

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: **March 30 – April 5, 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.

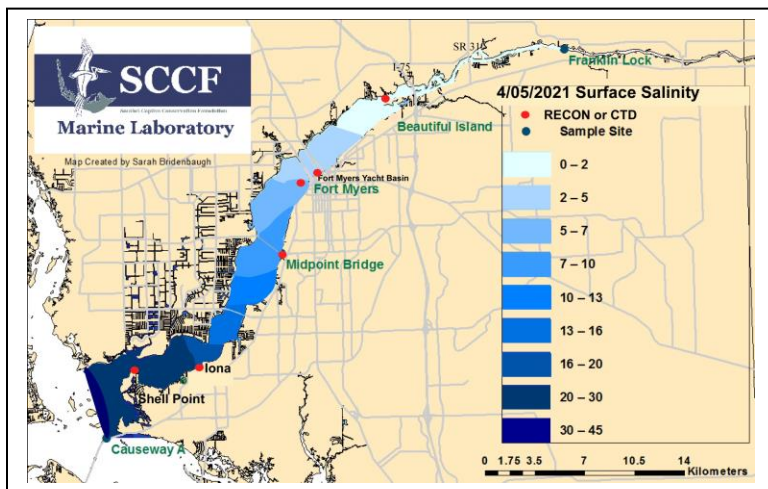
Caloosahatchee Condition Summary: Flows to the Caloosahatchee Estuary had a 7-day average of **1,688 cfs at S-79** and a 7-day average of **1,454 cfs at S-77**. The **14-day moving average flow at S-79 is 1,731 cfs, within the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020)**. Water clarity around Sanibel and Lee County remains good at this time. The harmful alga, *Karenia brevis*, persists at background to low concentrations in 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. **Based on current conditions, we recommend maintaining flows at the upper end of the optimal flow envelope in RECOVER and up to the maximum flow allowed under the HAB deviation.** 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.

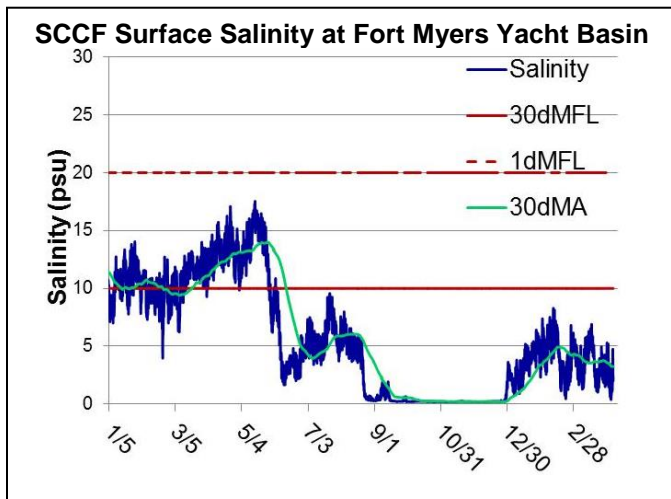
USACE Action: On Saturday, 4/3/21 the USACE reduced targeted flows to a 7-day average of 1,200 cfs (pulse) to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) and to 300 cfs (pulse) to the St. Lucie Lock and Dam (S-80).

Lake Flows: In the past 7 days **45,348 AF** were discharged from Lake Okeechobee, with **20,186 AF (45%)** to the Caloosahatchee through **S-77**, **3,049 AF (7%)** to the St. Lucie River through **S-308**, **859 AF (2%)** through **S-310** in Clewiston, **4,631 AF (10%)** through **C-10A** to the L-8 canal, and **16,623 AF (37%)** to the EAA through **S-351, S-352, and S-354**. Water conservation areas received flows of **875 AF, 6,040 AF, and 0 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **3,638 AF**.

