

# MEMORANDUM

To: USACE Colonel James L. Booth, LTC Todd F. Polk, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Drew Bartlett, Jennifer Reynolds, Lawrence Glenn, DEP Secretary Shawn Hamilton

From: Periodic Scientists Conference Call Participants  
 Kevin Godsea & Avery Renshaw - 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 21 – 27, 2022**

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 Conditions Summary:** Flows to the Caloosahatchee Estuary had a 7-day average of **1484 cfs** at **S-79** with a 7-day average of **131 cfs (9%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1926 cfs and has been in the optimal flow envelope (750 – 2100 cfs; RECOVER 2020) for 2 days.**

**Recommendation:** We encourage the Corps to maintain flows within the RECOVER 2020 optimal flow envelope of 750 – 2,100 cfs at S-79 for the Caloosahatchee Estuary. Flows from the Lake should be suspended when local basin runoff exceeds 2,100 cfs at S-79 and when cyanobacteria blooms are present near S-77.

**USACE Action:** On 6/3/22 the USACE announced that Port Mayaca Lock and Dam (S-308) and Julian Keen Lock and Dam (S-77) will be closed during Tropical Cyclone One and all local basin runoff will be passed through downstream structures to tide, suspending the current weekly release target of 1,000 cfs at S-79 to the Caloosahatchee. USACE has not scheduled regular lake releases through the S-80 since Spring of 2021. Any release decisions made after the storm will be communicated prior to execution.

**Lake Flows:** In the past 7 days the total outflow from Lake Okeechobee was **3,170 AF** with **1,563 AF** to the Caloosahatchee through **S-77**, **699 AF** through **S-310** in Clewiston, and **492 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **11,344 AF** (6,772 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **4,573 AF** from **S310**, **C10A**, and **S308**. Water conservation areas received flows of **14,325 AF**, **22,558 AF**, and **7,884 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **14,709 AF**.

**Lake Level: 12.92 ft (Base Flow sub-band)**

**Last Week: 12.94 ft**

**Last Year: 12.67 ft**

**Lake Okeechobee Inflow: 1204 cfs**

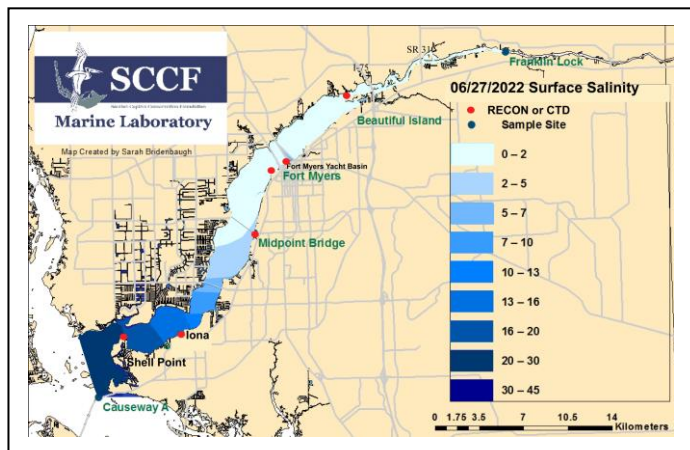
**Lake Okeechobee Outflow: 71 cfs**

**Weekly Rainfall Total: WP Franklin 1.86"**

**Ortona 0.40"**

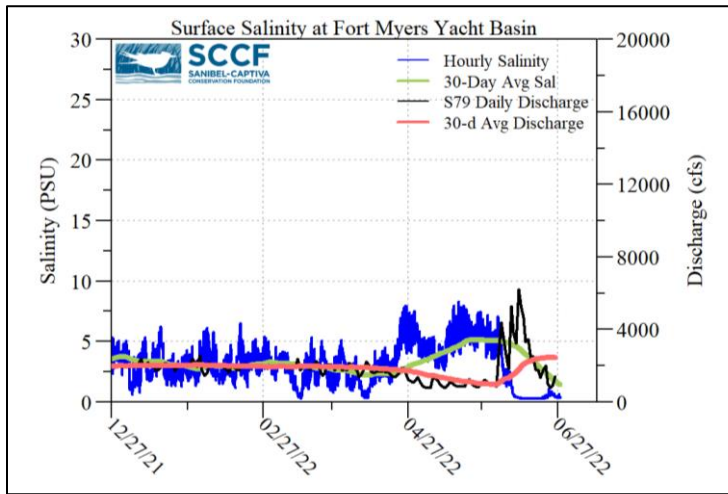
**Moore Haven ≥ 1.40"**

**7-Day Lake Recession Rate: -0.02 ft/week**



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
6/21/22	1733	274	0
6/22/22	2002	672	205
6/23/22	1008	148	421
6/24/22	792	149	118
6/25/22	862	147	0
6/26/22	1552	344	44
6/27/22	2443	388	NR
<b>7-day avg</b>	<b>1485</b>	<b>303</b>	<b>131</b>

**NR: No report**



Light Penetration				
Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.61 <sup>c</sup>	> 1	3.8	< 18
Shell Point	0.97 <sup>c</sup>	>2.2	1.2	< 18
Causeway	1.63 <sup>c</sup>	> 2.2	1.7	< 5

25% Iz is the depth (z) where irradiance (I) is 25% of surface irradiance. Target values indicate the depth of light penetration needed for healthy seagrass.  
<sup>m</sup> measured, <sup>c</sup> calculated

**Cyanobacteria Status:** On 6/27/22 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Dolichospermum* at the Davis Boat Ramp with some visible streaks.

