

MEMORANDUM

To: USACE Colonel Andrew D. Kelly, LTC Todd F. Polk, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Drew Bartlett, Jennifer Reynolds, Lawrence Glenn, DEP Secretary Noah Valenstein

From: Periodic Scientists Conference Call Participants
 Kevin Godsea & Jeremy Conrad - J.N. "Ding" Darling National Wildlife Refuge (NWR) Complex
 Holly Milbrandt & Dana Dettmar - City of Sanibel
 Lesli Haynes & Lisa Kreiger - Lee County
 Harry Phillips & Maya Robert - City of Cape Coral
 James Evans, Leah Reidenbach, & Rick Bartleson PhD - SCCF (Sanibel-Captiva Conservation Foundation)

Subject: Caloosahatchee & Estuary Conditions Report

Reporting Period: **April 13 – 19, 2021**

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: Flows to the Caloosahatchee Estuary had a 7-day average of **1,109 cfs at S-79** and a 7-day average of **729 cfs at S-77**. The **14-day moving average flow at S-79 is 1,131 cfs, within the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020)**. Water clarity around Sanibel and Lee County remains good at this time. The harmful alga, *Karenia brevis*, persists in background to very low concentrations in and offshore of Lee County.

Recommendation: We strongly encourage the Corps to utilize all options to reduce lake levels prior to the wet season to prevent damaging releases to the estuaries. Releases to the Northern Estuaries should utilize adaptive management to optimize ecosystem salinities while balancing the system as a whole. These decisions should be reevaluated regularly based on current and forecasted conditions in the lake and estuaries.

USACE Action: On Saturday, 4/10/21 the USACE reduced targeted flows to a 7-day average of 1,000 cfs (pulse) to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) and no flow to the St. Lucie Lock and Dam (S-80). The USACE will execute a temporary, minor deviation to the Lake Okeechobee Regulation Schedule as part of the ongoing study by the South Florida Water Management District and U.S. Geological Survey to find ways to indirectly measure sediment and nutrients transported from the lake to the estuaries. The deviation will allow up to 5,000 cubic feet per second (cfs) flow from structures for short periods of time for up to 8 hours on April 20 at the Moore Haven Lock and Dam (S-77).

Lake Flows: In the past 7 days **23,137 AF** were discharged from Lake Okeechobee, with **10,148 AF (44%)** to the Caloosahatchee through **S-77**, **617 AF* (3%)** through **C-10A** to the L-8 canal, and **12,372 AF (53%)** to the EAA through **S-351, S-352, and S-354**. There was a net backflow of **671 AF** from the St. Lucie River through **S-308** and a net backflow of **29 AF** through **S-310** in Clewiston. Water conservation areas received flows of **2,184 AF, 6,528 AF, and 1,644 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **2,479 AF**.

*data missing for C-10A on 4/16/21

Lake Okeechobee Level: 14.19 ft (Low sub-band)

