

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 17 - 23, 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 **9,028 cfs** at S-79, **over 3 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 **7,026 cfs** to the Caloosahatchee at S-77. Discharges at S-80 the past week averaged **4,242 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.

Lake Okeechobee Level: **16.95 ft. (High Sub-Band)** **Last week: 17.16 ft**

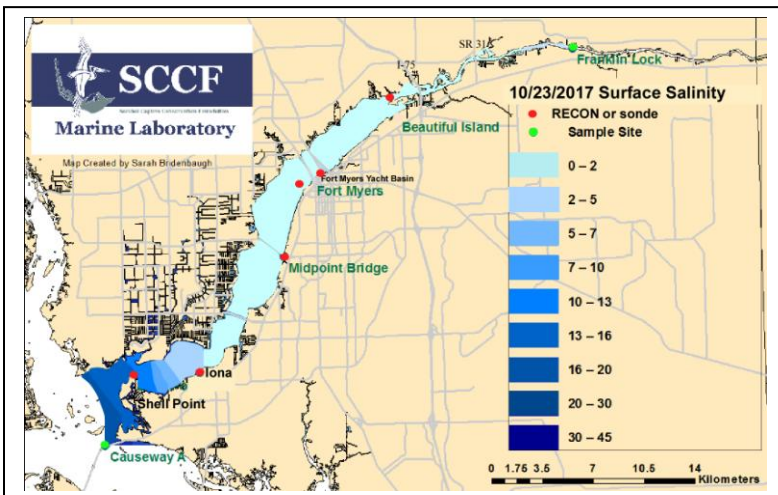
Lake Okeechobee Inflow: **5,837 cfs** **Lake Okeechobee Outflow: 9,263 cfs**

Weekly Rainfall: WP Franklin **1.62"** Ortona **1.15"** Moore Haven **1.70"**

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**

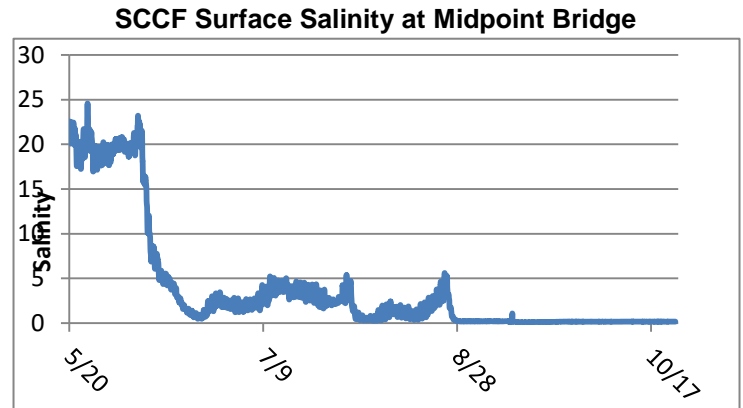
Salinity Shell Point: **1.2 – 29 psu (SCCF RECON)** **Previous wk 0.7 – 26 psu**



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	1.2 - 29	25 - 32 psu	Low
Light (25% I _z depth meters)			
Fort Myers	0.50	1 meter	Low
Shell Point	1.04	2.2 meters	Low
Causeway	1.17	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **9,028 cfs**. Over the past 14 days **303,218 AF of water was discharged from Lake O, 59% to S-77 and 41% to S-308. No water was discharged south to the EAA. A net -184 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)
10/17/2017	9604	6950	7003
10/18/2017	9060	6891	7052
10/19/2017	8708	7002	7086
10/20/2017	8822	6948	7081
10/21/2017	9091	7173	7132
10/22/2017	8930	7210	7038
10/23/2017	8978	6834	6793
7 day Avg	9028	7001	7026



Upstream of S-79/Franklin Conditions: On 10/24/17 the Olga Water Treatment plant chlorides measured **46 mg/L**, apparent color was **246 CU** and turbidity measured **3.80 NTU**. No visible algae in the plant intake the past week. The plant is online running at 2000 GPM. The WP Franklin Lock park remains closed to public access and water sampling.

Upper Estuary Conditions: On 10/19/17 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 in the optimal range for oysters at Shell Point (**14 psu**). Light levels and salinities were below optimal for seagrasses in much of the lower estuary.

J.N. "Ding" Darling NWR: Dark opaque water continues to obscure light causing low oxygen levels in the impoundments.

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	17.7 – 28.3	2.0 – 6.9	19.8 – 32.2	3.0 – 5.1
Tarpon Bay	17.0 – 32.6	4.0 – 6.8	8.3 – 44.2	2.1 – 5.4

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

Red Tide: On 10/20/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was present in Northwest and Southwest Florida but not south of Sarasota the past week.

Wildlife Impacts: CROW, the wildlife hospital on Sanibel treated **2 patients for harmful algal bloom (HAB) toxins: 1 laughing gull and 1 double crested cormorant who later died.**

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% I ₀ depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Fort Myers	4.8	350	8.0	0.50
Shell Point	5.7	115	6.0	1.04
Causeway	3.6	104	4.1	1.17

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