

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 16 - 23, 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 increased to an average of **647 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: On 1/12/18 the Army Corps 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 continue to reduce Lake Okeechobee water levels and provide healthy salinity conditions throughout the estuary we encourage the Corps to provide pulse releases to the Caloosahatchee of **800 - 1,000 cfs measured at S-79** over the next week. This will help lower lake levels to prevent high lake levels at the beginning of the wet season.

Lake Okeechobee Level: **15.31 ft. (Low Sub-Band)**

Last week: **15.39 ft.**

Lake Okeechobee Inflow: **679 cfs**

Lake Okeechobee Outflow: **1,643 cfs**

Weekly Rainfall: WP Franklin **0.1"** Ortona **0.0"**

Moore Haven **0.0"**

Salinity Beautiful Island: **ND** (SCCF RECON Marker 18)

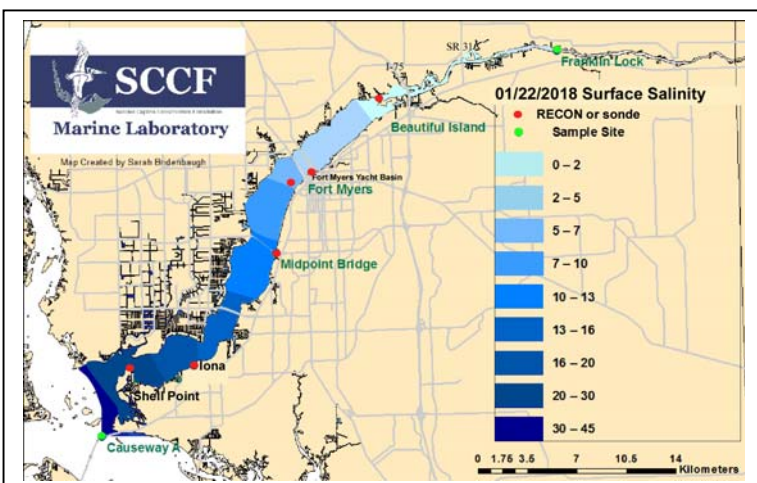
Previous wk. **ND**

Salinity Fort Myers: **ND** (SCCF RECON)

Previous wk. **ND**

Salinity Shell Point: **14 – 31 psu** (SCCF RECON)

Previous wk. **13 – 31 psu**

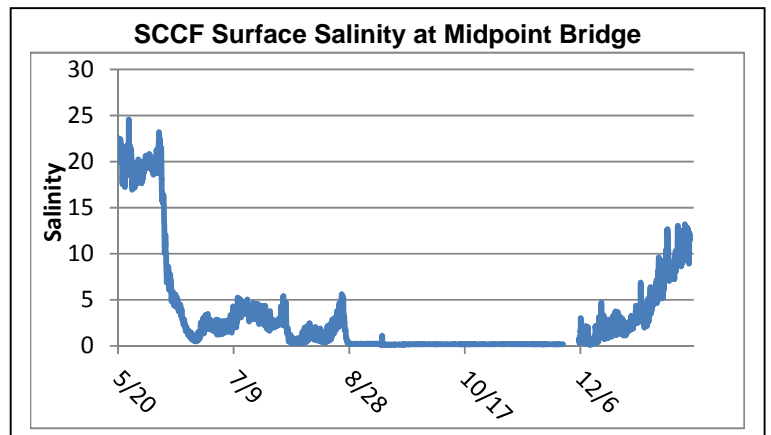


Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	ND	<10 psu	In Range
Shell Point	14 – 31	25 - 32 psu	Low
Light (25% I _z depth meters)			
Fort Myers	0.70	1 meter	Low
Shell Point	1.10	2.2 meters	Low
Causeway	1.79	2.2 meters	Low

*ND – No Data

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **647 cfs**. Over the past 14 days **29,819 AF** of water was discharged from Lake O, **36% to S-77** and **4% to S-308**. **Around 46% of water from Lake O was discharged south to the EAA. Approximately 13% was discharged through L8 and 2% was discharged through S-310.**

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/16/2018	410	270	550
1/17/2018	192	0	34
1/18/2018	45	0	51
1/19/2018	779	490	590
1/20/2018	1388	1158	1478
1/21/2018	1070	713	789
1/22/2018	646	300	347
7 day Avg	647	419	548



Upper Estuary Conditions: On 1/23/18 the Olga Water Treatment plant reported chlorides of **58 mg/l**, apparent color **141 CU** and turbidity **4.17 NTU**. No visible algae were reported at the plant intake the past week. The plant is online running at 2200 GPM.

Lower Estuary Conditions: The average weekly salinity was within the optimal range for oysters at Shell Point (**25 psu**). Diatoms (*Skeletonema* and *Thalassiosira*) were the dominant phytoplankton in a Shell Point sample on 1/19/18.

J.N. "Ding" Darling NWR:

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	-----	-----	-----	-----
Tarpon Bay	27.5 – 32.0	6.2 – 8.0	10.2 – 20.3	1.9 – 7.2

Beach Conditions: Water clarity is increasing along coastal beaches with lower flows and higher salinities.

Red Tide: On 1/18/18 the Florida Fish and Wildlife Conservation Commission reports the Florida red tide organism, *Karenia brevis*, persists in Charlotte, Lee and Monroe counties in Southwest Florida with medium concentrations in Charlotte County and very low to low concentrations in Lee. SCCF monitoring found low concentrations of *Karenia* at Dinkin’s Bayou on 1/18/18.

Wildlife Impacts: The past week, CROW the wildlife hospital on Sanibel treated **3 new patients with red tide symptoms: 2 Royal Terns and 1 Brown pelican**. A green turtle was stranded on Captiva with no obvious wounds or abnormalities.

Manatees: Lee County park staff reported up to **100 manatees** in the warm water discharge of the Orange River and FPL canal the past week when water temperatures were **64 - 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	5.5	238	3.1	0.70
Shell Point	6.1	120	2.8	1.10
Causeway	1.5	50.5	1.9	1.79

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