

# 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 18 – April 24, 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 **1,914 cfs** at **S-79** with a 7-day average of **552 cfs (29%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,958 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for 12 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 **6,119 AF** with **5,272 AF** to the Caloosahatchee through **S-77**, **24 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 **5,861 AF** (4,334 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **1,527 AF** from **S310** and **C10A**. Water conservation areas received flows of **4,003 AF**, **-1,860 AF**, and **5,814 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **6,932 AF**.

Lake Level: **14.26 ft (Low sub-band)**

Last Week: **14.34 ft**

Last Year: **13.08 ft**

7-Day Lake Recession Rate: **-0.08 ft/week**

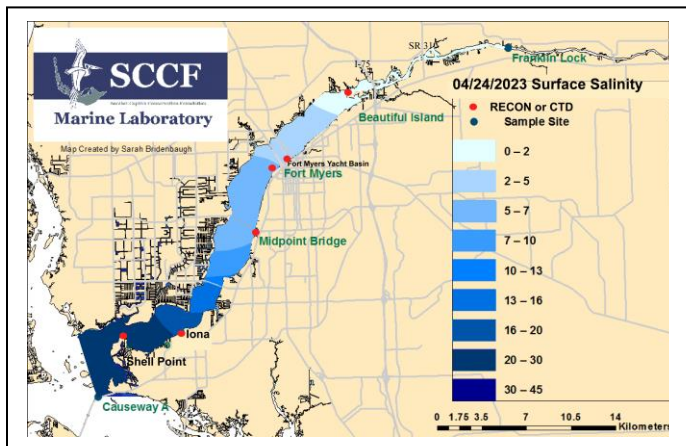
Lake Okeechobee Inflow: **546 cfs**

Lake Okeechobee Outflow: **1705 cfs**

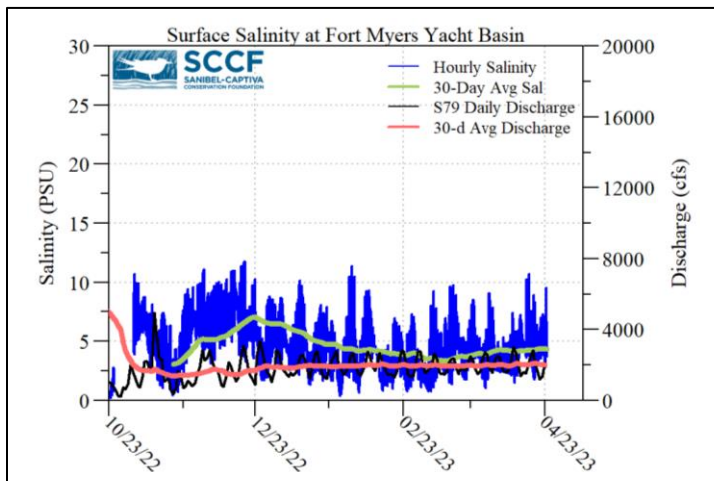
Weekly Rainfall Total: **WP Franklin: 0.73"**

**Ortona: ≥ 0.00"**

**Moore Haven: 0.40"**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/18/23	2840	1730	0
4/19/23	2075	1801	0
4/20/23	1585	1377	166
4/21/23	1174	865	339
4/22/23	1349	1125	708
4/23/23	2136	1456	1065
4/24/23	2238	1659	1588
7-day avg	1914	1392	552



Light Penetration				
Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	2.16	>2.2	1.7	< 18
Causeway	3.10	> 2.2	3.5	< 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.  
<sup>m</sup> measured, <sup>c</sup> calculated

**Cyanobacteria Status:** On 4/24/23 sampling for cyanobacteria by the Lee County Environmental Lab reported **moderately abundant** cyanobacteria, predominantly *Dolichospermum* and some *Microcystis*, upstream of the **Franklin Locks** as streaks and accumulation along the lock and shore. Predominantly *Dolichospermum* and some *Microcystis* and *Aphanizomenon* were **present** at the **Davis Boat Ramp** with some streaks and accumulation along the seawall.

**Upper Estuary Conditions:** The 30-day average surface salinity at the Fort Myers Yacht Basin was 4.5 psu, within the suitable range for tape grass. A mix of phytoplankton including *Leptocylindrus* caused chlorophyll and oxygen spikes at Beautiful Island.

