

MEMORANDUM

To: USACE Colonel Andrew D. Kelly, LTC Todd F. Polk, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Drew Bartlett, Jennifer Reynolds, Lawrence Glenn, DEP Interim Secretary Shawn Hamilton

From: Periodic Scientists Conference Call Participants  
 Kevin Godsea & Jeremy Conrad - 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: **July 20 – 26, 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.

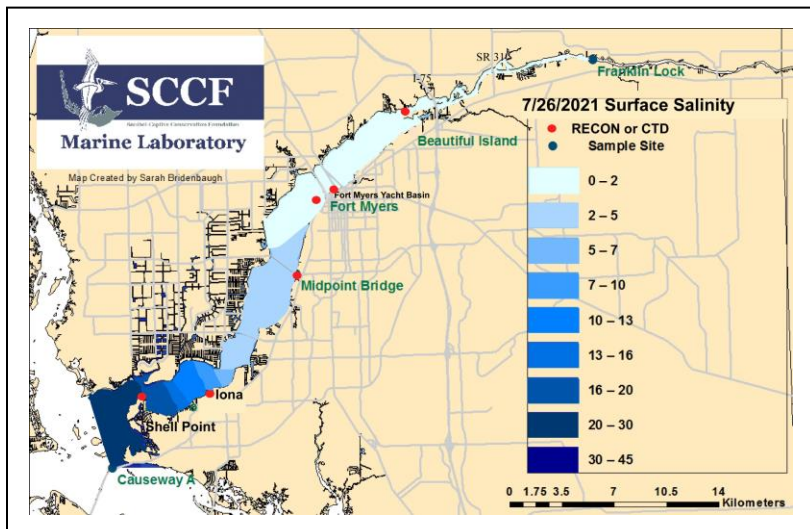
**Caloosahatchee Condition Summary:** Flows to the Caloosahatchee Estuary had a 7-day average of **1,933 cfs at S-79** and a 7-day average of **0 cfs at S-77**. The **14-day moving average flow at S-79 is 2,584 cfs and is within the stress flow envelope (2,100 – 2,600 cfs; RECOVER 2020)**. Water clarity around Sanibel and Lee County has declined with the higher flows from the watershed.

**Recommendation:** Local basin runoff into the Caloosahatchee is now within the stress flow envelope, with a 14-day average flow of 2,584 cfs and has been outside of the optimal flow envelope for 17 days. We request that the Corps continue to cease flow from S-77 until watershed flows drop within the optimal flow range.

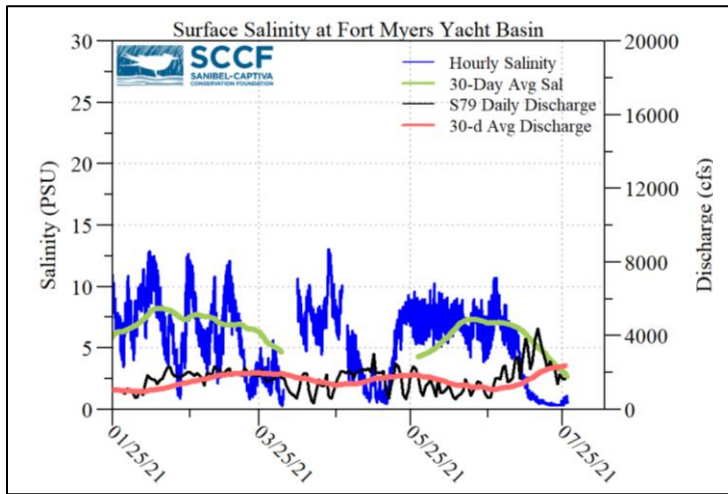
**USACE Action:** On Saturday, 5/29/21 the USACE decreased targeted flows to a 7-day average of 1,000 cfs (pulse) to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) and continued no releases to the St. Lucie Lock and Dam (S-80).

**Lake Flows:** In the past 7 days the total net outflow from Lake Okeechobee was **3,471 AF** with **0 AF** to the Caloosahatchee through **S-77** and **3,471 AF** to the EAA through **S-351, S-352, and S-354**. The total net inflow was **1,046 AF** with a backflow of **623 AF** to the St. Lucie River through **S-308**, a net backflow of **124 AF** through **S-310** in Clewiston, and a backflow of **300 AF** through **C-10A** to the L-8 canal. Water conservation areas received flows of **4,891 AF, 7,747 AF, and 8,900 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **5,786 AF**.

