

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
Leah Reidenbach, Rick Bartleson PhD, & Matt Depaolis - SCCF (Sanibel-Captiva Conservation Foundation)

Subject: Caloosahatchee & Estuary Conditions Report

Reporting Period: **March 28 – April 3, 2023**

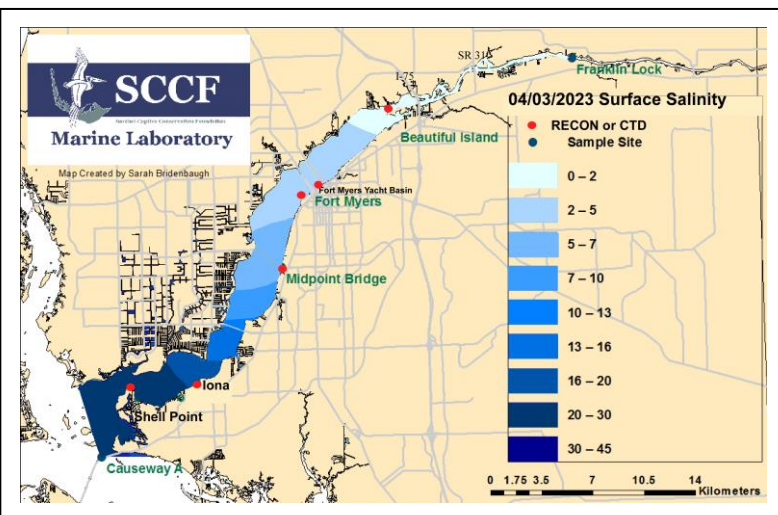
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

Caloosahatchee Conditions Summary: Flow to the Caloosahatchee Estuary had a 7-day average of **2,248 cfs** at **S-79** with a 7-day average of **2,074 cfs (92%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,087 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for 48 days.**

Recommendation: To keep the Caloosahatchee River and Estuary in the optimum salinity envelope and to avoid unnecessary stress, we encourage the Corps to maintain flows within the RECOVER 2020 optimum flow envelope of 750 – 2,100 cfs at S-79 for the Caloosahatchee Estuary.

USACE Action: With Lake Okeechobee in the Low sub band and dry tributary hydrologic conditions, LORS08 Part D suggests up to 450 cfs at S-79 and up to 200 cfs at S-80. On 1/21/23 the USACE increased releases from Lake Okeechobee to the St. Lucie Estuary (S-80) to a 7-day average steady release of 500 cfs and to the Lake Worth Lagoon to a 7-day average steady release of 100 cfs. Flows to the Caloosahatchee Estuary from the W.P. Franklin Lock and Dam (S-79) were sustained at seven-day average pulse release of 2,000 cubic feet per second. **Since entering the low sub band on 2/13/23 the USACE began utilizing banked releases** from a make-up release tool which allowed them to make releases at levels lower than suggested in LORS08 since 11/18/22 and bank the volume not released for beneficial releases throughout the dry season.

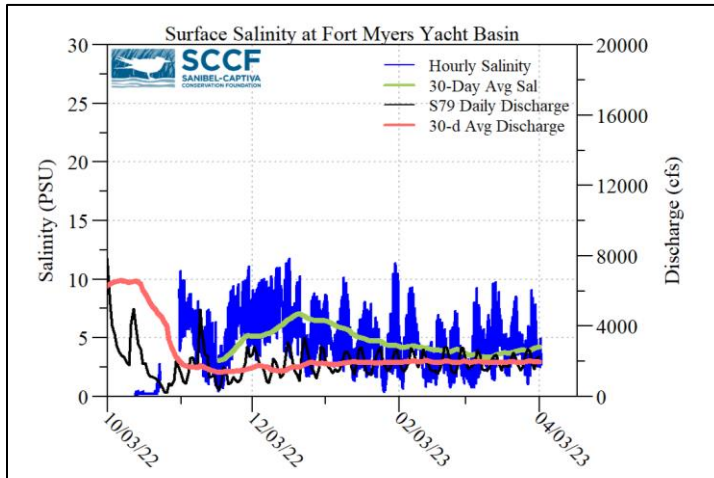
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **57,119 AF** with **28,792 AF** to the Caloosahatchee through **S-77**, **2,902 AF** through **S-308** in Port Mayaca, **376 AF** through **S-310** in Clewiston, and **20,592 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **9,081 AF** (7,583 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **1,498 AF** from **S310** and **S308**. Water conservation areas received flows of **0 AF**, **0 AF**, and **1,511 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **7,386 AF**.



Lake Level: 14.47 ft (Low sub-band)
Last Week: 14.68 ft
Last Year: 13.75 ft
7-Day Lake Recession Rate: -0.21 ft/week

Lake Okeechobee Inflow: 485 cfs
Lake Okeechobee Outflow: 4,589 cfs

Weekly Rainfall Total:
WP Franklin: 0.00"
Ortona: 0.31"
Moore Haven: 0.77"



Light Penetration				
Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.96	>2.2	2.2	< 18
Causeway	3.59	> 2.2	3.1	< 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 4/3/23 sampling for cyanobacteria by the Lee County Environmental Lab reported **moderately abundant** *Microcystis* at the **Alva Boat Ramp** as sparse specks with no accumulation or streaks. *Microcystis* and *Dolichospermum* were **present** upstream of the **Franklin Locks** and at the **Davis Boat Ramp** as visible specks with no accumulation or streaks.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 4.3 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. *Karenia* spp. counts at Sanibel and the Causeway were low to background during the week and diatom and chlorophyll concentrations were also low.

