

# 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: **February 7 – 13, 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 **2,233 cfs** at **S-79** with a 7-day average of **1,594 cfs (71%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,101 cfs and has been in the stress flow envelope (2,100 – 2,600 cfs; RECOVER 2020) for 1 day.** Fish kills and respiratory irritation from red tide are being reported 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 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.

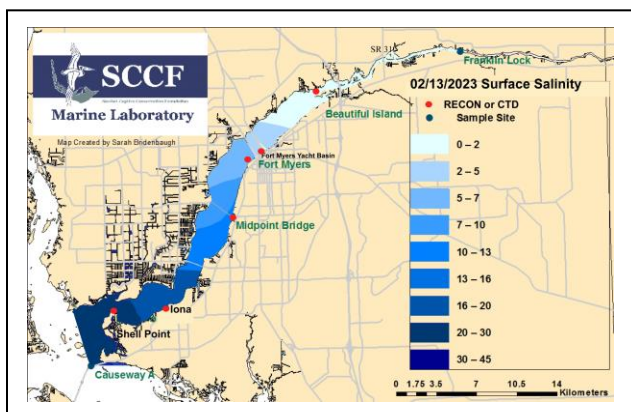
**Lake Flows:** In the past 7 days the total outflow from Lake Okeechobee was **32,941 AF** with **20,243 AF** to the Caloosahatchee through **S-77**, **6,549 AF** through **S-308** in Port Mayaca, **1,444 AF** through **S-310** in Clewiston, and **2,479 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **20,430 AF** (20,430 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) . Water conservation areas received flows of **593 AF**, **315 AF**, and **1,500 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **12,000 AF**.

**Lake Level: 15.93 ft (Intermediate sub-band)      Last Week: 15.97 ft      Last Year: 14.86 ft**

**Lake Okeechobee Inflow: 1,378 cfs      Lake Okeechobee Outflow: 2,764 cfs**

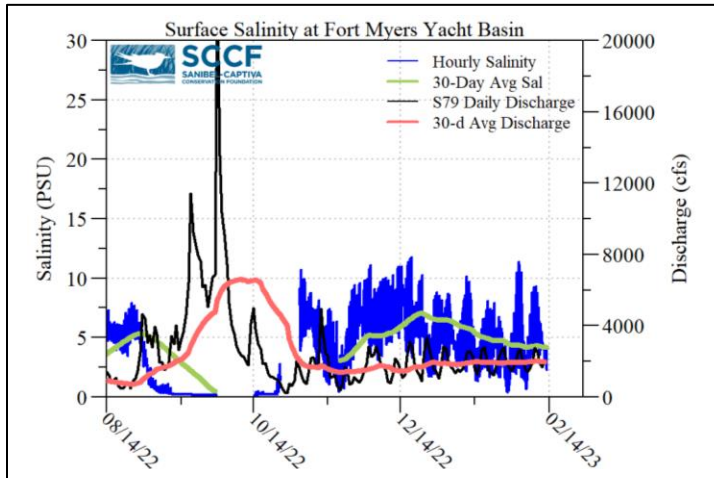
**Weekly Rainfall Total:      WP Franklin: 0.04"      Ortona: 0.00"      Moore Haven: ≥ 0.00"**

**7-Day Lake Recession Rate: -0.04 ft/week**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
2/7/22	2010	1069	957
2/8/22	2766	1890	1909
2/9/22	2524	1951	1885
2/10/22	1925	1360	1666
2/11/22	1684	1307	1554
2/12/23	2043	1557	NR
2/13/23	2678	NR	NR
7-day avg	2233	1522	1594

NR = No Record



**Light Penetration**

Site	25% I <sub>z</sub>	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.65	>2.2	2.3	< 18
Causeway	2.40	> 2.2	2.5	< 5

25% I<sub>z</sub> is the depth (z) where irradiance (I) is 25% of surface irradiance. Target values indicate the depth of light penetration needed for healthy seagrass.  
<sup>m</sup> measured, <sup>c</sup> calculated

**Cyanobacteria Status:** On 2/13/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Dolichospermum*, *Microcystis*, and *Aphanizomenon* upstream of the Franklin Locks as some wind-driven tan/green scum along the lock and shore.

**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 26 psu, within the optimal range for oysters and seagrass. *Karenia* spp. counts were medium at Lighthouse Beach Park, the Causeway and Tarpon Bay Beach on 2/13/23.

