

MEMORANDUM

To: USACE Colonel Jason A. Kirk, LTC Jennifer A. Reynolds, Richard McMillen, Kim Taplin, SFWMD Executive Director Peter Antonacci, Terrie Bates, Susan Gray, Peter Doering, DEP Secretary Jon Stevenson

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 Blake – 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: June 1 – 7, 2016

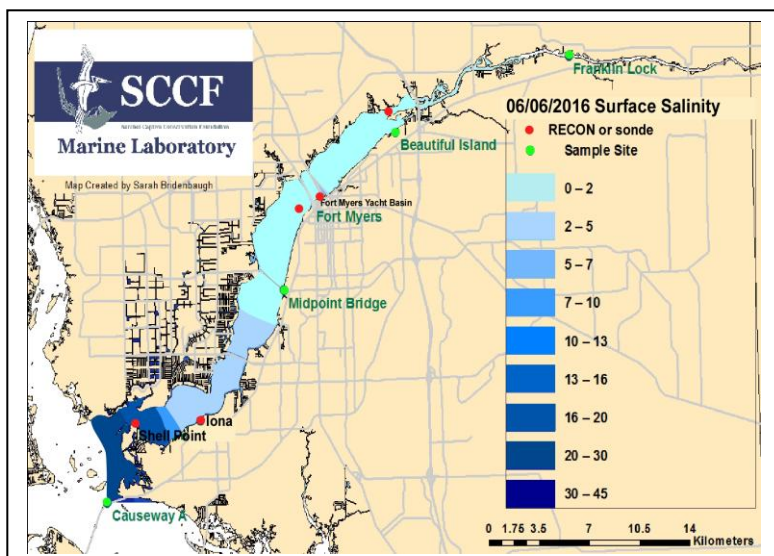
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: Discharges into the estuary at S-79 during the past week increased to an average of **4,821 cfs**. Lake Okeechobee discharges to the river measured at **S-77** increased to an average of **3,835 cfs**. Approximately **80%** of the flows to the Caloosahatchee estuary came from Lake Okeechobee the past week. Watershed inflows to the Franklin pool between S-78 and S-79 averaged **1,300 cfs**.

USACE Action: On June 2, 2016 the USACE continued Lake Okeechobee discharges of **4,000 cfs** to the Caloosahatchee through **S-77** and **1,800 cfs** to the St. Lucie measured at S-80.

Recommendation: We request flows be reduced to an average of **no more than 2,800 cfs at S-79** to improve a salinity gradient throughout the estuary and enhance conditions for spawning in the Caloosahatchee estuary.

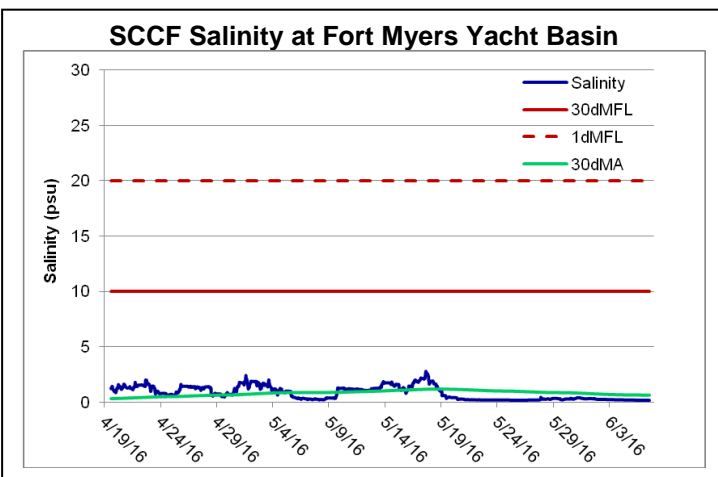
Lake Okeechobee Level:	14.40 ft. (Low Sub-Band)	Last week: 14.40 ft.
Lake Okeechobee Inflow:	6,001 cfs	Lake Okeechobee Outflow: 5,566 cfs
Weekly Rainfall:	WP Franklin 3.19"	Ortona 0.40" Moore Haven 0.35"
Salinity Beautiful Island:	0.2 – 0.3 psu (SCCF RECON Marker 18)	Previous wk 0.2 – 0.3 psu
Salinity Fort Myers:	0.2 – 0.4 psu (SCCF Yacht Basin)	Previous wk 0.2 – 0.5 psu
Salinity Shell Point:	8 – 32 psu (SCCF RECON)	Previous wk 8 – 32 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	0.2 – 0.3	< 5 psu	-
Fort Myers	0.2 – 0.4	<10 psu	-
Shell Point	8 – 32	25 - 31 psu	Low
Light (25% Iz depth meters)			
Beautiful Is	0.66	1 meter	Low
Causeway	1.73	2.2 meters	Low
E. Sanibel	1.91	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S79 during the past seven days averaged **4,821 cfs**. Over the past 14 days **60%** of Lake Okeechobee outflows were directed to the Caloosahatchee, **28%** were delivered to the St Lucie at S308, **7%** of flows were discharged south to the EAA for irrigation demand and **5%** to the L8.

