

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: **April 4 – April 10, 2023**

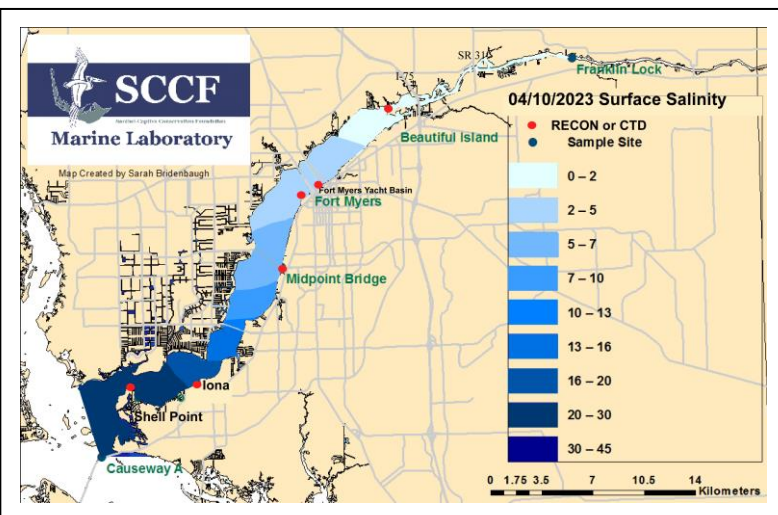
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

Caloosahatchee Conditions Summary: Flow to the Caloosahatchee Estuary had a 7-day average of **2,048 cfs** at **S-79** with a 7-day average of **1,836 cfs (89%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,166 cfs and has been in the stress flow envelope (750 – 2,100 cfs; RECOVER 2020) for 1 day.**

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.

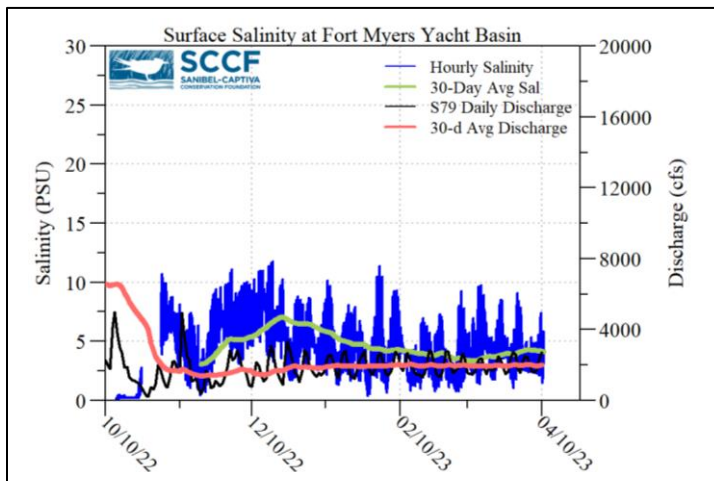
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **56,730 AF** with **24,464 AF** to the Caloosahatchee through **S-77**, **12,309 AF** through **S-308** in Port Mayaca, **392 AF** through **S-310** in Clewiston, and **15,915 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **4,842 AF** (4,733 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **109 AF** from **S310**. Water conservation areas received flows of **0 AF**, **-446 AF**, and **657 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **5,443 AF**.



Lake Level: 14.24 ft (Low sub-band)
Last Week: 14.47 ft
Last Year: 13.49 ft
7-Day Lake Recession Rate: -0.23 ft/week

Lake Okeechobee Inflow: 324 cfs
Lake Okeechobee Outflow: 2,441 cfs

Weekly Rainfall Total:
WP Franklin: 0.31"
Ortona: 1.01"
Moore Haven: 1.65"



Light Penetration				
Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	2.11	>2.2	2.1	< 18
Causeway	2.95	> 2.2	1.7	< 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 4/10/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis* at the **Alva Boat Ramp** as sparse specks. *Dolichospermum* and *Microcystis* were **moderately abundant** upstream of the **Franklin Locks** as some streaks along the shore and lock and at the **Davis Boat Ramp** as some streaks with accumulation along the seawall.

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 28 psu, within the optimal range for oysters and seagrass. *Karenia* spp. counts at Sanibel and the Causeway ranged from medium to background during the week, and *Trichodesmium erythraeum* rafts were observed.

