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

M E M O R A N D U M

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

FROM: SFWMD Staff Environmental Advisory Team

DATE: January 22, 2025

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Weather Conditions and Forecast

Wednesday, light moisture and scattered rainfall onshore along parts of the east coast are expected due to a shift in a frontal zoon that had resulted in precipitation throughout the District. Drier conditions are anticipated this weekend following another frontal passage. Near average total SFWMD rainfall is likely for the 7-day period ending next Tuesday morning.

Kissimmee

Releases were made as needed from East Lake Toho and Lake Toho to continue snail kite nesting season stage recessions to reach low pool by June 1, 2025. Weekly average discharge on January 19, 2025, was 750 cfs at S-65 and 660 cfs at S-65A, respectively. Mean weekly water depth on the Kissimmee River floodplain decreased by 0.18 feet to 0.56 feet. The weekly average concentration of dissolved oxygen in the Kissimmee River increased from 7.4 mg/L the previous week to 8.1 mg/L, which is above both the potentially lethal level of 1.0 mg/L and the stressful level of 2.0 mg/L (**Figure KB-6**).

Lake Okeechobee

Lake Okeechobee stage was 13.32 feet NAVD88 (14.63 ft NGVD29) on January 19, 2025, which was 0.13 feet lower than the previous week, 0.71 feet lower than a month ago, and is the lowest lake level in January since 2020. Average daily inflows (excluding rainfall) were slightly lower than the previous week, at 1,140 cfs compared to 1,310 cfs. Average daily outflows (excluding evapotranspiration) decreased slightly from 5,810 cfs the previous week to 5,530 cfs. The most recent non-obscured satellite image from January 15, 2025, suggests minimal bloom activity on Lake Okeechobee.

Estuaries

Total inflow to the St. Lucie Estuary averaged 1,449 cfs over the past week with 864 cfs coming from Lake Okeechobee (S308). Mean salinities increased at HR1 and US1 Bridge and remained similar at A1A Bridge over the past week. Salinity in the middle estuary was in the optimal range (5-10) for adult eastern oysters.

Total inflow to the Caloosahatchee Estuary averaged 1,477 cfs over the past week with 1,148 cfs coming from Lake Okeechobee (S-77). Mean salinities remained the same at S-79 and Val I-75 and increased at all remaining stations over the past week. Salinities were in the optimal range (0-10) for tape grass in the upper estuary. Salinities were in the optimal range (10-25) for adult eastern oysters at Cape Coral and Shell Point, and in the upper stressed range (>25) at Sanibel.

Stormwater Treatment Areas

For the week ending Sunday, January 19, 2025, 22,300 ac-ft of Lake Okeechobee water was delivered to the FEBs/STAs. The total amount of Lake releases sent to the FEBs/STAs in WY2025 (since May 1, 2024) is approximately 173,800 ac-feet. The total amount of inflows to the STAs in WY2025 is approximately 1,047,000 ac-feet. STA cells are near target stage. STA-1E Central Flow-way is offline for construction activities. Operational restrictions are in effect in STA-1E Western Flow-way, STA-1W Northern Flow-way, STA-2 Flow-ways 2 and 4, and STA-3/4 Eastern Flow-way for vegetation management activities. This week, if LOSOM recommends Lake releases to the WCAs and conditions allow, releases will be sent to STA-1W, STA-2, A-1 FEB, and STA-3/4.

Everglades

Last week recession rates continued to be characterized in the good or fair range across the Everglades Protection Area (EPA), helped by rainfall and inputs from the north. However current and predicted depths indicate that the hydroperiods in WCA-3A necessary for a productive wading bird nesting season remain in question, critical as nesting has been minimally successful for the last three consecutive seasons. White ibis continue to forage in numbers (~7,000) in WCA-3A North, but this is too early and typically when they forage at this time in the season nesting is limited at the important Alley North colony located in that sub-basin. Water depths in Taylor Slough and salinities in Florida Bay remain well positioned for this time of dry season. Florida Bay minimum flows and levels (MFL) also remain well positioned outside the thresholds of harm.

Biscayne Bay

Total inflow to Biscayne Bay averaged 334 cfs, and the previous 30-day mean inflow averaged 352 cfs. The seven-day mean salinity was 30.2 at BBCW8 and 25.0 at BBCW10, both within the ideal salinity range for estuarine organisms in this region (salinity less than 35). Data were provided by Biscayne National Park.

Supporting Information

Kissimmee Basin

Upper Kissimmee

On January 19, 2025, mean daily lake stages were 56.3 feet NAVD88 (0.7 feet below schedule) in East Lake Toho, 53.3 feet NAVD88 (0.5 feet below schedule) in Lake Toho, and 48.6 feet NAVD88 (3.0 feet below the Increment 1 Temporary Deviation schedule) in Lakes Kissimmee-Cypress-Hatchineha (KCH) (**Table KB-1**, **Figures KB-1-3**).

Lower Kissimmee

For the week ending January 19, 2025, mean weekly discharge was 750 cfs at S-65 and 660 cfs at S-65A, respectively. Mean weekly discharge from the Kissimmee River was 1,200 cfs and 1,100 cfs at S-65D and S-65E, respectively (**Table KB-2**). Mean weekly headwater stages were 45.2 feet NAVD88 at S-65A and 24.6 feet NAVD88 at S-65D. Mean weekly river channel stage decreased by 0.8 feet to 34.6 feet NAVD88 (**Figure KB-4**). Mean weekly water depth on the Kissimmee River floodplain decreased by 0.18 feet to 0.56 feet (**Table KB-2**, **Figure KB-5**). The weekly average concentration of dissolved oxygen in the Kissimmee River increased from 7.4 mg/L the previous week to 8.1 mg/L (**Table KB-2**, **Figure KB-6**).

Water Management Recommendations

Continue the stage recessions in East Lake Toho and Lake Toho lakes to reach their low pools on June 1, 2025. Follow the Headwaters Revitalization Schedule (HRS) Increment 1 Temporary Deviation Discharge Plan for S-65/S-65A (**Figure KB-7**). Maintain at least minimum flow (250-300 cfs) at S-65A.

Table KB-1. Average discharge for the preceding seven days, Sunday's average daily stage and Sunday's average daily departure from Kissimmee Chain of Lakes (KCOL) flood regulation lines or temporary schedules. All data are provisional.

Water Body	Structure	Stage Monitoring Site	Weekly (7-Day) Average Discharge (cfs)	Sunday Lake Stage (feet NAVD88)[a]	Schedule Type[b]	Sunday Schedule Stage (feet NAVD88)	Sunday Departure from Regulation (feet)	
							1/19/25	*1/12/25*
Lakes Hart and Mary Jane	S-62	LKMJ	20	60.0	R	59.9	0.1	0.1
Lakes Myrtle, Preston and Joel	S-57	S-57	10	60.4	R	60.5	-0.1	-0.1
Alligator Chain	S-60	ALLI	0	62.6	R	63.0	-0.4	N/A
Lake Gentry	S-63	LKGT	0	60.4	R	60.4	0.0	-0.1
East Lake Toho	S-59	TOHOE	140	56.3	R	57.0	-0.7	-0.7
Lake Toho	S-61	TOHOW S-61	360	53.3	R	53.8	-0.5	-0.5
Lakes Kissimmee, Cypress and Hatchineha	S-65	KUB011 LKIS5B	750	48.6	T	51.6	-3.0	-3.0

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.

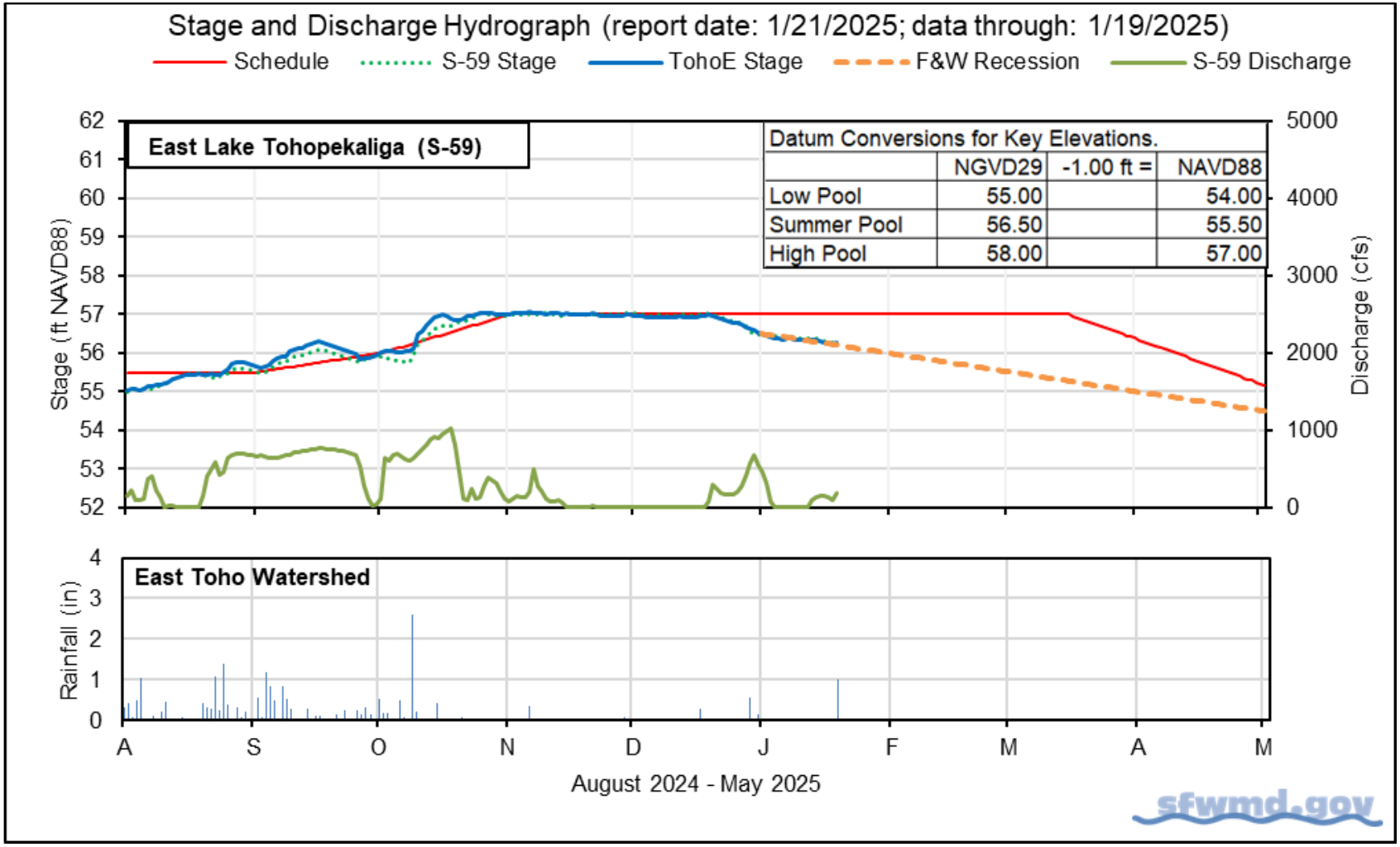


Figure KB-1. East Lake Toho regulation schedule, stage, discharge, and rainfall.

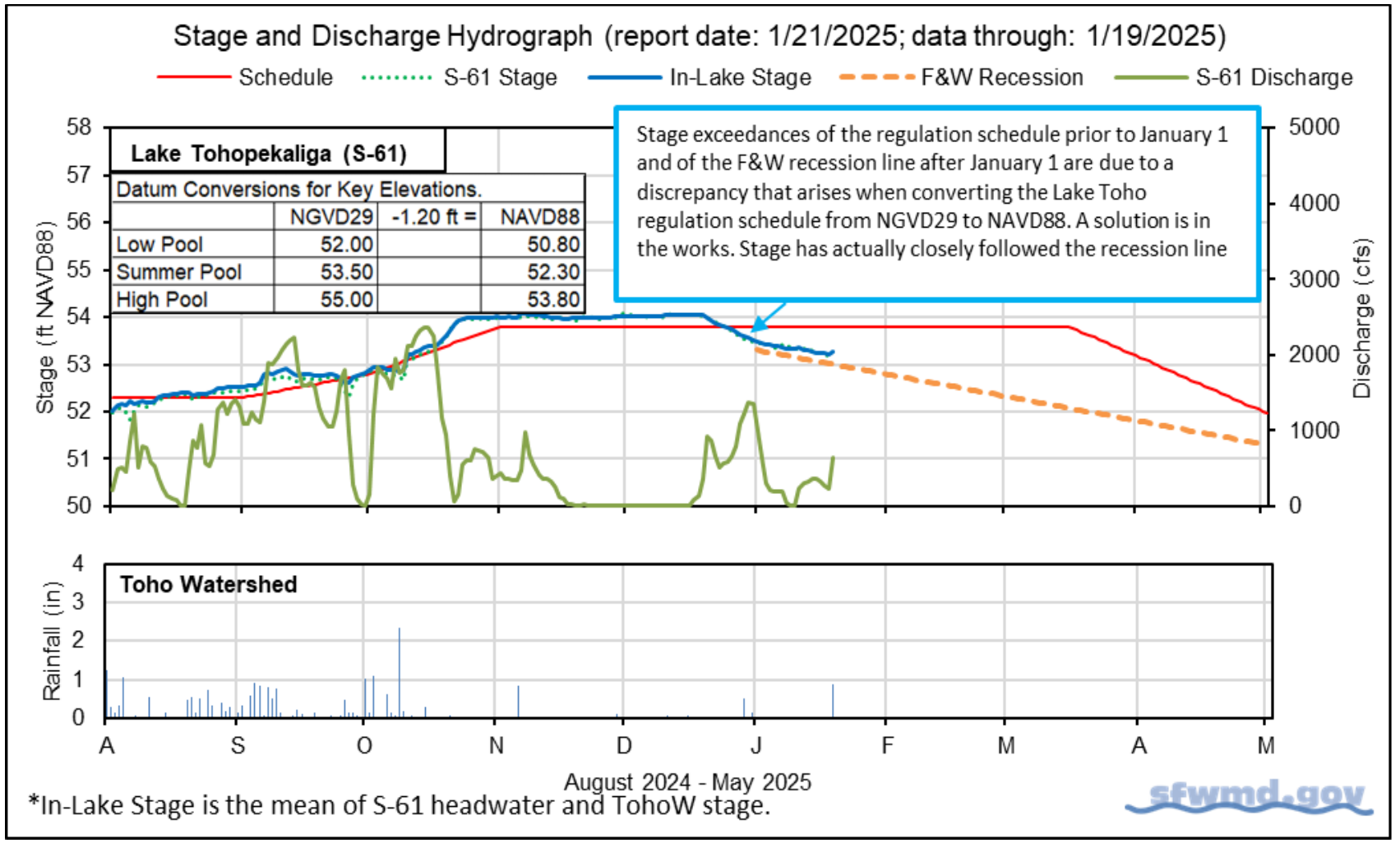


Figure KB-2. Lake Toho regulation schedule, stage, discharge, and rainfall.

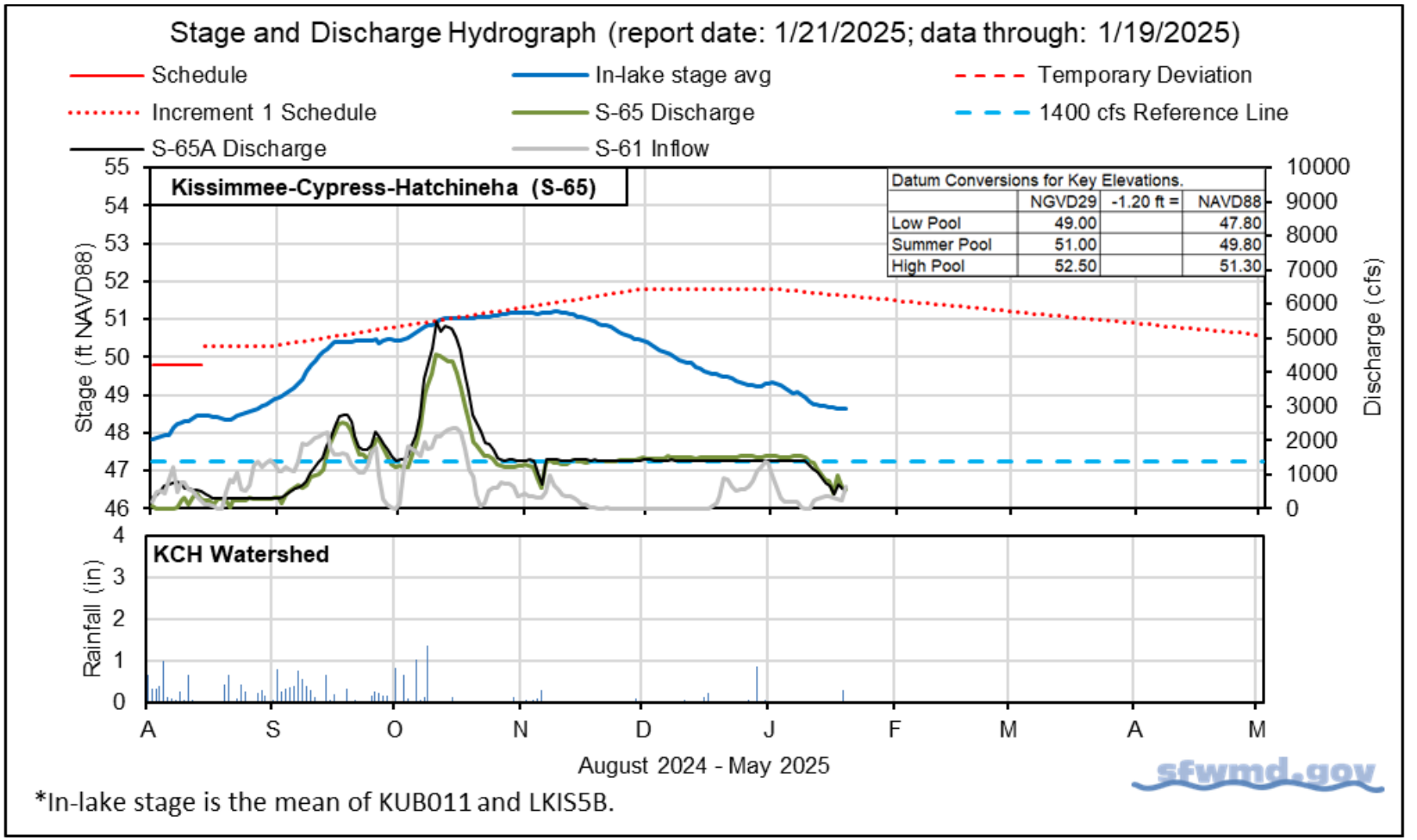


Figure KB-3. Lakes Kissimmee, Cypress and Hatchineha regulation schedule, stage, discharge, and rainfall.

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	Sunday Daily Average	Weekly Average for Previous Seven Day Periods			
		1/19/25	1/19/25	1/12/25	1/5/25	12/29/24
Discharge	S-65	550	750	1,400	1,500	1,500
Discharge	S-65A[a]	510	660	1,300	1,400	1,400
Headwater Stage (feet NAVD88)	S-65A	45.2	45.2	45.2	45.2	45.2
Discharge	S-65D[b]	890	1,200	1,400	1,400	1,400
Headwater Stage (feet NAVD88)	S-65D[c]	24.5	24.6	24.7	24.8	24.7
Discharge (cfs)	S-65E[d]	870	1,100	1,300	1,300	1,300
Discharge (cfs)	S-67	0	0	0	0	0
Dissolved Oxygen (mg/L) [e]	Phase I, II/III river channel	8.2	8.1	7.4	5.8	6.2
River channel mean stage (feet NAVD88) [f]	Phase I river channel	33.6	34.6	35.4	35.5	35.5
Mean depth (feet) [g]	Phase I floodplain	0.43	0.56	0.74	0.78	0.76

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. Mean of five river channel stations (PC62, KRDR02, KRBN, PC33, PC11) in the Phase I area.

