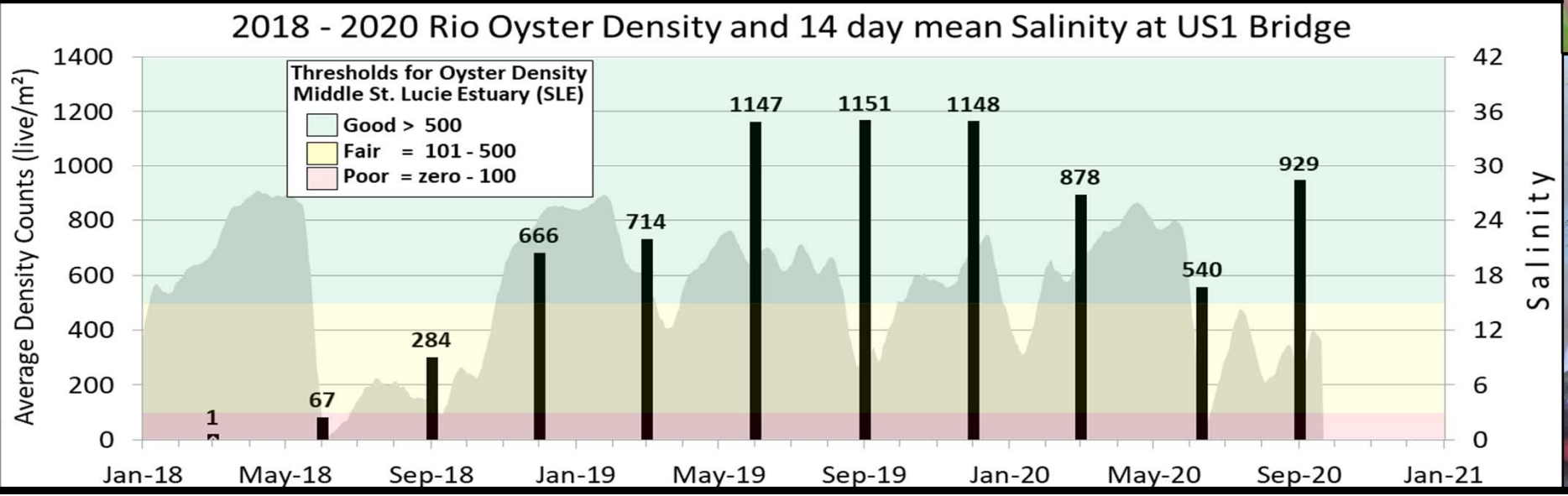
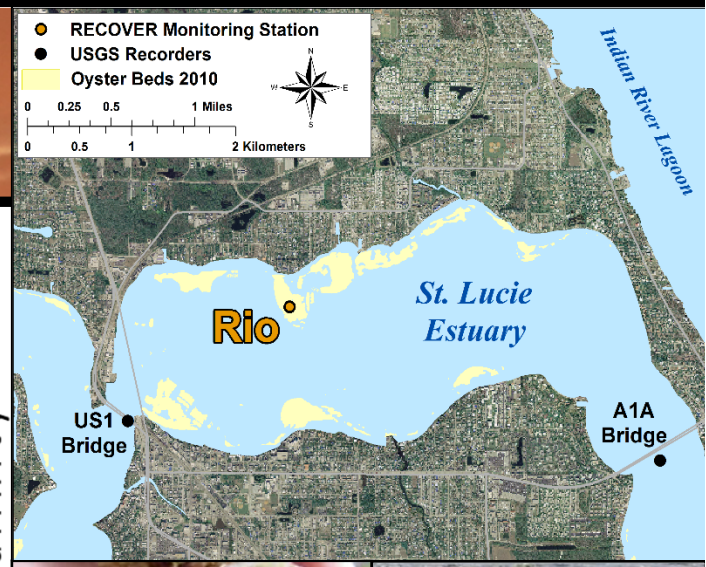
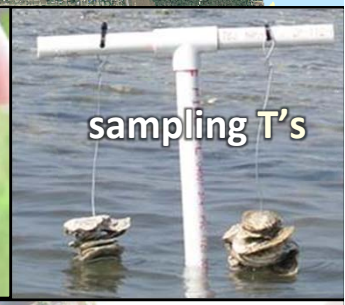


St. Lucie Estuary – Oysters at Rio Station

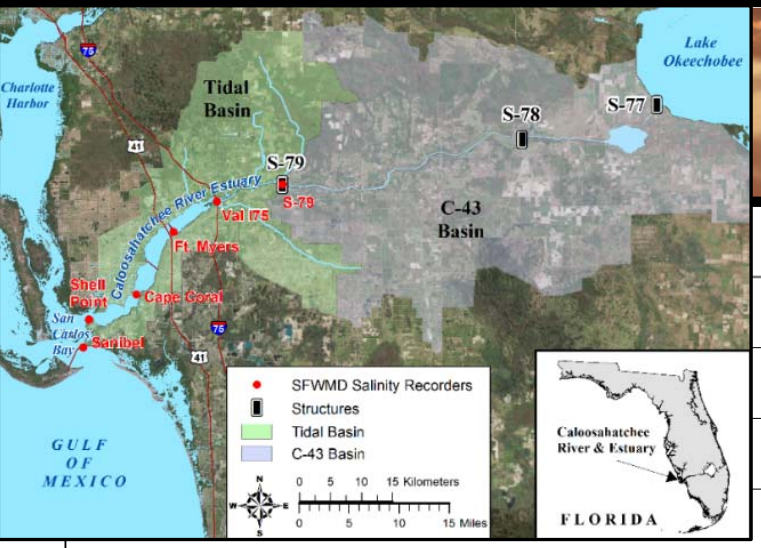








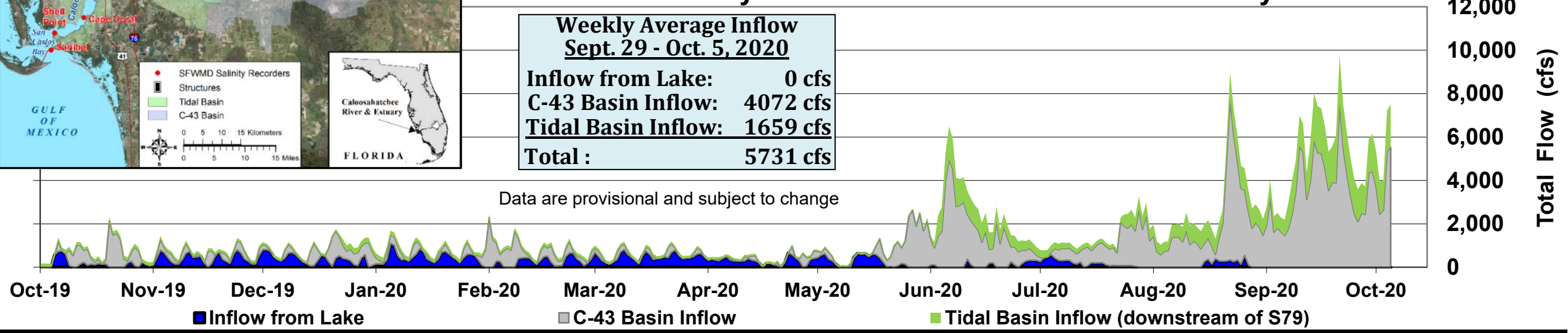
Caloosahatchee Inflows and Salinity Conditions

