

**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 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 **1,948 cfs at S-79 with a 7-day average of 958 cfs coming from the lake at S-77. The 14-day moving average flow at S-79 is 1,796 cfs within the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020).** The red tide organism, *Karenia brevis*, persists in Lee county, with bloom concentration found in 8 samples from the FWC. CROW, the wildlife sanctuary on Sanibel is continuing to see high numbers of dead, sick, and injured animals associated with the red tide event.

**Recommendation:** We request that the Corps **continue sending 2,000 cfs to Caloosahatchee this week, and then scale back flows starting in March** to optimize salinity conditions for oyster spawning. We **strongly encourage** the Corps to consider all alternative options in order to reduce lake levels and decrease the risk of harmful discharges to the Caloosahatchee in the future.

**USACE Action:** On Saturday, 2/13/21 the USACE increased flow to the Caloosahatchee Estuary at a 7-day average targeted flow (constant) of 2,000 cfs as measured at the WP Franklin Lock & Dam (S-79). Additionally, releases south from the lake began this week at around 200 cfs and while they fluctuate based on conditions, are expected to increase as capacity opens in the stormwater treatment areas over the coming months. No scheduled lake releases are currently planned from the St. Lucie Lock and Dam (S-80).

**Lake Flows:** In the past 7 days **21,965 AF** were discharged from Lake Okeechobee, with **13,357 AF (61%)** to the Caloosahatchee through **S-77, 42 AF (<1%)** to the St. Lucie River through **S-308, a net flow of 784 AF (4%)** through **S-310** in Clewiston, and **7,782 AF (35%)** 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 **198 AF, 0 AF, and 8,670 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **14,007 AF**.

\*Missing data on 2/16/21 – 2/22/21 for L-8.

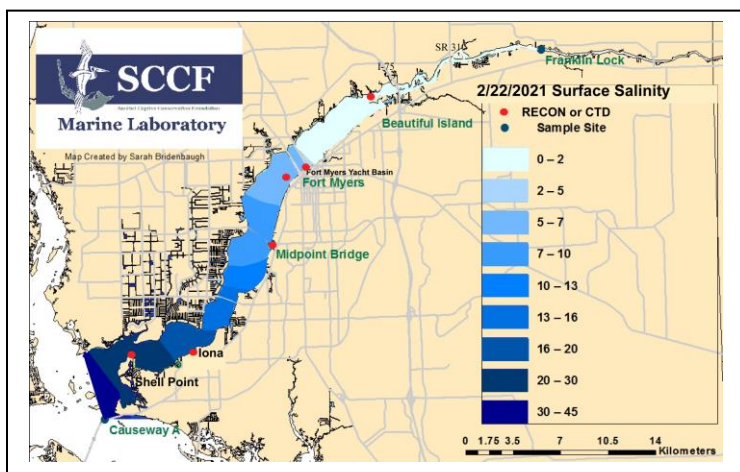
**Lake Okeechobee Level: 15.41 ft (Low sub-band)**

**Last Week: 15.44 ft**

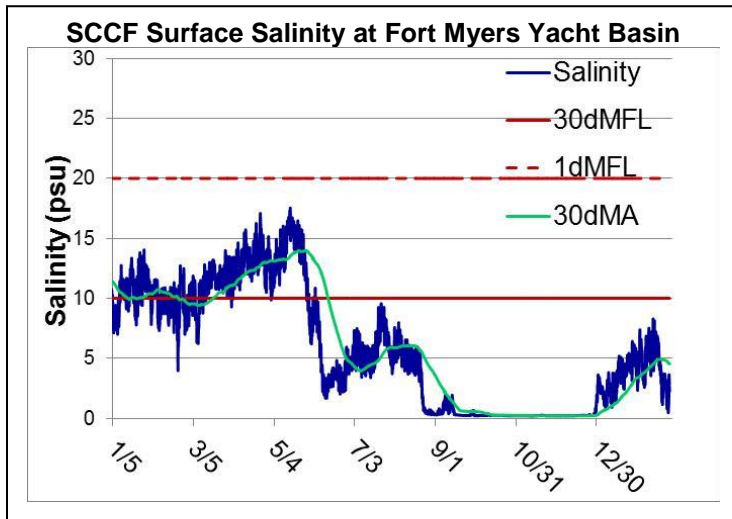
**Lake Okeechobee Inflow: 1,437 cfs**

**Lake Okeechobee Outflow: 1,733 cfs**

**Weekly Rainfall Total:** WP Franklin **0.88"** Ortona **1.19"** Moore Haven **≥0.20"**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
2/16/2021	2271	1473	1343
2/17/2021	2300	1495	1165
2/18/2021	1951	1329	829
2/19/2021	1771	1109	642
2/20/2021	1788	1215	891
2/21/2021	1743	1306	951
2/22/2021	1813	1302	886
<b>7-day avg</b>	<b>1948</b>	<b>1318</b>	<b>958</b>



Light Penetration

Site	25% I <sub>z</sub>	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.90	> 1	5.0	< 18
Shell Point	1.57	>2.2	3.0	< 18
Causeway	1.88	> 2.2	11	< 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 2/23/21, sampling by the Lee County Environmental Lab reported the presence of *Dolichospermum*, *Microcystis*, *Planktothrix*, and *Nostocalean* filaments visible as specks on the surface, with slight wind driven accumulation along the locks upstream of the Franklin Locks.

