Disclaimer: Information contained in the report addresses environmental conditions only and is not the official South Florida Water Management District operations recommendation or decision.

M E M O R A N D U M

TO: John Mitnik, Interim Assistant Executive Director, Executive Office Staff

FROM: SFWMD Staff Environmental Advisory Team

DATE: May 20, 2020

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Weather Conditions and Forecast

Daily thunderstorm activity over the coming week. An upper level trough located east of Jacksonville has a trough which extends southwestward across the Florida peninsula. The trough will help generate showers and thunderstorms over the District with heaviest activity focused over the interior and east today. Behind the trough, less shower coverage is expected north of Lake Okeechobee. A second, stronger upper level low near Tennessee will eject the first system off to the east and northeast today and tonight and bring a cold front southward to near Lake Okeechobee by Wednesday morning. Dry air behind the front will spread over the northern portion of the District behind the front and keep afternoon shower and thunderstorm activity focused across the southern half of the District Wednesday. The stronger upper level low is forecast to meander around the Tennessee Valley and Ohio Valley producing a broad trough across the eastern Gulf of Mexico and Florida peninsula and generate scattered showers and thunderstorms over the District Thursday. Low and midlevel high pressure is then expected to build back in over the area Friday and Saturday bringing southeasterly winds and scattered seabreeze showers and thunderstorms focused over the interior and west each day. A midlevel trough is forecast to move in from the southwest and increase shower coverage a bit on Sunday and Monday while southeasterly winds will keep heaviest activity focused west. In the extended outlook, daytime heating should continue to produce daily scattered shower and thunderstorm activity mainly in the afternoons. It remains to be seen how robust the coverage of thunderstorm activity will be each day so the rainfall forecast for the second 7-day period ("Week 2") continues to be an uncertain near-average.

Kissimmee

Tuesday morning stages were 52.3 feet NGVD (3.2 feet below schedule) in East Lake Toho, 52.3 feet NGVD (0.2 feet below schedule) in Toho, and 49.4 feet NGVD (0.0 feet below schedule) in Kissimmee-Cypress-Hatchineha; headwater stages were 46.1 feet NGVD at S-65A and 25.8 feet NGVD at S-65D. Tuesday morning discharges were 388 cfs at S-65, 297 cfs at S-65A, 265 cfs at S-65D and 427 cfs at S-65E. Dissolved oxygen concentration in the Kissimmee River averaged 7.9 mg/L for the week through Sunday. Kissimmee River mean floodplain depth on Sunday was 0.07 feet. *Today's recommendations:* Continue the snail kite recession on Lake Tohopekaliga to reach low pool (52 feet) on June 1st. Manage discharge at S-65 for a stage recession rate in Lakes Kissimmee-Cypress-Hatchineha that is less than 0.8 ft/30 days through June 1, to the extent possible without exceeding the current USACE limit of 700 cfs on discharge at S-65A for KRR construction.

Lake Okeechobee

Lake Okeechobee stage was 11.03 feet NGVD on May 18, 2020, down 0.14 feet from the previous week, and 0.38 feet from the previous month. The Lake entered the Beneficial Use sub-band on March 4, 2020 and is now 0.34 feet above the Water Shortage sub-band. Lake stage moved below the ecological envelope (which varies seasonally from 12 – 15 feet NGVD +/- 0.5 feet) on October 15, 2019 and is currently 0.70 feet below the bottom of the envelope. Low water levels (lake stages below the ecological envelope) will continue to benefit recovering submerged and emergent marsh vegetation at low elevations but will reduce aquatic habitat for fish and wildlife in the marshes. Wading bird and snail kite nesting efforts are likely to be lower for the second consecutive year on the Lake due to low lake stages during the breeding season.

Estuaries

Total inflow to the St. Lucie Estuary averaged 513 cfs over the past week with no flow coming from Lake Okeechobee. The seven-day average salinities changed little in the estuary over the past week. Salinity at the US1 Bridge is in the good range for adult eastern oysters.

Total inflow to the Caloosahatchee Estuary averaged 831 cfs over the past week with 576 cfs coming from the Lake. The seven-day average salinity increased at VALI-75 and Ft. Myers but little changed in the lower estuary over the past week. Salinities are in the good range (0-10) for tape grass at Val I-75 and in the poor range (>15) at Ft. Myers. Salinities are in the good range for adult eastern oysters at Cape Coral and in the fair range at Shell Point and Sanibel.

Water Management Recommendations

Lake stage is in the Beneficial Use sub-band of 2008 LORS. Tributary hydrological conditions are dry. The SFWMD's Lake Okeechobee Adaptive Protocol's Release Guidance suggests no release to the Caloosahatchee Estuary.

Stormwater Treatment Areas

Over the past week, 4,500 ac-feet of Lake Okeechobee water was delivered to the FEBs/STAs. The total amount of Lake releases sent to the FEBs/STAs in WY2021 (since May 1, 2020) is approximately 8,200 ac-feet. The total amount of inflows to the STAs in WY2021 is approximately 11,800 ac-feet. Most STA cells are at or near target stage, except the EAV cells of STA-3/4 that are above target and STA-5/6 cells that continue to dry out. STA-1E Western Flow-way is offline for the Restoration Strategies project to fill and grade Cells 5 and 7. Operational restrictions are in place in STA-1W Northern Flow-way related to STA-1W Expansion #1 startup activities, in STA-1E Central Flow-way, STA-2 Flow-way 1, STA-2 Flow-way 2, STA-2 Flow-way 3, STA-2 Flow-way 4, STA-3/4 Eastern, Central, and Western Flow-ways for vegetation management activities, and in STA-5/6 Flow-ways 2 and 3 following the Restoration Strategies project to grade non-effective treatment areas. Nests of Migratory Bird Treaty Act (MBTA) protected species have been observed in STA-1E, STA-1W, and STA-5/6. This week, there is no capacity for Lake releases in the STAs.

Everglades

Stage reversals occurred across the Everglades most likely impacting wading bird nesting. The core of the wading bird nesting effort in the Everglades is taking place in WCA-1, protecting foraging conditions there by moderating reversals could have great ecological benefit by prolonging the nesting effort in that region. Current stages in WCA-3A remain below average for this time of year. Conserving fresh water in the Everglades, distributing it to where depths are low (WCA-3A NE and WCA-3A NW), then allowing it to flow south has important ecological benefit. Heavy rains fell over Taylor Slough and Florida Bay last week and stages increased, and salinities decreased on average. Salinities at the TR station in the mangrove zone decreased but remains over 30 psu. Bay wide average salinity remains above average for this time of year, but Central and Western Florida Bay are below.

Supporting Information

KISSIMMEE BASIN

Kissimmee Basin Rainfall

The Upper Kissimmee Basin received 0.23 inches of rainfall in the past week and the Lower Basin received 0.32 inches (SFWMD Daily Rainfall Report 5/17/2020).

Upper Kissimmee Basin

Stages and departures in the Kissimmee Chain of Lakes (KCOL) are shown in **Table 1**. KCOL stage hydrographs with respective regulation schedules and rainfall are shown in Figures 1-3.

Table 1. Average discharge (cfs) for the preceding seven days, one-day stage (feet NGVD), and departures from KCOL flood regulation (R) or temporary schedules (T, A, or S). Provisional, real-time data are from SFWMD.

Report Date: 5/19/2020

Water Body	Structure	7-day Average Discharge (cfs)[1]	Stage Monitoring Site[2]	Lake Stage (feet)	Schedule Type[3]	Schedule Stage (feet)	Daily Departure (feet)						
							5/17/20	5/10/20	5/3/20	4/26/20	4/19/20	4/12/20	4/5/20
Lakes Hart and Mary Jane	S-62	0	LKMJ	59.6	R	59.8	**-0.2**	-0.2	-0.2	-0.2	-0.2	-0.3	-0.4
Lakes Myrtle, Preston, and Joel	S-57	0	S-57	60.1	R	60.2	**-0.1**	0.0	0.0	0.1	0.0	-0.1	0.0
Alligator Chain	S-60	5	ALLI	62.4	R	62.4	**0.0**	-0.1	0.0	0.1	-0.2	-0.4	-0.5
Lake Gentry	S-63	20	LKGT	60.0	R	59.9	**0.1**	0.0	0.0	0.1	0.1	0.1	0.0
East Lake Toho	S-59	0	TOHOE	52.4	R	55.6	**-3.2**	-3.4	-3.5	-3.8	-4.1	-4.5	-4.6
Lake Toho	S-61	2	TOHOW, S-61	52.3	R	52.6	**-0.3**	-0.5	-0.5	-0.6	-0.7	-0.9	-0.9
Lakes Kissimmee, Cypress, and Hatchineha	S-65	353	KUB011, LKIS5B	49.4	R	49.5	**-0.1**	-0.1	-0.1	-0.1	-0.3	-0.4	-0.5

[1] Seven-day average of weighted daily means through midnight.
[2] Names of in-lake monitoring sites and structures used to determine lake stage; if more than one site is listed, an average is reported.
[3] A = projected ascension line, R = USACE regulation schedule, S = temporary recession target line, T = temporary schedule, N/A= not applicable or data not available.
DATA ARE PROVISIONAL

Lower Kissimmee Basin

Discharges at Lower Basin structures are shown in Table 2. SFWDAT depth maps for the Phase I restoration area are shown in Figure 4. Mean daily dissolved oxygen concentrations, discharge, temperature, and rainfall are shown in Figure 5. Kissimmee River floodplain stages at selected stations are shown in Figures 6-8.

Table 2. One-day and seven-day averages of discharge at S-65x structures, of dissolved oxygen concentration in the Phase I area river channel, and water depth in the Phase I area floodplain. Data are provisional real-time data from SFWMD.

Report Date: 5/19/2020

Metric	Location	1-Day Average	Average for the Preceeding 7-Days[1]								
		5/17/2020	5/17/20	5/10/20	5/3/20	4/26/20	4/19/20	4/12/20	4/5/20	3/29/20	3/22/20
Discharge (cfs)	S-65	250	**353**	738	760	611	372	365	357	448	690
Discharge (cfs)	S-65A[2]	244	**313**	656	679	550	353	323	310	350	592
Discharge (cfs)	S-65D[2]	224	**441**	667	722	485	317	308	302	476	699
Headwater Stage (feet NGVD)	S-65D[2]	25.49	**25.61**	25.81	25.84	25.84	25.83	25.75	25.78	25.71	25.75
Discharge (cfs)	S-65E[2]	221	**411**	617	677	435	282	283	262	433	653
Discharge (cfs)	S-67	0	**0**	0	0	0	0	0	0	0	0
DO (mg/L)[3]	Phases I & II/III river channel	8.1	**7.9**	8.1	7.9	7.5	7.9	7.4	7.4	6.9	7.6
Mean depth (feet)[4]	Phase I floodplain	0.07	**0.07**	0.09	0.14	0.10	0.06	0.07	0.07	0.08	0.11

[1] Seven-day average of weighted daily means through Sunday midnight.
[2] S-65A discharge combines S-65A with auxillary strucutures; S-65D discharge combines discharge at S-65D, S-65DX1, and S-65DX2; S-65D stage averages stage at S-65D and S-65DX1; S-65E discharge combines S-65E and S-65EX1.
[3] DO is the average for sondes at KRBN, PC62, PC33, PD62R, and PD42R.
[4] 1-day spatial average from South Florida Water Depth Assessment Tool (SFWDAT).
DATA ARE PROVISIONAL; N/A indicates that data were not available.

KCOL Hydrographs (through Sunday midnight)

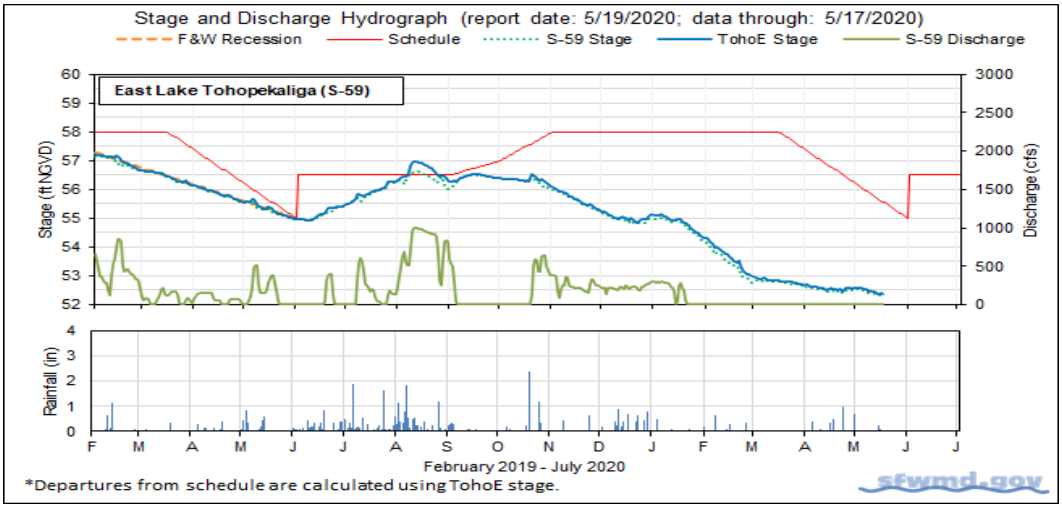


Figure 1.

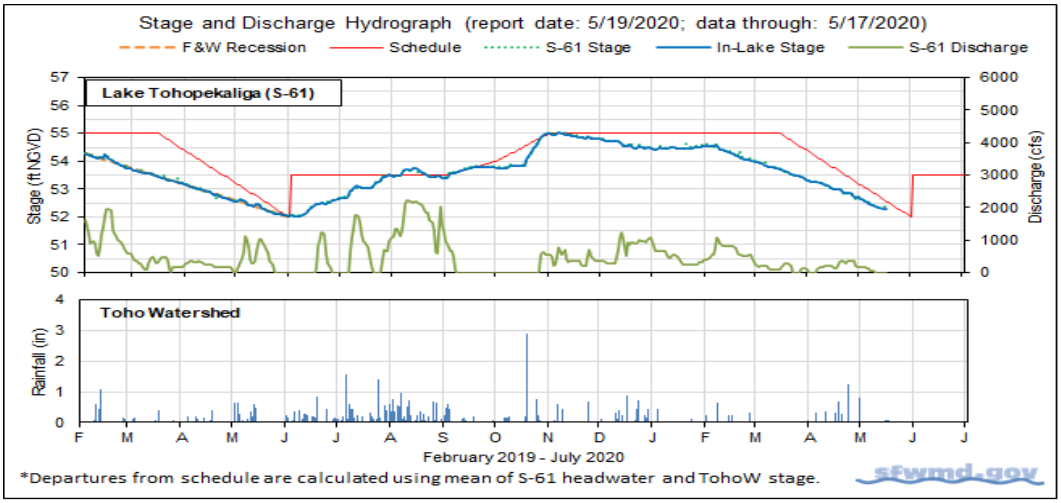


Figure 2.

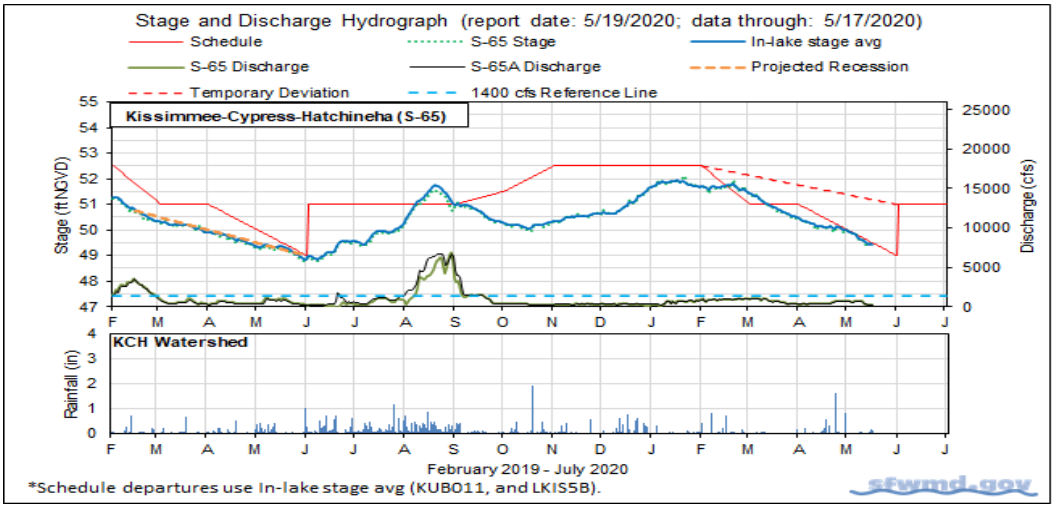


Figure 3.

