

**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: **October 10 - 16, 2017**

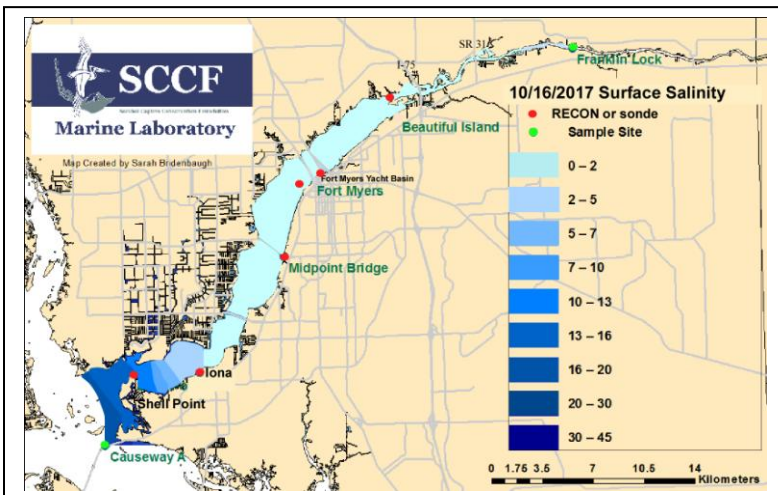
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

**Caloosahatchee Condition Summary:** The past week freshwater flows from Lake Okeechobee and the watershed decreased slightly to an average of **10,405 cfs** at S-79, **nearly 4 times the harm threshold**. **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 **7,219 cfs** to the Caloosahatchee at S-77. Discharges at S-80 the past week averaged **4,600 cfs**.

**Recommendation:** With Lake Okeechobee water levels in the high sub-band, we urge the Corps to continue maximum discharges in all directions, where practicable to return lake levels below 16 ft to reduce harmful discharges to the estuaries later in the spring when spawning occurs.

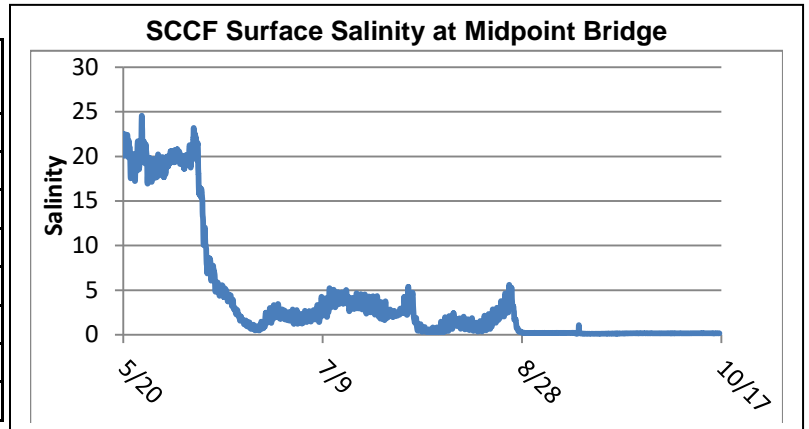
<b>Lake Okeechobee Level:</b>	<b>17.16 ft. (High Sub-Band)</b>	<b>Last week: 17.19 ft</b>
<b>Lake Okeechobee Inflow:</b>	<b>8,530 cfs</b>	<b>Lake Okeechobee Outflow: 9,661 cfs</b>
<b>Weekly Rainfall:</b>	WP Franklin <b>0.57"</b> Ortona <b>0.09"</b>	Moore Haven <b>0.06"</b>
<b>Salinity Beautiful Island:</b>	<b>ND (SCCF RECON Marker 18)</b>	Previous wk <b>ND</b>
<b>Salinity Fort Myers:</b>	<b>0.2 psu (SCCF RECON)</b>	Previous wk <b>0.2 – 0.2 psu</b>
<b>Salinity Shell Point:</b>	<b>0.7 – 26 psu (SCCF RECON)</b>	Previous wk <b>0.2 – 28 psu</b>



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	0.2 - 0.2	<10 psu	In Range
Shell Point	0.7 - 26	25 - 32 psu	Low
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	0.46	1 meter	Low
Shell Point	0.79	2.2 meters	Low
Causeway	0.87	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **10,405 cfs**. Over the past 14 days **273,152 AF of water was discharged from Lake O**, 68% to S-77 and 32% to S-308. **No water was discharged south to the EAA. A net - 5,712 AF\* of water back flowed from the L8 into Lake Okeechobee while harmful, maximum releases to reduce lake levels are harming the estuaries.** (\*Flow data missing)

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
10/10/2017	10994	7926	7394
10/11/2017	10835	7803	7332
10/12/2017	10524	7688	7114
10/13/2017	10222	7728	7258
10/14/2017	10172	7679	7209
10/15/2017	10062	7627	7133
10/16/2017	10029	7570	7090
<b>7 day Avg</b>	<b>10405</b>	<b>7717</b>	<b>7219</b>



**Upstream of S-79/Franklin Conditions:** On 10/10/17 the Olga Water Treatment plant chlorides measured **48 mg/L**, apparent color was **260 CU** and turbidity measured **2.90 NTU**. No visible algae in the plant intake the past week. The plant is online running at 2000 GPM.

**Upper Estuary Conditions:** On 10/12/17 Lee County Environmental Lab detected *Microcystis*, *Dolichospermum* and *Planktothrix* cyanobacteria at the Davis Boat Ramp in east Fort Myers. Salinities in the upper estuary were in the suitable range for tape grass. **Elevated turbidity and colored dissolved organic matter contributed to low light availability for tape grass and widgeon grass.**

**Lower Estuary Conditions:** The average salinity was below the optimal range for oysters at Shell Point (13 psu). At Shell Point diatoms were the dominant phytoplankton group. **Light levels and salinities were below optimal for seagrasses in much of the lower estuary.** Chlorophyll concentrations were elevated in parts of Pine Island Sound (up to 43 ug Chl a/L) with the bioluminescent dinoflagellate *Gonyaulax spinifera* dominant.

**J.N. "Ding" Darling NWR:** Dark opaque water throughout the refuge. **Visitors reported a fish kill of minnow size fishes along the west end of the refuge.**

Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	15.4 – 22.3	1.5 – 6.9	24.7 – 37.9	4.9 – 27.3
Tarpon Bay	13.8 – 25.8	4.0 – 7.2	24.2 – 46.2	4.0 – 16.4

**Beach Conditions:** Dark freshwater from high discharges extends beyond the Sanibel lighthouse surrounding the beaches of Sanibel and Fort Myers Beach.

**Red Tide:** On 10/13/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was present in background concentrations in samples from Manatee, Sarasota, Charlotte and Lee Counties.

**Wildlife Impacts:** CROW, the wildlife hospital on Sanibel treated 5 patients for suspected harmful algal bloom (HAB) toxins: 3 double crested cormorants, 1 anhinga and 1 brown pelican.

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>	8.2	380	8.0	0.46
<b>Shell Point</b>	5.7	201	3.0	0.79
<b>Causeway</b>	4.5	171	3.7	0.87

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