

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 Stevenson

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 3 - 9, 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 **623 cfs**. **The MFL has been exceeded with salinity exceeding the 30 day moving average of 10 psu at Fort Myers for 10 days**. Lake Okeechobee discharges to the river, measured at S-77 averaged **622 cfs**. **One day of rainfall dropped salinities temporarily.**

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: Rapidly rising salinities in the Caloosahatchee estuary have triggered an MFL exceedance. We recommend increasing pulse releases to provide adequate freshwater flows to prevent future MFL exceedances at Fort Myers. **We request a Periodic Scientist call next week to discuss the insufficient flow to the Caloosahatchee through S-79 causing salinities to exceed the MFL.**

Lake Okeechobee Level: **14.10 ft. (Low Sub-Band)** Last week: **14.25 ft**

Lake Okeechobee Inflow: **260 cfs** Lake Okeechobee Outflow: **1,912 cfs**

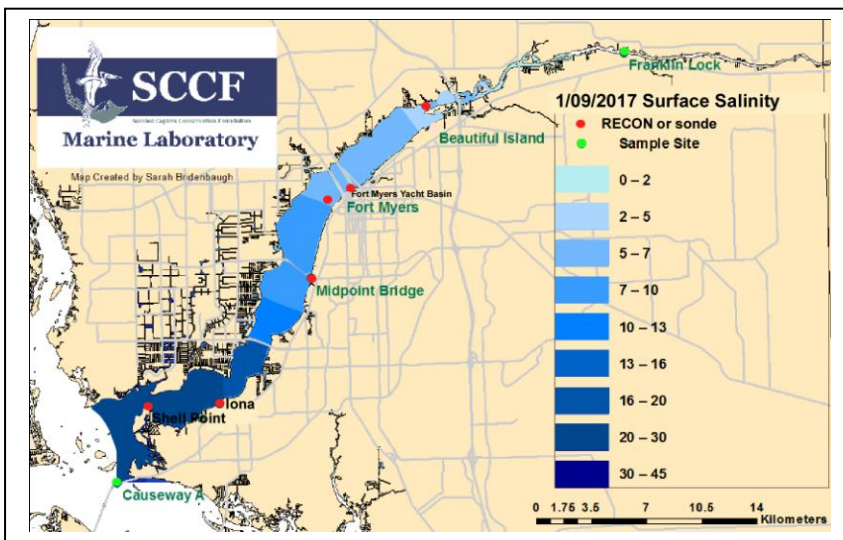
Weekly Rainfall: WP Franklin **0.49"** Ortona **0.28 "** Moore Haven **0.30"**

Salinity Beautiful Island: **3.8 - 6.5 psu** (SCCF RECON Marker 18) Previous wk **5.2 - 8.3 psu**

Salinity Fort Myers: **2.7 - 14 psu** (SCCF Yacht Basin) Previous wk **11 - 14 psu**

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

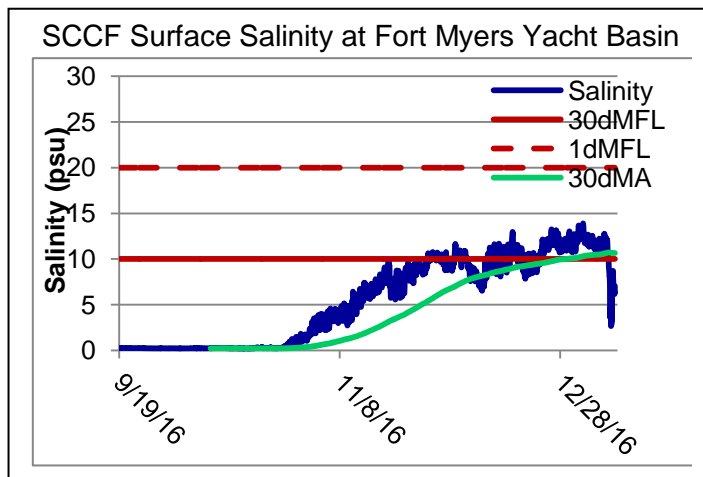
Salinity Shell Point: **19-33 psu** (SCCF RECON) Previous wk **22 - 33 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	3.8 - 6.5	< 5 psu	In Range
Fort Myers	2.7 - 14.0	<10 psu	MFL Ex
Shell Point	19 - 33	25 - 32 psu	In Range
Light (25% I _z depth meters)			
Tarpon Bay	1.07	2.2 meters	Low
Causeway	1.15	2.2 meters	Low
Sanibel E	1.34	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **623 cfs**. Over the past 14 days **36%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **0.8%** was delivered to the St Lucie at S-308, **50%** was delivered south to the EAA, **12%** was directed to the L8 and **1.2%** was delivered thru S-310.

