

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 18 - 24, 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 **325 cfs**. **Inadequate freshwater is raising salinity, continuing the Minimum Flow & Level (MFL) exceedance for 29 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. Cyanobacteria coverage increased upstream of S79 and 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 freshwater pulse flows to provide adequate flows to prevent estuary harm. **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 to provide input on current conditions.**

Lake Okeechobee Level: **11.81 ft. (Beneficial Use Sub-Band)** Last week: **11.93 ft**

Lake Okeechobee Inflow: **271cfs** Lake Okeechobee Outflow: **1,485 cfs**

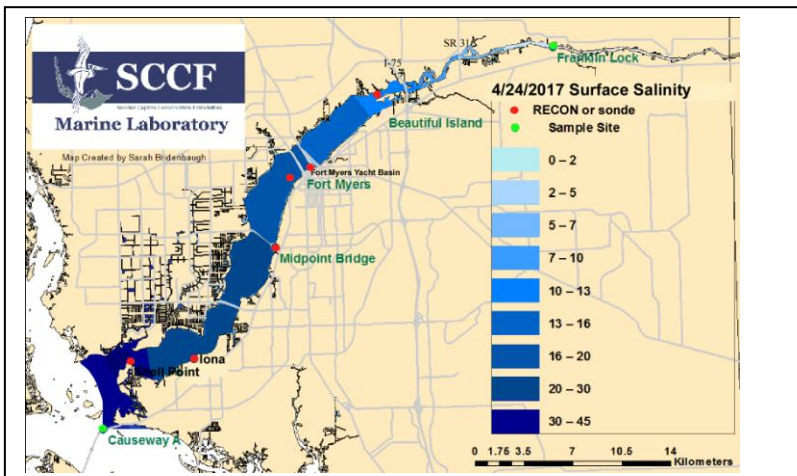
Weekly Rainfall: WP Franklin **0.61"** Ortona **0.71"** Moore Haven **0.52"**

Salinity Beautiful Island: **5.6 - 13 psu** (SCCF RECON Marker 18) Previous wk **2.8 - 7.0 psu**

Salinity Fort Myers: **12 - 18 psu** (SCCF Yacht Basin) Previous wk **9.4 - 16 psu**

MFL Status: **MFL Exceedance; 30-day moving average \geq 10 psu: 29 days since 3/28/17**

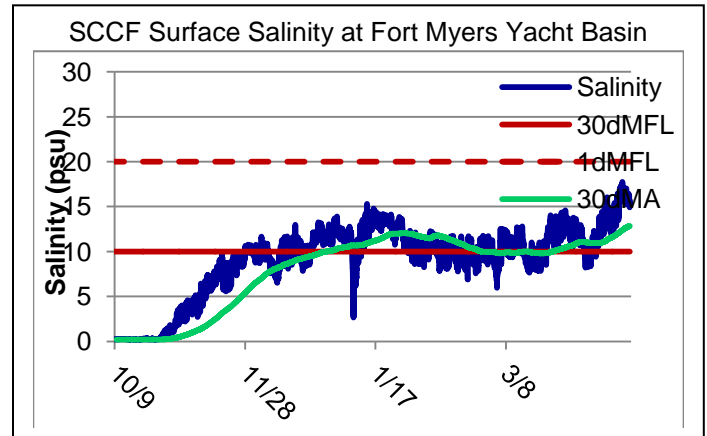
Salinity Shell Point: **26 - 36 psu** (SCCF RECON) Previous wk **27 - 35 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	5.6 - 13	< 5 psu	High
Fort Myers	12 - 18	<10 psu	MFL Exceed
Shell Point	26 - 36	25 - 32 psu	High
Light (25% I _z depth meters)			
Causeway	2.37	2.2 meters	In Range
E Sanibel	2.36	2.2 meters	In Range
Tarpon Bay	1.83	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **325 cfs**. Over the past 14 days **21%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **5%** was delivered to the St Lucie at S-308, **73%** was delivered south to the EAA, the L8 **back flowed** and **2%** to S310.

ACOE April 14 Releases at S79				
Date	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/18/2017	200	262	222	924
4/19/2017	0	62	51	593
4/20/2017	0	0	0	475
4/21/2017	200	115	0	513
4/22/2017	900	114	481	943
4/23/2017	500	793	686	964
4/24/17	300	922	324	322
7 day Avg	300	324	252	676



Upstream of S-79/Franklin Conditions: On 4/25/17 the Olga Water Treatment plant chlorides measured **100 mg/L**, apparent color was **64 CU** and turbidity measured **1.28 NTU**. No visible algae was noted at the plant intake the past week. The plant is off line for repairs.

On 4/20/17 Lee County Environmental Lab found abundant cyanobacteria in the Caloosahatchee at the Alva Boat Ramp consisting of three species; Dolichospermum, Microcystis and Aphanizomenon and the same 3 species present upstream of the WP Franklin Lock.

Upper Estuary Conditions: The average salinity at Fort Myers, **16 psu is in the lethal 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	34.0 – 35.9	3.3 -10.7	9.4 - 16.7	2.4 - 13.6
Tarpon Bay	34.1– 35.9	3.7– 5.5	7.3 – 13.6	2.3 – 7.2

Red Tide: On 4/13/17, FWC reported *Karenia brevis*, the Florida red tide organism, **persists in Southwest Florida from Pinellas to Lee Counties with background to very low concentrations in samples collected from Lee County.**

Shellfish Advisory: **Public shellfish harvesting areas remain closed in Pine Island Sound** for the harvest of oysters, clams, and mussels. In this context shellfish does not include scallops, shrimp, or crabs.

Wildlife Impacts: SCCF reports 1 loggerhead sea turtle stranding on Sanibel with no apparent cause of death

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	1.6	12.7	3.1	2.37
E Sanibel	3.0	12.2	2.8	2.36
Tarpon Bay	5.2	38.6	2.5	1.83

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