

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: November 24, 2021

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Weather Conditions and Forecast

A cold front that passed through the District yesterday extends from the southeastern Bahamas through the northwestern Caribbean this morning, while a secondary cold front passing offshore the southeast coast of Florida is losing its identity. A much cooler and stable air mass with significantly lower moisture behind the fronts will overspread the District today, ensuring a dry weather pattern. However, when surface high pressure located over the Tennessee Valley shifts eastward this afternoon, the low-level winds will veer from northwesterly to north-northeasterly along the east coast. The onshore winds and a batch of greater shallow moisture from the subtropical Atlantic could fuel light or very light east-coast shower activity beginning late today and tonight. However, little to no large areal average rainfall is expected. The cool weather will extend into Wednesday, followed by moderating temperatures by Thursday and Friday when the winds veer easterly. Through Thursday shallow moisture off of the Atlantic waters will produce light shower activity that will reach the east coast of Florida and occasionally spread inland over portions of the eastern interior. A few of the showers have the potential to be locally heavier along the immediate east coast, even though any large areal average rainfall is expected to be light. An upper-air disturbance moving through the Midwest late Thursday and Friday will dive into the eastern U.S. by Saturday, accompanied by a cold front that will push through the northern half of the District Friday night and the remainder of the area by Saturday morning. The front will usher in another very dry and cool air mass over the weekend, followed by a reinforcing shot of cool, dry air Monday next week from yet another frontal passage. As a result, no rainfall is forecast across the District through the middle part of next week while below normal temperatures dominate. For the week ending next Tuesday morning, total District rainfall is very likely to be much below normal, with the greatest weekly rains likely along and near the east coast.

Kissimmee

Flow at S-65A is currently at minimum (~300 cfs) and water depth on the Kissimmee River floodplain is declining. Mean depth decreased to 0.45 feet as of November 21, 2021. The concentration of dissolved oxygen in the Kissimmee River has remained well above the

region of concern, with an average of 6.0 mg/L for the week ending on November 21, 2021.

Lake Okeechobee

Lake Okeechobee stage was 16.07 feet NGVD on November 21, 2021 and it was 0.23 feet higher than a month ago. Lake stage is currently 0.57 feet above the ecological envelope, having been either above or at the very top of the envelope for all of 2021. Average daily inflows (excluding rainfall) decreased from the previous week, going from 3,086 cubic feet per second (cfs) to 2,699 cfs. Recent satellite imagery (November 16, 2021) showed low to medium bloom potential along the southern and western shorelines.

Estuaries

Total inflow to the St. Lucie Estuary averaged approximately 990 cfs over the past week with no flow coming from Lake Okeechobee. Mean surface salinities increased at HR1 and A1A Bridge sites and decreased at the US1 Bridge site over the past week. Salinity at the US1 Bridge was in the good range (10-26) for adult eastern oysters.

Total inflow to the Caloosahatchee Estuary averaged 2,494 cfs over the past week with 1,023 cfs coming from the Lake. Mean surface salinities remained the same at S-79, increased at Val I-75, Ft. Myers and Cape Coral, and decreased at Shell Point and Sanibel over the past week. Salinities were in the good range (0-10) for tape grass at Val I-75 and Ft. Myers. Salinities were also in the good range (10-30) for adult eastern oysters at Shell Point and Sanibel, and in the fair range at Cape Coral.

Stormwater Treatment Areas

For the week ending Sunday, November 21, 2021, no Lake Okeechobee water was delivered to the FEBs/STAs. The total amount of Lake releases sent to the FEBs/STAs in WY2022 (since May 1, 2021) is approximately 61,100 ac-feet. The total amount of inflows to the STAs in WY2022 is approximately 930,000 ac-feet. Most STA cells are near or above target stage. STA-1E Western Flow-way is offline for the Restoration Strategies project to fill and grade Cells 5 and 7, STA-3/4 Eastern Flow-way is offline for vegetation rehabilitation/drawdown, and STA-2 Flow-way 2 is offline for construction activities. Operational restrictions are in place in STA-1W Western, Eastern, and Northern Flow-ways for construction activities. Operational restrictions are in effect in STA-1E Central Flow-way and STA-2 Flow-ways 3 and 4 for vegetation management activities. This week, there is no capacity for Lake releases in the STAs.

Everglades

Rates of change were generally characterized as good across the Everglades, with slightly elevated ascension in WCA-3A South. Depths in WCA-3A North remained above the historical median and tree island model output indicates near average conditions. Florida Bay salinities decreased over the last week and stages increased in Taylor Slough with the locally heavy rainfall. Salinities in all regions of the Bay have decreased below their respective 75th percentiles and eastern Florida Bay and the nearshore areas are now polyhaline.

SUPPORTING INFORMATION

Kissimmee Basin

Upper Kissimmee

On November 21, 2021, lake stages were 58.0 feet NGVD (at schedule) in East Lake Toho, 55.0 feet NGVD (at schedule) in Lake Toho, and 49.8 feet NGVD (2.7 feet below schedule) in Lakes Kissimmee-Cypress-Hatchineha (KCH) (**Table KB-1, Figures KB-1-3**).

Lower Kissimmee

Discharges to the Kissimmee River on November 21, 2021 were 320 cfs at S-65 and 310 cfs at S-65A; discharges from the Kissimmee River were 780 cfs at S-65D and 740 cfs at S-65E (**Table KB-2**). Headwater stages were 46.5 feet NGVD at S-65A and 26.9 feet NGVD at S-65D on November 21, 2021. With lower water temperatures, little rainfall, and reduced discharge at S-65A, the concentration of dissolved oxygen has remained well above the region of concern, with an average of 6.0 mg/L for the week ending on November 21, 2021 (**Table KB-2, Figure KB-4**). Flow at S-65A is now at minimum (~300 cfs) and depth on the Kissimmee River floodplain is declining. Mean depth decreased to 0.45 feet as of November 21, 2021 (**Figure KB-5**).

Water Management Recommendations

Continue to maintain at least 300 cfs at S-65A per the IS-14-50 discharge plan (Figure KB-6).

Table KB-1. Average discharge for the preceding seven days and Sunday's average daily stage and departures from KCL flood regulation or temporary schedules. All data are provisional.

Water Body	Structure	Stage Monitoring Site	7-Day Average Discharge (cfs)	Lake Stage (feet NGVD) ^a	Schedule Type ^b	Schedule Stage (feet NGVD)	Departure from Regulation (feet)	
							11/21/21	11/14/21
Lakes Hart and Mary Jane	S-62	LKMJ	161	61.0	R	61.0	0.0	0.1
Lakes Myrtle, Preston and Joel	S-57	S-57	65	62.0	R	62.0	0.0	0.1
Alligator Chain	S-60	ALLI	133	64.0	R	64.0	0.0	0.1
Lake Gentry	S-63	LKGT	168	61.5	R	61.5	0.0	0.0
East Lake Toho	S-59	TOHOE	243	58.0	R	58.0	0.0	-0.1
Lake Toho	S-61	TOHOW S-61	493	55.0	R	55.0	0.0	-0.1
Lakes Kissimmee, Cypress and Hatchineha	S-65	KUB011 LKIS5B	517	49.8	R	52.5	-2.7	-2.8

a. Names of in-lake monitoring sites and structures used to determine lake stage. If more than one site is listed, an average is reported.

b. A: projected recession line; R: USACE regulation schedule; S: temporary recession target line; T: temporary schedule; NA: not applicable or not available.

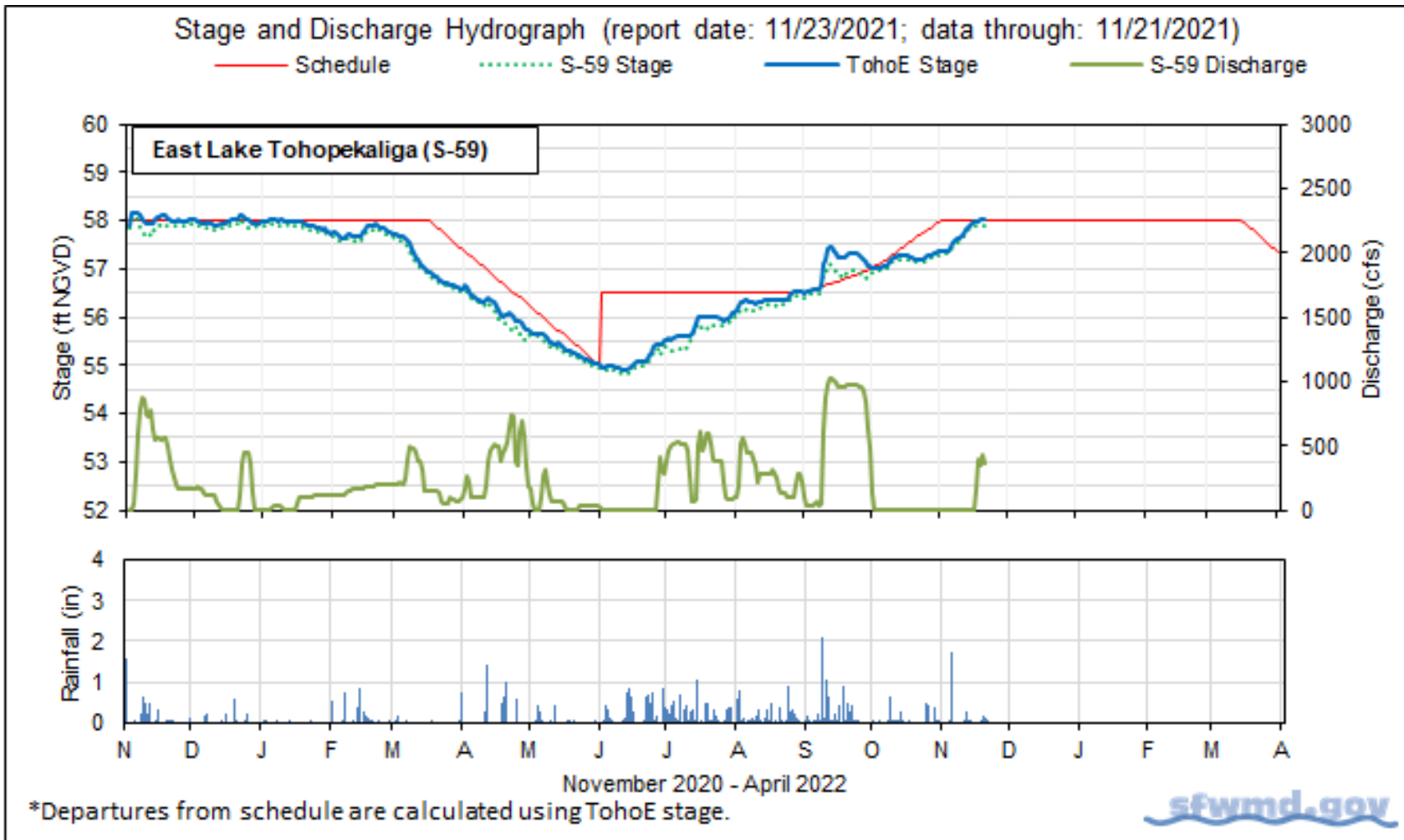


Figure KB-1. East Lake Toho regulation schedule, stage, discharge and rainfall.

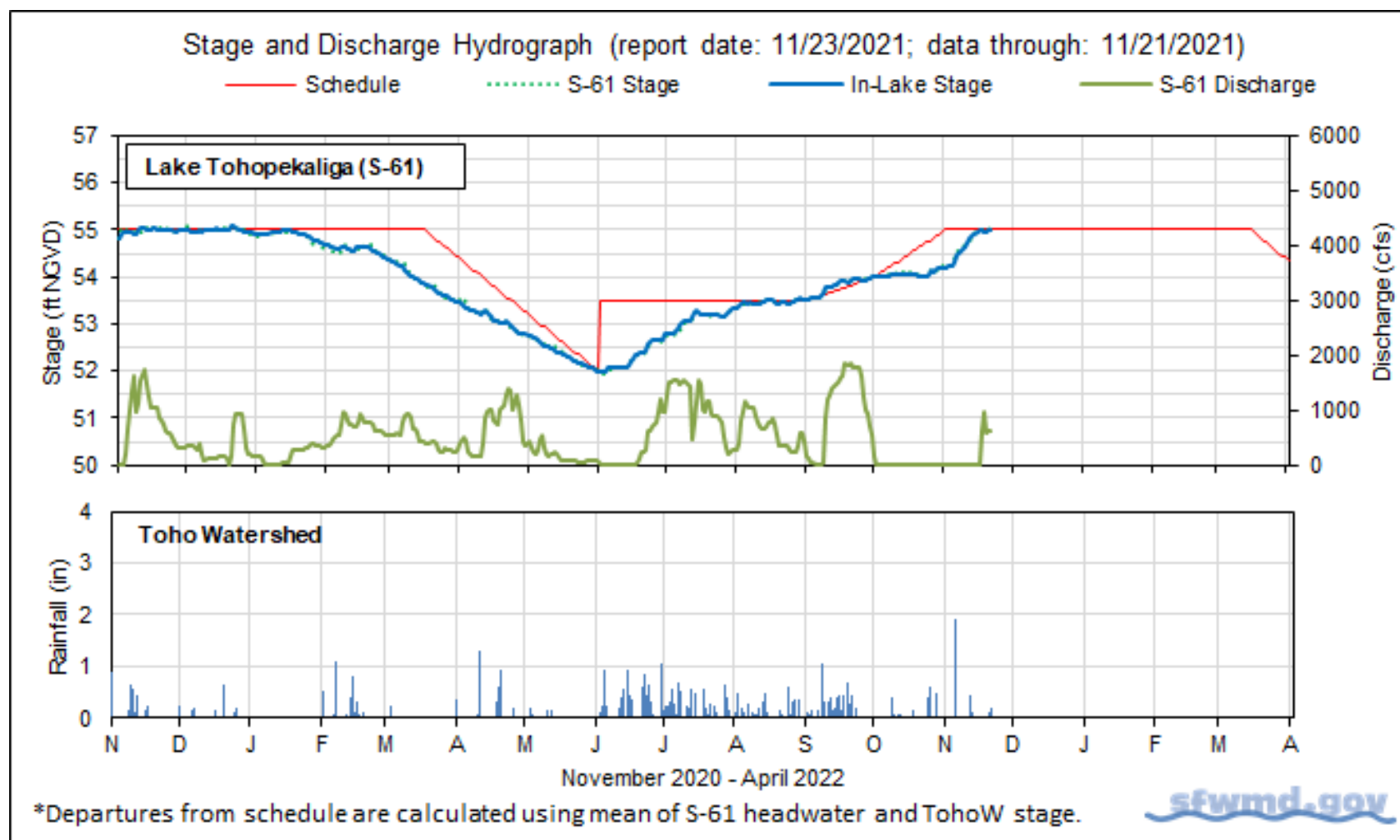


Figure KB-2. Lake Toho regulation schedule, stage, discharge and rainfall.

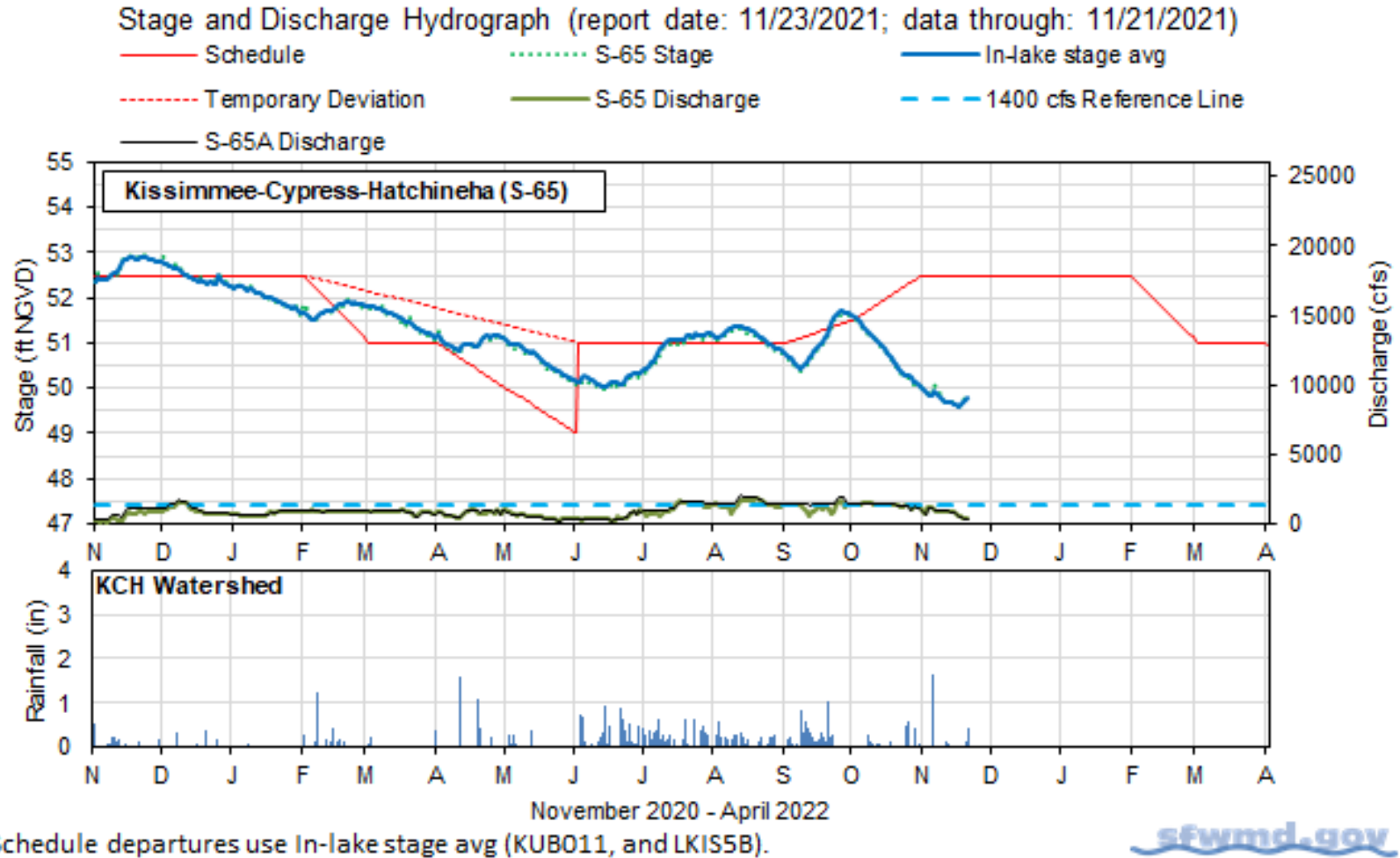


Figure KB-3. Lakes Kissimmee, Cypress and Hatchineha regulation schedule, stage, discharge and rainfall.

