

**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  
 Connie Jarvis & Harry Phillips – City of Cape Coral  
 Rae Ann Wessel & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **November 7 - 13, 2017**

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 past week freshwater flows from Lake Okeechobee and the watershed decreased to an average of **8,336 cfs** at S-79. **Light remains limited throughout the river and estuary from dark, freshwater discharge that extends several miles offshore into the Gulf of Mexico.**

**USACE Action:** The past week discharges from Lake Okeechobee continued at maximum practicable releases with average flows of **6,368 cfs** to the Caloosahatchee at S-77. Discharges at S-80 the past week averaged **4,141 cfs.**

**Recommendation:** We urge the Corps to continue maximum discharges in all directions, where practicable to return lake levels below 16 ft to minimize harmful discharges to the estuaries during the spring spawning season.

Lake Okeechobee Level: **16.67 ft. (Intermediate Sub-Band)** Last week: **16.91 ft**

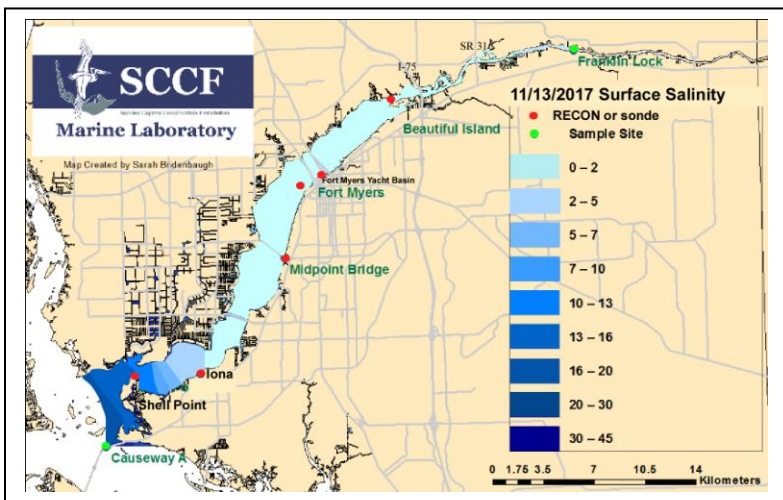
Lake Okeechobee Inflow: **5,107 cfs** Lake Okeechobee Outflow: **8,117 cfs**

Weekly Rainfall: WP Franklin **0.0"** Ortona **0.43"** Moore Haven **0.06"**

Salinity Beautiful Island: **ND** (SCCF RECON Marker 18) Previous wk **ND**

Salinity Fort Myers: **0.2 psu** (SCCF RECON) Previous wk **0.2 – 0.2 psu**

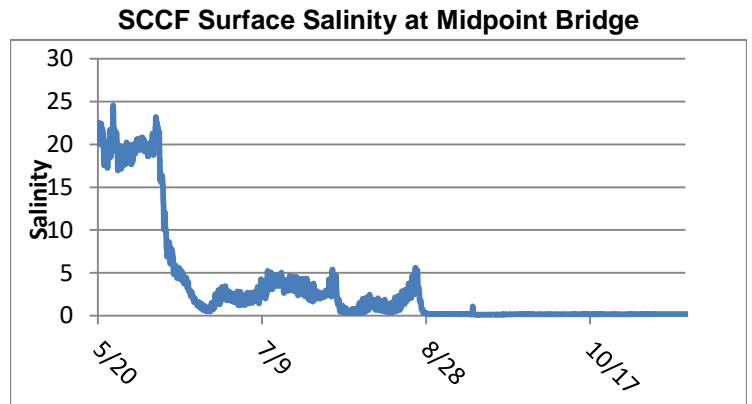
Salinity Shell Point: **2.0 - 28 psu** (SCCF RECON) Previous wk **0.2 - 27 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	0.2	<10 psu	In Range
Shell Point	0.2 - 28	25 - 32 psu	Low
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	0.56	1 meter	Low
Shell Point	0.80	2.2 meters	Low
Causeway	1.14	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **8,226 cfs**. Over the past 14 days **303,061 AF of water was discharged from Lake O, 57% to S-77 and 43% to S-308. No water was discharged south to the EAA.** A net **368 AF** was discharged through L8 and **161 AF** through S310.

