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: **May 17 – 23, 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 **979 cfs** at **S-79** with a 7-day average of **812 cfs (91%)** coming from the lake at **S-77**. **The 14-day moving average flow at S-79 is 959 cfs and has been in the optimal flow envelope (750 – 2,100 cfs; RECOVER 2020) for 181 days.**

Recommendation: With ongoing spawning activity for many estuarine and marine organisms, including oysters and fishes, decreased flows from S-79 help prevent advection of larvae to less suitable downstream locations**. We request that the Corps maintain flows at S-79** at current levels, while monitoring the salinity gradient throughout the estuary for the health of seagrass and oysters.

USACE Action: Part D of the 2008 LORS suggests flows up to 450 cfs at S-79 and up to 200 cfs at S-80. As of 4/30/21, target flow to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) was reduced to 1,000 cfs (7-day average, pulse release) and no flow continues to the St. Lucie Lock and Dam (S-80).

Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **29,726 AF** with **13,000 AF** to the Caloosahatchee through **S-77**, **10,322 AF** through **S-308** in Port Mayaca, **732 AF** through **S-310** in Clewiston, and **4,143 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **14,287 AF** (14,013 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **274 AF** from **S310 and C10A**. Water conservation areas received flows of **50 AF**, **3,600 AF**, and **1,950 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **355 AF**.

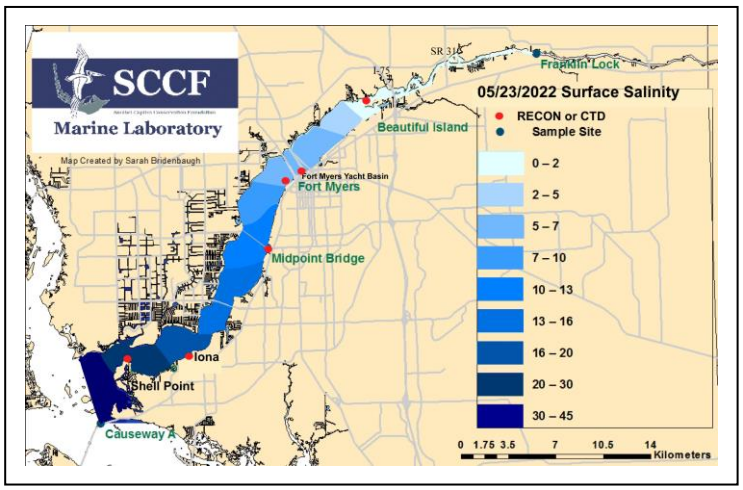
Lake Level: 12.67* ft (Base Flow sub-band) **Last Week**: **12.69 ft** **Last Year: 13.08 ft**

Lake Okeechobee Inflow: **0 cfs** **Lake Okeechobee Outflow: 1736 cfs**

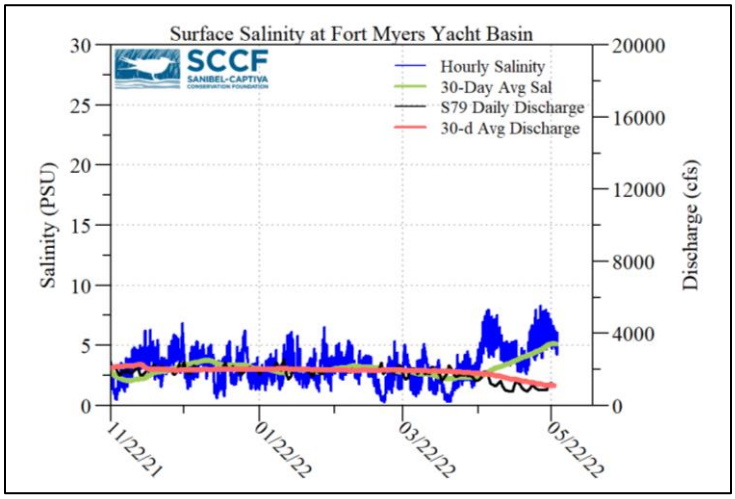
Weekly Rainfall Total: WP Franklin **1.51"** Ortona **≥2.25"** Moore Haven **≥ 0.25"**

