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 Steverson

From: Periodic Scientists Conference Call Participants
Paul Tritaik - 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: August 17 - 23, 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: Discharges into the estuary at S-79 during the past week averaged **2,952 cfs, still exceeding the harm threshold of 2,800 cfs established for the estuary.** Lake Okeechobee discharges to the river, measured at S-77, averaged **545 cfs.** Watershed inflows to the Franklin pool between S-78 and S-79 averaged **1,772 cfs.**

USACE Action: On August 19, 2016 the USACE continued Lake Okeechobee pulse releases with a target of **2,800 cfs** to the Caloosahatchee **through S-79** and **650 cfs** to the St. Lucie measured at S-80.

Recommendation: We request flows to the Caloosahatchee Estuary at S-79 be maintained between the harm thresholds of 2,800 cfs and 650cfs.

Lake Okeechobee Level: **14.70 ft**. (**Low Sub-Band)** **Last week**: **14.76 ft**.

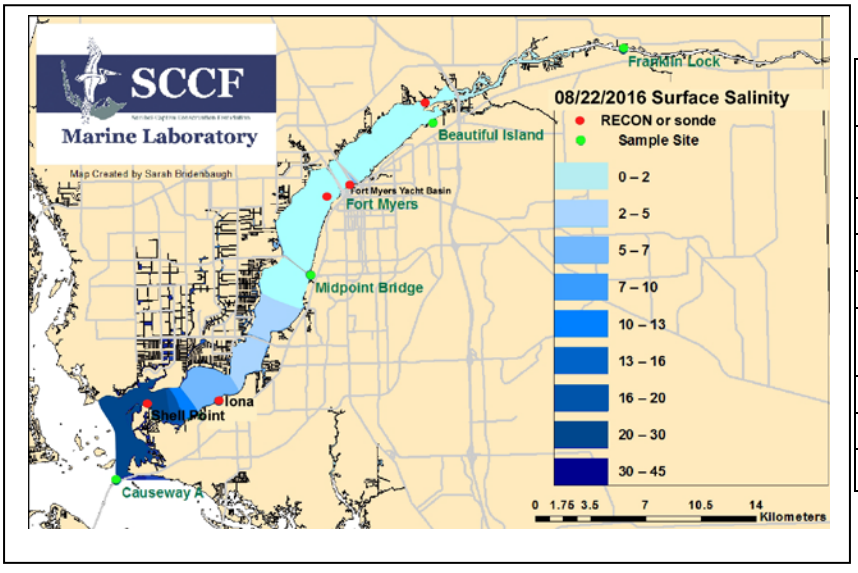
Lake Okeechobee Inflow: **1,808 cfs** **Lake Okeechobee Outflow: 2,962 cfs**

Weekly Rainfall: WP Franklin **0.25"** Ortona **1.32"** Moore Haven 0**.44"**

Salinity Beautiful Island: **0.2 – 0.2psu** (SCCF RECON Marker 18) Previous wk **0.2 – 0.2 psu**

Salinity Fort Myers: **0.2 – 0.2 psu** (SCCF Yacht Basin) Previous wk **0.2 – 0.2 psu**

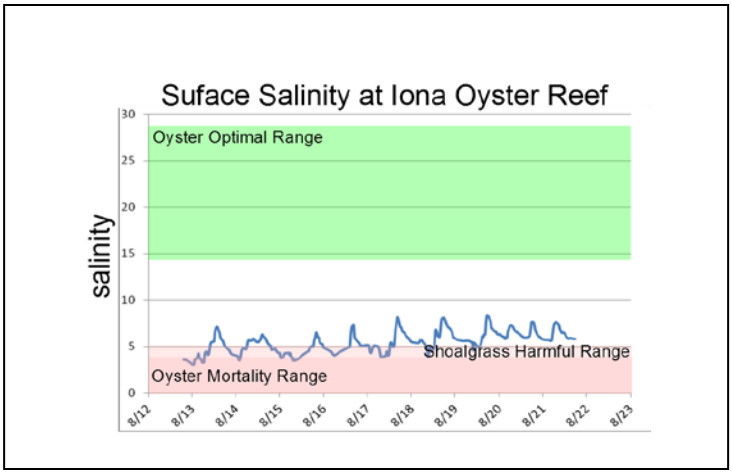
Salinity Shell Point: **7.4 – 29 psu (**SCCF RECON) Previous wk **5.0 – 28 psu**



