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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: April 28, 2021

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Weather Conditions and Forecast

A relatively dry and stable air mass is expected to inhibit rainfall over a large part of the District through Wednesday. However, patches of shallow moisture are forecast to arrive along the east coast fueling occasional, light shower activity extending through the southern interior of the District. Up to a tenth of an inch of large areal average rainfall could occur along or near the immediate southeast coast on Wednesday. On Thursday, widely scattered early-day showers, most of them light, followed by a scattered coverage of moderately heavy afternoon to early evening rains over the interior of the District are expected. Over the Lake, the intensity of the rains is potentially wet-season-like, with isolated but significant rainfall accumulations. On Friday, isolated or widely scattered afternoon rains are possible, particularly over the interior and east. A cold front is likely to push into the northern part of the District and could settle around Lake Okeechobee by early Sunday. Above-normal levels of moisture, good instability and the arrival of the front could enhance rains over the weekend, although a majority of model solutions is showing only scattered enhanced rains area-wide both days. The movement of a system from the southern Plains system into the Gulf of Mexico either over the weekend or early next week could further enhance District rains, although this scenario is considered of lower probability at this time. The high degree of model differences during this time frame make forecasts of the magnitude, timing and location of the weekend rains rather uncertain and of lower confidence. There is general agreement, however, that the relatively deep moisture and instability will continue into early next week and will fuel at least scattered afternoon to early evening rains over the District that could be wet-season-like, producing localized, significant rainfall accumulations.

Kissimmee

Rainfall was less than forecast last week and the stage reversals in East Lake Toho and Toho were small (<0.1 feet). A stage reversal of ~0.25 ft occurred in Kissimmee-Cypress-Hatchineha in the past week due to rainfall, increased discharge from S-61 to control stage rise in Toho, and the discharge limit at S-65A of 900 cfs. Discharge at S-65A was held below 900 cfs to allow construction for the Kissimmee River Restoration Project to continue, but work was temporarily halted due to wet conditions resulting from direct

rainfall. Flow at S-65A remains too low for extensive inundation of the Kissimmee River floodplain. Dissolved oxygen concentration in the Kissimmee River remains high and well above the threshold of concern, which is typical of cooler months.

Lake Okeechobee

Lake Okeechobee stage was 14.17 feet NGVD on April 25, 2021, the same as last week and 0.43 feet lower than a month ago. The Lake is currently in the Low Sub-band. Stage had been above or near the top of the preferred ecological envelope since August 1, 2020, reentered the envelope on March 30, 2021, but is currently 0.07 feet above the envelope. Latest water quality surveys (April 6 - 7, 2021) found detectable cyanotoxins and *Microcystis* dominant cyanobacteria taxa at six of the nine sites sampled. Chlorophyll *a* results for the 30 sites sampled indicate bloom conditions (50.0 µg/L) at one southwest shoreline site, and slightly elevated (~20 µg/L) at five other nearshore sites. Recent satellite imagery (April 26, 2021) suggests there is an increased algal bloom risk in the southern region of the Lake.

Estuaries

Total inflow to the St. Lucie Estuary averaged approximately 443 cfs over the past week with 4 cfs coming from Lake Okeechobee. Mean salinities increased at all sites within the estuary 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 1,291 cfs over the past week with approximately 442 cfs coming from the Lake. Mean salinities decreased at all sites in the estuary 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 Cape Coral and Shell Point, and in the fair range at Sanibel.

Lake stage is in the Low Sub-Band of 2008 LORS. Tributary hydrological conditions are normal. The seasonal outlook is wet and multi-seasonal outlook is wet. The LORS2008 Release Guidance suggests up to 3000 cfs release at S-79 to the Caloosahatchee Estuary and up to 1170 cfs release at S-80 to the St. Lucie Estuary.

Stormwater Treatment Areas

Over the past week, approximately 4,700 ac-ft of Lake Okeechobee water was delivered to the FEBs/STAs. The total amount of Lake releases sent to the FEBs/STAs in WY2021 (since May 1, 2020) is approximately 154,100 ac-feet. The total amount of inflows to the STAs in WY2021 is approximately 1,639,000 ac-feet. Most STA cells are near target stage, with the exception of EAV cells in STA-5/6 that are drying out. STA-1E Western Flow-way is offline for the Restoration Strategies project to fill and grade Cells 5 and 7, and STA-3/4 Eastern Flow-way is offline for vegetation rehabilitation/drawdown. Operational restrictions are in place in STA-1W Western, Eastern, and Northern Flow-ways, and STA-2 Flow-way 2 for construction activities. Operational restrictions are in effect in STA-1E Central Flow-way, STA-2 Flow-ways 3 and 4, and STA-3/4 Western Flow-way for vegetation management activities. Operational restrictions are also in effect in STA-5/6 Flow-ways 2 and 3 following the Restoration Strategies project to grade non-

effective treatment areas. Nests of Migratory Bird Treaty Act (MBTA) protected species have been observed in STA-1W. This week, if 2008 LORS recommends Lake releases to the WCAs and conditions allow, releases will be sent to STA-2 and STA-3/4.

Everglades

The current estimated 60,000 White Ibis nests is the second highest seen since the 1940s. However, the reversal in the northern WCAs has effectively cut short the previously excellent foraging conditions in WCA-2A. With little suitable foraging habitat nearby, this has the potential to trigger large scale abandonment at Alley N and colonies in the Refuge. Snail kite numbers are building in the Everglades. Salinities fell last week in Florida Bay and Taylor Slough but are gradually increasing as expected for this time of year. The Bay remains well positioned to minimize hyper-salinity before the wet season.

SUPPORTING INFORMATION

Kissimmee Basin

Upper Kissimmee

Lake stages on April 27, 2021 were 55.9 feet NGVD (0.5 feet below schedule) in East Lake Toho, 52.8 feet NGVD (0.6 feet below schedule) in Lake Toho, and 51.5 feet NGVD (1.3 feet above schedule) in Kissimmee-Cypress-Hatchineha (KCH) waterbodies (**Table KB-1, Figures KB-1-3**). Rainfall resulted in small (<0.1 feet) stage reversals in East Lake Toho and Toho; lake stage returned to the pre-rain target recession lines in by Sunday, which are projected to bring the lakes' stages to their low pools on June 1 at a rate of 0.17 feet/week. A stage reversal of ~0.25 ft occurred in Kissimmee-Cypress-Hatchineha in the past week due to rainfall, increased discharge from S-61 to control stage rise in Toho for snail kite nesting, and the discharge limit at S-65A of 900 cfs; stage continued to rise through Monday but appears to be leveling off or declining as of Tuesday morning.

Lower Kissimmee

Kissimmee River (headwater) stages were 46.3 feet NGVD at S-65A and 25.9 feet NGVD at S-65D on April 27, 2021, while discharges were 980 cfs at S-65, 900 cfs at S-65A, 950 cfs at S-65D and 890 cfs at S-65E (**Table KB-2**). Dissolved oxygen concentration in the Kissimmee River averaged 6.8 mg/L for the week through Sunday, well above the 2.0 mg/L threshold considered harmful to sportfish (**Figure KB-4**). While flow at S-65A remains too low for extensive inundation of the Kissimmee River floodplain, mean floodplain depth increased to 0.18 feet on Sunday from 0.09 feet the week before, based on the South Florida Water Depth Assessment Tool (SFWDAT) (**Figure KB-5**).

Water Management Recommendations

Return to the pre-rain target recession lines (recession rates 0.17 feet/week) in Lakes East Toho and Toho to reach their regulated low stage on June 1. Continue to follow the USACE request of <800-900 cfs discharge at S-65A to facilitate restoration construction activities on the river. If stages begin to recede in Kissimmee-Cypress-Hatchineha maintain a rate below 0.18 feet/week by reducing S-65 discharge as needed.

Table KB-1. Average discharge for the preceding seven days, 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) | |
|---|-----------|-----------------------|-------------------------------|-------------------------------------|----------------------------|----------------------------|----------------------------------|---------|
| | | | | | | | 4/25/21 | 4/18/21 |
| Lakes Hart and Mary Jane | S-62 | LKMJ | 183 | 60.1 | R | 60.2 | -0.1 | -0.3 |
| Lakes Myrtle, Preston and Joel | S-57 | S-57 | 44 | 60.4 | R | 60.4 | 0.0 | -0.0 |
| Alligator Chain | S-60 | ALLI | 239 | 63.0 | R | 63.0 | 0.0 | 0.2 |
| Lake Gentry | S-63 | LKGT | 357 | 60.4 | R | 60.5 | -0.1 | 0.2 |
| East Lake Toho | S-59 | TOHOE | 552 | 55.9 | R | 56.4 | -0.5 | -0.7 |
| Lake Toho | S-61 | TOHOW S-61 | 1,186 | 52.9 | R | 53.4 | -0.5 | -0.7 |
| Lakes Kissimmee, Cypress and Hatchineha | S-65 | KUB011 LKIS5B | 757 | 51.2 | R | 50.2 | 1.0 | 0.5 |

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.

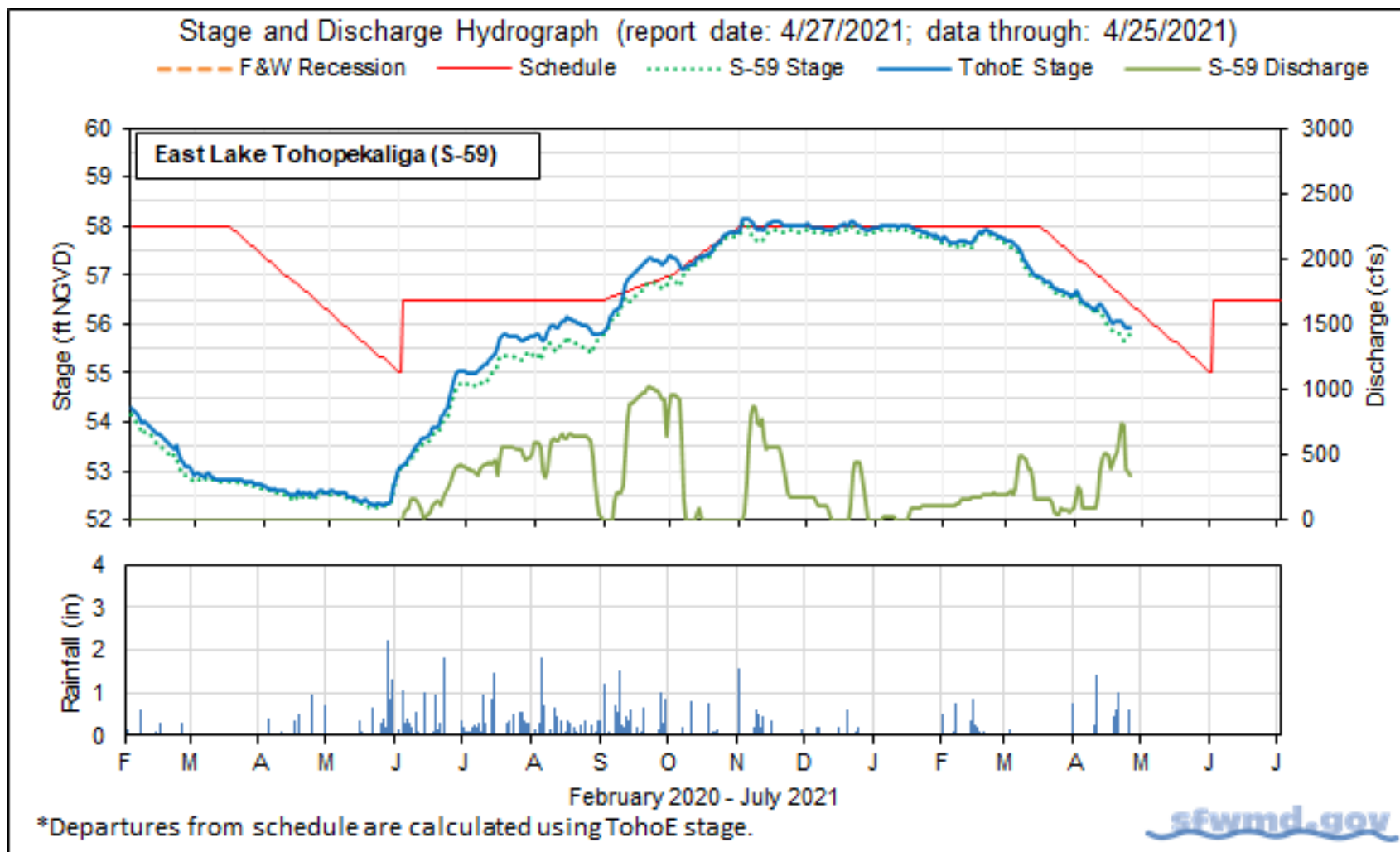


Figure KB-1. East Lake Toho regulation schedule, stage, discharge and rainfall.

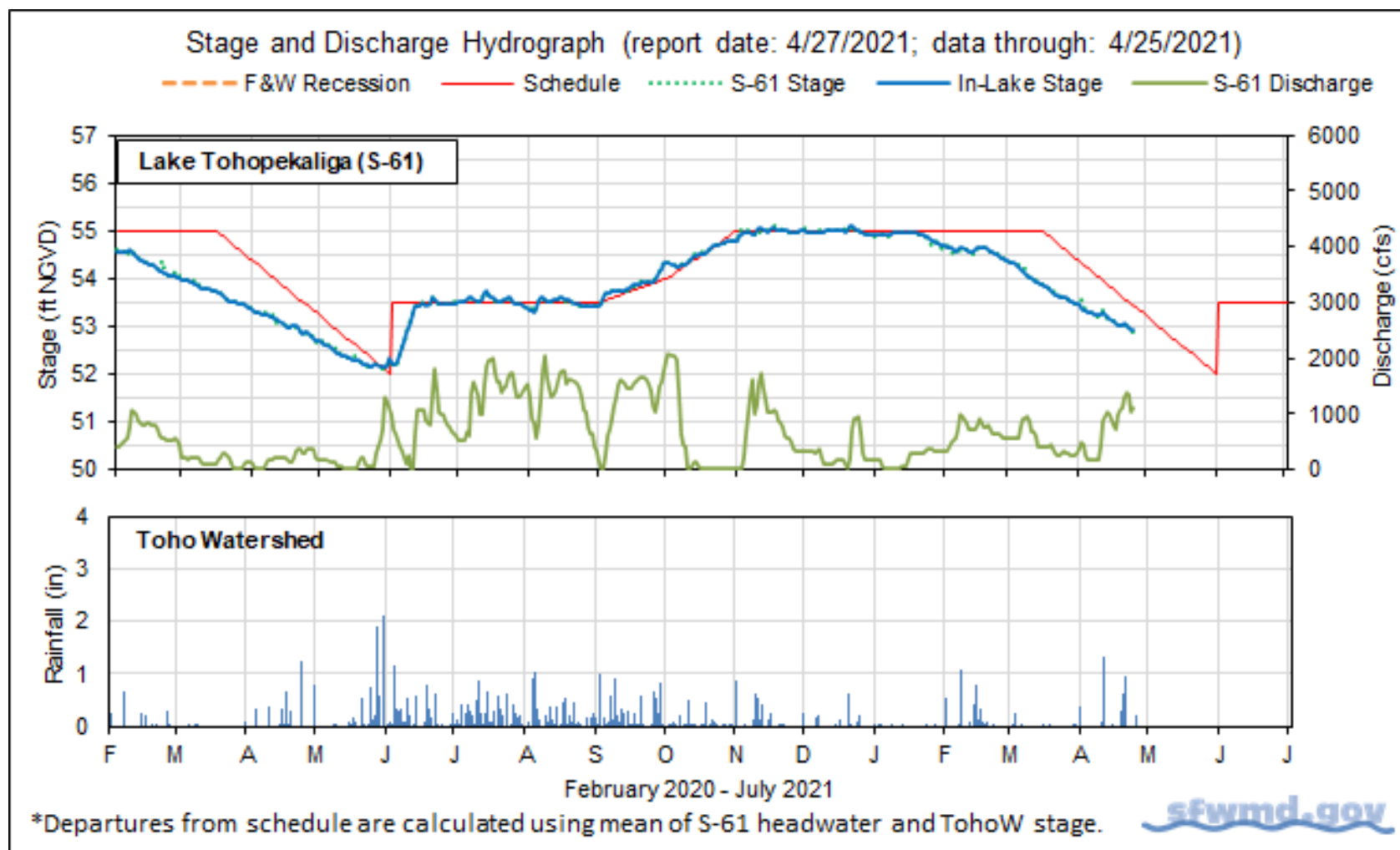


Figure KB-2. Lake Toho regulation schedule, stage, discharge and rainfall.

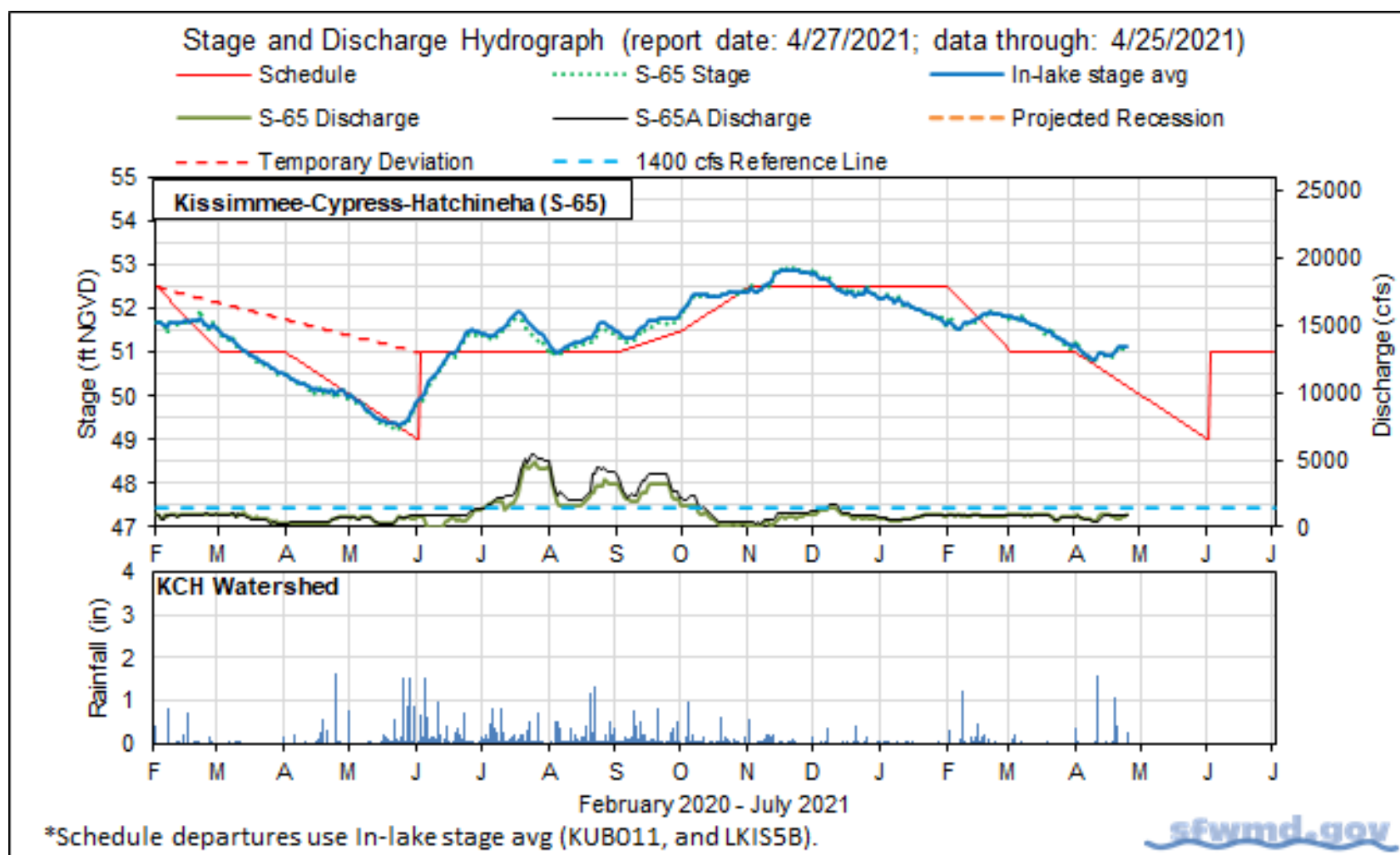


Figure KB-3. Lakes Kissimmee, Cypress and Hatchineha regulation schedule, stage, discharge and rainfall.

