

**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 2 – 8, 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 **1,885 cfs at S-79 with a 7-day average of 1,568 cfs (83%) coming from the lake at S-77. The 14-day moving average flow at S-79 is 1,906 cfs within the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020).** Water quality and clarity around Sanibel, Cape Coral, and Lee County remain unchanged. The Town of Fort Myers Beach has received reports of respiratory irritation. CROW, the wildlife sanctuary on Sanibel, continued to receive patients with suspected brevetoxicosis in the past week, some of which were in critical condition and did not survive despite intensive care. The number of new cases has decreased from prior weeks.

**Recommendation:** We are not opposed to the Corps' decision to maintain flows of 2,000 cfs to the Caloosahatchee estuary at S-79 and increase flows to the St. Lucie River to 500 cfs. We are not opposed to this strategy, because we recognize the urgent need to get water off the lake due to the concern of damaging release in the late summer and early fall. We strongly encourage the Corps to work with the South Florida Water Management District to consider all options to reduce lake levels and share adversity among users of the lake's resources, including moving water south.

**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).

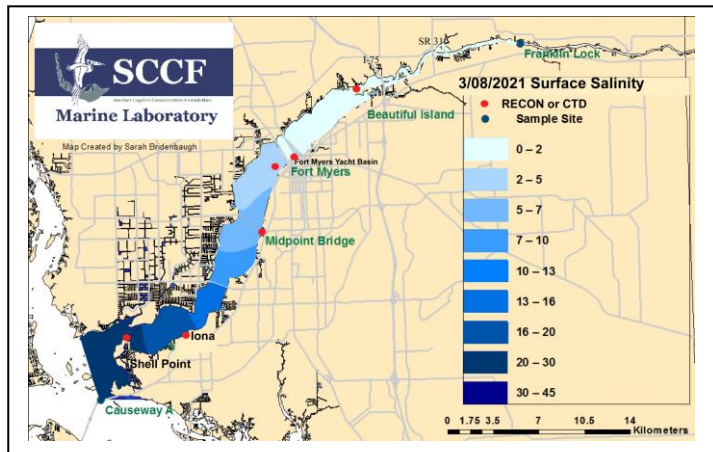
**Lake Flows:** In the past 7 days **37,387 AF** were discharged from Lake Okeechobee, with **21,916 AF (59%)** to the Caloosahatchee through **S-77, 3,870 AF (10%)** to the St. Lucie River through **S-308, 1,211 AF (3%)** through **S-310** in Clewiston, and **10,390 AF (28%)** to the EAA through **S-351, S-352, and S-354**. There was **NR\*** through the **L-8 canal**. Water conservation areas received flows of **83 AF, 0 AF, and 6,912 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **6,912 AF**.

\*Missing data on 3/2/21 – 3/8/21 for L-8.

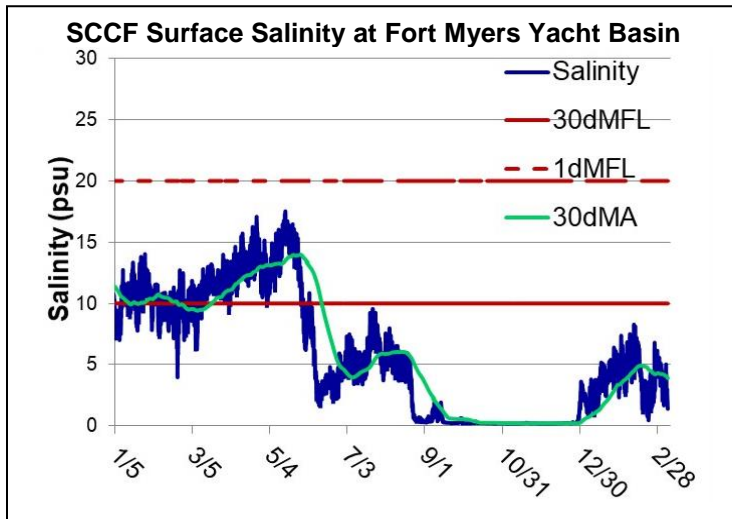
**Lake Okeechobee Level:** 15.15 ft (Low sub-band) **Last Week:** 15.32 ft

**Lake Okeechobee Inflow:** 1,188 cfs **Lake Okeechobee Outflow:** 2584 cfs

**Weekly Rainfall Total:** WP Franklin **0.55"** Ortona **0.57"** Moore Haven **0.41"**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
3/2/2021	1622	1077	1316
3/3/2021	1314	1259	1620
3/4/2021	1981	1461	1902
3/5/2021	1918	1483	1875
3/6/2021	1855	1496	1637
3/7/2021	2336	1478	1250
3/8/2021	2170	1476	1374
<b>7-day avg</b>	<b>1885</b>	<b>1390</b>	<b>1568</b>



