

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 12 – 18, 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 **1,667 cfs** at **S-79** with a 7-day average of **1,072 cfs (64%)** coming from the lake at **S-77**. The **14-day moving average flow at S-79 is 1,731 cfs** and has been in the **optimal flow envelope (750 – 2,100 cfs; RECOVER 2020)** for 146 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 maintain flows at S-79** at current levels, while monitoring the salinity gradient throughout the estuary for the health of seagrass and oysters.

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 4/16/21, target flow to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) was reduced to 1,500 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 **37,273 AF** with **14,886 AF** to the Caloosahatchee through **S-77**, **8,775 AF** to St Lucie through **S-308**, **785 AF** through **S-310** in Clewiston, and **12,034 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **15,524 AF** (15,130 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **394 AF** from **S310** and **C10A**. Water conservation areas received flows of **0 AF**, **849 AF**, and **244 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **3,108 AF**.

Lake Level: 13.38 ft (Base Flow sub-band)

Last Week: 13.49 ft

Last Year: 14.17 ft

Lake Okeechobee Inflow: 1022 cfs

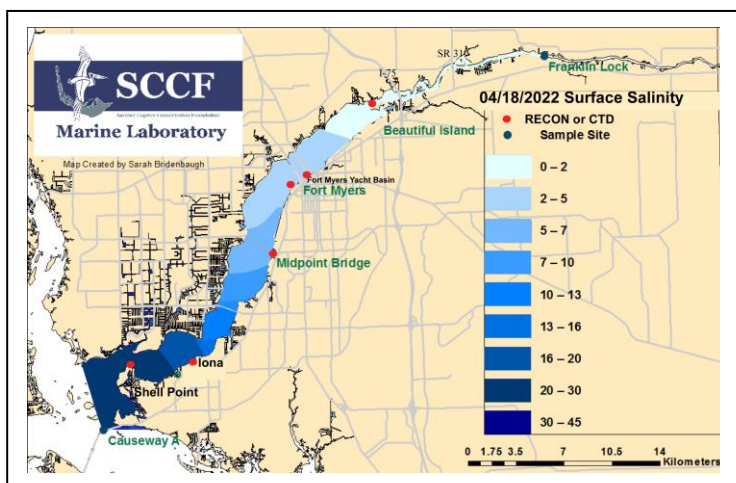
Lake Okeechobee Outflow: 2130 cfs

Weekly Rainfall Total: WP Franklin \geq 0.51"

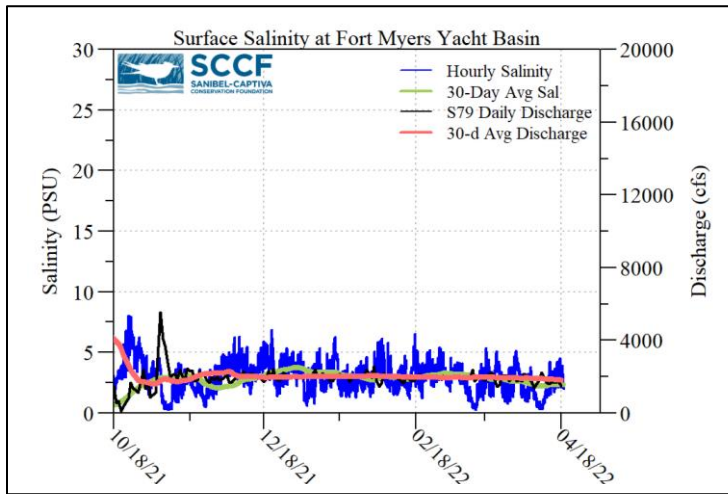
Ortona \geq 2.36"

Moore Haven \geq 0.80"

7-Day Lake Recession Rate: -0.08 ft/week



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/12/22	1661	1179	1786
4/13/22	1613	1513	1812
4/14/22	1672	1325	1685
4/15/22	1705	1243	940
4/16/22	1654	905	344
4/17/22	1750	994	339
4/18/22	1617	1021	599
7-day avg	1667	1169	1072



Light Penetration				
Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.70 ^c	>2.2	2.2	< 18
Causeway	2.17 ^c	> 2.2	3.5	< 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 4/18/22 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Dolichospermum*, *Microcystis*, and cyano-filaments at the **Alva Boat Ramp** and the **Davis Boat Ramp** as visible specks. *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. Elevated concentrations of diatoms (*Chaetoceros* dominant) were present at Sanibel’s causeway and south beach on 4/18/22.