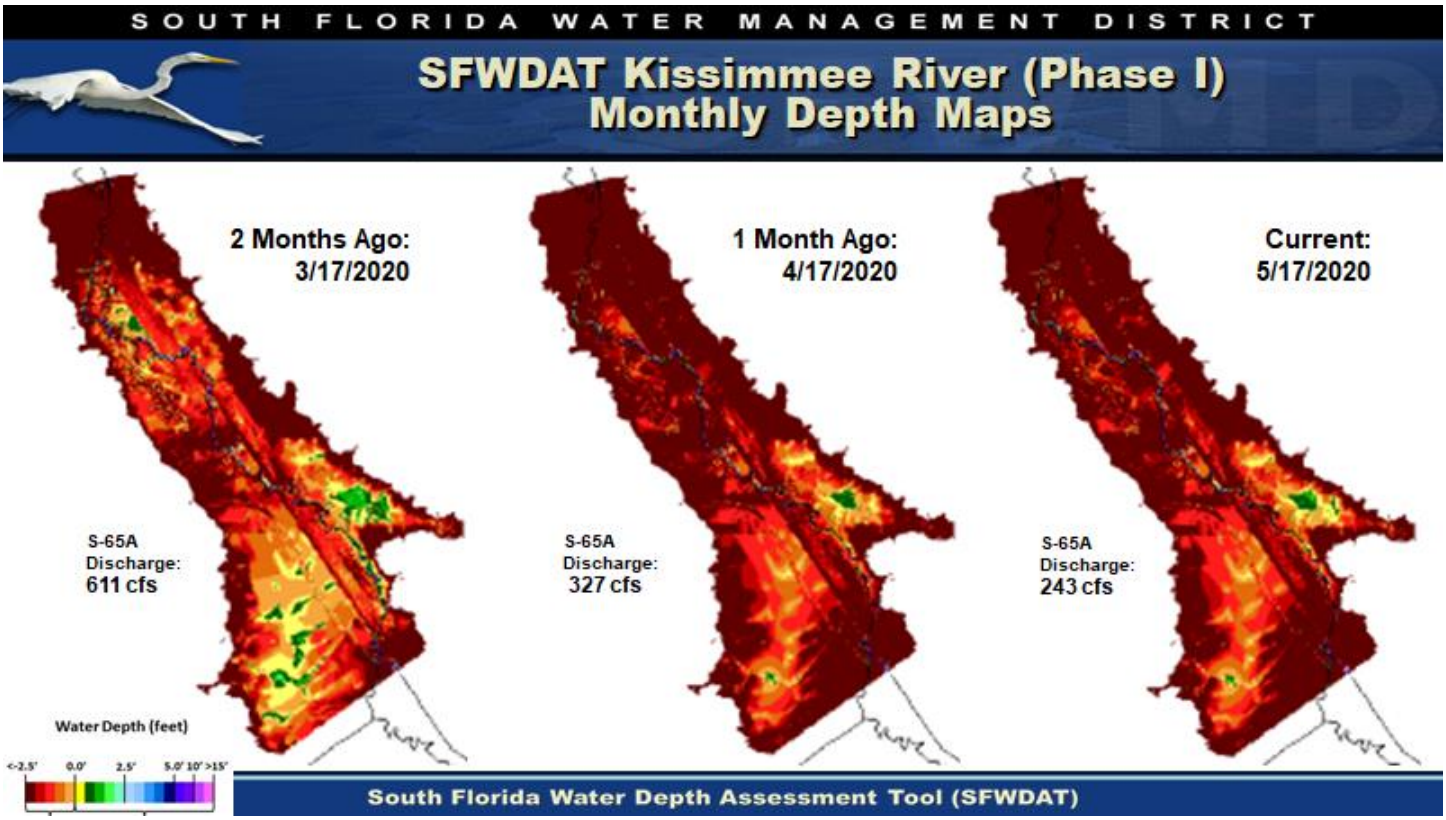


Figure 4. Phase I area floodplain water depths for this week, one month ago, and two months ago. Note that the WDAT color-coding has been modified to accommodate greater water depths; these maps are not directly comparable to Kissimmee Basin WDAT maps published prior to January 16, 2012.

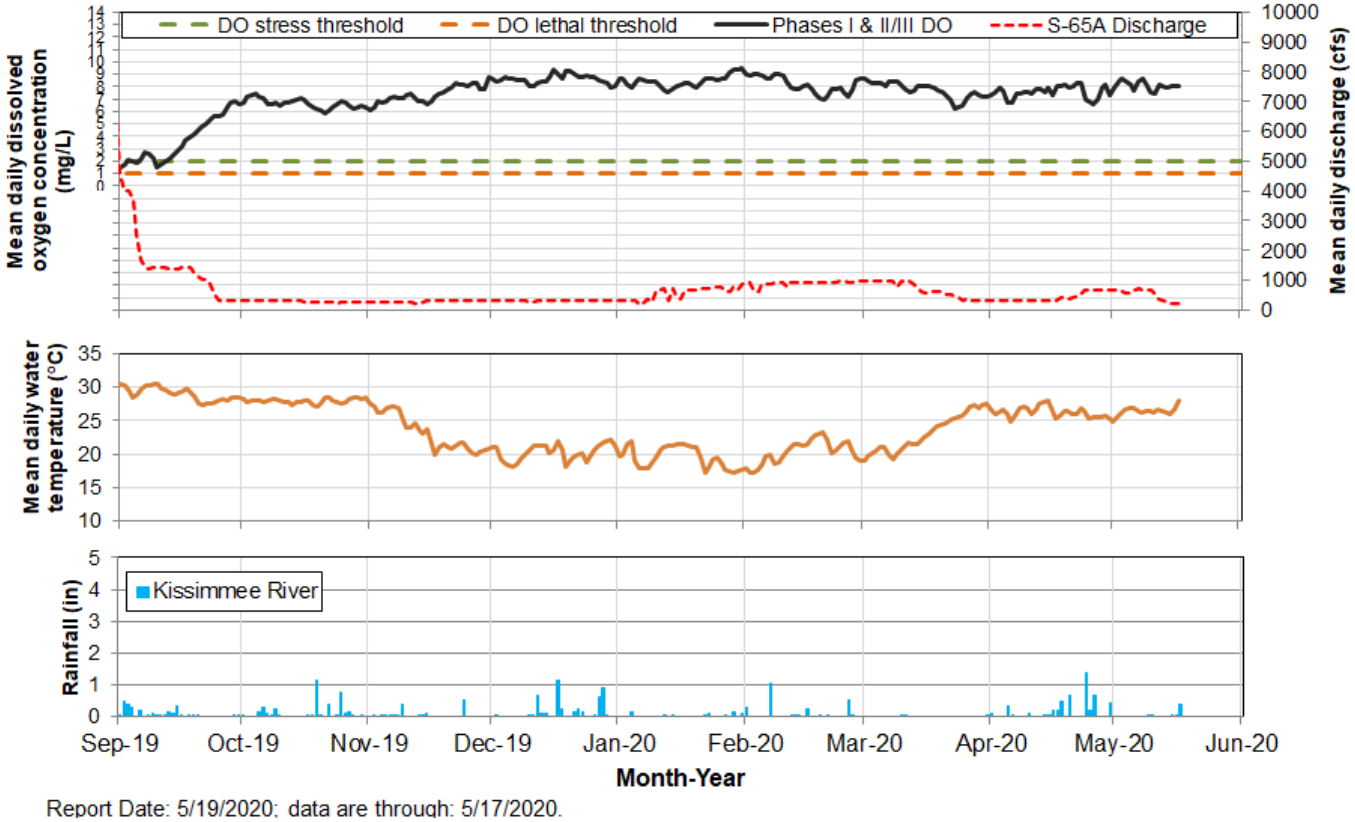


Figure 5. Mean daily dissolved oxygen, discharge, temperature and rainfall in the Phases I/II/III river channel.

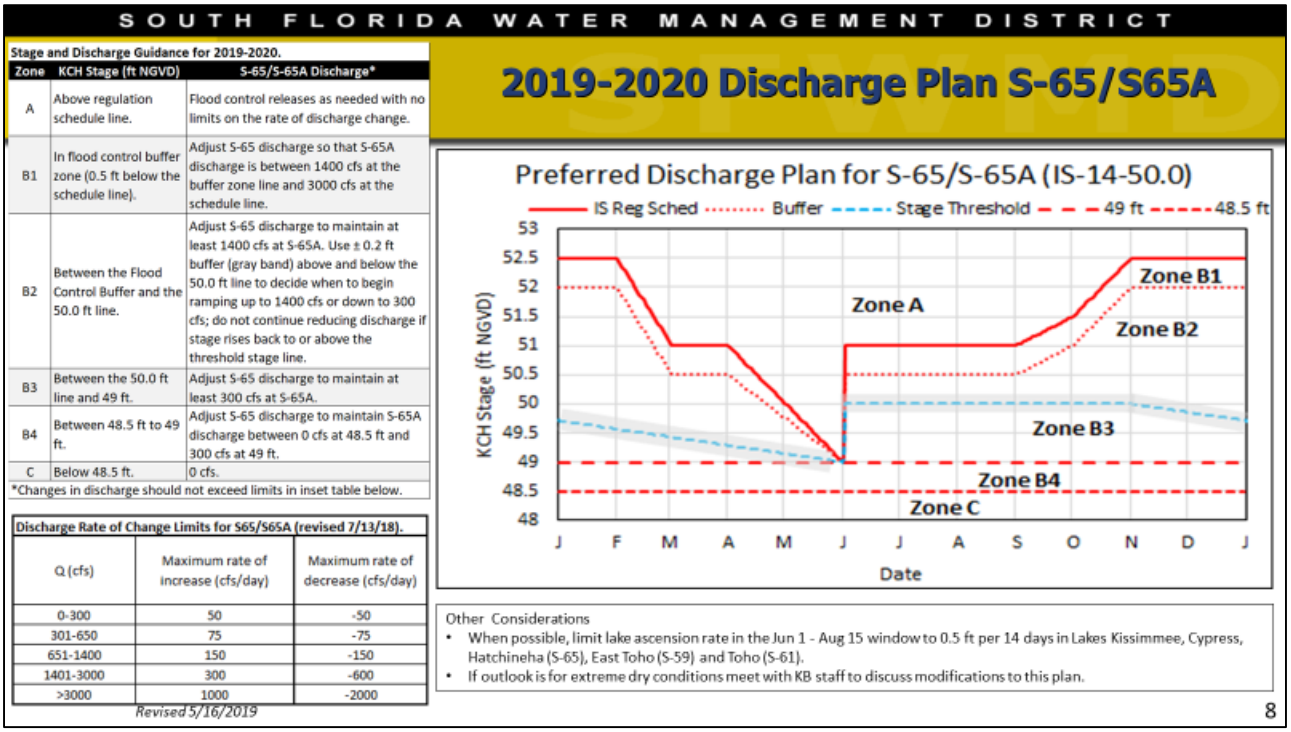


Figure 6. The 2019-2020 Discharge Plan for S-65/S-65A.

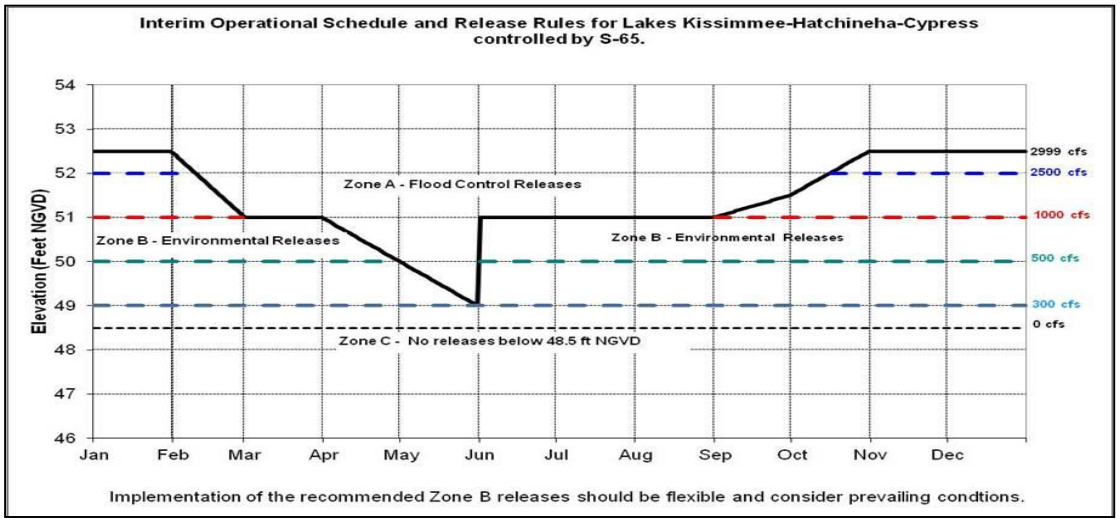


Figure 7. Interim operations schedule for S-65. The discharge schedule shown to the right has not been used in recent years.

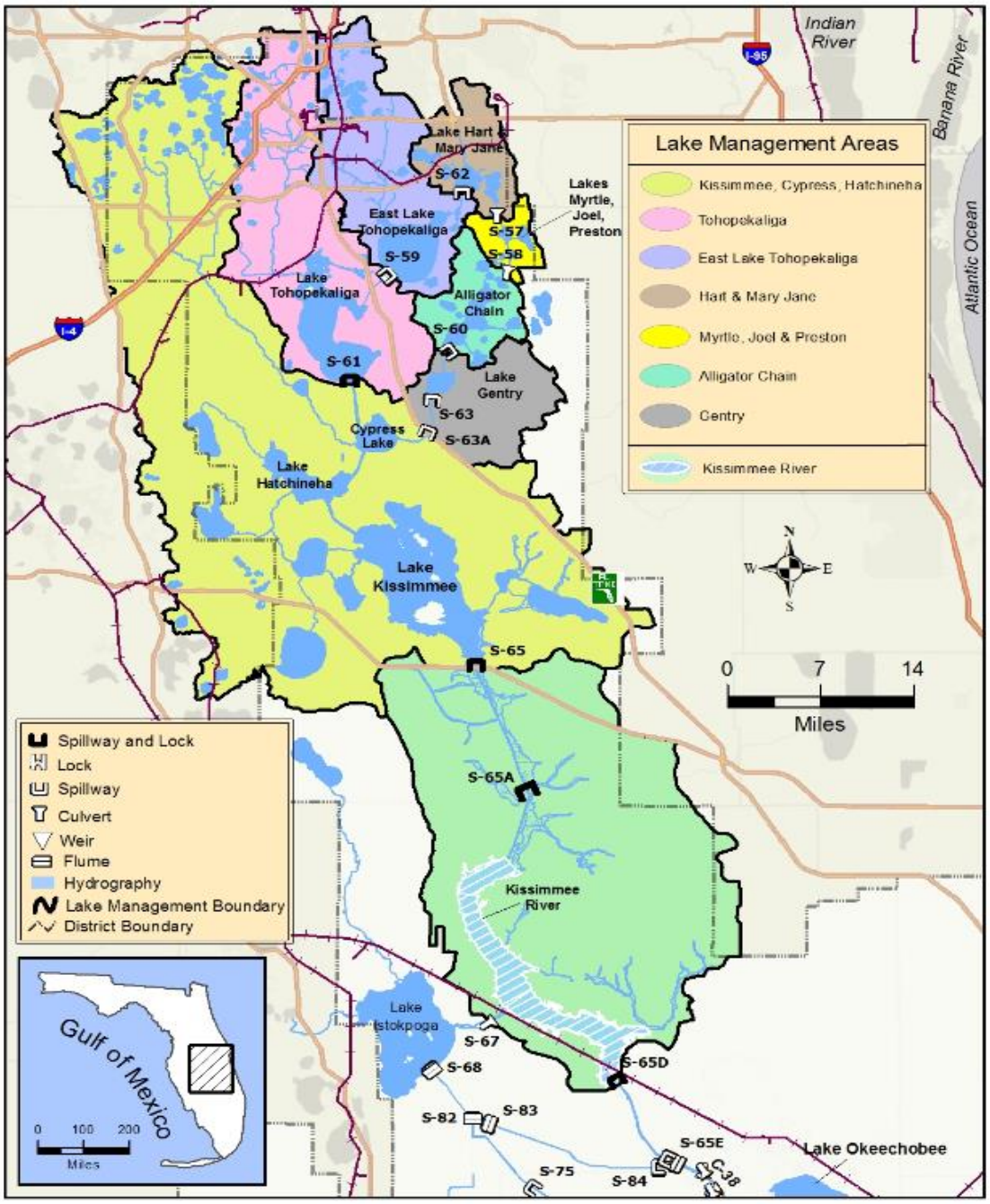


Figure 8. The Kissimmee Basin.

LAKE OKEECHOBEE

Lake Okeechobee stage is 11.03 feet NGVD, 0.38 feet lower than a month ago and 0.18 feet lower than one year ago (Figure 1). The Lake is currently 0.70 feet below the preferred ecological envelope (Figure 2). Lake stage moved into the Base Flow sub-band on September 11, 2019 and entered the Beneficial Use sub-band on March 4, 2020 (Figure 3). Lake stage had been quickly declining since late-February 2020 but rain events in mid-April resulted in a relatively stable stage for several weeks. However, with the start of the rainy season, lake stage has reversed slightly. According to RAINDAR, 1.70 inches of rain fell directly over the Lake during the past week (Figure 4). Most of the northern and southwestern regions of the watershed received less amounts, between 0–1.5 inches of rain, while the eastern and southeastern regions experienced similar or greater rainfall.

