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: **February 7 - 13, 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 **705 cfs. An MFL exceedance continues for 44 days. Salinities are in the harmful range for tape grass at Fort Myers. An algae bloom was detected by RECON at Beautiful Island upstream and red tide persists downstream.**

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 flow to the Caloosahatchee estuary through S-79 has caused high salinities in the estuary resulting in an MFL exceedance for the past six weeks. 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: **13.66 ft**. (**Low Sub-Band**) **Last week**: **13.78 ft**

Lake Okeechobee Inflow: **129 cfs** **Lake Okeechobee Outflow:** **2,935 cfs**

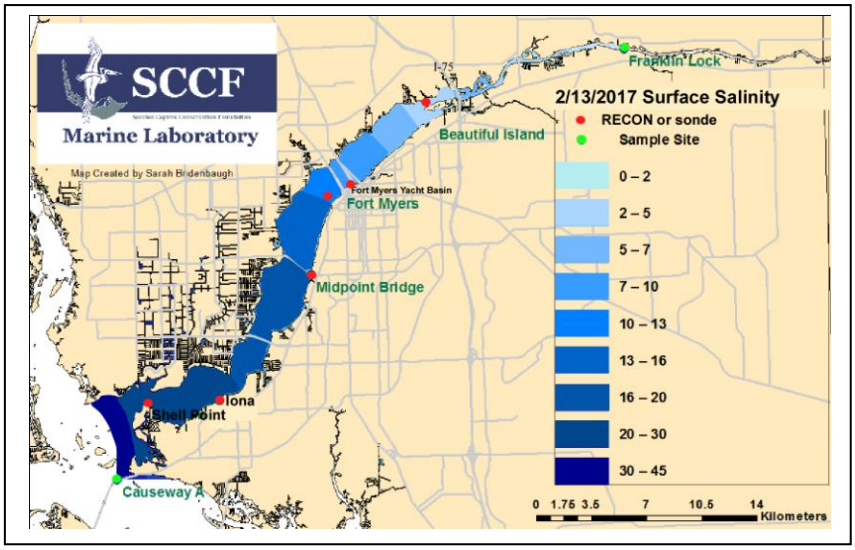
Weekly Rainfall: WP Franklin **0"** Ortona **0"** Moore Haven **0.05"**

Salinity Beautiful Island: **3.1 – 5.6 psu** (SCCF RECON Marker 18) Previous wk **3.1 – 4.7 psu**

Salinity Fort Myers: **8.2 – 12 psu** (SCCF Yacht Basin) Previous wk **8.6 – 12 psu**

MFL Status: **MFL Exceeded 30-day moving average >10 psu at surface for 44 days**

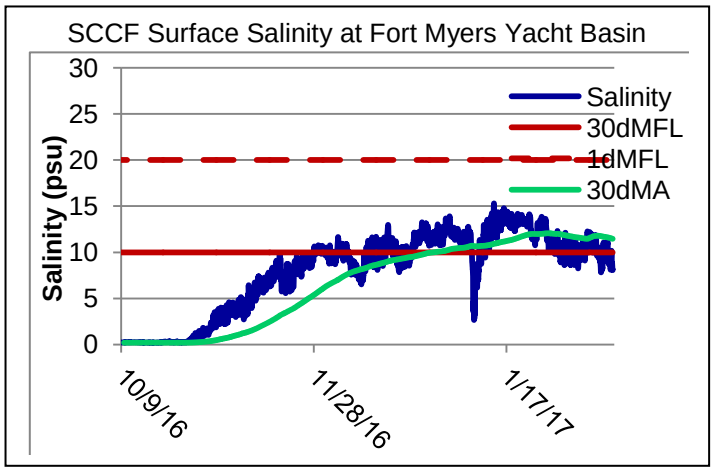
Salinity Shell Point: **22 – 33 psu (**SCCF RECON) Previous wk **22 – 32 psu**



Salinity (psu)			
	Current Value	**Sustainable Range**	**High/ Low**
Beautiful Is	**3.1 - 5.6**	**< 5 psu**	**High**
Fort Myers	**8.2 - 12**	**<10 psu**	**MFL Ex**
Shell Point	**22 - 33**	**25 - 32 psu**	**In Range**
Light (25% Iz depth meters)			
Tarpon Bay	**1.69**	**2.2 meter**	**Low**
Causeway	**2.11**	**2.2 meter**	**Low**
E Sanibel	**1.48**	**2.2 meters**	**Low**

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **705 cfs.** Over the past 14 days **46%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **0%** was delivered to the St Lucie at S-308, **44%** was delivered south to the EAA, **9%** was directed to the L8 and **<1%** through S310.

