

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 4 - 10, 2016

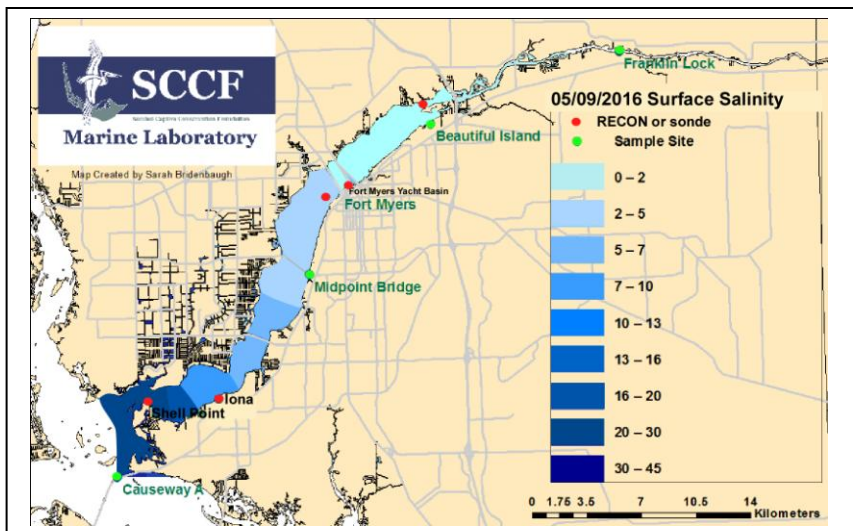
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: During the past week Lake Okeechobee water levels continued to recede. Discharges into the estuary at S79 the past week decreased to an average of **2,255 cfs** and discharges to the river from Lake Okeechobee at S77 decreased to an average of **1,294 cfs**. Watershed inflows to the Franklin pool between S78 and S79 averaged **624 cfs**.

USACE Action: On May 6, 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: For 16 weeks there has been no salinity signature in the middle Caloosahatchee estuary at Fort Myers. With successful lake recession occurring, high ET and little rainfall we request a gradual reduction in flows directed to the Caloosahatchee. We request flows be reduced the coming week to an average of 1,500 cfs at S79 with further reductions the next two weeks to 1,000 cfs to recover a salinity gradient throughout the estuary and protect and promote spawning in the Caloosahatchee estuary. Consideration should be made for providing dry season flows to the Caloosahatchee in light of potential development of La Nina conditions.

Lake Okeechobee Level:	13.90 ft. (Low Sub-Band)	Last week: 14.12 ft.
Lake Okeechobee Inflow:	1,984 cfs	Lake Okeechobee Outflow: 5,105 cfs
Weekly Rainfall:	WP Franklin 0.66"	Ortona 0.52" Moore Haven 1.10"
Salinity Beautiful Island:	ND (SCCF RECON Marker 18)	Previous wk ND
Salinity Fort Myers:	0.2 – 2.0 psu (SCCF Yacht Basin)	Previous wk 0.5 – 2.4 psu
Salinity Shell Point:	13 – 32 psu (SCCF RECON)	Previous wk 13 – 32 psu

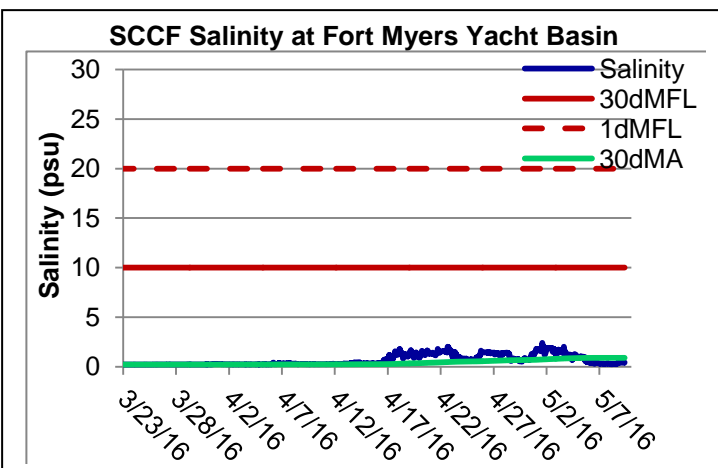


Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Island	ND	< 5 psu	-
Fort Myers	0.2 – 2.0	<10 psu	Low*
Shell Point	13 – 32	25 - 31 psu	Low
Light (25% I _z depth meters)			
Colonial Bridge	1.01	1 meter	In Range
Causeway	1.45	2.2 meters	Low
Sanibel Boat Ramp	1.49	2.2 meters	Low

*Higher than normal dry-season flows have limited salinity variation in the upper estuary.