**Upstream of S-79/Franklin Conditions:** On 2/23/21 the Olga Water Treatment plant reported chlorides of **60 mg/L**, apparent color **53 CU** and turbidity **3.14 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 4.5 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 site with 488,000 cells of *Skeletonema* filaments per liter.

**Lower Estuary Conditions:** The average salinity at Shell Point RECON was 25, 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	----- [0.4 – 1.3]	-----	-----	3.3
Fort Myers Yacht Basin	0.5 – 4.5 [3.5 – 8.3]	5.8 – 9.0	285	13
Shell Point	14 – 32 [20 – 32]	5.4 – 7.0	112	4.0
McIntyre Creek	-----	-----	-----	-----
Tarpon Bay	28.2 – 33.2	5.5 – 8.1	4.7 – 11.7	1.1– 3.0
Wildlife Drive	32.5 – 34.3	0.8 – 15.9	-----	1.0 – 16.8
Wulfert Flats	30.2 – 33.6	4.7 – 9.7	-----	3.1 – 67.0

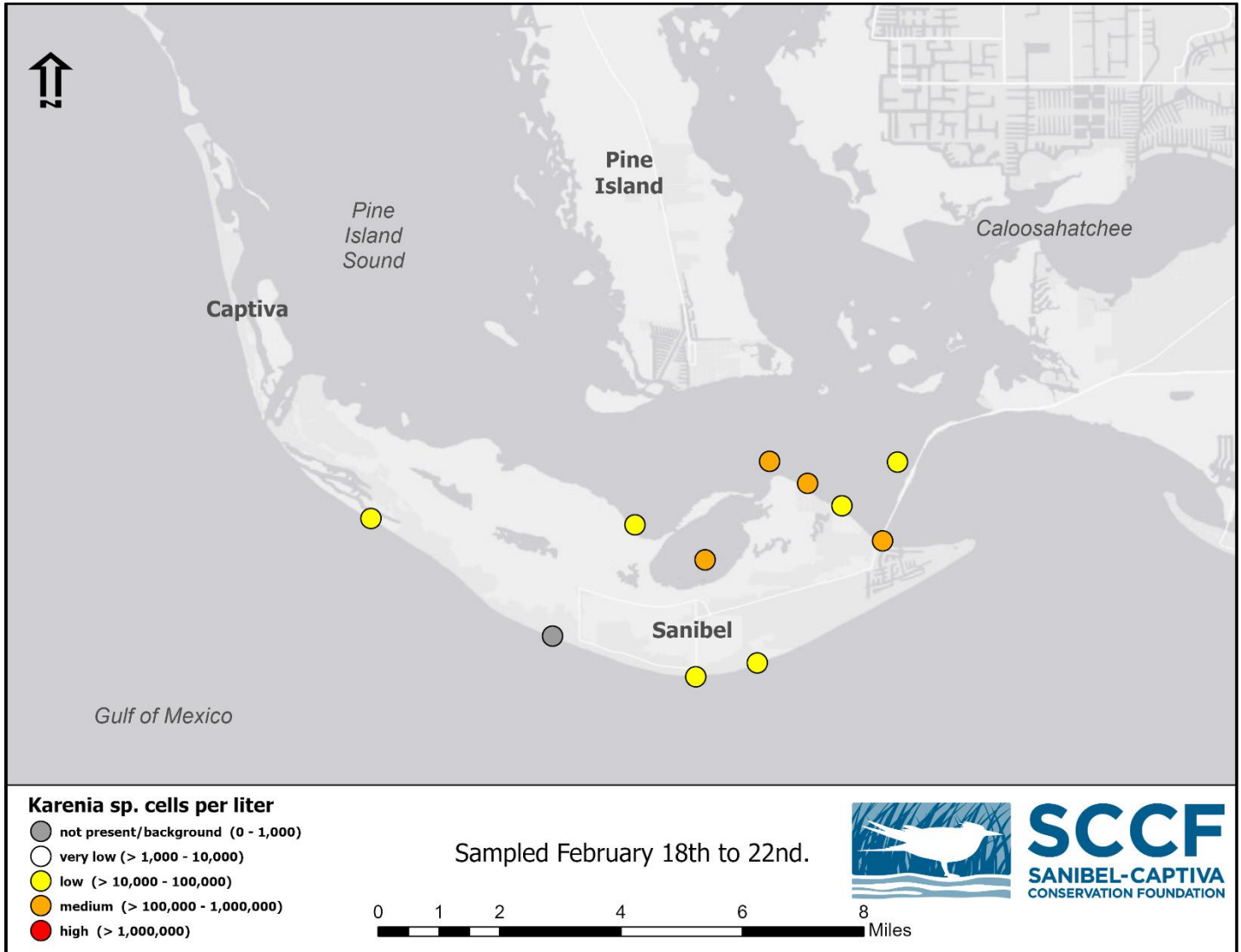
Red values are outside of the preferred range.  
<sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 25 – 32  
<sup>b</sup> Dissolved O<sub>2</sub> target values: all sites > 4  
<sup>c</sup> FDOM target values: BI < 70, FM < 70, SP < 11  
<sup>d</sup> Chlorophyll target values: BI < 11, FM <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