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 | Average | Average for Previous Seven Day Periods | | | |
|--------------------------------------|-------------------------------|---------|--|---------|---------|--------|
| | | 4/25/21 | 4/25/21 | 4/18/21 | 4/11/21 | 4/4/21 |
| Discharge | S-65 | 887 | 757 | 929 | 531 | 805 |
| Discharge | S-65A ^a | 880 | 881 | 842 | 492 | 729 |
| Discharge | S-65D ^b | 960 | 968 | 707 | 636 | 755 |
| Headwater Stage (feet NGVD) | S-65D ^c | 25.95 | 25.86 | 25.85 | 25.77 | 25.76 |
| Discharge (cfs) | S-65E ^d | 927 | 957 | 697 | 635 | 792 |
| Discharge (cfs) | S-67 | 0 | 0 | 0 | 0 | 0 |
| Dissolved Oxygen (mg/L) ^e | Phase I, II/III river channel | 6.5 | 6.8 | 7.6 | 7.9 | 7.3 |
| Mean depth (feet) ^f | Phase I floodplain | 0.27 | 0.30 | 0.22 | 0.13 | 0.17 |

a. Combined discharge from main and auxiliary structures.

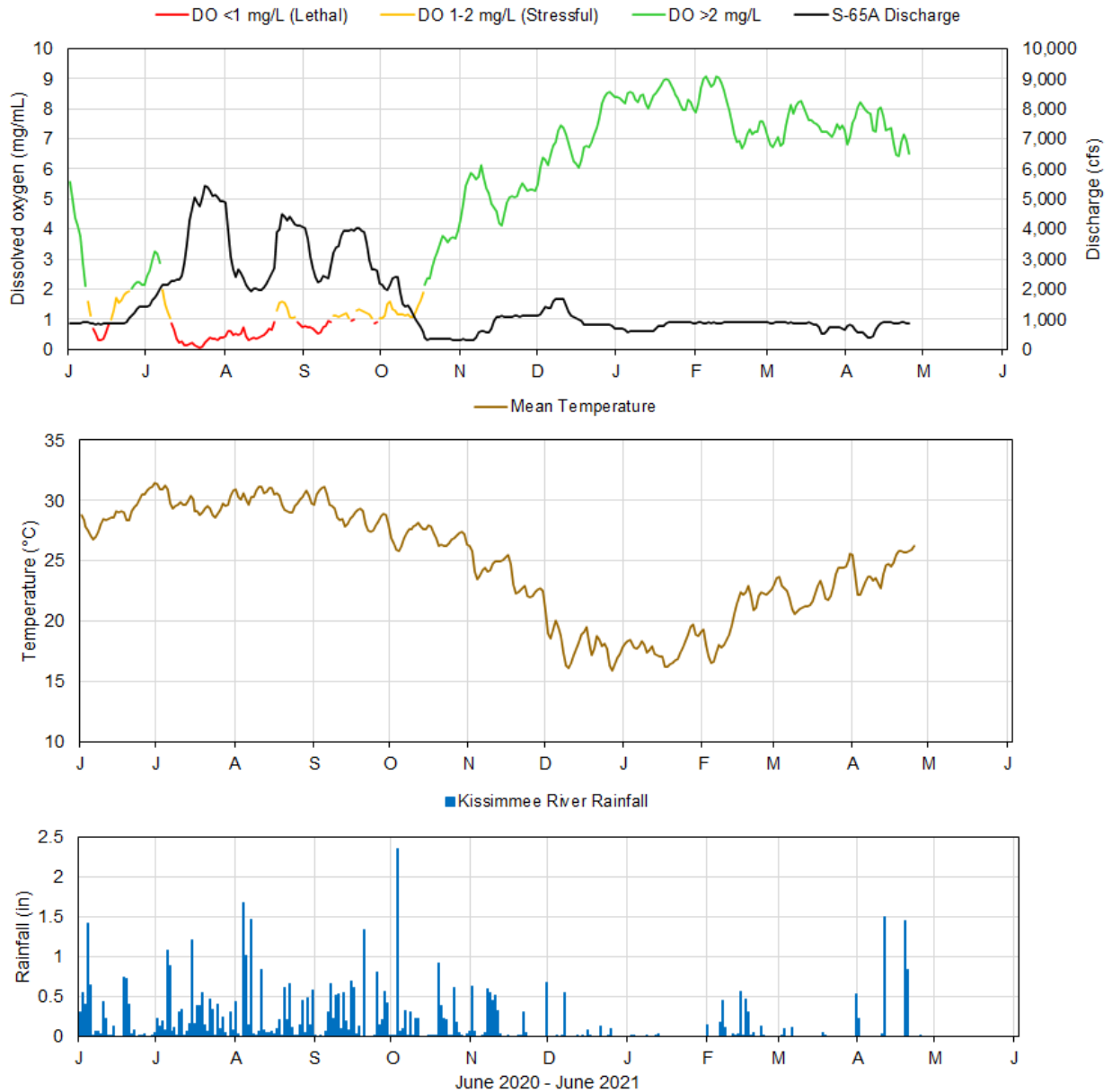
b. Combined discharge from S-65D, S-65DX1 and S-65DX2.

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, PC63, PD62R and PD42R.

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



Dissolved oxygen (DO) and temperature are mean daily values averaged for PC62, KRBN, PC33, PD62R and PD42R with an average of 4 stations reporting this week. Rainfall values are daily totals for Kissimmee River (Pool BCD) AHED watershed.
 Report Date: 4/27/2021; data are through: 4/25/2021

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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 four stations reporting this week. Rainfall values are daily totals for Kissimmee River (Pool BCD) AHED watershed.

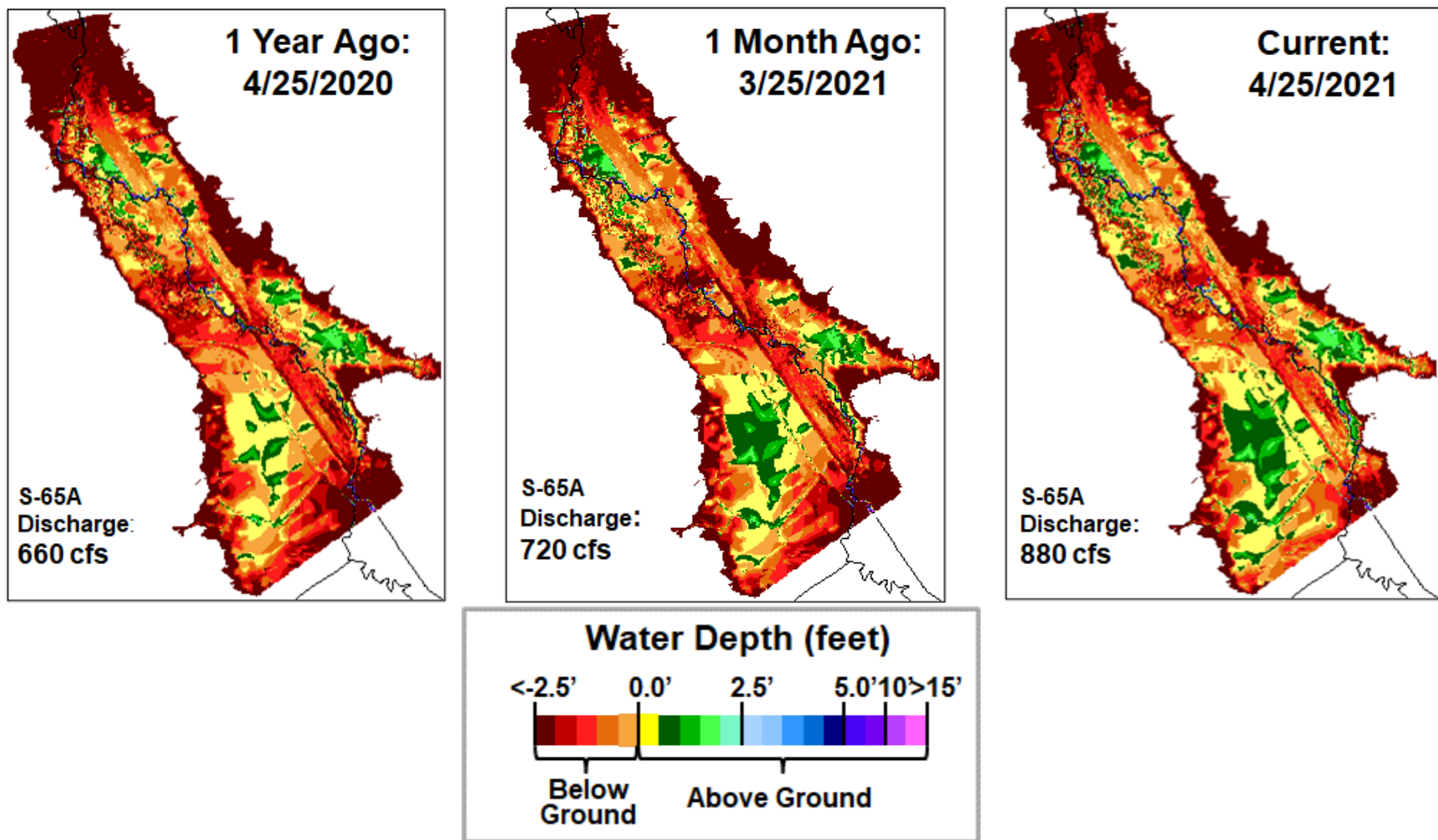


Figure KB-5. Phase I area Kissimmee River floodplain water depths (from left to right) one year ago, one month ago and current, based on the South Florida Water Depth Assessment Tool (SFWDAT).

Lake Okeechobee

Lake Okeechobee stage was 14.17 feet NGVD on April 25, 2021, 0.43 feet lower than a month ago, and 2.80 feet higher than one year ago (**Figure LO-1**). Lake stages rose into the lower portion of the preferred ecological envelope on June 2, 2020 (**Figure LO-2**) and had been above the envelope since August 1, 2020. Lake stage reentered the envelope on March 30, 2021, but is now 0.07 feet above the envelope, though still in the Low sub-band. Lake stage reached a low of 10.99 feet on May 17 and a high of 16.45 feet on November 12 (post Tropical Storm Eta), a difference of 5.5 feet (**Figure LO-3**). Lake stage declined slowly from mid-November through mid-February, then recession rates increased until early April. Lake stage has been steady for the past two weeks. According to NEXRAD, 1.07 inches of rain fell directly on the Lake.

Average daily inflows (excluding rainfall) increased from the previous week, going from 809 cubic feet per second (cfs) to 1,707 cfs. Outflows (excluding evapotranspiration) increased, going from 1,596 cfs to 1,733 cfs. The majority of the inflow came from the Kissimmee River (957 cfs through S-65E & S-65EX1), with notable flows also coming from the C-41a canal (325 cfs through S-84 & S-84X), and the C-39/C-40 canals (222 cfs through S-71 & S-72). Releases to the west via S-77 decreased from 720 cfs the prior week to 500 cfs, and releases east via S-308 were minimal, at 48 cfs. Releases south through the S-350 structures increased from 861 cfs to 1,076 cfs. Average inflows and outflows through water control structures surrounding the Lake for the previous two weeks (cfs) are shown in **Table LO-1**. The resultant Lake elevation change in inches (in) due to each structure's flow for the past week is also shown in **Table LO-1**. **Figure LO-4** 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.

Water quality sampling is now on the non-bloom season schedule (November – April), occurring once monthly at 32 stations for chlorophyll *a*, and at 9 stations for taxonomic identification and toxin analyses (**Figure LO-5**). Most of the April sampling occurred on the 6th and 7th. Chlorophyll *a* results from the 30 sites sampled indicated bloom conditions (50.0 µg/L) at one southwest shoreline site (PALMOUT), and one other nearshore site had a value over 20 µg/L (POLESOUT1). Six of the samples from the nine in-lake algal ID stations had detectable levels of cyanotoxins (but well below 8 µg/L), as did both structures (S-77 & S-308), and the algal community at all these sites was dominated by the cyanobacteria *Microcystis* (**Table LO-2**).

The most recent satellite image (April 26, 2021) from the NOAA cyanobacteria monitoring product derived from EUMETSAT's Sentinel 3 OLCI sensor data showed an increased bloom potential in the southern region of the Lake (**Figure LO-6**).

Table LO-1. Weekly Lake Okeechobee inflows and outflows (cfs) and as change in elevation (in).

| Inflows | Previous Week's Average Daily Flow (cfs) | This Week's Average Daily Flow (cfs) | Equivalent Depth Week Total (in) | Outflows | Previous Week's Average Daily Flow (cfs) | This Week's Average Daily Flow (cfs) | Equivalent Depth Week Total (in) |
|------------------|--|--------------------------------------|----------------------------------|--------------------|--|--------------------------------------|----------------------------------|
| S-65E & S-65EX1 | 698 | 957 | 0.4 | S-77 | 720 | 500 | 0.2 |
| S-71 & S-72 | 35 | 222 | 0.1 | S-308 | -35 | 48 | 0.0 |
| S-84 & S-84X | 0 | 325 | 0.1 | S-351 | 435 | 555 | 0.2 |
| Fisheating Creek | 12 | 30 | 0.0 | S-352 | 295 | 84 | 0.0 |
| S-154 | 0 | 0 | 0.0 | S-354 | 132 | 437 | 0.2 |
| S-191 | 0 | 41 | 0.0 | L-8 Outflow | 50 | 109 | 0.0 |
| S-133 P | 1 | 27 | 0.0 | Evapotranspiration | 3010 | 2138 | 0.9 |
| S-127 P | 1 | 9 | 0.0 | Totals | 4606 | 3871 | 1.6 |
| S-129 P | 1 | 22 | 0.0 | | | | |
| S-131 P | 10 | 35 | 0.0 | | | | |
| S-135 P | 52 | 40 | 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 | 594 | 2884 | 1.2 | | | | |
| Totals | 1403 | 4591 | 1.9 | | | | |

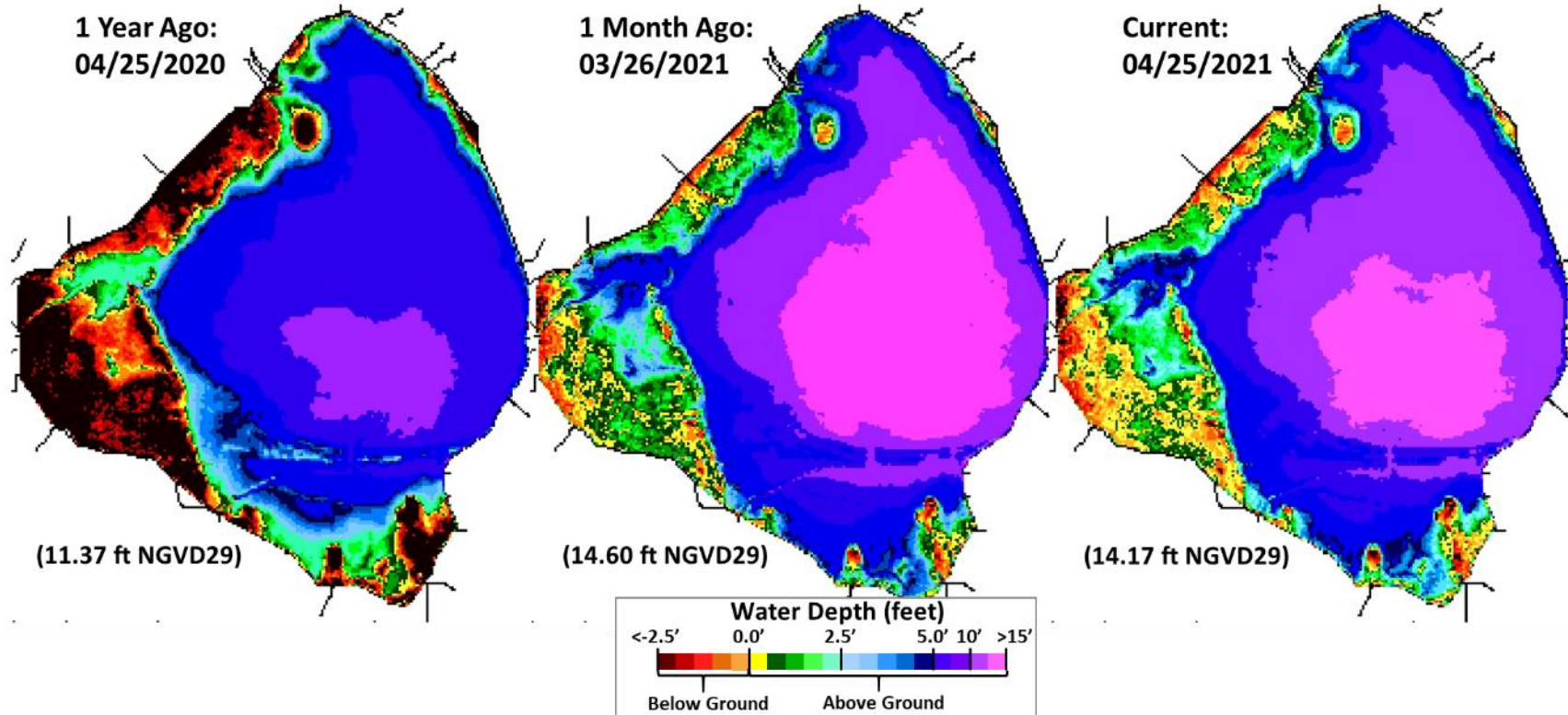


Figure LO-1. Lake Okeechobee water depth estimates based on South Florida Water Depth Assessment Tool (SFWDAT).

