

# 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: **June 27 – July 3, 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 **3,580 cfs** at **S-79** with a 7-day average of **70 cfs (2%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 3,255 cfs and has been in the damaging flow envelope (> 2,600 cfs; RECOVER 2020) for 5 days.**

**Recommendation:** Lake Okeechobee is concerningly high and has developed large cyanobacterial blooms on the lake and at S-77. There is potential risk that the Caloosahatchee could experience damaging high Lake discharge events in addition to watershed runoff, resulting not only in increased nutrient loading and decreased salinity, but the transportation of harmful algae via S-77 to the estuary. We recommend that the Corps seek to utilize all outlets around the Lake to reduce rising Lake levels in an effort to prevent damaging high releases to the Caloosahatchee estuary and to confirm the absence of cyanobacteria at all lock structures before releases resume to avoid risk to environmental and human health.

**USACE Action:** With Lake Okeechobee stage within the Low Sub-band, the Tributary Hydrologic conditions in the Very Wet category, Lake stage within 1 ft of the Intermediate Sub-band, and the Seasonal Lake Okeechobee Net Inflow outlook in the Very Wet category, Part D of the 2008 LORS suggests "S-77 up to 4,000 cfs and S-80 up to 1,800 cfs". 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 **1,206 AF** with **1,206 AF** to the Caloosahatchee through **S-77**, **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 **70,730 AF** (68,678 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **2,053 AF** from **S310** and **C10A**. Water conservation areas received flows of **27,215 AF**, **24,516 AF**, and **19,345 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **15,497 AF**.

**Lake Level: 14.68 ft (Low Sub-Band)**

**Last Week: 14.56 ft**

**Last Year: 12.87 ft**

**7-Day Lake Recession Rate: +0.12 ft/week**

**Lake Okeechobee Inflow: 4,928 cfs**

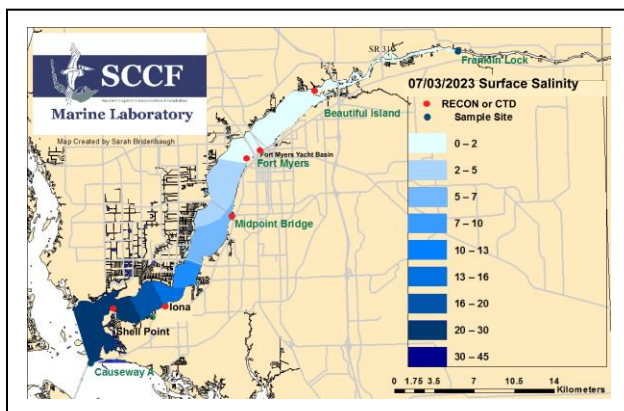
**Lake Okeechobee Outflow: 93 cfs**

**Weekly Rainfall Total:**

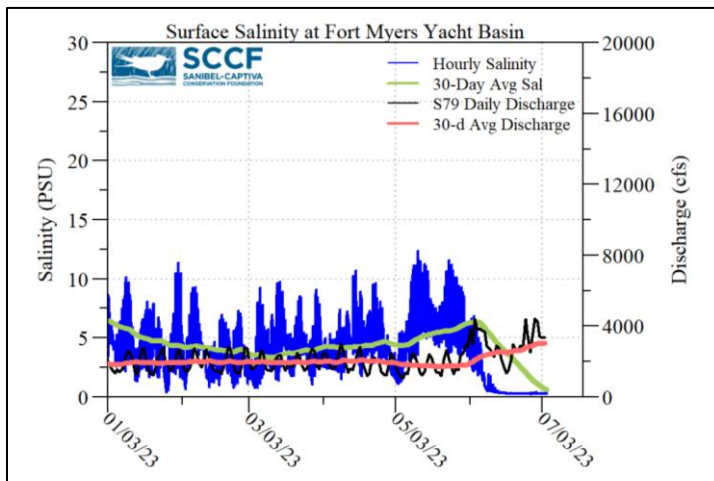
**WP Franklin: 1.46"**

**Ortona: 3.75"**

**Moore Haven: 0.7"**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
6/27/23	3470	2034	0
6/28/23	2518	1295	0
6/29/23	3650	1499	0
6/30/23	4437	2055	0
7/1/23	4220	2085	243
7/2/23	3425	1544	157
7/3/23	3338	1463	93
<b>7-day avg</b>	<b>3580</b>	<b>1752</b>	<b>70</b>



