

**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: **March 6 - 12, 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 decreased to an average of **661cfs** at S-79. **Salinities in the estuary at Fort Myers have exceeded the 30 day moving average of 10 psu at Fort Myers for 14 days.** Red tide caused 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:** We request the Corps provide additional water through pulse releases to reduce harmful salinities in the Caloosahatchee estuary to 10 psu to maintain salinities below the ecological harm threshold. Past operations have shown that flows of **800 - 1,000 cfs measured at S-79** are needed to achieve this.

Lake Okeechobee Level: **14.50 ft. (Low Sub-Band)** Last week: 14.66 ft

Lake Okeechobee Inflow: **455 cfs** Lake Okeechobee Outflow: 2,778 cfs

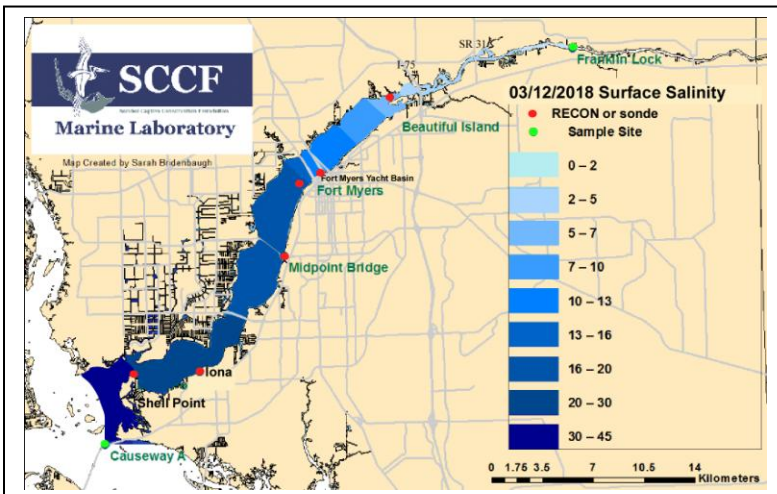
Weekly Rainfall: WP Franklin **0.27"** Ortona **0.25"** Moore Haven **0.38"**

Salinity Beautiful Island: **3.3 - 6.1 psu** (SCCF RECON Marker 18) Previous week **3.8 - 7.8 psu**

Salinity Fort Myers: **11 - 20 psu** (SCCF RECON) Previous week **11 - 18 psu**

Yacht Basin 30 day moving average: **11.1 psu** Previous week: **10.7 psu**  
**MFL Status: Exceedance = 14 days**

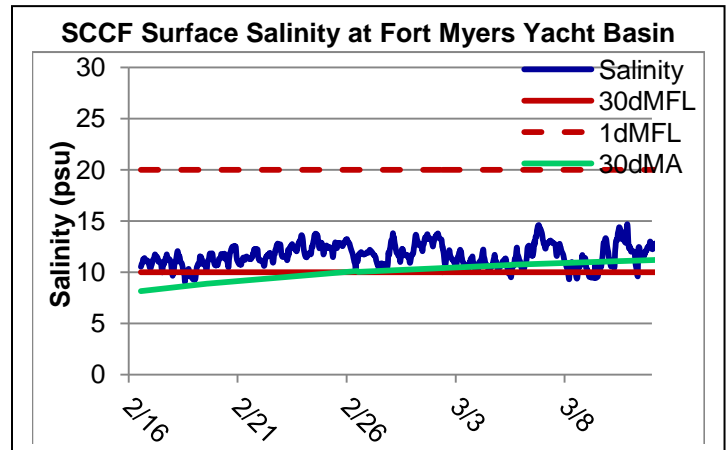
Salinity Shell Point: **25 - 35 psu** (SCCF RECON) Previous week **24 - 35 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	3.3 - 6.1	< 5 psu	High
Fort Myers	11 - 20	<10 psu	High
Shell Point	25 - 35	25 - 32 psu	High
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	1.13	1 meter	In Range
Shell Point	1.71	2.2 meters	Low
Causeway	1.91	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **661 cfs**. Over the past 14 days **94,108 AF** of water was discharged from Lake O, **24% to S-77**, **4% to S-308**, **62.5% of water from Lake O was discharged south to the EAA**. **Approximately 8% was discharged to the L8** and **1.5% was discharged through S-310**.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
3/6/2018	384	149	682
3/7/2018	159	151	518
3/8/2018	40	150	428
3/9/2018	764	1313	1278
3/10/2018	1699	832	695
3/11/2018	1034	442	451
3/12/2018	547	234	300
<b>7 day Avg</b>	<b>661</b>	<b>467</b>	<b>622</b>



**Upstream of S-79/Franklin Conditions:** On 3/13/18 the Olga Water Treatment plant reported chlorides of **60 mg/l**, apparent color **101 CU** and turbidity **3.13 NTU**. No visible algae was reported at the plant intake the past week. The plant is off line running for maintenance.

**Upper Estuary Conditions:** **The 30 day moving average salinity at the Fort Myers Yacht Basin was 11.1 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.

**Lower Estuary Conditions:** The average salinity at Shell Point, **31 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)
Wulfert Flats	34.2 - 35.2	5.0 - 9.1	-----	-----
Wildlife Drive	34.7 - 36.7	1.7 - 10.8	-----	-----
McIntyre Creek	-----	-----	7.7 - 17.8	3.3 - 6.2

**Red Tide:** On 3/9/18 the Florida Fish and Wildlife Conservation Commission reports that the Florida red tide organism, *Karenia brevis* was present in Pinellas, Manatee, Sarasota, Charlotte, Lee and Collier Counties with background to medium concentrations along Lee County. Numerous fish kills and respiratory irritation were reported for Lee and Collier counties the past week. **SCCF sampling found low to medium concentrations of *Karenia* at Tarpon Beach, Sanibel and low to high concentrations in Tarpon Bay, and medium concentrations inside the Causeway Islands.**

**Wildlife Impacts:** The past week, CROW the wildlife hospital on Sanibel treated **23 new patients with red tide symptoms, 21 Double Crested Cormorants, 1 Black Skimmer, 1 Lesser Scaup**. SCCF reports **3 adult male loggerhead sea turtle strandings, 2 on Sanibel and 1 on Captiva Island. Suspected red tide related.** A sub adult manatee was found dead in San Carlos Bay. **FWC will provide a necropsy to determine cause of death.**

**Manatees:** Lee County park staff reported up to **20 manatees** in the warm water discharge of the Orange River and FPL canal the past week. Water temperatures ranged from **68 - 74° F**.

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% I <sub>0</sub> depth (meters)
<b>Target Values</b>	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
<b>Fort Myers</b>	12	93.6	4.9	1.13
<b>Shell Point</b>	4.4	50.4	2.2	1.71
<b>Causeway</b>	4.3	32.0	2.1	1.91

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