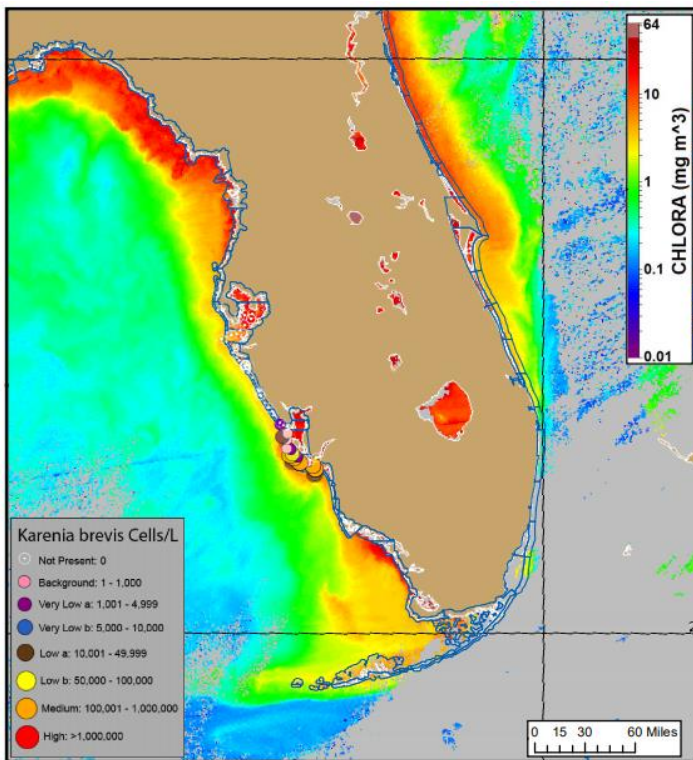
**Red Tide:** On 2/19/21 [FWC](#) reported that the red tide organism, *Karenia brevis*, persists in Southwest Florida. Over the past week, *K. brevis* was detected in 31 samples. **Bloom concentrations (>100,000 cells/liter) were observed in eight Lee County samples.** Recent satellite imagery (2/15; NOAA, USF) indicates that chlorophyll patches persist along and/or offshore of Lee, Collier, and Monroe counties. One Northwest Florida sample had background levels of *K. brevis*. In Southwest Florida over the past week, *K. brevis* was observed at very low concentrations in Charlotte County, **background to medium concentrations in or offshore of Lee County**, and very low to low concentrations in Collier County.

**Shellfish Advisory:** On 2/18/21 the Florida Department of Agriculture and Consumer Services (FDACS) **CLOSED** Section #5802 Gasparilla Sound Shellfish Harvest Area (Aquaculture Use Zones and Leases remain open). On 2/22/21 FDACS **OPENED** Section #6222 Pine Island Sound Section 2 (Matlacha Pass North) Shellfish Harvest Area.

**Beach Conditions:** In the past week, 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 Bonita Beach, Fort Myers Beach, and Sanibel. Affected species included puffer, anhinga, royal tern, red drum, and black drum. In one of the fish kill events, the Town of Fort Myers Beach reported 180 dead black drum, 20 dead puffers, and 4 dead anhinga near beach access 25.

**Wildlife Impacts:** In the past week, the CROW wildlife hospital on Sanibel **received 30 toxicosis patients:** 5 herring gulls (2 died, 3 still at CROW), 9 double-crested cormorants (3 died, 5 still at CROW, 1 released), 7 royal terns (4 died, 1 still at CROW), 3 northern gannets (2 died, 1 still at CROW), 1 ring-billed gull (died), 1 sanderling (released), 1 osprey (died), 1 brown pelican (still at CROW), 1 Kemp’s ridley (died), and 1 great blue heron (still at CROW).





[Satellite imagery](#) (VIIRS, 2/20), shows patches of elevated to very high chlorophyll (2 to >20  $\mu\text{g/L}$ ) present alongshore southwest Florida from Lee to Collier counties, though none contain the optical characteristics of *K. brevis*. A large patch of elevated chlorophyll (2 – 5  $\mu\text{g/L}$ ) containing some of the optical characteristics of *K. brevis* remains present offshore Monroe County, approximately 15 miles northwest of Big Pine Key in the lower Florida Keys; however, this patch has decreased in concentration and extent since last week. FWC sampling data from: 02/12/21 – 2/17/21.



Dead gannet near Gulfside City Park on 2/16/21. Photo: SCCF