MEMORANDUM

To: USACE Colonel Jason A. Kirk, LTC Jennifer A. Reynolds, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Ernie Marks, Terrie Bates, Susan Gray, DEP Secretary Noah Valenstein

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 Burns – Town of Fort Myers Beach
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 13 - 19, 2018**

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: The past week freshwater flows from Lake Okeechobee and the watershed averaged **622 cfs** at S-79. Salinities in the estuary at Fort Myers are rising. Red tide was detected in background to low levels along coastal beaches.

USACE Action: Since 1/12/18 the Army Corps has continued flows from Lake Okeechobee through pulse releases with an average target flow for the Caloosahatchee Estuary of **650 cfs** at S-79 and no releases to the St Lucie at S-80.

Recommendation: To offset rising salinities in the Caloosahatchee we request the Corps provide pulse releases to the Caloosahatchee to maintain salinities below the ecological harm threshold of 10 psu. Past operations have shown that flows of **800 - 1,000 cfs measured at S-79** are needed to achieve this.

Lake Okeechobee Level: **15.04 ft. (Low Sub-Band)** **Last week**: **15.18 ft**

Lake Okeechobee Inflow: **1,198 cfs** **Lake Okeechobee Outflow: 3,074 cfs**

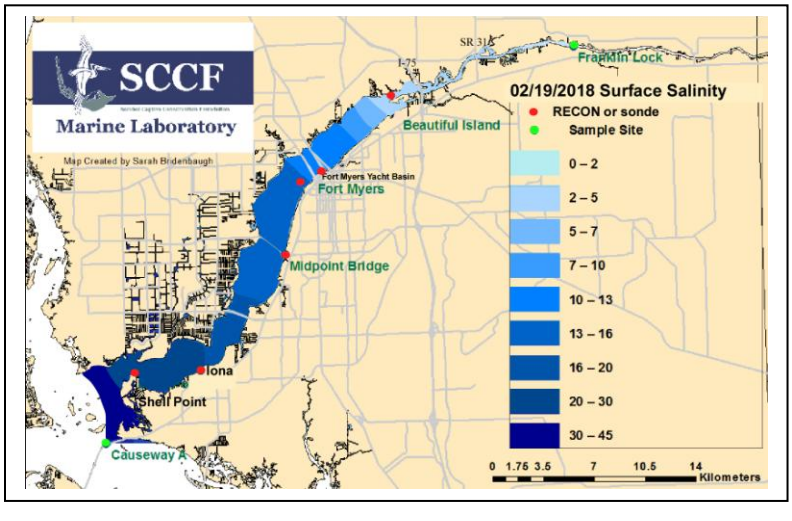
Weekly Rainfall: WP Franklin **0.0"** Ortona **0"** Moore Haven **0"**

Salinity Beautiful Island: **ND** (SCCF RECON Marker 18) **Previous week ND**

Salinity Fort Myers: **11 – 16 psu** (SCCF RECON) **Previous week 12 – 18 psu**

Yacht Basin 30 day moving average: **8.9 psu** **Previous week: 7.4 psu**

Salinity Shell Point: **ND** (SCCF RECON) **Previous week ND psu**

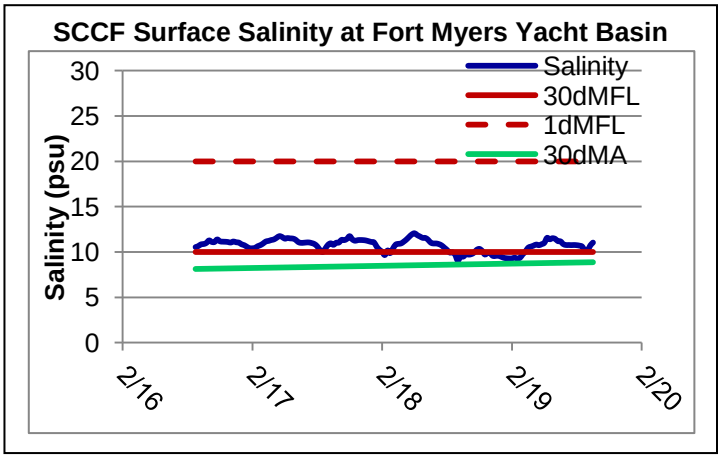


Salinity (psu)			
	Current Value	Sustainable Range	High/ Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	11 – 16	<10 psu	In Range
Shell Point	ND	25 - 32 psu	-

Light (25% Iz depth meters)			
Fort Myers	0.86	1 meter	Low
Shell Point	1.70	2.2 meters	Low
Causeway	2.15	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **622 psu.** Over the past 14 days **76,422 AF** of water was discharged from Lake O, **29% to S-77. Over 63% of water from Lake O was discharged south to the EAA. Approximately 8%* was discharged to the L8 and a net flow of <1%** was discharged through S-310. **(* data missing)**

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
2/13/2018	193	244	563
2/14/2018	152	654	627
2/15/2018	71	187	352
2/16/2018	820	470	690
2/17/2018	1384	1108	1533
2/18/2018	1050	692	1244
2/19/2018	686	526	847
7 day Avg	622	554	837



Upstream of S-79/Franklin Conditions: On 2/19/18 Lee County Environmental Lab detected cyanobacteria including *Microcystis, Aphanizomenon* and *Dolichospermum*. On 2/20/18 the Olga Water Treatment plant reported chlorides of **58 mg/l**, apparent color **118 CU** and turbidity **3.32 NTU**. No visible algae was reported at the plant intake the past week. The plant is online running at 1800 GPM.

Upper Estuary Conditions: The weekly average salinity at the Fort Myers Yacht Basin was **9.8 psu,** in the suitable range for tape grass, which is growing between the Caloosahatchee Bridge and Beautiful Island. ***Skeletonema*** **and dinoflagellates contributed to elevated water column chlorophyll readings.**

Lower Estuary Conditions: The average salinity at Shell Point, **29 psu**, was **above the optimal range for oysters since 2/17/18.**

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

Monitor Site	Salinity (psu)	Diss O_2 (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	----------	1.5 – 5.6	9.0 – 16.0	2.1 – 8.6

Red Tide: On 2/16/18 the Florida Fish and Wildlife Conservation Commission reports the Florida red tide organism, ***Karenia brevis***, **was observed in Pinellas, Lee, Collier and Monroe Counties with background to low concentrations in and offshore Lee County.**

Wildlife Impacts: The past week, CROW the wildlife hospital on Sanibel treated **8 new patients with red tide symptoms, all Double Crested Cormorants.**

Manatees: Lee County park staff reported only **one manatee** in the warm water discharge of the Orange River and FPL canal the past week when water temperatures ranged from **78 - 88.5° 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
Fort Myers	12	161	4.0	0.86
Shell Point	4.8	48.0	2.6	1.70
Causeway	1.5	24.4	2.8	2.15

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*