

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 31 - February 6, 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 **1,969 cfs** at **S-79** with a 7-day average of **1,495 cfs (76%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,008 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for 39 days.** 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.

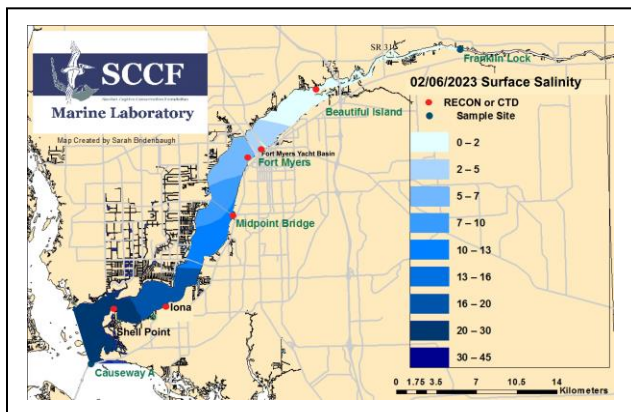
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **40,958 AF** with **20,753 AF** to the Caloosahatchee through **S-77**, **5,086 AF** through **S-308** in Port Mayaca, **83 AF** through **S-310** in Clewiston, and **10,832 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **19,944 AF** (19,944 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) . Water conservation areas received flows of **0 AF**, **18 AF**, and **1,692 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **14,174 AF**.

Lake Level: 15.97 ft (Intermediate sub-band) Last Week: 16.01 ft Last Year: 14.89 ft

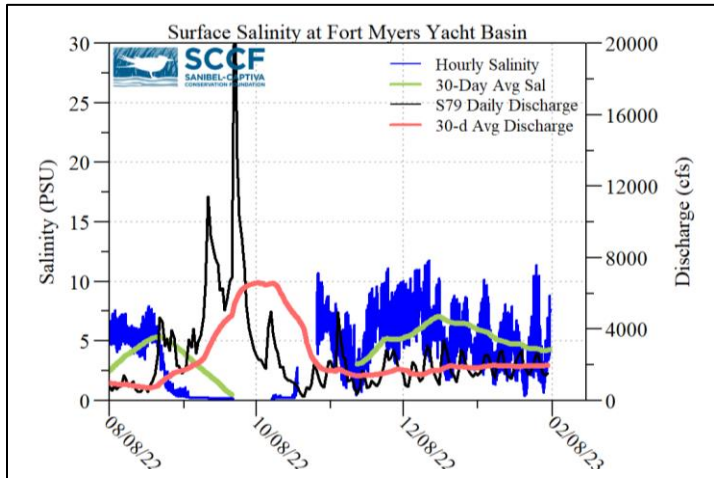
Lake Okeechobee Inflow: 1,449 cfs Lake Okeechobee Outflow: 1,687 cfs

Weekly Rainfall Total: WP Franklin: 0.14" Ortona: ≥ 0.12" Moore Haven: 0.66"

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



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/31/22	1963	1377	1323
2/1/22	2572	2115	2184
2/2/22	2630	1986	2382
2/3/22	1994	1292	1498
2/4/22	1568	1212	1356
2/5/23	1412	1044	1039
2/6/23	1646	872	681
7-day avg	1969	1504	1495



Light Penetration

Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.51	>2.2	2.5	< 18
Causeway	2.05	> 2.2	3.2	< 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 2/6/23 sampling for cyanobacteria by the Lee County Environmental Lab reported **moderately abundant** *Dolichospermum*, *Microcystis*, and *Aphanizomenon* upstream of the **Franklin Locks** as some wind-driven green scum along the lock and shore. *Dolichospermum*, *Microcystis*, and *Aphanizomenon* were **present** at the Davis Boat Ramp.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 5.0 psu, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was 25 psu, within the optimal range for oysters and seagrass. *Karenia* spp. counts were high at Lighthouse Beach Park and medium at the Causeway and Tarpon Bay Beach on 2/06/23.

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]	4.3 – 7.0	-----	6.0
Fort Myers Yacht Basin	----- [3.1 – 8.7]	-----	-----	-----
Shell Point	14 – 31 [13 – 33]	5.4 – 7.0	96.0	2.3
McIntyre Creek	27.1 – 30.0 [28.4 – 32.4]	0.1 – 7.7	-----	-----
Tarpon Bay	----- [28.1 – 33.9]	-----	-----	-----
Wulfert Flats	28.9 – 30.8 [29.8 – 32.8]	5.4 – 8.9	-----	4.1 – 72.4