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

***data are provisional and subject to change**



ACOE Daily Reports			
Date	**S79 Flow (cfs)**	**S78 Flow (cfs)**	**S77 Flow (cfs)**
5/17/22	**836**	**685**	**1357**
5/18/22	**856**	**650**	**1317**
5/19/22	**864**	**655**	**1099**
5/20/22	**836**	**652**	**680**
5/21/22	**1166**	**645**	**568**
5/22/22	**1259**	**417**	**574**
5/23/22	**1038**	**393**	**704**
7-day avg	**979**	**585**	**900**



Light Penetration

Site	25% Iz	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.87[c]	>2.2	1.1	< 18
Causeway	1.52[c]	> 2.2	5.5	< 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: No samples for cyanobacteria were collected this week by the Lee County Environmental Lab. On 5/24/22 the USACE reported cyanobacteria present upstream of the Franklin Lock and Dam.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **5.2 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **29 psu**, within the optimal range for seagrasses, but above optimal for oysters.

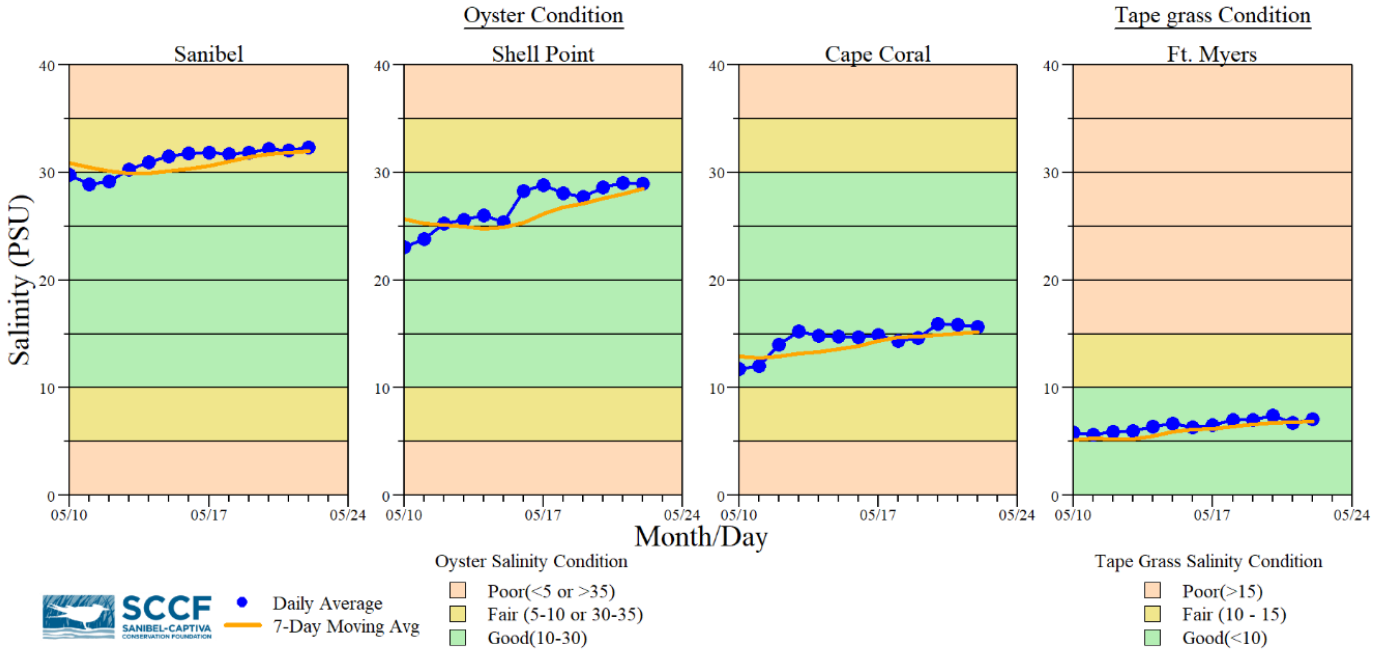
Water Quality Conditions

Monitor Site	Salinity (psu)[a] [previous week]	Diss O_2 (mg/L)[b]	FDOM (qsde)[c]	Chlorophyll (µg/L)[d]
Beautiful Island	0.6 – 1.6 [0.5 – 1.6]	4.0 – 8.7	201	-------
Fort Myers Yacht Basin	4.3 – 7.8 [2.8 – 7.5]	4.7 –7.1	200	-------
