

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 3 - 9, 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 **42 consecutive days salinity has exceeded the MFL ecological criteria of 10 psu resulting in harmful high salinities for tape grass in the upper estuary and oysters in the lower estuary**. Weekly average inflow to the estuary at S-79 was **683 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 lower salinity and support habitat recovery throughout the Caloosahatchee estuary. There is sufficient water in the lake to achieve this and meet consumptive uses.

Lake Okeechobee Level: **13.57 ft. (Low Sub-Band)**

Last week: **13.81 ft**

Lake Okeechobee Inflow: **295 cfs**

Lake Okeechobee Outflow: **3,454 cfs**

Weekly Rainfall: WP Franklin **NR"** Ortona **0"** Moore Haven **0.26"**

Salinity Beautiful Island: **4.8 - 7.9 psu** (SCCF RECON Marker 18)

Previous week **2.7 - 9.5 psu**

Salinity Fort Myers: **14 - 19 psu** (SCCF RECON)

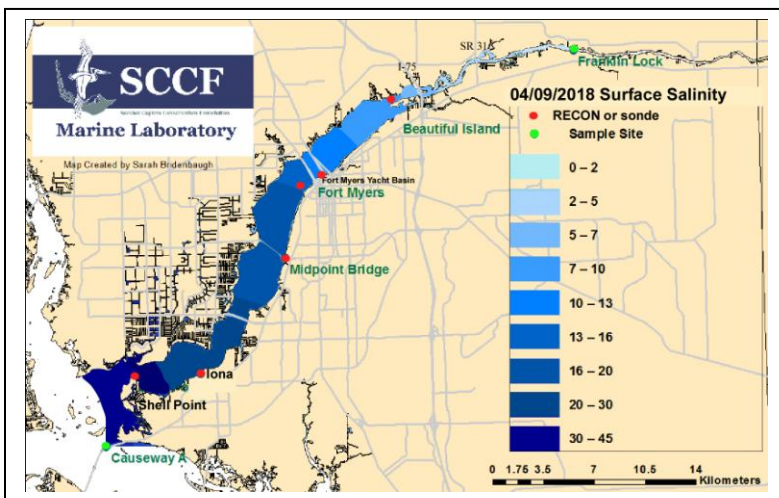
Previous week **14 - 20 psu**

MFL Status: Exceedance = 42 days 30 day moving average: **12.4 psu**

Previous week: **12.0 psu**

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

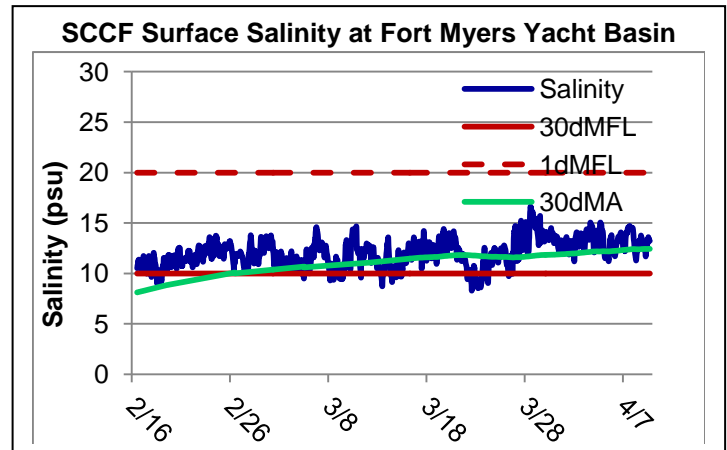
Previous week **25 - 35 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	4.8 - 7.9	< 5 psu	High
Fort Myers	14 - 19	<10 psu	High
Shell Point	25- 35	25 - 32 psu	High
Light (25% I _z depth meters)			
Fort Myers	0.84	1 meter	Low
Shell Point	1.97	2.2 meters	Low
Causeway	2.58	2.2 meters	In Range

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **683 cfs**. Over the past 14 days **127,765 AF** of water was discharged from Lake O, **25% to S-77, 5.4% to S-308, 62% of water from Lake O was discharged south to the EAA. Approximately 6% was discharged to the L8 and 1.2% was discharged through S-310.**

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/3/2018	343	502	1093
4/4/2018	167	250	610
4/5/2018	44	147	476
4/6/2018	935	1564	1504
4/7/2018	1336	1139	1823
4/8/2018	1322	710	1320
4/9/2018	636	NR	804
7 day Avg	683	719	1090



Upstream of S-79/Franklin Conditions: Sampling by Lee County Environmental Lab on 4/9/18 reported the presence of cyanobacteria at 2 sample sites; *Microcystis* and *Aphanizomenon* at the Alva boat ramp and *Microcystis* upstream of the Lock. On 4/10/18 the Olga Water Treatment plant reported chlorides of **60 mg/l**, apparent color **99 CU** and turbidity **3.73 NTU**. No visible algae was 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 **12.4 psu** and the weekly average salinity was **13 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 Beautiful Island.

Lower Estuary Conditions: The average salinity at Shell Point, **32 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	33.8 – 35.8	4.1 – 7.7	-----	-----
Wildlife Drive	36.2 – 38.7	0.2 – 9.8	-----	-----
McIntyre Creek	-----	3.1 – 10.9	6.5 – 13.3	1.7 – 5.8

Beach Conditions: Hundreds of dead fish were reported in Estero Bay and catfish washed up along Fort Myers Beach, suspected culprits, red tide.

Red Tide: On 4/6/18 the Florida Fish and Wildlife Conservation Commission reports that the Florida red tide organism, *Karenia brevis* persists in Pinellas, Charlotte, Lee, Collier and Monroe Counties with **background to medium concentrations in samples collected from or offshore of Lee County**. Numerous fish kills and respiratory irritation were 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.**

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% I ₀ depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Fort Myers	16	152	6.0	0.84
Shell Point	4.4	35.9	1.4	1.97
Causeway	3.2	7.9	2.0	2.58

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