**Lower Estuary Conditions:** The average salinity at Shell Point RECON was 28 psu, optimal for seagrass and oysters. At the Sanibel beaches, the diatoms *Chaetoceros* and *Rhizosolenia* were dominant while *Karenia* spp. counts ranged from background to medium 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 – 1.0 [0.2 – 1.1]	5.9 – 10	-----	3.0
Fort Myers Yacht Basin	----- [-----]	-----	-----	-----
Shell Point	18 – 35 [14 – 36]	5.4 – 7.3	63.4	1.7
McIntyre Creek	31.9 – 33.3 [30.0 – 34.3]	2.8 – 8.8	-----	-----
Tarpon Bay	32.3 – 34.9 [30.1 – 36.1]	4.9 – 9.2	1.6 – 7.6	-----
Wulfert Flats	32.3 – 33.1 [30.9 – 34.1]	4.1 – 8.0	-----	0.5 – 11.2

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

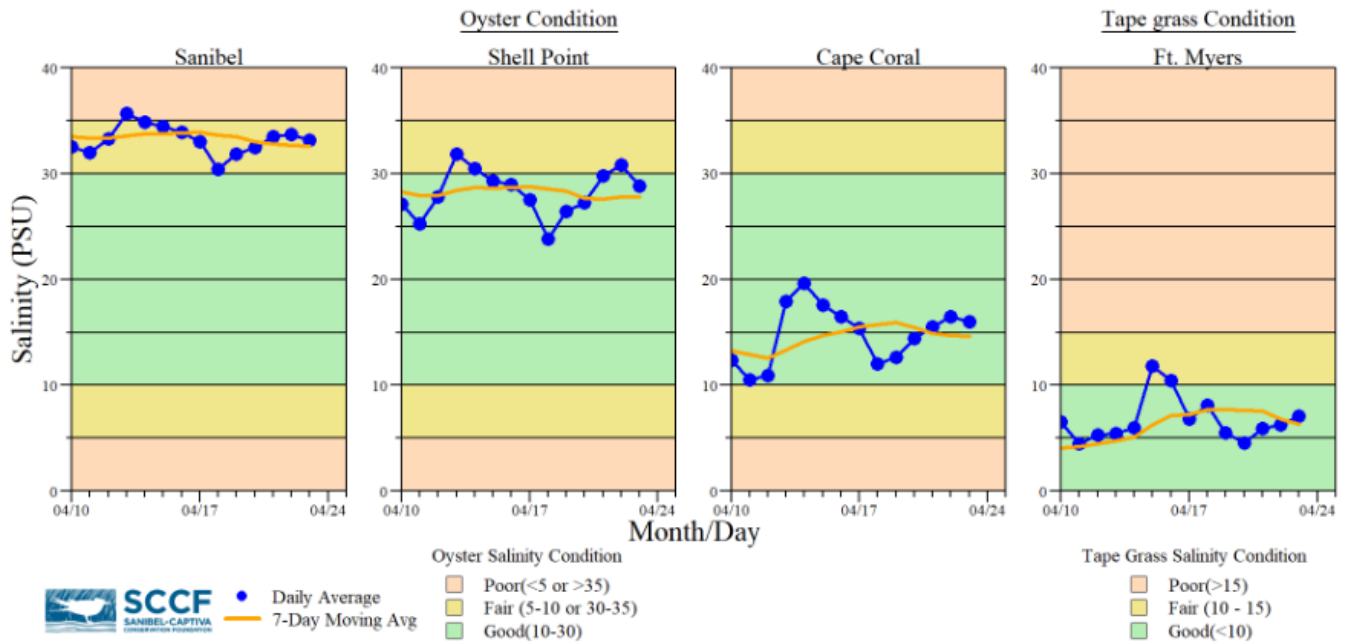
<sup>s</sup> Single sonde lower and surface layer or surface grab lab measurement

----- no data

**Red Tide:** On 4/21/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 72 samples collected from Florida’s Gulf Coast. Bloom concentrations (>100,000 cells/liter) were present in three samples: one in Pinellas County, one in Sarasota County, and **one in Lee 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, background to medium concentrations in Sarasota County, background to low concentrations in Charlotte County, **background to medium concentrations in and offshore of Lee County**, background to low concentrations in and offshore of Collier County, and low concentrations offshore of Monroe County.