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

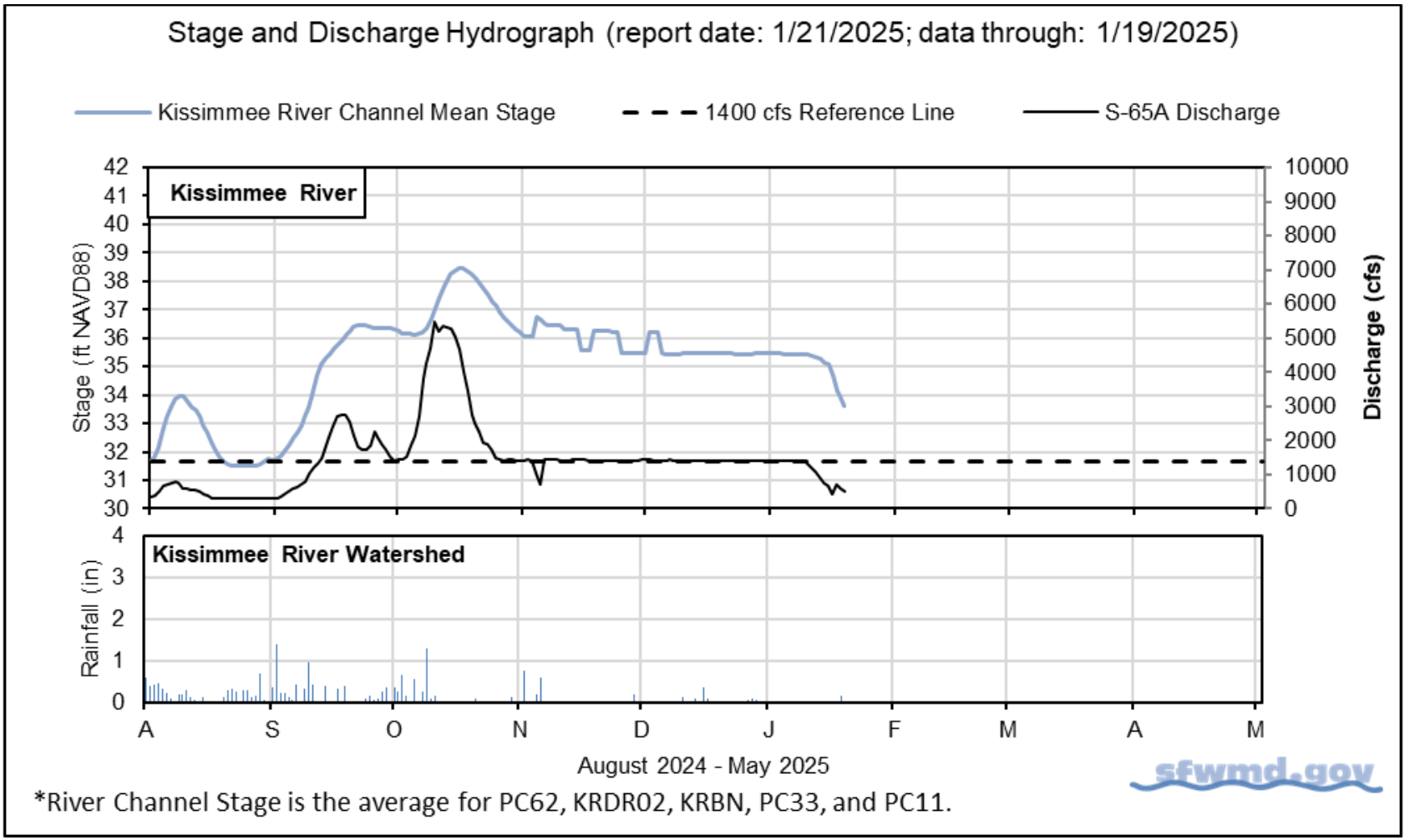


Figure KB-4. Kissimmee River stage, discharge, and rainfall.

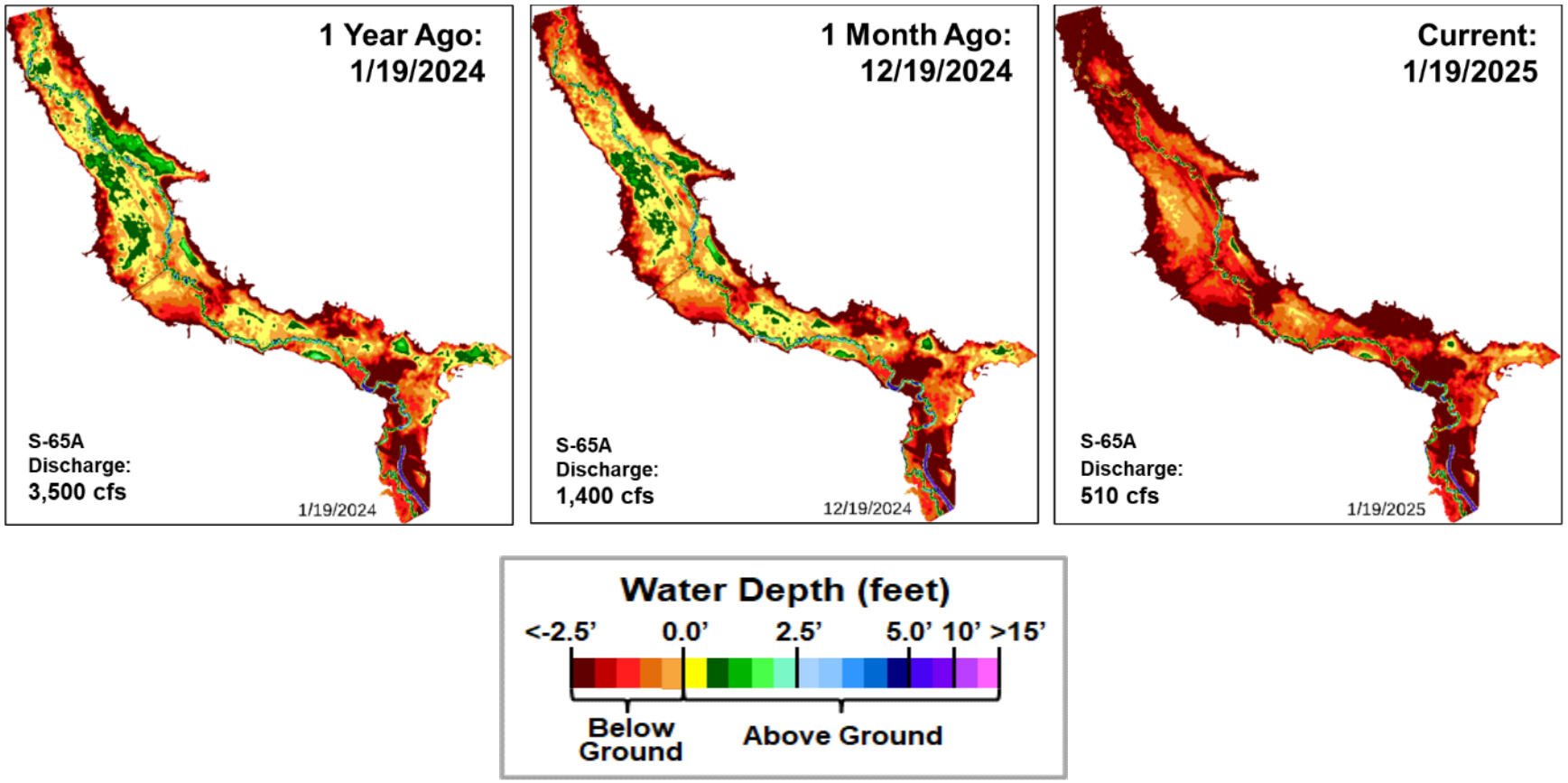


Figure KB-5. Phase I-II-III area Kissimmee River floodplain water depths (from left to right) one year ago, one month ago, and current.

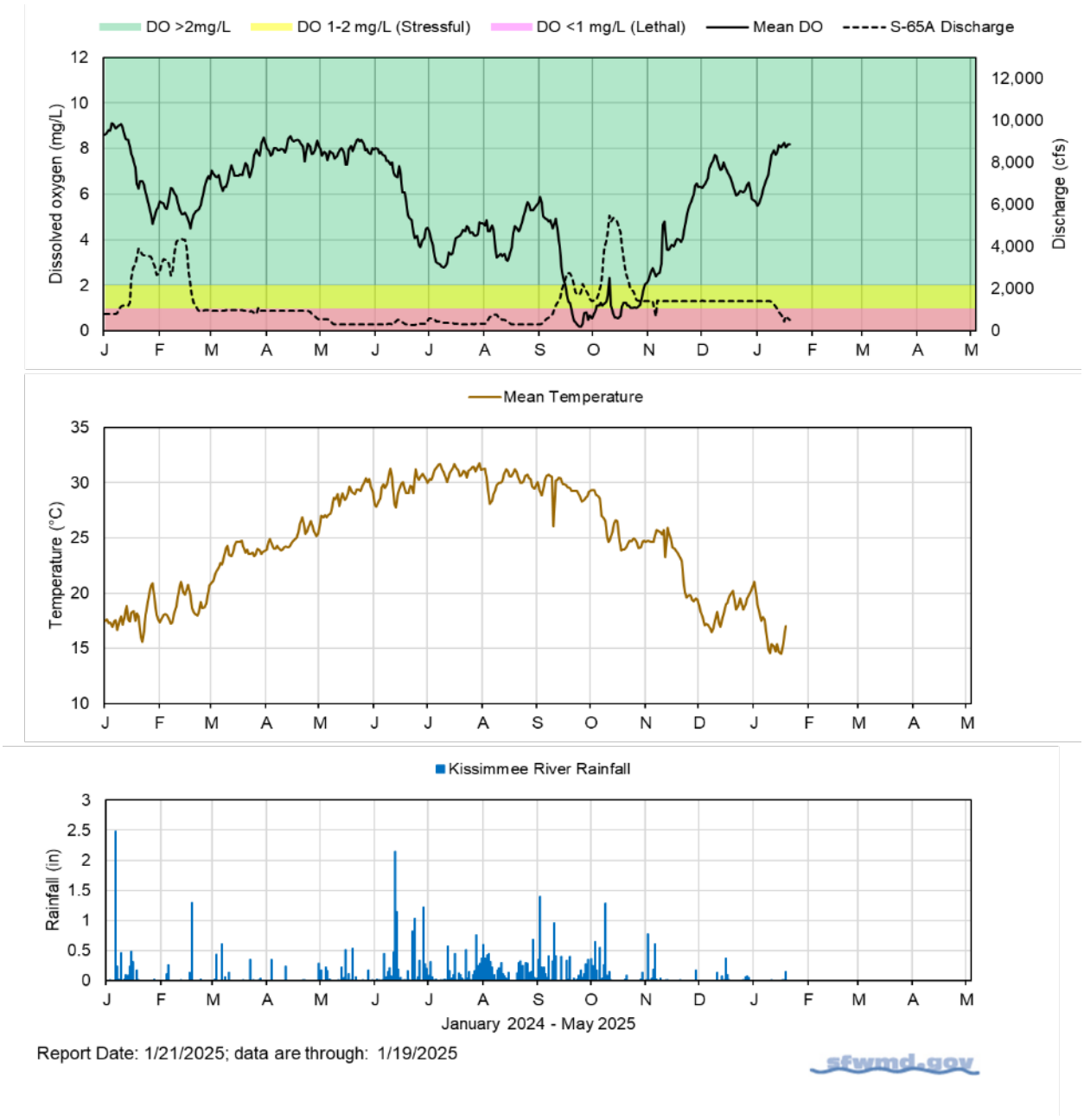


Figure KB-6. Kissimmee River channel mean daily dissolved oxygen concentration (mg/L), S-65A discharge (cfs), temperature (°C) and rainfall (inches). Dissolved oxygen (DO) and temperature are mean daily values averaged for PC62, KRDR02, KRBN, PC33, PC11, PD62R, and PD42R with an average of five stations reporting this week. Rainfall values are daily totals for Kissimmee River (Pool BCD) AHED watershed.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

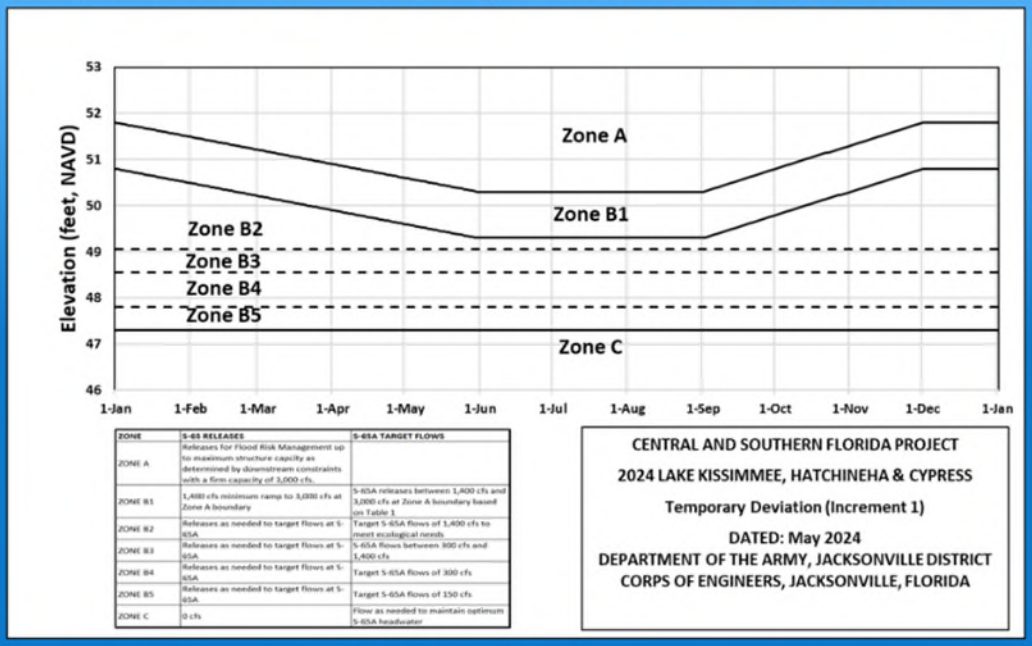
HRS Increment 1 Temporary Deviation Discharge Plan for S-65/S-65A

Discharge Guidance for Increment I Temporary Deviation Discharge Plan		
ZONE	**S-65 RELEASES**	**S-65A TARGET FLOWS**
ZONE A	Releases for Flood Risk Management up to maximum structure capcity as determined by downstream constraints with a firm capacity of 3,000 cfs.	
ZONE B1	1,400 cfs minimum ramp to 3,000 cfs at Zone A boundary	S-65A releases between 1,400 cfs and 3,000 cfs at Zone A boundary based on Table 1
ZONE B2	Releases as needed to target flows at S-65A	Target S-65A flows of 1,400 cfs to meet ecological needs
ZONE B3	Releases as needed to target flows at S-65A	S-65A flows between 300 cfs and 1,400 cfs
ZONE B4	Releases as needed to target flows at S-65A	Target S-65A flows of 300 cfs
ZONE B5	Releases as needed to target flows at S-65A	Target S-65A flows of 150 cfs
ZONE C	0 cfs	Flow as needed to maintain optimum S-65A headwater

Table KB-3. Maximum Rate of Change Limits for S-65A

MAXIMUM Release Rate of Chane Limits for S-65A. **In general recommended rates of change will be slower than shown in this table.**

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



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.

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Figure KB-7. Headwaters Revitalization Schedule (HRS) Increment 1 Temporary Deviation Discharge Plan for S-65/S-65A.

Lake Okeechobee

Lake Okeechobee stage was 13.32 feet NAVD88 (14.63 ft NGVD29) on January 19, 2025, which was 0.13 feet lower than the previous week and 0.71 feet lower than a month ago (**Figure LO-1**). Lake stage is in Zone D of the regulation schedule (**Figure LO-2**), 0.16 feet above the upper limit of the recovery ecological envelope and is the lowest lake level in January since 2020 (**Figure LO-3**). According to NEXRAD, 0.27 inches of rain fell directly over the Lake last week.

Average daily inflows (excluding rainfall) were slightly lower than the previous week, at 1,140 cfs compared to 1,310 cfs. The largest single inflow came from the Kissimmee River via the S-65E structure (1,110 cfs). Average daily outflows (excluding evapotranspiration) decreased slightly from 5,810 cfs the previous week to 5,530 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.

In the most recent non-obscured satellite image from January 15, 2025, NOAA's Harmful Algal Bloom Monitoring System suggests minimal bloom activity on Lake Okeechobee (**Figure LO-6**).

Note: All data presented in this report are provisional and are subject to change.

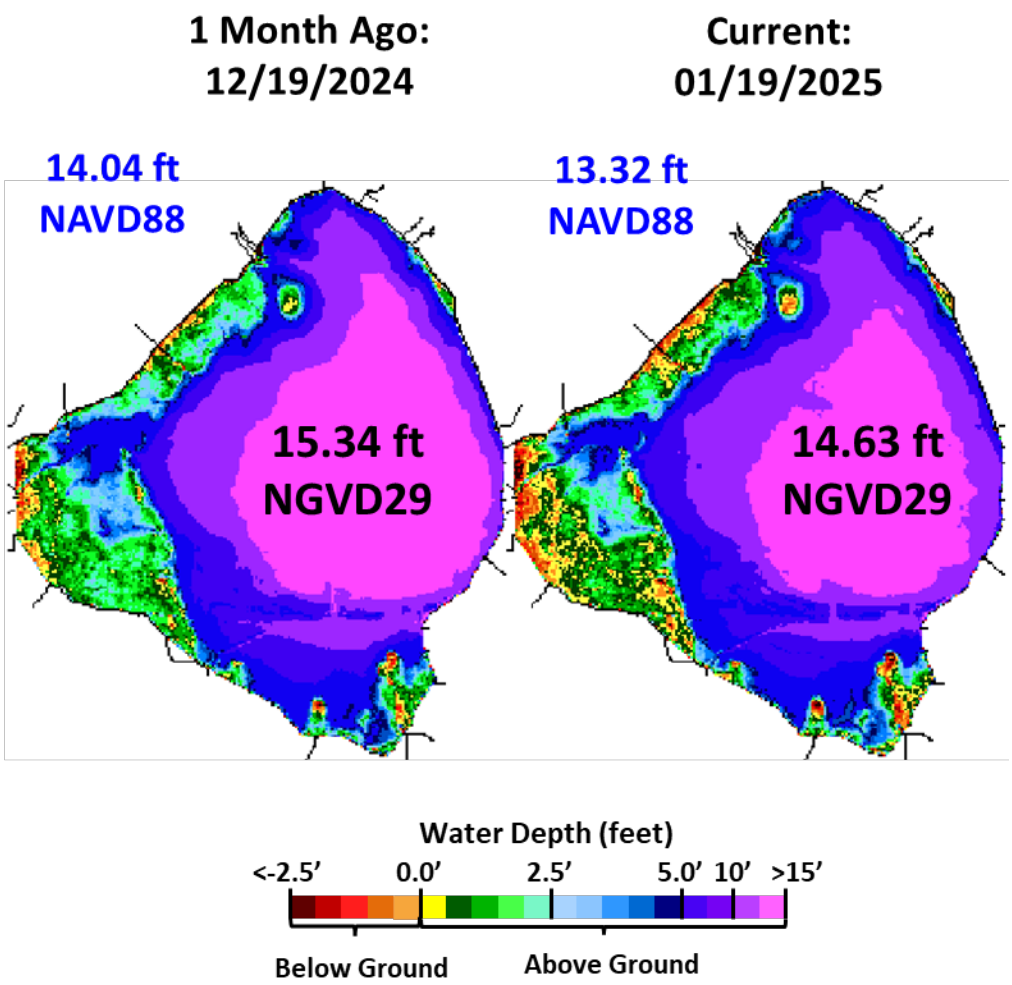


Figure LO-1. Lake Okeechobee water depth estimates based on South Florida Water Depth Assessment Tool (SFWDAT).

