# MEMORANDUM

To: USACE Colonel James L. Booth, Major Cory Bell, Richard McMillen, SFWMD Governing Board, Executive Director Drew Bartlett, Jennifer Reynolds, Lawrence Glenn, DEP Secretary Shawn Hamilton

From: Periodic Scientists Conference Call Participants
Kevin Godsea & Avery Renshaw - J.N. "Ding" Darling National Wildlife Refuge (NWR) Complex
Holly Milbrandt & Dana Dettmar - City of Sanibel
Harry Phillips & Maya Robert - City of Cape Coral
Allie Pecenka, Rick Bartleson PhD, Matt Depaolis & Leah Reidenbach - Sanibel-Captiva Conservation Foundation
In coordination with Lee County

Subject: Caloosahatchee & Estuary Conditions Report

Reporting Period: **April 2 – 8, 2024**

This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

**Caloosahatchee Conditions Summary:** Flow to the Caloosahatchee Estuary had a 7-day average of **500 cfs** at **S-79** with a 7-day average of **594 cfs (100%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,256 cfs and has been in the optimum flow envelope** (750- 2,100 cfs; RECOVER 2020) for **3 days** after 46 days in the damaging flow envelope and 1 day in the stress envelope. The 14-day average flow at S-77 was **1,114 cfs**.

**Recommendation:** On April 6, The Army Corps resumed releases to the Caloosahatchee of 650 average cfs to S-79 to reduce stagnant conditions conducive to blue-green algal blooms. While we are supportive of this decision, we remain concerned with the high lake stage, the efficacy of the dry season strategy to reduce lake levels, and the potential for high-volume releases this summer/ fall. We ask the Army Corps to remain reactive to changing conditions in Lake Okeechobee and the Caloosahatchee River and estuary, and adjust flows as needed to support the ecological health of this system. In addition, we recommend the Corps develop and implement a long-term strategy, equitable to all stakeholders, to decrease lake levels.

**USACE Action:** With Lake Okeechobee stage within the Low Sub-band, the Tributary Hydrologic Conditions in the Normal category, the Seasonal Lake Okeechobee Net Inflow outlook in the Wet category, and the Multi-Seasonal Lake Okeechobee Net Inflow Outlook in the Normal category, Part D of the 2008 LORS suggests "S-79 up to 450 cfs and S-80 up to 200 cfs" On 2/17/24 the USACE increased releases from Lake Okeechobee to the Caloosahatchee Estuary from the Julian Keen Jr. Lock and Dam (S-77) to 4,000 cfs, 1,800 cfs at St. Lucie Lock and Dam (S-80), and up to 500 cfs to the Lake Worth Lagoon through the C-51 canal.

**Lake Flows:** In the past 7 days the total outflow from Lake Okeechobee was **23,762 AF*** with **753 AF** to the Caloosahatchee through **S-77**, **84 AF** to the St. Lucie canal though **S-308**, **1,138 AF** though the **L8 canal**, and **21,787 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **12,610 AF** (**12,610 AF** from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1). Water conservation areas received flows of **303 AF**, **11,009 AF**, and **3,572 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **6,651 AF.**
***Data missing for S-77 from 4/5- 4/8, S-310 from 4/2- 4/8 and for S-80 on 4/7.**

**Lake Level: 15.05 ft (Low Sub-Band)** **Last Week**: **15.22 ft** **Last Year: 14.28 ft**

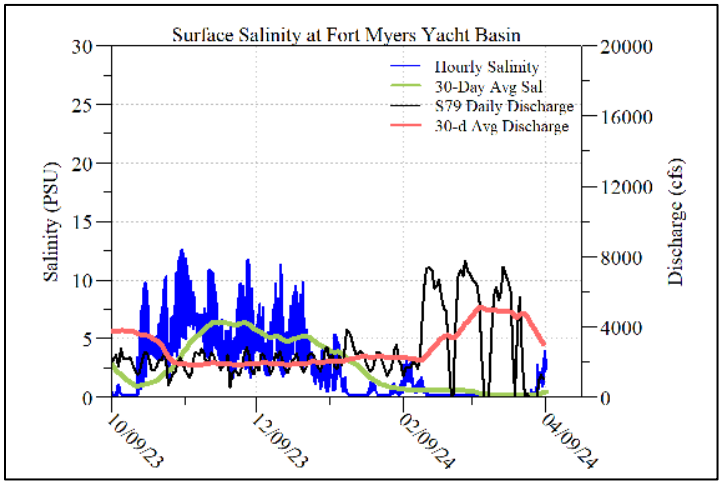
**7-Day Lake Recession Rate: -0.17 ft/week**

