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, Assistant Executive Director, Executive Office Staff

FROM: SFWMD Staff Environmental Advisory Team

DATE: February 13, 2020

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Weather Conditions and Forecast

Below-average rains over most of the District the next couple of weeks but potential for some moderate rains developing east this weekend. Some limited moisture over the District will help fuel some scattered light showers today and Wednesday and then some light to moderate showers Thursday. A cold front is forecast to move in from the north bring moderate showers during the day Friday and then this activity should shift southward to south Florida Friday night. While dry air is expected to spread over central Florida behind the front, the boundary is forecast to stall near south Florida which should keep moderate showers in the forecast mainly east Saturday and Sunday. In the extended range, fairly persistent high pressure over the area should continue a pattern of below-average rainfall over most of the District for Week 2.

Kissimmee

Tuesday morning stages were 53.9 feet NGVD (4.1 feet below schedule) in East Lake Toho, 54.4 feet NGVD (0.6 feet below schedule) in Toho, and 51.7 feet NGVD (0.3 feet below schedule) in Kissimmee-Cypress-Hatchineha; headwater stages were 46.4 feet NGVD at S-65A and 25.7 feet NGVD at S-65D. Tuesday morning discharges were 928 cfs at S-65, 912 cfs at S-65A, 869 cfs at S-65D and 636 cfs at S-65E. Dissolved oxygen concentration in the Kissimmee River averaged 9.2 mg/L for the week through Sunday. Kissimmee River mean floodplain depth on Sunday was 0.29 feet. Recommendations made in previous week: Begin a fish and wildlife recession on Lake Tohopekaliga starting 2/7/2020 to reach low pool (52 feet) on June 1. Today's recommendation: USACE recommends maintaining S-65A discharge at 900 cfs or less to protect construction work on the Kissimmee River floodplain.

Lake Okeechobee

Lake Okeechobee stage was 12.93 feet NGVD on February 10, 2020, down 0.03 feet from the previous week, and down 0.12 feet from the previous month. The Lake remains in the Base Flow sub-band, where it has been since September 11, 2019. Water levels moved below the ecological envelope (which varies seasonally from 12.5 – 15.5 feet NGVD +/- 0.5 feet) on October 15, 2019 and are currently 1.14 feet below the bottom of the envelope. 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. Wading bird and snail kite nesting efforts are likely to be lower for the second consecutive year on the Lake if stages continue below the ecological envelope throughout the breeding season.

Estuaries

Total inflow to the St. Lucie Estuary averaged 1,001 cfs over the past week with no flow coming from Lake Okeechobee. Salinities decreased at HR1 and US-1 but little changed at A1A. Salinity at the US1 Bridge is in the good range for adult eastern oysters. Total inflow to the Caloosahatchee Estuary averaged 1,112 cfs over the past week with 161 cfs coming from the Lake. Salinity decreased in the upper part of the estuary (S-79 to Cape Coral) but little changed in the lower part. Salinities are in the good range for tape grass at Val I-75 and Ft. Myers. Salinities are in the good range for adult eastern oysters at Cape Coral and Shell Point and in the fair range at Sanibel.

Lake stage is in the Base Flow sub-band of 2008 LORS. Tributary hydrological conditions are wet. The 2008 LORS release guidance suggests releases of up to 450 cfs at S-79 and up to 200 cfs at S-80.

Stormwater Treatment Areas

Over the past week, 6,500 ac-ft of Lake Okeechobee water was delivered to the FEBs/STAs. The total amount of Lake releases sent to the FEBs/STAs in WY2020 (since May 1, 2019) is approximately 87,000 acre-feet. The total amount of inflows to the STAs in WY2020 is approximately 874,000 acre-feet. Most STA cells are above target, except STA-1E cells which are near target and STA-5/6 cells that continue to dry out. STA-1E Western Flow-way is offline for West Distribution Cell levee repairs and 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-3/4 Eastern Flow-way for energy dissipator installation, in STA-1E Eastern and Central Flow-way for Eastern Distribution Cell levee repairs, in STA-1E Central Flow-way, STA-2 Flow-way 3, and STA-2 Flow-way 4 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. This week, if 2008 LORS recommends Lake releases to the WCAs and the conditions allow, releases will be sent to STA-2 or A-1 FEB/STA-3/4.

Everglades

Current stages in the WCA-3A remain below average (Site 62 in the northwest is -0.33 below and Site 63 in the northeast is -0.70 below) for this time of year and salinities are above average in Florida Bay. Conserving fresh water in the Everglades, distributing it to where depths are low (WCA-3A North) and allowing it to flow south has important ecological benefit. As wading bird nesting begins in the Everglades, ecological recommendations move towards moderating recession rates where and when possible. Generally, this time of year rates from -0.05 to -0.09 feet per week are desirable to optimize conditions for prey concentration and capture. However, given the below average stages in key foraging areas it currently remains ecologically desirable to conserve as much water as possible. This recommendation is expected to change as wading bird nesting increases in the Everglades. Near average precipitation fell over Taylor Slough and Florida Bay this last week keeping stages steady and a slight reduction in average salinity. Despite that reduction, FB remains 5 psu above average and the lack of an estuarine gradient between the nearshore and the bay remains problematic. Recent rains have helped to bring salinities slightly lower before temperatures increase.

Supporting Information

KISSIMMEE BASIN

Kissimmee Basin Rainfall

The Upper Kissimmee Basin received 0.75 inches of rainfall in the past week and the Lower Basin received 1.02 inches (SFWMD Daily Rainfall Report 2/10/2020).

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: 2/11/2020

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)						
							2/9/20	2/2/20	1/26/20	1/19/20	1/12/20	1/5/20	12/29/19
Lakes Hart and Mary Jane	S-62	56	LKMJ	61.0	R	61.0	**0.0**	0.0	0.0	-0.1	0.0	0.0	0.2
Lakes Myrtle, Preston, and Joel	S-57	26	S-57	61.2	R	61.2	**0.0**	0.1	0.0	0.0	0.1	0.1	0.1
Alligator Chain	S-60	0	ALLI	63.5	R	64.0	**-0.5**	-0.5	-0.6	-0.5	-0.5	-0.5	-0.7
Lake Gentry	S-63	0	LKGT	61.5	R	61.5	**0.0**	0.0	-0.1	-0.1	-0.1	-0.1	-0.3
East Lake Toho	S-59	0	TOHOE	53.9	R	58.0	**-4.1**	-3.7	-3.4	-3.2	-3.1	-2.8	-2.9
Lake Toho	S-61	693	TOHOW, S-61	54.5	R	55.0	**-0.5**	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5
Lakes Kissimmee, Cypress, and Hatchineha	S-65	853	KUB011, LKIS5B	51.7	R	52.1	**-0.4**	-0.8	-0.7	-0.6	-0.6	-0.7	-1.0

[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 8. Kissimmee River floodplain stages at selected stations are shown in Figure 9.

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: **2/11/2020**

Metric	Location	1-Day Average	Average for the Preceeding 7-Days[1]								
		2/9/2020	2/9/20	2/2/20	1/26/20	1/19/20	1/12/20	1/5/20	12/29/19	12/22/19	12/15/19
Discharge (cfs)	S-65	922	**853**	808	719	606	408	211	283	317	347
Discharge (cfs)	S-65A[2]	916	**824**	767	736	557	445	314	317	315	302
Discharge (cfs)	S-65D[2]	897	**881**	785	777	632	438	553	454	408	344
Headwater Stage (feet NGVD)	S-65D[2]	25.91	**25.79**	25.76	25.77	25.78	25.76	25.75	25.84	25.76	25.81
Discharge (cfs)	S-65E[2]	916	**861**	759	713	601	434	502	441	386	342
Discharge (cfs)	S-67	0	**0**	0	0	0	4	0	0	0	0
DO (mg/L)[3]	Phases I & II/III river channel	9.3	**9.2**	9.1	8.5	8.0	8.3	8.2	8.6	9.1	8.4
Mean depth (feet)[4]	Phase I floodplain	0.29	**0.24**	0.18	0.18	0.25	0.20	0.26	0.23	0.16	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)

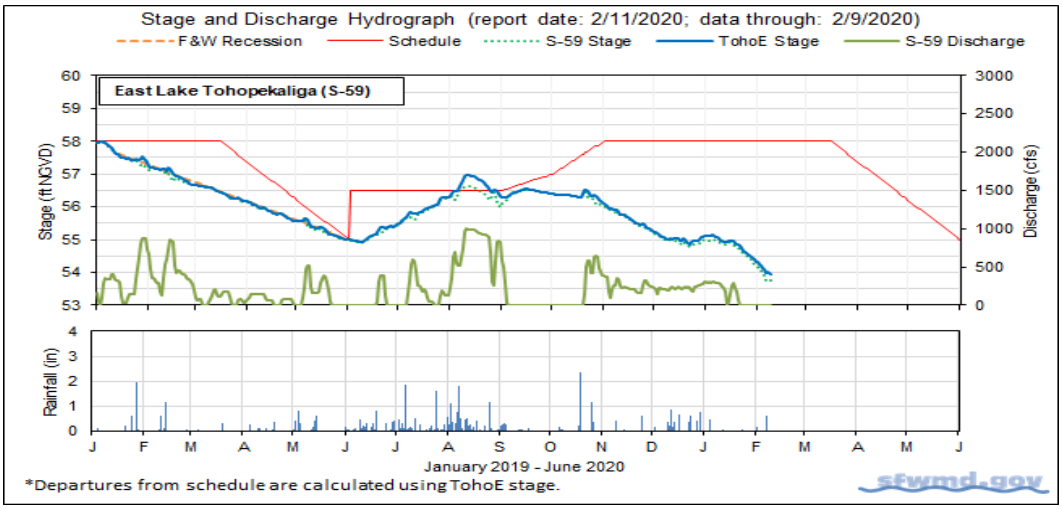


Figure 1.

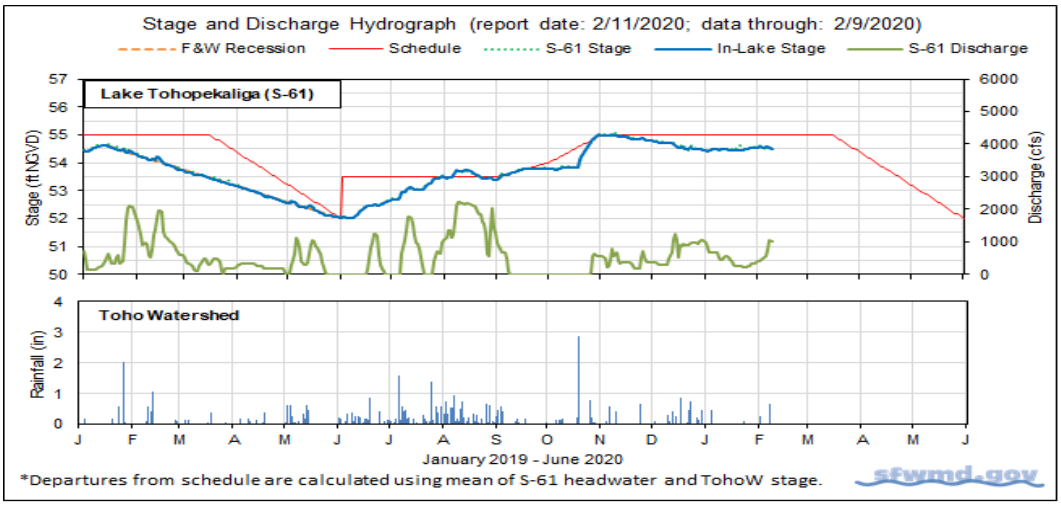


Figure 2.

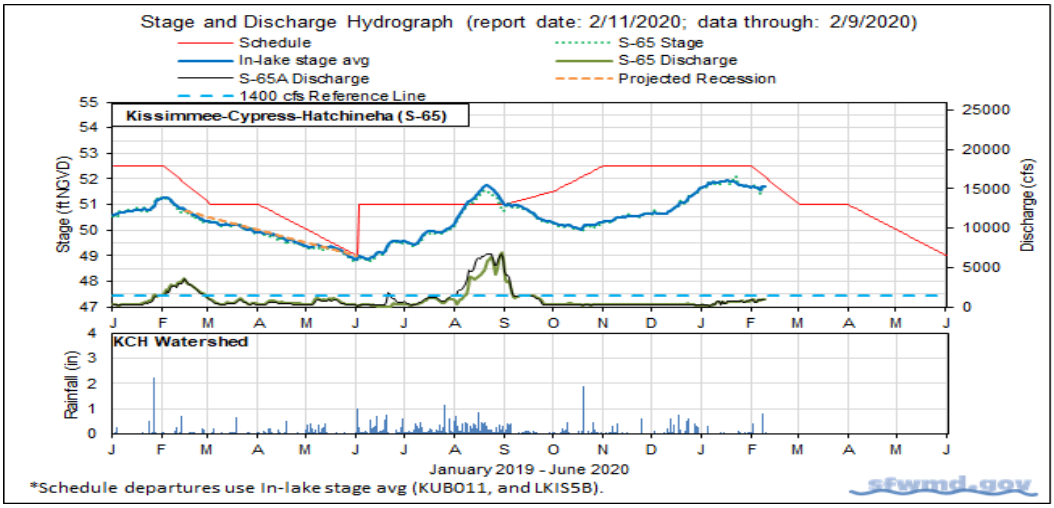


Figure 3.

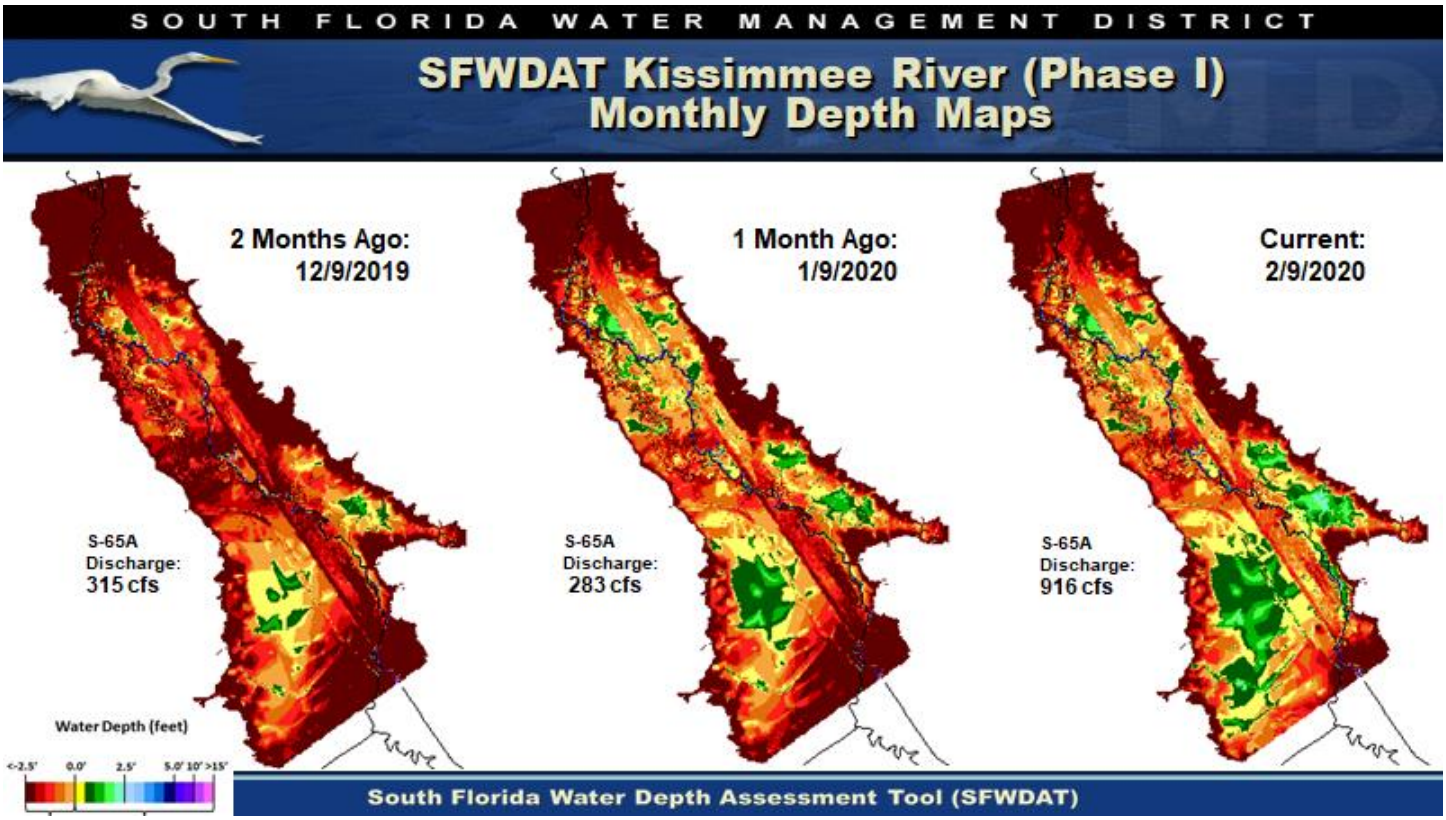


Figure 4. Phase I area floodplain water depths for this week, one month ago, and two months ago. Note that the WDAT color-coding has been modified to accommodate greater water depths; these maps are not directly comparable to Kissimmee Basin WDAT maps published prior to January 16, 2012.