Lake Okeechobee Stage vs Updated Ecological Envelope

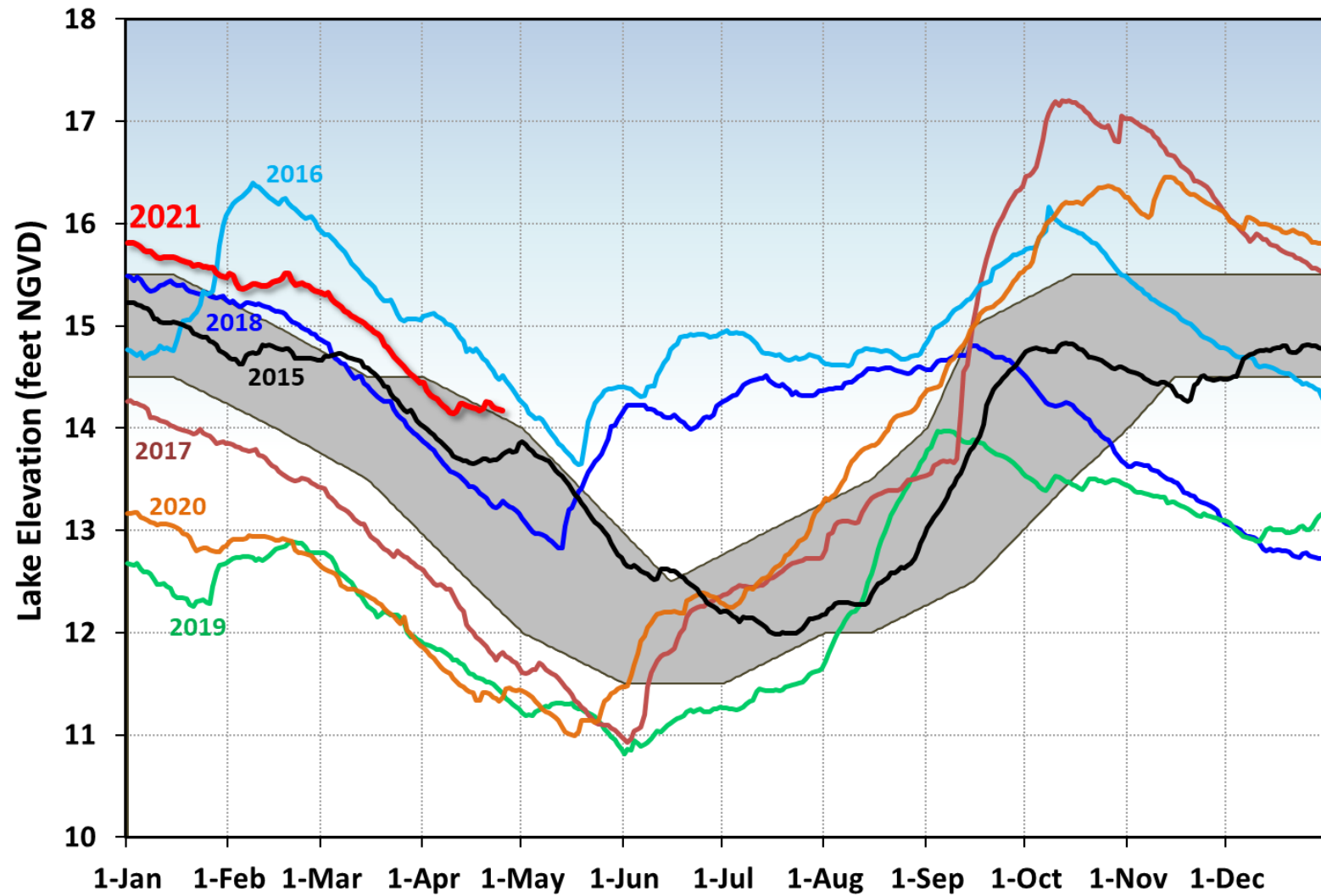
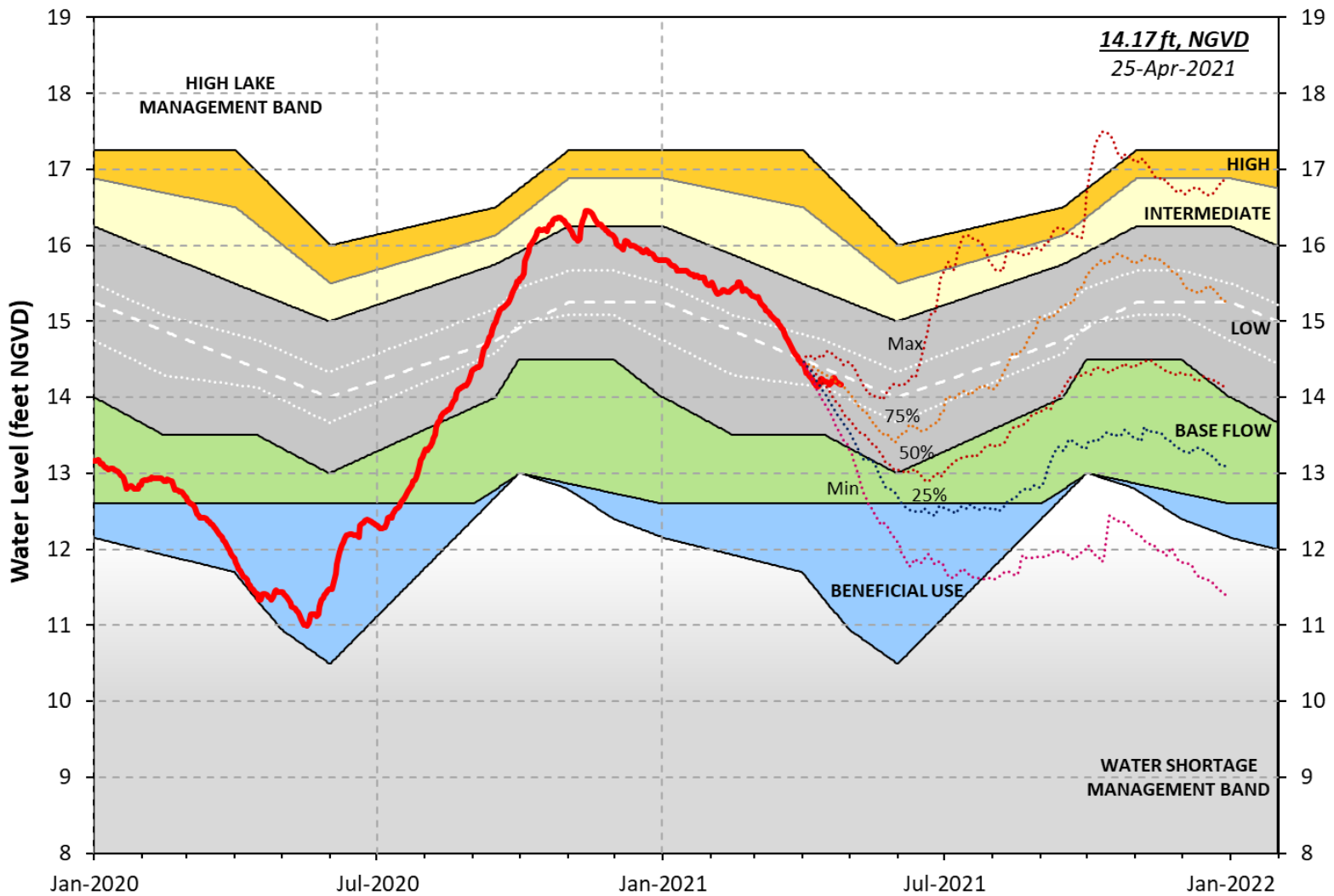


Figure LO-2. Select annual stage hydrographs for Lake Okeechobee in comparison to the updated ecological envelope.

Lake Okeechobee Water Level History and Projected Stages



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.

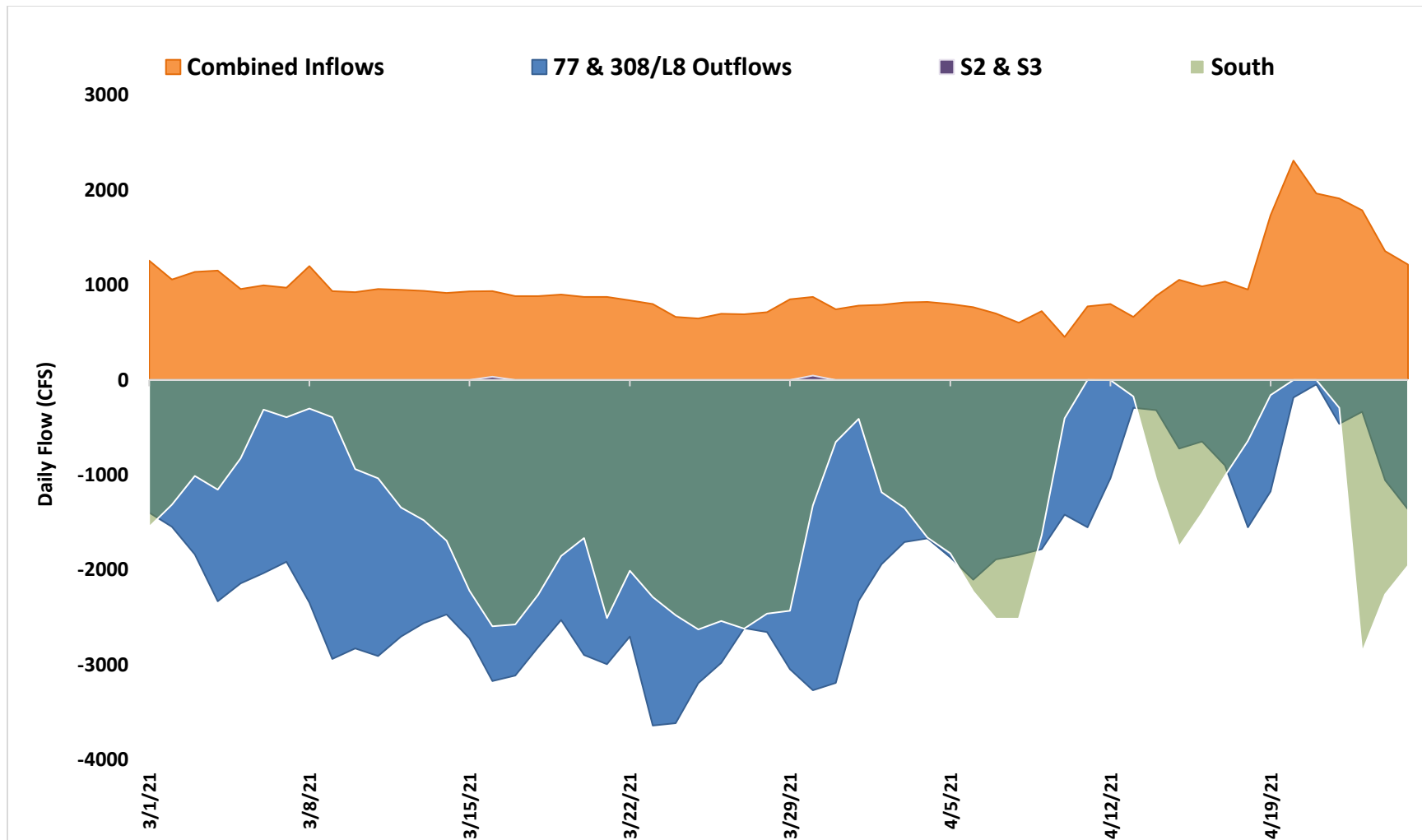


Figure LO-4. Major inflows (orange) to and outflows east and west (blue) from Lake Okeechobee. Outflows south are shown in green. Flows into Lake Okeechobee from the L-8 canal through S-271 (formerly Culvert 10A) are included as inflows. Conversely, flows from Lake Okeechobee into the L-8 Canal are included 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 due to lock openings for navigation.

Table LO-2. Provisional results of chlorophyll *a* concentrations and cyanobacteria taxa from sampling trips on April 6-7, 2021.

| Station | Chl <i>a</i> (µg/L) | Toxin (µg/L) | Taxa | Station | Chl <i>a</i> (µg/L) | Toxin (µg/L) | Taxa |
|-----------------|------------------------|-----------------|-----------------|--|------------------------|-----------------|-----------------|
| FEBIN | NS | | | L001 | 8.2 | | |
| FEBOUT | NS | | | L004 | 12.2 | | |
| KISSR0.0 | 17.7 | 0.4 | <i>Microcys</i> | L006 | 5.3 | | |
| L005 | 18.6 | 0.8 | <i>Microcys</i> | L007 | 5.0 | | |
| LZ2 | 19.0 | 0.5 | <i>Microcys</i> | L008 | 7.3 | | |
| KBARSE | 13.1 | | | LZ30 | 8.2 | 1.1 | <i>Microcys</i> |
| RITTAE2 | 4.8 | BDL | mixed | LZ40 | 10.7 | | |
| PELBAY3 | 4.0 | | | CLV10A | 7.8 | BDL | mixed |
| POLE3S | 8.3 | | | NCENTER | 7.8 | | |
| LZ25A | 18.4 | | | Outflow Structures (sampled Apr 5) | | | |
| PALMOUT | 50.0 | 1.1 | <i>Microcys</i> | S308C | 6.4 | 0.3 | <i>Microcys</i> |
| PALMOUT1 | 8.5 | | | S77 | 5.9 | 0.5 | <i>Microcys</i> |
| PALMOUT2 | 6.4 | | | <ul style="list-style-type: none"> • SFWMD considers > 40 µg/L chlorophyll <i>a</i> (Chl<i>a</i>) an algal bloom. • BDL: below detectable limit of 0.25 µg/L • ND: no dominant taxa • P: pending • NS: not sampled • Bold font: crew observed possible blue-green algae • Chl<i>a</i> analyzed by SFWMD • Toxin and taxa analyzed by FDEP <p> <i>Cylindro</i>: <i>Cylindrospermopsis</i> <i>Planktal</i>: <i>Planktalyngbya</i> <i>Dolicho</i>: <i>Dolichospermum</i> <i>Microcys</i>: <i>Microcystis</i> </p> | | | |
| PALMOUT3 | 6.1 | | | | | | |
| POLESOUT | 19.6 | 0.6 | <i>Microcys</i> | | | | |
| POLESOUT1 | 26.4 | | | | | | |
| POLESOUT2 | 11.7 | | | | | | |
| POLESOUT3 | 9.5 | | | | | | |
| EASTSHORE | 7.3 | | | | | | |
| NES135 | 5.8 | | | | | | |

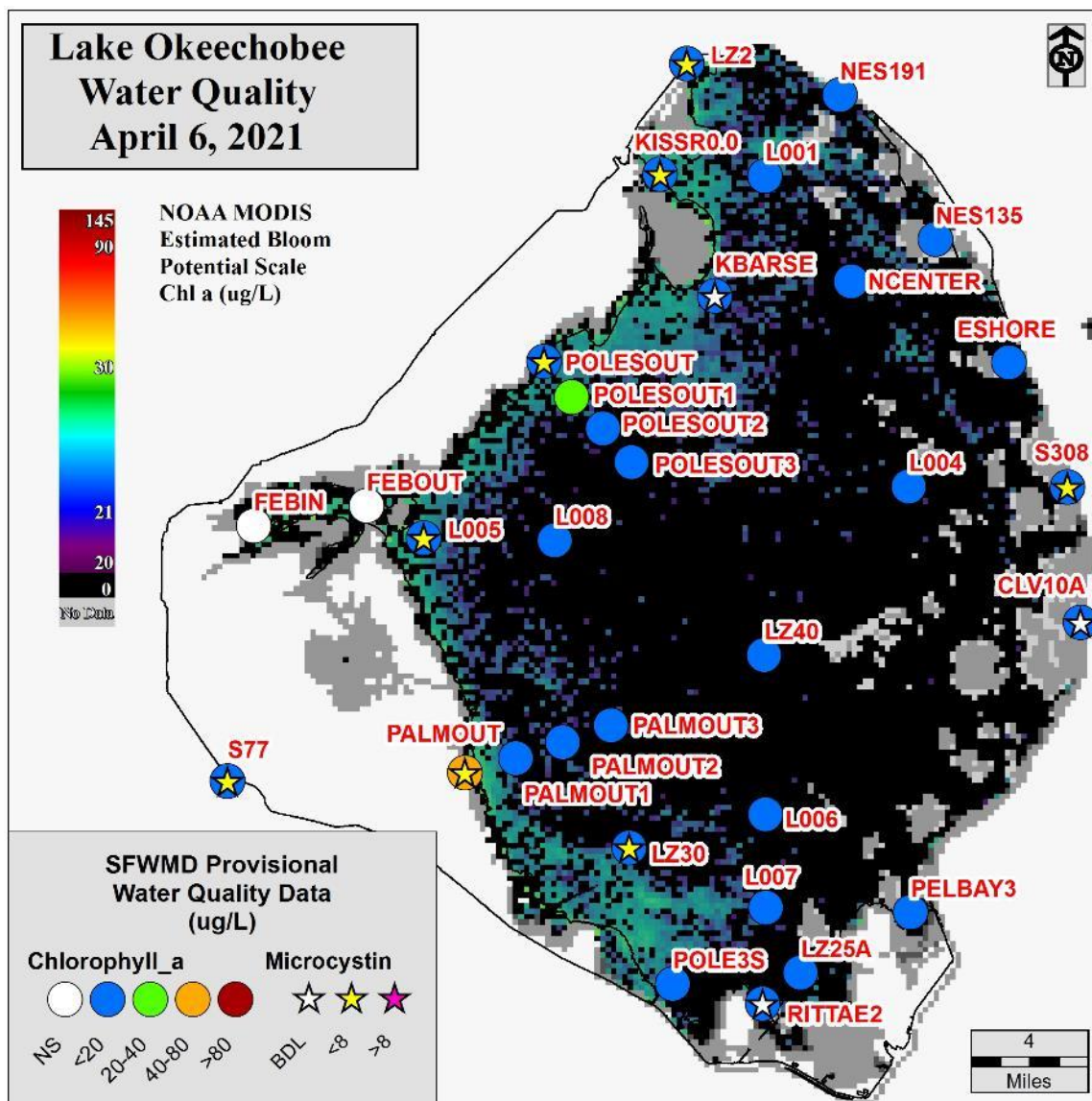


Figure LO-5. Expanded monitoring network and provisional results from samples collected April 6-7, 2021.