Salinity (psu)			
	Current Value	**Sustainable Range**	**High/ Low**
Beautiful Is	**0.2 – 0.2**	**< 5 psu**	**-**
Fort Myers	**0.2 – 0.2**	**<10 psu**	**-**
Shell Point	**7.4 – 29**	**25 - 32 psu**	**Low**
Light (25% Iz depth meters)			
Iona	**0.80**	**1 meter**	**Low**
Causeway	**1.22**	**2.2 meters**	**Low**
Sanibel East	**1.39**	**2.2 meters**	**Low**

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **2,952 cfs. Cyanobacteria was not present upstream of the Franklin Lock the past week. Over the past 14 days 39%** of Lake Okeechobee outflow was directed to the Caloosahatchee at S-77, **47%** was delivered to the St Lucie at S-308, **3%** was delivered south to the EAA for irrigation demand, **11%** was directed to the L8. S-310 backflowed **1,308 acre feet** into Lake O.

ACOE August 12 Release at S-79					
Date	**Day**	**Pulse Target**	**S79 Flow (cfs)**	**S78 Flow (cfs)**	**S77 Flow (cfs)**
8/12/2016	1	3300	**3235**	**709**	**479**
8/13/2016	2	4100	**4049**	**710**	**306**
8/14/2016	3	3600	**3670**	**1006**	**263**
8/15/2016	4	2700	**3123**	**1004**	**281**
8/16/2016	5	2500	**3097**	**737**	**405**
8/17/2016	6	2200	**2026**	**411**	**-1429**
8/18/2016	7	1200	**1878**	**393**	**-164**
7 day avg		**2800**	**3011**	**620**	**20**



Upstream of S-79/Franklin Conditions: On 8/23/16 the Olga Water Treatment plant chlorides measured **43 mg/L**, apparent color was **223 CU** and turbidity measured **2.47 NTU. Slight traces of algae were present at the plant intake for a few days last week.** The plant is online at 2000 GPM.

Upper Estuary Conditions: On 8/18/16 Lee County Environmental Lab found no cyanobacteria at their upper estuary sample sites. Salinities are in the suitable range for tape grass and have begun increasing slightly at the Fort Myers RECON.

Lower Estuary Condition: Average salinity **(5.5psu**) was sub-optimal for oysters and seagrass at Peppertree Pointe Marina in Iona. The average salinity at Shell Point (**20 psu**) was in the optimal range for oysters**.**

McIntyre Creek & Tarpon Bay in J.N. *"Ding"* Darling NWR: Salinities were below the preferred range for shoal grass and turtle grass (30 to 40 psu) in McIntyre Creek for 70 days (sensor down 8/6-8/11) and in Tarpon Bay, 69 of the past 75 days.

Tarpon Bay Salinity: **23.7 – 31.1 psu;** CDOM**: 15.0 – 36.0 qsde;** Dissolved oxygen: **4.7 – 8.8 mg/L;** Chlorophyll: **3.5– 10.5 µg/L**. **McIntyre Creek:** Salinity: **23.7 – 26.2 psu;** CDOM**: 21.2 – 28.8 qsde;** Dissolved oxygen: **2.3 – 8.3 mg/L;** Chlorophyll: **3.7 – 9.5 µg/L.** Dissolved oxygen dropped below 3 mg/L last week six times at McIntyre Creek.

Red Tide: On 8/19/16 FWC reported *finding no Karenia brevis*, the Florida red tide organism, in their Lee County samples.

Shellfish Harvesting Harmful Algal Bloom Closure: **On 8/10/16 The Florida Department of Agriculture and Consumer Services closed Area #6222 Pine Island Sound East in Matlacha Pass for the harvest of oysters, clams, and mussels.** The closure, triggered by heavy rainfall, does not include shrimp, or crabs.

Caloosahatchee Stations	Chlorophyll (µg/L)	CDOM (qse)	Turbidity (NTU)	25% Io depth (meters)
Target Values	**< 11**	**CE <70 SCB <11**	**CE < 18 SCB < 5**	**CE = 1 m SCB = 2.2m**
Iona	**6.2**	**190**	**1.9**	**0.80**
Causeway	**5.7**	**84.8**	**3.1**	**1.22**
Sanibel E	**7.4**	**54.5**	**3.7**	**1.39**

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)**
8/16/2016	Tues	**3097**	**737**	**405**
8/17/2016	Wed	**2026**	**411**	**-1429**
8/18/2016	Thur	**1878**	**393**	**-164**
8/19/2016	Fri	**2824**	**925**	**252**
8/20/2016	Sat	**3668**	**2042**	**1680**
8/21/2016	Sun	**4004**	**2214**	**1964**
8/22/2016	Mon	**3170**	**1539**	**1465**
7 Day	**Avg**	**2952**	**1180**	**545**