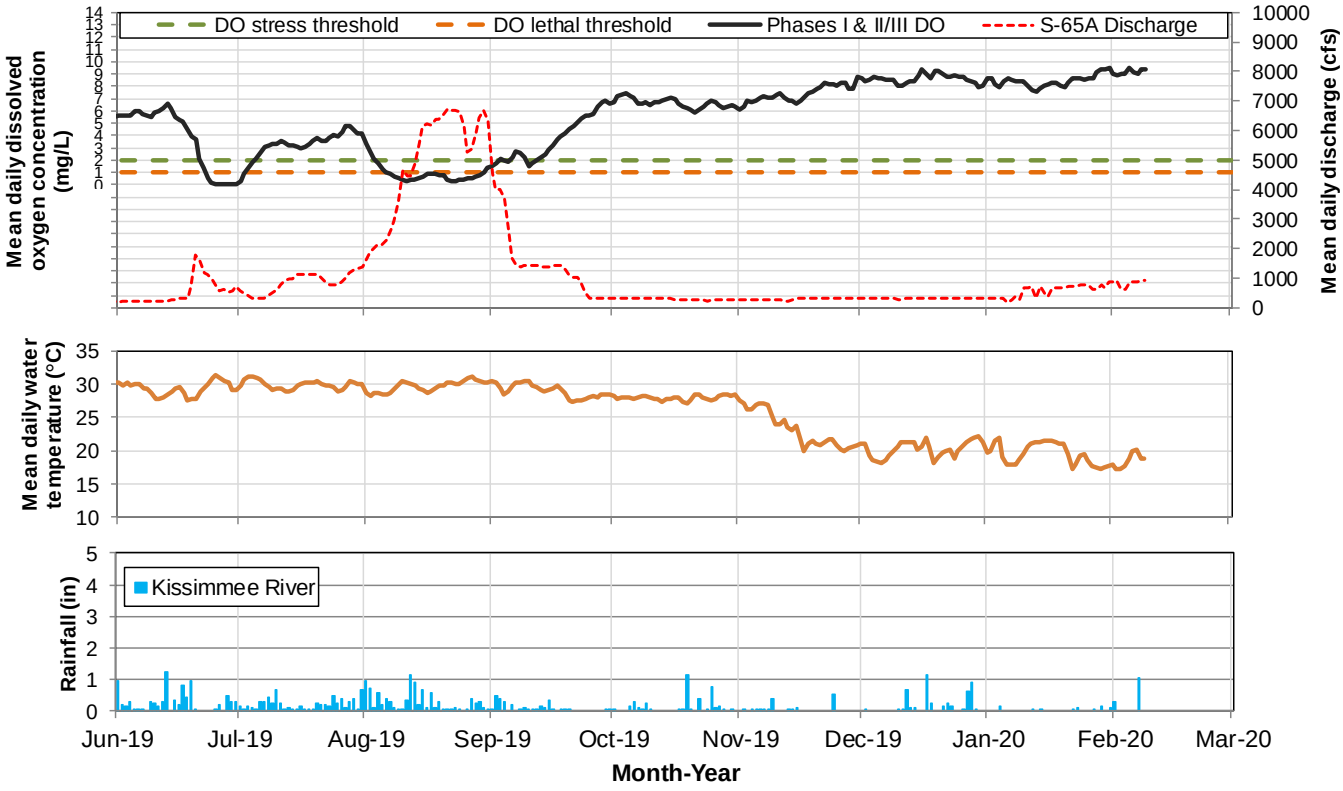


Figure 5. Mean daily dissolved oxygen, discharge, temperature and rainfall in the Phases I/II/III river channel.

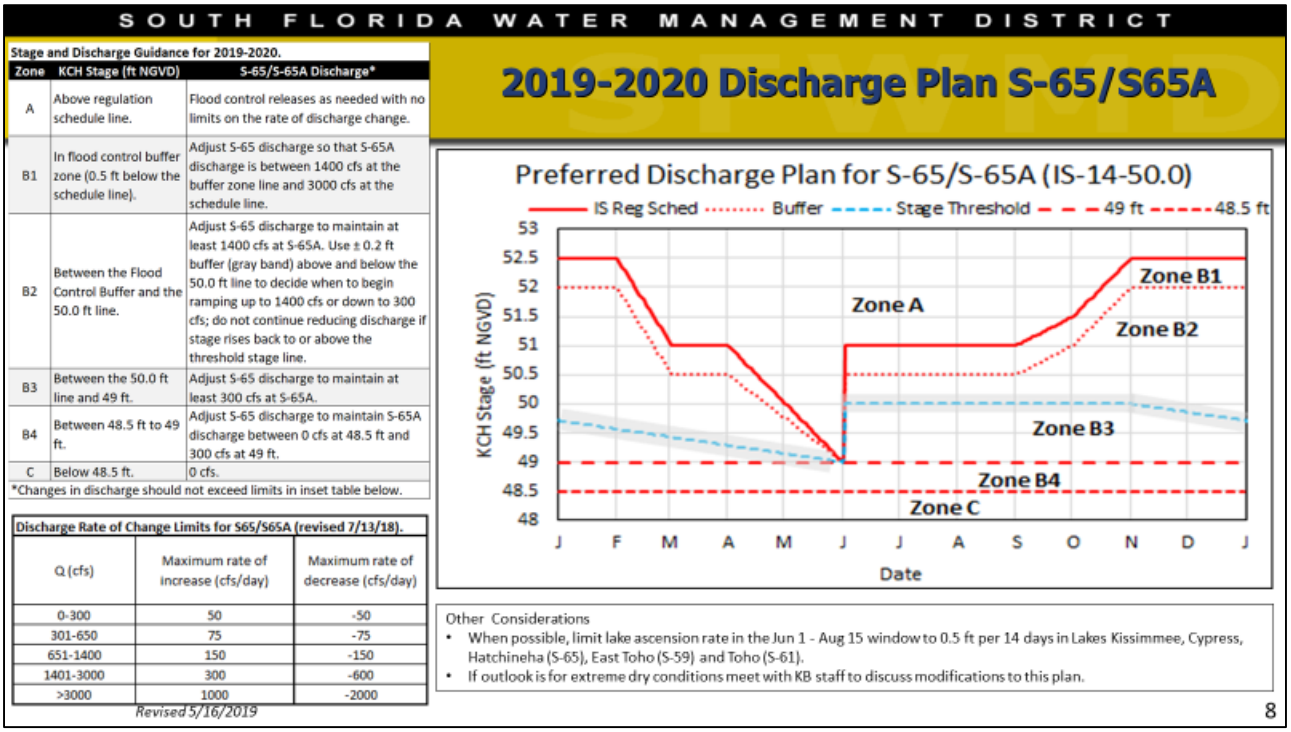


Figure 6. The 2019-2020 Discharge Plan for S-65/S-65A.

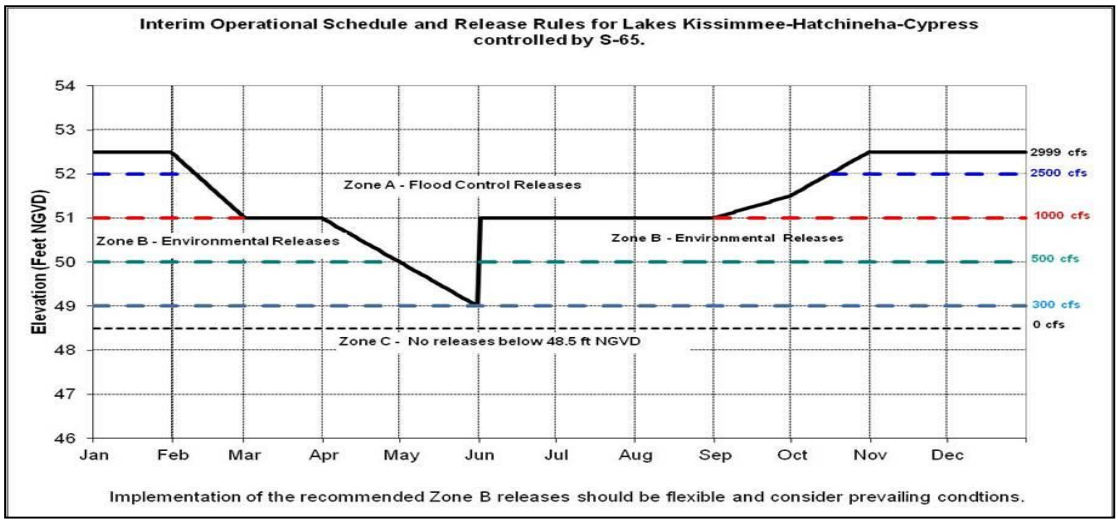


Figure 7. Interim operations schedule for S-65. The discharge schedule shown to the right has not been used in recent years.

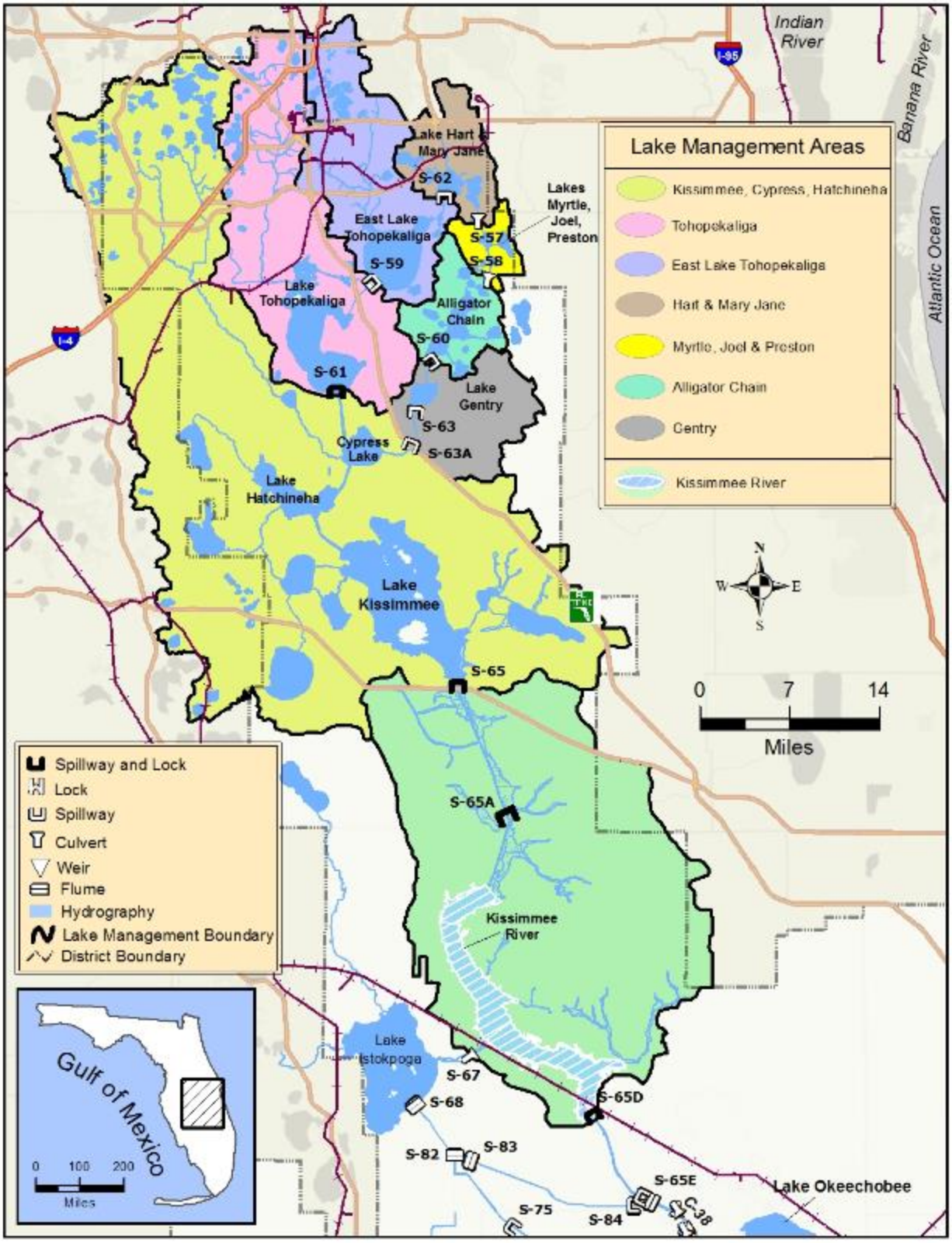


Figure 8. The Kissimmee Basin.

LAKE OKEECHOBEE

Lake Okeechobee stage is 0.12 feet lower than a month ago and 0.24 feet higher than a year ago (Figure 1). The Lake is currently 1.14 feet below the preferred ecological envelope (Figure 2). Lake stages moved up into the Low sub-band on September 4, 2019 then moved back down into the Base Flow sub-band on September 11, 2019 where it has remained since (Figure 3). Lake stage has hovered around 13.0 feet since late November 2019. According to RAINDAR, 0.55 inches of rain fell directly over the Lake during the past week (all on Feb 6-7), which was similar to the district-wide average of 0.66 inches (Figure 4).

The average daily inflows (minus rainfall) increased by almost 500 cfs from the previous week, while outflows were very similar. Most of the inflow came from the Kissimmee River (S-65E & S-65EX1) and C-41a (S-84 & S-84X), while most of the outflows were released through S-308 (C-44/St Lucie Canal) and south through the S-350 structures. Total Lake inflows and outflows for the past week are detailed in Table 1, as well as the approximate change in lake stage from each major structure's total flows over the period. Figure 5 shows the combined average daily cfs for inflows and outflows for the Lake over the past eight weeks. These data are provisional and are subject to change.

The most recent available satellite imagery (February 3, 2020 [more recent photographs are obscured by clouds]) using NOAA's cyanobacteria monitoring product derived from EUMETSAT's Sentinel 3 OLCI sensor data showed that bloom potential is low across most of the central and eastern portions of the Lake, with a continued moderate risk along the western shoreline (Figure 6).

Water Management Summary

Lake Okeechobee stage was 12.93 feet NGVD on February 10, 2020, down 0.03 feet from the previous week, and down 0.12 feet from the previous month. The Lake remains in the Base Flow sub-band, where it has been since September 11, 2019. Water levels moved below the ecological envelope (which varies seasonally from 12.5 – 15.5 feet NGVD +/- 0.5 feet) on October 15, 2019 and are currently 1.14 feet below the bottom of the envelope. 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. Wading bird and snail kite nesting efforts are likely to be lower for the second consecutive year on the Lake if stages continue below the ecological envelope throughout the breeding season.