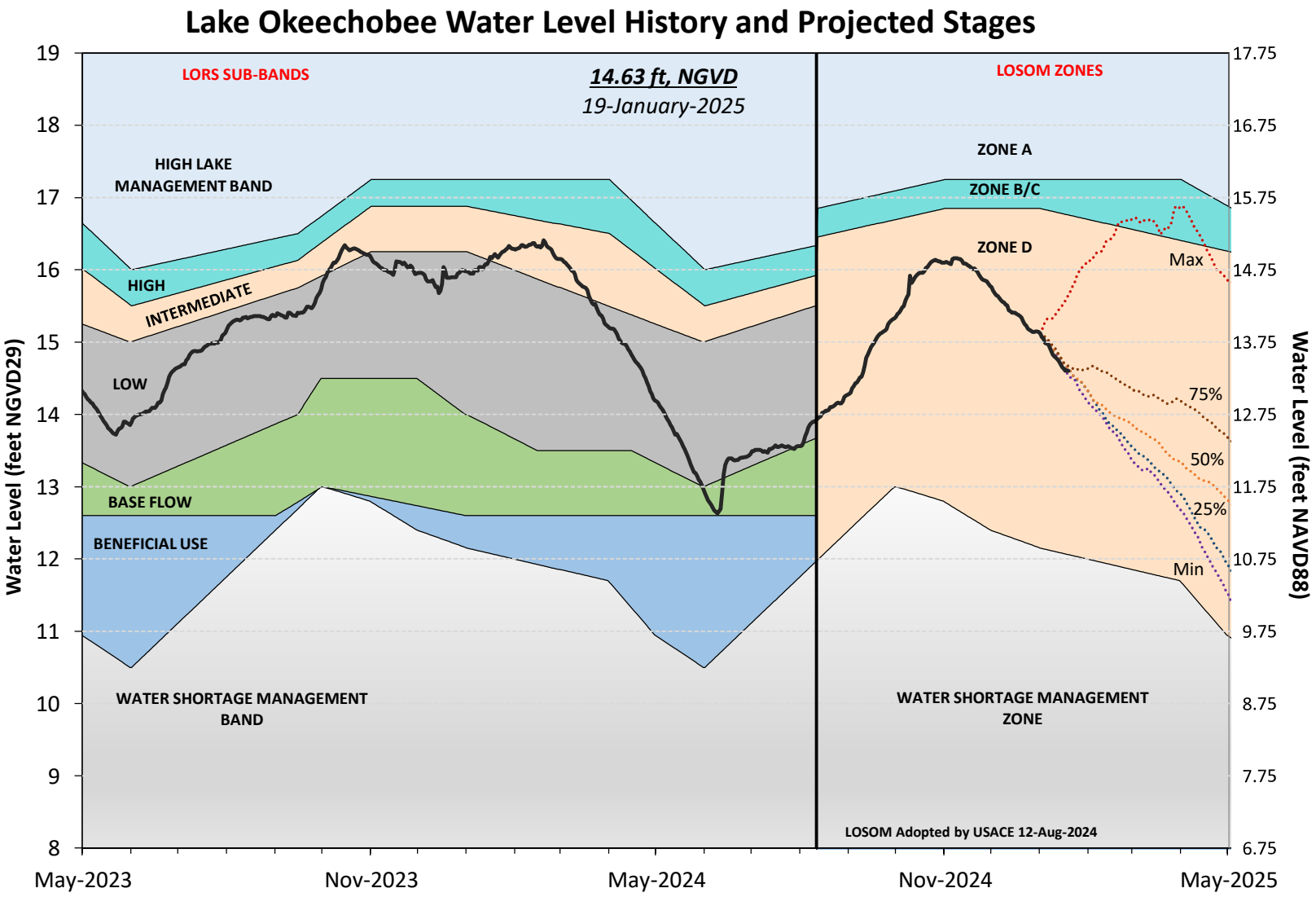


Figure LO-2. Recent Lake Okeechobee stages with projected stages based on a dynamic position analysis. Note: stages are in NGVD29, approximate NAVD88 values are shown for reference.

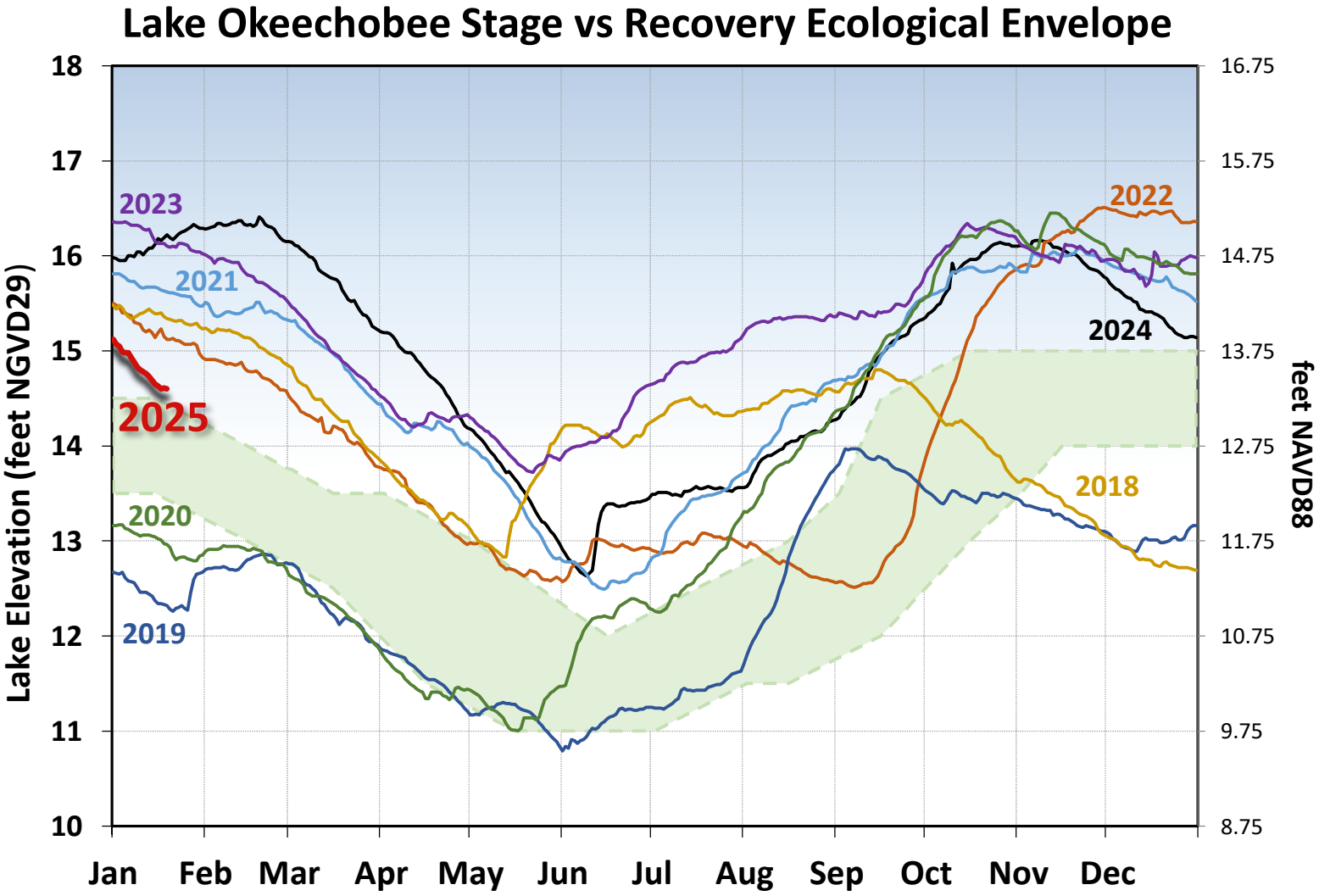


Figure LO-3. The current and seven prior year's annual stage hydrographs for Lake Okeechobee in comparison to the recovery envelope (light green). A shift from the normal ecological envelope to the recovery envelope occurred because the 30-day minimum lake stage (elevations exposed for at least 30 days, nonconsecutively) in the June 1 – July 31, 2023, window was >13 ft NGVD29 (11.75 ft NAVD88).

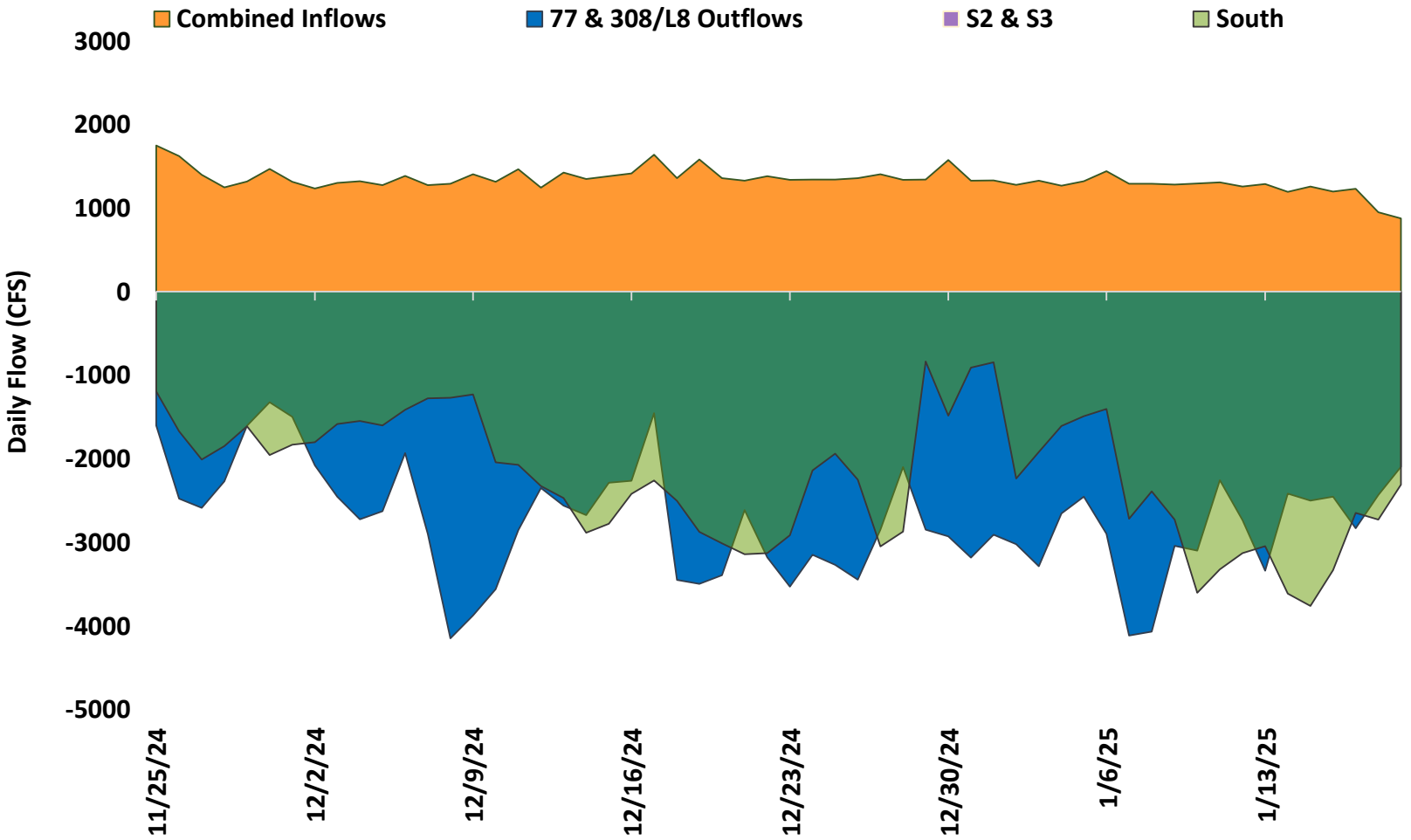


Figure LO-4. Major inflows (orange) to and outflows east and west (blue) from Lake Okeechobee. Outflows south are shown in green. Flows into Lake Okeechobee from the L-8 canal through S-271 (formerly Culvert 10A) or from the C-44 canal through the S-308 are included as inflows. Conversely, flows from 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.

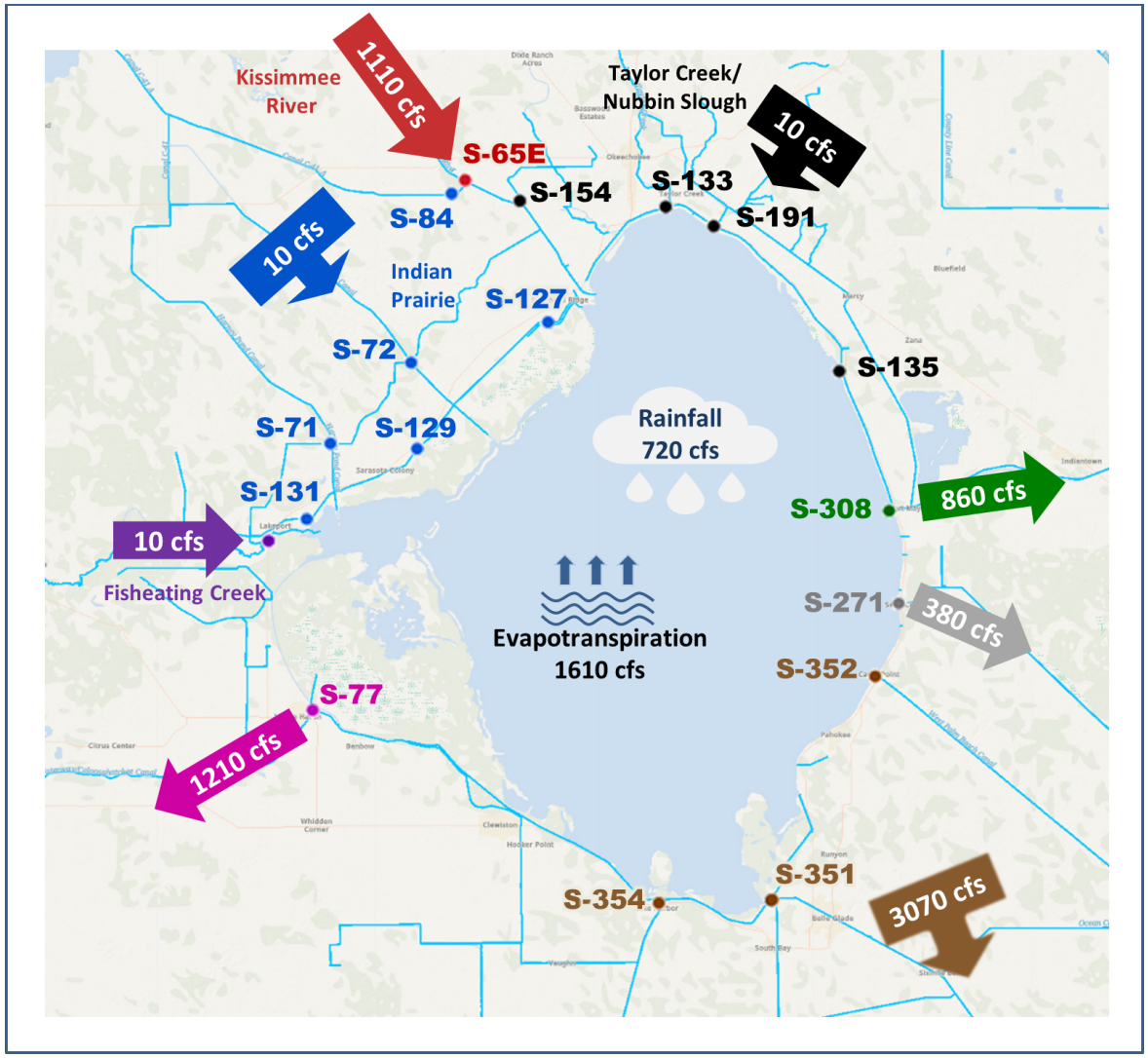


Figure LO-5. Inflows into Lake Okeechobee from Indian Prairie basins, Taylor Creek/Nubbin Slough, Kissimmee River and Fisheating Creek, and outflows to the west via S-77, to the east via S-308, to the south via S-351, S-352, S-354, and to southeast via S-271 (formerly Culvert 10A) for the week of January 13 - 19, 2025.

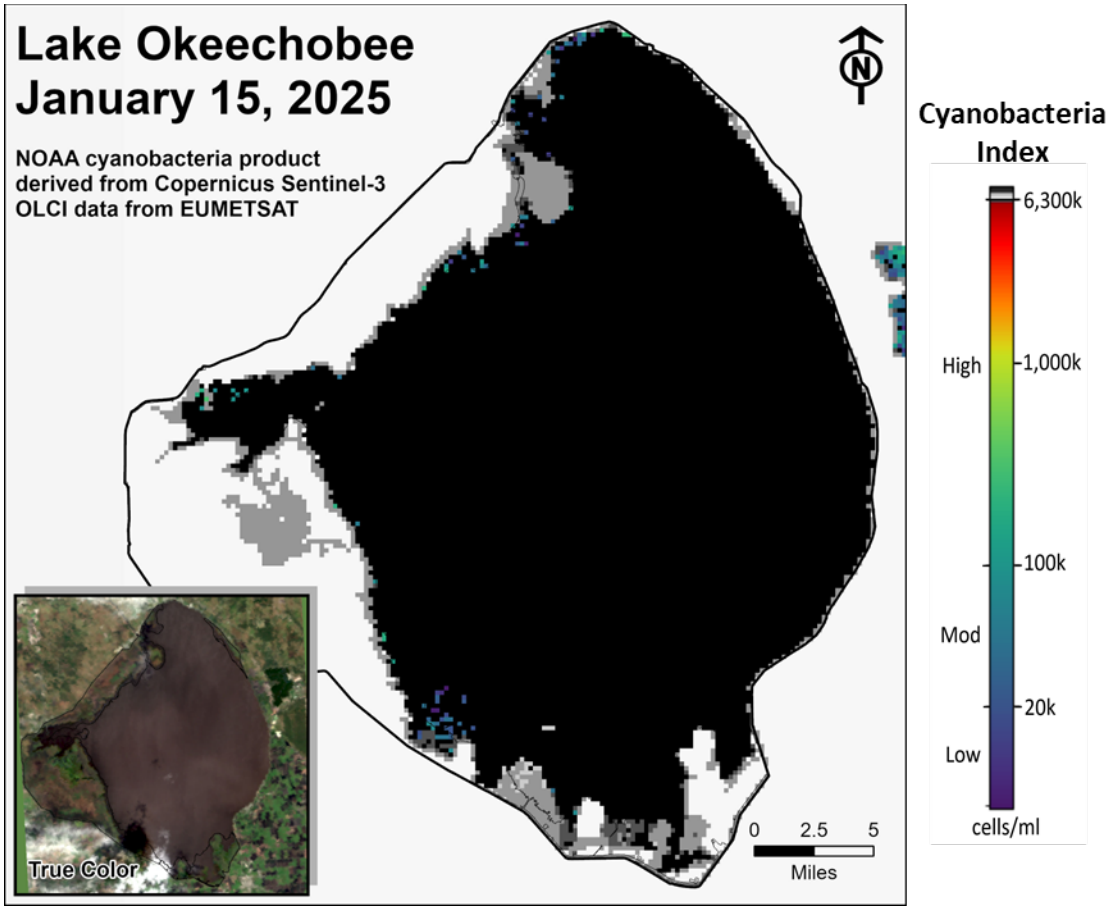


Figure LO-6. Cyanobacteria bloom index level on Lake Okeechobee, based on NOAA's harmful algal bloom monitoring system. Gray color indicates cloud cover. *Provisional NOAA image, subject to change*.