**Light Penetration**

Site	25% I <sub>z</sub>	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.80	> 1	8.6	< 18
Shell Point	1.50	>2.2	2.8	< 18
Causeway	1.21	> 2.2	15	< 5

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

**Cyanobacteria Status:** On 3/4/21, sampling by the Lee County Environmental Lab report the presence of *Dolichospermum*, *Microcystis*, *Planktothrix*, and *Nostocalean* filaments as specks visible on the surface with a slight wind driven accumulation along the Locks and shore upstream of the Franklin Locks.

**Upstream of S-79/Franklin Conditions:** On 3/9/21 the Olga Water Treatment plant reported chlorides of **53 mg/L**, apparent color **99 CU** and turbidity **2.77 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 3.9 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.

**Lower Estuary Conditions:** The average salinity at Shell Point RECON was 23, 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	----- [------]	-----	-----	---
Fort Myers Yacht Basin	1.4 – 5.6 [1.3 – 6.8]	5.6 – 8.9	320	13
Shell Point	12 – 32 [17 – 32]	5.6 – 7.2	132	4.3
McIntyre Creek	27.8 – 32.3	5.8 – 13.6	6.4 – 13.5	1.6 – 4.7
Tarpon Bay	25.4 – 32.6	5.4 – 8.6	5.3 – 15.8	0.8 – 13.2
Wildlife Drive	31.5 – 33.9	0.9 – 17.4	-----	0.9 – 9.7
Wulfert Flats	31.4 – 33.3	4.4 – 10.4	-----	1.9 – 34.5

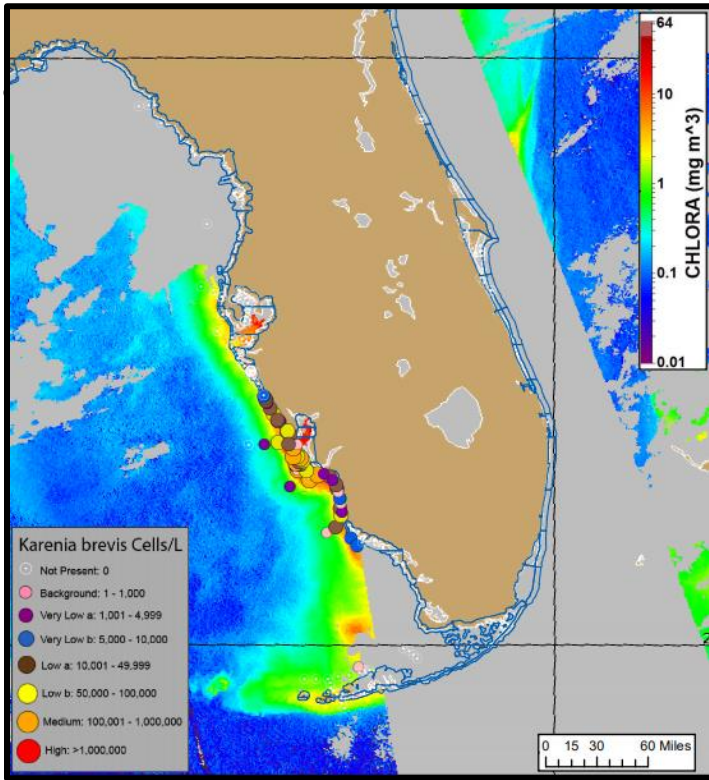
Red values are outside of the preferred range.  
<sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 25 – 32  
<sup>b</sup> Dissolved O<sub>2</sub> target values: all sites > 4  
<sup>c</sup> FDOM target values: BI < 70, FM < 70, SP < 11  
<sup>d</sup> Chlorophyll target values: BI < 11, FM < 11, SP < 11

**Red Tide:** On 3/5/21 [FWC](#) reported that the red tide organism, *Karenia brevis*, persists in Southwest Florida. Over the past week, *K. brevis* was detected in 53 samples at background to medium concentrations. **Bloom concentrations (>100,000 cells/liter) were observed in three samples from Charlotte County and seven samples from Lee County.** Recent satellite imagery (3/2; NOAA, USF) indicated the presence of chlorophyll patches along and/or offshore of Charlotte, Lee, Collier, and Monroe counties. In Southwest Florida over the past week, *K. brevis* was observed at very low to low concentrations in Sarasota County, very low to medium concentrations in Charlotte County, **background to medium concentrations in Lee County**, and background to low concentrations in and offshore of Collier County.