The average daily inflows and outflows are not currently available but will be updated once the issue has been resolved.

A review of water quality samples collected in April over the past 4 years (2017–2020) showed lower nearshore values in April 2020 compared to April 2019, and improved conditions compared to March 2018, seven months after Hurricane Irma (Figure 5). All pelagic values were higher than the nearshore values but similar to last year's values. Turbidity levels also decreased from March 2020 values of 27.5 to 11.1 NTU in the nearshore and 60.8 to 40.0 NTU in the pelagic, indicating less windy conditions and less sediment resuspension in April.

Current satellite imagery (May 17, 2020) using NOAA's cyanobacteria monitoring product derived from EUMETSAT's Sentinel 3 OLCI sensor data suggested low/moderate potential for cyanobacterial blooms along the northwestern shoreline of the Lake, slightly lower than this time last year (Figure 6). Spatially, the current bloom is focused in the western and southern regions compared to the eastern region last year at this time. Blooms during this time of year tend to be ephemeral in nature with slight changes occurring in intensity and location along the western and northern sides of the lake from week to week.

Water Management Summary

Lake Okeechobee stage was 11.03 feet NGVD on May 18, 2020, down 0.14 feet from the previous week, and 0.38 feet from the previous month. The Lake entered the Beneficial Use sub-band on March 4, 2020 and is now 0.34 feet above the Water Shortage sub-band. Lake stage moved below the ecological envelope (which varies seasonally from 12 – 15 feet NGVD +/- 0.5 feet) on October 15, 2019 and is currently 0.70 feet below the bottom of the envelope. Low water levels (lake stages below the ecological envelope) will continue to benefit recovering submerged and emergent marsh vegetation at low elevations but will reduce aquatic habitat for fish and wildlife in the marshes. Wading bird and snail kite nesting efforts are likely to be lower for the second consecutive year on the Lake due to low lake stages during the breeding season.

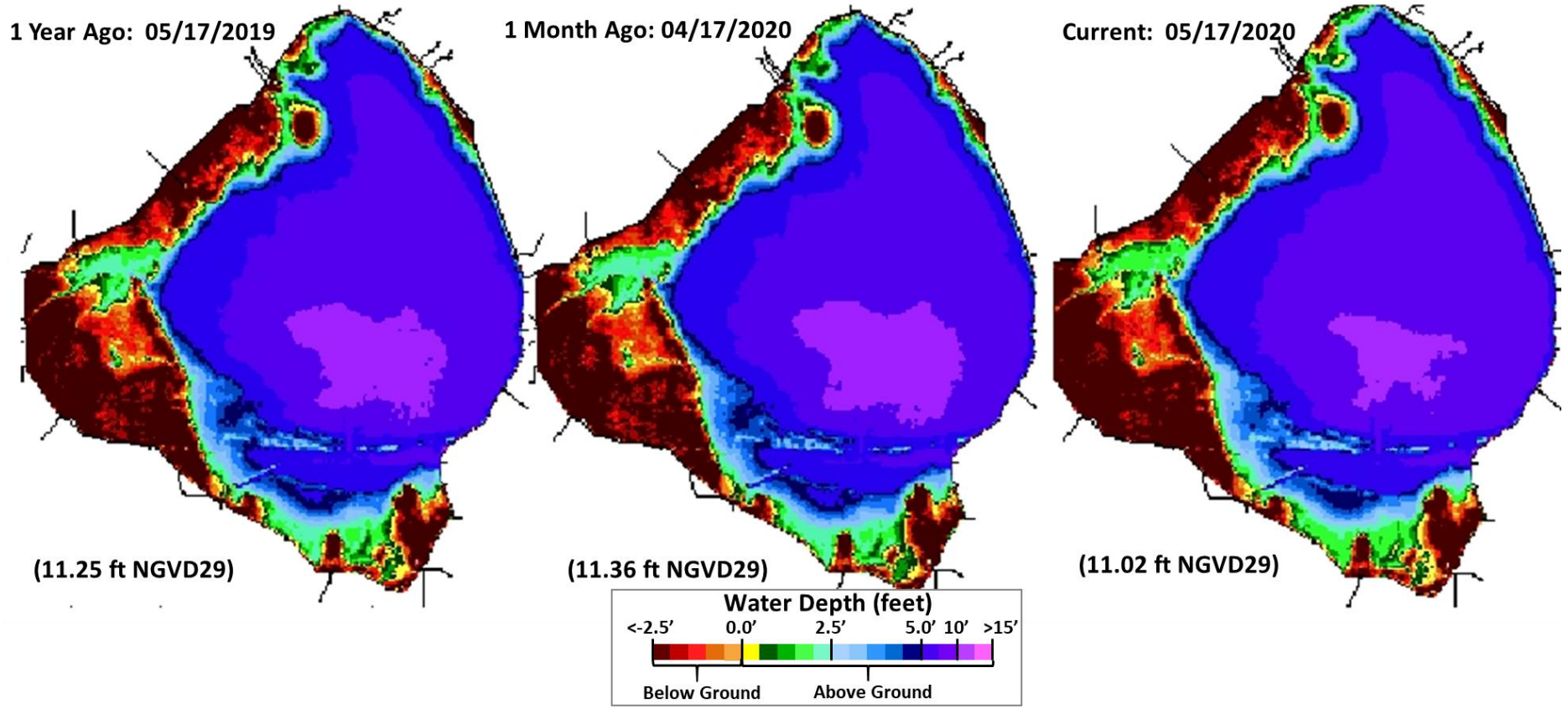


Figure 1. Water depth estimates on Lake Okeechobee based on the South Florida Water Depth Assessment Tool.

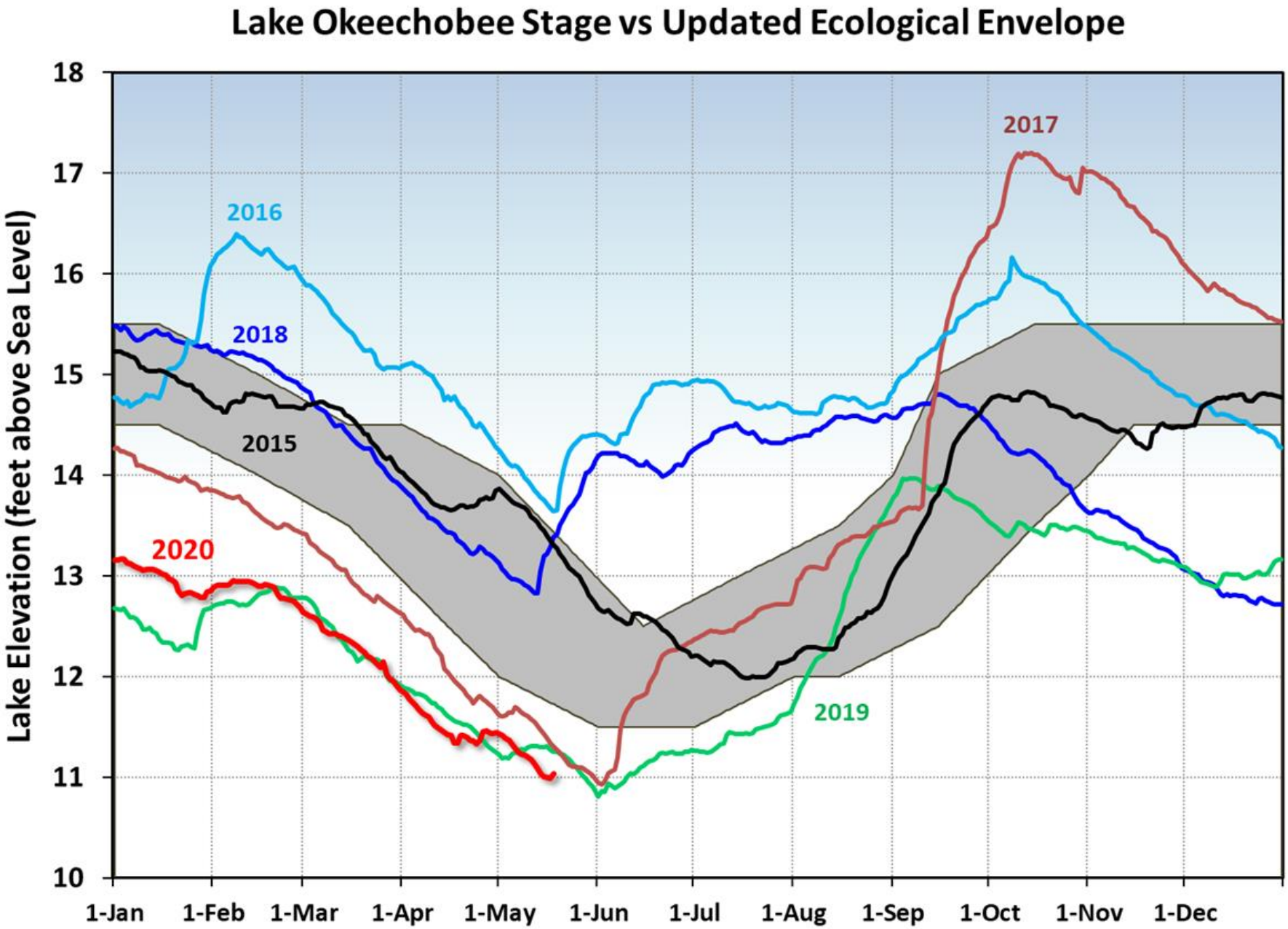


Figure 2. Select annual stage hydrographs for Lake Okeechobee in comparison to the updated Ecological Envelope.

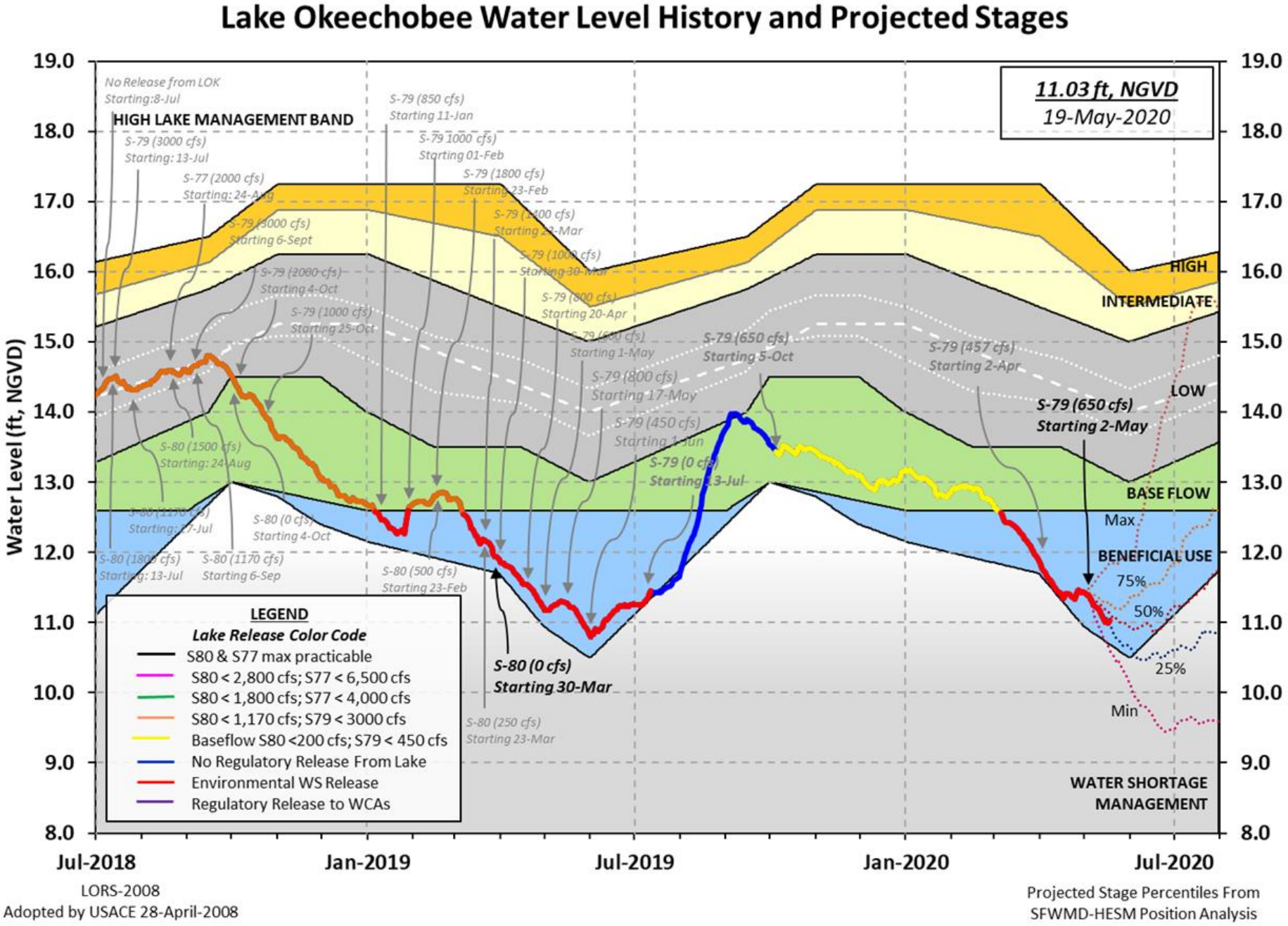


Figure 3. Recent Lake Okeechobee stage and releases, with projected stages based on a dynamic position analysis.

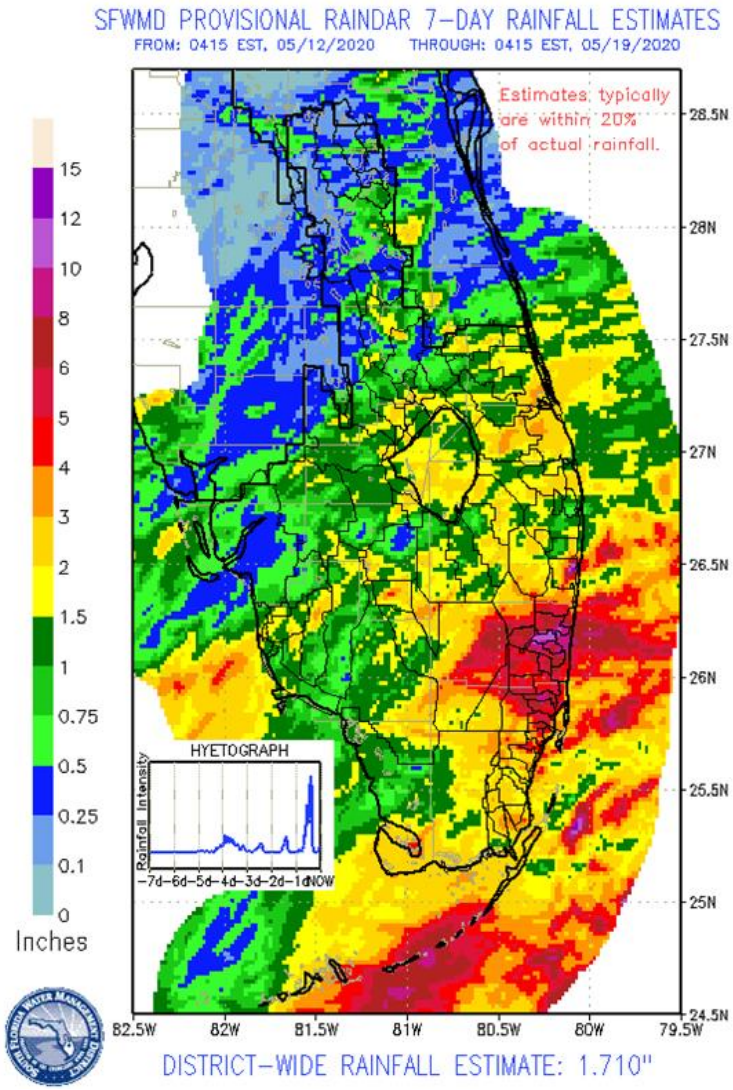
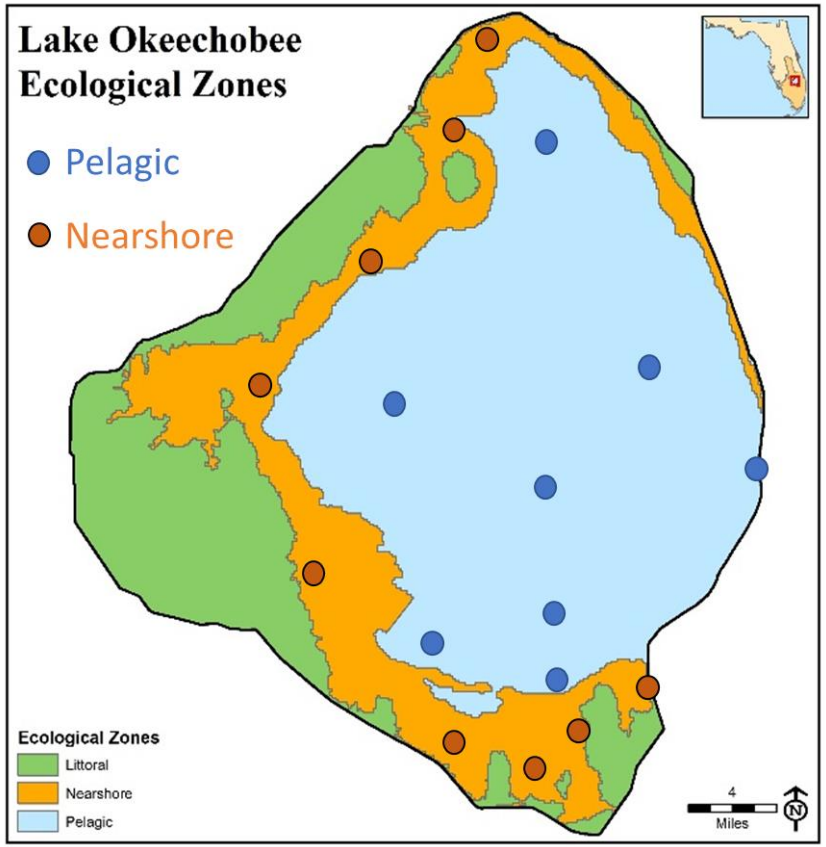


Figure 4. 7-Day rainfall estimates by RAINDAR.



