

**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: **September 19 - 25, 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 averaged **8,902 cfs** at S-79, **over 3 times the harm threshold**. **A dark wall of freshwater extends several miles offshore into the Gulf of Mexico.**

**USACE Action:** The past week discharges from Lake Okeechobee to the Caloosahatchee at S-77 averaged **4,614 cfs**. Lake discharges to the St Lucie estuary at S-80 the past week averaged **over 2,808 cfs\***.

**Recommendation:** With Lake Okeechobee water levels anticipated to continue rising into the high sub-band, we understand the need to move water out of the lake and urge the Corps to equitably discharge water in **all directions** and to **utilize all options to reduce harmful discharges to the estuaries**.

**Lake Okeechobee Level:** 16.21 ft. (Intermediate Sub-Band)      **Last week:** 15.66 ft

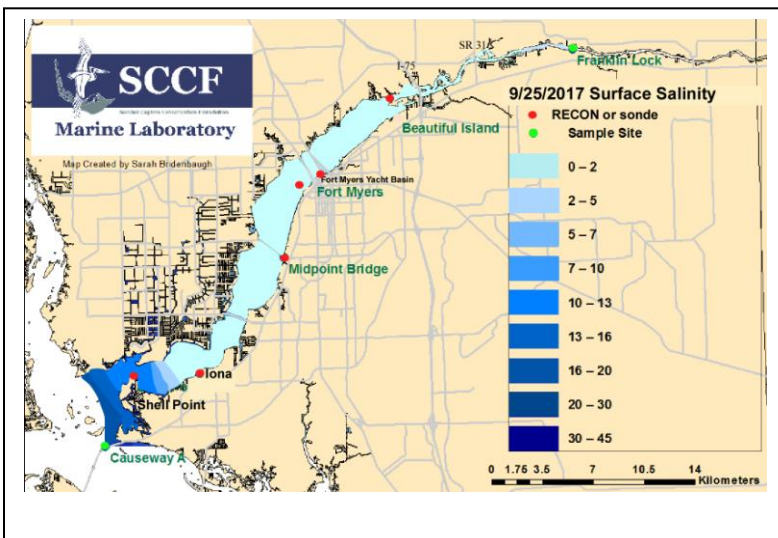
**Lake Okeechobee Inflow:** 18,024 cfs      **Lake Okeechobee Outflow:** 3,770 cfs

**Weekly Rainfall:** WP Franklin 2.53"      Ortona 0.65"      Moore Haven 0.0"

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

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

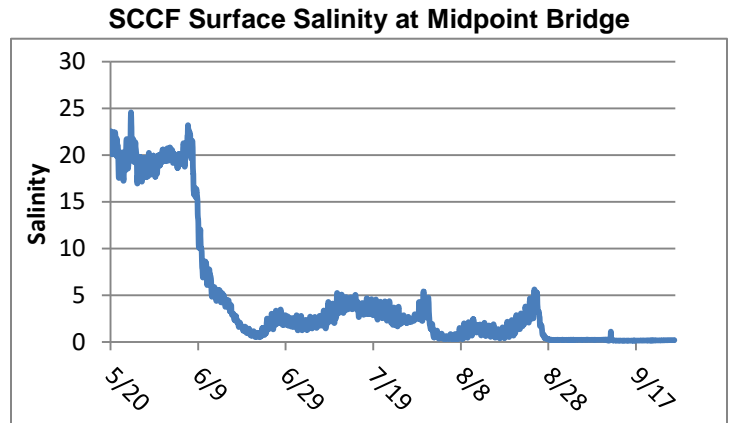
**Salinity Shell Point:** 0.2 – 25 psu (SCCF RECON)      Previous wk 0.1 – 25 psu



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	0.2 - 25	25 - 32 psu	Low
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	0.54	1 meter	Low
Shell Point	0.70	2.2 meters	Low
Causeway	0.76	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **8,902 cfs**. Over the past 14 days **19,874 acre feet of water back flowed into Lake Okeechobee at the same time harmful estuary releases are being used to reduce lake levels; 88% of back flow from the L8 and a net backflow of 12% from S-310. 97,052 AF of water was discharged from Lake O, 55% to S-77\* and 45% to S-308\*.** \*Flow data missing

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
9/19/2017	9743	4729	1940
9/20/2017	9979	5100	3520
9/21/2017	11118	5592	4324
9/22/2017	11289	6511	5668
9/23/2017	10738	6398	5744
9/24/2017	10323	6393	5804
9/25/2017	9450	5918	5301
<b>7 day Avg</b>	<b>8902</b>	<b>5806</b>	<b>4614</b>



**Upstream of S-79/Franklin Conditions:** On 9/26/17 the Olga Water Treatment plant chlorides measured **35 mg/L**, apparent color was **262 CU** and turbidity measured **0.52 NTU**. No visible algae in the plant intake the past week. The plant is online running at 2400 GPM.

