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: January 29, 2020

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Weather Conditions and Forecast

A pattern of troughs moving across the Gulf of Mexico and interacting with frontal boundaries over the Florida peninsula should yield above-average rainfall over the next two weeks. The tail end of a cold front is currently moving through the southern end of the District this morning and it is expected to stall across the Florida Straits. A few showers should pop up southeast with daytime heating today and then scattered showers should linger near the southeast coast overnight. A reinforcing cold front is forecast to push into central Florida Wednesday night and slide southward to south Florida by Thursday morning. Therefore, scattered showers should develop mainly east during the day Wednesday and then scattered showers and a couple of thunderstorms should accompany the front as it moves through the northern portion of the District Wednesday night. Only limited shower activity is forecast to develop near the frontal boundary as it slides southward through the remainder of the District Thursday. An upper level trough is then expected to move across Florida Friday and Saturday and flare up areas of moderate to heavy rain over portions of the District mainly Friday night and Saturday. The trough is forecast to be strong enough to nudge the frontal boundary south of District bringing drier conditions Sunday and Monday. Current computer model data indicates a frontal boundary could stall across central Florida late in the following week (Wednesday night, Thursday, and Friday) so above-average rainfall is forecast for Week 2.

Kissimmee

Tuesday morning stages were 54.5 feet NGVD (3.5 feet below schedule) in East Lake Toho, 54.5 feet NGVD (0.5 feet below schedule) in Toho, and 51.7 feet NGVD (0.8 feet below schedule) in Kissimmee-Cypress-Hatchineha; headwater stages were 46.3 feet NGVD at S-65A and 25.6 feet NGVD at S-65D. Tuesday morning discharges were 810 cfs at S-65, 813 cfs at S-65A, 815 cfs at S-65D and 838 cfs at S-65E. Dissolved oxygen concentration in the Kissimmee River averaged 9.0 mg/L for the week through Sunday. Kissimmee River mean floodplain depth on Sunday was 0.17 feet. This week's recommendation is to increase discharge at S-65A to 900 cfs and hold until further notice.

Lake Okeechobee

Lake Okeechobee stage was 12.80 feet NGVD on January 27, 2020, down 0.13 feet from the previous week, and 0.30 feet lower than 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 1.49 feet below the bottom of the envelope. Low lake stages continue to benefit recovering SAV communities, but also stress higher elevation marshes; areas with elevations greater than approximately 14.0 feet NGVD have now been dry since late October of 2018. Low lake stages throughout 2019 likely limited prey production in the marsh and appear to be impacting wading bird use of the Lake prior to the 2020 breeding season.

Estuaries

Total inflow to the St. Lucie Estuary averaged 620 cfs over the past week with no flow coming from Lake Okeechobee. Salinities increased throughout the estuary. Salinity at the US1 Bridge is in the good range for adult eastern oysters. Total inflow to the Caloosahatchee Estuary averaged 823 cfs over the past week with 473 cfs coming from the Lake. Salinity little changed in the estuary. Salinities are in the good range for tape grass at Val I-75 and in the fair range at 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 normal. The 2008 LORS release guidance suggests up to 450 cfs at S-79 and up to 200 cfs at S-80.

Stormwater Treatment Areas

Over the past week, 5,200 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 77,000 acre-feet. The total amount of inflows to the STAs in WY2020 is approximately 842,000 acre-feet. Most STA cells are at or near target depths except STA-5/6 cells which are drying 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 WCA-3A remain low 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. Work has been initiated in WCA-3A North to help conserve water by installing a canal plug. 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. Very little rain fell to the south last week. Stages decreased in Taylor Slough this week, but depths in the slough remain above average and average salinity in Florida Bay increased. Upstream flows last week further elevated salinities in the nearshore and mangrove zone.

Supporting Information

KISSIMMEE BASIN

Kissimmee Basin Rainfall

The Upper Kissimmee Basin received 0.19 inches of rainfall in the past week and the Lower Basin received 0.09 inches (SFWMD Daily Rainfall Report 1/27/2020).

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: 1/28/2020

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)						
							1/26/20	1/19/20	1/12/20	1/5/20	12/29/19	12/22/19	12/15/19
Lakes Hart and Mary Jane	S-62	1	LKMJ	61.0	R	61.0	**0.0**	-0.1	0.0	0.0	0.2	0.0	-0.2
Lakes Myrtle, Preston, and Joel	S-57	11	S-57	61.4	R	61.4	**0.0**	0.0	0.1	0.1	0.1	0.0	-0.3
Alligator Chain	S-60	0	ALLI	63.4	R	64.0	**-0.6**	-0.5	-0.5	-0.5	-0.7	-0.9	-1.0
Lake Gentry	S-63	0	LKGT	61.4	R	61.5	**-0.1**	-0.1	-0.1	-0.1	-0.3	-0.6	-0.7
East Lake Toho	S-59	8	TOHOE	54.6	R	58.0	**-3.4**	-3.2	-3.1	-2.8	-2.9	-3.1	-3.0
Lake Toho	S-61	240	TOHOW, S-61	54.5	R	55.0	**-0.5**	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4
Lakes Kissimmee, Cypress, and Hatchineha	S-65	719	KUB011, LKIS5B	51.8	R	52.5	**-0.7**	-0.6	-0.6	-0.7	-1.0	-1.4	-1.6

[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: **1/28/2020**

Metric	Location	1-Day Average	Average for the Preceeding 7-Days[1]								
		1/26/2020	1/26/20	1/19/20	1/12/20	1/5/20	12/29/19	12/22/19	12/15/19	12/8/19	12/1/19
Discharge (cfs)	S-65	822	**719**	606	408	211	283	317	347	359	358
Discharge (cfs)	S-65A[2]	798	**736**	612	445	314	317	315	302	318	315
Discharge (cfs)	S-65D[2]	834	**777**	632	438	553	454	408	344	346	347
Headwater Stage (feet NGVD)	S-65D[2]	25.70	**25.77**	25.78	25.76	25.75	25.84	25.76	25.81	25.88	25.90
Discharge (cfs)	S-65E[2]	757	**713**	601	434	502	441	386	342	307	330
Discharge (cfs)	S-67	0	**0**	0	4	0	0	0	0	0	0
DO (mg/L)[3]	Phases I & II/III river channel	9.2	**9.0**	8.3	9.1	9.0	9.2	9.7	9.7	9.3	8.4
Mean depth (feet)[4]	Phase I floodplain	0.17	**0.18**	0.25	0.20	0.26	0.23	0.16	0.11	0.11	0.14

[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)

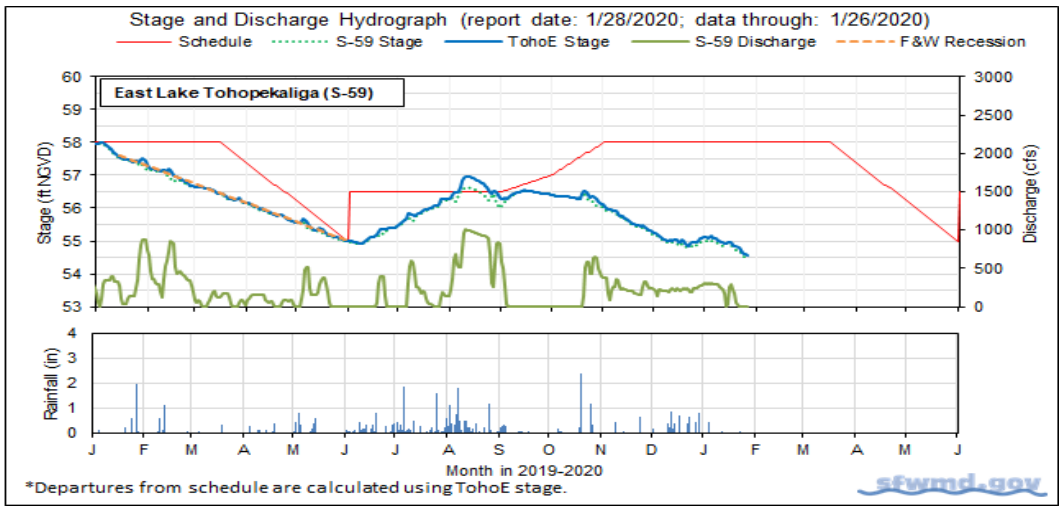


Figure 1.

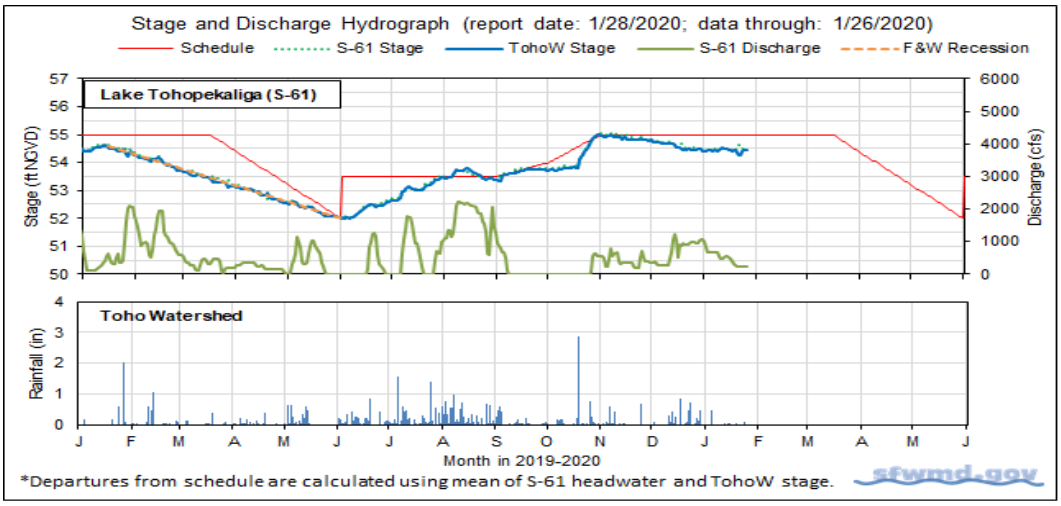


Figure 2.

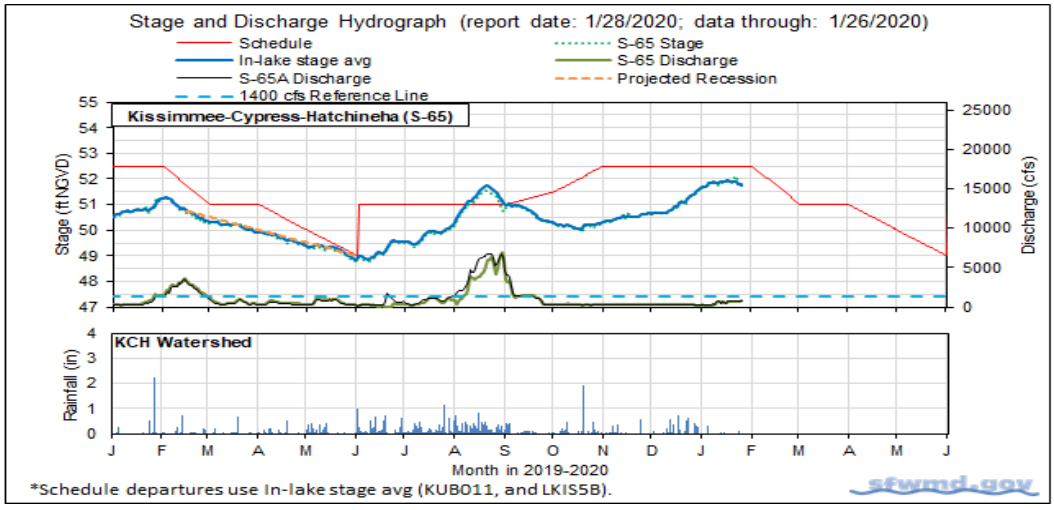


Figure 3.

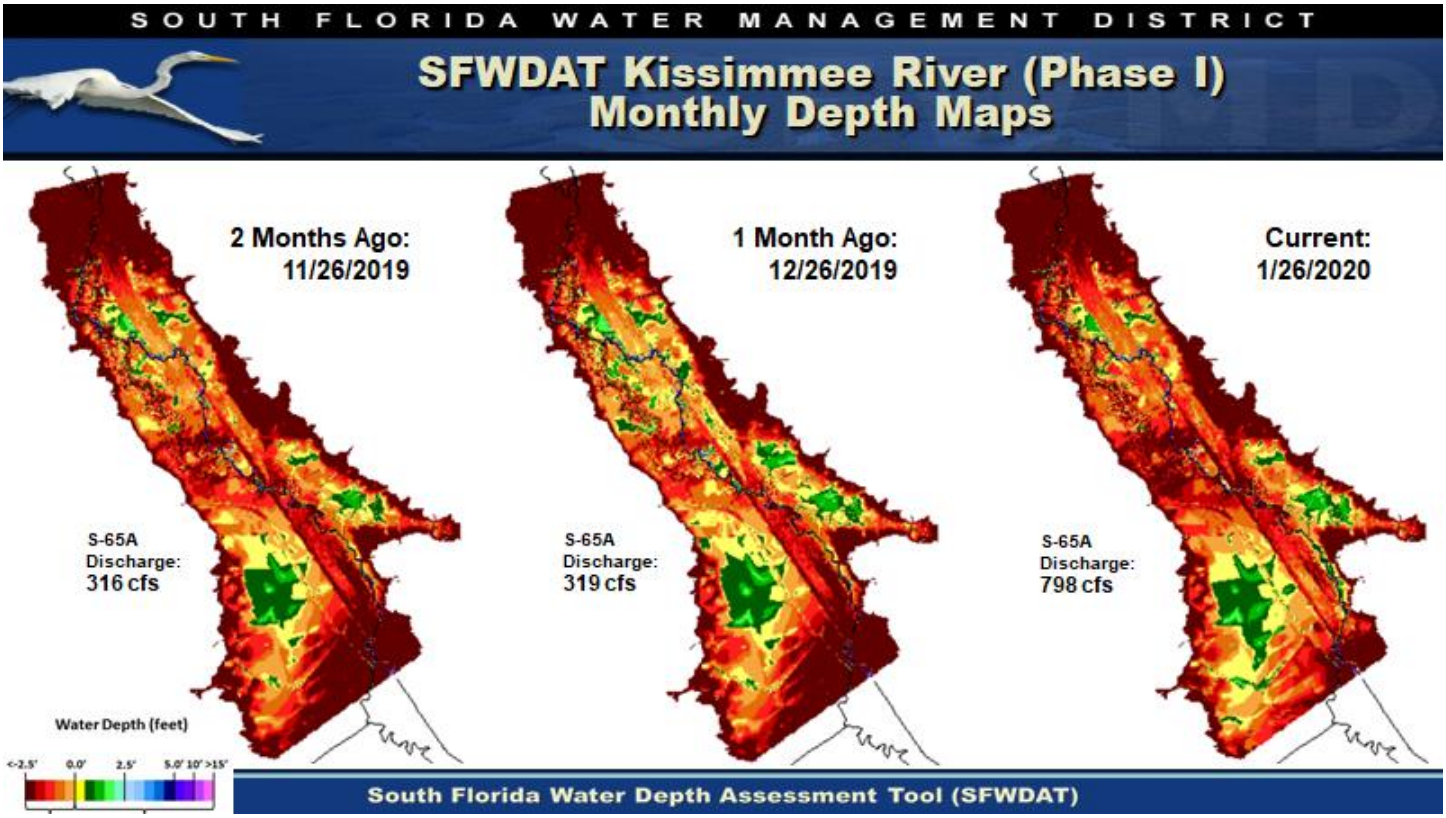


Figure 4. Phase I area floodplain water depths for this week, one month ago, and two months ago. Note that the WDAT color-coding has been modified to accommodate greater water depths; these maps are not directly comparable to Kissimmee Basin WDAT maps published prior to January 16, 2012.