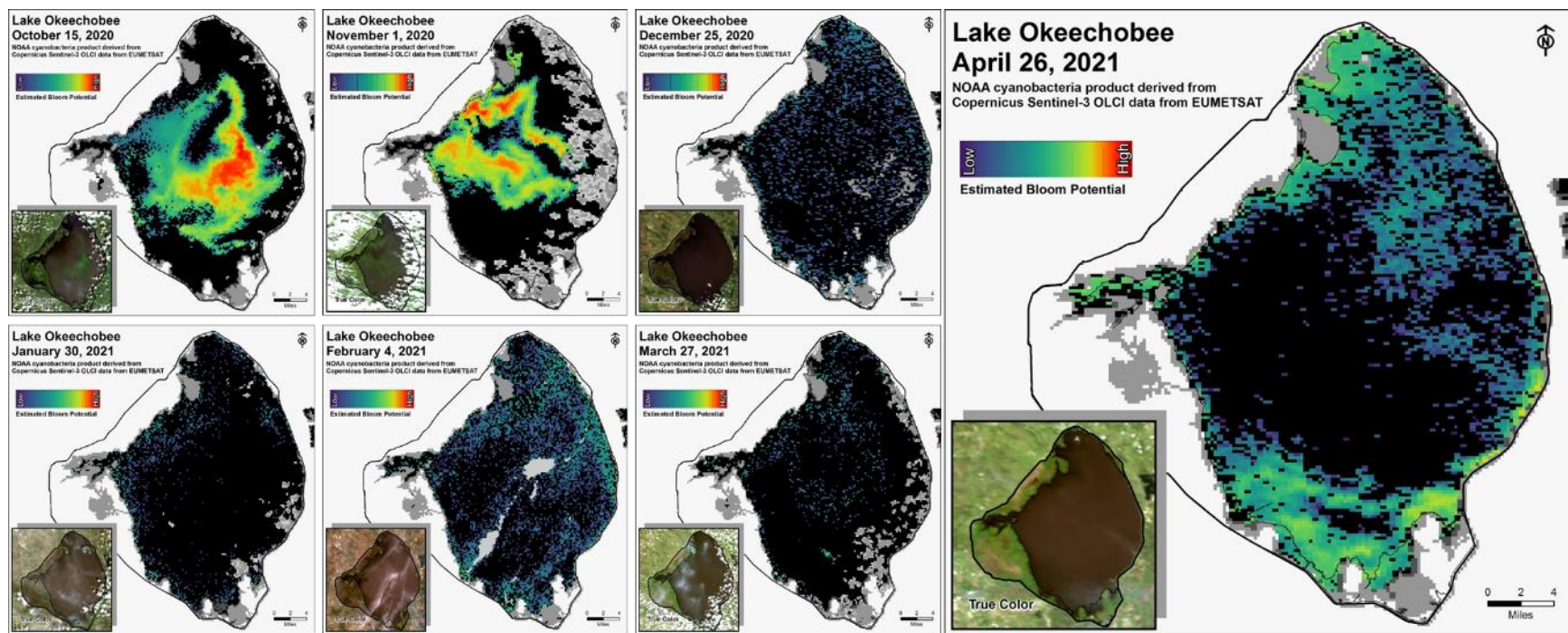


Figure LO-6. Cyanobacteria bloom potential based on NOAA's harmful algal bloom monitoring system. Gray color indicates cloud cover.

Estuaries

St. Lucie Estuary

Over the past week, mean total inflow to the St. Lucie Estuary was approximately 443 cfs (**Figures ES-1 and ES-2**) and the previous 30-day mean inflow was approximately 572 cfs. For comparison, the historical provisional mean inflows from the contributing areas are shown in **Figure ES-2**.

Over the past week, salinities increased at all sites within the estuary (**Table ES-1 and Figure ES-3**). The seven-day moving average of the surface and bottom salinities at the US1 Bridge was 18.7. Salinity conditions in the middle estuary were estimated to be within the good range for adult eastern oysters (**Figure ES-4**).

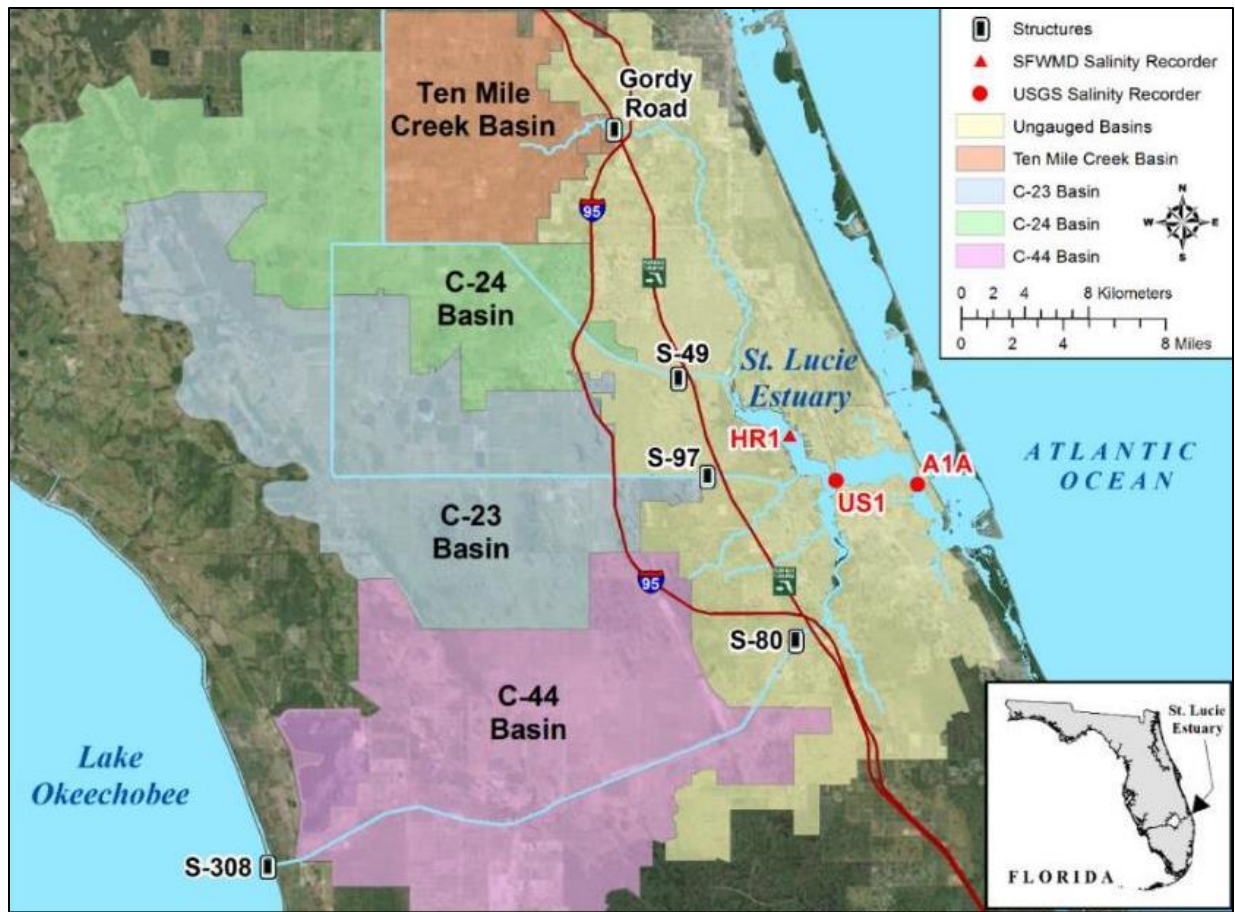


Figure ES-1. Basins, water control structures and salinity monitoring sites in the St. Lucie Estuary.

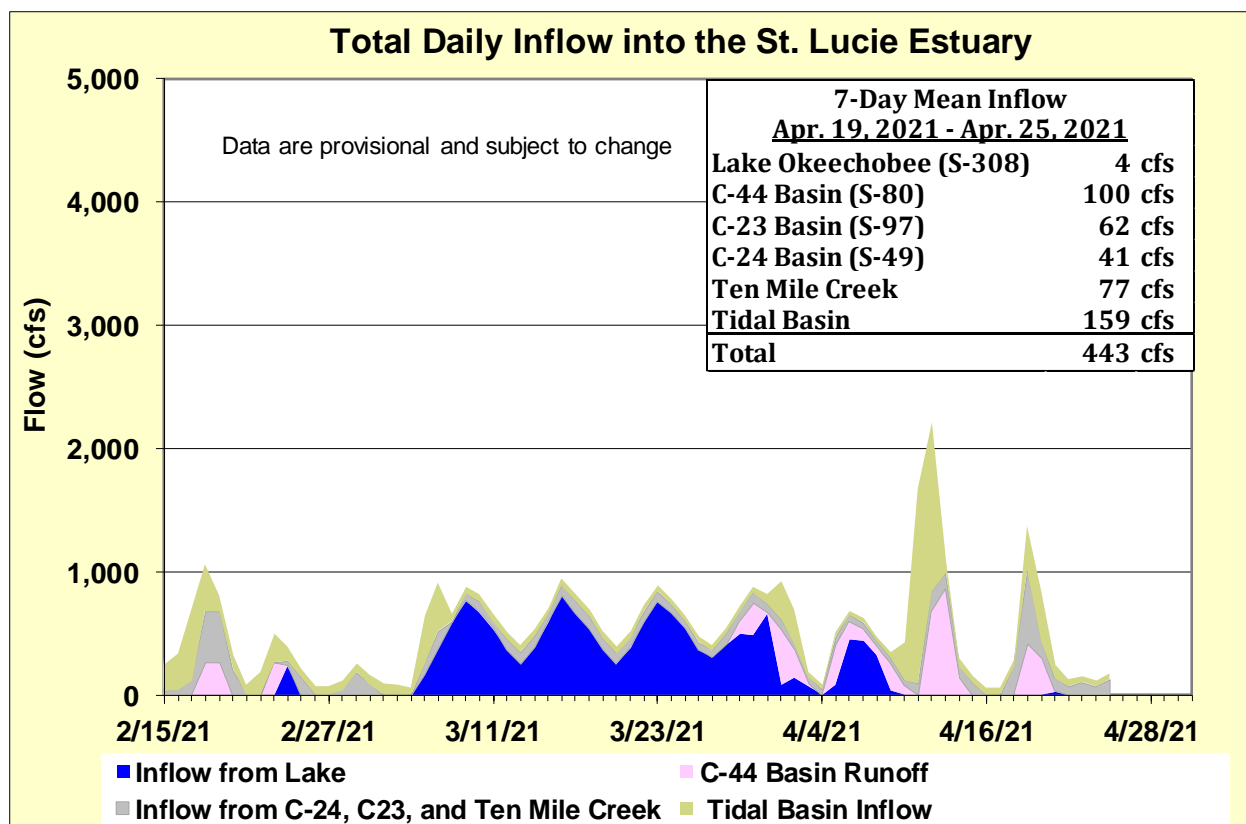


Figure ES-2. Total daily inflows from Lake Okeechobee and runoff from the C-44, C-23, C-24, Ten Mile Creek, and Tidal Basins into the St. Lucie Estuary.

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 (Nork Fork) | 13.3 (11.3) | 17.0 (14.8) | NA ^a |
| US1 Bridge | 17.5 (15.6) | 19.9 (18.6) | 10.0 – 26.0 |
| A1A Bridge | 25.6 (23.1) | 28.2 (27.2) | NA ^a |

a. The envelope is not applicable.

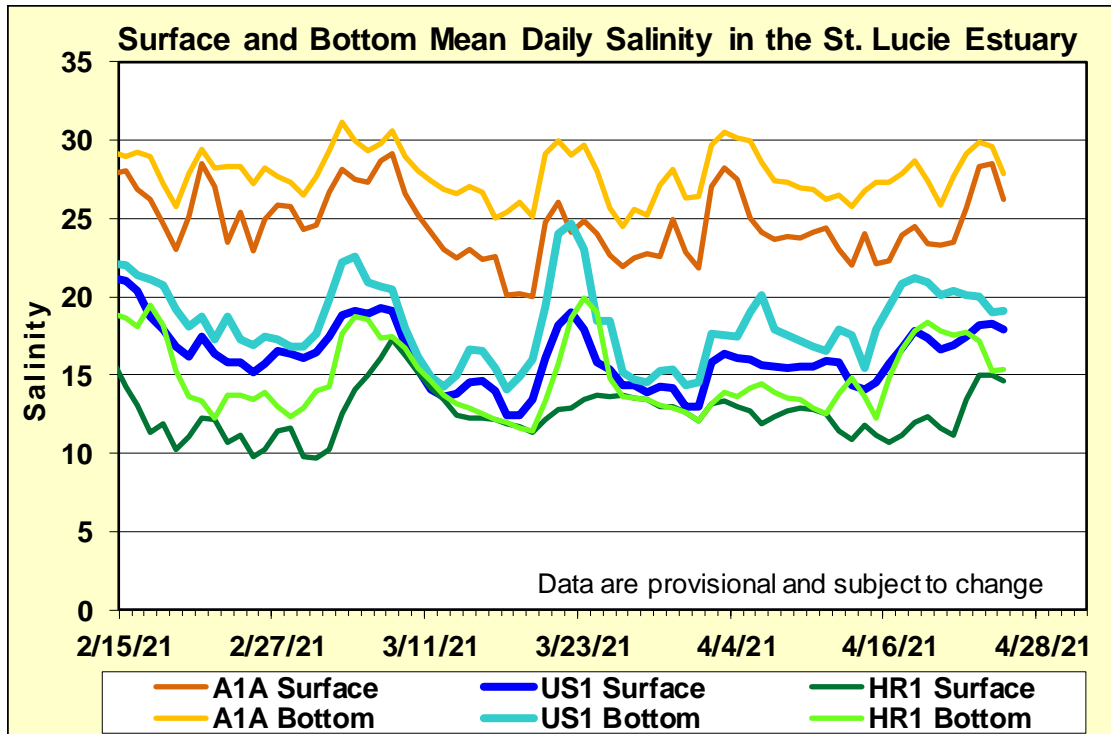


Figure ES-3. Mean daily salinity at the A1A, US1 and HR1 sites in the St. Lucie Estuary.

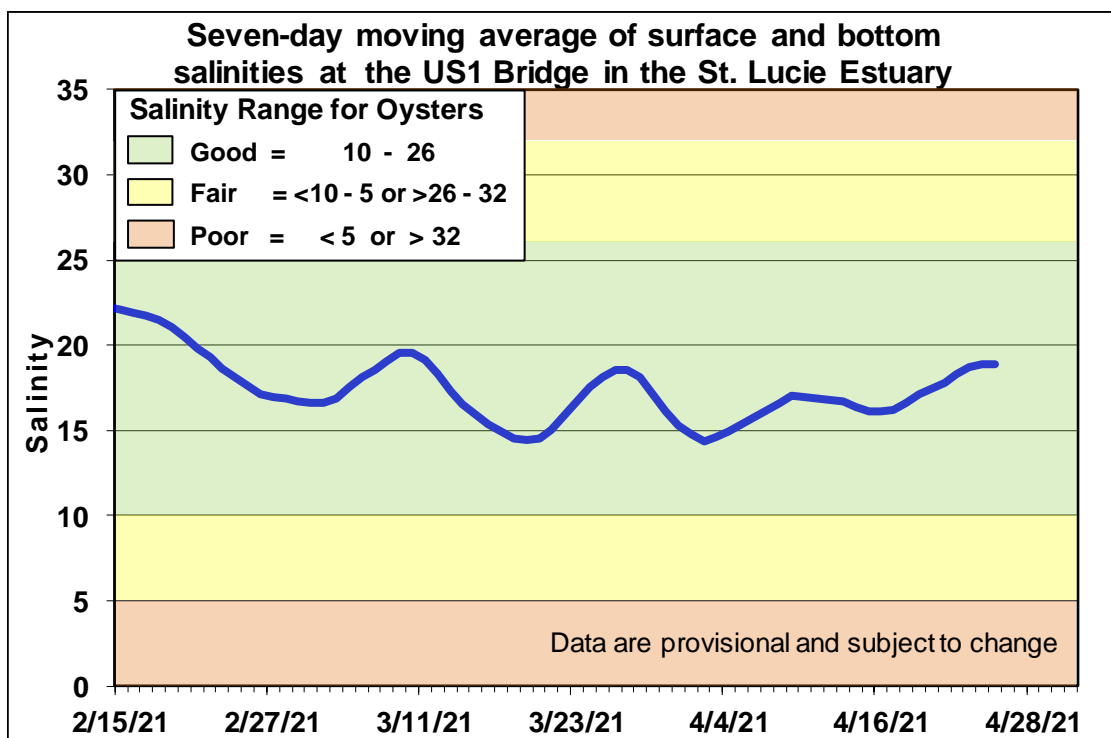


Figure ES-4. Seven-day moving average of the surface and bottom salinities at the US1 Bridge in the St. Lucie Estuary.

Caloosahatchee River Estuary

Over the past week, mean total inflow to the Caloosahatchee River Estuary was approximately 1,291 cfs (**Figures ES-5 and ES-6**) and the previous 30-day mean inflow was approximately 1,385 cfs. For comparison, the historical provisional mean inflows from the contributing areas are shown in **Figure ES-6**.

Over the past week, salinities decreased at all sites in the estuary (**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 Cape Coral and Shell Point, and in the fair range at Sanibel (**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 with estimated tidal basin inflows of 120 cfs. Model results from all scenarios predict daily salinity to be 3.0 or lower and the 30-day moving average surface salinity to be 1.0 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).

