

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: **October 19 – 25, 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 **677 cfs** at **S-79** with a 7-day average of **120 cfs** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,381 cfs and has been in the optimum flow envelope (750 – 2,100; RECOVER 2020) for 6 days** after being above the optimal flow envelope for 41 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, 5/29/21 the USACE decreased targeted flows to a 7-day average of 1,000 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: In the past 7 days the total outflow from Lake Okeechobee was **4,358 AF** with **1,666 AF** to the Caloosahatchee through **S-77**, **613 AF** through **S-310** in Clewiston, and **2,079 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **37,803 AF** (37,222 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **581 AF** from **C10A**. Water conservation areas received flows of **1,904 AF**, **3,975 AF**, and **10,425 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **34,681 AF**.

Lake Okeechobee Level: 15.87 ft (Low sub-band)

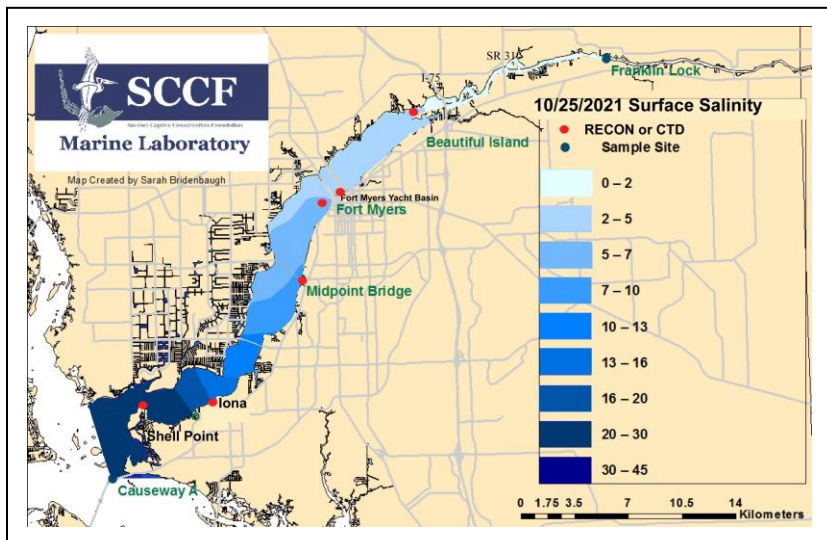
Last Week: 15.86 ft

Lake Okeechobee Inflow: 2,643 cfs

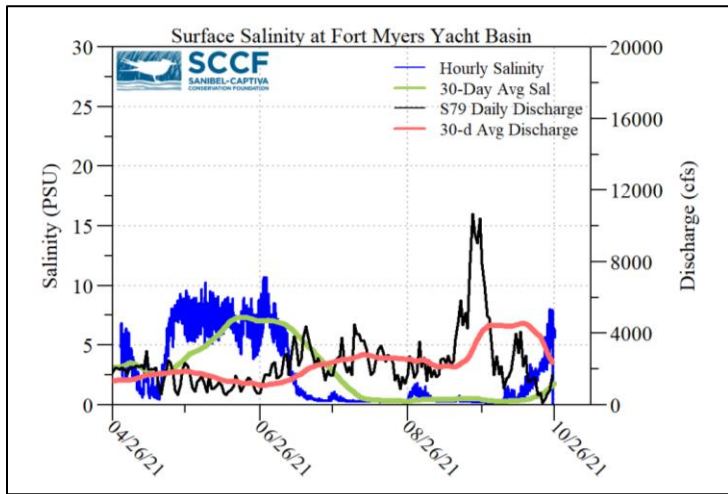
Lake Okeechobee Outflow: 394 cfs

Weekly Rainfall Total: WP Franklin **0.30"** Ortona **0.21"**

Moore Haven **2.31"**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
10/19/21	541	48	0
10/20/21	678	0	68
10/21/21	109	0	184
10/22/21	319	0	184
10/23/21	591	106	176
10/24/21	824	510	172
10/25/21	1678	539	56
7-day avg	677	172	120



Light Penetration				
Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.63 ^c	> 1	1.6	< 18
Shell Point	1.19 ^c	>2.2	1.2	< 18
Causeway	1.37 ^c	> 2.2	1.3	< 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 10/26/21 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 **1.6 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **25 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 – 2.8 [0.2 – 0.4]	3.1 – 4.7	358	7.2
Fort Myers Yacht Basin	2.2 – 6.8 [0.4 - 3.8]	4.7 – 6.5	280	6.8
Shell Point	15 – 32 [11 - 31]	4.8 – 6.5	115	3.6
McIntyre Creek	26.4 – 28.8	3.1 – 10.5	11.2 – 15.6	0.2 – 0.6
Tarpon Bay	23.2 – 30.6	-----	10.3 – 40.6	-----
Wulfert Flats	26.9 – 28.1	2.9 – 7.7	-----	4.6 – 27.1

