

**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 16 - 22, 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 **311 cfs**. **Inadequate freshwater is causing salinity to rise and continuing the Minimum Flow & Level (MFL) exceedance for the past 57 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.**

**USACE Action:** On May 19, 2017 the USACE increased flows slightly to the Caloosahatchee with a 7-day average target of **375 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 further harm to the estuary. 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: **11.12 ft. (Beneficial Use Sub-Band)** Last week: **11.39 ft**

Lake Okeechobee Inflow: **202 cfs** Lake Okeechobee Outflow: **2949 cfs**

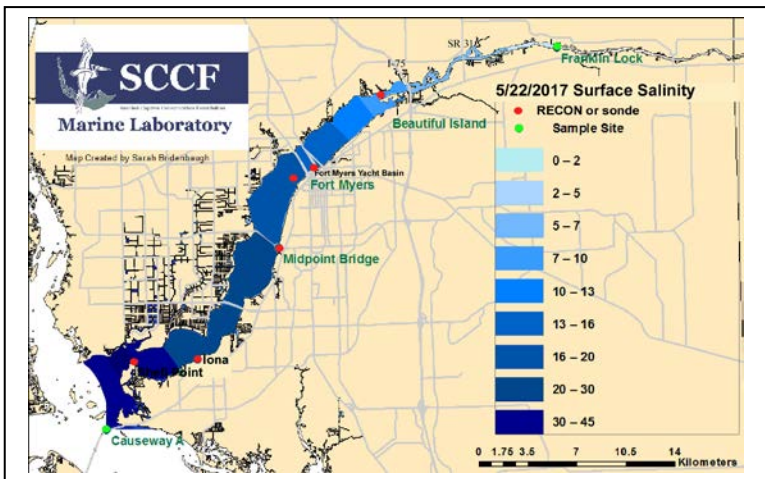
Weekly Rainfall: WP Franklin **0.54"** Ortona **0.16"** Moore Haven **0.50"**

Salinity Beautiful Island: **4.9 -9.3 psu** (SCCF RECON Marker 18) Previous wk **6.9 -11 psu**

Salinity Fort Myers: **12 – 17 psu** (SCCF Yacht Basin) Previous wk **13 – 17 psu**

MFL Status: **MFL Exceedance; 30-day moving average  $\geq 10$  psu: 57 days since 3/28/17**

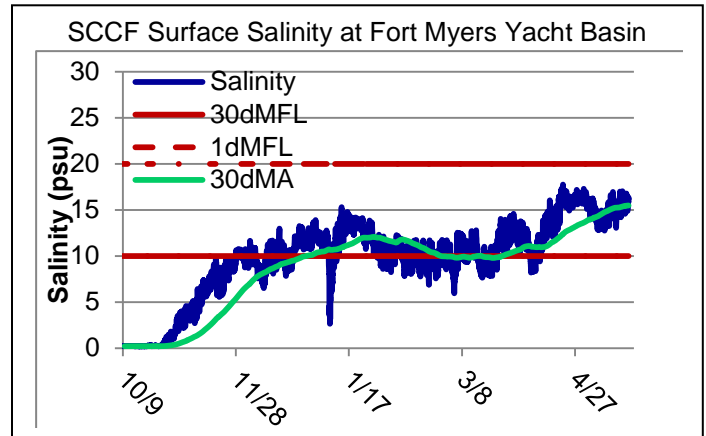
Salinity Shell Point: **29 – 36** (SCCF RECON) Previous wk **28 – 36 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	4.9 -9.3	< 5 psu	High
Fort Myers	12 – 17	<10 psu	MFL Exceed
Shell Point	29 – 36	25 - 32 psu	-
Light (25% I <sub>z</sub> depth meters)			
Beautiful Is	0.90	1 meter	Low
Fort Myers	1.34	1 meter	In Range
E Sanibel	2.30	2.2 meters	In Range

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **361 cfs**. Over the past 14 days **33%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **64%** was delivered south to the EAA, the L8 and S-308 **back flowed into the Lake**.

ACOE May 9 Releases at S79				
Date	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/16/2017	200	227	154	914
5/17/2017	0	64	0	660
5/18/2017	0	0	115	696
5/19/2017	450	293	248	606
5/20/2017	975	608	588	969
5/21/2017	600	600	527	708
5/22/2017	300	385	450	784
7 day Avg	361	311	297	762



**Upstream of S-79/Franklin Conditions:** On 5/23/17 the Olga Water Treatment plant chlorides measured **94 mg/L**, apparent color was **115 CU** and turbidity measured **3.25 NTU**. **Significant algae** were noted at the plant intake the past 3 days. The plant is online at 2000 GPM.

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

**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	35.2 – 36.7	3.0- 9.4	4.6 – 14.8	1.9 – 4.2
Tarpon Bay	35.4 – 36.2	3.8 – 7.3	5.3– 10.9	2.8 – 6.2

**Red Tide:** Recent samples collected alongshore southwest Florida from Pinellas to Collier counties indicate *Karenia brevis* is still present in up to 'background' concentrations (FWRI, SCHD, MML, CCPCD; 5/12-5/19). Samples collected in Charlotte Harbor and coastal Lee County indicates background to Very Low concentrations. Detailed sample information and a summary of impacts can be obtained through FWC Fish and Wildlife Research Institute at:

<http://myfwc.com/redtidestatus>.

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	10.5	155	3.5	0.90
Fort Myers	5.2	81	3.4	1.34
E Sanibel	3.7	8.1	3.8	2.30

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