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: **November 21 – 27, 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 **2,005 cfs** at **S-79** with a 7-day average of **1,323 cfs (66%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,201 cfs and has been in the stress** flow envelope (2,100 – 2,600 cfs; RECOVER 2020) for 8 days.

Recommendation: 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 **20,705 AF** with **18,359 AF** to the Caloosahatchee through **S-77**, **496 AF** to the St. Lucie Canal though **S-308**, **234 AF** through **S-310** in Clewiston, **1,503 AF** though the **L8 canal**, and **113 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **15,893 AF** (from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1). Water conservation areas received flows of **5,576 AF**, **17,573 AF**, and **11,905 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **15,170 AF**.

Lake Level: 16.03 ft (Intermediate Sub-Band) **Last Week**: **16.11 ft** **Last Year: 16.48 ft**

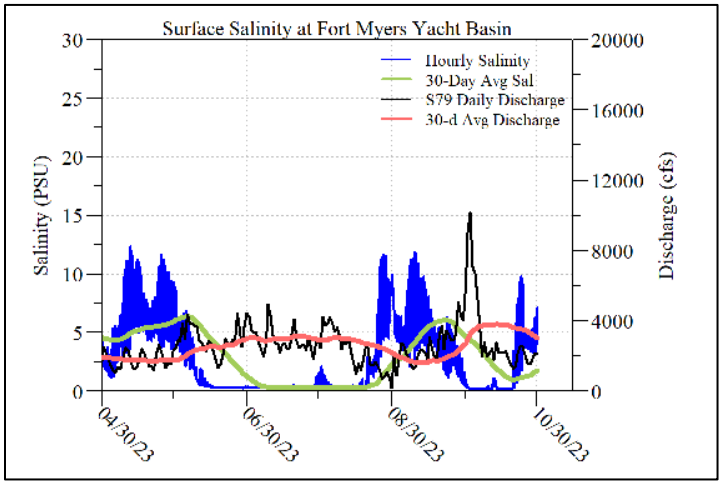
7-Day Lake Recession Rate: +0.08 ft/week

Lake Okeechobee Inflow: 1,207 cfs **Lake Okeechobee Outflow: 1,493 cfs**

Weekly Rainfall Total: **WP Franklin: 0.07"** **Ortona: 0.10"** **Moore Haven: 0.05"**

Cyanobacteria Status: On 11/27/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the **presence** of *Microcystis* upstream of the **Franklin Locks** as a wind-driven pale green scum line.

Red Tide: On 11/21/23, the FWC reported the red tide organism *Karenia brevis* was observed at background concentrations in one sample collected 36 miles offshore of Monroe County. Other samples collected statewide did not contain K. brevis.



Light Penetration

Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.5	> 1	3.0	< 18
Shell Point	ND	>2.2	ND	< 18
Causeway	2.5	> 2.2	1.1	< 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.*

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 6.5 psu, within the suitable range for tape grass.

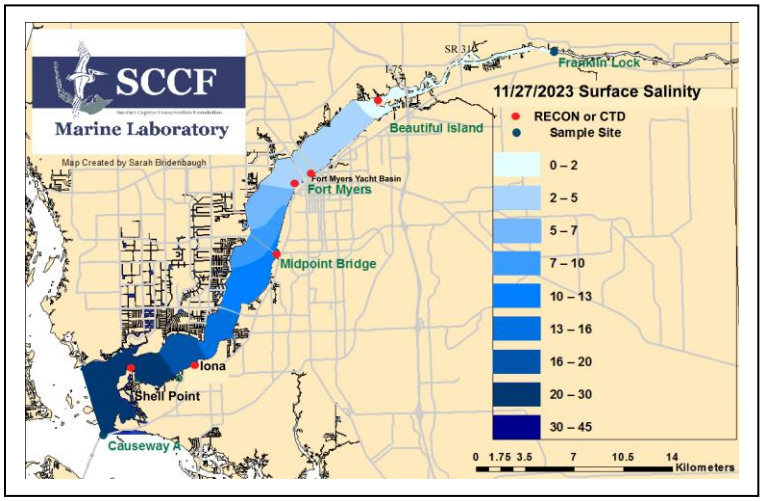
Lower Estuary Conditions: The average salinity at Shell Point RECON was 25 psu, in the optimal range for oysters and seagrass. At Algiers beach and the causeway, small diatoms (*Odontella*, *Asterionellopsis*, *Thalassiosira*) were the dominant phytoplankton group but dinoflagellate numbers and diversity increased during the week.