Table 1. Average daily inflows and outflows and the approximate depth equivalents on Lake Okeechobee for various structures.

INFLOWS	Previous week Avg Daily CFS	Avg Daily Flow cfs	Equivalent Depth Week Total (in)
S-65E & S-65EX1	773	866	0.4
S-71 & S-72	40	70	0.0
S-84 & S-84X	5	375	0.2
Fisheating Creek	18	22	0.0
S-154	0	0	0.0
S-191	0	7	0.0
S-133 P	0	0	0.0
S-127 P	0	0	0.0
S-129 P	5	5	0.0
S-131 P	5	6	0.0
S-135 P	0	0	0.0
S-2 P	0	0	0.0
S-3 P	0	0	0.0
S-4 P	0	0	0.0
L-8 Backflow	19		
Rainfall	3627	1222	0.5
Total	**4492**	**2572**	**1.2**

OUTFLOWS	Previous week Avg Daily CFS	Avg Daily Flow cfs	Equivalent Depth Week Total (in)
S-77	231	223	0.1
S-308	497	605	0.3
S-351	274	28	0.0
S-352	133	0	0.0
S-354	312	482	0.2
L-8 Outflow		88	0.0
ET	1402	1701	0.8
Total	**2848**	**3127**	**1.4**

Provisional Data

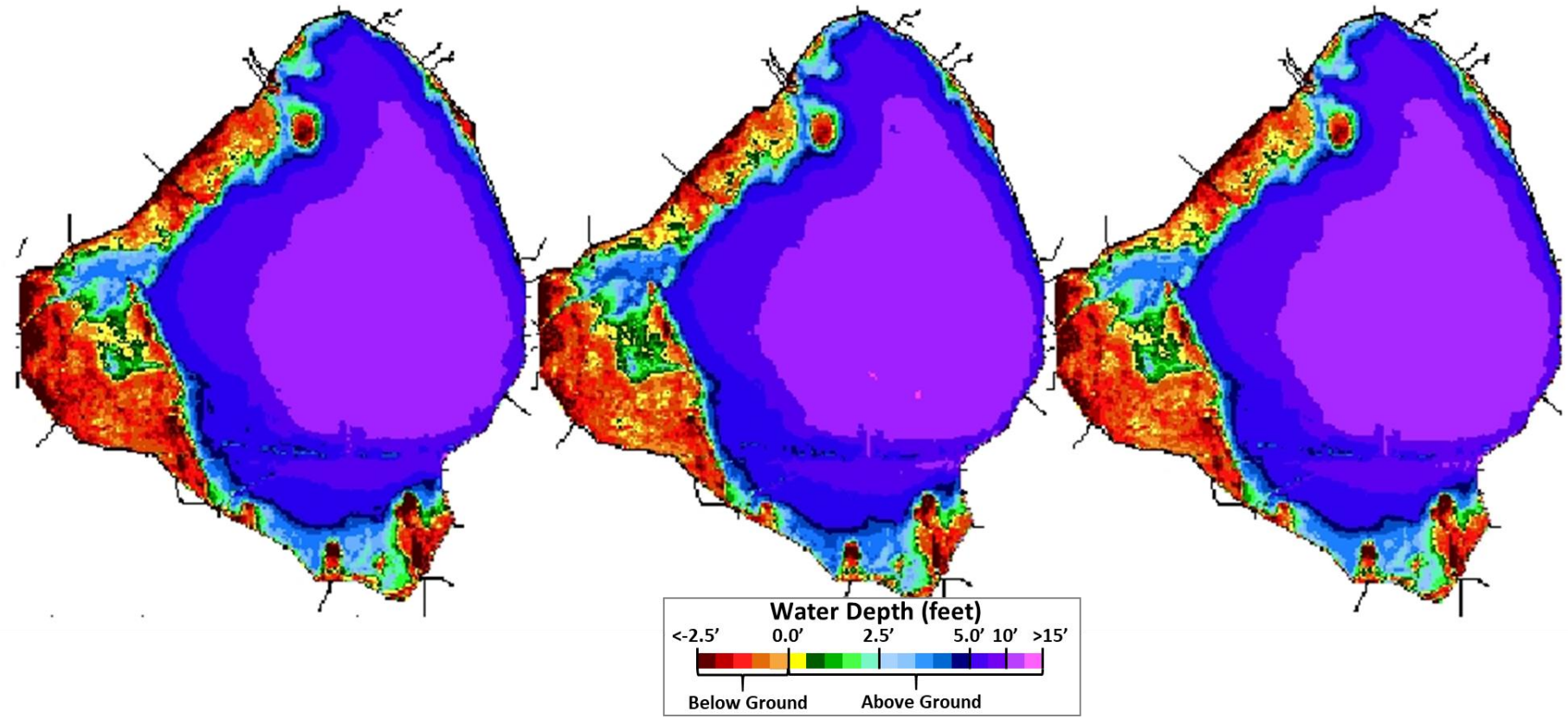


Figure 1. Water depth estimates on Lake Okeechobee based on the South Florida Water Depth Assessment Tool.

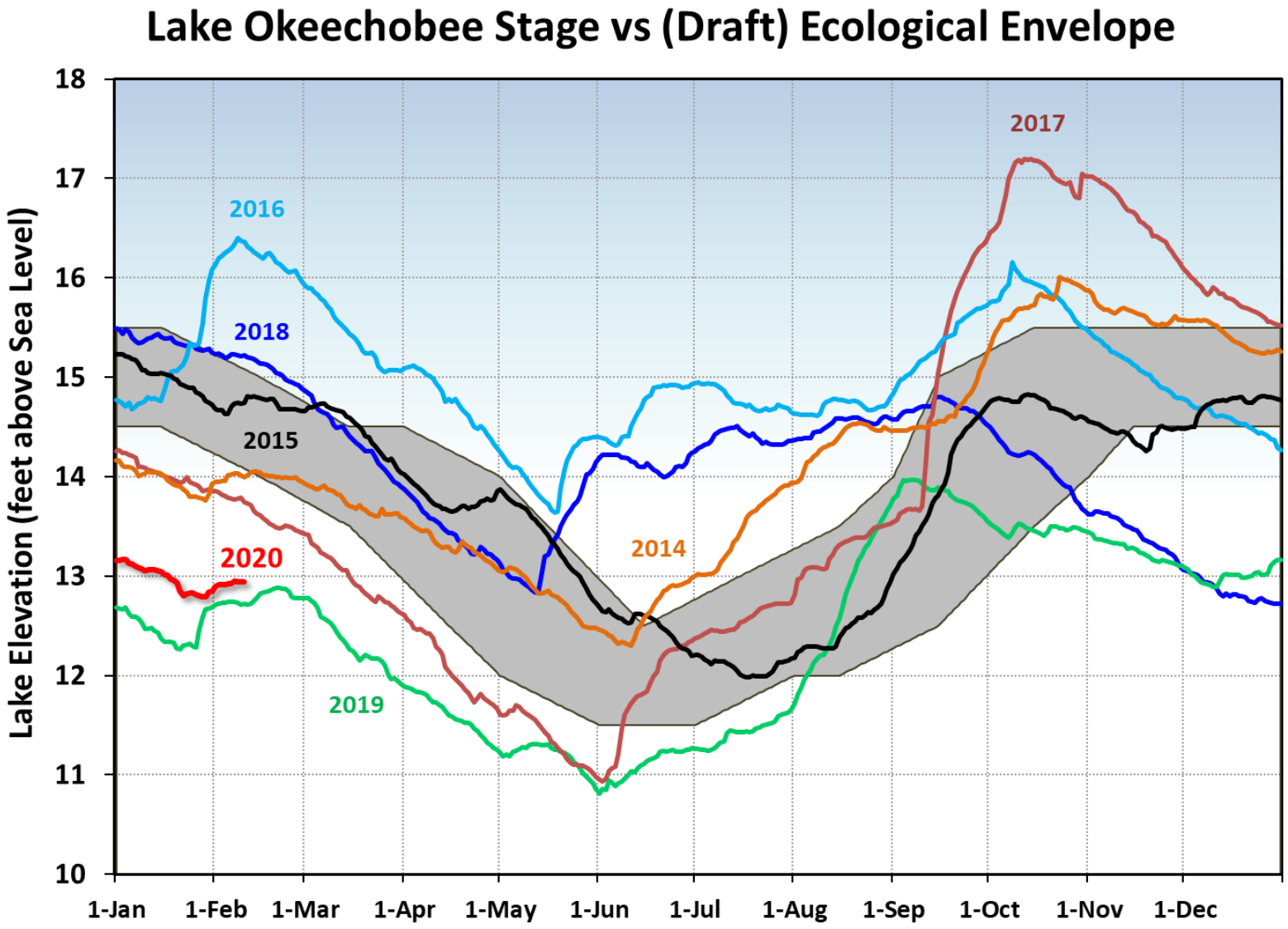


Figure 2. Select annual stage hydrographs for Lake Okeechobee in comparison to the Ecological Envelope.

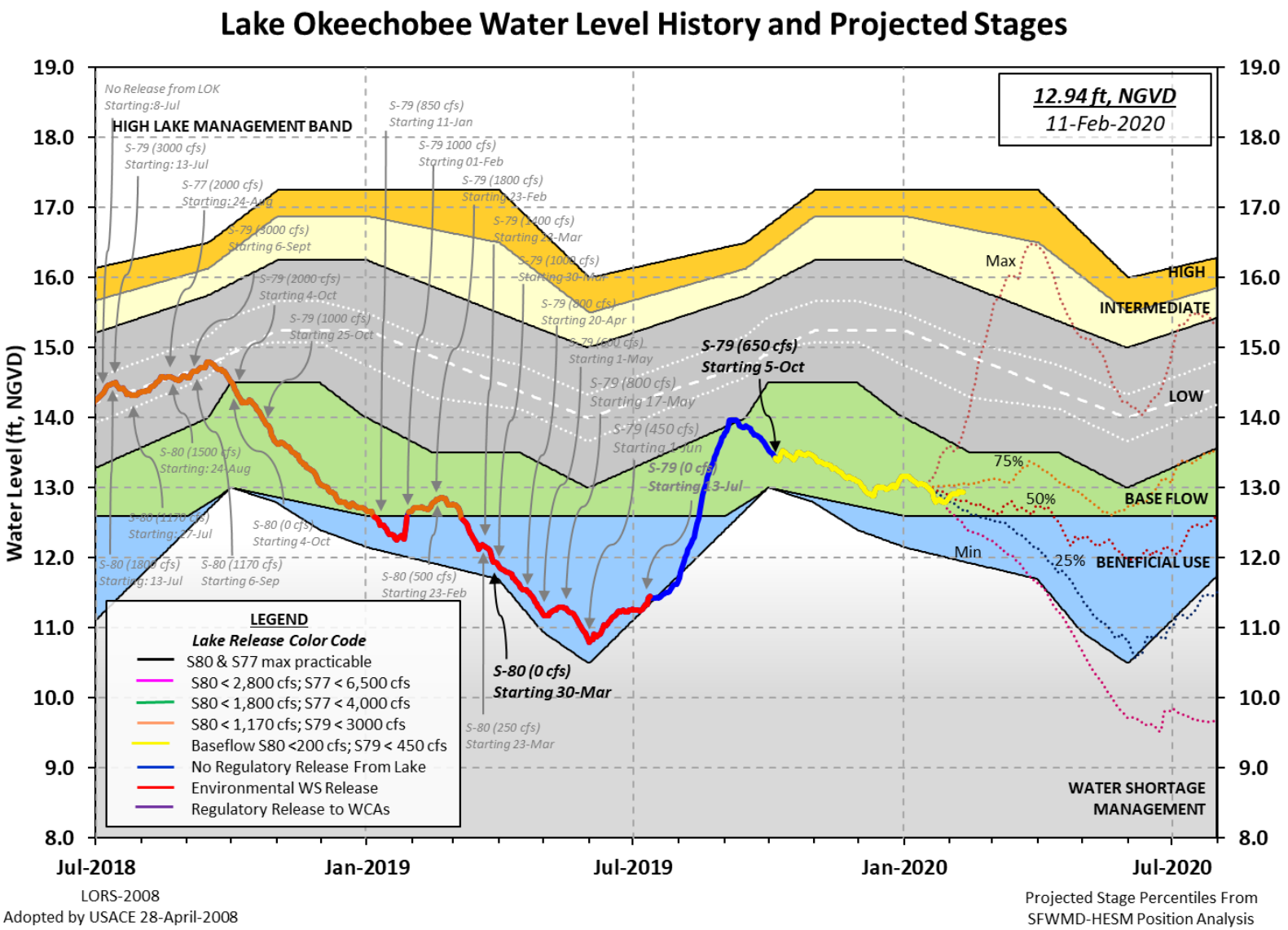


Figure 3. Recent Lake Okeechobee stage and releases, with projected stages based on a dynamic position analysis.

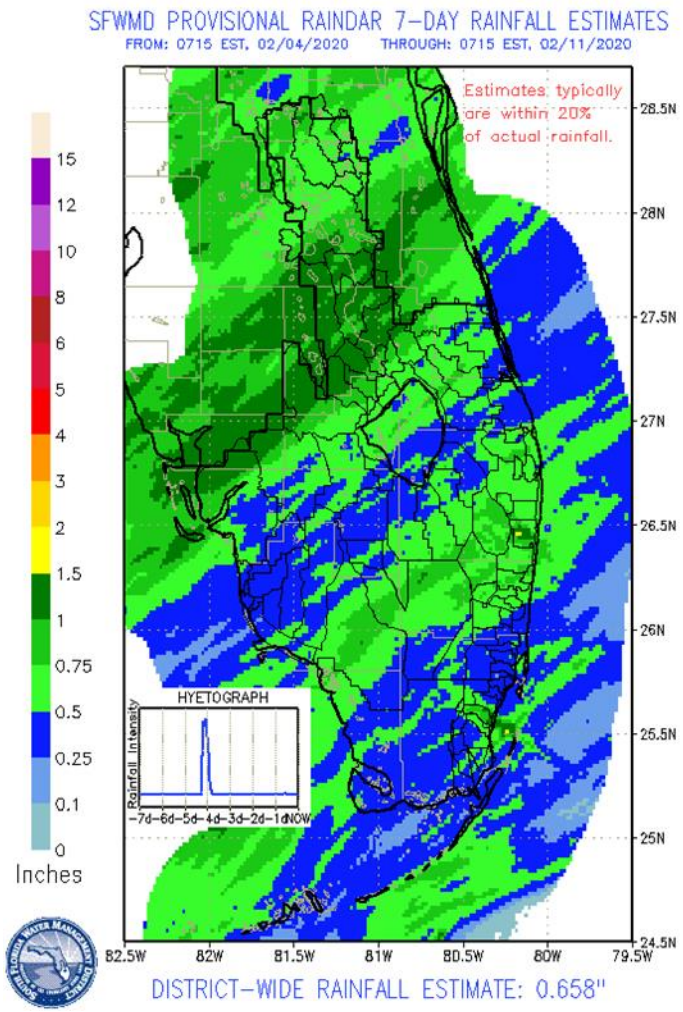


Figure 4. 7-Day rainfall estimates by RAINDAR.