Last Week: 14.24 ft

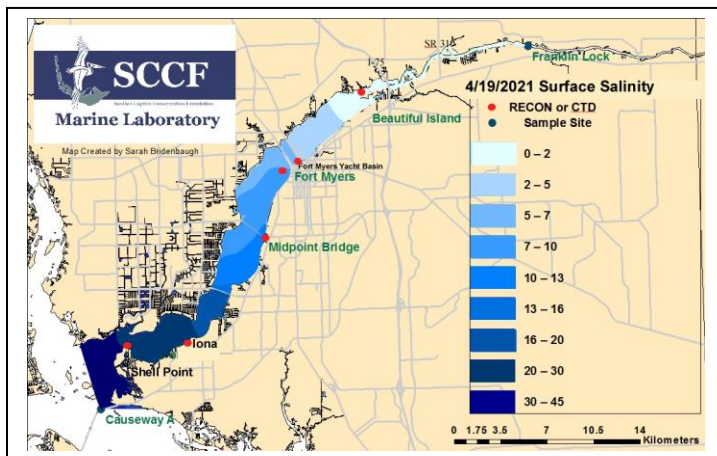
Lake Okeechobee Inflow: 1,799 cfs

Lake Okeechobee Outflow: 1,259 cfs

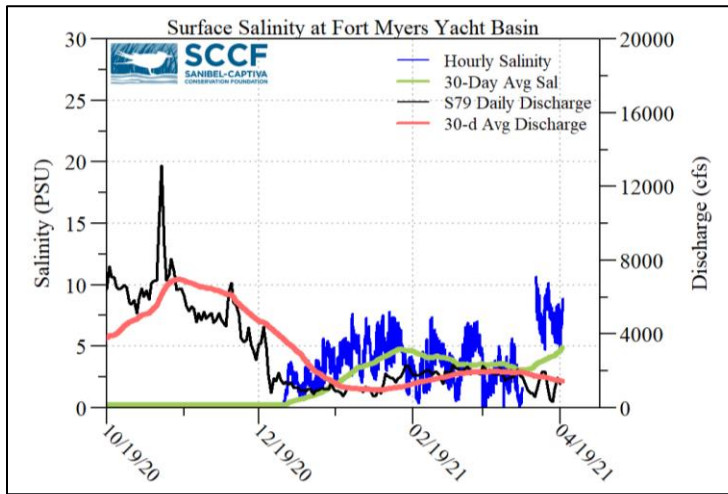
Weekly Rainfall Total: WP Franklin 0.41"

Ortona 1.10"

Moore Haven 0.55"



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/13/21	1925	758	260
4/14/21	1049	584	242
4/15/21	469	594	559
4/16/21	346	525	648
4/17/21	1047	743	816
4/18/21	1624	1092	1481
4/19/21	1301	854	1095
7-day avg	1109	736	729



Light Penetration				
Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	1.09 ^c	> 1	8.8	< 18
Shell Point	2.26 ^c	>2.2	2.2	< 18
Causeway	1.98 ^c	> 2.2	8.0	< 5

25% I_z is the depth (z) where irradiance (I) is 25% of surface irradiance. Target values indicate the depth of light penetration needed for healthy seagrass.
^m measured, ^c calculated

Cyanobacteria Status: On 4/19/21, sampling by the Lee County Environmental Lab reported the presence of *Dolichospermum*, *Microcystis*, *Aphanizomenon*, and *Aphanocapsa* at the Alva Boat Ramp as specks visible on the surface and in the water column with some streaks and accumulation along the shore.

Upstream of S-79/Franklin Conditions: On 4/20/21 the Olga Water Treatment plant reported chlorides of **55 mg/L**, apparent color **88 CU** and turbidity **2.78 NTU**. **Trace algae** were observed at the plant intake the past week. The plant is online at **1800 GPM**.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **3.7 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **29 psu**, above the suitable range for oysters.