Light Penetration				
Site	25% I <sub>z</sub>	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	ND	>2.2	ND	< 18
Causeway	ND	> 2.2	ND	< 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:** The Lee County Environmental Lab did not issue a cyanobacteria report this week.

**Upper Estuary Conditions:** The 30-day average surface salinity at the Fort Myers Yacht Basin was 1.7 psu, within the suitable range for tape grass.

**Lower Estuary Conditions:** The average salinity at Shell Point RECON was 23 psu, in the optimal range for oysters, but below optimal for seagrass.

**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 – 0.3 [0.2 – 0.3]	-----	-----	9.0
Fort Myers Yacht Basin	0.3 – 0.3 [0.3 – 0.3]	-----	-----	-----
Shell Point	9.7– 33 [9.4 – 32]	3.8 - 6.8	105	-----
McIntyre Creek	27.8 – 31.7 [29.2 – 32.1]	0.8 – 11.3	-----	-----
Tarpon Bay	26.9 – 33.6 [28.2 – 34.7]	3.9 – 11.7	2.3 – 5.9	1.2 – 2.6
Wulfert Flats	28.6 – 32.3 [24.2 – 32.1]	3.0 – 9.3	-----	2.8 – 26.3

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

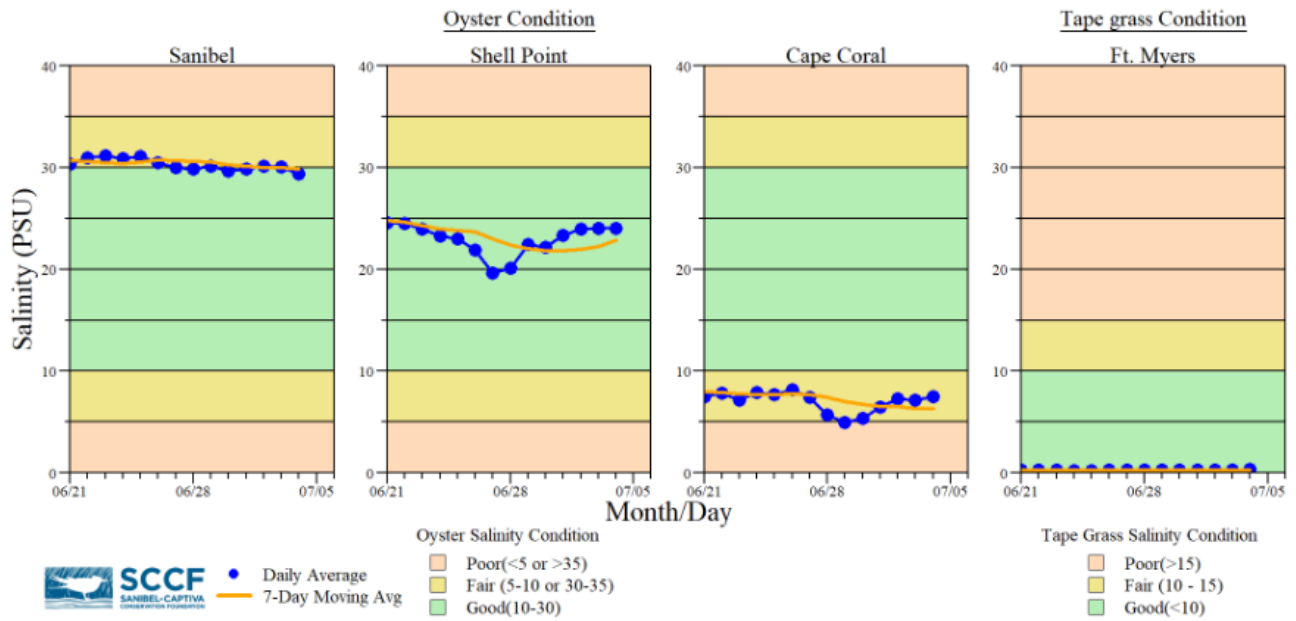
<sup>d</sup> Chlorophyll target values: BI < 11, FM < 11, SP < 11

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

----- no data

**Red Tide:** On 6/30/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected at background concentrations in one sample from Pinellas County.