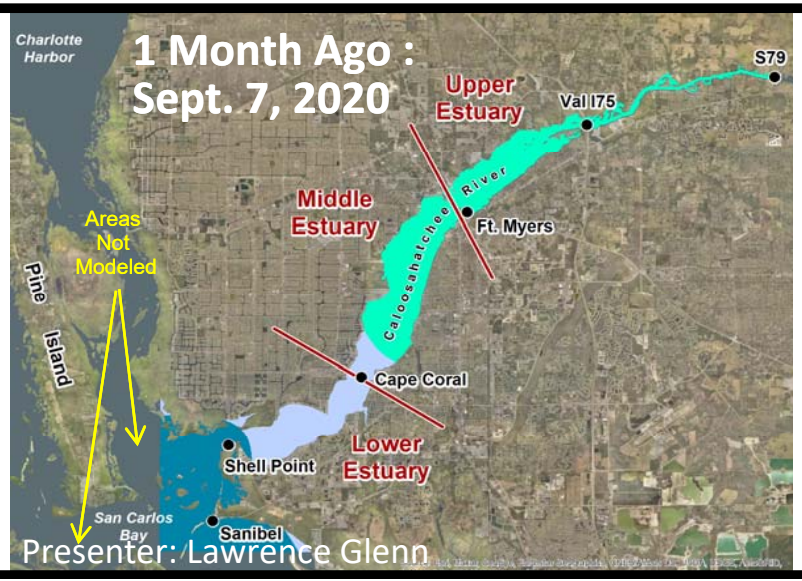


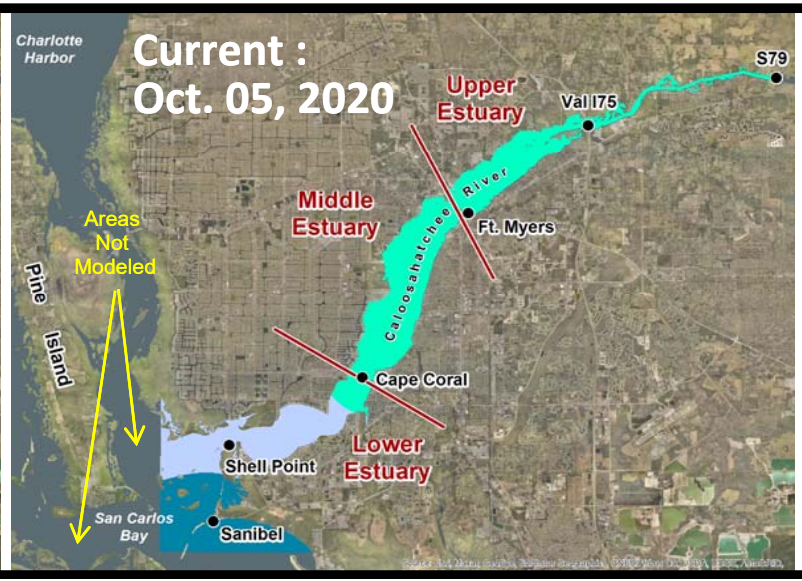
Total Daily Inflow into the Caloosahatchee Estuary

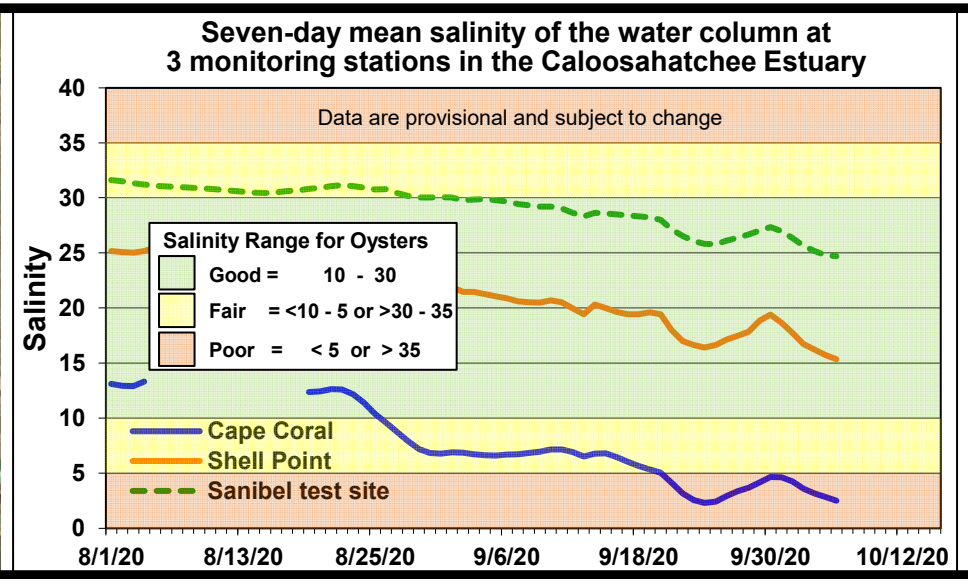
Weekly Average Inflow
Sept. 29 - Oct. 5, 2020

Inflow from Lake:	0 cfs
C-43 Basin Inflow:	4072 cfs
Tidal Basin Inflow:	1659 cfs
Total :	5731 cfs









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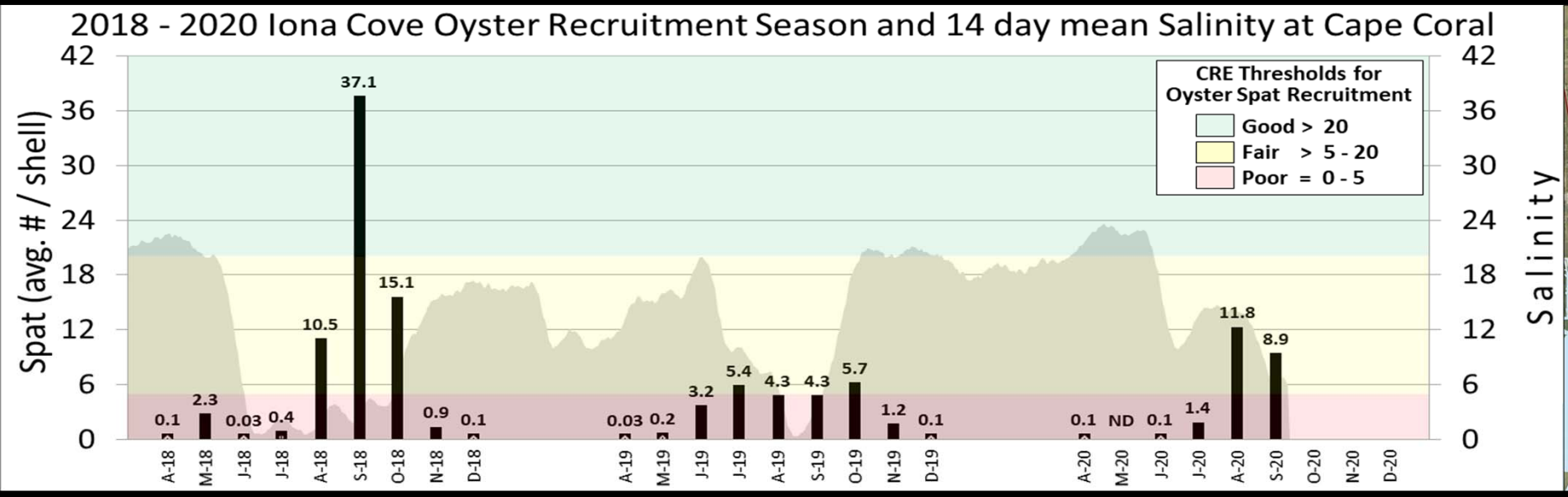
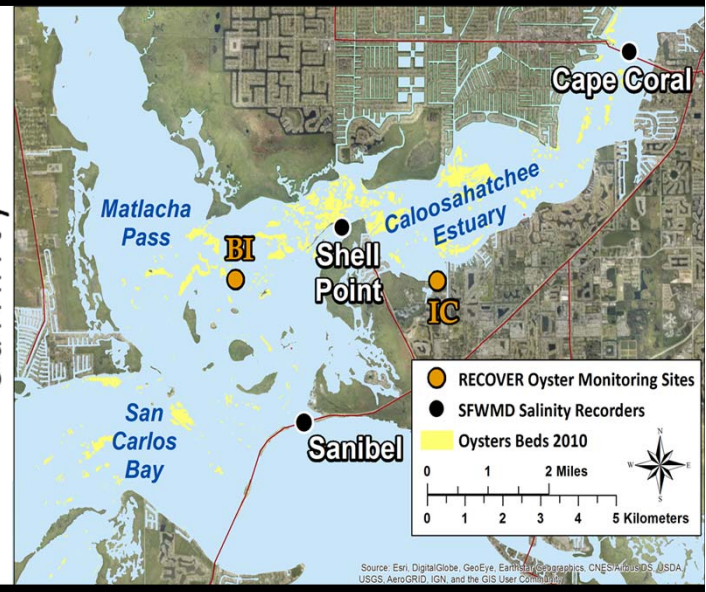
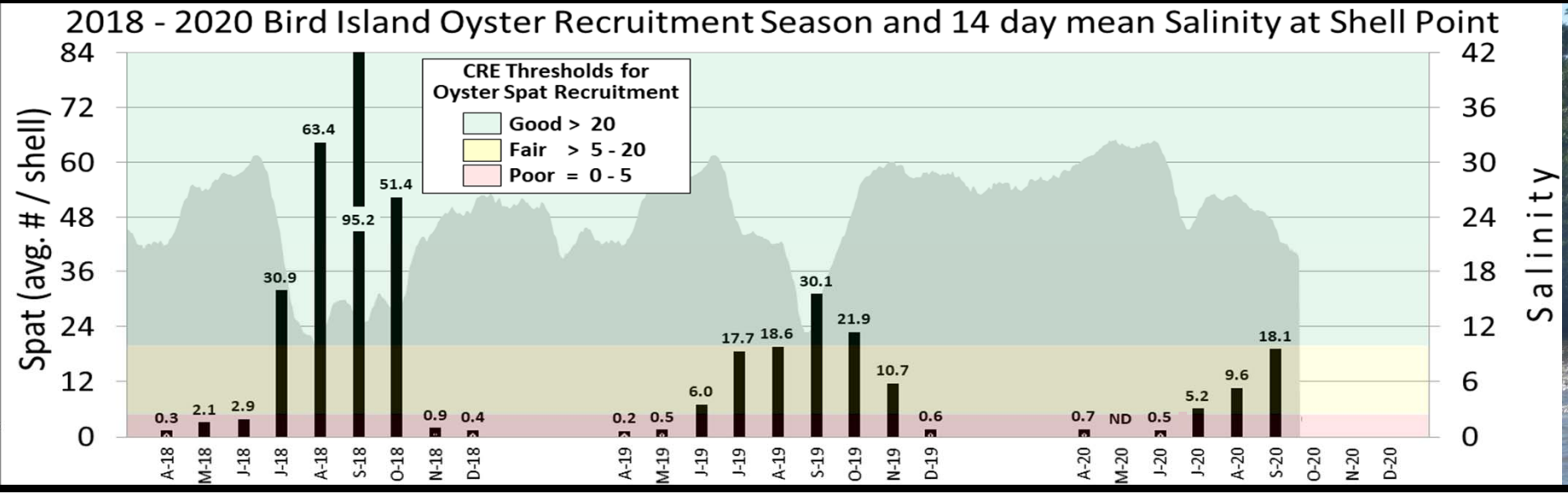
Caloosahatchee Estuary - Oyster Recruitment

