

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 14 – 20, 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: Flow to the Caloosahatchee Estuary had a 7-day average of **1,900 cfs** at **S-79** with a 7-day average of **1,375 cfs (72%)** coming from the lake at **S-77**. The **14-day moving average flow at S-79 is 2,006 cfs** and has been in the **optimal flow envelope (750 - 2100 cfs; RECOVER 2020)** for 26 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 **22,776 AF** with **19,095 AF** to the Caloosahatchee through **S-77**, **254 AF** to St Lucie through **S-308**, **10 AF** through **S-310** in Clewiston, and **3,418 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **9,644 AF** (7,738 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **1,906 AF** from **S310** and **C10A**. Water conservation areas received flows of **2,721 AF**, **746 AF**, and **0 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **22,727 AF**.

Lake Level: 15.74 ft (Low sub-band)

Last Week: 15.78 ft

Last Year: 15.92 ft

Lake Okeechobee Inflow: 677 cfs

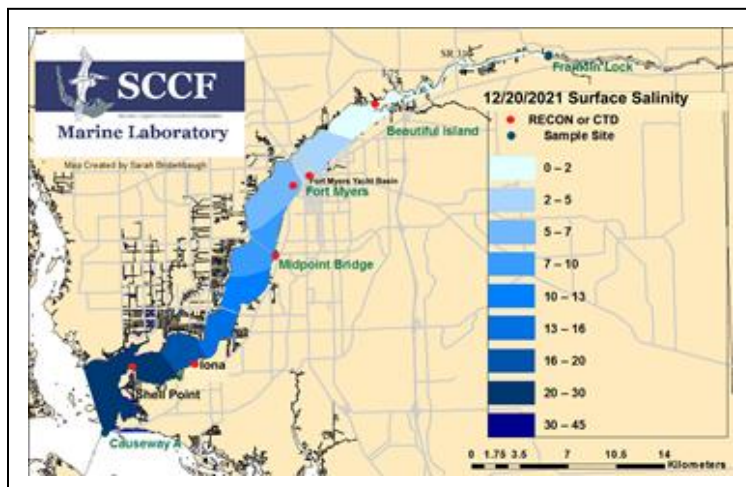
Lake Okeechobee Outflow: 1237 cfs

Weekly Rainfall Total: WP Franklin ≥0.16"

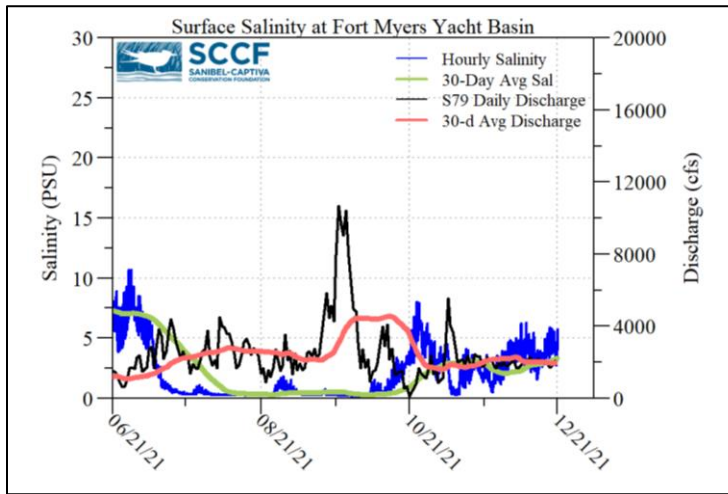
Ortona ≥0.14"

Moore Haven ≥0.08"

7-Day Lake Recession Rate: -0.05 ft/wk



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
12/14/21	2109	1724	1527
12/15/21	2033	1604	1620
12/16/21	1886	1568	1582
12/17/21	1876	1370	1226
12/18/21	1706	1295	1059
12/19/21	1833	1383	1157
12/20/21	2304	1612	1456
7-day avg	1964	1508	1375



Light Penetration				
Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.73 ^c	> 1	1.3	< 18
Shell Point	1.15 ^c	>2.2	1.5	< 18
Causeway	2.18 ^c	> 2.2	1.1	< 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 12/20/21 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis* and *Dolichospermum* upstream of the Franklin Locks as some streaks with light wind-driven accumulation along the locks and shore. *Microcystis*, *Dolichospermum*, and *Planktothrix* were moderately abundant at the Davis Boat Ramp as streaks with accumulation along the seawall.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **3.4 psu**, within the suitable range for tape grass.

