

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
 James Evans, Leah Reidenbach, & Rick Bartleson PhD - SCCF (Sanibel-Captiva Conservation Foundation)

Subject: Caloosahatchee & Estuary Conditions Report

Reporting Period: **November 9 – 15, 2021**

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: Flows to the Caloosahatchee Estuary had a 7-day average of **2,751 cfs** at **S-79** with a 7-day average of **151 cfs (5%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,462 cfs and has been in the stress flow envelope (2,100 – 2,600; RECOVER 2020) for 8 days.**

Recommendation: In order to maintain a beneficial salinity gradient in the Caloosahatchee Estuary for the health of seagrass and oysters, we recommend that the Corps maintain flows at S-79 within the optimum flow envelope (750 – 2,100 cfs) based on the RECOVER performance measure for salinity.

USACE Action: On Saturday, 11/5/21 the USACE increased targeted flows to a 7-day average of 2,000 cfs (pulse) to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) and continued no releases to the St. Lucie Lock and Dam (S-80). Lake flows will be reduced and may stop completely based on local basin runoff. On 11/17/21 the Corps plans to execute a one-day deviation as part of an ongoing sediment study by the SFWMD and USGS with releases up to 6,000 cfs at S-77 for up to eight hours as part of an ongoing sediment study to predict sediment and nutrients transportation from the lake to the estuaries.

Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **5,161 AF** with **4,943 AF** to the Caloosahatchee through **S-77**, **218 AF** through **S-310** in Clewiston, and **0 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **37,816 AF** (35,530 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **2,286 AF** from **S310** and **C10A**. Water conservation areas received flows of **5,145 AF**, **7,384 AF**, and **22,695 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **19,045 AF**.

Lake Okeechobee Level: 16.01 ft (Low sub-band)

Last Week: 16.00 ft

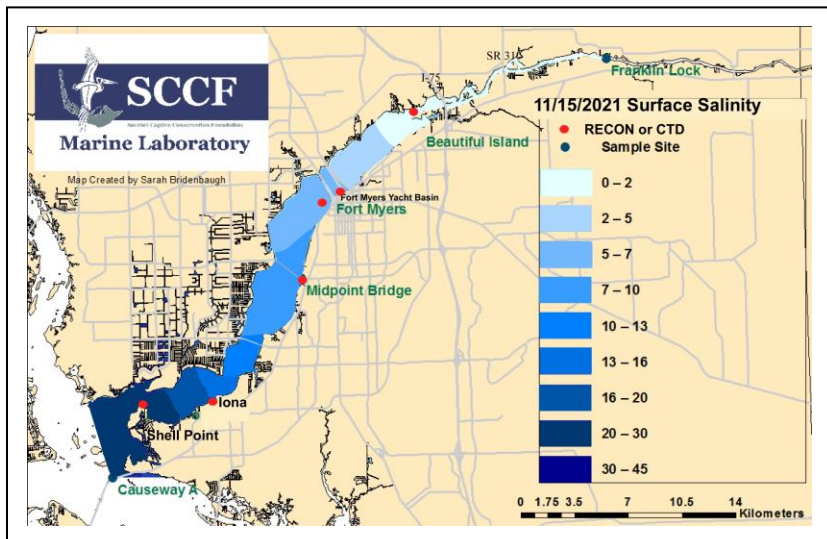
Lake Okeechobee Inflow: 3,061 cfs

Lake Okeechobee Outflow: 376 cfs

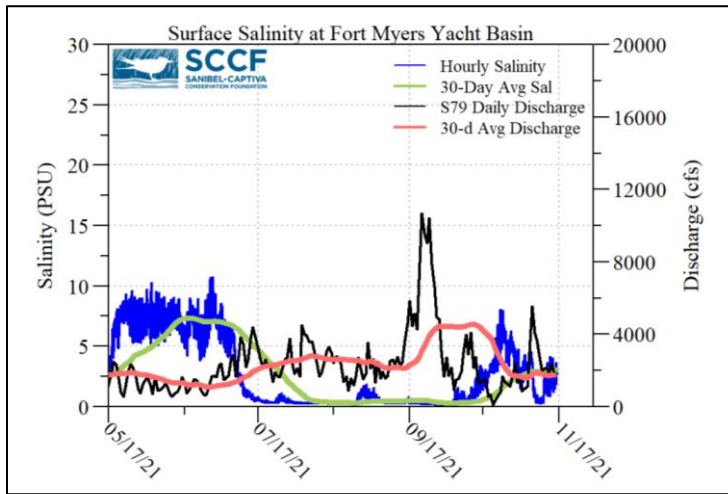
Weekly Rainfall Total: WP Franklin $\geq 0.00''$

Ortona $\geq 0.05''$

Moore Haven $\geq 0.00''$



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
11/9/21	2765	1053	70
11/10/21	1942	784	0
11/11/21	2130	885	0
11/12/21	2132	974	0
11/13/21	1864	1070	916
11/14/21	2386	1245	376
11/15/21	1991	959	1130
7-day avg	2173	996	356



Light Penetration				
Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.67 ^c	> 1	1.8	< 18
Shell Point	1.03 ^c	>2.2	1.1	< 18
Causeway	1.28 ^c	> 2.2	1.4	< 5

25% Iz 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 11/16/21 sampling for cyanobacteria by the Lee County Environmental Lab reported no visible cyanobacteria in the Caloosahatchee.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 3.3 **psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **22 psu**, within the optimal range for oysters, but below optimal for seagrass.

