

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: **June 1 – 7, 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 **1,199 cfs at S-79** and a 7-day average of **1,885 cfs at S-77**. The **14-day moving average flow at S-79 is 1,396 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 low concentrations in and offshore of Lee County.

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 **34,851 AF** was discharged from Lake Okeechobee, with **11,990 AF (34%)** to the Caloosahatchee through **S-77**, **1,084 AF (3%)** through **S-310** in Clewiston, and **24,113 AF (69%)** to the EAA through **S-351, S-352, and S-354**. There was a net backflow of **1,738 AF** to the St. Lucie River through **S-308** and a net backflow of **600 cfs** through **C-10A** to the L-8 canal. Water conservation areas received flows of **2,729 AF, 2,989 AF, and 2,297 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **173 AF**.

Lake Okeechobee Level: 12.72 ft (Base flow sub-band)

Last Week: 12.82 ft

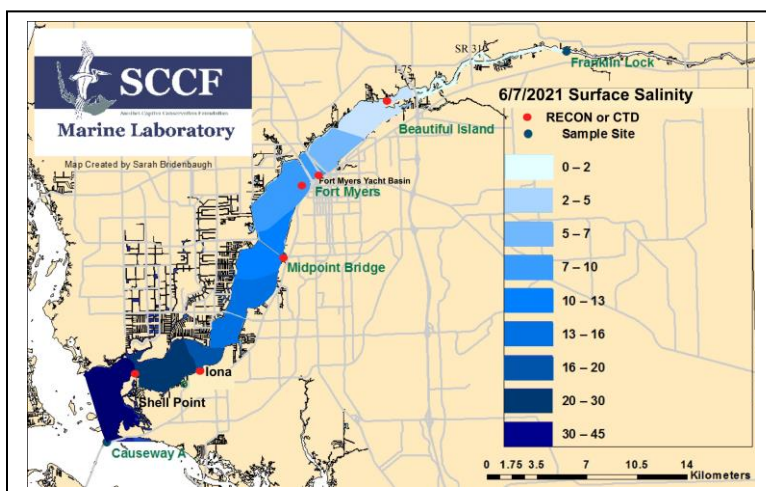
Lake Okeechobee Inflow: 424 cfs

Lake Okeechobee Outflow: 9,911 cfs

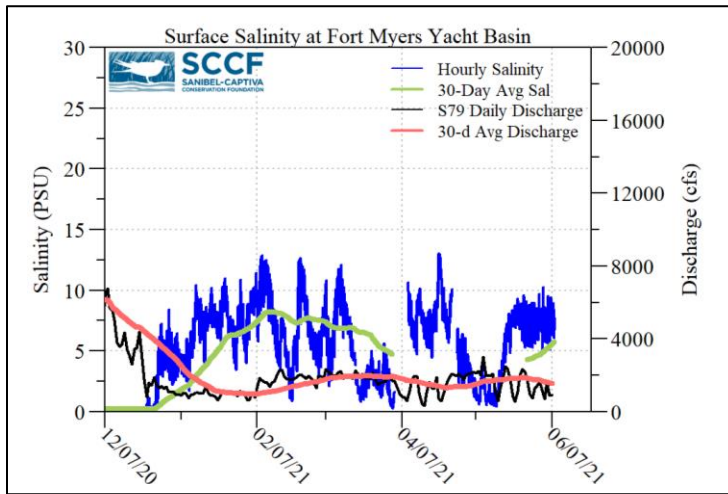
Weekly Rainfall Total: WP Franklin **≥1.67"**

Ortona **0.86"**

Moore Haven **0.45"**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
6/1/21	1450	998	1517
6/2/21	1613	777	1048
6/3/21	1192	686	944
6/4/21	690	545	1026
6/5/21	1625	473	673
6/6/21	878	482	399
6/7/21	944	566	7587
7-day avg	1199	647	1885



Light Penetration				
Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	1.28 ^c	> 1	2.8	< 18
Shell Point	2.34 ^c	>2.2	1.6	< 18
Causeway	3.55 ^m	> 2.2	0.6	< 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 6/8/21, sampling by the Lee County Environmental Lab reported **moderately abundant** *Microcystis*, *Dolichospermum*, and Nostocalean filaments (600 colonies/liter) at the **Alva Boat Ramp** as visible on the surface and in the water column with some streaks and accumulation at the ramp. *Microcystis*, *Dolichospermum*, and Nostocalean filaments (1400 colonies/liter) were **moderately abundant** upstream of the Franklin Locks as visible streaks on the surface and in the water column with wind driven accumulation. *Microcystis* (210 colonies/liter) was **present** at the **Davis Boat Ramp** as sparse streaks.

