

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 14 – 20, 2023**

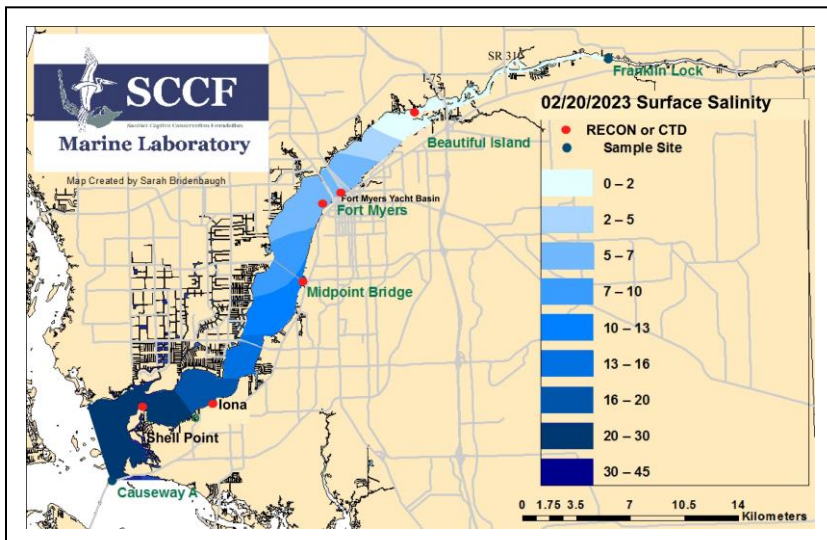
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

Caloosahatchee Conditions Summary: Flow to the Caloosahatchee Estuary had a 7-day average of **1,649 cfs** at **S-79** with a 7-day average of **1,569 cfs (95%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,941 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for 6 days after 2 days in the stress flow envelope.** 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 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.

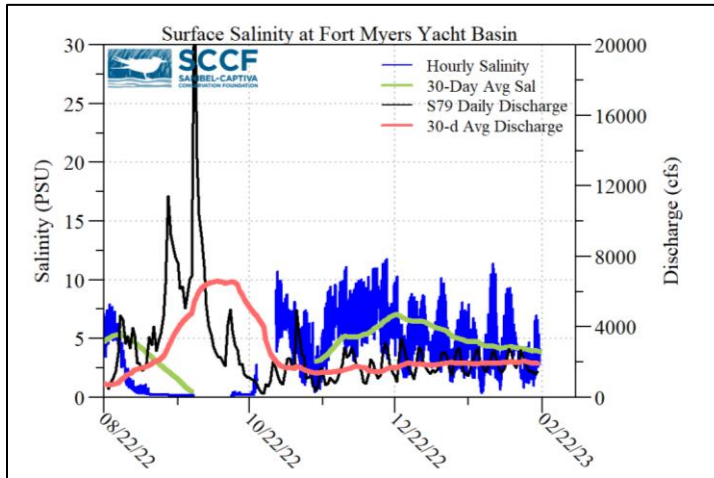
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **40,372 AF** with **13,757 AF** to the Caloosahatchee through **S-77**, **6,331 AF** through **S-308** in Port Mayaca, **30 AF** through **S-310** in Clewiston, and **16,030 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **18,509 AF** (18,492 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **17 AF** from **S310**. Water conservation areas received flows of **434 AF**, **0 AF**, and **1,813 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **10,895 AF**.



Current Lake Level: 15.72 ft (Low sub-band)
Lake Level Last Week: 15.93 ft
7-Day Recession Rate: -0.21 ft/week
Lake Level Last Year: 14.72 ft

Lake Okeechobee Inflow: 1,260 cfs
Lake Okeechobee Outflow: 1,603 cfs

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



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
2/14/22	2319	475	2172
2/15/22	1911	1537	2124
2/16/22	1565	1101	1320
2/17/22	1455	1049	1454
2/18/22	1469	953	1466
2/19/23	1300	889	1174
2/20/23	1524	1098	1272
7-day avg	1649	1001	1569

Cyanobacteria Status: The Lee County Environmental Lab did not collect cyanobacteria samples in the Caloosahatchee Estuary during the week of 2/14/23.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 5.3 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 were high on the 14th and 17th at Tarpon Beach and on the 16th, 18th, and 19th at the Causeway.

