

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 Interim Secretary Shawn Hamilton

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
 Leslie 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: **June 15 – 21, 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.

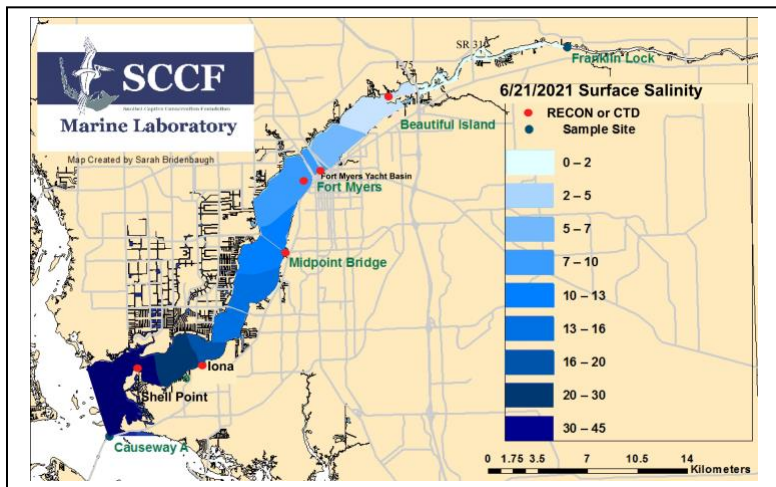
Caloosahatchee Condition Summary: Flows to the Caloosahatchee Estuary had a 7-day average of **1,203 cfs at S-79** and a 7-day average of **805 cfs at S-77**. The 14-day moving average flow at S-79 is **1,047 cfs** and is within the optimal flow envelope (750 – 2,100 cfs; RECOVER 2020). Water clarity around Sanibel and Lee County remains good at this time. The harmful alga, *Karenia brevis*, persists in background to very low concentrations in and offshore Lee County. Algal blooms and strandings have been observed in Matlacha (*Dapis pleousa* and *Caulerpa* sp.), at Bowman's Beach (*Trichodesmium*).

Recommendation: We encourage the Corps to maintain flows within the RECOVER 2020 optimal flow envelope of 750 – 2,100 cfs for the Caloosahatchee Estuary. Releases to the Northern Estuaries should utilize adaptive management to optimize ecosystem salinities while balancing the system as a whole. These decisions should be evaluated regularly based on current and forecasted conditions in the lake and estuaries.

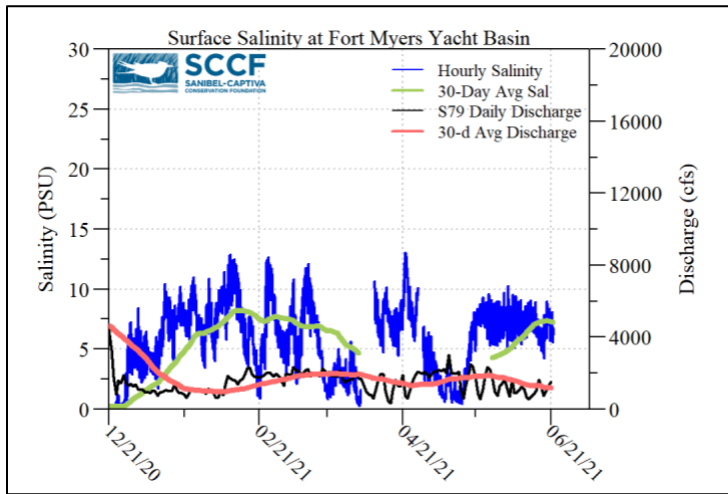
USACE Action: On Saturday, 5/29/21 the USACE decreased targeted flows to a 7-day average of 1,000 cfs (pulse) to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) and continued no releases to the St. Lucie Lock and Dam (S-80).

Lake Flows: In the past 7 days a net flow of **11,986 AF** were discharged from Lake Okeechobee, with **11,177 AF (93%)** to the Caloosahatchee through **S-77**, **288 AF (2%)** to the St. Lucie River through **S-308**, a net flow of **167 AF (1%)** through **S-310** in Clewiston, a net flow of **355 AF (3%)** through **C-10A** to the L-8 canal, and **0 AF (0%)** to the EAA through **S-351, S-352, and S-354**. Water conservation areas received flows of **2,735 AF, 7,422 AF, and 8,344 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **198 AF**.

Lake Okeechobee Level: 12.57 ft (Base flow sub-band) Last Week: 12.50 ft
Lake Okeechobee Inflow: 469 cfs Lake Okeechobee Outflow: 769 cfs
Weekly Rainfall Total: WP Franklin 1.94" Ortona 0.47" Moore Haven 0.44"



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
6/15/21	1025	892	1256
6/16/21	1642	803	1276
6/17/21	1280	442	605
6/18/21	755	483	270
6/19/21	954	633	707
6/20/21	1262	652	752
6/21/21	1503	1109	769
7-day avg	1203	716	805



Light Penetration				
Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	1.15 ^c	> 1	2.7	< 18
Shell Point	2.29 ^c	>2.2	1.6	< 18
Causeway	2.52 ^m	> 2.2	4.0	< 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 6/22/21, sampling by the Lee County Environmental Lab reported the **presence** of *Microcystis*, *Dolichospermum*, and *Aphanizomenon* (240 colonies/liter) at the **Alva Boat Ramp** as some streaks with light accumulation on the ramp. *Microcystis* and *Dolichospermum* (500 colonies/liter) were **present** upstream of the Franklin Locks with some streaks and accumulation along the lock. *Microcystis* and *Dolichospermum* (100 colonies/liter) were **present** at the **Davis Boat Ramp** as visible specks on the surface. Overcast conditions were observed during each of the sampling events.