Estuaries

St. Lucie Estuary

Over the past week, mean total inflow to the St. Lucie Estuary was 1,449 cfs (**Figures ES-1** and **ES-2**), and the previous 30-day mean inflow was 783 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 HR1 and US1 Bridge sites and remained similar at the A1A 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 12.3. Salinity conditions in the middle estuary were estimated to be within the optimal range for adult eastern oysters (**Figure ES-4**). There was no larval oyster recruitment reported by the Fish and Wildlife Research Institute (FWRI) for December, which is similar to the previous month (**Figure ES-5**).

Caloosahatchee River Estuary

Over the past week, mean total inflow to the Caloosahatchee River Estuary was 1,477 cfs (**Figures ES-6** and **ES-7**), and the previous 30-day mean inflow was 2,021 cfs. For comparison, the historical provisional mean inflows from the contributing areas are shown in **Figure ES-7**.

Over the past week, salinities remained the same at S-79 and Val I-75 and increased at the remaining sites in the estuary (**Table ES-2** and **Figures ES-8** and **ES-9**). The seven-day mean salinities (**Table ES-2**) were in the optimal range (0-10) for tape grass in the upper estuary. The seven-day mean salinity values were within the optimal range for adult eastern oysters at Cape Coral and Shell Point and in the upper stressed range at Sanibel (**Figure ES-10**). The mean larval oyster recruitment rate reported by the FWRI was 0.7 spat/shell at Iona Cove and 0.7 spat/shell at Bird Island for December, which is a significant decrease at both sites from the previous month (**Figures ES-11 and ES-12**) indicating that the spawning season is coming to an end.

Surface salinity at Val I-75 was forecast for the next two weeks using an autoregression model (Qiu and Wan, 2013[1]) coupled with a linear reservoir model for the tidal basin. Model scenarios included pulse releases at S-79 ranging from 450 to 2,000 cfs with estimated tidal basin inflows of 69 cfs. Model results from all scenarios predict daily salinity to be 0.5 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-13**). This keeps predicted salinities in the upper estuary within the optimal salinity range (0-10) for tape grass.

[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.

Red Tide

The FWRI reported on January 15, 2025, that *Karenia brevis*, the Florida red tide dinoflagellate, was observed at background to high concentrations in samples collected from Charlotte County, background to medium concentrations in samples from Lee and Collier counties, and medium concentrations offshore of Monroe County. On the east coast, red tide was not observed.

Water Management Recommendations

Lake stage is in Zone D. Current climatological and hydrological conditions are normal. The LOSOM release guidance suggests up to 2,100 cfs release at S-79 to the Caloosahatchee River Estuary and up to 1,400 cfs total at S-80, S-97, S-49, and Gordy Road combined to the St. Lucie Estuary.

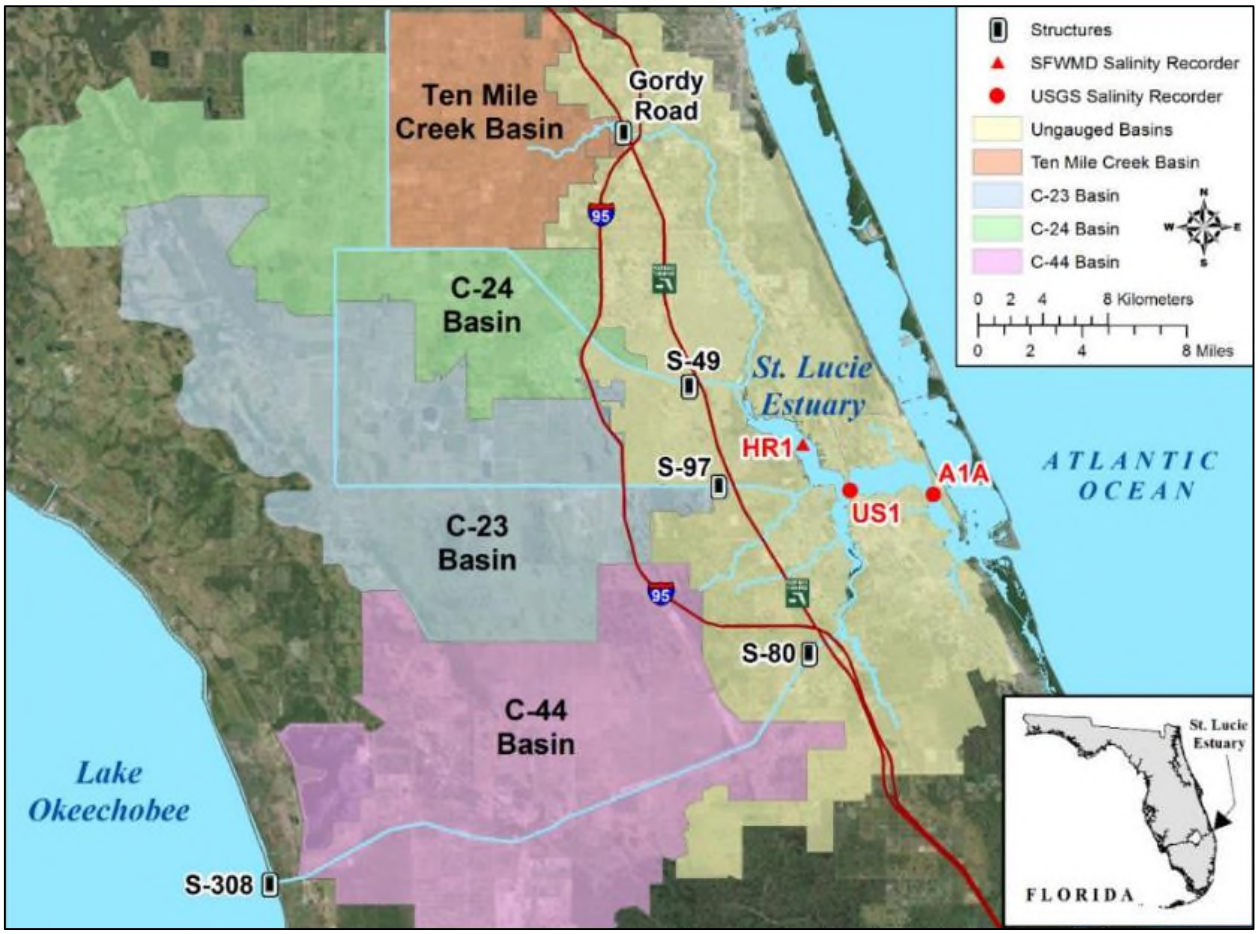


Figure ES-1. Basins, water control structures and salinity monitoring sites in the St. Lucie Estuary.

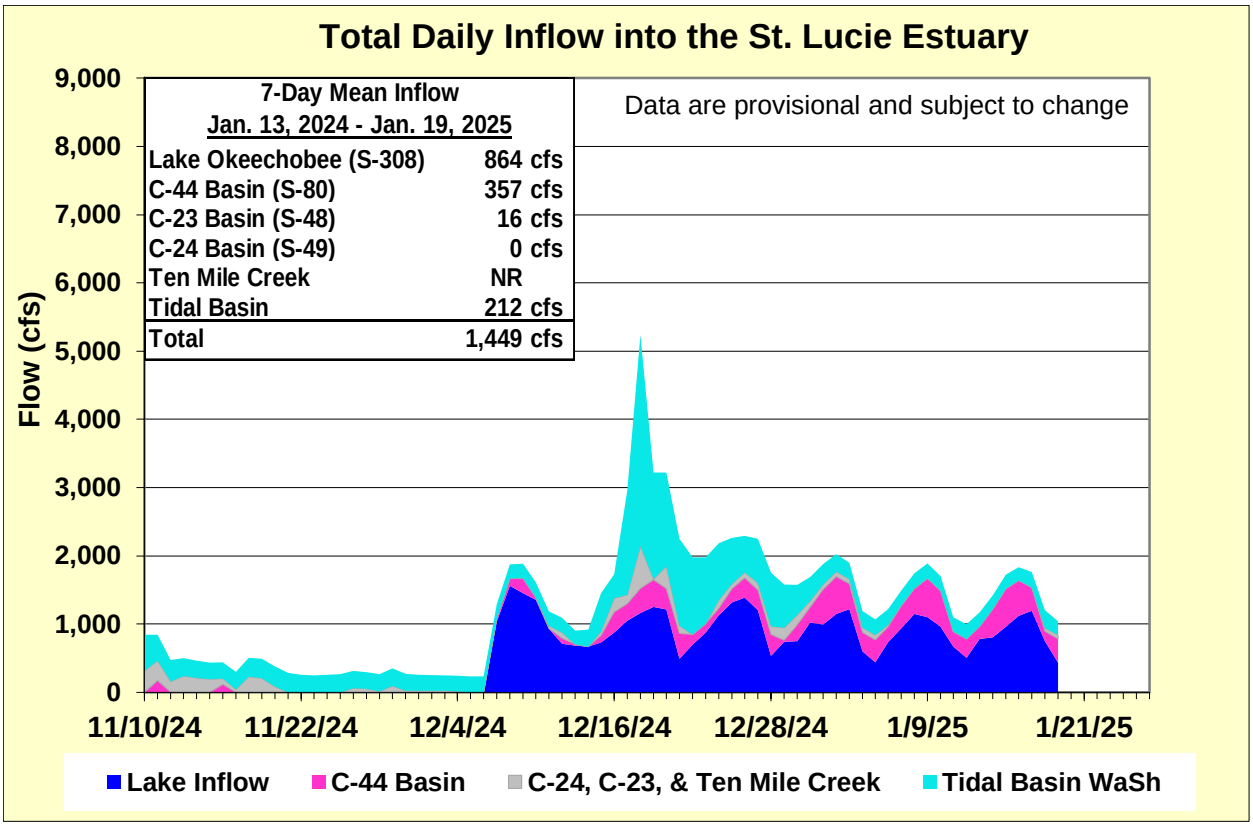


Figure ES-2. Total daily inflows from Lake Okeechobee and runoff from the C-44, C-23, C-24, Ten Mile Creek, and Tidal Basins into the St. Lucie Estuary.

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 optimum salinity range for adult eastern oysters (*Crassostrea virginica*) in the estuary. Data are provisional.

Sampling Site	Surface	Bottom	Optimum Envelope
HR1 (North Fork)	**9.4** (8.1)	**11.5** (9.8)	10.0 – 25.0
US1 Bridge	**11.1** (10.4)	**13.6** (13.0)	10.0 – 25.0
A1A Bridge	**19.4** (19.0)	**23.6** (24.0)	10.0 – 25.0

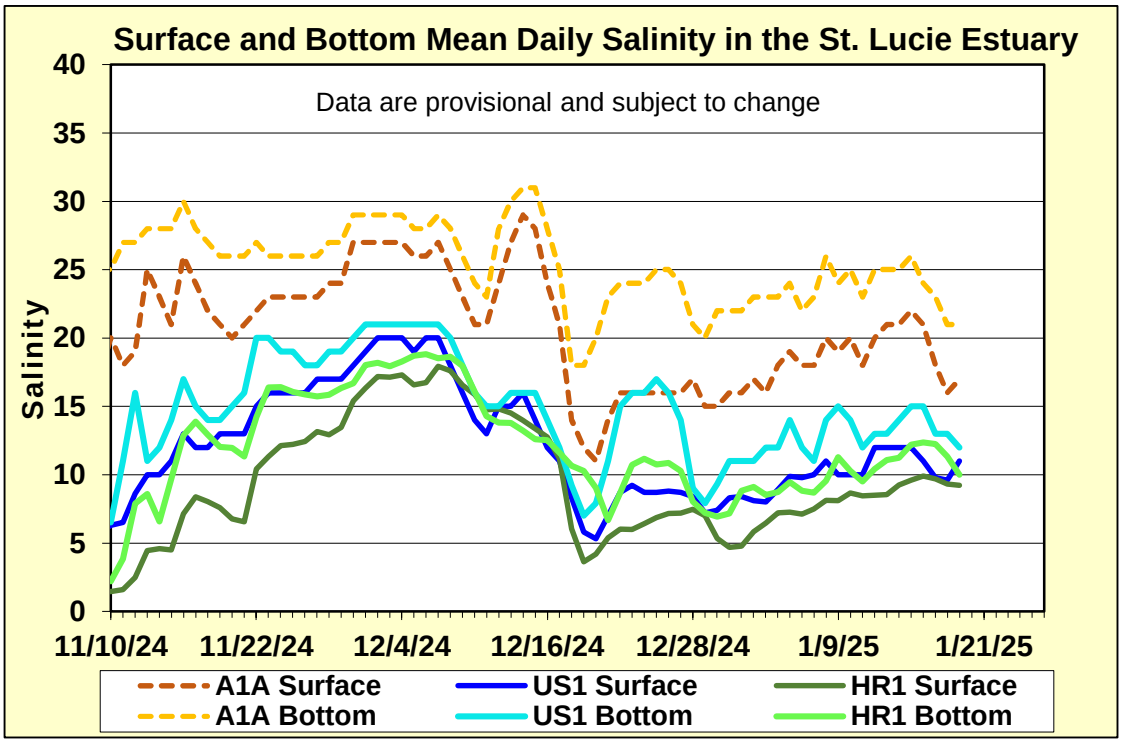


Figure ES-3. Mean daily salinity at the A1A, US1, and HR1 sites in the St. Lucie Estuary.

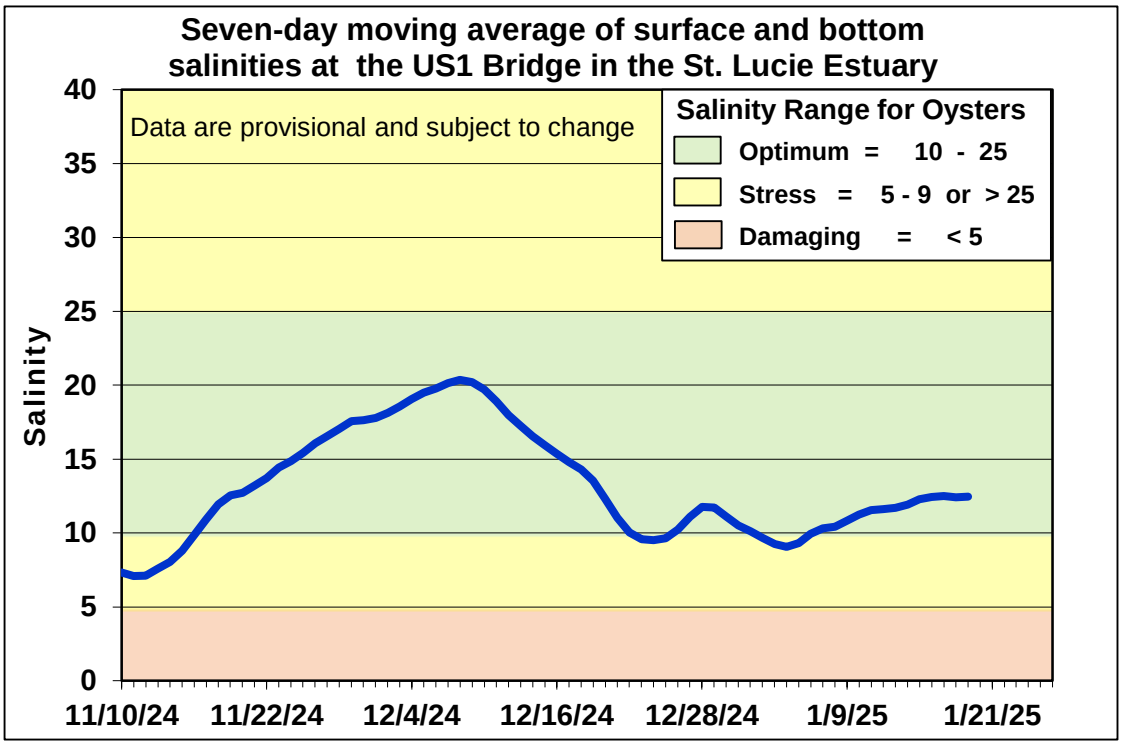


Figure ES-4. Seven-day moving average of the surface and bottom salinities at the US1 Bridge in the St. Lucie Estuary.

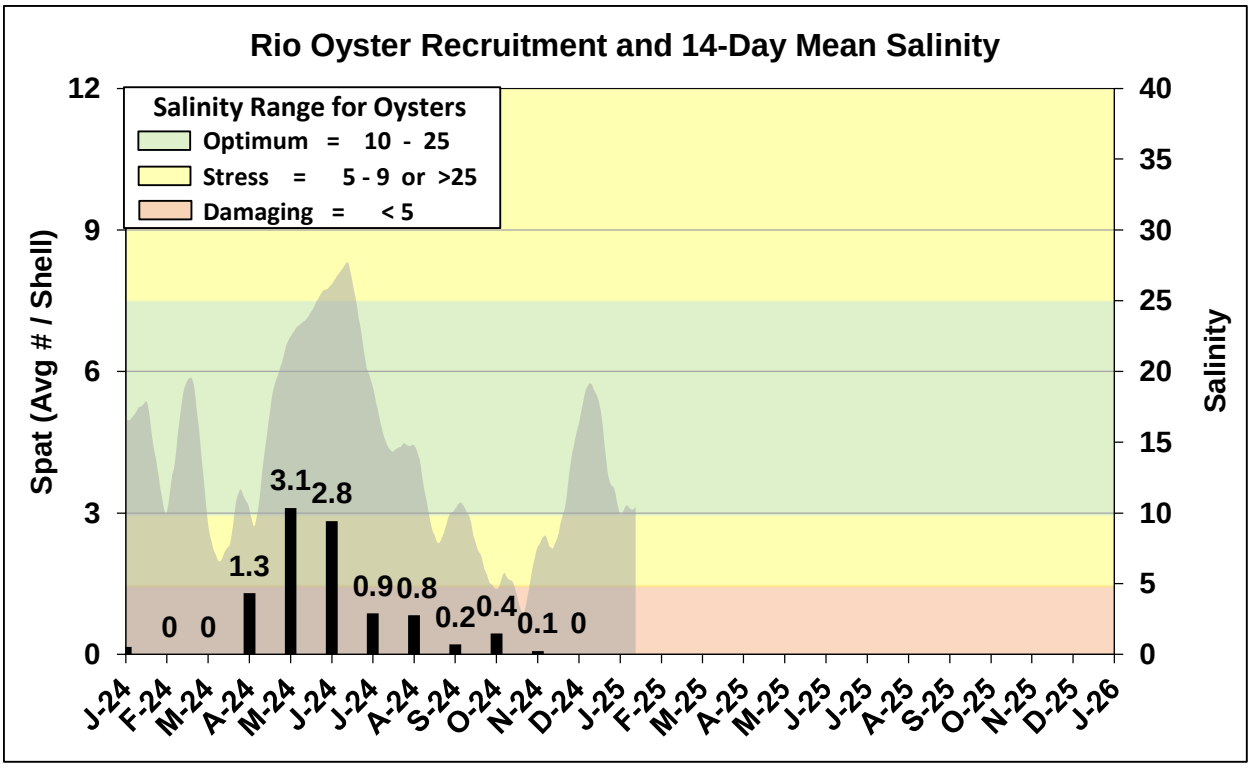


Figure ES-5. Mean oyster recruitment at the Rio oyster monitoring station and 14-day mean salinity at US1 Bridge.