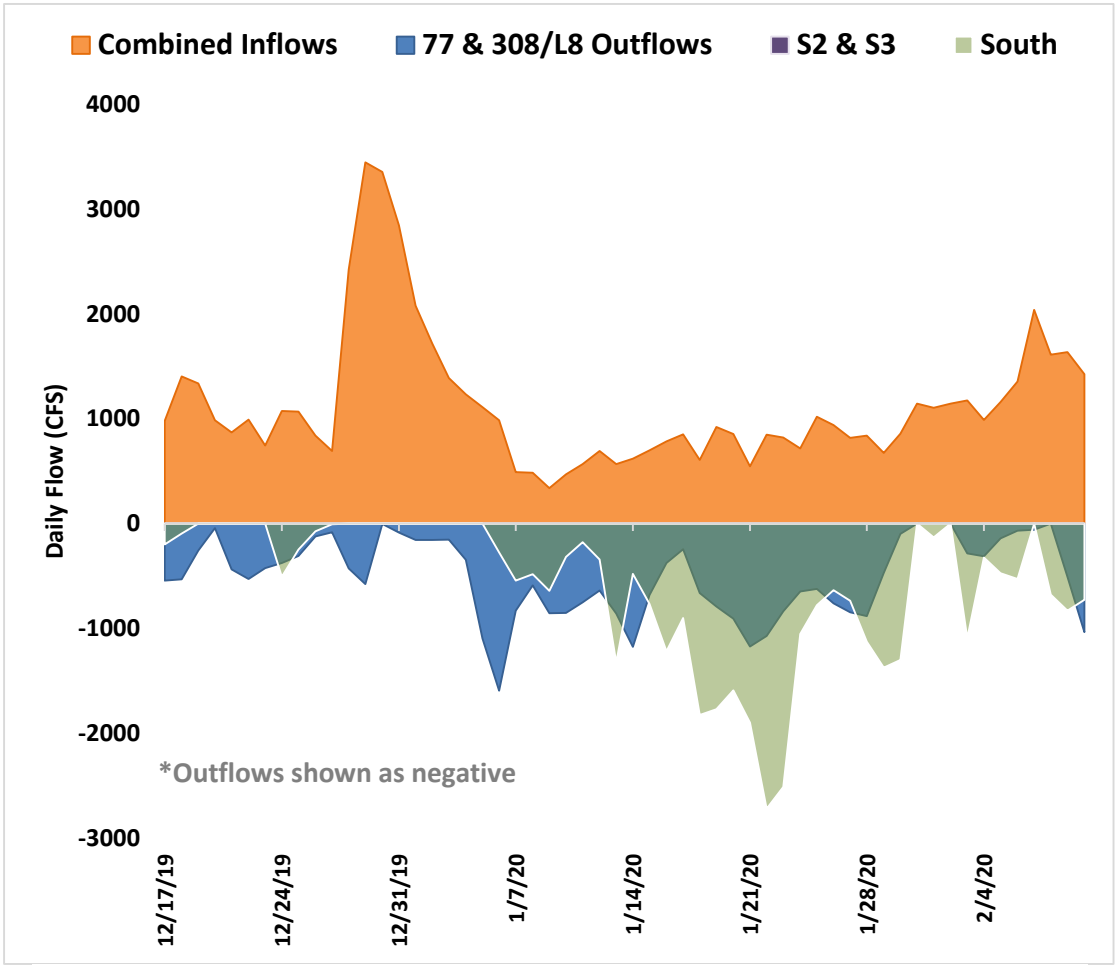


Figure 5. Major inflows (orange) and outflows (blue) of Lake Okeechobee, including the S-350 structures designated as South (green). The L-8 Canal flows through Culvert 10A are included as outflows when positive, and as inflows when backflowing into the Lake. All inflows and outflows are shown as positive and negative, respectively, for visual purposes. Outflows through the S-77 and S-308 structures are shown based on their downstream gauges to account for lock openings for navigation.

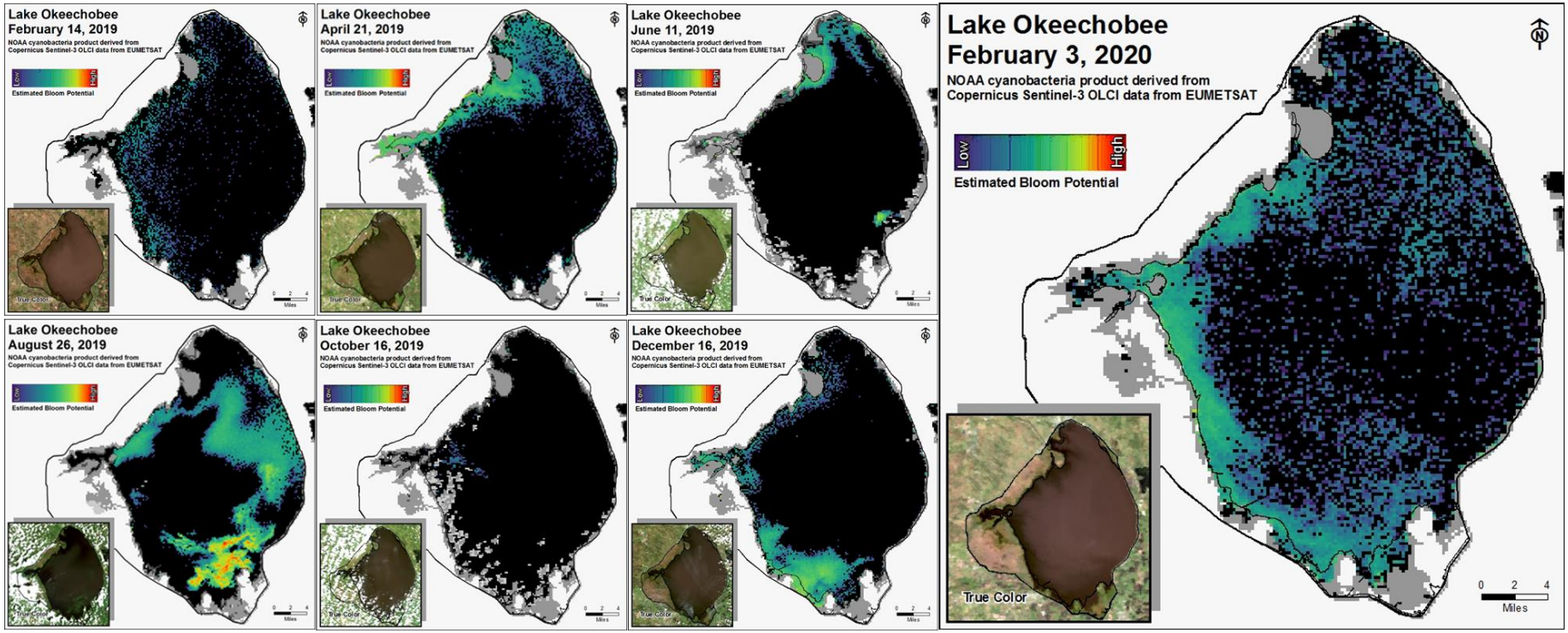


Figure 6. Potential for cyanobacterial blooms on Lake Okeechobee in 2019 and 2020, based on NOAA's harmful algal bloom monitoring system derived from Copernicus Sentinel-3 OLCI data from EUMETSAT. Gray indicates cloud cover.

ESTUARIES

St. Lucie Estuary:

Last week total inflow to the St. Lucie Estuary averaged approximately 1,001 cfs (Figures 1 and 2) and last month inflow averaged about 746 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	712
S-80	0
S-308	605
S-49 on C-24	69
S-97 on C-23	101
Gordy Rd. structure on Ten Mile Creek	119

Over the past week in the estuary, salinity decreased except for A1A surface salinity (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 17.1. 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)	**12.6** (15.1)	**14.9** (18.3)	NA[1]
US1 Bridge	**16.8** (18.6)	**17.6** (20.6)	10.0-26.0
A1A Bridge	**24.8** (24.7)	**27.0** (27.5)	NA[1]

[1]Envelope not applicable

Caloosahatchee Estuary:

Last week total inflow to the Caloosahatchee Estuary averaged approximately 1,112 cfs (Figures 5 and 6) and last month inflow averaged about 966 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	223
S-78	485
S-79	983
Tidal Basin Inflow	129

Over the past week in the estuary, salinity decreased from S-79 to Cape Coral and remained about the same downstream (Table 4, Figures 7 & 8). The seven-day average salinity values are within the good range for adult eastern oysters at Cape Coral and at Shell Point and in the fair range at Sanibel (Figure 9). The seven-day average surface salinities (Table 4) are in the good range for tape grass at Val I-75 and 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 reflects the preferred salinity range for associated sampling sites.

Sampling Site	Surface	Bottom	Envelope
S-79 (Franklin Lock)	**2.3** (4.0)	**2.4** (4.1)	NA[1]
Val I75	**3.3** (4.7)	**4.0** (6.5)	0.0-5.0[2]
Ft. Myers Yacht Basin	**9.5** (10.8)	**11.1** (13.6)	NA
Cape Coral	**17.4** (17.6)	**19.1** (19.4)	10.0-30.0
Shell Point	**26.9** (26.2)	**27.5** (27.1)	10.0-30.0
Sanibel	**31.0** (30.7)	**31.1** (31.3)	10.0-30.0

[1]Envelope not applicable and [2]Envelope is based on a 2-week forecast 30-day average (see Table 5 below).

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 2.5 to 5.6 at the end of the two-week period for pulse release at S-79 ranging from 0 to 1000 cfs and Tidal Basin inflows of 115 cfs. The 30-day moving average surface salinity at Val I-75 is forecast to be between 3.3 and 4.0 (Table 5). The current salinity conditions at Val I-75 are within 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	115	5.6	4.0
B	450	115	4.0	3.5
C	650	115	3.5	3.4
D	800	115	3.2	3.3
E	1000	115	2.5	3.2

Red tide

The Florida Fish and Wildlife Research Institute reported on February 7, 2020, that *Karenia brevis,* the Florida red tide dinoflagellate, was not observed in samples collected from Lee, St. Lucie, Martin or Palm Beach counties (no samples were analyzed this week from Miami-Dade County).

Water Management Recommendations

Lake stage is in the Base Flow sub-band. Tributary conditions are wet. The 2008 LORS suggests release of up to 450 cfs at S-79 and up to 200 cfs at S-80.

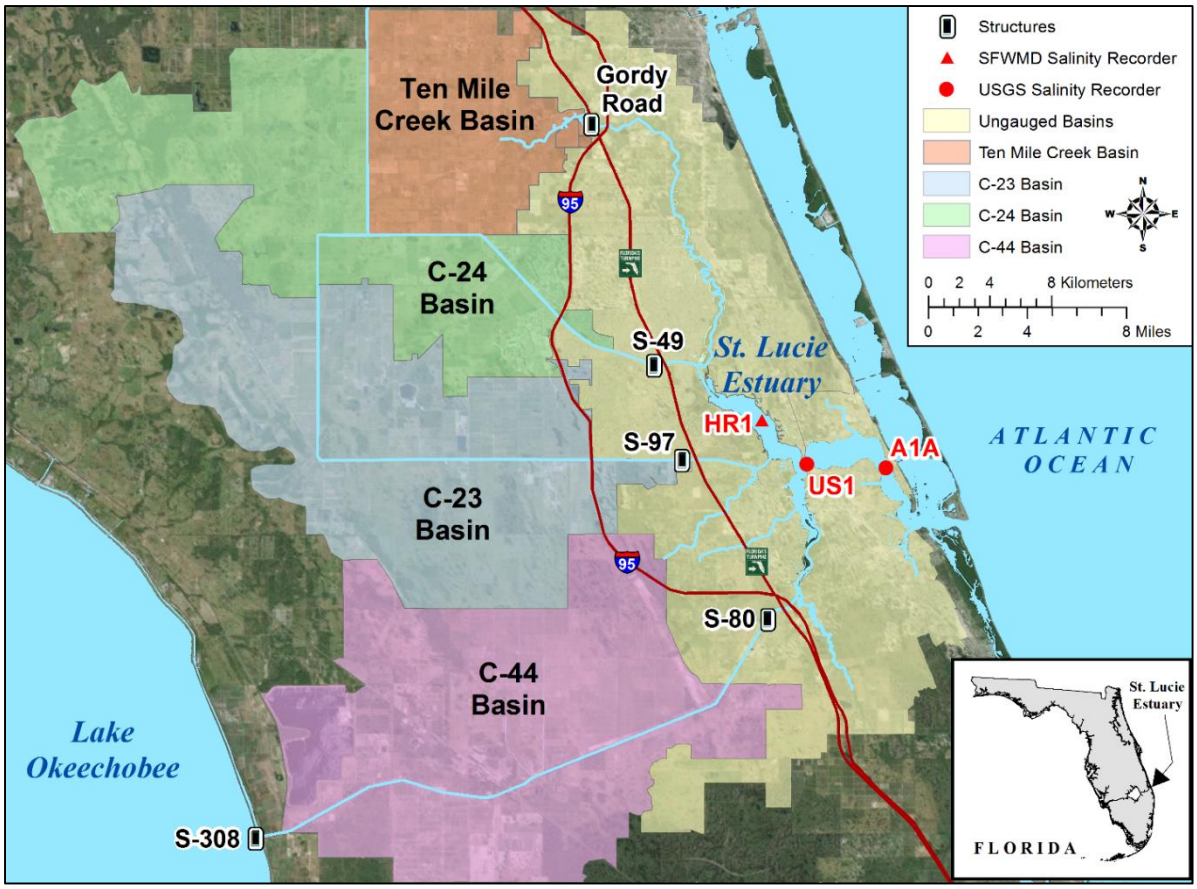


Figure 1. Basins, water control structures, and salinity monitoring for the St. Lucie Estuary.

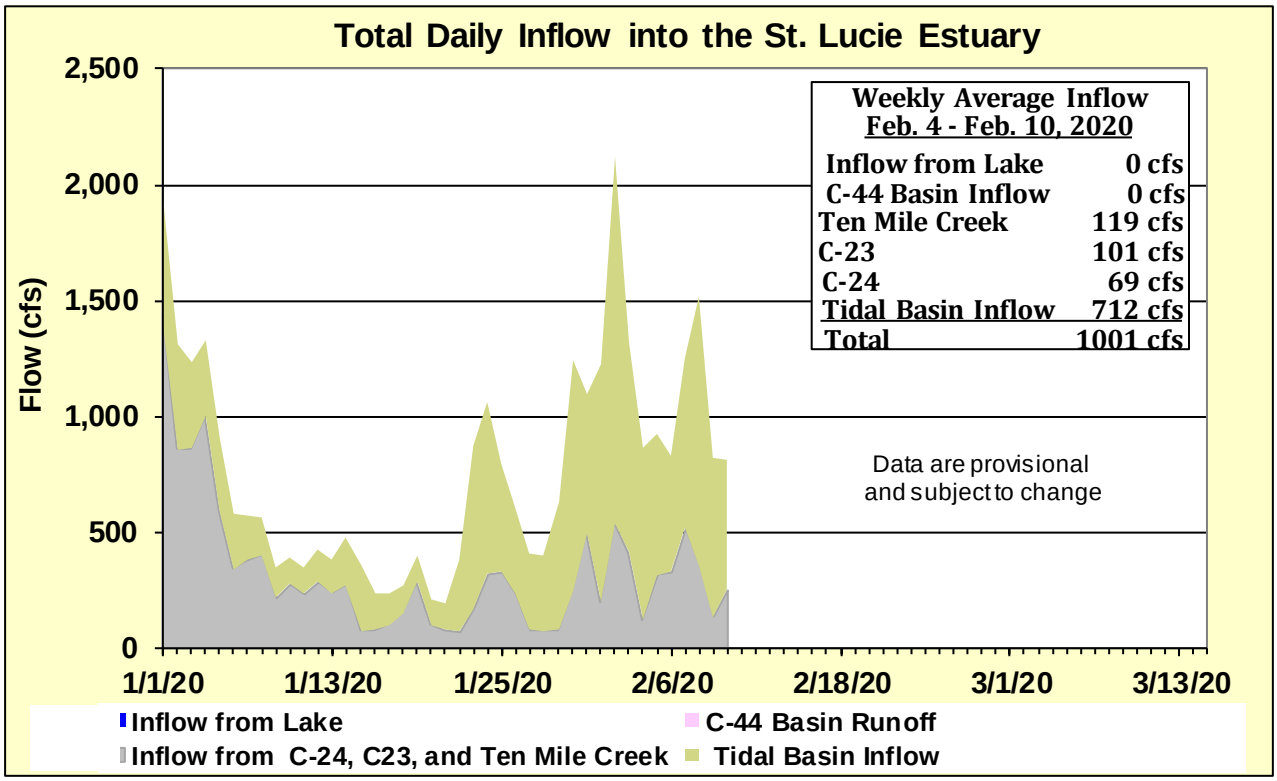


Figure 2. Total daily inflows from Lake Okeechobee and runoff from the C-44, C-23, C-24, Ten Mile Creek, and tidal basin into the St. Lucie Estuary.