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

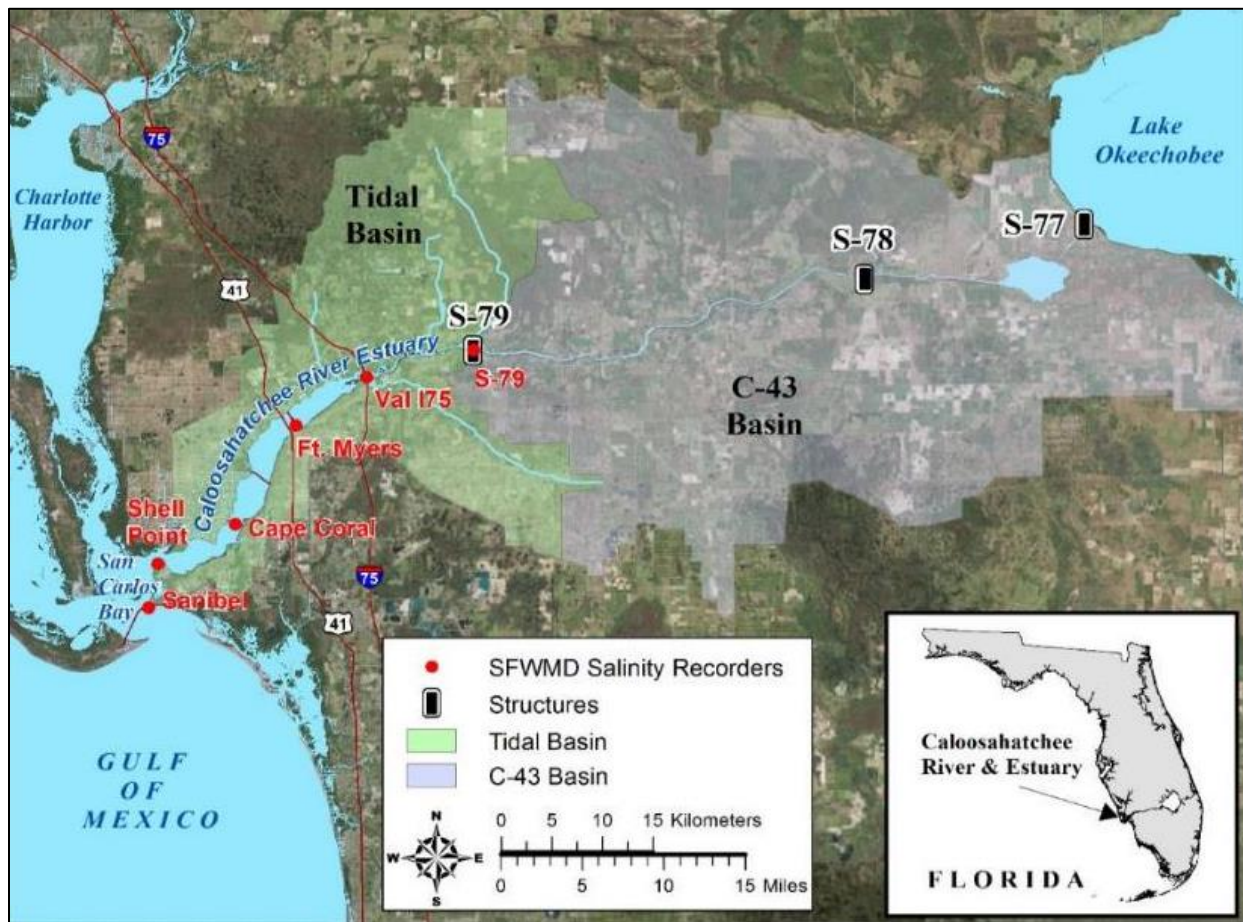


Figure ES-5. Basins, water control structures and salinity monitoring sites in the Caloosahatchee River Estuary.

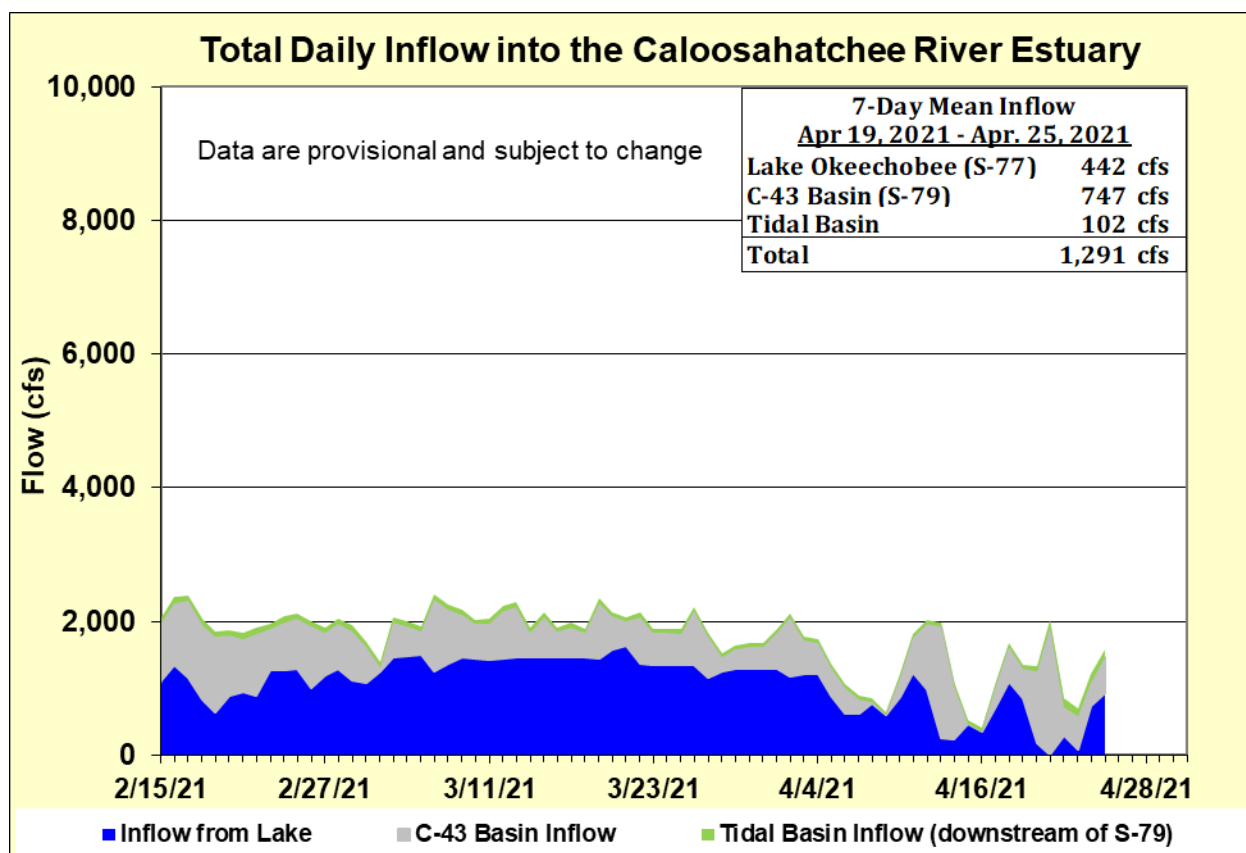


Figure ES-6. Total daily inflows from Lake Okeechobee, and runoff from the C-43 and Tidal basins into the Caloosahatchee River Estuary.

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 (0.3) | 0.2 (0.3) | NA |
| Val I-75 | 0.6 (0.7) | 0.7 (0.8) | 0.0 – 5.0 ^a |
| Fort Myers Yacht Basin | 2.9 (3.0) | 6.4 (3.5) | NA |
| Cape Coral | 13.2 (13.9) | 15.2 (15.3) | 10.0 – 30.0 |
| Shell Point | 26.1 (27.6) | 27.4 (28.6) | 10.0 – 30.0 |
| Sanibel | 29.4 (30.7) | 31.8 (32.3) | 10.0 – 30.0 |

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

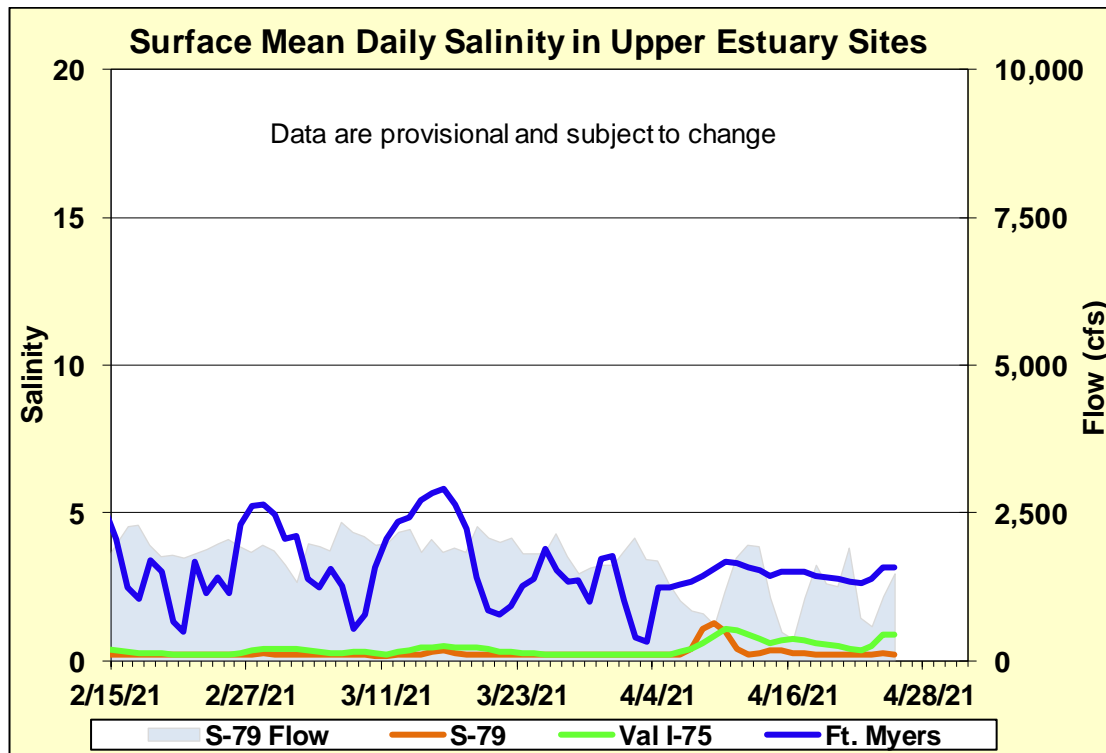


Figure ES-7. Mean daily salinity at upper Caloosahatchee River Estuary monitoring sites and mean daily flow at S-79.

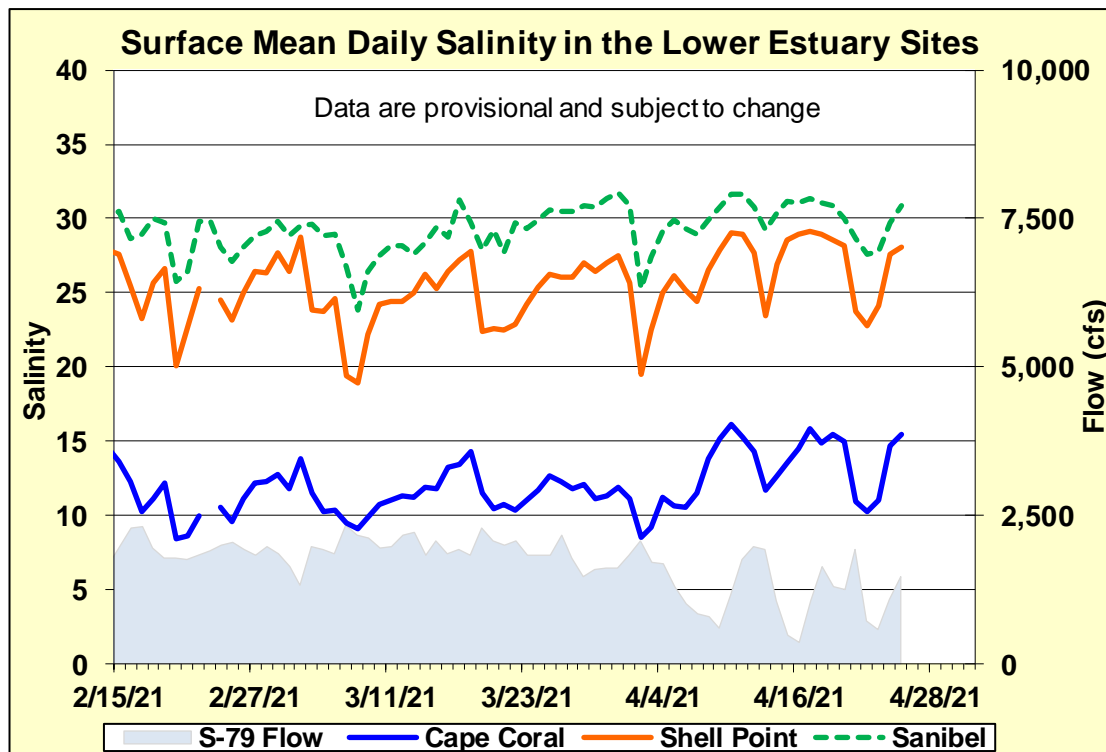


Figure ES-8. Mean daily surface salinity at lower Caloosahatchee River Estuary monitoring sites and mean daily flow at S-79.

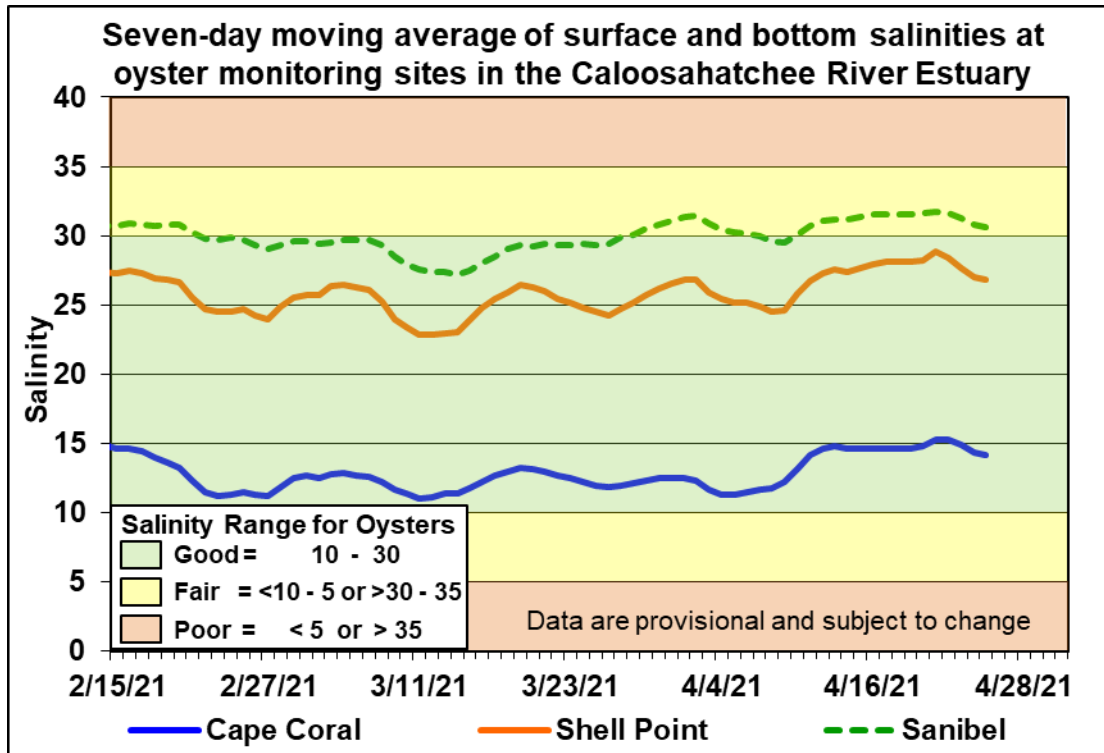


Figure ES-9. Seven-day moving average of surface and bottom salinities at Cape Coral, Shell Point and Sanibel monitoring sites in the Caloosahatchee River Estuary.

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 | 120 | 3.0 | 1.0 |
| B | 450 | 120 | 1.9 | 0.8 |
| C | 800 | 120 | 1.1 | 0.7 |
| D | 1000 | 120 | 0.7 | 0.6 |
| E | 1500 | 120 | 0.3 | 0.5 |

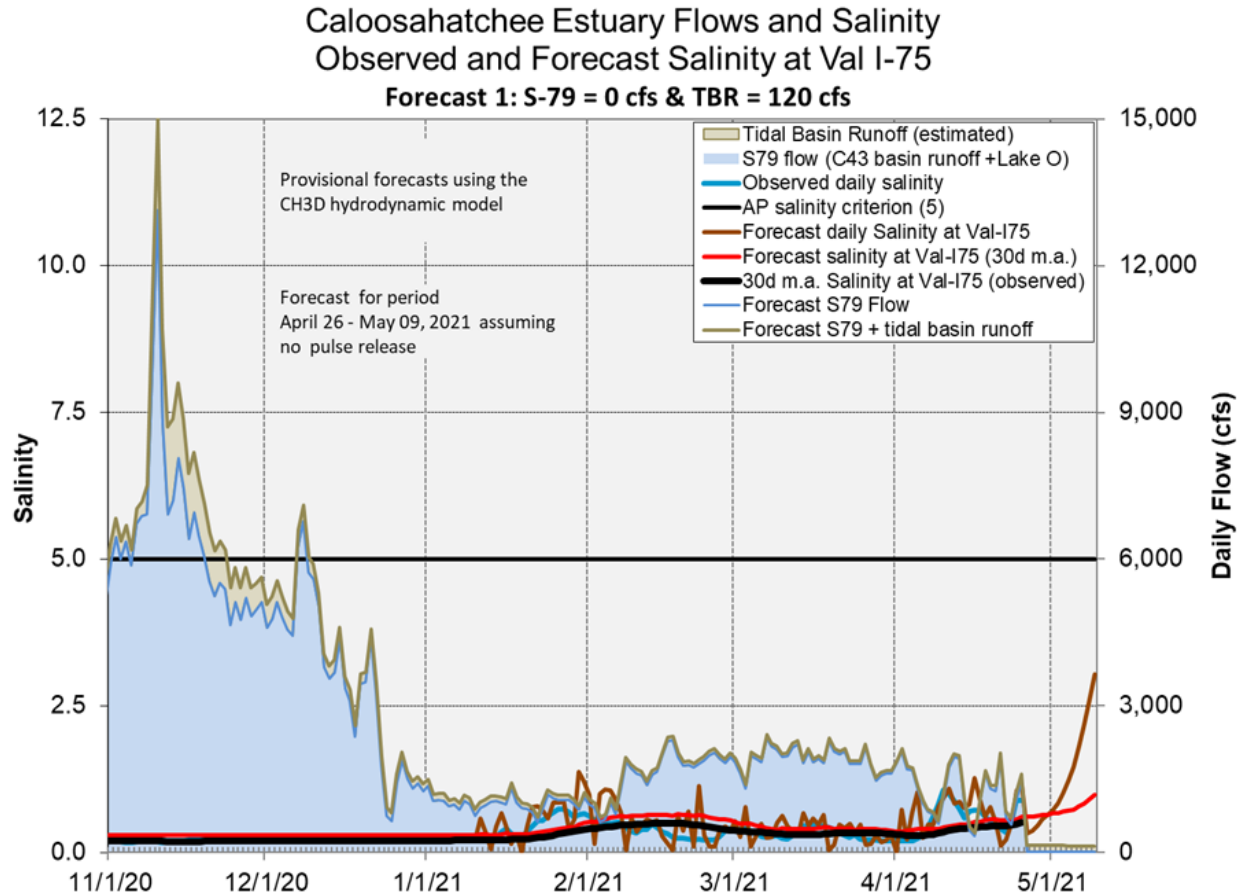


Figure ES-10. Forecasted Val I-75 site surface salinity assuming no pulse release at S-79.

Red Tide

The Florida Fish and Wildlife Research Institute reported on April 23, 2021, that *Karenia brevis*, the Florida red tide dinoflagellate, was observed at very low to low concentrations in Lee County, background to low concentrations in Collier County. On the east coast, red tide was not observed in samples from St. Lucie, Martin or Palm Beach counties.

