

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: **August 1 – 7, 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 **3,858 cfs at S-79** with a 7-day average of **36 cfs (<1%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 3,211 cfs and has been in the **damaging** flow envelope (> 2,600 cfs; RECOVER 2020) for 40 days.**

Recommendation: Lake Okeechobee is concerningly high and has developed large cyanobacterial blooms on the lake. 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 Wet category, and the Seasonal Lake Okeechobee Net Inflow outlook in the Wet category, Part D of the 2008 LORS suggests "S-79 up to 3,000 cfs and S-80 up to 1,170 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 **2,501 AF** with **498 AF** to the Caloosahatchee through **S-77**, **1,317 AF** through **S-308** in Port Mayaca, **22 AF** through **S-310** in Clewiston, and **659 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **63,074 AF** (62,799 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **275 AF** from **S310** and **C10A**. Water conservation areas received flows of **14,955 AF**, **16,461 AF**, and **11,451 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **24,363 AF**.

Lake Level: 15.31 ft (Low Sub-Band)

Last Week: 15.13 ft

Last Year: 12.89 ft

7-Day Lake Recession Rate: +0.18 ft/week

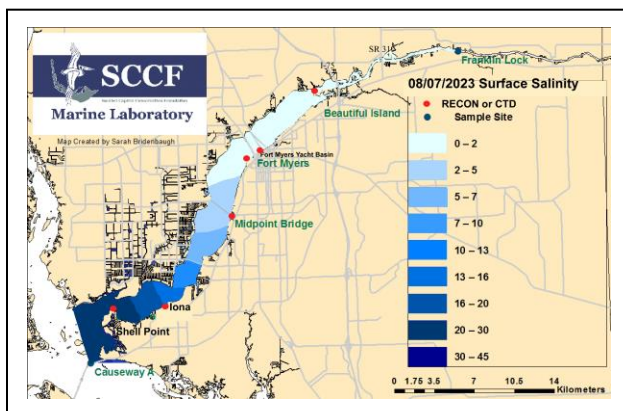
Lake Okeechobee Inflow: 4,846 cfs

Lake Okeechobee Outflow: 0 cfs

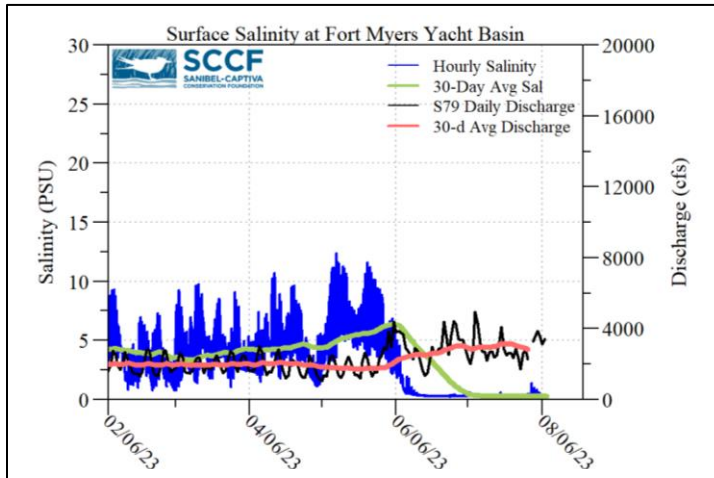
Weekly Rainfall Total: WP Franklin: 1.54"

Ortona: 0.85"

Moore Haven: 1.03"



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
8/1/23	4244	2062	0
8/2/23	3745	1840	0
8/3/23	3866	1277	0
8/4/23	4206	1130	37
8/5/23	3925	1008	2
8/6/23	3393	1176	0
8/7/23	3630	1303	212
7-day avg	3858	1399	36



Light Penetration

Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	ND	>2.2	ND	< 18
Causeway	1.9	> 2.2	1.5	< 5

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

Cyanobacteria Status: On 8/7/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis* at the **Davis Boat Ramp** as sparse specks. *Microcystis* was **moderately abundant** at **Midpoint Bridge Park** with accumulation along the shore and some streaks.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 0.3 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. Chlorophyll was elevated at the Causeway with diatoms *Chaetoceros* spp. and *Rhizosolenia* dominant.