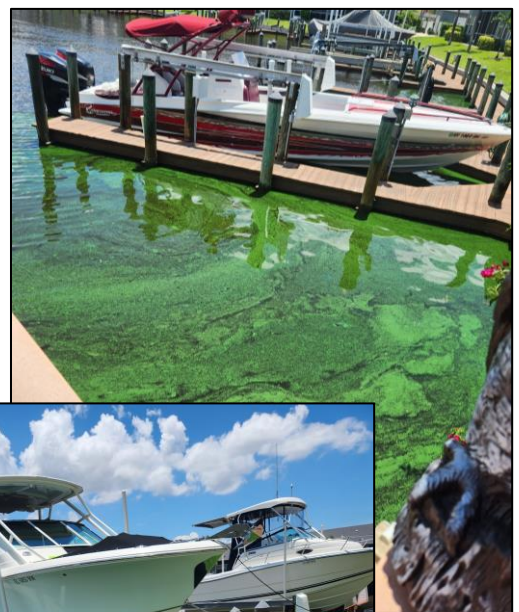
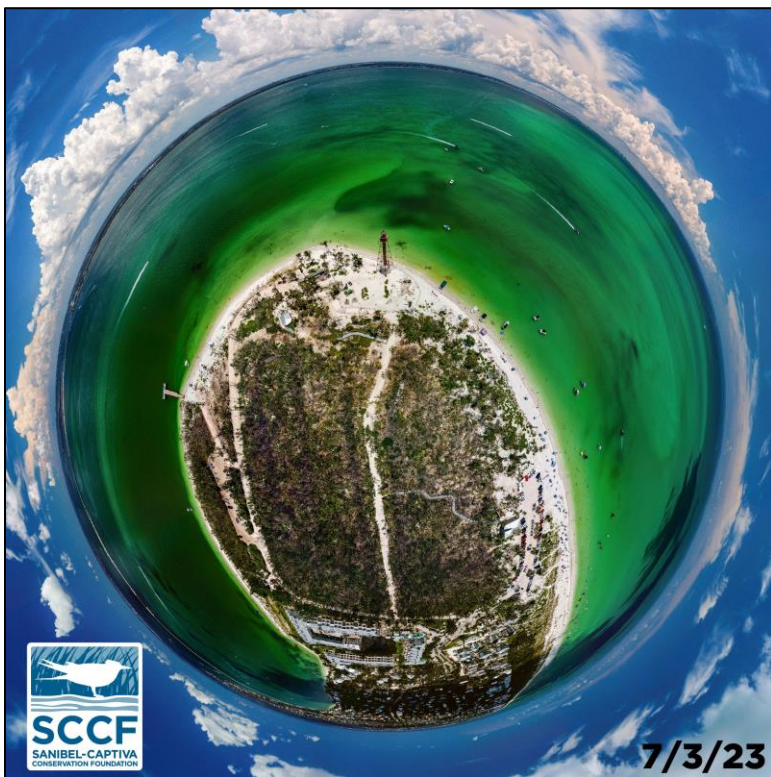
**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel received 2 patients with toxicosis symptoms: 1 adult royal tern (died) and 1 adult white ibis (still at CROW).



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 7/3/23 at 1:21 PM on a high tide (3.4 ft). [Lighthouse Beach Park Virtual Tour](#).

Blue green algae in a canal with direct river access near the Cape Coral Bridge on 7/3/23. City of Cape Coral