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: **December 5 - 11, 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 **2,001 cfs** at **S-79** with a 7-day average of **1,502 cfs (75%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,905 cfs and has been in the optimum** flow envelope (750 – 2,100 cfs; RECOVER 2020) for **15 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. Since there are no active algal blooms on the Lake or in the Gulf of Mexico, 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, the Tributary Hydrologic conditions in the Normal category, the Seasonal Climate Outlook in the Normal to Extremely Wet category, and the Multi-seasonal Climate Outlook in the Wet category, Part D of the 2008 LORS suggests up to 3,000 cfs at S-79 1,170 cfs at S-80. 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 **26,452 AF** with **20,842 AF** to the Caloosahatchee through **S-77**, **58 AF** to the St. Lucie Canal though **S-308**, **85 AF** through **S-310** in Clewiston, **1,523 AF** though the **L8 canal**, and **3,944 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **11,964 AF** (from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1). Water conservation areas received flows of **7,857 AF**, **2,513 AF**, and **5,370 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **27,436 AF**.

Lake Level: 15.89 ft (Intermediate Sub-Band) **Last Week**: **15.99 ft** **Last Year: 16.41 ft**

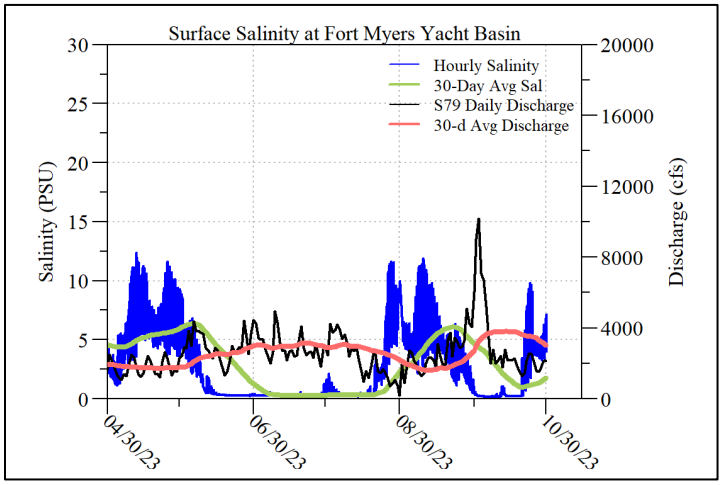
7-Day Lake Recession Rate: -0.10 ft/week

Lake Okeechobee Inflow: 802 cfs **Lake Okeechobee Outflow: 1,109 cfs**

Weekly Rainfall Total: **WP Franklin: 0.25"** **Ortona: 0.25"** **Moore Haven: 0.07"**

Cyanobacteria Status: On 12/11/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the **presence** of *Microcystis* at the **Alva Boat Ramp** as sparse visible specks.

Red Tide: On 12/8/23, the FWC reported the red tide organism *Karenia brevis* was not observed in samples collected statewide over the past week



Light Penetration

Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.9	> 1	2.0	< 18
Shell Point	ND	>2.2	ND	< 18
Causeway	2.3	> 2.2	2.0	< 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 5.7 psu, within the suitable range for tape grass.

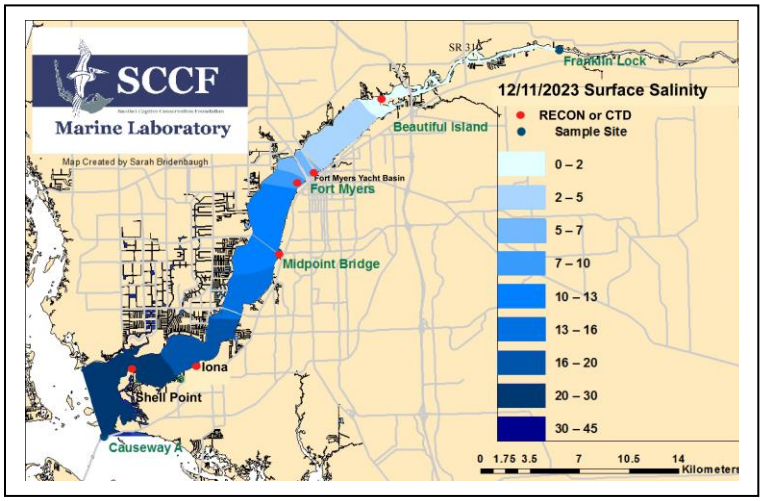
Lower Estuary Conditions: The average salinity at Shell Point RECON was 25 psu, in the optimal range for oysters and seagrass.

