

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, Peter Doering, 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 20 - 26, 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 during the past week averaged **2,596 cfs**. **High Colored Dissolved Organic Matter (CDOM) has reduced light attenuation throughout the estuary.** **A bloom of *Skeletonema* sp. was present at Shell Point.** **Flows to estuary during the past week came entirely 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: 12.30 ft. (Beneficial Use Sub-Band) Last week: 12.15 ft

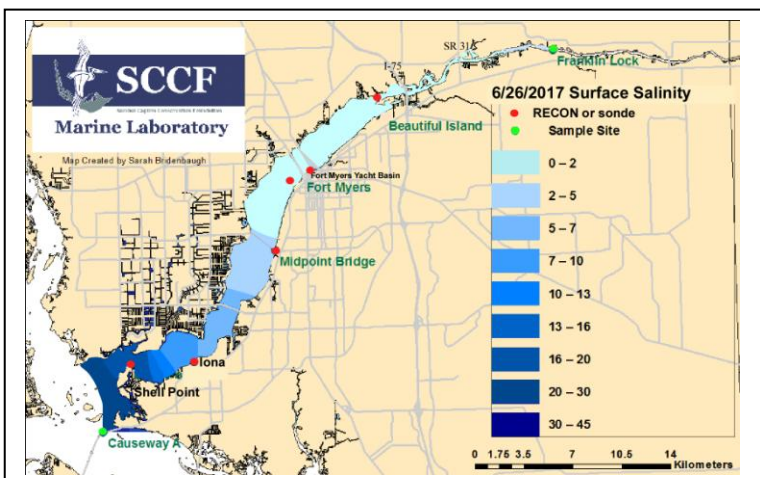
Lake Okeechobee Inflow: 4,795 cfs **Lake Okeechobee Outflow:** - 744 cfs

Weekly Rainfall: WP Franklin 1.06" Ortona 0.56" Moore Haven 0.41"

Salinity Beautiful Island: 0.3 - 0.4 psu (SCCF RECON Marker 18) Previous wk 0.3 - 0.7 psu

Salinity Fort Myers: 0.4 - 0.4 psu (SCCF Yacht Basin) Previous wk 0.4 - 3.3 psu

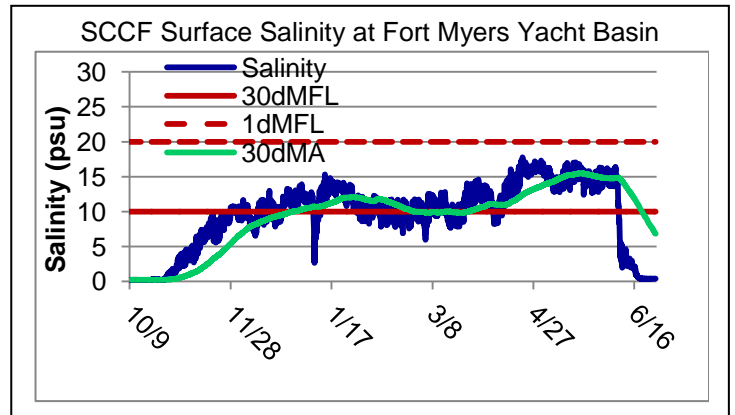
Salinity Shell Point: 9.9 - 33 psu (SCCF RECON) Previous wk 7.8 - 31 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	0.3 – 0.4	< 5 psu	In Range
Fort Myers	0.4 - 0.4	<10 psu	In Range
Shell Point	9.9 - 33	25 - 32 psu	In Range
Light (25% I _z depth meters)			
Beautiful Is	0.76	1 meter	Low
Fort Myers	0.70	1 meter	Low
Shell Pointe	0.92	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **2,596 cfs**. Over the past 14 days **43,553 acre feet** was back flowed into Lake Okeechobee from all outlets except S-77. S-308 back flowed 48%, the L8 23%, S-310 19% and the EAA backpumped 9% into Lake O at Belle Glade.

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
6/20/2017	4182	1509	0
6/21/2017	3334	1229	0
6/22/2017	3098	882	0
6/23/2017	2284	891	0
6/24/2017	2420	876	0
6/25/2017	1811	588	0
6/26/2017	1043	372	0
7 day Avg	2596	907	0



Upstream of S-79/Franklin Conditions: On 6/27/17 the Olga Water Treatment plant chlorides measured **55 mg/L**, apparent color was **179 CU** and turbidity measured **2.36 NTU**. Slight traces of algae at the plant intake the past week. The plant is off line for maintenance.

Upper Estuary Conditions: Salinity at Fort Myers was in the acceptable range for tape grass.

Lower Estuary Condition: Water column chlorophyll was spiking to as high as **20 µg/L** due to a bloom of *Skeletonema* sp. The average salinity at Shell Point, **24 psu**, was in the optimal range for oysters.

J.N. "Ding" Darling NWR:

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	28.1 -31.7	3.0 – 6.9	9.6 – 18.1	2.1 – 5.2
Tarpon Bay	27.5 – 33.8	4.2 – 6.9	7.1 – 22.1	2.5 – 6.5

Red Tide: On 6/23/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was found in background to low concentrations in Manatee, Sarasota, Charlotte and Lee Counties.

Shellfish Advisory: On 6/22/17 the Florida Dept of Agriculture and Consumer Services **re-opened #6222 Pine Island Sound Section 2 Shellfish Harvest Area (Matlacha Pass)** for the harvest of oysters, clams, and mussels.

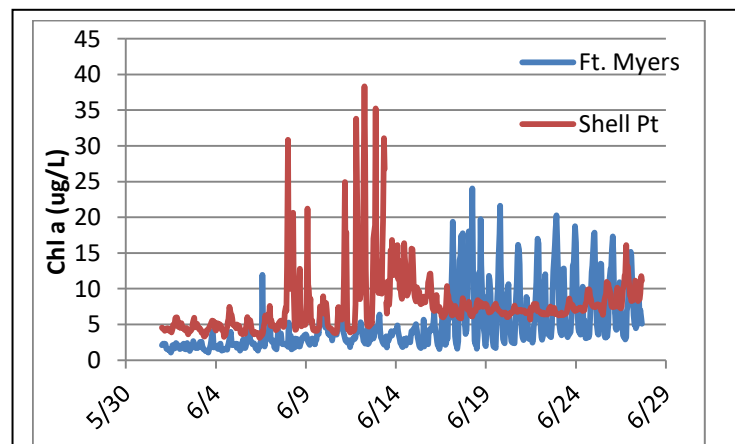
Wildlife: A baby manatee was spotted in Tarpon Bay with adult manatees who were eating mangrove leaves.

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	12.5	210	1.5	0.76
Fort Myers	16.8	209	5.1	0.70
Shell Point	11.0	75.6	1.8	0.92

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



Chlorophyll response to increased nutrients from runoff at Fort Myers and Shell Point RECONS. A spike in chlorophyll at Fort Myers started a couple days after the salinities started dropping, and took 9 days to appear at Shell Point.