

MEMORANDUM

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

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 - Lee County Natural Resources
 Connie Jarvis - City of Cape Coral
 Rae Ann Wessel & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: October 13 -19, 2015

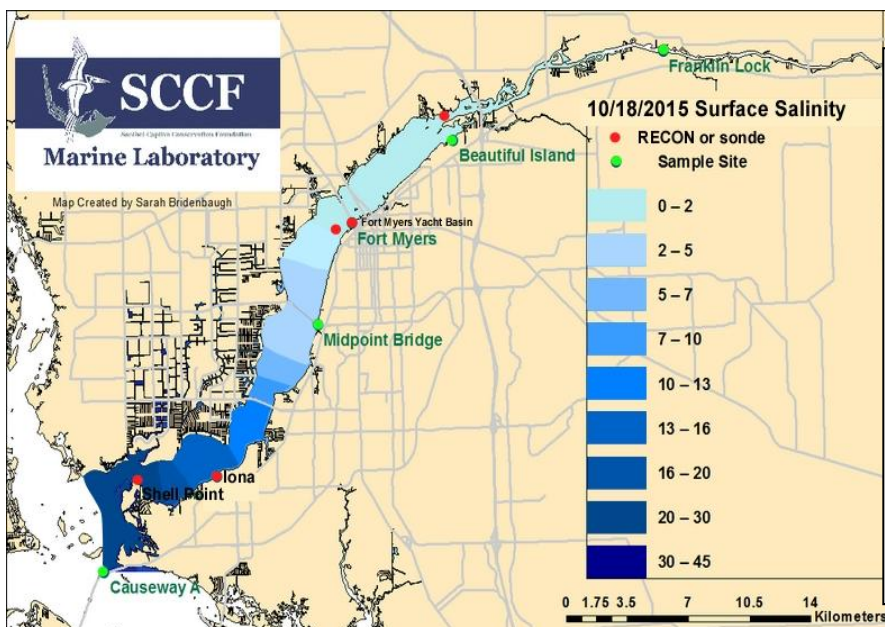
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: No rain, zero watershed runoff from S78 the past week and releases from Lake O available only for the Ortona pool water supply dropped flows to the estuary at S79 to an average of **147 cfs**.

USACE Action: On 10/16/15 the USACE continued the closure of the S77 structure except to maintain optimum canal levels in the Caloosahatchee for water supply and navigation.

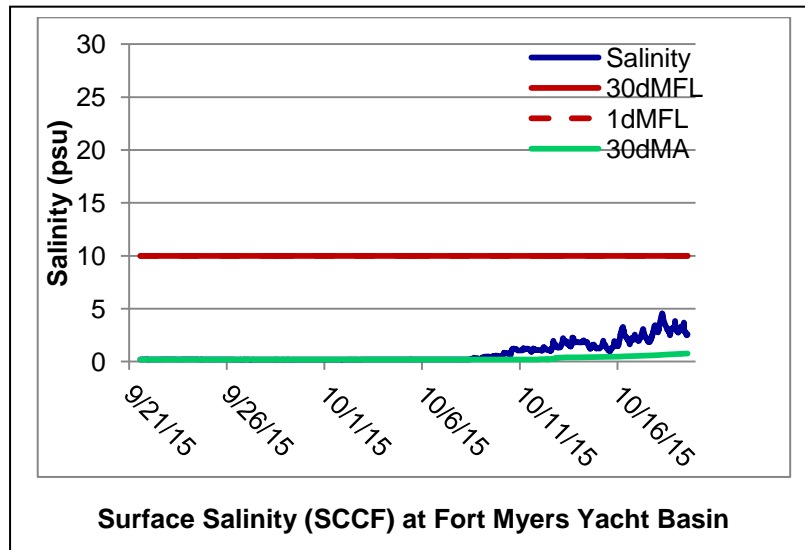
Recommendation: With drier conditions and no freshwater from the watershed, we recommend a seven day pulse release to the Caloosahatchee to provide average flows of **800 - 1000 cfs** at S79 in order to gradually transition salinity changes in the estuary and avoid unnecessary abrupt and harmful flow/salinity extremes.

