

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 10 - 16, 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 **2,029 cfs** at **S-79** with a 7-day average of **1,727 cfs (85%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,807 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for 18 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 12/3/22 the USACE increased releases from Lake Okeechobee to the Caloosahatchee Estuary from the W.P. Franklin Lock and Dam (S-79) to a seven-day average pulse release of 2,000 cubic feet per second. No lake releases are planned for the St. Lucie Estuary. 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.

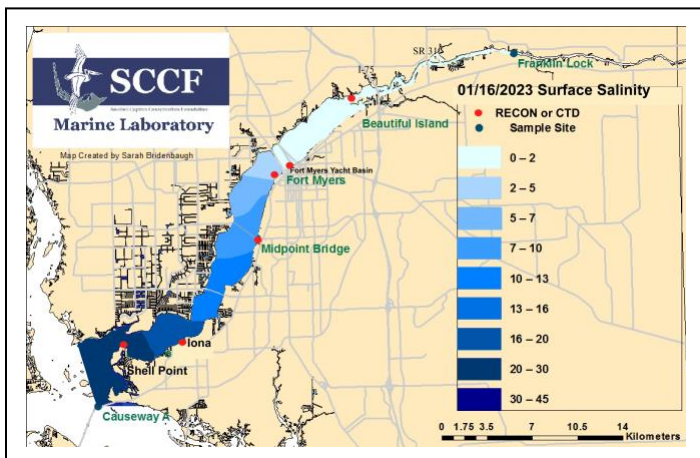
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **42,670 AF** with **23,974 AF** to the Caloosahatchee through **S-77**, **101 AF** through **S-310** in Clewiston, and **16,961 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **21,991 AF** (21,977 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **14 AF** from **C10A**. Water conservation areas received flows of **143 AF**, **0 AF**, and **2,707 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **13,144 AF**.

Lake Level: 16.13 ft (Intermediate sub-band) Last Week: 16.32 ft Last Year: 15.19 ft

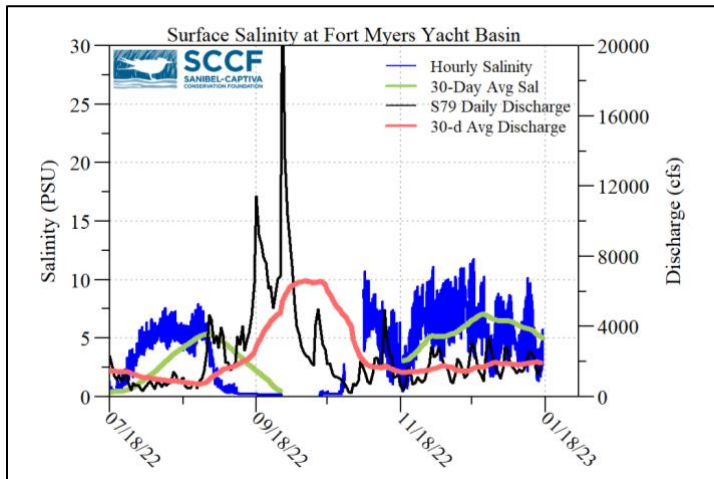
Lake Okeechobee Inflow: 1,436 cfs Lake Okeechobee Outflow: 2,032 cfs

Weekly Rainfall Total: WP Franklin: ≥ 0.00" Ortona: 0.06" Moore Haven: ≥ 0.07"

7-Day Lake Recession Rate: -0.19 ft/week



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/10/22	2043	1559	1595
1/11/22	2544	2208	2307
1/12/22	2566	2037	2181
1/13/22	2249	1445	1744
1/14/22	1624	889	1286
1/15/23	1262	1162	973
1/16/23	1916	1778	2001
7-day avg	2029	1550	1727



Light Penetration				
Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.44	>2.2	1.8	< 18
Causeway	2.34	> 2.2	2.8	< 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 1/17/23 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis* at the Alva Boat Ramp as visible specks.

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 24 psu, within the optimal range for oysters. *Skeletonema* was the dominant net plankton at the Causeway on 1/16/23 (60,000 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 – 0.6 [0.4 – 1.2]	4.9 – 7.0	302	6.6
Fort Myers Yacht Basin	1.5 – 9.7 [2.7 – 7.8]	-----	-----	-----
Shell Point	14 – 31 [15 – 32]	6.3 – 7.6	103	1.7
McIntyre Creek	28.4 – 33.4 [27.9 – 31.6]	3.6 – 8.6	-----	-----
Tarpon Bay	28.3 – 33.4 [27.8 – 33.5]	5.7 – 8.2	-----	-----
Wulfert Flats	30.7 – 34.7 [29.5 – 31.4]	5.8 – 9.1	-----	1.6 – 44.1