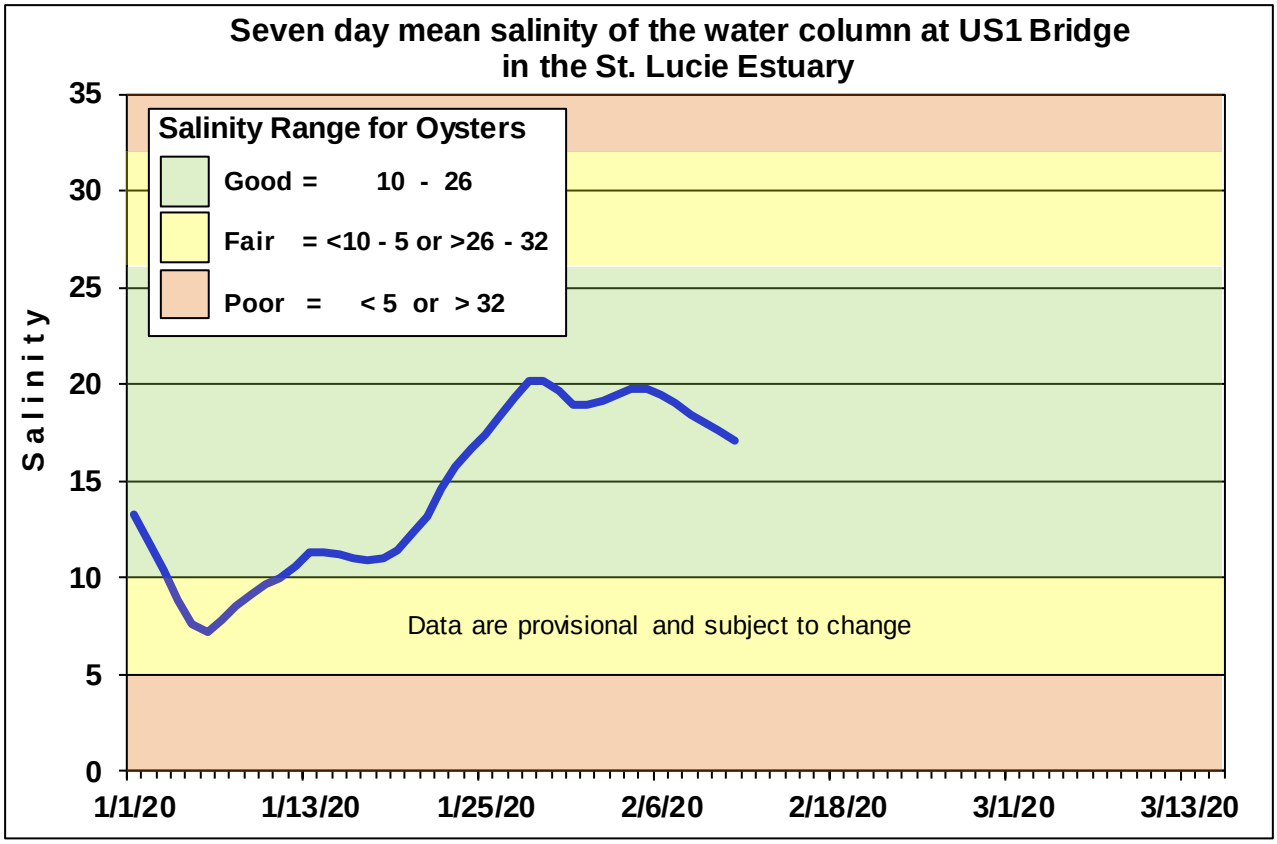


Figure 3. Seven-day mean salinity of the water column at the US1 Bridge.

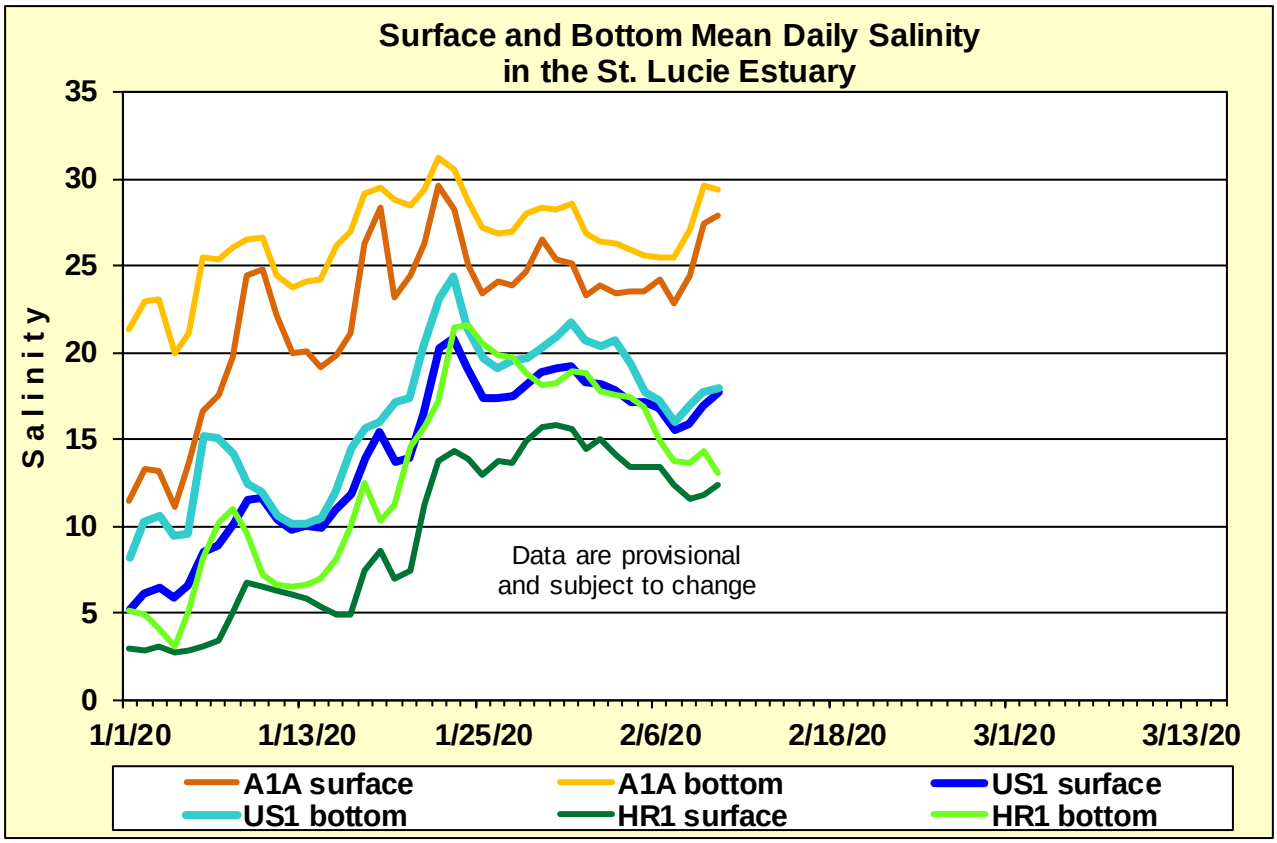


Figure 4. Daily mean salinity at the A1A, US1, and HR1 stations.

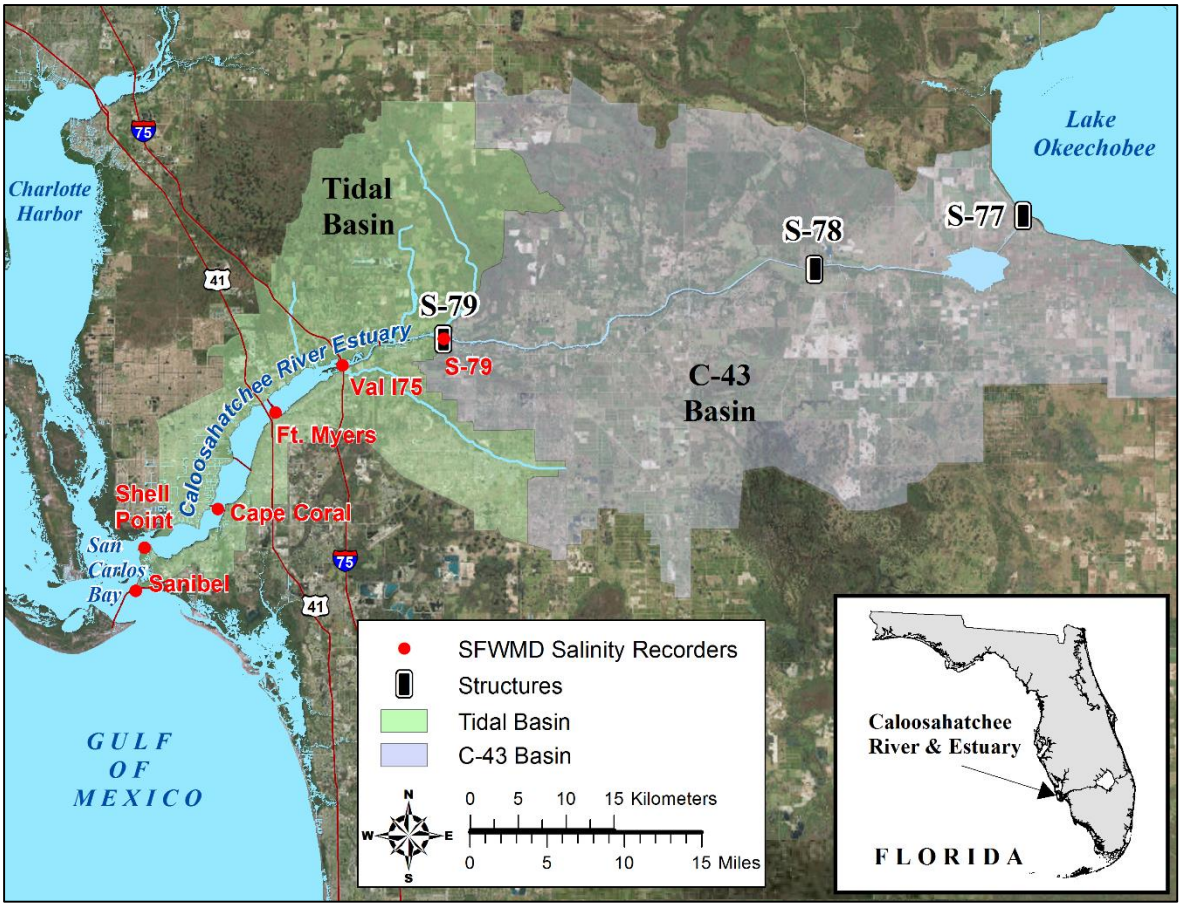


Figure 5. Basins, water control structures, and salinity monitoring for the Caloosahatchee Estuary.

