

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**.

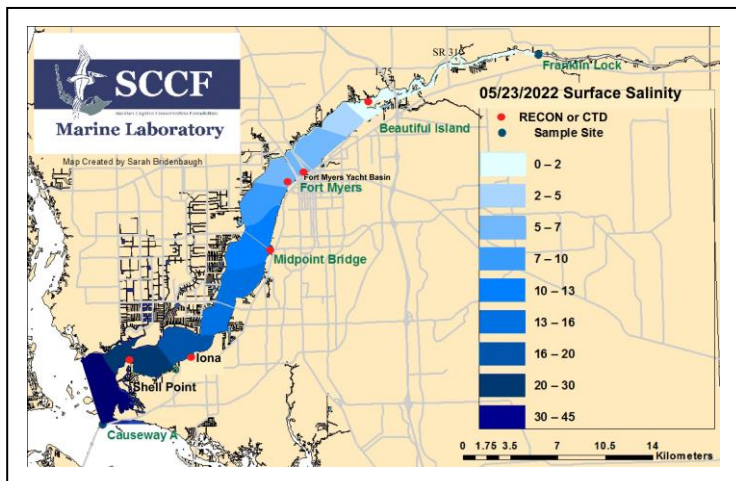
Lake Level: 12.67* ft (Base Flow sub-band) Last Week: 12.69 ft Last Year: 13.08 ft

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

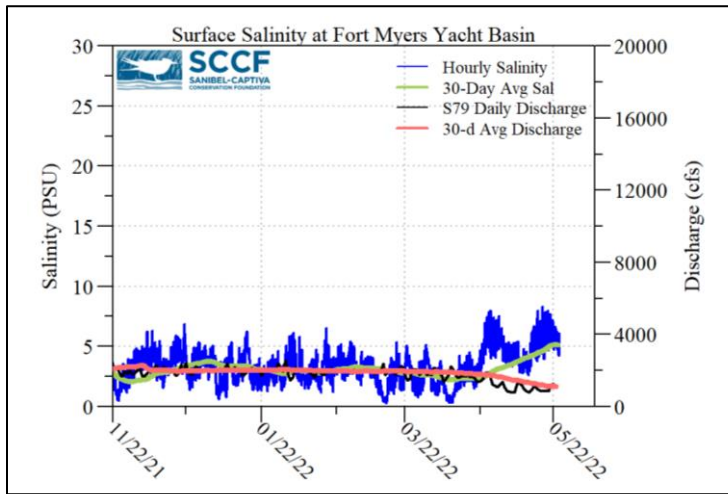
Weekly Rainfall Total: WP Franklin 1.51" Ortona ≥2.25" Moore Haven ≥ 0.25"

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% I _z	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% 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: 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.

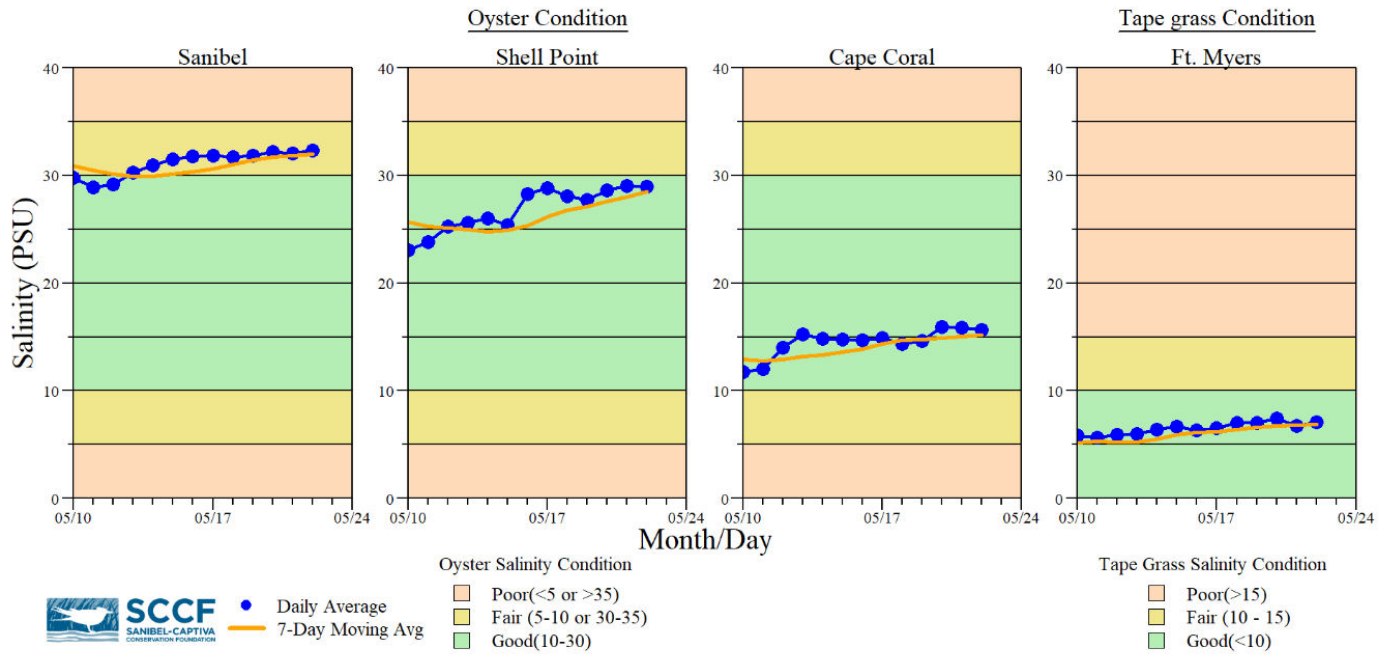
Water Quality Conditions

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 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 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.

Data are provisional and subject to change.



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