**Water Quality Conditions:**

Monitor Site	Salinity (psu) <sup>a</sup> [previous week]	Diss O <sub>2</sub> (mg/L) <sup>b</sup>	FDOM (qsde) <sup>c</sup>	Chlorophyll (µg/L) <sup>d</sup>
Beautiful Island	0.2 – 0.6 [0.2 – 0.4]	4.5 – 6.7	-----	5.3
Fort Myers Yacht Basin	----- [-----]	-----	-----	-----
Shell Point	19 - 34 [14 – 31]	5.5 – 6.7	87.0	1.9
McIntyre Creek	27.3 – 33.2 [27.1 – 30.0]	1.4 – 7.6	-----	-----
Tarpon Bay	30.7 – 35.0 [-----]	5.8 – 8.3	-----	-----
Wulfert Flats	28.7 – 33.7 [28.9 – 30.8]	5.2 – 9.7	-----	2.1 – 15.7

Red values are outside of the preferred range.  
<sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 10 – 30  
<sup>b</sup> Dissolved O<sub>2</sub> target values: all sites > 4  
<sup>c</sup> FDOM target values: BI < 70, FM < 70, SP < 11  
<sup>d</sup> Chlorophyll target values: BI < 11, FM < 11, SP < 11  
<sup>e</sup> Single sonde lower and surface layer or surface grab lab measurement  
 ----- no data

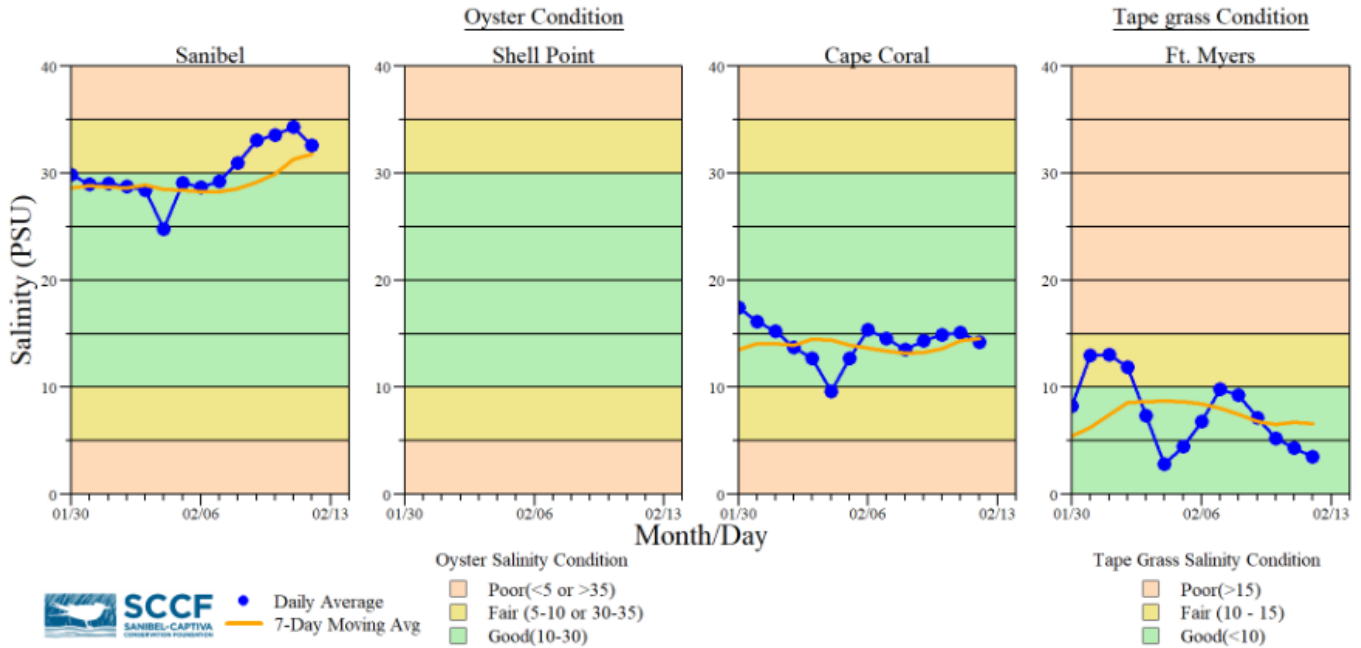
**Red Tide:** On 2/10/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 91 samples from and offshore of Southwest Florida over the past week. Bloom concentrations (>100,000 cells/liter) were present in 25 samples: five in Sarasota County, one in Charlotte County, **15 in Lee County**, and four from and offshore of Monroe County.