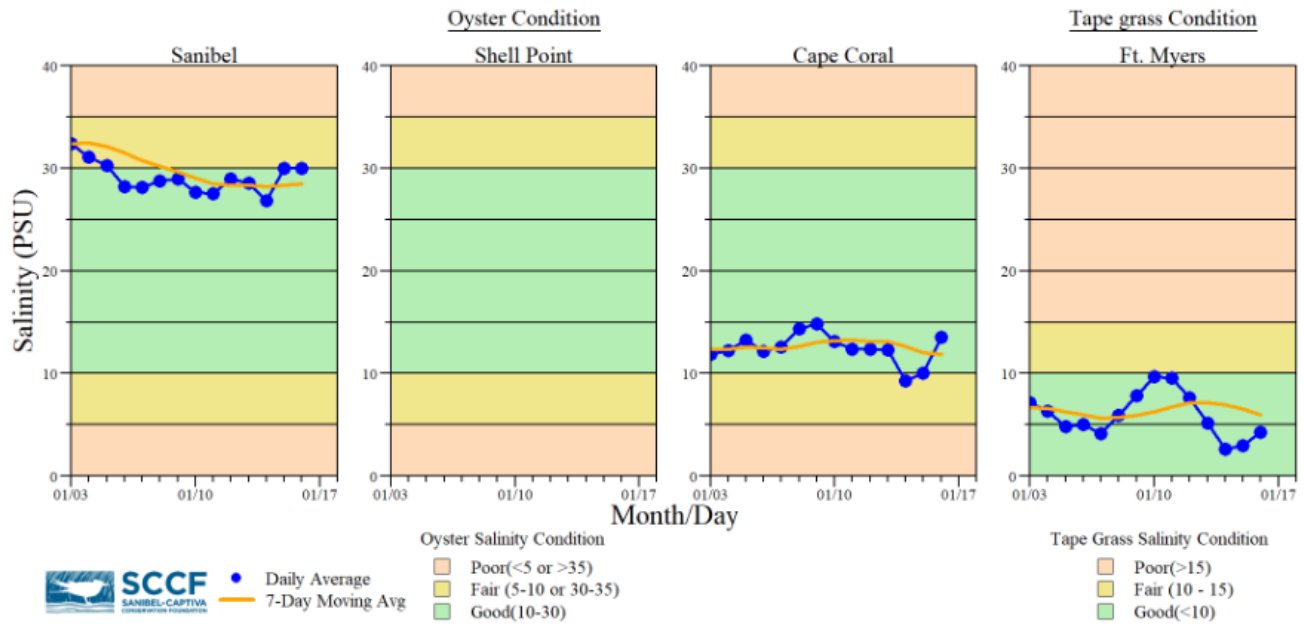
- Red values are outside of the preferred range.
- ^a Salinity target values: BI < 5, FM < 10, SP = 10 – 30
- ^b Dissolved O₂ target values: all sites > 4
- ^c FDOM target values: BI < 70, FM < 70, SP < 11
- ^d Chlorophyll target values: BI < 11, FM < 11, SP < 11
- ^e Single sonde lower and surface layer or surface grab lab measurement

Red Tide: On 1/13/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 109 samples from and offshore of Southwest Florida and one sample along Florida’s East Coast over the past week. Bloom concentrations (>100,000 cells/liter) were present in 17 samples: six in Manatee County, one offshore of Sarasota County, four offshore of Charlotte County, four offshore of Collier County, and two offshore of Monroe County.

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

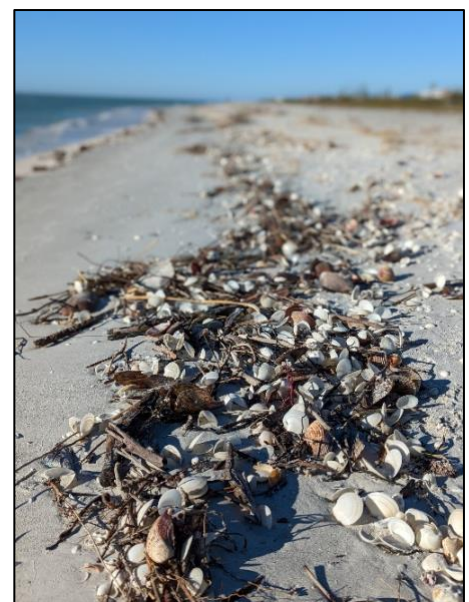
Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 1 patient with toxicosis symptoms: 1 juvenile brown pelican (still at CROW).

Beach Conditions: The City of Sanibel reported 6 deceased birds at various stages of decay found on the beach during a beach cleanup including 1 double crested cormorant, 2 brown pelicans, 1 royal tern, and 2 herring gulls. SCCF reported an abundance of dead shells in the wrack line including dosnia, cockles, pen shells, and fighting conchs on beach surveys from Lighthouse Beach Park to Tarpon Bay on 1/17/23.



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.



Dead shells in the wrack line including dosnia, cockles, pen shells, and fighting conchs on beach surveys from Lighthouse Beach Park to Tarpon Bay on 1/17/23. SCCF

Water clarity at Lighthouse Beach Park on 1/17/23 at 11:50 AM on a slack tide (1.2 ft). [Lighthouse Beach Park Virtual Tour.](#)