

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 17 - 23, 2023**

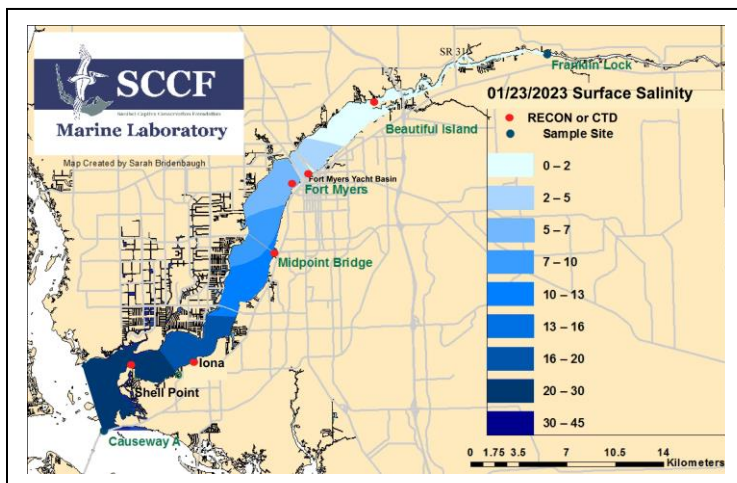
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

Caloosahatchee Conditions Summary: Flow to the Caloosahatchee Estuary had a 7-day average of **1,903 cfs** at **S-79** with a 7-day average of **1,211 cfs (64%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,966 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for 25 days.** Red tide blooms are causing fish kills and respiratory irritation on Sanibel Island.

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 seven day average steady release of 500 cfs. Flows to the Lake Worth Lagoon are increased to a seven 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 **38,120 AF** with **16,818 AF** to the Caloosahatchee through **S-77**, **1,738 AF** through **S-308** in Port Mayaca, **71 AF** through **S-310** in Clewiston, and **17,042 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **21,711 AF** (21,709 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **2 AF** from **S310**. Water conservation areas received flows of **256 AF**, **0 AF**, and **2,360 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **13,379 AF**.



Lake Level: 16.12 ft (Intermediate sub-band)

Last Week: 16.13 ft Last Year: 15.11 ft

Lake Okeechobee Inflow: 1,396 cfs

Lake Okeechobee Outflow: 1,906 cfs

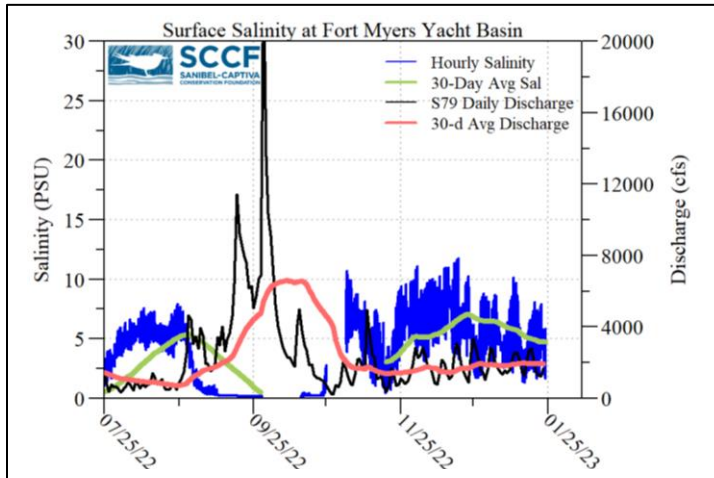
Weekly Rainfall Total:

WP Franklin: 0.97"

Ortona: 0.82"

Moore Haven: 0.70"

7-Day Lake Recession Rate: -0.01 ft/week



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/17/22	2653	1754	2304
1/18/22	2780	1781	1661
1/19/22	2129	1355	1573
1/20/22	1448	963	940
1/21/22	1289	860	826
1/22/23	1229	911	691
1/23/23	1793	997	484
7-day avg	1903	1271	1211

Cyanobacteria Status: On 1/23/23 sampling for cyanobacteria by the Lee County Environmental Lab reported no cyanobacteria in the Caloosahatchee River.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 5.2 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 seagrass and oysters. *Karenia* spp. counts were high at the Causeway on 1/20, 1/22 and 1/23/23 (>1million cells/L).

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 – 0.6]	4.6 – 6.5	-----	6.5
Fort Myers Yacht Basin	1.5 – 9.7 [1.5 – 9.7]	-----	-----	-----
Shell Point	17 – 33 [14 – 31]	6.0 – 7.7	64.0	2.0
McIntyre Creek	30.8 – 32.4 [28.4 – 33.4]	1.7 – 8.5	-----	-----
Tarpon Bay	30.8 – 34.5 [28.3 – 33.4]	4.1 – 8.4	-----	-----
Wulfert Flats	31.5 – 34.1 [30.7 – 34.7]	3.7 – 9.4	-----	2.4 – 26.6

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 1/20/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 77 samples from and offshore of Southwest Florida over the past week. Bloom concentrations (>100,000 cells/liter) were present in 10 samples: two in Manatee County, **four in Lee County**, and four offshore of Monroe County.

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

The **Sanibel Captiva Conservation Foundation** reported that *Karenia* spp. counts were high in the surf zone on the southern Sanibel beaches and Causeway on 1/20, 1/22 and 1/23/23 (>1million cells/L).

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 2 patients with toxicosis symptoms: 2 laughing gulls (1 died, 1 still at CROW).

