

**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: **February 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.

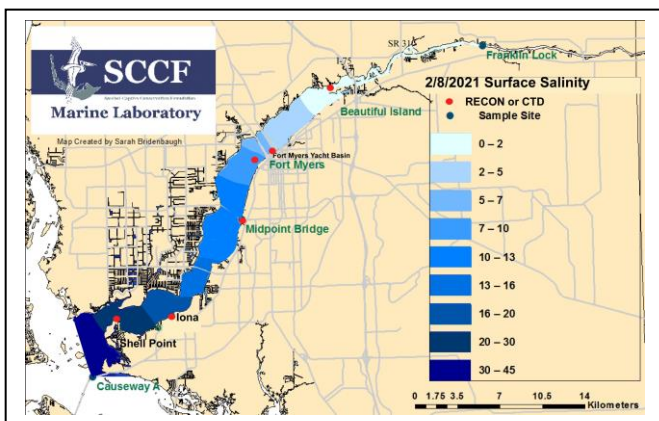
**Caloosahatchee Condition Summary:** Flows to the Caloosahatchee estuary had a 7-day average of **1,028 cfs at S-79** with a 7-day average of **582 cfs coming from the lake at S-77**. The **14-day moving average flow at S-79 is 1,030 cfs within the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020)**. Concentrations of the harmful alga, *Karenia brevis*, have decreased in the past week around Sanibel; however, CROW, the wildlife hospital on Sanibel, is still receiving a high number of patients exhibiting toxicosis symptoms.

**Recommendation:** We appreciate the Corps' decision last week to reduce the planned releases to the Caloosahatchee from 2,000 cfs to 1,500 cfs in consideration of the lingering red tide bloom impacting Lee and Collier counties. As the red tide bloom appears to be weakening, we respectfully request that the Corps consider increasing flows to the Caloosahatchee estuary to a 7-day average of **up to 2,000 cfs (constant)** as measured at **S-79** which is within the range recommended by the RECOVER 2020 performance measure for salinity (750 cfs – 2,100 cfs). With current lake levels at 15.41 ft, we are concerned that high lake levels towards the end of the dry season will result in damaging regulatory releases. Increasing flow now, within the RECOVER target range, will mitigate this risk and allow for more adaptability as the wet season approaches. We also request that red tide conditions continue to be closely monitored and adaptive management applied should conditions deteriorate.

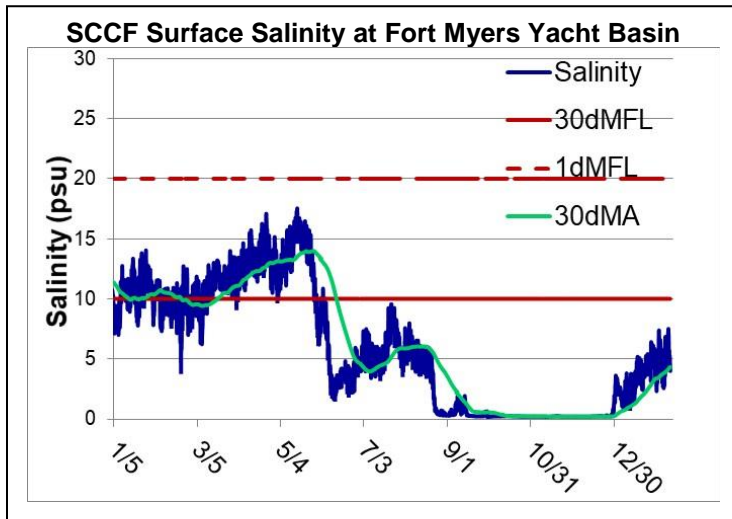
**USACE Action:** On Saturday, 2/6/21 the USACE increased flow to the Caloosahatchee Estuary at a 7-day average targeted flow (constant) of 1,500 cfs as measured at the WP Franklin Lock & Dam (S-79). For the St. Lucie Estuary, the Corps will release no water from Lake Okeechobee to S-80.

**Lake Flows:** In the past 7 days **20,345 AF** were discharged from Lake Okeechobee, with **8,268 AF (41%)** to the Caloosahatchee through **S-77**, **718 AF (3.5%)** to the St. Lucie River through **S-308**, **2,819 AF (14%)** through **S-310** in Clewiston, and **8,540 AF (42%)** to the EAA through **S-351, S-352, and S-354**. There was a net flow of **2,326 AF** at the **L-8 canal**. Water conservation areas received flows of **139 AF, 60 AF, and 2,823 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **24,280 AF**.