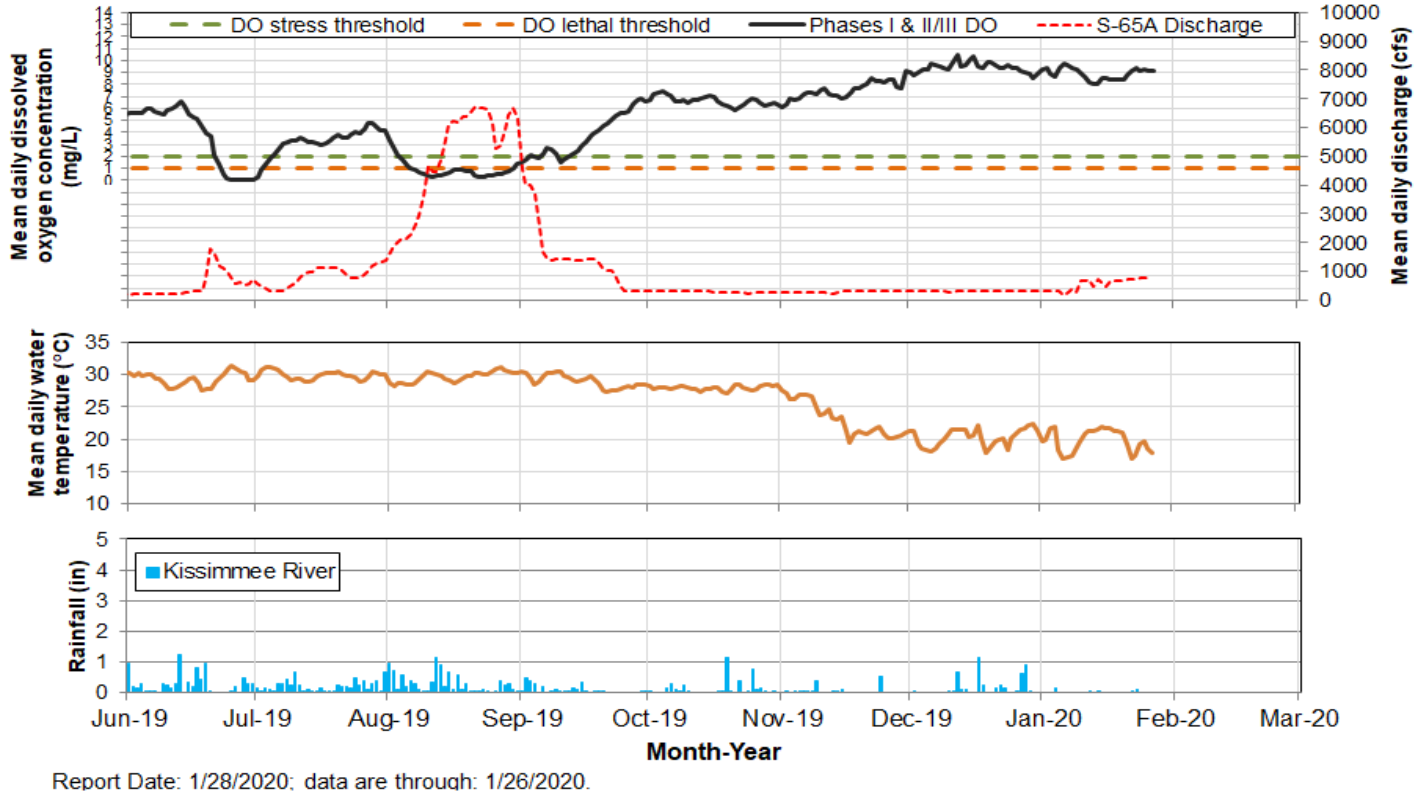


Figure 5. Mean daily dissolved oxygen, discharge, temperature and rainfall in the Phases I/II/III river channel.

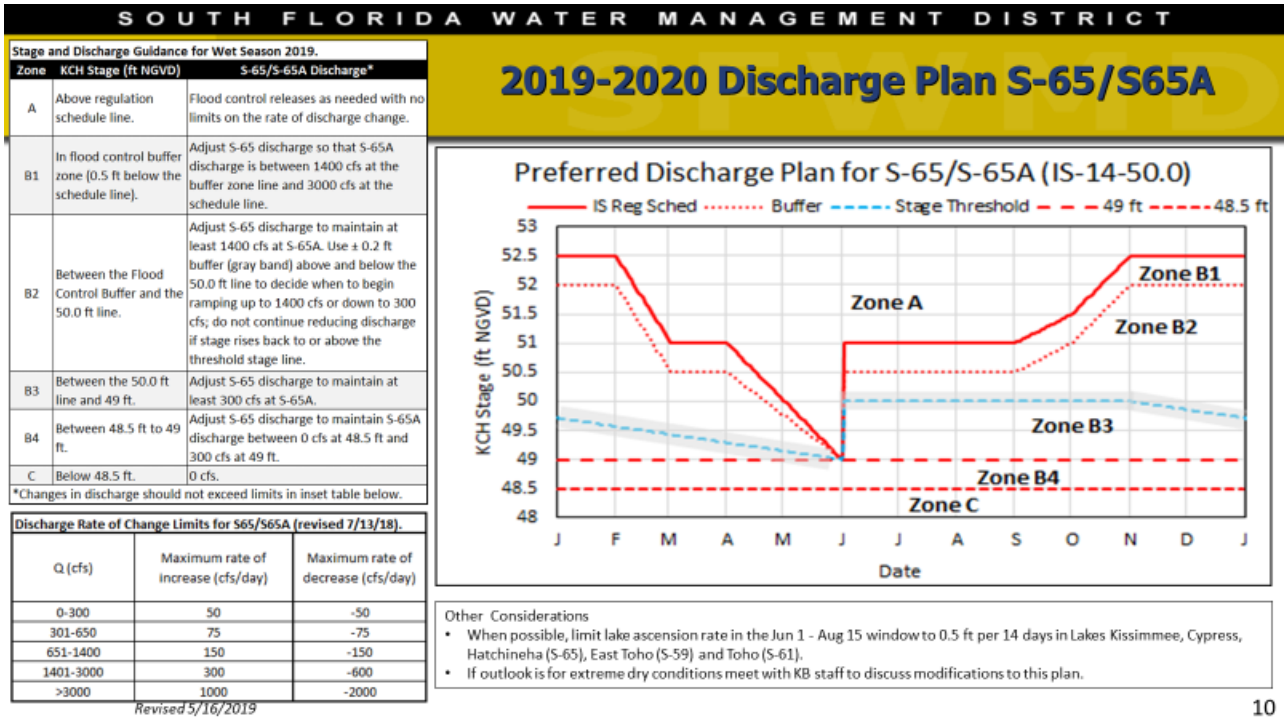


Figure 6. The 2019-2020 Discharge Plan for S-65/S-65A.

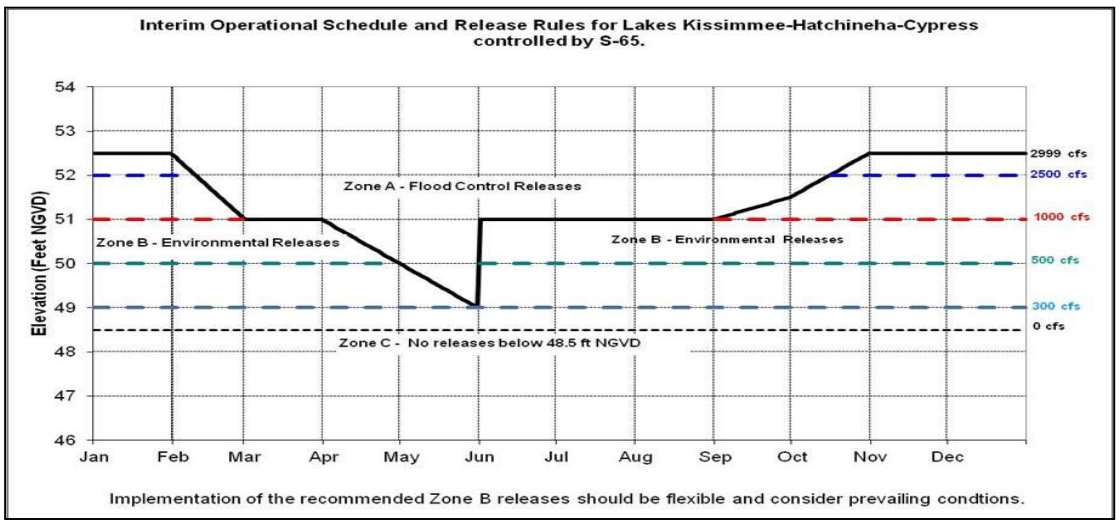


Figure 7. Interim operations schedule for S-65. The discharge schedule shown to the right has not been used in recent years.

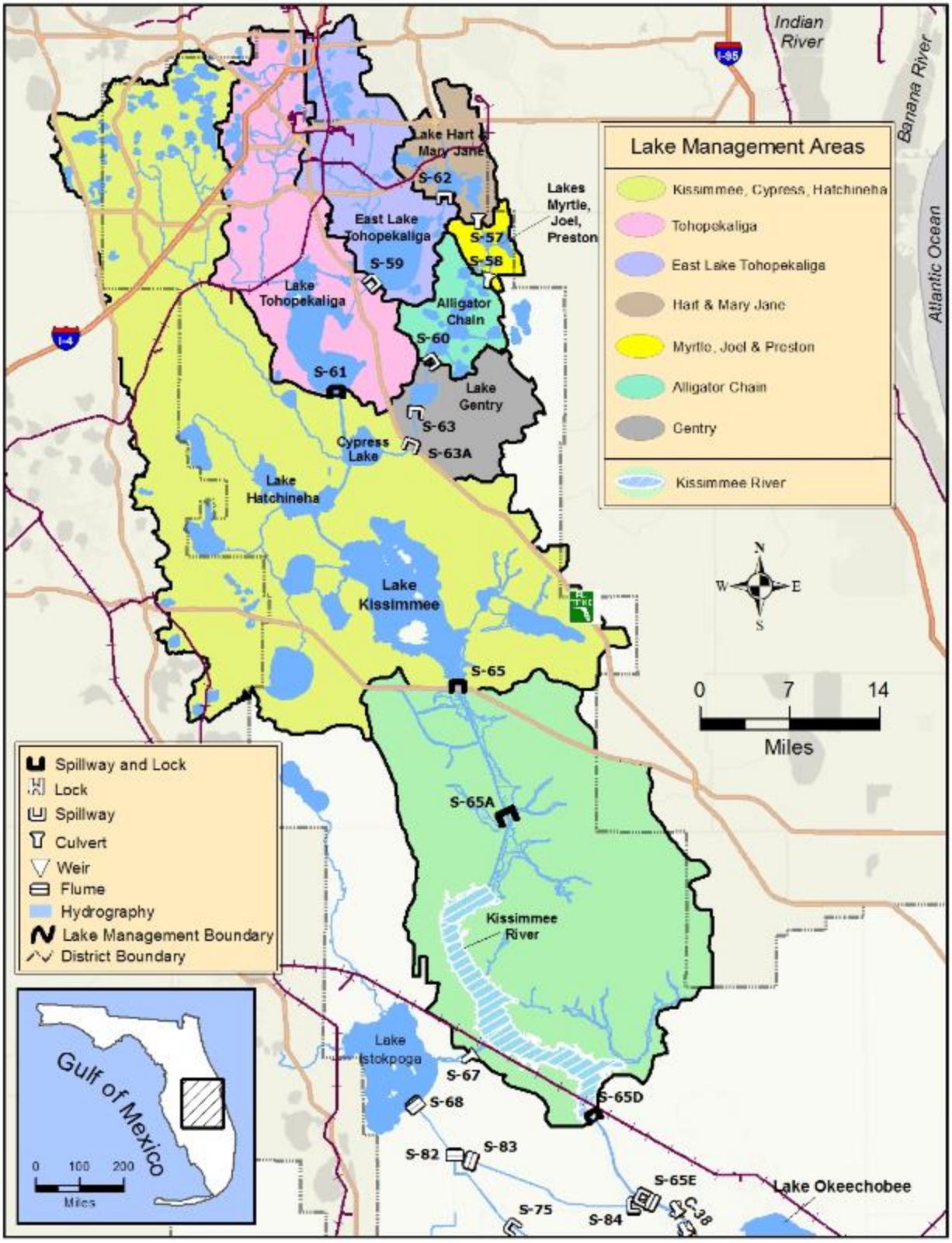


Figure 8. Lake Management Areas

LAKE OKEECHOBEE

According to the USACE web site, Lake Okeechobee average daily lake stage was at 12.80 feet NGVD for January 27, 2020 decreasing 0.13 feet from the previous week. This value is based on the use of four interior lake stations (L001, L005, L006 and LZ40) and four perimeter stations (S-308, S-352, S-4 and S-133). The Lake is 0.30 feet lower than a month ago, but 0.35 feet higher a year ago (Figure 1). The Lake is currently 1.5 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 exhibited a gradual, steady decline since early September 2019 (Figure 4). According to RAINDAR, during the week of January 21 to January 27, 2020, 0.07 inches of rain fell directly over the lake and over the majority of the watershed. The exception was the eastern coastline which experienced up to 3 inches of rain (Figure 5).

The average daily inflows (minus rainfall) to the Lake were again higher than the previous week, increasing slightly to 758 cfs from 697 cfs. Most of the inflow came from the Kissimmee River (S-65E & S-65EX1), which increased from 650 cfs to 730 cfs. Flows from Indian Prairie (S-71, S-72, and S-84/S-84X) increased from 7 cfs to 13 cfs while flows through both Fisheating Creek and S-191 decreased (Table 1).

Outflow (minus evapotranspiration) increased again from the previous week, going from 2,381 cfs to 2,809 cfs. Flows west through the S-77 increased from 630 cfs to 799 cfs, flows east through the S-308 were similar to the previous week at 530 cfs, while flows south through the S-350 structures increased from 1,233 cfs the previous week to 1,473 cfs this past week. Outflows to the L-8 canal via Culvert 10A were minimal, at 8 cfs. The corrected average daily evapotranspiration value for the week based on the L006 and LZ40 weather platform solar radiation was the same as the previous week at 0.54 inches.

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 6 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 (January 26, 2020) using NOAA's cyanobacteria monitoring product derived from EUMETSAT's Sentinel 3 OLCI sensor data showed that bloom potential is low across the majority of the central and eastern portions of the Lake and moderate risk along the western shoreline from near Indian Prairie Canal south to Clewiston (Figure 7).

