

MEMORANDUM

To: USACE Colonel Andrew D. Kelly, LTC Jennifer A. Reynolds, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Drew Bartlett, Susan Gray, Lawrence Glenn, DEP Secretary Noah Valenstein

From: Periodic Scientists Conference Call Participants
 Paul Tritaik & Jeremy Conrad - J.N. "Ding" Darling National Wildlife Refuge (NWR) Complex
 James Evans & Holly Milbrandt - City of Sanibel
 Lesli Haynes & Lisa Kreiger - Lee County
 Rae Burns – Town of Fort Myers Beach
 Harry Phillips & Maya Robert – City of Cape Coral
 Rae Ann Wessel & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **May 7 - 13, 2019**

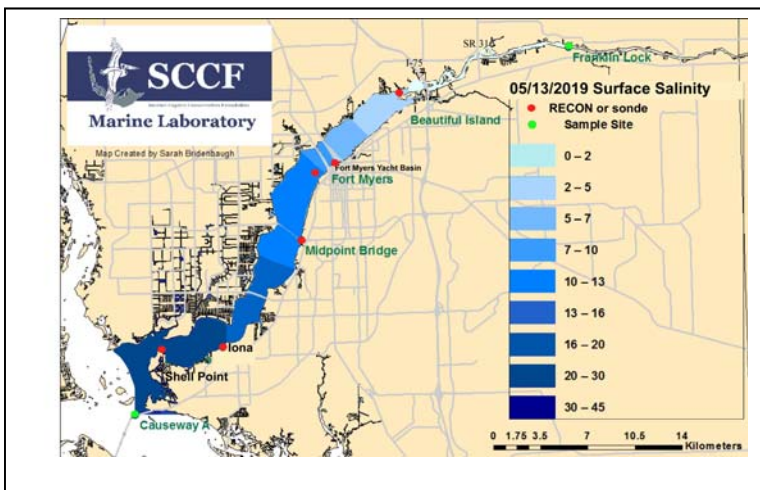
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: Caloosahatchee flows during the past week averaged **1,092 cfs at S-79**. **Cyanobacteria is present along the river and estuary. Thick mats of *Dapis pleousa*, a benthic filamentous cyanobacteria, have been floating to the surface in Pine Island Sound and accumulating along shore in some areas. Water clarity around Sanibel and Captiva is excellent.**

USACE Action: On 5/4/19 the U.S. Army Corps of Engineers initiated a 7-day pulse release from Lake Okeechobee reducing average flows to the Caloosahatchee to **600 cfs** measured at **S-79** and **zero** to the St. Lucie measured at **S-80**.

Recommendation: We recommend maintaining target flows to the Caloosahatchee estuary at **S-79** to maintain a healthy salinity envelope of **10 psu** at the Fort Myers Yacht basin.