Shell Point	20 – 33 [17 – 33]	4.9 – 7.0	75.5	1.6
McIntyre Creek	30.2 – 33.7 [30.3 – 32.6]	2.2 – 12.7	-------	-------
Tarpon Bay	30.8 – 34.4 [28.5 – 32.3]	3.3 – 7.8	-------	-------
Wulfert Flats	------- [-------]	-------	-------	-------

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 5/20/22, the FWC reported that the red tide organism, *Karenia brevis* was observed at background concentrations offshore of Manatee and Collier counties.

Wildlife Impacts: Wildlife impacts were not reported this week.



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.

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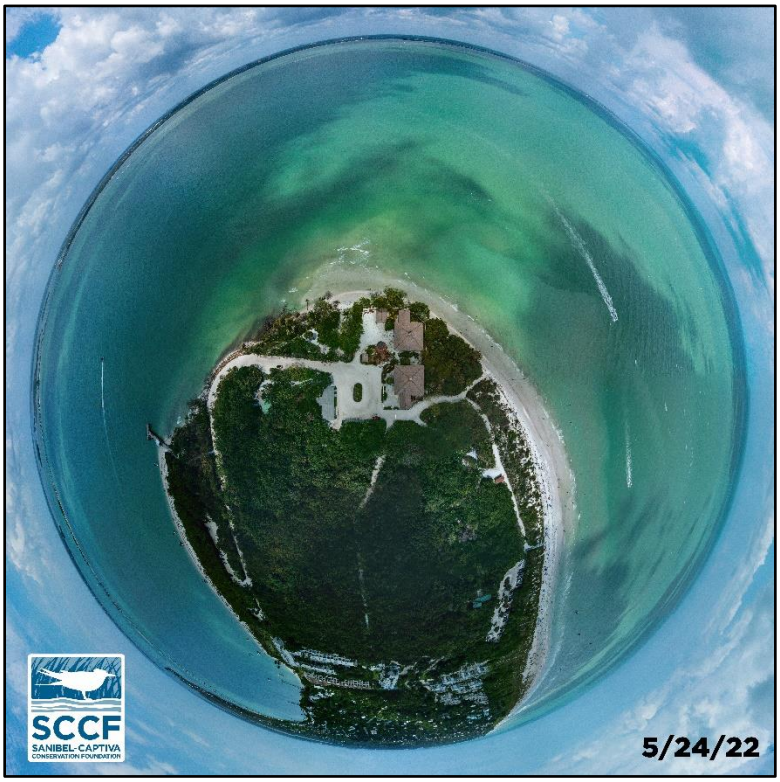

Water clarity at Lighthouse Beach Park on 5/24/22 at 2:00 PM on a falling tide (low tide: 1.16 ft @ 4:12 PM). Lighthouse Beach Park Virtual Tour.

Matlacha Pass on 5/22/22 showing a sulfur whiting event. DO was mostly uniform in the milky area (about 80% saturation vs >100% in the clear water). Water temperatures > 30°C in the shallows is too hot for the high biomass mats of the cyanobacteria Dapis and the macroalga Caulerpa resulting in decomposition. Anaerobic microbes use sulfate and sulfur compounds which react with oxygen in the upper water column. Elemental sulfur precipitates causing the water to look white. *SCCF*