**Upper Estuary Conditions:** Salinities in the upper estuary are in the suitable range for tape grass. **Hypoxia was recorded from Olga to Whiskey Creek in Fort Myers on 9/25/17 (Mote/SCCF).**

**Lower Estuary Conditions:** Salinity was below the optimal range for oysters at Shell Point (**10 psu**). Water column chlorophyll and phycoerythrin concentrations were elevated in Iona Cove where clumps of phytoplankton were visible on 9/22/17. **The Gulf RECON has been recording hypoxia in the lower layer of the water column since 9/17/17.**

**J.N. "Ding" Darling NWR:** **Dissolved oxygen at McIntyre Creek fell below 3 mg/L seven times, presenting a milky white anoxic appearance to the water. A cyanobacteria bloom appeared in an isolated freshwater pond in the refuge.**

Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	11.6 – 17.2	1.5 – 6.8	28.0 – 34.5	7.7 – 25.0
Tarpon Bay	11.1 – 23.9	3.5 – 10.3	28.0 – 43.8	5.0 – 27.6

**Beach Conditions:** The past week moon jellyfish have been washing up on Sanibel and Fort Myers Beaches. Red drift algae is continuing to wash ashore on Fort Myers Beach, although quantities have been reduced.

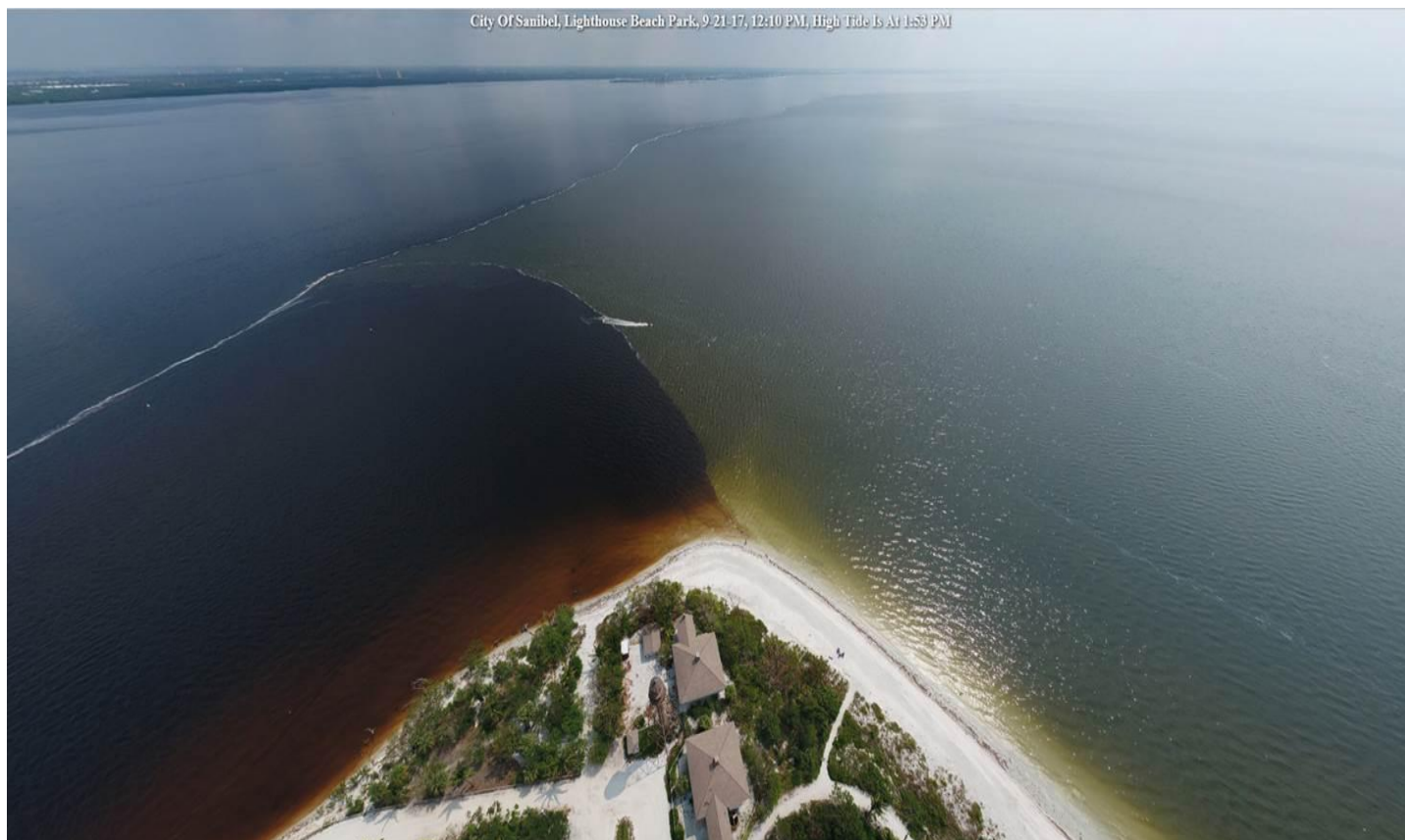
**Red Tide:** On 9/22/17 the Florida Fish and Wildlife Conservation Commission reported NO red tide in samples collected throughout Florida the past week.

**Shellfish Advisory:** On 9/7/17 the Florida Dept of Agriculture Consumer Services **CLOSED #6212 Pine Island Sound Section 1 AUZ and Leases** for the harvest of oysters, clams, and mussels due to Hurricane Irma.

**Wildlife Impacts:** CROW, the wildlife hospital on Sanibel, treated **8 patients for red tide poisoning the past week: 3 ruddy turnstones, 2 sanderlings, 1 blue winged teal, 1 mottled duck and 1 double crested cormorant.**

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	12	325	2.9	0.54
Shell Point	11	230	2.7	0.70
Causeway	8.1	212	2.6	0.76

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



**Dark water discharges observed at City of Sanibel Lighthouse Beach Park on 9/21/17 approximately an hour and a half before high tide.**  
Photo City of Sanibel