

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 14 - 20, 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: This past week freshwater flows from Lake Okeechobee and the watershed decreased to an average of **7,569 cfs** at S-79. **Light remains limited throughout the river and estuary from dark freshwater discharge, which continues to extend offshore into the Gulf of Mexico.**

USACE Action: The past week discharges from Lake Okeechobee continued at maximum practicable releases with average flows of **6,103 cfs** to the Caloosahatchee at S-77. Discharges at S-80 the past week averaged **3,288 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: **16.42 ft. (Intermediate Sub-Band)** Last week: **16.67 ft**

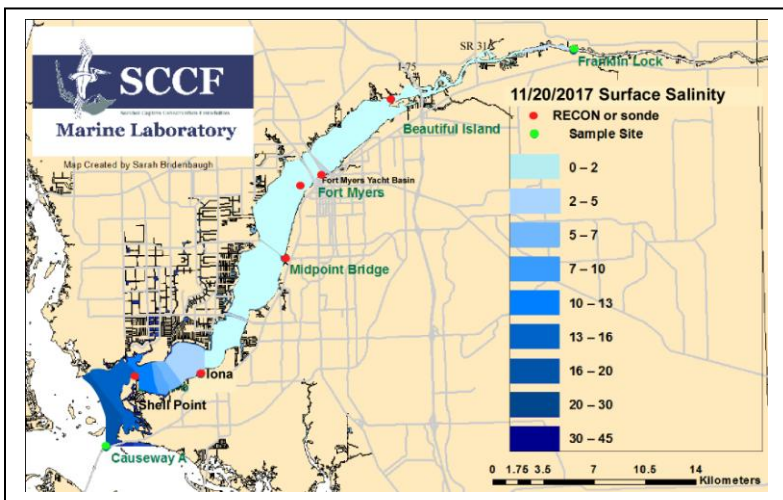
Lake Okeechobee Inflow: **2,893 cfs** Lake Okeechobee Outflow: **7,690 cfs**

Weekly Rainfall: WP Franklin **0.01"** Ortona **0.18"** Moore Haven **0.20"**

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

Salinity Fort Myers: **0.1 – 0.2 psu** (SCCF RECON) Previous wk **0.2 – 0.2 psu**

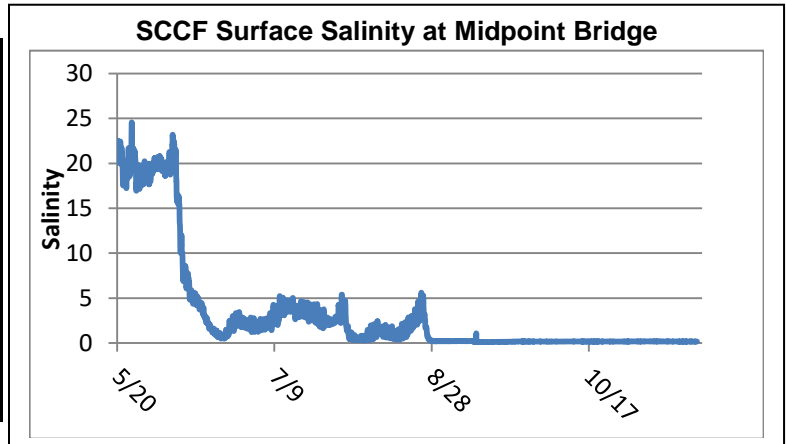
Salinity Shell Point: **2.0 – 28 psu** (SCCF RECON) Previous wk **0.2 - 28 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	0.1 - 0.2	<10 psu	In Range
Shell Point	2.0 - 28	25 - 32 psu	Low
Light (25% I _z depth meters)			
Fort Myers	0.54	1 meter	Low
Shell Point	0.63	2.2 meters	Low
Causeway	0.65	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **7,569 cfs**. **80% of estuary flows originated from Lake Okeechobee**. Over the past 14 days **287,552 AF of water was discharged from Lake O**, 60% to S-77 and 40% to S-308. **No water was discharged south to the EAA**. A net 277 AF was discharged through L8 and a net 201 AF through S-310.

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
11/14/2017	7850	6516	6453
11/15/2017	6835	5568	5455
11/16/2017	7407	6224	6257
11/17/2017	7713	6263	6253
11/18/2017	7854	6179	6158
11/19/2017	7888	6144	5957
11/20/2017	7435	6248	6187
7 day Avg	7569	6163	6103



Upstream of S-79/Franklin Conditions: On 11/21/17 the Olga Water Treatment plant chlorides measured **52 mg/L**, and turbidity measured **5.39 NTU**. No visible algae in the plant intake during the past week. The plant is online running at 2200 GPM.