Table KB-2. One- and seven-day average discharge and stage at Lower Kissimmee basin structures, river channel dissolved oxygen concentrations and water depths in the Phase I area floodplain. All data are provisional.

Metric	Location	Daily Average	Average for Previous Seven Day Periods			
		11/21/21	11/21/21	11/14/21	11/7/21	10/31/21
Discharge	S-65	320	520	910	1,020	1,210
Discharge	S-65A ^a	310	460	900	960	1,160
Headwater Stage (feet NGVD)	S-65A	46.5	46.4	46.3	46.4	46.4
Discharge	S-65D ^b	780	1,120	1,410	1,390	1,550
Headwater Stage (feet NGVD)	S-65D ^c	26.9	27.0	27.0	27.0	27.1
Discharge (cfs)	S-65E ^d	740	1,210	1,470	1,460	1,600
Discharge (cfs)	S-67	0	0	0	0	0
Dissolved Oxygen (mg/L) ^e	Phase I, II/III river channel	6.0	6.0	5.6	5.2	4.1
Mean depth (feet) ^f	Phase I floodplain	0.45	0.57	0.83	0.78	0.83

a. Combined discharge from main and auxiliary structures.

b. Combined discharge from S-65D, S-65DX1 and S-65DX2.

c. Average stage from S-65D and S-65DX1.

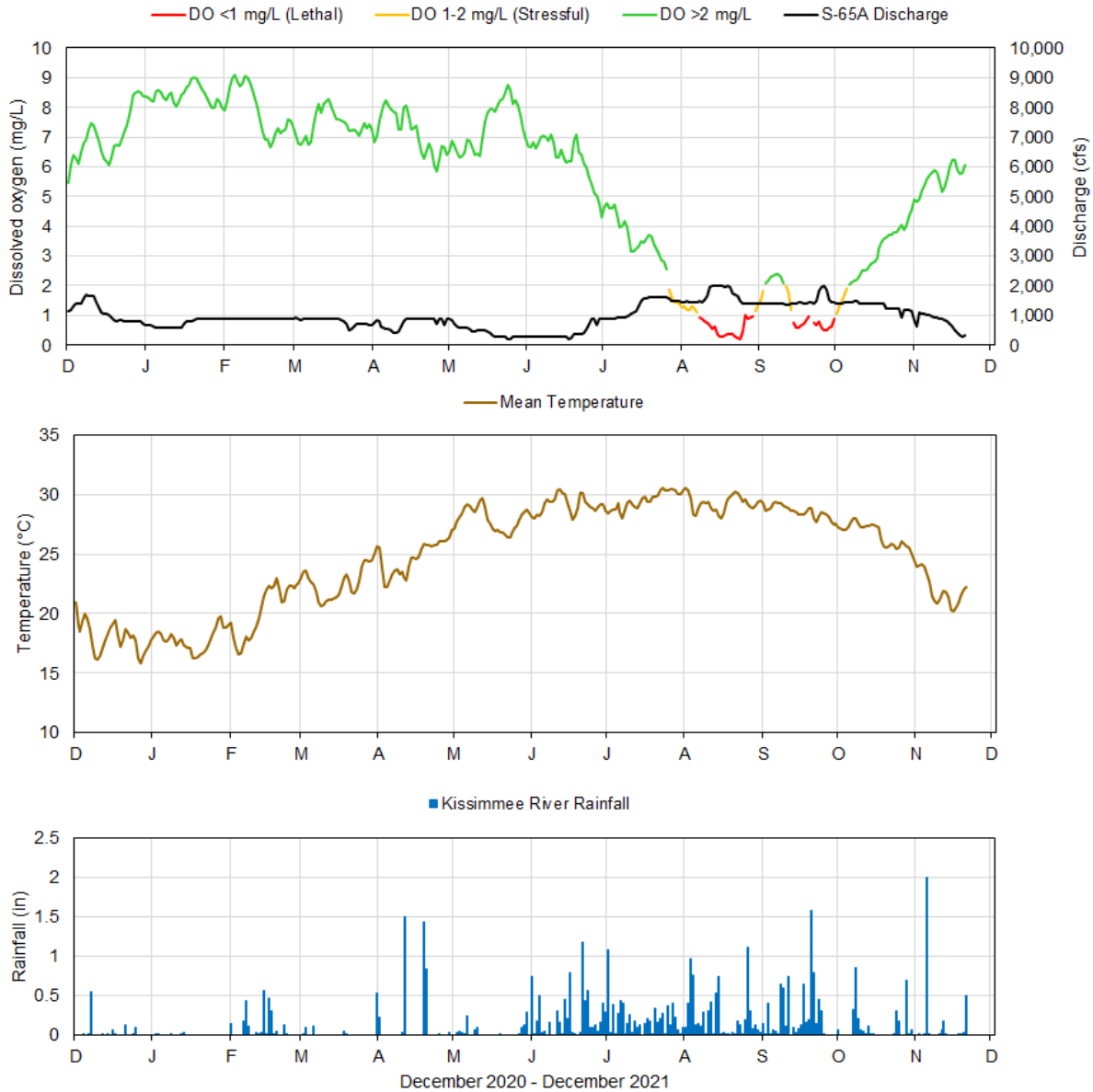
d. Combined discharge from S-65E and S-65EX1.

e. Dissolved oxygen is the average of values from sondes KRBN, PC62, PC33, PD62R and PD42R.

f. One-day spatial average obtained from the South Florida Water Depth Assessment Tool (SFWDAT).

Table KB-3. Discharge rate of change limits for S65/S-65A (revised 1/14/19).

Discharge (cfs)	Maximum Rate of Increase (cfs/day)	Maximum Rate of Decrease (cfs/day)
0-300	100	-50
301-650	150	-75
651-1,400	300	-150
1,401-3,000	600	-600
>3,000	1,000	-2,000



Report Date: 11/23/2021; data are through: 11/21/2021



Figure KB-4. Restored Kissimmee river channel mean daily dissolved oxygen concentration (mg/L), S-65A discharge (cfs), temperature (°C) and rainfall (inches). Dissolved oxygen (DO) and temperature are mean daily values averaged for PC62, KRBN, PC33, PD62R, and PD42R with an average of three stations reporting this week. Rainfall values are daily totals for Kissimmee River (Pool BCD) AHED watershed.

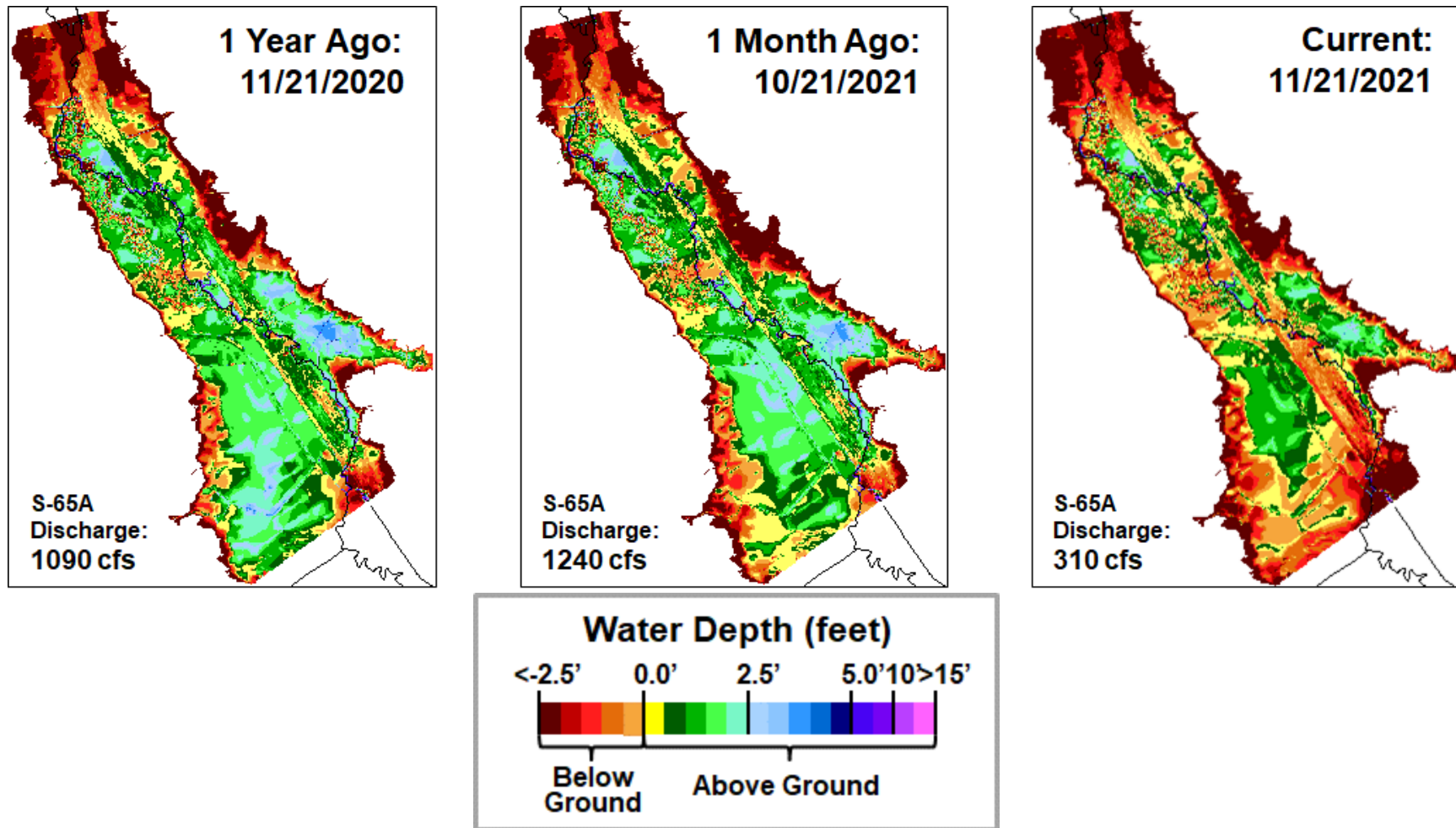


Figure KB-5. Phase I area Kissimmee River floodplain water depths (from left to right) one year ago, one month ago and current.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Stage and Discharge Guidance for 2021-2022.

Zone	KCH Stage (ft NGVD)	S-65/S-65A Discharge*
A	Above regulation schedule line.	Flood control releases as needed with no limits on the rate of discharge change.
B1	In flood control buffer zone (0.5 ft below the schedule line).	Adjust S-65 discharge so that S-65A discharge is between 1400 cfs at the buffer zone line and 3000 cfs at the schedule line.
B2	Between the Flood Control Buffer and the 50.0 ft line.	Adjust S-65 discharge to maintain at least 1400 cfs at S-65A. Use ± 0.2 ft buffer (gray band) above and below the 50.0 ft line to decide when to begin ramping up to 1400 cfs or down to 300 cfs; do not continue reducing discharge if stage rises back to or above the threshold stage line.
B3	Between the 50.0 ft line and 49 ft.	Adjust S-65 discharge to maintain at least 300 cfs at S-65A.
B4	Between 48.5 ft to 49 ft.	Adjust S-65 discharge to maintain S-65A discharge between 0 cfs at 48.5 ft and 300 cfs at 49 ft.
C	Below 48.5 ft.	0 cfs.

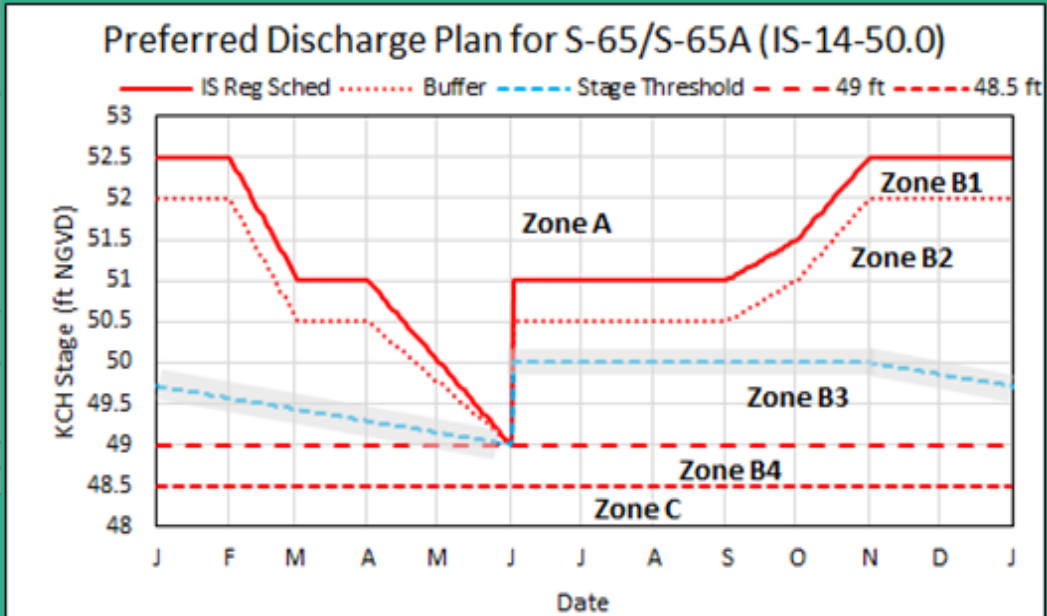
*Changes in discharge should not exceed limits in inset table below.

Table KB-3. Discharge Rate of Change Limits for S65/S65A (revised 1/14/19).

Q (cfs)	Maximum rate of INCREASE (cfs/day)	Maximum rate of DECREASE (cfs/day)
0-300	100	-50
301-650	150	-75
651-1400	300	-150
1401-3000	600	-600
>3000	1000	-2000

sfwmd.gov

2021-2022 Discharge Plan for S-65/S-65A



Other Considerations

- When possible, limit lake ascension rate in the Jun 1 - Aug 15 window to 0.25 ft per 7 days in Lakes Kissimmee, Cypress, Hatchineha (S-65), East Toho (S-59) and Toho (S-61).
- If outlook is for extreme dry conditions meet with KB staff to discuss modifications to this plan.

Slide Revised 6/1/2021

11

Figure KB-6. IS-14-50 Discharge Plan for S65/S65A with discharge rate of change limits (revised 1/14/19).

Lake Okeechobee

Lake Okeechobee stage was 16.07 feet NGVD on November 21, 2021, with water levels 0.23 feet higher than a month ago (**Figure LO-1**). Lake stage was approximately 0.57 feet above the ecological envelope, having been either above or at the very top of the envelope for all of 2021 (**Figure LO-2**). Lake stage remained in the Low sub-band and was 0.18 feet below the Intermediate sub-band (**Figure LO-3**). According to NEXRAD, 0.38 inches of rain fell directly on the Lake last week, an increase of 0.21 inches compared to the previous week.

Average daily inflows (excluding rainfall) decreased from the previous week, going from 3,086 cubic feet per second (cfs) to 2,699 cfs. Average daily outflows (excluding evapotranspiration) increased from the previous week, going from 225 cfs to 1,048 cfs. Most of the inflows (1,211 cfs) came from the Kissimmee River through the S-65E and S-65EX1 structures. The second highest inflow was received from the Indian Prairie basin (910 cfs). There was an outflow of 1,048 cfs to the west via S-77, but zero outflow to the east via S-308, or to the south via the S-350 structures. There was a backflow from the L-8 canal via the S-271 structure at the average daily rate of 146 cfs. **Figures LO-4 and LO-5** show the combined average daily inflows and outflows for the Lake over the past eight weeks, and average inflows and outflows last week, respectively. These data are provisional and are subject to change.

The most recent satellite image (November 16, 2021) from the NOAA cyanobacteria monitoring product derived from EUMETSAT's Sentinel 3 OLCI sensor data is slightly obscured by clouds, but it showed low to medium bloom potential along the southern and western shorelines (**Figure LO-6**).

