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: **October 17 - 23, 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 **1,874 cfs** at **S-79** with a 7-day average of **1,059 cfs (57%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,054 cfs and has been in the optimum** flow envelope (750 – 2,100 cfs; RECOVER 2020) for 4 days after 33 days above the optimum flow envelope.

Recommendation: The high elevation of Lake Okeechobee remains a cause for concern and a significant rainfall event could result in damaging releases to the Caloosahatchee. With limited options to significantly reduce Lake O levels, we recommend that the Corps continue to manage flows to the Caloosahatchee in the optimal range at S-79 and take advantage of any other opportunities to lower the Lake, both reducing harm to Lake O and reducing the risk of future damaging releases to the Caloosahatchee estuary.

USACE Action: With Lake Okeechobee stage within the Intermediate Sub-band, the Tributary Hydrologic conditions in the Very Wet category, the Up to 30 day Meteorological Forecast in the Normal category (according to CPC outlook for October), 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.

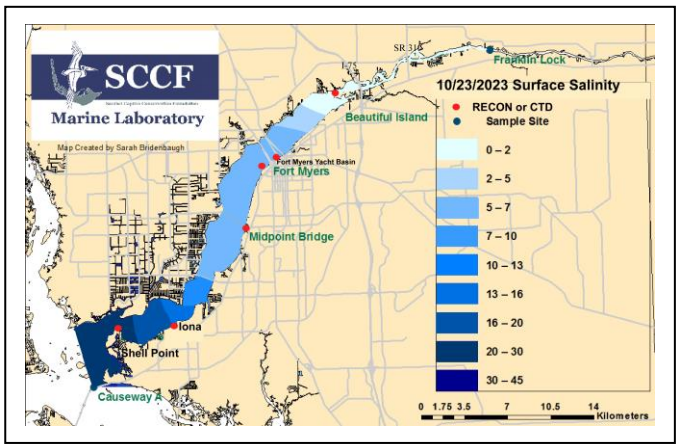
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **15,416 AF** with **14,701 AF** to the Caloosahatchee through **S-77**, **0 AF** through **S-310** in Clewiston, and **714 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **62,142 AF** (62,027 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **115 AF** from **C10A**. Water conservation areas received flows of **284 AF**, **4,362 AF**, and **8,749 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **38,741 AF**.

Lake Level: 16.28 ft (Intermediate Sub-Band) **Last Week**: **16.31 ft** **Last Year: 15.57 ft**

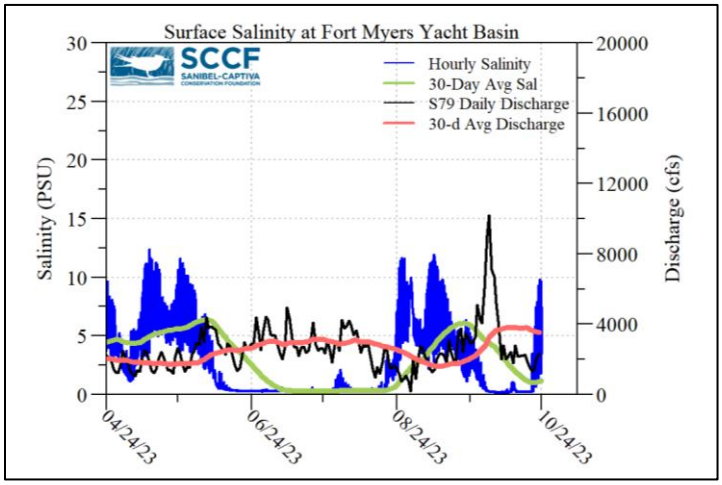
7-Day Lake Recession Rate: -0.03 ft/week

Lake Okeechobee Inflow: 3,866 cfs **Lake Okeechobee Outflow: 2,024 cfs**

Weekly Rainfall Total: **WP Franklin: 0.00"** **Ortona: 0.00"** **Moore Haven: 0.07"**



ACOE Daily Reports			
Date	**S79 Flow (cfs)**	**S78 Flow (cfs)**	**S77 Flow (cfs)**
10/17/23	2279	1135	1053
10/18/23	1836	1138	1218
10/19/23	1547	753	990
10/20/23	1301	595	712
10/21/23	1456	804	720
10/22/23	2130	1227	1056
10/23/23	2568	1767	1663
7-day avg	**1874**	**1060**	**1059**



Light Penetration

Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	ND	>2.2	ND	< 18
Causeway	1.3	> 2.2	1.9	< 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.*
[m] measured, [c] calculated

Cyanobacteria Status: On 10/23/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the **presence** of *Microcystis* upstream of the **Franklin Locks** as a slight wind-driven greenish/tan scum.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 1.2 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. Chlorophyll was 17 ug/L (170,000 *Margalefidinium*, plus *Skeletonema*) at the Causeway on 10/23/23.

