

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: **November 15 – 22, 2022**

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 **972 cfs** at **S-79** with a 7-day average of **0 cfs (0%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,871 cfs and has been in the optimal flow envelope (750 - 2100 cfs; RECOVER 2020) for 26 days.** Red tide blooms off the coast of Lee County are causing fish kills and respiratory irritation on Sanibel Island. Abundant red drift macroalgae is stranded on Sanibel beaches.

Recommendation: There is currently an intense *Karenia brevis* bloom off the coast of Lee County. We are currently maintaining flows within the 14-day average optimal flow envelope from basin runoff. We request that the Corps maintain the current schedule of releases from the Lake to avoid additional nutrient loading that could exacerbate the current red tide bloom.

USACE Action: On 11/18/22 the USACE will resume releases from Lake Okeechobee to the Caloosahatchee Estuary from the W.P. Franklin Lock and Dam (S-79) at a fourteen-day average pulse release of 1,200 cubic feet per second beginning Saturday, Nov. 19. No lake releases are planned for the St. Lucie Estuary.

Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **615 AF** with **0 AF** to the Caloosahatchee through **S-77**, **284 AF** through **S-310** in Clewiston, and **319 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **66,554 AF** (66,492 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **63 AF** from **S310 and C10A**. Water conservation areas received flows of **12,052 AF**, **6,633 AF**, and **7,698 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **25,426 AF**.

Lake Level: 16.31 ft (Base flow sub-band)

Last Week: 16.18 ft

Last Year: 16.02 ft

Lake Okeechobee Inflow: 4,485 cfs

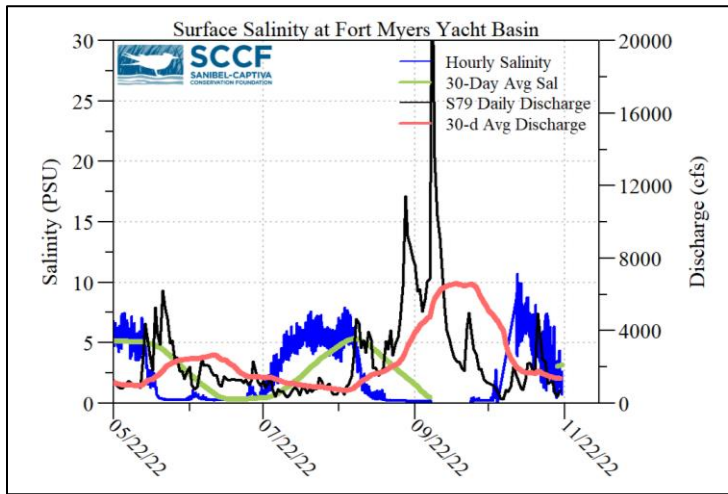
Lake Okeechobee Outflow: 23 cfs

Weekly Rainfall Total: WP Franklin ≥ 0.20" Ortona ≥ 0.35"

Moore Haven ≥ 0.10"

7-Day Lake Recession Rate: +0.07 ft/week

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
11/15/22	1091	251	0
11/16/22	1150	151	0
11/17/22	1175	596	0
11/18/22	600	342	0
11/19/22	386	0	0
11/20/22	721	241	0
11/22/22	1678	801	0
7-day avg	972	264	0



Light Penetration				
Site	25% I _z Target Values		Turbidity Target Values	
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	ND	>2.2	ND	< 18
Causeway	ND	> 2.2	ND	< 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 11/21/22 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis* upstream of the **Franklin Locks** and *Microcystis* and *Planktothrix* at the **Davis Boat Ramp**.

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	0.3 – 0.5 [0.3 – 2.5]	4.2 – 7.0	-----	4.8
Fort Myers Yacht Basin	[2.1 – 7.8]	-----	-----	-----
Shell Point	11.7 – 29.6 [13.1 – 30.8]	4.2 – 7.4	-----	2.2
McIntyre Creek	28.2 – 30.8 [27.6- 32.2]	1.0 – 8.4	-----	-----
Tarpon Bay	-----	-----	-----	-----
Wulfert Flats	30.7 – 33.5 [28.2 – 33.8]	2.6 – 8.8	-----	22.5