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]	4.3 – 6.8	-----	2.6
Fort Myers Yacht Basin	----- [-----]	-----	-----	-----
Shell Point	14 – 33 [19 - 34]	5.7 – 6.7	78.0	2.4
McIntyre Creek	29.8 – 32.0 [27.3 – 33.2]	0.4 – 6.3	-----	-----
Tarpon Bay	29.1 – 34.0 [30.7 – 35.0]	5.0 – 8.7	2.4 – 5.8	1.4 – 8.3
Wulfert Flats	31.2 – 33.5 [28.7 – 33.7]	4.7 – 9.4	-----	2.6 – 46.8

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 2/17/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 96 samples from and offshore of Southwest Florida, and one sample each from Northwest Florida and Florida’s East Coast. Bloom concentrations (>100,000 cells/liter) were present in 47 samples: four in Manatee County, 13 in Sarasota County, eight in Charlotte County, and **22 in and offshore of Lee County.**

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

Red Tide Alert: The Florida Department of Health in Lee County (DOH-Lee) has issued **health alerts** for the presence of a red tide bloom. An alert level of red tide was found near **Lynn Hall Park (Fort Myers Beach), Gasparilla Island State**

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	2.0	< 18
Causeway	2.50	> 2.2	2.6	< 5

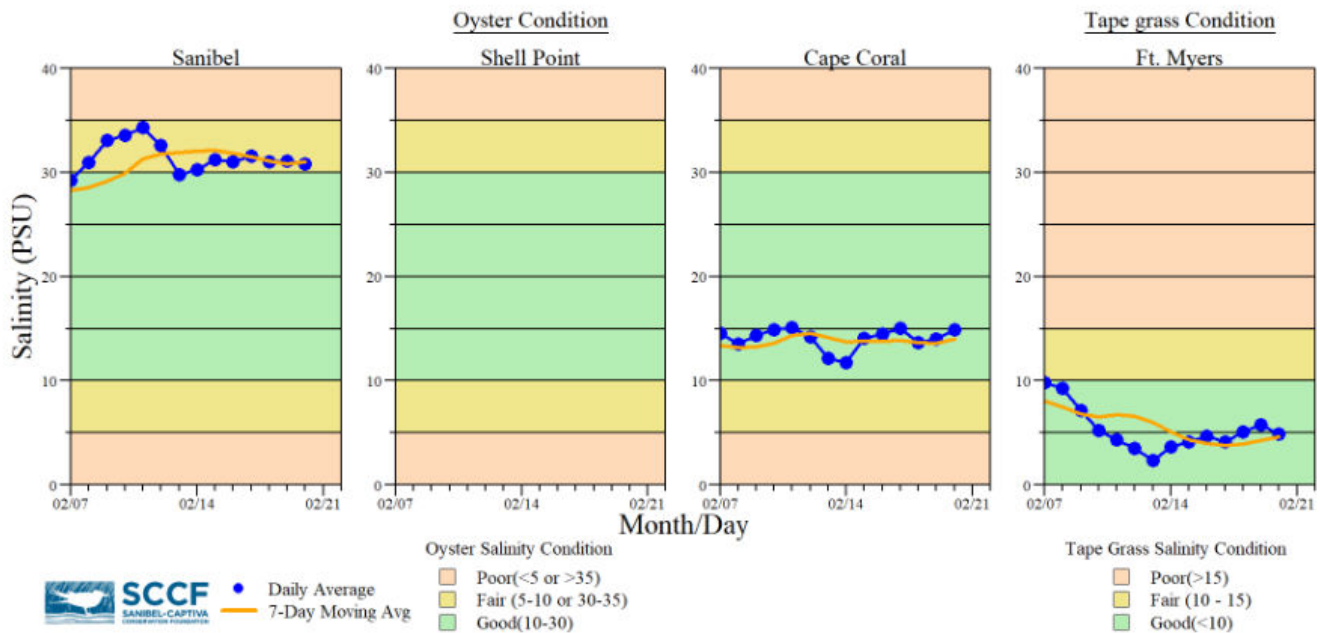
25% I_z is the depth (z) where irradiance (I) is 25% of surface irradiance. Target values indicate the depth of light penetration needed for healthy seagrass.
^m measured, ^c calculated