1 Month Ago:
10/22/2021

Current:
11/21/2021

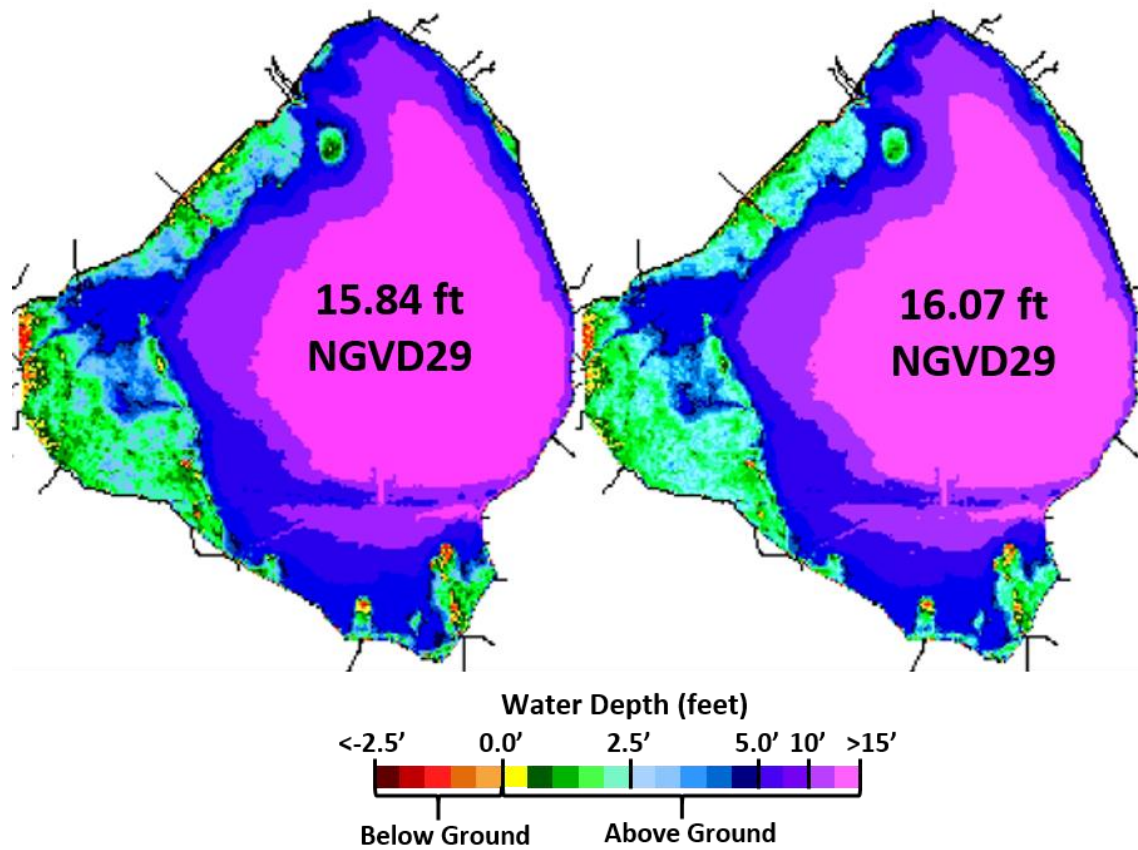


Figure LO-1. Lake Okeechobee water depth estimates based on South Florida Water Depth Assessment Tool (SFWDAT).

Lake Okeechobee Stage vs Updated Ecological Envelope

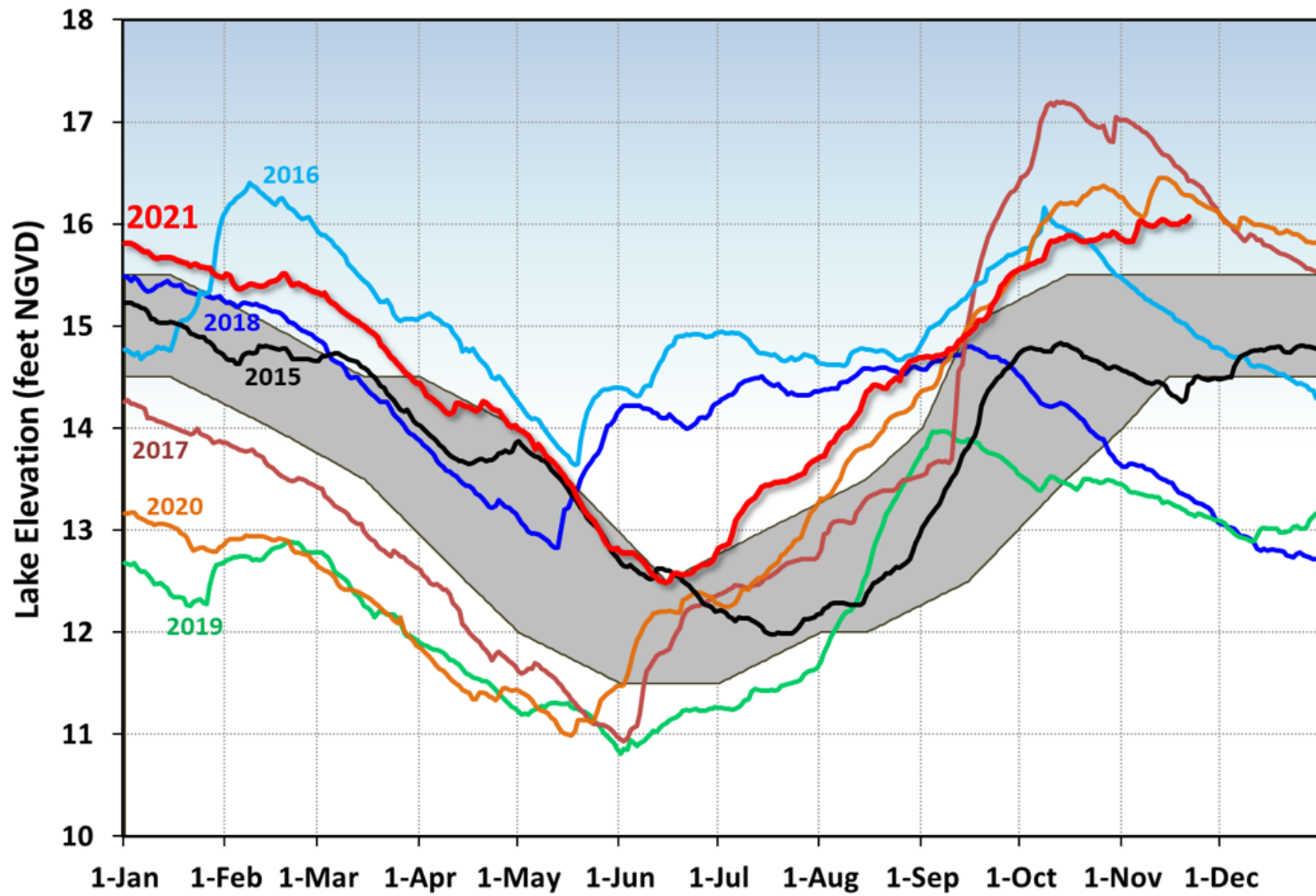
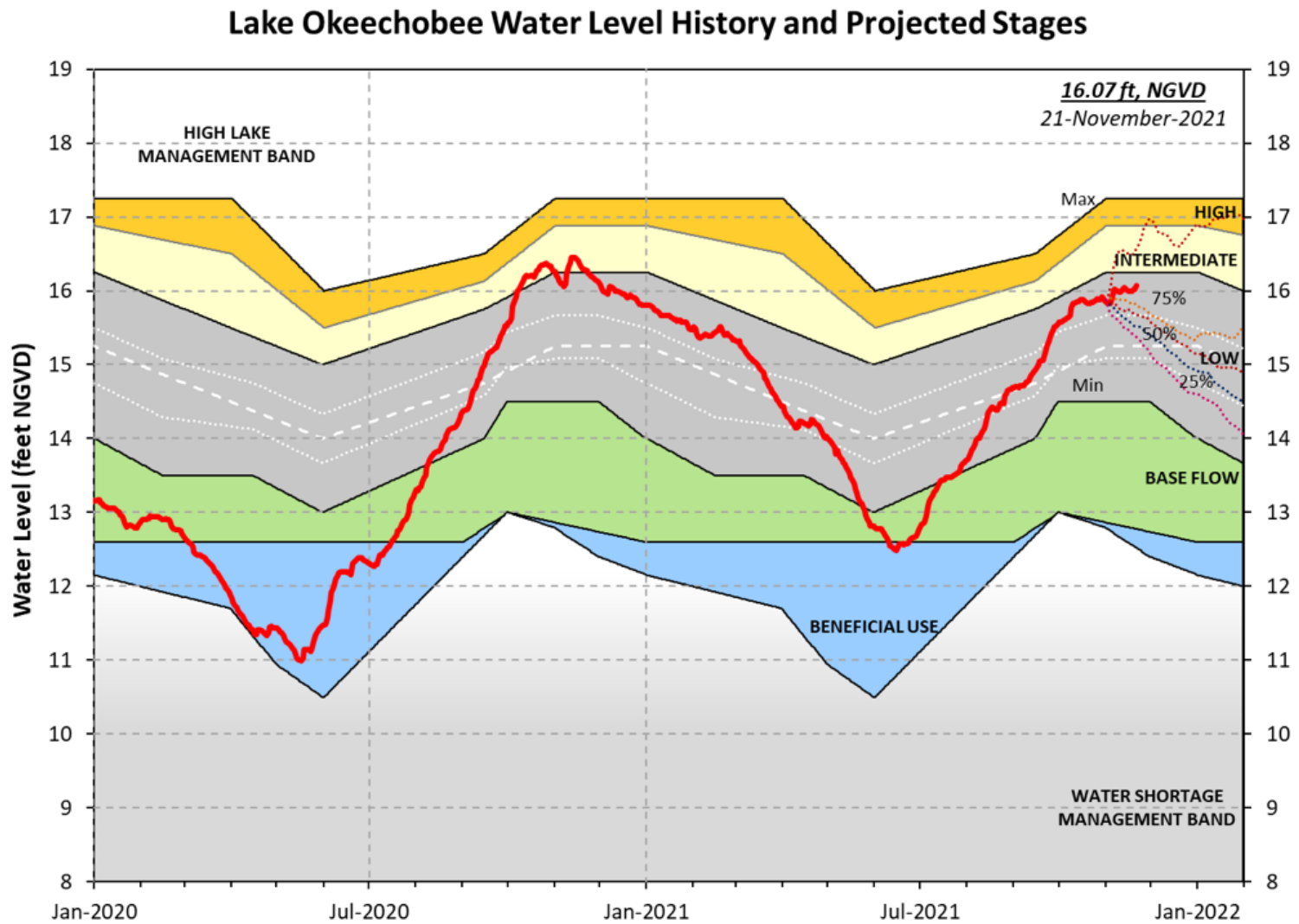


Figure LO-2. The prior seven years of annual stage hydrographs for Lake Okeechobee in comparison to the updated ecological envelope.



LORS-2008 - Adopted by USACE 28-April-2008

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

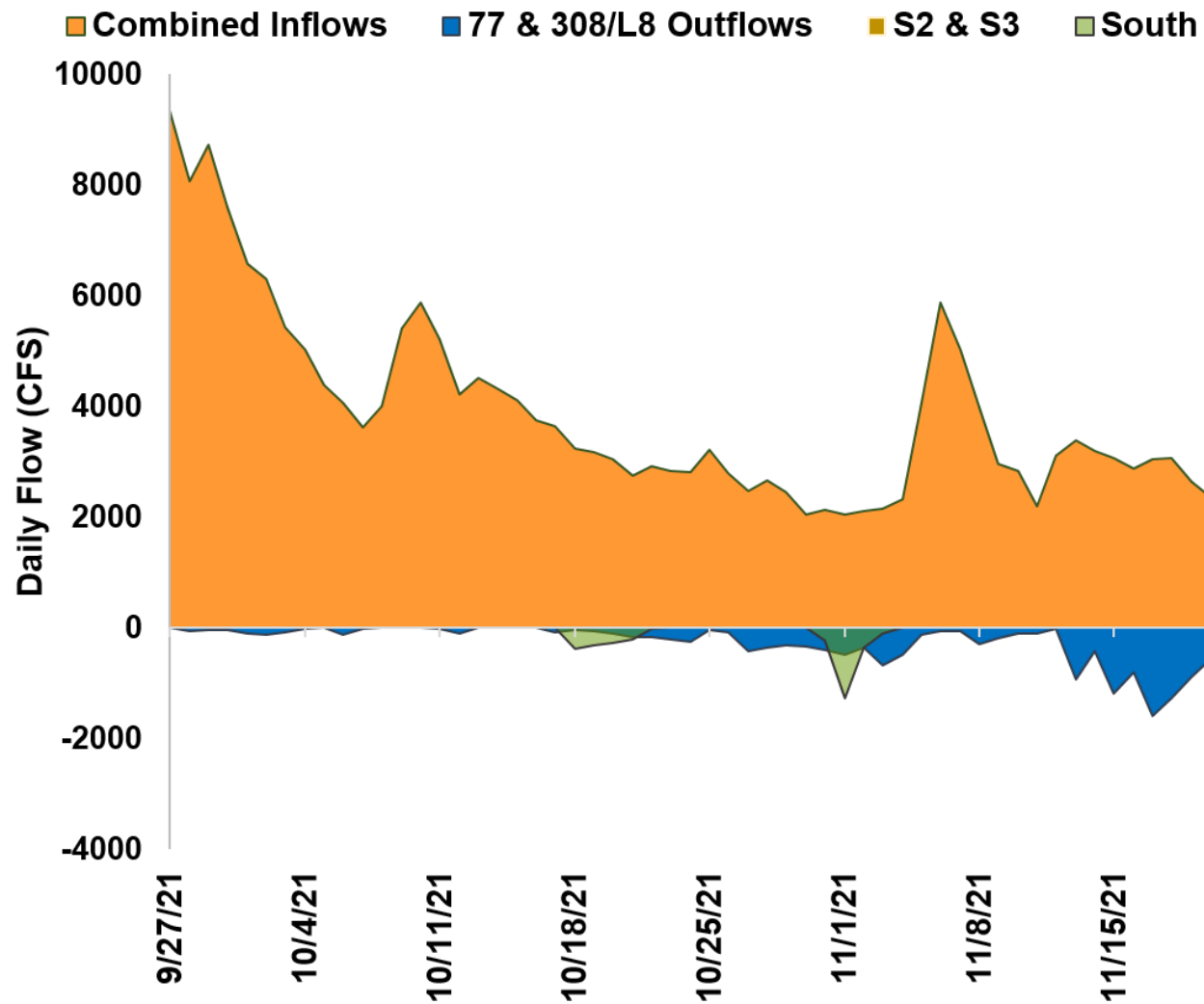


Figure LO-4. Major inflows (orange) to and outflows east and west (blue) from Lake Okeechobee. Outflows south are shown in green. Flows into Lake Okeechobee from the L-8 canal through S-271 (formerly Culvert 10A) or from the C-44 canal through the S-308 are included as inflows. Conversely, flows from Lake Okeechobee into the L-8 or C-44 canals are included with outflows. Inflows are shown as positive values; outflows are negative. Outflows through the S-77 (Caloosahatchee) and S-308 (C-44 Canal) structures are based on downstream gauges to include flows to lock openings for navigation.

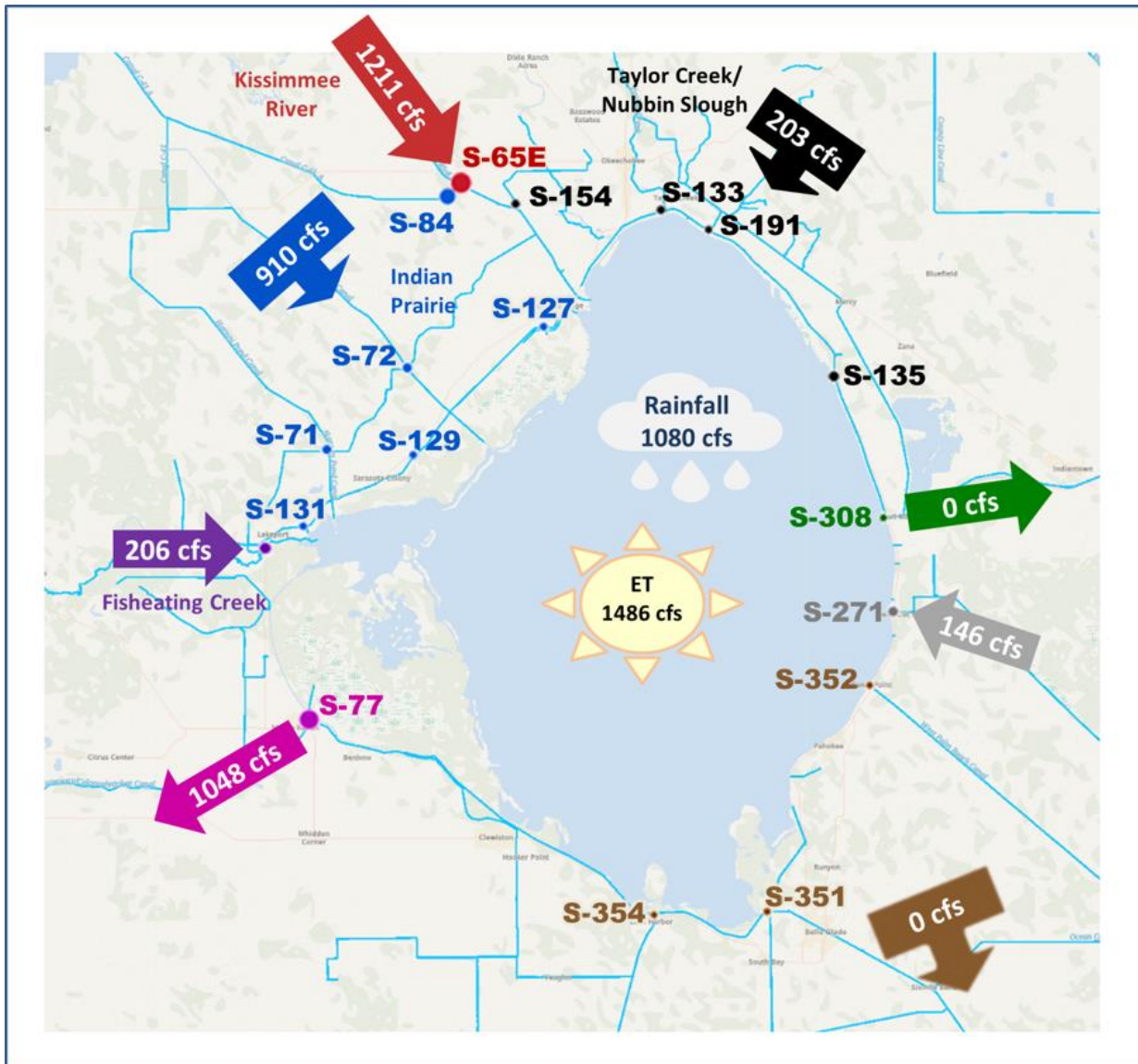


Figure LO-5. Inflows into Lake Okeechobee from Indian Prairie basins, Taylor Creek/Nubbin Slough, Kissimmee River and Fisheating Creek, and outflows to the west via S-77, to the east via S-308, to the south via S-351, S-352, S-354, and to southeast via S-271 (formerly Culvert 10A) for the week of November 15 – 21, 2021.

