

MEMORANDUM

To: USACE Colonel Jason A. Kirk, LTC Jennifer A. Reynolds, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Ernie Marks, Terrie Bates, Susan Gray, DEP Secretary Noah Valenstein

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 Burns – 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: **October 24 - 30, 2017**

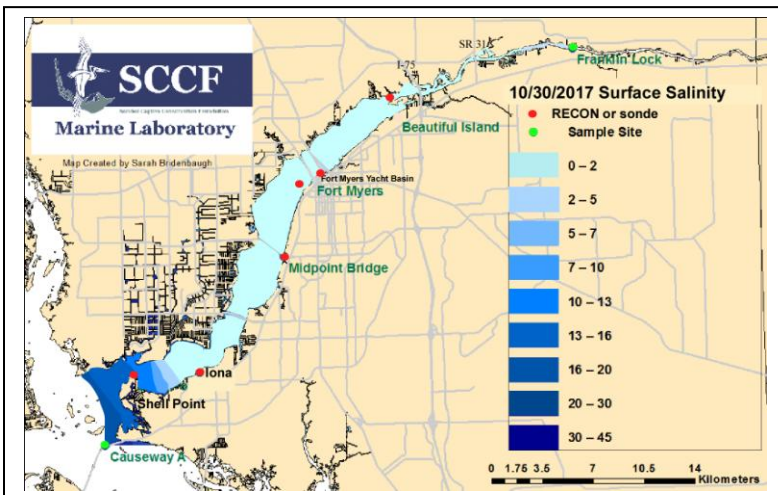
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: The past week freshwater flows from Lake Okeechobee and the watershed increased to an average of **10,862 cfs** at S-79 as Tropical Depression Phillip passed over southern Florida. **Light remains limited throughout the river and estuary from dark, freshwater discharge that extends several miles offshore into the Gulf of Mexico.**

USACE Action: The past week discharges from Lake Okeechobee continued at maximum practicable releases with average flows of **6,623 cfs** to the Caloosahatchee at S-77. Discharges at S-80 the past week averaged **4,481 cfs**.

Recommendation: With Lake Okeechobee water levels in the high sub-band, we urge the Corps to continue maximum discharges in all directions, where practicable to return lake levels below 16 ft to reduce harmful discharges to the estuaries later in the spring when spawning occurs.

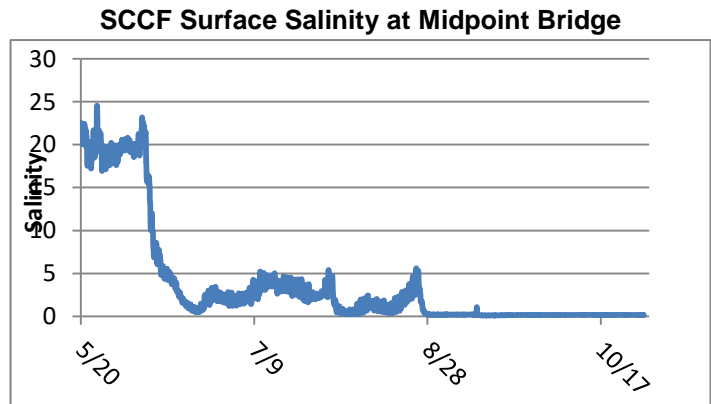
Lake Okeechobee Level:	17.02 ft. (High Sub-Band)	Last week: 16.95 ft
Lake Okeechobee Inflow:	13,528 cfs	Lake Okeechobee Outflow: 7,371 cfs
Weekly Rainfall:	WP Franklin 1.93" Ortona 2.89"	Moore Haven 3.22"
Salinity Beautiful Island:	ND (SCCF RECON Marker 18)	Previous wk ND
Salinity Fort Myers:	0.2 psu (SCCF RECON)	Previous wk 0.2 – 0.2 psu
Salinity Shell Point:	0.5- 29 psu (SCCF RECON)	Previous wk 1.2 – 29 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	0.2 - 0.2	<10 psu	In Range
Shell Point	0.5 - 29	25 - 32 psu	Low
Light (25% I _z depth meters)			
Fort Myers	0.54	1 meter	Low
Shell Point	0.79	2.2 meters	Low
Causeway	0.75	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **10,862 cfs**. Over the past 14 days **310,276 AF of water was discharged from Lake O, 59% to S-77 and 41% to S-308. No water was discharged south to the EAA.** A net **351 AF** was discharged through L8 and **351 AF** through S310.

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
10/24/2017	9220	6754	6678
10/25/2017	9634	7100	6773
10/26/2017	10055	7753	7082
10/27/2017	9664	7615	7196
10/28/2017	10451	7382	7166
10/29/2017	13907	7455	6106
10/30/2017	13104	7520	5362
7 day Avg	10,862	7368	6623



Upstream of S-79/Franklin Conditions: On 10/31/17 the Olga Water Treatment plant chlorides measured **51 mg/L**, apparent color was **235 CU** and turbidity measured **4.36 NTU**. No visible algae in the plant intake the past week. The plant is online running at 2200 GPM. **The WP Franklin Lock park remains closed to public access and water sampling.**

Upper Estuary Conditions: On 10/26/17 Lee County Environmental Lab detected *Microcystis*, at the Davis Boat Ramp in east Fort Myers. Salinities in the upper estuary were in the suitable range for tape grass. **Elevated turbidity and colored dissolved organic matter contributed to low light availability for tape grass and widgeon grass.**

Lower Estuary Conditions: The average weekly salinity was in the optimal range for oysters at Shell Point (**15 psu**) though the **daily average was as low as 6.2 psu**. Light levels and salinities were **below optimal for seagrasses in much of the lower estuary**. On 10/29/17 during 30 knot winds, the 25% light depth measured at Iona was **0.15 meters** and the salinity was **0.8 psu**.