Water Management Summary

Lake Okeechobee stage was 12.80 feet NGVD on January 27, 2020, down 0.13 feet from the previous week, and 0.30 feet lower than 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 1.49 feet below the bottom of the envelope. Low lake stages continue to benefit recovering SAV communities, but also stress higher elevation marshes; areas with elevations greater than approximately 14.0 feet NGVD have now been dry since late October of 2018. Low stages throughout 2019 likely limited prey production in the marsh and appear to be impacting wading bird use of the Lake prior to the 2020 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	650	730	0.3
S-71 & S-72	7	13	0.0
S-84 & S-84X	0	0	0.0
Fisheating Creek	18	13	0.0
S-154	0	0	0.0
S-191	21	0	0.0
S-133 P	0	0	0.0
S-127 P	0	0	0.0
S-129 P	0	0	0.0
S-131 P	0	3	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			
Rainfall	0	156	0.1
Total	**697**	**914**	**0.4**

OUTFLOWS	Previous week Avg Daily CFS	Avg Daily Flow cfs	Equivalent Depth Week Total (in)
S-77	630	799	0.4
S-308	504	530	0.2
S-351	507	328	0.1
S-352	223	242	0.1
S-354	503	903	0.4
L-8 Outflow	15	8	0.0
ET	1194	1214	0.5
Total	**3575**	**4023**	**1.8**

Provisional Data

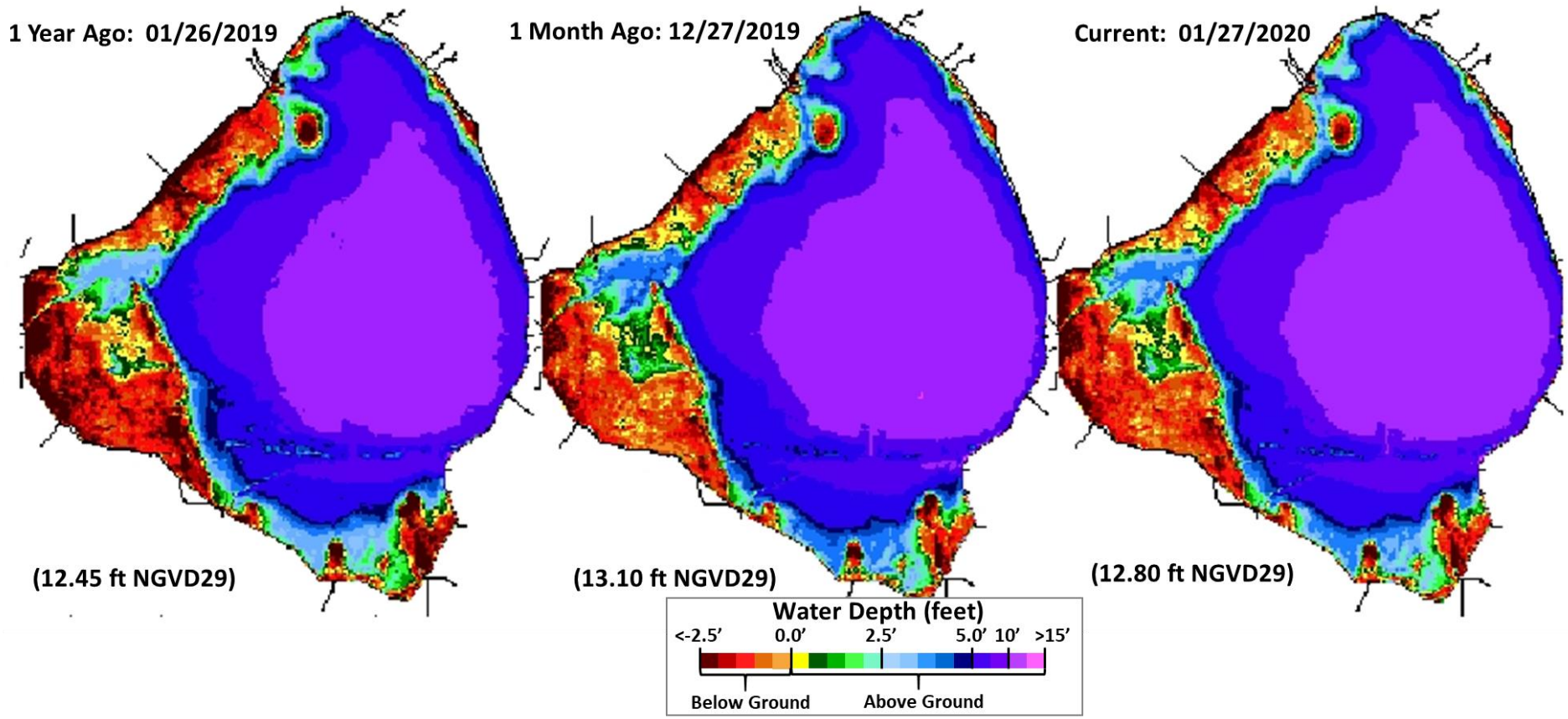


Figure 1. Water depth estimates on Lake Okeechobee based on the South Florida Water Depth Assessment Tool.

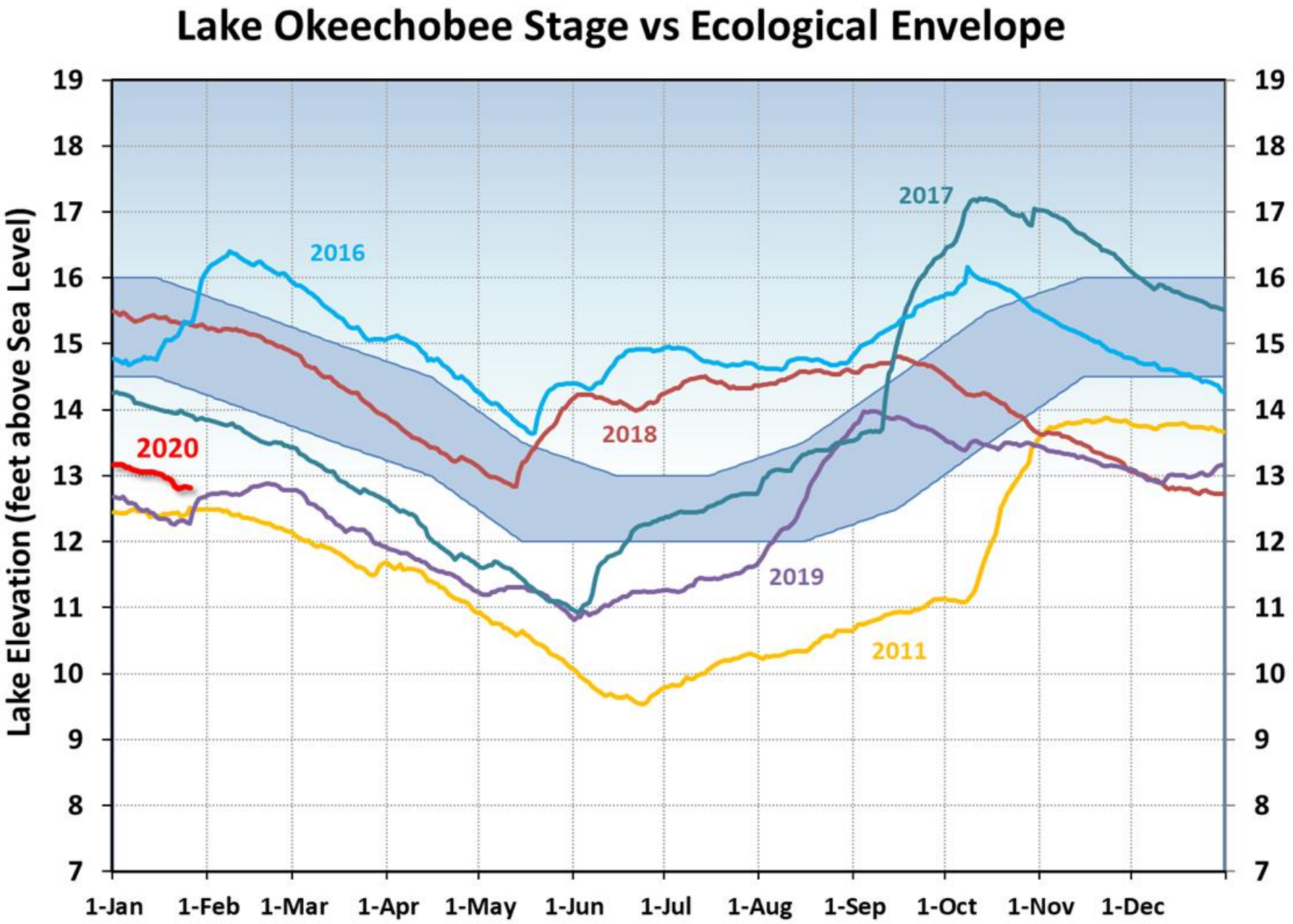


Figure 2. Select annual stage hydrographs for Lake Okeechobee in comparison to the Ecological Envelope.

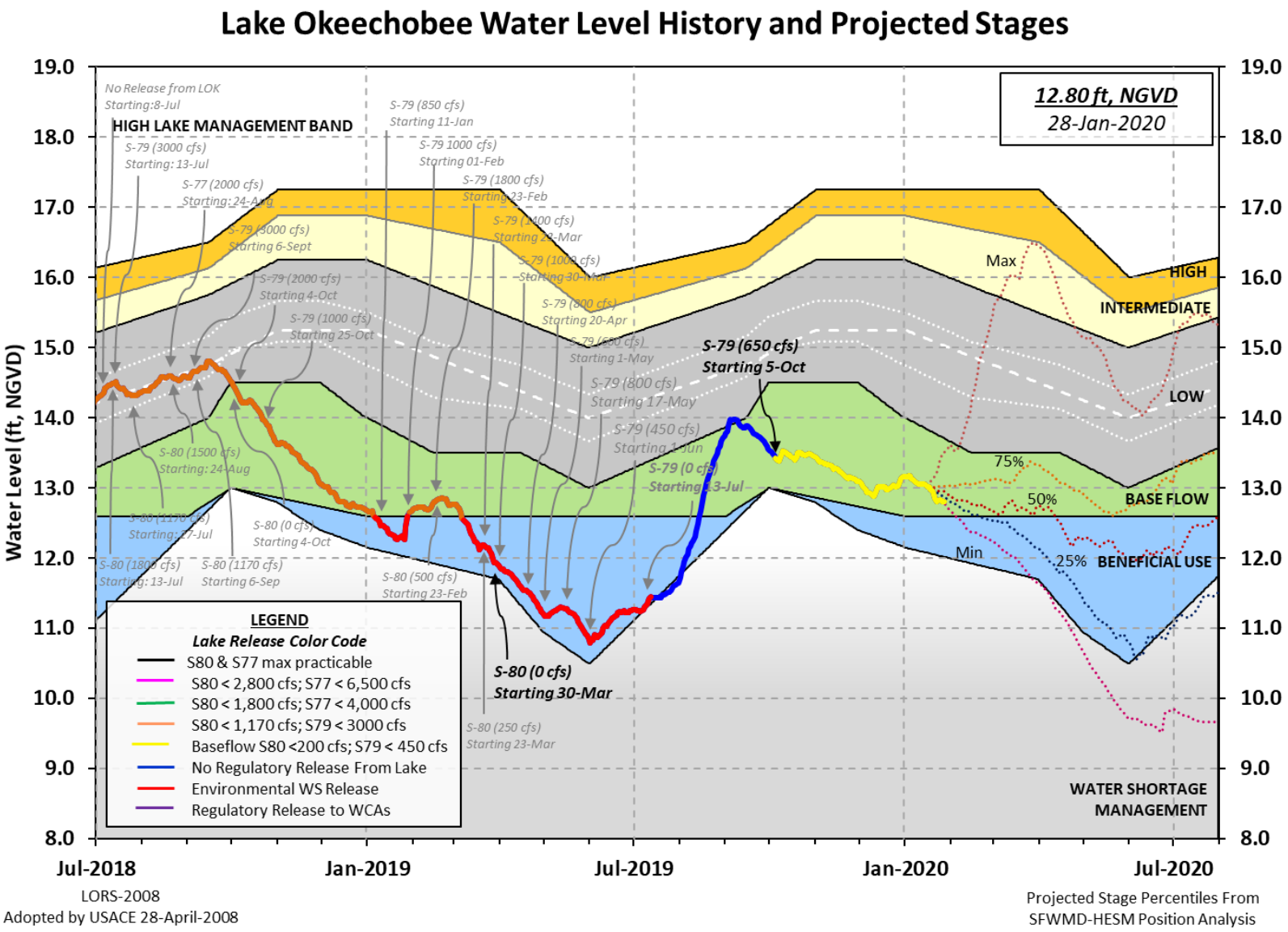


Figure 3. Recent Lake Okeechobee stage and releases, with projected stages based on a dynamic position analysis.

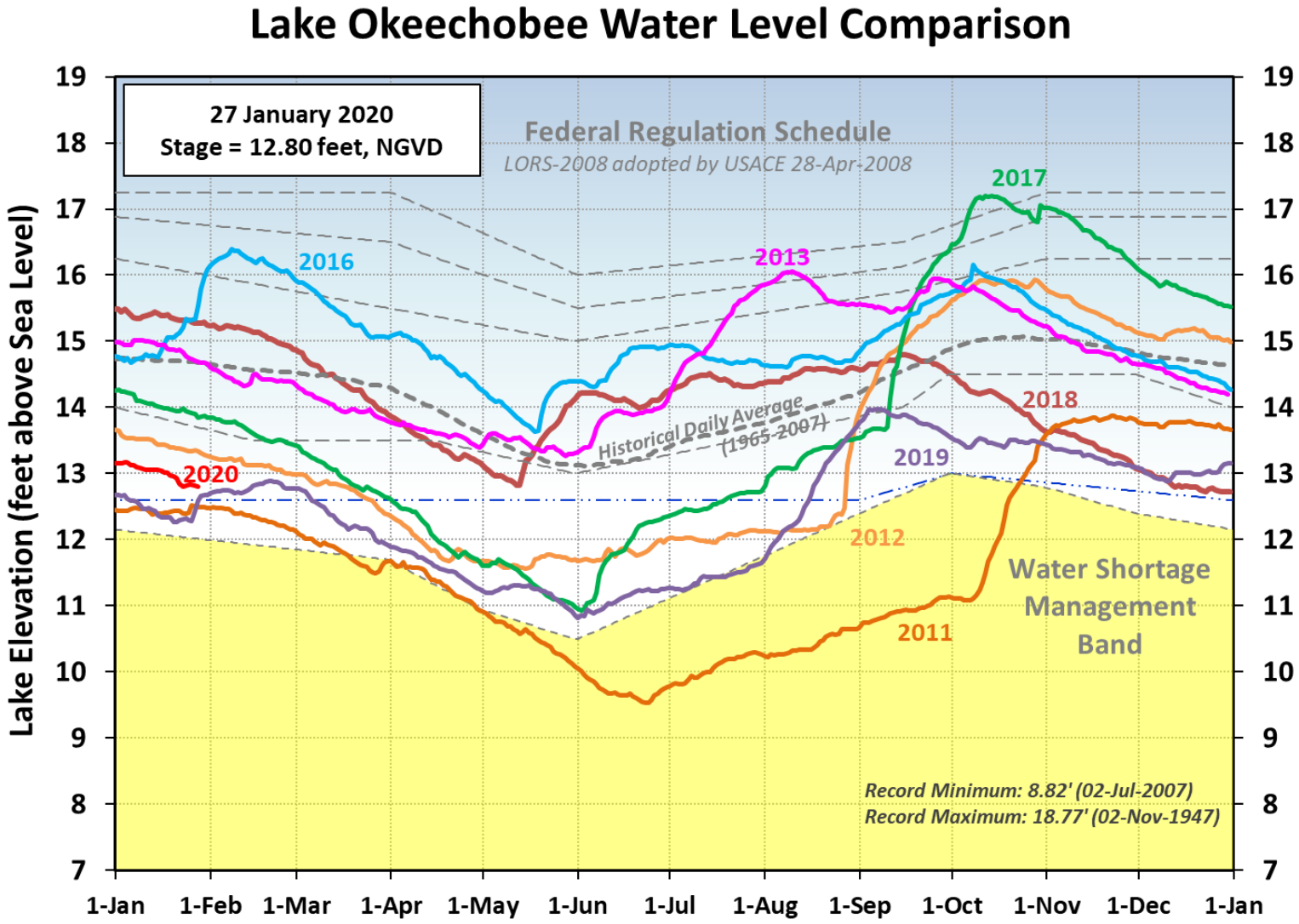


Figure 4. Select annual stage hydrographs for Lake Okeechobee from 2010 – 2019.