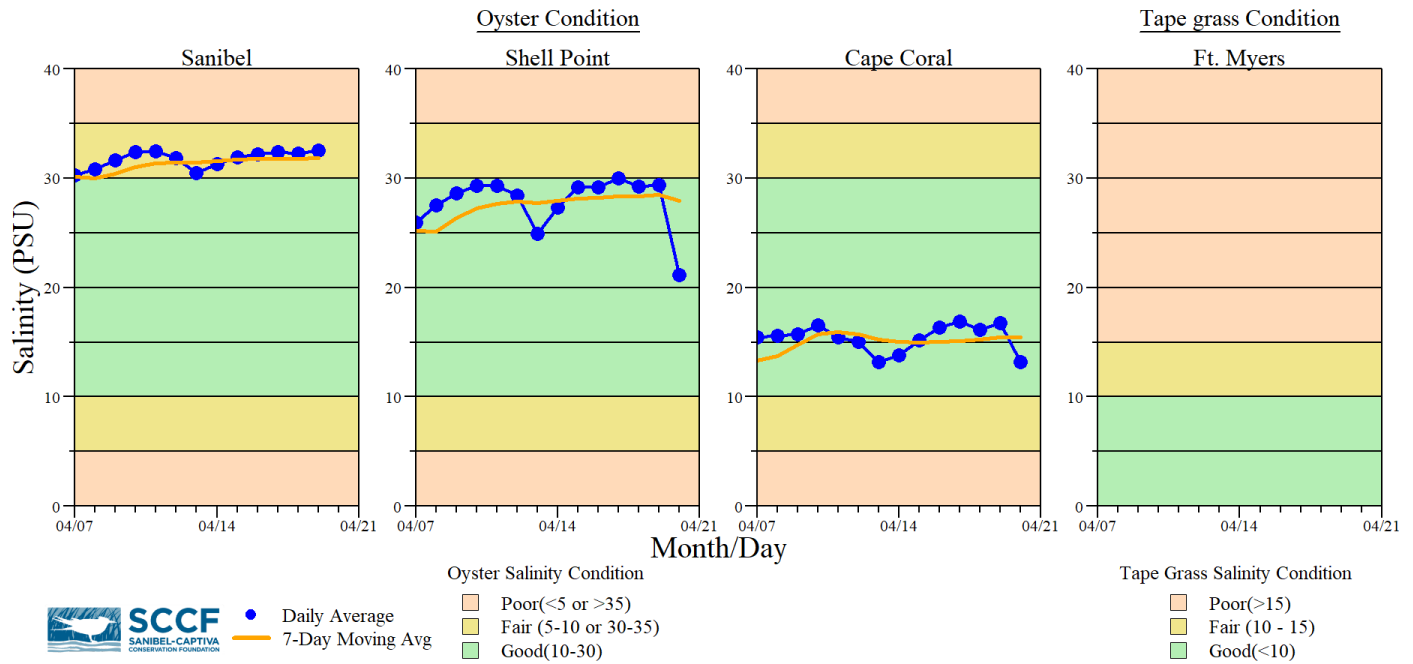
Water Quality Conditions

Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	----- [------]	-----	-----	-----
Fort Myers Yacht Basin	3.0 – 7.0 [2.0 – 7.3]	5.3 – 8.0	164	11
Shell Point	19 – 33 [19 – 33]	4.9 – 6.4	33.6	4.0
McIntyre Creek	30.2 – 33.2	2.0 – 13.4	0.0 – 9.7	-----
Tarpon Bay	31.4 – 34.4	3.2 – 8.0	3.4 – 14.5	-----
Wildlife Drive	29.6 – 32.9	0.6 – 11.3	-----	0.8 – 26.0
Wulfert Flats	30.9 – 33.0	2.8 – 8.7	-----	-----

Red values are outside of the preferred range.
^a Salinity target values: BI < 5, FM < 10, SP = 25 – 32
^b Dissolved O₂ target values: all sites > 4
^c FDOM target values: BI < 70, FM < 70, SP < 11
^d Chlorophyll target values: BI < 11, FM < 11, SP < 11
^e Single sonde lower and surface layer or surface grab lab measurement

Red Tide: On 4/16/2021, [FWC](#) reported that the red tide organism, *Karenia brevis*, persists in Southwest Florida. Over the past week, *K. brevis* was detected in **40 samples**. Bloom concentrations (>100,000 cells/liter) were observed in one sample each from Sarasota, Charlotte, and Collier counties. *K. brevis* was observed at background to medium concentrations in Sarasota County, background to high concentrations in Charlotte County, **background to very low concentrations in and offshore of Lee County**, and background to medium concentrations in Collier County. For additional information, view the Southwest Coast report and map.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel **received 7 toxicosis patients**: 1 brown pelican (died), 1 great blue heron (died), 4 double-crested cormorants (3 died, 1 still at CROW), 1 osprey (died).



Daily average bottom salinity data for the last 14-days from sampling locations within the tidal Caloosahatchee River Estuary relative to oyster health (Sanibel, Shell Point and Cape Coral) and tape grass (*Vallisneria americana*) health (Ft. Myers only) conditions.

Stage and recession rates this time for the current and last three water years

Date (Month-Day)	Water Year	Stage (ft, NGVD29)	7-Day Recession Rate (ft 7-d ⁻¹)	30-Day Recession Rate (ft 30-d ⁻¹) ^B
04-19	2018	13.31	-0.19	-0.94
04-19	2019	11.54	-0.16	-0.67
04-18	2020	11.39	-0.11	-0.90
04-19	2021	14.18 ^A	-0.05	-0.61

^A Value provided by SFWMD DBKEY:N3466

^B -0.5 ft 30-d⁻¹ maximum 30-day Recession Rate for HAB Deviation



On 4/20/21 cyanobacteria were observed accumulating on the shore at the Alva Boat Ramp. Photo: Lee County Natural Resources, Marine Division