

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: **February 22 – 28, 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 **1,961cfs** at **S-79** with a 7-day average of **1,872 cfs (95%)** coming from the lake at **S-77**. The **14-day moving average flow at S-79 is 1,936 cfs** and has been in the **optimal flow envelope (750 – 2,100 cfs; RECOVER 2020)** for 97 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.

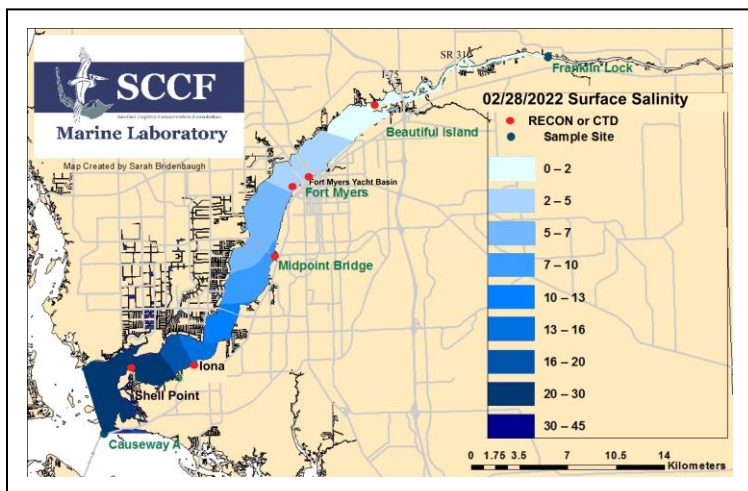
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **58,798 AF** with **25,991 AF** to the Caloosahatchee through **S-77**, **9,713 AF** to St Lucie through **S-308**, **986 AF** through **S-310** in Clewiston, and **18,942 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **12,069 AF** (15,126 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 **4,604 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **6,399 AF**.

Lake Level: 14.58 ft (Low sub-band) Last Week: 14.71 ft Last Year: 15.40 ft

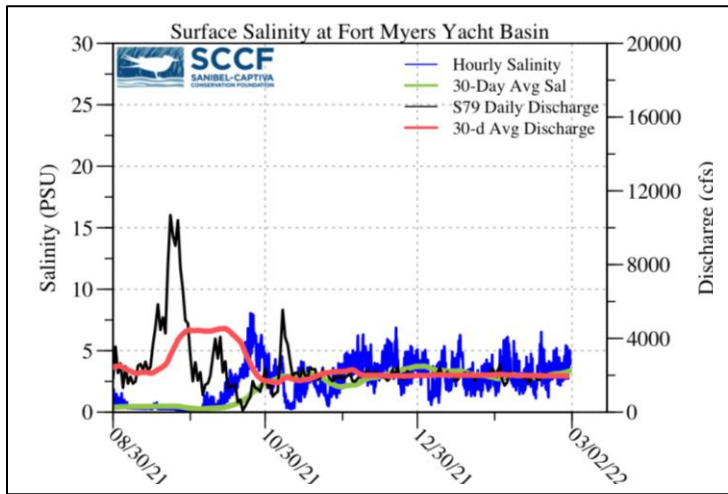
Lake Okeechobee Inflow: 600 cfs Lake Okeechobee Outflow: 3,014 cfs

Weekly Rainfall Total: WP Franklin 0.00" Ortona ≥0.03" Moore Haven 0.00"

7-Day Lake Recession Rate: -0.13 ft/week



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
2/22/22	1960	1370	1740
2/23/22	1892	1500	2226
2/24/22	1974	1587	1986
2/25/22	1972	1453	1892
2/26/22	2030	1352	1862
2/27/22	1902	1379	1748
2/28/22	1998	1331	1650
7-day avg	1961	1425	1872



Light Penetration				
Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	---	> 1	---	< 18
Shell Point	1.55 ^c	>2.2	2.0	< 18
Causeway	1.78 ^c	> 2.2	2.9	< 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 2/28/22 sampling for cyanobacteria by the Lee County Environmental Lab reported **moderately abundant *Dolichospermum*** at the **Alva Boat Ramp** as visible specks. *Dolichospermum* was **present** upstream of the **Franklin Locks** as visible specks with some accumulation along the lock. *Microcystis* and *Dolichospermum* were **present** at the **Davis Boat Ramp** as visible specks with some streaks.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **3.5 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 seagrasses. Water column chlorophyll was low at the Causeway, with diatoms including *Skeletonema*, *Paralia* and *Asterionellopsis* dominating the phytoplankton.

