

**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  
 James Evans & Holly Milbrandt - City of Sanibel  
 Lesli Haynes & Lisa Kreiger - Lee County  
 Harry Phillips & Maya Robert – City of Cape Coral  
 Leah Reidenbach & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **June 2 – 8, 2020**

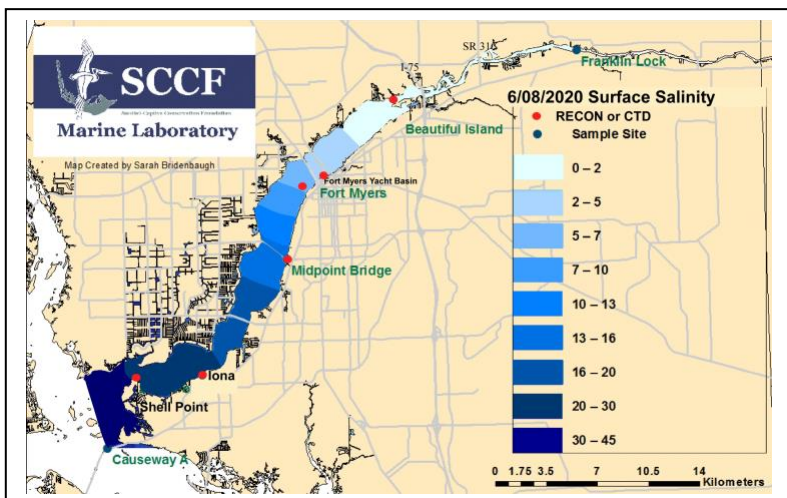
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

**Caloosahatchee Condition Summary:** Increased flows to a 7-day average of **2,891 cfs** at **S-79** have resulted in salinity in the upper estuary, at Beautiful Island, to decrease to < 5 psu, the optimal range for tape grass. In the lower estuary, at Shell Point, the 7-day average salinity was 28 psu, within the optimum range for oysters. **Excessive rainfall and runoff from the watershed have contributed to high organic matter, low dissolved oxygen, and a bloom of *Akashiwo sanguinea* in the upper estuary.** The Caloosahatchee estuary continues to need **optimum flows between 750 – 2,100 cfs** to keep salinities at optimum levels throughout the estuary.

**USACE Action:** On 5/8/20 the Corps continued pulse releases to the Caloosahatchee from Lake Okeechobee at a 7-day average of **650 cfs at S-79**. Releases to the St. Lucie estuary at **S-80** remain at **zero cfs**.

**Recommendation:** With the start of the wet season, Caloosahatchee estuary salinities are decreasing but still remain high in the lower estuary. **In order to maintain optimum salinities in the estuary and avoid damaging high flows as the wet season progresses, we request the District maintain flows between 750 – 2,100 cfs at S-79 over a 7-day average.** This is consistent with the draft 2020 RECOVER optimum flow envelopes for the Caloosahatchee estuary.

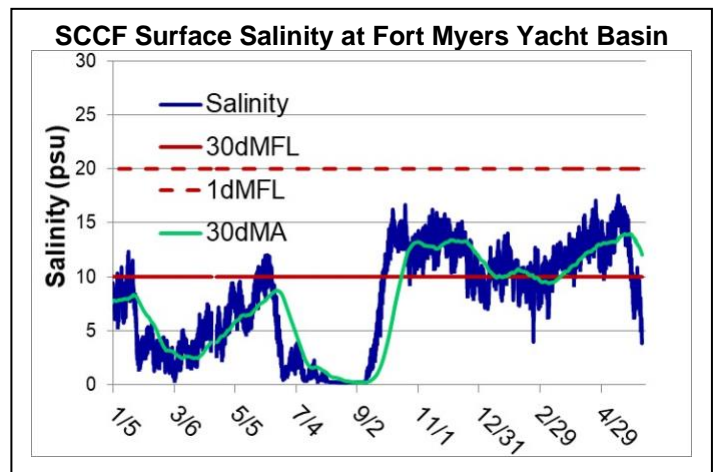
<b>Lake Okeechobee Level:</b>	<b>12.05 ft (Beneficial Use Sub Band)</b>	<b>Last week: 11.47 ft</b>
<b>Lake Okeechobee Inflow:</b>	<b>6,259 cfs</b>	<b>Lake Okeechobee Outflow: -4,100 cfs</b>
<b>Weekly Rainfall Total:</b>	WP Franklin <b>3.52"</b> Ortona <b>2.83"</b>	Moore Haven <b>3.71"</b>
<b>Salinity Beautiful Island:</b>	<b>0.7 – 4.0 psu (SCCF RECON)</b>	<b>Previous week 1.6 – 8.0 psu</b>
<b>Salinity Fort Myers:</b>	<b>3.8 – 11 psu (SCCF Surface FM Yacht Basin)</b>	<b>Previous week 6.2 – 14 psu</b>
	<b>5.1 – 17 psu (SCCF RECON)</b>	<b>Previous week 13 – 19 psu</b>
<b>Salinity Shell Point:</b>	<b>20 – 34 psu (SCCF RECON)</b>	<b>Previous week 24 – 35 psu</b>