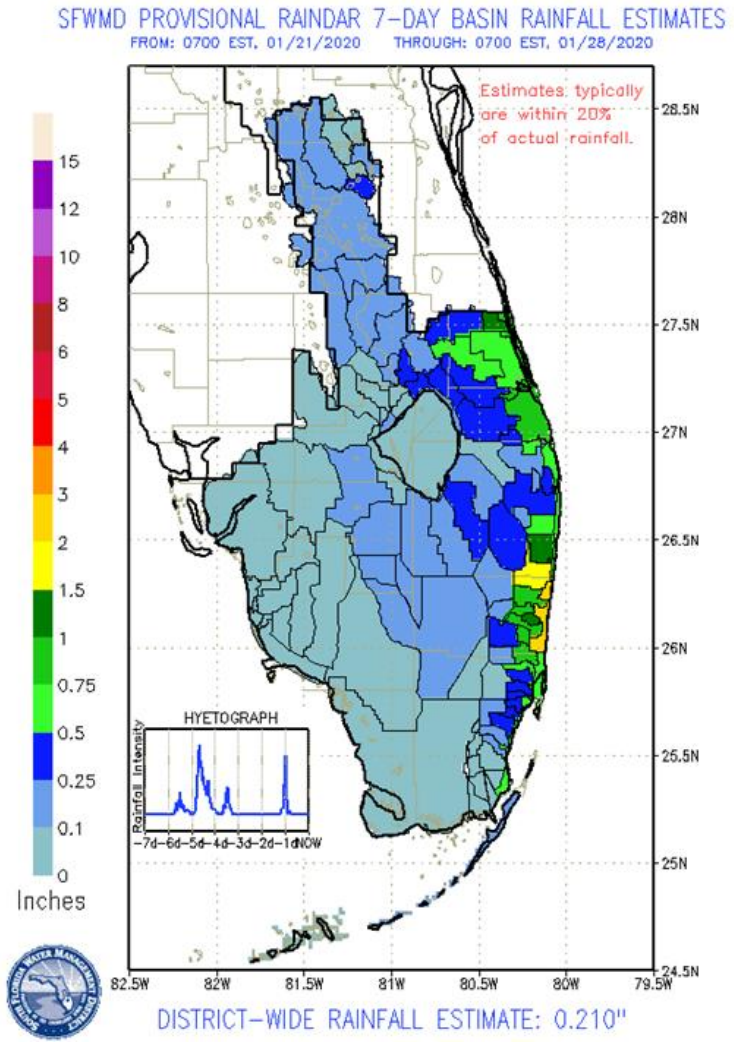


Figure 5. 7-Day rainfall estimates by RAINDAR.

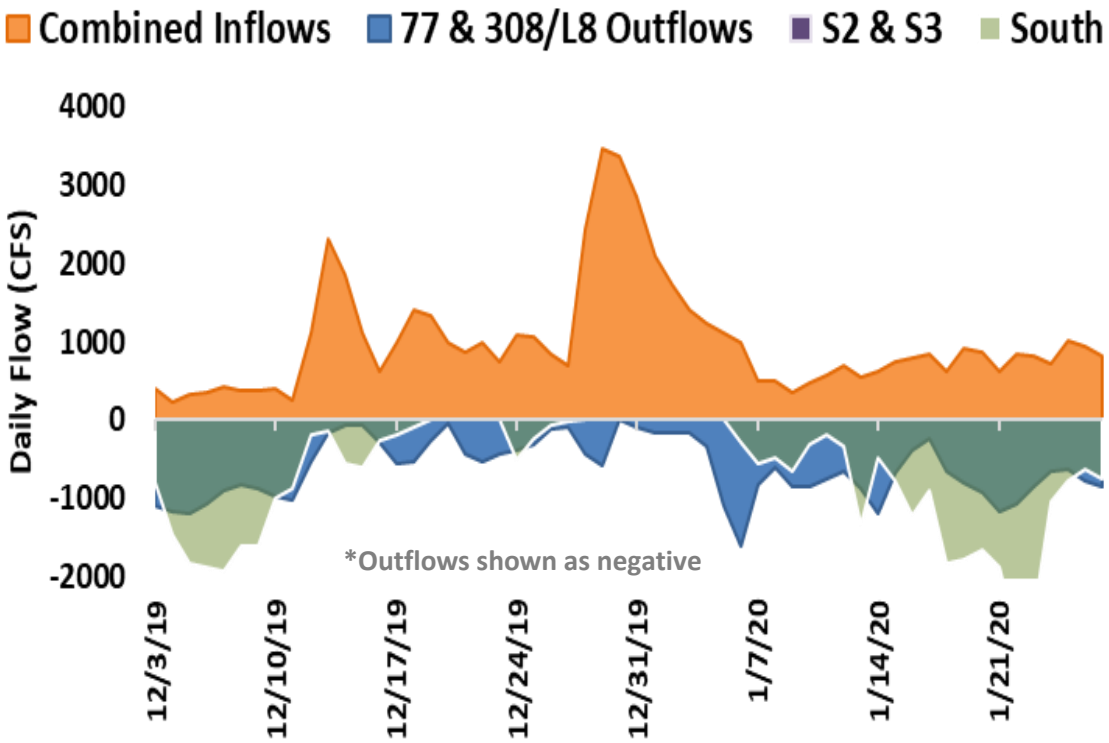


Figure 6. Major inflows (orange) and outflows (blue) of Lake Okeechobee, including the S-350 structures designated as South (green). The L-8 Canal flows through Culvert 10A are included as outflows when positive, and as inflows when backflowing into the lake. All inflows and outflows are shown as positive 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.

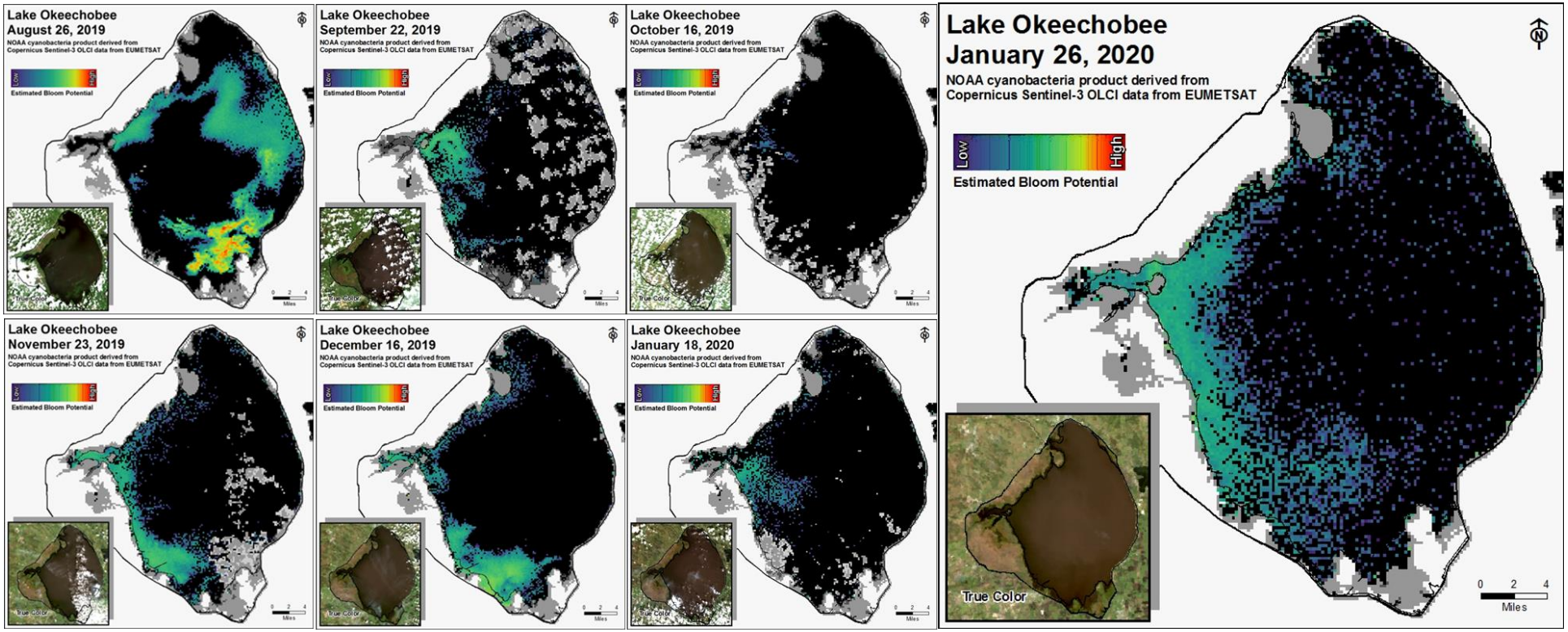


Figure 7. Potential for cyanobacterial blooms on Lake Okeechobee in 2019 and 2020, based on NOAA's harmful algal bloom monitoring system derived from Copernicus Sentinel-3 OLCI data from EUMETSAT. Gray indicates cloud cover.

ESTUARIES

St. Lucie Estuary:

Last week total inflow to the St. Lucie Estuary averaged approximately 620 cfs (Figures 1 and 2) and last month inflow averaged about 918 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	435
S-80	0
S-308	494
S-49 on C-24	39
S-97 on C-23	58
Gordy Rd. structure on Ten Mile Creek	88

Over the past week, salinity increased 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 20.1. 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)	**13.4** (6.5)	**19.4** (10.5)	NA[1]
US1 Bridge	**18.4** (12.8)	**21.1** (14.8)	10.0-26.0
A1A Bridge	**25.8** (23.2)	**28.7** (27.6)	NA[1]

[1]Envelope not applicable

Caloosahatchee Estuary:

Last week total inflow to the Caloosahatchee Estuary averaged approximately 823 cfs (Figures 5 and 6) and last month inflow averaged about 879 cfs. Last week's provisional averaged inflows from the structures are shown in Table 3.

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

Location	Flow (cfs)
S-77	799
S-78	499
S-79	703
Tidal Basin Inflow	120

Over the past week, salinity decreased at S-79 and at Sanibel and remained about the same throughout the rest of the estuary (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 in the fair range 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)	**3.5** (4.2)	**3.6** (4.2)	NA[1]
Val I75	**4.6** (4.3)	**5.8** (5.9)	0.0-5.0[2]
Ft. Myers Yacht Basin	**10.1** (10.8)	**12.9** (12.6)	NA
Cape Coral	**18.3** (17.2)	**20.0** (19.5)	10.0-30.0
Shell Point	**27.1** (27.7)	**27.6** (28.3)	10.0-30.0
Sanibel	**30.7** (31.8)	**30.8** (32.2)	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 30 days using the autoregression model (Qiu and Wan, 2013) coupled with a linear reservoir model for the tidal basin predicts daily salinity ranging from 2.9 to 10.0 at the end of the 30 day period for pulse release at S-79 ranging from 0 to 1000 cfs and Tidal Basin inflows of 95 cfs. The 30-day moving average surface salinity at Val I-75 is forecast to be between 3.1 and 6.9 (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	95	10.0	6.9
B	450	95	5.9	5.3
C	650	95	4.3	3.8
D	800	95	3.7	3.6
E	1000	95	2.9	3.1

Red tide

The Florida Fish and Wildlife Research Institute reported on January 24, 2020, that *Karenia brevis,* the Florida red tide dinoflagellate, was observed at background concentrations in two samples collected offshore of Lee County. *Karenia brevis* was not observed in samples collected from St. Lucie, Martin, or Palm Beach counties (no samples were analyzed this week from Broward or Miami-Dade counties).

Water Management Recommendations

Lake stage is in the Base Flow sub-band. Tributary conditions are normal. SFWMD's Lake Okeechobee Adaptive Protocol's Release Guidance suggests up to 450 cfs @ S-79 and up to 200 cfs @S-80.

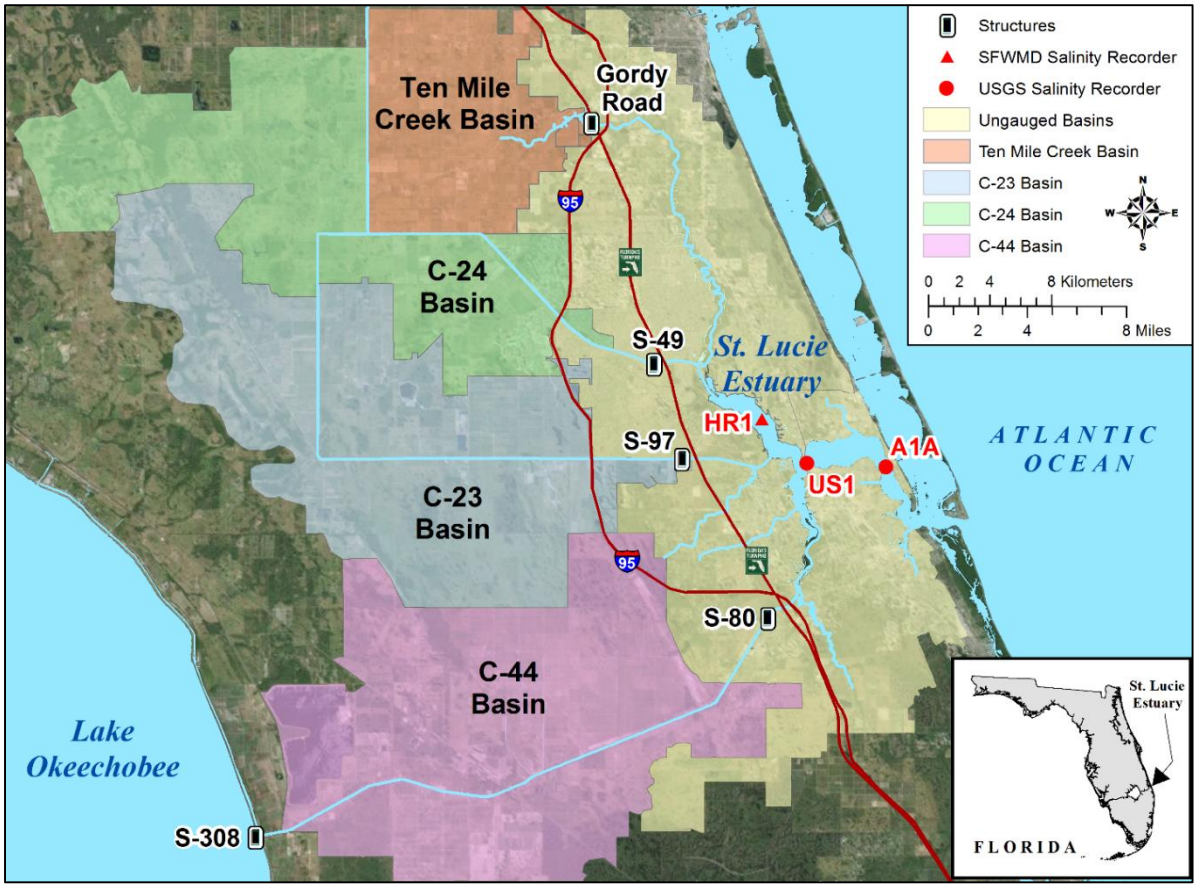


Figure 1. Basins, water control structures, and salinity monitoring for the St. Lucie Estuary.