Location	Year	Chla (ug/L)	DIN (mg/L)	TN (mg/L)	SRP (ug/L)	TP (ug/L)	Turbidity (NTU)
Nearshore	2017	18.8	0.208	1.31	0.045	0.131	25.8
	2018	12.2	0.413	1.46	0.075	0.163	27.8
	2019	19.6	0.164	1.50	0.032	0.130	27.7
	2020	15.7	0.104	1.20	0.027	0.082	11.1
Pelagic	2017	12.6	0.345	1.45	0.065	0.170	51.5
	2018	7.0	0.519	1.54	0.090	0.187	45.9
	2019	12.3	0.281	1.58	0.060	0.182	61.3
	2020	15.5	0.311	1.51	0.063	0.163	48.0

Chlorophyll *a* (Chla), Dissolved Inorganic Nitrogen (DIN), Total Nitrogen (TN), Soluble Reactive Phosphorus (SRP), Total Phosphorus (TP)

Figure 5. Average concentrations of selected water quality parameters at nearshore (n=8) and pelagic (n=9) stations for April 2017 - 2020. Measured parameters are Chlorophyll *a* (Chla), Dissolved Inorganic Nitrogen (NH4 and NOx), Total Nitrogen (TN), Soluble Reactive Phosphorus (SRP = OPO4), Total Phosphorus (TP), and turbidity. Data are provisional.

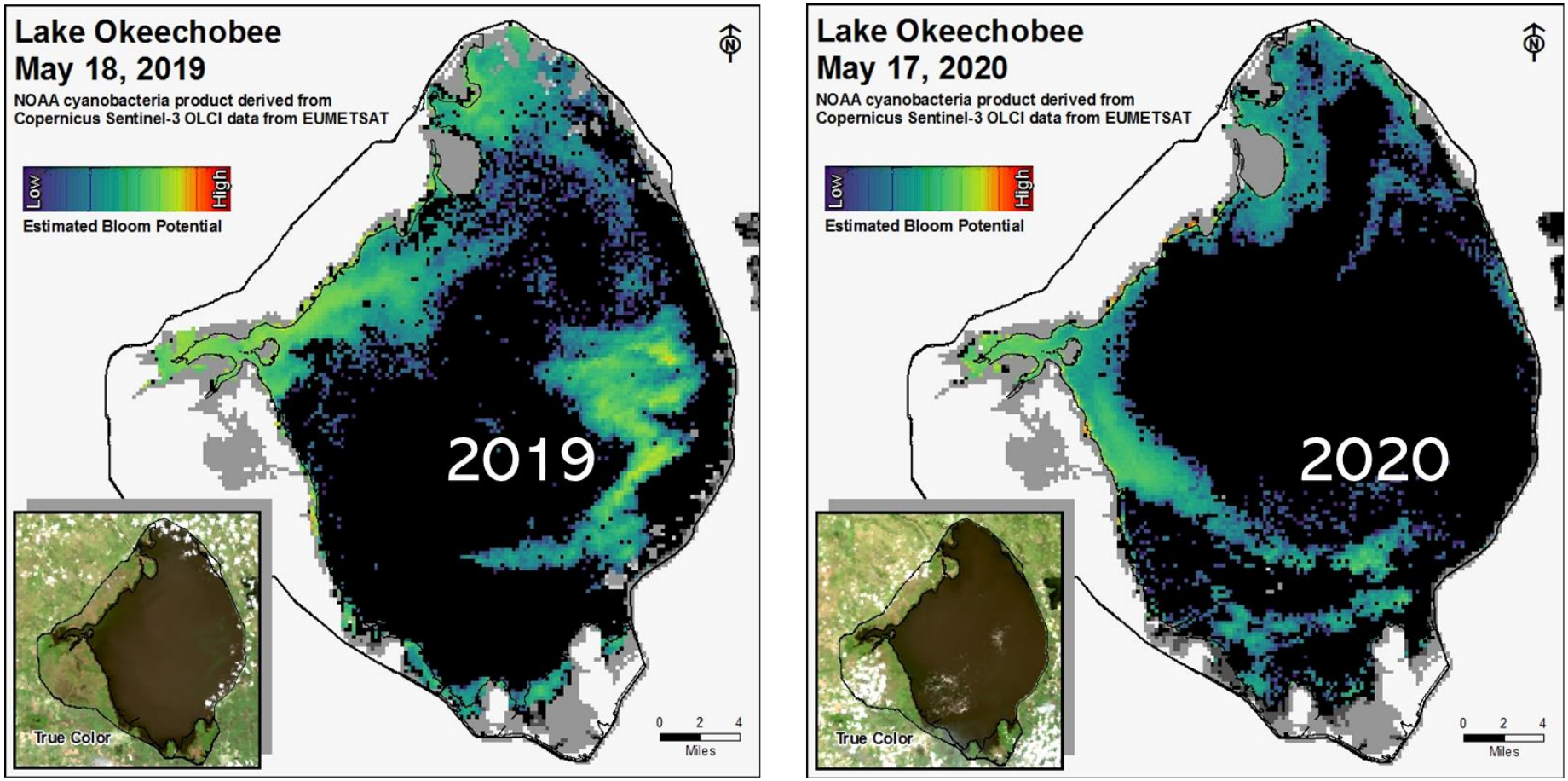


Figure 6. Potential for cyanobacterial blooms on Lake Okeechobee in mid-May 2019 and 2020, based on NOAA's harmful algal bloom monitoring system. Gray color indicates cloud cover.

ESTUARIES

St. Lucie Estuary:

Last week total inflow to the St. Lucie Estuary averaged approximately 513 cfs (Figures 1 and 2) and last month inflow averaged about 414 cfs. Last week's provisional averaged inflows from the tidal basin and the structures are shown in Table 1.

Table 1. Weekly average inflows (data are provisional).

Location	Flow (cfs)
Tidal Basin Inflow	445
S-80	0
S-308	-9
S-49 on C-24	0
S-97 on C-23	0
Gordy Rd. structure on Ten Mile Creek	68

Over the past week, salinity remained the same throughout the estuary (Table 2, Figures 3 and 4). The seven-day moving average of the water column (an average of the surface and bottom salinity) at the US1 Bridge is 24.2. Salinity conditions in the middle estuary are estimated to be within the good range for adult eastern oysters (Figure 3).

Table 2. Seven-day average salinity at three monitoring sites in the St. Lucie Estuary. Current average is in bold face type, previous average in parentheses. The envelope reflects the preferred salinity range for adult eastern oysters (*Crassostrea virginica*) in the middle estuary.

Sampling Site	Surface	Bottom	Envelope
HR1 (North Fork)	**20.0** (19.7)	**22.1** (22.4)	NA[1]
US1 Bridge	**23.4** (23.6)	**24.7** (24.4)	10.0-26.0
A1A Bridge	**30.4** (30.4)	**31.3** (31.3)	NA[1]

[1]Envelope not applicable

Caloosahatchee Estuary:

Last week total inflow to the Caloosahatchee Estuary averaged approximately 831 cfs (Figures 5 and 6) and last month inflow averaged about 579 cfs. Last week's provisional averaged inflows from the structures and the tidal basin are shown in Table 3.

Table 3. Weekly average inflows (data is provisional).

Location	Flow (cfs)
S-77	878
S-78	637
S-79	762
Tidal Basin Inflow	69

Over the past week in the estuary, surface salinity increased downstream of S79 (Table 4, Figures 7 & 8). The seven-day average salinity values are within the good range for adult eastern oysters at Cape Coral and in the fair range at Shell Point and at Sanibel (Figure 9). The seven-day average surface salinities (Table 4) are in the good range (0-10) for tape grass at Val I-75 and in the poor range (>15) at Ft. Myers.

Table 4. Seven-day average salinity at six monitoring stations in the Caloosahatchee Estuary. Current average is in bold, previous average in parentheses. The envelope at Val I-75 is for the protection of tape grass in the upper estuary and the envelope in the lower estuary reflects the preferred salinity range for adult eastern oysters (*Crassostrea virginica*).

Sampling Site	Surface	Bottom	Envelope
S-79 (Franklin Lock)	**1.6** (2.0)	**2.7** (1.7)	NA[1]
Val I75	**7.7** (5.6)	**8.5** (6.3)	0.0-5.0[2]
Ft. Myers Yacht Basin	**16.0** (13.5)	**18.1** (15.3)	NA
Cape Coral	**21.4** (21.4)	**24.0** (23.5)	10.0-30.0
Shell Point	**32.0** (31.9)	**32.1** (32.0)	10.0-30.0
Sanibel	**34.7** (34.1)	**35.1** (34.6)	10.0-30.0

[1]Envelope not applicable, [2]Envelope is based on a 2-week forecast 30-day average.

Forecast of surface salinity (Table 5 and Figure 10) at Val I-75 for the next two weeks using the autoregression model (Qiu and Wan, 2013) coupled with a linear reservoir model for the tidal basin predicts daily salinity ranging from 5.0 to 10.0 at the end of the two-week period for pulse release at S-79 ranging from 0 to 800 cfs and estimated Tidal Basin inflows of 52 cfs. The 30-day moving average surface salinity at Val I-75 is forecast to be between 5.9 and 7.6 (Table 5). The current salinity conditions at Val I-75 are outside of the envelope of salinity 0.0-5.0 for this site (Table 4).

Table 5. Predicted salinity at Val I-75 at the end of forecast period

Scenario	Q79 (cfs)	TB runoff (cfs)	Daily salinity	30 day Mean
A	0	52	10.0	7.6
B	300	52	8.5	7.0
C	450	52	6.9	6.6
D	650	52	5.4	6.1
E	800	52	5.0	5.9

Red tide

The Florida Fish and Wildlife Research Institute reported on May 15, 2020, that *Karenia brevis, the Florida red tide dinoflagellate, was not observed in samples collected from Lee County or Palm Beach* counties (no samples were analyzed this week from St. Lucie, Martin, or *Miami-Dade* counties).

Water Management Recommendations

Lake stage is in the Beneficial Use Flow sub-band. Tributary conditions are dry. The South Florida Water Management District's Lake Okeechobee Adaptive Protocol's Release Guidance suggests no release from the lake to the Caloosahatchee Estuary.

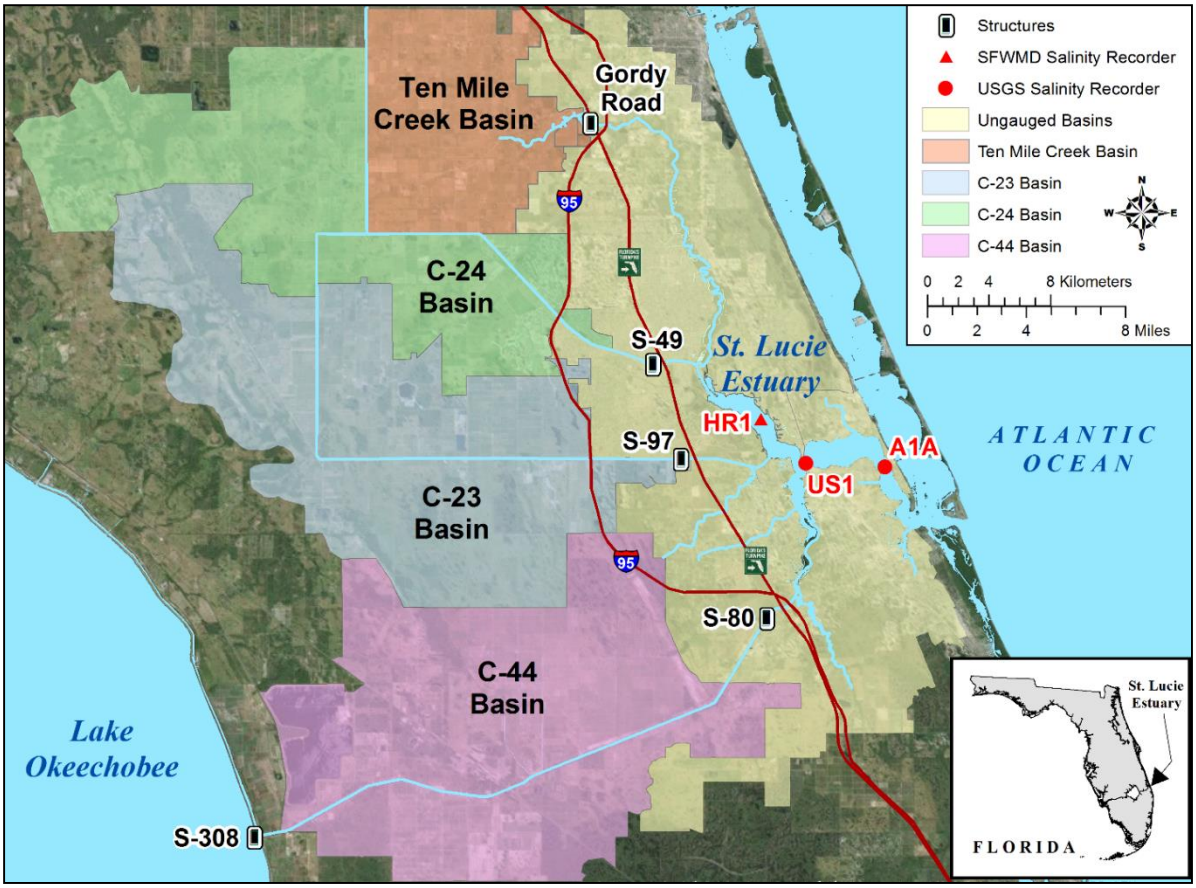


Figure 1. Basins, water control structures, and salinity monitoring for the St. Lucie Estuary.

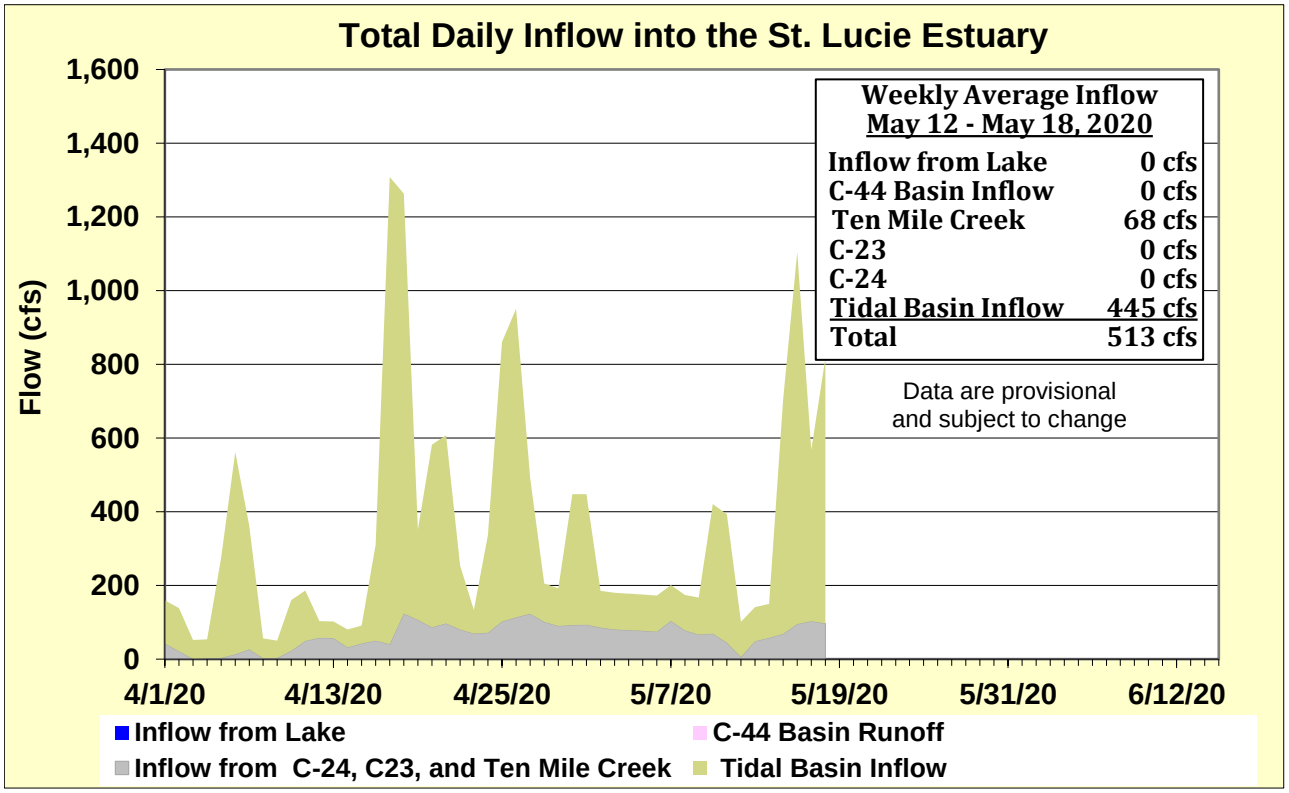


Figure 2. Total daily inflows from Lake Okeechobee and runoff from the C-44, C-23, C-24, Ten Mile Creek, and tidal basin into the St. Lucie Estuary.