Water Management Recommendations

Lake stage is in the Low Sub-Band. Tributary conditions are normal. The seasonal outlook is wet and multi-seasonal outlook is wet. The LORS2008 release guidance suggests up to 3000 cfs release at S-79 to the Caloosahatchee River Estuary and up to 1170 cfs release at S-80 to the St. Lucie Estuary.

Stormwater Treatment Areas

Over the past week, approximately 4,700 ac-ft of Lake Okeechobee water was delivered to the FEBs/STAs. The total amount of Lake releases sent to the FEBs/STAs in WY2021 (since May 1, 2020) is approximately 154,100 ac-feet. The total amount of inflows to the STAs in WY2021 is approximately 1,639,000 ac-feet. This week, if 2008 LORS recommends Lake releases to the WCAs and conditions allow, releases will be sent to STA-2 and STA-3/4. For definitions on STA operational language see glossary following figures.

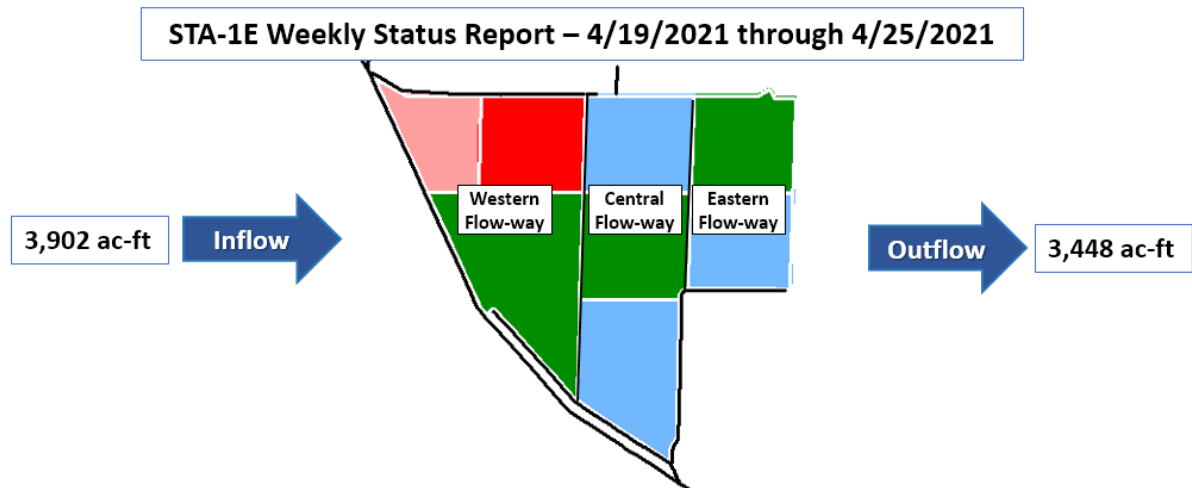
STA-1E: STA-1E Western Flow-way is offline for the Restoration Strategies project to fill and grade Cells 5 and 7. Operational restrictions are in place in STA-1E Central Flow-way for vegetation management activities. Online treatment cells are at or above target stage, vegetation in these cells is highly stressed and the 365-day phosphorus loading rates (PLR) for these flow-ways are extremely high (**Figure S-1**).

STA-1W: Operational restrictions are in place in STA-1W Western, Eastern, and Northern Flow-ways due to construction activities. The Northern and Western Flow-ways and Cell 8 contain nests of Migratory Bird Treaty Act protected species. Treatment cells are at or near target stage. Vegetation in all flow-ways is highly stressed. The 365-day PLRs for all flow-ways are high to very high (**Figure S-2**).

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

STA-3/4: STA-3/4 Eastern Flow-way is offline for vegetation rehabilitation/drawdown. Operational restrictions are in place in STA-3/4 Western Flow-way for vegetation management activities. Online treatment cells are at or near 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 all flow-ways are below 1.0 g/m²/year (**Figure S-4**).

STA-5/6: Operational restrictions are in place in STA-5/6 Flow-ways 2 and 3 following the Restoration Strategies project to grade non-effective treatment areas. Some treatment cells are at or near target stage while several cells are drying out. The 365-day PLRs for most flow-ways are near 1.0 g/m²/year. All treatment cells have highly stressed vegetation conditions except Flow-ways 7 and 8 which are healthy (**Figure S-5** and **S-6**).





















| STA-1E Flow-Way Status | | | | As of 4/25/2021 | | | | STA-1E Flow & Phosphorus Concentration | | | |
|------------------------|---|---|---------------------------------|---|---|--|--|--|-------|---------|---------|
| Flow-Way | Vegetation Status <small>Healthy ----- Stressed</small>  | 365-day P Loading Rate <small>(below 1.0 g P / m²/yr. is optimal)</small> | Online / Offline / Restrictions | Stage Based: Relative to Target Stage (TS) | | | | Total Inflow, ac-ft | 7-day | 28-day | 365-day |
| | | | |  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') | | | | |
| Eastern |  |  | Online |  Deep Water Level (> 2.8' above TS) | | | | 3,902 | 8,295 | 324,499 | |
| Central |  |  | Vegetation Rehab |  High Water Level (1.5' – 2.8' above TS) | | | | 100 | N/A | 24,800 | |
| Western | Offline, construction activities starting 11/01/2019 | | |  0.2' – 1.5' above TS | | | | 3,448 | 7,127 | 284,090 | |
| | | | |  Target Stage (TS +/- 0.2') | | | | 175 | 168 | 138 | |
| | | | |  Low Water Level (<0.2' below TS) | | | | 40 | 37 | 37 | |
| | | | | Depth / Area Based: Percent of Area Dry | | | | Includes Preliminary Data | | | |
| | | | |  0-25% Dry | |  50-75% Dry | | | | | |
| | | | |  25-50% Dry | |  75-100% Dry | | | | | |

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

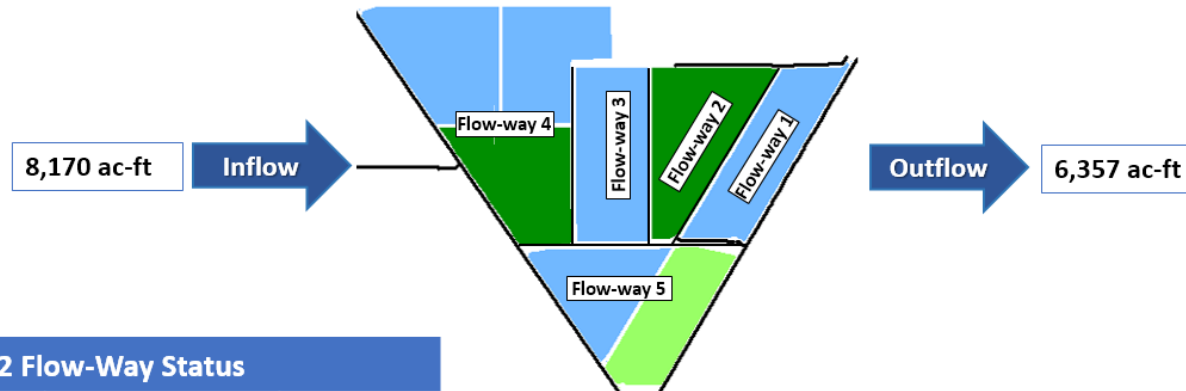
STA-1W Weekly Status Report – 4/19/2021 through 4/25/2021



| STA-1W Flow-Way Status | | | | STA-1W Flow & Phosphorus Concentration | | | |
|---------------------------|--|---|---------------------------------|--|------------------------------------|---------|--|
| Flow-Way | Vegetation Status <small>Healthy --- Stressed</small> | 365-day P Loading Rate <small>(below 1.0 g P / m²/yr. is optimal)</small> | Online / Offline / Restrictions | As of 4/25/2021 | | | |
| | | | | Stage Based: Relative to Target Stage (TS) | | | |
| | | | | <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> | | | |
| Northern | <div><div></div></div> | <div><div></div></div> | Construction / Avian Nesting | <div><div></div> Target Stage (TS +/- 0.2')</div> | | | |
| | | | | <div><div></div> Low Water Level (<0.2' below TS)</div> | | | |
| Western | <div><div></div></div> | <div><div></div></div> | Construction / Avian Nesting | Depth / Area Based: Percent of Area Dry | | | |
| | | | | <div><div></div> 0-25% Dry</div> | <div><div></div> 50-75% Dry</div> | | |
| Eastern | <div><div></div></div> | <div><div></div></div> | Construction | <div><div></div> 25-50% Dry</div> | <div><div></div> 75-100% Dry</div> | | |
| | | | | | | | |
| Total Inflow, ac-ft | | | | 7-day | 28-day | 365-day | |
| --Lake Inflow, ac-ft | | | | 0 | 5,465 | 191,934 | |
| Total Outflow, ac-ft | | | | 0 | 0 | 216,414 | |
| Inflow Conc., ppb | | | | N/A | 140 | 253 | |
| Outflow Conc., ppb | | | | N/A | N/A | 38 | |
| Includes Preliminary Data | | | | | | | |

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

STA-2 Weekly Status Report – 4/19/2021 through 4/25/2021



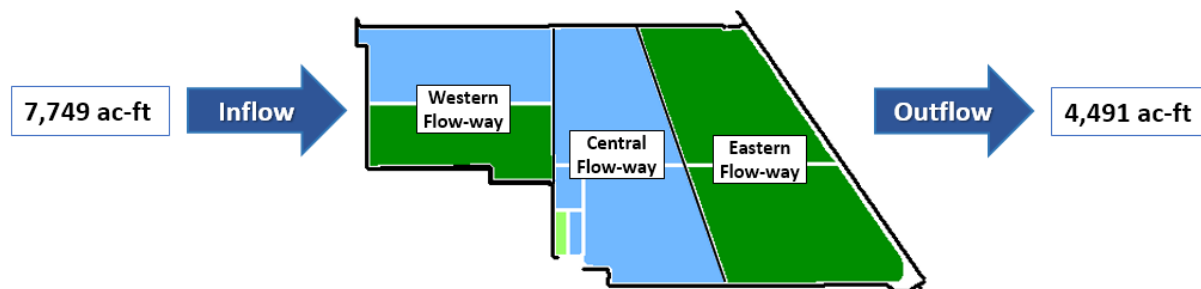
| STA-2 Flow-Way Status | | | |
|-----------------------|---|--|---------------------------------|
| Flow-Way | Vegetation Status Healthy ----- Stressed | 365-day P Loading Rate (below 1.0 g P / m ² /yr. is optimal) | Online / Offline / Restrictions |
| 1 | ← → | 1.0 | Online |
| 2 | ← → | 1.0 | Construction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

| As of 4/25/2021 | |
|--|-------------|
| 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 | 50-75% Dry |
| 25-50% Dry | 75-100% Dry |

| STA-2 Flow & Phosphorus Concentration | | | |
|---------------------------------------|-------|--------|---------|
| | 7-day | 28-day | 365-day |
| Total Inflow, ac-ft | 8,170 | 31,372 | 436,914 |
| --Lake Inflow, ac-ft | 2,400 | N/A | 69,800 |
| Total Outflow, ac-ft | 6,357 | 26,515 | 500,313 |
| Inflow Conc., ppb | 70 | 64 | 101 |
| Outflow Conc., ppb | 17 | 17 | 21 |
| Includes Preliminary Data | | | |

Figure S-3. STA-2 Weekly Status Report

STA-3/4 Weekly Status Report – 4/19/2021 through 4/25/2021















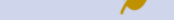

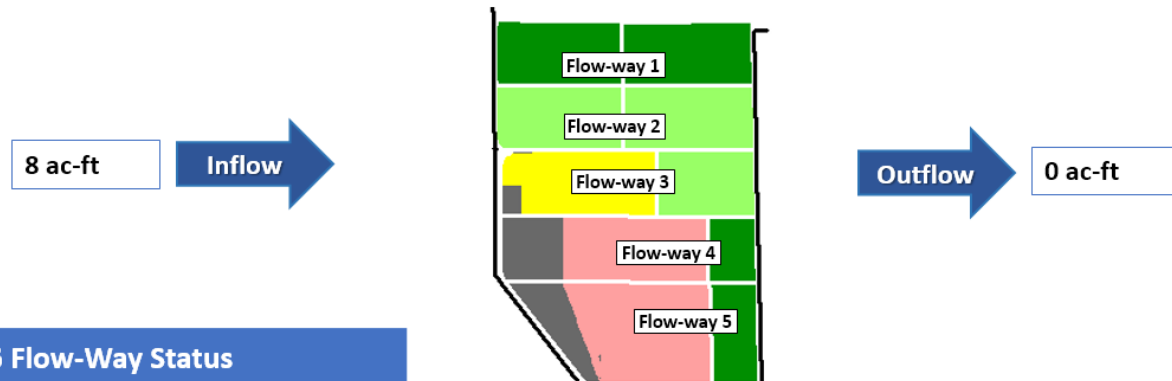
| STA-3/4 Flow-Way Status | | | | As of 4/25/2021 | | STA-3/4 Flow & Phosphorus Concentration | | | |
|-------------------------|---|--|---------------------------------|--|--|---|-------|--------|---------|
| Flow-Way | Vegetation Status <div>Healthy ----- Stressed</div> <div></div> | 365-day P Loading Rate (below 1.0 g P /m²/yr is optimal) | Online / Offline / Restrictions | Stage Based: Relative to Target Stage (TS) | | Total Inflow, ac-ft | 7-day | 28-day | 365-day |
| | | | | <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> | | | | | |
| | | | | Depth / Area Based: Percent of Area Dry | | | | | |
| Eastern | Offline, vegetation management drawdown as of 3/1/2021 | | | <div> 0-25% Dry</div> <div> 25-50% Dry</div> | <div> 50-75% Dry</div> <div> 75-100% Dry</div> | Total Outflow, ac-ft | 4,491 | 4,495 | 538,992 |
| Central | <div></div> | <div><div><div><div><div></div><div></div><div></div><div></div><div></div></div><div>1.0</div></div></div></div> | Online | | | Inflow Conc., ppb | 29 | 30 | 57 |
| Western | <div></div> | <div><div><div><div><div></div><div></div><div></div><div></div><div></div></div><div>1.0</div></div></div></div> | Vegetation Rehab | | | Outflow Conc., ppb | 22 | 22 | 12 |
| | | | | Includes Preliminary Data | | | | | |

Figure S-4. STA-3/4 Weekly Status Report

STA-5/6 Weekly Status Report – 4/19/2021 through 4/25/2021



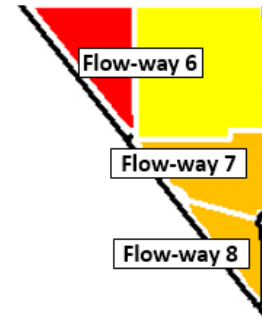
| STA-5/6 Flow-Way Status | | | |
|-------------------------|--|---|---------------------------------|
| Flow-Way | Vegetation Status Healthy ----- Stressed ←-----→ | 365-day P Loading Rate (below 1.0 g P / m ² /yr is optimal) | Online / Offline / Restrictions |
| 1 | ←-----→ | 1.0 | Online |
| 2 | ←-----→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

| As of 4/25/2021 | |
|--|---|
| 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 | 8 | 8 | 130,134 |
| --Lake Inflow, ac-ft | N/A | N/A | N/A |
| Total Outflow, ac-ft | 0 | 64 | 152,526 |
| Inflow Conc., ppb | 107 | 107 | 281 |
| Outflow Conc., ppb | N/A | 70 | 79 |
| Includes Preliminary Data | | | |

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

STA-5/6 Weekly Status Report – 4/19/2021 through 4/25/2021












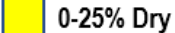
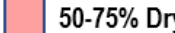
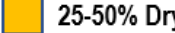
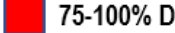


| STA-5/6 Flow-Way Status | | | | As of 4/25/2021 | |
|-------------------------|---|---|---------------------------------|--|--|
| Flow-Way | Vegetation Status Healthy ----- Stressed ←-----→ | 365-day P Loading Rate (below 1.0 g P / m ² /yr is optimal) | Online / Offline / Restrictions | Stage Based: Relative to Target Stage (TS) | |
| 6 | ←-----→  |  | Online |  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) | |
| 7 | ←-----→  |  | Online | Depth / Area Based: Percent of Area Dry  0-25% Dry  50-75% Dry  25-50% Dry  75-100% Dry | |
| 8 | ←-----→  |  | Online | | |

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: Stages at the 1-8C Gauge began paralleling the Zone A1 regulation line over the past week and are currently 0.28 feet above. WCA-2A: Falling stages at S11B-HW began to parallel the regulation line late in the past week, now 0.31 feet above. WCA-3A: The Three Gauge Average stages receded over the past week, paralleling the schedule and currently 0.52 feet below the Zone A line. Stage at gauge 62 (northwest corner) continued to decline over the past week and is currently 0.99 feet below the upper schedule line (**Figures EV-1 through EV-4**).

Water Depths

Water depths in northeastern WCA-3A are decreasing based on the SFWDAT and the area where water is significantly below the surface is expanding. North-to-south hydrologic connectivity remains within Taylor Slough and Shark River Slough in Everglades National Park (ENP) though conditions dry down to the west and east. Most of the Big Cypress National Preserve has dried down to significantly below the soil surface (**Figure EV-5**). Water levels fell significantly across northern WCA-3A and along the L-67 levees compared to the prior month, but WCA-3A and WCA-2A are significantly wetter than one year ago. The eastern boundary of ENP is also significantly wetter than a year ago (**Figure EV-6**).

Tree Islands

Eleven (3%) of the 371 tree Islands of known elevation within WCA-3A, WCA-3B, and ENP Shark Slough are currently inundated (down from 4% the week prior), and all of those islands have been inundated for more than 120 days (**Figure EV-7**). Inundation for more than 120 days will cause ecological harm to sensitive islands.

Wading Birds

White Ibis nesting effort is considerable in 2021 thus far, with approximately 60,000 nests now estimated within the Everglades; second only to 2018. Conditions remain good in ENP, and large flocks are increasing along the drying front in WCA-3A. However, the reversal in the northern WCAs has effectively cut short the previously excellent foraging conditions in WCA-2A. With little suitable foraging habitat nearby, this has the potential to trigger large scale abandonment at the Alley North colonies and those in WCA-1 (Loxahatchee Refuge).

Taylor Slough and Florida Bay

About 1.63 inches of rain fell over Taylor Slough and Florida Bay last week and caused stage increases throughout the Slough (**Figure EV-8**). The Slough averaged a 0.23 feet increase on average over the week which brought water levels back above ground again even in the northern Taylor Slough area (**Figure EV-9**). Taylor Slough is now averaging 9 inches higher than the historical average for this time of year.

Salinities in Florida Bay decreased by an average of 0.5 over the past week and are maintaining a lower than average condition for this time of year (**Figure EV-10**). Bay-wide salinity is 4, still lower than the historical average for this time of year. The central and western Bay areas are at standard seawater salinity and the shallow western nearshore (GB) is the only hypersaline station. Conditions in the Bay appear favorable to minimize potential for hypersalinity before the rainy season begins.

