

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: April 20 - 26, 2016

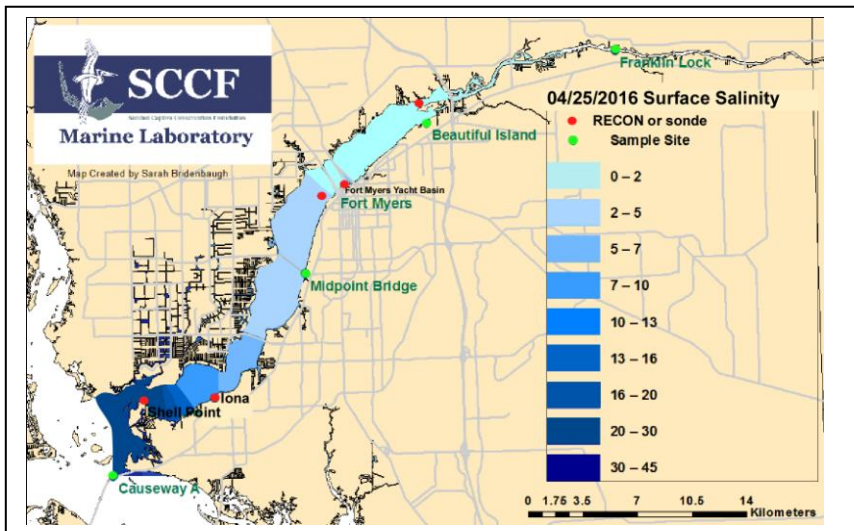
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: During the past week Lake Okeechobee water levels continued to recede with flows to the Caloosahatchee exceeding the high-flow harm threshold of 2,800 cfs for three days. Lake discharges into the estuary at S79 the past week decreased to an average of **2,664 cfs** while discharges to the river from Lake Okeechobee at S77 increased to an average of **2,829 cfs**. Watershed inflows to the Franklin pool between S78 and S79 averaged **298 cfs**.

USACE Action: On April 22, 2016 the USACE reduced pulse releases to the Caloosahatchee through **S-79** to a weekly average of 2,500 cfs and **950 cfs** to the St. Lucie measured at S-80.

Recommendation: High estuary discharges the past fourteen weeks together with low rainfall, a waning El Nino and high evapotranspiration off the lake have contributed to significant lake recession. To protect spawning in the Caloosahatchee estuary and to improve the salinity gradient throughout the estuary, **we recommend reducing average discharges to the Caloosahatchee to 2,000 cfs or less measured at S79**. Reduced flows are critical to prevent the advection of eggs and larvae from critical habitat within the estuary.

Lake Okeechobee Level:	14.42 ft. (Low Sub-Band)	Last week: 14.65 ft.
Lake Okeechobee Inflow:	2,354 cfs	Lake Okeechobee Outflow: 6,118 cfs
Weekly Rainfall:	WP Franklin 0.39" Ortona 0.21" Moore Haven 0.50"	
Salinity Beautiful Island:	0.2 – 0.2 psu (SCCF RECON Marker 18)	Previous wk 0.2 – 0.2 psu
Salinity Fort Myers:	0.3 – 1.8 psu (SCCF Yacht Basin)	Previous wk 0.2 – 0.2 psu
Salinity Shell Point:	11– 32 psu (SCCF RECON)	Previous wk 11– 30 psu

