

**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: **December 19, 2017 - January 1, 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 two weeks freshwater flows from Lake Okeechobee and the watershed decreased to an average of **3,044 cfs** (12/19 - 25/17) and **2,066 cfs** (12/26/17 - 1/1/18) at S-79. Light remains limited throughout the river and estuary from dark, freshwater discharge that extends to Lighthouse Beach on Sanibel. **Red tide has been persistent the past two weeks causing fish kills along coastal beaches and is the suspected cause of one manatee death in Matlacha Pass.**

**USACE Action:** On 12/29/17 the Army Corps continued the transition to reduce flows from Lake Okeechobee through pulse releases with an average target flow for the Caloosahatchee Estuary of **1,500 cfs** at S-79 and no releases to the St Lucie at S-80.

**Recommendation:** In order to continue to reduce Lake Okeechobee water levels and acclimate the estuary to lower dry season flows we encourage the Corps to modify the discharge schedule to the Caloosahatchee estuary with a target of **1,000 cfs measured at S-79** over the next week.

**Lake Okeechobee Level:** 15.48 ft. (Low Sub-Band) **Last week:** 15.71 ft

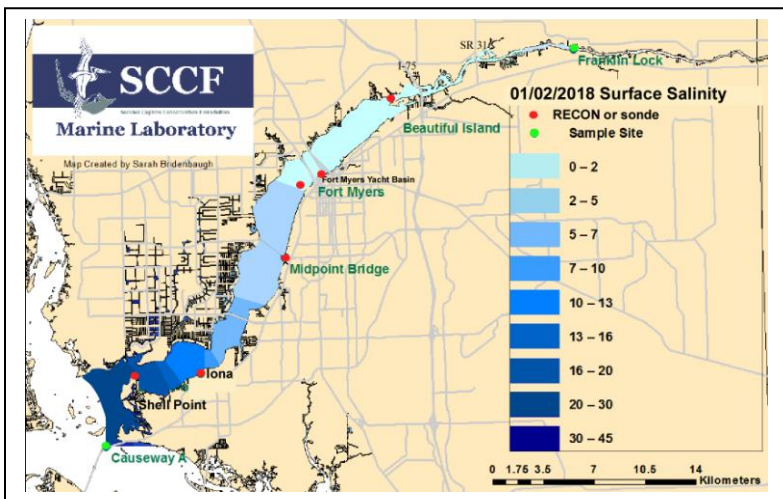
**Lake Okeechobee Inflow:** 1,124 cfs **Lake Okeechobee Outflow:** 1,525 cfs

**Weekly Rainfall:** WP Franklin **0.13"** Ortona **0.17"** Moore Haven **0.07"**

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

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

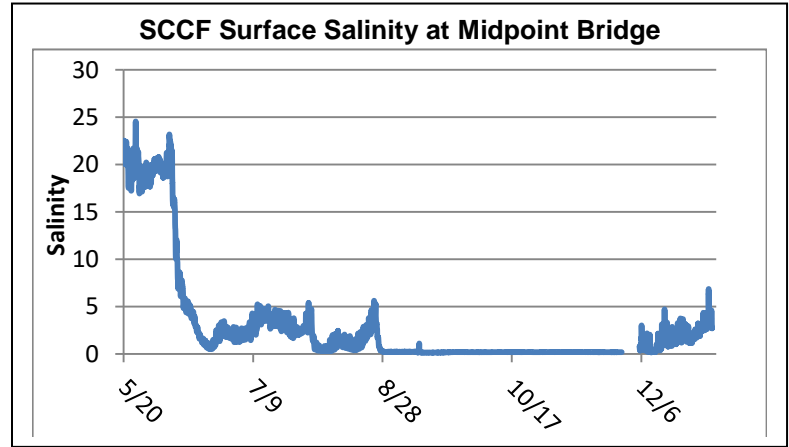
**Salinity Shell Point:** **9.1 – 29 psu** (SCCF RECON) Previous wk **6.1 - 30 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	ND	< 5 psu	-
Fort Myers	ND	<10 psu	In Range
Shell Point	9.1 – 29	25 - 32 psu	Low
Light (25% lz depth meters)			
Fort Myers	0.66	1 meter	Low
Shell Point	1.20	2.2 meters	Low
Causeway	1.60	2.2 meters	Low

**Flow & Water Quality:** Flows to the Caloosahatchee Estuary at S-79 during the past seven days averaged **2,066 cfs**. Over the past 14 days **84,594 AF** of water was discharged from Lake O, **67% to S-77** and **23% to S-308**. **Over 6,635\* AF (8%) of water from Lake O was discharged south to the EAA (\*no report for S-351)**. **100 AF** was discharged through L8 and **1,488 AF (1.8%)** through S310.

Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
12/19/2017	2862	1806	2004
12/20/2017	2180	1632	1744
12/21/2017	1613	1319	1446
12/22/2017	3273	NR	2468
12/23/2017	4222	2876	3288
12/24/2017	3834	2902	3050
12/25/2017	3323	2280	2492
<b>7 day Avg</b>	<b>3044</b>	<b>2136</b>	<b>2356</b>
12/26/2017	2698	2052	2348
12/27/2017	2304	1920	2141
12/28/2017	1792	1200	1697
12/29/2017	2093	1698	1482
12/30/2017	2242	1202	1615
12/31/2017	1880	1392	1400
1/1/2018	1454	1180	1171
<b>7 day Avg</b>	<b>2066</b>	<b>1521</b>	<b>1693</b>



**Upper Estuary Conditions:** On 1/2/18 The Olga Water Treatment plant reported chlorides **56 mg/l**, apparent color **148 CU** and turbidity **3.95 NTU**. No visible algae was reported at the plant intake the past week. The plant is online running at 2200 GPM. Salinities in the upper estuary were in the suitable range for tape grass.

**Lower Estuary Conditions:** The average weekly salinity was within the optimal range for oysters at Shell Point (**20 psu**).

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

Monitor Site	Salinity (psu)	Diss O <sub>2</sub> (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	-----	4.1 – 9.6	12.7 – 60.7	3.8 – 8.4
Tarpon Bay	22.8 – 29.6	5.5 – 7.6	15.9 – 29.0	3.6 – 10.0

**Red Tide:** Over the past two weeks the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, in background to high concentrations in local coastal waters of Lee and Charlotte counties. A SCCF water sample from Bowman’s Beach on 12/30/17 had 210,000 *Karenia* cells/L. Fish kills were reported on Cayo Costa and Sanibel beaches.

**Wildlife Impacts:** Over the past two weeks, CROW the wildlife hospital on Sanibel treated **16 patients with red tide symptoms: 15 Double Crested Cormorants and 1 White Pelican**. A dead manatee was found in Matlacha Pass at MM 59; suspected cause of mortality, red tide.

**Manatees:** Lee County park staff reported over **69 manatees** in the warm water of the Orange River and FPL canal the past week. Water temperatures ranged from **69 - 82° F**. **Two manatee deaths washed up on Sanibel beaches the past 2 weeks, cause of deaths unknown.**

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% lo depth (meters)
<b>Target Values</b>	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
<b>Fort Myers</b>	4.1	257	4.7	0.66
<b>Shell Point</b>	6.1	99	3.5	1.20
<b>Causeway</b>	4.4	43	5.5	1.60

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