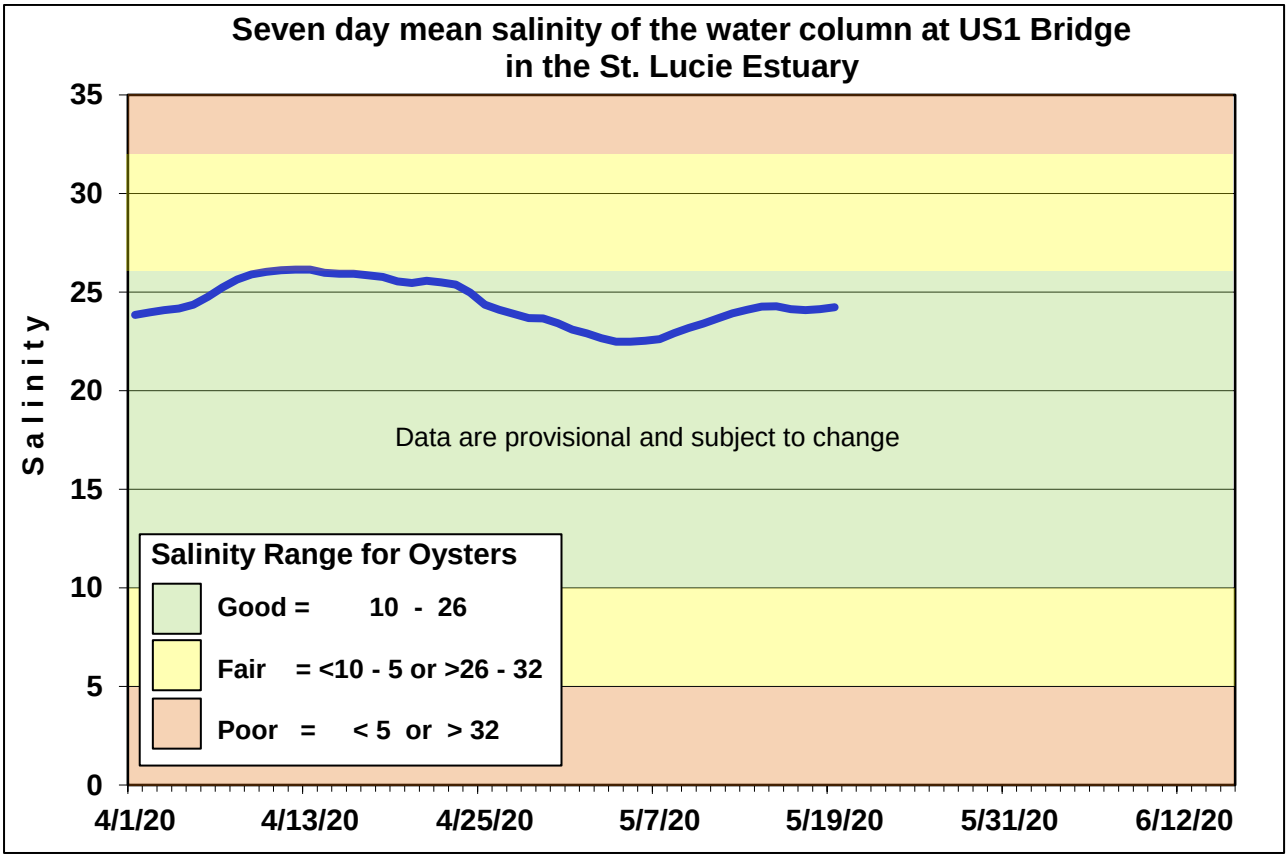


Figure 3. Seven-day mean salinity of the water column at the US1 Bridge.

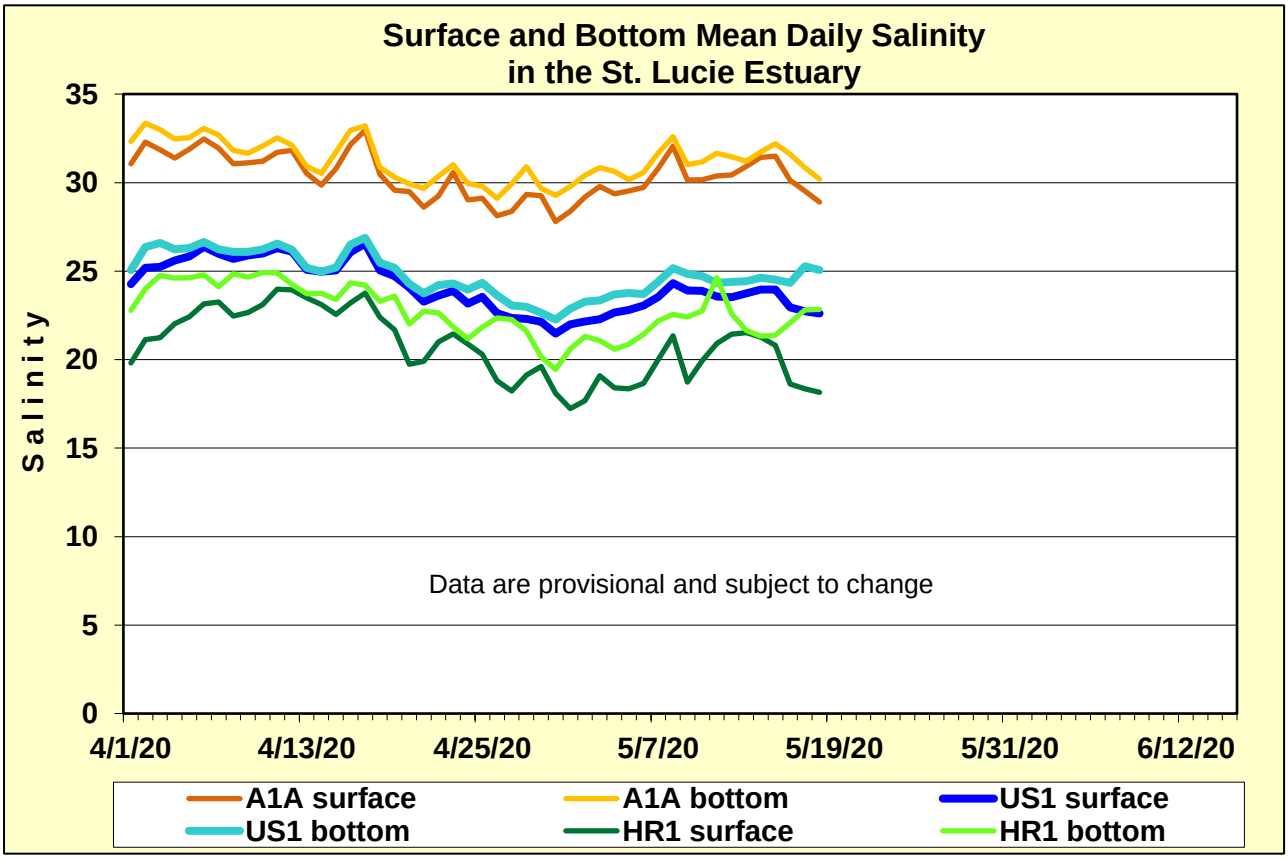


Figure 4. Daily mean salinity at the A1A, US1, and HR1 stations.

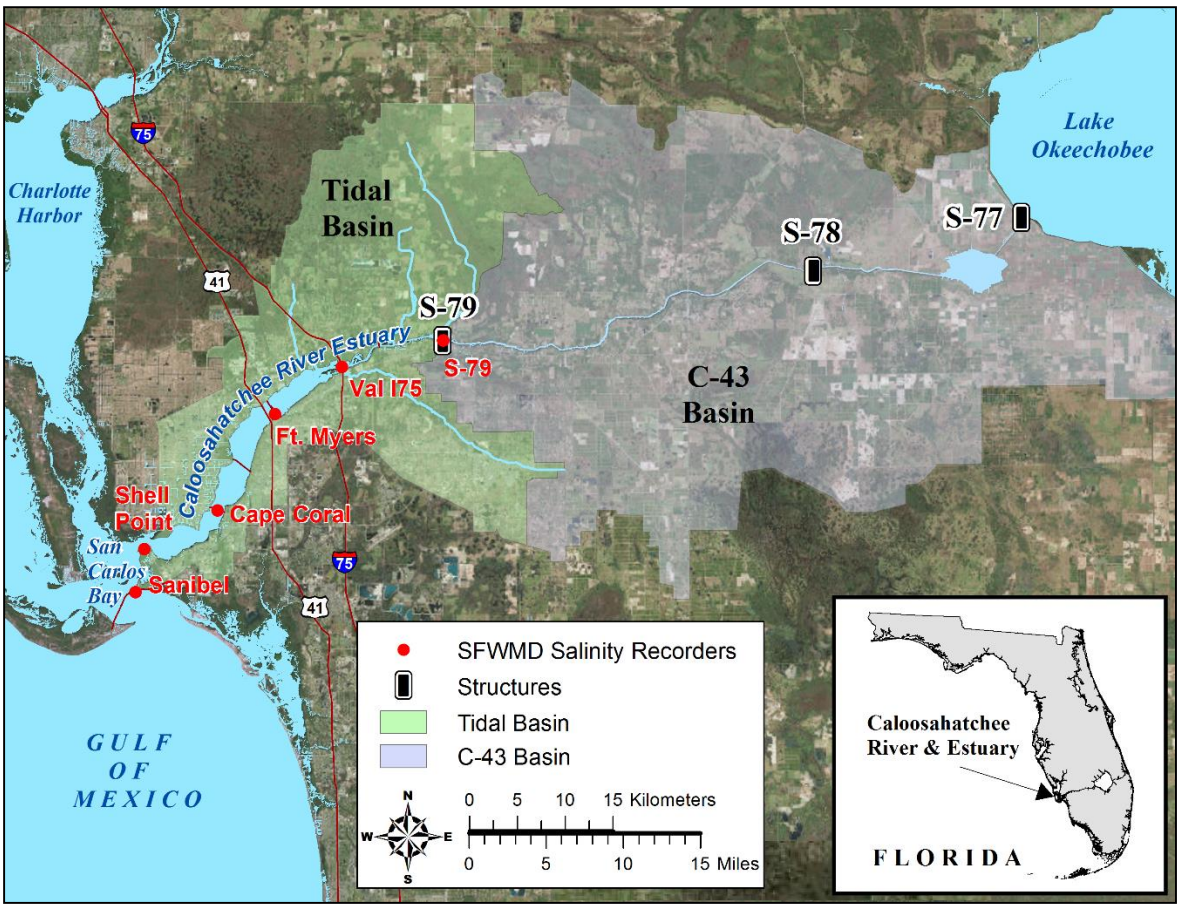


Figure 5. Basins, water control structures, and salinity monitoring for the Caloosahatchee Estuary.