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	0.7 – 4.0	< 5 psu	Low
Fort Myers	5.1 – 17	<10 psu	High
Shell Point	20 – 34	25 - 32 psu	High
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	0.94	1 meter	Low
Shell Point	1.55	2.2 meters	Low
Causeway	2.21	2.2 meters	In Range

**Lake Flows:** Flows to the Caloosahatchee estuary at S-79 during the past 7 days averaged **5,779 AF**. A backflow of **51,862 AF** occurred at S-308, a backflow of **3,674 AF** occurred at the L8 canal, and a net backflow of **1,388 AF** occurred at S-310. The EAA, south of the lake, received **0 AF** from Lake O. Water conservation areas received flows of **35,092 AF**, **23,854 AF**, and **9,297 AF** at WCA1, WCA2, and WCA3, respectively. Everglades National Park received **6,319 AF**.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
6/2/2020	898	595	112
6/3/2020	1438	529	0
6/4/2020	1653	591	0
6/5/2020	3932	1932	0
6/6/2020	4982	2798	0
6/7/2020	4534	2353	0
6/8/2020	2801	1840	0
<b>7 day Avg</b>	<b>2891</b>	<b>1520</b>	<b>16</b>



**Cyanobacteria Status:** Sampling by Lee County Environmental Lab on 6/9/20 reported presence of cyanobacteria species *Microcystis* and *Oscillatoria* at the Alva bridge and Davis Boat Ramp, and *Microcystis* and nostocalean filaments at the upstream side of the WP Franklin Lock.

**Upstream of S-79/Franklin Conditions:** The Lee County Olga Water Treatment plant will be offline until further notice.

**Upper Estuary Conditions:** The 30-day average surface salinity at the Fort Myers Yacht Basin was **12 psu, above the optimal level for tape grass. This moving average has been above 10 psu for 30 of the past 32 weeks.** The weekly average salinity was below 10. Chlorophyll spiked daily at Fort Myers RECON where bloom levels of the dinoflagellate, *Akashiwo sanguinea*, were present on 6/5/20. Hypoxia was detected daily at the Fort Myers RECON until 6/6/20.

**Lower Estuary Conditions:** The weekly average salinity at the Shell Point RECON was **28 psu, within the optimal range for oysters.** Drift algae was abundant at multiple locations in the lower estuary and San Carlos Bay.

**J.N. "Ding" Darling NWR:**

Monitor Site	Salinity	Dissolved O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	-----	-----	3.8 – 12.4	-----
Tarpon Bay	32.4 – 34.9	2.9 – 7.4	3.9 – 11.3	2.5 – 23.9
Wildlife Drive	37.7 – 35.9	0.5 – 7.9	-----	1.2 – 17.9
Wulfert Flats	30.3 – 34.9	1.9 – 8.6	-----	2.4 – 35.1

**Red Tide:** On 6/5/20 FWC reported red tide, *Karenia brevis*, was present at very low concentrations in Manatee County: [Click here for the FWC status of red tide](#)

**Shellfish Advisory:** Shellfish harvest area #6222/6232 Pine Island Section 2 and Section 3 (Matlacha Pass North and South) are **CLOSED** by the Florida Department of Agriculture and Consumer Services (FDACS) as of 6/4/2020 due to excessive rainfall.

**Wildlife Impacts:** The past week CROW, the wildlife hospital on Sanibel, treated 1 patient with red tide symptoms (1 brown pelican (died)) and 2 patients with suspected cyanotoxicity (2 mottled ducks (still at CROW)). SCCF staff documented 1 dead loggerhead sea turtle stranding on Sanibel in the past week.

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% I <sub>z</sub> depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Fort Myers	3.6	159	3.6	0.94
Shell Point	2.0	66.8	2.5	1.55
Causeway	4.6	4.4	6.1	2.21

Target light penetration:  
 Caloosahatchee Estuary (CE) = 1 meter  
 San Carlos Bay (SCB) = 2.2 meters  
 25% I<sub>z</sub> is the depth (z) where irradiance (I) is 25% of surface irradiance.