

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
 Connie Jarvis & Harry Phillips – City of Cape Coral
 Rae Ann Wessel & Rick Bartleson, Ph.D. -Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **August 1 - 7, 2017**

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 at S-79 averaged **3,030 cfs**. **High colored dissolved organic matter (CDOM) continues to attenuate light throughout the estuary.**

USACE Action: The USACE delivered minimal flows of **87 cfs** to the Caloosahatchee the past week. No discharge from Lake Okeechobee to the St Lucie estuary at S-80.

DEP Emergency Order: On 6/23/17 DEP issued an emergency order to allow temporary operational changes to minimize flooding south of Lake Okeechobee. The SFWMD stopped back pumping to Lake O from the EAA on 7/5/17.

Recommendation: We recommend continuing no releases to the Caloosahatchee from Lake Okeechobee while the Lake is relatively low and the Caloosahatchee is receiving adequate freshwater flow from the watershed. We encourage the use of all available watershed storage capacity within distributed storage projects and other lands owned or under contract by the State to avoid harmful flows to the estuary.

Lake Okeechobee Level: 13.09 ft. (Base Flow Sub-Band) **Last week:** 12.81 ft

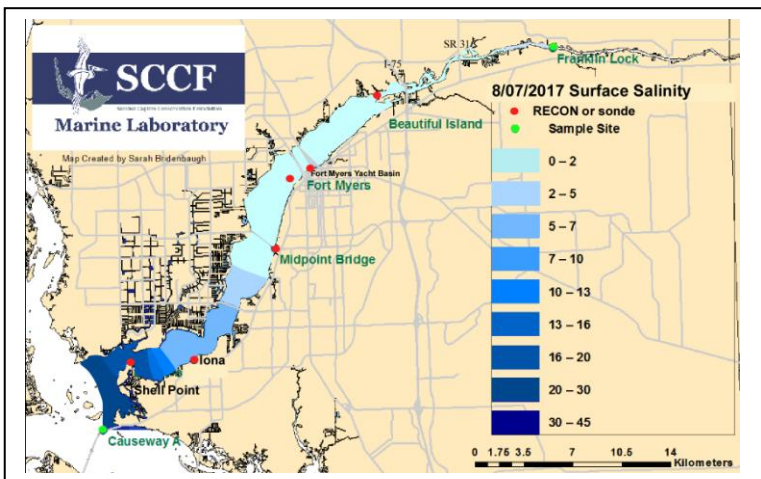
Lake Okeechobee Inflow: 4,013 cfs **Lake Okeechobee Outflow:** 481 cfs

Weekly Rainfall: WP Franklin **0.84"** Ortona **3.36"** Moore Haven **0.67"**

Salinity Beautiful Island: **ND** (SCCF RECON Marker 18) Previous wk **ND**

Salinity Fort Myers: **0.3 - 0.8 psu** (SCCF RECON) Previous wk **0.3 - 2.0 psu**

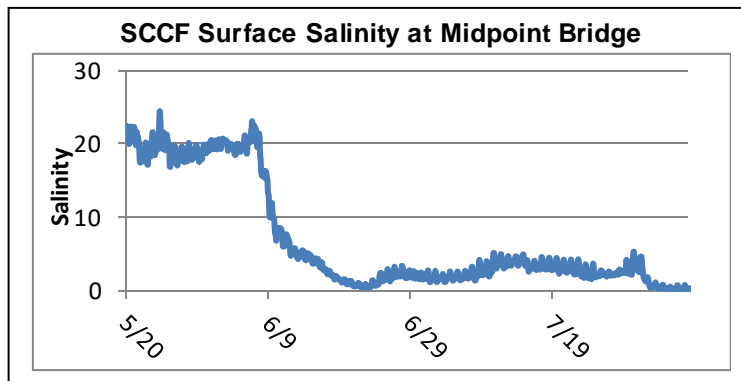
Salinity Shell Point: **8 - 28 psu** (SCCF RECON) Previous wk **10 - 30 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	0.3 - 0.8	<10 psu	In Range
Shell Point	8 - 28	25 - 32 psu	In Range
Light (25% I _z depth meters)			
Fort Myers	0.51	1 meter	Low
Shell Pointe	1.21	2.2 meters	Low
Causeway	1.26	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **3,030 cfs**. Over the past 14 days **more than 14,374 acre feet of water backflowed into Lake Okeechobee**; approximately **70%*** from S-308, a net backflow of 12% from L8 and a net backflow of 18% from S-310. Only 1,907 AF of water was discharged from the Lake; 51% to the EAA and 49% to S-77. (* Flow records not available).