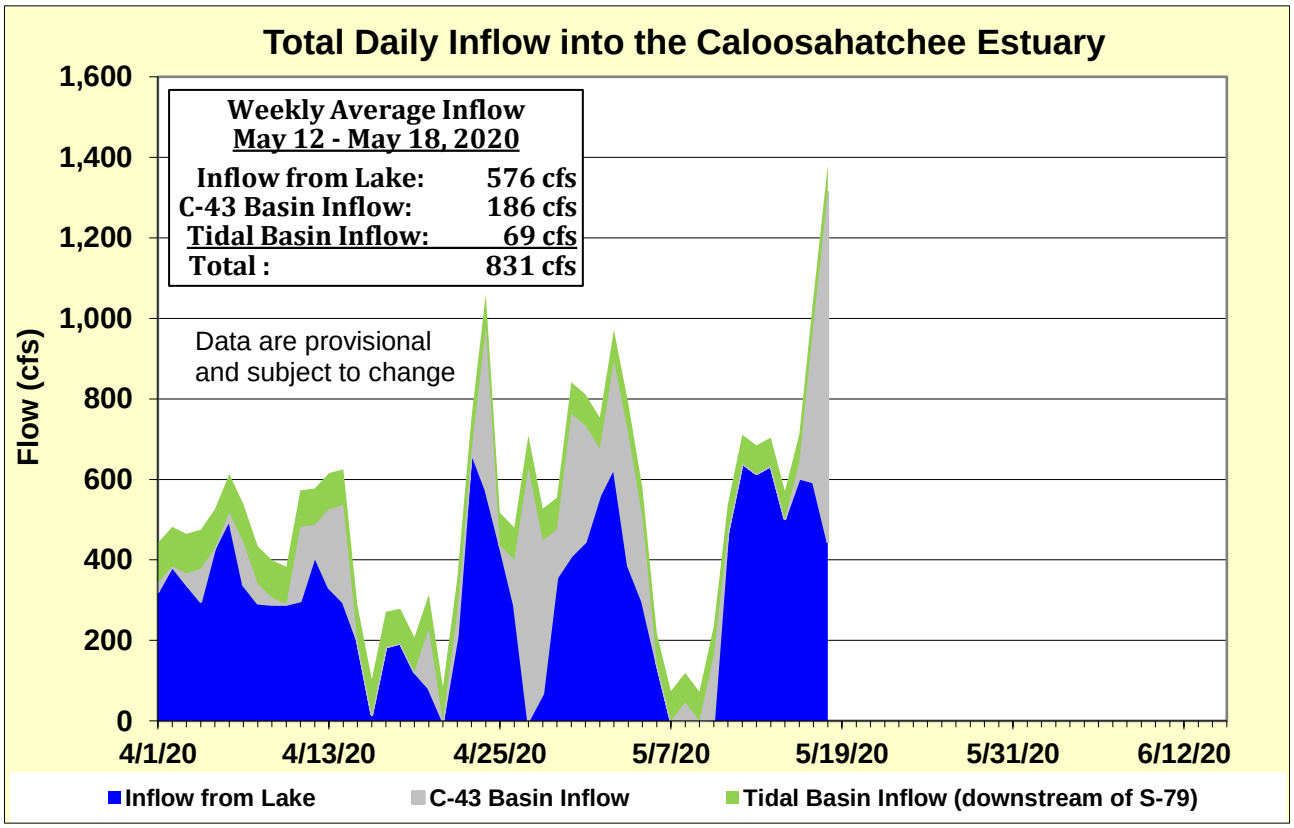


Figure 6. Total daily inflows from Lake Okeechobee, runoff from the C-43 basin

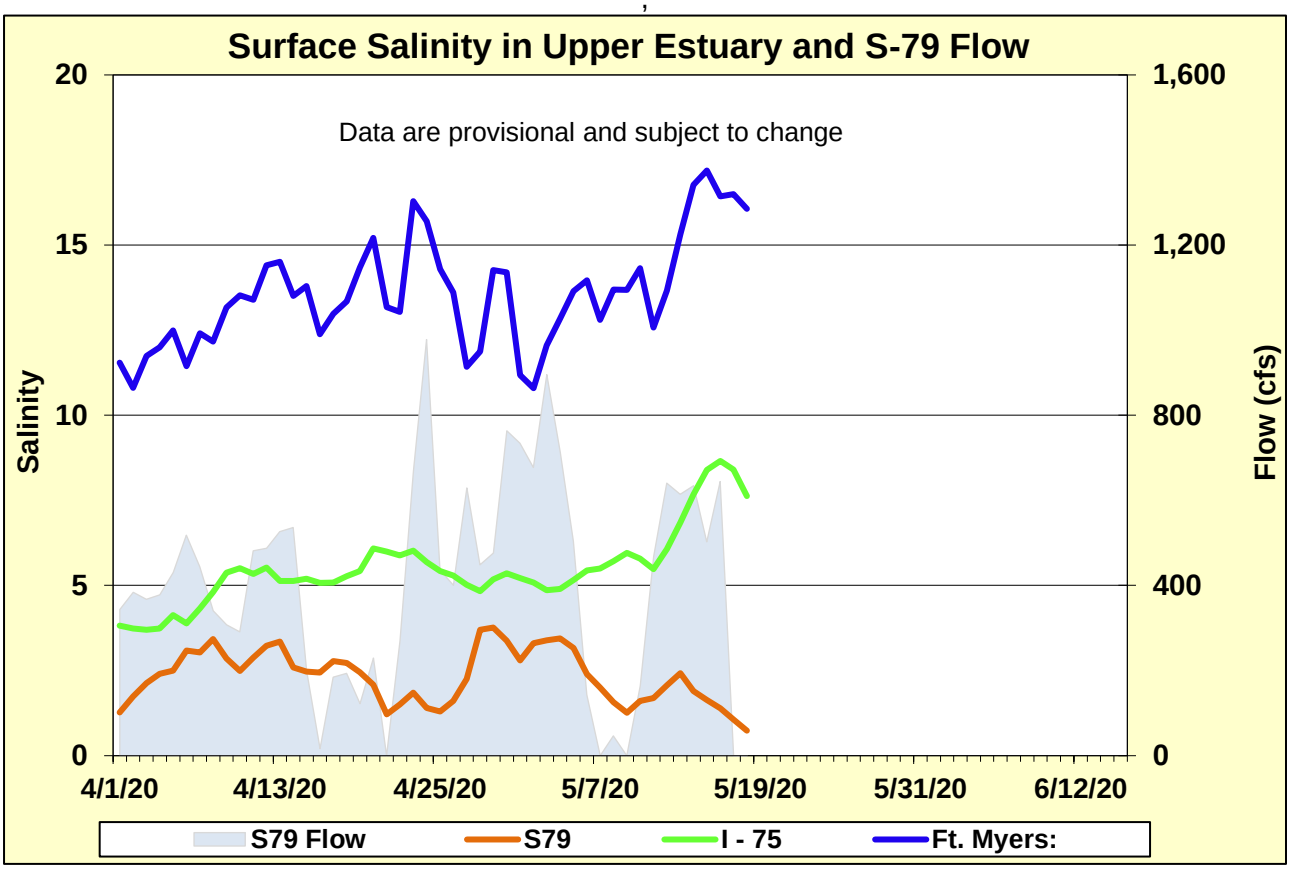


Figure 7. Daily mean flows at S-79 and salinity at upper estuary monitoring stations.

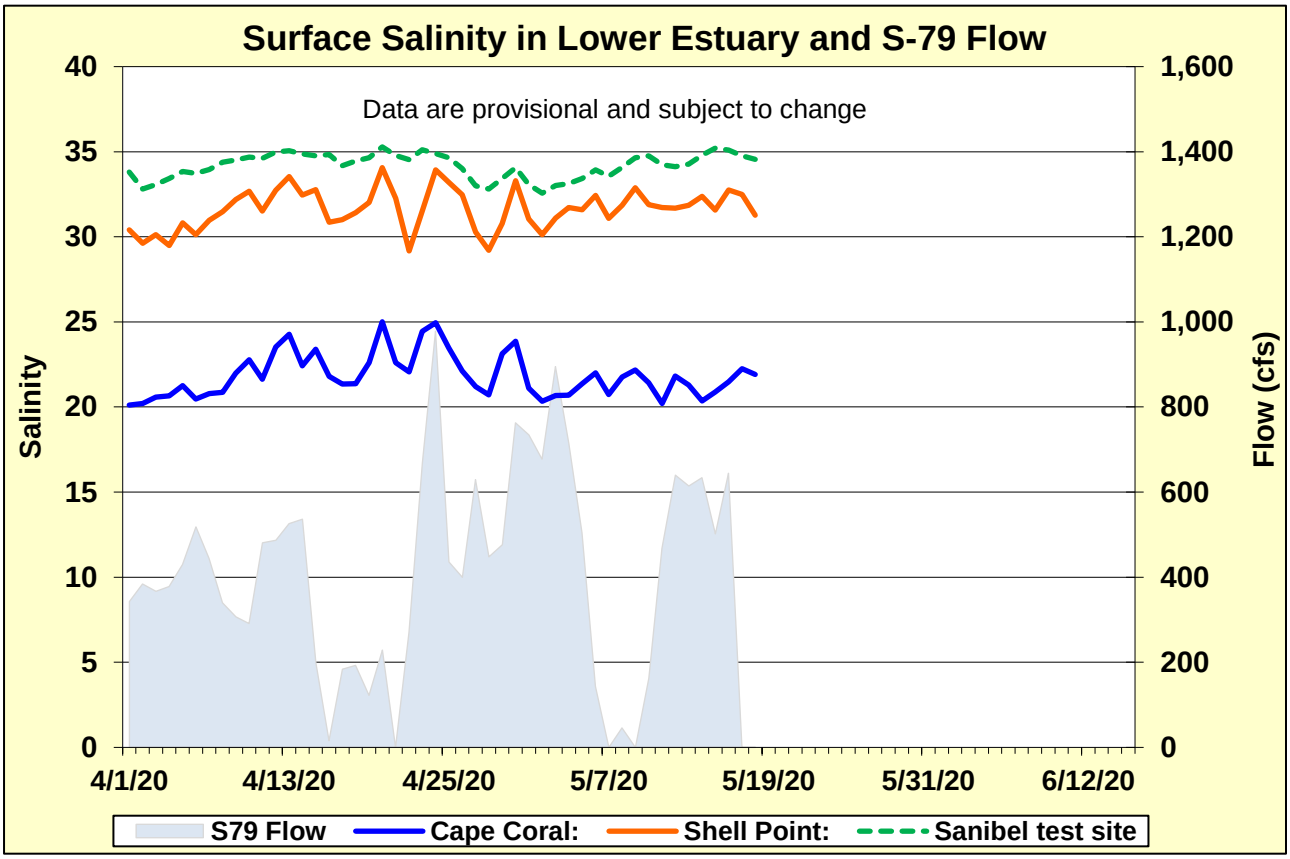


Figure 8. Daily mean flows at S-79 and salinity at lower estuary stations.

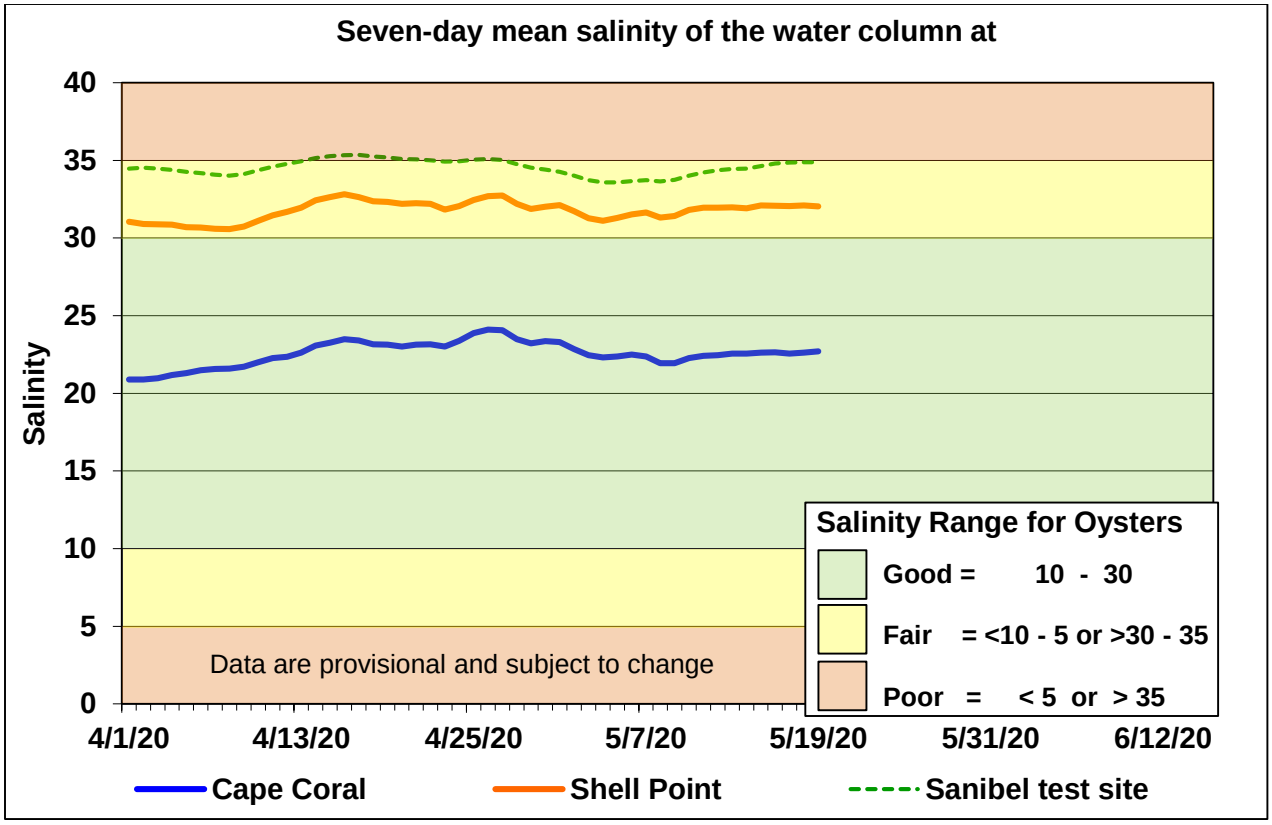


Figure 9. Seven-day mean salinity at Cape Coral, Shell Point, and Sanibel monitoring stations.

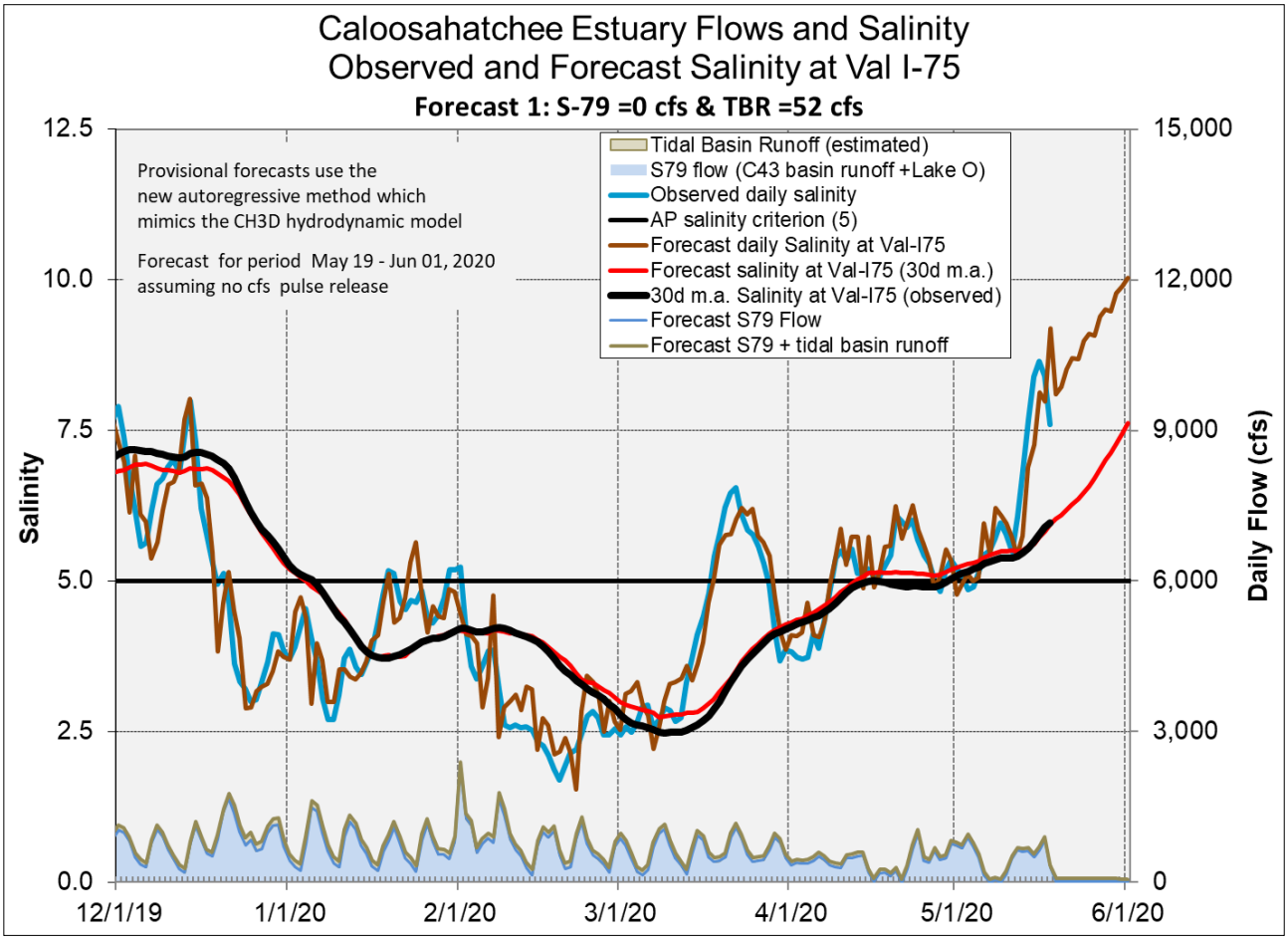


Figure 10. Forecasted Val I-75 surface salinity assuming no pulse release at S79.

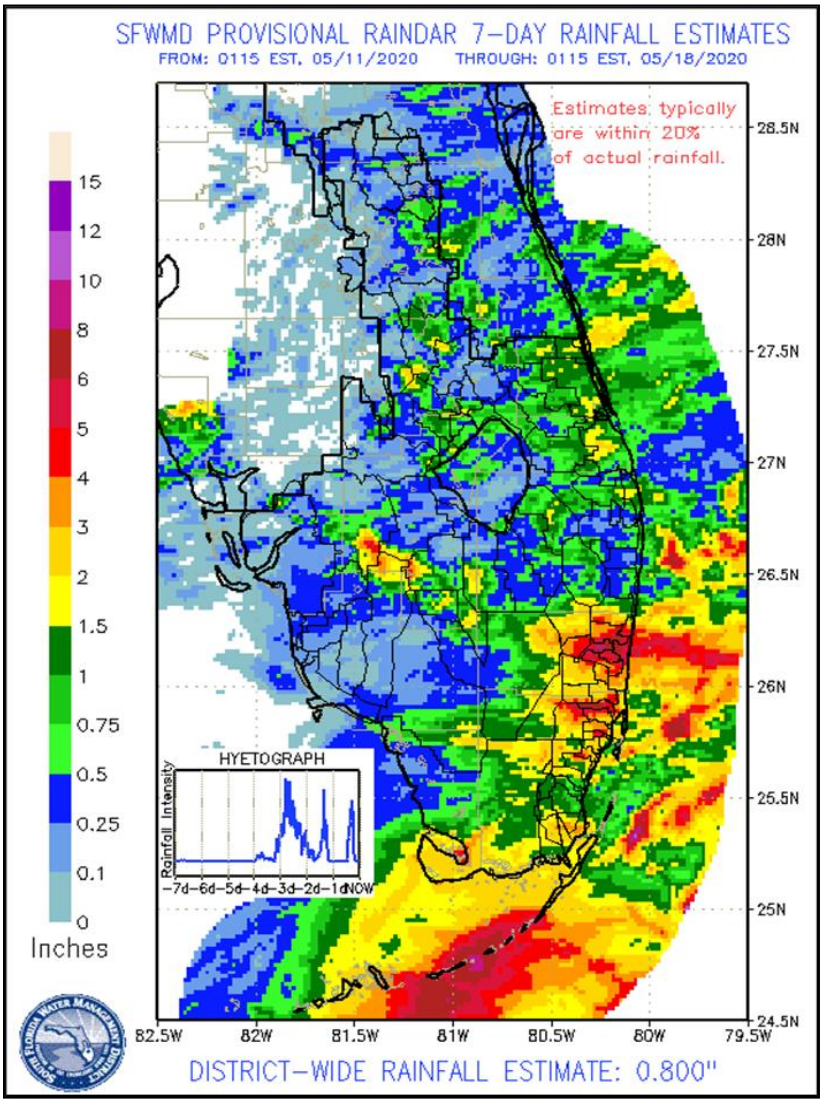
EVERGLADES

Scattered above average rainfall was recorded across the Everglades last week, with WCA-1 receiving the least. At the gauges monitored for this report (excluding those in WCA-1, ascension = 0.21 feet) stages rose on average 0.15 feet last week and changes ranged from -0.08 to +0.60. Evaporation was estimated at 1.92 inches last week.