**Lake Okeechobee Level:** 15.41 ft (Low sub-band) **Last Week:** 15.51 ft  
**Lake Okeechobee Inflow:** 1,570 cfs **Lake Okeechobee Outflow:** 989 cfs  
**Weekly Rainfall Total:** WP Franklin **0.30"** Ortona **0.25"** Moore Haven **0.00"**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
2/2/2021	912	599	222
2/3/2021	627	772	760
2/4/2021	680	1030	1298
2/5/2021	1023	447	596
2/6/2021	791	351	160
2/7/2021	1300	755	202
2/8/2021	1862	1191	837
<b>7-day avg</b>	<b>1028</b>	<b>735</b>	<b>582</b>



Light Penetration

Site	25% I <sub>z</sub>	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.98	> 1	2.4	< 18
Shell Point	1.51	>2.2	3.0	< 18
Causeway	2.08	> 2.2	10.2	< 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 2/9/21, sampling by the Lee County Environmental Lab reported no cyanobacteria in the Caloosahatchee estuary.

**Upstream of S-79/Franklin Conditions:** On 2/9/21 the Olga Water Treatment plant reported chlorides of **55 mg/L**, apparent color **37 CU** and turbidity **2.1 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 4.3 psu, within the suitable range for tape grass. No hypoxia was recorded during the week at the RECON sites.

**Lower Estuary Conditions:** The average salinity at Shell Point RECON was 26, within the suitable range for oysters and seagrass.

Water Quality Conditions

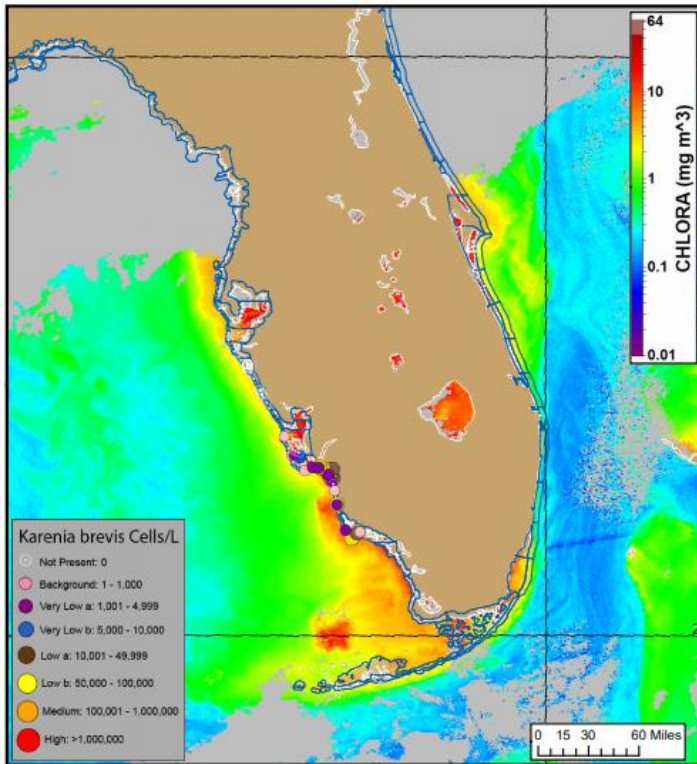
Monitor Site	Salinity (psu) <sup>a</sup> [previous week]	Diss O <sub>2</sub> (mg/L) <sup>b</sup>	FDOM (qsde) <sup>c</sup>	Chlorophyll (µg/L) <sup>d</sup>
Beautiful Island	0.5 – 1.2 [0.6 – 1.4]	6.7 – 9.1	-----	3.9
Fort Myers Yacht Basin	2.6 – 7.5 [2.3 – 7.4]	7.3 – 8.9	275	7.8
Shell Point	19 – 32 [23 – 29]	6.8 – 8.2	127	4.5
McIntyre Creek	-----	-----	-----	-----
Tarpon Bay	29.3 – 33.5	6.5 – 8.6	4.1 – 15.5	0.9 – 3.7
Wildlife Drive	30.9 – 32.9	1.0 – 12.5	-----	0.1 – 7.2
Wulfert Flats	31.9 – 34.0	4.7 – 9.02	-----	2.3 – 26.6

