

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: **May 30 – June 5, 2023**

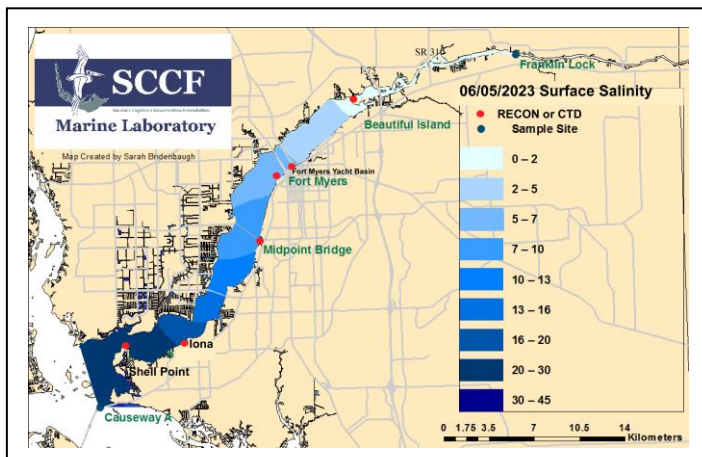
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

Caloosahatchee Conditions Summary: Flow to the Caloosahatchee Estuary had a 7-day average of **3,098 cfs** at **S-79** with a 7-day average of **568 cfs (18%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 2,491 cfs and has been in the stress flow envelope (2,100 – 2,600 cfs; RECOVER 2020) for 3 days after 51 days in the optimum flow envelope.**

Recommendation: Entering into the rainy season, Lake Okeechobee is at a concerning high level and has already started to develop worrisome cyanobacterial blooms at S-77 and elsewhere. This sets up a potential scenario where the Caloosahatchee will 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 strongly encourage the Corps to utilize all options 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 4/15/23 the USACE decreased releases from Lake Okeechobee to the St. Lucie Estuary (S-80) to 0 cfs and to the Caloosahatchee Estuary from the W.P. Franklin Lock and Dam (S-79) to 1,800 cfs.

Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **7,888 AF** with **7,888 AF** to the Caloosahatchee through **S-77**, **0 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 **15,487 AF** (11,905 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **3,582 AF** from **S310** and **C10A**. Water conservation areas received flows of **14,013 AF**, **4,772 AF**, and **6,056 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **9,669 AF**.

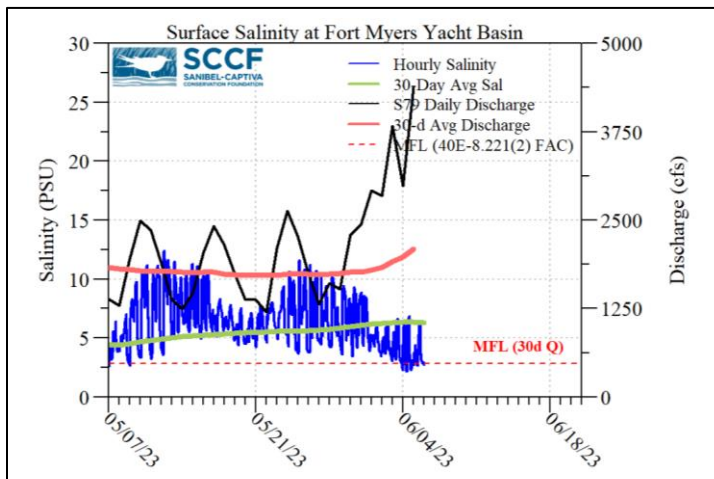


Lake Level: 13.99 ft (Operational Management Band)
Last Week: 13.88 ft
Last Year: 12.75 ft

7-Day Lake Recession Rate: +0.11 ft/week

Lake Okeechobee Inflow: 2,309 cfs
Lake Okeechobee Outflow: 0 cfs

Weekly Rainfall Total:
WP Franklin: 1.81"
Ortona: 3.32"
Moore Haven: 4.16"



Light Penetration				
Site	25% I _z meters	Target Values	Turbidity NTU	Target Values
Shell Point	ND	>2.2	ND	< 18
Causeway	3.11	> 2.2	1.7	< 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 6/5/23 sampling for cyanobacteria by the Lee County Environmental Lab reported **moderately abundant** *Microcystis* and *Dolichospermum* at the **Alva Boat Ramp** as streaks with no accumulation. *Microcystis* and *Dolichospermum* were **present** upstream of the **Franklin Locks** with some accumulation along the shore/lock and some minor streaks. *Microcystis* and *Dolichospermum* and were **abundant** at the **Davis Boat Ramp** as streaks with heavy accumulation along the seawall and ramp.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/30/23	2296	1523	929
5/31/23	2438	1801	1730
6/1/23	2917	1660	1318
6/2/23	2842	2075	0
6/3/23	3835	2599	0
6/4/23	2987	1918	0
6/5/23	4373	2283	0
7-day avg	3098	1929	568

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 6.3 psu, within the suitable range for tape grass. The surface chlorophyll at the Fort Myers Yacht Basin was 20 ug/L and phycoerythrin was 45 ug/L. The dominant alga was *Skeletonema* (1.9 million filaments/L), and nanoflagellates and estuarine cyanobacteria were abundant.

Lower Estuary Conditions: The average salinity at Shell Point RECON was 26 psu on 5/30/23, in the optimal range for seagrass and oysters.

