

# MEMORANDUM

To: USACE Colonel James L. Booth, LTC Todd F. Polk, Richard McMillen, Kim Taplin, 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: **April 11 – April 17, 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 **1,923 cfs** at **S-79** with a 7-day average of **846 cfs (44%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,004 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for 5 days.**

**Recommendation:** To keep the Caloosahatchee River and Estuary in the optimum salinity envelope and to avoid unnecessary stress, we encourage the Corps to maintain flows within the RECOVER 2020 optimum flow envelope of 750 – 2,100 cfs at S-79 for the Caloosahatchee Estuary.

**USACE Action:** With Lake Okeechobee in the Low sub band and dry tributary hydrologic conditions, LORS08 Part D suggests up to 450 cfs at S-79 and up to 200 cfs at S-80. On 4/15/23 the USACE decreased releases from Lake Okeechobee to the St. Lucie Estuary (S-80) to 0 cfs and to the Caloosahatchee Estuary from the W.P. Franklin Lock and Dam (S-79) to 1,800 cfs. **Since entering the low sub band on 2/13/23 the USACE began utilizing banked releases** from a make-up release tool which allowed them to make releases at levels lower than suggested in LORS08 since 11/18/22 and bank the volume not released for beneficial releases throughout the dry season.

**Lake Flows:** In the past 7 days the total outflow from Lake Okeechobee was **15,285 AF** with **11,750 AF** to the Caloosahatchee through **S-77, 2,559 AF** through **S-308** in Port Mayaca, **0 AF** through **S-310** in Clewiston, and **0 AF** to the EAA through **S-351, S-352, and S-354**. The total net inflow to the Lake was **5,088 AF** (4,143 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **944 AF** from **S310 and S308**. Water conservation areas received flows of **0 AF, -742 AF, and 1,031 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **4,733 AF**.

**Lake Level: 14.34 ft (Low sub-band)**

**Last Week: 14.24 ft**

**Last Year: 13.49 ft**

**7-Day Lake Recession Rate: +0.10 ft/week**

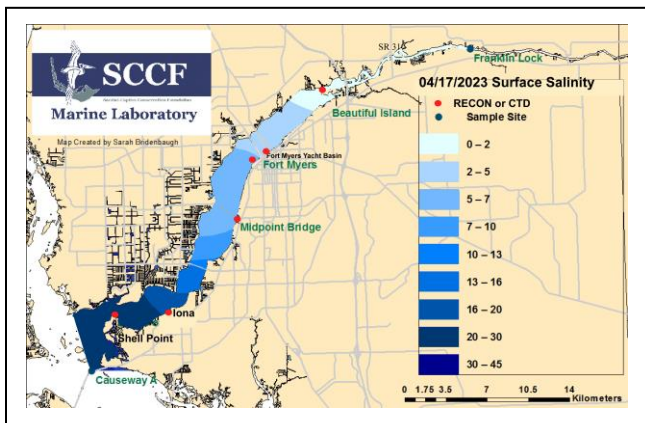
**Lake Okeechobee Inflow: 463 cfs**

**Lake Okeechobee Outflow: 957 cfs**

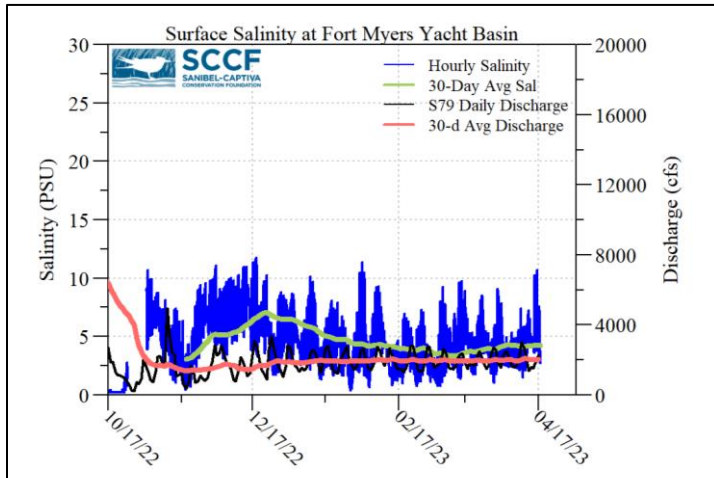
**Weekly Rainfall Total: WP Franklin: ≥ 1.25"**

**Ortona: ≥ 2.31"**

**Moore Haven: ≥ 2.28"**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/11/23	2669	1862	1985
4/12/23	1925	1598	1149
4/13/23	1367	969	488
4/14/23	1611	797	442
4/15/23	1528	1139	584
4/16/23	1914	1574	896
4/17/23	2449	1724	380
7-day avg	1923	1323	846



Light Penetration				
Site	25% I <sub>z</sub>	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	2.23	>2.2	1.6	< 18
Causeway	2.85	> 2.2	4.0	< 5

25% I<sub>z</sub> is the depth (z) where irradiance (I) is 25% of surface irradiance. Target values indicate the depth of light penetration needed for healthy seagrass.  
<sup>m</sup> measured, <sup>c</sup> calculated

**Cyanobacteria Status:** On 4/17/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis* at the **Alva Boat Ramp**, upstream of the **Franklin Locks**, and the **Davis Boat Ramp** as specks.

**Upper Estuary Conditions:** The 30-day average surface salinity at the Fort Myers Yacht Basin was 4.3 psu, within the suitable range for tape grass.