Lake Okeechobee Level: 14.28 ft (Low sub-band) Last Week: 14.50 ft
Lake Okeechobee Inflow: 774 cfs Lake Okeechobee Outflow: 3,161 cfs
Weekly Rainfall Total: WP Franklin 0.02" Ortona 0.62" Moore Haven 0.50"



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
3/30/21	1616	1300	1719
3/31/21	1616	1291	1686
4/1/21	1824	1285	1662
4/2/21	2065	1182	1382
4/3/21	1705	1260	1221
4/4/21	1680	1211	1262
4/5/21	1307	898	1245
7-day avg	1688	1204	1454



Light Penetration

Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	-----	> 1	6.4	< 18
Shell Point	2.10 ^c	>2.2	2.2	< 18
Causeway	2.22 ^c	> 2.2	5.5	< 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 4/6/21, sampling by the Lee County Environmental Lab reported the presence of *Dolichospermum* and *Microcystis* at the Alva Boat Ramp and *Dolichospermum*, *Microcystis*, and *Aphanizomenon* at the Davis Boat Ramp as specks visible on the surface and in the water column. *Dolichospermum*, *Microcystis*, and *Aphanizomenon* were moderately abundant upstream of the Franklin Locks as visible streaks with some accumulation along the shore and locks.

Upstream of S-79/Franklin Conditions: On 4/6/21 the Olga Water Treatment plant reported chlorides of **58 mg/L**, apparent color **96 CU** and turbidity **2.78 NTU**. No visible algae were reported 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 **3.3 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **25 psu**, within the suitable range for oysters and seagrass.

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	0.2 – 0.3 [0.2 – 0.4]	-----	262	8.5
Fort Myers Yacht Basin	0.4 – 5.3 [1.0 – 5.0]	-----	223	-----
Shell Point	13 – 33 [16 – 32]	4.7 – 6.6	64.0	4.1
McIntyre Creek	29.4 – 33.6	4.3 – 16.4	5.8 – 12.9	0.9 – 39.3
Tarpon Bay	28.0 – 33.6	4.6 – 9.1	3.8 – 10.1	1.0 – 51.6
Wildlife Drive	22.9 – 36.1	0.7 – 16.8	-----	1.3 – 15.5
Wulfert Flats	31.1 – 33.6	3.9 – 11.1	-----	-----

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

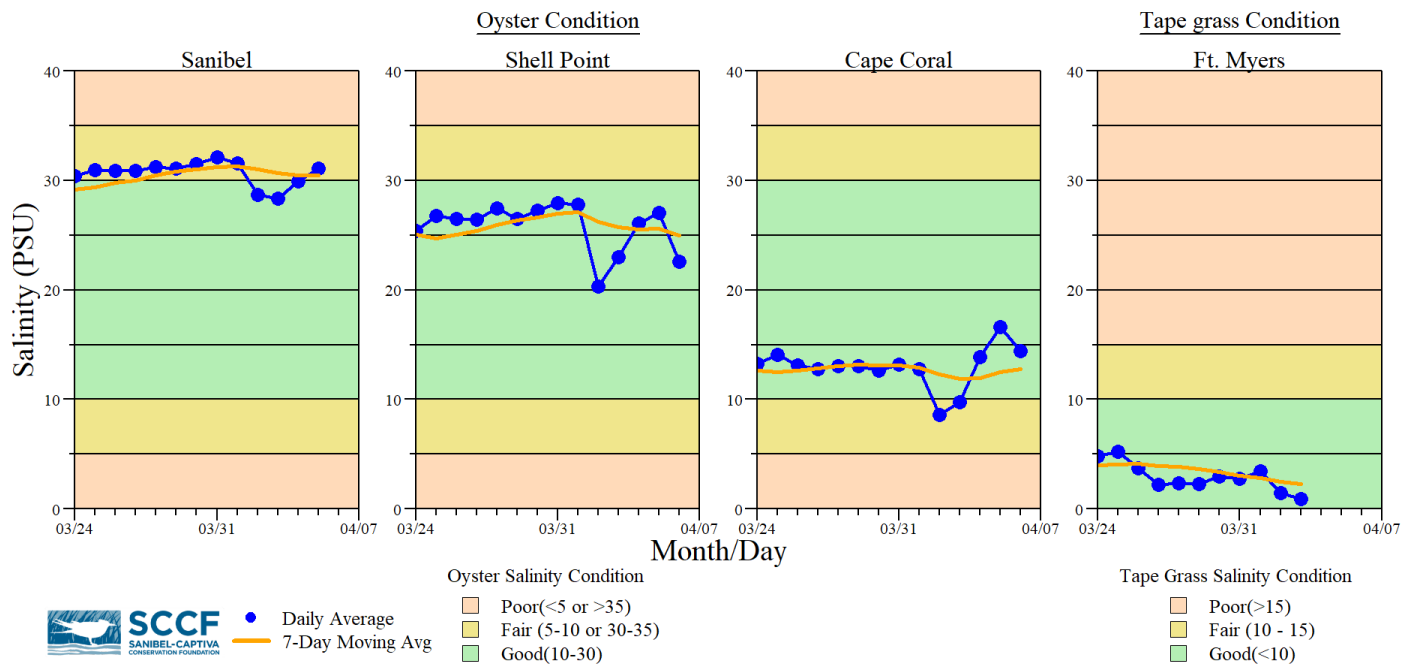
^c FDOM target values: BI < 70, FM < 70, SP < 11

