

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 11 - 17, 2016

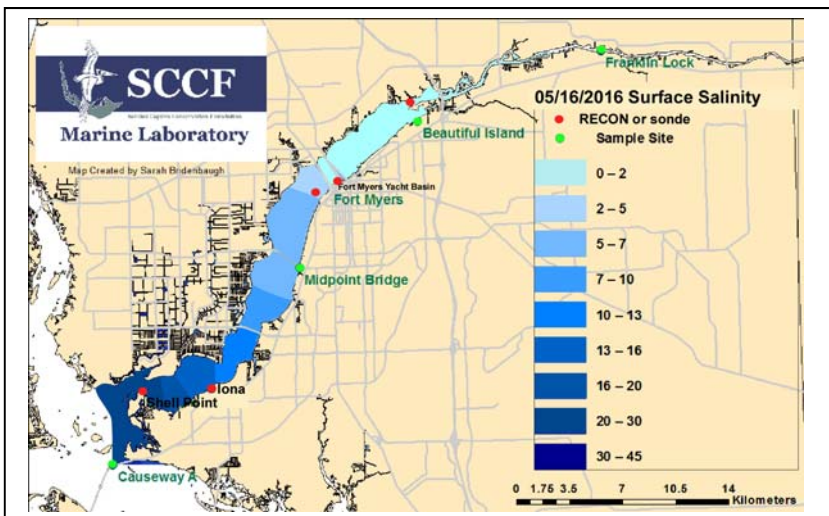
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: During the past week Lake Okeechobee water flows continued to recede at S-79. Discharges into the estuary at S-79 during the past week decreased to an average of **2,164 cfs**, while discharges to the river from Lake Okeechobee at S-77 increased to an average of **2,178 cfs**. Watershed inflows to the Franklin pool between S-78 and S-79 averaged **443 cfs**.

USACE Action: On May 13, 2016 the USACE continued pulse releases to the Caloosahatchee through S-79 to a weekly average of **2,000 cfs** and **650 cfs** to the St. Lucie measured at S-80.

Recommendation: We request flows be reduced to an average of 1,000 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.

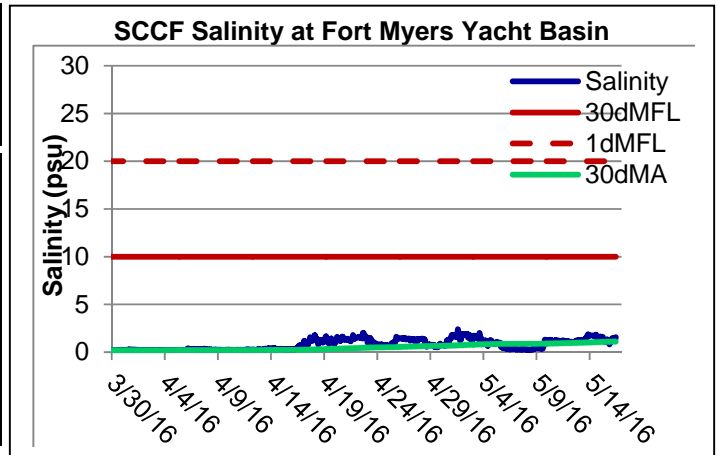
Lake Okeechobee Level:	13.64 ft. (Low Sub-Band)	Last week: 13.90 ft.
Lake Okeechobee Inflow:	2,008 cfs	Lake Okeechobee Outflow: 5,878 cfs
Weekly Rainfall:	WP Franklin 0.00" Ortona 0.00" Moore Haven 0.00"	
Salinity Beautiful Island:	0.2 – 0.3 psu (SCCF RECON Marker 18)	Previous wk ND
Salinity Fort Myers:	0.8 – 1.9 psu (SCCF Yacht Basin)	Previous wk 0.2 – 2.0 psu
Salinity Shell Point:	12 – 32 psu (SCCF RECON)	Previous wk 13 – 32 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Island	0.2 – 0.3	< 5 psu	-
Fort Myers	0.8 – 1.9	<10 psu	-
Shell Point	12 – 32	25 - 31 psu	Low
Light (25% I_z depth meters)			
Beautiful Is	0.88	1 meter	Low
Iona	1.11	1 meter	-
Causeway	1.67	2.2 meters	Low

Over the past 14 days **34%** of Lake Okeechobee outflows were directed to the Caloosahatchee, **12%** were delivered to the St Lucie at S308, **47%** of flows were discharged south to the EAA for irrigation demand, **5%** to the L8 and **2%** to S310.