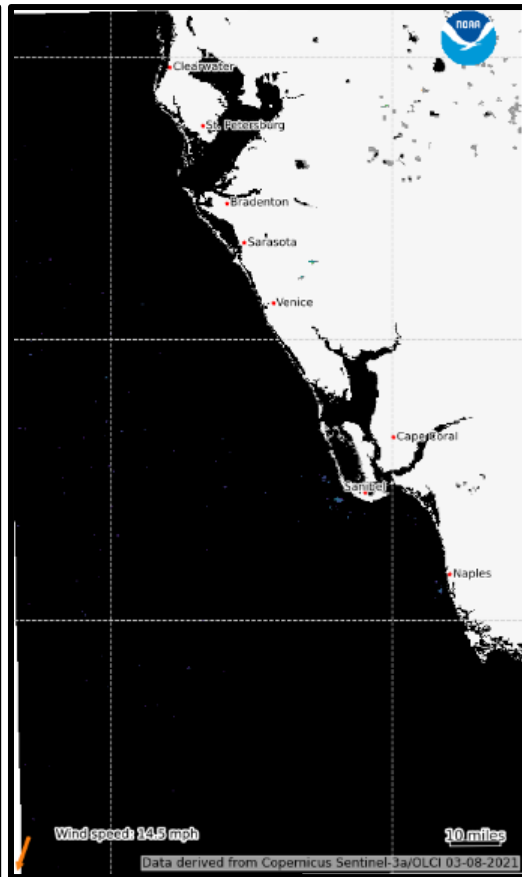
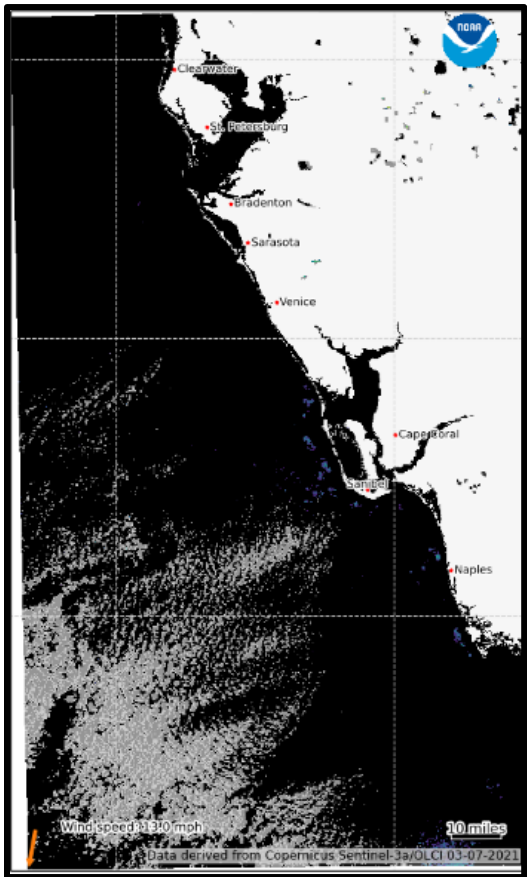
**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel **received 7 toxicosis patients:** 1 osprey (died), 1 great egret (died), 1 royal tern (died), 1 brown pelican (still at CROW), and 3 double-crested cormorants (2 died, 1 still at CROW).



*Karenia brevis* in water samples collected from Lee County on 3/3/21. Very low to medium concentrations of *K. brevis* were detected at 6 locations. Source: Florida FWC Fish and Wildlife Research Institute.



[Satellite imagery](#) (VIIRS, 3/1), shows elevated to high chlorophyll (2 to 19  $\mu\text{g/L}$ ) present at the coast of southwest Florida. A newly formed patch of elevated chlorophyll (11 to 17  $\mu\text{g/L}$ ) with some of the optical characteristics of *K. brevis* is present alongshore from Sarasota County to central Lee County in line with recent beach reports, increased sample concentration, and overall bloom extent. The patch of elevated chlorophyll (3 to 4  $\mu\text{g/L}$ ) with some of the optical characteristics of *K. brevis* remains offshore Monroe County, 27 miles northwest of Big Pine Key in the lower Florida Keys. *K. brevis* cell concentration sampling data from: 2/22/21 – 3/2/21. Cell count data are provided by Florida FWC Fish and Wildlife Research Institute.



[NOAA National Center for Coastal Ocean Science](#) satellite imagery from 3/7 (left) and 3/8 (right). Red Band Difference (RBD) showing relative chlorophyll fluorescence from high (red) to low (violet). Grey is clouds and other invalid data and black indicates “no detection” of bloom.