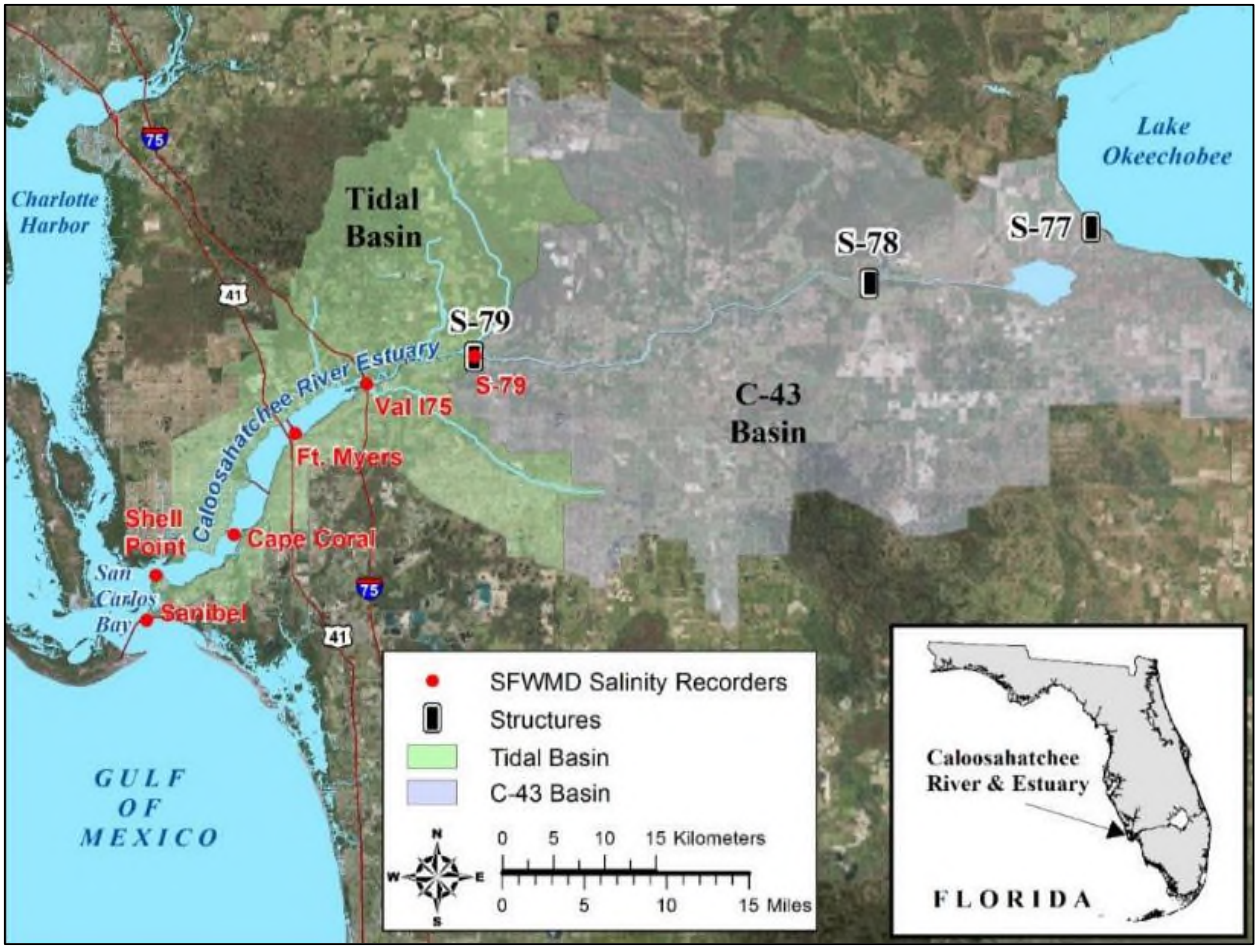


Figure ES-6. Basins, water control structures, and salinity monitoring sites in the Caloosahatchee River Estuary.

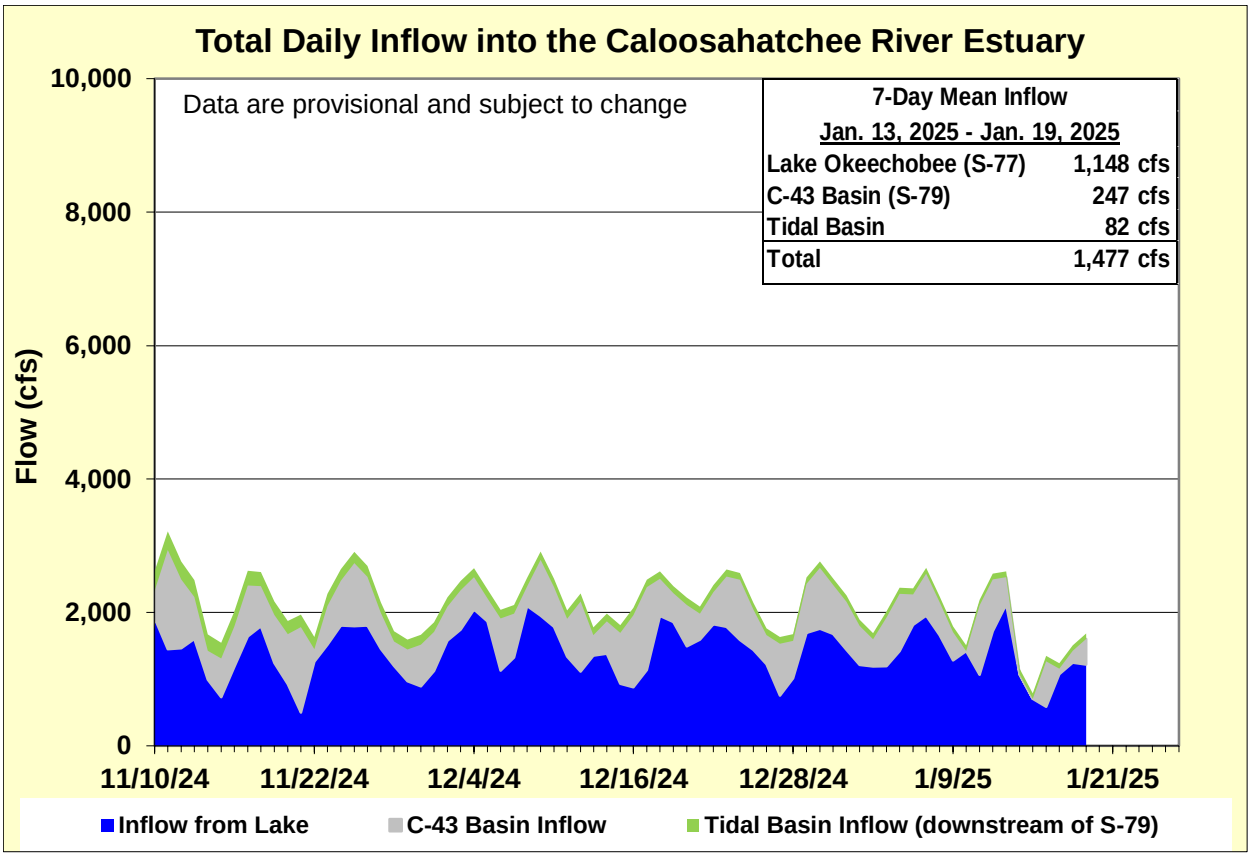


Figure ES-7. Total daily inflows from Lake Okeechobee, and runoff from the C-43 and Tidal basins into the Caloosahatchee River Estuary.

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 in the upper estuary sites is for the protection of tape grass and the envelope in the lower estuary is the optimum salinity range for adult eastern oysters (*Crassostrea virginica*). Data are provisional.

Sampling Site	Surface	Bottom	Optimum Envelope
S-79 (Franklin Lock)	**0.2** (0.2)	**0.2** (0.2)	0.0 – 10.0
Val I-75	**0.3** (0.3)	**0.3** (0.3)	0.0 – 10.0
Fort Myers Yacht Basin	**3.3** (2.0)	**5.8** (3.9)	0.0 – 10.0
Cape Coral	**11.3** (10.5)	**13.9** (12.6)	10.0 – 25.0
Shell Point	**24.8** (22.9)	**26.1** (24.2)	10.0 – 25.0
Sanibel	**29.5** (27.9)	**29.9** (29.1)	10.0 – 25.0

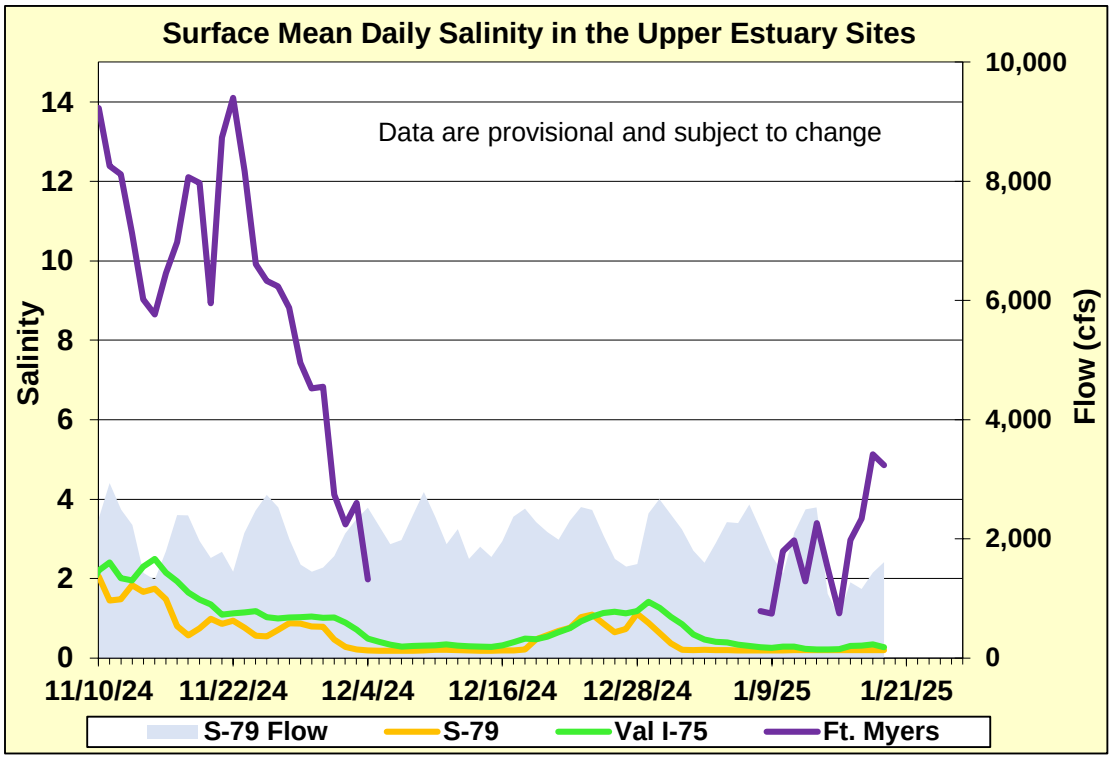


Figure ES-8. Mean daily salinity at upper Caloosahatchee River Estuary monitoring sites and mean daily flow at S-79.

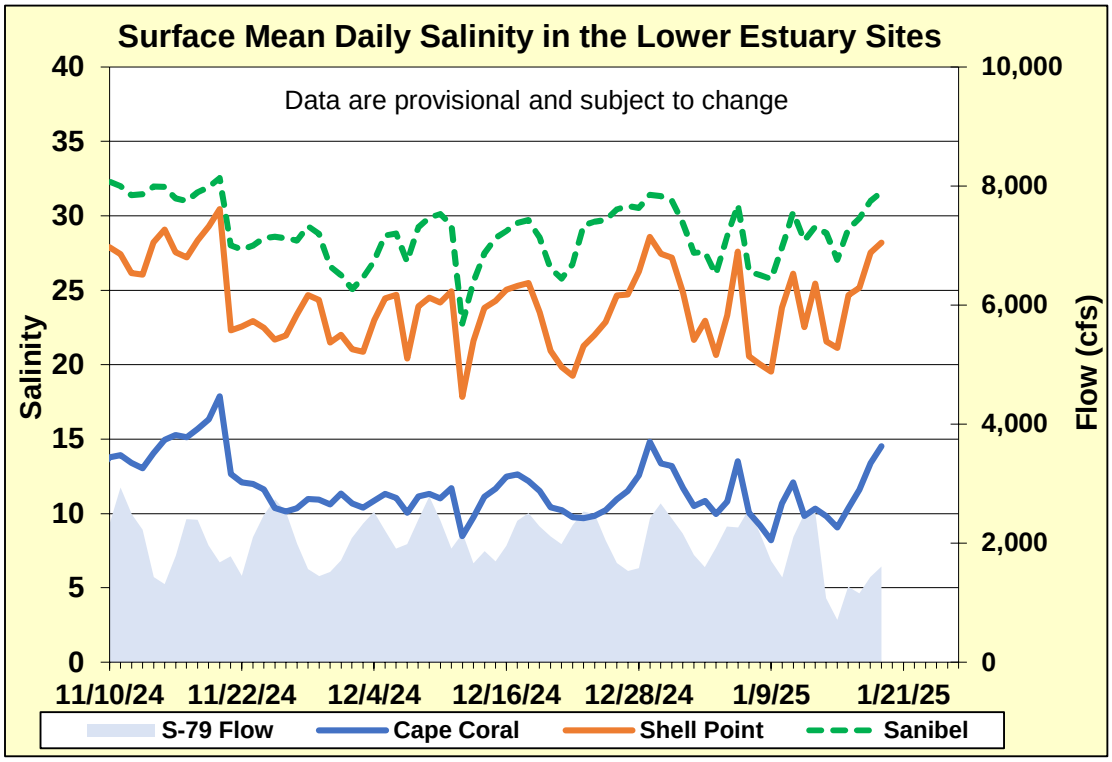


Figure ES-9. Mean daily surface salinity at lower Caloosahatchee River Estuary monitoring sites and mean daily flow at S-79.

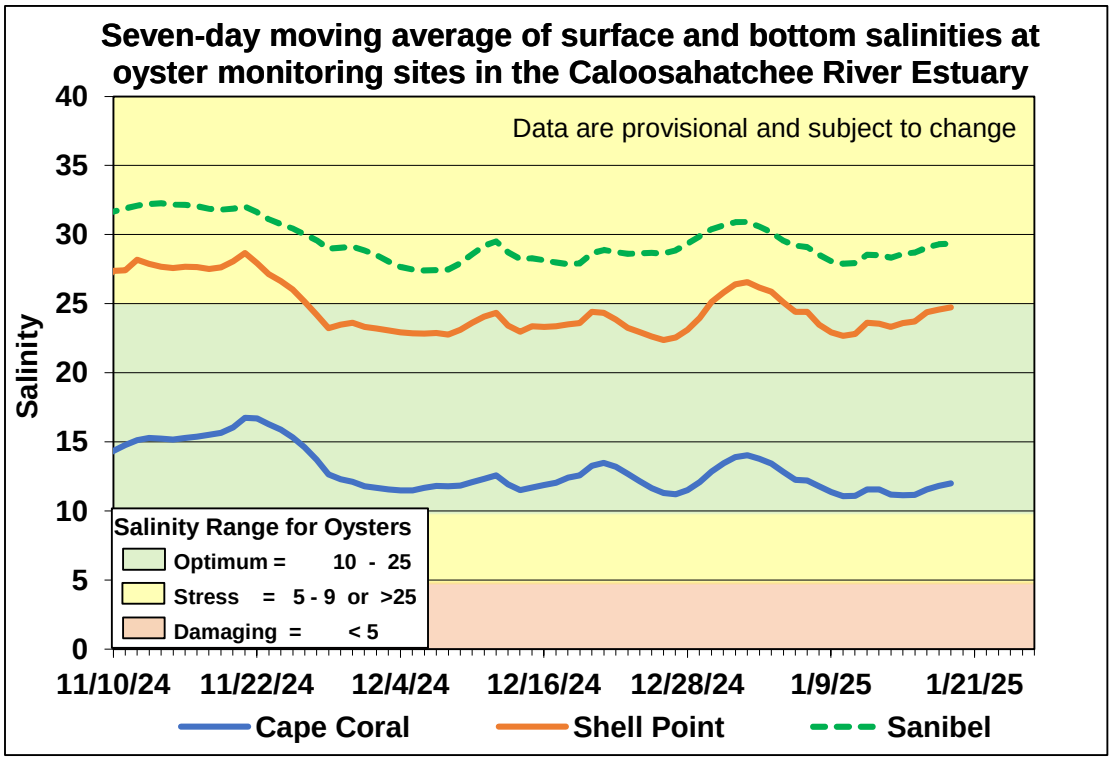


Figure ES-10. Seven-day moving average of surface and bottom salinities at Cape Coral, Shell Point, and Sanibel monitoring sites in the Caloosahatchee River Estuary.

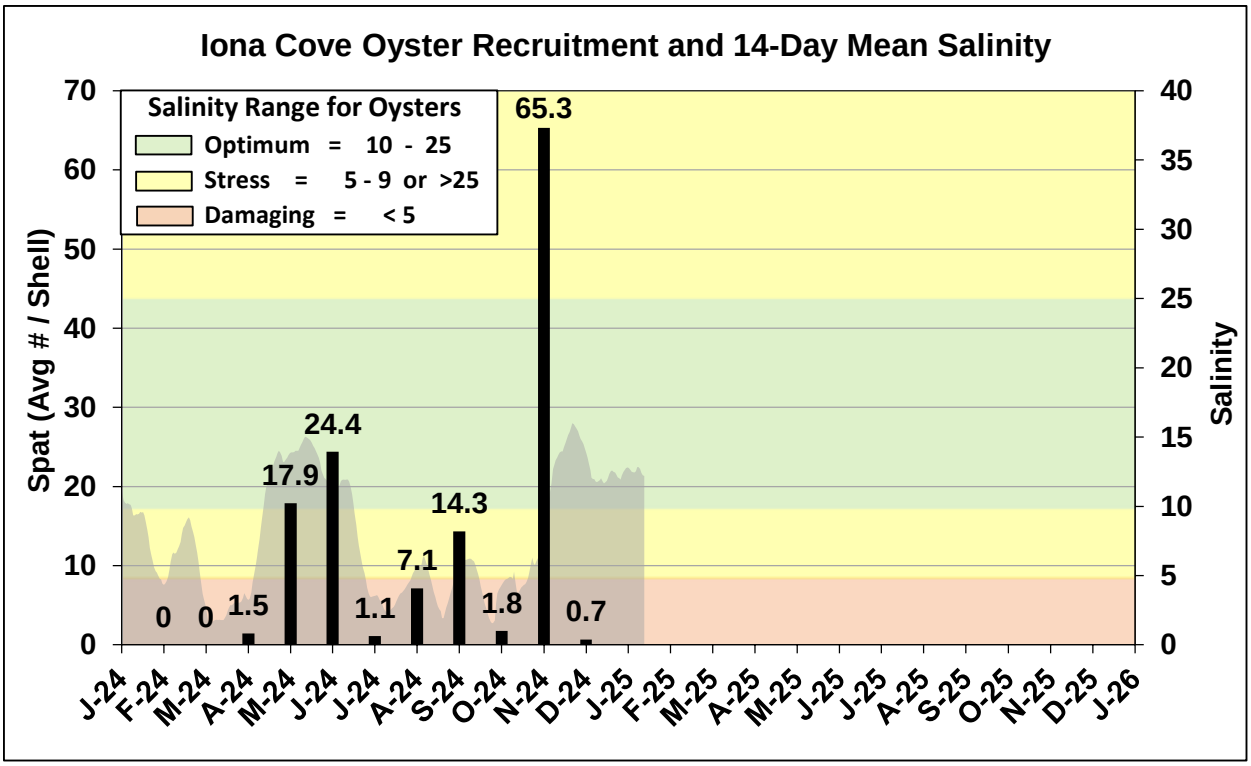


Figure ES-11. Mean oyster recruitment at the Iona Cove oyster monitoring station and 14-day mean salinity at Cape Coral.