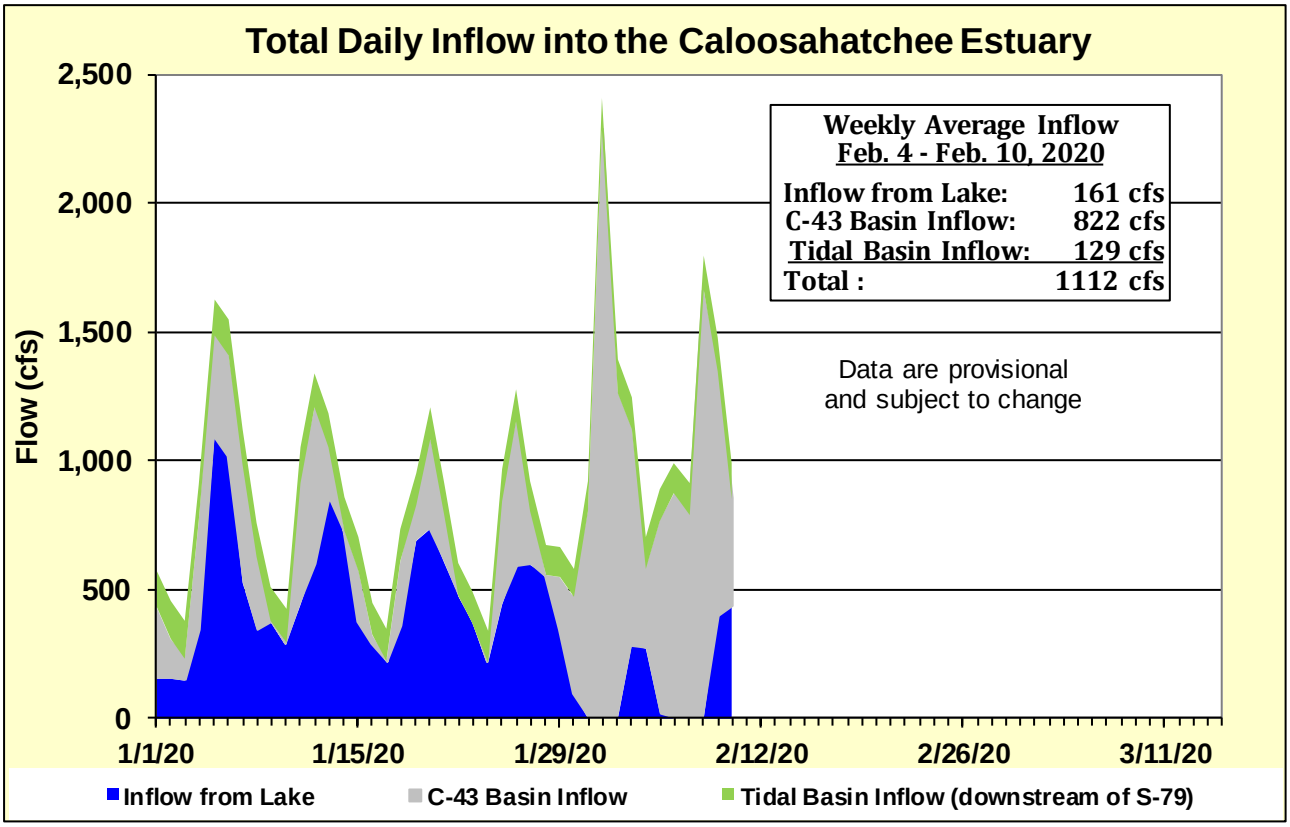


Figure 6. Total daily inflows from Lake Okeechobee, runoff from the C-43 basin

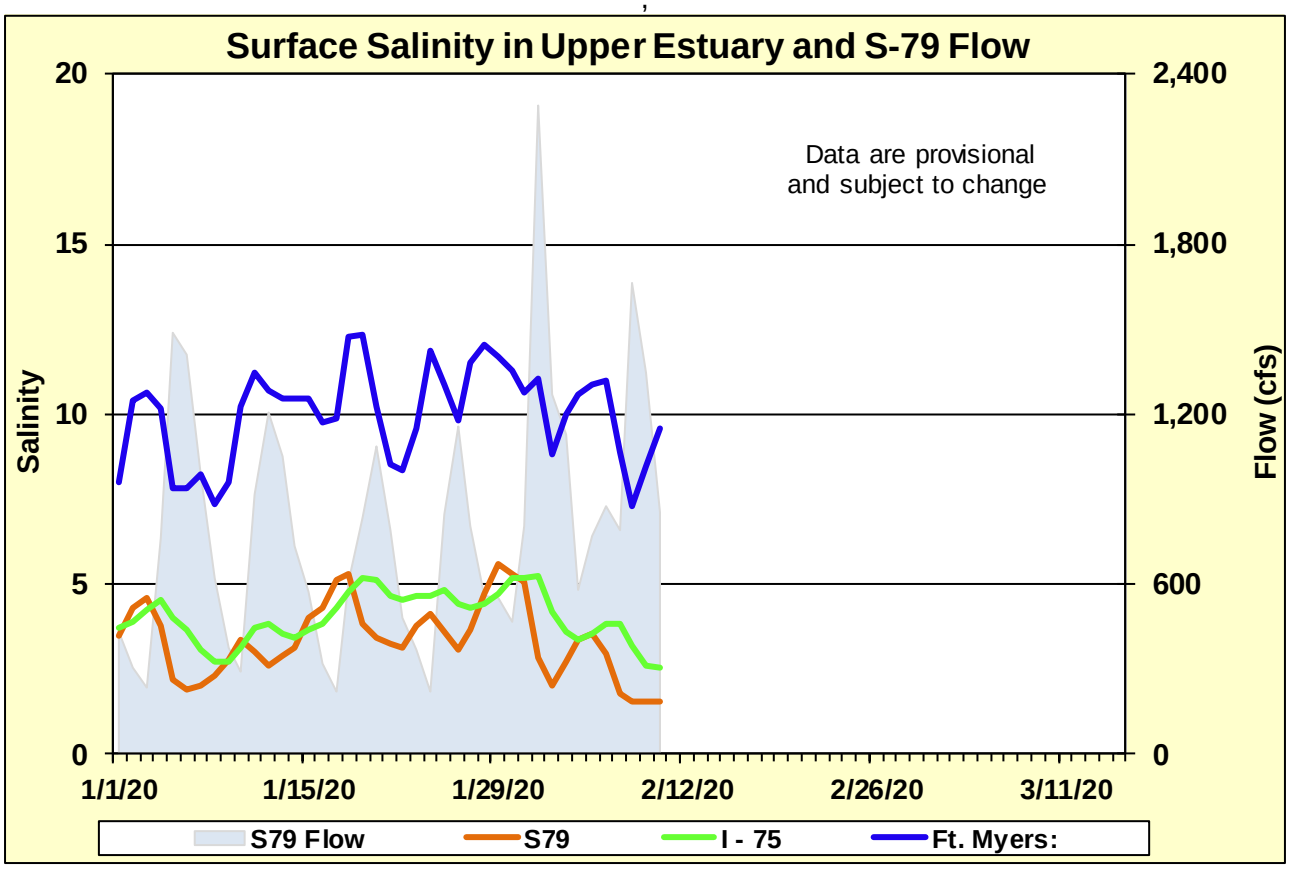


Figure 7. Daily mean flows at S-79 and salinity at upper estuary monitoring stations.

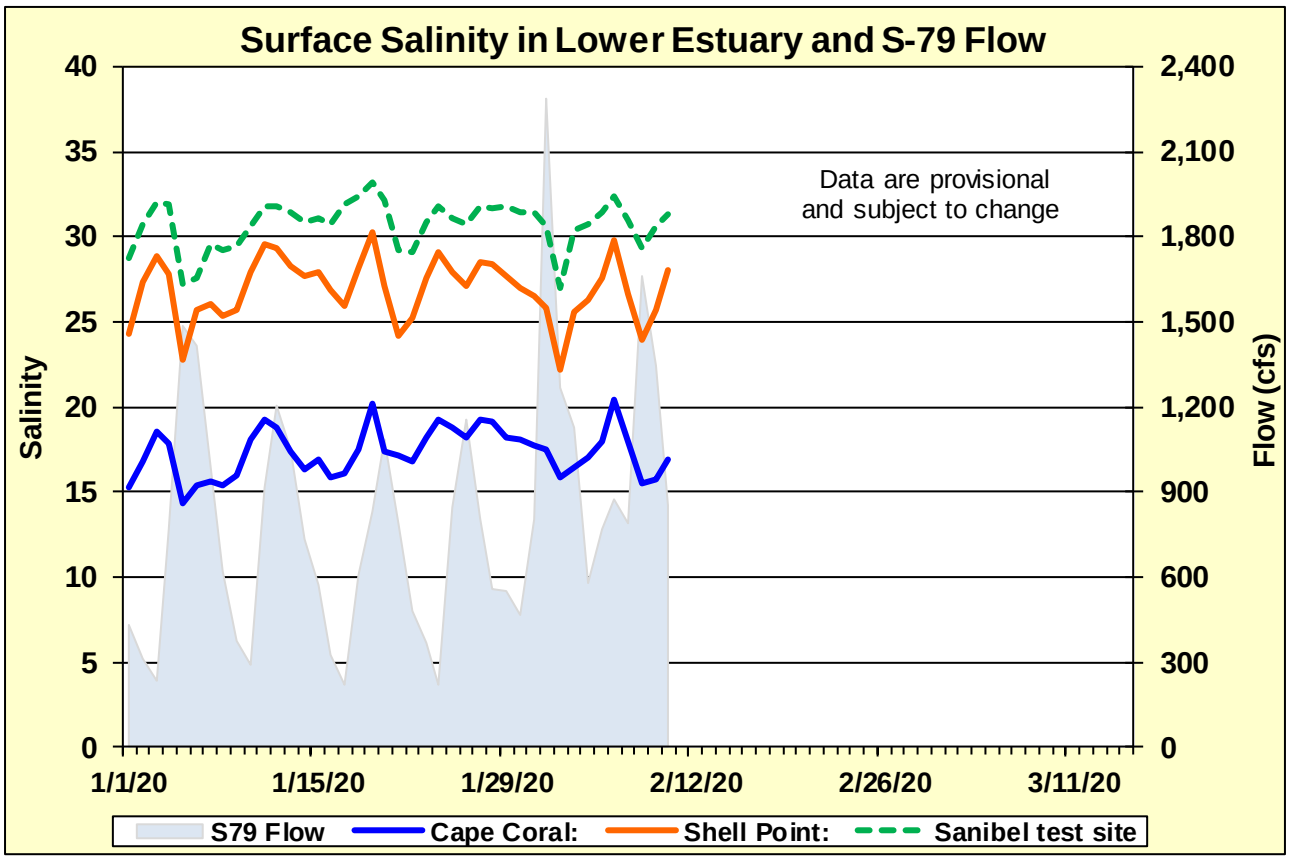


Figure 8. Daily mean flows at S-79 and salinity at lower estuary stations.

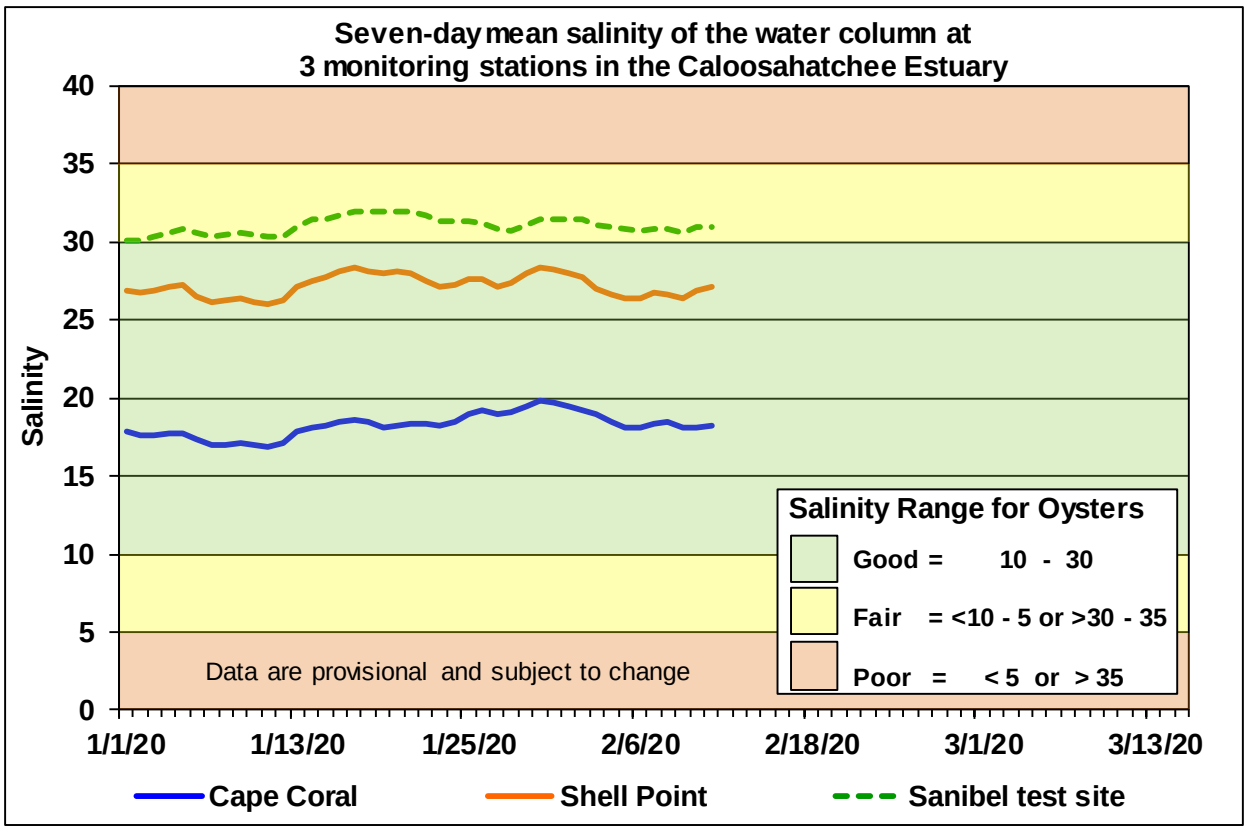


Figure 9. Seven-day mean salinity at Cape Coral, Shell Point, and Sanibel monitoring stations.

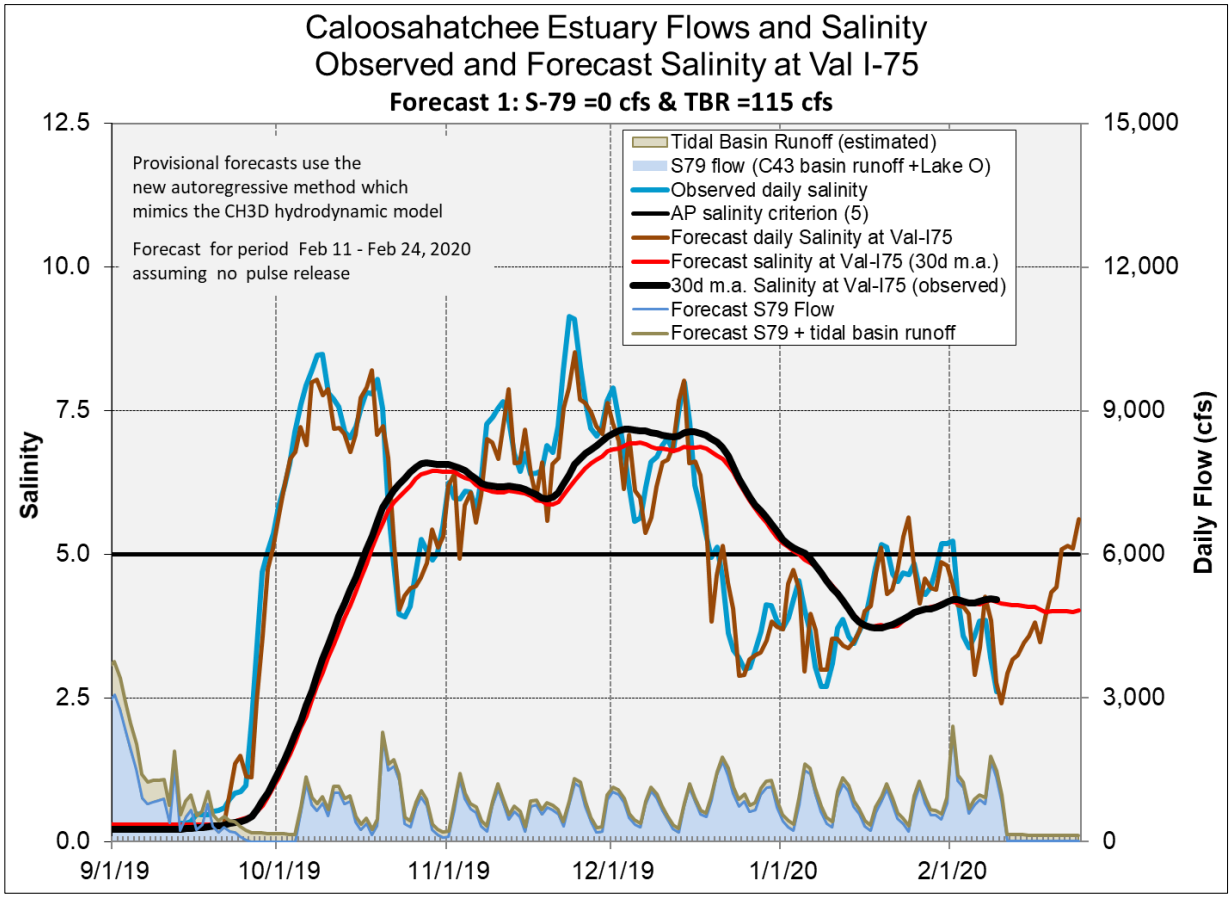


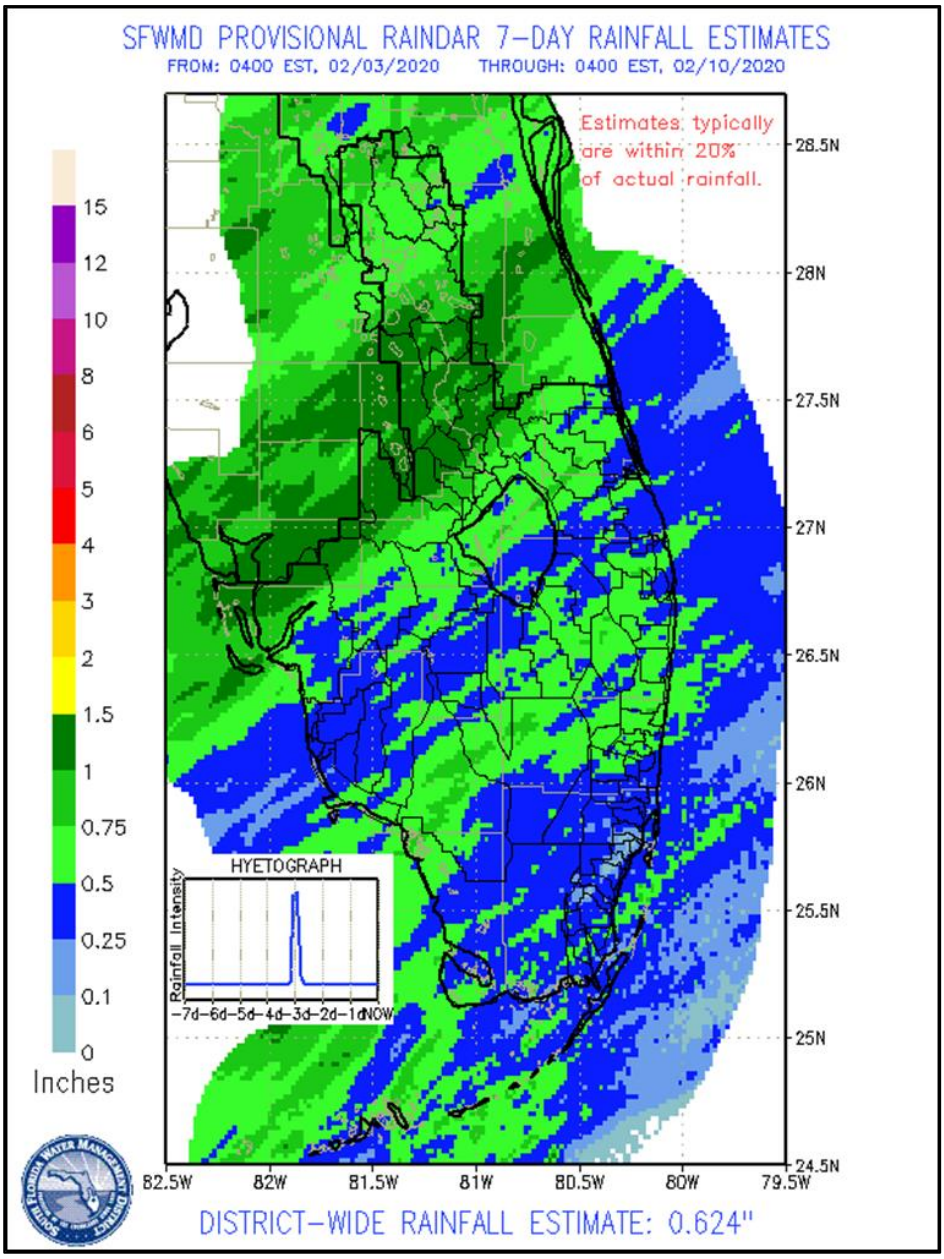
Figure 10. Forecasted Val I-75 surface salinity assuming no pulse release at S-79.

