

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 31 - November 6, 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 **10,160 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 **6,125 cfs** to the Caloosahatchee at S-77. Discharges at S-80 the past week averaged **4,788 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: **16.91 ft. (High Sub-Band)** **Last week: 17.02 ft**

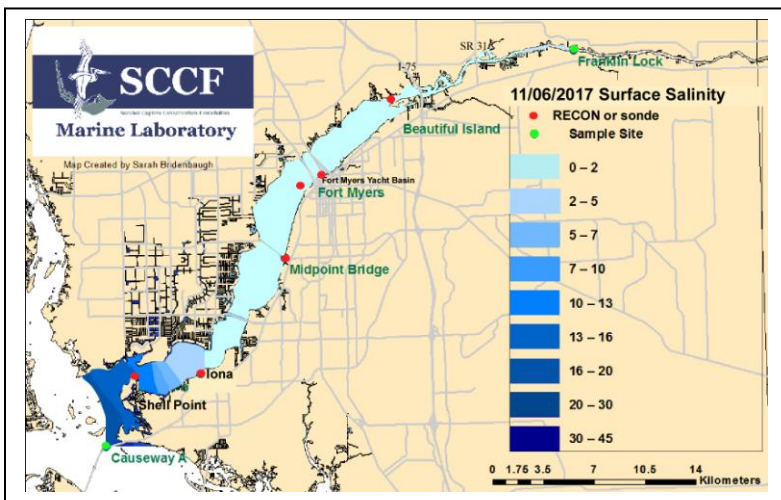
Lake Okeechobee Inflow: **5,625 cfs** **Lake Okeechobee Outflow: 7,894 cfs**

Weekly Rainfall: WP Franklin **0.0"** Ortona **0.08"** Moore Haven **0.02"**

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**

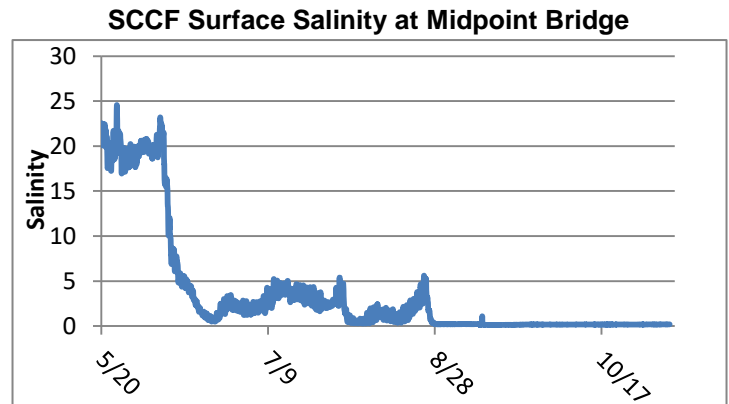
Salinity Shell Point: **0.2 - 27 psu** (SCCF RECON) **Previous wk 0.5 - 29 psu**



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	0.2 - 27	25 - 32 psu	Low
Light (25% I _z depth meters)			
Fort Myers	0.52	1 meter	Low
Shell Point	0.83	2.2 meters	Low
Causeway	0.82	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **10,160 cfs**. Over the past 14 days **301,912 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 **277 AF** was discharged through L8 and **225 AF** through S310.

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
10/31/2017	12476	7633	6393
11/1/2017	12199	8043	6622
11/2/2017	11374	7926	7189
11/3/2017	10605	7898	7149
11/4/2017	8588	6292	5335
11/5/2017	8200	5774	5051
11/6/2017	7680	6025	5133
7 day Avg	10160	7084	6125



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 11/7/17 the Olga Water Treatment plant chlorides measured **62 mg/L**, apparent color was **187 CU** and turbidity measured **2.88 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. **Elevated turbidity and colored dissolved organic matter contributed to low light availability for tape grass and widgeon grass.**

Lower Estuary Conditions: The average weekly salinity was below the optimal range for oysters at Shell Point (**13 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 ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	17.7 – 25.4	3.0 – 8.7	23.2 – 35.1	4.4 – 11.3
Tarpon Bay	15.8 – 27.4	4.9 – 8.7	23.3 – 44.0	4.1 – 12.0

Coastal Conditions: Dark, freshwater from high discharges extends beyond the Sanibel lighthouse surrounding the beaches of Sanibel and Fort Myers Beach. A significant number of dead pen shells washed up dead along the north end of Lovers Key on 11/6/17 possibly a result of a 2 day cold front .

Red Tide: On 11/3/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was present in samples collected in Southwest Florida Counties Pinellas, Hillsborough, Manatee and Sarasota, but not in local waters the past week.

Wildlife Impacts: CROW the wildlife hospital on Sanibel treated **4 patients with suspected brevetoxicosis: 3 double crested cormorants and 1 brown pelican.**



Dead pen shells washed up on Lovers Key on 11/6/17. Photo Lee County

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% lo depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Fort Myers	5.2	340	5.2	0.52
Shell Point	7.9	190	4.7	0.83
Causeway	9.0	159	3.9	0.82

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