**Upper Estuary Conditions:** The 30-day average surface salinity at the Fort Myers Yacht Basin was 1.5 psu, within the suitable range for tape grass. Surface chlorophyll fluorescence values at Beautiful Island and Fort Myers were 14 and 12 µg/L and the dissolved oxygen saturation was 100% in the evening on 6/26/22. Surface chlorophyll fluorescence values at Labelle and S79 were 30 and 36 µg/L in the afternoon on 6/26/22.

**Lower Estuary Conditions:** The average salinity at Shell Point RECON was 21 psu, within the optimal range for oysters, but below optimal for seagrass.

**Water Quality Conditions**

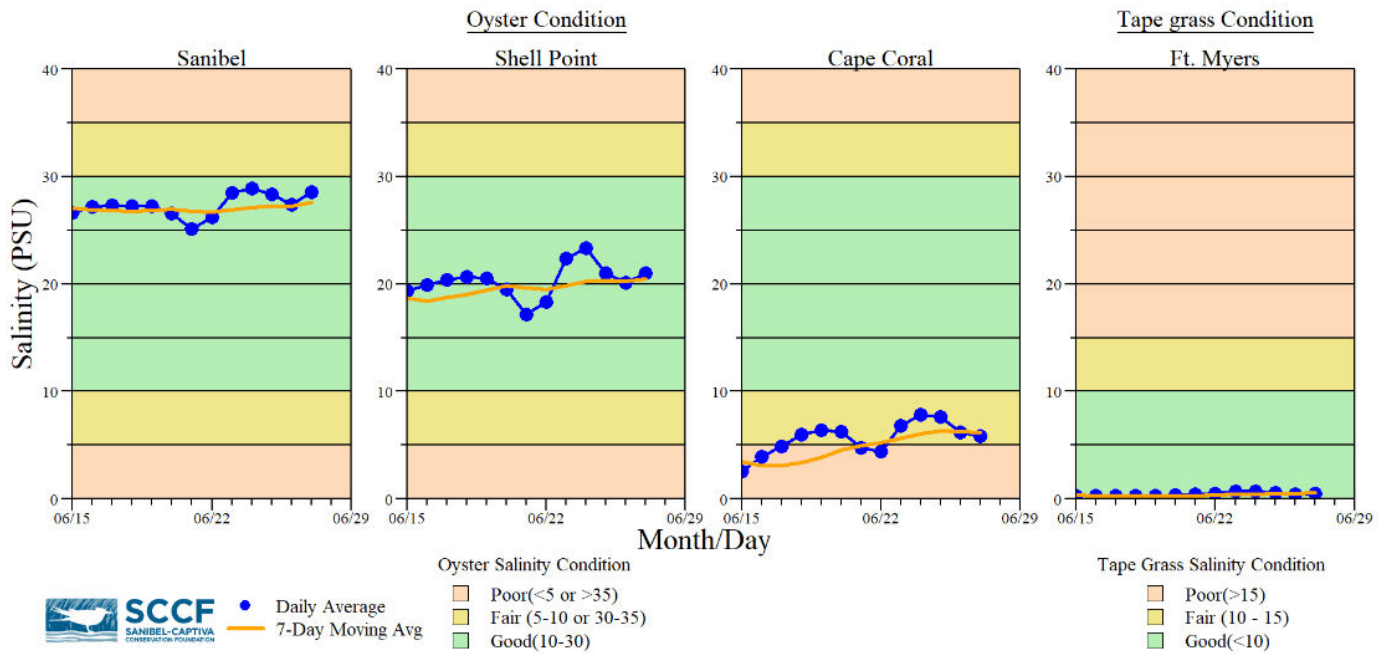
Monitor Site	Salinity (psu) <sup>a</sup> [previous week]	Diss O <sub>2</sub> (mg/L) <sup>b</sup>	FDOM (qsde) <sup>c</sup>	Chlorophyll (µg/L) <sup>d</sup>
Beautiful Island	0.3 – 0.3 [0.3 – 0.3]	-----	-----	-----
Fort Myers Yacht Basin	0.3 – 0.5 [0.3 – 0.5]	-----	-----	-----
Shell Point	10 – 29 [5.5 – 30]	3.5 – 6.8	161	2.3
McIntyre Creek	22.5 – 26.4 [24.3 – 27.9]	2.1 – 11.5	-----	-----
Tarpon Bay	23.8 – 29.2 [23.5 – 30.2]	4.0 – 10.2	-----	-----
Wulfert Flats	----- [-----]	-----	-----	-----

Red values are outside of the preferred range.  
<sup>a</sup> Salinity target values: BI < 5, FM < 10, SP = 10 – 30  
<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  
<sup>e</sup> Single sonde lower and surface layer or surface grab lab measurement  
 ----- no data

**Red Tide:** On 6/24/22, the FWC reported that the red tide organism, *Karenia brevis* was observed at background concentrations in and offshore of Lee County and offshore of Collier County.

