

**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 2 - 8, 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 **477 cfs**. **Inadequate freshwater is causing salinity to rise and continuing the Minimum Flow & Level (MFL) exceedance for 43 days at Fort Myers. Salinity is at lethal levels for tapegrass 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 5, 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 tapegrass. We request weekly calls resume.**

**Lake Okeechobee Level:** 11.62 ft. (Beneficial Use Sub-Band) **Last week:** 11.60 ft

**Lake Okeechobee Inflow:** 161 cfs **Lake Okeechobee Outflow:** 345 cfs

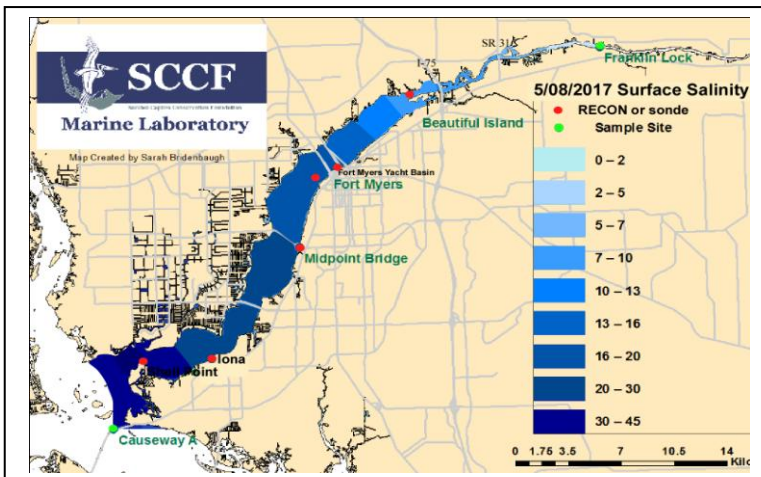
**Weekly Rainfall:** WP Franklin 0.23" Ortona 0.22" Moore Haven 1.51"

**Salinity Beautiful Island:** 6.9 -11 psu (SCCF RECON Marker 18) **Previous wk** 8.9 -13 psu

**Salinity Fort Myers:** 13 – 17 psu (SCCF Yacht Basin) **Previous wk** 15 – 17 psu

**MFL Status:** **MFL Exceedance; 30-day moving average  $\geq 10$  psu: 43 days since 3/28/17**

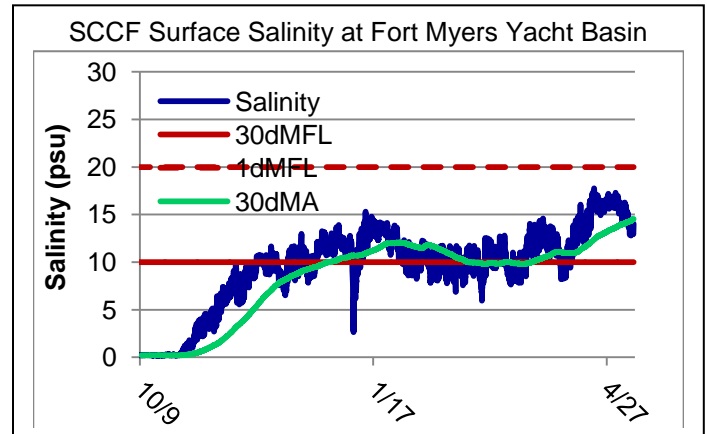
**Salinity Shell Point:** 28 – 36 psu (SCCF RECON) **Previous wk** 27 – 35 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	6.9 - 11	< 5 psu	High
Fort Myers	13 - 17	<10 psu	MFL Exceed
Shell Point	28 - 36	25 - 32 psu	High
Light (25% Iz depth meters)			
Beautiful Is.	0.98	1 meter	Low
Fort Myers	1.20	1 meter	In Range
E Sanibel	1.97	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **477 cfs**. Over the past 14 days **36%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **11%** was delivered to the St Lucie at S-308, **53%** was delivered south to the EAA, the L8 and S310 both **back flowed into the Lake**.

ACOE May 2 Releases at S79				
Date	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/2/2017	200	203	171	528
5/3/2017	0	1354	174	136
5/4/2017	0	280	176	322
5/5/2017	200	0	176	217
5/6/2017	900	689	631	264
5/7/2017	500	548	255	572
5/8/17	300	268	103	376
7 day Avg	300	477	241	345



**Upstream of S-79/Franklin Conditions:** On 5/9/17 the Olga Water Treatment plant chlorides measured **120 mg/L**, apparent color was **90 CU** and turbidity measured **2.31 NTU**. **Slight traces of algae** were noted at the plant intake the past week. The plant is online at 2000 GPM.

**On 5/4/17 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.**

**Upper Estuary Conditions:** The average salinity at Fort Myers, **14 psu**, is in the harmful range for tape grass. **Tape grass transplants near Lochmoor Estates, North Fort Myers, were losing their roots on 5/4/17.**

On 5/4/17, the Lee County Dept of Health **closed North Shore Park beach on the Caloosahatchee due to high levels Enterococcus (fecal) bacteria** identified in routine testing.

**Lower Estuary Condition:** The average 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 <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	34.1 – 36.4	2.7 - 10.1	0.9 - 1.8	3.7 - 9.7
Tarpon Bay	33.8 – 35.6	3.8 – 6.2	6.8– 11.8	3.3 – 6.0

**Beach Conditions:** Water clarity along Sanibel and Fort Myers beaches the past week was good, see aerial photos.

**Red Tide:** On 5/5/17, FWC reported *Karenia brevis*, the Florida red tide organism, persists at background to very low concentrations in Southwest Florida and was not found in samples collected from Lee County.

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% I <sub>0</sub> depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Beautiful Is.	11	132	3.7	0.98
Fort Myers	3.0	107	2.7	1.20
E Sanibel	4.3	7.9	7.1	1.97

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



**Clear water surrounding Sanibel Island May 3, 2017. Photos City of Sanibel**

