

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: **June 27 - July 3, 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 **1,688 cfs**. **High Colored Dissolved Organic Matter (CDOM) has reduced light attenuation throughout the estuary. Flows to the estuary during the past 4.5 weeks originated from the watershed, with no flow from Lake Okeechobee.**

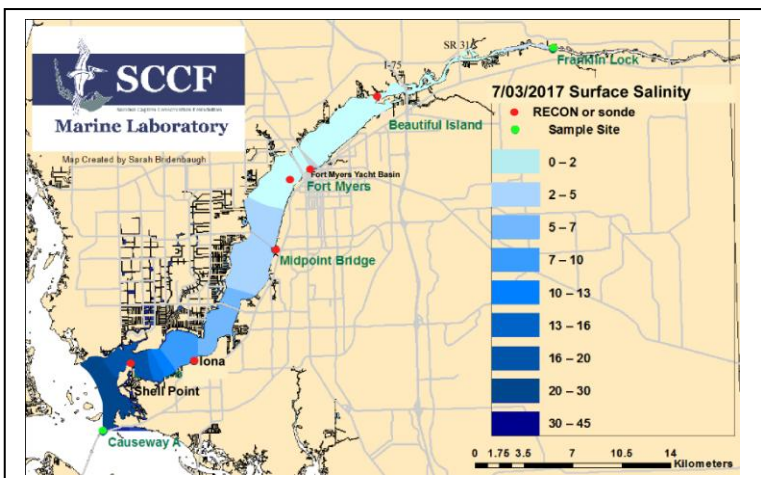
USACE Action: The USACE discontinued flows to the Caloosahatchee on June 3, 2017 due to significant rainfall throughout the region. No discharge from Lake Okeechobee to the St Lucie estuary at S-80.

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 initiated back pumping to Lake O from the EAA, 6/24/17.**

Recommendation: We recommend not making any 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 as much watershed storage as possible within distributed storage projects and other lands owned or under contract by the State.

Lake Okeechobee Level: 12.42 ft. (Beneficial Use Sub-Band) Last week: 12.30 ft
Lake Okeechobee Inflow: 3,649 cfs **Lake Okeechobee Outflow:** - 852 cfs
Weekly Rainfall: WP Franklin 2.65" Ortona 0.91" Moore Haven 2.92"

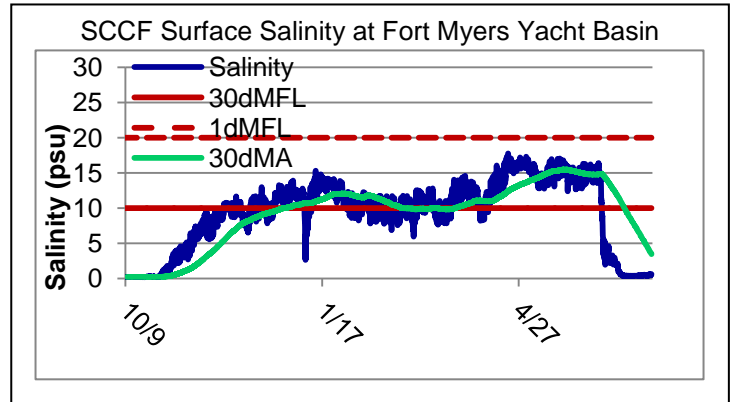
Salinity Beautiful Island: 0.2 - 0.3 psu (SCCF RECON Marker 18) Previous wk 0.3 - 0.4 psu
Salinity Fort Myers: 0.4 - 0.7 psu (SCCF Yacht Basin) Previous wk 0.4 - 0.4 psu
Salinity Shell Point: 9.7 - 30 psu (SCCF RECON) Previous wk 9.9 - 33 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	0.2 - 0.3	< 5 psu	In Range
Fort Myers	0.4 - 0.7	<10 psu	In Range
Shell Point	9.7 - 30	25 - 32 psu	In Range
Light (25% I _z depth meters)			
Beautiful Is	0.75	1 meter	Low
Fort Myers	0.71	1 meter	Low
Shell Pointe	1.23	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **1,688 cfs**. Over the past 14 days **35,838 acre feet** was back flowed into Lake Okeechobee from all outlets except S-77. S-308 back flowed 52%, the L8 32%, S-310 5% and the EAA backpumped 11% into Lake O at S-351.

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
6/27/2017	1346	173	0
6/28/2017	1424	272	0
6/29/2017	2674	704	0
6/30/2017	1614	529	0
7/1/2017	1234	468	0
7/2/2017	1947	522	0
7/3/2017	1576	347	0
7 day Avg	1688	431	0



Upstream of S-79/Franklin Conditions: Cyanobacteria, *Dolichospermum* and *Microcystis*, was present in samples taken by Lee County Environmental Lab upstream of the Franklin Lock on 6/29/17. On 7/5/17 the Olga Water Treatment plant chlorides measured **70 mg/L**, apparent color was **156 CU** and turbidity measured **2.00 NTU**. The plant is off line for maintenance.

Upper Estuary Conditions: Salinity at Fort Myers was in the acceptable range for tape grass. Dissolved oxygen levels at Beautiful Island RECON averaged below 3 mg/L and dropped during the week at Fort Myers RECON to below 3 mg/L. Chlorophyll levels were elevated at both sites.

Lower Estuary Condition: The average salinity at Shell Point, **21 psu**, was in the optimal range for oysters.

Beach Conditions: Water clarity along Fort Myers Beach and the bay side of Sanibel has decreased following increased freshwater flows from the Caloosahatchee watershed. Sparse accumulations of filamentous green and red drift algae are present along Fort Myers Beach around mid island.

J.N. "Ding" Darling NWR:

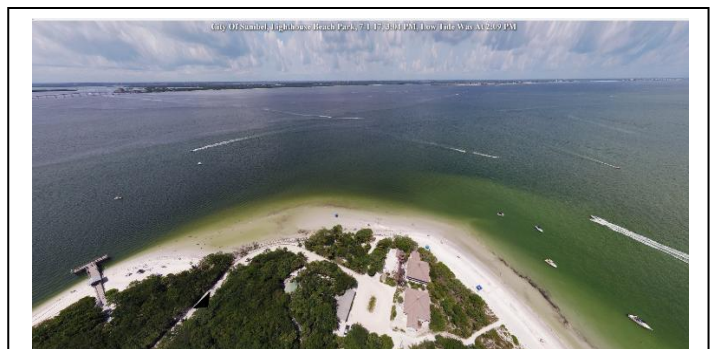
Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	29.9 – 26.3	3.1 – 9.3	14.8 – 19.6	3.2 – 8.4
Tarpon Bay	25.6 – 30.1	3.2 – 7.5	16.5 – 26.7	3.1 – 6.6

Red Tide: On 6/30/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was found in background concentrations only in Pinellas County the past week.

Wildlife Impacts: SCCF reports **4 sea turtle deaths** the past 2 weeks. **1 juvenile green sea turtle** death from a boat strike on the Sanibel causeway, **2 sub-adult loggerheads** hit by boats on Sanibel and **1 Kemp's ridley** on Sanibel with no visible cause of death.

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
Beautiful Is	12	210	2.4	0.75
Fort Myers	17	203	5.8	0.71
Shell Point	7.3	92.6	3.4	1.23

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



Aerial photo of Sanibel Lighthouse Beach Park taken on 7/1/17. Water clarity has decreased throughout San Carlos Bay following increased freshwater flows from the watershed. Photo San-Cap Aerial, City of Sanibel.