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
8/1/2017	3342	1042	0
8/2/2017	3378	1268	0
8/3/2017	4428	1940	0
8/4/2017	3382	1527	0
8/5/2017	2909	814	0
8/6/2017	1847	746	0
8/7/2017	1923	630	87
7 day Avg	3030	1138	12



Upstream of S-79/Franklin Conditions: On 8/3/17 Lee County Environmental Lab detected the presence of *Microcystis*, *Planktothrix* and *Dolichospermum* cyanobacteria upstream of the Franklin Locks. On 8/8/17 the Olga Water Treatment plant chlorides measured **77 mg/L**, apparent color was **127 CU** and turbidity measured **0.67 NTU**. No visible algae in the plant intake the past week. The plant is online running at 2000 GPM.

Upper Estuary Conditions: On 8/3/17 Lee County Environmental Lab detected the presence of *Microcystis* cyanobacteria downstream of the Franklin Locks. Salinity at Fort Myers was in the acceptable range for tape grass. Dissolved oxygen at the Fort Myers RECON sensor dropped into the hypoxic range daily since 8/3/17 despite the lack of stratification.

Lower Estuary Condition: The average salinity at Shell Point, **19 psu**, was in the optimal range for oysters, but below optimal for seagrasses.

J.N. "Ding" Darling NWR: Dissolved oxygen fell below 3mg/L three days during the past week in McIntyre Creek.

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	24.9 – 28.1	2.8 – 8.4	15.3 – 27.0	3.5 – 8.8
Tarpon Bay	22.9 – 29.2	3.6 – 7.0	17.0 – 33.3	2.6 – 7.1

Beach Conditions: Red drift and green algae was present along Fort Myers Beach. Sanibel beaches had red drift algae accumulating in the surf zone with little accumulation on the beaches.

Red Tide: On 8/4/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, in **background concentrations in Lee, Okaloosa and Gulf Counties** the past week.

Wildlife Impacts: Two double crested cormorants were treated for red tide poisoning the past week at CROW the wildlife hospital on Sanibel.

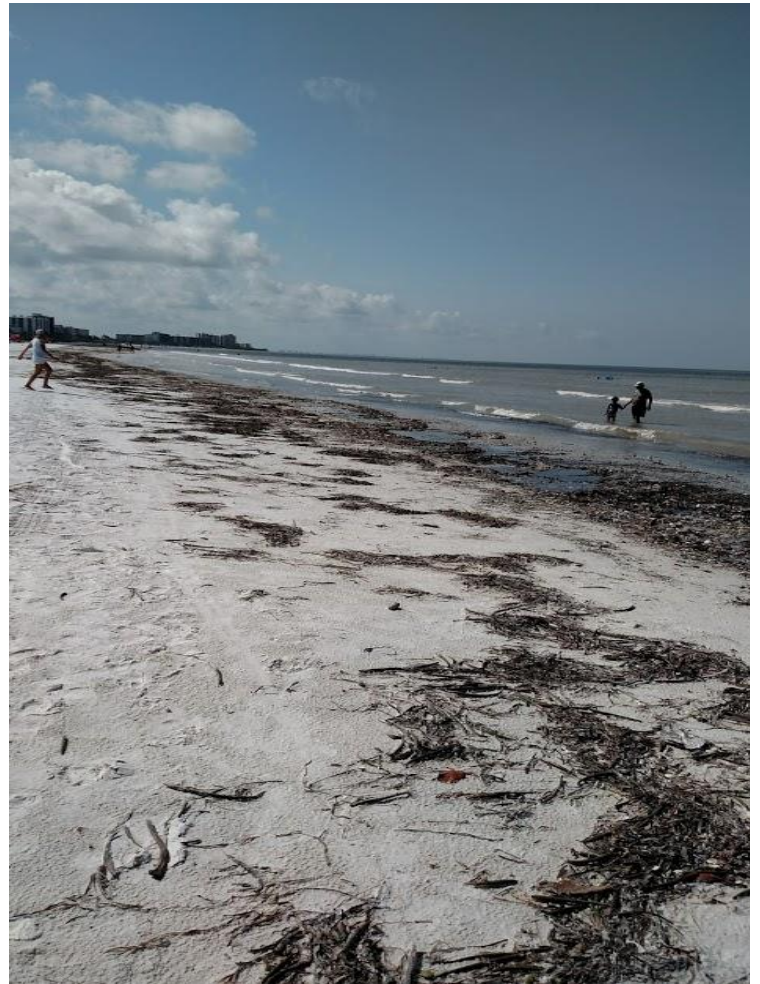
Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% lo depth (meters)
Target Values	< 11	CE < 70 SCB < 11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Fort Myers	11	350	3.2	0.51
Shell Point	7.2	103	2.1	1.21
Causeway	4.4	96.7	2.4	1.26

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





Red drift algae along Sanibel Lighthouse beach from Pointe Ybel to the fishing Pier, 8/4/17. City of Sanibel



Red drift and green algae washing up along Fort Myers Beach 8/4/17. Photo Town of Fort Myers Beach



Red drift algae along Tarpon Bay Beach and in the surf zone 8/8/17. Photo City of Sanibel



Red drift algae within the surf zone along the entire length of Sanibel's West Gulf beach without much accumulation on the beach 8/8/17. Photo City of Sanibel