

**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 6 - 12, 2016

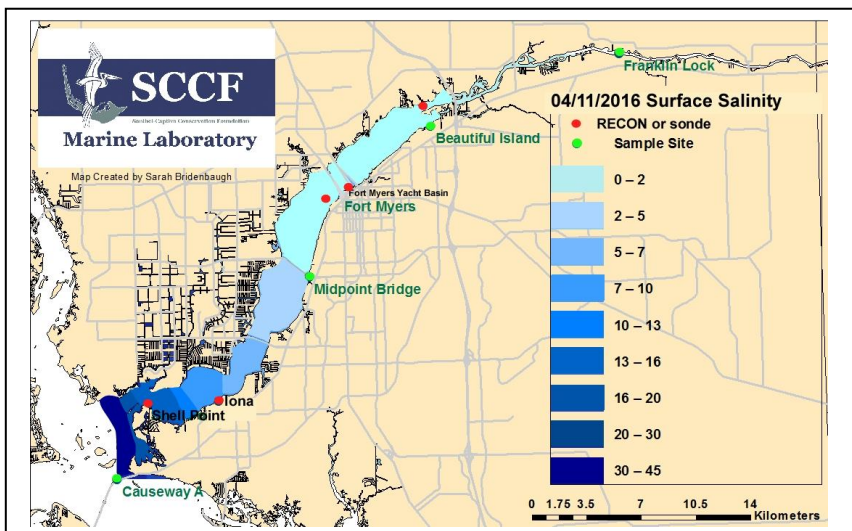
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

**Caloosahatchee Condition Summary:** The past week Lake Okeechobee water levels continue to recede with relatively high discharges to the Caloosahatchee. **Over the past week, discharges into the estuary at S79 increased slightly to an average of 3,078 cfs and discharges to the river from Lake Okeechobee at S77 increased almost 1,000 cfs to an average of 3,121 cfs to supply agricultural irrigation demand.** Watershed inflows into the Franklin pool between S78 and S79 averaged **504 cfs**.

**USACE Action:** On April 8, 2016 the USACE continued pulse releases to the Caloosahatchee through **S-79** to a weekly average of 3,000 cfs and **1,170 cfs** to the St. Lucie measured at S-80.

**Recommendation:** High estuary discharges the past twelve weeks and increased evapotranspiration off the lake have contributed to significant lake recession. To protect spawning in the Caloosahatchee estuary and to improve salinity conditions throughout the estuary, **we recommend reducing average discharges to the Caloosahatchee to 2,000 cfs or less measured at S79** for the coming week. Reduced flows are critical to prevent the advection of eggs and larvae from critical habitat within the estuary. Given this year's unseasonably wet conditions we request the COE adjust the June 1 lake level target of 13.5 ft to levels closer to 14 or 14.5 ft.

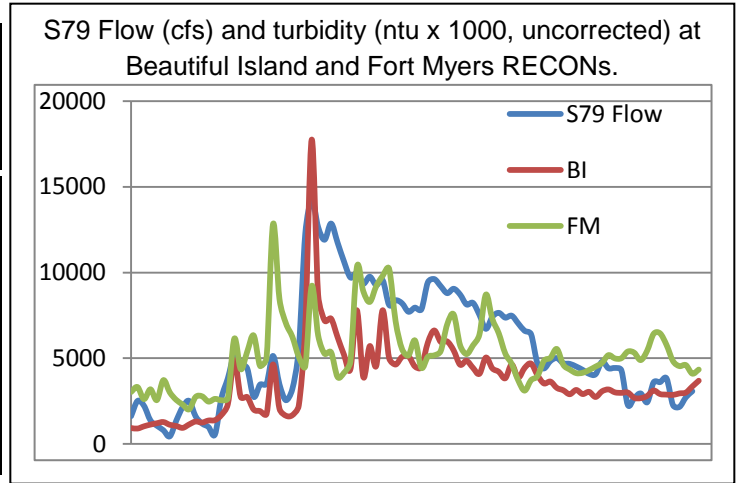
<b>Lake Okeechobee Level:</b>	<b>14.85 ft. (Low Sub-Band)</b>	<b>Last week: 15.08 ft.</b>
<b>Lake Okeechobee Inflow:</b>	<b>3,859 cfs</b>	<b>Lake Okeechobee Outflow: 6,840 cfs</b>
<b>Weekly Rainfall:</b>	WP Franklin <b>0"</b>	Ortona <b>0"</b> Moore Haven <b>0"</b>
<b>Salinity Beautiful Island:</b>	<b>0.2 – 0.2 psu</b> (SCCF RECON Marker 18)	Previous wk <b>0.2 – 0.2 psu</b>
<b>Salinity Fort Myers:</b>	<b>0.2 – 0.2 psu</b> (SCCF Yacht Basin)	Previous wk <b>0.2 – 0.2 psu</b>
<b>Salinity Shell Point:</b>	<b>10 – 31 psu</b> (SCCF RECON)	Previous wk <b>7.9 – 32 psu</b>