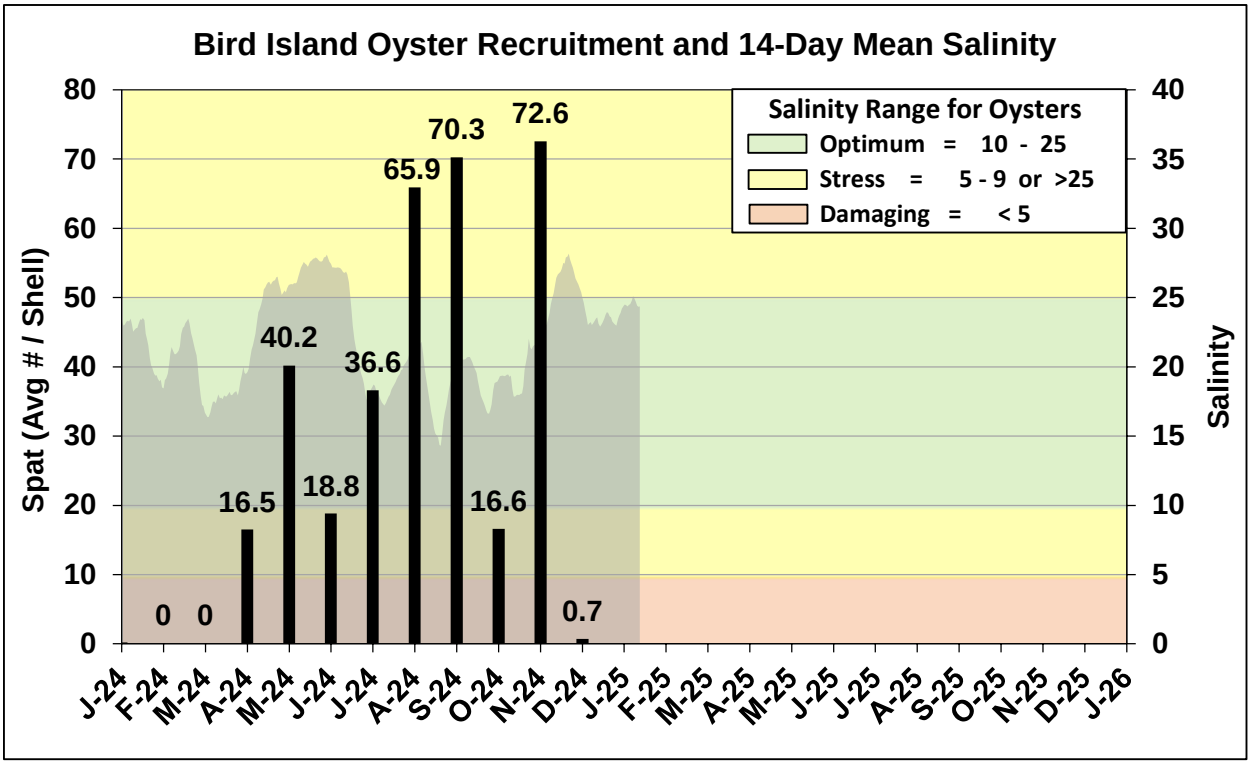


Figure ES-12. Mean oyster recruitment at the Bird Island oyster monitoring station and 14-day mean salinity at Shell Point.

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	450	69	0.5	0.4
B	650	69	0.3	0.4
C	1,200	69	0.3	0.4
D	2,000	69	0.3	0.4

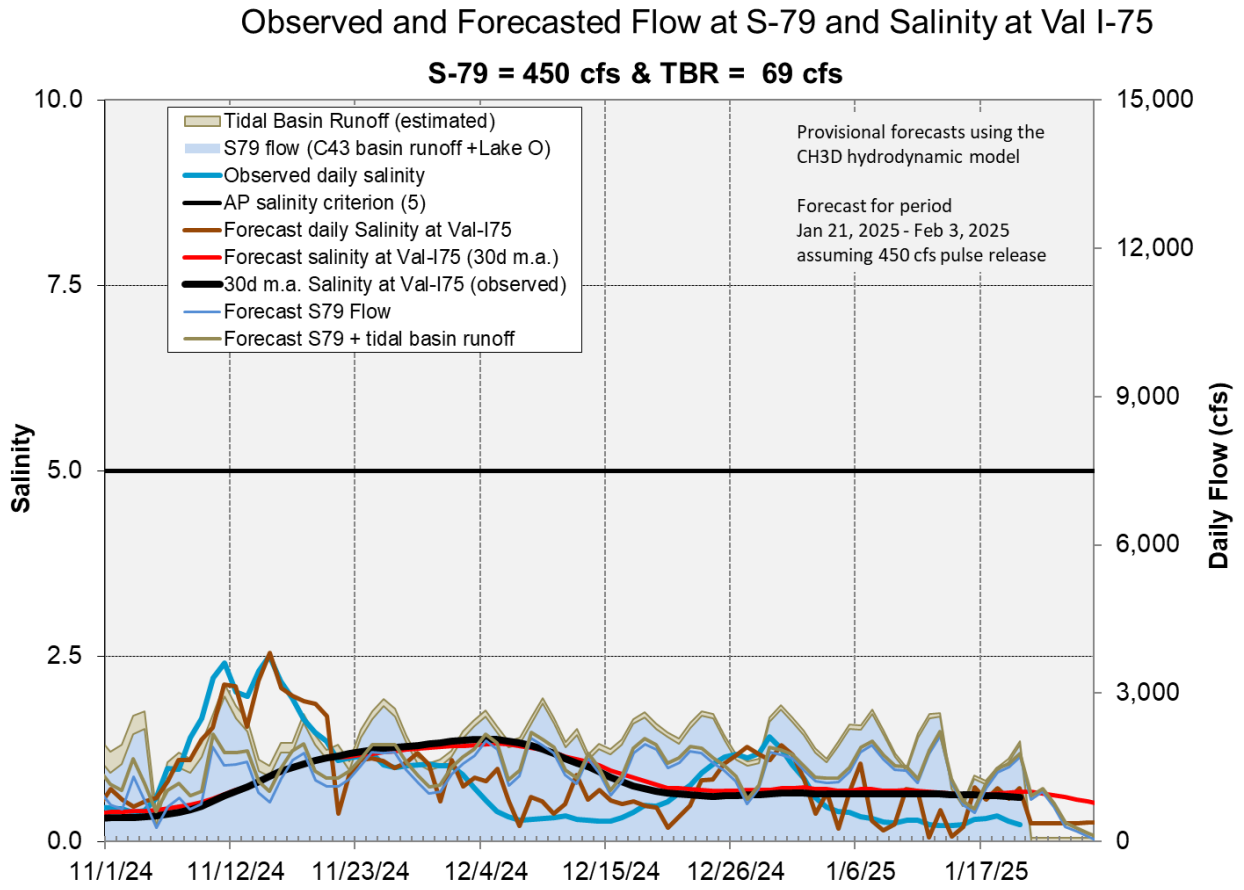


Figure ES-13. Surface salinity forecast at the Val I-75 site assuming a 450 cfs pulse release at S-79.

Stormwater Treatment Areas

STA-1E: STA-1E Central Flow-way is offline for construction activities. An operational restriction is in place in the Western Flow-way for post-construction vegetation grow-in. Online treatment cells are near target stage. The 365-day Phosphorus Loading Rate (PLR) for the Western Flow-way is below 1.0 g/m^2/year (**Figure S-1**).

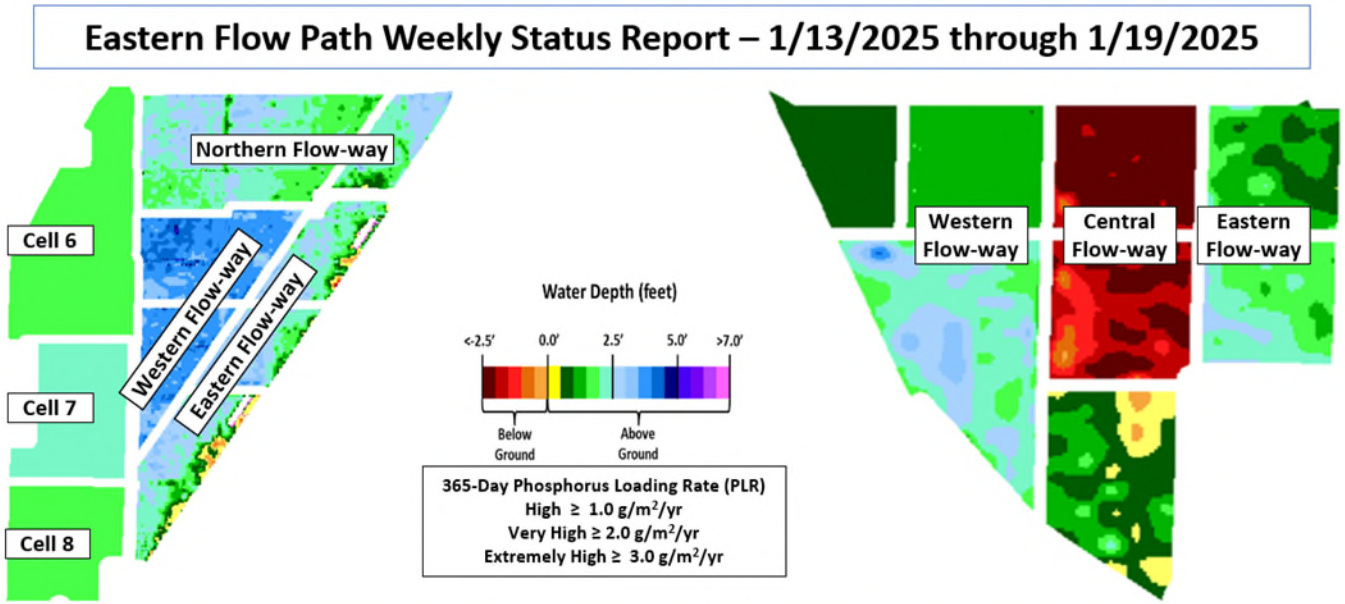
STA-1W: An operational restriction is in place in the Northern Flow-way for vegetation management activities. Treatment cells are near target stage. Vegetation in the Western and Eastern flow-ways is highly stressed. The 365-day PLRs for the Eastern, Western, and Northern Flow-ways are high (**Figure S-1**).

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

STA-3/4: An operational restriction is in place in the Eastern Flow-way for post-drawdown vegetation grow-in. Treatment cells are near or above target stage. Vegetation in the Central Flow-way is highly stressed. The 365-day PLRs for the Central and Western Flow-ways are high (**Figure S-2**).

STA-5/6: Treatment cells are near or below target stage. All treatment cells have highly stressed or stressed vegetation conditions. The 365-day PLRs for Flow-ways 1, 2, 6, 7, and 8 are below 1.0 g/m^2/year, and the 365-day PLRs for Flow-ways 3, 4, and 5 are high. (**Figure S-3**).

For definitions on STA operational language see glossary following figures.

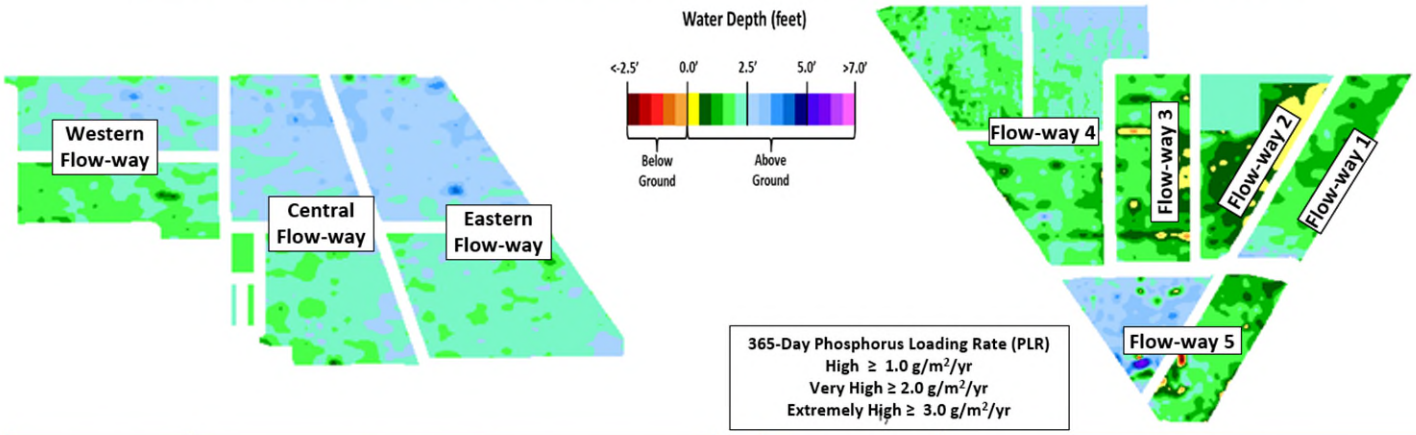


STA-1W	Flow-way Status
Western	• High 365-day PLR • Highly stressed vegetation conditions
Eastern	• High 365-day PLR • Highly stressed vegetation conditions
Northern	• Stressed vegetation conditions • Planting emergent vegetation
Cell 6	
Cell 7+8	

STA-1E	Flow-way Status
Western	• Post-construction vegetation grow-in
Central	• Offline for construction activities
Eastern	

Figure S-1. Eastern Flow Path Weekly Status Report

Central Flow Path Weekly Status Report – 1/13/2025 through 1/19/2025



STA-3/4	Flow-way Status
Western	• High 365-day PLR • Exotic vegetation control
Central	• Highly stressed vegetation conditions • High 365-day PLR • Exotic vegetation control
Eastern	• Post-drawdown vegetation grow-in

STA-2	Flow-way Status
Flow-way 1	
Flow-way 2	• High 365-day PLR • Post-construction vegetation grow-in • Stressed vegetation conditions
Flow-way 3	• High 365-day PLR • Stressed vegetation conditions
Flow-way 4	• Planting emergent vegetation
Flow-way 5	• Highly stressed vegetation conditions

Figure S-2. Central Flow Path Weekly Status Report

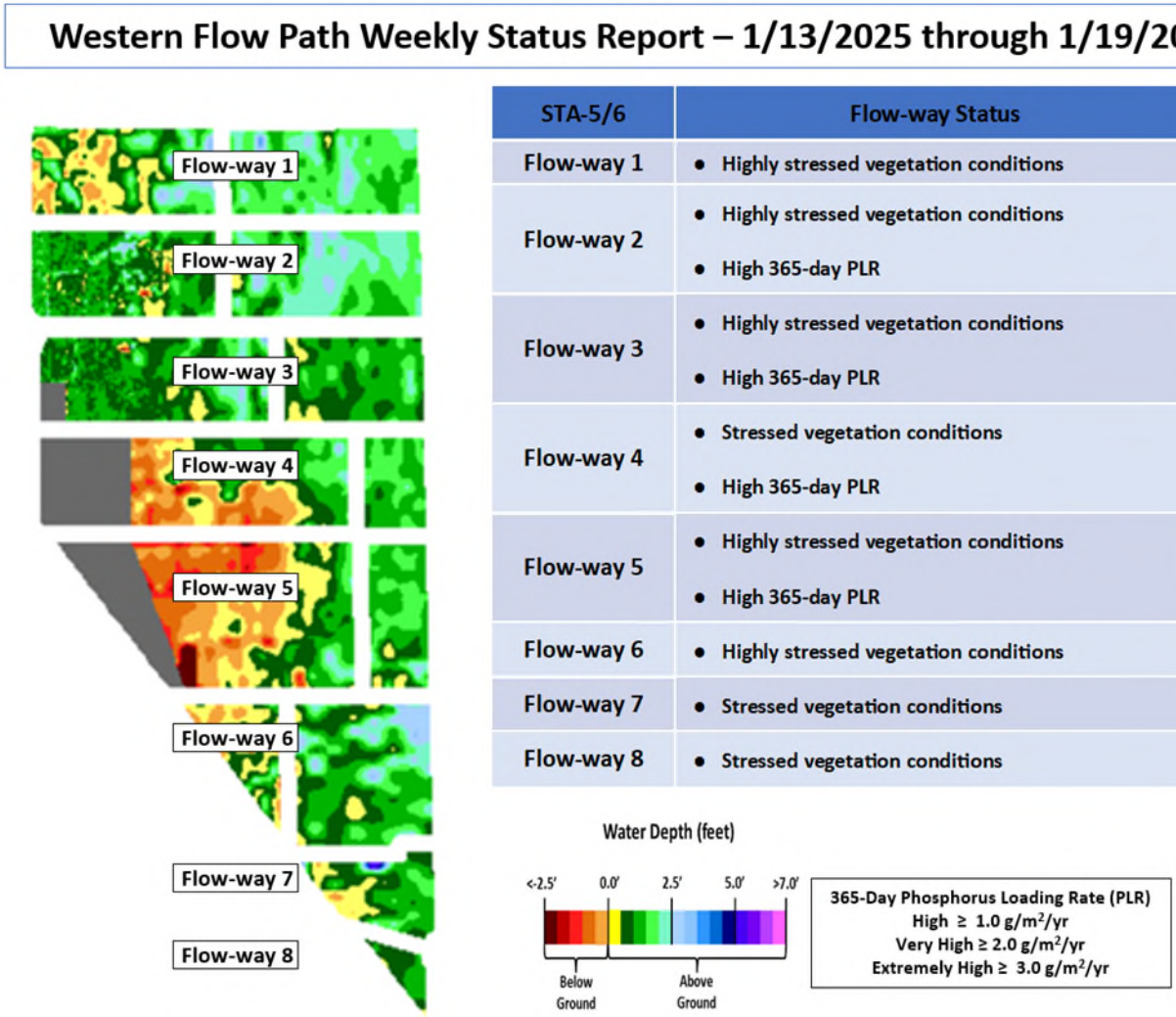


Figure S-3. Western Flow Path Weekly Status Report

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, µg/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

More rainfall occurred throughout the Everglades Protection Area (EPA) last week than has fallen in any week over the last month. WCA-1: Stages showed a slight increase at the 1-8C gauge within the Refuge but remain below the A2 zone regulation line by 0.23 on Monday, January 20, 2025. WCA-2A: Stage at gauge 2A-17 remains above but following the slope of the regulation line. The average on Monday was 1.14 feet above the Zone A line. WCA-3A: The 3-Gauge average stage continues to decline faster than the slope of the regulation line, stages were below the Zone A regulation line by about 0.65 feet on Monday. WCA-3A North: Stage at Gauge 62 (NW corner) remained steady last week with the average on Monday remaining 0.64 feet below the Upper Schedule. See figures **EV-1** through **EV-4**.

Water Depths

The SFWDAT model output for January 19, 2025, illustrates shallower conditions across WCA-3A northeast compared to a month ago. The WCA-3A North sub-basin continues to dry out and is approaching the soil surface. The ponded conditions in southern/eastern WCA3A and in northern Shark River Slough (SRS) continue to contract. Most of the Big Cypress Basin, both to the north and south of Tamiami trail, remains near or below soil surface. Hydrologic connectivity within the major sloughs of Everglades National Park (ENP) has diminished over the past two months, but depths remain conducive for water flow. Below average conditions are present along the L-67 levees in WCA-3A South. See figures **EV-5** through **EV-6**.

Taylor Slough and Florida Bay

All stages across Taylor Slough decreased from January 12th to 16th, with an average decrease of 0.03 feet. Changes ranged from −0.05 feet at Taylor Slough Bridge (TSB) in the northern slough to −0.02 feet at EPSW in the C-111 area (**Figure EV-8 and Figure EV-9**). Taylor Slough water levels remain above the recent average for this time of year by 5.1 inches compared to before the Florida Bay initiative (starting in 2017), a decrease of 0.2 inches relative to last week's comparison. The Craighead Pond (CP) and TSB stages remain below estimated historical levels (circa 1900) by 0.41 and 0.91 feet, respectively.

