

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 23 – 29, 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.

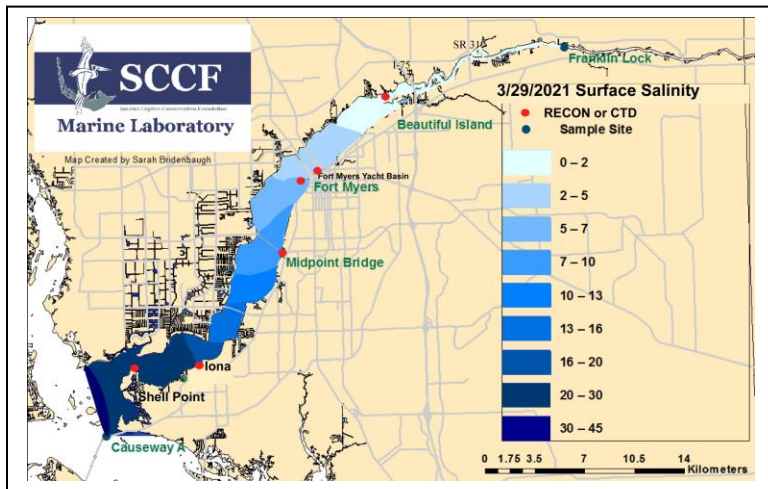
Caloosahatchee Condition Summary: Flows to the Caloosahatchee Estuary had a 7-day average of **1,775 cfs at S-79** and a 7-day average of **1,871 cfs at S-77**. The **14-day moving average flow at S-79 is 1,887 cfs, within the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020)**. Water clarity around Sanibel and Lee County remains good at this time. The harmful alga, *Karenia brevis*, persists around Sanibel and Captiva.

Recommendation: We strongly encourage the Corps to utilize all options to reduce lake levels prior to the wet season to prevent damaging releases to the estuaries. **Based on current conditions, we recommend maintaining flows at the upper end of the optimal flow envelope in RECOVER and up to the maximum flow allowed under the HAB deviation.** Releases to the Northern Estuaries should utilize adaptive management to optimize ecosystem salinities while balancing the system as a whole. These decisions should be reevaluated regularly based on current and forecasted conditions in the lake and estuaries.

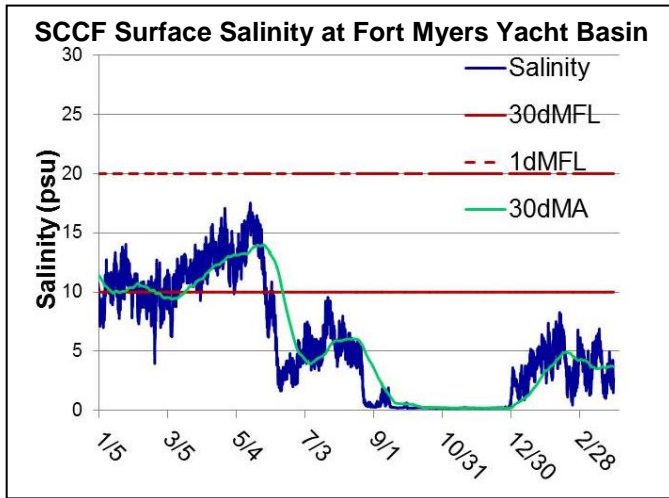
USACE Action: On Saturday, 3/29/21 the USACE reduced targeted flows at a 7-day average of 1,500 cfs (constant) to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) and maintained flows at a 7-day average of 500 cfs (pulse) to the St. Lucie Lock and Dam (S-80).

Lake Flows: In the past 7 days **76,925 AF** were discharged from Lake Okeechobee, with **26,026 AF (34%)** to the Caloosahatchee through **S-77**, **9,582 AF (12%)** to the St. Lucie River through **S-308**, **1,499 AF (2%)** through **S-310** in Clewiston, **5,260 AF (7%)** through **C-10A** to the L-8 canal, and **34,558 AF (45%)** to the EAA through **S-351, S-352, and S-354**. Water conservation areas received flows of **545 AF, 4,929 AF, and 482 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **4,685 AF**.

