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
Leah Reidenbach, Rick Bartleson PhD, & Matt Depaolis - SCCF (Sanibel-Captiva Conservation Foundation)

Subject: Caloosahatchee & Estuary Conditions Report

Reporting Period: **June 6 – 12, 2023**

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: Flow to the Caloosahatchee Estuary had a 7-day average of **3,318 cfs** at **S-79** with a 7-day average of **155 cfs (5%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 3,208 cfs and has been in the damaging** flow envelope (>2,600 cfs; RECOVER 2020) for 7 days.

Recommendation: Lake Okeechobee is concerningly high and has developed large cyanobacterial blooms on the lake and at S-77. There is potential risk that the Caloosahatchee could experience damaging high Lake discharge events in addition to watershed runoff, resulting not only in increased nutrient loading and decreased salinity, but the transportation of harmful algae via S-77 to the estuary. We recommend that the Corps seek to utilize all outlets around the Lake to reduce rising Lake levels in an effort to prevent damaging high releases to the Caloosahatchee estuary and to confirm the absence of cyanobacteria at S-77 before releases resume.

USACE Action: With Lake Okeechobee in the Low Sub-band, normal tributary hydrologic conditions, the seasonal Lake Okeechobee Net Inflow outlook in the Very Wet category, and the Multi-Seasonal Lake Okeechobee Net Inflow outlook in the Wet Category, Part D of the 2008 LORS suggests "S-79 up to 3,000 cfs and S-80 up to 1,170 cfs". **On 6/10/23 the USACE increased releases** from Lake Okeechobee to the Caloosahatchee Estuary from the W.P. Franklin Lock and Dam **(S-79) to 2,000 cfs**. Releases to the St. Lucie Estuary (S-80) remain at 0 cfs.

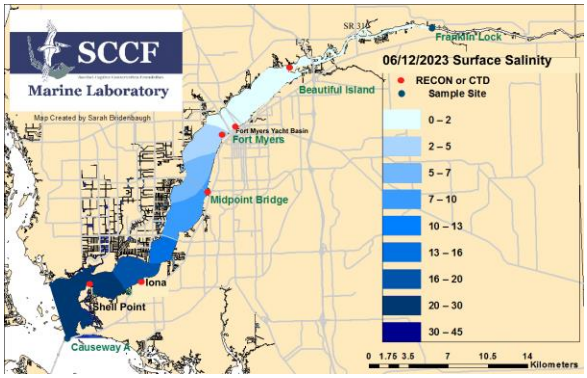
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **2,176 AF** with **2,146 AF** to the Caloosahatchee through **S-77**, **14 AF** through **S-310** in Clewiston, and **0 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **22,095 AF** (20,325 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **1,771 AF** from **S310 and C10A**. Water conservation areas received flows of **11,377 AF**, **10,681 AF**, and **10,764 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **9,491 AF**.

Lake Level: 14.04 ft (Operational Management Band) Last Week: **13.99 ft** **Last Year: 13.02 ft**

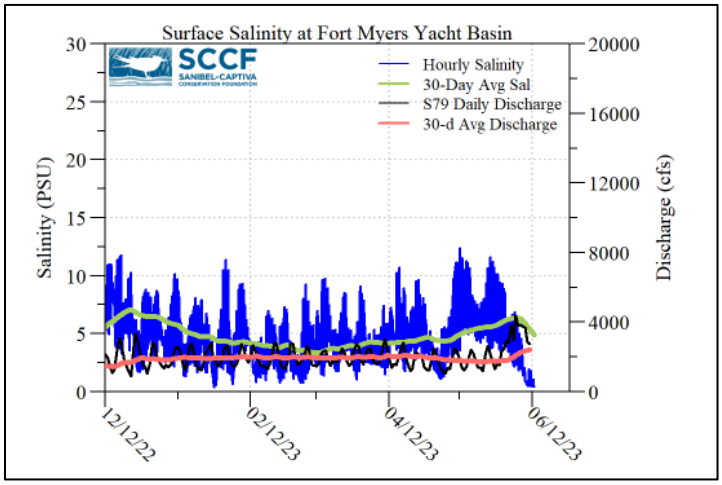
7-Day Lake Recession Rate: +0.05 ft/week

Lake Okeechobee Inflow: 1,595 cfs **Lake Okeechobee Outflow: 385 cfs**

Weekly Rainfall Total: **WP Franklin: 1.82"** **Ortona: 1.52"** **Moore Haven: 0.24"**



ACOE Daily Reports			
Date	**S79 Flow (cfs)**	**S78 Flow (cfs)**	**S77 Flow (cfs)**
6/6/23	**3801**	**2249**	**0**
6/7/23	**3861**	**1964**	**0**
6/8/23	**3744**	**2007**	**0**
6/9/23	**3677**	**1858**	**0**
6/10/23	**2883**	**1518**	**697**
6/11/23	**2739**	**1363**	**385**
6/12/23	**2523**	**1219**	**0**
7-day avg	**3318**	**1827**	**155**