Average Florida Bay salinity was 22.4, a decrease of 0.2 from January 12th. Salinity decreased at most sites, with changes ranging from −2.8 at Terrapin Bay (TB) in the central nearshore region to +0.6 at Buoy Key (BK) in the western region (**Figure EV-8**). Salinity is at the WY2001-2016 Interquartile Range (IQR) 25th percentile in the eastern region, and below the IQR and above estimated historical levels (circa 1900) in the central and western regions (**Figure EV-10**). Average Florida Bay salinity remains below its recent average for this time of year by 3.1, a decrease of 0.9 relative to last week's comparison.

Salinity at the Taylor River (TR) station in the mangrove zone (tracked for the Florida Bay MFL) was 0.4. The 30-day moving average was 0.4 (**Figure EV-11**), with no change from

January 12th. The 365-day moving sum of flow from the five major creeks (McCormick Creek, Taylor River, Mud Creek, Trout Creek, West Highway Creek) was 327,784 acre-feet, a decrease of 4,858 acre-feet from January 12th (**Figure EV-11**).

Average rainfall across Taylor Slough and Florida Bay was 0.03 inches over the past week, based on the 18 gauges used for this report. Rainfall ranged from 0.0 inches at six stations to 0.13 inches at Long Sound (LS) in the eastern nearshore region (**Figure EV-12**). Wind directions and speeds in Florida Bay ranged from 1.3 mph E on January 14th to 21.9 mph N on January 15th (**Figure EV-12**).

Average daily flow from the five major creeks totaled 689 acre-feet from January 13th to 16th, with net positive flows for this period. Total daily creek flow ranged from −80 acre-feet on January 13th to 1,808 acre-feet on January 15th (**Figure EV-13**). Average daily flow was 2,756 acre-feet below estimated historical levels (circa 1900).

Implications for water management

The ecology of the Everglades benefits from recession rates from 0.0 to 0.12 feet per week this time of year, with an ideal rate near 0.06 given the drier than average rainfall amounts predicted. Maintaining a hydroperiod supportive of upcoming wading bird nesting at the critical Alley North colony in WCA-3A North is very uncertain. Depth in this region is below 1.0 foot and la Nina climatic conditions persist which suggest a drier than average dry season. Maintaining an average to below average recession rate in this region will be beneficial to wading bird nesting success at this Colony, made more ecologically important as wading birds have experienced poor nesting the last three years. Florida Bay salinity is at a good position as we continue into the dry season and will continue to benefit from maintaining freshwater input to the system when available. Maintaining higher water depths in the WCAs now can help support wading bird nesting success throughout the nesting season. Although conserving water in WCA-3A could lead to increased salinity in the Florida Bay, current favorable salinity levels may provide an opportunity for a reduction in discharge from the WCAs to ENP. This approach could deliver broader landscape-wide ecological benefits across the EPA while balancing ecological priorities. Individual regional recommendations can be found in **Table EV-2**.

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

Everglades Region	Rainfall (inches)	Stage change (feet)
WCA-1	0.40	+0.00
WCA-2A	0.40	−0.08
WCA-2B	0.55	+0.11
WCA-3A	0.32	−0.06
WCA-3B	0.29	−0.03
ENP	0.32	−0.03

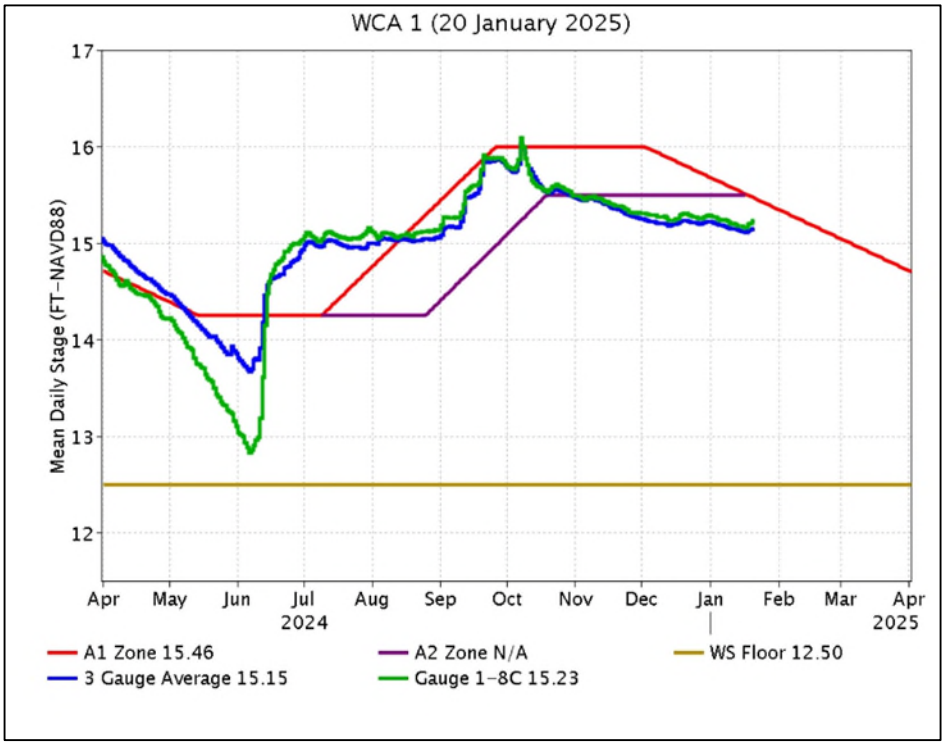


Figure EV-1. WCA-1 stage hydrographs and regulation schedule.

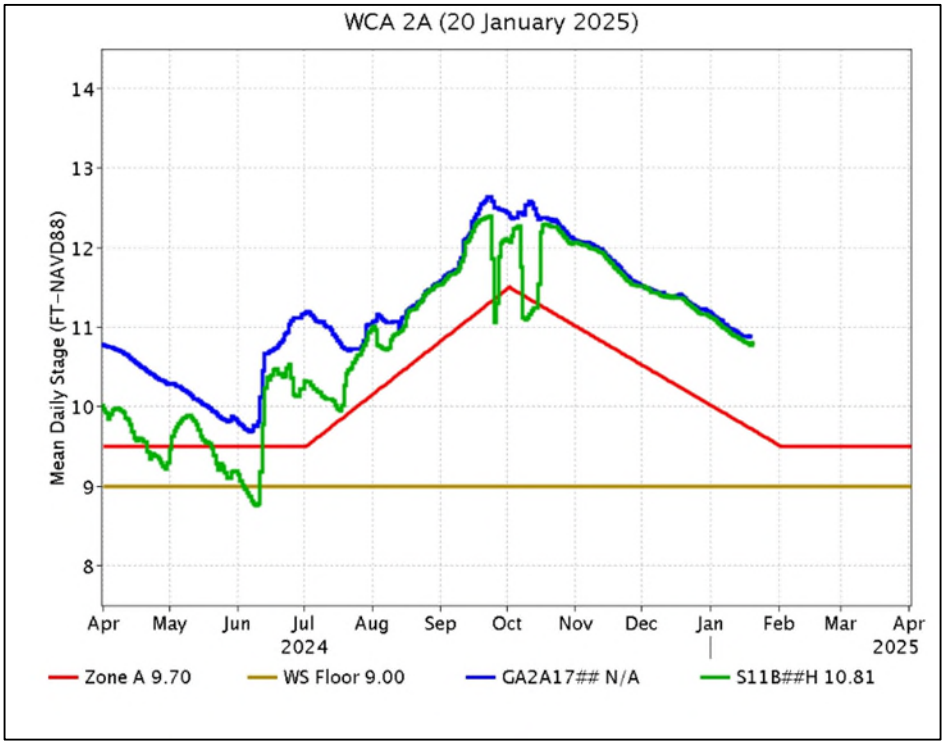


Figure EV-2. WCA-2A stage hydrographs and regulation schedule.

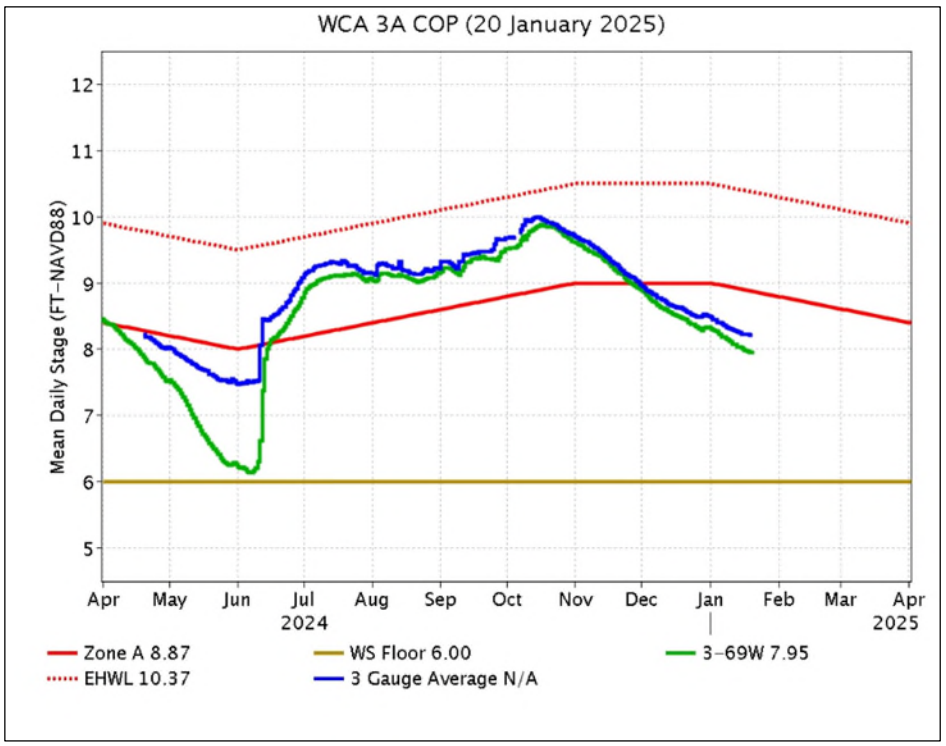


Figure EV-3. WCA-3A stage hydrographs (three-gauge average, 3-69W) and regulation schedule.

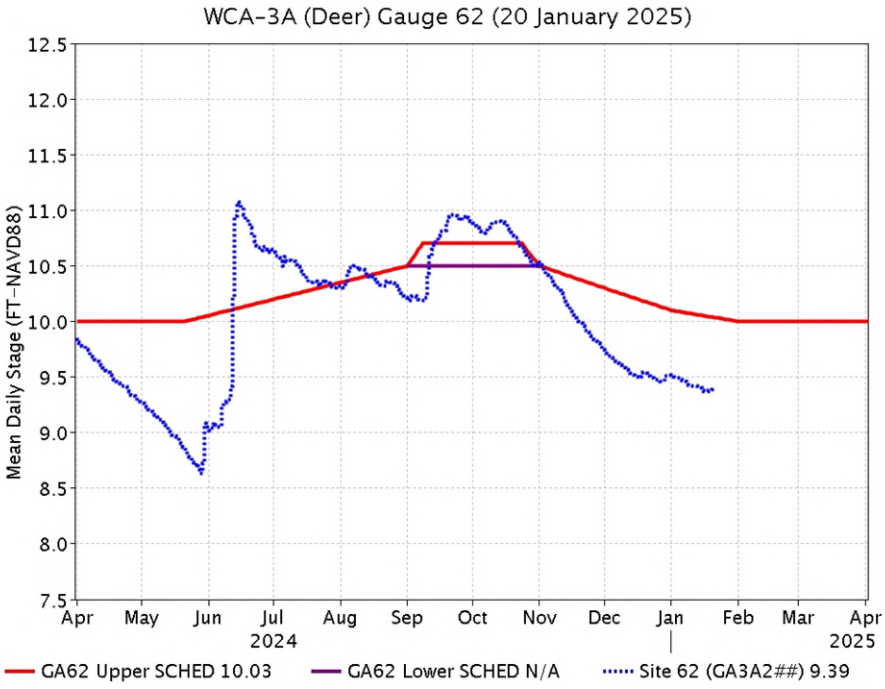


Figure EV-4. WCA-3A stage hydrograph (Deer gauge; Site 62) and GA62 regulation schedule.

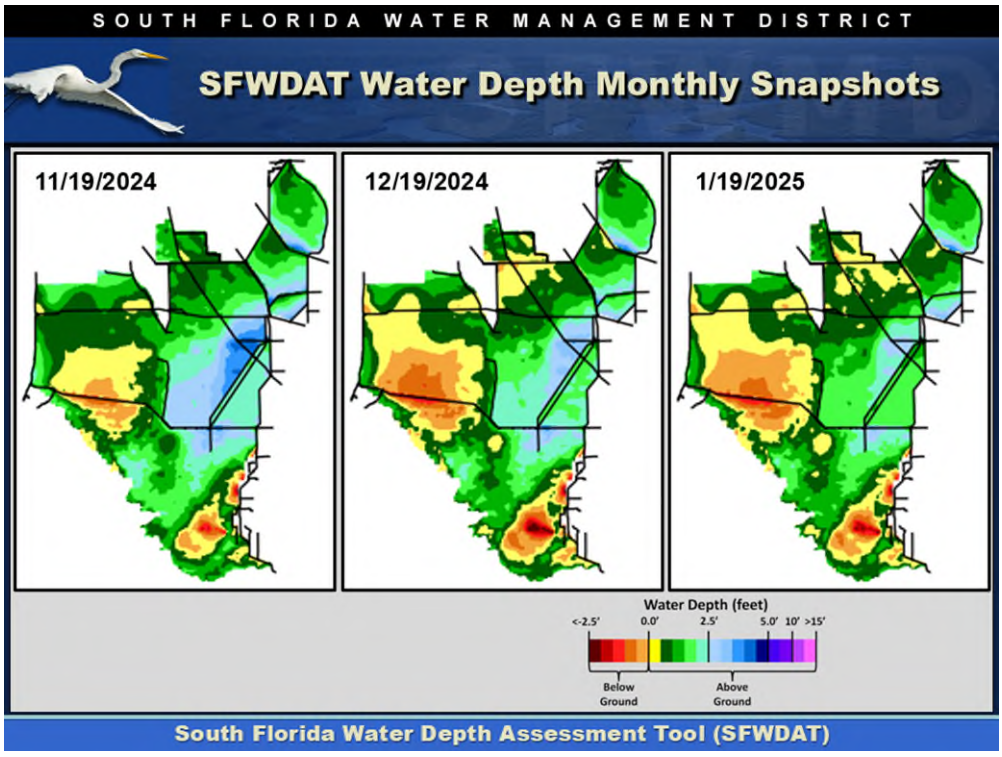


Figure EV-5. Everglades water depths from two months ago (left), one month ago (center) and present (right), based on SFWDAT.

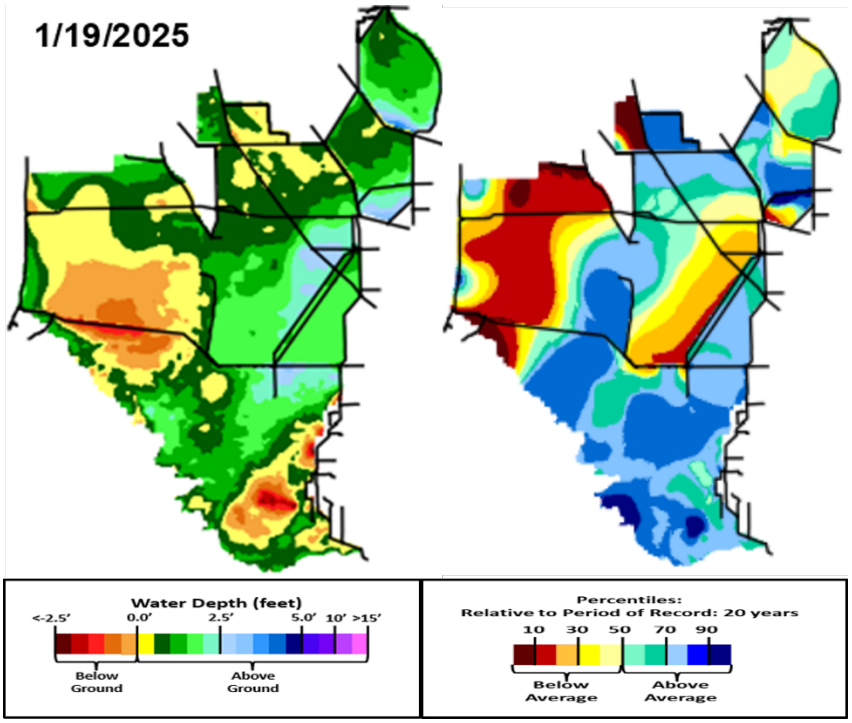


Figure EV-6. Present water depths (January 19th, 2025) compared to the day of year average over the previous 20 years.

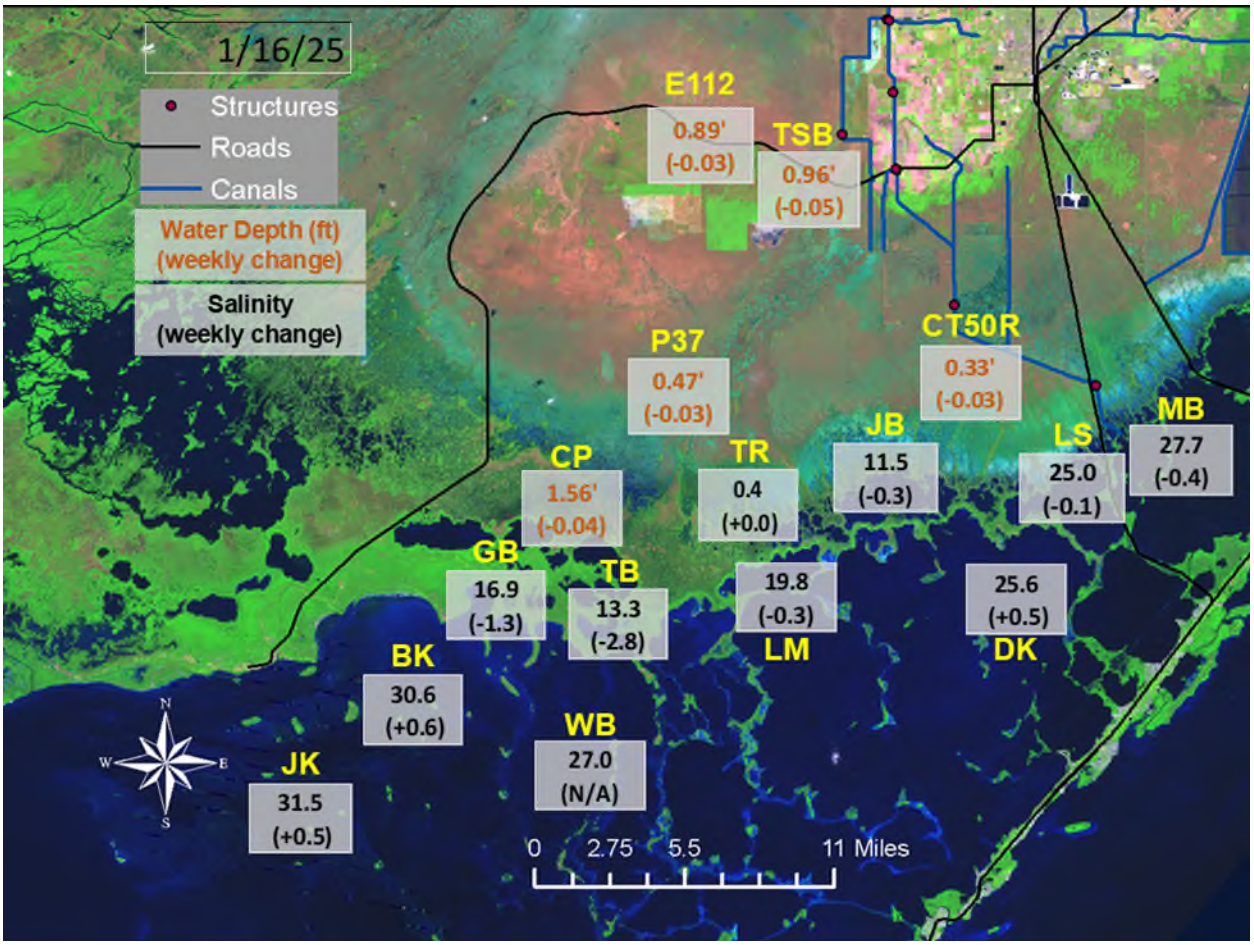


Figure EV-8. Taylor Slough water depths and Florida Bay salinities with changes since a week ago.