Upstream of S-79/Franklin Conditions: On 6/22/21 the Olga Water Treatment plant reported chlorides of **66 mg/L**, apparent color **95 CU** and turbidity **5.15 NTU**. **Algae** present. The plant is offline.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **7.3 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **31 psu**, above the optimal range for oysters.

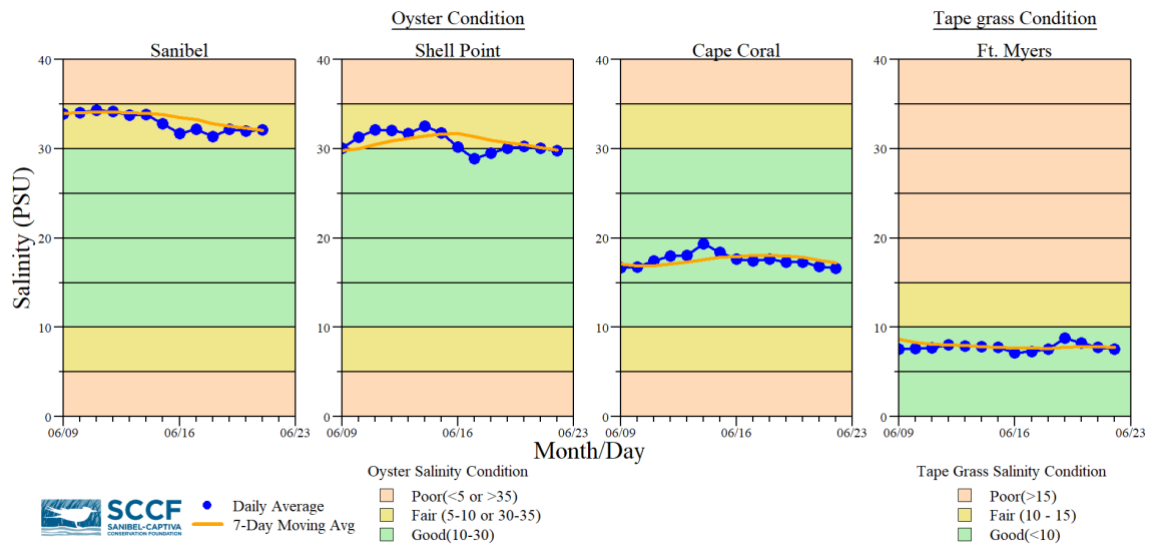
Water Quality Conditions

Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	----- [-----]	-----	-----	-----
Fort Myers Yacht Basin	4.8 – 8.7 [5.4 – 8.6]	3.8 – 7.9	223	5.9
Shell Point	21 – 35 [22 – 36]	4.3 – 6.8	40.1	1.6
McIntyre Creek	32.6 – 35.6	2.0 – 12.9	4.4 – 13.5	1.5 – 12.6
Tarpon Bay	33.6 – 36.5	0.2 – 9.6	2.0 – 4.8	0.8 – 2.9
Wulfert Flats	33.8 – 35.6	1.5 – 9.7	-----	2.5 – 22.2

- 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
- ^e Single sonde lower and surface layer or surface grab lab measurement

Red Tide: On 6/18/21, the FWC reported that a patchy bloom of the red tide organism, *Karenia brevis*, persists in Southwest Florida. **Over the past week, *K. brevis* was detected in 63 samples. Bloom concentrations (>100,000 cells/liter) were observed in 11 samples:** eight samples from Pinellas County (including two samples with high concentrations of >1 million cells/liter), two samples from Manatee County, and one sample from Charlotte County. *K. brevis* was observed at very low to high concentrations in Pinellas County, very low and low concentrations in Hillsborough County, background to medium concentrations in Manatee County, background concentrations in Sarasota County, very low to medium concentrations in and offshore of Charlotte County, **background to very low concentrations in and offshore of Lee County**, and background to very low concentrations in and offshore of Collier County.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel **received 1 toxicosis patients:** 1 white ibis (still at CROW).



Daily average bottom salinity data for the last 14-days from sampling locations within the tidal Caloosahatchee River Estuary relative to oyster health (Sanibel, Shell Point and Cape Coral) and tape grass (*Vallisneria americana*) health (Ft. Myers only) conditions.



Water clarity at Lighthouse Beach Park on 06-21-2021 at 13:54 on a falling tide. (Low tide: 17:46 @ -0.11 ft)