**Lake Okeechobee Inflow: 884 cfs** **Lake Okeechobee Outflow: 2,986 cfs**

**Weekly Rainfall Total:** **WP Franklin: 0.65"** **Ortona: 0.52"** **Moore Haven: 0.40"**

**Cyanobacteria Status:** On 4/8/24 sampling for cyanobacteria by the Lee County Environmental Lab reported the **presence** of *Dolichospermum*, *Microcystis* and miscellaneous cyano-filaments at the **Alva Boat Ramp** with streaks and a pale green tint to the water. *Dolichospermum, Microcystis* and miscellaneous cyano-filaments were **abundant** upstream of the **Franklin Locks** as streaks and small clumps with heavy accumulation along the lock. *Dolichospermum, Microcystis,* and miscellaneous cyano-filaments were **moderately abundant** at the **Davis Boat Ramp** as streaks with some accumulation.

**Red Tide:** On 4/5/24, the FWC reported that the red tide organism, *Karenia brevis*, was not observed in samples collected statewide over the past week.




**Light Penetration**

| Site | 25% Iz | Target Values | Turbidity | Target Values |
|---|---|---|---|---|
| | meters | | NTU | |
| Fort Myers | 0.7 | > 1 | 8.0 | < 18 |
| Shell Point | 1.0 | >2.2 | 3.6 | < 18 |
| Causeway | 3.0 | > 2.2 | 4.0 | < 5 |

***25% Iz** is the depth (z) where irradiance (I) is 25% of surface irradiance. Target values indicate the depth of light penetration needed for healthy seagrass.*

**Upper Estuary Conditions:** The 30-day average surface salinity at the Fort Myers Yacht Basin was 0.4 psu, within the suitable range for tape grass.

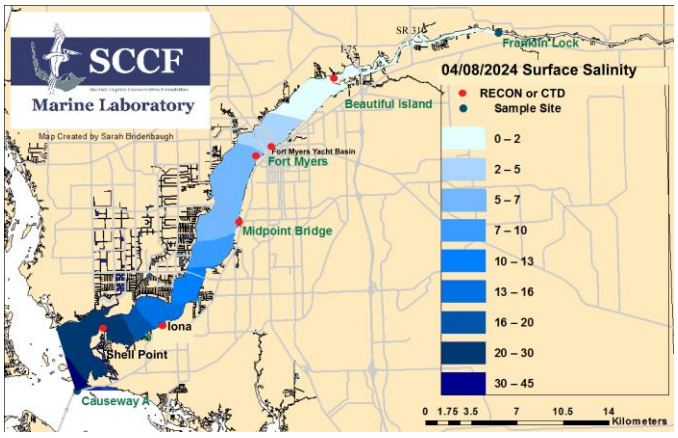
**Lower Estuary Conditions:** The average salinity at Shell Point RECON was 24 psu, in the optimal range for oysters but below optimal for seagrass.