Lake Okeechobee Level: 14.50 ft (Low sub-band) Last Week: 14.75 ft
Lake Okeechobee Inflow: 852 cfs Lake Okeechobee Outflow: 5,012 cfs
Weekly Rainfall Total: WP Franklin 0.08" Ortona 0.00" Moore Haven 0.00"



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
3/23/21	1820	1348	2060
3/24/21	1820	1354	2001
3/25/21	1816	1355	1978
3/26/21	2158	1358	1995
3/27/21	1765	1163	1694
3/28/21	1467	1254	1632
3/29/21	1577	1298	1734
7-day avg	1775	1304	1871



Site	Light Penetration		Turbidity	Target Values
	25% I _z	Target Values		
	meters		NTU	
Fort Myers	1.03 ^c	> 1	5.2	< 18
Shell Point	2.18 ^c	> 2.2	2.3	< 18
Causeway	2.24 ^m	> 2.2	3.3	< 5

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

^m measured, ^c calculated

Cyanobacteria Status: On 3/30/21, sampling by the Lee County Environmental Lab reported moderately abundant, predominantly *Dolichospermum* and also *Microcystis* and *Aphanizomenon* as visible streaks with accumulation along the south shore and locks upstream of the Franklin Locks. The presence of predominantly *Dolichospermum* and also *Microcystis*, and *Aphanizomenon* were reported as specks visible on the surface and in the water column at the Davis Boat Ramp.

Upstream of S-79/Franklin Conditions: On 3/30/21 the Olga Water Treatment plant reported chlorides of **57 mg/L**, apparent color **97 CU** and turbidity **2.44 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 **3.7 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **27 psu**, within the suitable range for oysters and seagrass.

Water Quality Conditions

Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	0.2 – 0.4 [0.4 ^s]	5.7 – 8.3	263	8.6
Fort Myers Yacht Basin	1.0 – 5.0 [1.1 – 6.9]	5.2 – 6.6	229	4.5
Shell Point	16 – 32 [15 – 33]	5.2 – 6.6	48.8	3.8
McIntyre Creek	30.9 – 32.7	4.2 – 14.2	5.9 – 10.3	0.8 – 1.8
Tarpon Bay	30.2 – 33.3	4.8 – 7.9	4.7 – 9.5	0.9 – 8.6
Wildlife Drive	22.5 – 34.4	0.8 – 11.5	-----	0.0 – 20.0
Wulfert Flats	31.8 – 33.4	4.6 – 8.5	-----	-----

Red values are outside of the preferred range.