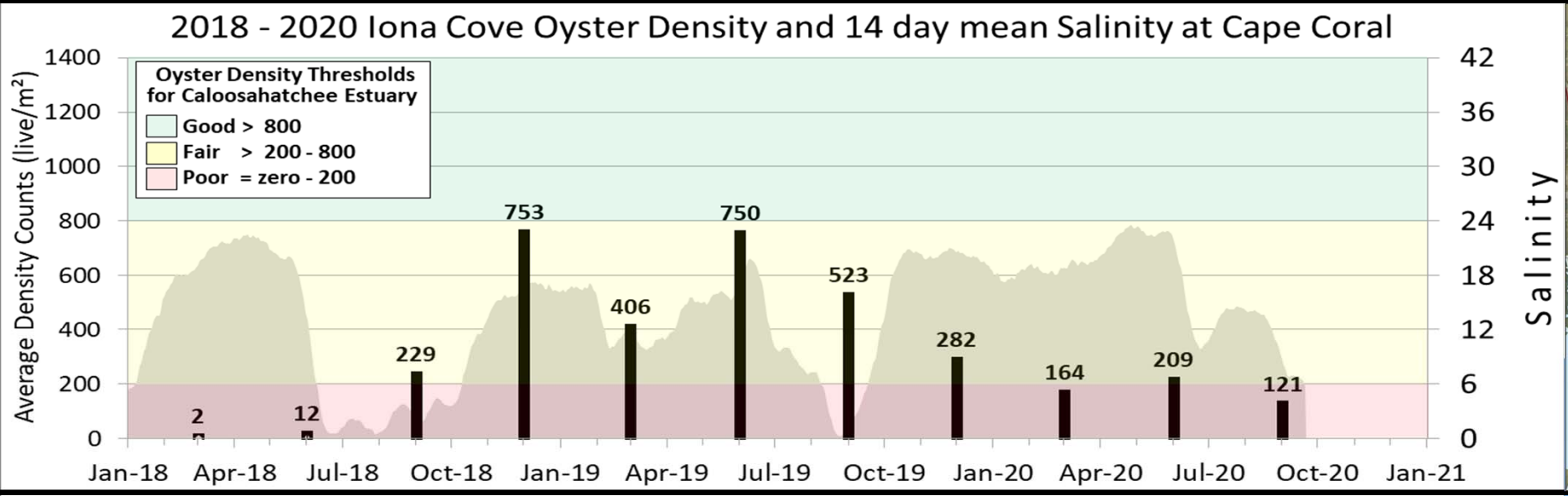


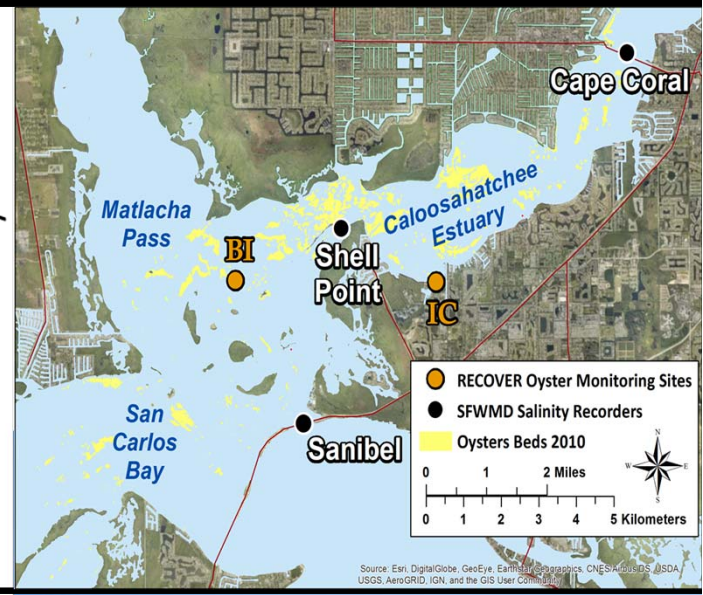


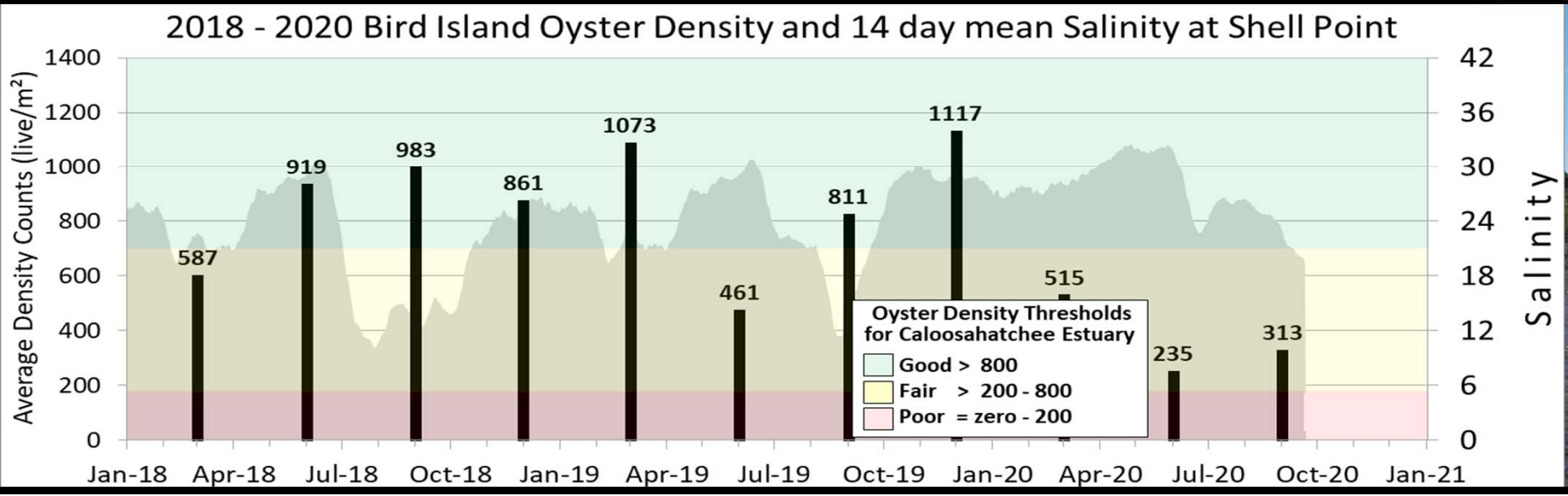


Exposed oyster bed at Iona Cove

Caloosahatchee Estuary - Oyster Density







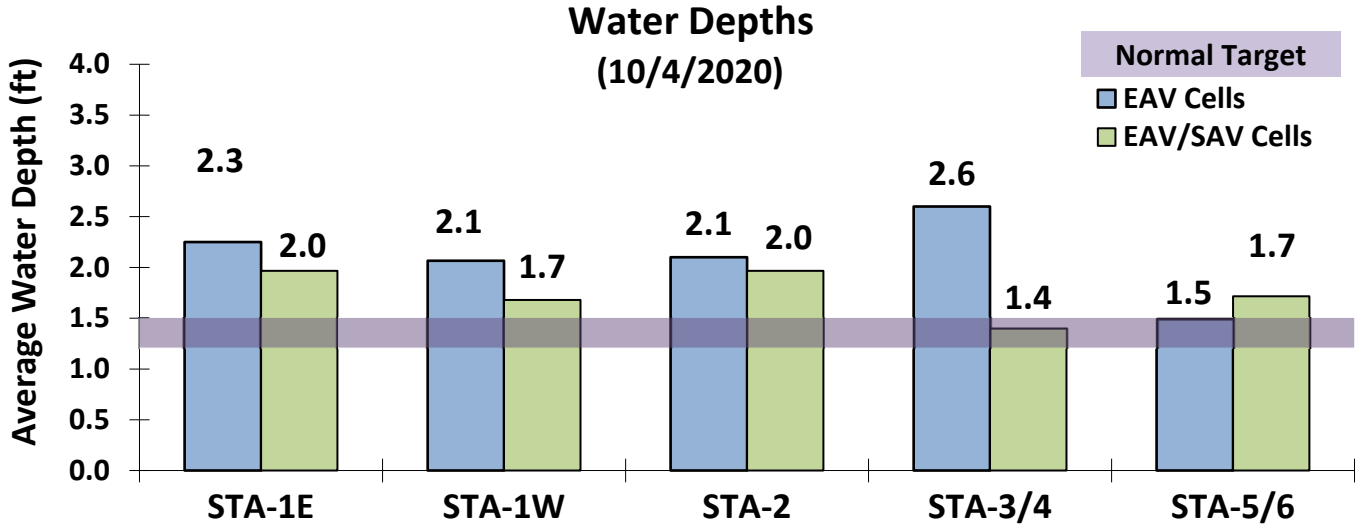
Everglades Stormwater Treatment Areas (STAs)

- STAs treated basin runoff and Lake Okeechobee releases in September
  - Total Inflows to STAs in WY2021 ~916,000 ac-ft
  - Lake Okeechobee releases to STAs in WY2021 ~36,000 ac-ft (4% of total)
- Extensive vegetation management activities underway to address stressed and highly stressed vegetation especially in EAV cells
