

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: **March 7 – 13, 2023**

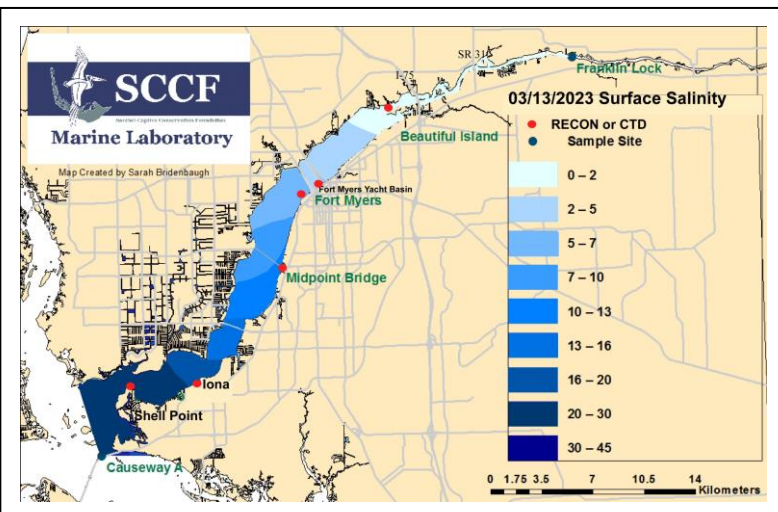
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

Caloosahatchee Conditions Summary: Flow to the Caloosahatchee Estuary had a 7-day average of **1,899 cfs** at **S-79** with a 7-day average of **1,781 cfs (93%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,981 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for 27 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 Low sub band and dry tributary hydrologic conditions, LORS08 Part D suggests up to 450 cfs at S-79 and up to 200 cfs at S-80. On 1/21/23 the USACE increased releases from Lake Okeechobee to the St. Lucie Estuary (S-80) to a 7-day average steady release of 500 cfs and to the Lake Worth Lagoon to a 7-day average steady release of 100 cfs. 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. **Since entering the low sub band on 2/13/23 the USACE began utilizing banked releases** from a make-up release tool which allowed them to make releases at levels lower than suggested in LORS08 since 11/18/22 and bank the volume not released for beneficial releases throughout the dry season.

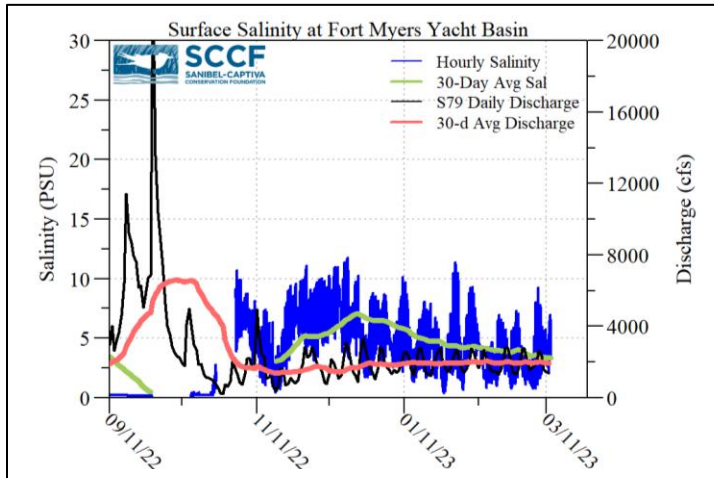
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **61,604 AF** with **24,705 AF** to the Caloosahatchee through **S-77**, **3,879 AF** through **S-308** in Port Mayaca, **1,707 AF** through **S-310** in Clewiston, and **25,801 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **9,143 AF** (9,143 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) . Water conservation areas received flows of **0 AF, 0 AF**, and **1,134 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **3,976 AF**.



Lake Level: 15.11 ft (Low sub-band)
Last Week: 15.34 ft
Last Year: 14.30 ft
7-Day Lake Recession Rate: -0.23 ft/week

Lake Okeechobee Inflow: 675 cfs
Lake Okeechobee Outflow: 3,753 cfs

Weekly Rainfall Total:
WP Franklin: 0.23"
Ortona: ≥0.00"
Moore Haven: 0.00"



Cyanobacteria Status: The Lee County Environmental Lab did not collect cyanobacteria samples in the Caloosahatchee Estuary during the week of 3/7/23.

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 27 psu, within the optimal range for oysters and seagrass. *Karenia* spp. counts at Sanibel and Captiva beaches ranged from background to medium and *Leptocylindrus*, (a diatom), was the dominant phytoplankton genus.