Water Quality Conditions:

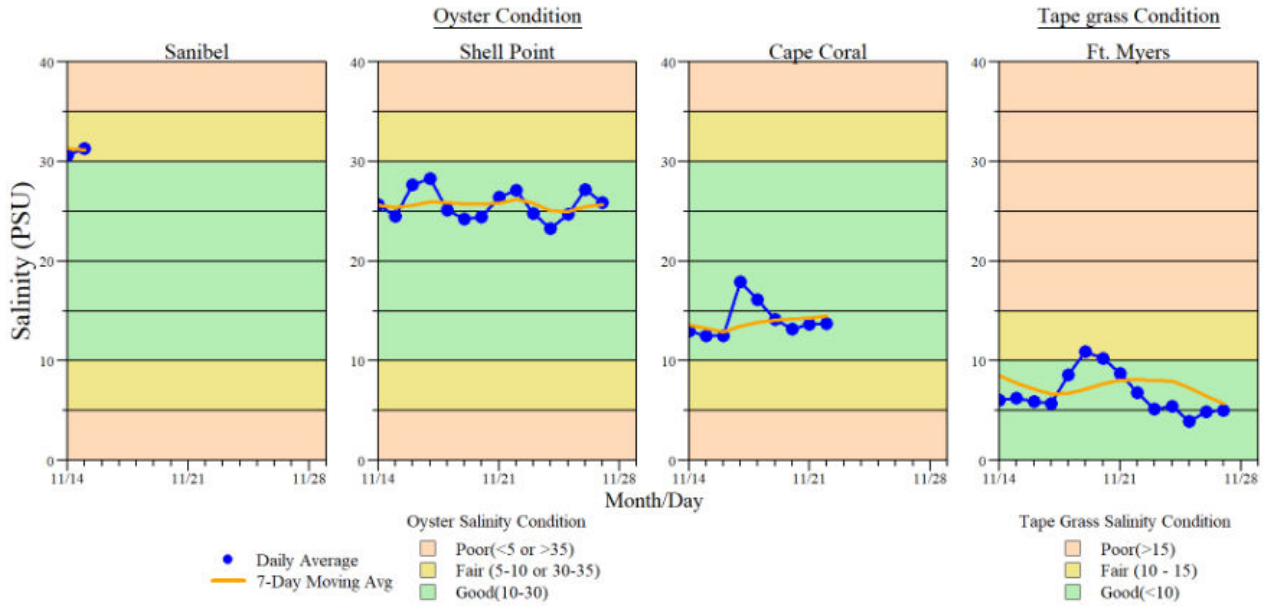
Monitor Site	Salinity (psu)[a] [previous week]	Diss O_2 (mg/L)[b]	FDOM (qsde)[c]	Chlorophyll (µg/L)[d]	Temperature (°F)
Beautiful Island	0.4 – 1.5 [0.4 – 3.0]	5.1 – 6.5	------	6.5	76.1 – 82.0
Fort Myers Yacht Basin	2.5 – 8.2 [3.3 – 11]	5.5 – 7.4	-------	4.9	71.4 – 78.3
Shell Point	15 – 33 [17 – 34]	5.8 – 7.4	-------	-------	71.7 – 77.6
McIntyre Creek	29.0 – 31.4 [27.5 – 32.1]	3.4 – 8.5	-------	-------	70.0 – 78.8
Tarpon Bay	29.0 – 34.3 [28.7 – 33.7]	5.2 – 7.9	23.8 – 65.8	1.1 – 3.2	71.1 – 78.1
Wulfert Flats	30.1 – 32.7 [27.2 – 33.0]	4.2 – 8.4	-------	3.1 – 14.8	69.4 – 78.4

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

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel admitted 6 patients with suspected red tide/toxicosis: 2 juvenile and 1 adult double-crested cormorants (all still at CROW), 1 adult snowy egret (still at CROW), 1 adult anhinga (still at CROW), and 1 adult royal terns (died).



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
11/21/23	2459	1812	1687
11/22/23	2004	1615	1515
11/23/23	1836	1053	1236
11/24/23	1568	879	837
11/25/23	1828	1079	1051
11/26/23	1899	1375	1461
11/27/23	2438	1451	1471
7-day avg	2005	1323	1323



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 11/27/23 at 11:35 AM on a rising tide (1.3 ft). Lighthouse Beach Park Virtual Tour.