

# 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: **December 21, 2021 – January 3, 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 **1,947 cfs** at **S-79** with a 7-day average of **1,568 cfs (81%)** coming from the lake at **S-77**. The **14-day moving average flow at S-79 is 1,980 cfs** and has been in the **optimal flow envelope (750 - 2100 cfs; RECOVER 2020)** for 40 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 **39,005 AF** with **21,769 AF** to the Caloosahatchee through **S-77**, **0 AF** through **S-310** in Clewiston, and **16,296 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **5,968 AF** (5,933 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **35 AF** from **S310**. Water conservation areas received flows of **1,384 AF**, **319 AF**, and **351 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **21,697 AF**.

**Lake Level: 15.46 ft (Low sub-band)**

**Last Week: 15.62 ft**

**Last Year: 15.81 ft**

**Lake Okeechobee Inflow: 429 cfs**

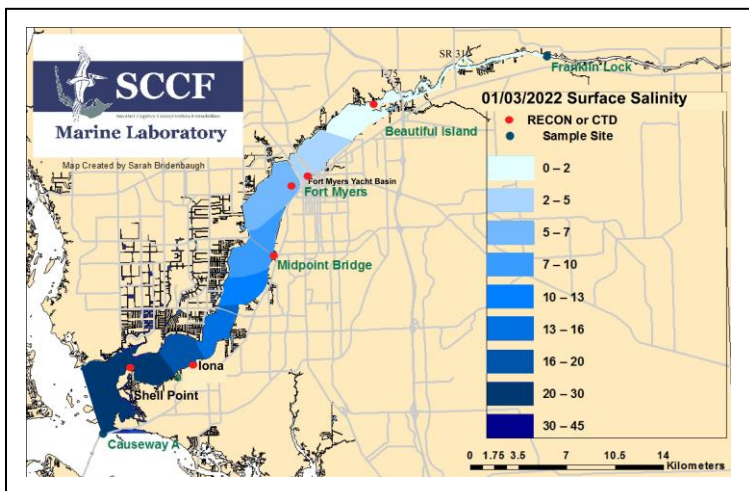
**Lake Okeechobee Outflow: 2,316 cfs**

**Weekly Rainfall Total: WP Franklin ≥0.13"**

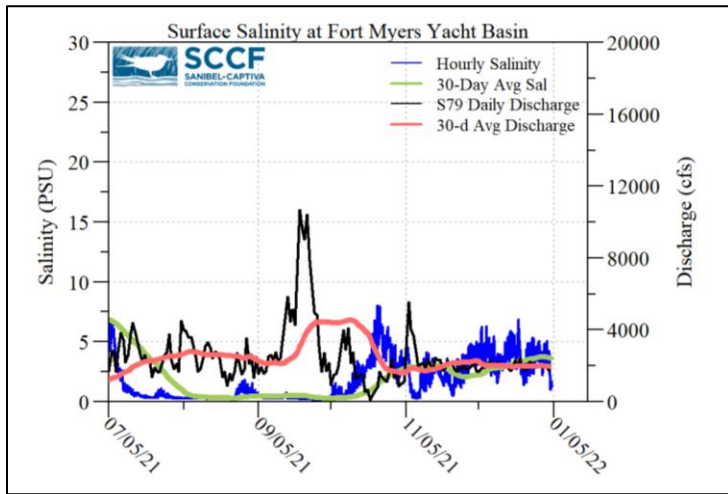
**Ortona ≥0.00"**

**Moore Haven ≥0.00"**

**7-Day Lake Recession Rate: -0.16 ft/wk**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
12/21/21	1906	1652	1630
12/22/21	2424	1450	1563
12/23/21	1852	1263	1507
12/24/21	1797	1293	1567
12/25/21	1826	1597	1620
12/26/21	2222	1603	1472
12/27/21	2073	1514	1540
12/28/21	1900	1517	1642
12/29/21	1894	1508	1646
12/30/21	2063	1512	1691
12/31/21	2004	1413	1672
1/1/22	1902	1361	1580
1/2/22	1917	1367	1458
1/3/22	1911	1285	1286
14-day avg	1978	1453	1562



Light Penetration				
Site	25% I <sub>z</sub>	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.60 <sup>c</sup>	> 1	1.8	< 18
Shell Point	1.35 <sup>c</sup>	>2.2	3.0	< 18
Causeway	1.41 <sup>c</sup>	> 2.2	9.1	< 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 1/3/22 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis* at the Alva Boat Ramp and upstream of the Franklin Locks as visible sparse specks.

On 12/27/22 they reported the presence of *Microcystis* at the Alva Boat Ramp and the Davis Boat Ramp as visible sparse specks.

**Upper Estuary Conditions:** The 30-day average surface salinity at the Fort Myers Yacht Basin was **3.8 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 seagrass.