Water Quality Conditions:

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
3/28/23	2315	1810	2064
3/29/23	2730	2000	2717
3/30/23	2609	1750	2299
3/31/23	1835	1307	1659
4/1/23	1544	1152	1464
4/2/23	2205	1560	2023
4/3/23	2497	1727	2290
7-day avg	2248	1597	2074

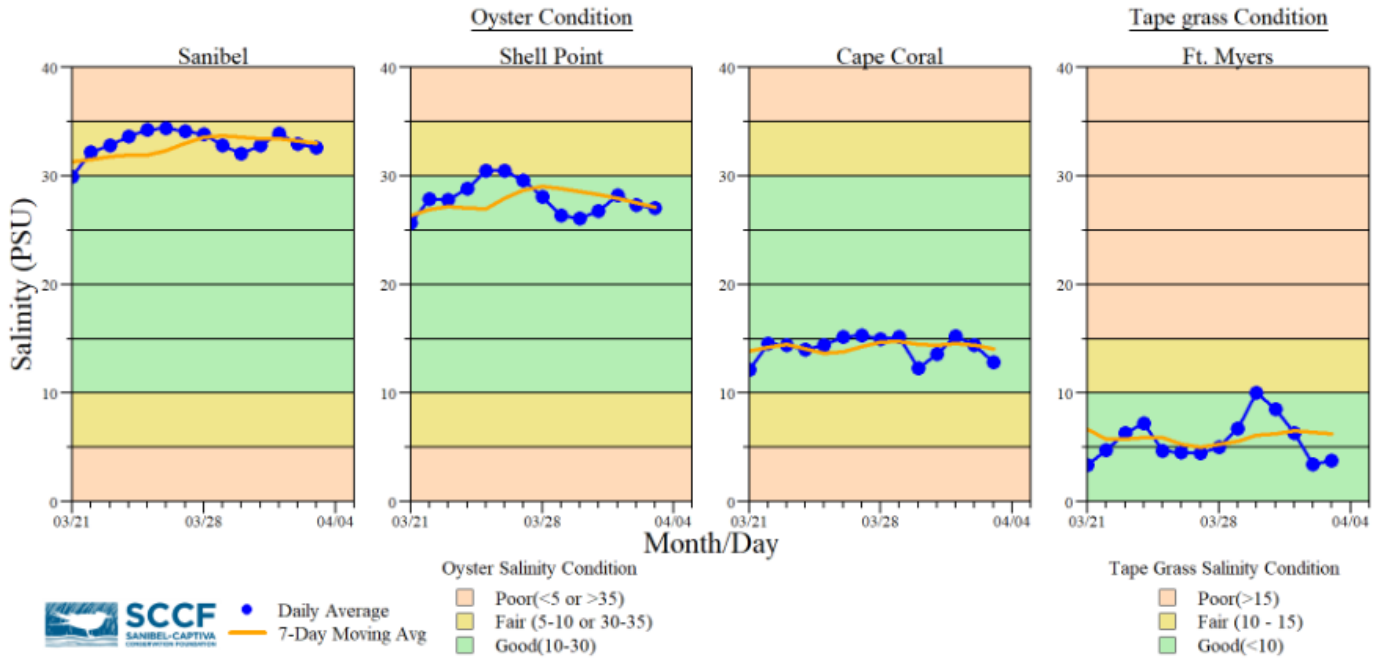
Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	0.2 – 0.8 [0.3 – 0.8]	2.4 – 6.5	255	5.2
Fort Myers Yacht Basin	----- [-----]	-----	-----	-----
Shell Point	16 – 34 [16 – 34]	4.5– 5.9	70.1	1.5
McIntyre Creek	31.2 – 33.7 [31.6 – 33.7]	0.1 – 1.2	-----	-----
Tarpon Bay	30.8 – 34.9 [32.1 – 35.3]	3.5 – 9.0	-----	0.9 – 74.3
Wulfert Flats	32.1 – 34.5 [32.6 – 34.1]	3.1 – 9.4	-----	1.9 – 10.4

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 3/31/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 75 samples collected from Florida’s Gulf Coast. Bloom concentrations (>100,000 cells/liter) were present in 14 samples from Southwest Florida: one in Pinellas County, two in Manatee County, one in Sarasota County, seven in Charlotte County, and **three in Lee County**.

In Southwest Florida over the past week, *K. brevis* was observed at background to medium concentrations in Pinellas County, background to low concentrations offshore of Hillsborough County, background to medium concentrations in Manatee County, background to medium concentrations in and offshore of Sarasota County, background to high concentrations in Charlotte County, **background to medium concentrations in Lee County**, and background concentrations in Collier County.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 3 patients with toxicosis symptoms 1 adult double crested cormorant (still at CROW), 1 adult osprey (still at CROW), and 1 adult white ibis (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.

*Ft. Myers sensor is in the lower strata

Data are provisional and subject to change.



Water clarity at Lighthouse Beach Park on 4/3/23 at 2:11 PM on a falling tide (1.7 ft). [Lighthouse Beach Park Virtual Tour.](#)