

MEMORANDUM

To: USACE Colonel Andrew D. Kelly, 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: **October 16 - 22, 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: **Cyanobacteria persists in Lake Okeechobee and at sample sites along the upstream Caloosahatchee.** The beach at the Cape Coral Yacht Club has reopened. The weekly average flow to the Caloosahatchee at S79 decreased to **1,343 cfs**. Red tide along the Lee County coastline has reduced to low levels.

USACE Action: On 10/5/18 the U.S. Army Corps of Engineers initiated a three week pulse release reducing average weekly flows from Lake Okeechobee beginning with **2,000 cfs** dropping to **1,500 cfs** then **1,000 cfs** at S-79, the WP Franklin Lock & Dam. No Lake releases will be directed to the St. Lucie Lock & Dam at S-80.

Recommendation: We support the Corps step down releases to the Caloosahatchee at **S-79** to acclimate the estuary as we transition to the dry season. **We encourage the Corps and SFWMD to allow the lake to drop lower than average by the start of the next rainy season for lake and estuary health. To achieve this we support dry season flows to the Caloosahatchee be maintained between 800 - 1,000 cfs to accommodate the El Niño conditions forecasted for this winter and spring.**

Lake Okeechobee Level: **13.98 ft. (Base Flow Sub-Band)**

Last week: **14.19 ft.**

Lake Okeechobee Inflow: **1,519 cfs**

Lake Okeechobee Outflow: **5,062 cfs**

Weekly Rainfall: WP Franklin **0"** Ortona **0"** Moore Haven **0"**

Salinity Beautiful Island: **0.2 - 2.4 psu** (SCCF RECON Marker 18)

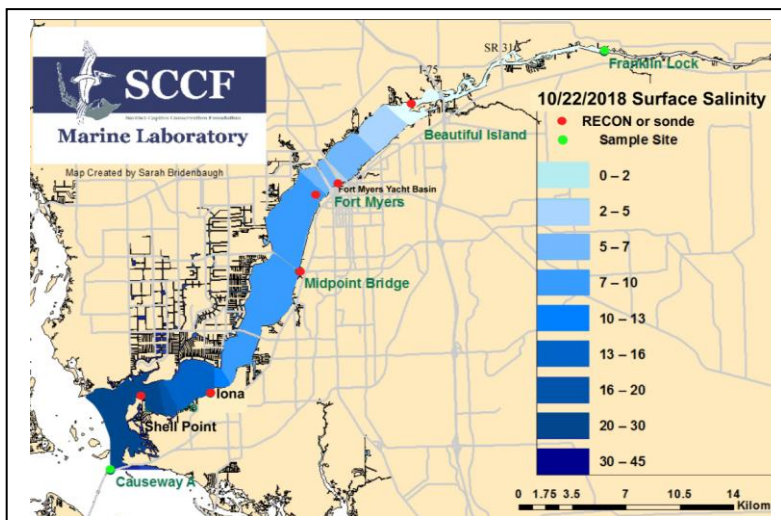
Previous week **0.2 - 0.4 psu**

Salinity Fort Myers: **7.3 – 13 psu** (SCCF RECON)

Previous week **2.0 - 8.9 psu**

Salinity Shell Point: **13 – 33 psu** (SCCF RECON)

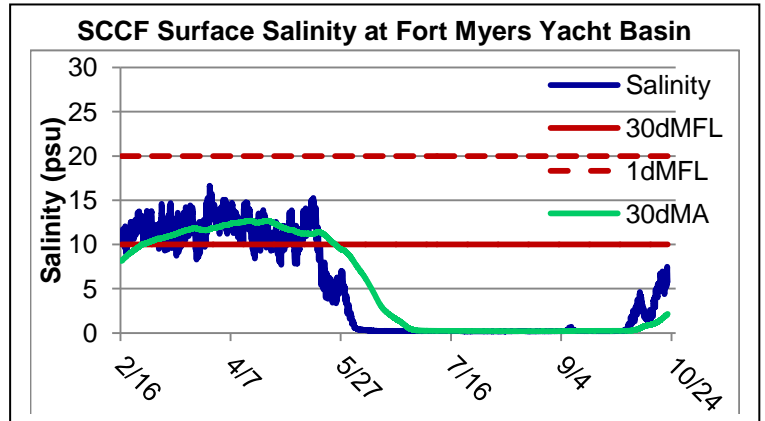
Previous week **13 - 33 psu**



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	0.2 - 2.4	< 5 psu	In Range
Fort Myers	7.3 - 13	<10 psu	In Range
Shell Point	13 – 33	25 - 32 psu	Low
Light (25% I _z depth meters)			
Fort Myers	0.55	1 meter	Low
Shell Point	1.26	2.2 meters	Low
Causeway	1.52	2.2 meters	Low

Flow & Water Quality: Flows to the Caloosahatchee Estuary at S-79 during the **past seven days** averaged **1,343 cfs**. Over the past 7 days **61,629 AF** of water was discharged from Lake Okeechobee; **34%** to the Caloosahatchee at **S-77**, **1.5%** to the St Lucie at **S-80**, **61%** was discharged south to the **EAA**, **3.2%** was discharged through the **L8** and **263* AF** was discharged to **S-310**. (* Missing flow data)

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
10/16/2018	1649	960	1425
10/17/2018	1193	857	785
10/18/2018	682	511	1198
10/19/2018	1354	823	956
10/20/2018	1639	1518	2172
10/21/2018	1626	1450	2318
10/22/2018	1261	775	1259
7 day Avg	1343	985	1445



Cyanobacteria bloom: On 10/23/18 the Lee County Environmental Lab found a cyanobacteria bloom of *Microcystis* and *Dolichospermum* upstream of the Franklin locks and presence of *Microcystis* and *Dolichospermum* at the Alva Boat Ramp, downstream of the locks and at the Davis Boat ramp.

