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 7 – 13, 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 **1,860 cfs** at **S-79** with a 7-day average of **1,676 cfs (90%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,737 cfs and has been in the optimum** flow envelope (750 – 2,100 cfs; RECOVER 2020) for 20 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 **38,265 AF** with **15,441 AF** to the Caloosahatchee through **S-77**, **485 AF** to the St. Lucie Canal though **S-308**, **51 AF** through **S-310** in Clewiston, **851 AF** though the **L8 canal**, and **21,436 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **18,079 AF** (from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1). Water conservation areas received flows of **882 AF**, **252 AF**, and **2,136 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **14,708 AF**.

Lake Level: 15.97 ft (Intermediate Sub-Band) **Last Week**: **16.07 ft** **Last Year: 16.21 ft**

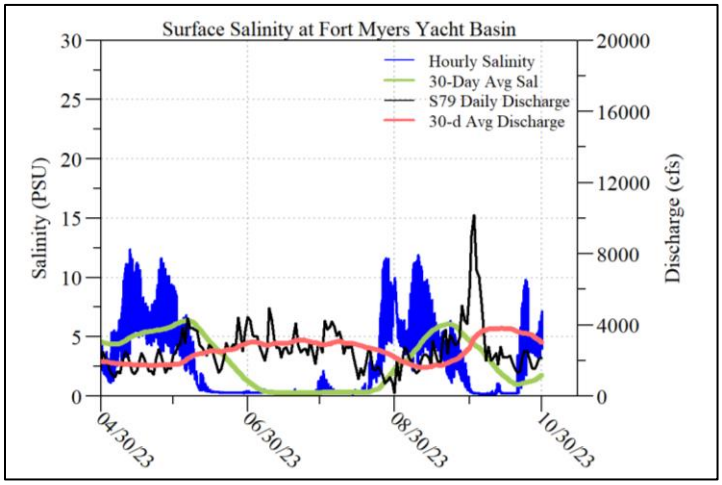
7-Day Lake Recession Rate: -0.10 ft/week

Lake Okeechobee Inflow: 1,776 cfs **Lake Okeechobee Outflow: 2,588 cfs**

Weekly Rainfall Total: **WP Franklin: 0.44"** **Ortona: 0.00"** **Moore Haven: 0.00"**

Cyanobacteria Status: On 11/14/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the **presence** of *Microcystis* and *Dolichospermum* at the **Alva Boat Ramp** as visible specks. *Microcystis* and *Dolichospermum* were **moderately abundant** upstream of the **Franklin Locks** with some wind-driven accumulation and streaks and **abundant** at the **Davis Boat Ramp** with streaks and accumulation.

Red Tide: On 11/9/23, the FWC reported the red tide organism *Karenia brevis* was not observed in samples collected statewide.



Light Penetration

Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.6	> 1	2.0	< 18
Shell Point	ND	>2.2	ND	< 18
Causeway	1.7	> 2.2	2.7	< 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

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 5.0 psu, within the suitable range for tape grass.

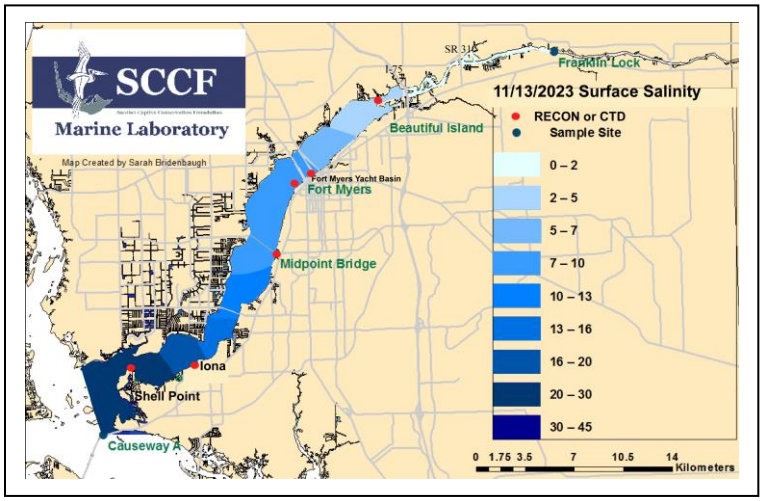
Lower Estuary Conditions: The average salinity at Shell Point RECON was 25 psu, in the optimal range for oysters and seagrass. The *Peridinium* count was high at Algiers beach on 11/13/23, but diatoms (*Coscinodiscus*, *Skeletonema*, and *Bellerochia*) comprised most of the phytoplankton biomass at the beach and causeway.

