

**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: **May 8 - 14, 2018**

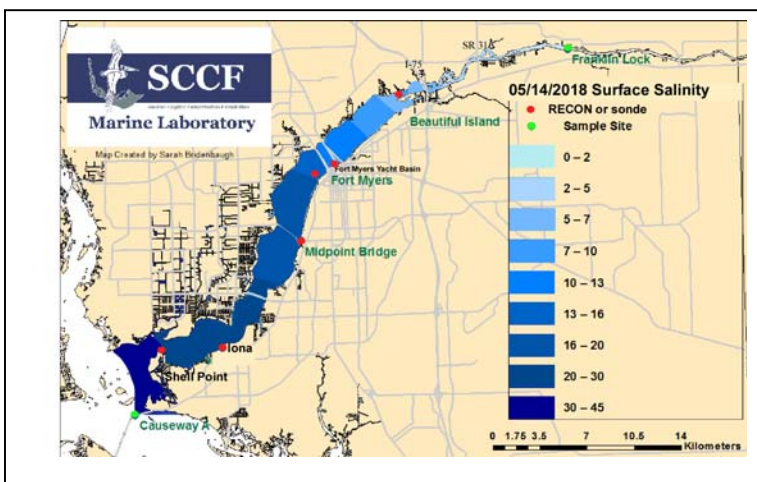
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

**Caloosahatchee Condition Summary:** Average flows of 948 cfs the past week reduced salinity at Fort Myers demonstrating the level of freshwater flow needed to manage salinities below the harm threshold of 10 psu. Dry conditions and lack of rainfall makes the Caloosahatchee estuary **dependent on freshwater flows from Lake Okeechobee. The past 76 consecutive days the 30 day moving average salinity has exceeded the MFL resulting in harmful high salinities for oysters in the lower estuary and tape grass in the upper estuary.** Red tide continues to impact birds, sea turtles and cause fish kills and respiratory irritation 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:** Continue to provide adequate water discharges from the Lake to benefit recovery of both the Lake Okeechobee marsh and assist habitat recovery and reduce harmful salinities throughout the Caloosahatchee estuary. There is sufficient water in the lake to achieve this and meet consumptive uses.

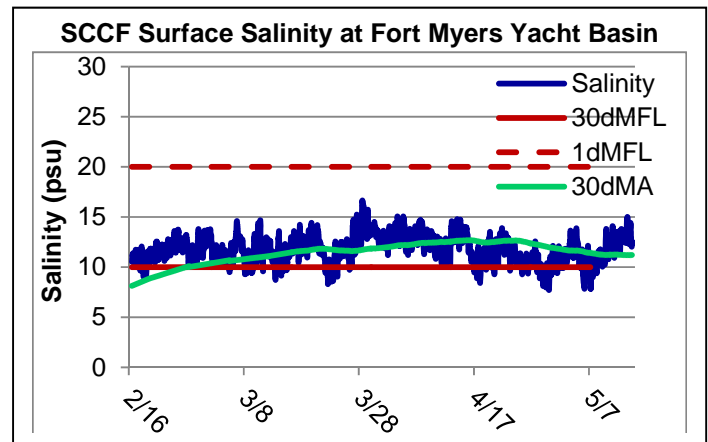
<b>Lake Okeechobee Level:</b>	<b>13.04 ft. (Base Flow Sub-Band)</b>	<b>Last week:</b>	<b>12.96 ft.</b>
<b>Lake Okeechobee Inflow:</b>	<b>2,377 cfs</b>	<b>Lake Okeechobee Outflow:</b>	<b>138 cfs</b>
<b>Weekly Rainfall:</b>	WP Franklin <b>1.53"</b> Ortona <b>2.70"</b>	Moore Haven	<b>1.80"</b>
<b>Salinity Beautiful Island:</b>	<b>3.0-6.9 psu (SCCF RECON Marker 18)</b>	<b>Previous week</b>	<b>2.2 - 4.2 psu</b>
<b>Salinity Fort Myers:</b>	<b>13-18 psu (SCCF RECON)</b>	<b>Previous week</b>	<b>11 - 19 psu</b>
<b>MFL Status: Exceedance =</b>	<b>76 days 30 day moving average:</b>	<b>11.2 psu</b>	<b>Previous week: 11.3 psu</b>
<b>Salinity Shell Point:</b>	<b>23-35 psu (SCCF RECON)</b>	<b>Previous week</b>	<b>23 - 35 psu</b>



