MEMORANDUM

To: USACE Colonel James L. Booth, LTC Todd F. Polk, Richard McMillen, Kim Taplin, 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
James Evans, Leah Reidenbach, & Rick Bartleson PhD - SCCF (Sanibel-Captiva Conservation Foundation)

Subject: Caloosahatchee & Estuary Conditions Report

Reporting Period: **November 23 – 29, 2021**

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: Flows to the Caloosahatchee Estuary had a 7-day average of **1,910 cfs** at **S-79** with a 7-day average of **1,102 cfs (58%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,013 cfs and has been in the optimal flow envelope (750 – 2,100; RECOVER 2020) for 5 days.**

Recommendation: In order to maintain a beneficial salinity gradient in the Caloosahatchee Estuary for the health of seagrass and oysters, we recommend that the Corps maintain flows at S-79 within the optimum flow envelope (750 – 2,100 cfs) based on the RECOVER performance measure for salinity.

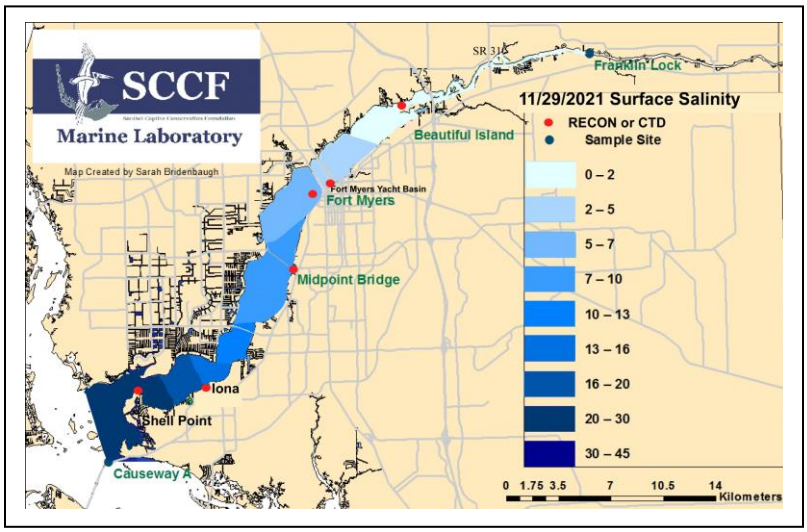
USACE Action: Part D of the 2008 LORS suggests flows up to 450 cfs at S-79 and up to 200 cfs at S-80. As of 11/5/21, target flow to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) is 2,000 cfs (7-day average, pulse release) and no flow to the St. Lucie Lock and Dam (S-80). Lake flows will be reduced and may stop completely based on local basin runoff.

Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **16,693 AF** with **15,304 AF** to the Caloosahatchee through **S-77**, **20 AF** through **S-310** in Clewiston, and **1,369 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **14,881 AF** (11,111 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **3,770 AF** from **S310 and C10A**. Water conservation areas received flows of **3,053 AF**, **4,417 AF**, and **6,454 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **28,437 AF**

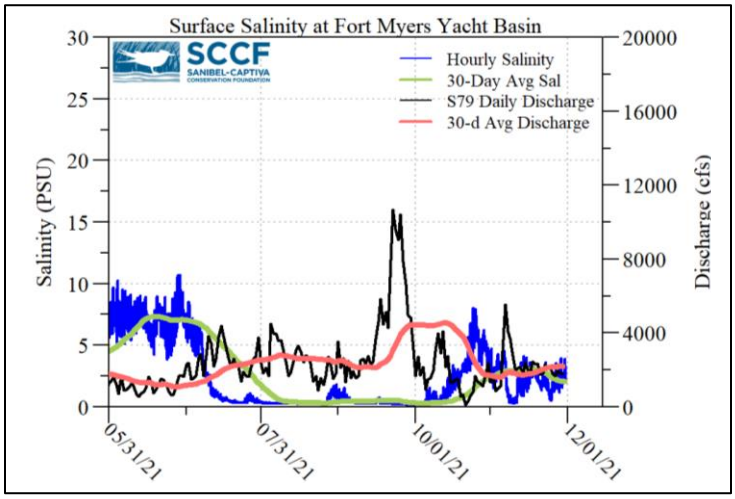
Lake Level: 15.96 ft (Low sub-band) **Last Week**: **16.07 ft** **Last Year: 16.13 ft**

Lake Okeechobee Inflow: **1060 cfs** **Lake Okeechobee Outflow: 1208 cfs**

Weekly Rainfall Total: WP Franklin **0.00"** Ortona **0.01"** Moore Haven **≥0.00"**



ACOE Daily Reports			
Date	**S79 Flow (cfs)**	**S78 Flow (cfs)**	**S77 Flow (cfs)**
11/23/21	**2037**	**1321**	**1104**
11/24/21	**2075**	**1407**	**1367**
11/25/21	**1796**	**1043**	**956**
11/26/21	**1684**	**1039**	**942**
11/27/21	**1954**	**1098**	**995**
11/28/21	**1835**	**1198**	**1109**
11/29/21	**1988**	**1264**	**1243**
7-day avg	**1910**	**1196**	**1102**



