

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: **January 24 - 30, 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 **2,046 cfs** at **S-79** with a 7-day average of **1,329 cfs (65%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,975 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for 32 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 Intermediate sub band and normal to wet tributary hydrologic conditions and weather forecast, LORS08 Part D currently suggests up to 4,000 cfs at S-77. On 1/21/23 the USACE increased releases from Lake Okeechobee. 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. Flows to the St. Lucie Estuary (S-80) were increased to a 7 day average steady release of 500 cfs. Flows to the Lake Worth Lagoon are increased to a 7 day average steady release of 100 cfs. The USACE is utilizing a make-up release tool which allows them to make releases at levels lower than suggested in LORS08 and bank the volume not released for beneficial use throughout the dry season.

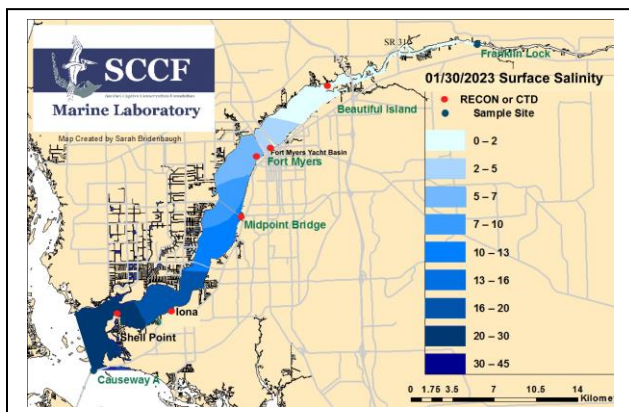
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **39,946 AF** with **18,458 AF** to the Caloosahatchee through **S-77**, **5,340 AF** through **S-308** in Port Mayaca, **84 AF** through **S-310** in Clewiston, and **11,141 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **22,639 AF** (22,639 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) . Water conservation areas received flows of **48 AF**, **0 AF**, and **2,299 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **14,180 AF**.

Lake Level: 16.01 ft (Intermediate sub-band) Last Week: 16.12 ft Last Year: 14.97 ft

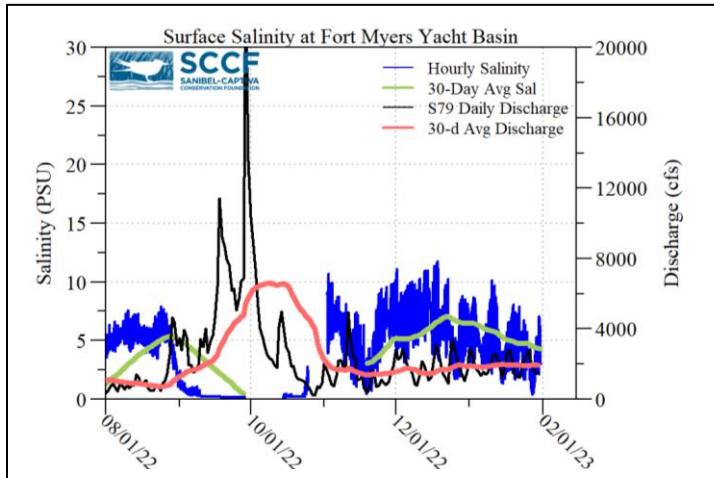
Lake Okeechobee Inflow: 1,533 cfs Lake Okeechobee Outflow: 2,566 cfs

Weekly Rainfall Total: WP Franklin: 0.15" Ortona: ≥ 0.00" Moore Haven: 0.00"

7-Day Lake Recession Rate: -0.11 ft/week



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/24/22	2234	1584	1369
1/25/22	2522	1948	1669
1/26/22	2802	1621	1692
1/27/22	1997	1754	1660
1/28/22	1740	1295	1295
1/29/23	1444	1039	946
1/30/23	1585	1039	675
7-day avg	2046	1540	1329



Light Penetration

Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.75	>2.2	2.2	< 18
Causeway	1.89	> 2.2	3.3	< 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 1/30/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Aphanizomenon* and *Microcystis* upstream of the Franklin Locks as some wind-driven scum along the lock.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 4.8 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. *Karenia* spp. counts were high at Lighthouse Beach Park and medium at the Causeway and at the mouth of Tarpon Bay on 1/30/23.