Upstream of S-79/Franklin Conditions: On 6/8/21 the Olga Water Treatment plant reported chlorides of **61 mg/L**, apparent color **125 CU** and turbidity **6.11 NTU**. Little **Algae** present at intake, nothing notable. The plant is offline at **0 GPM**.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **6.0 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **30 psu**, just above the suitable range for oysters.

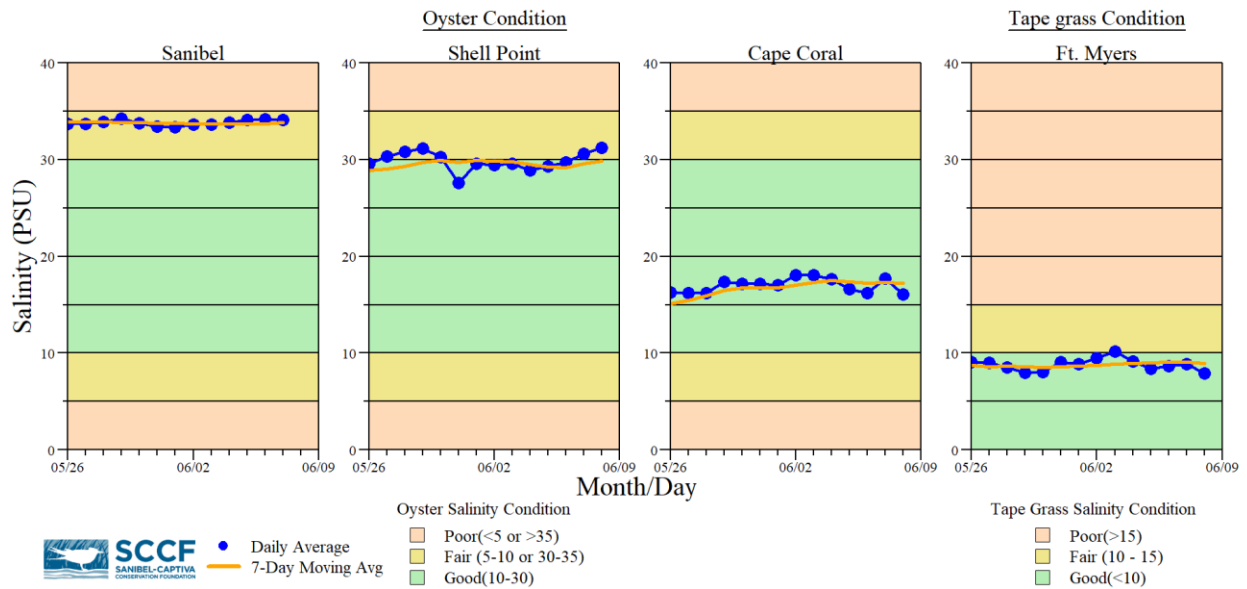
Water Quality Conditions

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	6.0 – 9.7 [5.8 – 9.4]	3.6 – 7.1	176	6.8
Shell Point	22 – 35 [22 – 35]	4.1 – 7.0	32.0	2.3
McIntyre Creek	29.7 – 35.2	3.7 – 16.5	3.3 – 8.8	1.4 – 3.8
Tarpon Bay	31.7 – 36.2	4.4 – 9.8	0.3 – 1.0	0.4 – 1.8
Wulfert Flats	33.1 – 34.1	2.6 – 8.3	-----	3.0 – 13.3

- 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 6/4/21, 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 **53 samples**, with bloom concentrations (>100,000 cells/liter) observed in two samples each from Hillsborough, Manatee, and Collier counties. In Southwest Florida over the past week, *K. brevis* was observed at background and low concentrations in Pinellas County, very low to medium concentrations in Hillsborough County, very low to medium concentrations in Manatee County, background concentrations in Sarasota County, **background to low concentrations in and offshore of Lee County**, and background to medium concentrations in and offshore of Collier County.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel **received 4 toxicosis patients:** 2 anhingas (both died), 1 little blue heron (died), 1 osprey (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.



Photos of water clarity at Cape Coral parks along the Caloosahatchee River on 6/8/21. Left: Rosen Park. Center: Jaycee Park. Right: Yacht Club Public Beach. Photos: City of Cape Coral



Water clarity at Lighthouse Beach Park on 6/8/21 at 14:54 on a falling tide. (High tide: 12:36 @ 2.43 ft in Tarpon Bay.)