- All treatment cells are at or above target depth

Water Year 2021
5/1/2020 to 10/4/2020

	STA-1E	STA-1W	STA-2	STA-3/4	STA-5/6
Inflow TP Concentration (ppb)	127	239	111	48	200
Outflow TP Concentration (ppb)	21	31	19	12	59
365-day Phosphorus Loading Rate ($g/m^2/yr$)	2.5	1.8	0.6	0.4	0.2
Inflow Volume (ac-ft)	173,900	133,500	231,600	328,300	48,500

Includes preliminary data; all concentrations are flow-weighted means

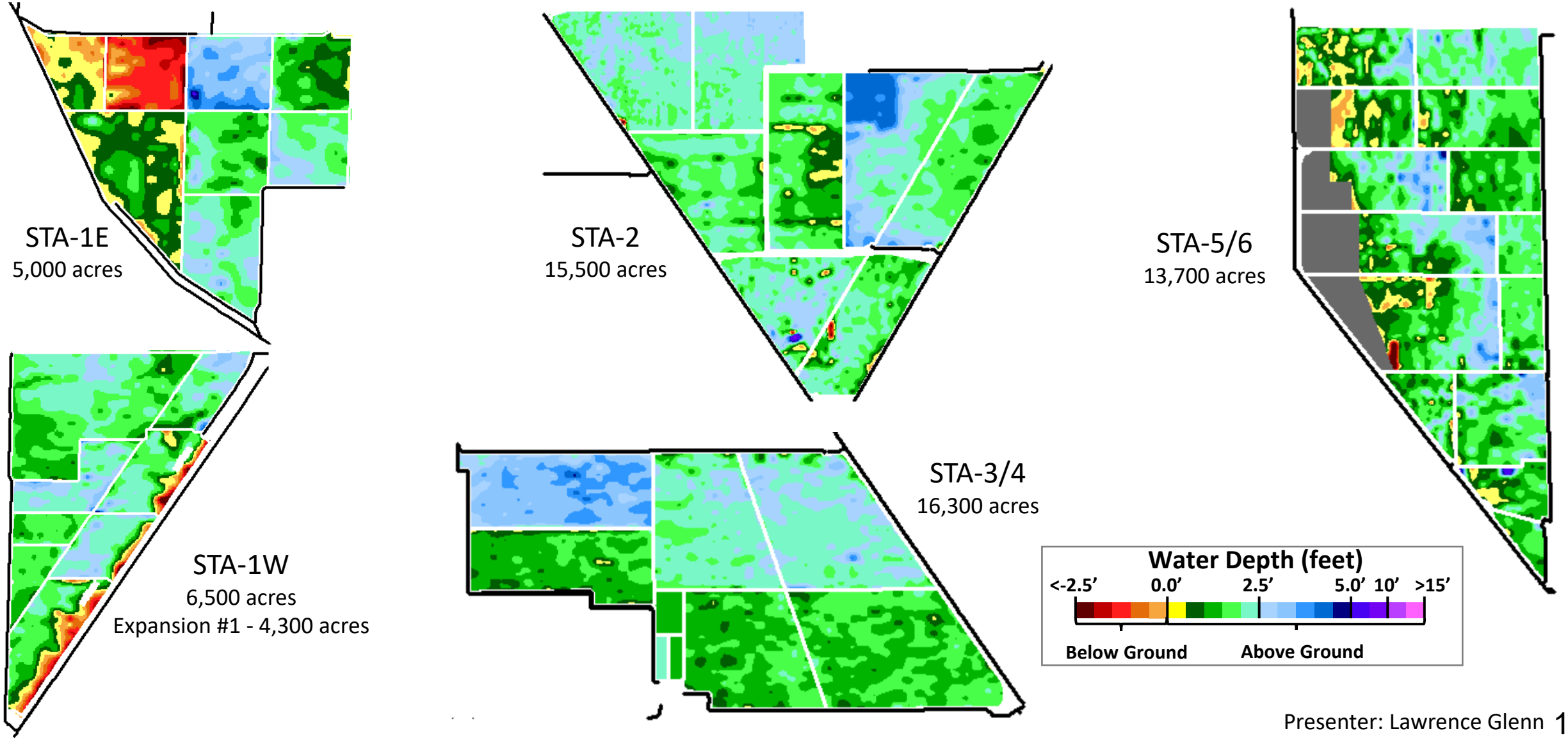


Includes preliminary data; Emergent Aquatic Vegetation (EAV); Submerged Aquatic Vegetation (SAV)