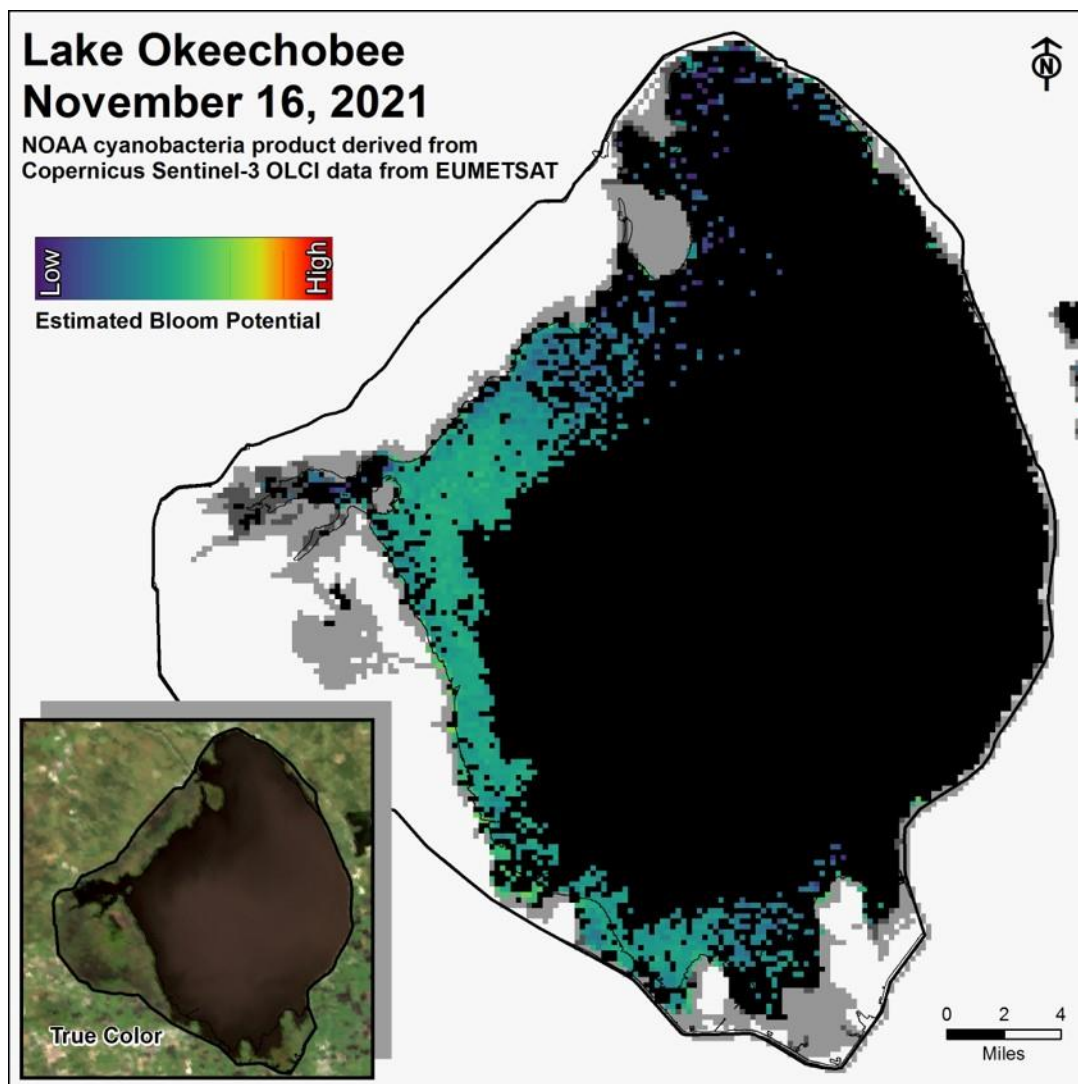


Figure LO-6. Cyanobacteria bloom potential on November 16, 2021 based on NOAA's harmful algal bloom monitoring system. Gray color indicates cloud cover.

Estuaries

St. Lucie Estuary

Over the past week, mean total inflow to the St. Lucie Estuary was approximately 990 cfs (**Figures ES-1 and ES-2**) and the previous 30-day mean inflow was approximately 646 cfs. For comparison, the historical provisional mean inflows from the contributing areas are shown in **Figure ES-2**.

Over the past week, surface salinities increased at the HR1 and A1A Bridge sites and decreased at US1 Bridge site (**Table ES-1 and Figure ES-3**). The seven-day moving average of the surface and bottom salinities at the US1 Bridge was 19.1. Salinity conditions in the middle estuary were estimated to be within the good range for adult eastern oysters (**Figure ES-4**).

Caloosahatchee River Estuary

Over the past week, mean total inflow to the Caloosahatchee River Estuary was approximately 2,494 cfs (**Figures ES-5 and ES-6**) and the previous 30-day mean inflow was approximately 2,478 cfs. For comparison, the historical provisional mean inflows from the contributing areas are shown in **Figure ES-6**.

Over the past week, surface salinities remained the same at S-79, increased at Val I-75, Ft. Myers and Cape Coral, and decreased at Shell Point and Sanibel (**Table ES-2 and Figures ES-7 and ES-8**). The seven-day mean surface salinities (**Table ES-2**) were in the good range (0-10) for tape grass at Val I-75 and at Ft. Myers. The seven-day mean surface salinity values were within the good range for adult eastern oysters at Sanibel and Shell Point, and in the fair range at Cape Coral (**Figure ES-9**).

Surface salinity at Val I-75 was forecasted for the next two weeks, using an autoregression model (Qiu and Wan, 2013¹) coupled with a linear reservoir model for the tidal basin. Model scenarios included pulse releases at S-79 ranging from 0 to 1500 cfs and steady releases at 2,000 cfs with estimated tidal basin inflows of 239 cfs. Model results from all scenarios predict daily salinity to be 1.0 or lower and the 30-day moving average surface salinity to be 0.4 or lower at Val I-75 at the end of the two-week period (**Table ES-3 and Figure ES-10**). This keeps predicted salinities at Val I-75 within the LORS 2008 salinity range (0.0-5.0).

Red Tide

The Florida Fish and Wildlife Research Institute reported on November 19, 2021, that *Karenia brevis*, the Florida red tide dinoflagellate, was not observed at any concentrations in samples collected in or offshore of any counties within the District. On the east coast, red tide was not observed in samples from Palm Beach or Miami-Dade counties.

¹ Qiu, C., and Y. Wan. 2013. Time series modeling and prediction of salinity in the Caloosahatchee River Estuary. *Water Resources Research* 49:5804-5816.

Water Management Recommendations

Lake stage is in the Low Sub-Band. Tributary conditions are near normal. The LORS2008 release guidance suggests up to 450 cfs release at S-79 to the Caloosahatchee River Estuary and up to 200 cfs release at S-80 to the St. Lucie Estuary.

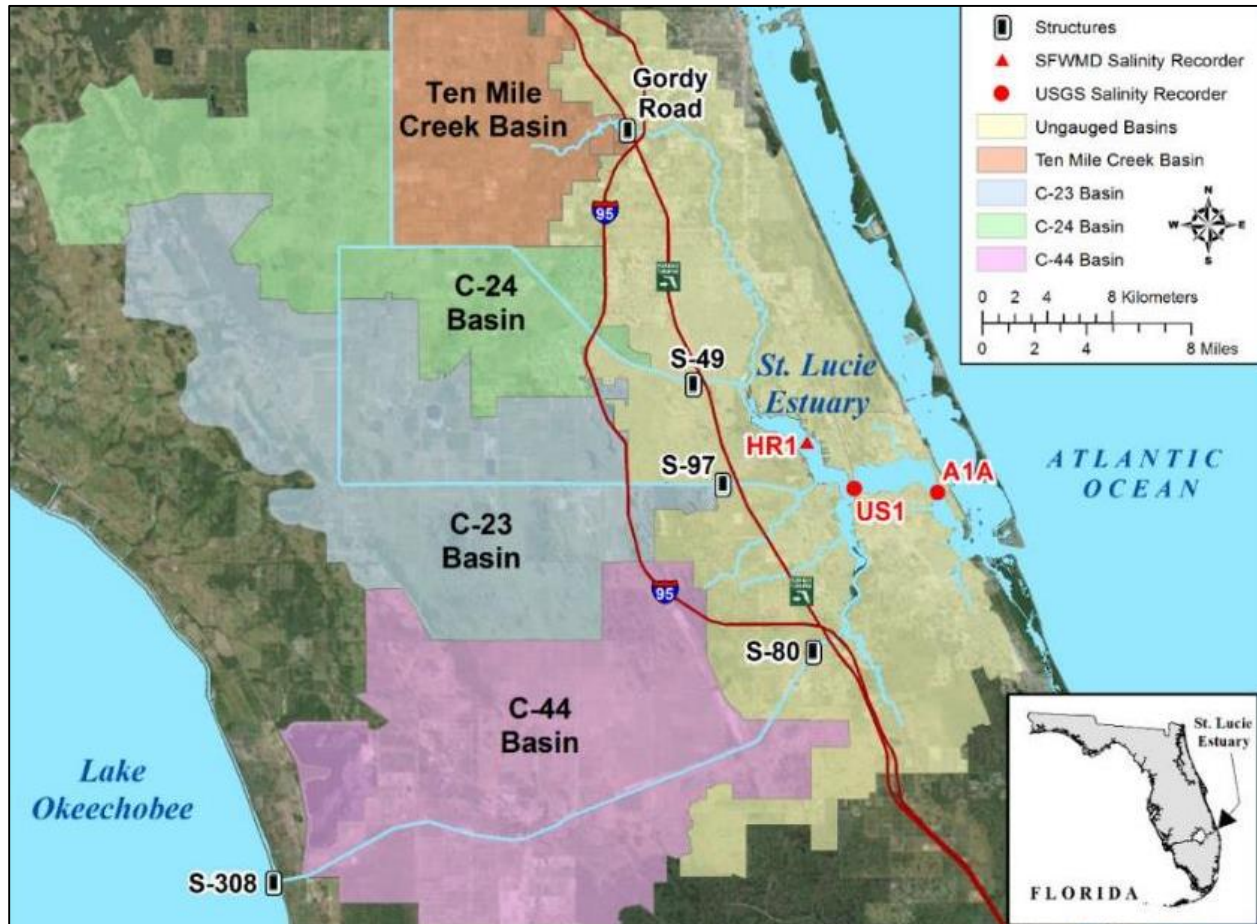


Figure ES-1. Basins, water control structures and salinity monitoring sites in the St. Lucie Estuary.

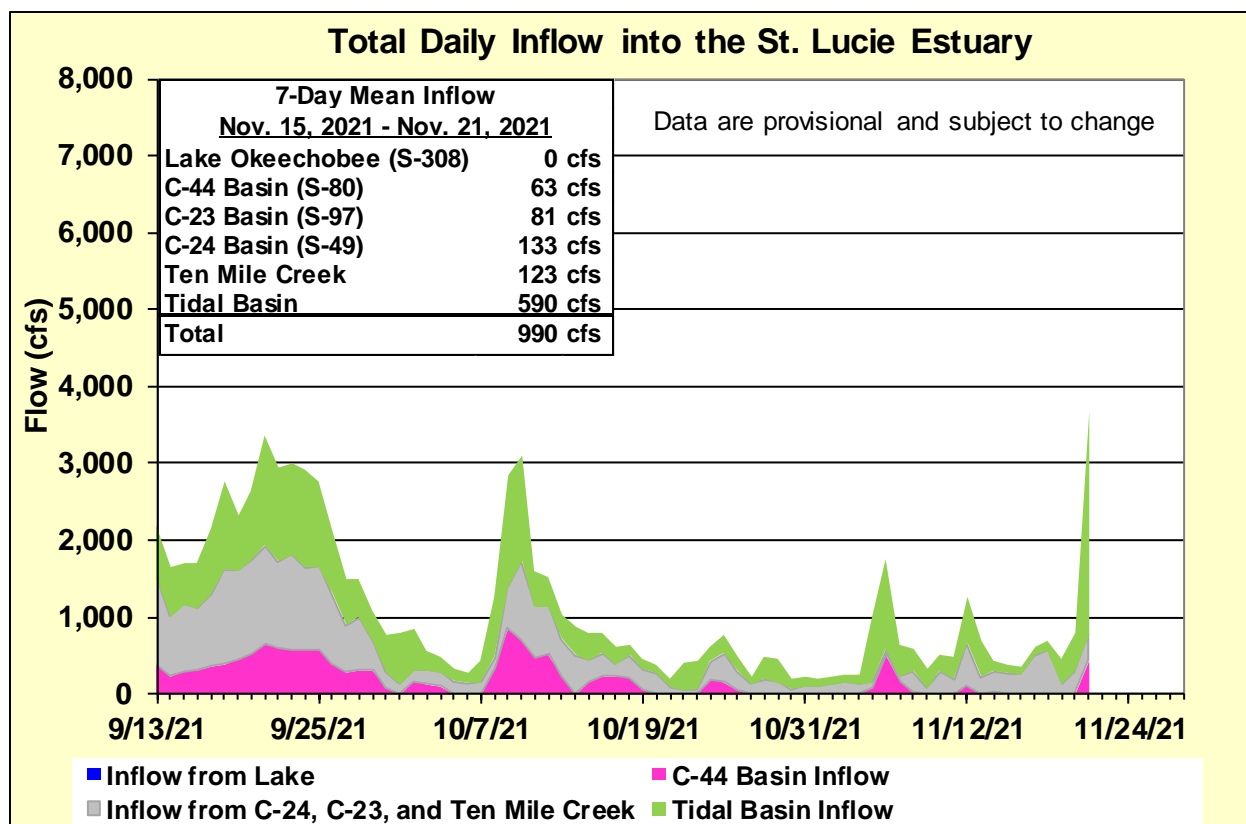


Figure ES-2. Total daily inflows from Lake Okeechobee and runoff from the C-44, C-23, C-24, Ten Mile Creek, and Tidal Basins into the St. Lucie Estuary.

Table ES-1. Seven-day mean salinity at oyster monitoring sites in the St. Lucie Estuary. Current means are in bold font; previous week's means are in parentheses. The envelope reflects the preferred salinity range for adult eastern oysters (*Crassostrea virginica*) in the middle estuary. Data are provisional.

Sampling Site	Surface	Bottom	Envelope
HR1 (North Fork)	15.4 (15.0)	17.0 (18.4)	NA ^a
US1 Bridge	18.6 (19.3)	19.6 (21.0)	10.0 – 26.0
A1A Bridge	27.0 (26.0)	28.6 (28.6)	NA ^a

a. The envelope is not applicable.

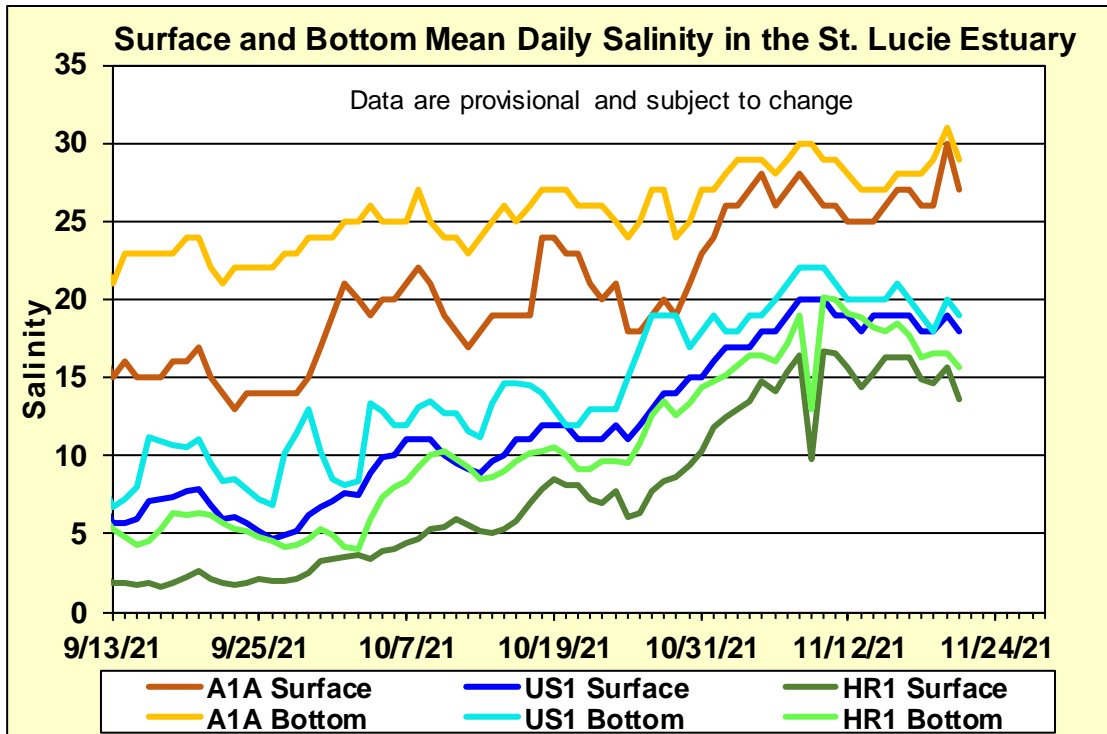


Figure ES-3. Mean daily salinity at the A1A, US1 and HR1 sites in the St. Lucie Estuary.