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

Between 2/10 – 2/13 SCCF reported that *Karenia* sp. were found in medium concentrations in 14 samples around Sanibel Island.

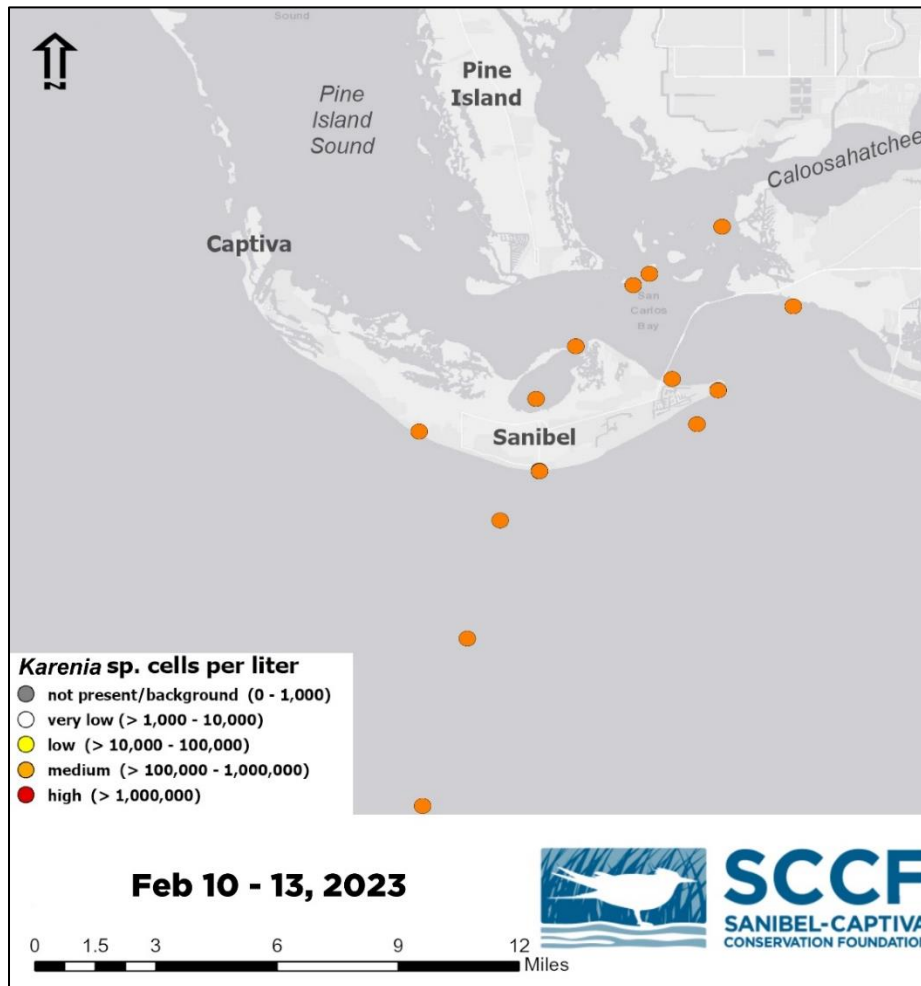
**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel received 4 patients with toxicosis symptoms: 2 brown pelicans, one adult and one juvenile (both at CROW), 1 white ibis (died), 1 adult cormorant (1 died).

**Beach Conditions:** On 2/13/23 SCCF staff reported finding a dead laughing gull at the Shell Island Beach Club and fresh fish kills and shells (gastropod kills) from the Colony Inn to the Shell Island Beach Club. On 2/8/23 the City of Sanibel reported finding a dead juvenile brown pelican near the Sundial resort, on 2/12/23 they captured a tern with suspected red tide symptoms and dropped it off at BluePearl Pet Hospital, and mild respiratory issues were reported along the west end beaches.



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 2/13/23 at 12:21 PM on a rising tide (1.3 ft).  
[Lighthouse Beach Park Virtual Tour.](#)