

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
 Harry Phillips – City of Cape Coral
 Rae Ann Wessel & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **May 29 - June 4, 2018**

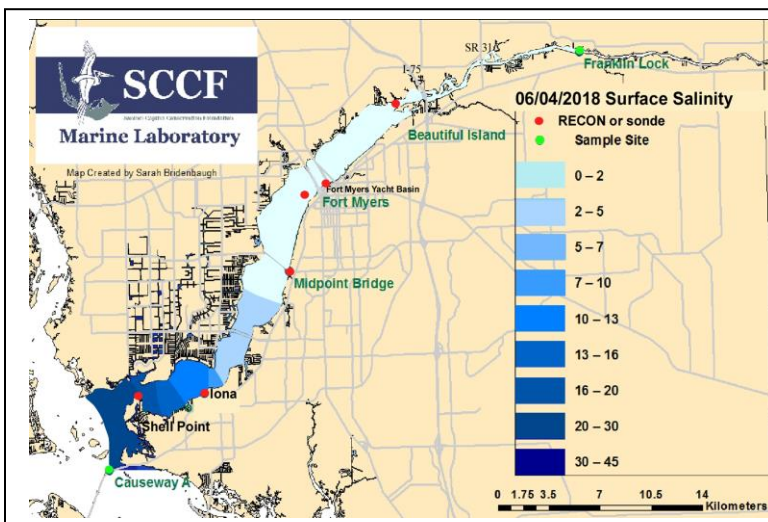
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: Following 89 days of MFL exceedance from flows below the low flow harm threshold, discharge has switched to exceeding the high flow harm threshold. The weekly average flow at S79 was 5,555 cfs, with flows nearly 3 times the high flow harm threshold for two of the past 5 days.

USACE Action: On 6/1/18 the U.S. Army Corps of Engineers initiated discharges of 4,000 cfs to the Caloosahatchee measured at S-77 and 1,800 cfs to the St Lucie measured at S-80.

Recommendation: We request that the Army Corps discontinue flows from Lake O to the Caloosahatchee until flows at S-79 drop below 3,000 cfs. We request water managers maximize use of all available storage and provide updates on emergency storage use and options. We urge the Corps and SFWMD to redirect stormwater from Clewiston's S-310 and the L8 that are back flowing into Lake Okeechobee at levels that exceed the total lake discharge the past 14 days.

Lake Okeechobee Level:	14.22 ft. (Low Flow Sub-Band)	Last week:	14.02 ft.
Lake Okeechobee Inflow:	5,456cfs	Lake Okeechobee Outflow:	4,442 cfs
Weekly Rainfall:	WP Franklin 0.58"	Ortona 1.18"	Moore Haven 3.46"
Salinity Beautiful Island:	0.3 - 1.1 psu (SCCF RECON Marker 18)	Previous week	0.6 - 3.1 psu
Salinity Fort Myers:	0.3 - 6.5 psu (SCCF RECON)	Previous week	5.0 - 14 psu
MFL Status: In compliance:	30 day moving average: 7.1 psu	Previous week:	9.3 psu
Salinity Shell Point:	6.0 - 34 psu (SCCF RECON)	Previous week	16 - 34 psu

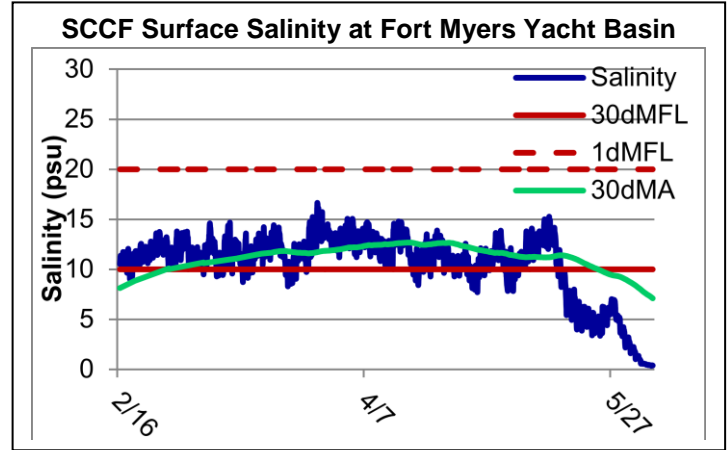


Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	0.3 - 1.1	< 5 psu	In Range
Fort Myers	0.3 - 6.5	<10 psu	In Range
Shell Point	6.0 - 34	25 - 32 psu	Low
Light (25% Iz depth meters)			
Fort Myers	0.46	1 meter	Low
Shell Point	0.45	2.2 meters	Low
Causeway	1.05	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **5,555 cfs**. Over the past 14 days **36,147 AF** of water was discharged from Lake O; 78% through **S-77** and **22% through S-80**. **Zero water was discharged south to the EAA**. The past 14 days the **L8 backflowed 31,314 AF** and stormwater from Clewiston discharged **4,289 AF into Lake Okeechobee**.

The combined back flows from the L8 and S-310 were 2,456 AF higher than the total outflows to the estuary the past 14 days.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/29/2018	2907	1533	0
5/30/2018	2064	832	0
5/31/2018	3227	1024	0
6/1/2018	6188	4150	1526
6/2/2018	8284	6099	3848
6/3/2018	8260	6036	3940
6/4/2018	7958	5786	3996
7 day Avg	5555	3637	1901



Upstream of S-79/Franklin Conditions: On 6/5/18 the Olga Water Treatment plant reported chlorides of **64 mg/l**, apparent color **203 CU** and turbidity **3.96 NTU**. No visible algae reported at the plant intake the past week. The plant remains off line for maintenance.

Upper Estuary Conditions: The weekly average salinity at Fort Myers Yacht Basin was **1.8 psu**, in the suitable range for **tape grass**, which is growing between the Caloosahatchee Bridge and Beautiful Island. Water column chlorophyll was elevated at Fort Myers and Beautiful Island RECON stations.

Lower Estuary Conditions: The average salinity at Shell Point, **21 psu**, was in the suitable range for oysters.

J.N. "Ding" Darling NWR:

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	27.2 – 34.7	4.6 – 13.5	5.2 – 15.6	1.3 – 13.7
Wulfert Flats	31.4 – 35.0	3.8 – 8.5	-----	6.6 – 40.1
Wildlife Drive	26.5 – 34.2	0.3 – 9.1	-----	0.8 – 10.9

Red Tide: On 6/1/18 the Florida Fish and Wildlife Conservation Commission reports that the Florida red tide organism, **Karenia brevis persists** in Hillsborough, Manatee, Sarasota, Charlotte and Lee Counties **with background to very low concentrations** in Lee County samples. No **Karenia** cells were found in SCCF samples from San Carlos Bay or Tarpon Beach.

Wildlife Impacts: The past week, CROW, the wildlife hospital on Sanibel, treated **10 new patients with red tide symptoms**; **7 Double Crested Cormorants, 2 Brown Pelicans and 1 Loggerhead sea turtle**.

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	30	367	3.2	0.46
Shell Point	12	141	3.2	0.45
Causeway	4.5	133	2.6	1.05

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



Sanibel Lighthouse Beach Park, 5/31/18 two hours before high tide. Photo City of Sanibel
<https://s3.amazonaws.com/cityofsanibel/LH5-31-18/index.html>



Sanibel Lighthouse Beach Park, 6/3/18 one hour before high tide.
Photo City of Sanibel with San Cap Aerial <https://s3.amazonaws.com/cityofsanibel/LH6-3-18/index.html>