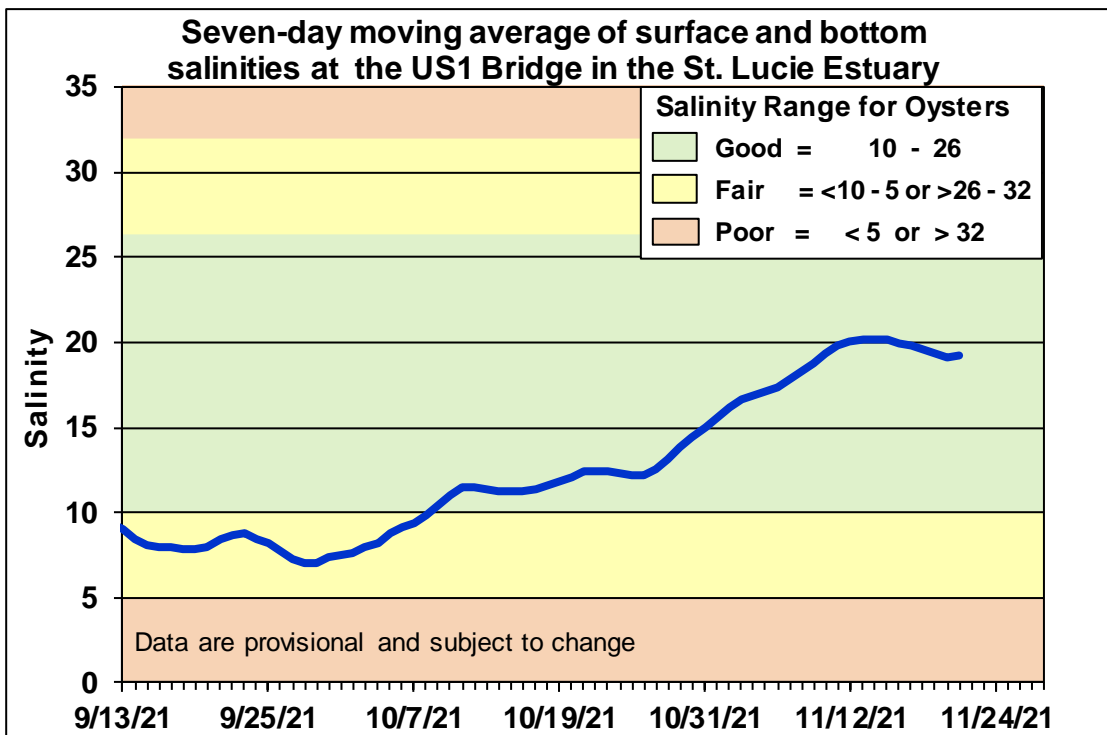


Figure ES-4. Seven-day moving average of the surface and bottom salinities at the US1 Bridge in the St. Lucie Estuary.

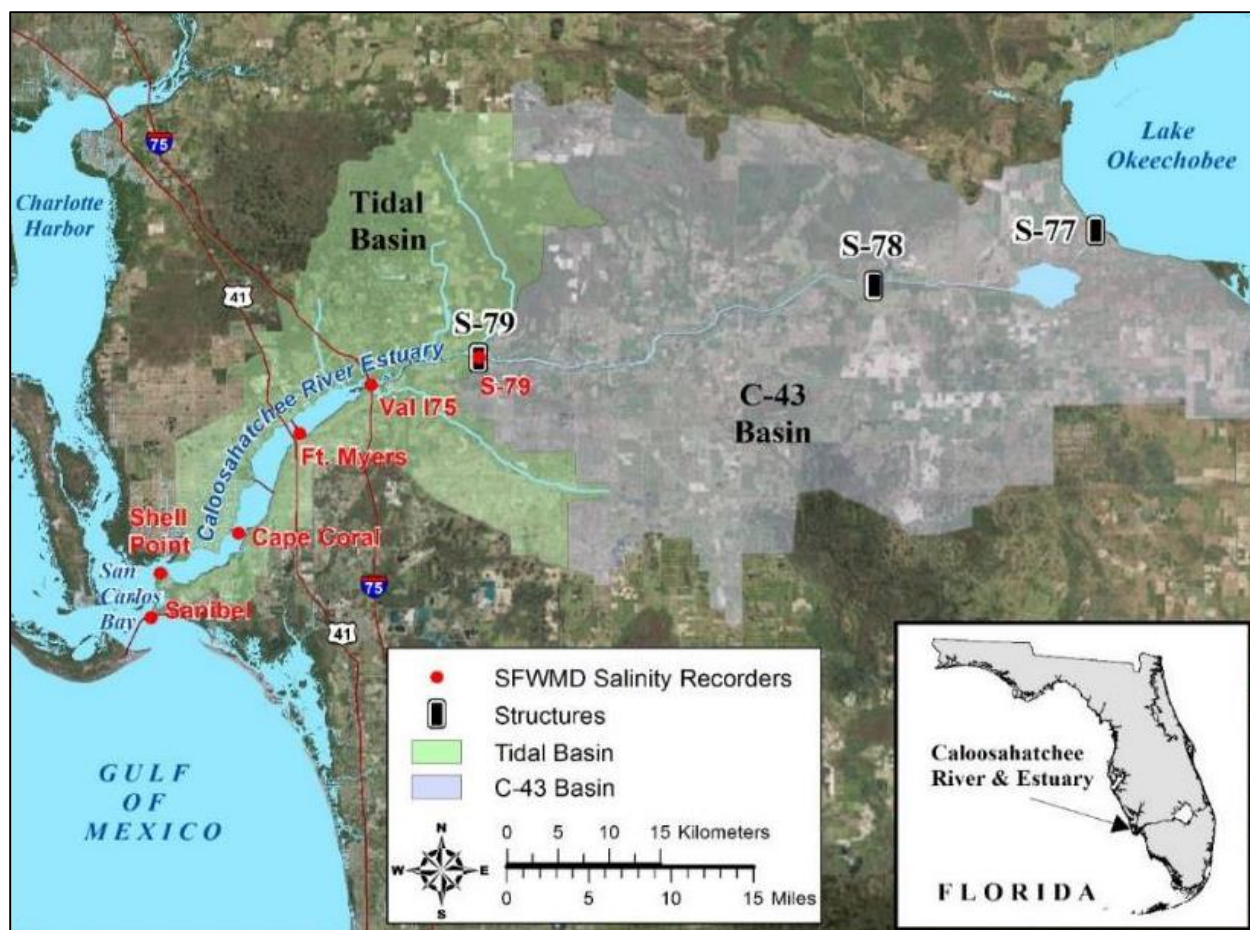


Figure ES-5. Basins, water control structures and salinity monitoring sites in the Caloosahatchee River Estuary.

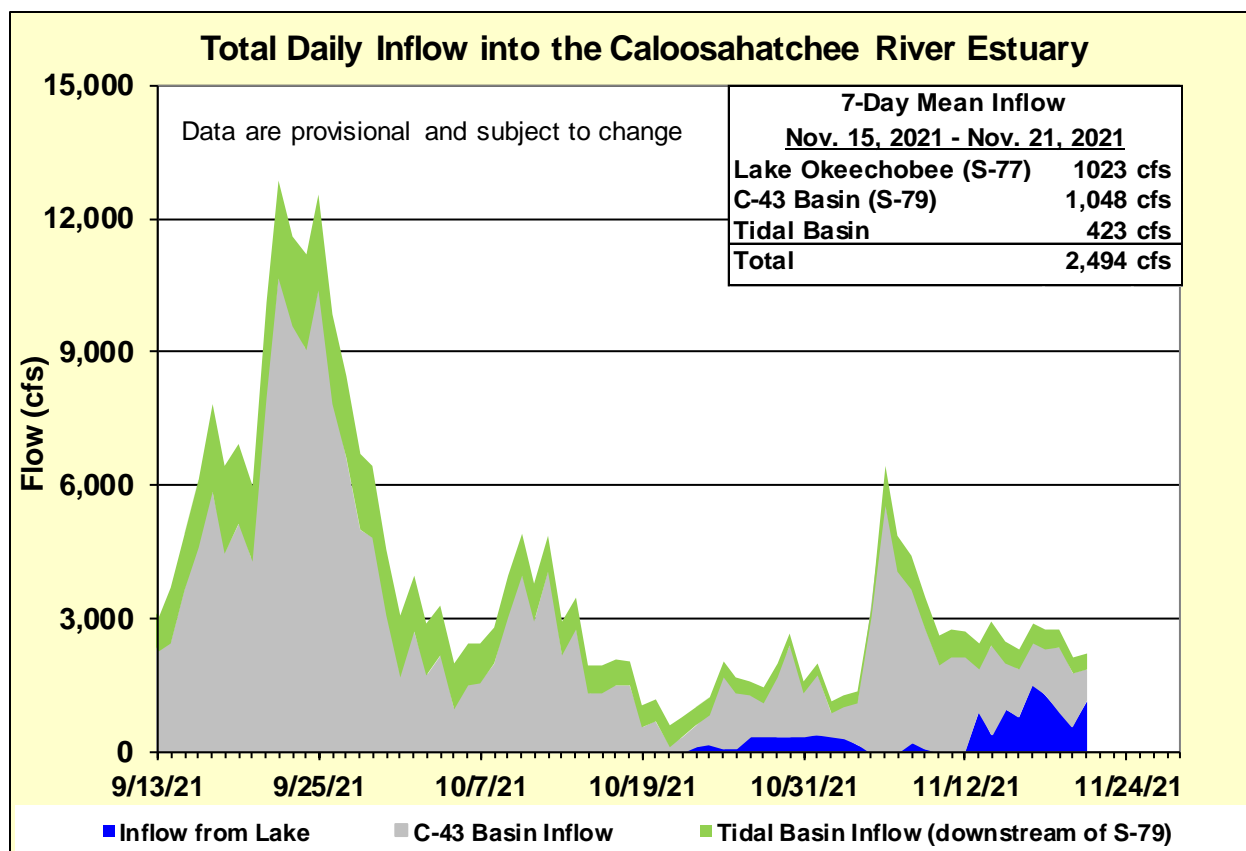


Figure ES-6. Total daily inflows from Lake Okeechobee, and runoff from the C-43 and Tidal basins into the Caloosahatchee River Estuary.

Table ES-2. Seven-day mean salinity at six monitoring sites in the Caloosahatchee River Estuary. Current means are in bold font; previous week's means are in parentheses. The envelope at I-75 is for the protection of tape grass in the upper estuary and the envelope in the lower estuary is the preferred salinity range for adult eastern oysters (*Crassostrea virginica*). Data are provisional.

Sampling Site	Surface	Bottom	Envelope
S-79 (Franklin Lock)	0.2 (0.2)	0.2 (0.2)	NA ^a
Val I-75	0.3 (0.2)	0.3 (0.2)	0.0 – 5.0 ^b
Fort Myers Yacht Basin	2.3 (1.4)	3.4 (3.8)	NA ^a
Cape Coral	7.8 (7.4)	8.8 (10.4)	10.0 – 30.0
Shell Point	19.6 (20.1)	20.9 (21.1)	10.0 – 30.0
Sanibel	26.8 (27.4)	28.3 (29.1)	10.0 – 30.0

a. The envelope is not applicable.

b. The envelope is based on the predicted 30-day mean for the next two weeks.

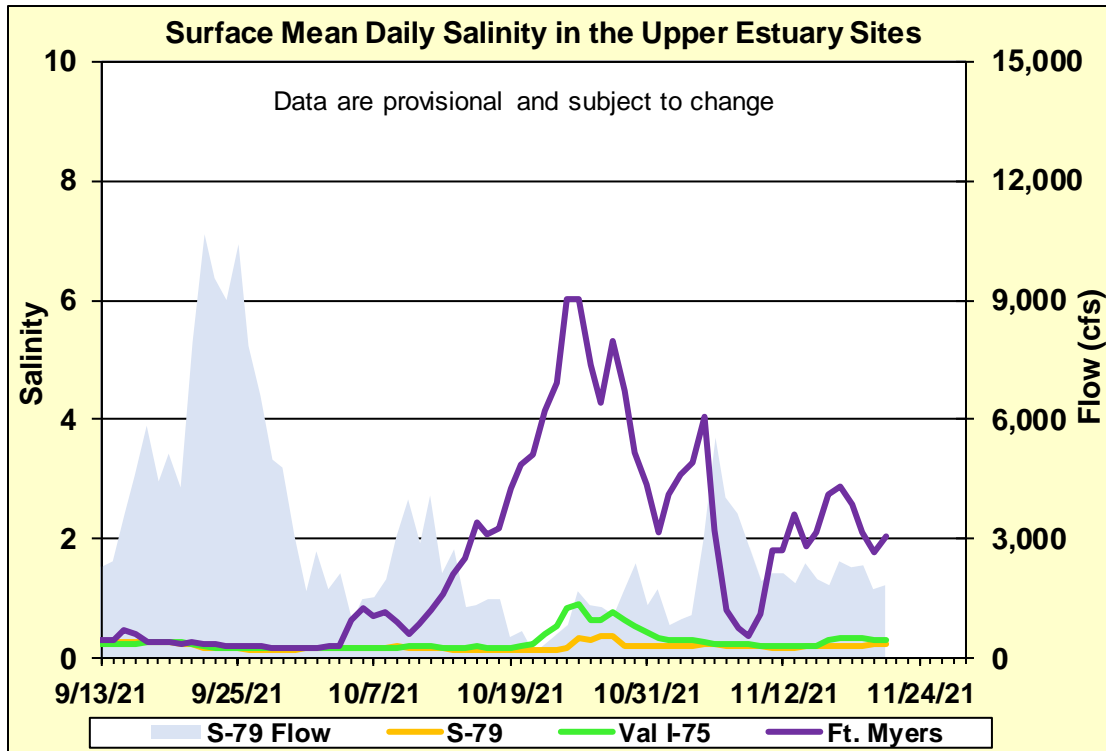


Figure ES-7. Mean daily salinity at upper Caloosahatchee River Estuary monitoring sites and mean daily flow at S-79.

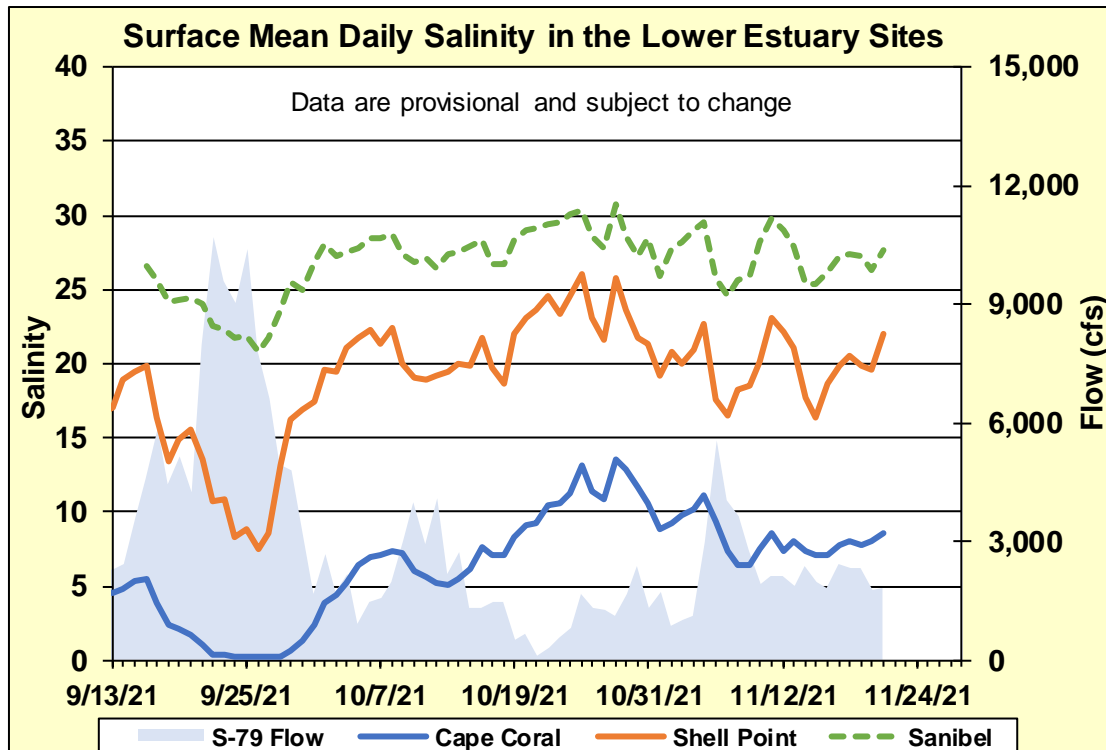


Figure ES-8. Mean daily surface salinity at lower Caloosahatchee River Estuary monitoring sites and mean daily flow at S-79.

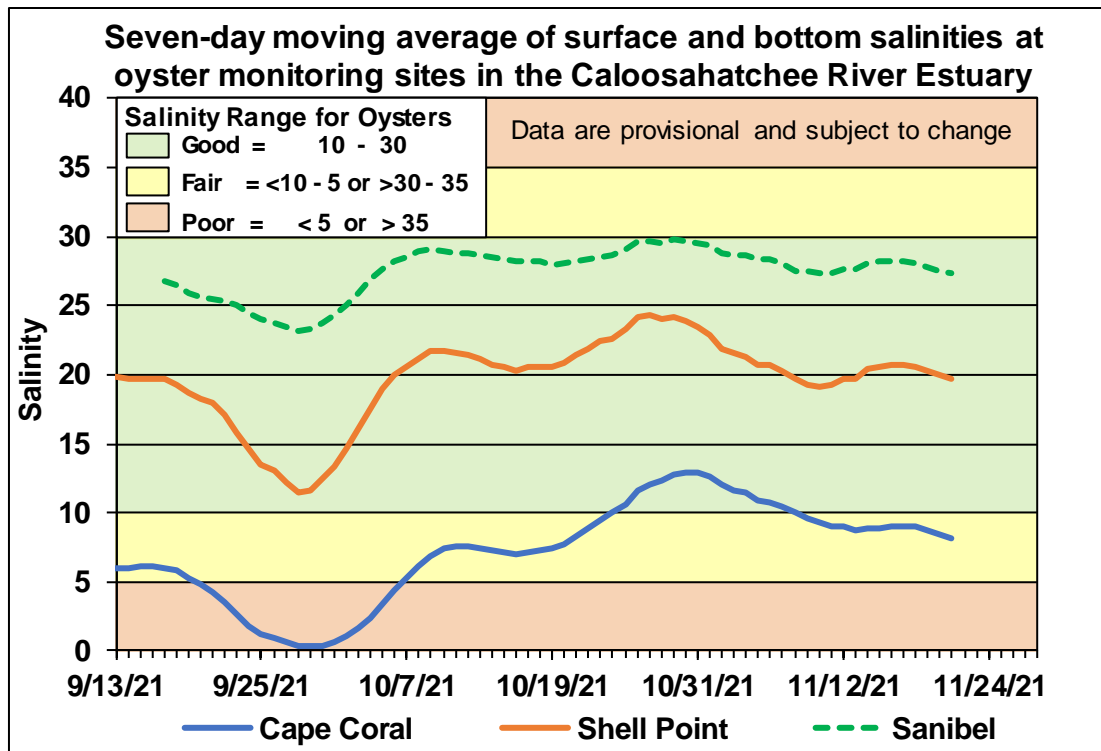


Figure ES-9. Seven-day moving average of surface and bottom salinities at Cape Coral, Shell Point and Sanibel monitoring sites in the Caloosahatchee River Estuary.