**Water Quality Conditions:**

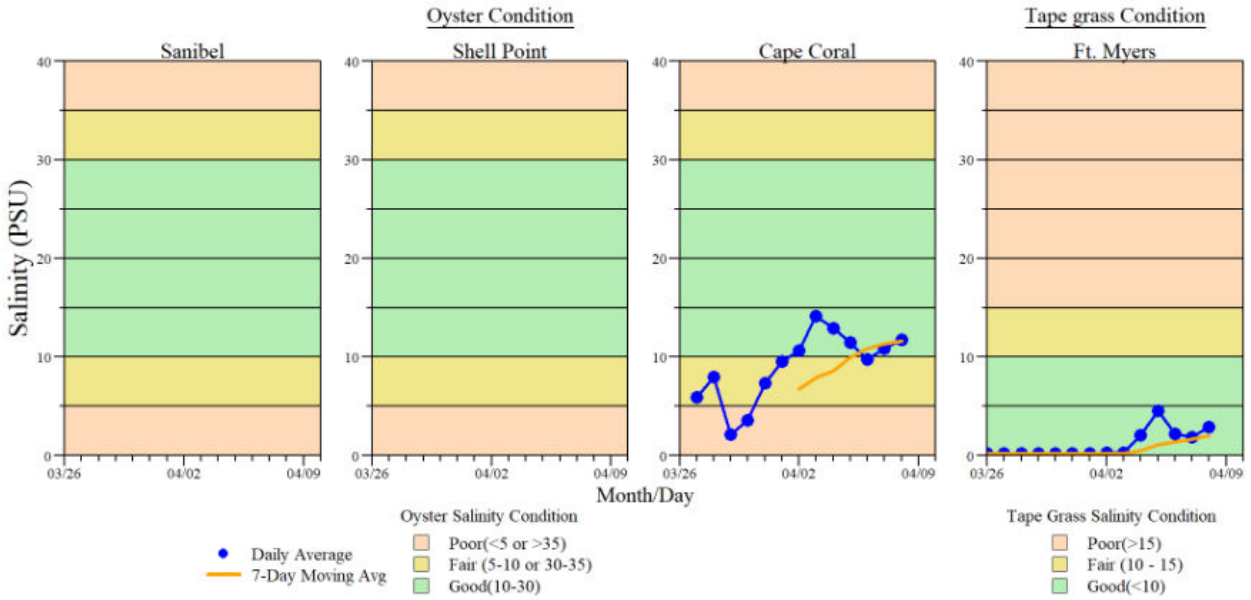
| Monitor Site | Salinity (psu)[a] [previous week] | Diss $O_2$ (mg/L)[b] | FDOM (qsde)[c] | Chlorophyll (µg/L)[d] | Temperature (°F) |
|---|---|---|---|---|---|
| Beautiful Island | 0.2 – 0.2 [0.2 – 0.2] | 3.7 – 7.1 | 152– 160 | 6.5 | 75.4 – 81.0 |
| Fort Myers Yacht Basin | 0.2 – 3.5 [0.2 – 0.2] | 1.2 – 9.0 | 123 – 166 | 12 | 73.3 – 80.0 |
| Shell Point | 12 - 32 [6.3 - 33] | 4.4 – 8.9 | 36.0 – 159 | 2.5 | 73.8 – 79.2 |
| McIntyre Creek | 28.6 – 33.7 [24.1 – 32.6] | 2.9 – 10.0 | 24.3 – 75.8 | 1.4 – 3.6 | 70.7 – 80.2 |
| Tarpon Bay | 29.3 – 34.0 [23.3 – 34.0] | 4.7 – 8.5 | 16.3 – 42.2 | 1.0 – 2.9 | 71.6 – 79.5 |
| Wulfert Flats | ------- [-------] | ------- | ------- | ------- | ------- |

Red values are outside of the preferred range.
[a] Salinity target values: BI < 5, FM < 10, SP = 10 – 30
[b] Dissolved $O_2$ target values: all sites > 4
[c] FDOM target values: BI < 70, FM < 70, SP < 11
[d] Chlorophyll target values: BI < 11, FM < 11, SP < 11
[s] Single sonde lower and surface layer or surface grab lab measurement
------- no data

**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel admitted 1 patient with suspected red tide/toxicosis: 1 juvenile double-crested cormorant (still in care).




| ACOE Daily Reports | | | |
|---|---|---|---|
| Date | S79 Flow (cfs) | S78 Flow (cfs) | S77 Flow (cfs) |
| 4/2/24 | 0 | 0 | 74 |
| 4/3/24 | 0 | 0 | 216 |
| 4/4/24 | 0 | 0 | 64 |
| 4/5/24 | 39 | 0 | 379 |
| 4/6/24 | 1048 | 714 | 712 |
| 4/7/24 | 1299 | 1157 | 1370 |
| 4/8/24 | 1116 | 757 | 1346 |
| 7-day avg | 500 | 375 | 594 |




Daily average bottom salinity data for the last 14-days from sampling locations within the tidal Caloosahatchee River Estuary relative to oyster health (Sanibel, Shell Point and Cape Coral) and tape grass (*Vallisneria americana*) health (Ft. Myers only) conditions.
*Ft. Myers sensor is in the lower strata


Water quality at Lighthouse Beach Park on 4-10 at 2:05 PM on a falling tide (2.8 ft).