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

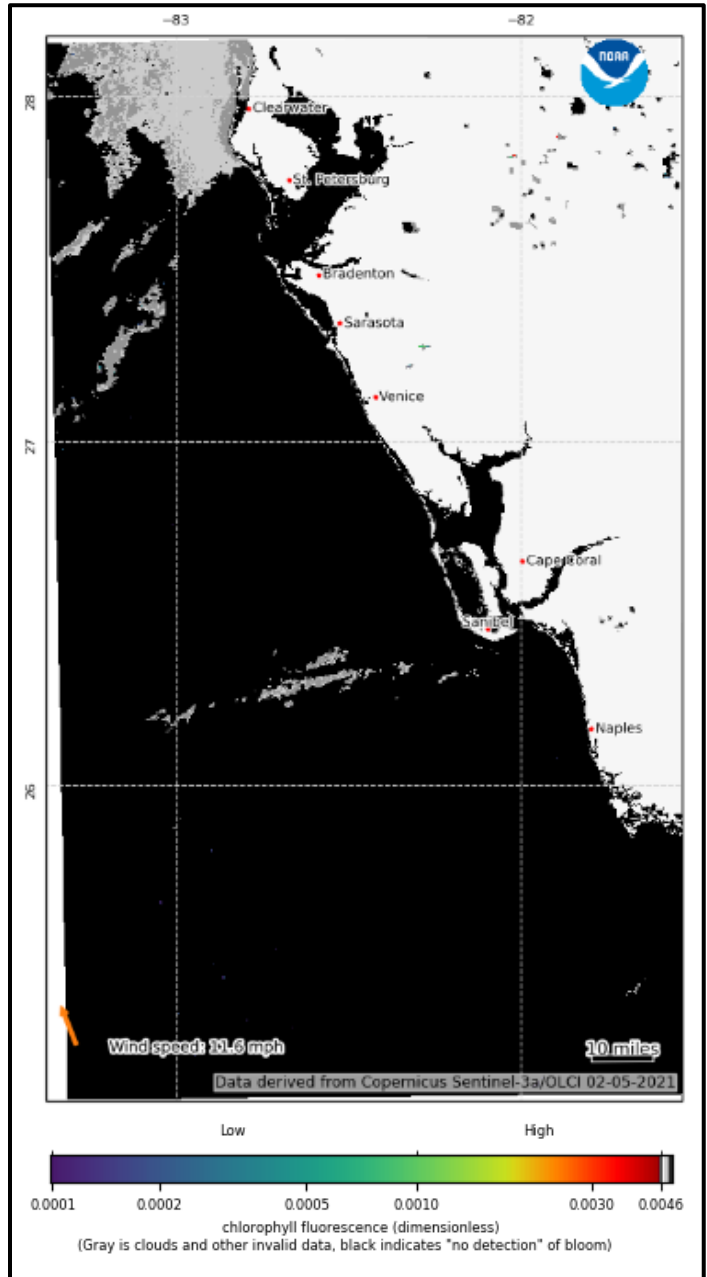
**Red Tide:** On 2/5/21 [FWC](#) reported that the red tide organism, *Karenia brevis*, persists in Southwest Florida. Over the past week, *K. brevis* was detected in 20 samples. **Bloom concentrations (>100,000 cells/liter) were observed in one Lee County sample.** Recent satellite imagery (2/4; NOAA, USF) indicates the presence of patches of chlorophyll >5 miles offshore of Lee, Collier, and Monroe counties. In Southwest Florida over the past week, *K. brevis* was observed at background to medium concentrations in Lee County, and low concentrations in Collier County. Samples from Pinellas, Manatee, Sarasota, Charlotte, and Monroe counties did not contain *K. brevis*.

**Beach Conditions:** In the past week, the [FWC Fish Kill Hotline](#) has received **0 reports** in Lee County related to the red tide event and its associated effects. A mass stranding event of shells and invertebrates was observed on the east end Sanibel beaches on 2/8/21.

**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel **received 20 toxicosis patients:** 9 royal terns (6 died, 3 still at CROW), 8 double-crested cormorants (4 died, 4 still at CROW), 1 great egret (still at CROW), 1 northern gannet (died), 1 herring gull (died).



[Satellite imagery](#) (VIIRS, 2/3), shows patches of elevated chlorophyll (2 – 9  $\mu\text{g/L}$ ) present alongshore southwest Florida from Lee to Collier counties. Chlorophyll in this region has decreased in concentration over the last week and no longer contains the optical characteristics of *K. brevis*. Offshore Monroe County, a patch of elevated to very high chlorophyll (2 – >20  $\mu\text{g/L}$ ) containing some of the optical characteristics of *K. brevis* is present 14 miles northwest of Big Pine Key. FWC sampling data from: 1/29/21 – 2/4/21.



[NOAA National Center for Coastal Ocean Science](#) satellite imagery from 2/5. 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.



Mass stranding event of marine life from Lighthouse Beach Park to Tarpon Bay beach (4.5 miles) on 2/8/21. Photos: SCCF