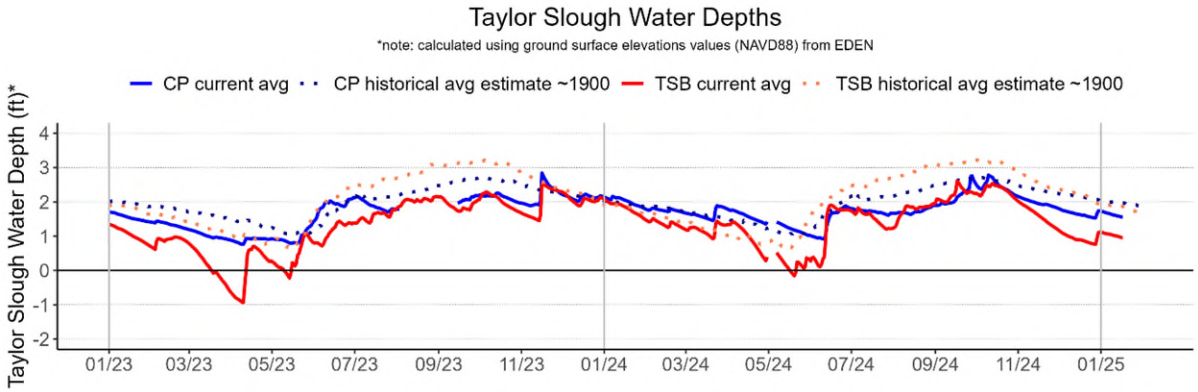


Figure EV-9. Taylor Slough water depth time series for Taylor Slough Bridge (TSB; northern slough) and Craighead Pond (CP; southern slough).

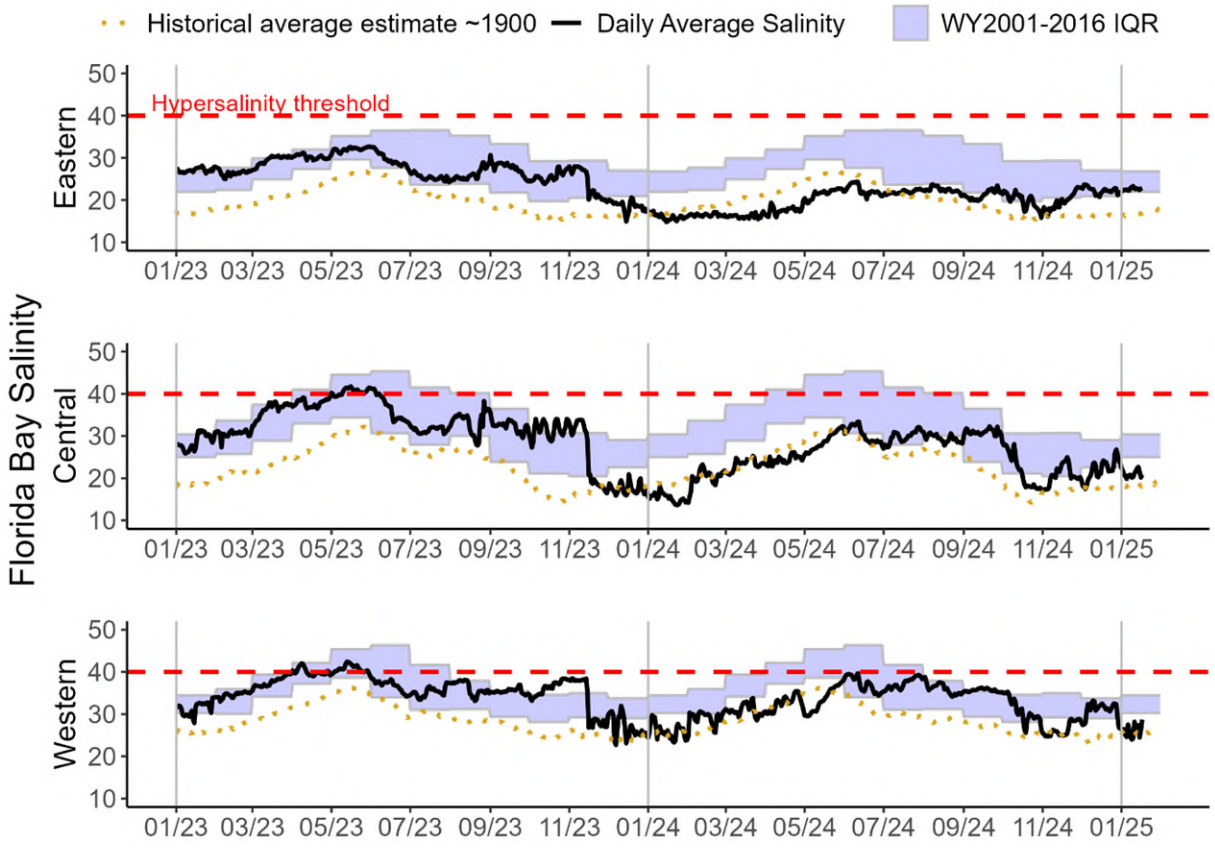


Figure EV-10. Eastern (top panel), Central (middle panel) and Western (bottom panel) Florida Bay daily average salinities with WY2001-2016 interquartile (25-75 percentile) ranges (IQR) and estimated historical daily average salinities. The hypersalinity threshold indicates the level at which salinities start to become harmful to seagrass.

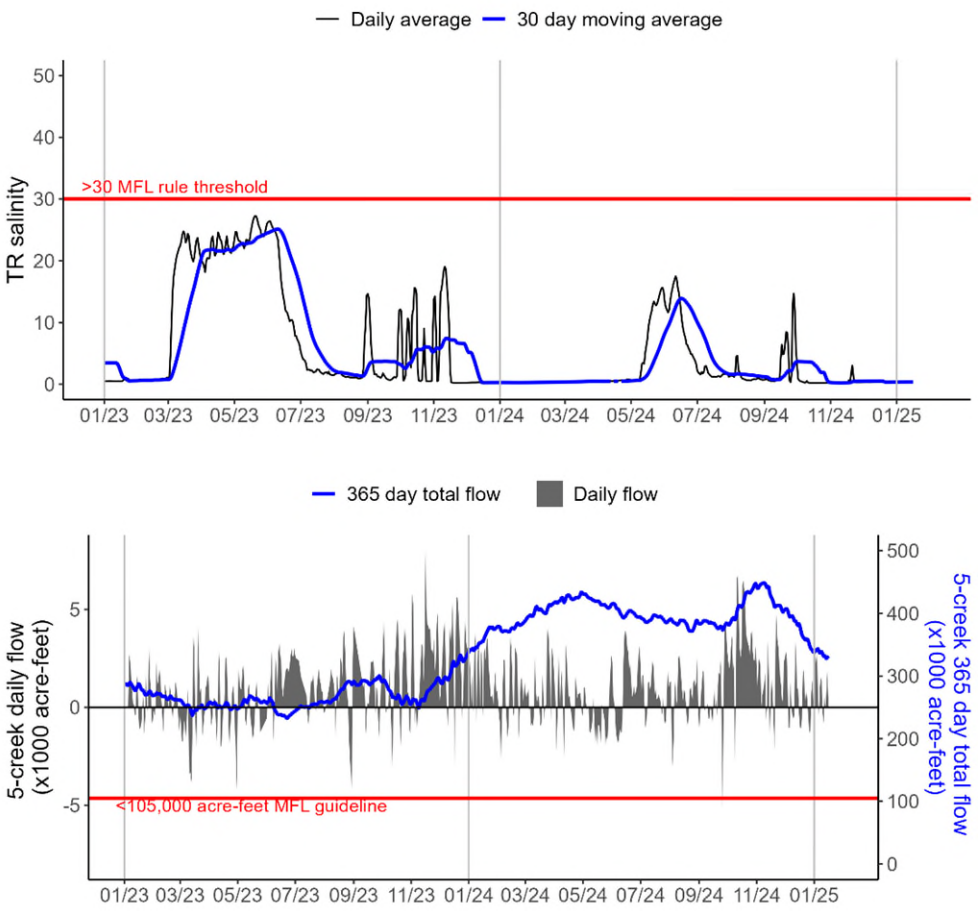


Figure EV-11. Salinity at Taylor River (TR; top) and creek inflow to Florida Bay (bottom) from the five major creeks (McCormick Creek, Taylor River, Mud Creek, Trout Creek, and West Highway Creek). The 30-day moving average salinity and 365-day total creek flow are tracked for the Florida Bay MFL criteria.

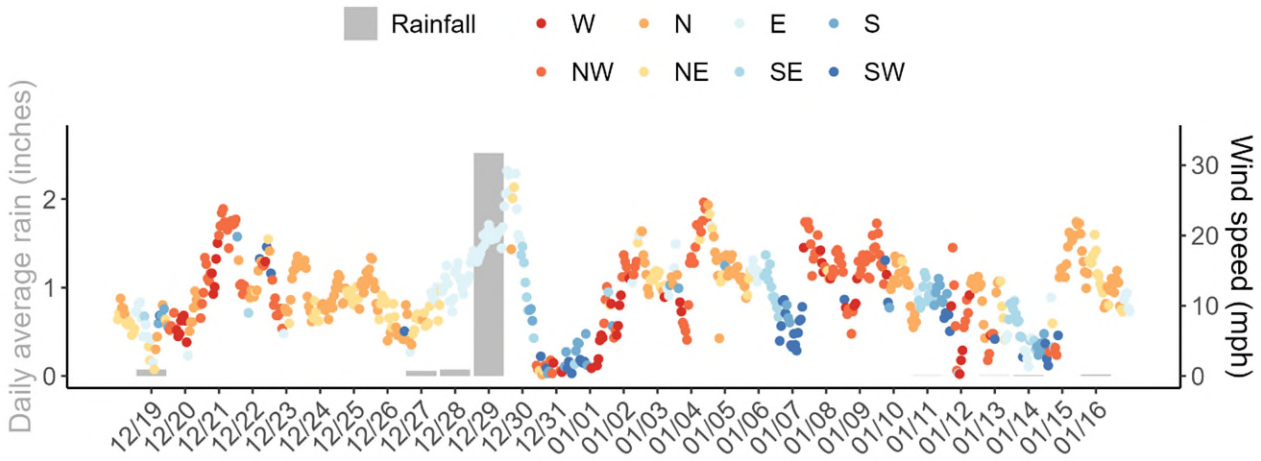


Figure EV-12. Daily average rain across Taylor Slough and Florida Bay, along with hourly average wind speed and direction (measured at Long Key) in Florida Bay over the past four weeks.

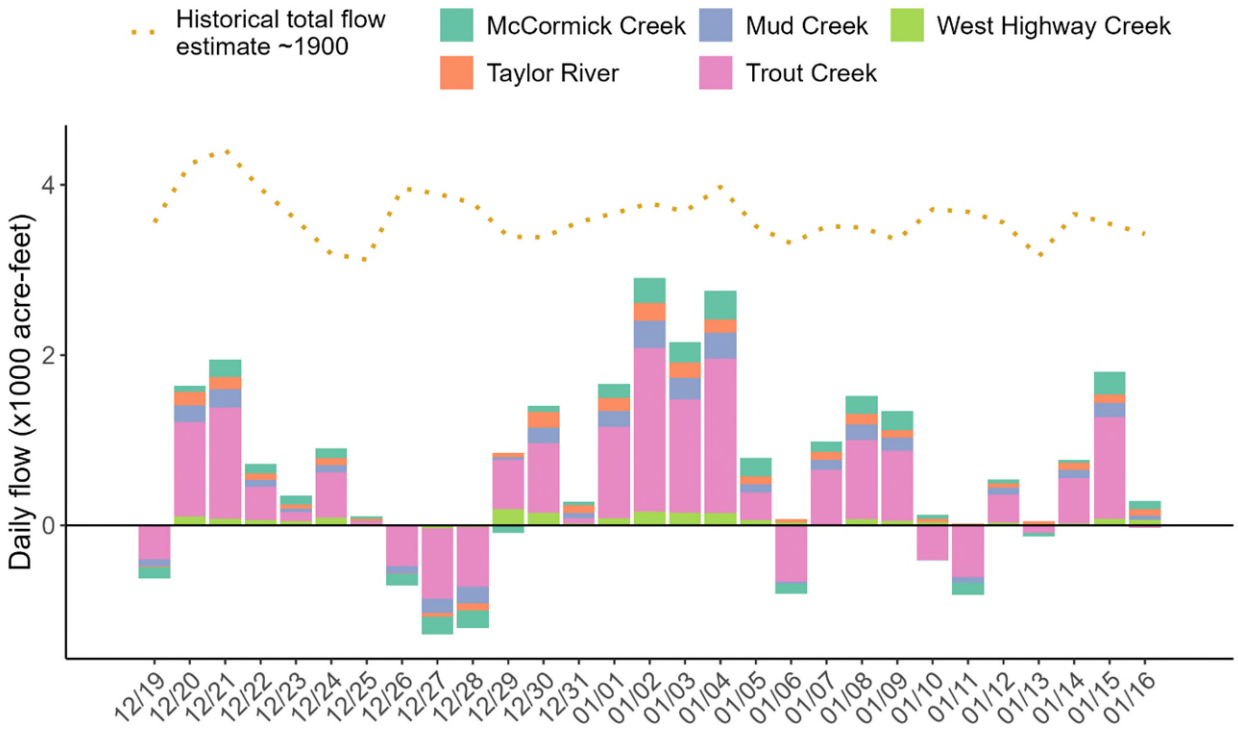


Figure EV-13. Daily average creek flow summed between five creeks with estimated historical daily flow over the past four weeks.

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

SFWMD Everglades Ecological Recommendations, January 20, 2025 (red is new)			
	Weekly change	Recommendation	Reasons
WCA-1	Stage remained unchanged	Recession rate of less than 0.06 ft per week.	Protect within basin and downstream habitat and wildlife.
WCA-2A	Stage decreased by 0.08 ft	Recession rate of less than 0.12 ft per week.	Protect within basin and downstream habitat and wildlife.
WCA-2B	Stage increased by 0.08 ft	Recession rate of less than 0.12 ft per week.	Protect within basin and downstream habitat and wildlife.
WCA-3A NE	Stage decreased by 0.07 ft	Recession rate of less than 0.06 ft per week.	Protect within basin and downstream habitat and wildlife.
WCA-3A NW	Stage decreased by 0.03 ft	Recession rate of less than 0.06 ft per week.	
Central WCA-3A S	Stage decreased by 0.06 ft	Recession rate of less than 0.06 ft per week.	Protect within basin and downstream habitat and wildlife.
Southern WCA-3A S	Stage decreased by 0.08’		
WCA-3B	Stage decreased by 0.03 ft	Recession rate of less than 0.12 ft per week.	Protect within basin wildlife.
ENP-SRS	Stage decreased by 0.08 ft	Make discharges to ENP according to COP and TTFF protocol while adaptively considering upstream and downstream ecological conditions.	Protect within basin and upstream habitat and wildlife.
Taylor Slough	Stage changes ranged from −0.05 ft to −0.02 ft	Move water southward as possible.	When available, provide freshwater to promote water movement.
FB- Salinity	Salinity changes ranged from –2.8 to +0.6	Move water southward as possible.	When available, provide freshwater to promote water movement.

Biscayne Bay

As shown in **Figure BB-1**, mean total inflow to Biscayne Bay was 334 cfs, and the previous 30-day mean inflow was 352 cfs. The seven-day mean salinity was 30.2 at BBCW8 and 25.0 at BBCW10, both within the ideal salinity range for estuarine organisms in this region (salinity less than 35). Data were provided by Biscayne National Park.

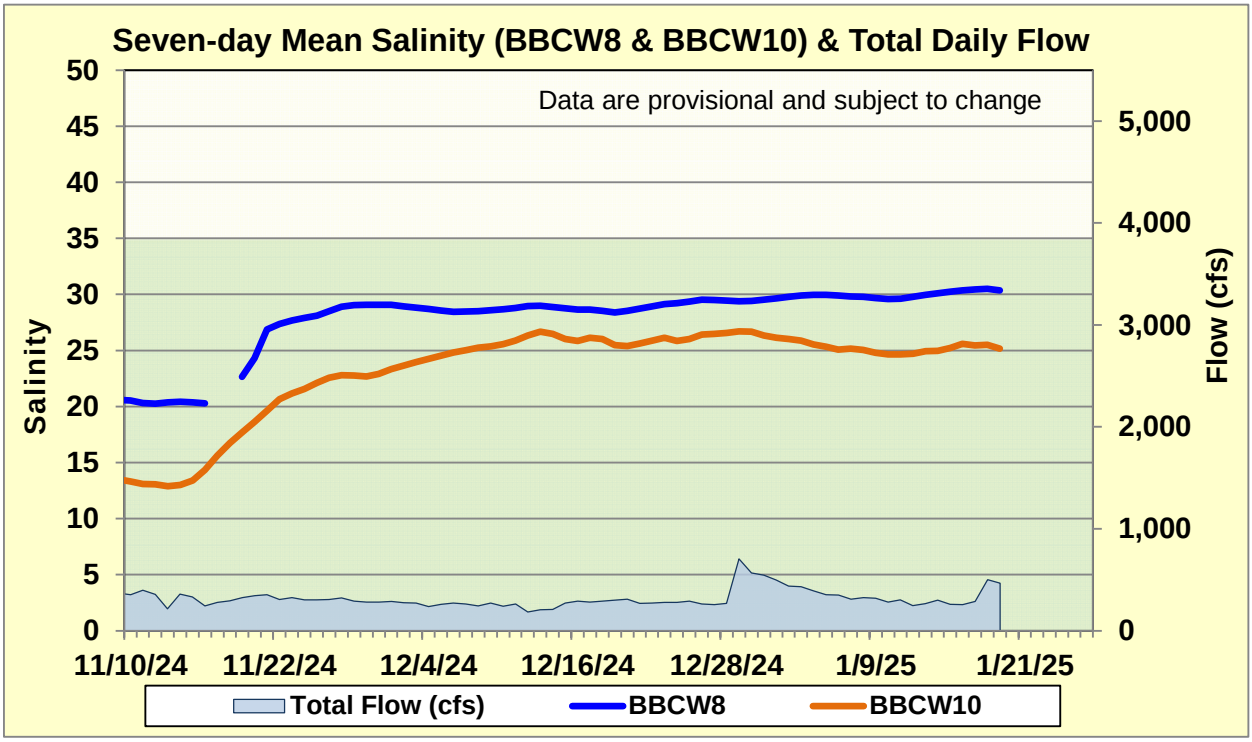


Figure BB-1. Seven-day mean salinity at BBCW8 and BBCW10 and total daily flow in Biscayne Bay. Total daily flow was calculated using flow from structures S20G, S20F, S21, S21A, S123, and S700P.