<b>Salinity (psu)</b>			
	<b>Current Value</b>	<b>Sustainable Range</b>	<b>High/Low</b>
<b>Beautiful Is</b>	<b>3.0-6.9</b>	<b>&lt; 5 psu</b>	<b>In Range</b>
<b>Fort Myers</b>	<b>13-18</b>	<b>&lt;10 psu</b>	<b>High</b>
<b>Shell Point</b>	<b>23-35</b>	<b>25 - 32 psu</b>	<b>High</b>
<b>Light (25% lz depth meters)</b>			
<b>Fort Myers</b>	<b>0.97</b>	<b>1 meter</b>	<b>Low</b>
<b>Shell Point</b>	<b>1.62</b>	<b>2.2 meters</b>	<b>Low</b>
<b>Causeway</b>	<b>2.10</b>	<b>2.2 meters</b>	<b>Low</b>

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **948 cfs**. Over the past 14 days **34,136 AF** of water was discharged from Lake O, **39% to S-77**, **7% to S-308**, **43% of water from Lake O was discharged south to the EAA**. A net outflow of **7%** was discharged to the **L8** and a net **4%** was discharged through S-310.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/8/2018	407	351	227
5/9/2018	207	352	211
5/10/2018	42	349	234
5/11/2018	1125	980	452
5/12/2018	1505	1231	554
5/13/2018	1561	919	482
5/14/2018	1792	936	387
<b>7 day Avg</b>	<b>948</b>	<b>731</b>	<b>364</b>



**Upstream of S-79/Franklin Conditions:** Sampling by Lee County Environmental Lab on 5/14/18 reported accumulation of 2 cyanobacteria species on the upstream side of S-79: *Microcystis* and *Dolichospermum*. On 5/15/18 the Olga Water Treatment plant reported chlorides of **61 mg/l**, apparent color **82 CU** and turbidity **3.78 NTU**. No visible algae reported at the plant intake the past week. The plant remains off line for maintenance.

**Upper Estuary Conditions:** The 30 day moving average salinity at the Fort Myers Yacht Basin was **11.2 psu** and the weekly average salinity was **12 psu**. These salinities are above the suitable range for tape grass, which is growing between the Caloosahatchee Bridge and Beautiful Island. Water column chlorophyll was elevated at Beautiful Island.

**Lower Estuary Conditions:** The average salinity at Shell Point, **30 psu**, was above the optimal range for oysters.

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

Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	34.0 – 36.4	5.1 – 10.9	9.6 – 16.2	1.5 – 6.8
Wulfert Flats	24.0 – 37.4	3.0 – 8.9	-----	7.2 – 46.0
Wildlife Drive	35.5 – 39.2	0.7 – 10.7	-----	0.8 – 12.0

**Beach Conditions:** The past week macroalgae was reported until 5/11/18 along beaches on Sanibel. Macroalgae strandings were reported along some Fort Myers Beach beaches.

**Red Tide:** On 5/11/18 the Florida Fish and Wildlife Conservation Commission reports that the Florida red tide organism, *Karenia brevis* persists in Charlotte, Lee and Collier Counties with background to medium concentrations in 17 samples collected from or offshore of Lee County. A water sample SCCF collected at SCCF's Gulf RECON on 5/10/18 contained medium concentrations of *Karenia*.

**Wildlife Impacts:** The past week, CROW, the wildlife hospital on Sanibel, admitted one green sea turtle over the weekend. The turtle was euthanized due to internal & external fibropaps. SCCF reported one dead Kemp's Ridley on Sanibel beach.

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
Fort Myers	7.8	139	3.8	0.97
Shell Point	3.4	60.0	2.0	1.62
Causeway	1.8	28.6	2.4	2.10

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