

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 23 – 29, 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 **966 cfs** at **S-79** with a 7-day average of **38 cfs (4%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 969 cfs and has been in the optimal flow envelope (750 - 2100 cfs; RECOVER 2020) for 34 days.** Red tide blooms off the coast of Lee County are causing fish kills and respiratory irritation on Sanibel Island.

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 11/19/22 the USACE resumed 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. No lake releases are planned for the St. Lucie Estuary.

Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **917 AF** with **532 AF** to the Caloosahatchee through **S-77**, **36 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 **69,471 AF** (69,356 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **115 AF** from **S310** and **C10A**. Water conservation areas received flows of **6,161 AF**, **4,080 AF**, and **5,018 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **23,542 AF**.

Lake Level: 16.50 ft (Intermediate sub-band)

Last Week: 16.31 ft

Last Year: 15.97 ft

Lake Okeechobee Inflow: 4,823 cfs

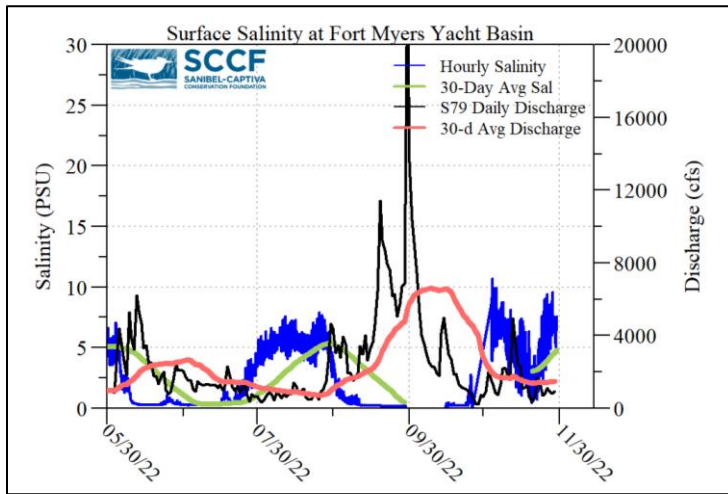
Lake Okeechobee Outflow: 22 cfs

Weekly Rainfall Total: WP Franklin \geq 0.10" Ortona \geq 0.00"

Moore Haven \geq 0.00"

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

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
11/23/22	1402	338	0
11/24/22	721	0	0
11/25/22	785	320	0
11/26/22	1108	292	0
11/27/22	936	181	0
11/28/22	800	239	0
11/29/22	1012	53	268
7-day avg	966	228	38



Site	Light Penetration		Turbidity	Target Values
	25% I _z	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 11/28/22 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Microcystis* upstream of the Franklin Locks and at the Davis Boat Ramp as wind driven tan/green scum along the lock and seawall.

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 – 2.5 [0.3 – 0.5]	4.5 – 6.7	-----	4.7
Fort Myers Yacht Basin	3.4 – 9.8 [-----]	-----	-----	-----
Shell Point	14.59 – 31.66 [11.7 – 29.6]	5.3 – 7.3	-----	2.0
McIntyre Creek	27.4 – 30.0 [28.2 – 30.8]	0.6 – 7.0	-----	-----
Tarpon Bay	26.5 – 33.0 [24.7 – 29.9]	4.3 – 7.7	-----	-----
Wulfert Flats	28.6 – 32.4 [30.7 – 33.5]	2.7 – 9.8	-----	5.1 – 81.8

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 11/22/22, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was observed in 133 samples. Bloom concentrations (>100,000 cells/liter) were present in 82 samples: one in Manatee County, 34 in and offshore of Sarasota County, two in Charlotte County, 38 in and offshore of Lee County, and seven in Collier County.