Water Quality Conditions:

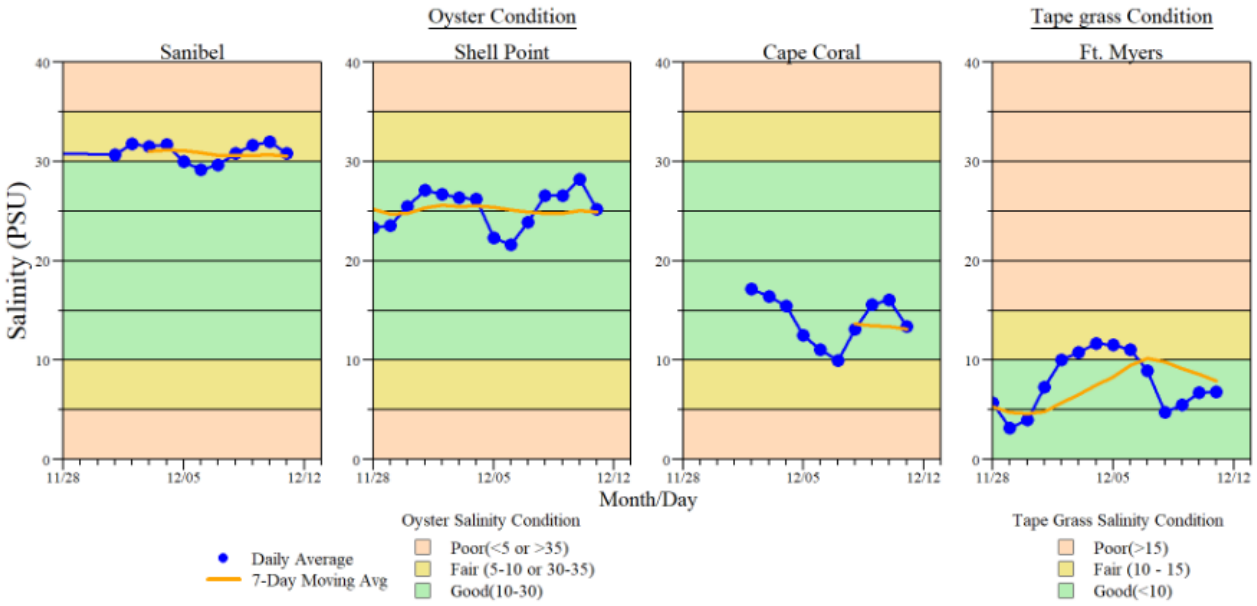
Monitor Site	Salinity (psu)[a] [previous week]	Diss O_2 (mg/L)[b]	FDOM (qsde)[c]	Chlorophyll (µg/L)[d]	Temperature (°F)
Beautiful Island	0.4 – 1.7 [0.4 – 1.4]	5.0 – 6.8	211 – 238	6.5	72.4 – 81.1
Fort Myers Yacht Basin	1.7 – 12 [3.3 – 11]	6.1 – 8.1	162 – 220	4.5	64.8 – 78.1
Shell Point	13 – 33 [14 – 33]	6.4 – 7.8	-------	-------	64.8 – 74.5
McIntyre Creek	30.7 – 32.6 [27.8 – 31.2]	3.6 – 9.1	-------	-------	63.3 – 73.6
Tarpon Bay	28.6 – 34.2 [27.4 – 32.7]	5.8 – 8.0	25.3 – 63.1	1.0 – 2.7	64.5 – 74.0
Wulfert Flats	31.1 – 34.5 [30.2 – 33.5]	5.0 – 8.6	-------	2.8 – 26.6	60.2 – 74.3

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 double-crested cormorants (1 died, 1 still at CROW), 2 juvenile laughing gulls (1 died, 1 still at CROW) and 1 adult osprey (died).

