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 16 – 22, 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 **1,755 cfs** at **S-79** with a 7-day average of **1,891 cfs (107%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 1,790 cfs and has been in the optimal** flow envelope (750 - 2100 cfs; RECOVER 2020) for 40 days.

Recommendation: As the rainy season approaches, we remain concerned with the high level of the lake. We strongly encourage the Corps to utilize all options to reduce lake levels prior to the wet season to prevent damaging releases to the estuaries and to maintain an optimum flow envelope of 750 – 2,100 cfs at S-79 (RECOVER 2020) to support an optimal salinity gradient and spawning activities of oysters in the estuary.

USACE Action: With Lake Okeechobee in the Low sub band and dry tributary hydrologic conditions, LORS08 Part D suggests up to 650 cfs at S-79. 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. **Since entering the low sub band on 2/13/23 the USACE began utilizing banked releases** from a make-up release tool which allowed them to make releases at levels lower than suggested in LORS08 since 11/18/22 and bank the volume not released for beneficial releases throughout the dry season.

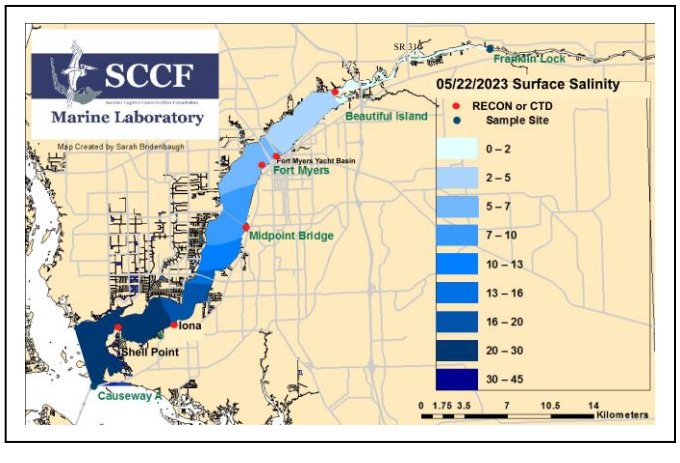
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **40,941 AF** with **24,072 AF** to the Caloosahatchee through **S-77**, **2,071 AF** through **S-310** in Clewiston, and **11,782 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **3,616 AF** (3,616 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) . Water conservation areas received flows of **847 AF**, **-908 AF**, and **5,006 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **4,780 AF**.

Lake Level: 13.72 ft (Operational Management Band) **Last Week**: **13.88 ft** **Last Year: 12.68 ft**

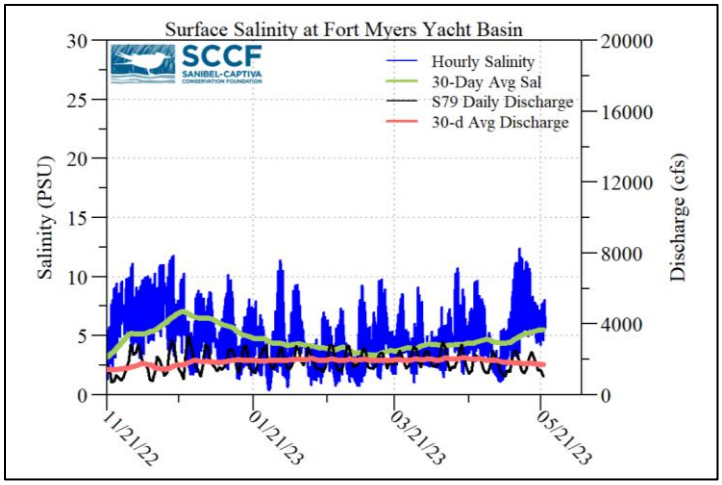
7-Day Lake Recession Rate: -0.16 ft/week

Lake Okeechobee Inflow: 328 cfs **Lake Okeechobee Outflow: 976 cfs**

Weekly Rainfall Total: **WP Franklin: 0.36"** **Ortona: 3.25"** **Moore Haven: 0.77"**



ACOE Daily Reports			
Date	**S79 Flow (cfs)**	**S78 Flow (cfs)**	**S77 Flow (cfs)**
5/16/23	**2033**	**1660**	**2214**
5/17/23	**2420**	**192**	**2762**
5/18/23	**2143**	**1473**	**2111**
5/19/23	**1736**	**1333**	**1763**
5/20/23	**1377**	**1022**	**1700**
5/21/23	**1374**	**714**	**793**
5/22/23	**1201**	**957**	**NR**
7-day avg	**1755**	**1066**	**1891**



Light Penetration

Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	ND	>2.2	ND	< 18
Causeway	3.80	> 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.*
[m] measured, [c] calculated

