

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: **April 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 during the past week dropped by two-fold to an average of **305 cfs**. **The Caloosahatchee continues to exceed its Minimum Flow & Level (MFL) salinity at Fort Myers. Salinity is also above the suitable level for tapegrass in the middle and upper estuary and oysters in the lower estuary. Cyanobacteria increased upstream of S79 and at the Alva Boat Ramp.**

USACE Action: On April 14, 2017 the USACE reduced flows to the Caloosahatchee with a 7-day average target of **300 cfs** measured at S-79. No discharge from the 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 to be implemented, reductions should be made to all water users. We request weekly calls to provide input on current conditions.**

Lake Okeechobee Level: 11.93 ft. (Beneficial Use Sub-Band) Last week: 12.21 ft

Lake Okeechobee Inflow: 419 cfs **Lake Okeechobee Outflow:** 7,253 cfs

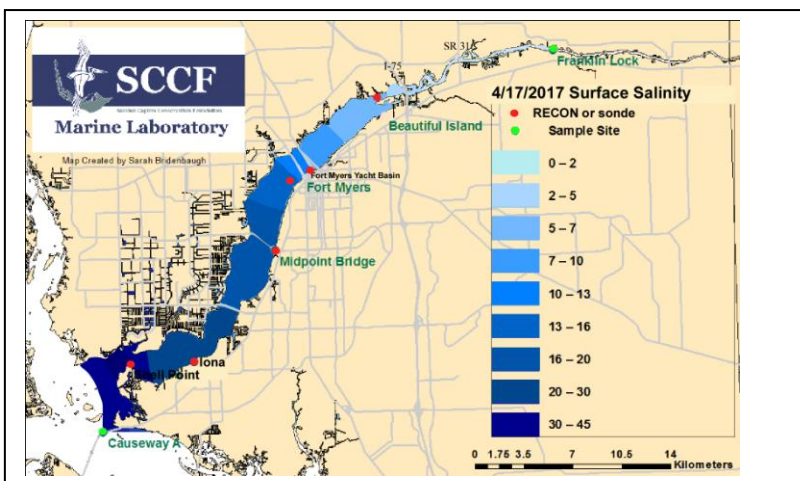
Weekly Rainfall: WP Franklin 0" Ortona 0.22" Moore Haven 0"

Salinity Beautiful Island: 2.8 - 7.0 psu (SCCF RECON Marker 18) Previous wk 3.2 - 7.4 psu

Salinity Fort Myers: 9.4 - 16 psu (SCCF Yacht Basin) Previous wk 8.2 - 14 psu

MFL Status: **MFL Exceedance; 30-day moving average ≥ 10 psu at surface**

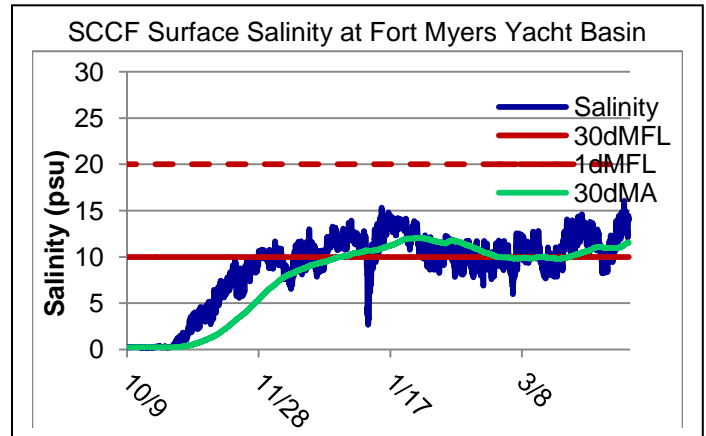
Salinity Shell Point: 27 - 35 psu (SCCF RECON) Previous wk 25 - 35 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	2.8 - 7.0	< 5 psu	High
Fort Myers	9.4 - 16	<10 psu	MFL Exceed
Shell Point	27 - 35	25 - 32 psu	High
Light (25% I _z depth meters)			
Causeway	2.34	2.2 meters	In Range
E Sanibel	2.50	2.2 meters	In Range
Tarpon Bay	2.04	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **305 cfs**. Over the past 14 days **16%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **16%** was delivered to the St Lucie at S-308, **67%** was delivered south to the EAA, the L8 **back flowed** and **1.6%** to S310.

ACOE April 14 Releases at S79				
Date	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/11/2017	200	234	342	904
4/12/2017	100	143	160	NR
4/13/2017	0	37	87	NR
4/14/2017	200	133	88	NR
4/15/2017	900	571	500	888
4/16/2017	500	619	859	1195
4/17/17	300	401	496	1080
7 day Avg	300	305	362	-



Upstream of S-79/Franklin Conditions: On 4/18/17 the Olga Water Treatment plant chlorides measured **59 mg/L**, apparent color was **57 CU** and turbidity measured **1.42 NTU**. No visible algae was noted at the plant intake the past week. The plant is online at 2000 GPM

On 4/13/17 Lee County Environmental Lab found expanded coverage of cyanobacteria in the Caloosahatchee from the WP Franklin Lock to the Alva Boat Ramp consisting of three species; Dolichospermum, Microcystis and Aphanizomenon.

Upper Estuary Conditions: The salinity at Fort Myers is above the suitable range for tape grass.

Lower Estuary Condition: The average salinity at Shell Point, **31 psu**, was 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	34.5 – 36.1	4.2 – 10.4	8.1 – 14.3	2.1 - 71.4
Tarpon Bay	35.0 – 35.9	4.9 – 6.8	7.3 – 24.8	2.5 – 5.8

Red Tide: On 4/13/17, FWC reported *Karenia brevis*, the Florida red tide organism, persists in **Southwest Florida from Manatee to Lee Counties with background to low concentrations in samples collected from Lee County**. Respiratory irritation was reported at Bowman's Beach on Sanibel and fish kills were reported at Bonita Beach.

Shellfish Advisory: On 4/6/17 The Florida Department of Agriculture and Consumer Services is temporarily **closed #6212 Pine Island Sound West Aquaculture Use Zones** for the harvest of oysters, clams, and mussels due to presence of *Karenia brevis*. The closure does not include scallops, shrimp, or crabs.

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
Causeway	2.1	18	2.1	2.34
E Sanibel	2.7	7.8	2.7	2.50
Tarpon Bay	8.6	15	3.4	2.04

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