Table ES-3. Predicted salinity at Val I-75 in the Caloosahatchee River Estuary at the end of the forecast period for various S-79 flow release scenarios.

Scenario	Simulated S-79 Flow (cfs)	Tidal Basin Runoff (cfs)	Daily Salinity	30-Day Mean Salinity
A	0	239	1.0	0.4
B	450	239	0.4	0.3
C	800	239	0.3	0.3
D	1000	239	0.3	0.3
E	1500	239	0.3	0.3
F	2000	239	0.3	0.3

Caloosahatchee River Estuary Flows and Salinity
Observed and Forecast Salinity at Val I-75
S-79 = 0 cfs & TBR = 239 cfs

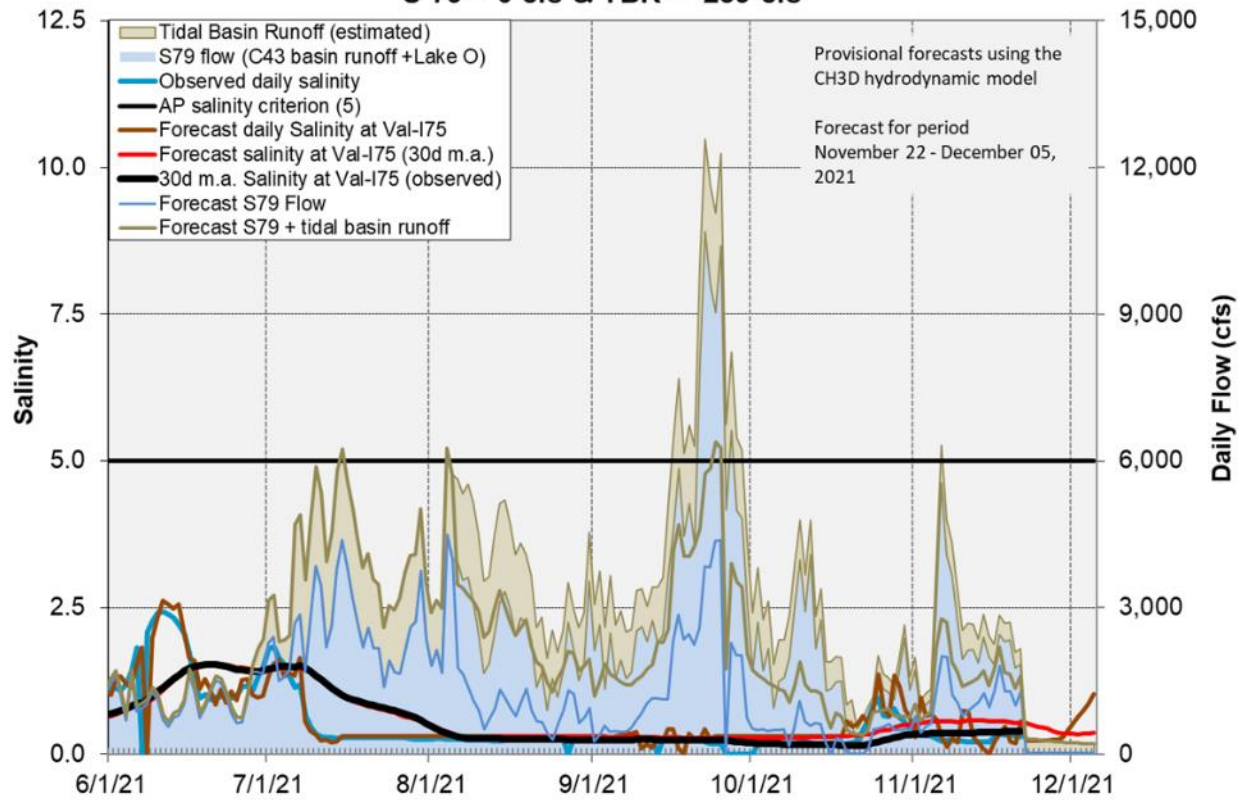


Figure ES-10. Forecasted Val I-75 site surface salinity assuming no pulse release at S-79.

Stormwater Treatment Areas

STA-1E: 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-1E Central Flow-way for vegetation management activities. Online treatment cells are at or above target stage and vegetation in these cells is stressed and highly stressed. The 365-day phosphorus loading rates (PLRs) are high for the Eastern and Central Flow-ways (**Figure S-1**).

STA-1W: Operational restrictions are in place in STA-1W Western, Eastern, and Northern Flow-ways due to construction activities. Most treatment cells are at target stage. Vegetation in the flow-ways is stressed and highly stressed. The 365-day PLRs for the Northern, Western, and Eastern Flow-ways are below 1.0 g/m²/year (**Figure S-2**).

STA-2: STA-2 Flow-way 2 is offline for construction activities. Operational restrictions are in place in STA-2 Flow-ways 3 and 4 for vegetation management activities. Online treatment cells are at or above target stage. Vegetation in Flow-ways 1 and 3 is stressed, and in Flow-ways 2, 4 and 5 is highly stressed. The 365-day PLRs for Flow-ways 1, 4 and 5 are below 1.0 g/m²/year. The 365-day PLR for Flow-way 3 is high (**Figure S-3**).

STA-3/4: STA-3/4 Eastern Flow-way is offline for vegetation rehabilitation/drawdown. Most online treatment cells are at or above target stage. Vegetation in the Eastern and Central Flow-ways is highly stressed and in the Western Flow-way is stressed. The 365-day PLRs for the Central and Western Flow-ways are below 1.0 g/m²/year (**Figure S-4**).

STA-5/6: All Flow-ways are online. Most treatment cells are near or above target stage. All treatment cells have highly stressed vegetation conditions except Flow-ways 7 and 8 which are healthy. The 365-day PLRs for most flow-ways are high (**Figures S-5 and S-6**).

For definitions on STA operational language see glossary following figures.

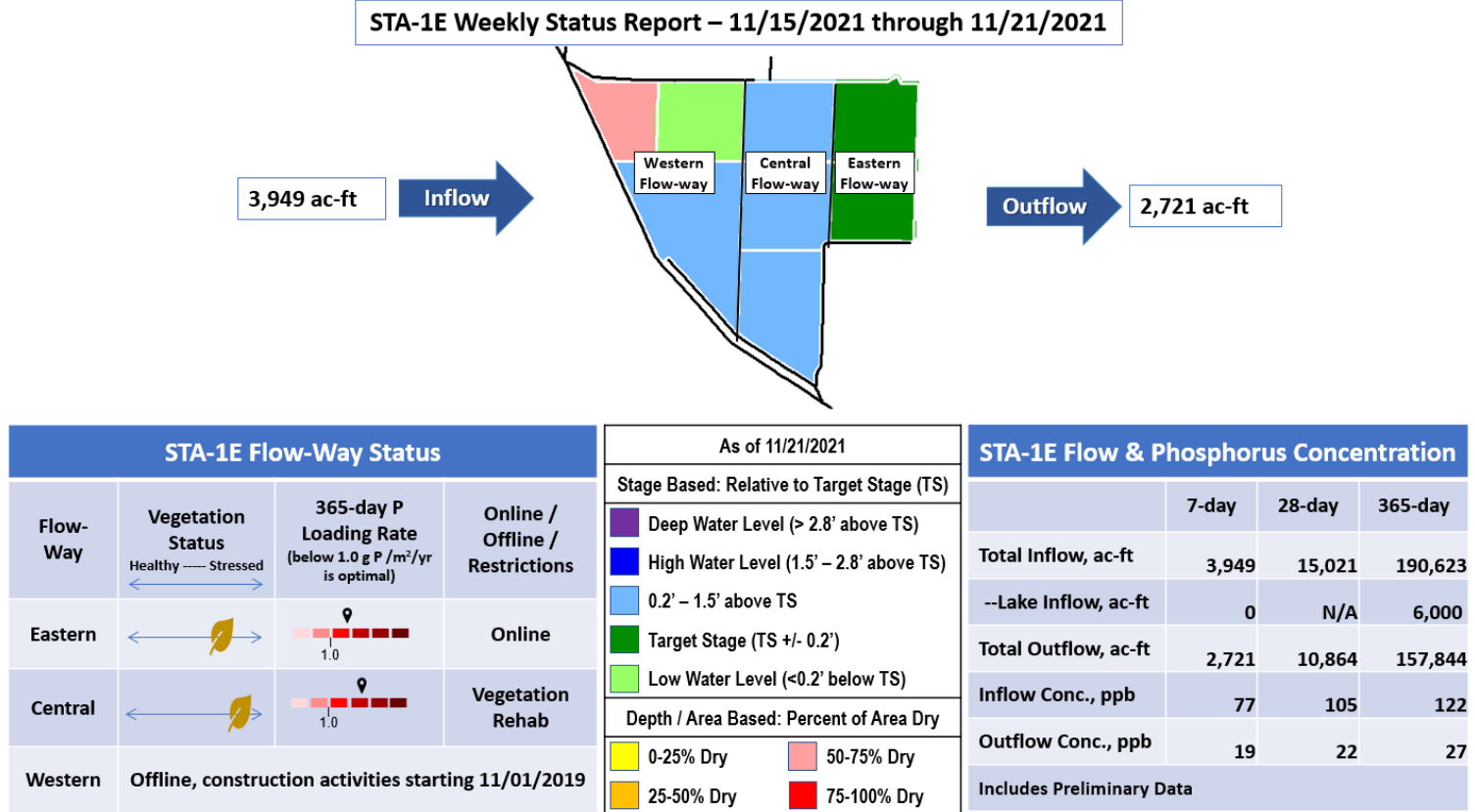
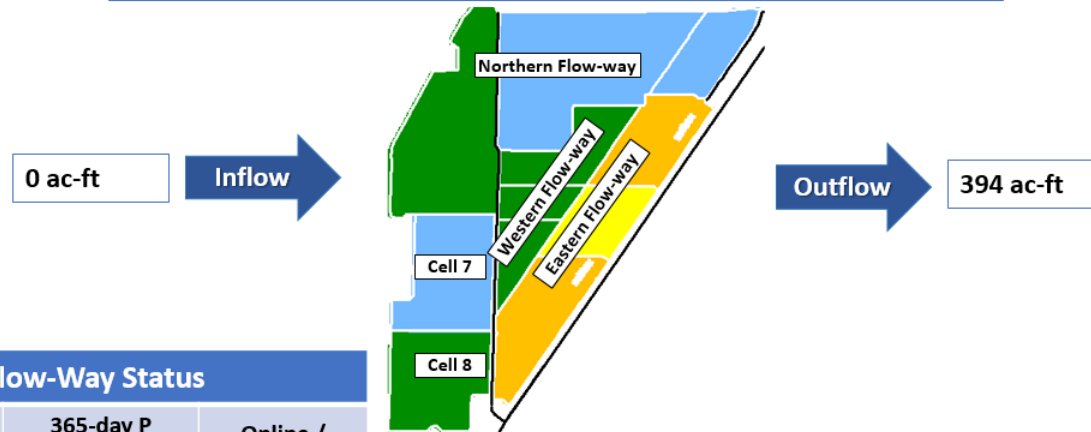


Figure S-1. STA-1E Weekly Status Report

STA-1W Weekly Status Report – 11/15/2021 through 11/21/2021



STA-1W Flow-Way Status

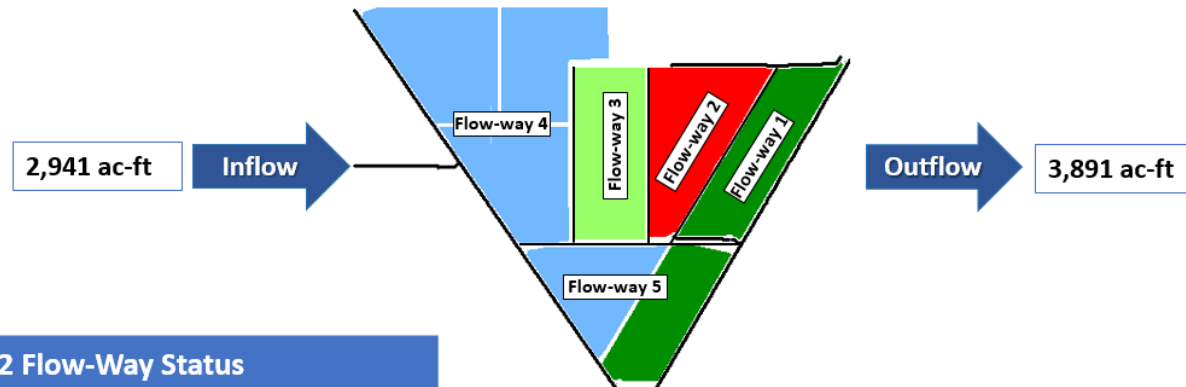
Flow-Way	Vegetation Status Healthy --- Stressed	365-day P Loading Rate (below 1.0 g P /m ² /yr is optimal)	Online / Offline / Restrictions
Northern			Construction
Western			Construction
Eastern			Construction
Cell 7		N/A	Construction
Cell 8		N/A	Construction

As of 11/21/2021	
Stage Based: Relative to Target Stage (TS)	
	Deep Water Level (> 2.8' above TS)
	High Water Level (1.5' – 2.8' above TS)
	0.2' – 1.5' above TS
	Target Stage (TS +/- 0.2')
	Low Water Level (<0.2' below TS)
Depth / Area Based: Percent of Area Dry	
	0-25% Dry
	25-50% Dry
	50-75% Dry
	75-100% Dry

STA-1W Flow & Phosphorus Concentration			
	7-day	28-day	365-day
Total Inflow, ac-ft	0	1,230	48,878
--Lake Inflow, ac-ft	0	N/A	4,100
Total Outflow, ac-ft	394	1,633	49,878
Inflow Conc., ppb	N/A	139	172
Outflow Conc., ppb	21	21	24
Includes Preliminary Data			

Figure S-2. STA-1W Weekly Status Report

STA-2 Weekly Status Report – 11/15/2021 through 11/21/2021



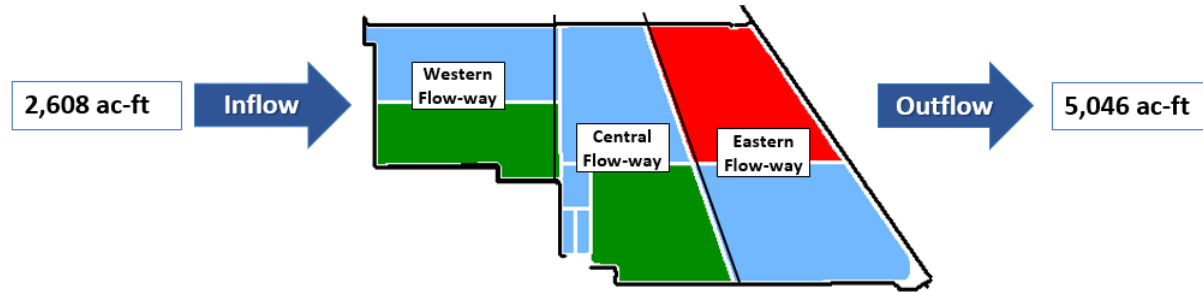
STA-2 Flow-Way Status			
Flow-Way	Vegetation Status Healthy ——— Stressed	365-day P Loading Rate (below 1.0 g P / m ² /yr is optimal)	Online / Offline / Restrictions
1			Online
2	Offline, construction activities as of 9/7/2021		
3			Vegetation Rehab
4			Vegetation Rehab
5			Online

As of 11/21/2021	
Stage Based: Relative to Target Stage (TS)	
	Deep Water Level (> 2.8' above TS)
	High Water Level (1.5' – 2.8' above TS)
	0.2' – 1.5' above TS
	Target Stage (TS +/- 0.2')
	Low Water Level (<0.2' below TS)
Depth / Area Based: Percent of Area Dry	
	0-25% Dry
	25-50% Dry
	50-75% Dry
	75-100% Dry

STA-2 Flow & Phosphorus Concentration				
	7-day	28-day	365-day	
Total Inflow, ac-ft	2,941	15,937	335,667	
--Lake Inflow, ac-ft	0	N/A	65,800	
Total Outflow, ac-ft	3,891	17,778	351,115	
Inflow Conc., ppb	58	59	87	
Outflow Conc., ppb	14	15	16	
Includes Preliminary Data				

