

**MEMORANDUM**

To: USACE Colonel Jason A. Kirk, LTC Jennifer A. Reynolds, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Ernie Marks, Terrie Bates, Susan Gray, DEP Secretary Noah Valenstein

From: Periodic Scientists Conference Call Participants  
 Paul Tritaik - J.N. "Ding" Darling National Wildlife Refuge (NWR) Complex  
 James Evans & Holly Milbrandt - City of Sanibel  
 Keith Kibbey & Lesli Haynes - Lee County  
 Rae Burns – Town of Fort Myers Beach  
 Harry Phillips – City of Cape Coral  
 Rae Ann Wessel & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **June 12 - 18, 2018**

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:** The weekly average flow at S79 was **6,852 cfs**, with flows two and a half times the high flow harm threshold. **Freshwater cyanobacteria was found on the surface and in the water column at four stations in the Caloosahatchee.** Samples sent to DEP.

**USACE Action:** On 6/1/18 the U.S. Army Corps of Engineers initiated discharges of **4,000 cfs** to the Caloosahatchee measured at S-77 and 1,800 cfs to the St Lucie measured at S-80.

**Recommendation:** With Lake O water levels more than one foot below the Intermediate sub band and the LORS Part D Guidance recommendation **up to 3,000 cfs** at S-79, we request the Army **Corps reduce flows from Lake Okeechobee to the Caloosahatchee until flows at S-79 drop below 3,000 cfs.** We request water managers maximize use of all available storage and provide updates on emergency storage use and options.