- 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

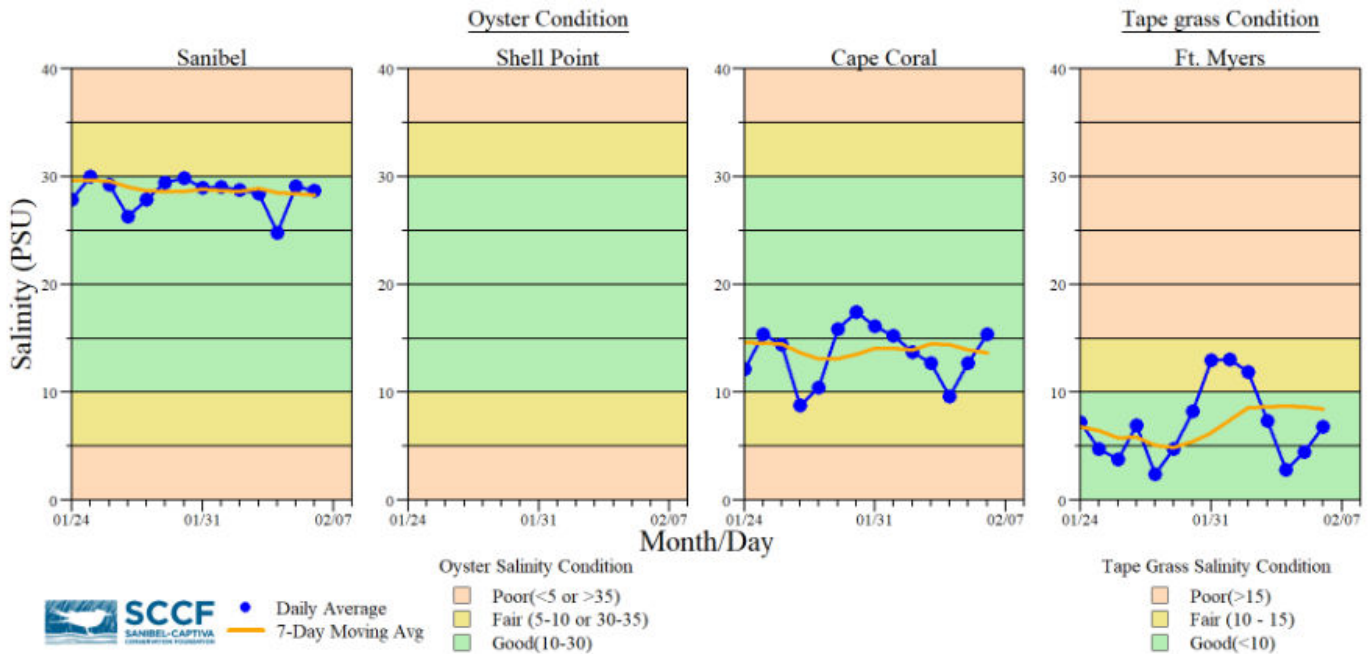
Red Tide: On 2/3/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 37 samples from and offshore of Southwest Florida over the past week. Bloom concentrations (>100,000 cells/liter) were present in 10 samples: one in Sarasota County, **eight in Lee County**, and one offshore of Collier County.

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

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

Beach Conditions: SCCF reported an abundance dead crabs along the shoreline from Lighthouse Beach Park to South Seas Resort including calico crabs, swimming crabs, spider crabs, and purse crabs and dead fish on the southern portion of Captiva on 2/7/23. On 2/1/23 a Sanibel resident reported 5 - 10 dead fish in Kesson Bayou. Species were identified as possibly being mullet, 10 - 12 inches long. On 2/3/2023 a Sanibel resident reported a fish kill near Sun Dial Resort that included hundreds of eels (species unknown) and respiratory irritation. On 2/1/23 the City of Sanibel reported a fish kill

between Algiers and Tarpon Bay Rd. Dead fish were every few feet to 50 feet and the reported species were mullet, 6 - 10 inches long. Mild sporadic respiratory irritation was reported, and a sick cormorant was found and taken to Blue Coral Vet. The FWC continues to receive reports of fish kills and respiratory irritation due to the current red tide bloom on Sanibel and in Cape Coral with species including mullet, silver perch, sheepshead, and bream.

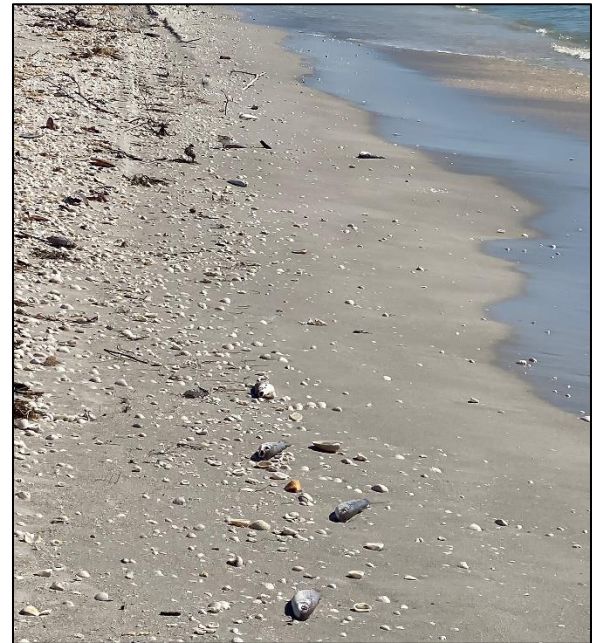


Daily average bottom salinity data for the last 14-days from sampling locations within the tidal Caloosahatchee River Estuary relative to oyster health (Sanibel, Shell Point and Cape Coral) and tape grass (*Vallisneria americana*) health (Ft. Myers only) conditions.

Data are provisional and subject to change.



Aerial view of red tide bloom at Tarpon Bay Beach on 2/3/23 with *Karenia* spp. concentrations >25 million cells/L. SCCF.



Dead mullet between Algiers and Tarpon Bay Rd on 2/1/23. City of Sanibel.



Water clarity at Lighthouse Beach Park on 2/6/23 at 12:08 AM on a rising tide (1.1 ft).
[Lighthouse Beach Park Virtual Tour.](#)



Dead fish and eels at Tarpon Bay Beach on 2/7/23 (above). Dead fish on the southern end of Captiva on 2/7/23 (right). SCCF.