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 – 0.5 [0.2 – 0.3]	2.7 – 6.0	-----	5.0
Fort Myers Yacht Basin	----- [-----]	-----	-----	-----
Shell Point	17 – 34 [16 – 34]	4.5 – 5.9	78.0	1.8
McIntyre Creek	32.4 – 34.1 [31.3 – 34.5]	0.1 – 3.9	-----	-----
Tarpon Bay	32.2 – 34.7 [33.6 – 34.4]	4.4 – 7.6	-----	1.2 – 21
Wulfert Flats	33.8 – 34.8 [32.3 – 34.8]	3.3 – 9.7	-----	1.8 – 11.8

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 3/10/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 157 samples along Florida’s Gulf Coast. Bloom concentrations (>100,000 cells/liter) were present in 89 samples: two in and offshore of Pasco County, 24 in and offshore of Pinellas County, eight in Manatee County, 32 in and offshore of Sarasota County, six in Charlotte County, **nine in Lee County**, and eight in Collier County.

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

Red Tide Alert: On 3/8/23 the Lee County Department of Health issued a red tide alert: An alert level of red tide was found near **Turner Beach (Captiva), Blind Pass Beach (Sanibel), Buck Key near Blind Pass, Bonita Beach Causeway (Dog Beach), Bonita Beach Park, Little Hickory Island Park, and Boca Grande Beach**. This is in response to water samples taken on February 24, February 27, March 1, and March 6. A caution level of red tide was found near **Bowman’s Beach, Tarpon Bay Road Beach, Lighthouse Beach (Sanibel), and Dixie Beach (Sanibel)**. A cautionary

Light Penetration

Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.80	>2.2	2.2	< 18
Causeway	3.20	> 2.2	4.4	< 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

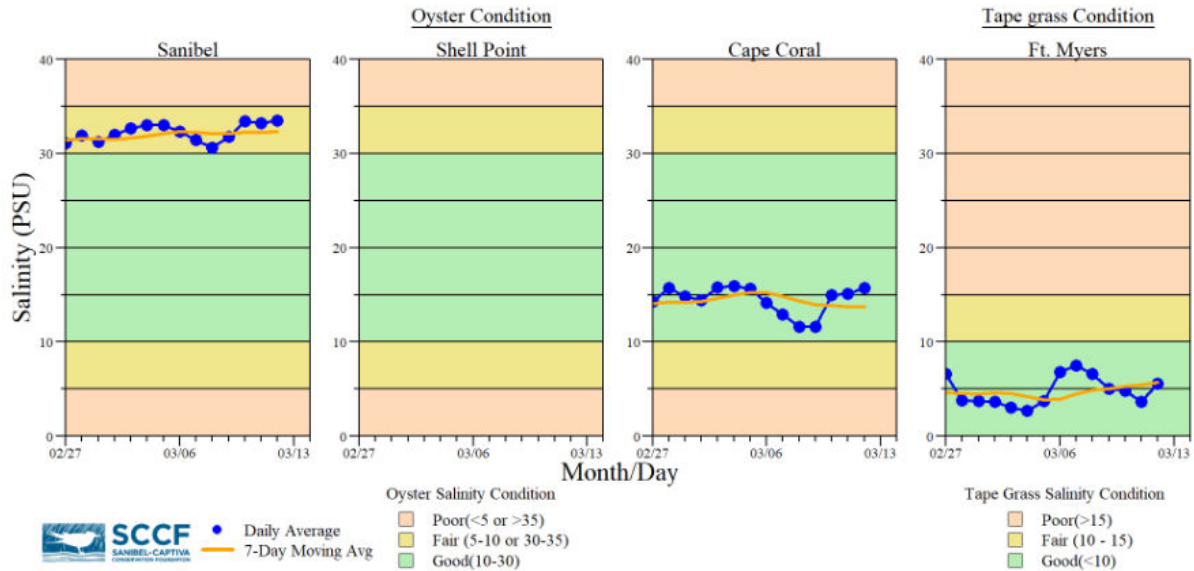
ACOE Daily Reports

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
3/7/23	2169	1809	1532
3/8/23	2631	1970	2250
3/9/23	2346	1996	2386
3/10/23	1576	1342	1949
3/11/23	1483	1039	1472
3/12/23	1497	1148	1366
3/13/23	1594	1322	1509
7-day avg	1899	1551	1781

notice indicates low levels (>10,000-100,000 *Karenia brevis* cells per liter) of red tide detected in sampling. This is in response to water samples taken on February 27 and March 6.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 4 patients with toxicosis symptoms 1 adult white ibis (still at CROW), 1 adult sanderling (still at CROW), 1 adult double crested cormorant (still at CROW), and 1 adult white pelican (still at CROW).

Fish Kills: In the past week, the [FWC](#) has received reports of fish kills from Collier County (6 reports), **Lee County (9 reports)**, Manatee County (9 reports), Pinellas County (52 reports), and Sarasota County (19 reports).



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 3/13/23 at 1:36 PM on a rising tide (1.7 ft). [Lighthouse Beach Park Virtual Tour.](#)