

# 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: **April 4 – 11, 2022**

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 **1,784 cfs** at **S-79** with a 7-day average of **1,592 cfs (89%)** coming from the lake at **S-77**. The **14-day moving average flow at S-79 is 1,856 cfs** and has been in the **optimal flow envelope (750 – 2,100 cfs; RECOVER 2020)** for 139 days.

**Recommendation:** With spawning months beginning for many estuarine and marine organisms, including oysters and fishes, decreased flows from S-79 help prevent advection of larvae to less suitable downstream locations. **We request that the Corps make a slight reduction in flows at S-79** (as was done April 2) to simulate a natural decrease in flows and increase in salinity as the dry season progresses. Drastic decreases in flows should be avoided to prevent stress to estuarine and marine organisms.

**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 4/2/21, target flow to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) was reduced to 1,800 cfs (7-day average, pulse release) and no flow continues to the St. Lucie Lock and Dam (S-80).

**Lake Flows:** In the past 7 days the total outflow from Lake Okeechobee was **53,986 AF** with **22,102 AF** to the Caloosahatchee through **S-77**, **7,910 AF** to St Lucie through **S-308**, **1,672 AF** through **S-310** in Clewiston, and **19,609 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **13,583 AF** (13,583 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1). Water conservation areas received flows of **0 AF**, **0 AF**, and **2,013 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **4,584 AF**.

**Lake Level: 13.49 ft (Base Flow sub-band)**

**Last Week: 13.73 ft**

**Last Year: 14.53 ft**

**Lake Okeechobee Inflow: 1025 cfs**

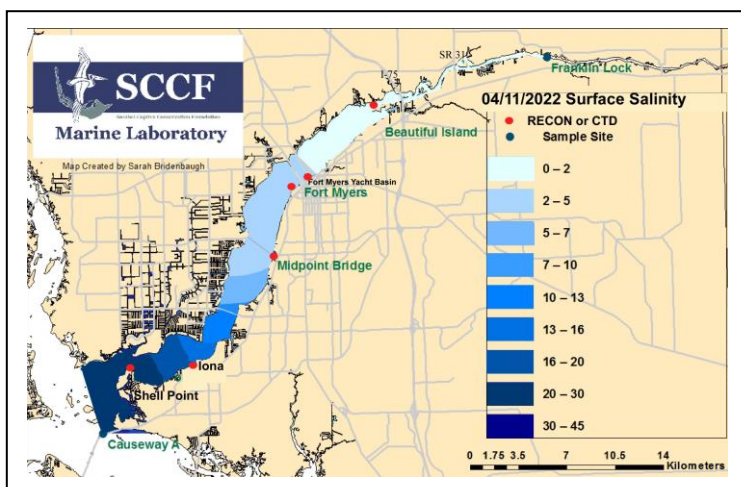
**Lake Okeechobee Outflow: 5101 cfs**

**Weekly Rainfall Total: WP Franklin ≥ 0.00"**

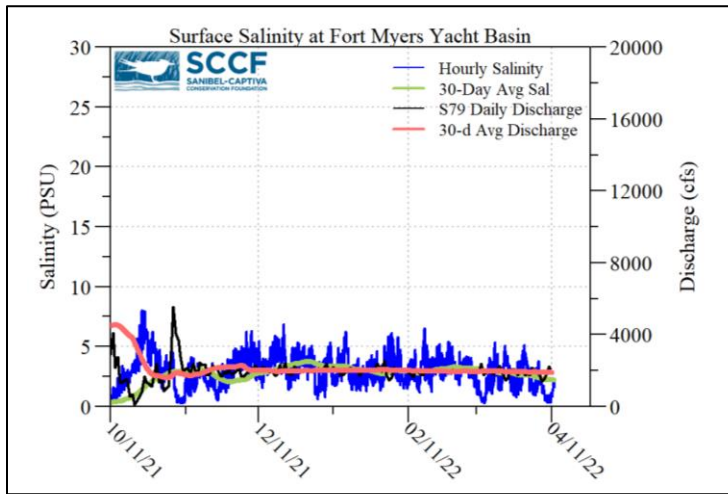
**Ortona ≥ 0.00"**

**Moore Haven ≥ 0.00"**

**7-Day Lake Recession Rate: -0.20 ft/week**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/5/22	1862	1270	1100
4/6/22	1728	758	1270
4/7/22	1385	1036	948
4/8/22	1573	854	1850
4/9/22	1788	1361	1763
4/10/22	2221	1780	2476
4/11/22	2000	1226	1736
<b>7-day avg</b>	<b>1794</b>	<b>1184</b>	<b>1592</b>



Light Penetration				
Site	25% I <sub>z</sub>	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.65 <sup>c</sup>	>2.2	2.5	< 18
Causeway	1.54 <sup>c</sup>	> 2.2	7.0	< 5

25% I<sub>z</sub> is the depth (z) where irradiance (I) is 25% of surface irradiance. Target values indicate the depth of light penetration needed for healthy seagrass.  
<sup>m</sup> measured, <sup>c</sup> calculated

**Cyanobacteria Status:** On 4/11/22 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Dolichospermum*, *Microcystis*, and cyano-filaments at the **Alva Boat Ramp** as visible specks and at the **Davis Boat Ramp** with slight accumulation along the seawall. *Dolichospermum*, *Microcystis*, and cyano-filaments were **moderately abundant** upstream of the **Franklin Locks** with streaks and accumulation along the locks.

