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 31 – November 6, 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 **1,614 cfs** at **S-79** with a 7-day average of **1,290 cfs (80%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,785 cfs and has been in the optimum** flow envelope (750 – 2,100 cfs; RECOVER 2020) for 13 days.

Recommendation: Although the elevation of Lake Okeechobee has started to decrease, the prolonged high lake stage is likely to have long-term impacts on the health of the Lake and downstream estuaries. With a strong El Niño forecast to bring an above average rainfall this wet season, lowering the lake prior to the 2024 rainy season may prove challenging. We encourage the Corps to manage water to lower Lake Okeechobee and facilitate the recovery of the Lake's ecosystem, maintain an appropriate salinity gradient in the Caloosahatchee, and use all measures to move water south to prevent damaging discharges to the estuaries during the spring and summer. With reduced oyster spawning in the fall and no active algal blooms, we recommend that the Corps manage flows to the Caloosahatchee in the higher end of the optimum flow envelope (750 – 2,100 cfs) to maintain beneficial salinities and as one component of an overall strategy to lower Lake Okeechobee this dry season.

USACE Action: With Lake Okeechobee stage in the Low Sub-band and the Tributary Hydrologic conditions in the Dry category, Part D of the 2008 LORS suggests up to 650 cfs at S-79. 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.

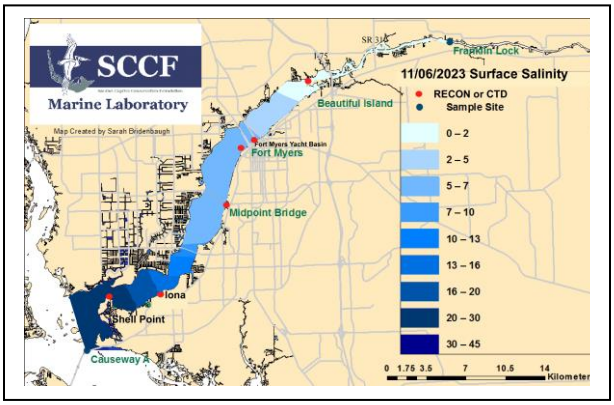
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **38,409 AF** with **17,900 AF** to the Caloosahatchee through **S-77**, **82 AF** through **S-310** in Clewiston, and **19,011 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **27,998 AF** (**27,998 AF** from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **0 AF** from **C10A**. Water conservation areas received flows of **196 AF**, **397 AF**, and **3,357 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **13,331 AF**.

Lake Level: 16.07 ft (Intermediate Sub-Band) **Last Week**: **16.21 ft** **Last Year: 15.89 ft**

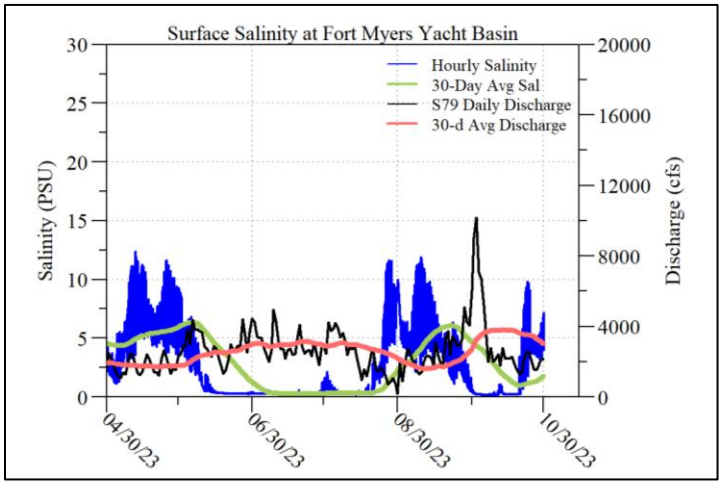
7-Day Lake Recession Rate: -0.14 ft/week

Lake Okeechobee Inflow: 2,007 cfs **Lake Okeechobee Outflow: 2,751 cfs**

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



ACOE Daily Reports			
Date	**S79 Flow (cfs)**	**S78 Flow (cfs)**	**S77 Flow (cfs)**
10/31/23	2460	1778	1865
11/1/23	2226	1332	1754
11/2/23	711	541	779
11/3/23	1034	889	645
11/4/23	1429	1023	1178
11/5/23	1430	1023	1194
11/6/23	2010	1313	1612
7-day avg	**1614**	**1128**	**1290**



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	2.5	> 2.2	1.3	< 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 11/6/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the **moderately abundant** *Microcystis* at the **Davis Boat Ramp** as some wind-driven accumulation and streaks.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 3.0 psu, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was 24 psu, in the optimal range for oysters and seagrass. *Margalefidinium* was still present at the Causeway on 11/3/23.

