

MEMORANDUM

To: USACE Colonel James L. Booth, LTC Todd F. Polk, 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

Lesli Haynes & Lisa Kreiger - Lee County

Harry Phillips & Maya Robert - City of Cape Coral

Leah Reidenbach, Rick Bartleson PhD, & Matt Depaolis - SCCF (Sanibel-Captiva Conservation Foundation)

Subject: Caloosahatchee & Estuary Conditions Report

Reporting Period: **December 19 – January 1, 2023**

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 **2,031 cfs** at **S-79** with a 7-day average of **980 cfs (48%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,013 cfs and has been in the optimum** flow envelope (750 – 2,100 cfs; RECOVER 2020) for **36 days**.

Recommendation: The prolonged high lake stage is likely to have long-term impacts on the health of the Lake and downstream estuaries. With a strong El Niño forecast to bring an above average rainfall this wet season, lowering the lake prior to the 2024 rainy season may prove challenging. We encourage the Corps to manage water to lower Lake Okeechobee and facilitate the recovery of the Lake's ecosystem, maintain an appropriate salinity gradient in the Caloosahatchee, and use all measures to move water south to prevent damaging discharges to the estuaries during the spring and summer. Since there are no active algal blooms on the Lake or in the Gulf of Mexico, we recommend that the Corps manage flows to the Caloosahatchee in the higher end of the optimum flow envelope (750 – 2,100 cfs) to maintain beneficial salinities and as one component of an overall strategy to lower Lake Okeechobee this dry season.

USACE Action: With Lake Okeechobee stage in the Low Sub-band, the Tributary Hydrologic conditions in the Normal category, the Seasonal Climate Outlook in the Normal to Extremely Wet category, and the Multi-seasonal Climate Outlook in the Wet category, Part D of the 2008 LORS suggests up to 3,000 cfs at S-79 and 1,170 cfs at S-80. On 6/10/23 the USACE increased releases from Lake Okeechobee to the Caloosahatchee Estuary from the W.P. Franklin Lock and Dam (S-79) to 2,000 cfs. Releases to the St. Lucie Estuary (S-80) remain at 0 cfs.

Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **15,443 AF** with **13,603 AF** to the Caloosahatchee through **S-77**, **44 AF** to the St. Lucie canal through **S-308**, **64 AF** through **S-310** in Clewiston, **1,400 AF** through the **L8 canal**, and **332 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **76,745 AF** (from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1). Water conservation areas received flows of **5,528 AF**, **9,988 AF**, and **6,963 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **28,330 AF**.

Lake Level: 15.99 ft (Intermediate Sub-Band)

Last Week: 15.90 ft

Last Year: 16.35 ft

7-Day Lake Recession Rate: +0.09 ft/week

Lake Okeechobee Inflow: 1,475 cfs

Lake Okeechobee Outflow: 1,239cfs

Weekly Rainfall Total: WP Franklin: 0.39"

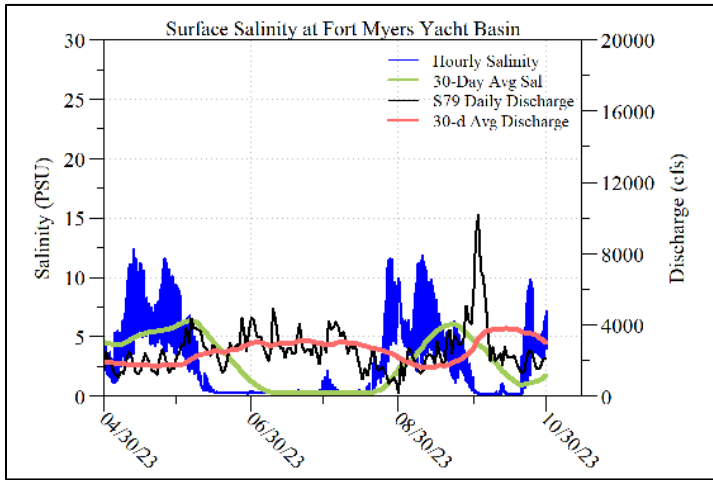
Ortona: 0.27"

Moore Haven: 0.50"

Cyanobacteria Status: On 12/28/23 sampling for cyanobacteria by the Lee County Environmental Lab reported no cyanobacteria in the Caloosahatchee River and Estuary.