Light Penetration

Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.69[c]	> 1	2.2	< 18
Shell Point	1.07[c]	>2.2	0.9	< 18
Causeway	1.55[c]	> 2.2	1.7	< 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

Cyanobacteria Status: On 11/30/21 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis*, *Dolichospermum*, and *Aphanizomenon* at the Alva Boat Ramp (240 colonies/L) and the Davis Boat Ramp (470 colonies/L). *Microcystis*, and *Dolichospermum* were reported as present upstream of the Franklin Locks (490 colonies/L).

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 2.4 **psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **23 psu**, within the optimal range for oysters, but **below optimal for seagrass**.

Water Quality Conditions

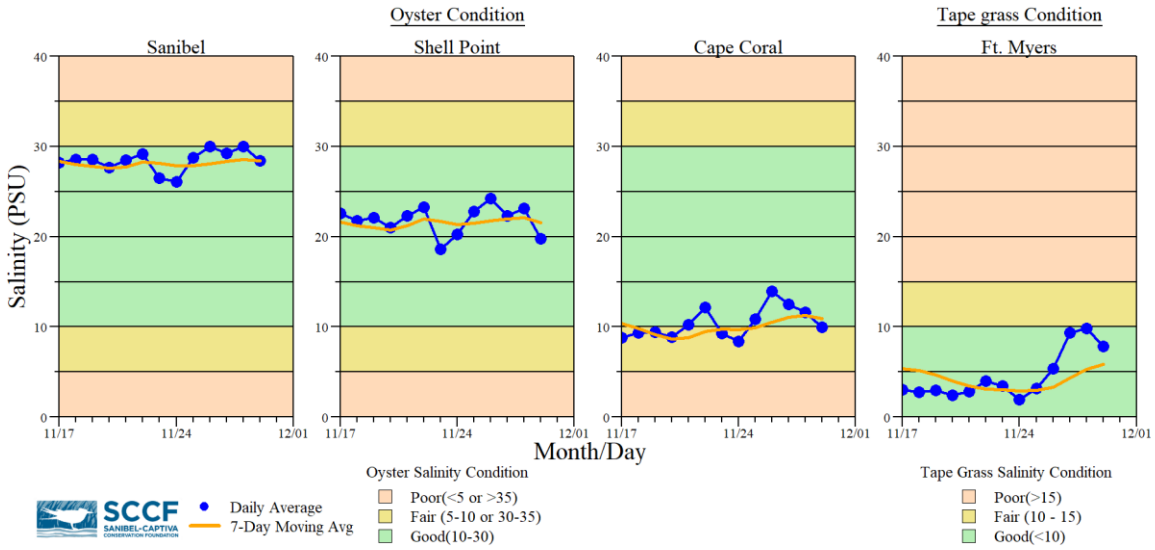
Monitor Site	Salinity (psu)[a] [previous week]	Diss O_2 (mg/L)[b]	FDOM (qsde)[c]	Chlorophyll (µg/L)[d]
Beautiful Island	0.2 – 0.7 [0.2 – 0.9]	4.7 – 6.0	356	6.8
Fort Myers Yacht Basin	1.0 – 4.4 [1.7– 3.9]	-------	248	6.1
Shell Point	12 – 31 [12 – 30]	5.5 – 6.8	141	3.1
McIntyre Creek	25.8 – 31.1	5.0 – 16.6	8.6 – 15.6	0.2 – 0.9
Tarpon Bay	25.5 – 29.6	-------	-------	-------
Wulfert Flats	28.7 – 31.9	5.8 – 9.4	-------	3.8 – 14.4

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

Red Tide: On 11/24/21, the FWC reported that *K. brevis* was detected in 37 samples along Florida's Gulf Coast, with bloom concentrations (>100,000 cells/liter) observed in one sample from offshore of Wakulla County.

In Southwest Florida over the past week, *K. brevis* was observed at background concentrations in and offshore of Pinellas County.

Wildlife Impacts: In the past week (11/22 – 11/28), the CROW wildlife hospital on Sanibel received 27 toxicosis patients: 7 brown pelicans (2 died, 5 still at CROW), 14 double crested cormorants (5 died, 9 still at CROW), 1 fish crow (still at CROW), 1 great blue heron (died), 1 lesser scaup (died), 2 laughing gulls (1 died, 1 still at CROW), and 1 white pelican (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.

Cyanobacteria at the Davis Boat ramp (top left) and upstream of the Franklin Locks (bottom left) on 11/30/21. *Lee County Environmental Laboratory*

Water clarity at Lighthouse Beach Park on 12/1/21 at 12:25 PM on a falling tide (High tide: 1.96 ft @ 10:24 AM). Lighthouse Beach Park Virtual Tour.