

# MEMORANDUM

To: USACE Colonel Andrew D. Kelly, LTC Jennifer A. Reynolds, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Drew Bartlett, Susan Gray, Lawrence Glenn, DEP Secretary Noah Valenstein

From: Periodic Scientists Conference Call Participants  
 Paul Tritaik & 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  
 Rae Ann Wessel & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **September 17 - 23, 2019**

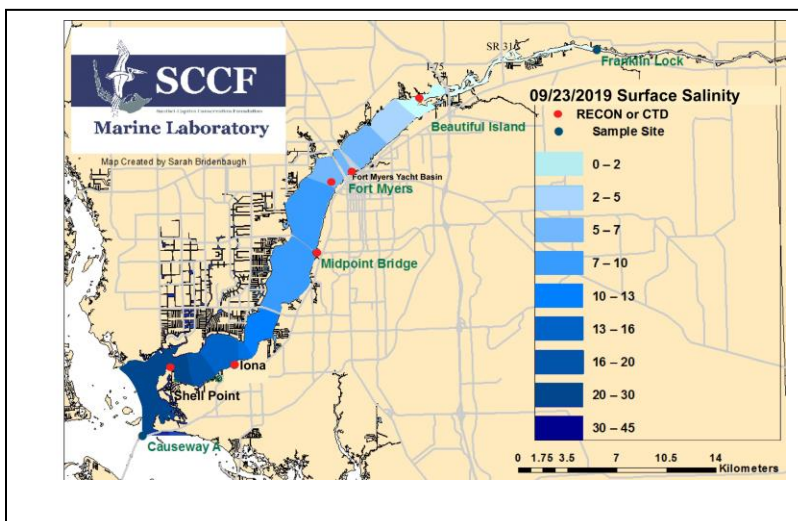
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

**Caloosahatchee Condition Summary:** Caloosahatchee flows dropped the past week to an average of **338 cfs at S-79**, half the flow of the previous week. Four days of flows originated from Lake Okeechobee.

**USACE Action:** On 7/28/19 the Corps stopped releases to the Caloosahatchee from Lake Okeechobee at the Moore Haven Lock, **S-77** due to high estuary flows from the watershed. Lake flows to the St. Lucie at **S-308** remain at **zero cfs**.

**Recommendation:** We recommend that the Corps continue to withhold releases from Lake Okeechobee at S-77 to allow salinities in the lower estuary to recover from previous watershed runoff and basin flow from above S-79.

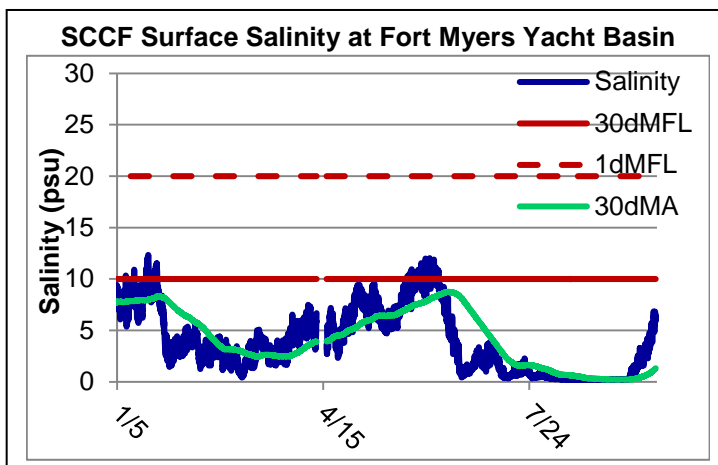
<b>Lake Okeechobee Level:</b>	<b>13.74 ft. (Base Flow Sub Band)</b>	<b>Last week: 13.88 ft.</b>
<b>Lake Okeechobee Inflow:</b>	<b>1,509 cfs</b>	<b>Lake Okeechobee Outflow: 1,804 cfs</b>
<b>Weekly Rainfall:</b>	WP Franklin <b>0.28 "</b> Ortona <b>0.38"</b>	Moore Haven <b>0.13"</b>
<b>Salinity Beautiful Island:</b>	<b>0.3 – 1.2 psu</b> (SCCF RECON Marker 18)	<b>Previous week 0.2 - 0.3 psu</b>
<b>Salinity Fort Myers:</b>	<b>2.8 – 11 psu</b> (SCCF RECON)	<b>Previous week 0.6 – 6.9 psu</b>
<b>Salinity Shell Point:</b>	<b>14 – 32 psu</b> (SCCF RECON)	<b>Previous week 11 – 30 psu</b>