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Island	0.2 - 0.2	< 5 psu	In Range
Fort Myers	0.2 - 0.2	<10 psu	Low
Shell Point	10 - 31	25 -31 psu	Low
Light (25% I <sub>z</sub> depth meters)			
Causeway	1.56	1 meter	Low
Sanibel Boat Ramp	1.84	2.2 meters	Low
Tarpon Bay Ramp	1.65	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S79 during the past seven days averaged **3,078 cfs**. Over the past 14 days **55%** of Lake Okeechobee outflows were directed to the Caloosahatchee, **20%** were delivered to the St Lucie at S308, **22%** of flows were discharged south to the EAA for irrigation demand and **3%** to the L8.

ACOE April 1 Pulse Release at S79					
Date	Day	Pulse Target	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/1/2016	1	1400	1942	1325	1465
4/2/2016	2	2400	2050	1468	1173
4/3/2016	3	2700	2761	1829	1967
4/4/2016	4	2900	2861	2140	2232
4/5/2016	5	3800	3662	2742	3074
4/6/2016	6	4300	4186	3259	4081
4/7/2016	7	3500	3506	3183	3905
<b>7 day avg</b>		<b>3000</b>	<b>2995</b>	<b>2278</b>	<b>2557</b>



**Upstream of S79/Franklin Conditions:** On 4/12/16 the Olga Water Treatment plant chlorides measured **50 mg/L**, apparent color was **138 CU** and turbidity measured **3.86 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 in the suitable range for tape grass. **Submarine light levels were too low for SAV below depths of less than one meter.**

**Lower Estuary Condition:** The average salinity at Shell Point was in the optimal range for oysters (**22 psu**).

**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 at or below the preferred range for sea grasses.**

Tarpon Bay Salinity: **27 – 33 psu**; CDOM: **1.5 – 5.3 qsde**; Dissolved oxygen: **5.3 – 8.5 mg/L**, Chlorophyll: **2.9 – 6.4 µg/L**  
 McIntyre Creek Salinity: **28 – 31 psu**; CDOM: **12.9 – 19.75 qsde**; Dissolved oxygen: **3.7 – 8.7 mg/L**, Chlorophyll: **2.2 – 5.5 µg/L**.

**Red tide:** On April 8, 2016 FWC reported *Karenia brevis*, the Florida red tide organism, persists in samples along Pinellas, Manatee, Sarasota, Charlotte, and Lee Counties in southwest Florida.

**Wildlife Impacts:** The past week CROW, the wildlife rehabilitation clinic on Sanibel, received **15 new patients** suffering from **red tide poisoning**; **13 double-crested cormorants**, **1 Kemps Ridley sea turtle**, **1 laughing gull**.

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	2.8	34.6	4.2	1.56
Sanibel Boat Ramp	2.9	24.2	3.0	1.84
Tarpon Bay Ramp	3.5	38.6	2.9	1.65

Target light penetration: **CE**- Caloosahatchee Estuary =1 m  
**SCB**-San Carlos Bay = 2.2 meters  
 Definition of 25% I<sub>z</sub>: **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)
4/5/2016	Tues	3662	2742	3074
4/6/2016	Wed	4186	3259	4081
4/7/2016	Thur	3506	3183	3905
4/8/2016	Fri	2159	1753	2268
4/9/2016	Sat	2225	1746	2068
4/10/2016	Sun	2911	2527	3104
4/11/2016	Mon	2897	2808	3350
<b>7 Day</b>	<b>Avg</b>	<b>3078</b>	<b>2574</b>	<b>3121</b>