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S79 during the past seven days averaged **2,255 cfs**. Over the past 14 days **38%** of Lake Okeechobee outflows were directed to the Caloosahatchee, **13%** were delivered to the St Lucie at S308, **43%** of flows were discharged south to the EAA for irrigation demand, **5%** to the L8 and **1%** to S310.

ACOE April 29 Pulse Release at S79					
Date	Day	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/29/2016	1	2300	2622	1743	2292
4/30/2016	2	2900	2353	1854	2023
5/1/2016	3	2600	2815	2200	2777
5/2/2016	4	2100	2163	1874	2460
5/3/2016	5	1700	1979	1167	1466
5/4/2016	6	1400	2002	1624	622
5/5/2016	7	1000	2550	1714	654
7 day avg		2000	2355	1739	1756



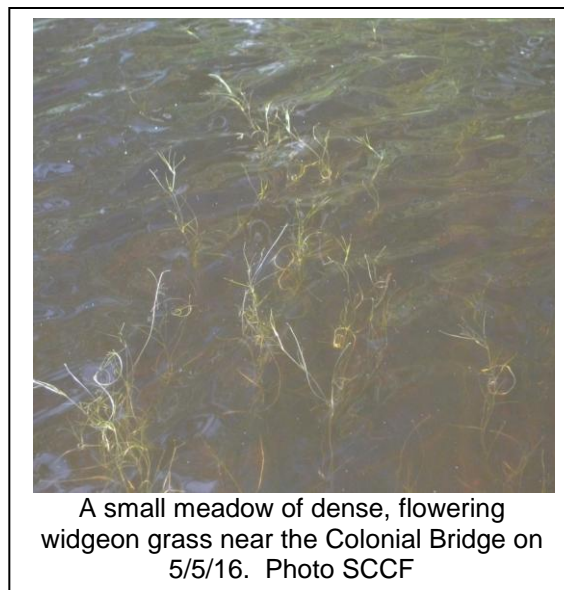
Upstream of S79/Franklin Conditions: On 5/10/16 the Olga Water Treatment plant chlorides measured **55 mg/L**, apparent color was **107 CU** and turbidity measured **4.32 NTU**. No visible algae for the past week. The plant is off line for maintenance. Water appearance is extremely dark, turbid and murky.

Upper Estuary Conditions: Salinities in the upper estuary are in the suitable range for tape grass. **Light was sufficient for SAV at 1 m depth at the Colonial Bridge in the middle estuary.**

Lower Estuary Condition: The average salinity at Shell Point (**21 psu**) was in the optimal range for oysters.

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: **28.1 – 34.0 psu**; CDOM: **8 – 26 qsde**; Dissolved oxygen: **4.9 – 8.1 mg/L**; Chlorophyll: **1.7 – 10.2 µg/L**.



McIntyre Creek: Salinity: **29.4 – 32.1 psu**; CDOM: **3 – 14 qsde**; Dissolved oxygen: **2.7 – 10.0 mg/L**; Chlorophyll: **2.0 – 5.2 µg/L**. **Dissolved oxygen dropped below 4 mg/L four times over the last week at McIntyre Creek.**

Red tide: On May 6, 2016 FWC reported a bloom of *Karenia brevis*, the Florida red tide organism, persists in samples along Pinellas, Manatee, Sarasota, and Charlotte Counties in southwest Florida.

Caloosahatchee Stations	Chlorophyll (µg/L)	CDOM (qse)	Turbidity (NTU)	25% I ₀ depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Colonial Br	4.6	152	1.5	1.01
Causeway	4.3	37.6	4.8	1.45
Sanibel Boat Ramp	3.0	31.5	5.2	1.49

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/3/2016	Tues	1979	1167	1466
5/4/2016	Wed	2002	1624	622
5/5/2016	Thur	2550	1714	654
5/6/2016	Fri	2284	1673	1641
5/7/2016	Sat	2451	1752	1510
5/8/2016	Sun	2460	1758	1495
5/9/2016	Mon	2061	1732	1671
7 Day	Avg	2255	1631	1294

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