Park (Boca Grande Pass), Turner Beach (Captiva), Blind Pass Beach (Sanibel) and Lighthouse Beach (Sanibel).
 This is in response to water samples taken on February 13, 14, and 15, 2023.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 2 patients with toxicosis symptoms: 1 juvenile royal tern (still at CROW) and 1 adult red-breasted merganser (still at CROW).

Beach Conditions: On 2/14/23 the City of Sanibel reported sporadic mullet washed up along Periwinkle beaches and small dead baitfish washed up near Algiers Beach, moderate to severe respiratory irritation in sporadic locations was reported on beach patrols on 2/17/23, and the following dead birds were reported by staff on the beach in the past week: 1 double crested cormorant, 2 laughing gulls, and 1 royal tern. On 2/14/23 SCCF reported dead pen shells, cockles, *Dosinia*, and mullet at Tarpon Bay Beach and hundreds of small dead fish at Gulfside City Park on 2/15/23,.

Shellfish Harvesting: On 2/14/23 the Florida Department of Agriculture and Consumer Services **CLOSED** shellfish harvesting area #6222 Pine Island Sound Section 2 Shellfish Harvest Area (Matlacha Pass North, #6232 Matlacha Pass South is already closed) due to the presence of *Karenia brevis*.

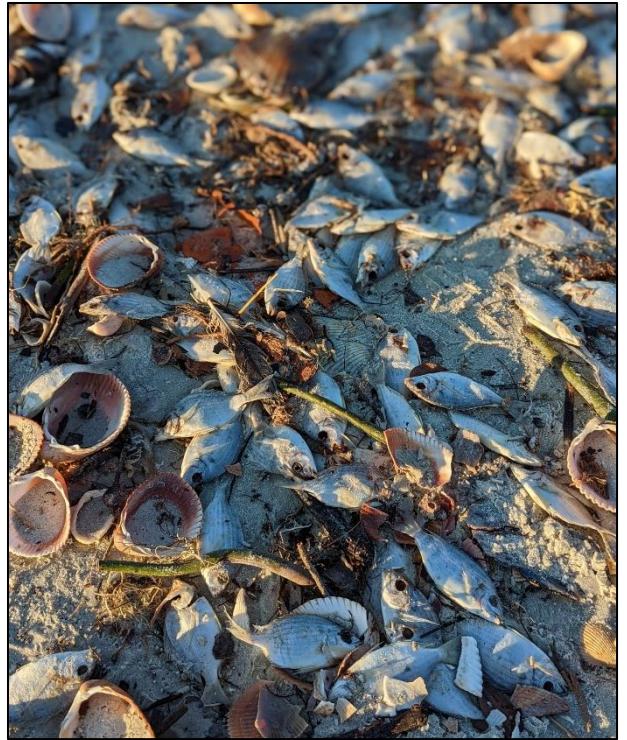


Daily average bottom salinity data for the last 14-days from sampling locations within the tidal Caloosahatchee River Estuary relative to oyster health (Sanibel, Shell Point and Cape Coral) and tape grass (*Vallisneria americana*) health (Ft. Myers only) conditions.

Data are provisional and subject to change.



Penshells and *Dosinia* in the wrack line at Lighthouse Beach Park on 2/19/23. SCCF.



Pen shells, cockles, *Dosinia*, and mullet at Tarpon Bay Beach on 2/14/23 (left). Hundreds of small dead fish on 2/15/23 at Gulfside City Park (right). SCCF.



2/21/23

Water clarity at Lighthouse Beach Park on 2/21/23 at 12:15 PM on a rising tide (1.4 ft). [Lighthouse Beach Park Virtual Tour.](#)