

MEMORANDUM

To: USACE Colonel Jason A. Kirk, LTC Jennifer A. Reynolds, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Peter Antonacci, 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: **July 11 - 17, 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: Freshwater flow into the estuary at S-79 over the past week averaged **1,346 cfs**. **High Colored Dissolved Organic Matter (CDOM) has increased light attenuation throughout the estuary.**

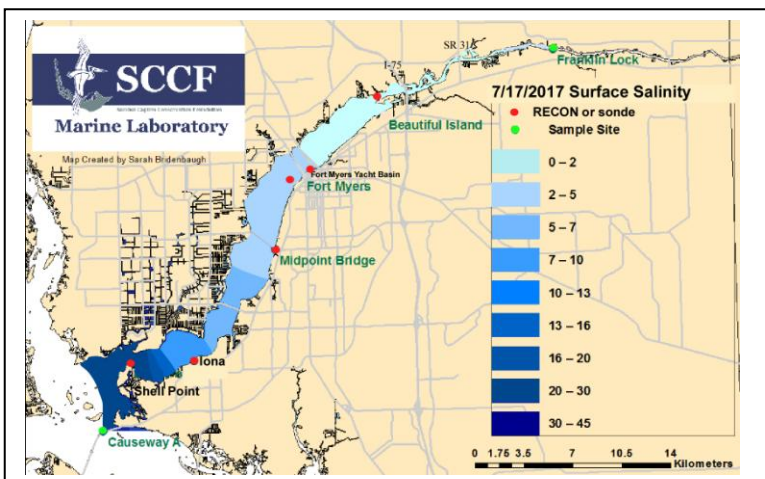
USACE Action: The USACE discontinued flows to the Caloosahatchee on June 3, 2017 due to significant rainfall throughout the region. No discharge from Lake Okeechobee to the St Lucie estuary at S-80.

DEP Emergency Order: On 6/23/17 DEP issued an emergency order to allow temporary operational changes to minimize flooding south of Lake Okeechobee. **The SFWMD stopped back pumping to Lake O from the EAA on 7/5/17.**

Recommendation: We recommend continuing no releases to the Caloosahatchee from Lake Okeechobee while the Lake is relatively low and the Caloosahatchee is receiving adequate freshwater flow from the watershed. We encourage the use of all available watershed storage capacity within distributed storage projects and other lands owned or under contract by the State to avoid drastic changes in estuary salinity.

Lake Okeechobee Level: 12.58 ft. (Beneficial Use Sub-Band) Last week: 12.45 ft
Lake Okeechobee Inflow: 2,160 cfs **Lake Okeechobee Outflow:** - 484 cfs
Weekly Rainfall: WP Franklin 2.04" Ortona 1.48" Moore Haven 1.64"

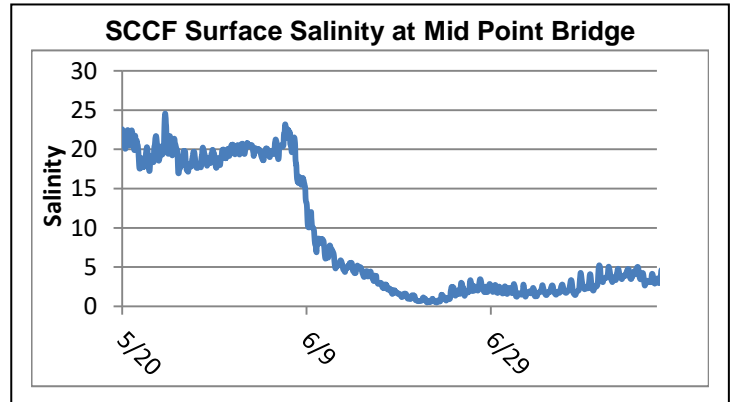
Salinity Beautiful Island: ND (SCCF RECON Marker 18) Previous wk 0.2 - 0.3 psu
Salinity Fort Myers: 0.3- 5.1 psu (SCCF RECON) Previous wk 0.3 - 2.9 psu
Salinity Shell Point: 11- 30 psu (SCCF RECON) Previous wk 9.8 - 30 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	0.3 - 5.1	<10 psu	In Range
Shell Point	11 - 30	25 - 32 psu	In Range
Light (25% I _z depth meters)			
Fort Myers	0.62	1 meter	Low
Shell Pointe	1.27	2.2 meters	Low
Causeway	1.67	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged 1,346 cfs. Over the past 14 days 25,017 acre feet of water was back flowed into Lake Okeechobee; 51% from S-308, 42% from L8 and 7% from S-310. Only 2,955 AF of water was discharged from the Lake; 46% to the EAA, 34% to S310 and 20% to S-77.

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
7/11/2017	888	274	0
7/12/2017	935	353	0
7/13/2017	1361	350	0
7/14/2017	1417	357	0
7/15/2017	1578	531	0
7/16/2017	1722	665	0
7/17/2017	1518	658	0
7 day Avg	1346	455	0



Upstream of S-79/Franklin Conditions: Cyanobacteria including *Microcystis* and *Dolichospermum* were present in samples taken by Lee County Environmental Lab upstream of the Franklin Lock on 7/13/17. On 7/11/17 the Olga Water Treatment plant chlorides measured 55 mg/L, apparent color was 155 CU and turbidity measured 1.38 NTU. No visible algae in the plant intake the past week. The plant is online running at 2000 GPM.

Upper Estuary Conditions: *Microcystis* cyanobacteria was in samples taken by Lee County Environmental Lab at the Davis Boat Ramp on 7/13/17. Salinity at Fort Myers was in the acceptable range for tape grass. Dissolved oxygen levels at the Fort Myers RECON dropped below 3 mg/L several times during the week, and dropped below 2 mg/L on 7/17 while chlorophyll was spiking above 11 from 7/13 to 7/17.

Lower Estuary Condition: Water column chlorophyll levels were elevated in much of Pine Island Sound because of diatoms with *Chaetoceros* spp. most abundant. Dinoflagellates including *Prorocentrum* sp. were found with the diatoms in Rocky Channel near mid Sound. The average salinity at Shell Point, 21 psu, was in the optimal range for oysters.

Beach Conditions: Coastal water clarity continues to be dark due to freshwater runoff from the watershed. Sparse accumulations of filamentous green and red drift algae are present along Sanibel. On Fort Myers Beach water is dark with a slight green hue. Red drift and filamentous green algae is appearing through the mid and south sections of the island with thicker deposits occurring along the south end.

J.N. "Ding" Darling NWR:

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	25.5 – 27.5	2.3 – 9.5	16.7 – 23.3	3.5 – 9.1
Tarpon Bay	25.2 – 30.1	3.5 – 7.0	15.8 – 29.3	3.1 – 8.3

Red Tide: On 7/14/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was found in background concentrations in Pinellas, Manatee and Lee Counties the past week.

Shellfish Advisory: On 7/11/17 The Florida Department of Agriculture and Consumer Services temporarily **closed** #6222 Pine Island Sound Section 2 (Matlacha Pass) Shellfish Harvest Area. **WILD OYSTER HARVEST SEASON IS CLOSED FOR THE MONTHS OF JULY - SEPTEMBER FROM PINELLAS TO COLLIER COUNTIES.**

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	22	237	6.1	0.62
Shell Point	3.1	92.6	3.5	1.27
Causeway	3.0	40.4	5.2	1.67

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