Light Penetration

Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	0.67	> 1	4.5	< 18
Shell Point	ND	>2.2	ND	< 18
Causeway	2.04	> 2.2	1.5	< 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.*
[m] measured, [c] calculated

Cyanobacteria Status: On 6/12/23 sampling for cyanobacteria by the Lee County Environmental Lab reported **moderately abundant** *Microcystis* and *Dolichospermum* at the **Alva Boat Ramp** as streaks with slight accumulation. *Microcystis* and *Dolichospermum* were **present** upstream of the **Franklin Locks** with some wind-driven accumulation along the lock, at the **Davis Boat Ramp** as specks and slight streaks with no accumulation, and at **North Shore Park** with accumulation along the seawall.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 5.7 psu, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was 24 psu, in the optimal range for oysters, but below optimal for seagrass.

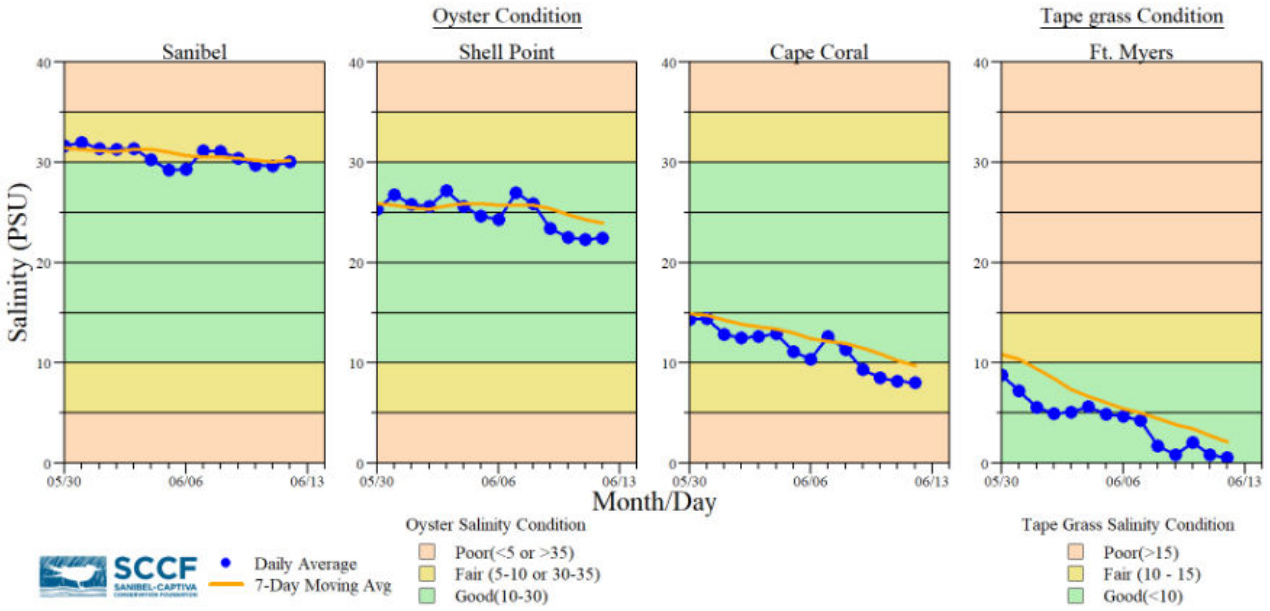
Water Quality Conditions:

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 – 1.3]	3.9 – 6.8	223	8.1
Fort Myers Yacht Basin	0.5- 7.0 [2.2 – 9.1]	-------	230	13
Shell Point	13 – 34 [15 – 34]	-------	-------	-------
McIntyre Creek	28.3 – 31.2 [29.3 – 34.1]	0.7 – 11.9	-------	-------
Tarpon Bay	29.0 – 33.9 [28.3 – 33.8]	3.2 – 8.4	1.8 – 4.8	1.0 – 2.1
Wulfert Flats	30.5 – 33.3 [31.8 – 35.1]	2.0 – 10.0	-------	2.9 – 19.8

