

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 7 – 13, 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 **2,107 cfs** at **S-79** with a 7-day average of **1,620 cfs (77%)** coming from the lake at S-77. **The 14-day moving average flow at S-79 is 1,973 cfs and has been in the optimal flow envelope (750 - 2100 cfs; RECOVER 2020) for 19 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 **32,287 AF** with **22,491 AF** to the Caloosahatchee through **S-77**, **218 AF** to St Lucie through **S-308**, **91 AF** through **S-310** in Clewiston, and **9,255 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **8,485 AF** (8,083 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **403 AF** from **S310** and **C10A**. Water conservation areas received flows of **1,164 AF**, **355 AF**, and **492 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **22,961 AF**.

Lake Level: 15.78 ft (Low sub-band)

Last Week: 15.86 ft

Last Year: 15.99 ft

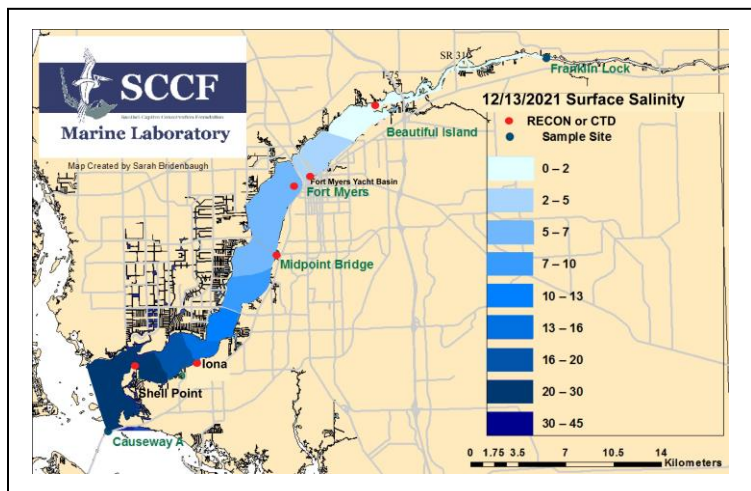
Lake Okeechobee Inflow: 524 cfs

Lake Okeechobee Outflow: 2,209 cfs

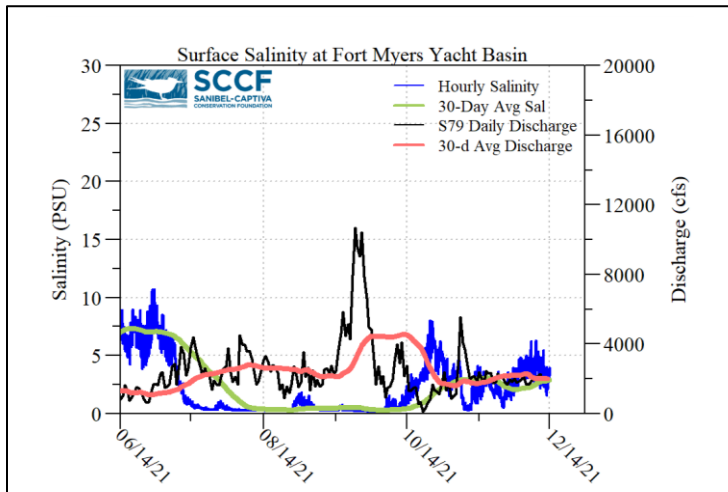
Weekly Rainfall Total: WP Franklin 0.00" Ortona ≥0.00"

Moore Haven 0.03"

7-Day Lake Recession Rate: -0.06 ft/wk



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
12/7/21	2008	1488	1468
12/8/21	2075	1619	1912
12/9/21	2153	1543	1895
12/10/21	2282	1477	1488
12/11/21	1953	1478	1358
12/12/21	2142	1464	1603
12/13/21	2133	1669	1618
7-day avg	2107	1566	1620



Light Penetration

Site	25% I _z Target Values		Turbidity Target Values	
	meters		NTU	
Fort Myers	0.68 ^c	> 1	1.5	< 18
Shell Point	1.33 ^c	>2.2	1.5	< 18
Causeway	2.02 ^c	> 2.2	1.1	< 5

25% I_z 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 12/14/21 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis* at the Alva Boat Ramp (20 colonies/L). *Microcystis* and *Aphanocapsa* were present upstream of the Franklin Locks (230 colonies/L) as light streaks with light wind-driven accumulation along the locks and shore. *Microcystis* and *Dolichospermum* were moderately abundant at the Davis Boat Ramp (1150 colonies/L) as streaks with accumulation along the seawall.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **3.1 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **24 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	0.3 – 1.4 [0.4 – 1.7]	4.8 – 6.6	277	6.0
Fort Myers Yacht Basin	2.4 – 5.8 [2.2 – 5.8]	-----	253	6.6
Shell Point	17– 32 [14 – 32]	5.8 – 7.6	96	3.0
McIntyre Creek	27.9 – 29.5	4.1 – 12.5	10.0 – 12.9	0.5 – 1.1
Tarpon Bay	16.4 – 31.8	-----	-----	-----
Wulfert Flats	30.2 – 31.2	3.9 – 7.7	-----	2.5 – 17.1