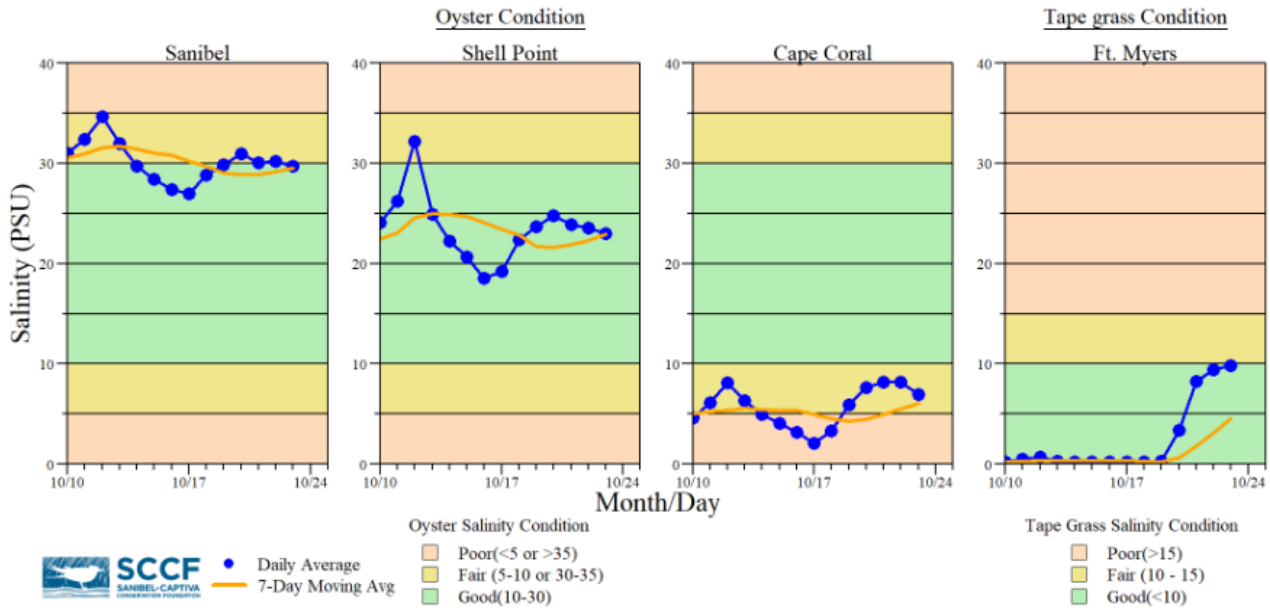
Water Quality Conditions:

Monitor Site	Salinity (psu)[a] [previous week]	Diss O_2 (mg/L)[b]	FDOM (qsde)[c]	Chlorophyll (µg/L)[d]	Temperature (°F)
Beautiful Island	0.2 – 0.3 [0.2 – 0.2]	3.0 – 5.2	230	8.0	77.2 – 84.2
Fort Myers Yacht Basin	0.2 – 10 [0.2 – 1.1]	-------	-------	-------	71.5 – 80.6
Shell Point	7.4 – 32 [8.5 – 34]	3.7 – 8.2	-------	-------	72.1 – 81.7
McIntyre Creek	27.0 – 31.9 [25.3 – 33.9]	2.6 – 11.7	-------	-------	69.4 – 81.6
Tarpon Bay	26.0 – 31.6 [24.4 – 34.5]	3.4 – 8.5	29.2 – 102.7	1.9 – 8.9	71.3 – 80.1
Wulfert Flats	29.4 – 34.1 [27.9 – 33.4]	4.6 – 9.6	-------	3.9 – 31.5	69.4 – 81.1

Red values are outside of the preferred range.
[a] Salinity target values: BI < 5, FM < 10, SP = 10 – 30
[b] Dissolved O_2 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
[s] Single sonde lower and surface layer or surface grab lab measurement
------- no data

Red Tide: On 10/20/23, the FWC reported the red tide organism *Karenia brevis* was observed at background was observed at background concentrations in one sample collected from Sarasota County over the past week. Other samples collected statewide did not contain *K. brevis*.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel admitted 4 patients with suspect red tide/toxicosis: 2 juvenile royal terns (2 still at CROW), 1 juvenile little blue heron (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 10/25/23 at 9:23 AM on a high tide (2.8 ft).
Lighthouse Beach Park Virtual Tour.