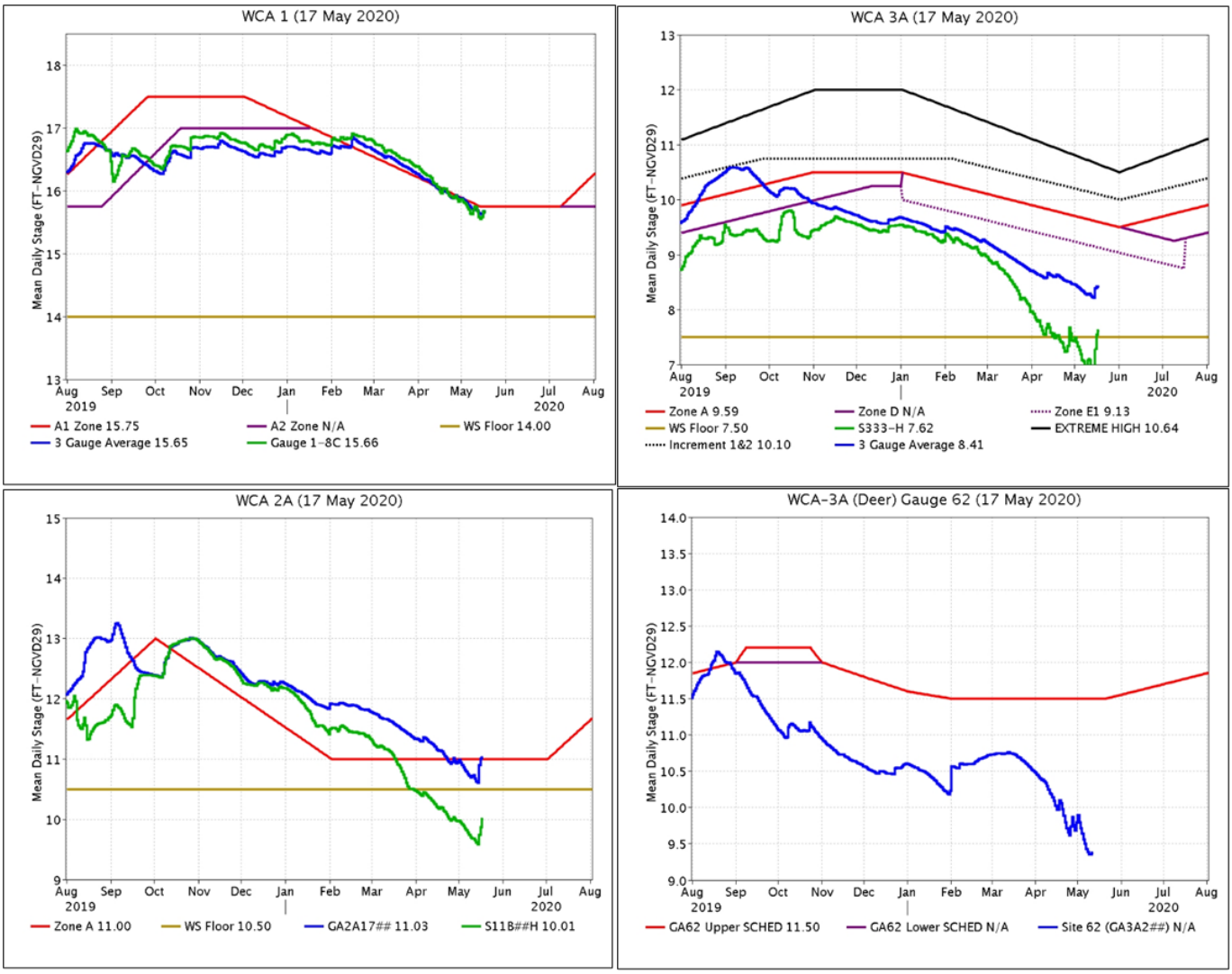
Everglades Region	Rainfall (Inches)	Stage Change (feet)
WCA-1	0.82	−0.07
WCA-2A	1.77	+0.34
WCA-2B	4.00	+0.28
WCA-3A✸	0.98	+0.10
WCA-3B	1.81	+0.12
ENP	1.35	+0.60

Good
Fair
Poor

✸ estimate due to sensor malfunction

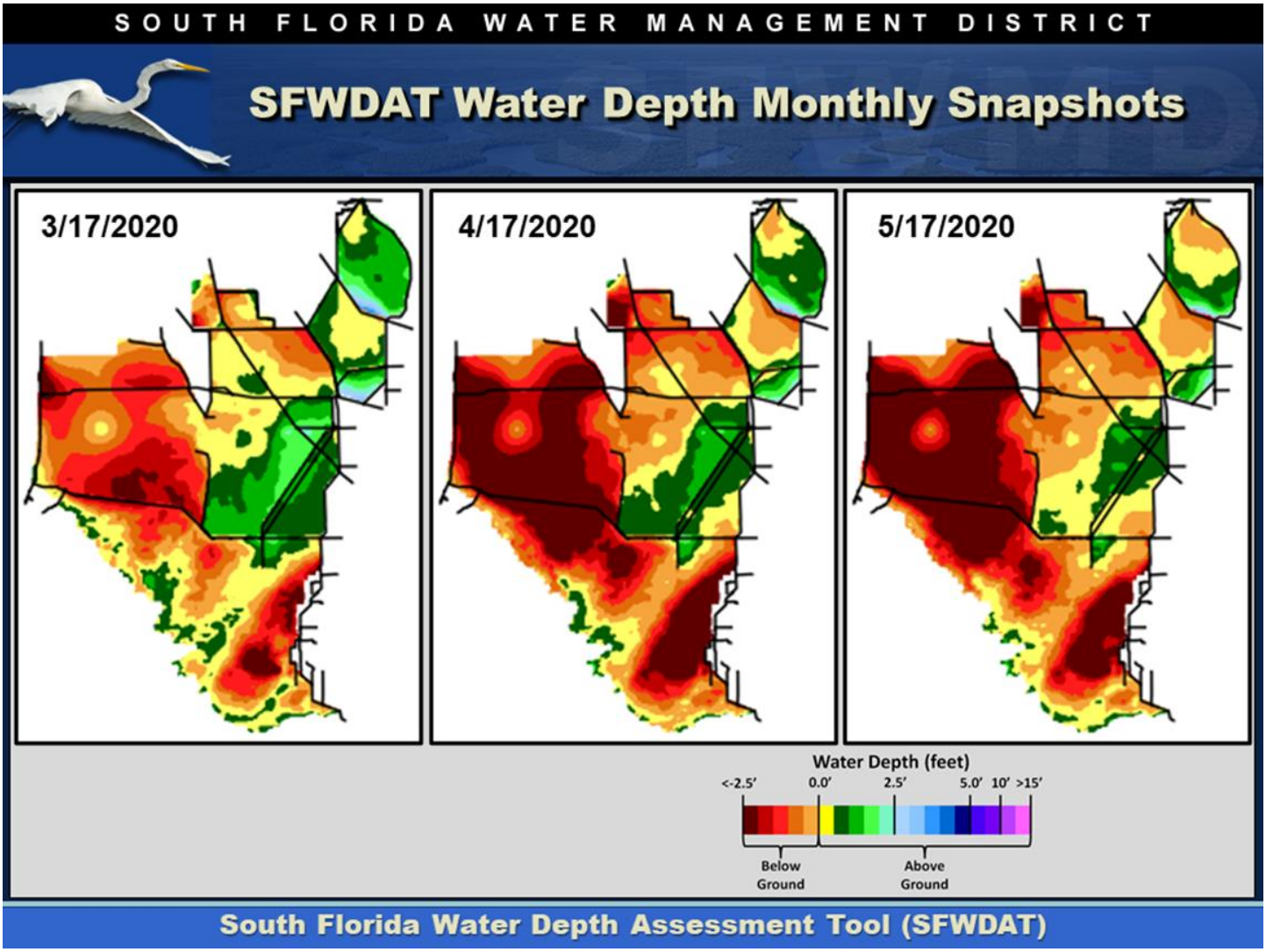


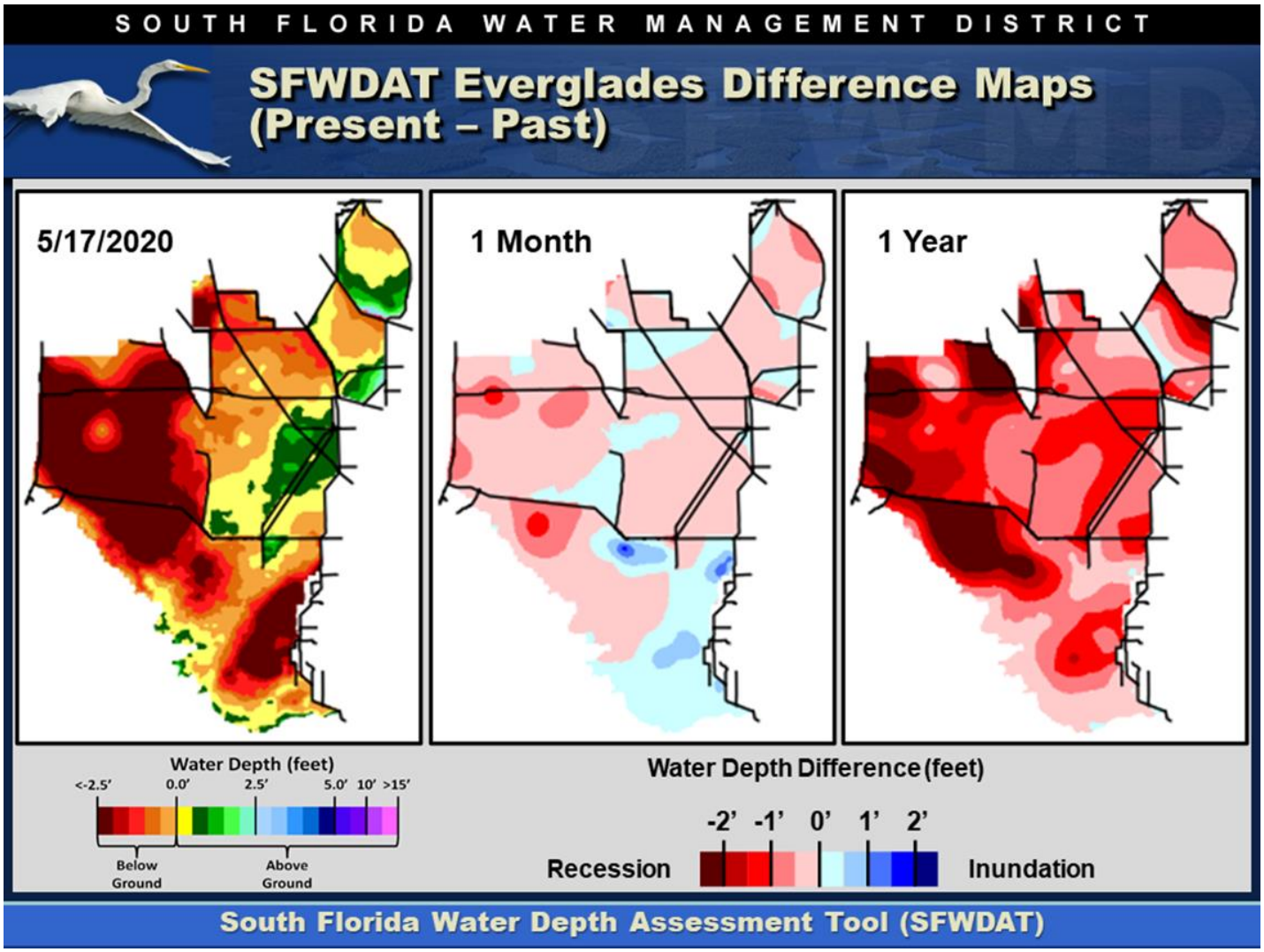
Regulation Schedules: WCA-1: Stage at the 1-8C Gauge continues to trend parallel to the falling regulation line last week, currently 0.09 feet below the Zone A1 line. WCA-2A: Stage at Gauge S11-B remained below the water supply floor of the regulation schedule last week but trends upwards, currently 0.49 feet below. WCA-3A: The Three Gauge Average stage trends up and towards regulation last week, still well below the falling Zone E1 regulation line, presently 0.72 feet below. S333-Hw is 0.12 feet above the water supply floor. WCA-3A at Gauge 62 (Northwest corner): Stage remained stable last week and is well below the Upper Schedule at 2.09 feet below the stable regulation line.



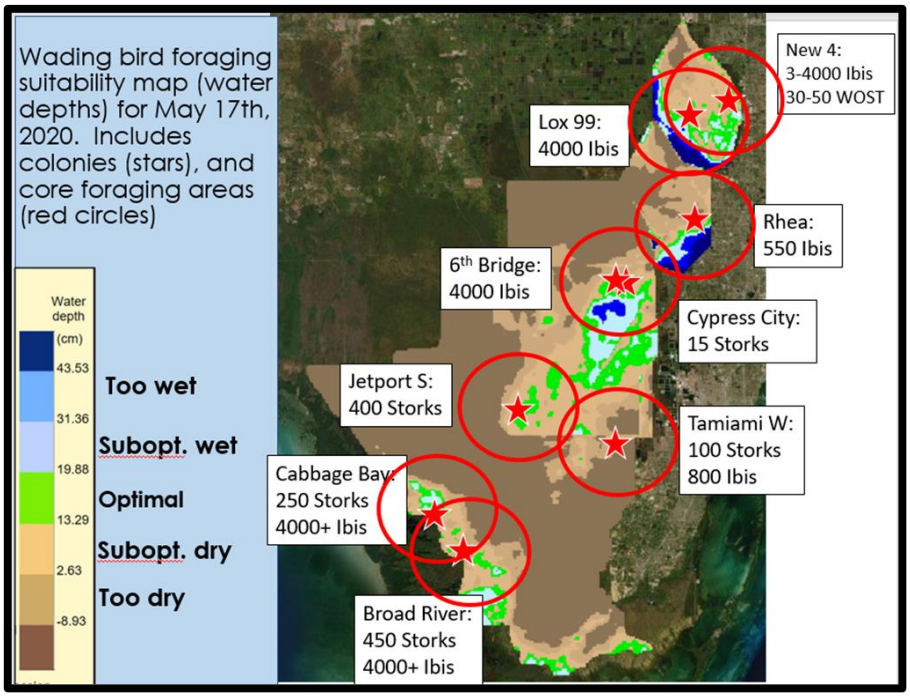
Water Depths: The WDAT tool for spatial interpolation of depth monthly snapshots indicate depths significantly below ground across WCA-3A North, and up to 1.5 feet below in the northeast as the drying trend stretches southward along the L-38W canal and up to 1.5 feet below in the northwest regions (with some stage ascension over the last month). Much of WCA3A-South is now also at or near ground surface in stage. Most of WCA-2A has dried down to ground surface, with the northern area of cattail expansion along the L-39 and south now significantly below ground for the last month. WCA-1 depths remain stable and drawing down from north to south. All the sloughs in ENP have all dried down to ground surface or near. Comparing WDAT water levels from present, over the last month the recession was moderate over a majority of the WCAs with northwestern WCA-3A and Mullet Slough even being slightly wetter. Looking back one year the stage difference patterns are starker. The entirety of the WCAs are significantly lower in stage. WCA-2A is most dramatically lower in stage in the northeastern regions of that basin and WCA-3A in the northwest. WCA-1 stages are significantly lower than they

were a year ago, particularly in the north. The WDAT model indicates a much drier condition in the western basins compared to a month and a year ago.