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/3/2017	Tues	488	632	904
1/4/2017	Wed	618	NR	676
1/5/2017	Thur	326	NR	538
1/6/2017	Fri	736	444	554
1/7/2017	Sat	1016	567	551
1/8/2017	Sun	621	580	562
1/9/2017	Mon	556	570	567
7 day Avg		623	-	622



Upstream of S-79/Franklin Conditions: On 1/10/17 the Olga Water Treatment plant chlorides measured **51 mg/L**, apparent color was **71 CU** and turbidity measured **1.63 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 exceedance 30 dma over 10 psu for ten days.** Salinities are in the suitable range for tape grass downriver to Fort Myers.

Lower Estuary Condition: The average salinity at Shell Point (**25 psu**) was in the optimal range for oysters. **Red, green and brown branching drift algae is accumulating in San Carlos Bay with accumulations four feet deep observed near Fisherman's Key.** SCCFs Marine Lab is working on a methodology to report biomass.

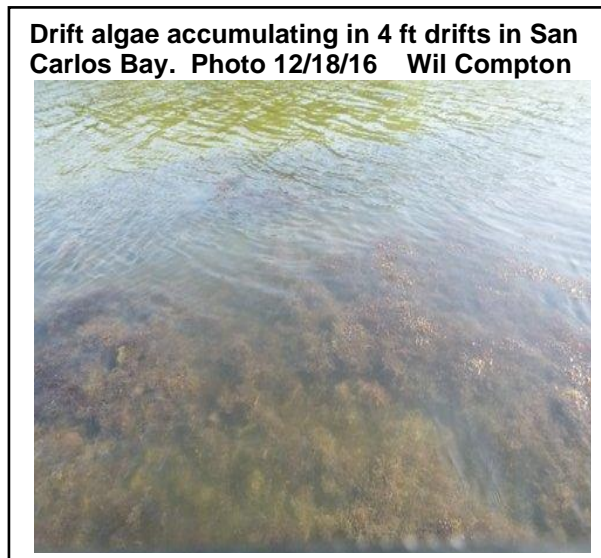
J.N. "Ding" Darling NWR:

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	30.5 – 32.2	3.6 – 11.5	12.5 – 29.3	1.6 – 5.5
Tarpon Bay	28.7 – 33.7	5.7 – 8.5	7.5 – 25.4	2.0 – 7.5

Beach Conditions: Fort Myers Beach experienced a two day event with 600 - 700 dead mullet washing up along the beach the past Thursday and Friday.

Red Tide: On 1/6/16, FWC reported *Karenia brevis*, the Florida red tide organism, persists in patches along Southwest Florida from **southern Pinellas to Lee County**.

Wildlife status: The past week, CROW, the wildlife rehabilitation clinic on Sanibel received **10 animals suffering from red tide poisoning; 8 Double Crested Cormorants (3 deceased), 1 Laughing Gull and 1 Ring Billed Gull.**



Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% I ₀ depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Tarpon Bay	5.0	48.3	9.2	1.07
Causeway	3.6	62.5	6.5	1.15
Sanibel E	5.1	28.5	6.9	1.34

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