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

Water Quality Conditions

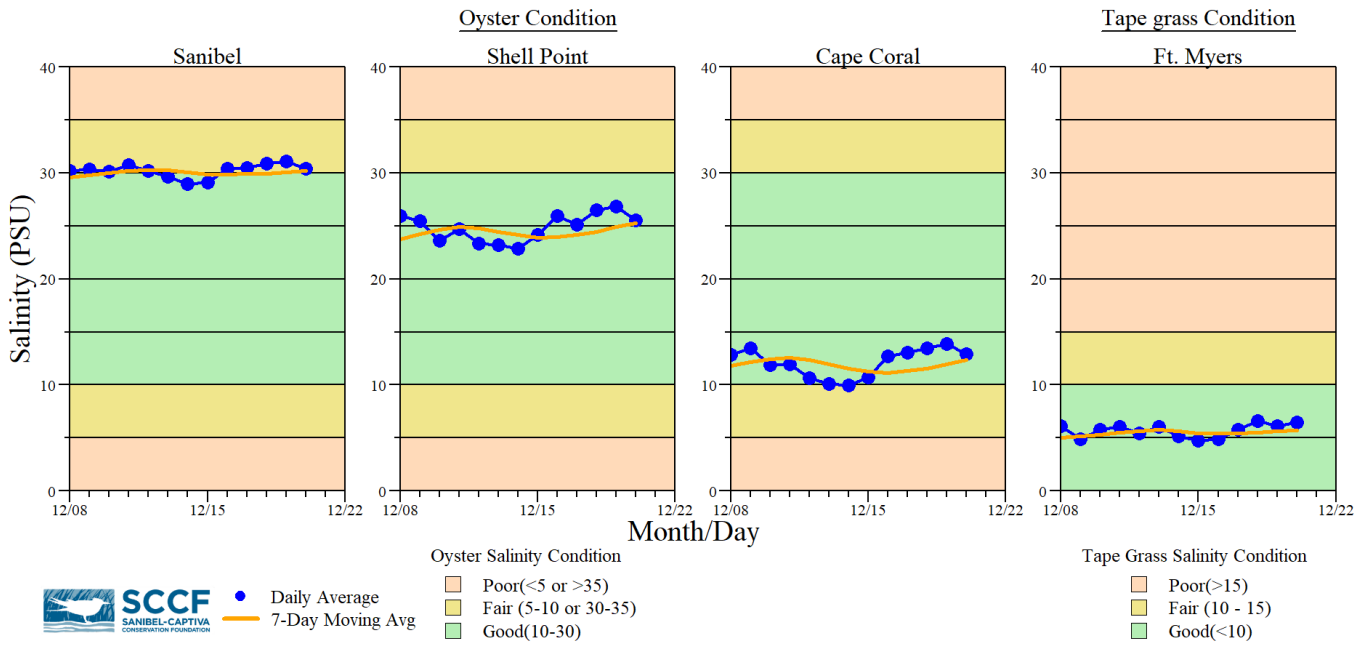
Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	0.3-1.2 [0.3 – 1.4]	4.3 – 6.8	288	5.3
Fort Myers Yacht Basin	2.8-5.6 [2.4 – 5.8]	-----	230	7.2
Shell Point	----- [17– 32]	-----	122	2.2
McIntyre Creek	27.4 – 30.1	3.9 – 15.4	8.5 – 12.8	0.7 – 2.3
Tarpon Bay	17.4 – 33.8	-----	-----	-----
Wulfert Flats	28.9 – 30.8	3.2 – 8.3	-----	3.8 – 15.6

- Red values are outside of the preferred range.
- ^a Salinity target values: BI < 5, FM < 10, SP = 10 – 30
- ^b Dissolved O₂ 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 12/17/21, the FWC reported that *K. brevis* was detected in eight samples along Florida’s Gulf Coast.

In Southwest Florida over the past week, *K. brevis* was observed at background in Lee County.

Wildlife Impacts: In the past week (12/14 – 12/19), the CROW wildlife hospital on Sanibel received 27 toxicosis patients: 1 common tern (died), 15 double crested cormorants (5 died, 10 still at CROW), 2 laughing gulls (both died), 1 ring-billed gull (still at CROW), 5 sandwich terns (5 died), 1 turkey vulture (still at CROW), 1 wood stork (died), and 1 white pelican (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.