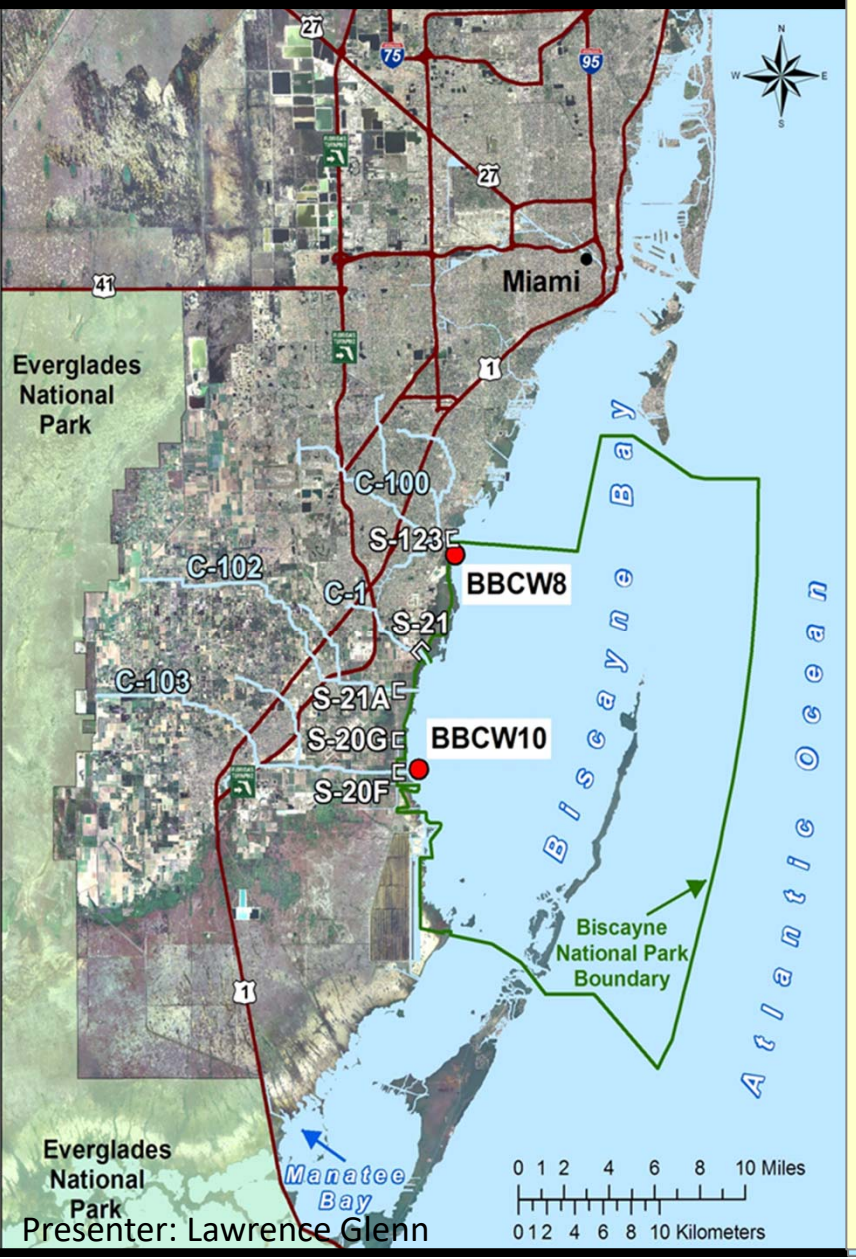
Presenter: Lawrence Glenn

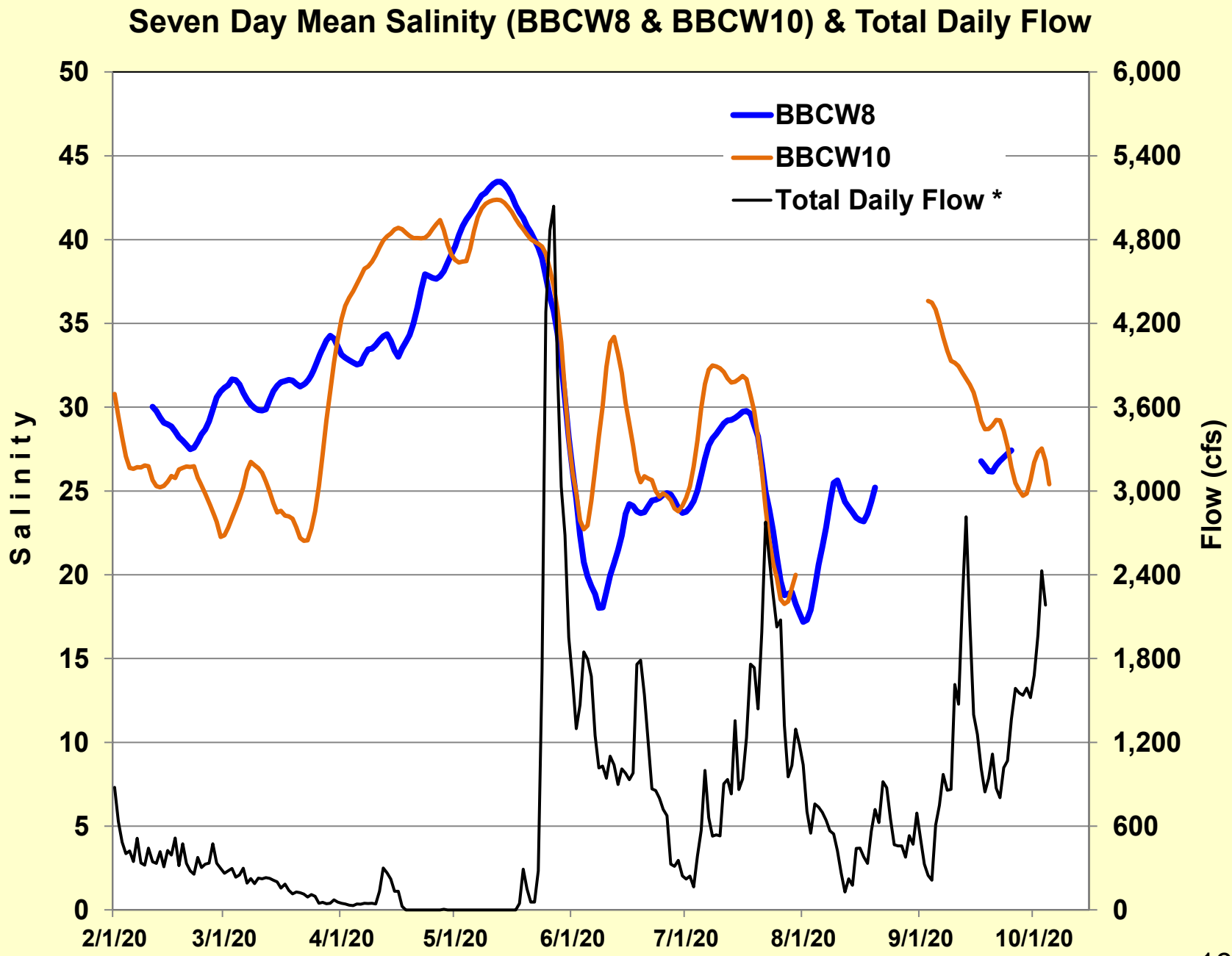
Everglades Stormwater Treatment Areas

Daily Average Water Depths on 10/4/2020



Biscayne Bay