EVERGLADES

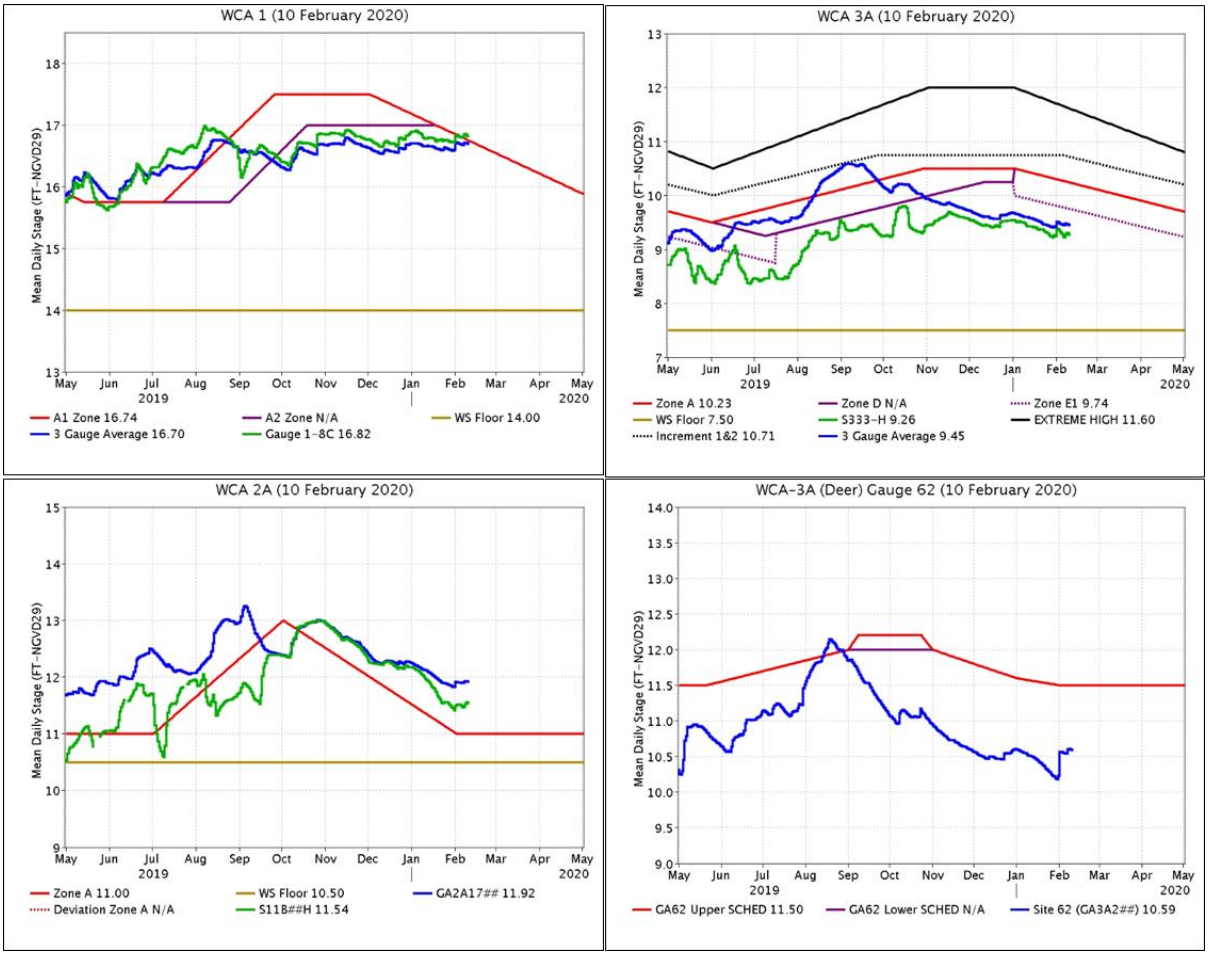
Precipitation amounts were very consistent across the Everglades last week and stages experienced little weekly change. At the gauges monitored for this report stages fell on average 0.02 feet last week. Pan evaporation was estimated at 1.12 inches an increase of 0.12 over last week.

Everglades Region	Rainfall (Inches)	Stage Change (feet)
WCA-1	0.59	−0.01
WCA-2A	0.55	+0.01
WCA-2B	0.64	−0.03
WCA-3A	0.53	−0.02
WCA-3B	0.41	−0.03
ENP	0.47	−0.05

Good
Fair
Poor

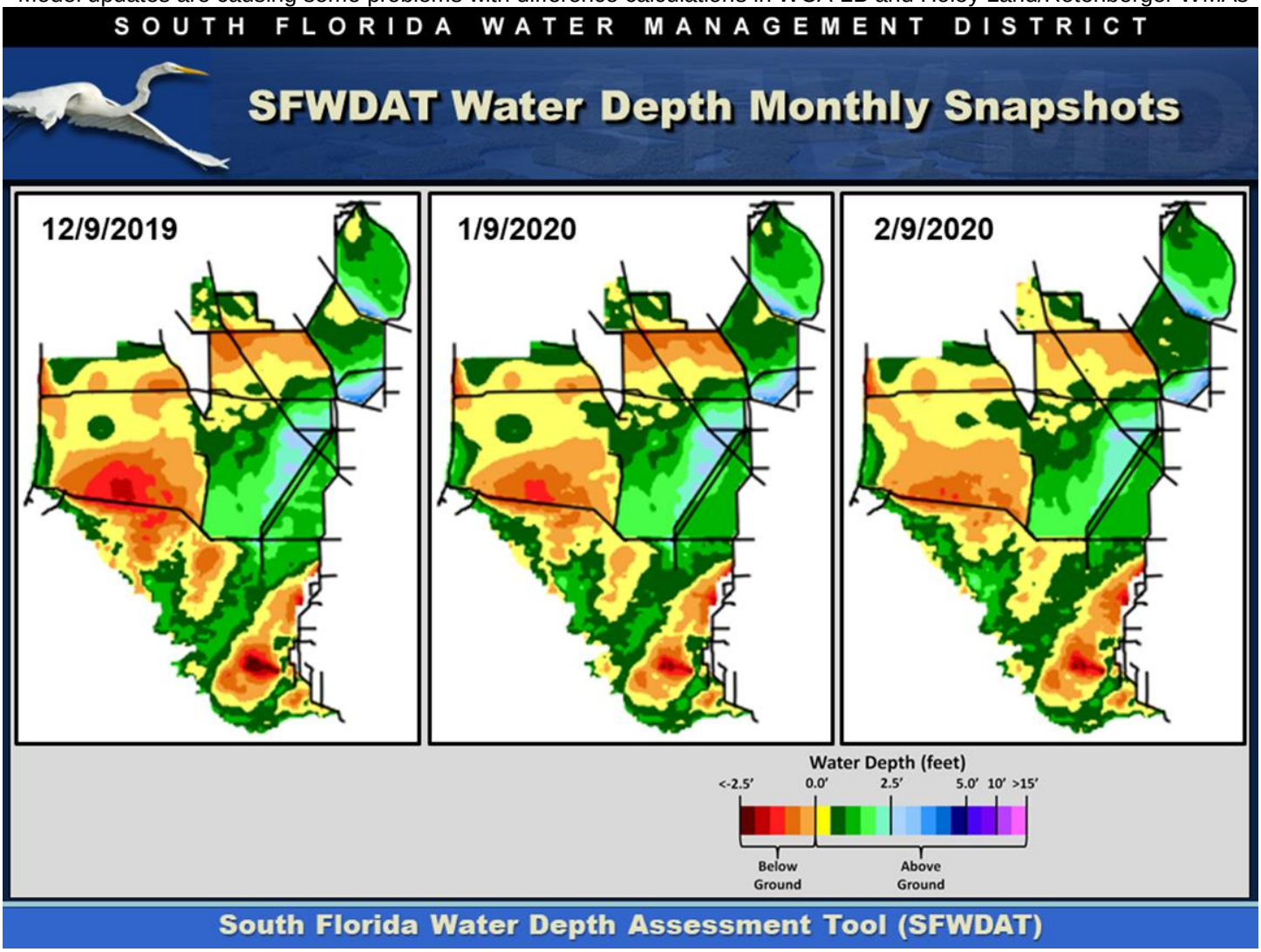


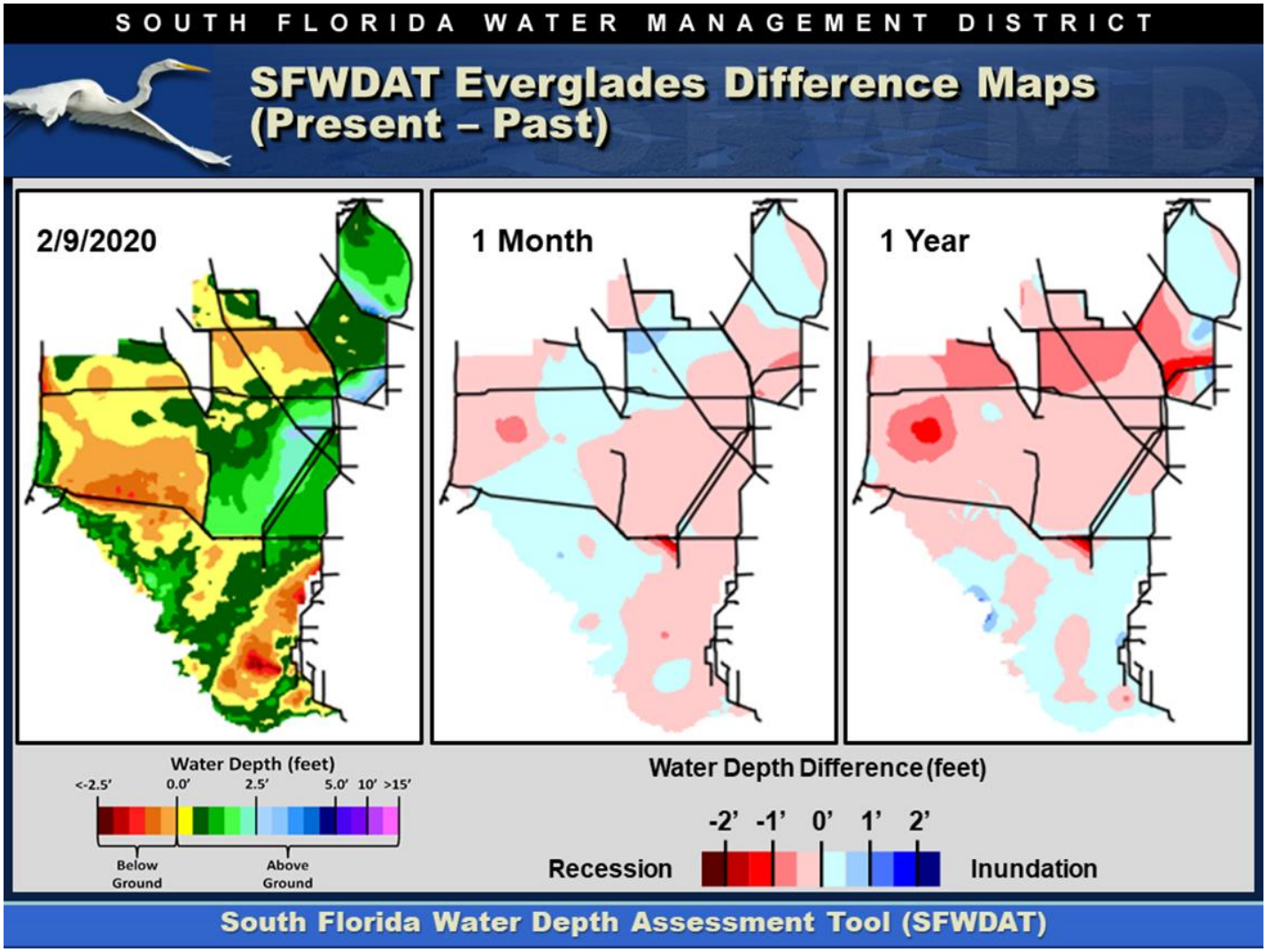
Regulation Schedules: WCA-1: Stage at the 1-8C Gauge remained steady last week, currently only 0.04 feet below the Zone A1 regulation line. WCA-2A: Stage at Gauge S11-B trends roughly parallel the Zone A regulation line now 0.54 feet above the now stable regulation line. WCA-3A: The Three Gauge Average stage remains parallel the falling Zone E1 regulation line last week, currently 0.29 feet below that line. WCA-3A at gauge 62 (Northwest corner): Stage remained relatively unchanged over the last week but generally trends downward away from the falling Upper Schedule, currently 0.91 feet below.



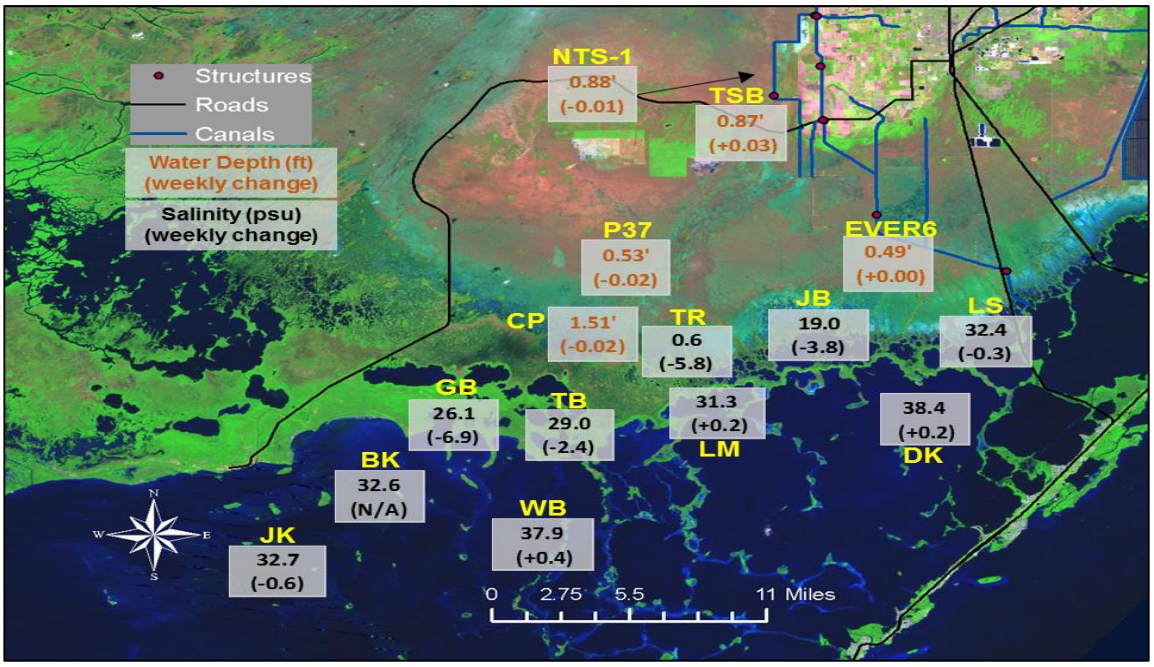
Water Depths: The WDAT tool for spatial interpolation of depth monthly snapshots indicates depths significantly below ground across most of WCA-3A North, surface water is still present in the areas surrounding the Alley North colony in that basin. Depths remain stable and near 3.5 feet across WCA-2B. Hydrologic connectivity has gradually diminished over the last two months in SRS and Taylor Slough, less so within Taylor. Comparing WDAT water levels from present, changes over the last month are mixed and not highly significant with the exception being the northwestern corner of WCA-3A which is significantly deeper. Looking back one year, the depth differences are mixed and more significant. The northwest corner of WCA-3A is significantly lower in stage and the rest of the basin slightly drier. Differences in WCA-1 are not significant. Differences in WCA-2A are difficult to interpret with the region north of the L-35B levee significantly drier and the northeast corner significantly wetter.