**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	0.3 – 0.7 [0.3 – 1.3]	4.7 – 5.9	309	3.2
Fort Myers Yacht Basin	1.2 – 5.0 [1.8 – 6.2]	-----	280	7.5
Shell Point	----- [-----]	-----	83.5	3.1
McIntyre Creek	28.0 – 32.3 [27.4 – 30.1]	4.2 – 14.5	5.9 – 13.5	0.3 – 2.9
Tarpon Bay	----- [17.4 – 33.8]	-----	-----	-----
Wulfert Flats	29.7 – 33.9 [28.9 – 30.8]	3.4 – 10.2	-----	2.0 – 15.9

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

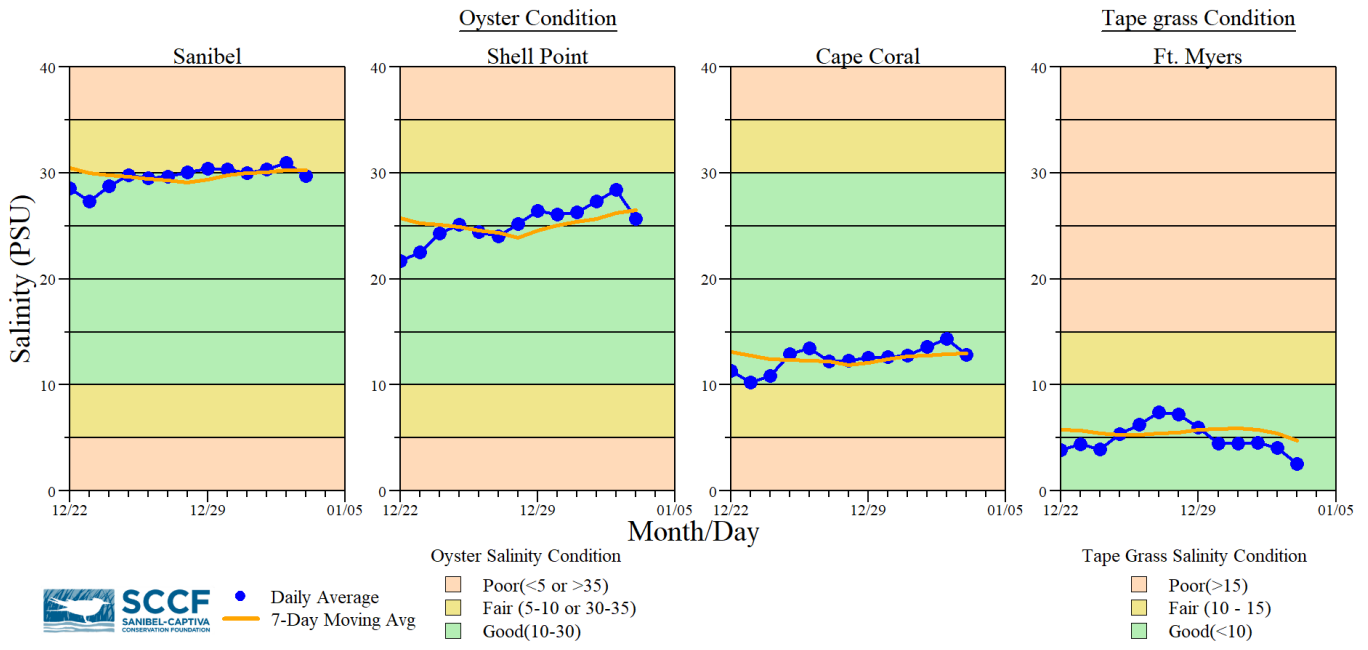
<sup>c</sup> FDOM target values: BI < 70, FM < 70, SP < 11

<sup>d</sup> Chlorophyll target values: BI < 11, FM < 11, SP < 11

<sup>s</sup> Single sonde lower and surface layer or surface grab lab measurement

**Red Tide:** On 12/29/21, the FWC reported that *K. brevis* was detected in one sample at very low concentrations offshore of Charlotte County.

**Wildlife Impacts:** In the past 2 weeks (12/20 – 1/3), the CROW wildlife hospital on Sanibel received 26 toxicosis patients: 1 black vulture (died), 1 brown pelican (still at CROW), 1 common loon (died), 1 common tern (died), 12 double crested cormorants (2 released, 4 died, 6 still at CROW), 2 laughing gulls (both still at CROW), 1 osprey (died), 1 ring-billed gull (still at CROW), 4 sandwich terns (4 died), and 1 white pelican (released).



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.



Water clarity at Lighthouse Beach Park on 1/4/22 at 11:18 AM on a rising tide (Low tide: -1.18ft @ 8:40 AM). [Lighthouse Beach Park Virtual Tour.](#)