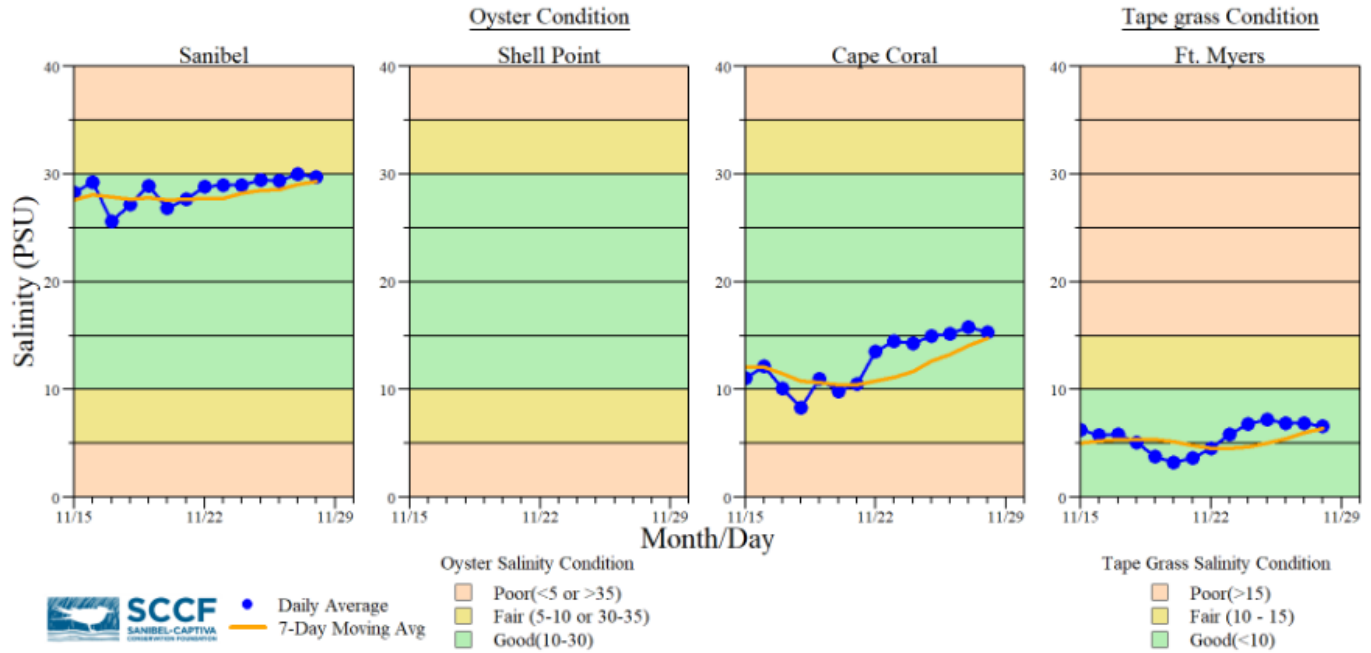
K. brevis was observed at background concentrations in Pinellas County, very low to medium concentrations in Manatee County, very low to high concentrations in and offshore of Sarasota County, background to high concentrations in and offshore of Charlotte County, **background to high concentrations in and offshore of Lee County**, and background to high concentrations in Collier County.

On 11/28 - 11/29 SCCF staff observed 1 sample of *K. brevis* with high concentrations at Lighthouse Beach Park (990,000 cells/liter) and 3 samples with low concentrations at Algiers Beach (60,000 cells/liter), Tarpon Bay Beach (20,000 cells/liter), and Tarpon Bay (40,000 cells/L).

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 7 patients with toxicosis symptoms: 1 brown pelican (transferred), 4 double crested cormorants (1 transferred, 3 still at CROW), 1 osprey (died), and 1 sanderling (still at CROW).

Beach Conditions: SCCF staff reported fish kills and a dead double crested cormorant at Lighthouse Beach Park on 11/29/22. There has been a reduction in the number of fish kills and respiratory irritation on Sanibel and Fort Myers Beach compared to previous weeks. The Town of Fort Myers Beach reported dead juvenile bonnethead sharks and mild respiratory irritation on 11/29/22. The FWC Fish Kill Hotline continued to receive reports of multi-taxa kills and respiratory irritation at Goodland Bay, Siesta Key Beach, Venice Pier, Boca Vista Harbor, Southbay Yacht Club Marina, Bowmans Beach, and Big Sarasota Pass. Affected Species: Snook, Red Drum, Gag Grouper, Goliath Grouper, Jack Crevalle,

Pinfish, Spotted Seatrout, grunt, Scaled Sardine, Sand Perch, Bluefish, Permit, Bonnethead Shark, mullet, catfish, pufferfish, eel, Horseshoe Crab, unidentified crab, unidentified fish.

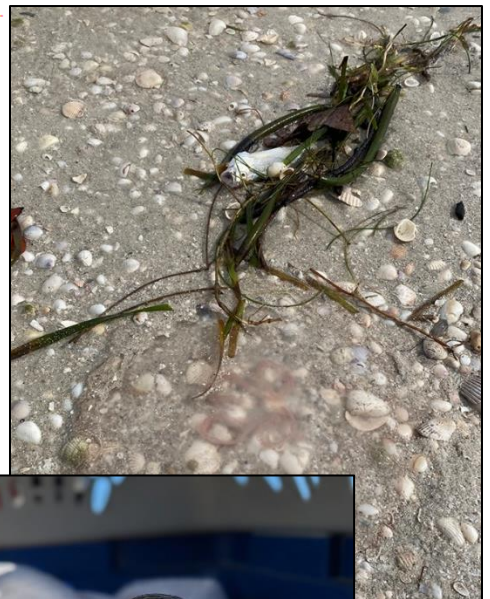


Daily average bottom salinity data for the last 14-days from sampling locations within the tidal Caloosahatchee River Estuary relative to oyster health (Sanibel, Shell Point and Cape Coral) and tape grass (*Vallisneria americana*) health (Ft. Myers only) conditions.

Data are provisional and subject to change.



Dead juvenile bonnet head sharks on Fort Myers Beach on 11/29/22. Town of Fort Myers Beach.



Dead fish and moon jelly in the wrack line at Lighthouse Beach Park on 11/28/22 (top). A sick sanderling found during bird surveys on Captiva unable to fly (bottom). SCCF staff transferred it to CROW. SCCF.



Water clarity at Lighthouse Beach Park on 11/28/22 at 1:10 PM on a rising tide (low tide: -0.53 ft @ 11:01 AM). [Lighthouse Beach Park Virtual Tour.](#)