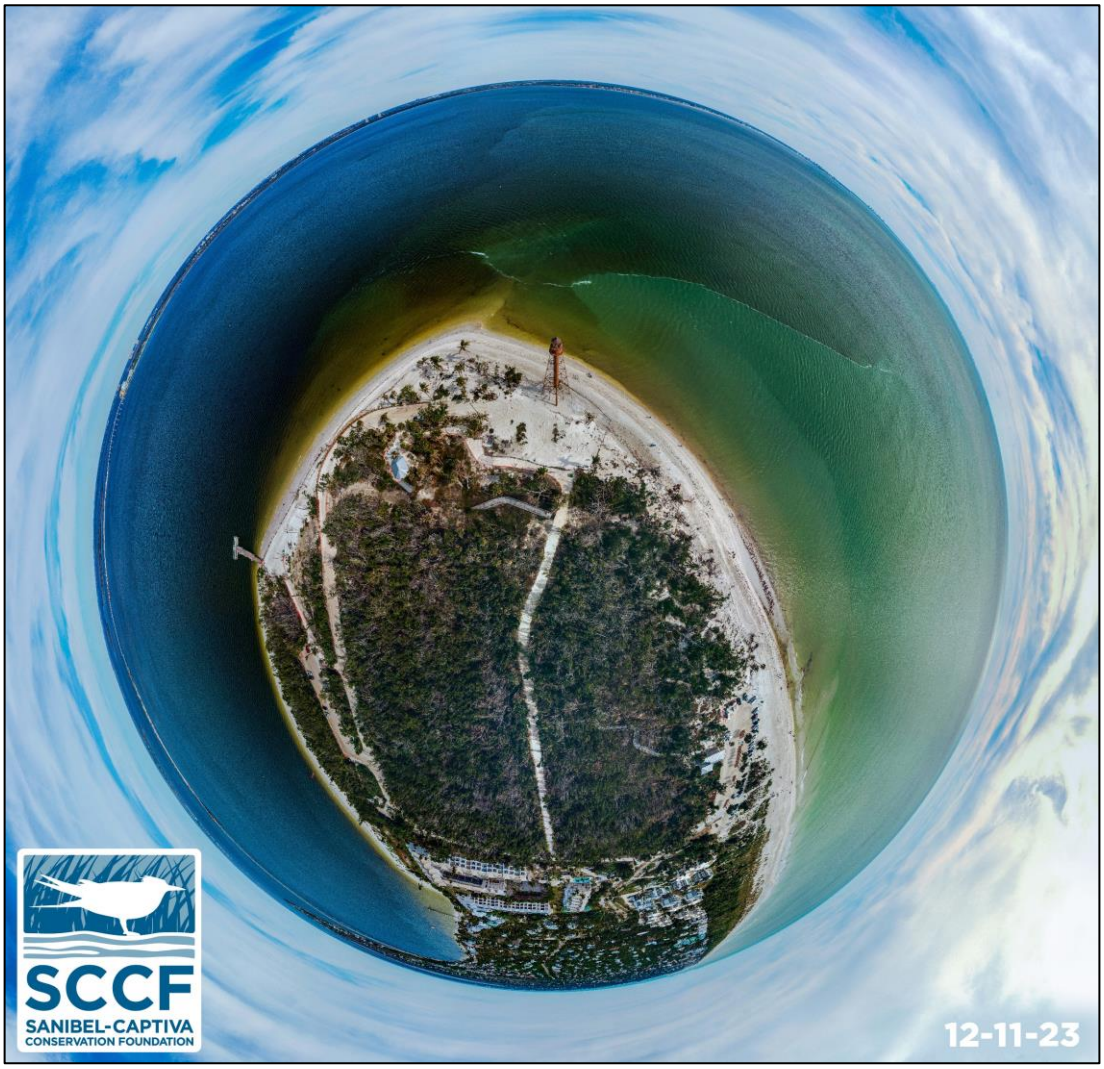


ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
12/5/23	2833	1952	2176
12/6/23	2340	1535	1649
12/7/23	1578	1281	1479
12/8/23	1329	1413	1668
12/9/23	1922	925	1075
12/10/23	1540	972	980
12/11/23	2465	1466	1485
7-day avg	**2001**	**1363**	**1502**



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 12/11/23 at 12:18 PM on a high tide (1.6 ft). Lighthouse Beach Park Virtual Tour.