**Wildlife Impacts:** In the past week (6/21 – 6/27), the CROW wildlife hospital on Sanibel received 1 toxicosis patient: 1 anhinga (died).

**Shellfish Advisory:** Shellfish harvest area #6222/6232 Pine Island Sound Section 2 and 3 Shellfish Harvest Area (Matlacha Pass) was OPENED by the Florida Department of Agriculture and Consumer Services as of 6/24/22 when the precautionary conditions for closure were not realized.



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.

Data are provisional and subject to change.



Water clarity at Lighthouse Beach Park on 6/27/22 at 1:59 PM on a falling tide (High tide: 3.14 ft @ 10:53 PM). [Lighthouse Beach Park Virtual Tour.](#)





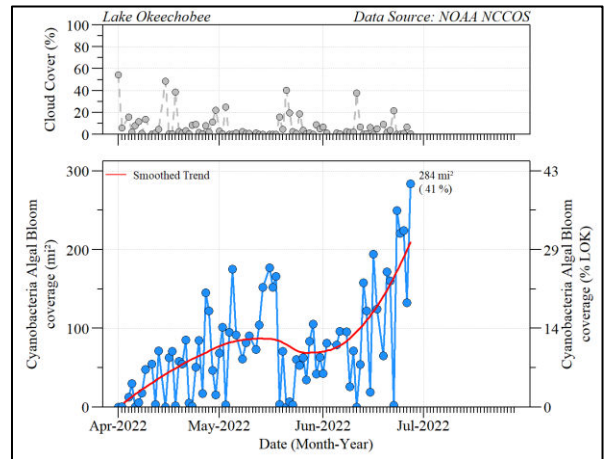
Water clarity near Punta Rassa, looking north towards the mouth of the Caloosahatchee on 6/25/22. SCCF.



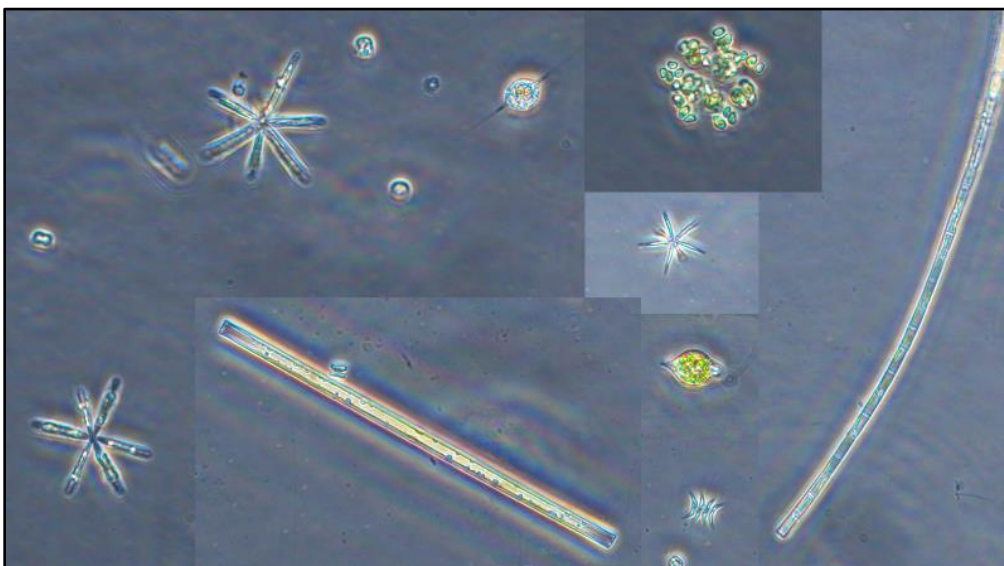
Matlacha Pass south of the bridge on Friday afternoon, 6/24/22. Water turbidity still discolored but not hypoxic (80% saturation in whitest area of the photo). SCCF



Left: Cyanobacteria bloom on the west side of Lake Okeechobee on 6/24/22. Ralph Arwood & Calusa Waterkeeper.



Above: Percent coverage of cyanobacteria on Lake Okeechobee was 41% or 285 mi<sup>2</sup> as of 6/27/22. SCCF.



Phytoplankton in the upper estuary on 6/26/22 at 400x. The chlorophyll, cell count and diversity were elevated. Nanoflagellates were very abundant at 31 Bridge. Phycocyanin (cyanobacteria pigment) fluorescence was low from Labelle to Fort Myers.