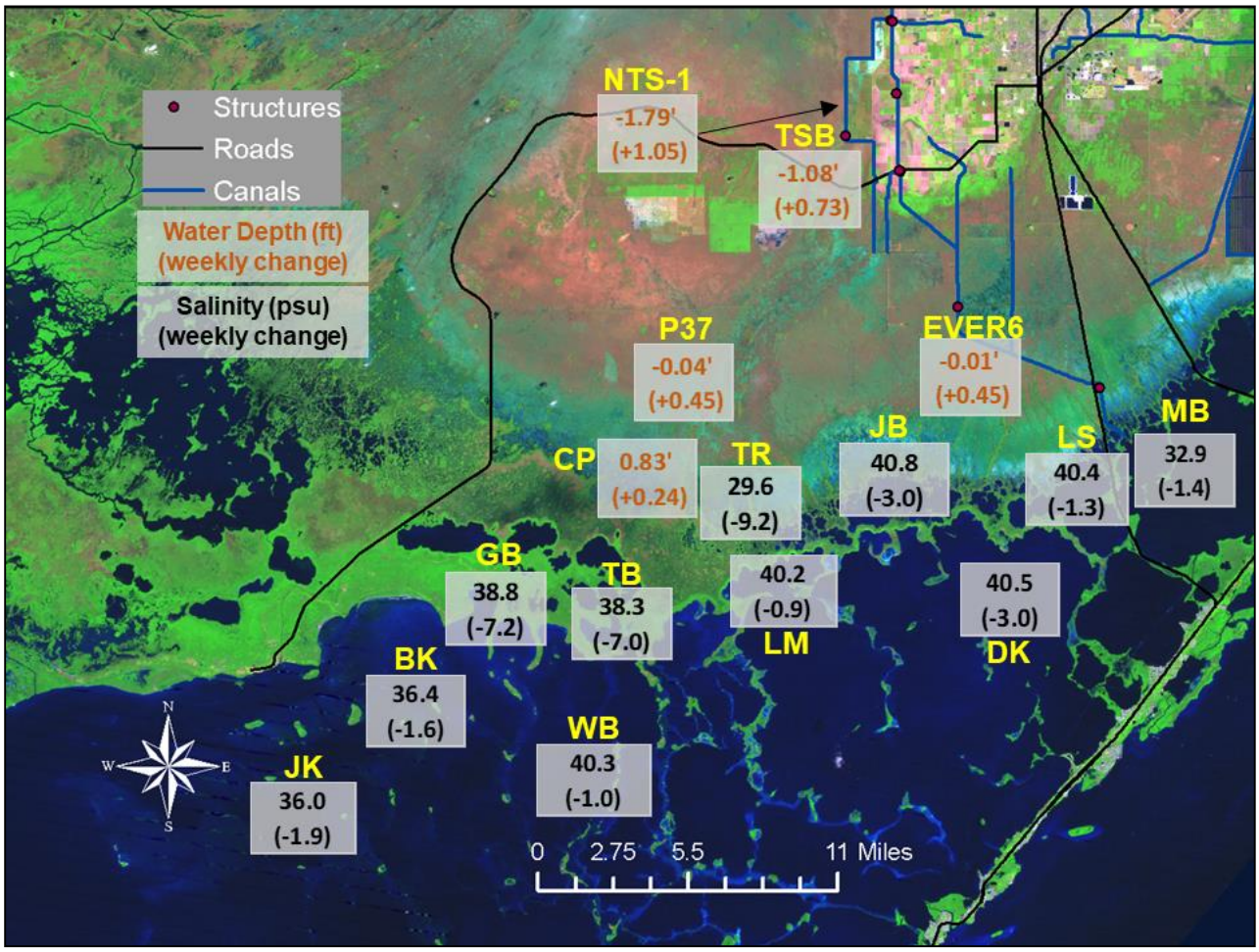


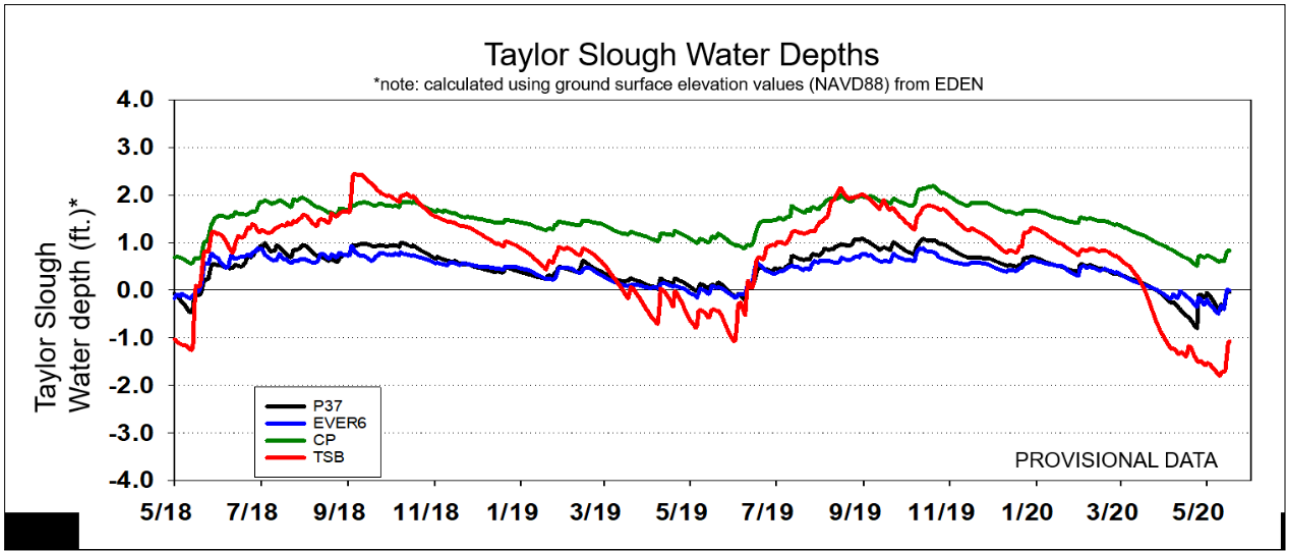


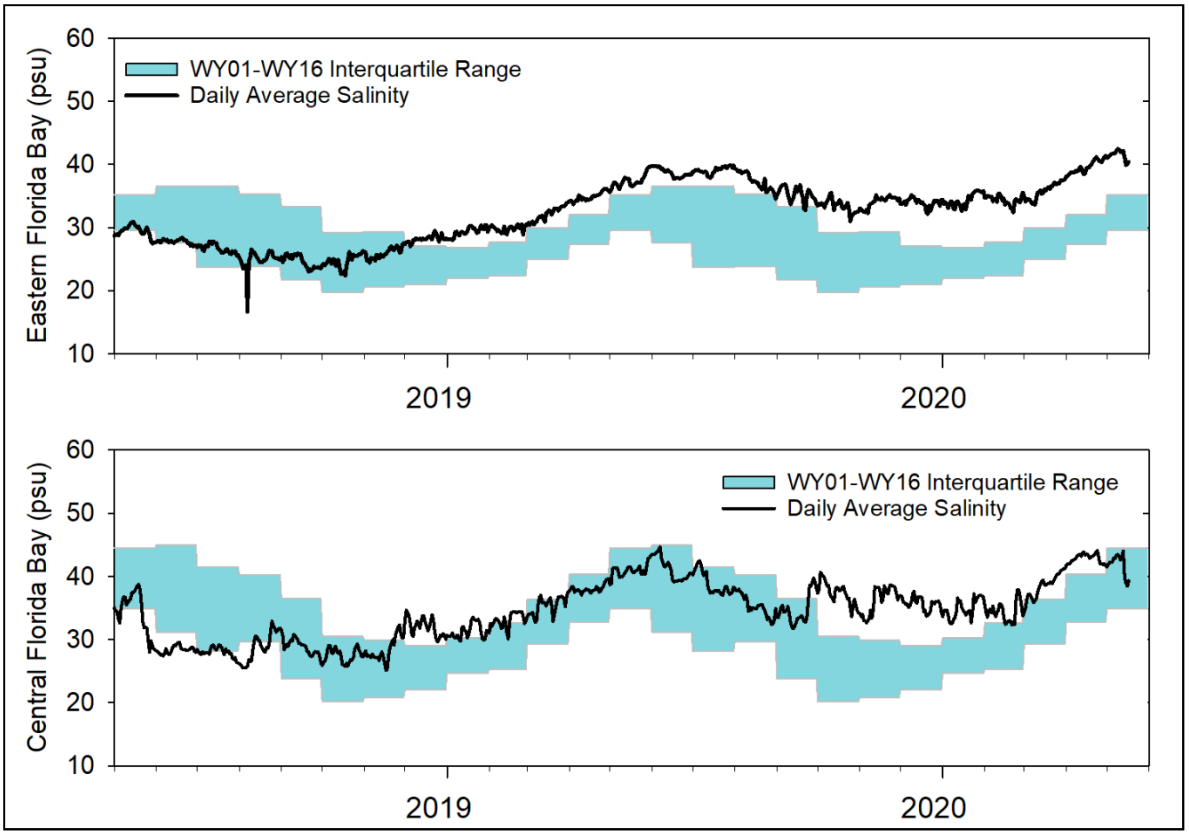
Wildlife: Wading birds HSI and core foraging areas, May 12, 2020.

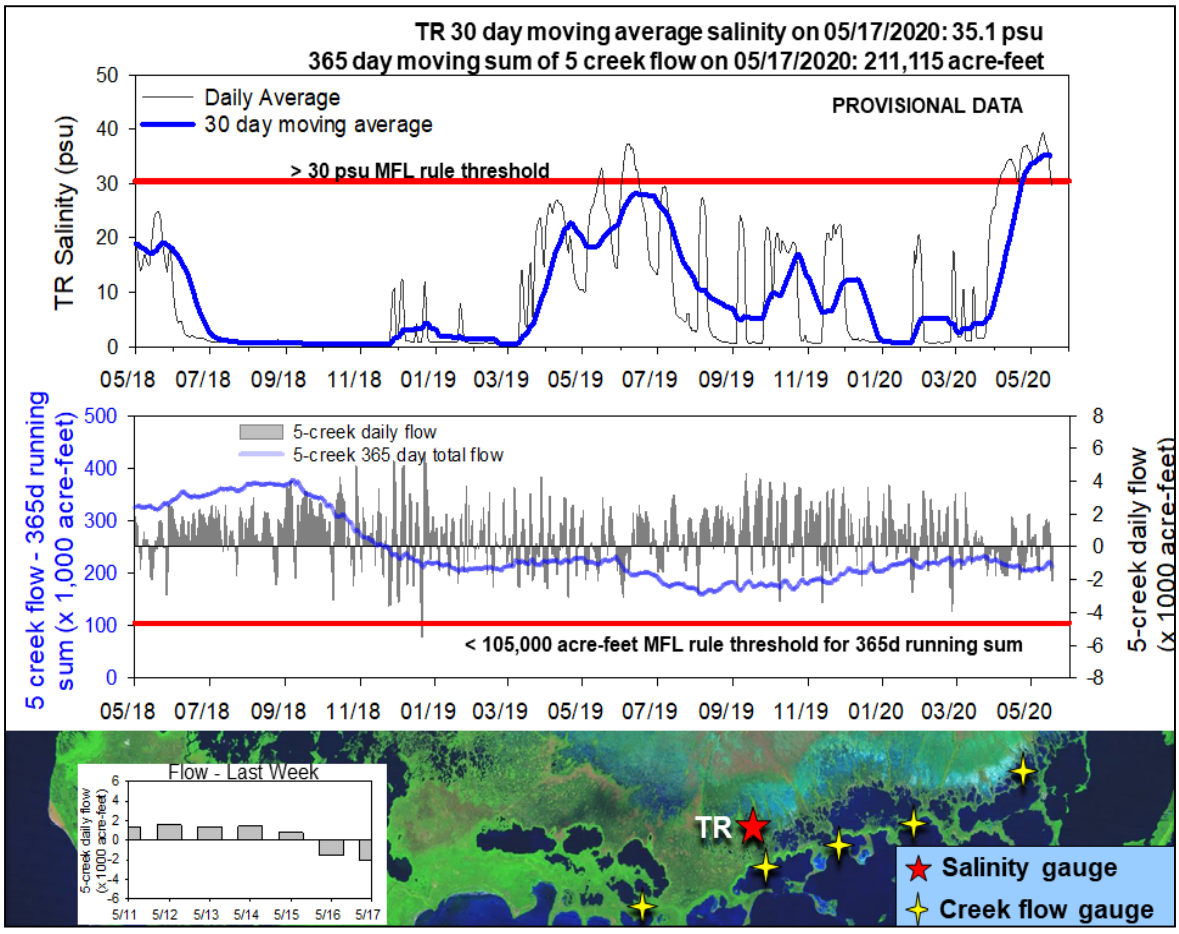


Taylor Slough Water Levels: An average of 2.20 inches of rain fell over Taylor Slough and Florida Bay on Sunday while stage increased an average of 0.58 feet over the past week with all stations except one remaining belowground. Craighead Pond (CP) is the only station with above ground water levels, but this station is below sea level. When the upstream system fills up enough to start westward flows, water quality will need to be assessed before discharging into the slough.






Eastern Florida Bay (psu)
WY01-WY16 Interquartile Range
Daily Average Salinity
60
50
40
30
20
10
2019
2020
Central Florida Bay (psu)
WY01-WY16 Interquartile Range
Daily Average Salinity
60
50
40
30
20
10
2019
2020


TR 30 day moving average salinity on 05/17/2020: 35.1 psu
365 day moving sum of 5 creek flow on 05/17/2020: 211,115 acre-feet
TR Salinity (psu)
Daily Average
30 day moving average
PROVISIONAL DATA
> 30 psu MFL rule threshold
50
40
30
20
10
0
05/18
07/18
09/18
11/18
01/19
03/19
05/19
07/19
09/19
11/19
01/20
03/20
05/20
5 creek flow - 365d running sum (x 1,000 acre-feet)
5-creek daily flow
5-creek 365 day total flow
< 105,000 acre-feet MFL rule threshold for 365d running sum
500
400
300
200
100
0
8
6
4
2
0
-2
-4
-6
-8
5-creek daily flow (x 1000 acre-feet)
Flow - Last Week
5-creek daily flow (x 1000 acre-feet)
6
4
2
0
-2
-4
-6
5/11
5/12
5/13
5/14
5/15
5/16
5/17
TR
Salinity gauge
Creek flow gauge

Florida Bay Salinities: Average salinity in Florida Bay decreased 3 psu this week due to rain. Florida Bay average salinity is still 2 psu higher than the historical average for this time of year, but Central and Western Florida Bay salinities are 2 psu lower than the historical average. All stations experienced at least a 0.9 psu decrease.

Florida Bay MFL: Salinity at the TR station in the mangrove zone (tracked for the Florida Bay MFL) decreased from 39 psu to 30 over the last week. The 30-day moving average increased 0.4 psu to end at 35.1 psu. Weekly flow from the 5 creeks identified by yellow stars on the map totaled about 2,800 acre-feet last week with positive flows until Saturday. The 365-day moving sum of flow from the five creeks (tracked as part of the Florida Bay MFL criteria) increased 3,000 acre-feet this week to end at 211,115 acre-feet, between the 25th percentile (192,885 acre-feet) and the median (249,091 acre-feet). Creek flow are provisional USGS data.

Water Management Recommendations

Discharges into historically over drained northern WCA-3A have the potential to maintain saturated soils and protect these over-drained portions of the Everglades. The ecological benefits include conserving peat and lowering the risk of muck fires especially as depths near the seasonal low in regions with muck fire potential. While the moderation of recession rates in any part of WCA-3A North are beneficial, available water sent through the S-150 into Northeastern WCA-3A would have greater ecological value than the same amount of water discharged in Northwestern 3A. This is due in part to the greater potential for muck fire in the northeastern region versus the northwestern regions of that basin.

Water management undertaken to minimize a reversal (trying to keep the rise in stage less than 0.2 feet per week) that would negatively impact the core wading bird foraging areas in WCA-3A South and WCA-1 would have ecological benefit.

Flows towards Taylor Slough and Florida Bay freshen salinity conditions within the nearshore areas of Florida Bay and decrease the currently stressful conditions for seagrasses and fauna as nearshore salinities remain elevated, decreasing the estuarine gradient within the bay.

More specific recommendations appear in the summary table below. The red text represents new or modified information or recommendations.

SFWMD Everglades Ecological Recommendations, May 19th, 2020 (red is new)			
Area	Weekly change	Recommendation	Reasons
WCA-1	Stage decreased by 0.07'	Maintaining the recession rate and conserving water in this basin has ecological benefit.	Protect downstream habitat and wildlife. Provide wading bird foraging opportunities as wading bird nesting continues in this basin.
WCA-2A	Stage increased by 0.34'	Moderating the recession rate and conserving water in this basin has ecological benefit.	Protect upstream/downstream habitat and wildlife. Provide wading bird foraging opportunities as wading bird nesting continues in this basin.
WCA-2B	Stage increased by 0.28'	Moderating the recession rate and conserving water in this basin has ecological benefit.	Protect upstream/downstream habitat and wildlife. Provide wading bird foraging opportunities as wading bird nesting continues nearby this basin.
WCA-3A NE	Stage increased by 0.02'	Conserving water and slowing the recession in this basin has ecological benefit as current water depths are well below seasonal averages. Inflows to this region have ecological benefit.	Protect and conserve peat soils, prevent muck fires.
WCA-3A NW	Stage increased by 0.02'	Conserving water and slowing the recession in this basin has ecological benefit as current water depths. Inflows to this region have ecological benefit.	
Central WCA-3A S	Stage increased by 0.20'	Conserving water and slowing the recession in this region has ecological benefit as current water depths are below seasonal averages. Inflows to this region have great ecological benefit.	Protect upstream/downstream habitat and wildlife. Protect wading bird foraging as nesting continues.
Southern WCA-3A S	Stage increased by 0.07'		
WCA-3B	Stage increased by 0.12'	Conserving water in this basin has benefit.	Protect tree islands, upstream/downstream habitat and wildlife.
ENP-SRS	Stage increased by 0.60'	Make discharges to the Park according to the 2012 WCP rainfall plan	Protect upstream/downstream habitat and wildlife.
Taylor Slough	Stage changes ranged from +0.24' to +1.03'	Move water southward as possible	When available, provide freshwater buffer for downstream conditions.
FB- Salinity	Salinity changes ranged −0.9 to −7.2 psu	Move water southward as possible	When available, provide freshwater to maintain low salinity buffer and promote water movement.