Florida Bay MFL: The TR station in the mangrove zone (tracked for the Florida Bay MFL) salinity peaked at 16 before decreasing to 10 by Sunday (**Figure EV-11**). The 30-day moving average salinity increased by 2.3 to end with a salinity of 7.7. Weekly flow from the 5 monitored creeks totaled about +1,700 acre-feet with the positive flows from the middle of the week outweighing the negative flows from the beginning and end of the week (inset on **Figure EV-11**). The 365-day moving sum of flow from the five creeks (tracked as part of the Florida Bay MFL criteria) ended at 429,628 acre-feet this week, which is a 9,000 acre-feet increase from the week prior. Cumulative flows remain higher than the 95th percentile of historical data (390,830 acre-feet). Creek flows are provisional USGS data.

Water Management Recommendations

Moderate the reversal (between 0.05 and 0.07 feet per week) in WCA-2A. Depths within the basin are adequate for foraging despite the reversal, but receding water levels are required to reinitiate foraging at this important location close to the Alley North colony. Flows into northern WCA-3A have a great ecological benefit at this time of dry season. Inflows that delay the drying down of northern Taylor Slough have within and downstream ecological benefit.

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

| Everglades Region | Rainfall (inches) | Stage (feet) | change |
|--------------------------|--------------------------|---------------------|---------------|
| WCA-1 | 0.91 | -0.02 | |
| WCA-2A | 0.75 | +0.10 | |
| WCA-2B | 0.54 | -0.11 | |
| WCA-3B | 0.65 | -0.07 | |
| ENP | 0.83 | -0.05 | |



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

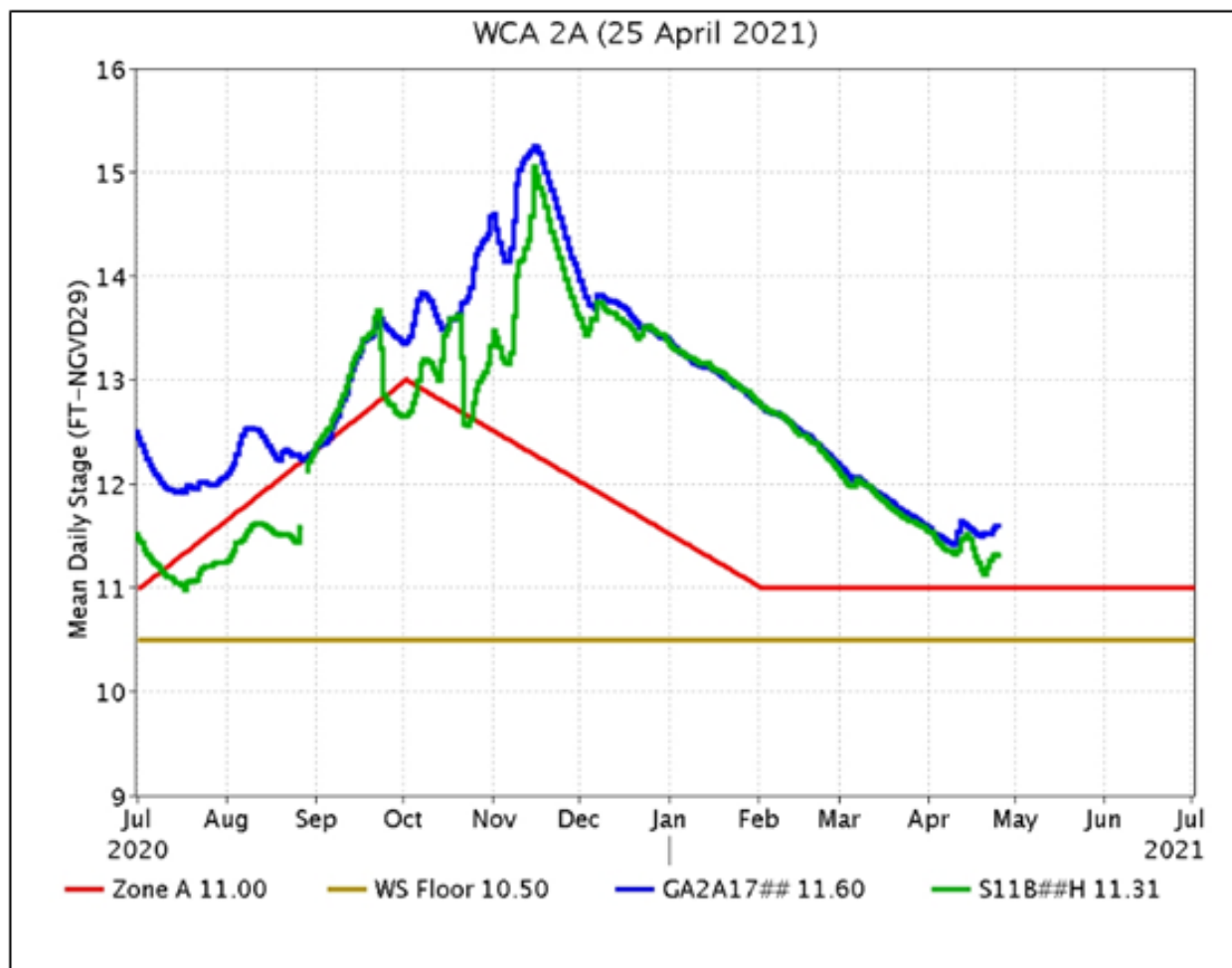


Figure EV-2. WCA-2A stage hydrographs and regulation schedule.

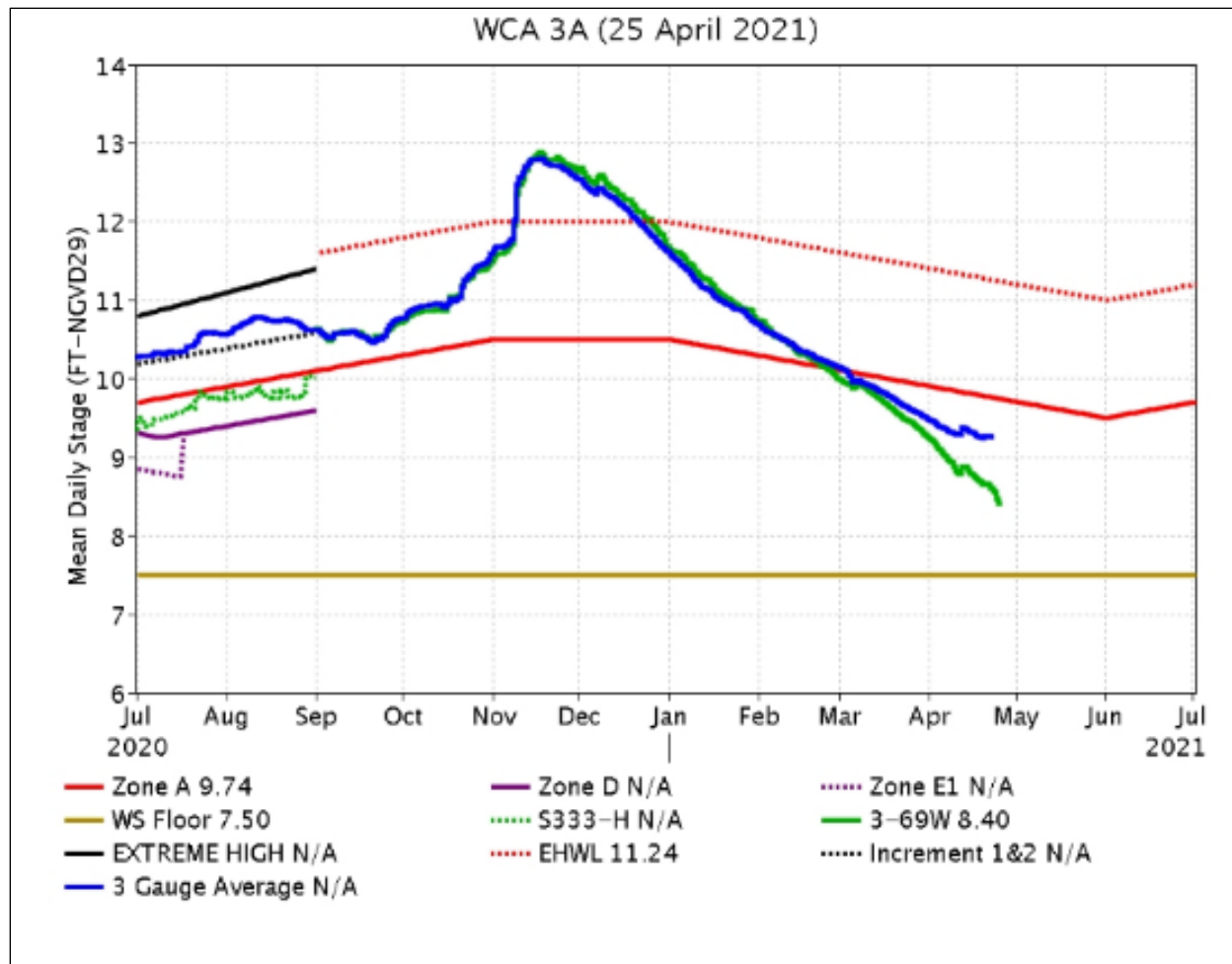


Figure EV-3. WCA-3A stage hydrographs (three-gauge average, S-333 headwater) and regulation schedule.

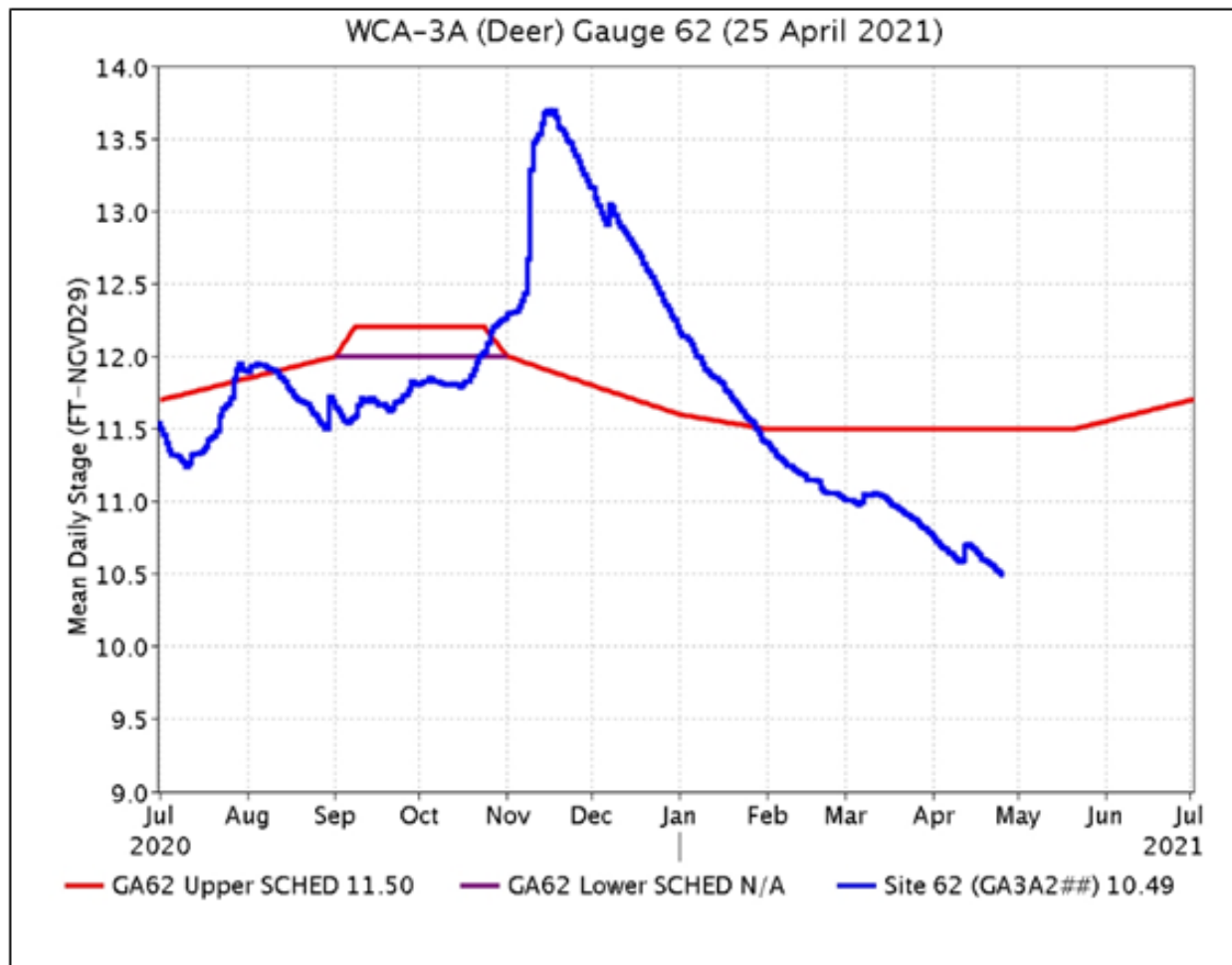


Figure EV-4. WCA-3A stage hydrograph (Deer gauge; Site 62) and CA62 regulation schedule.

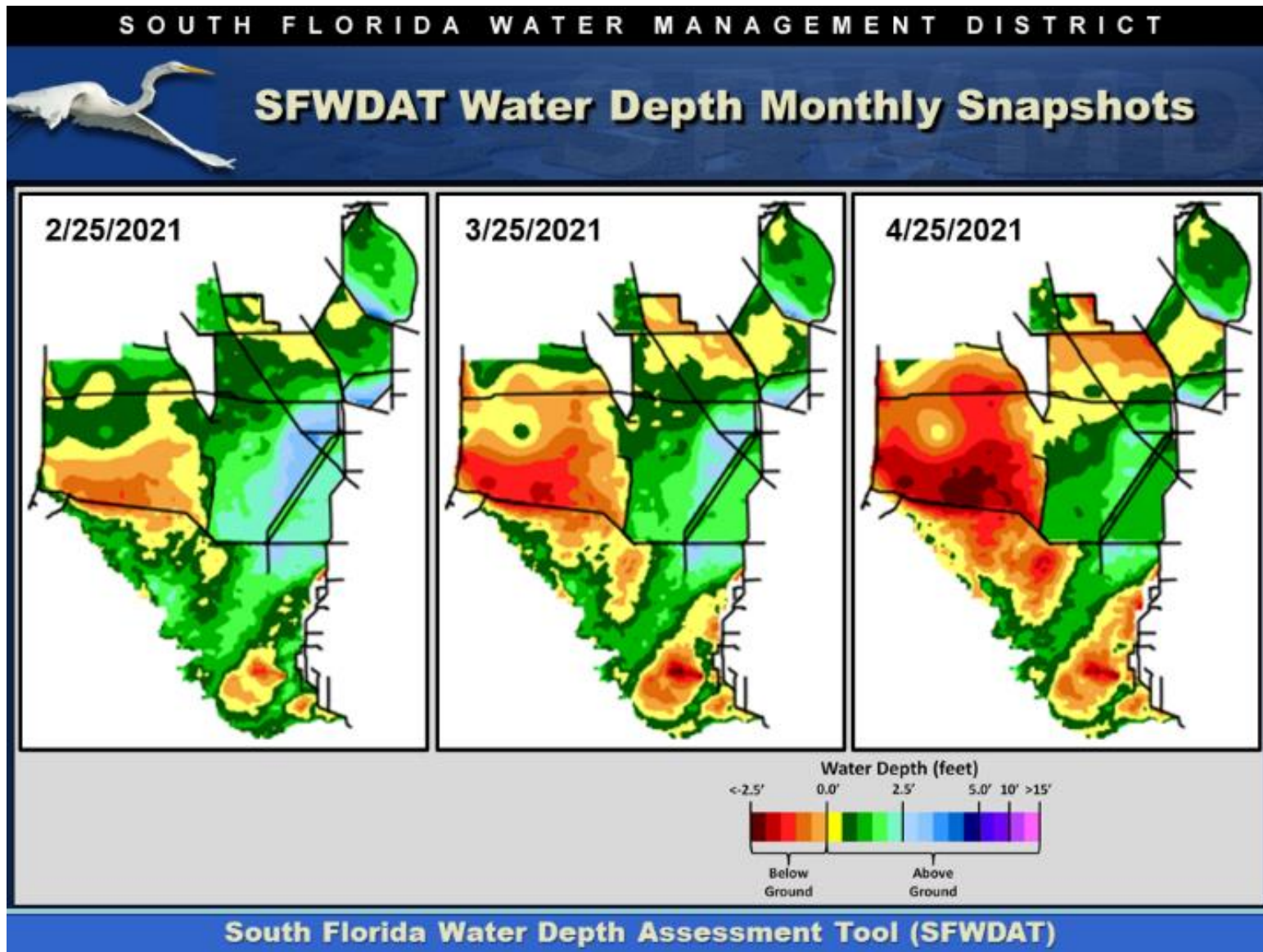


Figure EV-5. Everglades water depths from two months ago (left), one month ago (center) and present (right), based on SFWDAT.

