

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 & Joyce Palmer - 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: May 25 - 31, 2016

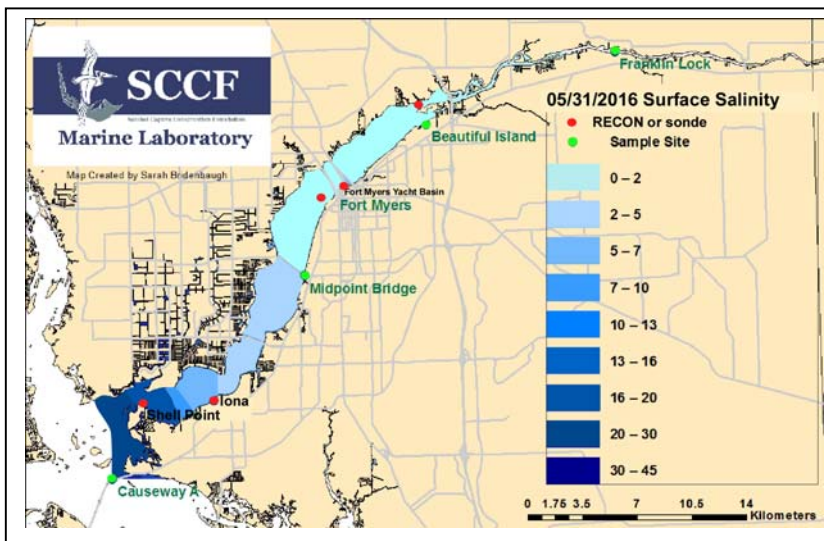
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: Discharges into the estuary at S-79 during the past week increased to an average of **4,305 cfs**, while discharges to the river from Lake Okeechobee at S-77 increased to an average of **2,515 cfs**. Watershed inflows to the Franklin pool between S-78 and S-79 averaged **1,048 cfs**.

USACE Action: On May 27, 2016 the USACE continued pulse releases to the Caloosahatchee through S-79 to a weekly average of **4,000 cfs** 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. Consideration should be made for providing dry season flows to the Caloosahatchee in light of potential development of La Niña conditions.

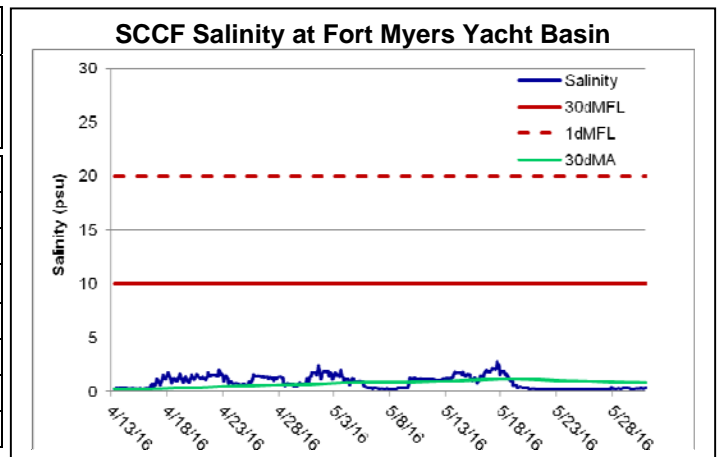
Lake Okeechobee Level:	14.40 ft. (Low Sub-Band)	Last week: 14.32 ft.
Lake Okeechobee Inflow:	7,833 cfs	Lake Okeechobee Outflow: 6,828 cfs
Weekly Rainfall:	WP Franklin 0.60"	Ortona 1.31" Moore Haven 0.29"
Salinity Beautiful Island:	0.2 – 0.3 psu (SCCF RECON Marker 18)	Previous wk 0.2 – 0.3 psu
Salinity Fort Myers:	0.2 – 0.5 psu (SCCF Yacht Basin)	Previous wk 0.2 – 1.9 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 – 0.5	<10 psu	-
Shell Point	8 – 32	25 - 31 psu	Low
Light (25% I_z depth meters)			
Iona	0.87	1 meter	Low
Causeway	1.44	2.2 meters	Low
E. Sanibel	1.65	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S79 during the past seven days averaged **4,305 cfs**. Over the past 14 days **60%** of Lake Okeechobee outflows were directed to the Caloosahatchee, **26%** were delivered to the St Lucie at S308, **7%** of flows were discharged south to the EAA for irrigation demand, **7%** to the L8 and **0%** to S310.

ACOE May 13 Pulse Release at S79					
Date	Day	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/20/2016	1	2300	5433	3352	-12
5/21/2016	2	2900	4316	1742	80
5/22/2016	3	2600	3794	1702	513
5/23/2016	4	2100	2838	1389	395
5/24/2016	5	1700	3921	2452	317
5/25/2016	6	1400	1717	1540	705
5/26/2016	7	1000	1715	1453	263
7 day avg		2000			



Upstream of S79/Franklin Conditions: On 5/31/16 the Olga Water Treatment plant chlorides measured **50 mg/L**, apparent color was **244 CU** and turbidity measured **5.65 NTU**. Light algae showed up last Wednesday in the plant intake increased to medium over the weekend, and back to light Monday, medium levels today. Plant is off line since 5/24 as a precaution due to algae.

Upper Estuary Conditions: Salinities in the upper estuary are in the suitable range for tape grass. Turbidity was elevated and chlorophyll was spiking at the Fort Myers and Beautiful Island RECONS. Cynaobacteria was visible from Fort Myers to the Colonial bridge.

Lower Estuary Condition: The average salinity at Shell Point (19 psu) was in the optimal range for oysters. The salinity at Iona was below optimal for oysters (5.2 psu) on 05/30/16.

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

Tarpon Bay: Salinity: **24.3 – 30.6 psu**; CDOM: **15.0 – 28.5 qsde**;
Dissolved oxygen: **4.6 – 9.0 mg/L**; Chlorophyll: **1.8 – 7.4 µg/L**.

McIntyre Creek: Salinity: **25.9 – 30.3 psu**; CDOM: **5.2 – 10.0 qsde**; Dissolved oxygen: **2.6 – 10.5 mg/L**;
Chlorophyll: **2.2 – 5.0 µg/L**. Dissolved oxygen dropped below 3 mg/L **one time** over the last week at McIntyre Creek.

Red tide: Updated on May 27, 2016 FWC reported a bloom of *Karenia brevis*, the Florida red tide organism, persists along 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
Iona	4.0	155	3.6	0.87
Causeway	2.9	55.8	3.3	1.44
E. Sanibel	1.9	58.2	1.2	1.65

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

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/24/2016	Tues	3921	2452	317
5/25/2016	Wed	1717	1540	705
5/26/2016	Thur	1715	1453	263
5/27/2016	Fri	3766	3107	2955
5/28/2016	Sat	5598	4665	4414
5/29/2016	Sun	6817	4838	4685
5/30/2016	Mon	6603	4743	4263
7 Day	Avg			