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

^b Dissolved O₂ target values: all sites > 4

^c FDOM target values: BI < 70, FM < 70, SP < 11

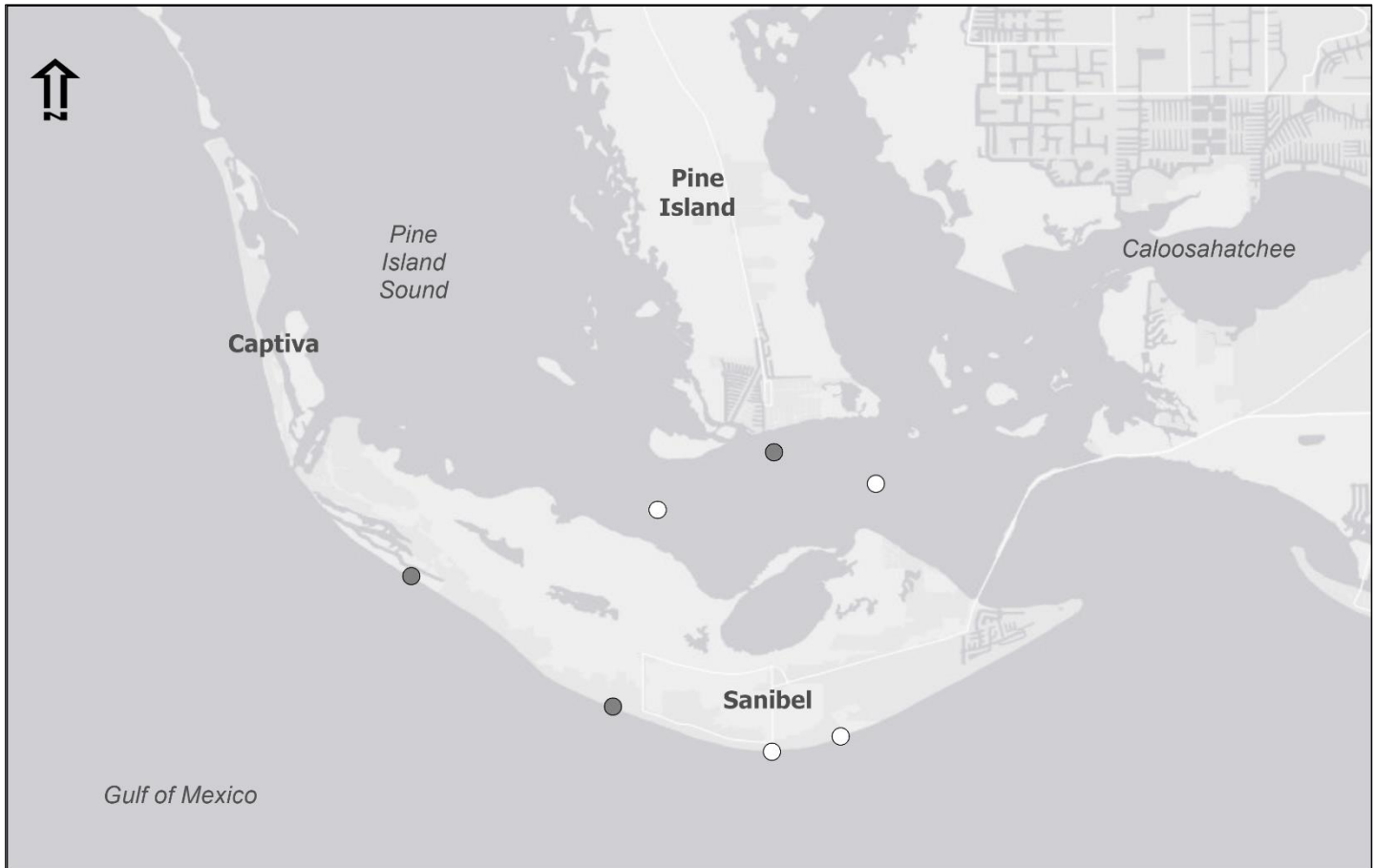
^d Chlorophyll target values: BI < 11, FM < 11, SP < 11

^s Single sonde lower and surface layer or surface grab lab measurement

Red Tide: On 3/26/21 [FWC](#) reported that the red tide organism, *Karenia brevis*, persists in Southwest Florida. Over the past week, *K. brevis* was detected in 39 samples. Bloom concentrations (>100,000 cells/liter) were observed in four samples from or offshore of Lee County. In Southwest Florida over the past week, *K. brevis* was observed at background to medium concentrations in and offshore of Lee County, and background to low concentrations in and offshore of Collier County.

Shellfish Advisory: Shellfish harvest area #6222 Pine Island Sound Section 2 (Matlacha Pass North) Shellfish Harvest Area is **CLOSED** by the Florida Department of Agriculture and Consumer Services (FDACS) as of 3/24/20 due to presence of *Karenia brevis* and conditions defined in The Biotxin Management Plan.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received **11 toxicosis patients**: 1 great blue heron (died), 3 double-crested cormorants (still at CROW), 3 herring gulls (all died), 2 laughing gulls (died), 1 ring-billed gull (died), and 1 fish crow (died).