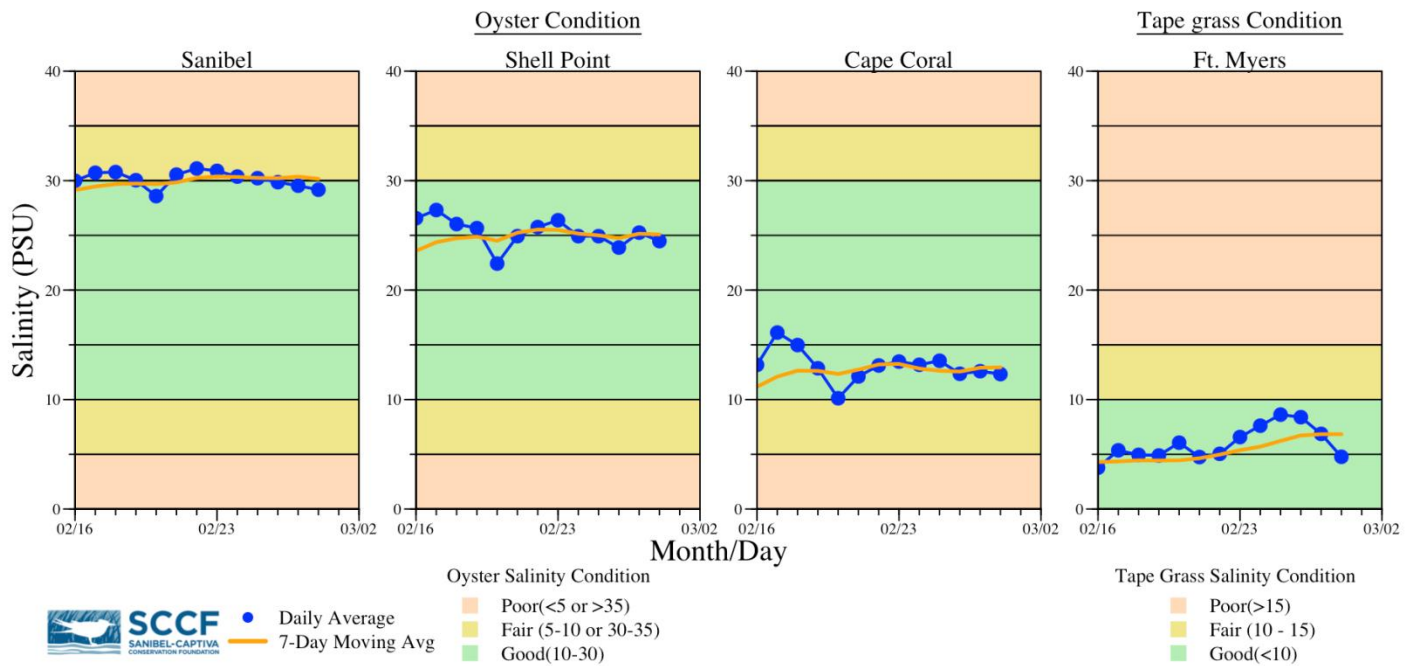
Water Quality Conditions

Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	----- [0.3 – 0.7]	-----	-----	-----
Fort Myers Yacht Basin	3.0 – 5.0 [1.9 – 5.3]	-----	-----	-----
Shell Point	----- [13 – 32]	6.6 – 8.3	67.5	2.7
McIntyre Creek	29.6—30.9 [29.0 – 31.2]	4.7 – 14.9	6.9 – 9.4	0.5 – 1.0
Tarpon Bay	27.5 – 31.7 [28.6 – 33.2]	4.9 – 8.6	-----	-----
Wulfert Flats	31.2—32.0 [26.3 – 35.1]	3.5 – 7.9	-----	3.0 – 38.2

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 2/25/22, the FWC reported that *K. brevis* was not observed in samples collected statewide over the past week.

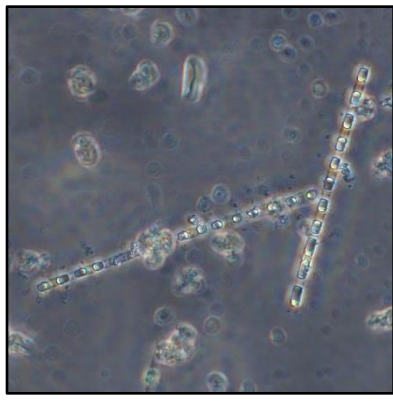
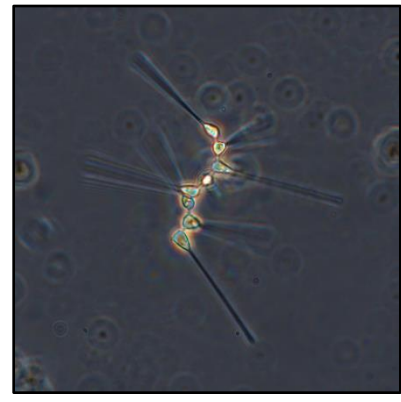
Wildlife Impacts: In the past week (2/22– 2/28), the CROW wildlife hospital on Sanibel received 1 toxicosis patients: 1 white pelican (died).



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.



Water clarity at Lighthouse Beach Park on 3/1/22 at 2:23 PM on a falling tide (high tide: 1.53 ft @ 12:53 PM). [Lighthouse Beach Park Virtual Tour](#).



Microscopic images of diatoms from the Causeway on 2/28/22 at 400x. Asterionellopsis (top right), Skeletonema (bottom left). SCCF.