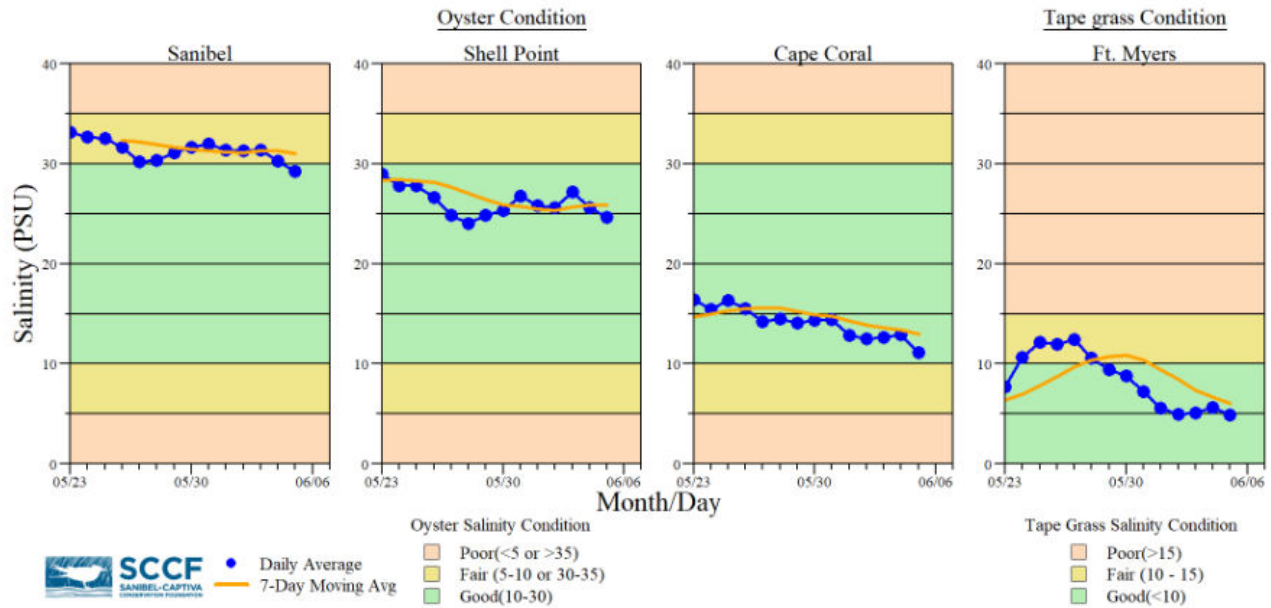
Water Quality Conditions:

Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	0.4 – 1.3 [0.5 – 1.2]	1.9 – 7.3	-----	6.4
Fort Myers Yacht Basin	2.2 – 9.1 [3.8 – 8.5]	-----	-----	17
Shell Point	15 – 34 [17 – 34]	-----	-----	2.1
McIntyre Creek	29.3 – 34.1 [25.0 – 34.0]	2.6 – 7.7	-----	-----
Tarpon Bay	28.3 – 33.8 [30.3 – 33.8]	3.3 – 10.6	2.2 – 5.0	1.1 – 2.1
Wulfert Flats	31.8 – 35.1 [33.0 – 34.7]	3.1 – 8.2	-----	2.0 – 11.2

Red values are outside of the preferred range.
^a Salinity target values: BI < 5, FM < 10, SP = 10 – 30
^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
 ----- no data

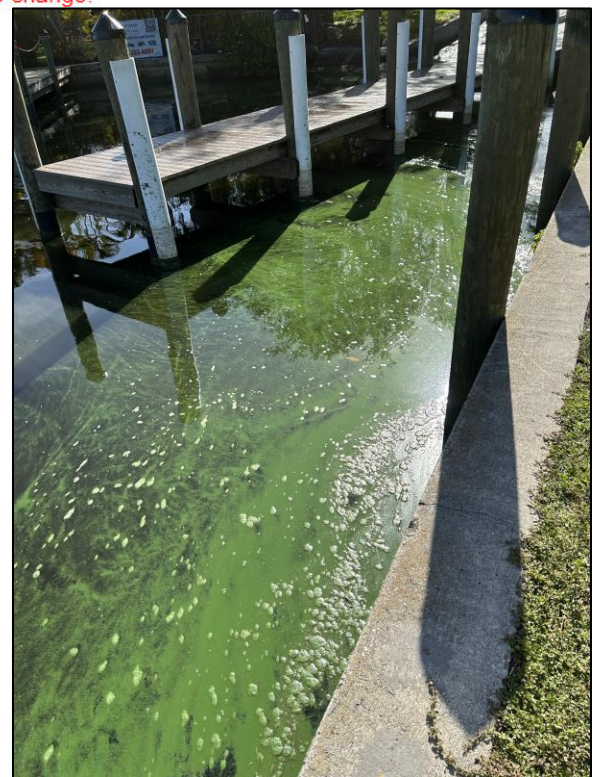
Red Tide: On 6/2/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected at background concentrations in one sample collected from Florida’s Southwest Coast. No samples above background levels were observed. In Southwest Florida over the past week, *K. brevis* was observed at background concentrations in **one sample from Lee County**.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel received 2 patients with toxicosis symptoms: 1 adult laughing gull (still at CROW) and 1 adult royal tern (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.



Microcystis and *Dolichospermum* and were **abundant** at the **Davis Boat Ramp** as streaks with heavy accumulation along the seawall and ramp on 6/5/23. *Lee County Natural Resources Environmental Lab.*

Water clarity at Lighthouse Beach Park on 6/5/23 at 1:34 PM on a high tide (3.5 ft). [Lighthouse Beach Park Virtual Tour.](#)