Red Tide: On 12/28/23, the FWC reported the red tide organism *Karenia brevis* was not observed in samples collected statewide over the past week

Shellfish Advisory: Shellfish harvest **area #6212 Pine Island Sound Section 1** is **OPEN** by the Florida Department of Agriculture and Consumer Services (FDACS) as of **12/24/23** because Fecal coliform results indicate that water quality meets NSSP standards as defined in Chapter 5L-1.003, Florida Administrative Code



| Light Penetration | | | | |
|-------------------|--------|---------------|-----------|---------------|
| Site | 25% Iz | Target Values | Turbidity | Target Values |
| | meters | | NTU | |
| Fort Myers | 0.7 | > 1 | 1.2 | < 18 |
| Shell Point | ND | >2.2 | ND | < 18 |
| Causeway | 2.4 | > 2.2 | 1.0 | < 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 5.0 psu, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was 22 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 | 0.3 – 1.2 [0.4 – 0.8] | 5.8 – 7.5 | 192 – 232 | 6.8 | 68.7– 73.7 |
| Fort Myers Yacht Basin | 1.9 – 9.9 [1.8 – 12] | 6.8 – 8.2 | 158 – 192 | 6.0 | 65.2 – 71.4 |
| Shell Point | 14 – 35 [14 – 32] | 6.4 – 7.3 | ----- | ----- | 64.4 – 68.6 |
| McIntyre Creek | 27.0 – 32.1 [28.2 – 30.9] | 3.1 – 8.4 | ----- | ----- | 63.5 – 69.8 |
| Tarpon Bay | 27.2 – 34.0 [27.8 – 34.0] | 5.6 – 8.5 | 22.8 – 68.6 | 1.0 – 2.1 | 64.1 – 69.2 |
| Wulfert Flats | 27.9 – 30.3 [28.6 – 32.5] | 4.7 – 10.1 | ----- | 3.4 – 14.5 | 63.6 – 70.8 |

Red values are outside of the preferred range.

^a Salinity target values: BI < 5, FM < 10, SP = 10 – 30

^b Dissolved O₂ target values: all sites > 4

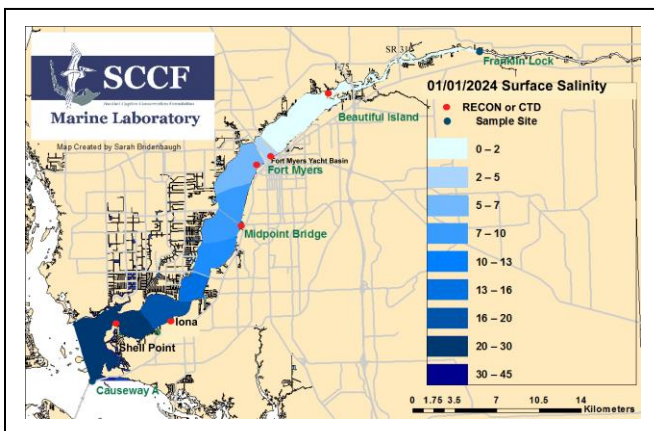
^c FDOM target values: BI < 70, FM < 70, SP < 11