**Lake Okeechobee Level:** 13.54 ft (Low sub-band) **Last Week:** 13.47 ft  
**Lake Okeechobee Inflow:** 4,452 cfs **Lake Okeechobee Outflow:** 56 cfs  
**Weekly Rainfall Total:** WP Franklin 1.19" Ortona 3.69" Moore Haven 2.36"



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
7/20/21	2588	692	0
7/21/21	2172	641	0
7/22/21	2172	534	0
7/23/21	1374	231	0
7/24/21	1912	444	0
7/25/21	1676	485	0
7/26/21	1637	557	0
7-day avg	1933	512	0



Light Penetration				
Site	25% Iz	Target Values	Turbidity	Target Values
		meters		NTU
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.88 <sup>c</sup>	>2.2	1.8	< 18
Causeway	2.54 <sup>c</sup>	> 2.2	2.5	< 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.  
<sup>m</sup> measured, <sup>c</sup> calculated

**Cyanobacteria Status:** On 7/27/21 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of sparse specks of *Microcystis* and *Dolichospermum* upstream of the Franklin Locks (40 colonies/L). *Microcystis*, *Dolichospermum*, and *Aphanizomenon* were present as visible sparse specks at the Davis Boat Ramp (120 colonies/L). *Microcystis* was present visible as sparse specks North Shore Park (40 colonies/L), and sparse specks at Midpoint Bridge Park (50 colonies/L).

**Upstream of S-79/Franklin Conditions:** On 7/27/21 the Olga Water Treatment plant reported chlorides of 58 mg/L, apparent color 112 CU and turbidity 1.92 NTU. Algae presence is trace. The plant is offline at 0 GPM.

**Upper Estuary Conditions:** The 30-day average surface salinity at the Fort Myers Yacht Basin was 3.0 psu, within the suitable range for tape grass.

**Lower Estuary Conditions:** The average salinity at Shell Point RECON was 23 psu, within the optimal range for oysters, but below optimal for seagrass.