^d Chlorophyll target values: BI < 11, FM < 11, SP < 11

^s Single sonde lower and surface layer or surface grab lab measurement

Red Tide: On 4/2/21 [FWC](#) reported that the red tide organism, *Karenia brevis*, persists in Southwest Florida. Over the past week, *K. brevis* was detected in 45 samples. Bloom concentrations (>100,000 cells/liter) were observed in two samples from Charlotte County. In Southwest Florida over the past week, *K. brevis* was observed at background to low concentrations in Sarasota County, background to high concentrations in Charlotte County, background to low concentrations in or offshore of Lee County and in Collier County, and low concentrations offshore of Monroe County.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received **3 toxicosis patients**: 1 snowy plover, 1 double-crested cormorant, and 1 herring gull. All 3 patients 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 rate this year and for the 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)
04-05	2018	13.69	-0.26	-0.95
04-05	2019	11.83	-0.14	-0.76
04-04	2020	11.71	-0.29	-0.86
04-05	2021	14.28^A	-0.23	-0.93

^A Value provided by SFWMD DBKEY:N3466



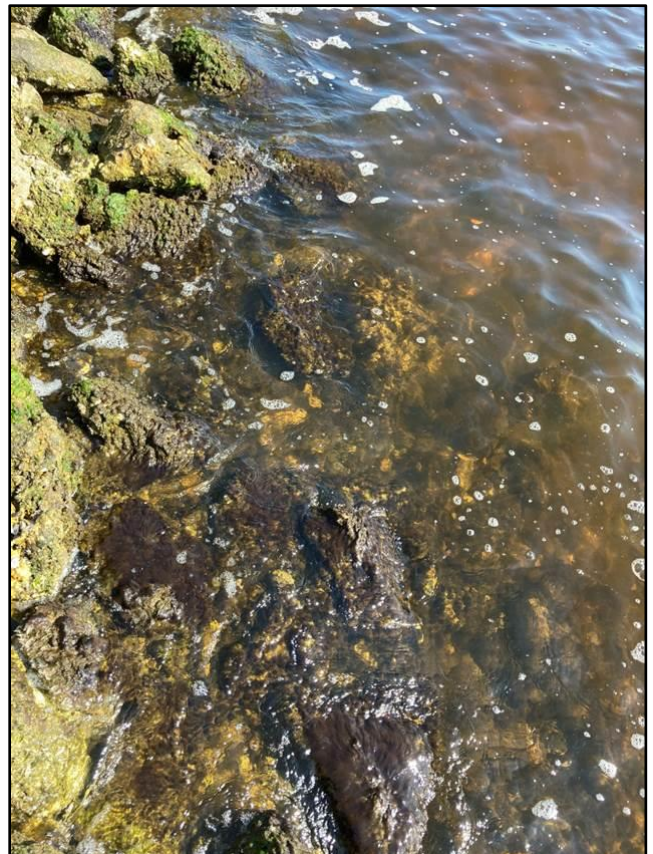
On 4/6/21, sampling by the Lee County Environmental Lab reported moderately abundant *Dolichospermum*, *Microcystis*, and *Aphanizomenon* upstream of the Franklin Locks as visible streaks with some accumulation along the shore and locks.



Water clarity on 4/5/21 at Rosen Park. Photo: City of Cape Coral.



Water clarity on 4/5/21 at the Yacht Club. Photo: City of Cape Coral.



Water clarity on 4/5/21 Jaycee Park. Photo: City of Cape Coral.