* Total flow from S20G, S20F, S21, S21A, S123, S700P

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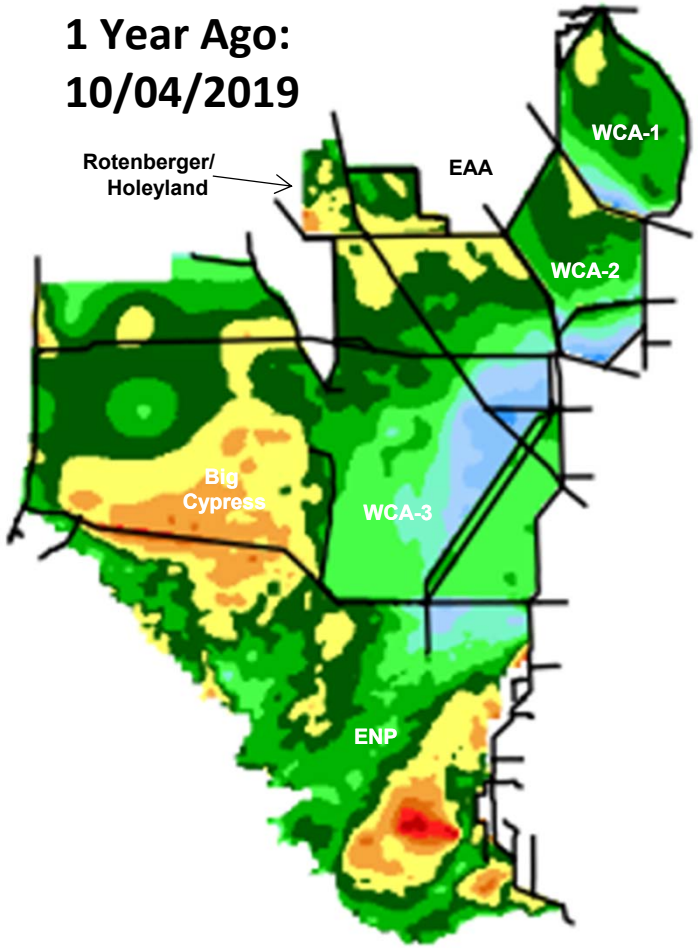
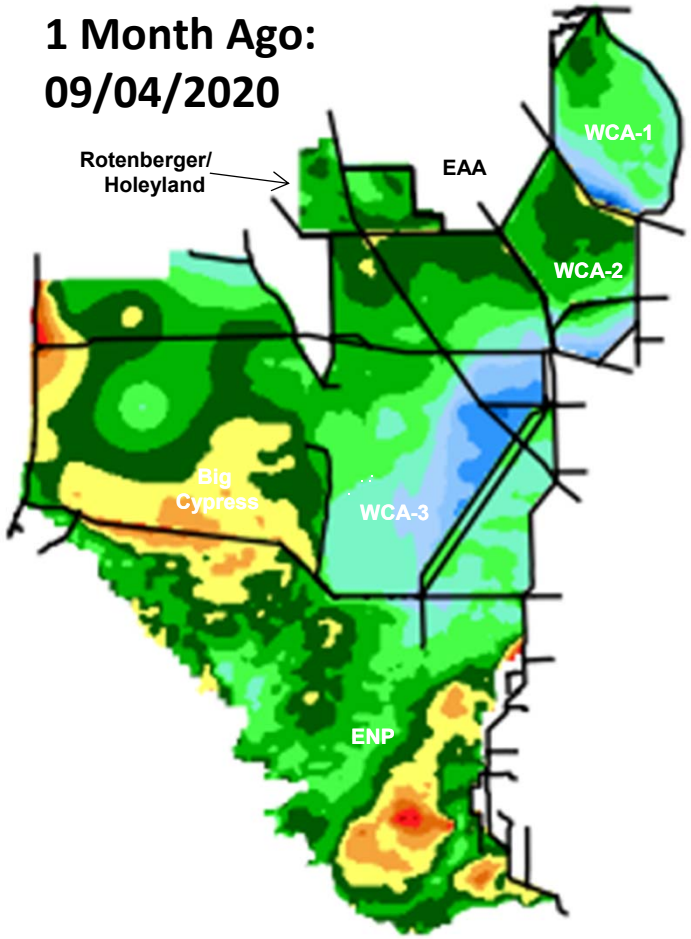
Everglades Water Depth Maps