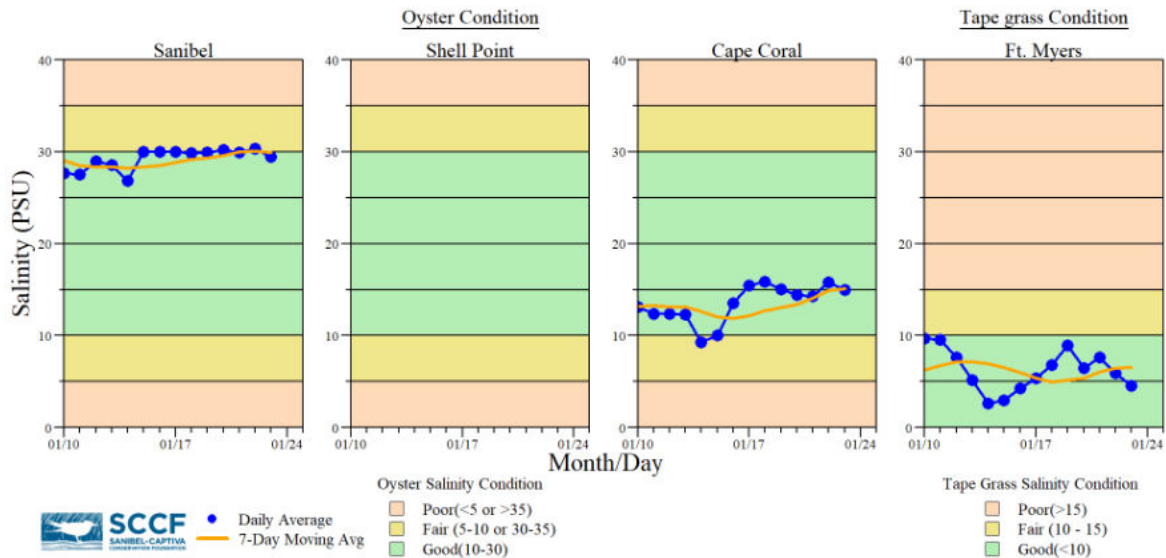
Light Penetration

Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	2.06	>2.2	2.4	< 18
Causeway	2.10	> 2.2	5.6	< 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

Beach Conditions: On 1/20/23 the Florida Department of Health in Lee County (DOH-Lee) issued **health alerts** for the presence of a **red tide bloom** near **Alison Hagerup Beach Park (Captiva)** and **Lighthouse Beach (Sanibel)**. The City of Sanibel reported respiratory irritation 1 mile east of Lighthouse Beach Park near Nerita St. (pictured below) as well as fresh fish kills with the predominant species being mullet. SCCF reported respiratory irritation at Lighthouse Beach Park on 1/24/23. The City of Cape Coral reported high turbidity and patches of sulfur precipitation in Matlacha Pass south of the bridge.



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.

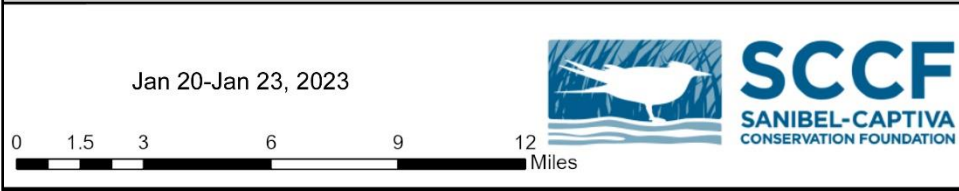
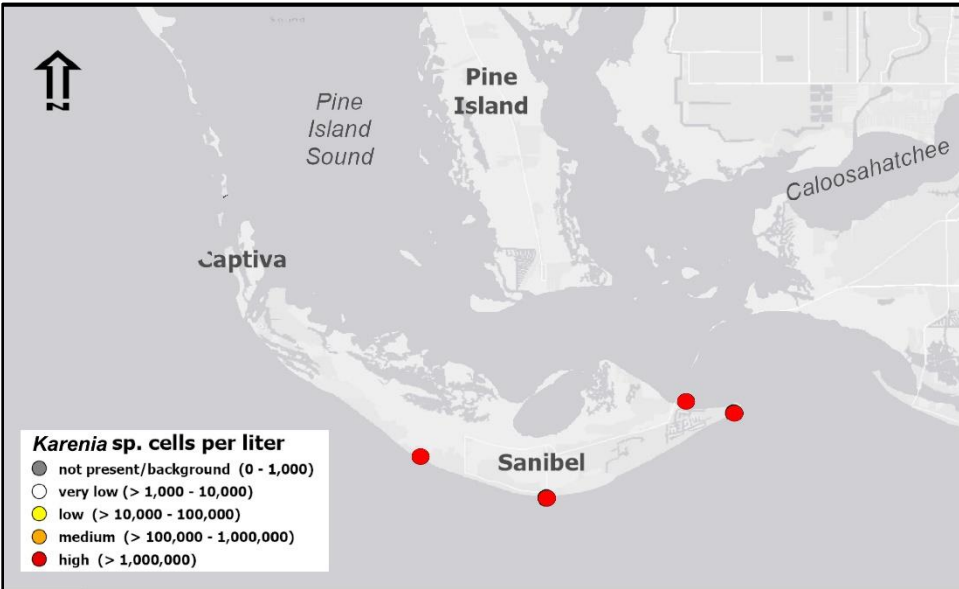
Data are provisional and subject to change.



Reddish, discolored water in the Gulf of Mexico of the coast of Gulfside City Park (top left) and Nerita St. (top right) on Sanibel Island and on Captiva Island (bottom left) on 1/20/23. City of Sanibel.



Water clarity at Lighthouse Beach Park on 1/24/23 at 11:54 AM on a rising tide (0.2 ft). [Lighthouse Beach Park Virtual Tour.](#)



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