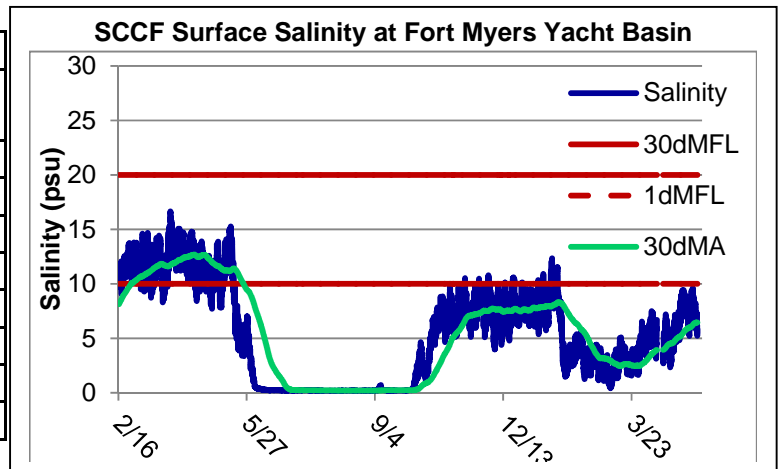
Lake Okeechobee Level:	11.29 ft. (Beneficial Use Sub-Band)	Last week: 11.23 ft.
Lake Okeechobee Inflow:	997 cfs	Lake Okeechobee Outflow: 1,778 cfs
Weekly Rainfall:	WP Franklin 2.63" Ortona 1.94"	Moore Haven 2.75"
Salinity Beautiful Island:	1.1 - 3.0 psu (SCCF RECON Marker 18)	Previous week 0.5 – 3.2 psu
Salinity Fort Myers:	8.3 - 19 psu (SCCF RECON)	Previous week 8.3 – 16 psu
Salinity Shell Point:	19 - 34 psu (SCCF RECON)	Previous week 19 – 34 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	1.1 – 3.0	< 5 psu	In Range
Fort Myers	8.3 – 19	<10 psu	In Range
Shell Point	19 – 34	25 - 32 psu	In Range
Light (25% I_z depth meters)			
Fort Myers	0.69	1 meter	Low
Shell Point	1.67	2.2 meters	Low
Causeway	2.29	2.2 meters	In Range

Lake Flows: The past 7 days **2,808 AF** of water was discharged from Lake Okeechobee; **43%** to the Caloosahatchee at **S-77**, **57%** to the **St Lucie**, **0%** was discharged south to the **EAA**, a net **-803 AF** back flowed into **Lake Okeechobee** from the **L8** and a net **-1,554** from the **S-310**.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/7/2019	635	592	176
5/8/2019	600	295	144
5/9/2019	301	151	- 472
5/10/2019	2119	691	- 4
5/11/2019	1542	779	0
5/12/2019	1538	451	184
5/13/2019	910	302	0
7 day Avg	1092	466	4



Cyanobacteria Status: On 5/14/19 the Lee County Environmental Lab reported an abundance of **Dolichospermum** and **Microcystis** at **Alva Boat Ramp**. A moderate abundance of **Dolichospermum** and **Microcystis** were reported at the **Franklin Locks, Upstream and Downstream, Davis Boat Ramp and North Shore Park**. No visible cyanobacteria was reported at **Midpoint Bridge Park**.

Upstream of S-79/Franklin Conditions: On 5/14/19 the Olga Water Treatment plant reported chlorides of **62 mg/l**, apparent color **59 CU** and turbidity **1.35 NTU**. Slight visible algae at the plant intake. Plant is online at 2,000 GPM.

Upper Estuary Conditions: The weekly average salinity at the Fort Myers Yacht Basin was **7.5 psu**, in the suitable range for tape grass growing between the Caloosahatchee US 41 Bridges and Beautiful Island. **Hypoxia** was recorded on one day at the Fort Myers RECON.

Lower Estuary Conditions: The weekly average salinity at Shell Point was **29 psu**, in the suitable range for oysters and seagrass.