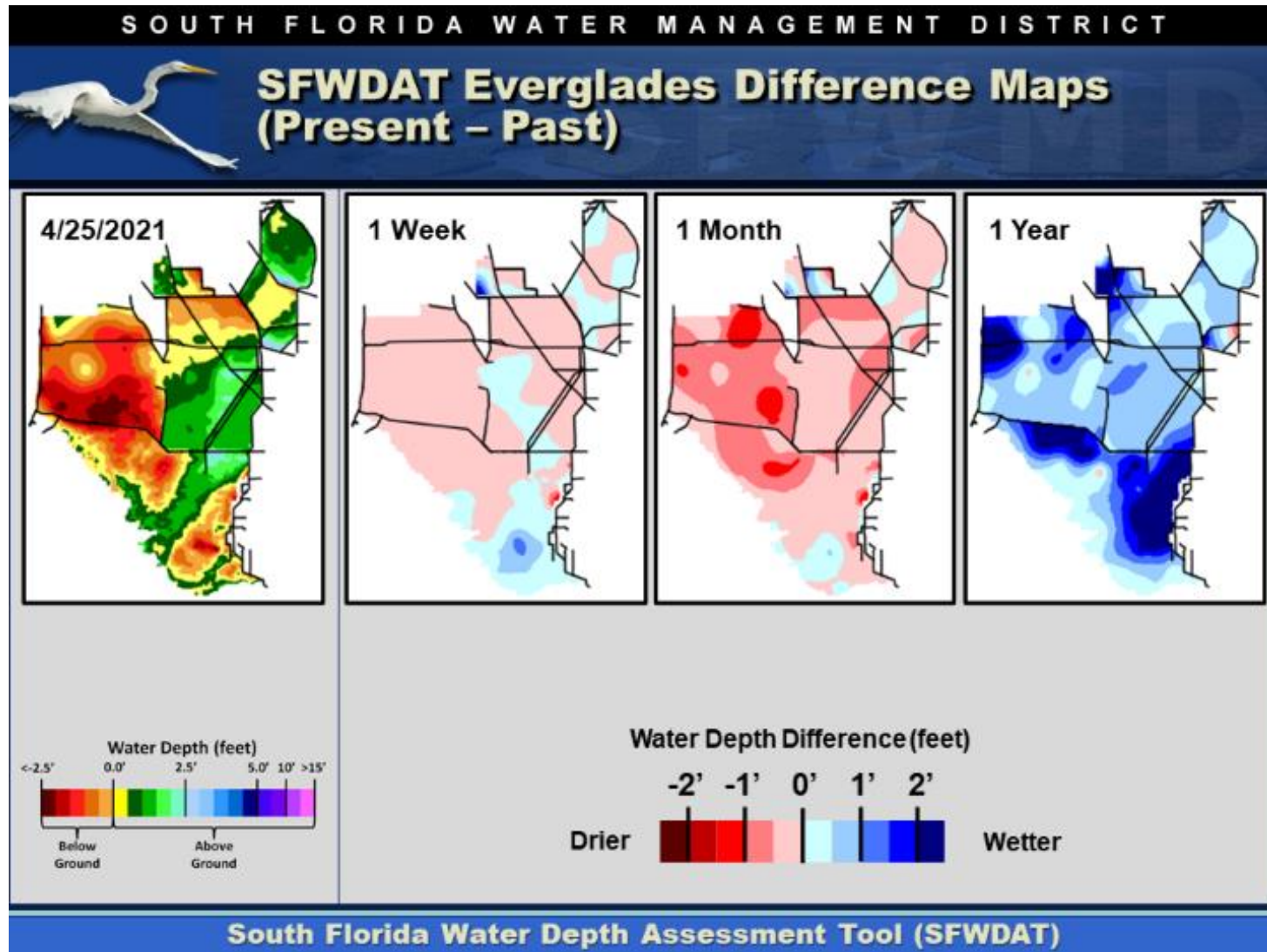


Figure EV-6. Present Everglades water depths (left) and water depth changes from one month (center) and one year (right) ago, based on SFWDAT.

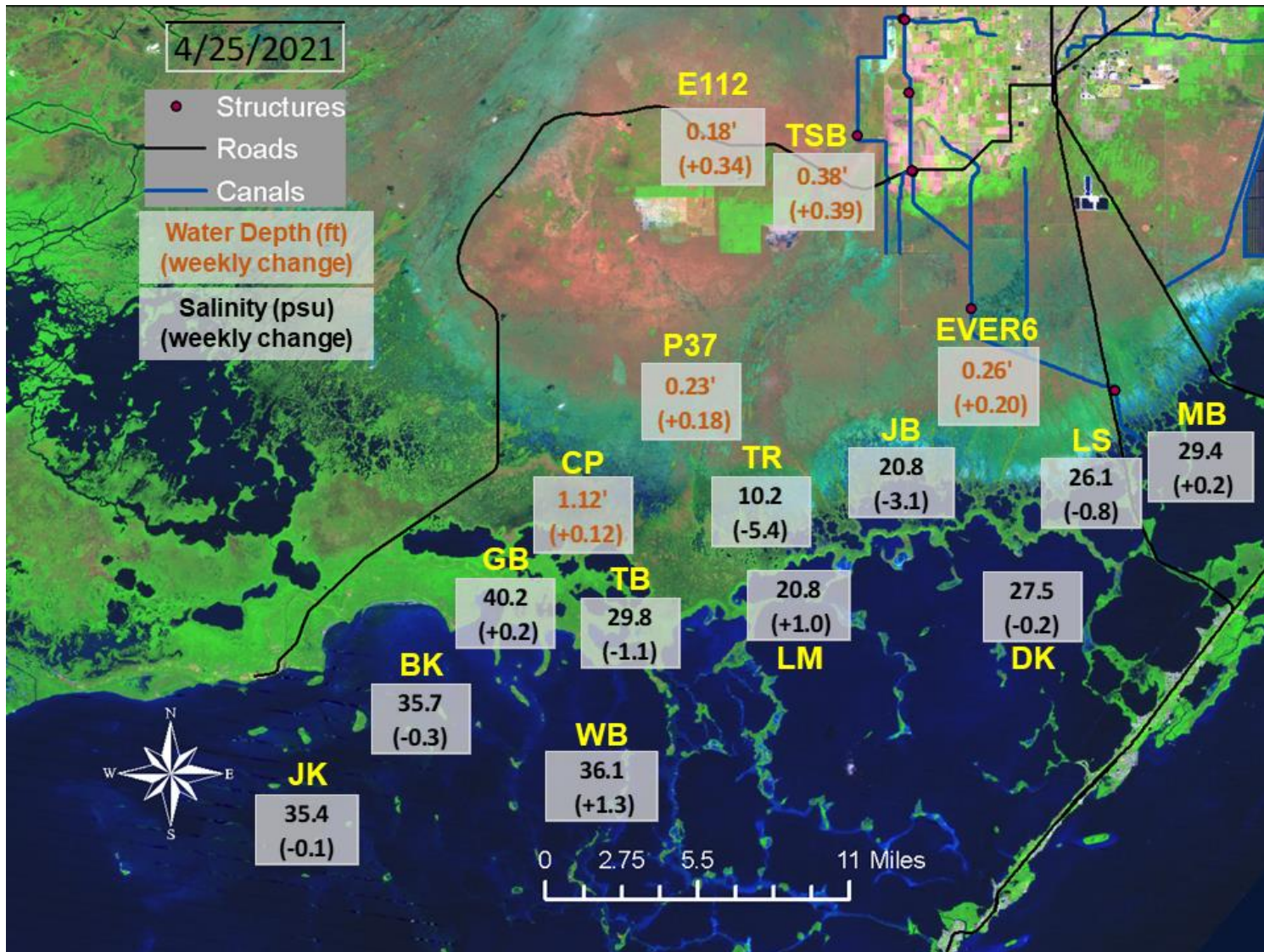


Figure EV-7. Taylor Slough water depths with changes since a week ago and Florida Bay salinities with changes since a week ago.

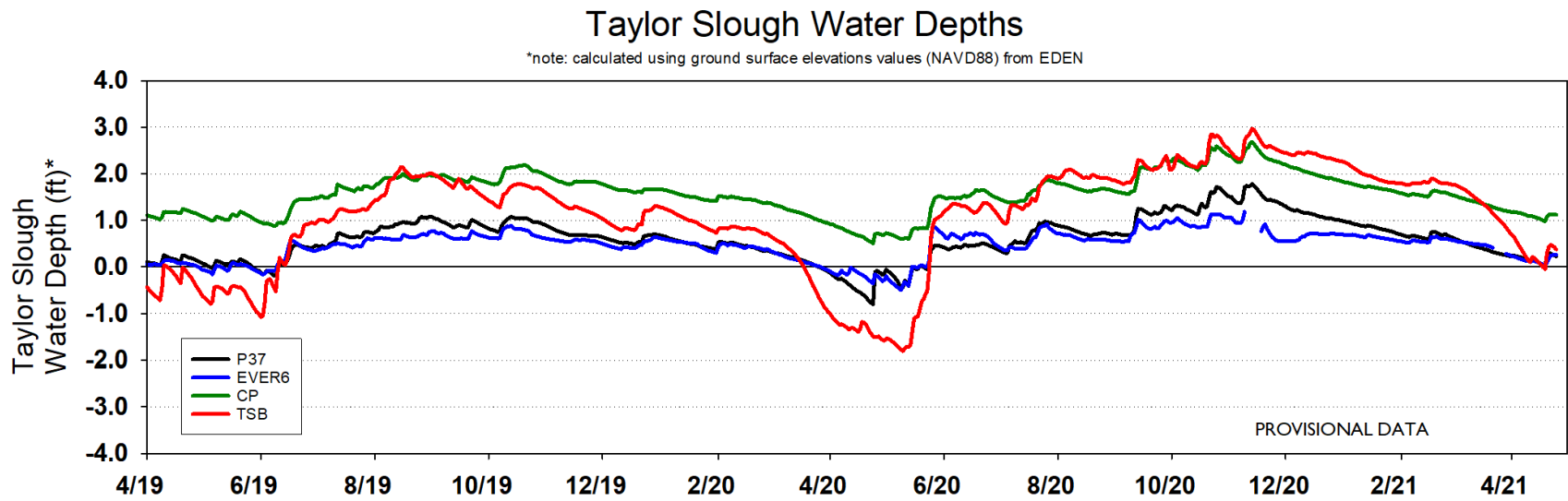


Figure EV-8. Taylor Slough water depth time series.

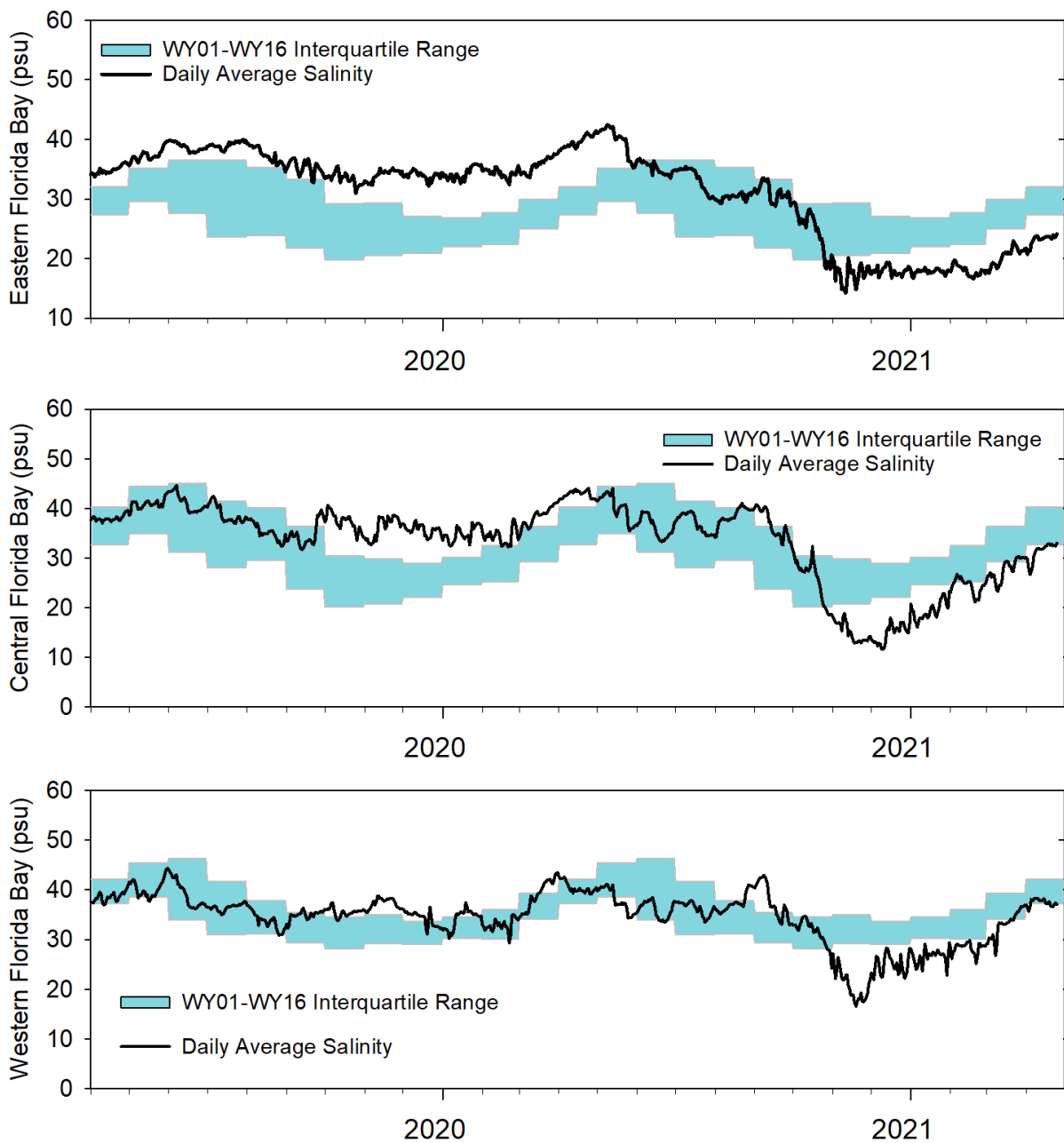


Figure EV-9. Eastern (top panel), Central (middle panel) and Western (bottom panel) Florida Bay daily average salinities with interquartile (25-75 percentile) ranges.

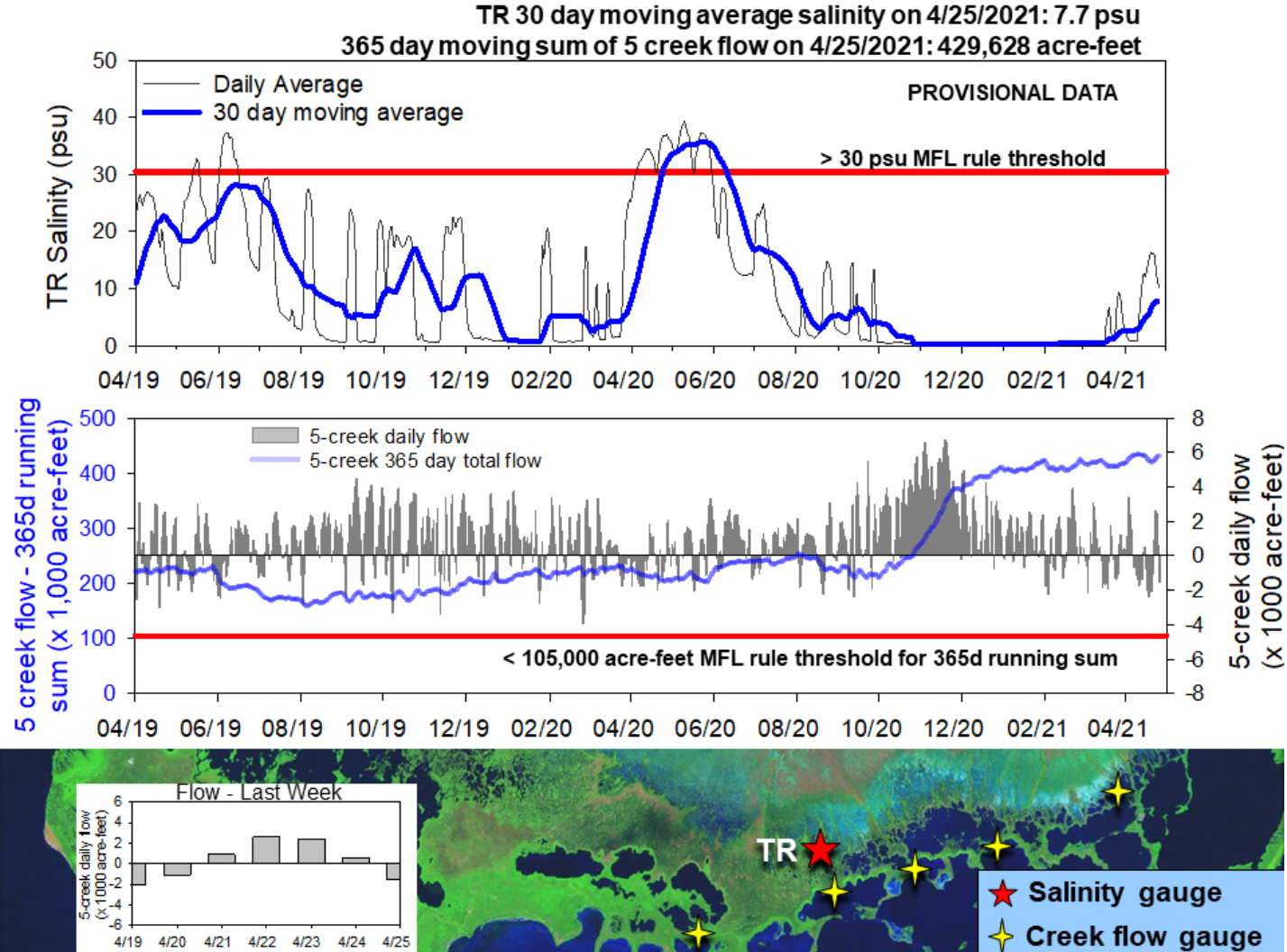


Figure EV-10. Top panel: Taylor River 30-day moving average salinity (blue), daily average salinity (gray) with salinity threshold; middle panel: Five-creek total flow for past 365 days (blue), daily flow (gray) with 365-day flow threshold; bottom panel: map of monitoring locations for the five creeks.

Table EV-11. Weekly water depth changes and water management recommendations

| SFWMD Everglades Ecological Recommendations, April 27th, 2021 (red is new) | | | |
|--|--|---|---|
| Area | Weekly change | Recommendation | Reasons |
| WCA-1 | Stage decreased by 0.02' | Restrict outflows to WCA-2A. Maintain marsh stage slightly above and parallel to the regulation schedule. | Protect within basin and downstream habitat and wildlife. |
| WCA-2A | Stage increased by 0.10' | Initiate a recession as soon as possible. | Reinitiate wading bird foraging. |
| WCA-2B | Stage decreased by 0.11' | Moderate the recession rate to near -.05 to -.07 feet per week. | Protect (expected) within basin wildlife and downstream habitat and wildlife from flooding stress. |
| WCA-3A NE | Stage decreased by 0.06' | Maintain the recession rate to near -.05 to -.07 feet per week. | Protect within basin and downstream habitat and wildlife. Optimal recession rates preserve peat soils and extends the time that foraging is optimal on the landscape. |
| WCA-3A NW | Stage decreased by 0.11' | Moderate the recession rate to near -.05 to -.07 feet per week. | |
| Central WCA-3A S | Stage decreased by 0.05' | Maintain the recession rate to near -.05 to -.07 feet per week. | Protect within basin and downstream habitat and wildlife. Moderating the recession preserves peat soils and extends the time that foraging is optimal on the landscape. |
| Southern WCA-3A S | Stage decreased by 0.06' | | |
| WCA-3B | Stage decreased by 0.05' | Maintain the recession rate to near -.05 to -.07 feet per week. | Protect within basin and downstream habitat and wildlife from flooding stress. Tree island ecology is diminished by flooding |
| ENP-SRS | Stage decreased by 0.01' | 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 from flooding stress. |
| Taylor Slough | Stage changes ranged from +0.12' to +0.38' | Move water southward as possible. | When available, provide freshwater buffer for downstream conditions. |
| FB- Salinity | Salinity changes ranged -3.1 to +1.3 psu | Move water southward as possible. | When available, provide freshwater to maintain low salinity buffer and promote water movement. |