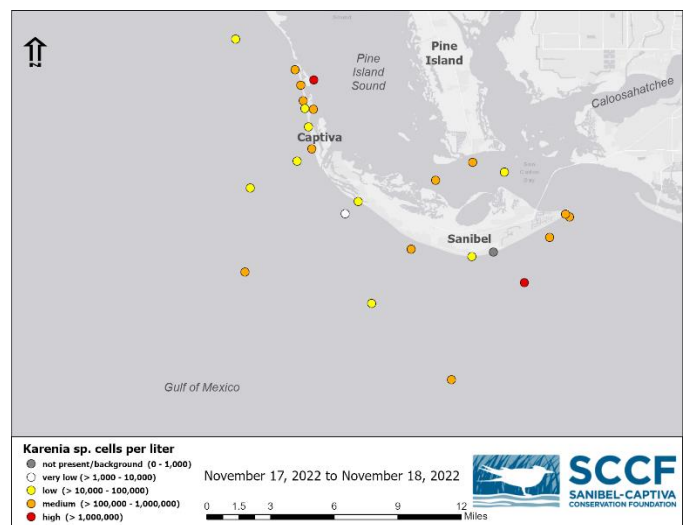
- Red values are outside of the preferred range.
- ^a Salinity target values: BI < 5, FM < 10, SP = 10 – 30
- ^b Dissolved O₂ target values: all sites > 4
- ^c FDOM target values: BI < 70, FM < 70, SP < 11
- ^d Chlorophyll target values: BI < 11, FM < 11, SP < 11
- ^e Single sonde lower and surface layer or surface grab lab measurement
- no data

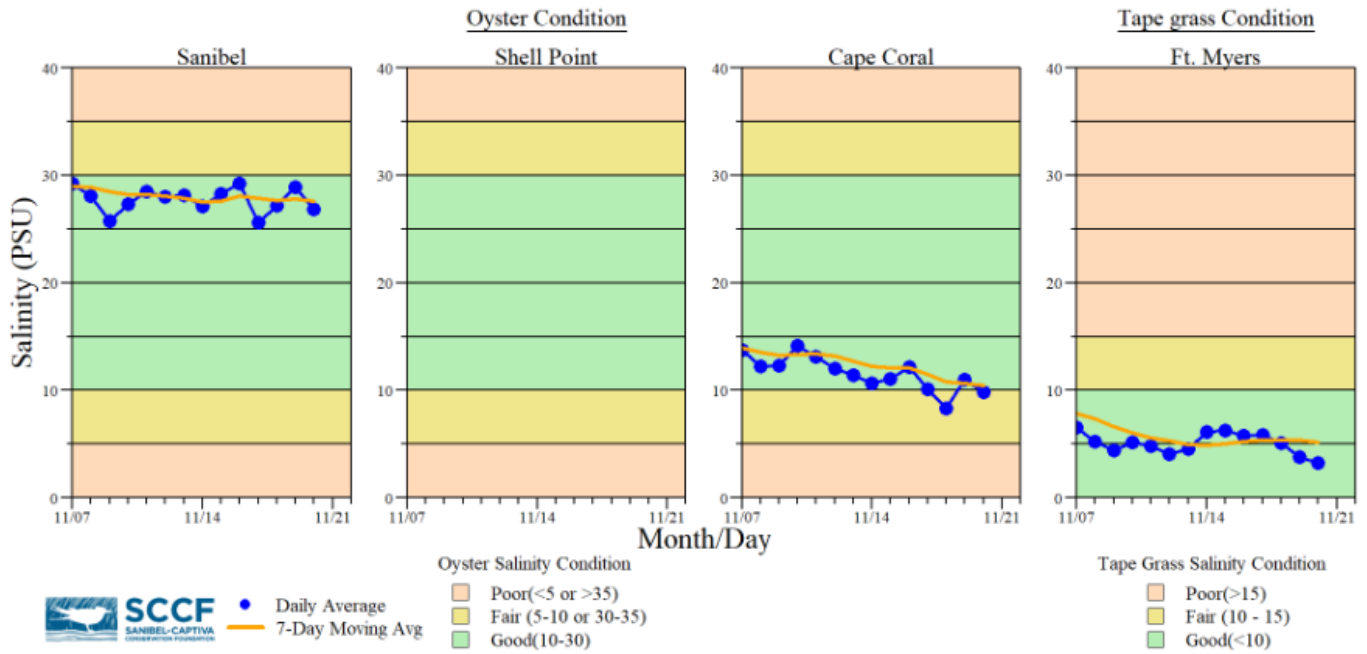
Red Tide: On 11/18/22, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was observed in 78 samples. **Bloom concentrations (>100,000 cells/liter) were present in 49 samples:** one in Manatee County, 31 in and offshore of Sarasota County, two in Charlotte County, **13 in Lee County**, and two in Collier County. Some shellfish harvest has been closed.

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

Wildlife Impacts: In the past week (11/15 – 11/22) the CROW wildlife hospital on Sanibel received 3 patients with toxicosis symptoms: 3 double crested cormorants (1 died, 1 still at CROW).

Beach Conditions: Sanibel staff reported respiratory irritation was mild on the east end of the island and became moderate toward Tarpon Bay. Dead fish are in the early stage of decay along the beaches. Red tide alert has been issued at Lighthouse Beach park and continues at Blind Pass. Red tide and dead fish are persistent on Fort Myers Beach, no new fish kills, and respiratory symptoms are improving.





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 11/18/22 at 1:06 PM on a falling tide (low tide: 0.52 ft @ 2:45 PM). [Lighthouse Beach Park Virtual Tour](#).



Dead fish on West Gulf drive (top) and Tarpon Bay Beach (bottom) on 11/22/22. City of Sanibel.