Cyanobacteria Status: On 5/22/23 sampling for cyanobacteria by the Lee County Environmental Lab reported **the presence of** *Microcystis* and *Dolichospermum* at the **Alva Boat Ramp** as visible specks. *Microcystis and Dolichospermum* were **moderately abundant** upstream of the **Franklin Locks** as some streaks and wind driven accumulation along the shore/lock. *Dolichospermum* and *Microcystis* were **moderately abundant** at the **Davis Boat Ramp** as some streaks and accumulation along the seawall.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 5.6 psu, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was 28 psu, 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	0.6 – 2.5 [0.3 – 1.9]	2.6 – 9.1	-------	7.4
Fort Myers Yacht Basin	-------- [-------]	-------	-------	-------
Shell Point	19 – 35 [17 – 33]	-------	-------	-------
McIntyre Creek	31.4 – 33.5 [31.3 – 33.6]	2.4 – 8.3	-------	-------
Tarpon Bay	31.9 – 33.8 [31.0 – 34.0]	3.3 – 10.4	2.4 – 3.7	0.9 – 1.8
Wulfert Flats	32.5 – 33.8 [32.5 – 34.5]	2.3 – 9.1	-------	2.1 – 34.7

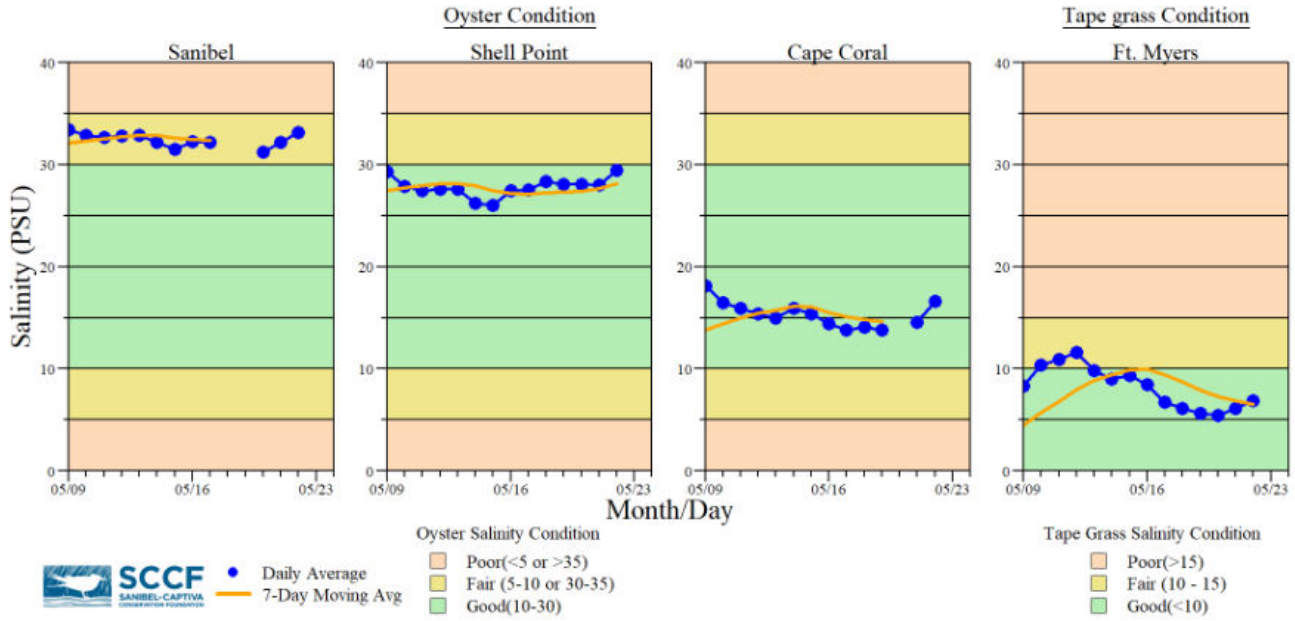
Red values are outside of the preferred range.
[a] Salinity target values: BI < 5, FM < 10, SP = 10 – 30
[b] Dissolved O_2 target values: all sites > 4
[c] FDOM target values: BI < 70, FM < 70, SP < 11
[d] Chlorophyll target values: BI < 11, FM < 11, SP < 11
[s] Single sonde lower and surface layer or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

Red Tide: On 5/19/23, the FWC reported that over the past week the red tide organism, *Karenia brevis*, was detected in 30 samples collected from Florida's Gulf Coast. **Bloom concentrations (>100,000 cells/liter) were not observed**. Water discoloration along Pinellas County's Gulf Coast this past week was attributed to a bloom of the marine cyanobacterium *Trichodesmium* by using a combination of satellite imagery and water sampling for microscopy analysis; this alga typically blooms in summer months in the Gulf of Mexico and was observed in other Southwest Florida counties (Manatee and Collier counties) as well.

In Southwest Florida over the past week, *K. brevis* was observed at background to low concentrations in Sarasota County, background to low concentrations in 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 patient with toxicosis symptoms: 1 adult sanderling (still at CROW).

Beach Conditions: Extensive, thick mats of the benthic macroalgae *Caulerpa* are floating to the surface in Matlacha Pass and accumulating on the shoreline and in the mangroves. On Sanibel, the cyanobacteria *Trichodesmium* was reported on the west end beaches in the surf and along the shoreline.



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 5/22/23 at 1:40 PM on a high tide (3.2 ft). Lighthouse Beach Park Virtual Tour.

The cyanobacteria *Trichodesmium* in the surf on 5/18/23 on Sanibel. *Sanibel Resident.*

Mats of the benthic macroalga *Caulerpa* floating to the surface and accumulating in the mangroves in Matlacha Pass on 5/18/23. *The City of Cape Coral.*