Water Quality Conditions:

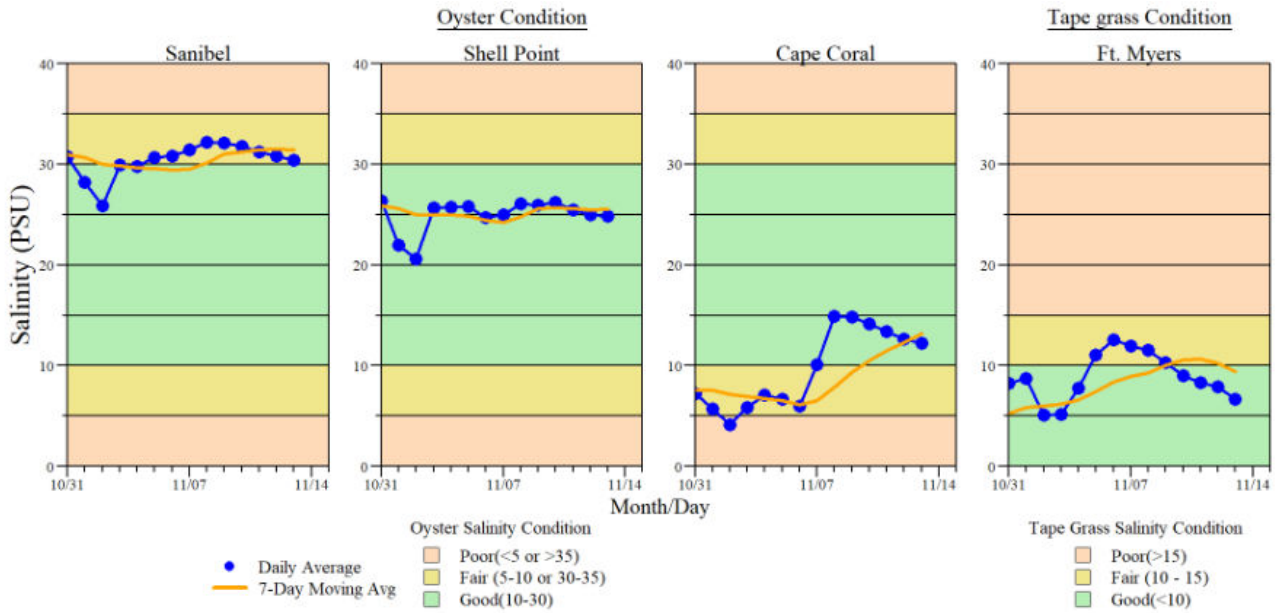
Monitor Site	Salinity (psu)[a] [previous week]	Diss O_2 (mg/L)[b]	FDOM (qsde)[c]	Chlorophyll (µg/L)[d]	Temperature (°F)
Beautiful Island	0.5 – 3.8 [0.4 – 1.3]	------	------	6.9	75.8 – 84.5
Fort Myers Yacht Basin	5.0 – 13 [1.6 – 12]	5.6 – 7.1	-------	5.3	75.0 – 80.6
Shell Point	17 – 32 [12 – 33]	4.7 – 6.7	-------	-------	71.3 – 79.8
McIntyre Creek	28.6 – 33.4 [27.6 – 32.9]	1.5 – 8.6	-------	-------	70.1 – 81.0
Tarpon Bay	29.3 – 31.4 [26.7 – 31.5]	4.3 – 6.7	42.6 – 71.8	1.2 – 4.1	70.8 – 80.3
Wulfert Flats	21.6 – 27.5 [29.0 – 34.9]	3.3 – 7.3	-------	1.8 – 25.5	70.9 – 81.5

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 8 patients with suspect red tide/toxicosis: 4 juvenile double-crested cormorants (2 died, 2 still at CROW), 1 adult brown pelican (still at CROW), 1 adult laughing gull (died), and 1 juvenile common loom (died).



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
11/7/23	1430	1023	1194
11/8/23	2010	1313	1612
11/9/23	2277	1924	2406
11/10/23	1956	1467	1976
11/11/23	1521	985	1256
11/12/23	1314	880	1016
11/13/23	2512	1624	2269
7-day avg	**1860**	**1317**	**1676**



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 11/13/23 at 12:03 PM on a high tide (1.8 ft). Lighthouse Beach Park Virtual Tour.

Red, brown, and green macroalgae on Sanibel Beaches on 11/13 – 11/14. Coverage ranged from sparse to continuous in the wrack line and swash zone. Species include *Agardhiella, Eucheuma, Gracilaria, Halymenia, Chondria, Hypnea, Lomentaria, Dictyota,* and *Caulerpa. SCCF.*