

**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 Ryan Matthews

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 Blake – 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: **February 21 - 27, 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 increased to an average of 790 cfs. Higher flows, averaging 729 cfs over the past five weeks reduced salinity below the MFL 10 psu harm threshold at Fort Myers after 53 days. Less drift algae is accumulating on Fort Myers Beach. Red tide persists in coastal waters, but no impacts were reported on Sanibel or Fort Myers Beach.

**USACE Action:** The USACE continued flows to the Caloosahatchee with a 7-day average target of 650 cfs measured at S-79 with no discharge from Lake Okeechobee to the St Lucie estuary at S-80.

**Recommendation:** We request maintaining freshwater pulses to provide adequate flows to prevent estuary harm. We request a Periodic Scientist call at least every two weeks.

Lake Okeechobee Level: 13.45 ft. (Base Flow Sub-Band) Last week: 13.49 ft

Lake Okeechobee Inflow: 599 cfs Lake Okeechobee Outflow: 2,280 cfs

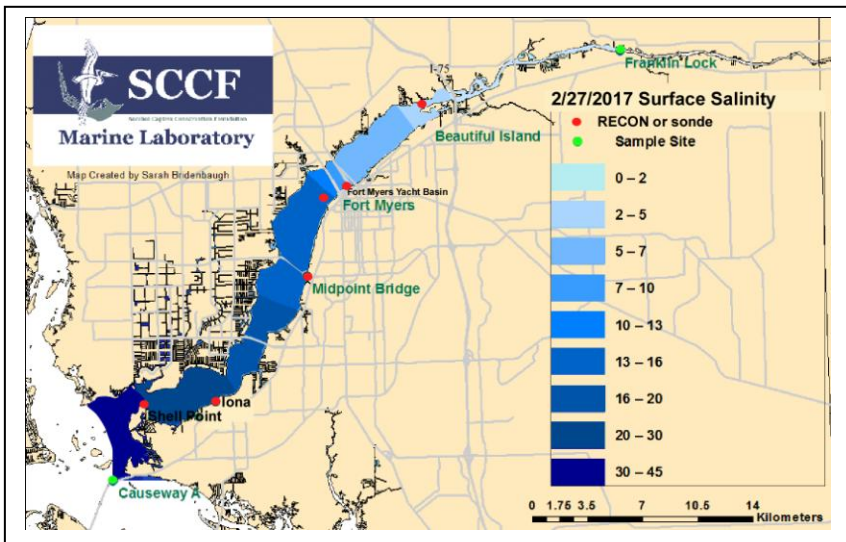
Weekly Rainfall: WP Franklin 0.51" Ortona 0.85" Moore Haven 0.65"

Salinity Beautiful Island: 1.6 – 4.5 psu (SCCF RECON Marker 18) Previous wk 1.8 – 4.9 psu

Salinity Fort Myers: 6.9 – 12 psu (SCCF Yacht Basin) Previous wk 7.8 – 12 psu

MFL Status: In compliance; 30-day moving average ≤10 psu at surface

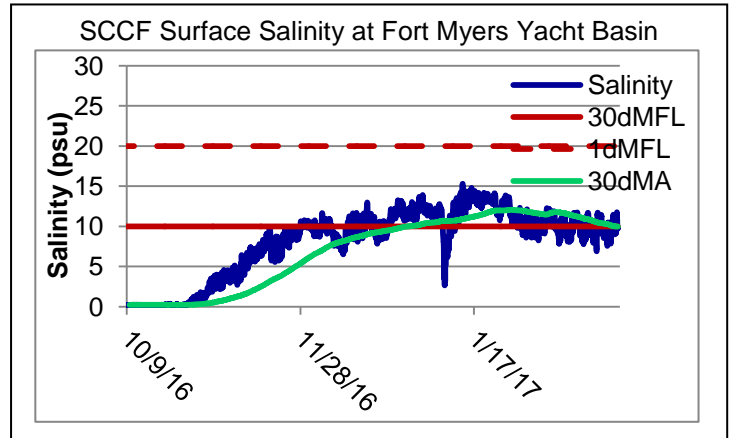
Salinity Shell Point: ND (SCCF RECON) Previous wk 23 – 33 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	1.6 - 4.5	< 5 psu	In Range
Fort Myers	6.9 - 12	<10 psu	In Range
Shell Point	ND	25 - 32 psu	-
Light (25% I <sub>z</sub> depth meters)			
Beautiful Is	0.90	1 meter	Low
Causeway	2.20	2.2 meter	In Range
E Sanibel	2.26	2.2 meters	In Range

