

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 27 - March 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 **708 cfs** at S-79. **Salinities in the estuary at Fort Myers exceeded the 30 day moving average of 10 psu at Fort Myers for 7 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: To reduce harmful salinities throughout the Caloosahatchee estuary we request the Corps provide additional water through pulse releases 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: **14.66 ft. (Low Sub-Band)**

Last week: **14.92 ft**

Lake Okeechobee Inflow: **523 cfs**

Lake Okeechobee Outflow: **3,706 cfs**

Weekly Rainfall: WP Franklin **0"** Ortona **0"**

Moore Haven **0"**

Salinity Beautiful Island: **3.8 - 7.8 psu** (SCCF RECON Marker 18)

Previous week **3.4 - 6.3 psu**

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

Previous week **12 - 18 psu**

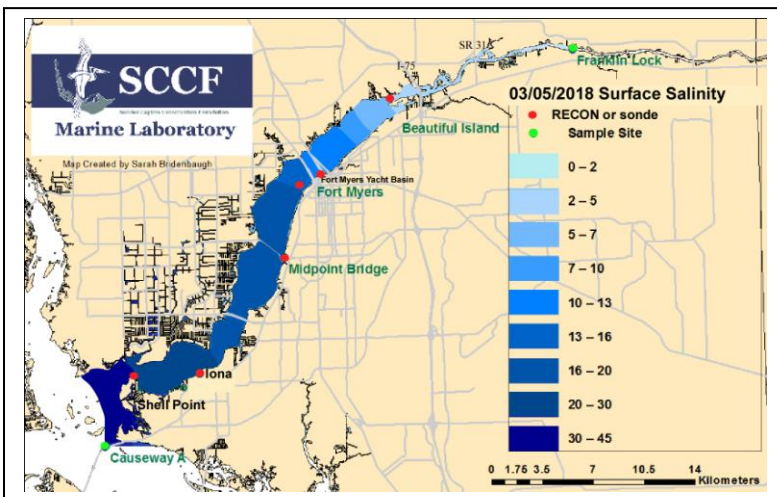
Yacht Basin 30 day moving average: **10.7 psu**

Previous week: **10.1 psu**

MFL Status: Exceedance = 7 days

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

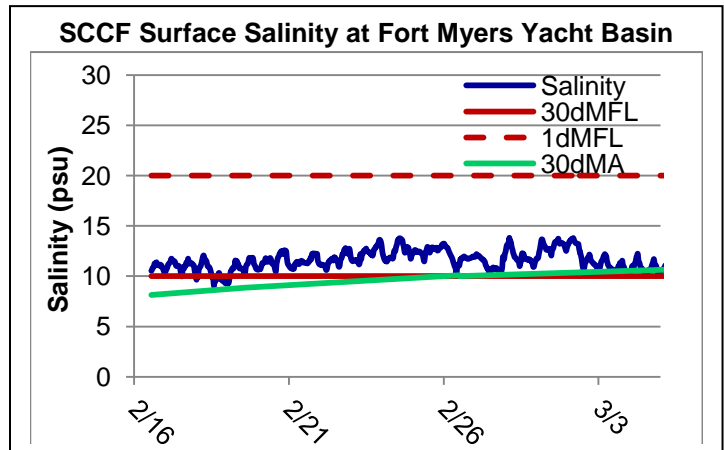
Previous week **24 - 34 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	3.8 - 7.8	< 5 psu	High
Fort Myers	11 - 18	<10 psu	In Range
Shell Point	24 - 35	25 - 32 psu	High
Light (25% I _z depth meters)			
Fort Myers	1.17	1 meter	In Range
Shell Point	1.61	2.2 meters	Low
Causeway	2.00	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **708 cfs**. Over the past 14 days **94,616* AF** of water was discharged from Lake O, **29% to S-77, 5% to S-308, 57% of water from Lake O was discharged south to the EAA. Approximately 8% 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)
2/27/2018	499	290	880
2/28/2018	203	194	810
3/1/2018	28	0	456
3/2/2018	808	1086	1151
3/3/2018	1562	1088	1484
3/4/2018	1155	1100	1467
3/5/2018	698	425	1066
7 day Avg	708	218	1045



Upstream of S-79/Franklin Conditions: On 3/6/18 the Olga Water Treatment plant reported chlorides of **59 mg/l**, apparent color **117 CU** and turbidity **2.97 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 was 10.7 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 ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
Wulfert Flats	31.3 - 35.0	2.8 - 9.4	-----	-----
Wildlife Drive	34.7- 36.5	0.7 - 11.7	-----	-----
McIntyre Creek	-----	0.2 - 7.4	7.0 - 13.5	2.4 - 11.5

Red Tide: On 3/218 the Florida Fish and Wildlife Conservation Commission reports that the Florida red tide organism, *Karenia brevis* was present in southwest Florida from Pinellas to 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. Lee County reports include Big Carlos Pass, Big Hickory Island, Bonita Beach, Captiva Island, Carlos Point, Cayo Costa, Estero Island, Fort Myers Beach, Little Hickory Island, Lovers Key State Park, Pine Island Sound, San Carlos Bay, Sanibel, and offshore of St. James City. SCCF sampling found low to medium concentrations of *Karenia* at Tarpon Beach, Sanibel and low to high concentrations in Tarpon Bay with counts up to 15 million cells/liter.

Wildlife Impacts: The past week, CROW the wildlife hospital on Sanibel treated **20 new patients with red tide symptoms, 8 Double Crested Cormorants, 8 Sanderlings, 2 Ring-billed Gulls, 1 Ruddy Turnstone and 1 Osprey.**

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 unseasonably warm water temperatures ranged from **81 - 90° 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	13	86.4	4.7	1.17
Shell Point	5.0	52.8	3.2	1.61
Causeway	2.7	32.0	2.5	2.00

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