Water Quality Conditions:

Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	0.2 – 0.3 [0.3 – 0.3]	-----	-----	5.5
Fort Myers Yacht Basin	0.3 – 0.6 [0.3 – 0.3]	-----	-----	-----
Shell Point	12 – 33 [10 – 33]	2.7 – 6.3	-----	-----
McIntyre Creek	27.7 – 29.8 [26.2 – 30.4]	0.5 – 7.8	-----	-----
Tarpon Bay	28.5 – 33.8 [-----]	3.8 – 9.0	2.8 – 6.3	1.6 – 3.2
Wulfert Flats	28.2 – 29.7 [27.1 – 30.5]	2.0 – 8.5	-----	4.5 – 27.1

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

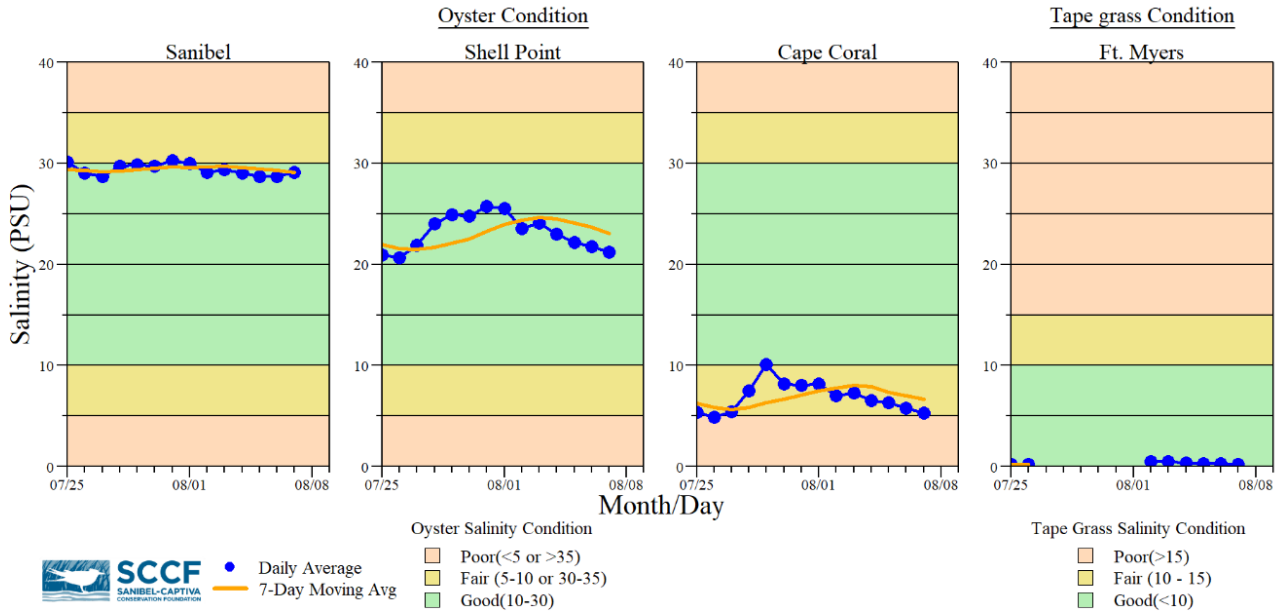
^d Chlorophyll target values: BI < 11, FM < 11, SP < 11

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

----- no data

Red Tide: On 8/4/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was not observed in samples collected statewide over the past week

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 0 patients with toxicosis symptoms.



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 8/7/23 at 1:44 PM on a rising tide (0.9 ft). [Lighthouse Beach Park Virtual Tour.](#)