

**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 20 - 26, 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 631 cfs at S-79. **Salinities in the estuary at Fort Myers exceeded the 30 day moving average of 10 psu at Fort Myers.** Red tide persists off the coast causing fish kills and impacting birds 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 the MFL exceedence in the Caloosahatchee we request the Corps provide additional water through 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: **14.92 ft. (Low Sub-Band)**

Last week: **15.04 ft**

Lake Okeechobee Inflow: **805 cfs**

Lake Okeechobee Outflow: **3,080 cfs**

Weekly Rainfall: WP Franklin **0.13"**

Ortona **0.05"**

Moore Haven **0"**

Salinity Beautiful Island: **3.4 - 6.3 (SCCF RECON Marker 18)**

Previous week **ND**

Salinity Fort Myers: **12 – 18 psu (SCCF RECON)**

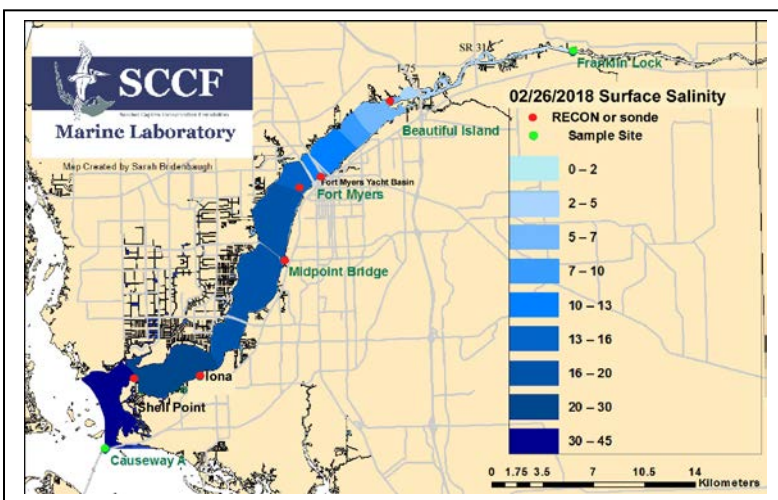
Previous week **11 – 16 psu**

Yacht Basin 30 day moving average: **10.1 psu**

Previous week: **8.9 psu**

Salinity Shell Point: **24 - 34 psu (SCCF RECON)**

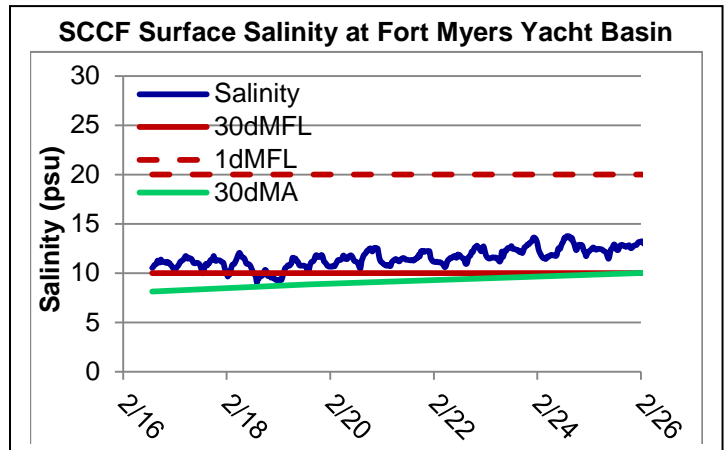
Previous week **ND psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	3.4 - 6.3	< 5 psu	-
Fort Myers	12 – 18	<10 psu	In Range
Shell Point	24 - 34	25 - 32 psu	In Range
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	1.01	1 meter	In Range
Shell Point	1.67	2.2 meters	Low
Causeway	1.80	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **631 cfs**. Over the past 14 days **90,396\* AF** of water was discharged from Lake O, **29% to S-77, 3.3% to S-308, 60% of water from Lake O was discharged south to the EAA. Approximately 6.6% was discharged to the L8 and 1%\* was discharged through S-310. (\* data missing)**

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
2/20/2018	496	360	583
2/21/2018	220	56	506
2/22/2018	38	0	340
2/23/2018	684	902	873
2/24/2018	1310	1244	1552
2/25/2018	995	300	1057
2/26/2018	672	302	581
<b>7 day Avg</b>	<b>631</b>	<b>452</b>	<b>785</b>



**Upstream of S-79/Franklin Conditions:** On 2/27/18 the Olga Water Treatment plant reported chlorides of **60 mg/l**, apparent color **107 CU** and turbidity **3.22 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 30 day moving average salinity at the Fort Myers Yacht Basin went over 10 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, **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	-----	<b>2.0 – 8.8</b>	5.8 – 13.6	2.2 – 10.7

**Red Tide:** On 2/23/18 the Florida Fish and Wildlife Conservation Commission reports a patchy bloom of the Florida red tide organism, **Karenia brevis** persists in southwest Florida at very low to medium concentrations offshore Lee County and medium concentrations offshore Monroe County. **SCCF sampling found medium to high concentrations of Karenia along the beaches of Sanibel and no or low concentrations in Pine Island Sound. Wide spread fish kills and respiratory irritation have been reported the past week.**

**Wildlife Impacts:** The past week, CROW the wildlife hospital on Sanibel treated **10 new patients with red tide symptoms, all Double Crested Cormorants.**

**Manatees:** Lee County park staff reported only **no manatees** in the warm water discharge of the Orange River and FPL canal the past week when unseasonably warm water temperatures ranged from **80 - 88° F.**

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% I <sub>0</sub> depth (meters)
<b>Target Values</b>	<b>&lt; 11</b>	<b>CE &lt;70 SCB &lt;11</b>	<b>CE &lt; 18 SCB &lt; 5</b>	<b>CE = 1 m SCB = 2.2m</b>
<b>Fort Myers</b>	<b>16</b>	<b>118</b>	<b>3.6</b>	<b>1.01</b>
<b>Shell Point</b>	<b>4.4</b>	<b>50.2</b>	<b>2.8</b>	<b>1.67</b>
<b>Causeway</b>	<b>2.5</b>	<b>44.1</b>	<b>2.7</b>	<b>1.80</b>

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



City Of Sanibel, Lighthouse Beach Park, 2-23-18, 12:23 PM, Low Tide Was At 10:54 AM

**Clear water at Sanibel Lighthouse Beach on 2/23/18. Photo City of Sanibel.**



**Numerous large red drum, over 30", and dead mullet in coastal waters on 2/26/18. Photo Lee County**