**Lower Estuary Conditions:** The average salinity at Shell Point RECON was 29 psu, optimal for seagrass, but above the optimal range for oysters. At the Sanibel beaches, the diatom species richness increased while *Karenia* spp. counts ranged from low to background during the week.

**Water Quality Conditions:**

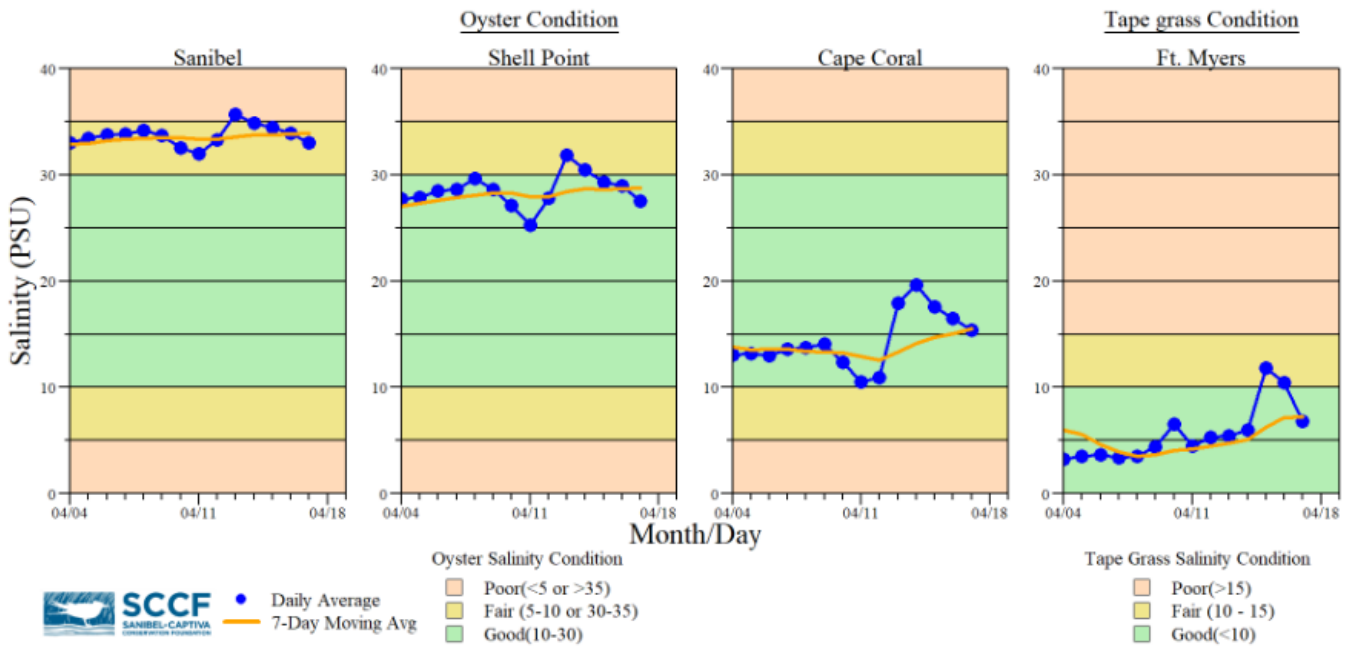
Monitor Site	Salinity (psu) <sup>a</sup> [previous week]	Diss O <sub>2</sub> (mg/L) <sup>b</sup>	FDOM (qsde) <sup>c</sup>	Chlorophyll (µg/L) <sup>d</sup>
Beautiful Island	0.2 – 1.1 [0.2 – 0.3]	3.7 – 6.9	-----	7.5
Fort Myers Yacht Basin	----- [-----]	-----	-----	-----
Shell Point	14 – 36 [18 – 35]	5.2 – 6.8	60.0	2.3
McIntyre Creek	30.0 – 34.3 [32.0 – 33.6]	2.6 – 11.4	-----	-----
Tarpon Bay	30.1 – 36.1 [31.5 – 34.6]	4.9 – 10.1	1.1 – 10.5	-----
Wulfert Flats	30.9 – 34.1 [32.4 – 33.5]	3.4 – 9.0	-----	1.7 – 13.2

- Red values are outside of the preferred range.
- <sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 10 – 30
- <sup>b</sup> Dissolved O<sub>2</sub> target values: all sites > 4
- <sup>c</sup> FDOM target values: BI < 70, FM < 70, SP < 11
- <sup>d</sup> Chlorophyll target values: BI < 11, FM < 11, SP < 11
- <sup>s</sup> Single sonde lower and surface layer or surface grab lab measurement
- no data

**Red Tide:** On 4/14/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 47 samples collected from Florida's Gulf Coast. Bloom concentrations (>100,000 cells/liter) were present in four samples: two in Pinellas County and two in Sarasota County.

In Southwest Florida over the past week, *K. brevis* was observed at background to medium concentrations in and offshore of Pinellas County, background and very low concentrations in Manatee County, very low to medium concentrations in Sarasota County, background to low concentrations in Charlotte County, **background to low concentrations in Lee County**, and background to very low concentrations in Collier County.

**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel received 2 patients with toxicosis symptoms 1 juvenile Bonaparte's Gull (died), and 1 adult double crested cormorant (died).



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

Data are provisional and subject to change.



Water clarity at Lighthouse Beach Park on 4/17/23 at 12:40 PM on a high tide (2.1 ft). [Lighthouse Beach Park Virtual Tour.](#)