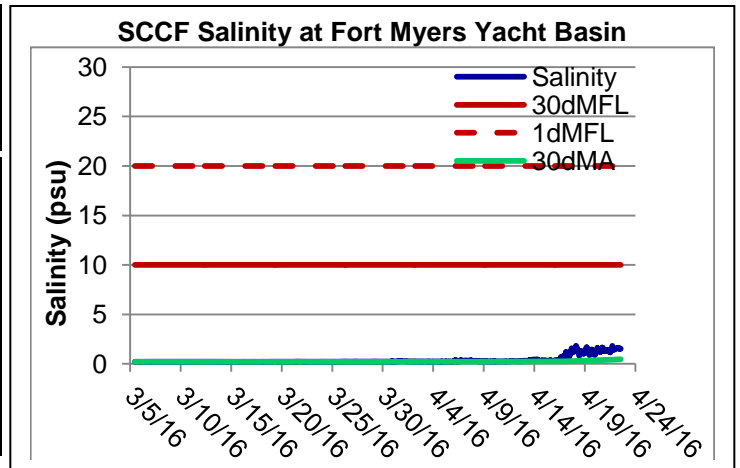


Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Island	0.2 - 0.2	< 5 psu	In Range
Fort Myers	0.3 – 1.8	<10 psu	Low*
Shell Point	11 – 32	25 -31 psu	Low
Light (25% I _z depth meters)			
Causeway	1.78	1 meter	Low
Sanibel Boat Ramp	2.20	2.2 meters	In Range
Tarpon Bay Dock	1.52	2.2 meters	Low

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

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S79 during the past seven days averaged **2,664 cfs**. Over the past 14 days **47%** of Lake Okeechobee outflows were directed to the Caloosahatchee, **15%** were delivered to the St Lucie at S308, **34%** of flows were discharged south to the EAA for irrigation demand, **3%** to the L8 and **1%** to S310.

ACOE April 15 Pulse Release at S79					
Date	Day	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/15/2016	1	1400	1887	1443	1911
4/16/2016	2	2400	2427	1719	1624
4/17/2016	3	2700	2805	2248	2244
4/18/2016	4	2900	2652	2210	2439
4/19/2016	5	3800	3338	2837	3502
4/20/2016	6	4300	4089	3109	3987
4/21/2016	7	3500	3163	3042	3881
7 day avg		3000	2909	2373	2798



Upstream of S79/Franklin Conditions: On 4/26/16 the Olga Water Treatment plant chlorides measured **52 mg/L**, apparent color was **113 CU** and turbidity measured **3.95 NTU**. No visible algae for the past week. The plant is online and operating at 2000 GPM.

Upper Estuary Conditions: Salinities in the upper estuary are increasing and are in the suitable range for tape grass.

Lower Estuary Condition: The average salinity at Shell Point (**23 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 below the preferred range for seagrass.**

Tarpon Bay Salinity **27.2 – 33.9 psu**; CDOM: **0.5 – 27.0 qsde**; Dissolved oxygen: **5.5 – 9.1 mg/L**, Chlorophyll: **1.5 – 5.6 µg/L**
 McIntyre Creek Salinity: Salinity: **26.5 – 30.66 psu**; CDOM: **11.0 – 18.5 qsde**; Dissolved oxygen: **2.6 – 8.2 mg/L**, Chlorophyll: **2.6 – 25.5 µg/L**. Dissolved oxygen dropped below 4 mg/L four times over the last week at McIntyre Creek.

Red tide: On April 22, 2016 FWC reported *Karenia brevis*, the Florida red tide organism, persists in samples along Pinellas, Manatee, Sarasota, and Charlotte Counties in southwest Florida.

Wildlife Impacts: The past week CROW, the wildlife rehabilitation clinic on Sanibel, received **2 new patients** suffering from suspected **red tide poisoning**; **1 double-crested cormorant** and **1 snowy plover**.

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
Causeway	1.6	43.2	1.7	1.78
Sanibel Boat Ramp	1.6	15.5	2.0	2.20
Tarpon Bay Dock	2.3	58.3	2.3	1.52

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

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/19/2016	Tues	3338	2837	3502
4/20/2016	Wed	4089	3109	3987
4/21/2016	Thur	3163	3042	3881
4/22/2016	Fri	1645	1510	2290
4/23/2016	Sat	1587	1929	1298
4/24/2016	Sun	2244	1894	2169
4/25/2016	Mon	2585	2243	2678
7 Day	Avg	2664	2366	2829