Upper Estuary Conditions: 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 (**14 psu**), but within the lethal range for oysters at Peppertree Point Marina in Iona. **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	19.1 – 26.0	3.7 – 7.8	20.0 – 30.2	3.1 – 9.3
Tarpon Bay	17.6 – 26.8	5.7 – 8.0	26.0 – 43.4	3.4 – 12.8

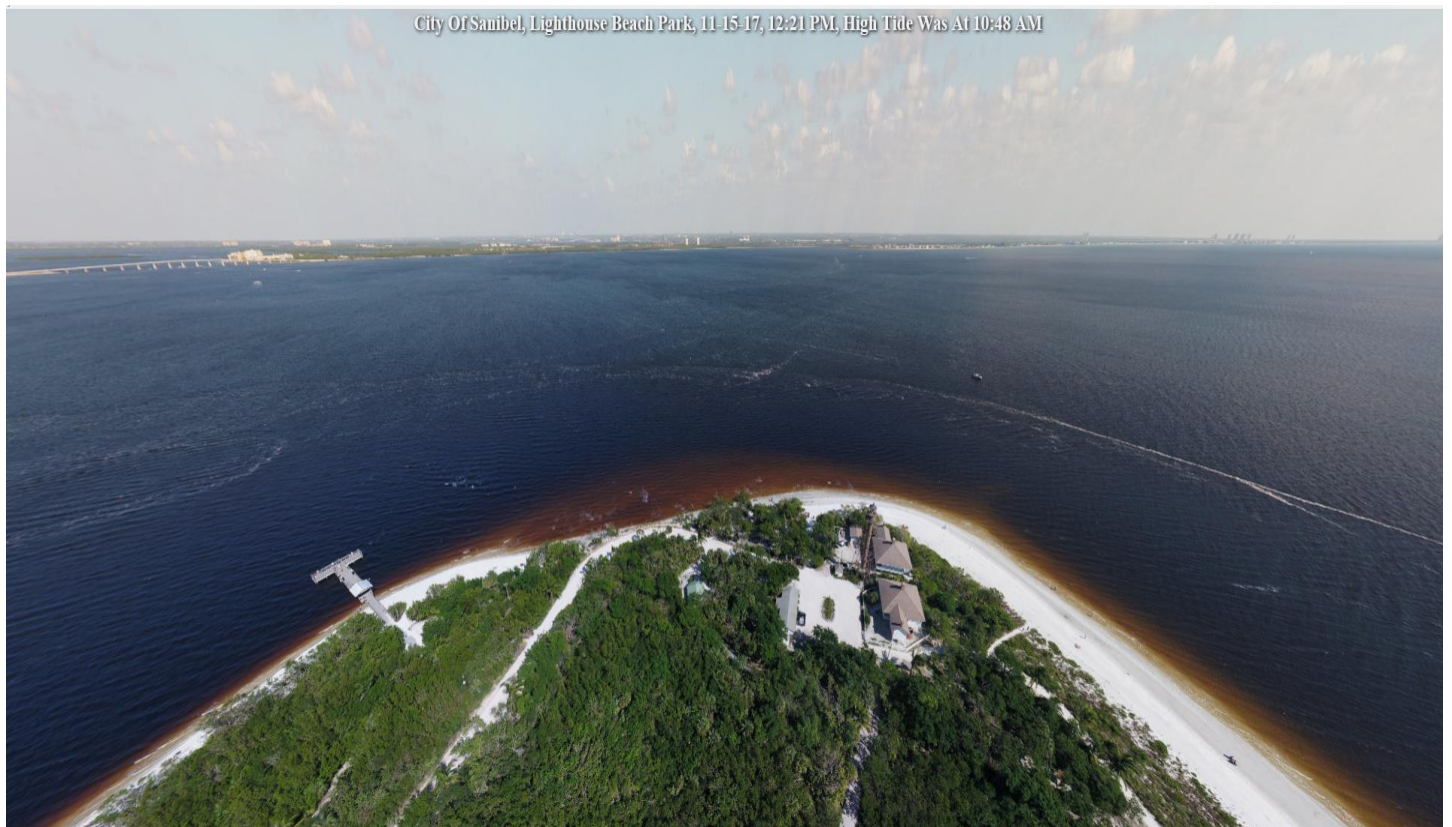
Coastal Conditions: Dark freshwater from high discharges extends beyond the Sanibel lighthouse surrounding Sanibel on outgoing tides (See Fig. 1). Dark water extends from the north end to mid island on Fort Myers Beach.

Red Tide: On 11/17/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was present in samples collected in Manatee, Sarasota and Charlotte Counties and in background to high concentrations in Lee County the past week. **SCCF sampling detected medium concentrations of *Karenia* sp. along the west side of Sanibel and Captiva from 11/15/17-11/17/17, and on the south side at Tarpon Beach on 11/20/17. On 11/21/17, SCCF samples had 112,500 *Karenia* cells/L at the Gulf of Mexico RECON off Ft. Myers Beach.**

Wildlife Impacts: The past week, CROW the wildlife hospital on Sanibel treated **10 double crested cormorants with suspected brevetoxicosis**. A dead green sea turtle was found on Sanibel with no obvious wounds. Suspect cause of death may be red tide related.

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	7.9	313	6.6	0.54
Shell Point	7.6	265	4.2	0.63
Causeway	5.5	251	5.2	0.65

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



City Of Sanibel, Lighthouse Beach Park, 11-15-17, 12:21 PM, High Tide Was At 10:48 AM

Aerial view of dark water surrounding Sanibel Lighthouse Beach Park and extending into the Gulf on 11/15/17. Photo City of Sanibel