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	0.3 – 1.2	< 5 psu	In Range
Fort Myers	2.8 - 11	<10 psu	In Range
Shell Point	14 - 32	25 - 32 psu	Low
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	0.49	1 meter	Low
Shell Point	1.00	2.2 meters	Low
Causeway	1.53	2.2 meters	Low

**Lake Flows:** The past 7 days **21,290 AF** of water was discharged from Lake Okeechobee; **8%** to the Caloosahatchee thru **S-77**, **7 AF** back flowed into the Lake from the St Lucie at **S-308**, **76%** was discharged south to the **EAA**, **1%** was discharged from the lake to the **L8** and **15%** was discharged from the lake through **S-310**.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
9/17/2019	360	0	0
9/18/2019	781	0	0
9/19/2019	317	0	210
9/20/2019	189	0	148
9/21/2019	301	0	97
9/22/2019	220	0	31
9/23/2019	196	0	0
<b>7 day Avg</b>	<b>338</b>	<b>0</b>	<b>69</b>



**Cyanobacteria Status:** NOAA satellite imagery for Lake Okeechobee on 9/18/19 indicated bloom potential was low. In the Caloosahatchee, Lee County Environmental Lab sampling on 9/17/19 reported no cyanobacteria at any of the sample sites.

**Upstream of S-79/Franklin Conditions:** On 9/24/19 the Olga Water Treatment plant reported chlorides of **49 mg/L**, apparent color **175 CU** and turbidity **2.16 NTU**. Very little algae reported at the plant intake. Plant is online at 1,400 GPM.

**Upper Estuary Conditions:** The weekly average salinity at the Fort Myers Yacht Basin was 3.7 psu, in the suitable range for tape grass growing between the Caloosahatchee US 41 Bridges and Beautiful Island. Chlorophyll spiked to over 50 ug/L at Fort Myers RECON mainly due to a diatom bloom of *Skeletonema* and *Coscinodiscus* (with over 10 million fragments of *Skeletonema/L*).

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

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

Monitor Site	Salinity	Diss O2 (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	25.6 – 27.5	1.0 – 8.5	16.8 – 22.0	2.7 – 7.4
Tarpon Bay	25.7 – 28.2	4.1 – 9.7	22.5 – 27.1	3.2 – 10.1
Wulfert Flats	24.5 – 30.7	3.5 – 7.5	-----	8.3 – 26.8

**Beach Conditions:** Red macroalgae continued to drift into the swash zone or onto the beach on Sanibel during the week. Phytoplankton densities near the beach were still high with mixed blooms of dinoflagellates and diatoms of over 30 ug/L chlorophyll.

**Red Tide:** On 9/20/19 FWC reported **background concentrations of the red tide organism, *Karenia brevis* in or offshore of Sarasota, Charlotte, Lee and Collier Counties**. Background concentrations of *Karenia* were found in some samples from Sanibel's beaches collected by Lee County, Sanibel Sea School and SCCF. Low concentrations of *Karenia* were found offshore of Sanibel on 9/17/19.

**Shellfish Advisory:** Area #6212 Pine Island Sound Section 1 remains closed since 6/18/19 due to the presence of *Pyrodinium bahamense*.

**\* WILD OYSTER HARVEST SEASON IS CLOSED FOR THE MONTHS OF JULY-SEPTEMBER FROM PINELLAS TO COLLIER COUNTIES \***

**Wildlife Impacts:** The past week, **CROW** the wildlife hospital on Sanibel treated 2 patients for symptoms of toxicosis: a **Brown Pelican** and a **Laughing Gull**. Both died.

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% lz depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Fort Myers	33	326	4.6	0.49
Shell Point	0.9	153	1.9	1.00
Causeway	3.6	68.1	2.1	1.53

Target light penetration: CE- Caloosahatchee Estuary = 1 m  
 SCB- San Carlos Bay = 2.2 meters  
 Definition of 25% lz: z where I is 25% of surface I.  
 I = irradiance, z = depth