

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: **January 23 - 29, 2018**

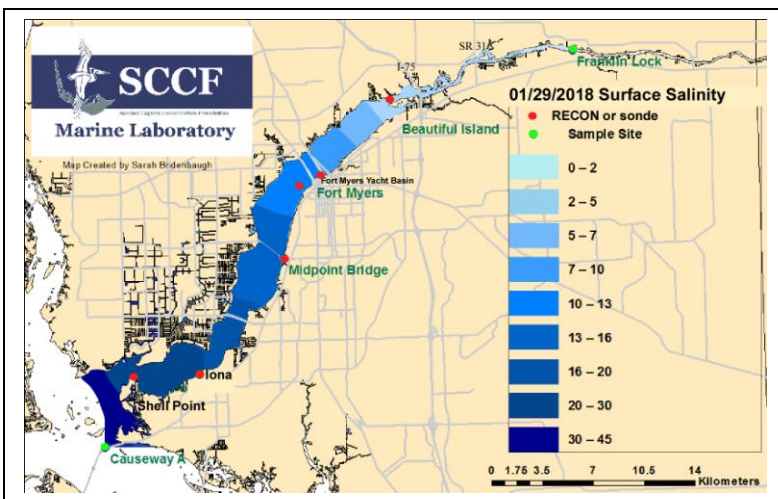
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: The past week freshwater flows from Lake Okeechobee and the watershed averaged **664 cfs** at S-79. Water clarity throughout San Carlos Bay and along Sanibel and Fort Myers beaches continues to improve as a result of the reduced freshwater flows. **Red tide continues along coastal beaches.**

USACE Action: Since 1/12/18 the Army Corps has continued flows from Lake Okeechobee through pulse releases with an average target flow for the Caloosahatchee Estuary of **650 cfs** at S-79 and no releases to the St Lucie at S-80.

Recommendation: To offset rapidly rising salinities in the Caloosahatchee we request the Corps provide pulse releases to the Caloosahatchee to maintain salinities below the ecological harm threshold of **10 psu**. Past operations have shown that flows of **800 - 1,000 cfs measured at S-79** are needed to achieve this.

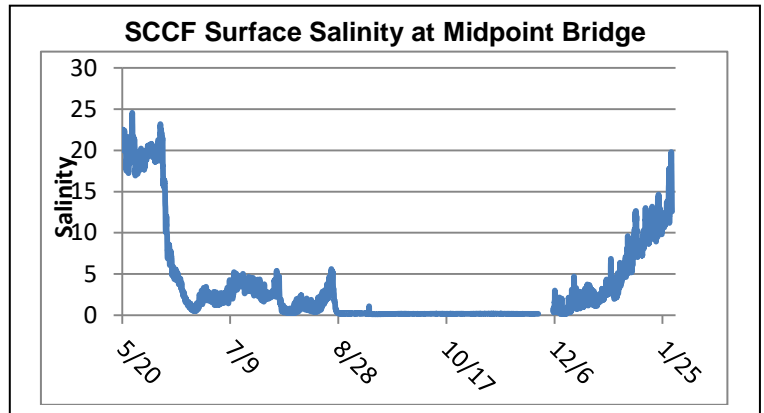
Lake Okeechobee Level:	15.29 ft. (Low Sub-Band)	Last week:	15.31 ft
Lake Okeechobee Inflow:	1,329 cfs	Lake Okeechobee Outflow:	1,208 cfs
Weekly Rainfall:	WP Franklin 0.38"	Ortona 0.19"	Moore Haven 0.75"
Salinity Beautiful Island:	ND (SCCF RECON Marker 18)	Previous wk	ND
Salinity Fort Myers:	ND (SCCF RECON)	Previous wk	ND
Salinity Shell Point:	17 – 33 psu (SCCF RECON)	Previous wk	14 – 31 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	ND	<10 psu	In Range
Shell Point	17 – 33	25 - 32 psu	Low
Light (25% I _z depth meters)			
Fort Myers	0.76	1 meter	Low
Shell Point	1.59	2.2 meters	Low
Causeway	1.89	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **664 cfs**. Over the past 14 days **29,931** AF** of water was discharged from Lake O, **43% to S-77** and **2% to S-308**. **Over 38%* of water from Lake O was discharged south to the EAA** (*no report for S-351). **Approximately 15%** was discharged to the L8 and 2% was discharged through S-310.** (** data missing)

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/23/2018	452	300	363
1/24/2018	156	301	112
1/25/2018	59	2	0
1/26/2018	960	805	30
1/27/2018	1393	1400	392
1/28/2018	1061	837	310
1/29/2018	566	330	-8
7 day Avg	664	568	171



Upstream of S-79/Franklin Conditions: On 1/23/18 the Olga Water Treatment plant reported chlorides of **56 mg/l**, apparent color **152 CU** and turbidity **5.36 NTU**. No visible algae was reported at the plant intake the past week. The plant is online running at 2200 GPM.

Upper Estuary Conditions: The average weekly salinity at the Fort Myers Yacht Basin was **8.0 psu**, in the suitable range for tape grass.

Lower Estuary Conditions: The average weekly salinity was **28 psu**, within the optimal range for oysters at Shell Point.

J.N. "Ding" Darling NWR:

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	-----	4.9 - 9.5	9.6 – 21	2.3 – 6.1
Tarpon Bay	25.7 – 33.6	5.9 – 7.5	6.26 – 22.6	2.0 – 21.0

Beach Conditions: A green algae *Ulva* is present across local beaches in Sanibel, Fort Myers and Fort Myers Beach and colonizing hard structures in the lower estuary.

Red Tide: On 1/26/18 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, persists in Charlotte and Lee Counties in Southwest Florida in low concentrations. SCCF monitoring found medium concentrations near Pumpkin Key, and low to none near 11 other Pine Island sites on 1/24/18.

Wildlife Impacts: The past week **one dead green sea turtle was reported on Captiva with prop scars.**

Manatees: Lee County park staff reported over **80 manatees** in the warm water discharge of the Orange River and FPL canal the past week when water temperatures ranged from **65 - 78° F**.

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	5.7	214	2.6	0.76
Shell Point	4.1	50.4	4.2	1.59
Causeway	1.9	24.3	5.5	1.89

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