J.N. "Ding" Darling NWR: Dark opaque water continues to obscure light causing low oxygen levels in the impoundments.

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	16.4 – 27.3	3.5 – 9.8	14.8 – 35.0	3.4 – 10.9
Tarpon Bay	17.7 – 25.2	3.8 – 9.6	22.2 – 43.1	4.2 – 13.7

Coastal Conditions: Spikes in chlorophyll concentrations were detected at both Tarpon Bay and MacIntyre Creek RECON sensors the past week. **Samples at the mouth of Tarpon Bay revealed a bloom dominated by the diatom *Skeletonema* sp.** Dark, freshwater from high discharges extends beyond the Sanibel lighthouse surrounding the beaches of Sanibel and Fort Myers Beach.

Red Tide: On 10/27/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was present in samples collected in Pinellas, Manatee, Sarasota and Collier Counties in Southwest Florida the past week.

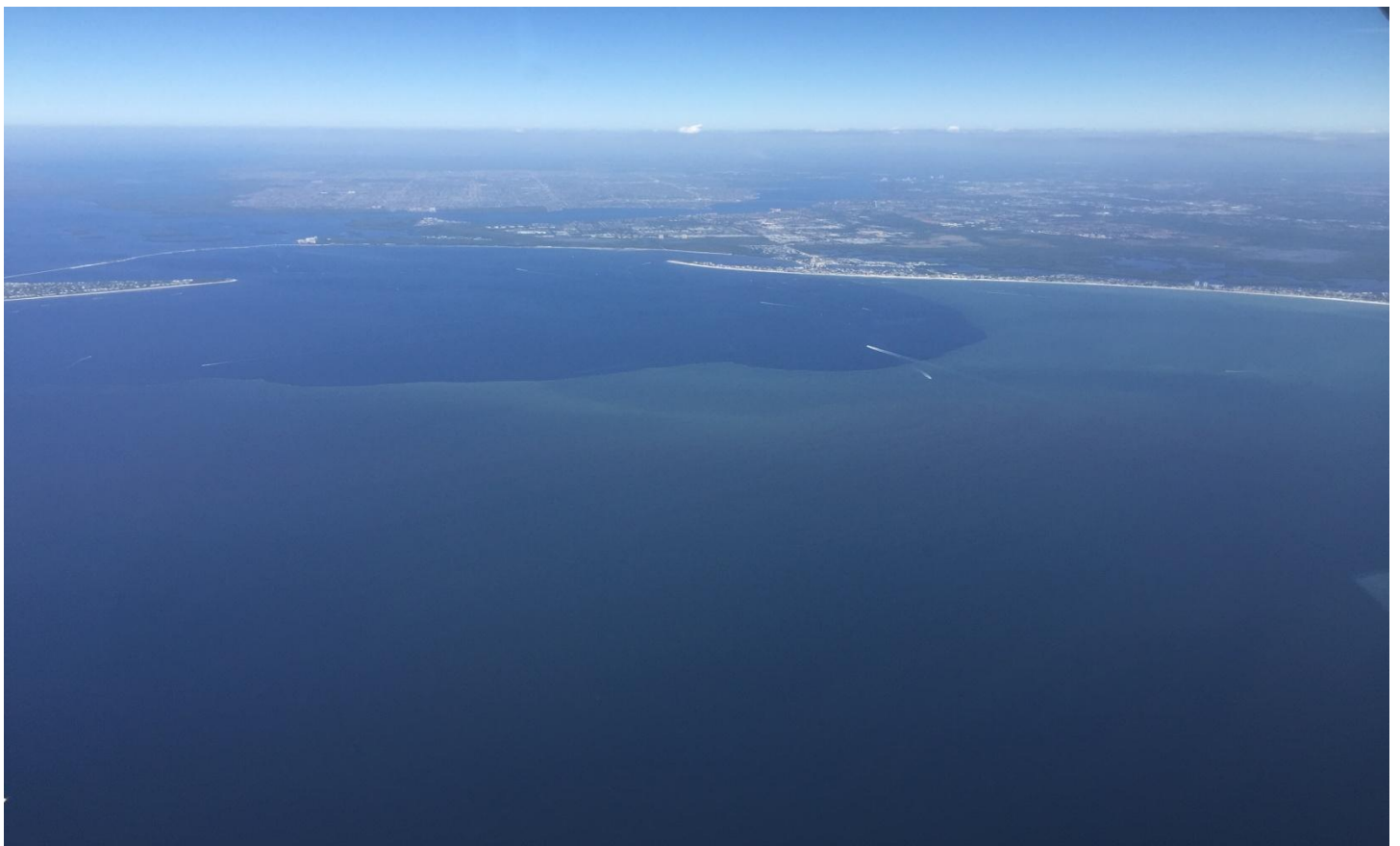
Wildlife Impacts: CROW, the wildlife hospital on Sanibel treated **11 patients with probable brevetoxicosis: 10 double crested cormorants and 1 white ibis.**

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% lo depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Fort Myers	4.1	330	4.1	0.54
Shell Point	5.7	190	6.0	0.79
Causeway	6.5	180	10	0.75

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



Dark chocolate colored water from Caloosahatchee discharges extending north in the Gulf of Mexico along Sanibel Island's West Gulf Drive/Rabbit Road on 10/30/17. Photo: Bob Holder, homeowner



A dark plume of freshwater discharging out the Caloosahatchee into the Gulf of Mexico along Fort Myers Beach, on the right, Sanibel Causeway and east end at left, on 10/27/17. Photo: Pilot Curt Brown