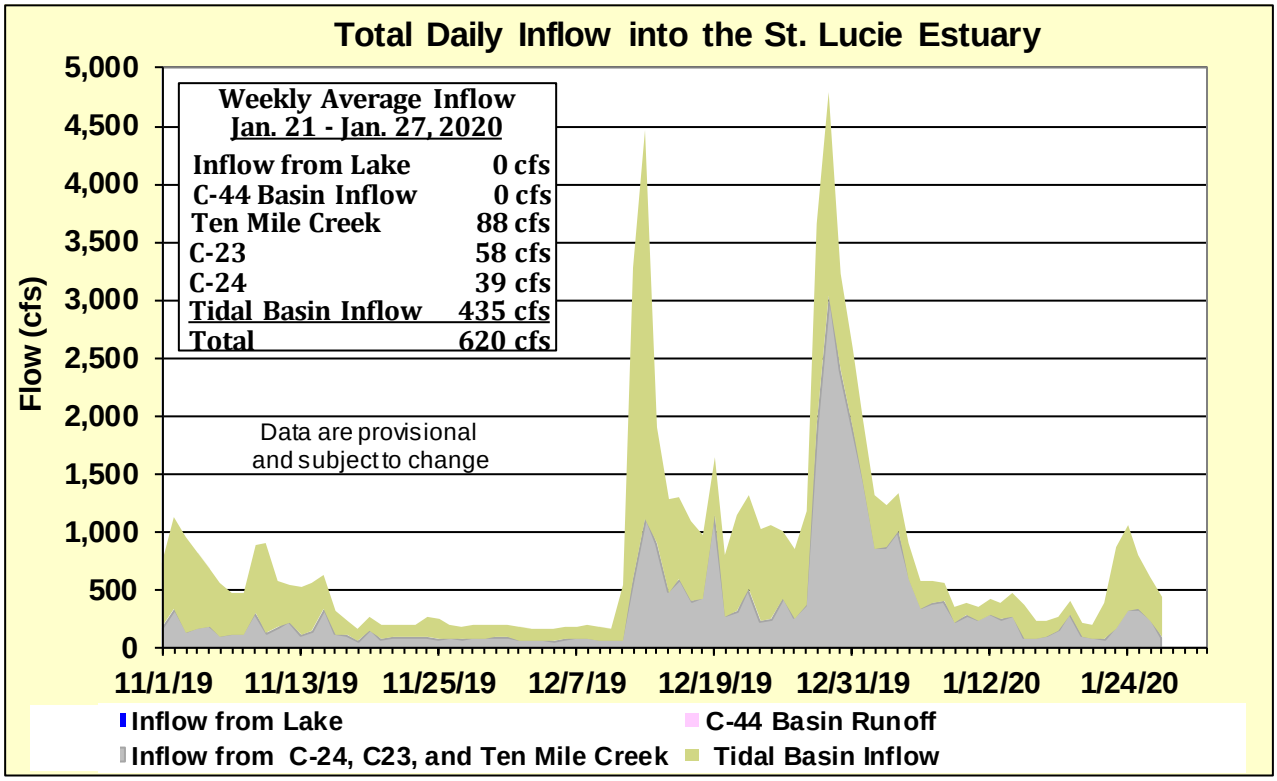


Figure 2. Total daily inflows from Lake Okeechobee and runoff from the C-44, C-23, C-24, Ten Mile Creek, and tidal basin into the St. Lucie Estuary.

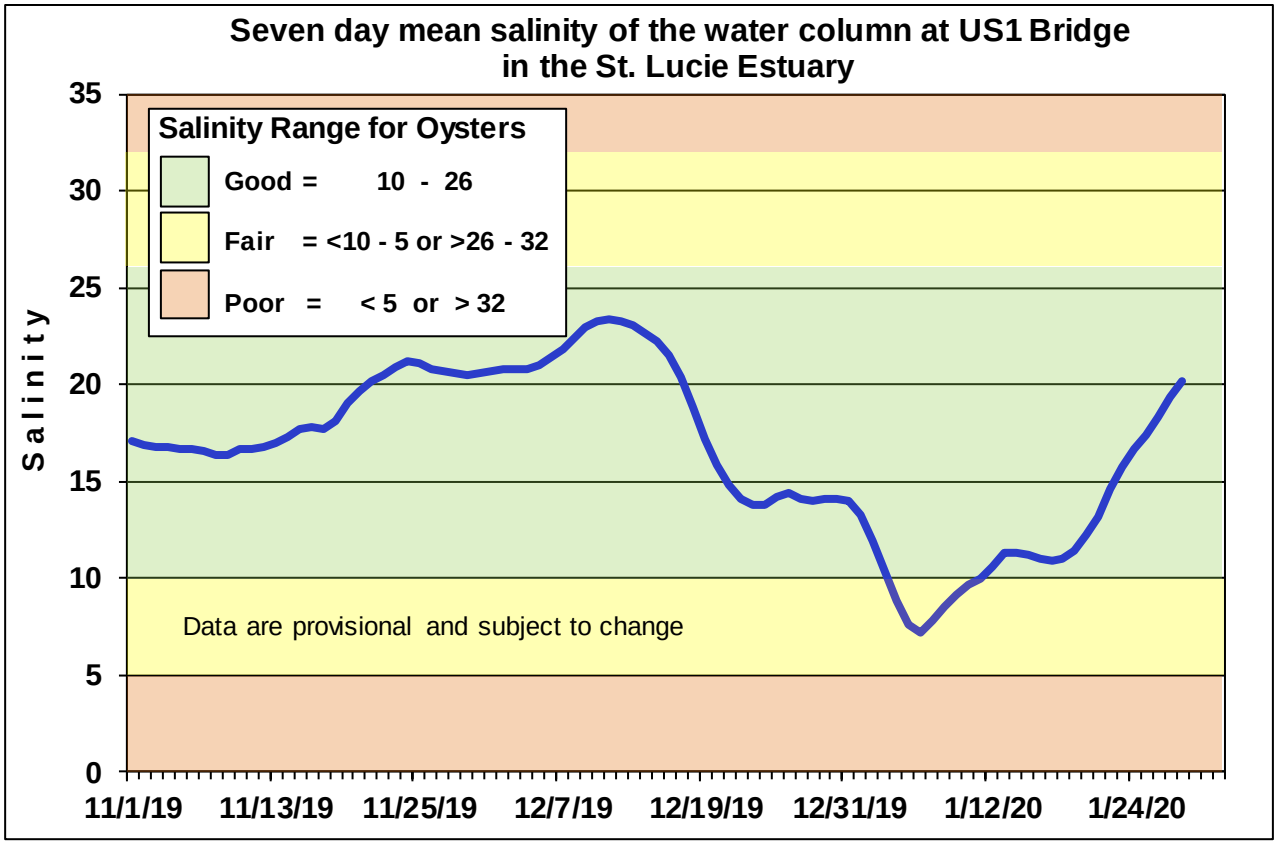


Figure 3. Seven-day mean salinity of the water column at the US1 Bridge.

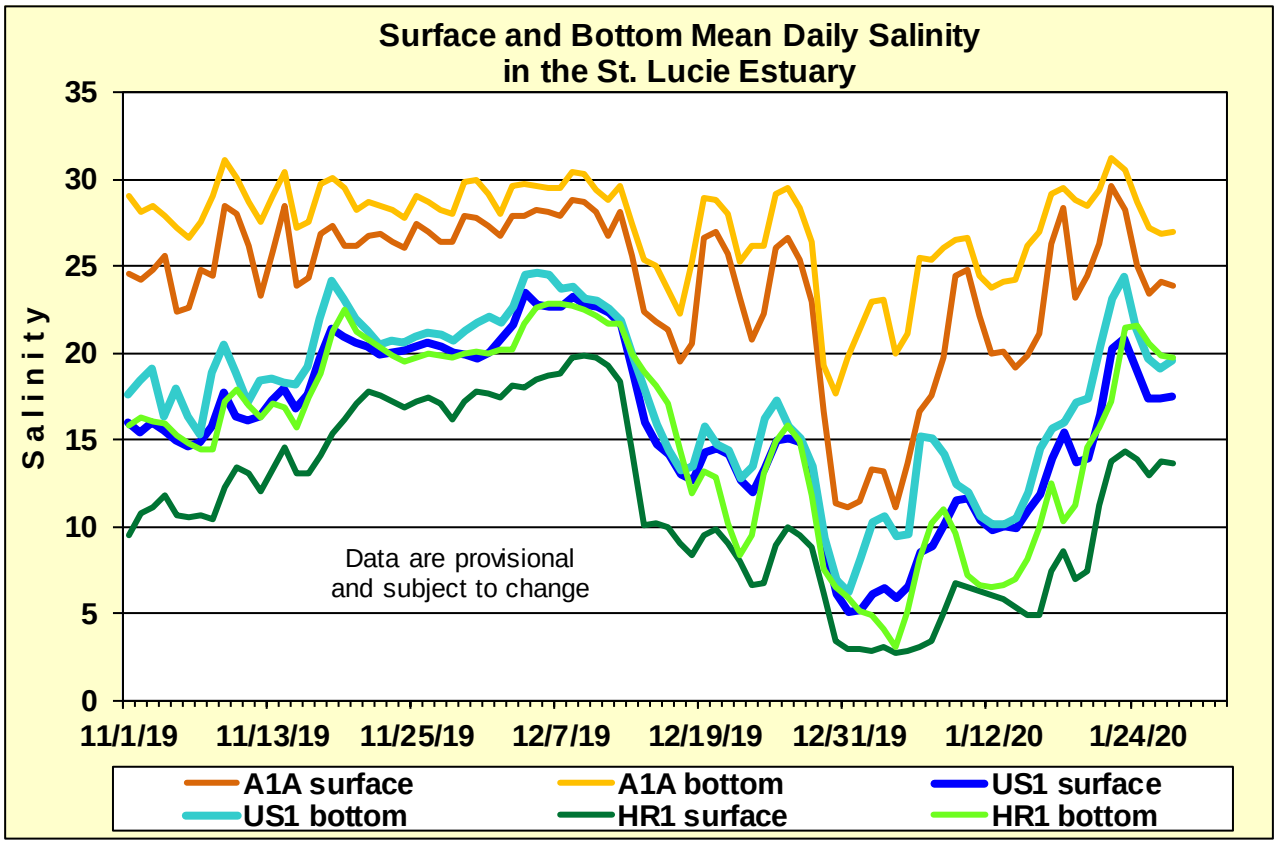


Figure 4. Daily mean salinity at the A1A, US1, and HR1 stations.

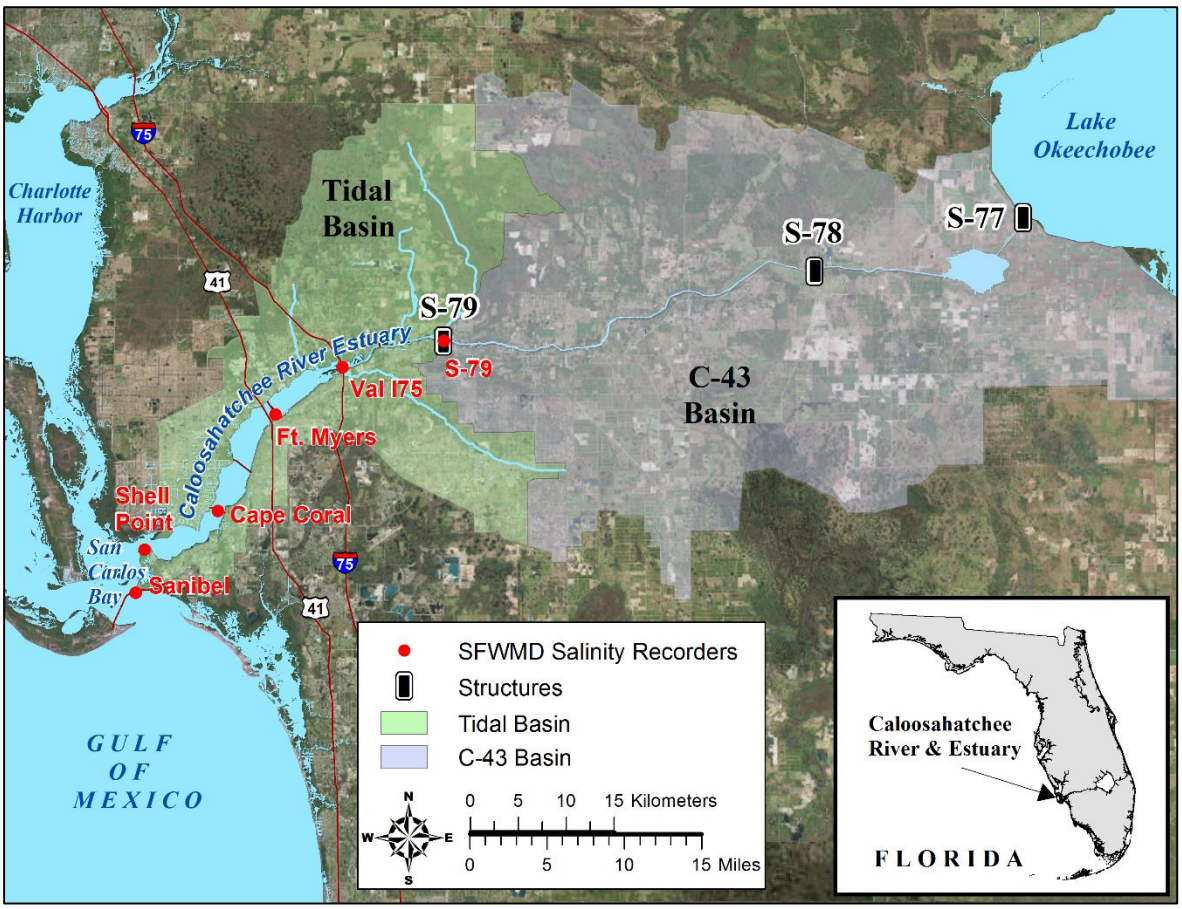


Figure 5. Basins, water control structures, and salinity monitoring for the Caloosahatchee Estuary.