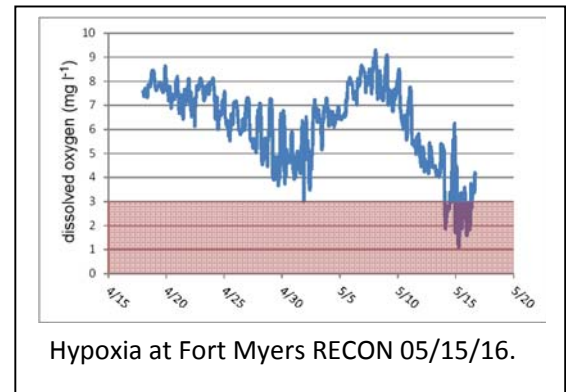
ACOE May 5 Pulse Release at S79					
Date	Day	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/6/2016	1	2300	2284	1673	1641
5/7/2016	2	2900	2451	1752	1510
5/8/2016	3	2600	2460	1758	1495
5/9/2016	4	2100	2061	1732	1671
5/10/2016	5	1700	2027	1696	1986
5/11/2016	6	1400	2395	1708	2073
5/12/2016	7	1000	1368	1128	1728
7 day avg		2000			



Upstream of S79/Franklin Conditions: On 5/17/16 the Olga Water Treatment plant chlorides measured **54 mg/L**, apparent color was **72 CU** and turbidity measured **2.74NTU**. No visible algae for the past week. The plant is off line for maintenance.

Upper Estuary Conditions: Salinities in the upper estuary are in the suitable range for tape grass. Dissolved oxygen concentrations at Fort Myers RECON dipped into the hypoxic range (~1 mg/L) on 05/15/16.

Lower Estuary Condition: The average salinity at Shell Point (21 psu) was in the optimal range for oysters. The salinity at Iona was below optimal for oysters (12.8 psu on 05/11/16).



McIntyre Creek & Tarpon Bay in J.N. "Ding" Darling NWR: Refuge waters are still brown and floating mats of green, filamentous algae (*Cladophora* sp.) persist in the west impoundment. **Salinities are in the low end of the preferred range for seagrass.**

Tarpon Bay: Salinity: **28.0 – 33.4 psu**; CDOM: **10 – 23.8 qsde**; Dissolved oxygen: **4.5 – 8.7 mg/L**; Chlorophyll: **1.75 – 5.75 µg/L**.

McIntyre Creek: Salinity: **28.5 – 31.25 psu**; CDOM: **6.7 – 13.5 qsde**; Dissolved oxygen: **2.7 – 10.7 mg/L**; Chlorophyll: **2.4 – 5.9 µg/L**. **Dissolved oxygen dropped below 3 mg/L three times over the last week** at McIntyre Creek.

Red tide: Updated on May 13, 2016 FWC reported a bloom of *Karenia brevis*, the Florida red tide organism, persists along Pinellas, Manatee, Sarasota, Charlotte, and Lee counties in Southwest Florida.

Oysters: For May in the Caloosahatchee, the *Perkinsus marinus* prevalence of all oysters sampled ranged from 80.00% to 100%. *P. marinus* intensity ranged from 0.80 to 1.0 with an estuary average of 0.89. Larval recruitment ranged from 0.47 to 29.78 spat per shell with an average of 11.06 spat per shell in the estuary.

Caloosahatchee Stations	Chlorophyll (µg/L)	CDOM (qse)	Turbidity (NTU)	25% I _z depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Beautiful Is	11.6	158	2.0	0.88
Iona	5.2	116	1.6	1.11
Causeway	2.7	57.9	0.9	1.67

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

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/10/2016	Tues	2027	1696	1986
5/11/2016	Wed	2395	1708	2073
5/12/2016	Thur	1368	1128	1728
5/13/2016	Fri	1666	1602	1921
5/14/2016	Sat	2612	2057	2567
5/15/2016	Sun	2838	2051	2616
5/16/2016	Mon	2242	1805	2358
7 Day	Avg			



Unfertilized tape grass flower in the Caloosahatchee 05/10/16.