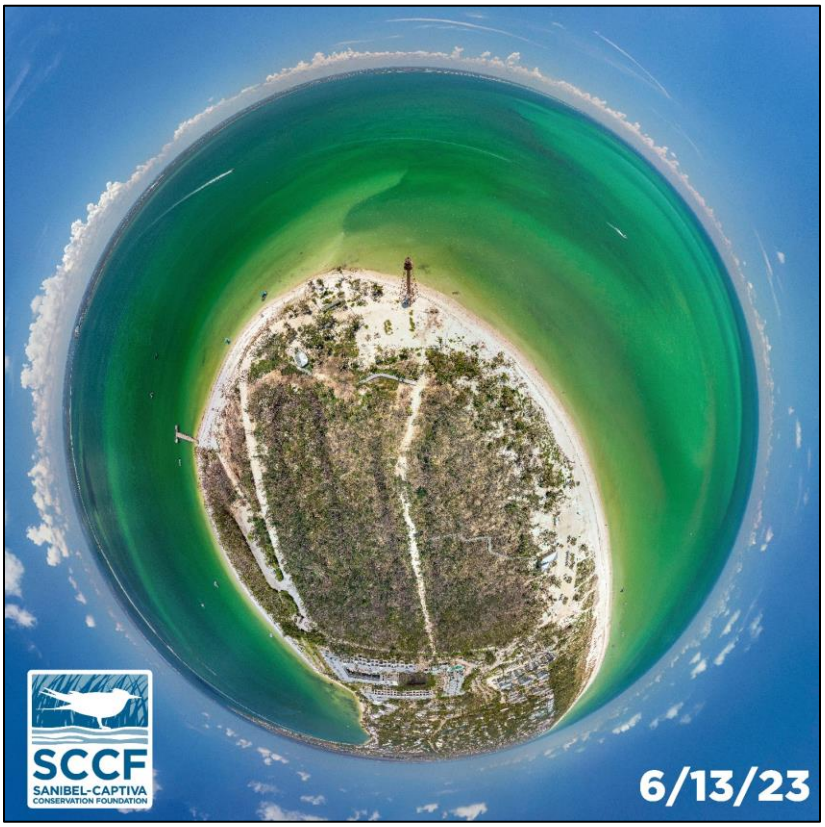
Red values are outside of the preferred range.
[a] Salinity target values: BI < 5, FM < 10, SP = 10 – 30
[b] Dissolved O_2 target values: all sites > 4
[c] FDOM target values: BI < 70, FM < 70, SP < 11
[d] Chlorophyll target values: BI < 11, FM < 11, SP < 11
[s] Single sonde lower and surface layer or surface grab lab measurement
------- no data

Red Tide: On 6/9/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected at background concentrations in two samples collected from and offshore of Florida's Southwest Coast. No samples above background levels were observed. In Southwest Florida over the past week, *K. brevis* was observed **at background concentrations offshore of Pinellas County and in Lee County**.

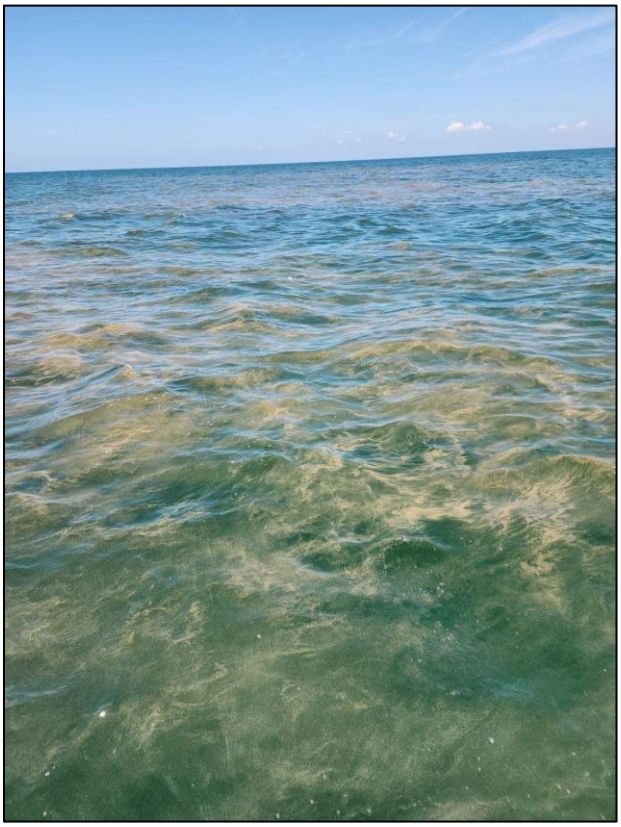
Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 1 patient with toxicosis symptoms: 1 adult snowy plover (still at CROW).



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.
*Ft. Myers sensor is in the lower strata
Data are provisional and subject to change.



Water clarity at Lighthouse Beach Park on 6/13/23 at 12:38 PM on a falling tide (1.8 ft). Lighthouse Beach Park Virtual Tour.



A large patch of the marine cyanobacteria *Trichodesmium* on 6/13/23 about ½ mile west of Little Hickory in Bonita Springs. *Lee County Natural Resources Department.*