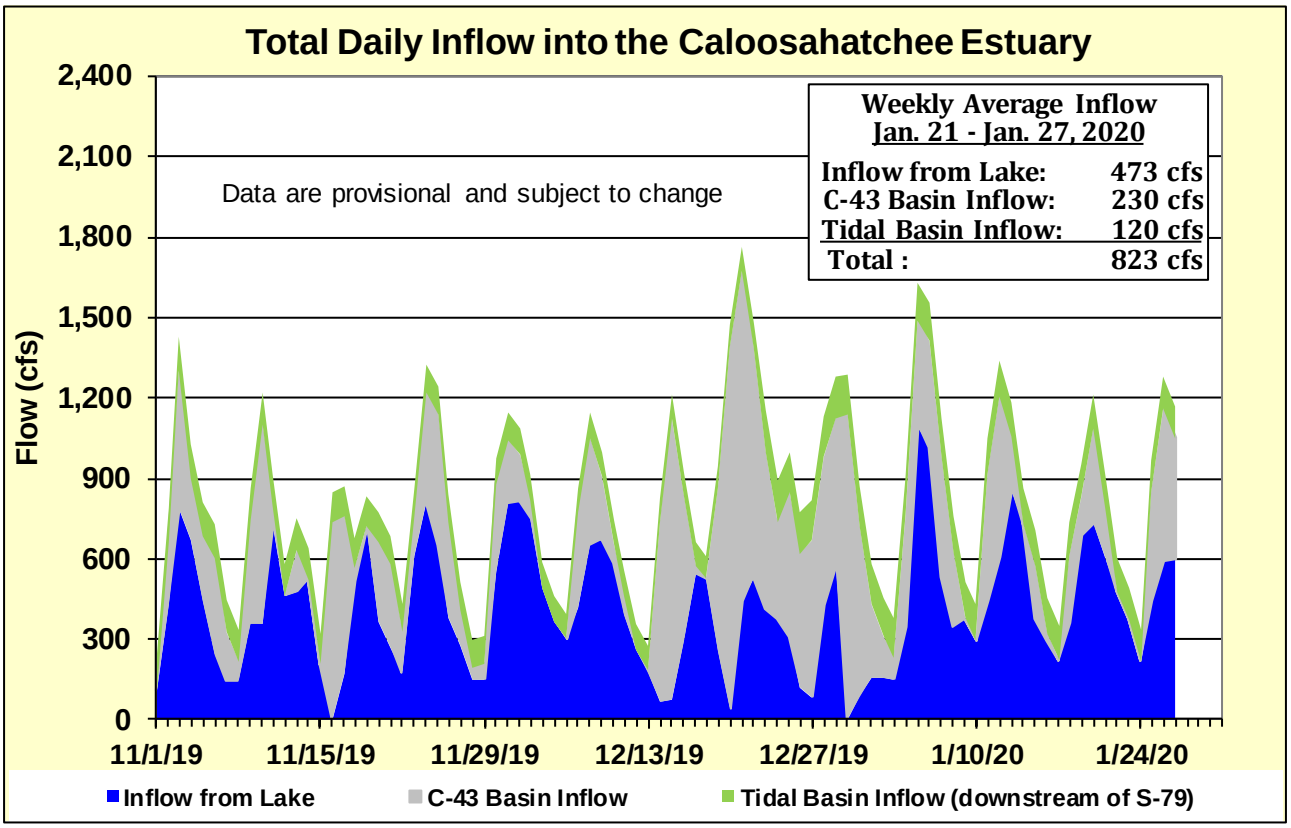


Figure 6. Total daily inflows from Lake Okeechobee, runoff from the C-43 basin

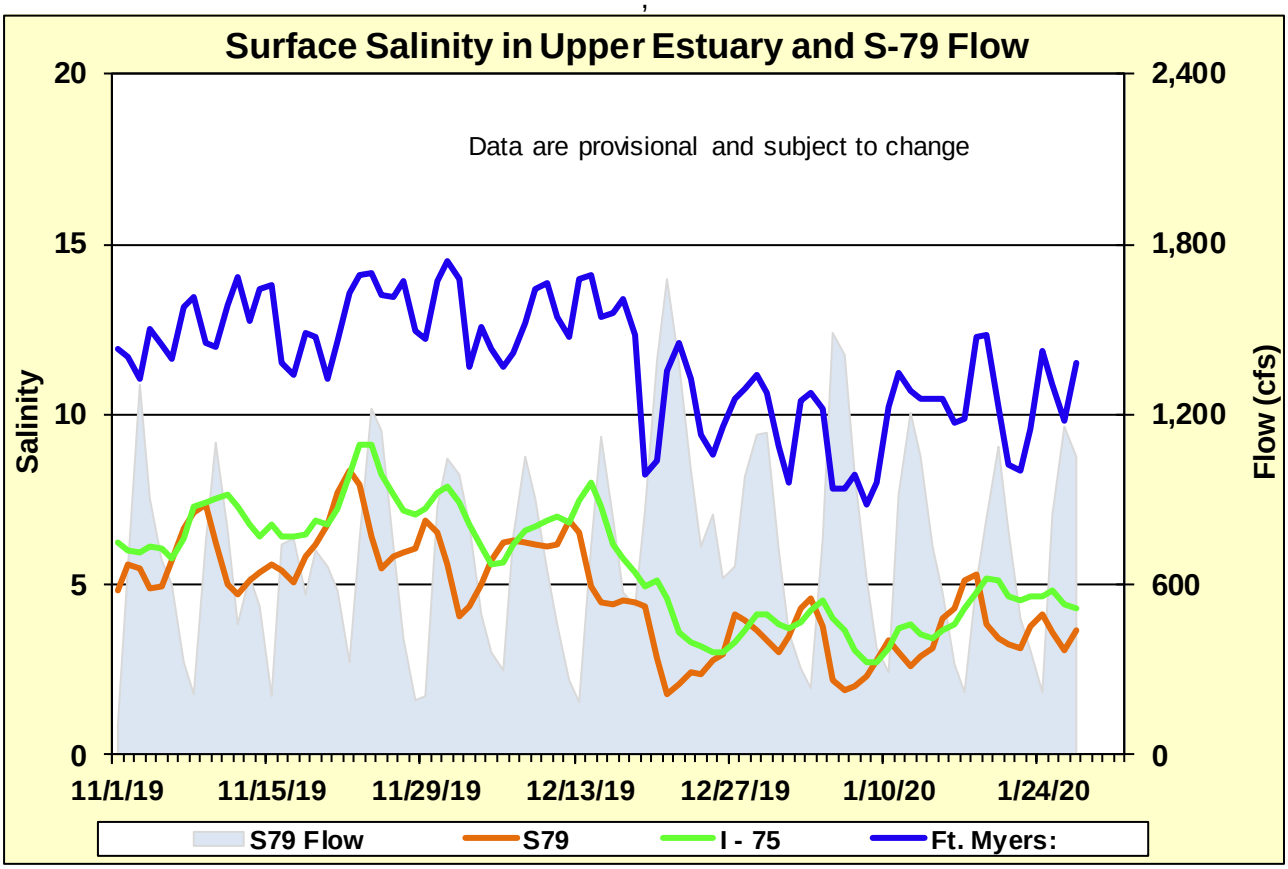


Figure 7. Daily mean flows at S-79 and salinity at upper estuary monitoring stations.

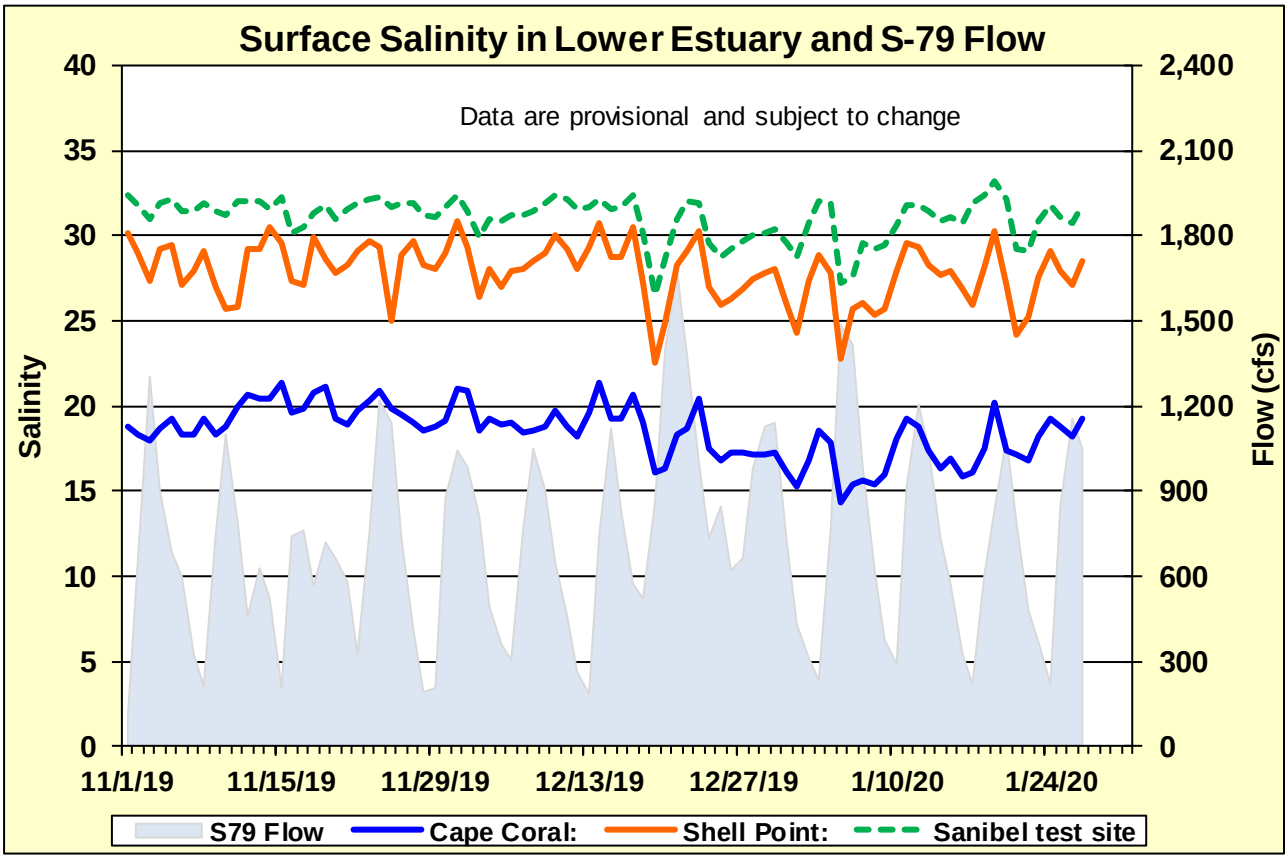


Figure 8. Daily mean flows at S-79 and salinity at lower estuary stations.

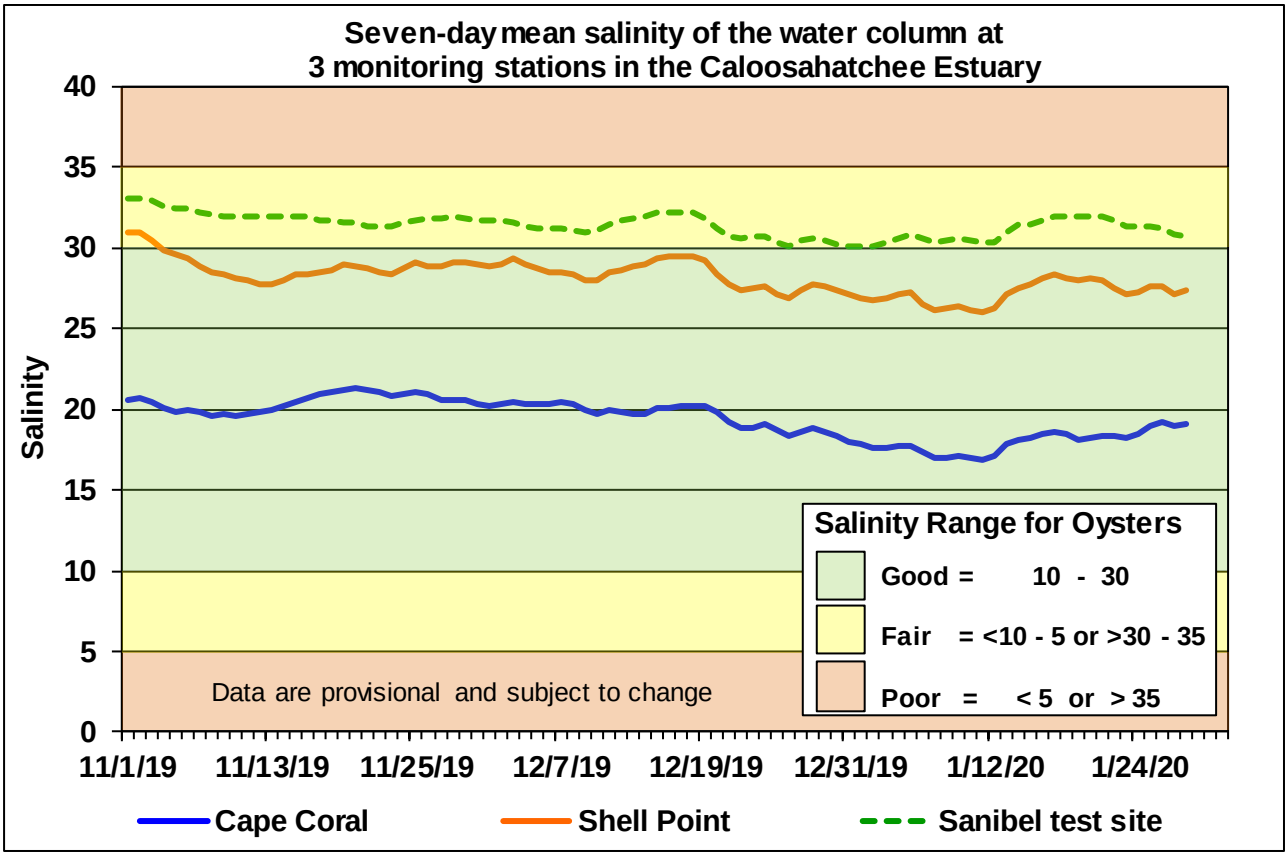


Figure 9. Seven-day mean salinity at Cape Coral, Shell Point, and Sanibel monitoring stations.

