

**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: **January 12 – 18, 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.

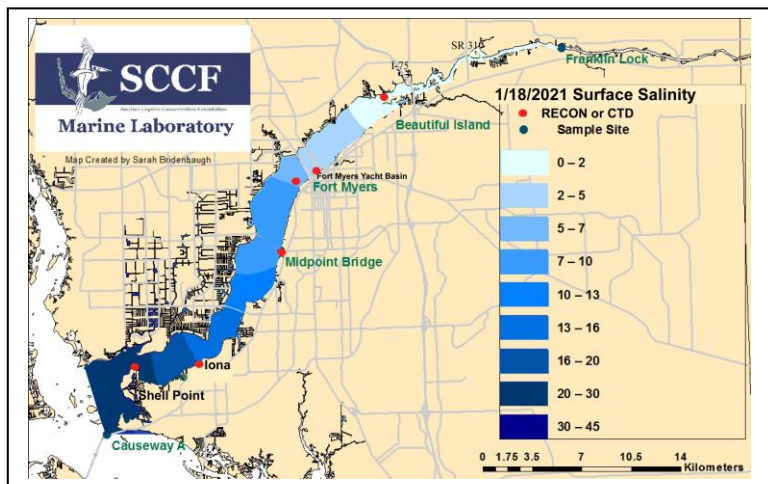
**Caloosahatchee Condition Summary:** Flows to the Caloosahatchee estuary had a 7-day average of **1,057 cfs at S-79 with a 7-day average of 657 cfs coming from the lake at S-77. The 14-day moving average flow at S-79 is 994 cfs and has been in the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020) for the past 18 days.** A patchy red tide bloom persists in Lee and Collier Counties causing multiple fish kill events, dead and injured wildlife, and respiratory irritation in humans. Water clarity and salinity are improving around Sanibel and Cape Coral, which is beneficial for seagrass and estuarine animals. On Sanibel beaches, public works has reported a decrease in the frequency and severity of fish kills.

**Recommendation:** We request flows to the Caloosahatchee be maintained at a 7-day average of **1,000 cfs** as measured at **S-79** which is within the range recommended by the RECOVER 2020 performance measure for salinity (750 cfs – 2,100 cfs) **for optimal ecological conditions.** Additionally, we request that flows be delivered in a 7-day pulse, as opposed to a steady release, to help maintain the desirable salinity wedge in the Caloosahatchee.

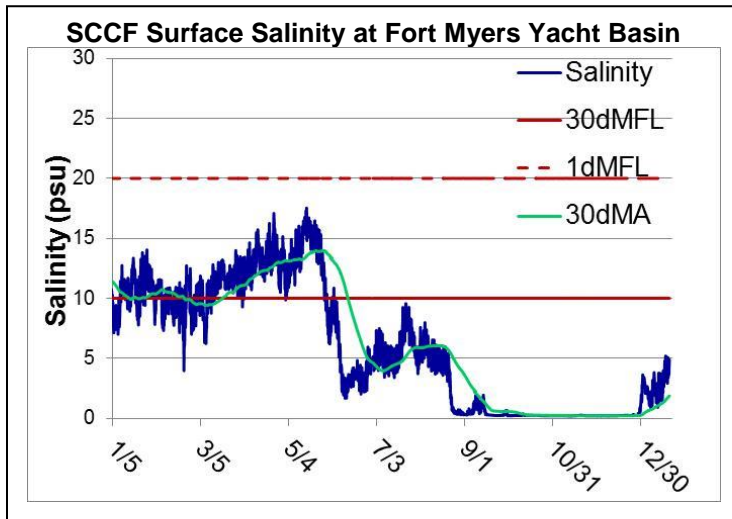
**USACE Action:** On Saturday 1/16/21 the USACE reduced flow to the Caloosahatchee Estuary to a 7-day average targeted flow (pulse) of 1000 cfs as measured at the WP Franklin Lock & Dam (S-79). For the St. Lucie Estuary, the Corps will release no water from Lake Okeechobee to S-80.

**Lake Flows:** In the past 7 days, **15,760 AF** were discharged from Lake Okeechobee, with **9,110 AF (58%)** to the Caloosahatchee through **S-77**, **42 AF (>1%)** to the St. Lucie River through **S-308**, **2,156 AF (14 %)** through **S-310** in Clewiston, and **4,452 AF (41%)** to the **EAA through S-351, S-352, and S-354.** There was a net backflow of **35 AF** at the **L-8 canal.** Water conservation areas received flows of **244 AF, 383 AF, and 4,673 AF at WCA1, WCA2, and WCA3,** respectively. Everglades National Park received **42,643 AF.**

**Lake Okeechobee Level:** 15.63 ft (Low sub-band) **Last Week:** 15.66 ft  
**Lake Okeechobee Inflow:** 907 cfs **Lake Okeechobee Outflow:** 1,147  
**Weekly Rainfall Total:** WP Franklin 0.31" Ortona 0.32" Moore Haven NR