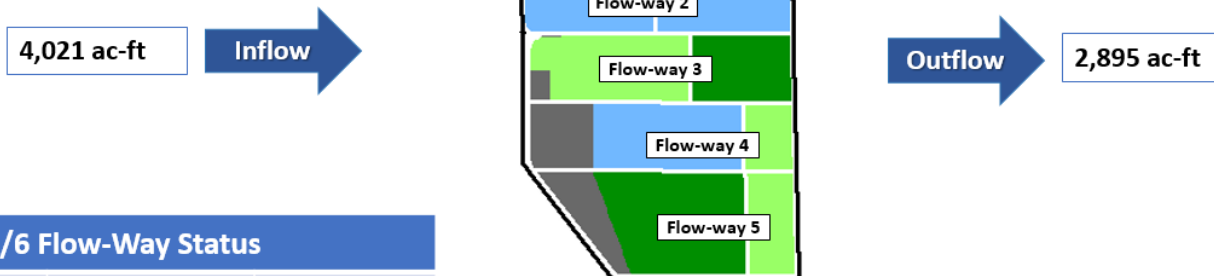
Figure S-3. STA-2 Weekly Status Report

STA-3/4 Weekly Status Report – 11/15/2021 through 11/21/2021



STA-3/4 Flow-Way Status				As of 11/21/2021		STA-3/4 Flow & Phosphorus Concentration			
Flow-Way	Vegetation Status <div>Healthy-----Stressed</div> <div></div>	365-day P Loading Rate (below 1.0 g P / m ² /yr is optimal)	Online / Offline / Restrictions	Stage Based: Relative to Target Stage (TS)		Total Inflow, ac-ft	7-day	28-day	365-day
				<div><div></div> Deep Water Level (> 2.8' above TS)</div> <div><div></div> High Water Level (1.5' – 2.8' above TS)</div> <div><div></div> 0.2' – 1.5' above TS</div> <div><div></div> Target Stage (TS +/- 0.2')</div> <div><div></div> Low Water Level (<0.2' below TS)</div>	Depth / Area Based: Percent of Area Dry				
Eastern	Offline, vegetation management drawdown as of 3/1/2021								
Central	<div></div>	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><</div>							

STA-5/6 Weekly Status Report – 11/15/2021 through 11/21/2021



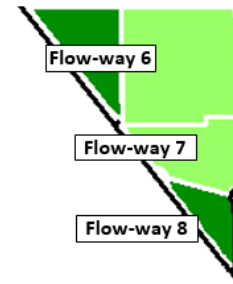
STA-5/6 Flow-Way Status			
Flow-Way	Vegetation Status Healthy ----- Stressed	365-day P Loading Rate (below 1.0 g P / m ² /yr is optimal)	Online / Offline / Restrictions
1	← →		Online
2	← →	N/A	Online
3	← →	N/A	Online
4	← →		Online
5	← →		Online

As of 11/21/2021	
Stage Based: Relative to Target Stage (TS)	
	Deep Water Level (> 2.8' above TS)
	High Water Level (1.5' – 2.8' above TS)
	0.2' – 1.5' above TS
	Target Stage (TS +/- 0.2')
	Low Water Level (<0.2' below TS)
Depth / Area Based: Percent of Area Dry	
	0-25% Dry
	25-50% Dry
	50-75% Dry
	75-100% Dry

STA-5/6 Flow & Phosphorus Concentration			
	7-day	28-day	365-day
Total Inflow, ac-ft	4,021	21,565	207,273
--Lake Inflow, ac-ft	0	N/A	9,000
Total Outflow, ac-ft	2,895	14,260	204,167
Inflow Conc., ppb	150	158	251
Outflow Conc., ppb	15	22	69
Includes Preliminary Data			

Figure S-5. STA-5/6 Weekly Status Report (Flow-ways 1 – 5)

STA-5/6 Weekly Status Report – 11/15/2021 through 11/21/2021



STA-5/6 Flow-Way Status				As of 11/21/2021	
Flow-Way	Vegetation Status Healthy ----- Stressed ←-----→	365-day P Loading Rate (below 1.0 g P /m ² /yr is optimal)	Online / Offline / Restrictions	Stage Based: Relative to Target Stage (TS)	
				<div>Deep Water Level (> 2.8' above TS)</div> <div>High Water Level (1.5' – 2.8' above TS)</div> <div>0.2' – 1.5' above TS</div> <div>Target Stage (TS +/- 0.2')</div> <div>Low Water Level (<0.2' below TS)</div>	
6	←-----→		Online		
7	←-----→		Online		
8	←-----→		Online		
				Depth / Area Based: Percent of Area Dry	
				<div>0-25% Dry</div> <div>25-50% Dry</div>	<div>50-75% Dry</div> <div>75-100% Dry</div>

Figure S-6. STA-5/6 Weekly Status Report (Flow-ways 6 – 8)

Basic Concepts and Definitions for STA Weekly Status Report

- **Inflow:** Sum of flow volume at all inflow structures to an STA.
- **Lake Inflow:** Portion of the STA total inflow volume that originates from Lake Okeechobee.
- **Outflow:** Sum of flow volume at outflow structures from an STA.
- **Total Phosphorus (TP):** Total mass of phosphorus in all its forms; including particulate, dissolved, etc.
- **Inflow Concentration:** TP concentration is the mass of TP in micrograms per liter of water, $\mu\text{g/L}$ or ppb. Inflow concentration refers to the flow-weighted mean TP from all inflow structures over a period of time.
- **Outflow Concentration:** The flow-weighted mean TP from all outflow structures over a period of time. The outflow concentration represents the reduction of inflow TP achieved by STA treatment of the inflow water.
- **WQBEL:** The STA outflow concentration that is required upon completion of the Restoration Strategies projects by December 2025. The outflow concentration shall not exceed 13 ppb as an annual flow weighted mean in more than 3 out of 5 water years on a rolling basis and shall not exceed 19 ppb as an annual flow weighted in any water year.
- **Flow-Way (FW):** One or more treatment cells connected in series. Cells typically have emergent aquatic vegetation (EAV) in the front portion of the flow-way followed by a mix of EAV and submerged aquatic vegetation (SAV)
- **Vegetation Status:** Healthy means the vegetation condition is good and will allow the STA to perform as designed. Stressed means the vegetation is showing signs of poor health, such as browning or areas of vegetation die-off, or the cell contains undesirable vegetation such as floating exotic vegetation requiring treatment. The TP reduction capability of the STA is affected when the vegetation condition is poor.
- **Phosphorus Loading Rate (PLR):** Mass of inflow TP in grams, divided by total treatment area of STA in square meters, per year. In general, a 365-day value of less than 1.0 is needed for an STA to perform optimally. A PLR of 2.0 is considered very high and a PLR of 3.0 is considered extremely high. The TP reduction capability of the STA is affected when the PLR is high, very high and extremely high.
- **Online:** Online status means the FW can receive and treat inflow.
- **Online with Restriction:** The FW can receive and treat inflow, but the amount of flow or water level may be limited temporarily. For example, a vegetation rehabilitation effort may require reduced flows through an area while the new plants are establishing, or nesting by protected species may require a certain water level not to be exceeded.
- **Offline:** The FW is unable to receive and treat inflow due to repairs, construction, or other prohibitive reasons.
- **Depth:** Difference between the average surface water level in a cell and the average ground elevation in that cell. Target depths, or depths between flow events, are between 1.25 ft to 1.5 ft. As depth approaches or drops below zero, an increasing percentage of the cell is considered dry and STA conditions deteriorate. An increase in depth above target depth is expected with increasing flow. However, as depth increases much above the target depth and is sustained over a period of time, it can be detrimental to vegetation health and overall STA treatment performance.
- **Note:** The data provided in this summary report were developed using a combination of provisional and quality-assured flow and water quality data. In some cases, best professional judgment was used to estimate missing data and revise questionable data. Values provided are not considered final but are appropriate for use in STA operational decision-making.

Everglades

Water Conservation Area Regulation Schedules

WCA-1: The 1-8C_stage showed a slight dip and rise above the Zone A1 regulation line last week. The average on Sunday was 0.15 feet above that stable line.

WCA-2A: Stage at 2A-17 decreased last week. The average on Sunday was 1.36 feet higher than the falling Zone A regulation line.

WCA-3A: The Three Gauge Average stage remained in parallel with the stable Zone A regulation line last week. Average stage was 0.04 feet above the Zone A line. WCA-3A: Stage at gauge 62 (Northwest corner) fell over the last week and remains below the falling Upper Schedule. The average on Sunday was 0.40 feet below the regulation line. (**Figures EV-1 – EV-4**).

Water Depths

The SFWDAT tool indicates that water depths in the WCAs are continuing to be lowest in northeastern WCA-3A and have increased slightly over the last month in most areas except for WCA-2A and northern WCA-3A. North to south hydrologic connectivity remains within all of the sloughs in Everglades National Park (ENP): building in Shark River Slough, stable at Taylor Slough, and diminishing to the west (**Figure EV-5**). The possible surface water connection between Shark and Taylor Sloughs in the east has returned. Comparing WDAT water levels from present over the last month, stage changes were mixed (**Figure EV-6**). Except for an east-west band that includes WCA-2A, northern WCA-3A, and northern Big Cypress Preserve, water levels mostly increased over the last month. Looking back one year, most of the Everglades, except WCA-1, was significantly lower in depth. Comparing depths over the past 20 years, most of the Everglades Protection Area remains in the upper half of that historical range (**Figure EV-7**). The western sloughs in ENP remain below the median, while western BCNP, WCA-1, and northeastern ENP are in the 90th percentile.

Taylor Slough and Florida Bay

Taylor Slough and Florida Bay received an average of 2.87 inches of rain over the week ending Sunday (November 22, 2021), which allowed stages to increase an average of 0.05 feet (**Figure EV-8**). The heaviest rainfall occurred where the US Highway 1 crosses to the Florida Keys (between LS and MB on the map) and this area had the highest increase in stage (+0.10 feet not shown on the map). The Slough average is 7.8 inches above the historical average for this time of year while the northern parts of the Slough are 11 inches above its historical average. The early dry-season frontal rains have helped to maintain water levels in the Slough and provide water downstream, but stages are 3.5 inches lower than this time last year after the rains of Tropical Storm Eta (**Figure EV-9**). Northern Taylor Slough historical averages are from before the alterations to the system to facilitate water movement, and this area is expected to be higher than the historical average as a result of these modifications even with less water directly delivered.

Salinities in Florida Bay averaged a decrease of 3 over the week ending November 22, 2021 but individual stations had weekly changes ranging from -7.0 to +0.2 (**Figure EV-**

8). The largest changes were in the nearshore area like last week. The rapid decreases of this past week brought all areas below their 75th percentiles and the western area decreased below its 25th percentile before beginning to increase slightly again (**Figure EV-10**). The nearshore and eastern areas of the Bay are now polyhaline (18-30), but conditions are not as low as last year after Tropical Storm Eta. The red dotted lines on the salinity graph demarcate the levels from 1 year ago.

Water Management Recommendations

Conserving water in the northern basins, then allowing that water to move downstream maximizes the ecological benefit of freshwater on the landscape. Flows into northern WCA-3A that move downstream continue to have an ecological benefit. Continued freshwater into Florida Bay will push the estuarine front further into the Bay helping to buffer potentially elevated dry season salinity conditions. Individual regional recommendations can be found in **Table EV-2**.

Table EV-2. Previous week's rainfall and water depth changes in Everglades regions.

Everglades Region	Rainfall (inches)	Stage change (feet)
WCA-1	0.62	+0.03
WCA-2A	0.40	-0.09
WCA-2B	0.70	-0.03
WCA-3A	0.50	+0.02
WCA-3B	1.36	+0.07
ENP	0.87	-0.13

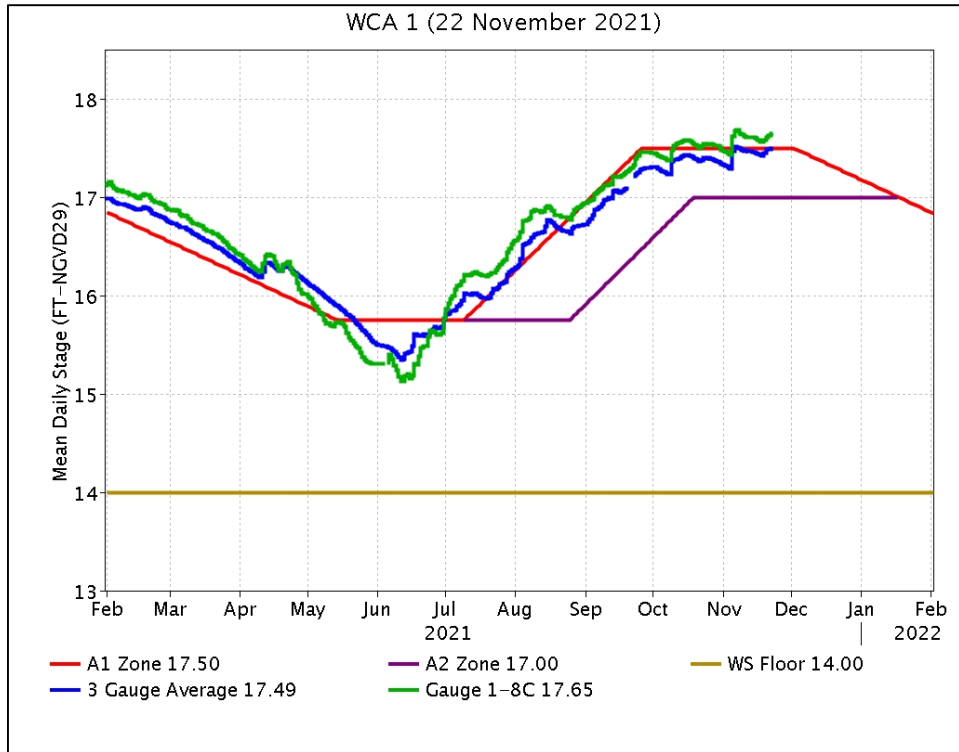


Figure EV-1. WCA-1 stage hydrographs and regulation schedule.

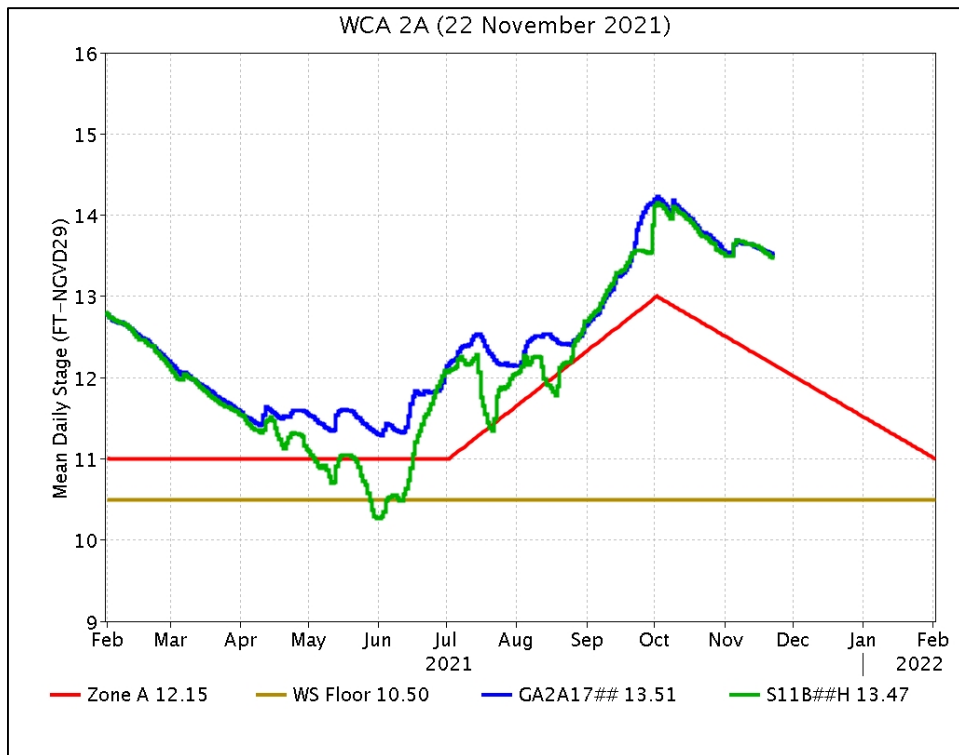


Figure EV-2. WCA-2A stage hydrographs and regulation schedule.

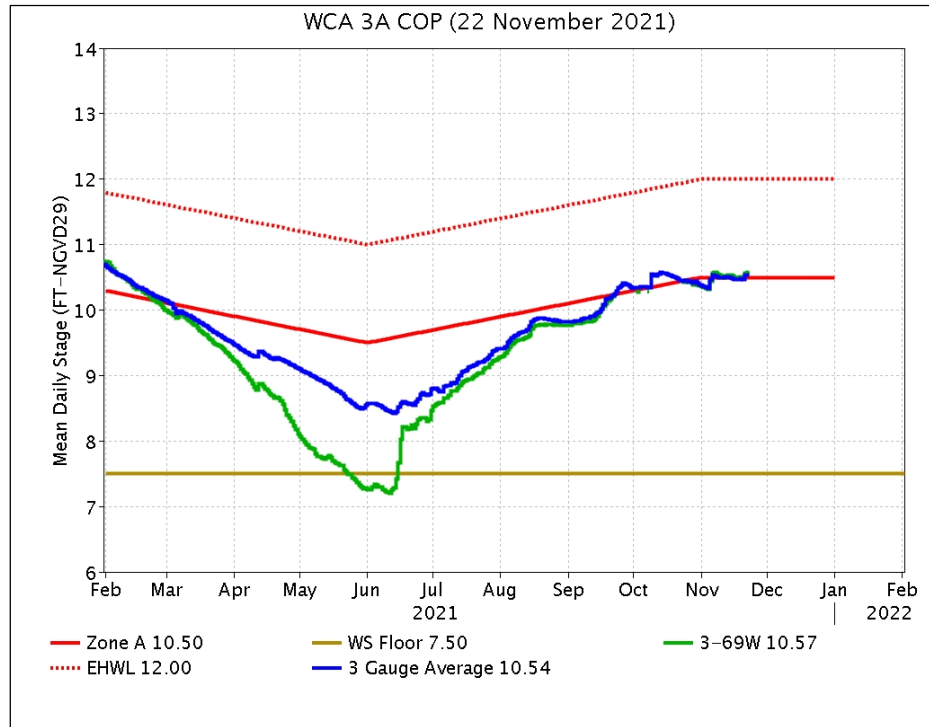


Figure EV-3. WCA-3A stage hydrographs (three-gauge average, S-333 headwater) and regulation schedule.