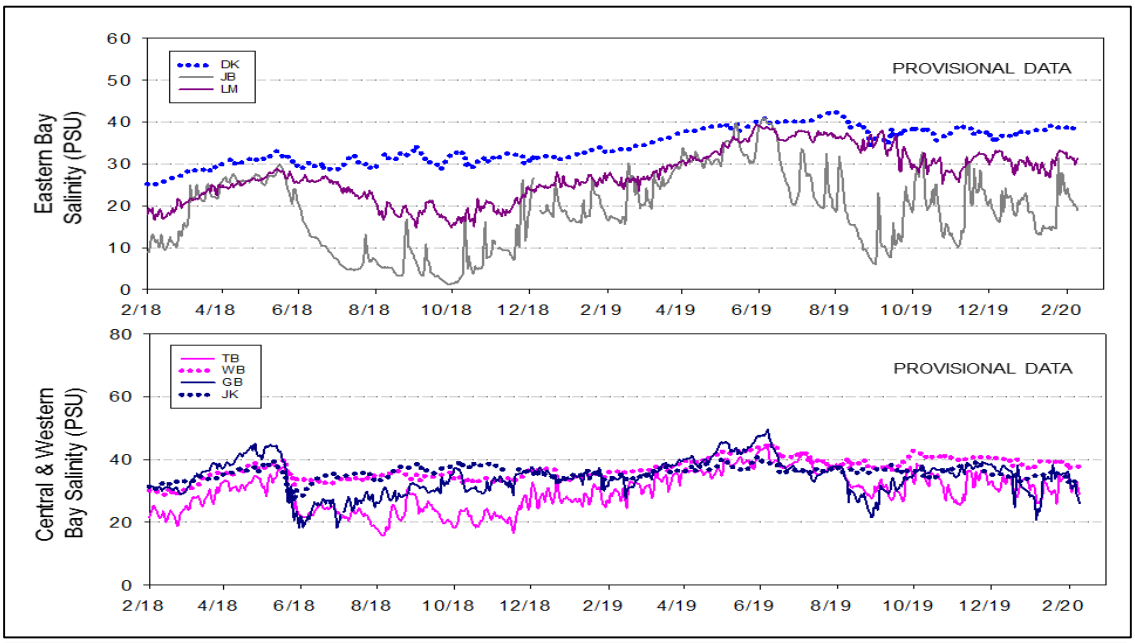
* Model updates are causing some problems with difference calculations in WCA-2B and Holey Land/Rotenberger WMAs

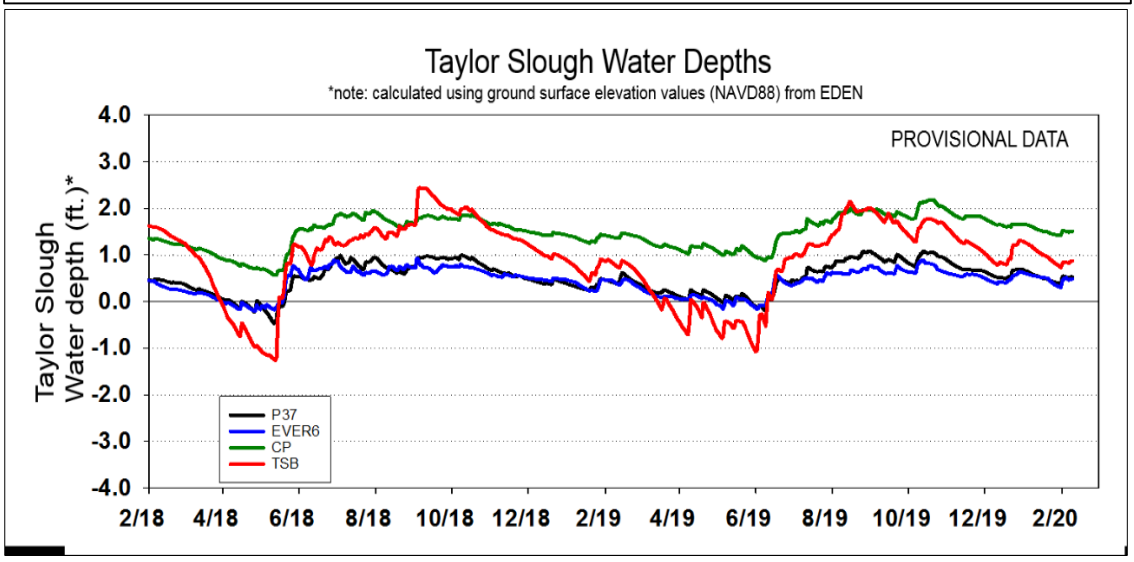


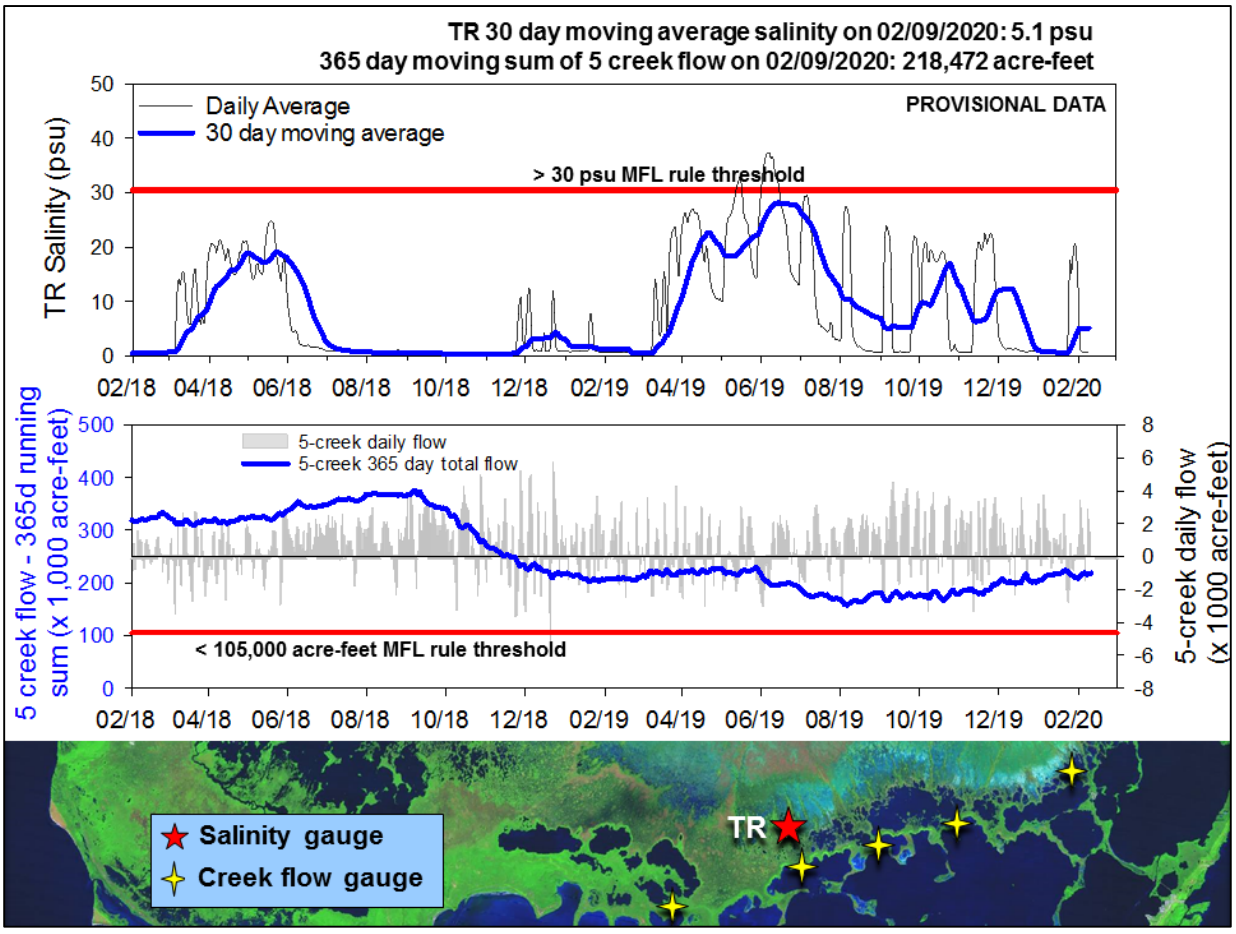


Taylor Slough Water Levels: An average of 0.37 inches of rain fell over Taylor Slough and Florida Bay this last week keeping stages steady. Upper Taylor Slough (west of S-332D impoundment) is 16 inches higher than its historical average while the rest of Taylor Slough is 5 inches higher than the historical average.


Structures
Roads
Canals
Water Depth (ft) (weekly change)
Salinity (psu) (weekly change)
NTS-1
0.88'
(-0.01)
TSB
0.87'
(+0.03)
P37
0.53'
(-0.02)
EVER6
0.49'
(+0.00)
CP
1.51'
(-0.02)
TR
0.6
(-5.8)
JB
19.0
(-3.8)
LS
32.4
(-0.3)
GB
26.1
(-6.9)
TB
29.0
(-2.4)
31.3
(+0.2)
LM
38.4
(+0.2)
DK
BK
32.6
(N/A)
WB
37.9
(+0.4)
JK
32.7
(-0.6)
N
W
E
S
0 2.75 5.5 11 Miles


DK
JB
LM
PROVISIONAL DATA
Eastern Bay Salinity (PSU)
60
50
40
30
20
10
0
2/18 4/18 6/18 8/18 10/18 12/18 2/19 4/19 6/19 8/19 10/19 12/19 2/20
TB
WB
GB
JK
PROVISIONAL DATA
Central & Western Bay Salinity (PSU)
80
60
40
20
0
2/18 4/18 6/18 8/18 10/18 12/18 2/19 4/19 6/19 8/19 10/19 12/19 2/20


Taylor Slough Water Depths
*note: calculated using ground surface elevation values (NAVD88) from EDEN
PROVISIONAL DATA
Taylor Slough Water depth (ft.)*
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
P37
EVER6
CP
TSB
2/18 4/18 6/18 8/18 10/18 12/18 2/19 4/19 6/19 8/19 10/19 12/19 2/20



Florida Bay Salinities: Average salinity in Florida Bay decreased 1.7 psu to end at 31 psu this past week (still 5 psu above average). The nearshore area is 6 psu above average at 29 psu presenting very little estuarine gradient within the bay which is problematic as the dry season progresses. Recent rains have helped to bring dry season salinities a little lower before the warmer temperatures arrive.

Florida Bay MFL: Salinity at the TR station in the mangrove zone (tracked for the Florida Bay MFL) finally returned to near-fresh this week. The 30-day moving average ended at 5.1 psu similar to last week. Weekly flow from the 5 creeks identified by yellow stars on the map totaled about 8,800 acre-feet last week with mostly positive flows all week. The 365-day moving sum of flow from the five creeks (tracked as part of the Florida Bay MFL criteria) increased 4,000 acre-feet this week to end at 218,472 acre-feet, between the 25th percentile (192,885 acre-feet) and the median (249,091 acre-feet). Creek flow data are provisional USGS data.

Water Management Recommendations

Current stages in WCA-3A are low for this time of year and salinities are high in Florida Bay. Conserving water within the WCA-3A and moving low nutrient water south has many ecological benefits, which are unrealized when flows are lost to tide. Discharges into northern WCA-3A have the potential to slow recessions near the important Alley North wading bird colony and the only foraging flocks of note currently in the WCAs. Maintaining saturated soils in over-drained portions of the Everglades, like WCA-3A Northeast, conserves peat and lowers the risk of muck fires, and depths there are well below average. Discharges into the area as well as rainfall recovered water depths in WCA-3A Northwest last week, however stage remains below average. At the present time flows are restricted from being discharged into the northeast WCA-3A via the S-150 as construction of the l38-West plug nears completion. Any available water sent through the S-150 post construction into Northeastern WCA-3A would have greater ecological value than the same amount of water discharged in Northwestern 3A, however both areas are in need of hydration.

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 which is problematic as the dry season progresses. More specific recommendations appear in the summary table below. The red text represents new or modified information or recommendations.

SFWMD Everglades Ecological Recommendations, February 11th, 2020 (red is new)

Area	Weekly change	Recommendation	Reasons
WCA-1	Stage decreased by 0.01'	Conserving water in this basin has ecological benefit as current water depths are below seasonal averages.	Protect downstream habitat and wildlife. Provide wading bird foraging opportunities later in the dry season.
WCA-2A	Stage increased by 0.01'	Moderating the recession rate and conserving water in this basin has ecological benefit as downstream basins are below seasonal average.	Protect upstream/downstream habitat and wildlife. Provide wading bird foraging opportunities later in the dry season.
WCA-2B	Stage decreased by 0.03'	Conserving water in this basin has benefit as current water depths in downstream basins are below seasonal averages.	Protect upstream/downstream habitat and wildlife.
WCA-3A NE	Stage decreased by 0.03'	Conserving water in this basin has ecological benefit as current water depths are below seasonal averages.	Protect and conserve peat soils. Provide stage conditions that are conducive for succesful wading bird nesting at the Alley North wading bird colony.
WCA-3A NW	Stage increased by 0.03'	Conserving water and slowing the recession in this basin has ecological benefit as current water depths are below seasonal averages. Inflows to this region have ecological benefit.	
Central WCA-3A S	Stage decreased by 0.02'	Conserving water in this basin has ecological benefit as current water depths are below seasonal averages.	Protect upstream/downstream habitat and wildlife. Provide wading bird foraging oppurtunitys later in the dry season.
Southern WCA-3A S	Stage decreased by 0.07'		
WCA-3B	Stage decreased by 0.03'	Conserving water in this basin has benefit as current water depths are below seasonal averages.	Protect tree islands, upstream/downstream habitat and wildlife.
ENP-SRS	Stage decreased by 0.05\'	Make discharges to the Park according to the 2012 WCP rainfall plan.	Protect upstream/downstream habitat and wildlife.
Taylor Slough	Stage changes ranged from −0.02' to +0.03'	Move water southward as possible	When available, provide freshwater buffer for downstream conditions.
FB- Salinity	Salinity changes ranged −6.9 to +0.4 psu.	Move water southward as possible	When available, provide freshwater to maintain low salinity buffer and promote water movement.