ACOE Daily Reports				
Date	**Day**	**S79 Flow (cfs)**	**S78 Flow (cfs)**	**S77 Flow (cfs)**
2/7/2017	Tues	467	522	725
2/8/2017	Wed	380	510	725
2/9/2017	Thur	419	499	735
2/10/2017	Fri	899	406	882
2/11/2017	Sat	944	704	1280
2/12/2017	Sun	1005	861	1443
2/13/2017	Mon	822	498	814
7 day Avg		705	571	943



Upstream of S-79/Franklin Conditions: On 2/7/17 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 exceeded at Fort Myers for 44 days. Salinities are in the harmful range for tape grass around the Caloosahatchee Bridge in Fort Myers. A bloom of phytoplankton was detected at Beautiful Island on 2/12/17.

Lower Estuary Condition: The average salinity at Shell Point (29 psu) was in above the optimal range for oysters.

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

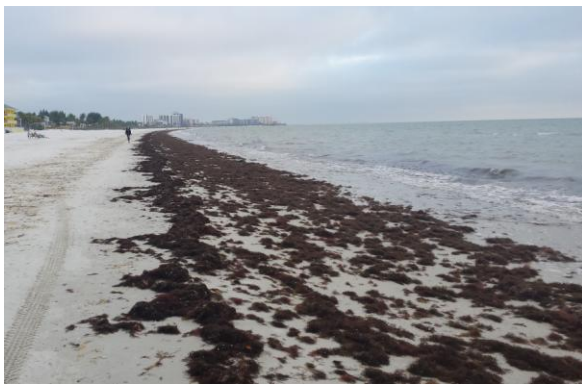
Monitor Site	**Salinity (psu)**	**Diss O_2 (mg/L)**	**FDOM (qsde)**	**Chlorophyll (µg/L)**
McIntyre Creek	**31.5 - 33.2**	**3.5 – 9.1**	**10.6 – 20.5**	**1.8 - 6.3**
Tarpon Bay	**32.2 - 34.1**	**5.4 – 8.1**	**7.0 – 15.6**	**2.0 – 6.6**

Beach Conditions: Drift algae continues accumulating near mid-island on Fort Myers Beach.

Red Tide: On 2/10/17, FWC reported *Karenia brevis*, the Florida red tide organism, persists **in Southwest Florida from southern Pinellas to Lee Counties with background to high concentrations in Lee County.**

Shellfish Harvesting Closure: On 2/10/17 the Florida Department of Agriculture and Consumer Services **closed #6212 Pine Island Sound West Aquaculture Use Zones for the harvest of oysters, clams, and mussels due to the presence of *Karenia brevis*. In this context, shellfish does not include scallops, shrimp, or crabs.**

Wildlife Impacts: The past week, CROW, the wildlife rehabilitation clinic on Sanibel received **5 new cases of wildlife suffering from red tide poisoning: 3Double-Crested Cormorants, 1 White pelican and 1Brown Pelican**.



Drift macroalgae along Fort Myers Beach 2/14/17. Photo Town of Fort Myers Beach

Manatees: Lee county park staff reported manatees with nursing calves gathering in the warm water refuge of the Orange River and FPL discharge canal the past week. River temperatures were 72 - 84° F.

Caloosahatchee Stations	**Chlorophyll (µg/L)**	**fDOM (qse)**	**Turbidity (NTU)**	**25% Io depth (meters)**
Target Values	**< 11**	**CE <70 SCB <11**	**CE < 18 SCB < 5**	**CE = 1 m SCB = 2.2m**
Tarpon Bay	**10.1**	**23.8**	**5.9**	**1.69**
Causeway	**2.4**	**26.1**	**2.5**	**2.11**
E Sanibel	**2.7**	**54.4**	**6.2**	**1.48**

Target light penetration: ***CE****- Caloosahatchee Estuary =1 m*

SCB*-San Carlos Bay = 2.2 meters*

Definition of 25% Iz: ***z where I is 25% of surface I.***
I *= irradiance,* ***z****= depth*