

**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 Secretary Noah Valenstein

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: **April 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 **1,266 cfs at S-79** and a 7-day average of **599 cfs at S-77**. **The 14-day moving average flow at S-79 is 1,187 cfs, within the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020)**. Water clarity around Sanibel and Lee County remains good at this time. The harmful alga, *Karenia brevis*, persists in very low to low concentrations in and offshore of Lee County.

**Recommendation:** We are very concerned about the level of the lake as we near the beginning of the rainy season with the long-range weather forecasts indicating a potentially rainy seasonal outlook. With recent rains stalling the lake recession, we strongly encourage the Corps to utilize all options to reduce lake levels prior to the wet season to prevent damaging releases to the estuaries. Releases to the Northern Estuaries should utilize adaptive management to optimize ecosystem salinities while balancing the system as a whole. These decisions should be reevaluated regularly based on current and forecasted conditions in the lake and estuaries.

**USACE Action:** On Saturday, 4/24/21 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:** In the past 7 days a net flow of **29,928 AF** were discharged from Lake Okeechobee, with **8,319 AF (28%)** to the Caloosahatchee through **S-77**, **682 AF (2%)** to the St. Lucie River through **S-308**, **61 AF (0%)** through **S-310** in Clewiston, a net flow of **1,751 AF (6%)** through **C-10A** to the L-8 canal, and **19,115 AF (64%)** to the EAA through **S-351**, **S-352**, and **S-354**. Water conservation areas received flows of **3,386 AF**, **5,700 AF**, and **6,734 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **2,003 AF**.

**Lake Okeechobee Level:** 14.12 ft (low sub-band)

**Last Week:** 14.19 ft

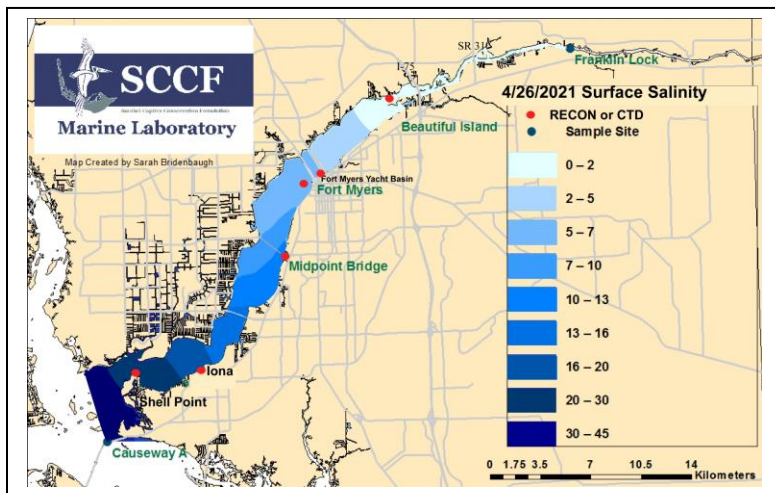
**Lake Okeechobee Inflow:** 1,317 cfs

**Lake Okeechobee Outflow:** 4,047 cfs

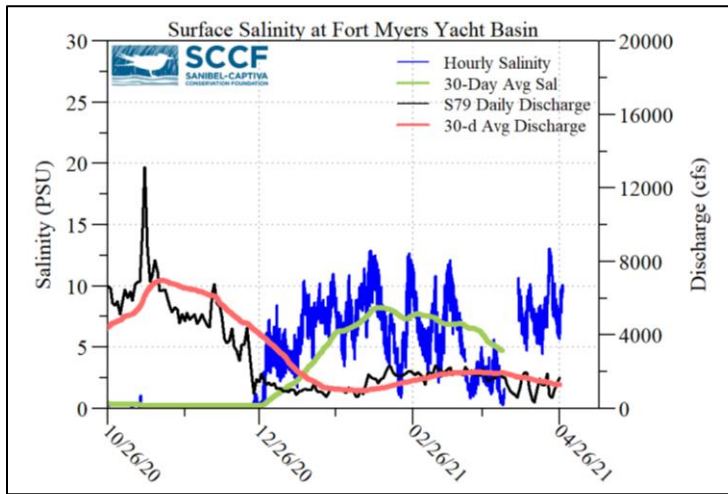
**Weekly Rainfall Total:** WP Franklin 1.04"

Ortona 0.11"

Moore Haven 0.42"



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/20/21	1257	853	184
4/21/21	1911	669	0
4/22/21	723	387	298
4/23/21	578	302	87
4/24/21	1090	738	760
4/25/21	1469	936	1074
4/26/21	1835	1620	1791
7-day avg	1266	786	599



Light Penetration				
Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	-----	> 1	-----	< 18
Shell Point	2.24 <sup>c</sup>	>2.2	2.2	< 18
Causeway	1.72 <sup>c</sup>	> 2.2	11	< 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 4/27/21, sampling by the Lee County Environmental Lab reported the presence of *Microcystis*, *Dolichospermum*, and *Cuspidothrix* at the Alva Boat and *Microcystis*, *Dolichospermum*, and possibly *Limnothrix* at the Davis Boat Ramp as specks visible on the surface and in the water column. *Microcystis* and *Dolichospermum* were moderately abundant as specks visible on the surface and in the water column with some streaks and accumulation along the locks upstream of the Franklin Locks.

