

**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: **January 30 - February 5, 2018**

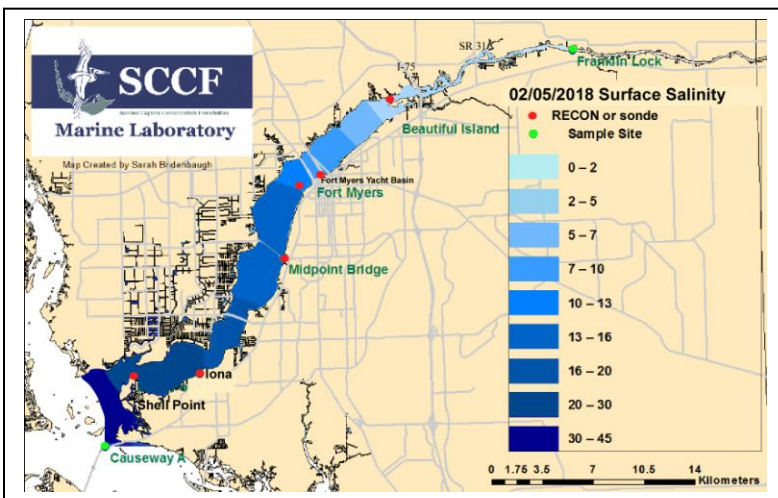
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

**Caloosahatchee Condition Summary:** The past week freshwater flows from Lake Okeechobee and the watershed averaged **705 cfs** at S-79. Salinities in the estuary are rising rapidly . **Red tide continues 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 rapidly 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.

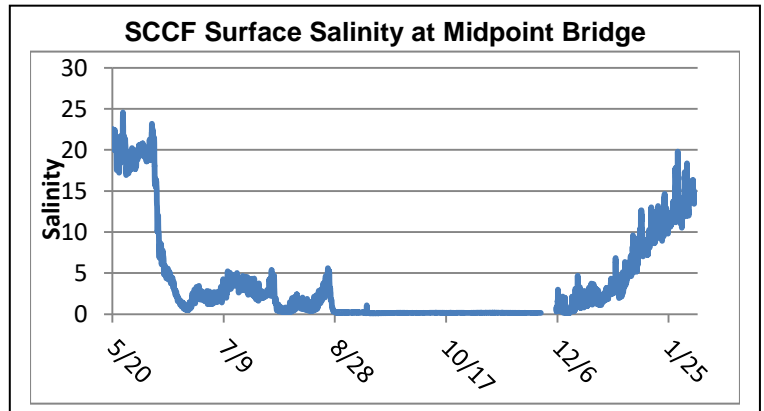
<b>Lake Okeechobee Level:</b>	<b>15.23 ft. (Low Sub-Band)</b>	<b>Last week: 15.29 ft</b>
<b>Lake Okeechobee Inflow:</b>	<b>1,438 cfs</b>	<b>Lake Okeechobee Outflow: 1,471 cfs</b>
<b>Weekly Rainfall:</b>	WP Franklin <b>1.45"</b> Ortona <b>1.0"</b>	Moore Haven <b>0.46"</b>
<b>Salinity Beautiful Island:</b>	<b>ND (SCCF RECON Marker 18)</b>	Previous wk <b>ND</b>
<b>Salinity Fort Myers:</b>	<b>7.9 – 18 (SCCF RECON)</b>	Previous wk <b>ND</b>
<b>30 day moving average:</b>	<b>5.7 psu</b>	<b>Previous week: 4.1 psu</b>
<b>Salinity Shell Point:</b>	<b>20 – 33 psu (SCCF RECON)</b>	Previous wk <b>17 – 33 psu</b>



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	7.9 – 18	<10 psu	In Range
Shell Point	20 – 33	25 - 32 psu	In Range
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	0.91	1 meter	Low
Shell Point	1.54	2.2 meters	Low
Causeway	2.05	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 **30,759\*\* AF** of water was discharged from Lake O, **50% to S-77**. **Over 34%\* of water from Lake O was discharged south to the EAA (\*no report for S-351)**. **Approximately 14%\*\* was discharged to the L8 and 2% was discharged through S-310. (\*\* data missing)**

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/30/2018	518	326	336
1/31/2018	252	230	229
2/1/2018	39	63	226
2/2/2018	1055	790	1006
2/3/2018	1548	1022	1516
2/4/2018	880	970	996
2/5/2018	644	425	219
<b>7 day Avg</b>	<b>705</b>	<b>547</b>	<b>647</b>



**Upstream of S-79/Franklin Conditions:** On 2/6/18 the Olga Water Treatment plant reported chlorides of **57 mg/l**, apparent color **136CU** and turbidity **4.98 NTU**. No visible algae was reported at the plant intake the past week. The plant is online running at 2200 GPM.

**Upper Estuary Conditions:** Salinities at the Fort Myers Yacht Basin were **8.9 psu**, weekly average, in the suitable range for tape grass.

**Lower Estuary Conditions:** The average weekly salinity was **28 psu**, within the optimal range for oysters at Shell Point.

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

Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	-----	3.9 – 8.6	12.5 – 32.0	2.7 – 6.7
Tarpon Bay	29.2 – 33.2	5.8 – 7.4	7.1 – 43.3	2.3 – 7.4

**Beach Conditions:** A green algae *Ulva* is present across local beaches of Sanibel, Fort Myers and Fort Myers Beach and colonized hard structures in the lower estuary .

**Red Tide:** On 2/2/18 the Florida Fish and Wildlife Conservation Commission reports the Florida red tide organism, *Karenia brevis*, was detected in Pinellas, Sarasota, Charlotte, Lee, and Monroe counties in Southwest Florida.. SCCF found no *Karenia* spp. in samples from around Sanibel.

**Wildlife Impacts:** The past two weeks, CROW the wildlife hospital on Sanibel treated **4 patients with red tide symptoms: 2 Brown Pelicans and 2 Double Crested Cormorants.**

**Manatees:** Lee County park staff reported over **70 manatees** in the warm water discharge of the Orange River and FPL canal the past week when water temperatures ranged from **68 - 76° F**.

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	12.1	187	4.1	0.91
Shell Point	4.1	62.4	2.5	1.54
Causeway	1.9	30.8	2.2	2.05

Target light penetration: **CE**- Caloosahatchee Estuary =1 m  
**SCB**-San Carlos Bay = 2.2 meters  
 Definition of 25% lz: **z** where **I** is 25% of surface **I**.  
**I** = irradiance, **z**= depth