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 [0.2 – 0.9]	3.9 – 5.0	358	7.2
Fort Myers Yacht Basin	0.3 – 4.1 [0.5 – 5.7]	-----	259	5.7
Shell Point	11 – 31 [12 – 31]	5.6 – 7.5	147	3.2
McIntyre Creek	25.4 – 29.8	5.3 – 15.6	9.7 – 15.1	0.3 – 0.9
Tarpon Bay	-----	-----	9.4 – 15.5	-----
Wulfert Flats	27.8 – 31.8	4.3 – 9.1	-----	3.5 – 25.2

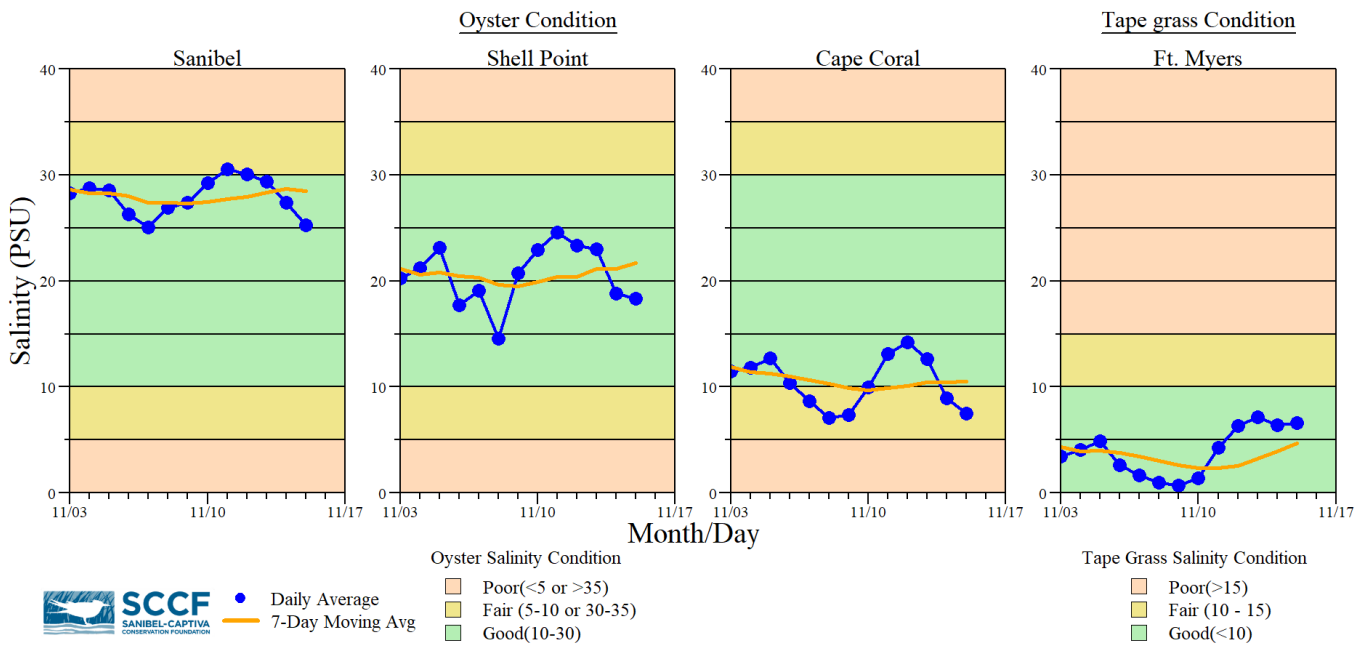
- Red** values are outside of the preferred range.
- ^a Salinity target values: BI < 5, FM < 10, SP = 10 – 30
- ^b Dissolved O₂ target values: all sites > 4
- ^c FDOM target values: BI < 70, FM < 70, SP < 11
- ^d Chlorophyll target values: BI < 11, FM < 11, SP < 11
- ^s Single sonde lower and surface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

Red Tide: On 11/12/21, the FWC reported that a patchy bloom of the red tide organism, *Karenia brevis*, persists along Florida’s Gulf Coast. Over the past week, *K. brevis* was detected in 53 samples. Bloom concentrations (>100,000 cells/liter) were observed in 10 samples: one offshore of Walton County, one in Bay County, five in Gulf County, two in Franklin County, and one offshore of Collier County.

In Southwest Florida over the past week, *K. brevis* was observed at very low concentrations in Sarasota County and low and medium concentrations offshore of Collier County.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 17 toxicosis patients: 2 brown pelicans (1 died, 1 still at CROW), 7 double crested cormorants (2 died, 5 still at CROW), 1 herring gull (died), 4 laughing gulls (3 died, 1 released), 2 royal terns (1 died, 1 still at CROW), and 1 white pelican (died).

Fish Kills: In the past week, the [FWC fish kill hotline](#) received no reports of a fish kills in Southwest Florida due to red tide, but received 1 report in Franklin county located in the panhandle.



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.



Water clarity at Lighthouse Beach Park on 11/12/21 at 1:10 PM on a rising tide (Low tide: 0.23 ft @ 2:16 PM). [Lighthouse Beach Park Virtual Tour.](#)