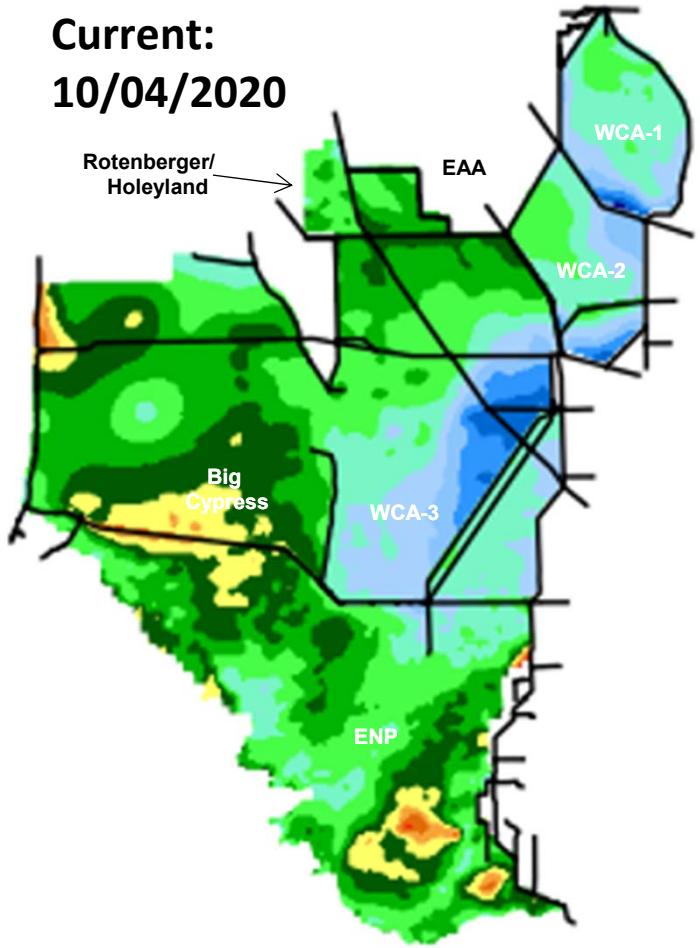
1 Year Ago:
10/04/2019

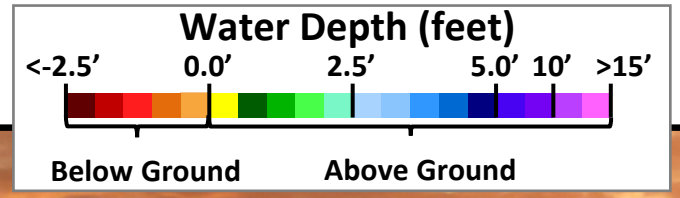


1 Month Ago:
09/04/2020



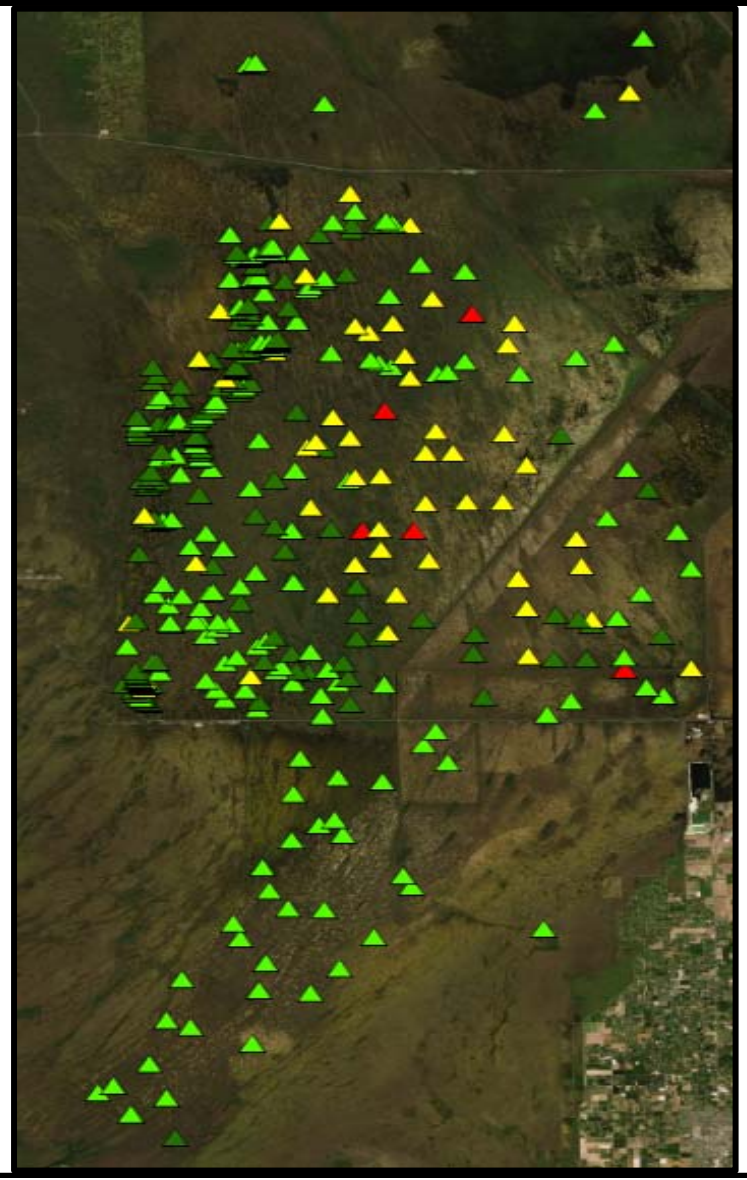
Current:
10/04/2020





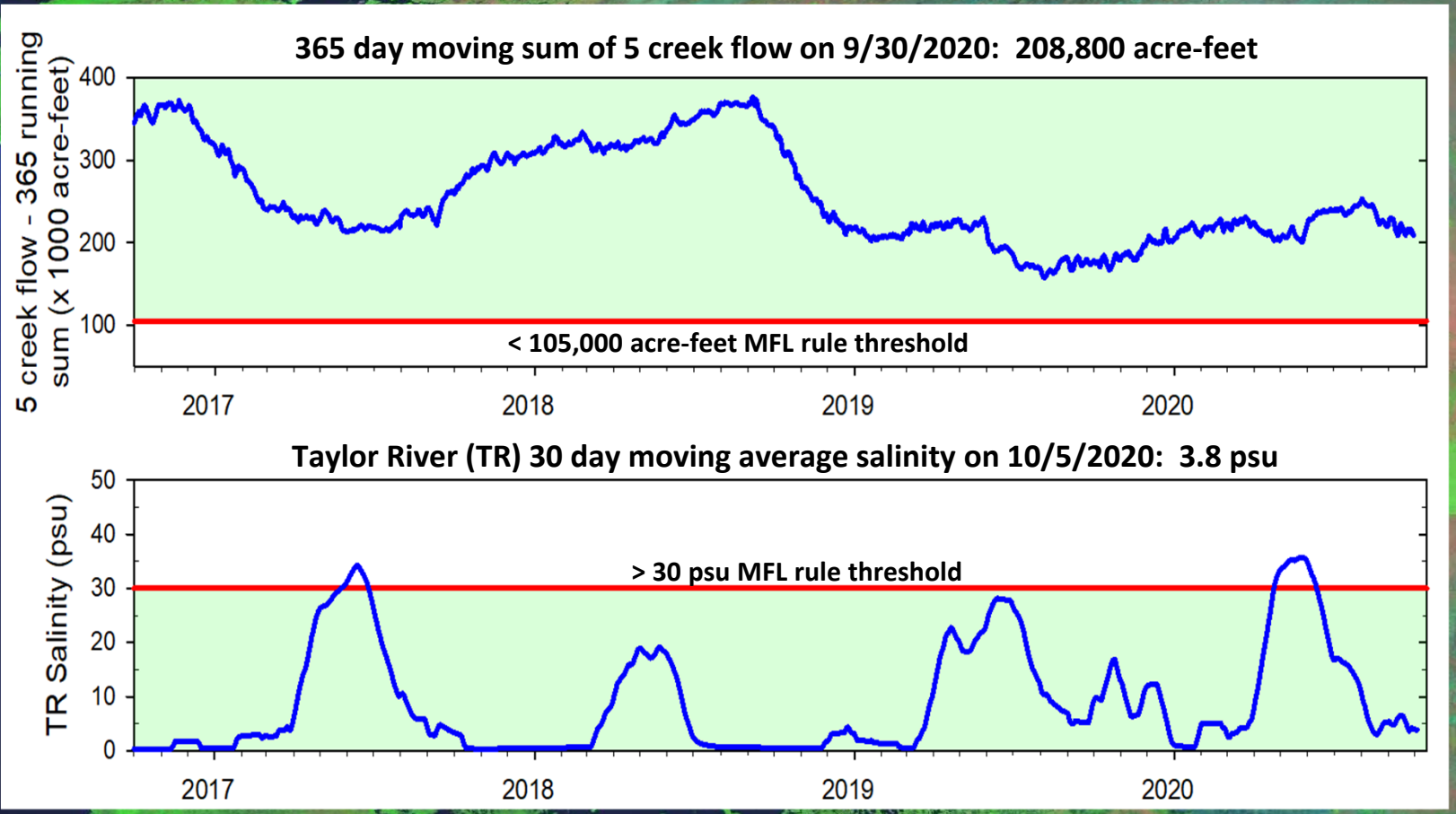
Tree Island Inundation (days) – Map And Data from 10/5 (Work In Progress)

- Not inundated
- 0 to 90 days inundated
- More than 90 days
- More than 120 days

