

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: **March 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 decreased to an average of **631 cfs**. The Caloosahatchee is currently meeting its Minimum Flow & Level (MFL), **but is expected to exceed the MFL over the course of the next week if flows remain at similar or reduced levels. Rising salinity at Fort Myers is above the suitable range for tape grass in the mid estuary and above the optimal range for oysters in the lower estuary.**

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. **If reduced flows are implemented, reductions should be made to all users. We request weekly calls to provide input on current conditions.**

Lake Okeechobee Level: 12.65 ft. (Base Flow Sub-Band) **Last week:** 12.82 ft

Lake Okeechobee Inflow: 470 cfs **Lake Okeechobee Outflow:** 3,683 cfs

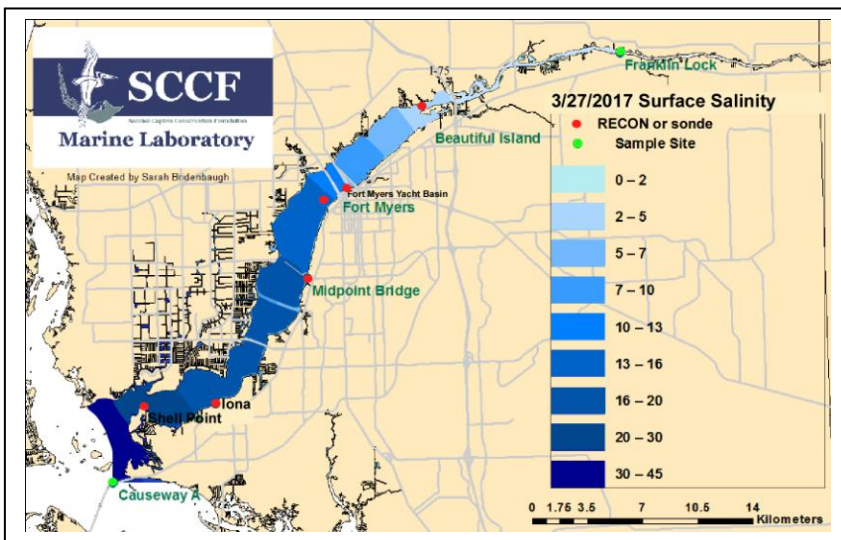
Weekly Rainfall: WP Franklin 0" Ortona 0.39" Moore Haven 0.05"

Salinity Beautiful Island: 2.1 – 5.6 psu (SCCF RECON Marker 18) Previous wk 2.3 – 6.3 psu

Salinity Fort Myers: 7.6 – 14 psu (SCCF Yacht Basin) Previous wk 7.7 – 13 psu

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

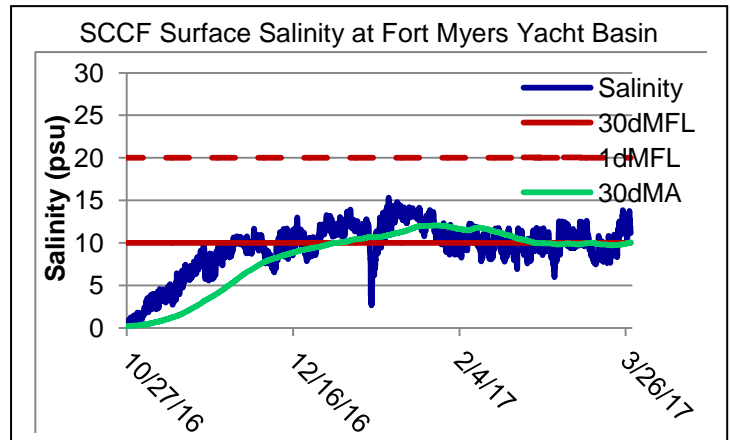
Salinity Shell Point: 23 – 34 psu (SCCF RECON) Previous wk 22 – 34 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	2.1 – 5.6	< 5 psu	In Range
Fort Myers	7.6 – 14	<10 psu	In Range
Shell Point	23 – 34	25 - 32 psu	High
Light (25% I _z depth meters)			
Beautiful Is	0.93	1 meter	Low
Causeway	2.09	2.2 meter	Low
E Sanibel	2.02	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **631 cfs**. Over the past 14 days **33%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **9%** was delivered to the St Lucie at S-308, **56%** was delivered south to the EAA, **2%** was directed to the L8 and **1%** through S310.

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
3/21/2017	Tues	561	358	982
3/22/2017	Wed	326	173	940
3/23/2017	Thur	300	176	930
3/24/2017	Fri	793	915	1462
3/25/2017	Sat	1064	1005	1537
3/26/2017	Sun	979	876	1347
3/27/2017	Mon	396	341	474
7 day Avg		631	549	1096



Upstream of S-79/Franklin Conditions: On 3/28/17 the Olga Water Treatment plant chlorides measured **60 mg/L**, apparent color was **57 CU** and turbidity measured **1.45 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 at Fort Myers was **11.5 psu**, above the suitable range for tape grass.

Lower Estuary Condition: The average salinity at Shell Point was **29 psu**, in the optimal range for seagrass but above 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	33.6 – 35.4	3.5 – 11.4	8.3 – 17.7	2.1 - 5.9
Tarpon Bay	33.6 - 34.9	5.4 – 8.3	7.9 – 14.0	1.9 – 4.6

Red Tide: On 3/24/17, FWC reported a patchy bloom of *Karenia brevis*, the Florida red tide organism, persists in Southwest Florida from southern Pinellas to Lee Counties with background to low concentrations in samples collected from Lee County.

Wildlife Impacts: The past week two dead loggerhead sea turtles with prop scars stranded on Sanibel and Captiva Islands the past week.

Manatees: Lee county park staff reported over **11 manatees** in the warm water of the Orange River and FPL canal the past week. River temperatures ranging from **74 - 84° F** the past week.

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
Beautiful Is.	10.5	155	1.6	0.93
Causeway	2.6	24.7	3.0	2.09
E Sanibel	3.2	22.0	4.2	2.02

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