

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: **April 17 - 23, 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 Caloosahatchee estuary **needs additional freshwater**. The past **55 consecutive days salinity has exceeded the MFL resulting in harmful high salinities for oysters in the lower estuary and tape grass in the upper estuary**. Weekly average inflow to the estuary at S-79 was **780 cfs**. **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: Additional water discharges from the Lake would benefit both Lake Okeechobee marsh recovery and provide needed additional water to 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.

Lake Okeechobee Level: **13.24 ft. (Base Sub-Band)**

Last week: **13.41 ft**

Lake Okeechobee Inflow: **854 cfs**

Lake Okeechobee Outflow: **1210 cfs**

Weekly Rainfall: WP Franklin **1.53"** Ortona **1.80"**

Moore Haven **0.45"**

Salinity Beautiful Island: **4.8 - 8.5 psu** (SCCF RECON Marker 18)

Previous week **4.0 - 7.2 psu**

Salinity Fort Myers: **11 - 19 psu** (SCCF RECON)

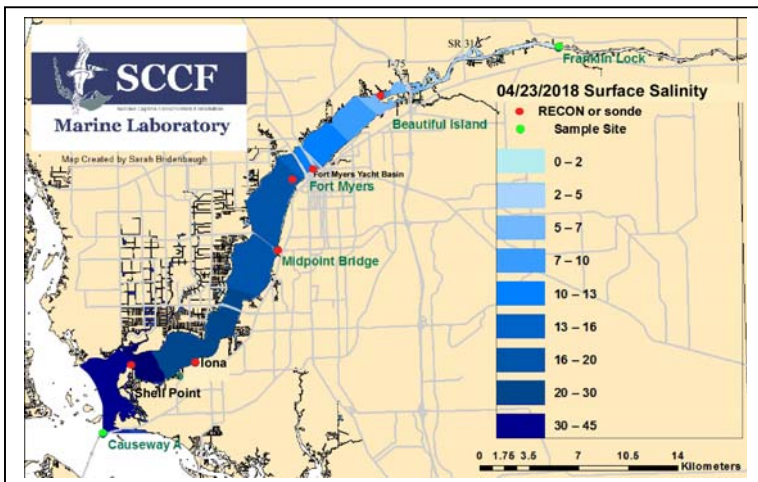
Previous week **12 - 18 psu**

MFL Status: Exceedance = 55 days 30 day moving average: 12.6 psu

Previous week: **12.7 psu**

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

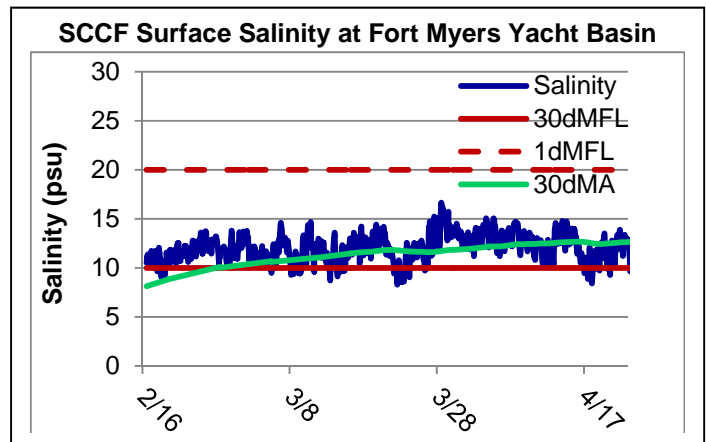
Previous week **24 - 36 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	4.8 - 8.5	< 5 psu	High
Fort Myers	11 - 19	<10 psu	High
Shell Point	25 - 35	25 - 32 psu	High
Light (25% I _z depth meters)			
Fort Myers	0.86	1 meter	Low
Shell Point	1.89	2.2 meters	Low
Causeway	2.59	2.2 meters	-

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged 780 cfs. Over the past 14 days **63,314 AF** of water was discharged from Lake O, **44% to S-77**, **4% to S-308**, **41% of water from Lake O was discharged south to the EAA**. **Approximately 8% was discharged to the L8** and **3% was discharged through S-310**.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/17/2018	407	293	182
4/18/2018	280	289	855
4/19/2018	90	292	1127
4/20/2018	1020	1192	1272
4/21/2018	1410	883	2274
4/22/2018	1242	1097	1855
4/23/2018	1010	NR	574
7 day Avg	780	578	1163



Upstream of S-79/Franklin Conditions: The beach at the Franklin Lock Park was closed due to high *Enterococcus* bacteria levels. On 4/24/18 the Olga Water Treatment plant reported chlorides of **62 mg/l**, apparent color **92 CU** and turbidity **2.37 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 **12.6 psu** and the weekly average salinity was **11 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 Fort Myers and Beautiful Island RECON sites.

Lower Estuary Conditions: The average salinity at Shell Point, **31 psu**, was above the optimal range for oysters. Water quality tests done on April 19, 2018 at the Yacht Club Beach, Cape Coral did not meet the safety criteria for *Enterococcus* bacteria recommended by the Florida Department of Health.

J.N. "Ding" Darling NWR:

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	34.6 – 36.1	3.5 – 12.9	8.2 – 14.9	1.6 – 11.0
Wulfert Flats	33.5 – 36.4	2.7 – 9.0	-----	-----
Wildlife Drive	36.5 – 38.5	0.6 – 11.0	-----	1.2 – 9.6

Beach Conditions: Dead fish washed up along Sanibel and Fort Myers Beaches, suspected cause, red tide.

Red Tide: On 4/20/18 the Florida Fish and Wildlife Conservation Commission reports that the Florida red tide organism, *Karenia brevis* persists in Charlotte, Lee and Collier Counties with **low to medium concentrations in samples collected from or offshore of Lee and Collier Counties**. Numerous fish kills and respiratory irritation were reported the past week. Seven out of thirteen SCCF samples collected in Pine Island Sound on 4/19/18 contained **low to medium** concentrations of *Karenia*. A sample from where a fish kill was occurring in Estero Bay on 4/20/18 contained 556,000 *Karenia* cells/L.

Wildlife Impacts: The past week, CROW, the wildlife hospital on Sanibel, treated **20 new patients with red tide symptoms; 17 double crested cormorants, 1 royal tern, 1 brown pelican and 1 sanderling**. Kelly Sloan, Sea Turtle Coordinator for SCCF, reported **one juvenile green sea turtle dead near the lighthouse, with no obvious cause of death and one adult male loggerhead hit by boat**. Both sea turtles were found on Sanibel Island.

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	136	3.6	0.86
Shell Point	4.5	38.4	2.0	1.89
Causeway	1.6	12.1	2.3	2.59

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