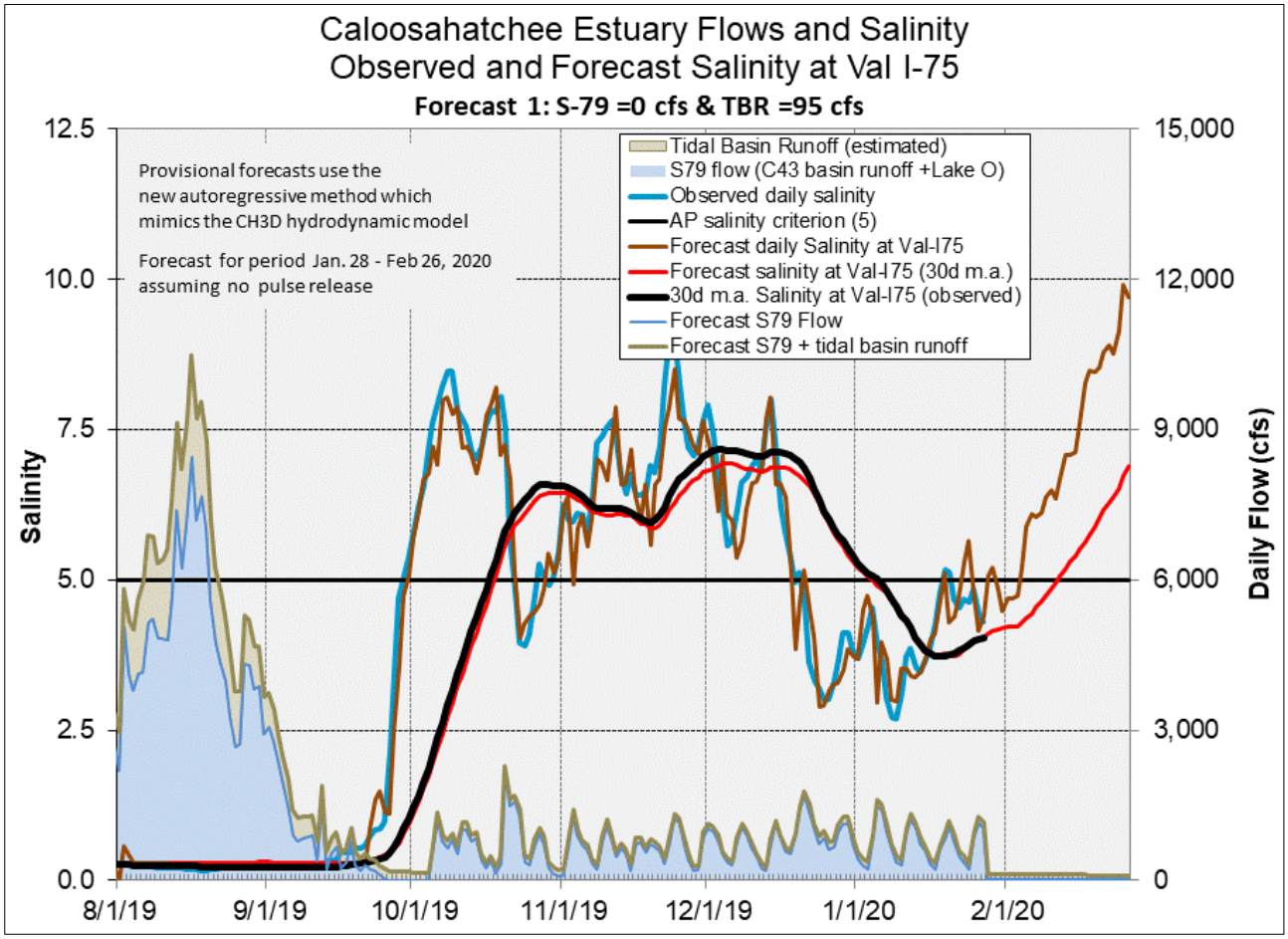


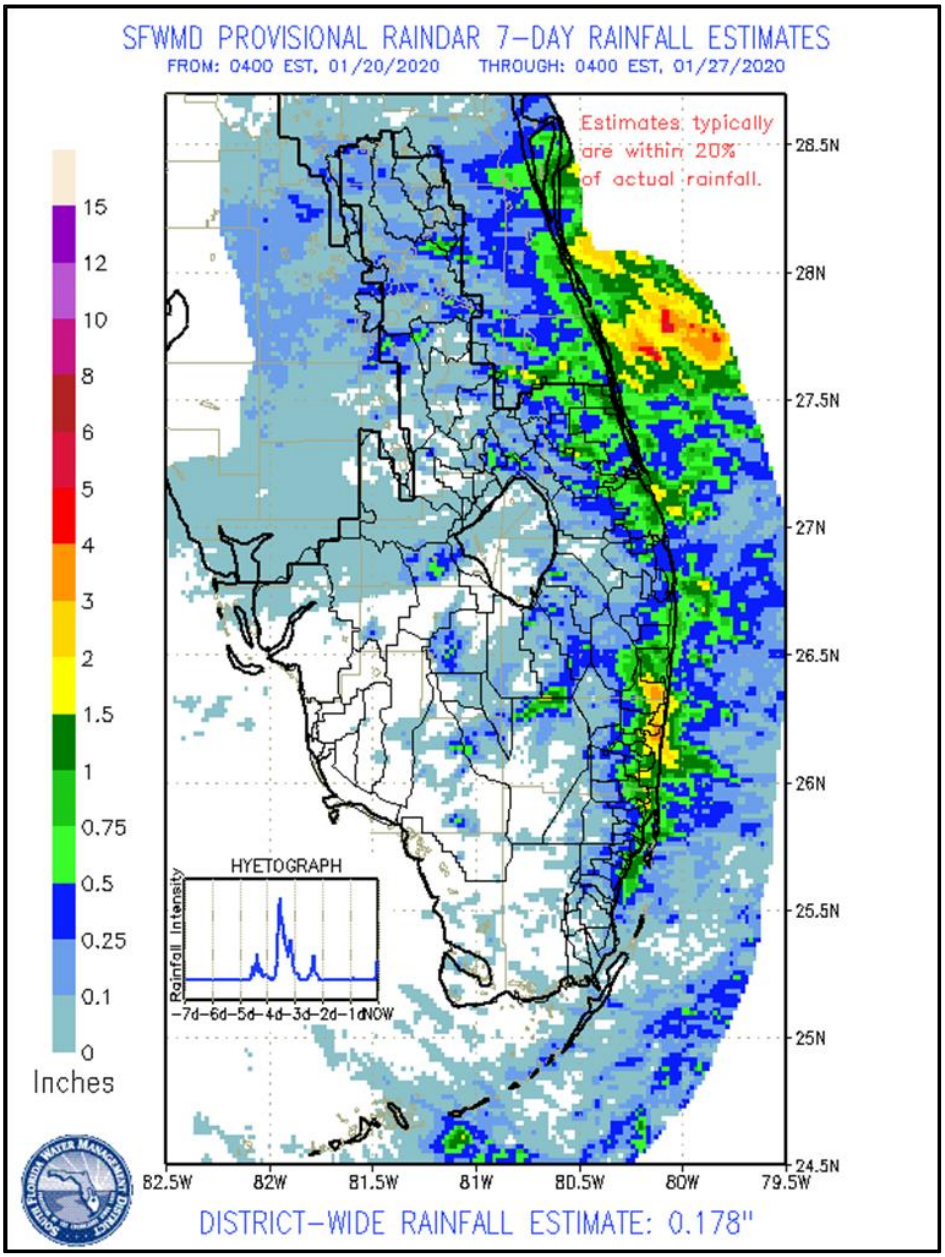
Figure 10. Forecasted Val I-75 surface salinity assu

EVERGLADES

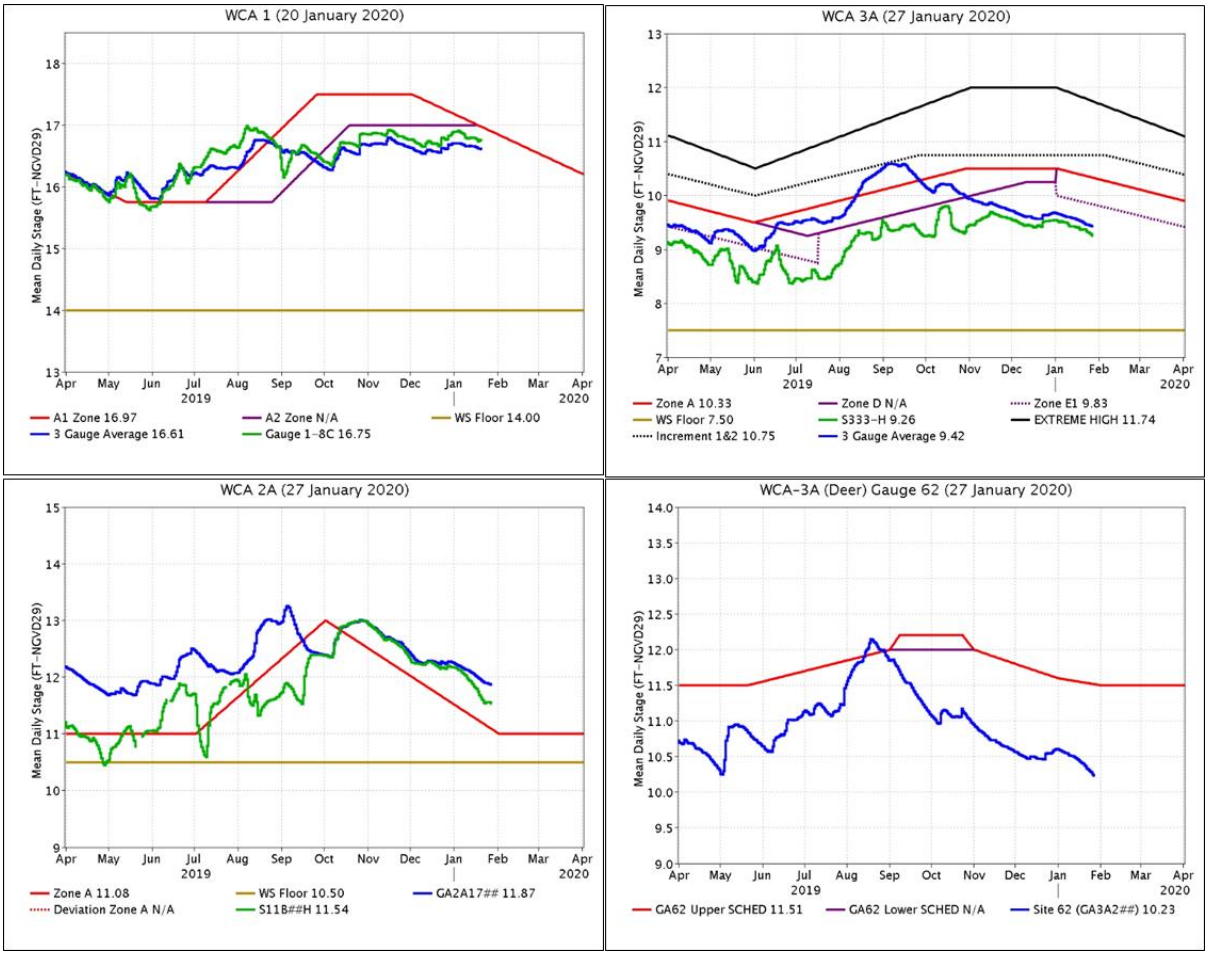
Spotty precipitation fell in the WCAs last week with very little to the south. Stages fell across the Everglades. Pan evaporation was estimated at 0.97 inches. At the gauges monitored for this report, stages fell on average 0.06 feet last week, about the same as the previous three weeks' rate of change.

Everglades Region	Rainfall (Inches)	Stage Change (feet)
WCA-1	0.34	+0.00
WCA-2A	0.09	−0.09
WCA-2B	0.23	−0.08
WCA-3A	0.12	−0.11
WCA-3B	0.04	−0.06
ENP	<0.01	−0.05

Good
Fair
Poor

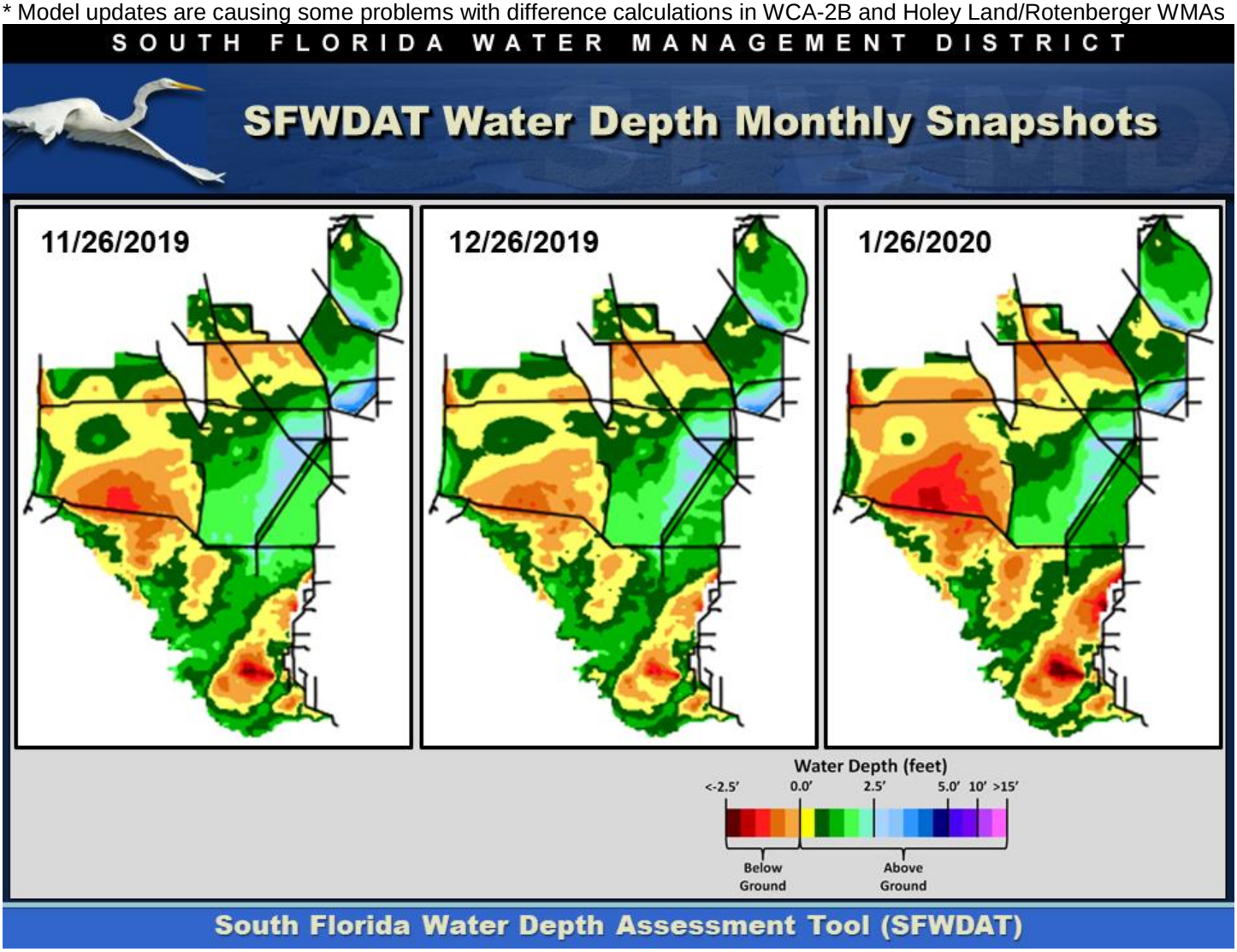


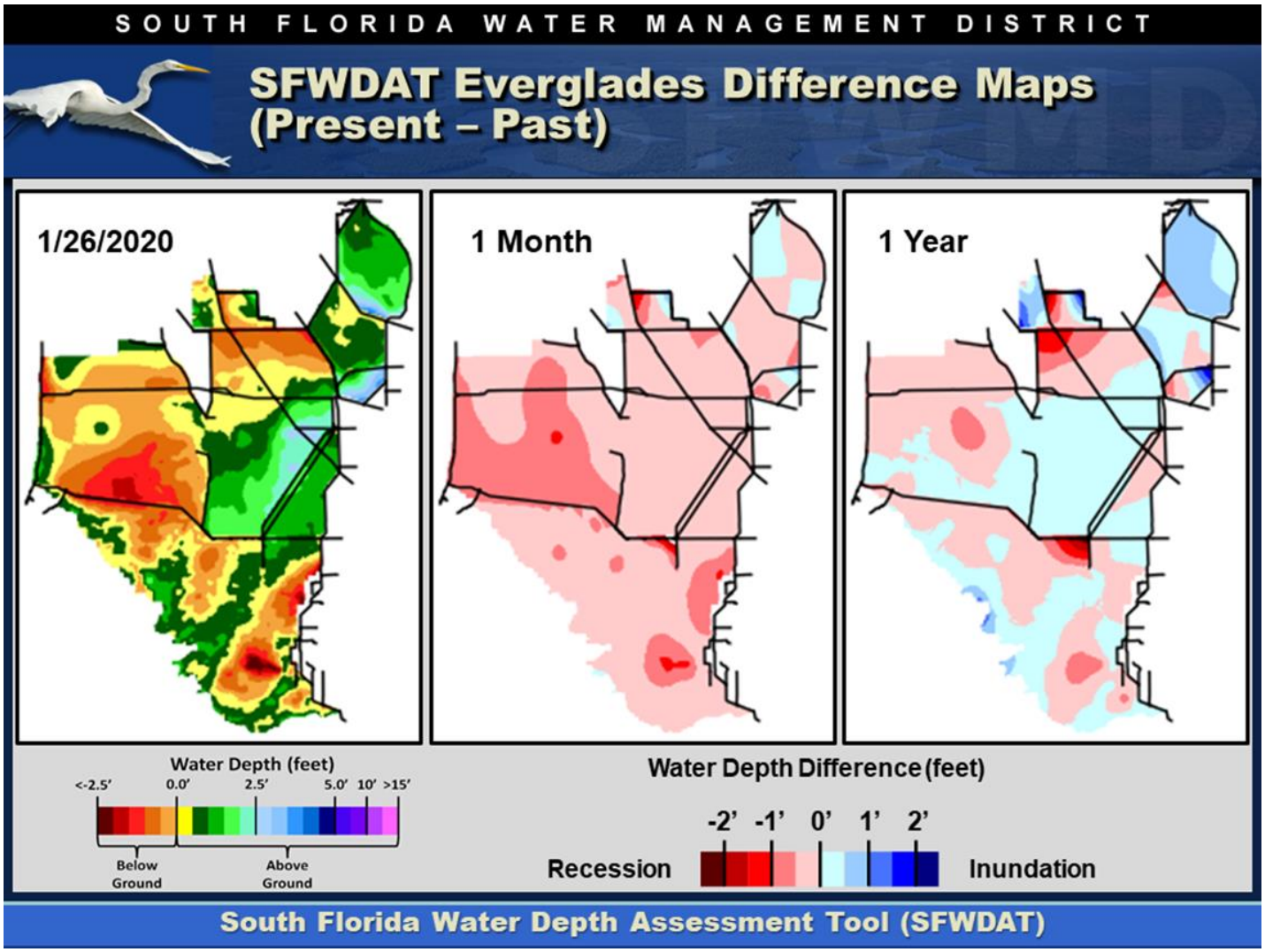
Regulation Schedules: WCA-1: The Three Gauge Average stage and stage at the 1-8C Gauge held parallel to the Zone A2 regulation line last week, currently at 0.28 feet and 0.15 feet, respectively, below the falling regulation line. WCA-2A: Stages at Gauge 2A-17 are parallel to the Zone A regulation line now 0.79 above the falling regulation line. WCA-3A stage: The Three Gauge Average stage fell parallel to the falling Zone E1 regulation line last week, currently 0.41 feet below that line. WCA-3A stage at gauge 62 (Northwest corner): Stage dropped 0.16 last week and generally trends downward away from the falling Upper Schedule, currently 1.28 feet below.