**Upstream of S-79/Franklin Conditions:** On 4/27/21 the Olga Water Treatment plant reported chlorides of **60 mg/L**, apparent color **95 CU** and turbidity **3.92 NTU**. **Algae** were observed at the plant intake the past week. The plant is online at **1800 GPM**.

**Upper Estuary Conditions:** The 30-day average surface salinity at the Fort Myers Yacht Basin was **4.3 psu**, within the suitable range for tape grass.

**Lower Estuary Conditions:** The average salinity at Shell Point RECON was **28 psu**, in the suitable range for oysters and seagrass.

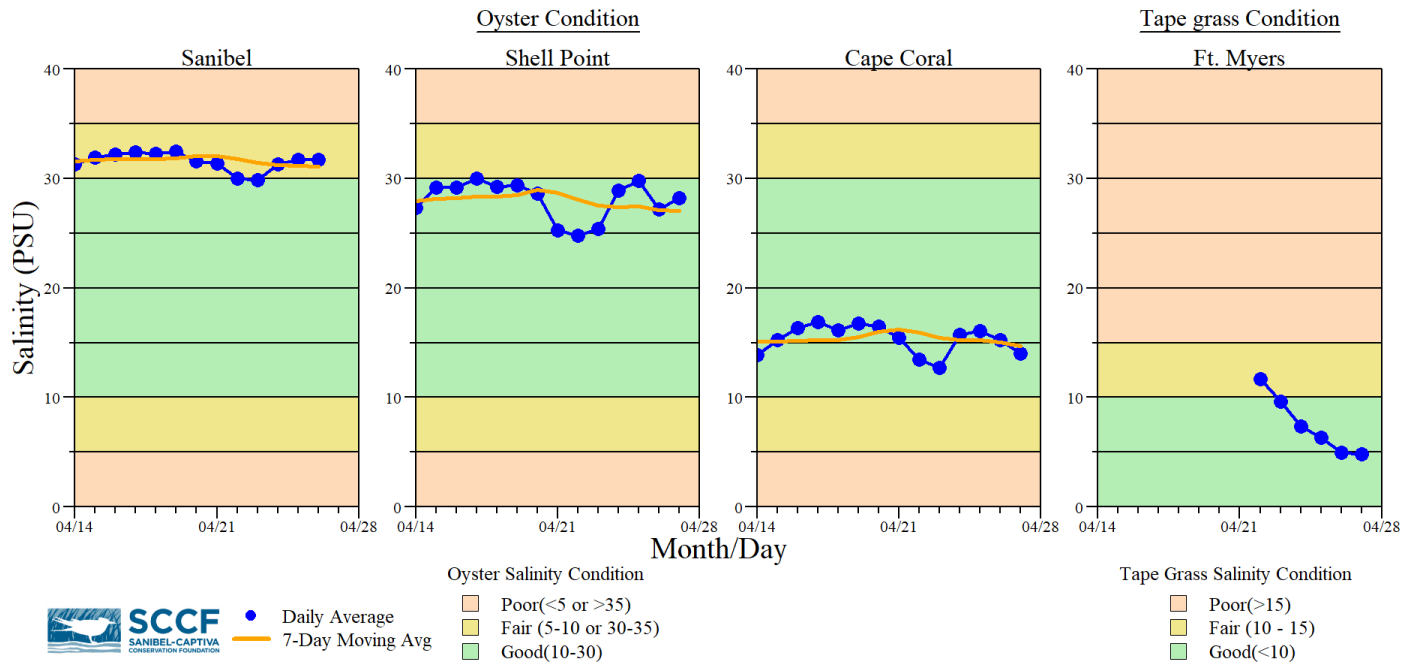
**Water Quality Conditions**

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	----- [-----]	-----	-----	-----
Fort Myers Yacht Basin	2.3 – 7.9 [3.0 – 7.0]	3.9 – 8.4	178	11
Shell Point	16 – 33 [19 – 33]	4.7 – 6.8	41.2	2.9
McIntyre Creek	31.7 – 33.5	2.2 – 14.6	0.0 – 8.9	1.4 – 96.4
Tarpon Bay	31.3 – 33.9	3.2 – 9.1	3.6 – 11.3	1.2 – 73.0
Wildlife Drive	15.19 – 33.53	0.6 – 15.4	-----	1.2 – 11.9
Wulfert Flats	32.04 – 32.93	2.4 – 8.7	-----	-----

- Red values are outside of the preferred range.
- <sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 25 – 32
- <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>s</sup> Single sonde lower and surface layer or surface grab lab measurement

**Red Tide:** On 4/23/2021, FWC reported that the red tide organism, *Karenia brevis*, persists in Southwest Florida. **Over the past week, K. brevis was detected in 52 samples.** Bloom concentrations (>100,000 cells/liter) were observed in three samples each from Sarasota and Charlotte counties. In Southwest Florida over the past week, *K. brevis* was observed at very low to low concentrations in Manatee County, background to medium concentrations in Sarasota County, very low to medium concentrations in Charlotte County, **very low and low concentrations in Lee County**, and background to low concentrations in Collier County.

**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel received **9 toxicosis patients**: 3 double-crested cormorants (1 died, 2 still at CROW), 1 osprey (died), 1 sandwich tern (died), 2 anhingas (1 died, 1 still at CROW), 1 common loon (died), and 1 snowy plover (died). SCCF staff reported 2 sick snowy plovers from Fort Myers Beach; one died on the way to CROW, the other (previously mentioned) died at CROW.



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 from Lighthouse Beach Park facing San Carlos Bay on 4-22-21.