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

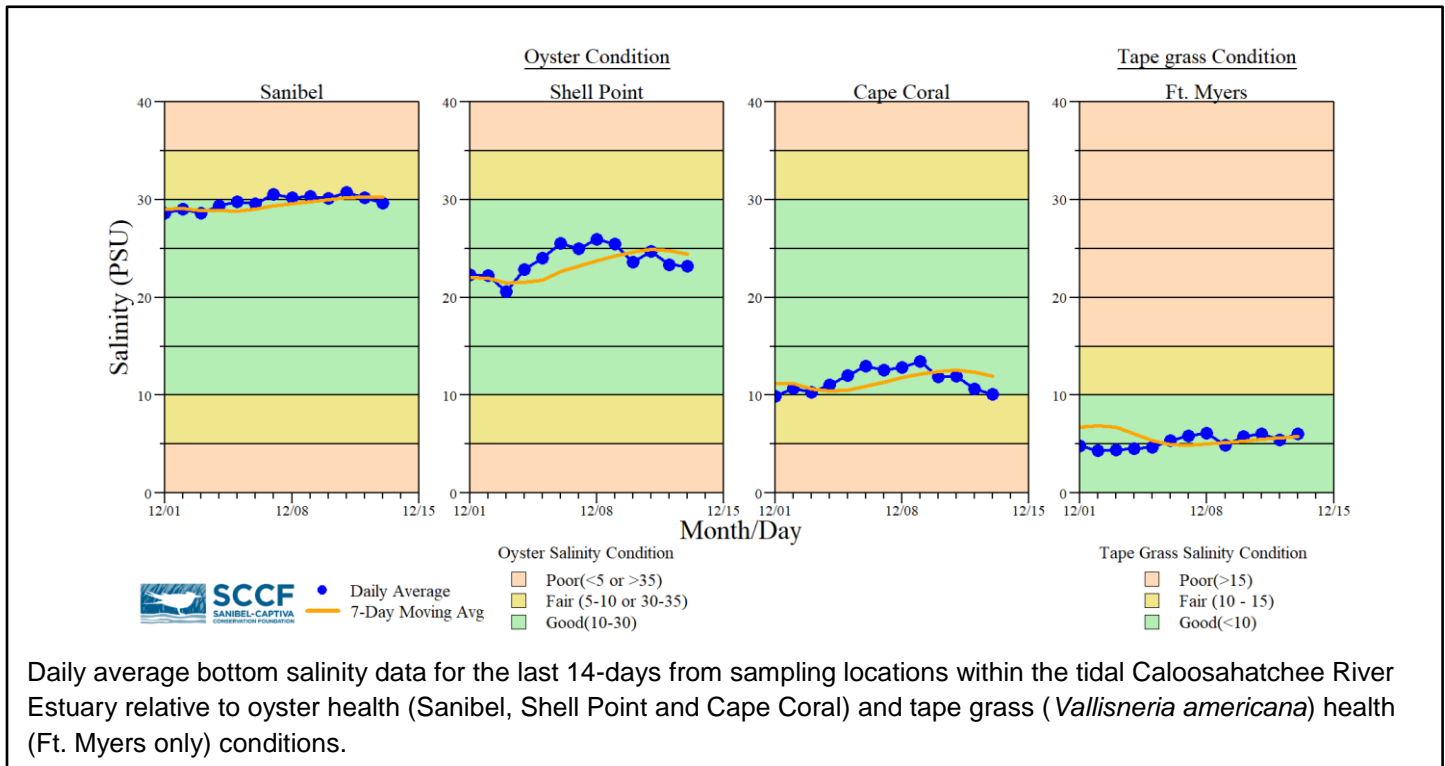
^d Chlorophyll target values: BI < 11, FM < 11, SP < 11

^s Single sonde lower and surface layer or surface grab lab measurement

Red Tide: On 12/10/21, the FWC reported that *K. brevis* was detected in six samples along Florida's Gulf Coast.

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

Wildlife Impacts: In the past week (12/7 – 12/13), the CROW wildlife hospital on Sanibel received 12 toxicosis patients: 1 common tern (still at CROW), 5 double crested cormorants (1 died, 4 still at CROW), 2 great blue herons (both died), 1 royal tern (still at CROW), 1 white ibis (died), 1 sanderling (died), and 1 white pelican (still at CROW).



Water clarity at Lighthouse Beach Park on 12/14/21 at 11:07 AM on a falling tide (High tide: 1.57 ft @ 10:09 AM). [Lighthouse Beach Park Virtual Tour.](#)