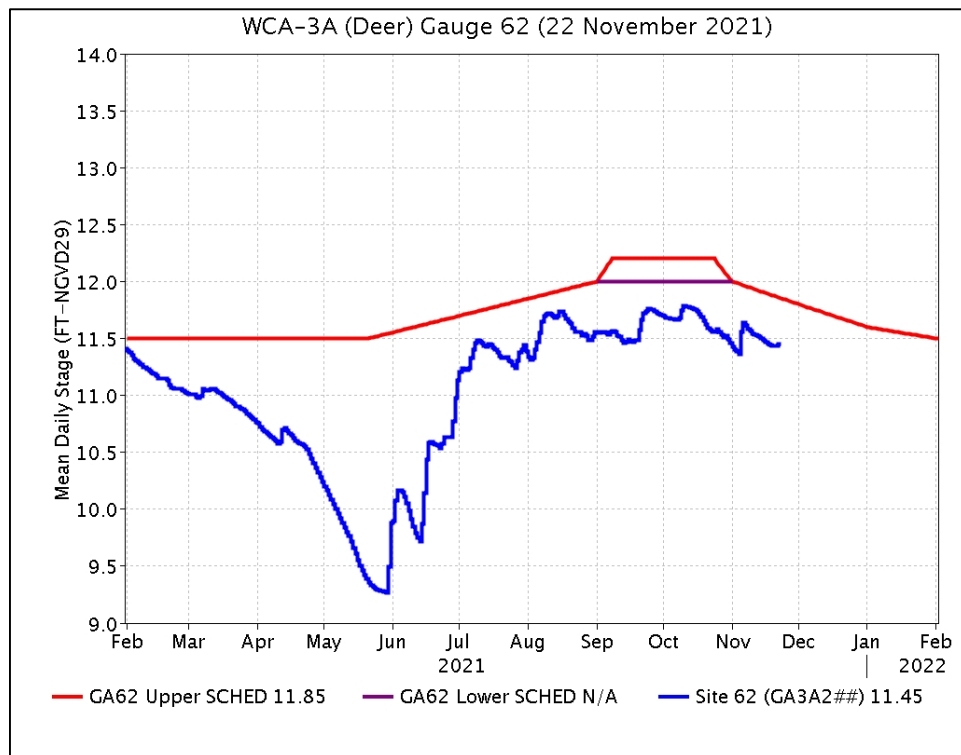


Figure EV-4. WCA-3A stage hydrograph (Deer gauge; Site 62) and CA62 regulation schedule.

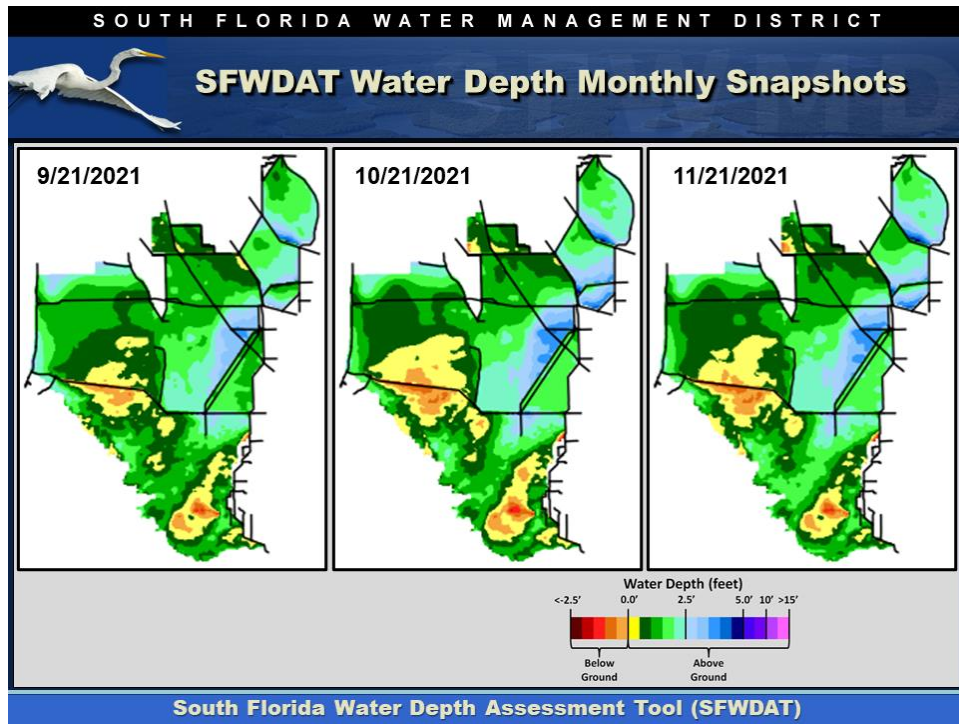


Figure EV-5. Everglades water depths from two months ago (left), one month ago (center) and present (right), based on SFWDAT.

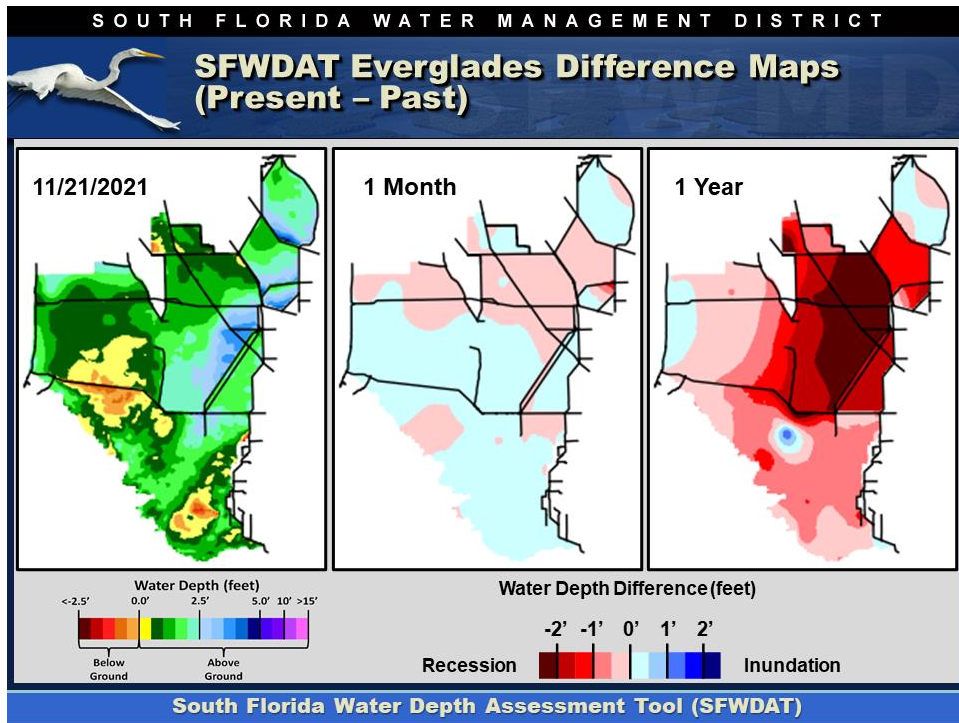


Figure EV-6. Present Everglades water depths (left) and water depth changes from one month (center) and one year (right) ago, based on SFWDAT.

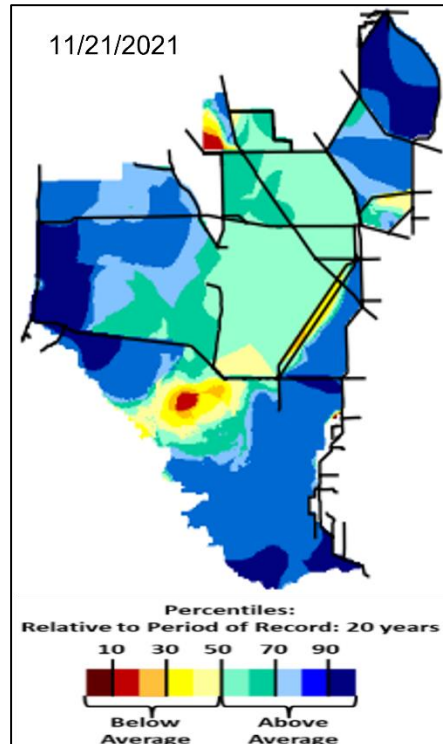


Figure EV-7. Present water depths compared to the day of year median over the previous 20 years.

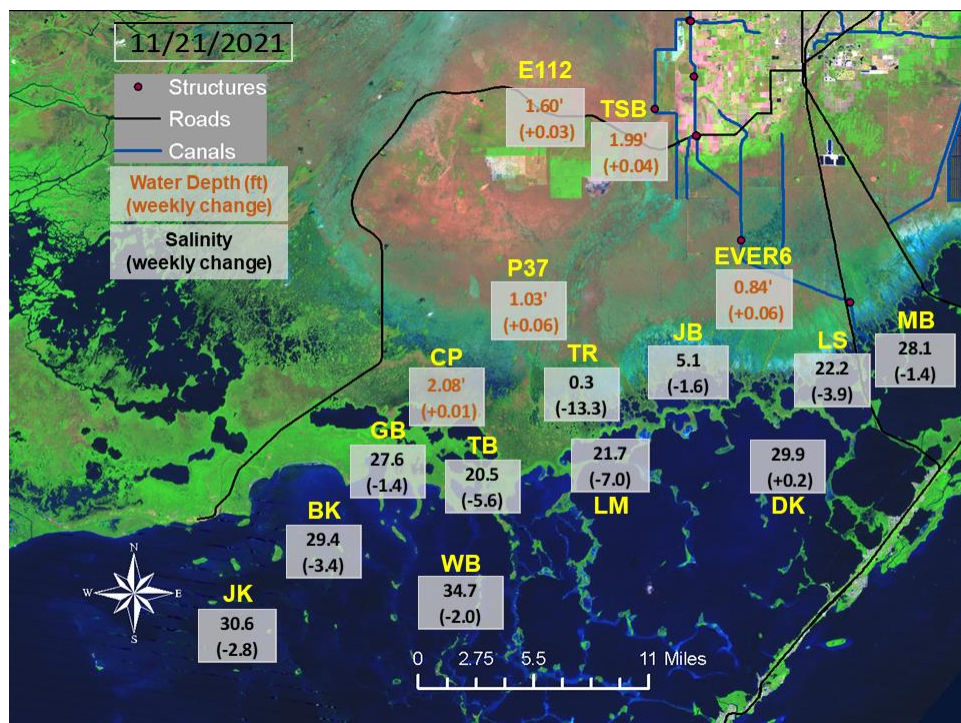


Figure EV-8. Taylor Slough water depths with changes since a week ago and Florida Bay salinities with changes since a week ago.

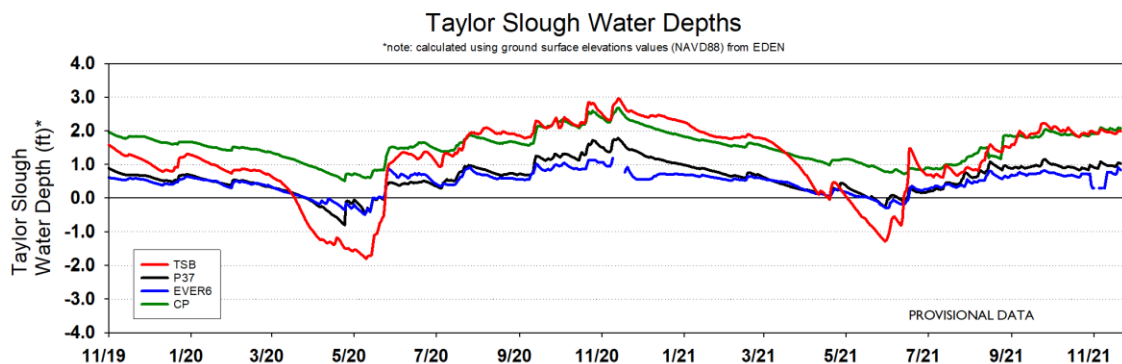


Figure EV-9. Taylor Slough water depth time series.

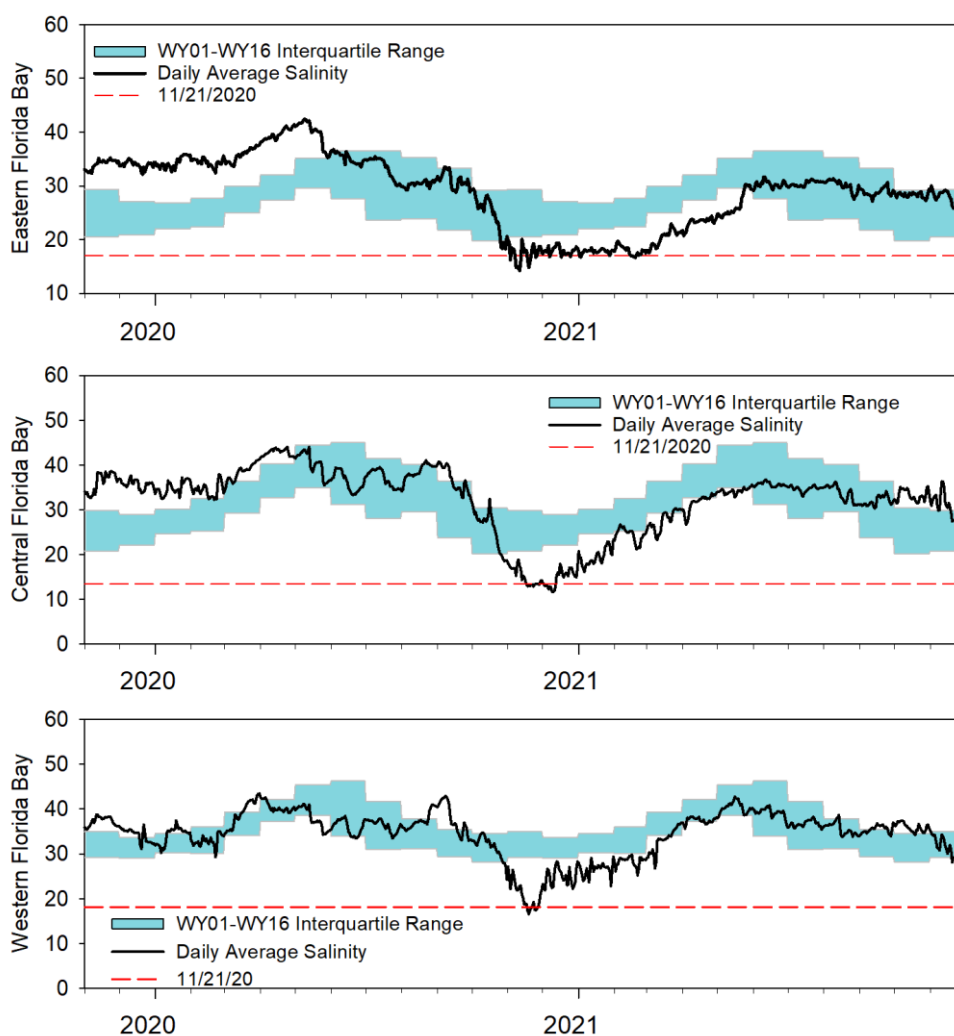


Figure EV-10. Eastern (top panel), Central (middle panel) and Western (bottom panel) Florida Bay daily average salinities with interquartile (25-75 percentile) ranges.

Table EV-2. Weekly water depth changes and water management recommendations.

SFWMD Everglades Ecological Recommendations, November 23, 2021 (red is new)			
Area	Weekly change	Recommendation	Reasons
WCA-1	Stage increased by 0.03'	Conserve water in this basin letting the water move south when conditions allow. Keeping a recession rate less than 0.10 feet per week has an ecological benefit.	Protect within basin and downstream habitat and wildlife. Anticipated La Nina dry season.
WCA-2A	Stage decreased by 0.09'	Conserve water in this basin letting the water move south when conditions allow. Keeping a recession rate less than 0.10 feet per week has an ecological benefit.	Protect within basin and downstream habitat and wildlife.
WCA-2B	Stage decreased by 0.03'	Conserve water in this basin, maintain a minimum input to maintain stage while moving water south when conditions allow.	Protect within basin and downstream habitat and wildlife. Depths in excess of 4.0 feet.
WCA-3A NE	Net change of 0	Conserve water in this basin letting the water move south when conditions allow. Keeping a recession rate less than 0.10 feet per week has an ecological benefit.	Protect within basin peat soils and downstream habitat and wildlife.
WCA-3A NW	Stage decreased by 0.06'	Conserve water in this basin letting the water move south when conditions allow. Keeping a recession rate less than 0.10 feet per week has an ecological benefit.	
Central WCA-3A S	Stage increased by 0.04'	Conserve water in this basin letting the water move south when conditions allow. Keeping a recession rate less than 0.10 feet per week has an ecological benefit.	Protect within basin and downstream habitat and wildlife.
Southern WCA-3A S	Stage increased by 0.12'		
WCA-3B	Stage increased by 0.07'	Conserve water in this basin letting the water move south when conditions allow. Keeping a recession rate less than 0.10 feet per week has an ecological benefit.	Protect within basin and downstream habitat and wildlife.
ENP-SRS	Stage decreased by 0.13 feet	Make discharges to the Park according to COP and TTFF protocol while considering upstream and downstream ecological conditions.	Protect within basin and upstream habitat and wildlife.
Taylor Slough	Stage changes ranged from +0.01' to +0.10'	Move water southward as possible.	When available, provide freshwater buffer for downstream conditions.
FB- Salinity	Salinity changes ranged -7.0 to +0.2	Move water southward as possible.	When available, provide freshwater to maintain low salinity buffer and promote water movement.