**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 **27 psu**, within the optimal range for oysters and seagrasses. Water column chlorophyll was slightly elevated at the Shell Point RECON following wind events. Diatoms, including *Pseudo-nitzschia* and *Chaetoceros*, dominated the phytoplankton at Sanibel’s causeway and beaches.

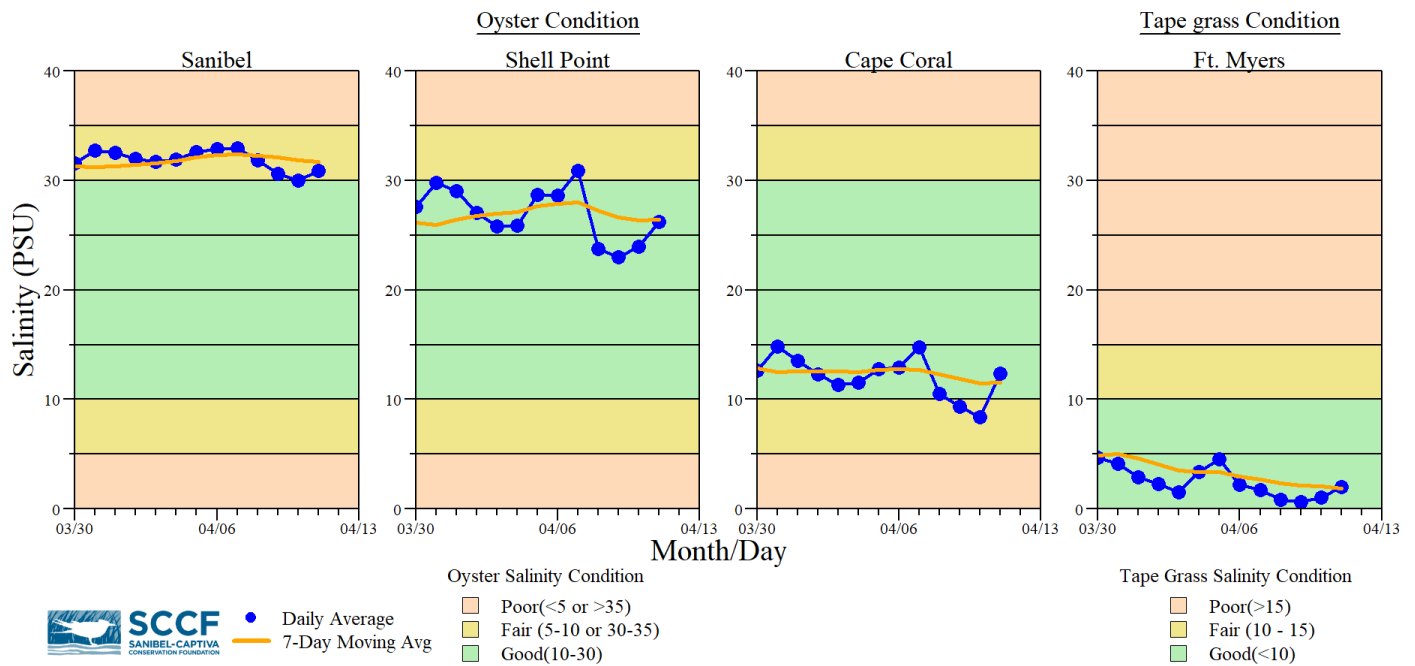
**Water Quality Conditions**

Monitor Site	Salinity (psu) <sup>a</sup> [previous week]	Diss O <sub>2</sub> (mg/L) <sup>b</sup>	FDOM (qsde) <sup>c</sup>	Chlorophyll (µg/L) <sup>d</sup>
Beautiful Island	0.2 – 0.3 [0.2 – 0.4]	-----	205	-----
Fort Myers Yacht Basin	0.4 – 3.4 [0.8 – 4.9]	-----	189	-----
Shell Point	13 – 34 [16 – 33]	4.6 – 7.0	55.5	3.2
McIntyre Creek	31.5 – 35.3 [32.7 – 34.3]	2.8 – 11.3	-----	-----
Tarpon Bay	30.1 – 34.3 [31.7 – 34.5]	3.7 – 8.7	-----	-----
Wulfert Flats	24.4 – 34.9 [25.1 – 34.3]	4.0 – 8.9	-----	3.2 – 38.7

- Red values are outside of the preferred range.
- <sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 10 – 30
- <sup>b</sup> Dissolved O<sub>2</sub> target values: all sites > 4
- <sup>c</sup> FDOM target values: BI < 70, FM < 70, SP < 11
- <sup>d</sup> Chlorophyll target values: BI < 11, FM < 11, SP < 11
- <sup>e</sup> Single sonde lower and surface layer or surface grab lab measurement
- no data

**Red Tide:** On 4/8/22, the FWC reported that the red tide organism, *Karenia brevis* was observed at background concentrations in one Northwest Florida sample over the past week. In Southwest Florida, *K. brevis* was not observed.

**Wildlife Impacts:** In the past week (4/5 – 4/11), the CROW wildlife hospital on Sanibel received 2 toxicosis patients: 2 ospreys (both 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.



*Gracilaria mammilaris* washing up on Bunche Beach on 4/9/22. SCCF.

Water clarity at Lighthouse Beach Park on 4/11/22 at 1:22 PM on a falling tide (high tide: 1.85ft @ 11:40 AM). [Lighthouse Beach Park Virtual Tour.](#)