Karenia sp. cells per liter

- not present/background (0 - 1,000)
- very low (> 1,000 - 10,000)
- low (> 10,000 - 100,000)
- medium (> 100,000 - 1,000,000)
- high (> 1,000,000)

March 22, 2021 to March 31, 2021

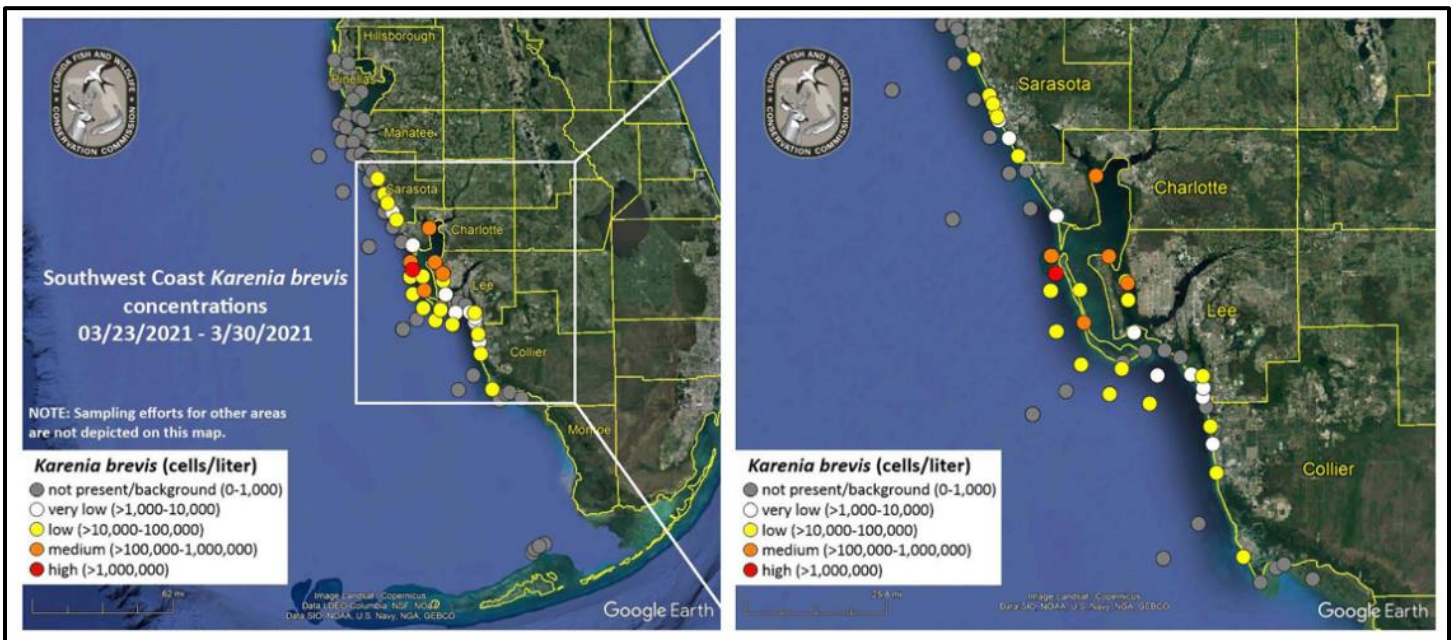
Sites may have been sampled multiple times during the above period. Only the most recent sample per site is shown.



SCCF
SANIBEL-CAPTIVA
CONSERVATION FOUNDATION



Karenia sp. concentrations in samples collected by SCCF scientists and volunteers from 3/22/21 – 3/31/21.



Karenia brevis concentrations in samples collected by Florida Fish and Wildlife from 3/23/21 – 3/30/21.



Water clarity at Rosen Park in Cape Coral on 3/29/21. Photo: City of Cape Coral