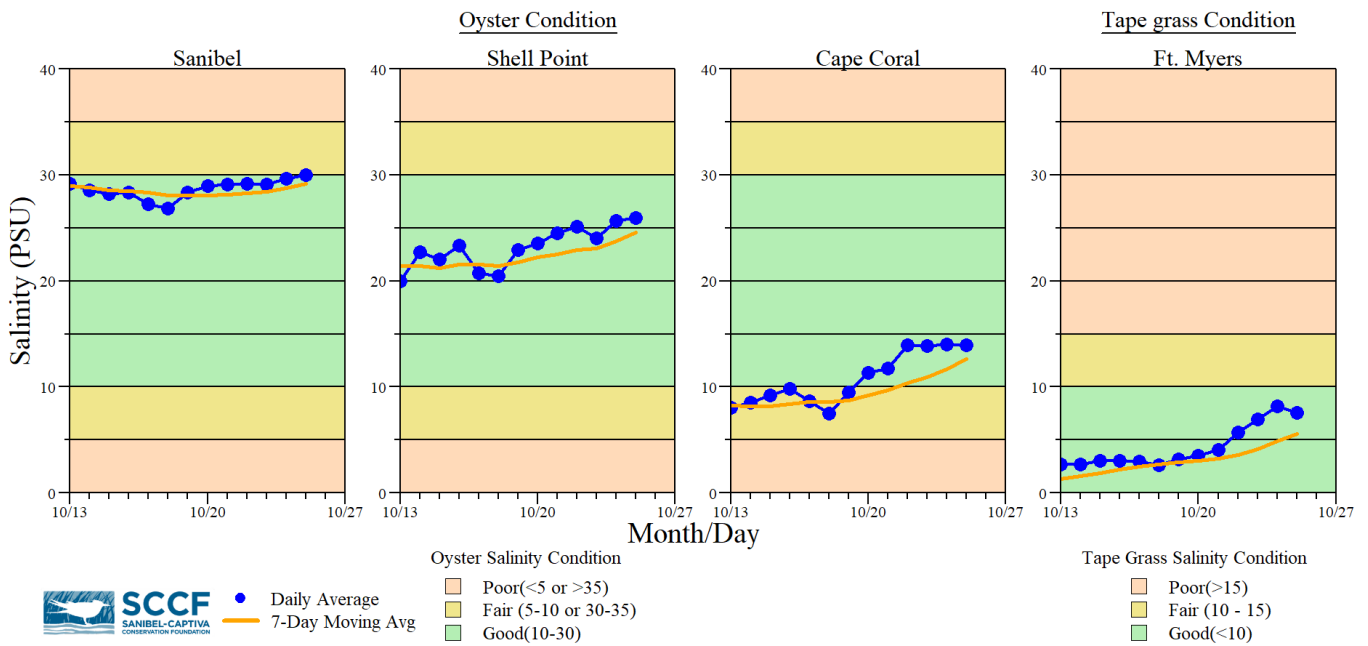
- Red values are outside of the preferred range.
- ^a Salinity target values: BI < 5, FM < 10, SP = 10 – 25
- ^b Dissolved O₂ target values: all sites > 4
- ^c FDOM target values: BI < 70, FM < 70, SP < 11
- ^d Chlorophyll target values: BI < 11, FM < 11, SP < 11
- ^s Single sonde lower and surface layer or surface grab lab measurement

Red Tide: On 10/22/21, 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 130 samples. Bloom concentrations (>100,000 cells/liter) were observed in 45 samples: 17 in and offshore of Bay County, three offshore of Gulf County, one in Franklin County, one offshore of Dixie County, two offshore of Levy County, five in and offshore of Pinellas County, six in Manatee County, nine in Sarasota County, and **one offshore of Lee County**.

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

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 5 toxicosis patients: 1 double crested cormorant (still at CROW), 1 royal tern (died), 2 anhinga (1 died, 1 still at CROW), and 1 great white egret (died).

Beach Conditions: In the past week, the [FWC fish kill hotline](#) continues to receive numerous reports of fish kills from Pinellas (16 reports), Sarasota (3 reports), and Manatee (1 report) counties with red tide as the suspected cause. The FWC is also receiving fish kill reports in the panhandle related to red tide.



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 10/22/21 at 1:45 PM on a rising tide (High tide: 2.24 ft @ 2:49 PM). [Lighthouse Beach Park Virtual Tour.](#)