

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: **May 9 - 15, 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 **276 cfs**. **Inadequate freshwater has caused an exceedance of the Minimum Flow & Level (MFL) at Fort Myers for the past 50 days. Salinity is at lethal levels for tape grass in the middle and upper estuary and above the optimal range for oysters in the lower estuary. Potentially toxic cyanobacteria persists upstream of S79 at two sites.**

USACE Action: On May 12, 2017 the USACE continued 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 the District use adaptive management to provide sufficient freshwater pulse flows to the Caloosahatchee to prevent estuary harm. There is sufficient water in the system to provide these flows and not harm the lake and other users. **In these dry conditions flow reductions should be made to all users not singularly directed at the Caloosahatchee where lethal levels of salinity are harming tape grass. We request weekly calls resume.**

Lake Okeechobee Level: 11.39 ft. (Beneficial Use Sub-Band) Last week: 11.62 ft

Lake Okeechobee Inflow: 171 cfs **Lake Okeechobee Outflow:** 2973 cfs

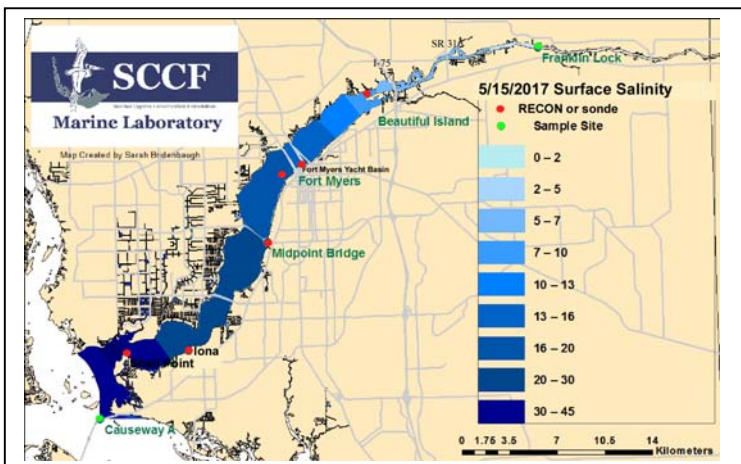
Weekly Rainfall: WP Franklin 0.05" Ortona 0.0" Moore Haven 0.0"

Salinity Beautiful Island: 6.2 -10 psu (SCCF RECON Marker 18) Previous wk 6.9 -11 psu

Salinity Fort Myers: 13 – 17 psu (SCCF Yacht Basin) Previous wk 13 – 17 psu

MFL Status: **MFL Exceedance; 30-day moving average ≥ 10 psu: 50 days since 3/28/17**

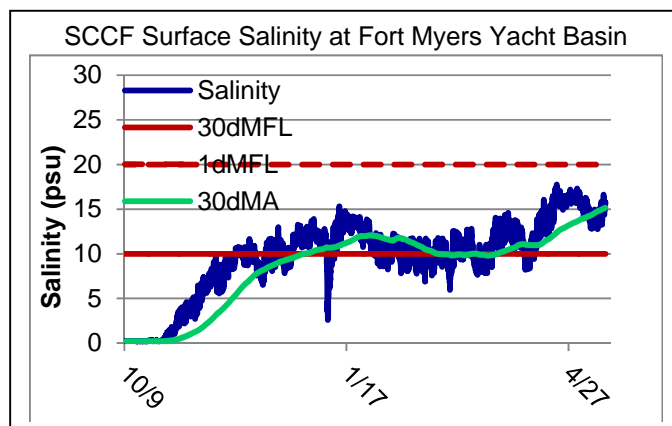
Salinity Shell Point: ND (SCCF RECON) Previous wk 28 – 36 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	6.2 - 10	< 5 psu	High
Fort Myers	13 - 17	<10 psu	MFL Exceed
Shell Point	ND	25 - 32 psu	-
Light (25% I _z depth meters)			
31 Bridge	0.76	1 meter	Low
Fort Myers	1.23	1 meter	In Range
E Sanibel	1.86	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **276 cfs**. Over the past 14 days **44%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **56%** was delivered south to the EAA, the L8, S308 and S310 both **back flowed into the Lake**.

ACOE May 9 Releases at S79				
Date	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/9/2017	200	169	178	361
5/10/2017	0	37	176	604
5/11/2017	0	0	315	878
5/12/2017	200	106	525	980
5/13/2017	900	577	518	772
5/14/2017	500	701	524	1008
5/15/2017	300	342	525	1120
7 day Avg	300	276	394	818



Upstream of S-79/Franklin Conditions: On 5/16/17 the Olga Water Treatment plant chlorides measured **94 mg/L**, apparent color was **82 CU** and turbidity measured **2.42 NTU**. **Noticeable traces of algae** were noted at the plant intake the past week. The plant is online at 2000 GPM.

On 5/12/17 Lee County Environmental Lab found two species of cyanobacteria in the Caloosahatchee, *Dolichospermum* and *Microcystis*, at two locations; the Alva Boat Ramp and WP Franklin Lock. As well as a third species of cyanobacteria, *Aphanizomenon*; at the Alva Boat Ramp.

Upper Estuary Conditions: The average salinity at Fort Myers, **15 psu**, is in the harmful range for tape grass.

Lower Estuary Condition: On 5/15/17 the salinity at Shell Point, **32 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	35.2 – 36.1	2.7- 9.5	6.9 – 14.8	2.5 – 4.9
Tarpon Bay	35.0 – 36.0	3.8 – 7.3	5.8– 10.8	2.9 – 6.0

Beach Conditions: Water clarity along Sanibel and Fort Myers beaches the past week was good.

Red Tide: On 5/12/17, FWC reported *Karenia brevis*, the Florida red tide organism, persists in background concentrations in two samples collected from Lee County.

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
31 Br.	14.4	159	10.5	0.76
Fort Myers	7.1	92	3.4	1.23
E Sanibel	4.3	7.9	8.1	1.86

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