J.N. "Ding" Darling NWR: Small mats of drift algae in Tarpon Bay

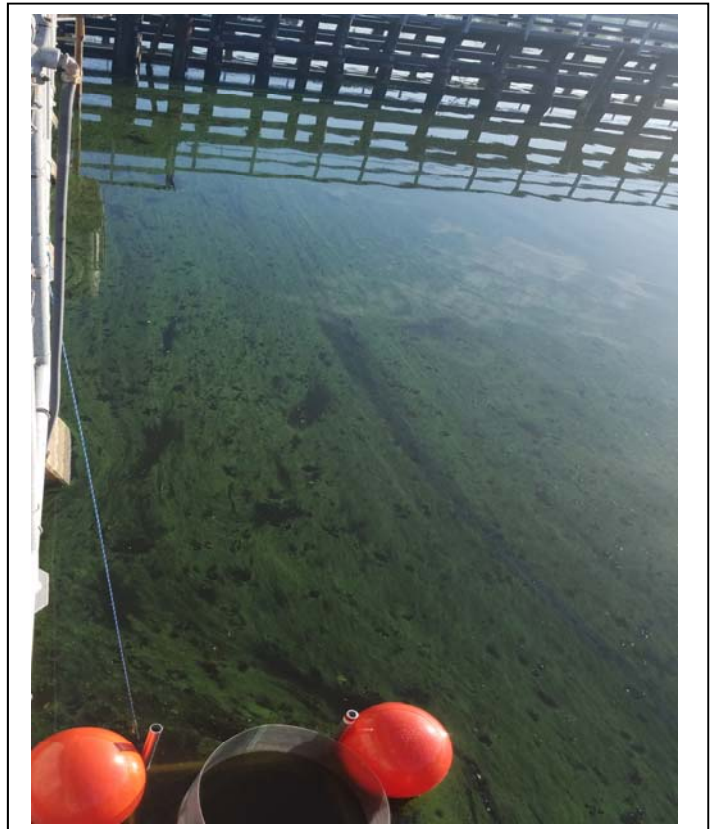
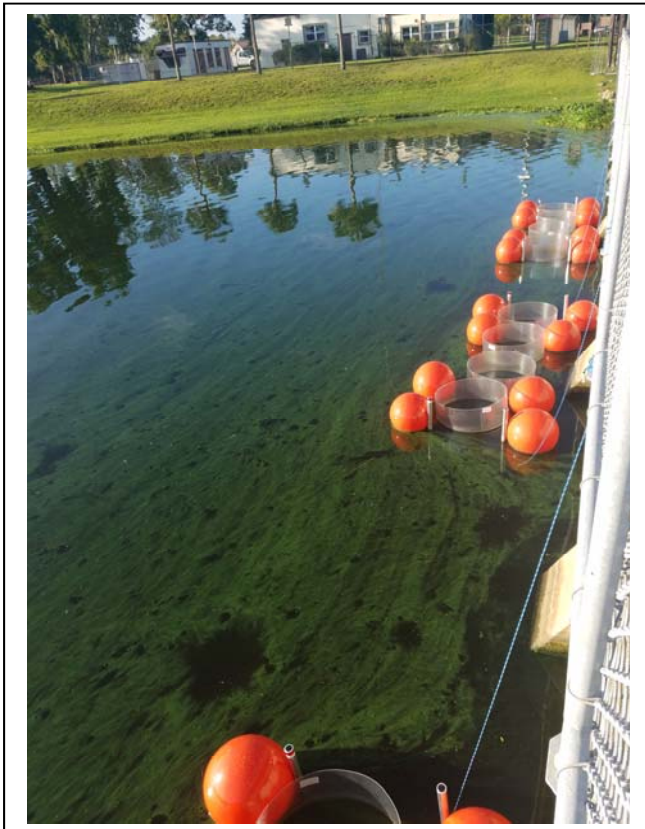
Monitor Site	Salinity	Diss O2 (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	32.4 – 33.5	1.9 – 11.1	6.3 – 13.8	1.1 – 3.4
Tarpon Bay	31.4 – 34.7	4.1 – 8.7	2.5 – 9.1	2.1 - 4.6
Wildlife Drive	-----	-----	-----	-----
Wulfert Flats	-----	-----	-----	-----

Red Tide: On 5/10/19 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide, *Karenia brevis* at background to very low concentrations in **Sarasota County**, background to very low concentrations in **Charlotte County**, and background concentrations in **Lee County**.

Wildlife Impacts: Over the past week CROW treated 1 Yellow Crowned Night Heron with red tide symptoms.

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% Iz depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Fort Myers	7.2	246	1.5	0.69
Shell Point	1.9	61.7	1.4	1.67
Causeway	1.5	23.1	1.7	2.29

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



Increasing bloom of cyanobacteria upstream and downstream of the Franklin Lock on 5/11/19. USGS in water mesocosm study pictured. Photo SCCF