Lake Okeechobee Level: 14.69 ft. (Low Sub-Band) Last week: 14. 83 ft.
Lake Okeechobee Inflow: 3,289 cfs **Lake Okeechobee Outflow:** 2,212 cfs
Weekly Rainfall: WP Franklin 0" Ortona 0.04" Moore Haven 0"
Salinity Fort Myers: 1.0- 4.5 psu (SCCF Yacht Basin Surface) Previous week: 0.2 – 1.4 psu
Salinity Shell Point: 12 – 31 psu (SCCF RECON) Previous week: 9.5 - 31 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Island	ND	< 5psu	In Range
Fort Myers	1.0 - 4.5	< 10 psu	In Range
Shell Point	12 – 31	25 – 31 psu	Low
Light (25% I _z depth meters)			
Iona	0.84	1 meter	Low
Causeway	0.84	2.2 meters	Low
Sanibel	0.99	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S79 during the past seven days averaged **147 cfs**, only **21% of the previous weeks flow**. Over the past 14 days **83%** of total Lake Okeechobee outflows were sent south to the EAA for water supply, **12%** was delivered to the L8 basin, **3%** was directed to the Caloosahatchee and **1.6%** to the St Lucie.



Upstream of S79/Franklin Conditions: On 10/20/15 at the Olga Water Treatment plant, chlorides measured **58 mg/L**, apparent color was **161 CU** and turbidity measured **0.93 NTU**. No algae was visible at the plant intake over the past week. The plant is online operating at 1600 GPM.

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

Lower Estuary Condition: Salinity was in the optimal range for oysters at Iona (**14 psu** on 10/18/15) and within the optimal range for oysters at Shell Point (**23 psu** weekly average).

McIntyre Creek & Tarpon Bay in J.N. "Ding" Darling NWR: Over the past week, salinity at McIntyre Creek ranged between **27 – 28.8 psu**. CDOM readings ranged from **15.5 – 22.3 qse**. Dissolved oxygen in McIntyre Creek **dipped below 3 mg/L 5 times**, ranging from **1.8 – 8.2 mg/L**. Chlorophyll readings ranged from **2.8 – 8 ug/L**. Salinity at Tarpon Bay ranged from **27 – 32 psu**. CDOM readings ranged from **20 to 52 qse**. Dissolved oxygen ranged from **3.75 – 7.5 mg/L**, and chlorophyll readings ranged from **3 – 11 ug/L**. **Salinity at both locations remains below or in the lower end of the preferred range for shoal grass and turtle grass (30 to 40 psu).**

Wildlife Impacts: The past week CROW, the Wildlife rehabilitation clinic on Sanibel, received **1 double crested cormorant** with suspected brevetoxicosis.

Red Tide: On 10/17/15 FWC reported red tide, *K. brevis* in background to high concentrations alongshore Bay and Gulf counties; background to medium concentrations alongshore Pinellas, Manatee and Sarasota counties; background to very low concentrations along, and offshore Charlotte County and very low concentrations in one sample off Lee County.

Caloosahatchee Stations	Chlorophyll (µg/L)	CDOM (qse)	Turbidity (NTU)	25% lz depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Iona	3.2	168	4.2	0.84
Causeway A	5.1	80.9	12.9	0.84
San Carlos Bay	4.1	62.2	10.5	0.99

Target light penetration: CE – Caloosahatchee estuary = **1 meter**
SCB – San Carlos Bay = **2.2 meters**

25% lz: where z is 25% of surface I. I = irradiance, z = depth

ACOE Daily Reports				
Date	Day	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
10/13/2015	Tues	267	0	31
10/14/2015	Wed	212	0	0
10/15/2015	Thur	133	0	159
10/16/2015	Fri	180	0	235
10/17/2015	Sat	36	0	232
10/18/2015	Sun	0	0	230
10/19/2015	Mon	207	0	113
7 Day	Avg	147	0	142