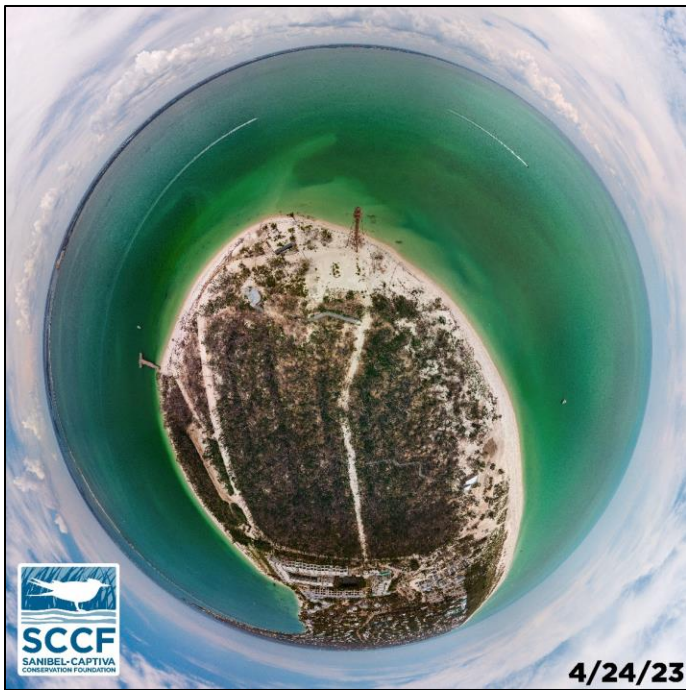
**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel received 2 patients with toxicosis symptoms 1 juvenile double crested cormorant (still at CROW) and 1 adult double crested cormorant (died).



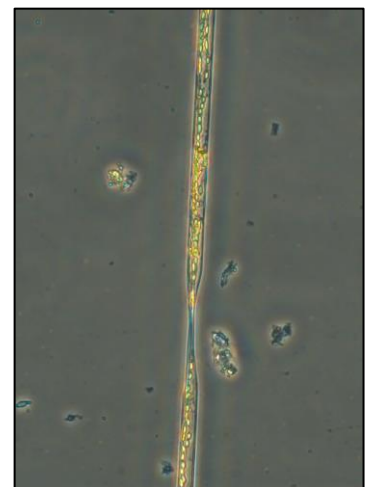
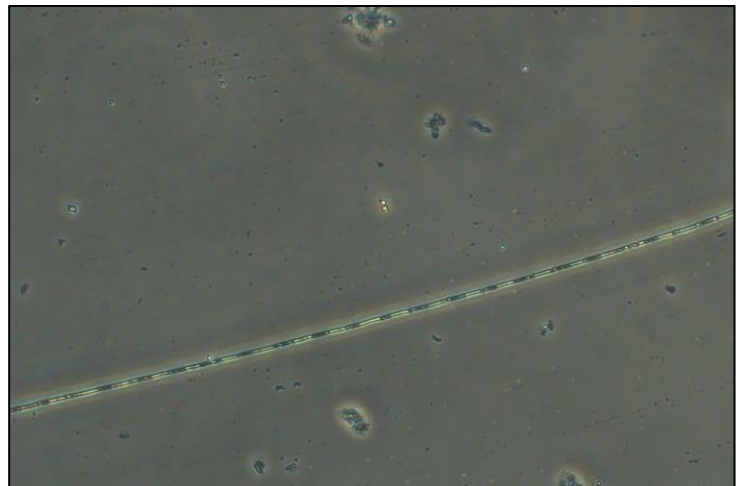
Daily average bottom salinity data for the last 14-days from sampling locations within the tidal Caloosahatchee River Estuary relative to oyster health (Sanibel, Shell Point and Cape Coral) and tape grass (*Vallisneria americana*) health (Ft. Myers only) conditions.

\*Ft. Myers sensor is in the lower strata

Data are provisional and subject to change.



Water clarity at Lighthouse Beach Park on 4/24/23 at 1:30 PM on a high tide (3.0 ft). [Lighthouse Beach Park Virtual Tour.](#)



*Leptocylindrus* (top photo) caused chlorophyll and oxygen spikes at Beautiful Island. At the Sanibel beaches, the diatoms *Chaetoceros* (left) and *Rhizosolenia* (right) were dominant. SCCF.