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
11/7/2017	7704	5976	5608
11/8/2017	8964	6714	6495
11/9/2017	8894	6561	6507
11/10/2017	8916	6552	6457
11/11/2017	8052	6623	6461
11/12/2017	7940	6331	6480
11/13/2017	7884	6332	6568
<b>7 day Avg</b>	<b>8336</b>	<b>6441</b>	<b>6368</b>



**Upstream of S-79/Franklin Conditions:** On 11/7/17 the Lee County Environmental Lab detected *Microcystis*, *Dolichospermum* and *Planktothrix* cyanobacteria upstream of the Franklin Lock in east Fort Myers. On 11/14/17 the Olga Water Treatment plant chlorides measured **54 mg/L**, apparent color was **216 CU** and turbidity measured **3.18 NTU**. No visible algae in the plant intake the past week. The plant is online running at 2200 GPM.

**Upper Estuary Conditions:** On 11/7/17 the Lee County Environmental Lab detected *Microcystis*, *Dolichospermum* and *Planktothrix* cyanobacteria downstream of the Franklin Lock and at the Davis boat ramp in east Fort Myers. Salinities in the upper estuary were in the suitable range for tape grass. Colored dissolved organic matter contributed to low light availability for tape grass and widgeon grass.

**Lower Estuary Conditions:** The average weekly salinity was within the optimal range for oysters at Shell Point (**15 psu**). Light levels and salinities were below optimal for seagrasses in much of the lower estuary.

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

Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	18.8 – 22.8	3.0 – 9.6	21.5 – 30.6	4.2 – 11.6
Tarpon Bay	17.3 – 25.3	4.9 – 7.2	28.0 – 42.3	3.8 – 9.3

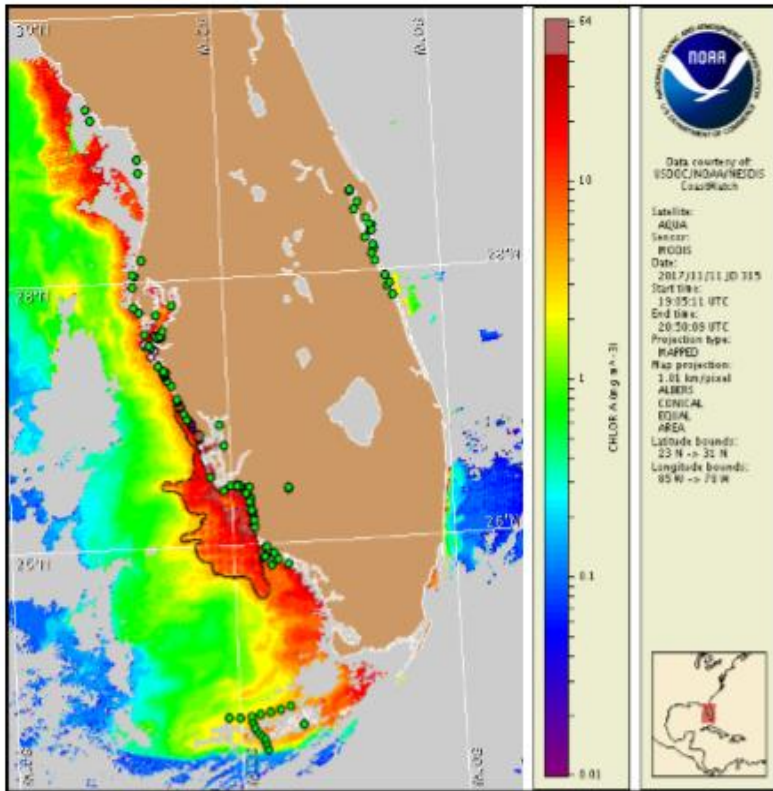
**Coastal Conditions:** Dark, freshwater from high discharges extends beyond the Sanibel lighthouse surrounding Sanibel on outgoing tides.

**Red Tide:** On 11/9/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was present in samples collected in Pinellas, Manatee, Sarasota and Charlotte Counties in Southwest Florida the past week. *Karenia* sp. was detected in low concentrations in Blind Pass on 11/9/17 (SCCF).

**Wildlife Impacts:** CROW the wildlife hospital on Sanibel treated **2 double crested cormorants with suspected brevetoxicosis.**

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% lo 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>	4.0	320	3.9	0.56
<b>Shell Point</b>	7.6	188	4.5	0.80
<b>Causeway</b>	3.3	125	1.3	1.14

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



Satellite chlorophyll image with possible *K. brevis* HAB areas shown by red polygons, NOAA Gulf of Mexico Harmful Algal Bloom Bulletin map 11/13/17.

Sampling by FWC reports background to low concentrations of red tide along the southwest coast.

Aerial view of dark, freshwater plume off Sanibel's Lighthouse Beach 11/7/17.  
Photo City of Sanibel