**Lake Okeechobee Level: 14.07 ft. (Low Flow Sub-Band)**

**Last week: 14.15 ft.**

**Lake Okeechobee Inflow: 5,915 cfs**

**Lake Okeechobee Outflow: 6,096 cfs**

**Weekly Rainfall:** WP Franklin **2.24"** Ortona **1.77"**

Moore Haven **1.11"**

**Salinity Beautiful Island: 0.2 - 0.2 psu (SCCF RECON Marker 18)**

**Previous week 0.2 - 0.3 psu**

**Salinity Fort Myers: 0.2 - 0.3 psu (SCCF RECON)**

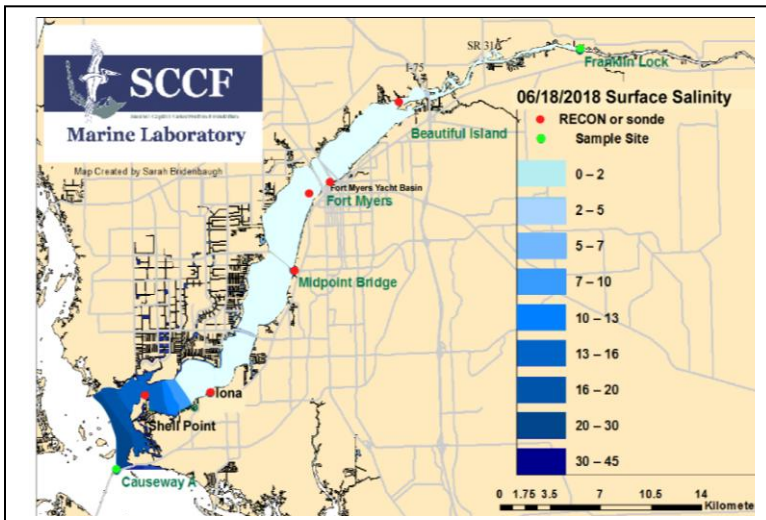
**Previous week 0.2 - 0.3 psu**

**MFL Status: In compliance: 30 day moving average: 2.0 psu**

**Previous week: 4.2 psu**

**Salinity Shell Point: 3.4 – 28 psu (SCCF RECON)**

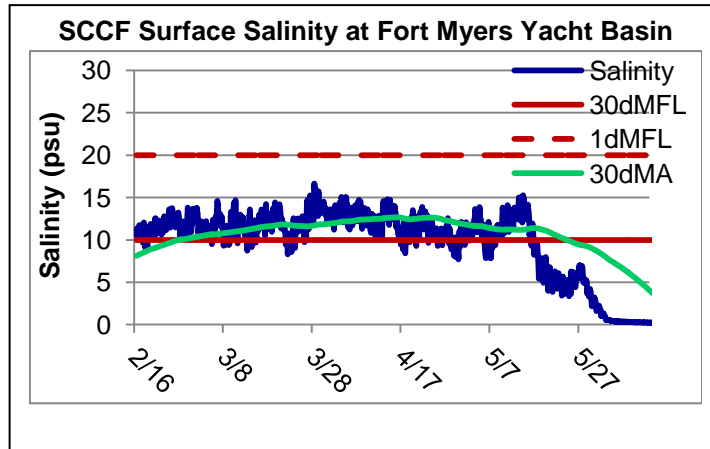
**Previous week 2.1 – 29 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	0.2 - 0.2	< 5 psu	In Range
Fort Myers	0.2 - 0.3	<10 psu	In Range
Shell Point	3.4 – 28	25 - 32 psu	Low
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	0.46	1 meter	Low
Shell Point	0.91	2.2 meters	Low
Causeway	1.06	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the **past seven days averaged 6,852 cfs, 60% of flow originated from Lake Okeechobee.** Over the past 14 days **147,954 AF** of water was discharged from Lake Okeechobee to the Caloosahatchee; **72% at S-77 and 26% to the St Lucie at S-80.** Only **2% (3,415 AF)** was discharged south thru S-354. A total of **9,159 AF of stormwater back flowed into Lake Okeechobee = 6.2% of the discharge volume;** **-7,920 AF** from the L8 and a net **-1,239 AF** from Clewiston's Industrial Canal.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
6/12/2018	7260	4910	4232
6/13/2018	6871	4914	4164
6/14/2018	6705	4874	4196
6/15/2018	6456	4637	4208
6/16/2018	6635	4602	4052
6/17/2018	6990	4826	3976
6/18/2018	7046	5024	4076
<b>7 day Avg</b>	<b>6852</b>	<b>4827</b>	<b>4129</b>



**Upstream of S-79/Franklin Conditions:** Cyanobacteria were found at 4 stations in the Caloosahatchee on 6/11/18 by the Lee County Environmental Lab. *Dolichospermum* at both the Alva Boat Ramp and downstream of Franklin Lock, *Dolichospermum* + *Aphanizomenon* upstream of the Franklin Lock, and *Dolichospermum* + *Microcystis* at the Davis Boat Ramp. Samples were submitted to DEP for analysis. On 6/19/18 the Olga Water Treatment plant reported chlorides of **50 mg/l**, apparent color **271 CU** and turbidity **7.04 NTU**. Algae visible at the plant intake on 6/18/18. The plant remains off line for maintenance.

**Upper Estuary Conditions:** The weekly average salinity at Fort Myers Yacht Basin was **0.3 psu**, in the suitable range for tape grass, growing between the Caloosahatchee Bridge and Beautiful Island.

**Lower Estuary Conditions:** The average salinity at Shell Point, **15 psu**, was in the suitable range for oysters, but below optimal for seagrass. Chlorophyll and turbidity were spiking at the Shell Point RECON on the outgoing tide. Light levels are too low for submersed plants growing at depth in the Caloosahatchee and around the Causeway.

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

Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	21.6 – 26.9	2.9 – 13.1	20.7 – 30.6	2.5 – 6.0
Tarpon Bay	20.7 – 29.6	4.7 – 8.4	20.5 – 41.7	2.6 – 6.4

**Red Tide:** On 6/15/18 the Florida Fish and Wildlife Conservation Commission reports that the Florida red tide organism, *Karenia brevis* persists in Pinellas, Manatee, Sarasota, Charlotte, Lee and Collier Counties with background to medium concentrations in Lee County samples.

**Wildlife Impacts:** The past week, CROW, the wildlife hospital on Sanibel, treated **2 new patients with red tide symptoms both Double Crested Cormorants.** SCCF reported five dead loggerhead sea turtle strandings on Sanibel and Captiva beaches the past week.

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% I <sub>0</sub> depth (meters)
<b>Target Values</b>	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
<b>Fort Myers</b>	11	386	5.3	0.46
<b>Shell Point</b>	10	152	3.8	0.91
<b>Causeway</b>	3.5	135	2.2	1.06

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