

**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: **August 29 - September 4, 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 at S-79 averaged **2,859 cfs** with all water from the watershed. High colored dissolved organic matter (CDOM) continues to attenuate light throughout the estuary.

**USACE Action:** No discharge from Lake Okeechobee to the Caloosahatchee at S-77 or to the St Lucie estuary at S-80 the past week.

**Recommendation:** With Hurricane Irma forecast to raise Lake O levels 3 - 5 ft we support the Corps decision to stop all backflow into the lake and the public safety need to discharge up to 4,000 cfs to the Caloosahatchee and 1,800 cfs to the St. Lucie.

**Lake Okeechobee Level:** 13.67 ft. (Base Flow Sub-Band) Last week: 13.51 ft

**Lake Okeechobee Inflow:** 5,220 cfs **Lake Okeechobee Outflow:** 0

**Weekly Rainfall:** WP Franklin 0.86" Ortona 0.63" Moore Haven 1.00"

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

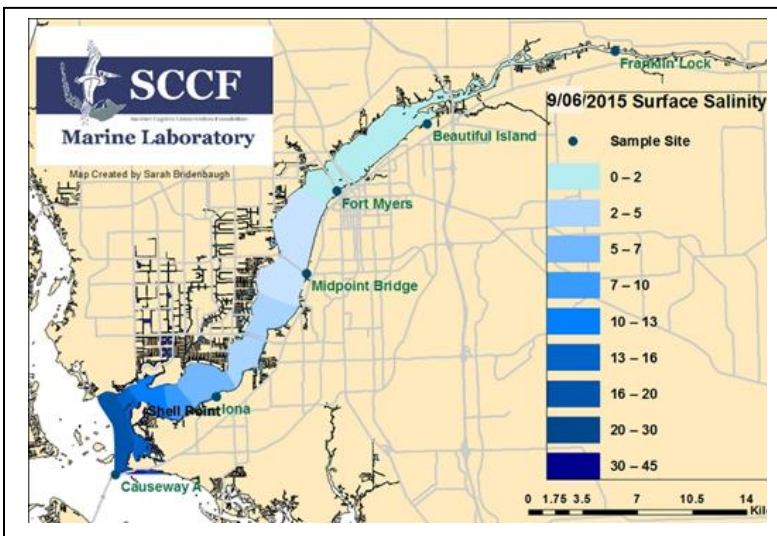
Previous wk ND

**Salinity Fort Myers:** 0.2 – 0.2 psu (SCCF RECON)

Previous wk 0.3 - 3.0 psu

**Salinity Shell Point:** 6.1 – 28 psu (SCCF RECON)

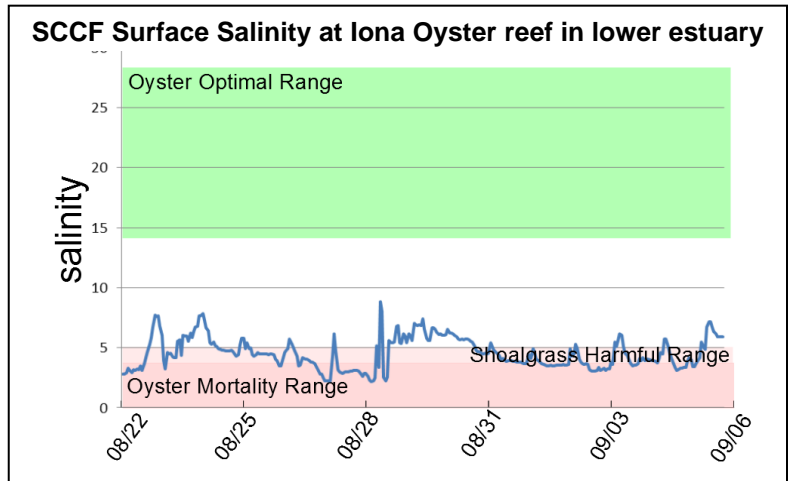
Previous wk 1.2 - 29 psu



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	0.2	<10 psu	In Range
Shell Point	6.1 - 28	25 - 32 psu	Low
Light (25% I <sub>z</sub> depth meters)			
Fort Myers	0.79	1 meter	Low
Shell Point	0.76	2.2 meters	Low
Causeway	0.97	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **2,859 cfs**. Over the past 14 days **more than 8,142 acre feet of water back flowed into Lake Okeechobee**; approximately 93% from S-308\*, a net backflow of 7% from L8\* from S-310. Only 2,340 AF of water was discharged from Lake O, 96% to the EAA at S-352 a net outflow of 2.3% through S-310\* and 1.8% to S-77. (\*Flow records not available).

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
8/29/2017	3512	338	0
8/30/2017	3088	225	0
8/31/2017	1768	0	0
9/1/2017	2218	119	0
9/2/2017	3144	438	0
9/3/2017	3268	634	0
9/4/2017	3013	624	0
<b>7 day Avg</b>	<b>2859</b>	<b>340</b>	<b>0</b>



**Upstream of S-79/Franklin Conditions:** On 8/29/17 the Olga Water Treatment plant chlorides measured **50 mg/L**, apparent color was **199 CU** and turbidity measured **0.57 NTU**. No visible algae in the plant intake the past week. The plant is online running at 2000 GPM.

Salinities in the upper estuary are in the suitable range for tape grass but are **too low for oysters upstream of the Cape Coral Bridge**.

**Lower Estuary Condition:** Salinity was below the optimal range for oysters at Iona (5.7 psu on 9/6/15) and within the optimal range at Shell Point (17 psu weekly average). Water column chlorophyll was elevated at the Causeway on 9/6/15.

**J.N. "Ding" Darling NWR:**

Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	13.3 – 23.0	2.4 – 10.2	19.1 – 35.0	4.8 – 15.6
Tarpon Bay	15.3 – 24.5	3.0 – 9.0	24.8 – 40.4	2.5 – 18.8

**Beach Conditions:** Fort Myers Beach experienced significant dark water from excessive rainfall driven stormwater in the Estero Bay basin the past week. Dark water from the Caloosahatchee discharge reached Sanibel Lighthouse Beach.

**Red Tide:** On 9/1/17 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, was present on the northwest and east coasts of Florida but not in local Gulf waters.

**Shellfish Advisory:** On 8/31/17 the Florida Dept of Agriculture Consumer Services Reopened ONLY #6212 Pine Island Sound Section 1 AUZ and Leases. Shellfish Harvest Area remain CLOSED for clams. Wild oyster harvest season is closed until October 1.

**Wildlife Impacts:** SCCF reported one loggerhead sea turtle stranding on Sanibel last week.

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	5.6	195	2.0	0.79
Shell Point	3.9	204	2.5	0.76
Causeway	15.2	106	4.1	0.97

Target light penetration: **CE**- Caloosahatchee Estuary =1 m  
**SCB**-San Carlos Bay = 2.2 meters  
 Definition of 25% lz: z where I is 25% of surface I.  
 I = irradiance, z= depth