

**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 16 – 22, 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.

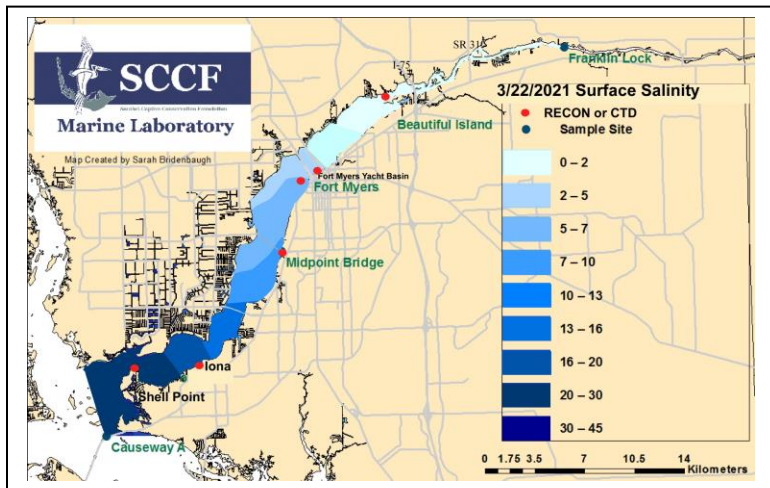
**Caloosahatchee Condition Summary:** Flows to the Caloosahatchee Estuary had a 7-day average of **1,999 cfs at S-79 with a 7-day average of 1,858 cfs (93%) coming from the lake at S-77. The 14-day moving average flow at S-79 is 1,963 cfs, within the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020).** Water clarity around Sanibel and Lee County remains good at this time. The harmful alga, *Karenia brevis*, persists around Sanibel and Captiva.

**Recommendation:** An average 7-day flow of 2,000 cfs to the Caloosahatchee at S-79 is reasonable considering high lake levels increase the risk of damaging releases in the late summer and early fall, and 2,000 cfs is within the optimal flow envelope for the salinity performance measure in RECOVER. We strongly encourage the Corps to utilize all options to reduce lake levels.

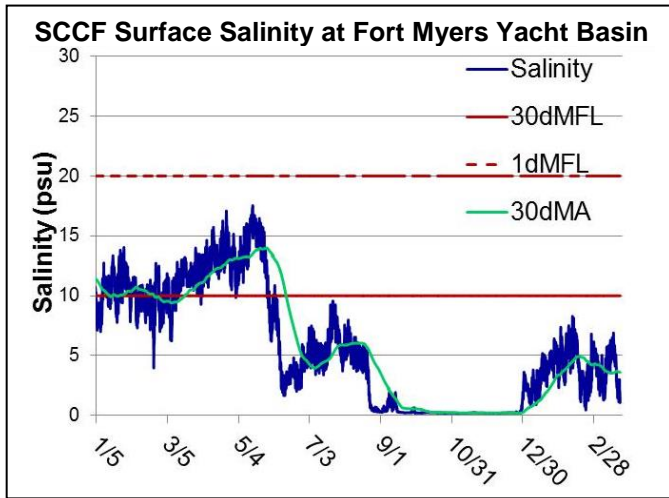
**USACE Action:** On Saturday, 3/6/21 the USACE maintained targeted flows at a 7-day average of 2,000 cfs (constant) to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) and started flows at a 7-day average of 500 cfs (pulse) to the St. Lucie Lock and Dam (S-80).

**Lake Flows:** In the past 7 days **71,857 AF** were discharged from Lake Okeechobee, with **25,879 AF (36%)** to the Caloosahatchee through **S-77**, **9,153 AF (13%)** to the St. Lucie River through **S-308**, **1,518 AF (2%)** through **S-310** in Clewiston, **4,633 AF (6%)** through **C-10A** to the L-8 canal, and **30,674 AF (43%)** to the EAA through **S-351, S-352, and S-354**. Water conservation areas received flows of **446 AF, 1,769 AF, and 1,837 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **5,238 AF**.

**Lake Okeechobee Level:** 14.75 ft (Low sub-band) Last Week: 15.00 ft  
**Lake Okeechobee Inflow:** 832 cfs Lake Okeechobee Outflow: 4,229 cfs  
**Weekly Rainfall Total:** WP Franklin 0.08" Ortona 0.00" Moore Haven 0.23"



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
3/16/21	1844	1474	1824
3/17/21	1912	1473	1794
3/18/21	1823	1468	1740
3/19/21	2272	1451	1767
3/20/21	2071	1575	2198
3/21/21	2002	1639	2078
3/22/21	2067	1361	1606
7-day avg	1999	1492	3686



Site	Light Penetration		Turbidity	Target Values
	25% Iz	Target Values		
		meters	NTU	
Fort Myers	0.53 <sup>m</sup>	> 1	5.8	< 18
Shell Point	2.10 <sup>c</sup>	>2.2	1.7	< 18
Causeway	2.11 <sup>c</sup>	> 2.2	5.5	< 5

25% Iz is the depth (z) where irradiance (I) is 25% of surface irradiance. Target values indicate the depth of light penetration needed for healthy seagrass.