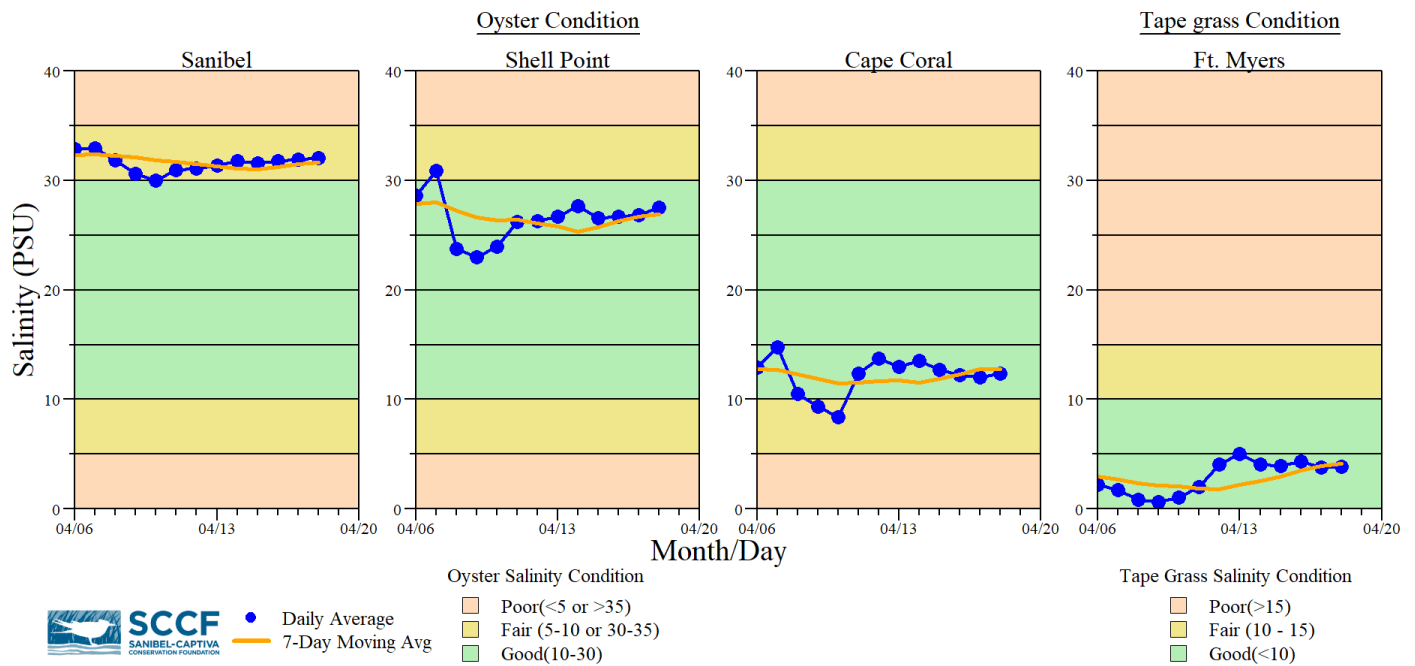
Water Quality Conditions

Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	0.2 – 0.4 [0.2 – 0.3]	-----	205	-----
Fort Myers Yacht Basin	1.2 – 3.9 [0.4 – 3.4]	-----	187	-----
Shell Point	----- [13 – 34]	-----	52.8	3.2
McIntyre Creek	31.7 – 33.5 [31.5 – 35.3]	2.8 – 10.1	-----	-----
Tarpon Bay	31.7 – 33.7 [30.1 – 34.3]	4.0 – 8.2	-----	-----
Wulfert Flats	----- [24.4 – 34.9]	-----	-----	-----

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
^e Single sonde lower and surface layer or surface grab lab measurement
 ----- no data

Red Tide: On 4/15/22, the FWC reported that the red tide organism, *Karenia brevis* was not observed in Southwest Florida.

Wildlife Impacts: In the past week (4/12 – 4/18), the CROW wildlife hospital on Sanibel received 2 toxicosis patients: 2 double crested cormorants (1 died, 1 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.



Water clarity at Lighthouse Beach Park on 4/18/22 at 1:56 PM on a high tide (high tide: 3.08 ft @ 1:12 PM). [Lighthouse Beach Park Virtual Tour](#).