ACOE May 27 Release at S77					
Date	Day	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/27/2016	1	4000	3766	3107	2955
5/28/2016	2	4000	5598	4665	4414
5/29/2016	3	4000	6817	4838	4685
5/30/2016	4	4000	6603	4743	4263
5/31/2016	5	4000	5326	3513	3727
6/1/2016	6	4000	4730	3224	3641
6/2/2016	7	4000	4519	3335	3752
7 day avg		4000	5338	3918	3920



Upstream of S79/Franklin Conditions: On 6/7/16 the Olga Water Treatment plant chlorides measured **45 mg/L**, apparent color was **222 CU** and turbidity measured **7.66 NTU**. Light algae was observed Saturday at the plant intake. Plant is offline since 5/24/16 as a precaution due to algae.

Upper Estuary Conditions: Salinities in the upper estuary are in the suitable range for tape grass. Turbidity and chlorophyll were elevated and cyanobacteria was visible between Beautiful Island and the Colonial Bridge.

Lower Estuary Condition: The average salinity at Shell Point (**20 psu**) was in the optimal range for oysters.

McIntyre Creek & Tarpon Bay in J.N. "Ding" Darling NWR: Salinities were below or in the lower end of the preferred range for shoal grass and turtle grass (30 to 40 psu).

Tarpon Bay: Salinity: **24.6 – 34.6 psu**; CDOM: **6.0 – 27.0 qsde**; Dissolved oxygen: **4.2 – 8.4 mg/L**; Chlorophyll: **1.6 – 8.6 µg/L**.

McIntyre Creek: Salinity: **26.5 – 33.5 psu**; CDOM: **5.0 – 14.5 qsde**; Dissolved oxygen: **2.6 – 10.2 mg/L**; Chlorophyll: **2.2 – 5.1 µg/L**. Dissolved oxygen dropped below 3 mg/L **two times** over the last week at McIntyre Creek.

Red tide: On June 3, 2016 FWC reported finding *Karenia brevis*, the Florida red tide organism, in samples from Pinellas, Sarasota and Charlotte counties in Southwest Florida.

Caloosahatchee Stations	Chlorophyll (µg/L)	CDOM (qse)	Turbidity (NTU)	25% lo depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Beautiful Is	19	216	3.7	0.66
Causeway	4.1	20.7	3.9	1.73
E. Sanibel	2.7	4.61	4.5	1.91

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/31/2016	Tues	5326	3513	3727
6/1/2016	Wed	4730	3224	3641
6/2/2016	Thur	4519	3335	3752
6/3/2016	Fri	5253	3761	4116
6/4/2016	Sat	4755	3520	3912
6/5/2016	Sun	4983	3583	3924
6/6/2016	Mon	4182	3709	3772
7 Day	Avg	4821	3521	3835

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