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
1/12/2021	968	445	678
1/13/2021	1036	700	655
1/14/2021	1049	800	653
1/15/2021	1016	587	645
1/16/2021	987	495	643
1/17/2021	1319	500	660
1/18/2021	1027	505	667
<b>7-day avg</b>	<b>1057</b>	<b>576</b>	<b>657</b>



**Light Penetration**

Site	25% I <sub>z</sub>	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.87	> 1	1.7	< 18
Shell Point	1.54	>2.2	1.4	< 18
Causeway	1.74	> 2.2	5.7	< 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 1/19/21, sampling by the Lee County Environmental Lab reported the presence of *Microcystis*, *Dolichospermum*, and *Nostocalean* filaments as a wind driven scum line along the shore and locks upstream of the Franklin Locks and *Microcystis*, *Dolichospermum*, *Cuspidothrix*, and *Nostocalean* filaments as a wind driven scum along the seawall at the Davis Boat Ramp.

**Upstream of S-79/Franklin Conditions:** On 1/19/21 the Olga Water Treatment plant reported chlorides of **53 mg/L**, apparent color **39 CU** and turbidity **2.33 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 1.9 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 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	0.2 – 1.2 [0.2 – 0.3]	6.5 – 8.1	-----	-----
Fort Myers Yacht Basin	1.4 – 5.2 [0.9 – 3.8]	7.8 – 8.8	<b>358</b>	6.9
Shell Point	15 – 30 [14 – 31]	6.9 – 8.0	<b>134</b>	5.7
McIntyre Creek	-----	-----	-----	-----
Tarpon Bay	26.9 – 30.8	7.2 – 9.1	9.2 – 18.1	1.6 – 4.2
Wildlife Drive	29.3 – 30.9	<b>1.4 – 14.4</b>	-----	1.8 – 24.7
Wulfert Flats	30.0 – 32.2	6.2 – 9.5	-----	6.3 – 78.0

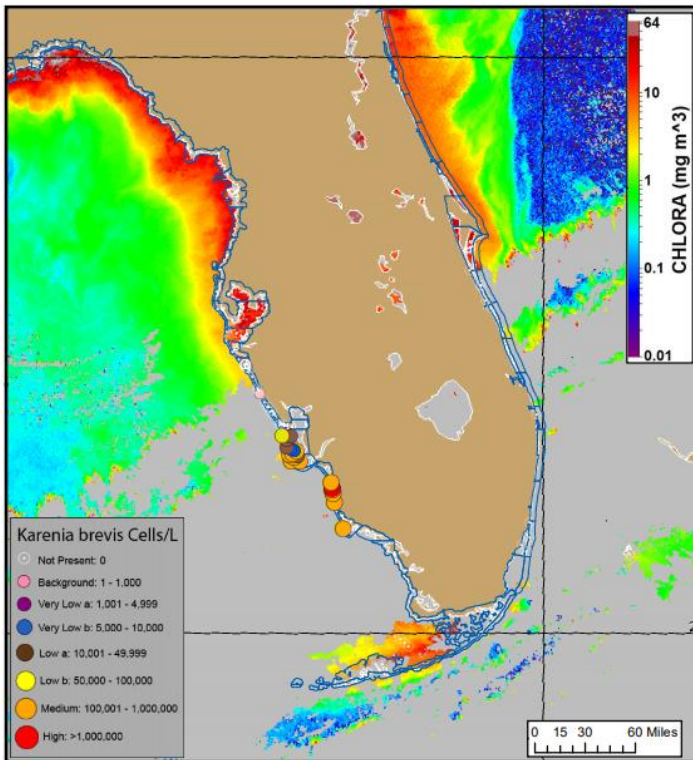
Red values are outside of the preferred range.  
<sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 25 – 32  
<sup>b</sup> Dissolved O<sub>2</sub> target values: all sites > 4  
<sup>c</sup> FDOM target values: BI < 70, FM < 70, SP < 11  
<sup>d</sup> Chlorophyll target values: BI < 11, FM <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

**Red Tide:** On 1/15/21 [FWC](#) reported that a patchy bloom of the red tide organism, *Karenia brevis*, persists in Southwest Florida. *K. brevis* was detected in 39 samples over the past week, with bloom concentrations (>100,000 cells/liter) observed in 26 of those collected from Lee and Collier counties. *K. brevis* was observed at background concentrations in Sarasota County, very low to high concentrations in Lee County, and medium to high concentrations in and offshore of Collier County. *K. brevis* was not detected in samples from Pinellas, Manatee, Charlotte, and Monroe counties. SCCF staff collected 17 water samples in Pine Island Sound and along the coast of Sanibel. *K. brevis* was observed at low concentrations in 2 samples, medium concentrations in 13 samples, and high concentrations in 2 samples.