<sup>m</sup> measured, <sup>c</sup> calculated

**Cyanobacteria Status:** On 3/23/21, sampling by the Lee County Environmental Lab reported the presence of predominantly *Dolichospermum* and also *Microcystis* and *Aphanizomenon* as visible specks on the surface and in the water column at the Alva Boat Ramp. Moderately abundant predominantly *Dolichospermum* and also *Microcystis*, *Aphanizomenon*, and *Aphanocapsa* were reported as streaks on the surface with accumulation along the south shore and locks upstream of the Franklin Locks and as streaks on the surface with accumulation along the seawall at the Davis Boat Ramp.

**Upstream of S-79/Franklin Conditions:** On 3/16/21 the Olga Water Treatment plant reported chlorides of **58 mg/L**, apparent color **95 CU** and turbidity **2.75 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 **3.6 psu**, within the suitable range for tape grass. No hypoxia was recorded during the week at the RECON sites. Chlorophyll was spiking at the Fort Myers RECON. An average of 14 µg/l chl was recorded along a transect from Beautiful Island to Fort Myers on 3/19/21, with *Skeletonema* dominant and freshwater species, including cyanobacteria, present at Beautiful Island.

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

**Water Quality Conditions**

Monitor Site	Salinity (psu) <sup>a</sup> [previous week]	Diss O <sub>2</sub> (mg/L) <sup>b</sup>	FDOM (qsde) <sup>c</sup>	Chlorophyll (µg/L) <sup>d</sup>
Beautiful Island	0.4 <sup>s</sup> [-----]	6.7 – 8.3	237 <sup>s</sup>	14 <sup>s</sup>
Fort Myers Yacht Basin	1.1 – 6.9 [1.3 – 6.3]	6.6 – 7.2 <sup>s</sup>	217 <sup>s</sup>	14 <sup>s</sup>
Shell Point	15 – 33 [12 – 32]	5.4 – 6.8	69.7	4.1
McIntyre Creek	29.4 – 33.3	6.4 – 13.0	4.4 – 10.9	0.9 – 1.9
Tarpon Bay	29.4 – 33.7	5.5 – 7.8	3.8 – 10.3	1.1 – 24.6
Wildlife Drive	30.1 – 33.4	1.1 – 12.7	-----	0.9 – 9.2
Wulfert Flats	29.0 – 33.5	4.4 – 9.5	-----	-----

Red values are outside of the preferred range.

<sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 25 – 32

<sup>b</sup> Dissolved O<sub>2</sub> target values: all sites > 4

<sup>c</sup> FDOM target values: BI < 70, FM < 70, SP < 11

<sup>d</sup> Chlorophyll target values: BI < 11, FM < 11, SP < 11

<sup>s</sup> Single sonde lower and surface layer or surface grab lab measurement

**Red Tide:** On 3/19/21 [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 10 samples from or offshore of Lee County, and one sample from Collier County. Recent satellite imagery (3/18; USF) indicated the presence of chlorophyll patches along and/or offshore of Lee, Collier and Monroe counties. In Southwest Florida over the past week, *K. brevis* was observed at background to low concentrations in Charlotte County, background to high concentrations in and offshore of Lee County, and background to medium concentrations in and offshore of Collier County. Respiratory irritation, caused by *K. brevis*, was reported on Captiva by SCCF staff on 3/19/21.



**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel **received 11 toxicosis patients:** 1 brown pelican (still at CROW), 2 mottled ducks (1 still at CROW, 1 DOA), 1 great blue heron (died), 4 double-crested cormorants (3 still at CROW and 1 DOA), 1 loggerhead sea turtle (still at CROW), and 2 great egrets (1 still at CROW, 1 died). Dead crabs, fish, urchins, bivalves, and tube worm casings were reported on the beach from Lighthouse Beach Park to Tarpon Bay Beach on 3/22/21 by SCCF staff.



(Above) Moderately abundant predominantly *Dolichospermum* and also *Microcystis*, *Aphanizomenon*, and *Aphanocapsa* were reported as streaks on the surface with accumulation along the south shore and locks upstream of the Franklin Locks on 3/23/21. Photos: Lee County Environmental Lab



(Left) Moderately abundant predominantly *Dolichospermum* and also *Microcystis*, *Aphanizomenon*, and *Aphanocapsa* were reported as streaks on the surface with accumulation along the seawall at the Davis Boat Ramp on 3/23/21. Photo: Lee County Environmental Lab



(Above) Poor water clarity at Jaycee Park in Cape Coral on 03/22/21. Photo: City of Cape Coral