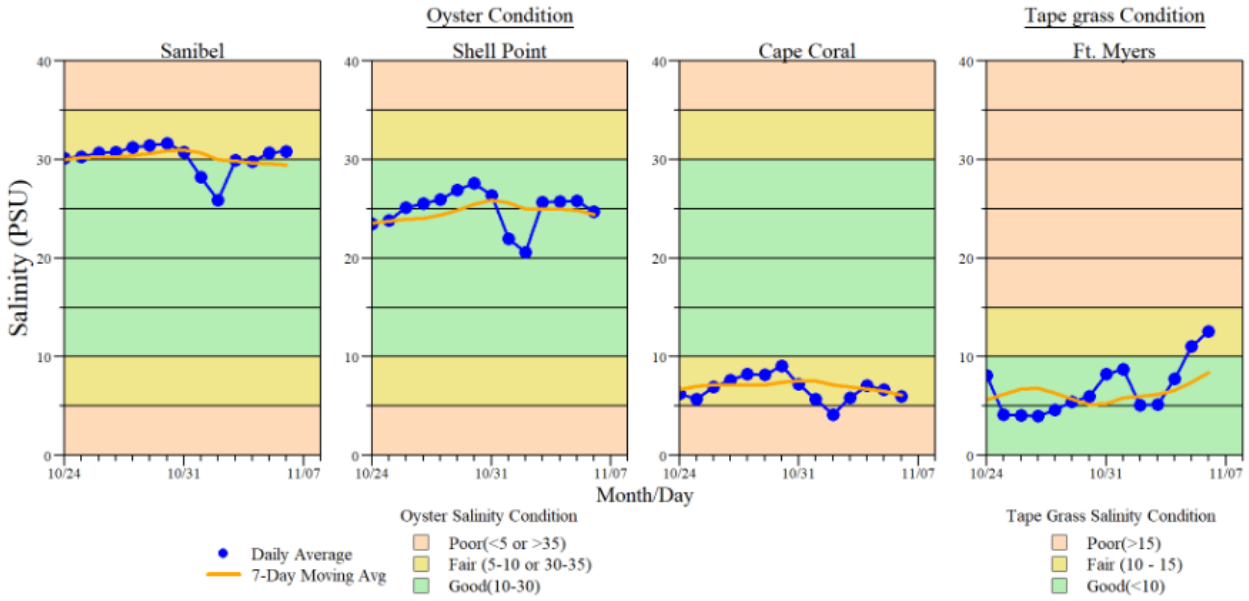
Water Quality Conditions:

Monitor Site	Salinity (psu)[a] [previous week]	Diss O_2 (mg/L)[b]	FDOM (qsde)[c]	Chlorophyll (µg/L)[d]	Temperature (°F)
Beautiful Island	0.4 – 1.3 [0.2 – 0.9]	4. 3– 7.0	------	6.6	73.0 – 83.1
Fort Myers Yacht Basin	1.6 – 12 [3.3 – 9.2]	-------	-------	-------	71.2 – 80.6
Shell Point	12 – 33 [7.4 – 32]	4.2 – 6.8	-------	-------	71.3 – 78.9
McIntyre Creek	27.6 – 32.9 [28.0 – 29.5]	1.6 – 9.9	-------	-------	69.7 – 80.6
Tarpon Bay	26.7 – 31.5 [27.5 – 33.2]	3.7 – 7.0	45.5 – 89.3	1.6 – 6.0	70.8 – 79.7
Wulfert Flats	29.0 – 34.9 [27.4 – 31.8]	3.7 – 8.2	-------	3.7 – 37.7	70.3 – 80.6

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 11/3/23, the FWC reported the red tide organism *Karenia brevis* was observed at background concentrations in one sample from Sarasota county. Other samples collected statewide did not contain *K. brevis*.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel admitted 6 patients with suspect red tide/toxicosis: 4 juvenile double-crested cormorants (1 died, 3 still at CROW), 1 adult great blue heron (still at CROW), and 1 adult magnificent frigate bird (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

Water clarity at Lighthouse Beach Park on 11/8/23 at 11:07 AM on a high tide (1.9 ft). Lighthouse Beach Park Virtual Tour.

Red drift algae between Olde Middle Gulf Drive and Tarpon Bay Road, with very heavy deposits near Olde Middle Gulf Drive on 11/2/23. Photo: *City of Sanibel*