^d Chlorophyll target values: BI < 11, FM < 11, SP < 11

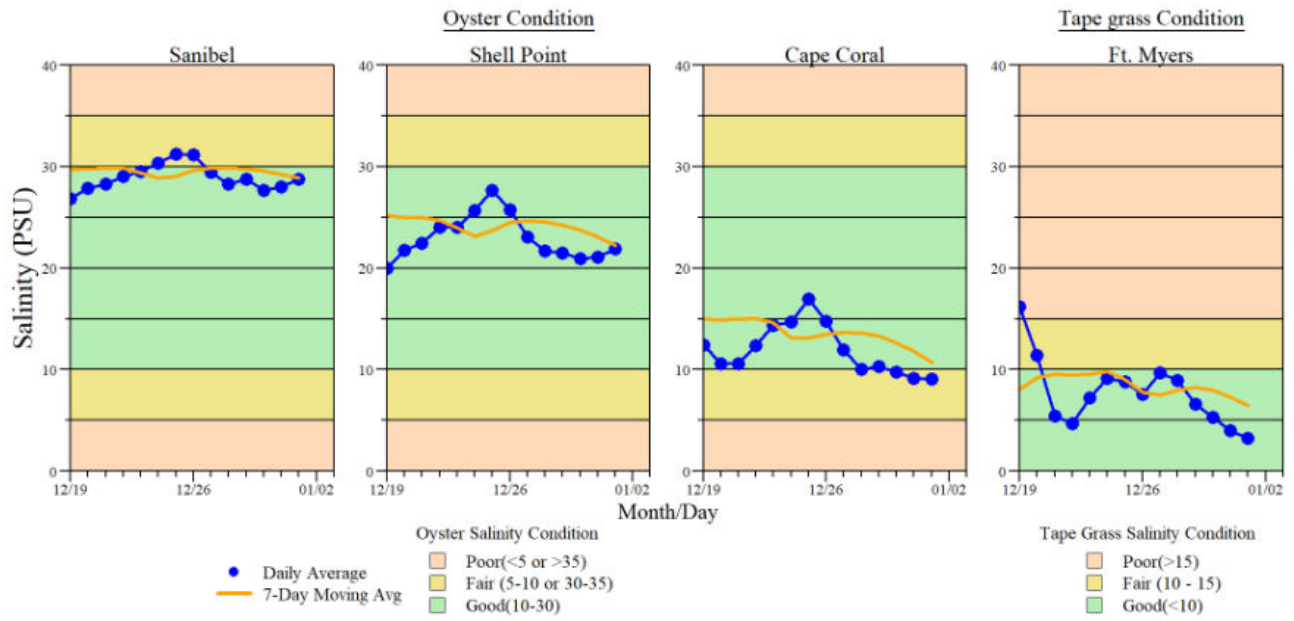
^e Single sonde lower and surface layer or surface grab lab measurement

----- no data

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel admitted 9 patients with suspected red tide/toxicosis: 4 adult royal terns(2 still at CROW, 2 died), 1 juvenile brown pelican (died), and 1 juvenile laughing gulls (still at CROW).



| ACOE Daily Reports | | | |
|--------------------|----------------|----------------|----------------|
| Date | S79 Flow (cfs) | S78 Flow (cfs) | S77 Flow (cfs) |
| 12/19/23 | 2451 | 1897 | 1902 |
| 12/20/23 | 2153 | 1588 | 1929 |
| 12/21/23 | 1813 | 1045 | 1415 |
| 12/22/23 | 1370 | 953 | 813 |
| 12/23/23 | 1629 | 940 | 513 |
| 12/24/23 | 2537 | 1154 | 640 |
| 12/25/23 | 2227 | 1532 | 1091 |
| 12/26/23 | 2532 | 1345 | 1344 |
| 12/27/23 | 1842 | 1181 | 1068 |
| 12/28/23 | 1798 | 1078 | 844 |
| 12/29/23 | 1416 | 732 | 522 |
| 12/30/23 | 1700 | 843 | 523 |
| 12/31/23 | 2383 | 1356 | 1215 |
| 1/1/23 | 2544 | 1583 | 1344 |
| 14-day avg | 2028 | 1231 | 1083 |



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 clarity at Lighthouse Beach Park on 1/2/24 at 12:10 PM on a low tide (0.2 ft).