Water Quality Conditions:

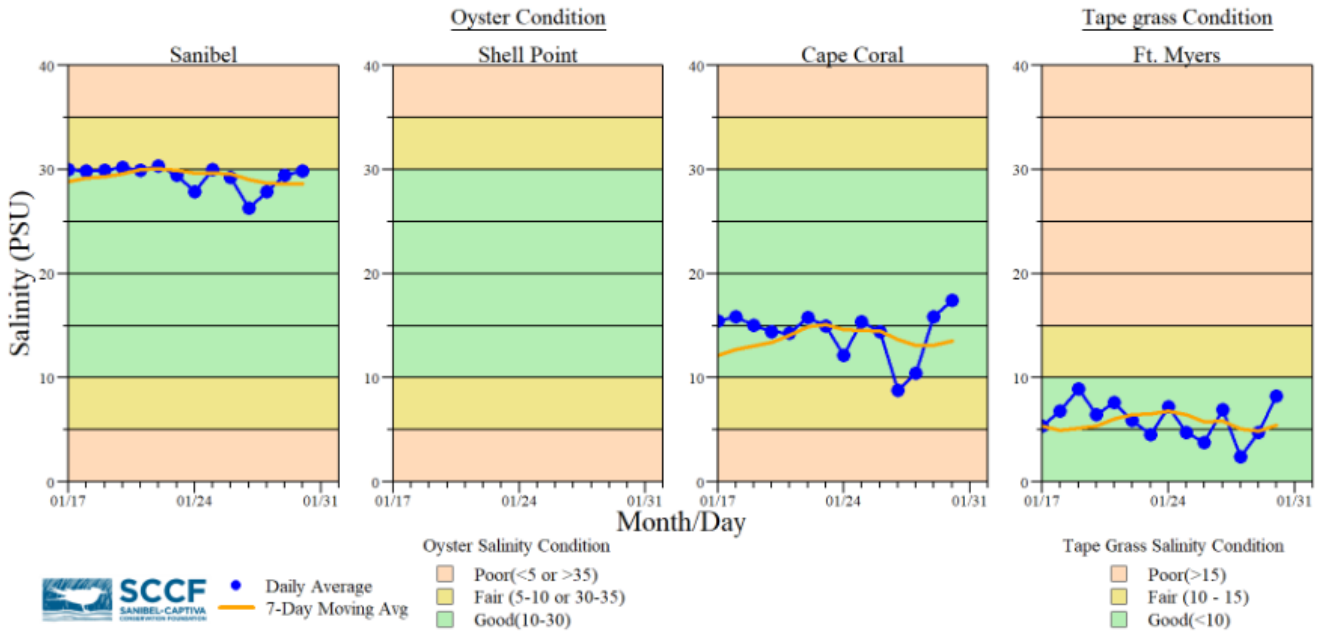
Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	0.2 – 0.4 [0.2 – 0.4]	4.8 – 7.2	-----	5.4
Fort Myers Yacht Basin	3.1 – 8.7 [1.5 – 9.7]	-----	-----	-----
Shell Point	13 – 33 [17 – 33]	6.0 – 7.1	81.0	1.9
McIntyre Creek	28.4 – 32.4 [30.8 – 32.4]	1.2 – 7.4	-----	-----
Tarpon Bay	28.1 – 33.9 [30.8 – 34.5]	3.6 – 7.2	-----	-----
Wulfert Flats	29.8 – 32.8 [31.5 – 34.1]	5.3 – 9.7	-----	3.7 – 110.8

- 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 1/27/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 69 samples from and offshore of Southwest Florida over the past week. Bloom concentrations (>100,000 cells/liter) were present in 14 samples: three in Manatee County, **10 in Lee County**, and one in Monroe County.

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

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 3 patients with toxicosis symptoms: 1 adult laughing gull (died), one adult ring-billed gull (still at CROW), and 1 adult common loon (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.

Data are provisional and subject to change.



Water clarity at Lighthouse Beach Park on 1/30/23 at 11:48 AM on a rising tide (1.2 ft). [Lighthouse Beach Park Virtual Tour.](#)