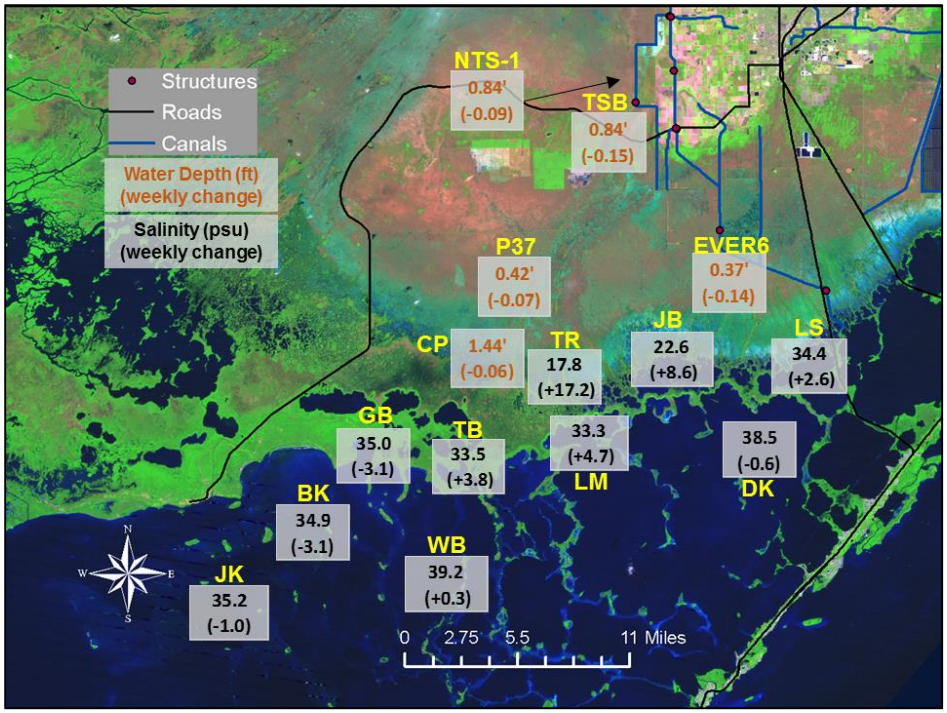
Water Depths: The WDAT tool for spatial interpolation of depth monthly snapshots indicates depths significantly below ground across a majority of WCA-3A North, with depths more than 1.0 feet below ground in the extreme northeast corner of that basin. Depths remain near 4.0 feet across parts of WCA-2B and extreme southern WCA-1. Hydrologic connectivity was diminished over the last month in Lostmans Slough and Taylor Slough. Comparing WDAT water depths from present, changes over the last month are mixed but generally lower and not highly significant. Looking back one year, the depth differences are also mixed and the changes are more significant. The northwest corner of WCA-3A is significantly drier and the rest of the basin slightly wetter. WCA-1 is significantly wetter.

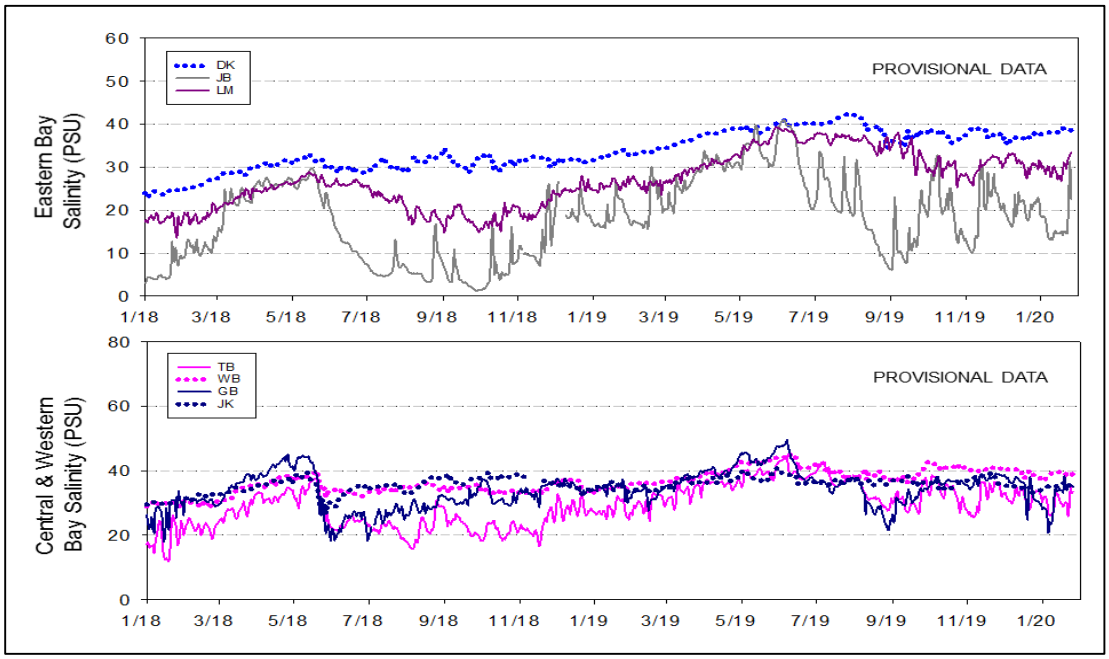
* Model updates are causing some problems with difference calculations in WCA-2B and Holey Land/Rotenberger WMAs

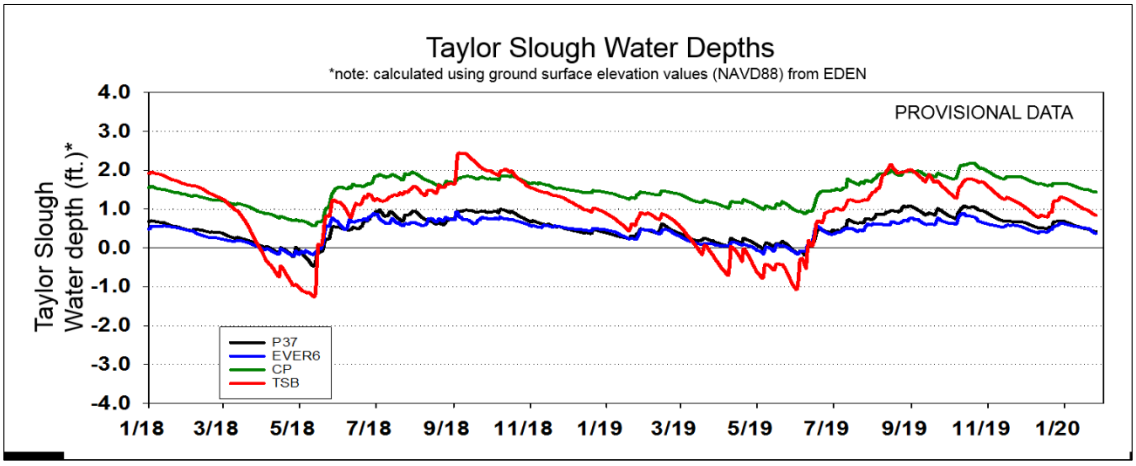


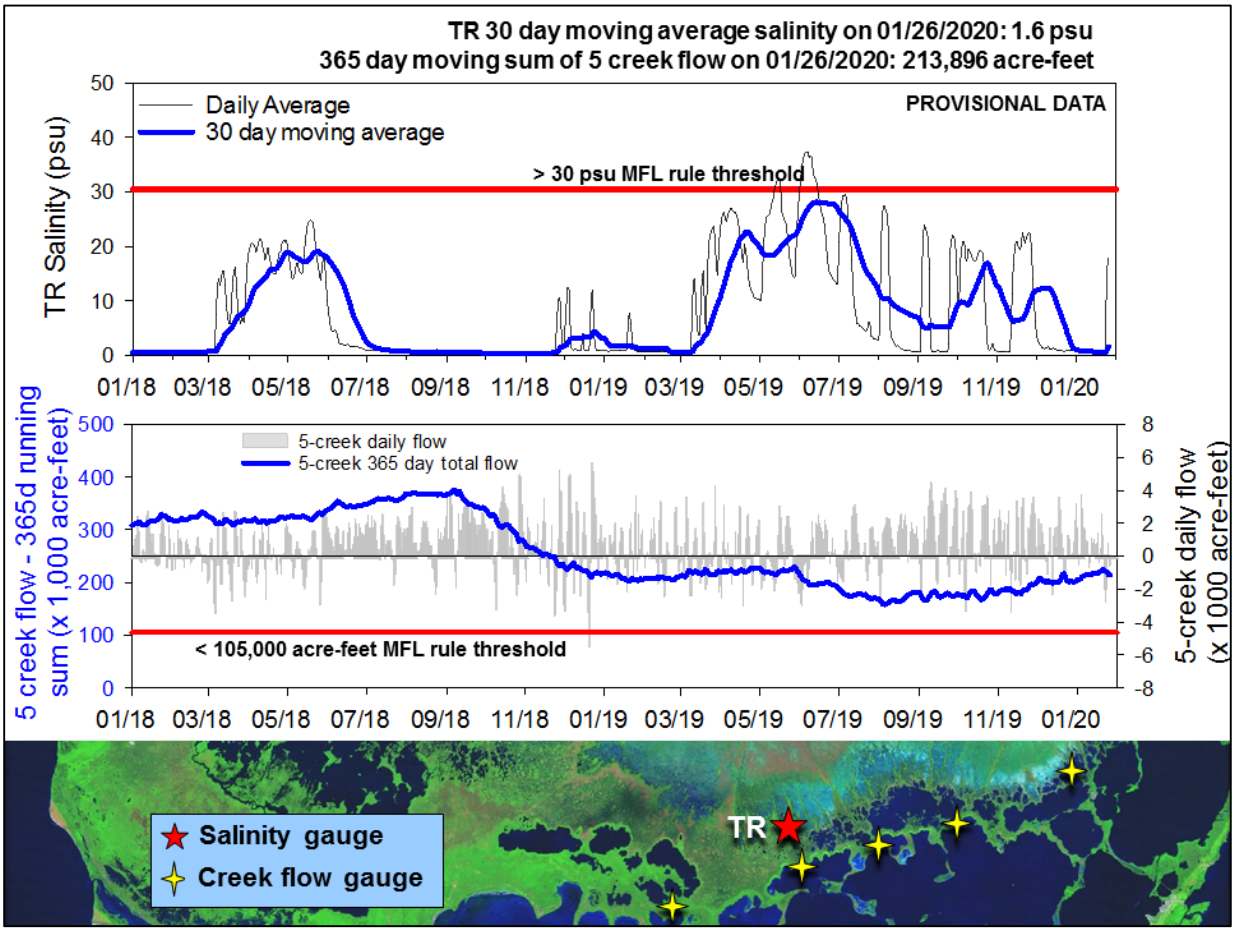


Taylor Slough Water Levels: An average of 0.02 inches of rain fell over Taylor Slough and Florida Bay this last week with stages decreasing an average of 0.10 feet. Upper Taylor Slough (west of S-332D impoundment) is 13 inches higher than its historical average while the rest of Taylor Slough is 4 inches higher than the historical average.


Structures
Roads
Canals
Water Depth (ft) (weekly change)
Salinity (psu) (weekly change)
NTS-1
0.84'
(-0.09)
TSB
0.84'
(-0.15)
P37
0.42'
(-0.07)
EVER6
0.37'
(-0.14)
CP
1.44'
(-0.06)
TR
17.8
(+17.2)
JB
22.6
(+8.6)
LS
34.4
(+2.6)
GB
35.0
(-3.1)
TB
33.5
(+3.8)
33.3
(+4.7)
LM
38.5
(-0.6)
DK
BK
34.9
(-3.1)
WB
39.2
(+0.3)
JK
35.2
(-1.0)
N
W
E
S
0 2.75 5.5 11 Miles


Eastern Bay Salinity (PSU)
DK
JB
LM
PROVISIONAL DATA
60
50
40
30
20
10
0
1/18 3/18 5/18 7/18 9/18 11/18 1/19 3/19 5/19 7/19 9/19 11/19 1/20
Central & Western Bay Salinity (PSU)
TB
WB
GB
JK
PROVISIONAL DATA
80
60
40
20
0
1/18 3/18 5/18 7/18 9/18 11/18 1/19 3/19 5/19 7/19 9/19 11/19 1/20


Taylor Slough Water Depths
*note: calculated using ground surface elevation values (NAVD88) from EDEN
Taylor Slough Water depth (ft.)*
PROVISIONAL DATA
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
P37
EVER6
CP
TSB
1/18 3/18 5/18 7/18 9/18 11/18 1/19 3/19 5/19 7/19 9/19 11/19 1/20



Florida Bay MFL: Salinity at the TR station in the mangrove zone (tracked for the Florida Bay MFL) had been staying near fresh (<1 psu) but increased 17 psu over 2 days this weekend to end at 18 psu. The 30-day moving average ended at 1.6 psu (0.9 psu higher than last week). Weekly flow from the 5 creeks identified by yellow stars on the map totaled about −2,000 acre-feet last week. The 365-day moving sum of flow from the five creeks (tracked as part of the Florida Bay MFL criteria) decreased 7,100 acre-feet this week to end at 213,896 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 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 Northwest, conserves peat and lowers the risk of muck fires, and depths there are well below average. At the present time flows into the northwest of WCA-3A take priority over those into northeast WCA-3A, however this may change as it becomes more certain in what locations wading birds will nest this dry season.

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, January 21st, 2020 (red is new)

Area	Weekly change	Recommendation	Reasons
WCA-1	Stage decreased by 0.05'	Conserving water in this basin has ecological benefit as current water depths are below seasonal averages.	Protect tree islands, upstream/downstream habitat and wildlife.
WCA-2A	Stage decreased by 0.13'	Conserving water in this basin has ecological benefit as current water depths are below seasonal averages.	Protect tree islands, upstream/downstream habitat and wildlife.
WCA-2B	Stage decreased by 0.07'	Conserving water in this basin has benefit as current water depths are below seasonal averages.	Protect within basin habitat and wildlife.
WCA-3A NE	Stage decreased by 0.08'	Conserving water in this basin has ecological benefit as current water depths are below seasonal averages. Inflows to this region continue to have ecological benefit.	Protect stage conditions conducive to wading bird foraging and peat soil conservation.
WCA-3A NW	Stage decreased by 0.10'	Conserving water in this basin has ecological benefit as current water depths are below seasonal averages.	
Central WCA-3A S	Stage decreased by 0.07'	Conserving water in this basin has ecological benefit as current water depths are below seasonal averages.	Protect upstream/downstream habitat and wildlife.
Southern WCA-3A S	Stage decreased by 0.06'		
WCA-3B	Stage decreased by 0.06'	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 0.09'	Make discharges to the Park according to the 2012 WCP rainfall plan.	Protect upstream/downstream habitat and wildlife.
Taylor Slough	Stage changes ranged from −0.04' to −0.11'	Move water southward as possible	When available, provide freshwater buffer for downstream conditions.
FB- Salinity	Salinity changes ranged −4.5 to +3.0 psu	Move water southward as possible	When available, provide freshwater to maintain low salinity buffer and promote water movement.