Water Quality Conditions:

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/4/23	2470	1733	2441
4/5/23	1915	1231	2058
4/6/23	1592	1164	1485
4/7/23	1587	1184	1380
4/8/23	1712	1169	1574
4/9/23	2307	1668	1650
4/10/23	3006	2170	2262
7-day avg	2084	1358	1836

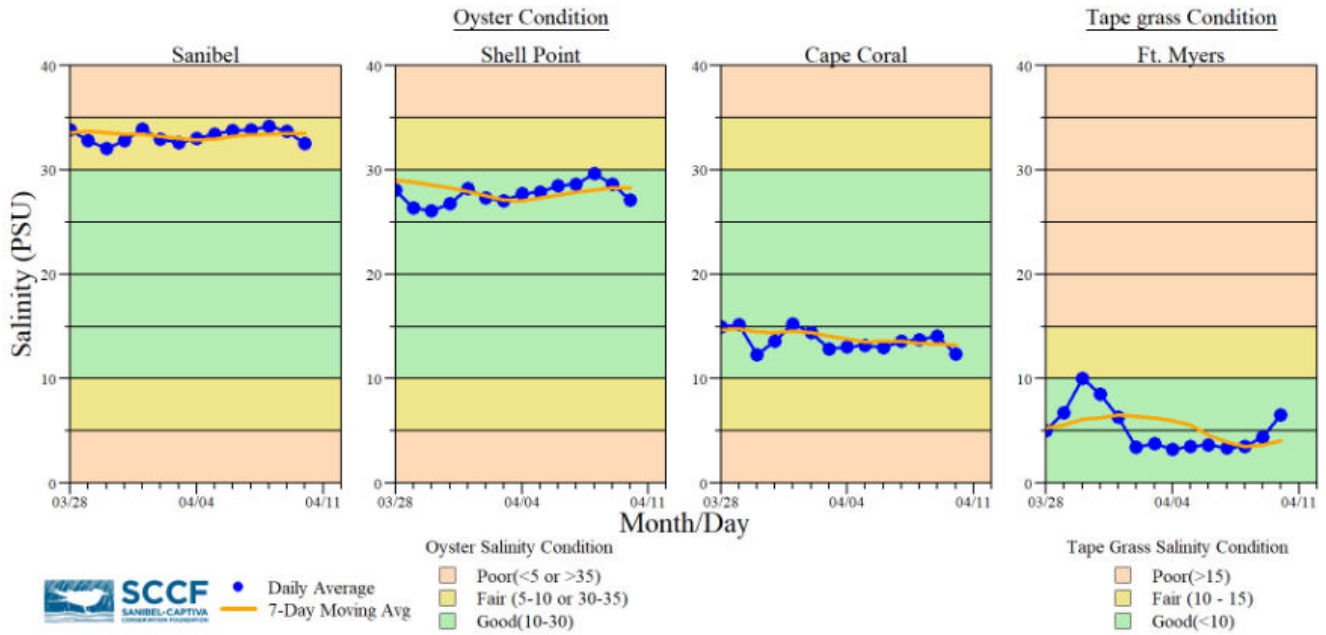
Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	0.2 – 0.3 [0.2 – 0.8]	-----	219	5.2
Fort Myers Yacht Basin	----- [-----]	-----	-----	-----
Shell Point	18 – 35 [16 – 34]	5.1– 6.5	63.4	2.2
McIntyre Creek	32.0 – 33.6 [31.2 – 33.7]	3.0 – 8.5	-----	-----
Tarpon Bay	31.5 – 34.6 [30.8 – 34.9]	3.4 – 8.9	2.1 – 14.5	-----
Wulfert Flats	32.4 – 33.5 [32.1 – 34.5]	3.6 – 8.5	-----	1.4 – 38.3

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
 ----- no data

Red Tide: On 4/7/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 78 samples collected from Florida’s Gulf Coast. Bloom concentrations (>100,000 cells/liter) were present in 10 samples: one offshore of Pasco County, one in Pinellas County, two in Manatee County, four in Charlotte County, **one in Lee County**, and one in Collier County.

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

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 3 patients with toxicosis symptoms 1 adult snowy plover (died), 1 juvenile brown pelican (still at CROW), and 1 adult double crested cormorant (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.

*Ft. Myers sensor is in the lower strata

Data are provisional and subject to change.



Water clarity at Lighthouse Beach Park on 4/10/23 at 1:34 PM on a high tide (2.9 ft). [Lighthouse Beach Park Virtual Tour](#).



Trichodesmium erythraeum with leaking phycoerythrin (algal pigments) at the Sanibel Causeway on 4/9/23. SCCF.