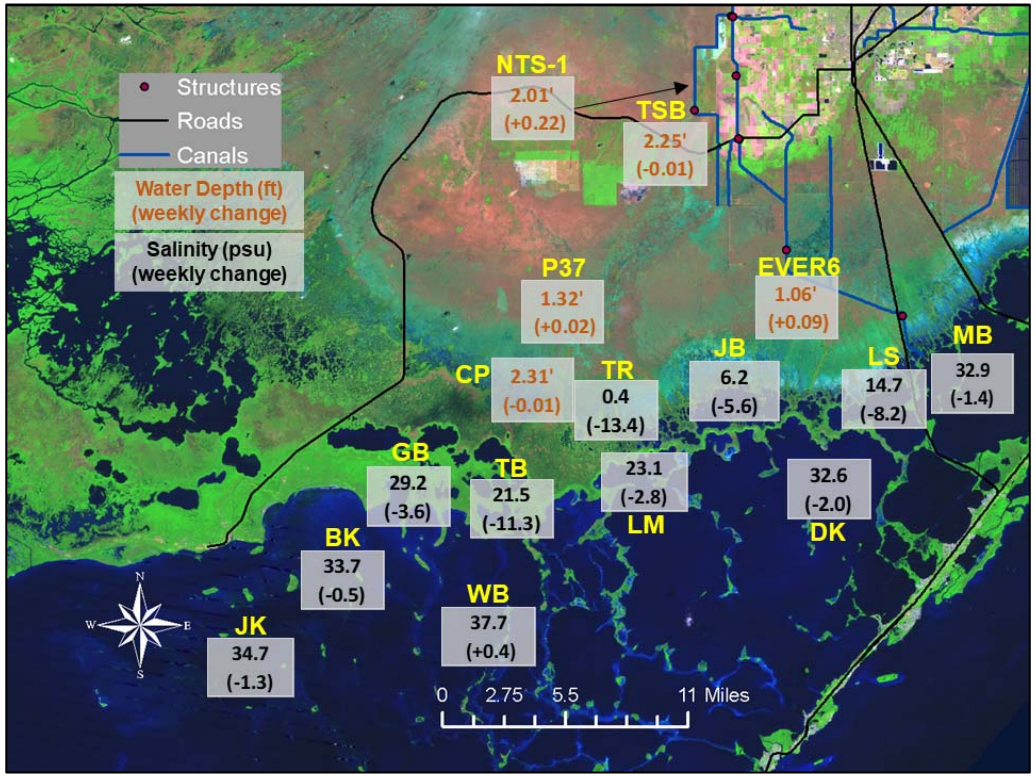


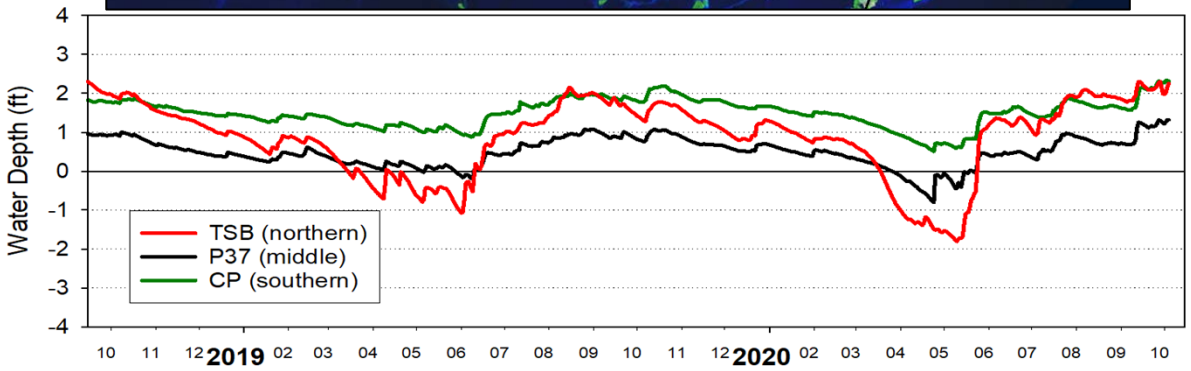
- 371 Tree Islands of known elevation within WCA-3A, -3B, and Everglades National Park's Shark Slough
- Current preliminary estimates using WDAT indicate that 53% or 198 of the tree islands are currently inundated, up from 49% the week prior
- Initial islands inundated beginning 5/24/20, longest duration of continuous inundation is 126 days
  - Inundation for more than 90 days has the potential for ecological harm
  - Inundation for more than 120 days will cause ecological harm

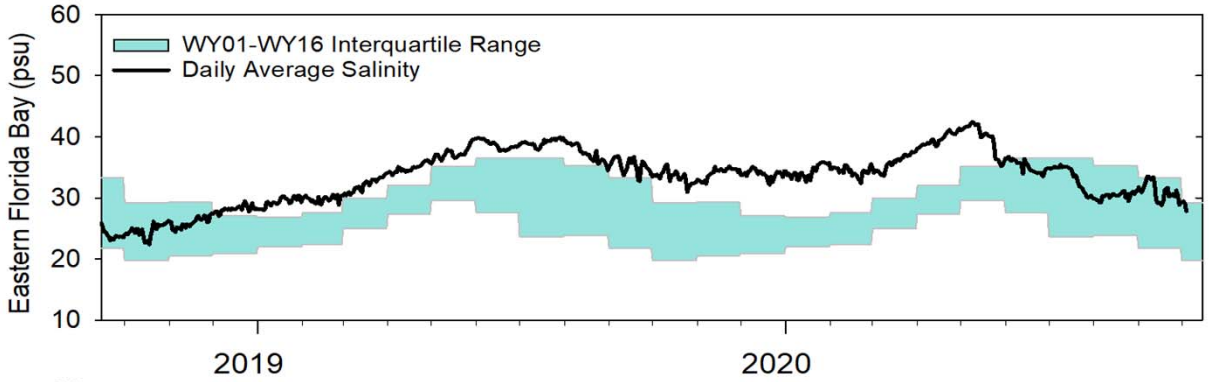
Northeast Florida Bay MFL

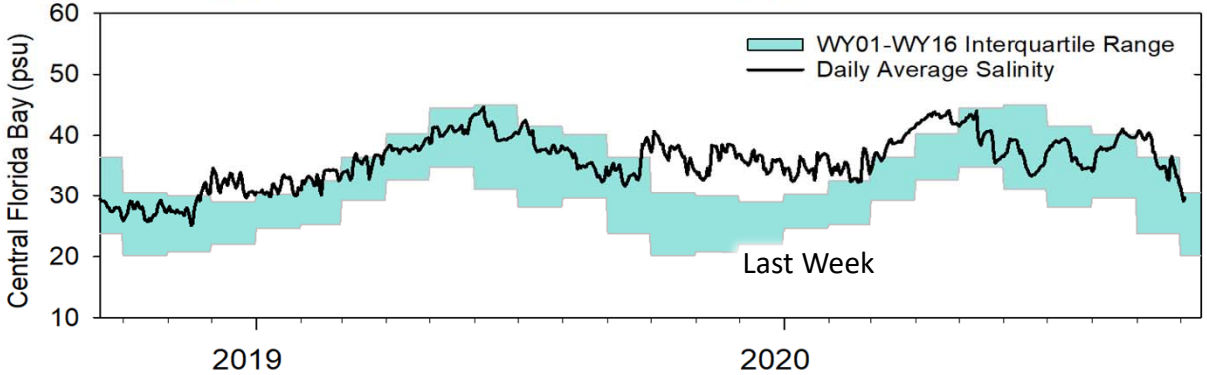


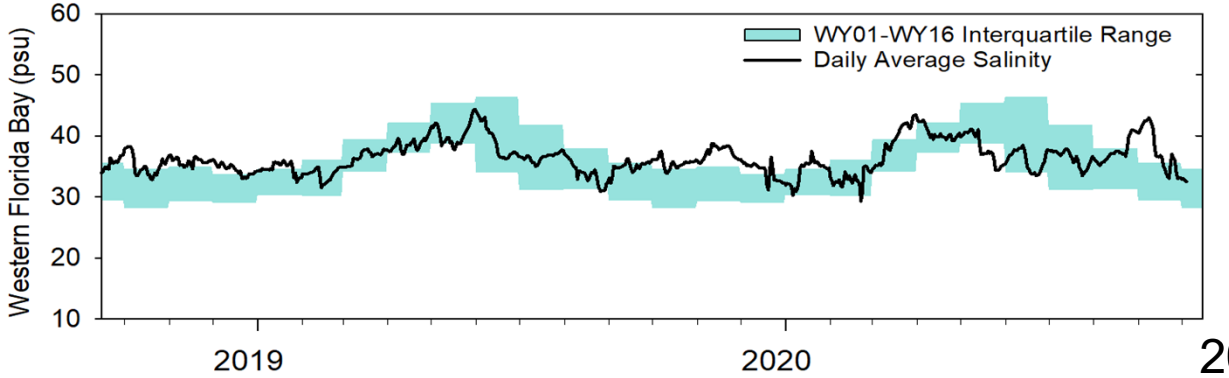
Taylor Slough Stages and Florida Bay Salinity











Presenter: Lawrence Glenn

Thank You

Barred Owl on the Edge of Big Cypress National Preserve
Photograph courtesy of Brian Garrett , SFWMD