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **790 cfs**. Over the past 14 days **39%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **0%** was delivered to the St Lucie at S-308, **52%** was delivered south to the EAA, **8%** was directed to the L8 and **1%** through S310.

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
2/21/2017	Tues	457	347	590
2/22/2017	Wed	252	348	327
2/23/2017	Thur	446	341	83
2/24/2017	Fri	1077	344	86
2/25/2017	Sat	1075	694	512
2/26/2017	Sun	1216	1028	912
2/27/2017	Mon	1006	782	911
7 day Avg		790	555	489



**Upstream of S-79/Franklin Conditions:** On 2/28/17 the Olga Water Treatment plant chlorides measured **57 mg/L**, apparent color was **67 CU** and turbidity measured **1.85 NTU**. No visible algae was noted at the plant intake the past week. The plant is online at 2,000 GPM.

**Upper Estuary Conditions:** The weekly average salinity was in the suitable range for tape grass.

**Lower Estuary Condition:** Up until 2/24/17, the average salinity at Shell Point (**29 psu**) was above the optimal range for oysters.

**J.N. "Ding" Darling NWR:**

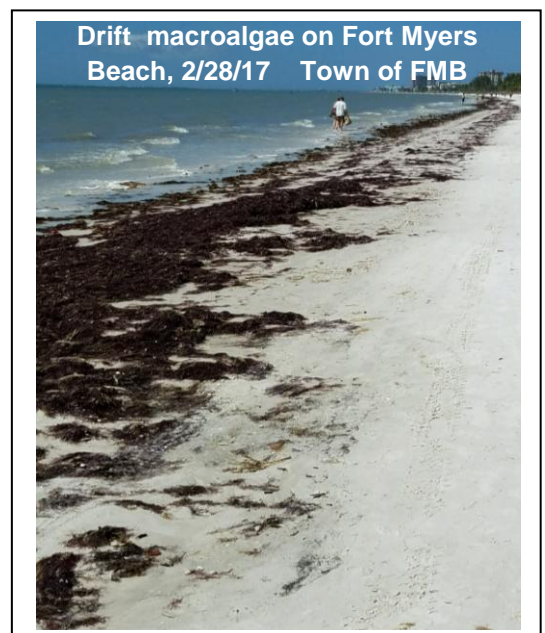
Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	31.7 - 33.1	3.8 - 9.6	10.5 - 21.2	2.3 - 9.2
Tarpon Bay	32.2 - 34.3	5.6 - 8.0	6.7 - 24.8	2.3 - 19.8

**Beach Conditions:** Accumulations of drift algae were slightly reduced the past week on Fort Myers Beach.

**Red Tide:** On 2/24/17, FWC reported *Karenia brevis*, the Florida red tide organism, persists in **Southwest Florida from southern Pinellas to Collier Counties with background to low concentrations in samples collected from Lee County.**

**Wildlife Impacts:** The past two weeks CROW, the wildlife rehabilitation clinic on Sanibel received **5 animals suffering from red tide poisoning: 1 loggerhead sea turtle, 4 Double Crested Cormorants. 2 loggerhead sea turtles were found dead on Sanibel the past week.**

**Manatees:** Lee county park staff reported up to 8 manatees including a mother and calf in the warm water of the Orange River and FPL discharge canal the past week. River temperatures are unseasonably warm for this time of year ranging from **77 - 90° F.**



Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% I <sub>0</sub> depth (meters)
<b>Target Values</b>	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
<b>Beautiful Is</b>	6.6	170	2.0	0.90
<b>Causeway</b>	4.1	15.3	3.2	2.20
<b>E Sanibel</b>	3.5	0.8	5.8	2.26

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