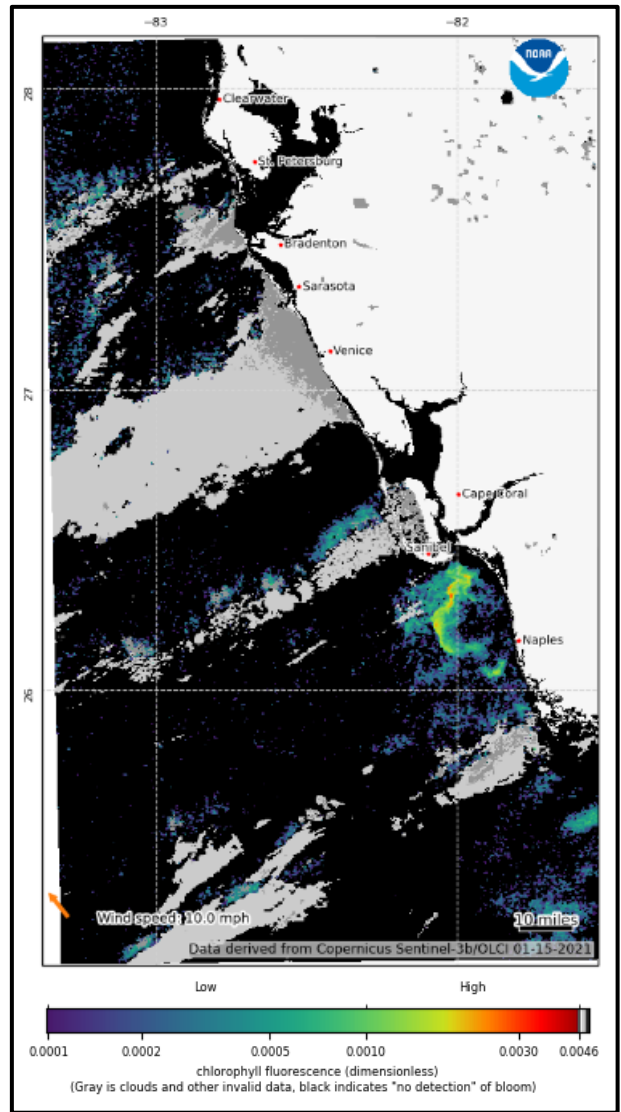
**Beach Conditions:** Since 1/12/21 the [FWC Fish Kill Hotline](#) has received **6 reports** in Lee County related to the red tide event and its associated effects. Affected areas include Sanibel and Fort Myers Beach and identified species include mullet and manatee.

**Shellfish Advisory:** Shellfish harvest area #6222 Pine Island Sound Section 2 (Matlacha Pass North) Shellfish Harvest Area is precautionarily **CLOSED** by the Florida department of Agriculture and Consumer Services as of 1/19/21 due to the presence of *Karenia brevis* and conditions defined in The Biotoxin Management Plan.

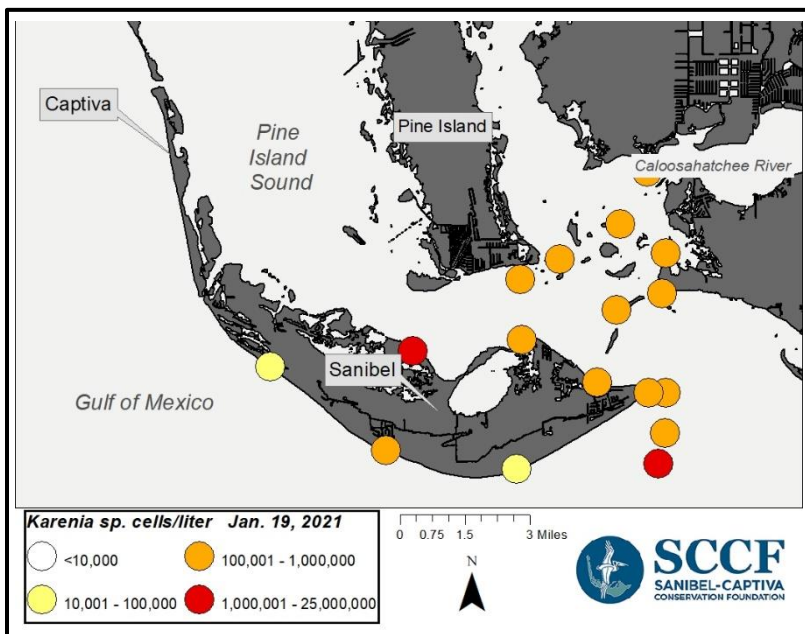
**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel received **13 brevetoxicosis patients:** 1 common loon (died), 3 double-crested cormorants (2 died, 1 still at CROW), 3 anhingas (all died), 3 royal terns (1 died, 2 still at CROW), and 1 sora (treated and released), 1 laughing gull (still at CROW), and 1 brown pelican (died).



[Satellite imagery](#) is not available. Southwest Florida remains heavily clouded at the coast, further preventing chlorophyll analysis of the region. Recent beach reports suggest lower concentrations of the bloom may be present alongshore northern Sarasota County, and remain most dense from central Lee to central Collier County. *Karenia brevis* cell concentration sampling data from 01/10/21 through 01/14/21 provided by FWC.



[NOAA National Center for Coastal Ocean Science](#) satellite imagery from 1/15. Red Band Difference (RBD) showing relative chlorophyll fluorescence from high (red) to low (violet).



SCCF scientists detected *Karenia brevis* at low to high concentrations in 17 samples from 1/14 – 1/19 in Pine Island Sound and along the Sanibel coastline.