Upstream of S-79/Franklin Conditions: On 10/16/18 the Olga Water Treatment plant reported chlorides of **50 mg/l**, apparent color **115 CU** and turbidity **3.1 NTU**. No visible algae at the plant intake. The plant is online at 1,400 GPM.

Upper Estuary Conditions: The weekly average salinity at the Fort Myers Yacht Basin was **5.1 psu**, in the suitable range for tape grass growing between the Caloosahatchee US 41 Bridges and Beautiful Island. **Water column chlorophyll spiked up to over 20 ug/L at the Ft. Myers RECON.**

Lower Estuary Conditions: The average salinity at Shell Point was **25 psu**, in the suitable range for oysters and seagrasses. **Light levels were too low for submersed plants growing at depth in the river and around the Causeway.**

J.N. "Ding" Darling NWR:

Monitor Site	Salinity (psu)	Diss O ₂ (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	29.3 – 30.5	2.9 – 8.6	10.6 – 14.7	1.7 – 4.0
Tarpon Bay	27.3 – 32.6	4.2 – 7.7	10.6 – 20.3	1.7 – 7.6
Wildlife Drive	30.3 – 31.7	0.4 – 15.3	-----	1.1 – 8.8
Wulfert Flats	24.7 – 30.6	4.0 - 9.4	-----	3.4 – 33.9

Beach Conditions: Reduced amounts of drift algae continues to wash up on Ft Myers beach with dead horseshoe crabs.

Wildlife recovery in coastal waters and beaches around Sanibel has been observed the past week with the reduction in red tide. A dramatic increase in sightings of wildlife including bait fish, jack, snook, tarpon, sheepshead, dolphins, manatees, pelicans, terns, gulls, osprey and bald eagles.

Red Tide: On 10/19/18 the Florida Fish and Wildlife Conservation Commission reported the Florida red tide organism, *Karenia brevis*, increased in Pinellas and Sarasota counties, reported very low concentrations in Lee, and Collier counties. A bloom lingers in northwest Florida and continues along the Atlantic east coast of Florida. **Access to a new FWC daily red tide sample map can be accessed: <http://myfwc.com/redtidestatus>**

No red tide was found in SCCF samples from the Gulf, beaches or the estuary.

Wildlife Impacts: The past week **SCCF recovered 3 dead sea turtles: 2 loggerheads from Sanibel and 1 juvenile Kemp's ridley**. **CROW**, the wildlife hospital on Sanibel treated **5 new patients with red tide symptoms; 3 double crested cormorants, 1 ruddy turnstone, 1 laughing gull.**

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	26	278	6.2	0.55
Shell Point	3.5	103	1.7	1.26
Causeway	2.2	75.1	1.3	1.52

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

Dead wildlife: Caloosahatchee, estuary, canals, back bays, Sanibel, Fort Myers beaches & Islands

Lee County has removed 2,200 tons of dead marine life. Sanibel = 425 tons

*Ongoing list not comprehensive **Endangered/Threatened Species***

American eels	Grunt sp.	Red snapper
American oystercatcher	Hardhead catfish	Remora
Anchovies	Horseshoe crabs	Reticulate moray
Angel fish	Jack fish sp.	Sand dollar
Anhinga	Kemps ridley sea turtle	Sanderling
Atlantic needlefish	Kingfish	Sand Trout
Atlantic spadefish	Lane snapper	Scaled sardine
Batfish	Laughing gull	Sheepshead
Black drum	Loggerhead sea turtle	Seahorses
Black tip shark	Lookdown fish	Shame- faced crab
Blenny	Mackerel	Snook
Blue crabs	Manatees	Snowy plover
Bottlenose dolphin	Mallard ducks	Starfish
Brown pelican	Mangrove snapper	Southern puffer
Bull shark	Mantis shrimp	Southern stargazer
Calico crab	Menhaden	Spanish mackerel
Catfish sp.	Minnows	Spotted eels
Cobia	Moray Eel	Spotted seatrout
Common tern	Muscovy duck	Sting rays sp
Coquina	Mullet sp.	Stone crab
Cowfish	Ornate diamondback terrapin	Striped burr fish
Crevalle jack	Osprey	Threadfin herring
Double crested cormorant	Pale spotted eels	Tarpon
Flounder	Parchment worms	Toadfish
Gafftopsail catfish	Permit	Tri-colored Heron
Goby	Pig fish	Tripletail
Goliath grouper	Pinfish	Whale shark
Green sea turtle	Florida Pompano	Whiting
Grey triggerfish	Red drum/ Redfish	Yellow snake eel
Grouper sp.	Red knot	