**Water Quality Conditions**

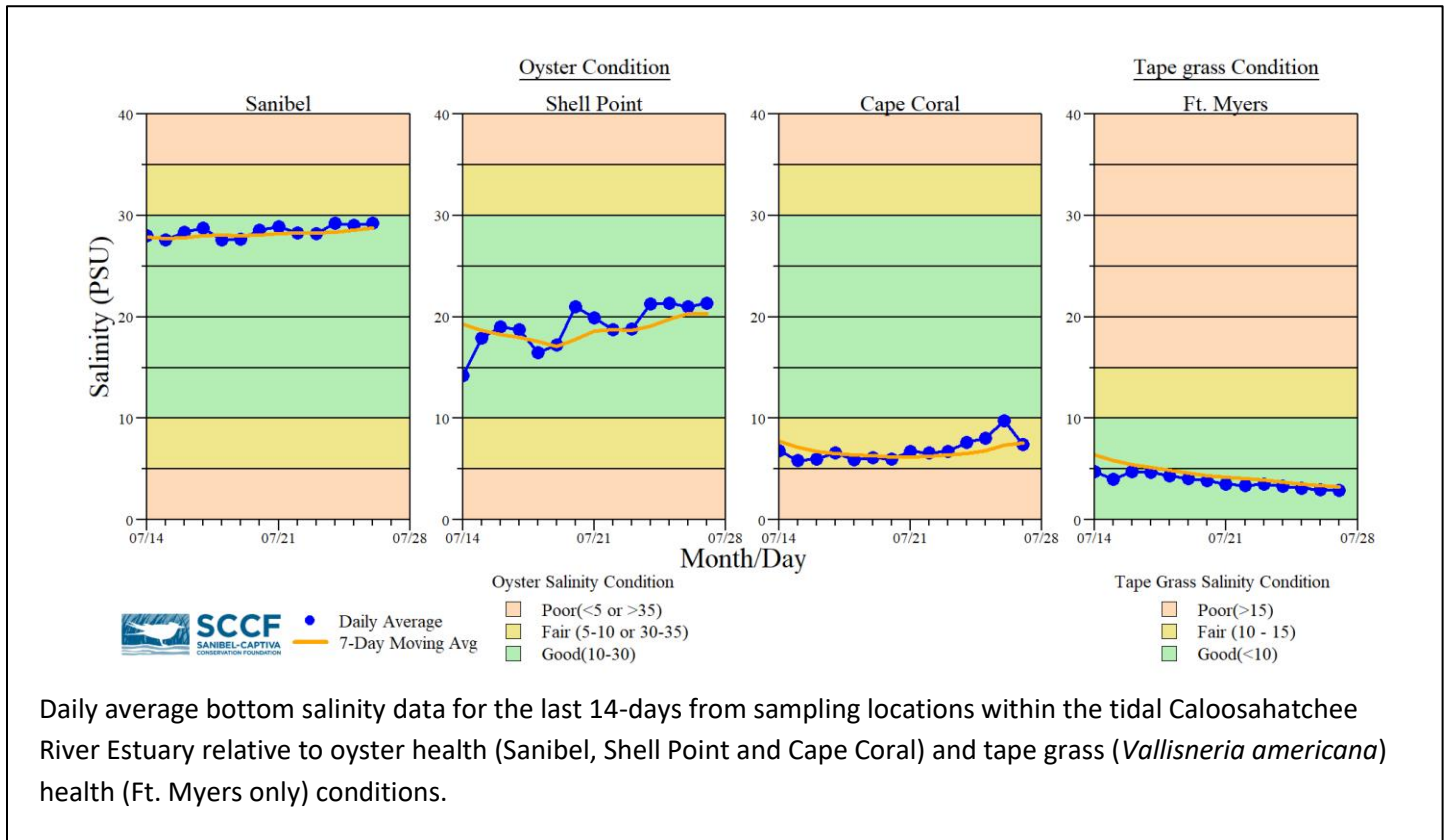
Monitor Site	Salinity (psu) <sup>a</sup> [previous week]	Diss O <sub>2</sub> (mg/L) <sup>b</sup>	FDOM (qsde) <sup>c</sup>	Chlorophyll (µg/L) <sup>d</sup>
Beautiful Island	0.3 – 0.3 [0.3 – 0.3]	3.0 – 5.8	282	8.7
Fort Myers Yacht Basin	0.3 – 1.0 [0.4 – 1.4]	4.0 – 8.2	273	ND
Shell Point	10 – 32 [10 – 30]	3.8 – 6.9	121	3.5
McIntyre Creek	25.9 – 29.0	2.9 – 11.4	6.1 – 10.1	-----
Tarpon Bay	26.2 – 33.7	3.5 – 9.0	0.9 – 1.1	-----
Wulfert Flats	26.7 – 28.3	2.6 – 8.8	-----	2.0 – 17.0

- Red values are outside of the preferred range.
- <sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 10 – 25
- <sup>b</sup> Dissolved O<sub>2</sub> target values: all sites > 4
- <sup>c</sup> FDOM target values: BI < 70, FM < 70, SP < 11
- <sup>d</sup> Chlorophyll target values: BI < 11, FM < 11, SP < 11
- <sup>e</sup> Single sonde lower and surface layer or surface grab lab measurement

**Red Tide:** On 7/23/21, the FWC reported that a bloom of the red tide organism, *Karenia brevis*, persists on the Florida Gulf Coast. Patchy bloom conditions also persist in Tampa Bay but have improved relative to last week and we are continuing enhanced monitoring in this and surrounding areas. Over the past week, *K. brevis* was detected in 126 samples. Bloom concentrations (>100,000 cells/liter) were observed in 69 samples: 10 from Pasco County, 29 from Pinellas County, four from Hillsborough County, four from Manatee County, and 22 from Sarasota County. In Southwest Florida over the past week, *K. brevis* was observed at low to high concentrations in and offshore of Pinellas County, background to medium concentrations in Hillsborough County, background to high concentrations in Manatee County, very low to high concentrations in Sarasota County, background to very low concentrations in Charlotte County, and background to low concentrations in Lee County.

**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel received 4 toxicosis patients: 1 white ibis (died), 1 least tern (died), 1 royal tern (still at CROW), and 1 great egret (died).





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.



Left: Water clarity at Lighthouse Beach Park on 7/17/21 at 14:02 on a low tide (Low tide: 0.85 ft @ 13:56) with a 14-day average flow of 2,898 cfs at S-79 (damaging flow envelope). Right: Water clarity at Lighthouse Beach Park on 7/26/21 at 13:21 on a high tide (high tide: 3.27 ft @ 13:59) with a 14-day average flow of 2,584 cfs at S-79 (stress flow envelope).