

**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 Jon Steverson

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: **January 24 - 30, 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:** Discharges into the estuary at S-79 during the past week averaged **749 cfs**. **The MFL has been exceeded at Fort Myers for 30 days. Salinities are in the harmful range for tape grass at Fort Myers.** Lake Okeechobee discharges to the river, measured at S-77 averaged **831 cfs**.

**USACE Action:** The USACE continued flows to the Caloosahatchee with a 7-day average target of **650 cfs** measured at S-79 with no discharge from Lake Okeechobee to the St Lucie estuary at S-80.

**Recommendation:** **Insufficient freshwater flows to the Caloosahatchee estuary through S-79 has caused high salinities in the mid to upper estuary resulting in an MFL exceedance for the past month. We request increasing freshwater pulses to provide adequate flows to prevent estuary harm. We request a Periodic Scientist call at least every two weeks while we are exceeding the MFL.**

Lake Okeechobee Level: **13.87 ft. (Low Sub-Band)** Last week: **13.99 ft**

Lake Okeechobee Inflow: **314 cfs** Lake Okeechobee Outflow: **683 cfs**

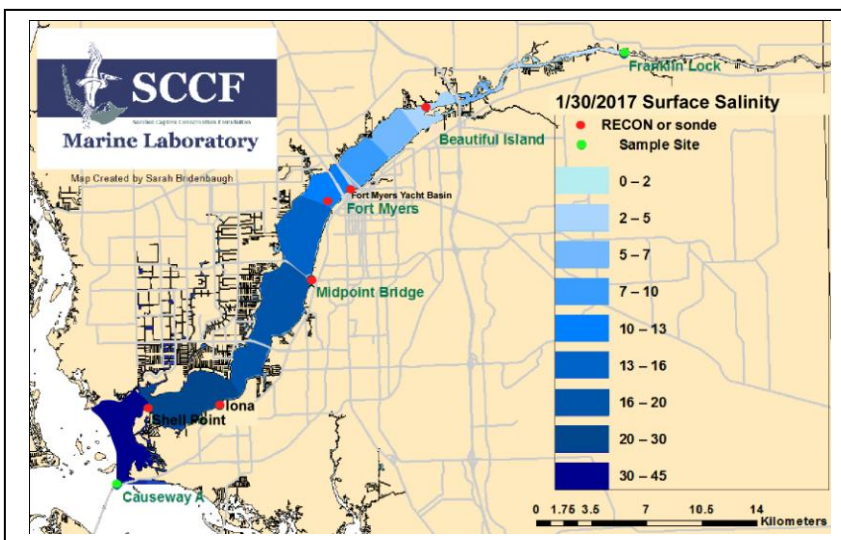
Weekly Rainfall: WP Franklin **0.27"** Ortona **0.72"** Moore Haven **0.70"**

Salinity Beautiful Island: **3.5 – 12 psu** (SCCF RECON Marker 18) Previous wk **6.5 – 12 psu**

Salinity Fort Myers: **9.8 – 14 psu** (SCCF Yacht Basin) Previous wk **12 – 15 psu**

MFL Status: **MFL Exceedance 30-day moving average >10 psu at surface for 30 days**

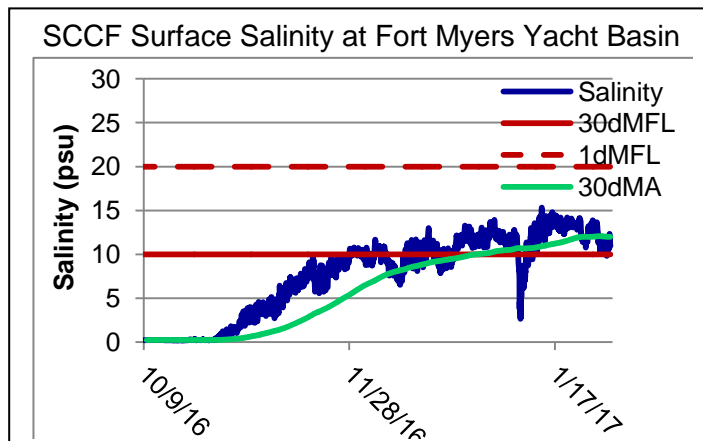
Salinity Shell Point: **24 – 34 psu** (SCCF RECON) Previous wk **24 - 34 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	<b>3.5 – 12</b>	< 5 psu	<b>High</b>
Fort Myers	<b>9.8 – 14</b>	<10 psu	<b>MFL Ex</b>
Shell Point	<b>24 - 34</b>	25 - 32 psu	<b>In Range</b>
Light (25% I <sub>z</sub> depth meters)			
Tarpon Bay	<b>1.81</b>	2.2 meters	<b>Low</b>
Causeway	<b>1.87</b>	2.2 meters	<b>Low</b>
Sanibel E	<b>1.98</b>	2.2 meters	<b>Low</b>

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **749 cfs**. Over the past 14 days **49%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **0%** was delivered to the St Lucie at S-308, **42%** was delivered south to the EAA, **9%** was directed to the L8 and **<1%** was delivered at S310.

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/24/2017	Tues	313	118	166
1/25/2017	Wed	116	174	337
1/26/2017	Thur	362	351	420
1/27/2017	Fri	1038	875	1849
1/28/2017	Sat	1317	1119	1687
1/29/2017	Sun	1289	673	853
1/30/2017	Mon	809	522	504
7 day Avg		749	547	831



**Upstream of S-79/Franklin Conditions:** On 1/31/17 the Olga Water Treatment plant chlorides measured **58 mg/L**, apparent color was **89 CU** and turbidity measured **3.09 NTU**. No visible algae was noted at the plant intake the past week. The plant is online at 2,000 GPM.

**Upper Estuary Conditions:** **MFL exceeded at Fort Myers for 30 days. Salinities are in the harmful range for tape grass around the Caloosahatchee Bridge in Fort Myers.**

**Lower Estuary Condition:** **The average salinity at Shell Point (30 psu) was above the optimal range for oysters.** Red, green and brown branching drift algae is accumulating along the shoreline in San Carlos Bay.

**J.N. "Ding" Darling NWR:**

Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	32 - 33	4 - 9	11 - 21	2.1 - 8.7
Tarpon Bay	32 - 34	5.5 - 7	8 - 18.7	2.5 - 49.6

**Beach Conditions:** Drift algae was observed accumulating at mid-island on Fort Myers Beach.

**Red Tide:** On 1/27/16, FWC reported *Karenia brevis*, the Florida red tide organism, persists in patches from **Pinellas to Lee County with background to low concentrations in five samples collected from Lee County.**

**Manatees:** Lee county park staff reported up to 50 manatees gathering in the warm water refuge of the Orange River and FPL discharge canal the past week. River temperatures were 72 - 87° F.



**Drift macroalgae washing up on Fort Myers Beach 1/31/17. Photo Town of Fort Myers Beach**

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
Tarpon Bay	4.7	18.2	7.0	1.81
Causeway	2.4	25.4	5.5	1.87
Sanibel E	2.7	16.9	5.7	1.98

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