

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 10 – 16, 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 **938 cfs** at **S-79** with a 7-day average of **1015 cfs (108%)** coming from the lake at **S-77**. The **14-day moving average flow at S-79 is 980 cfs** and has been in the **optimal** flow envelope (**750 – 2,100 cfs; RECOVER 2020**) for **177 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).

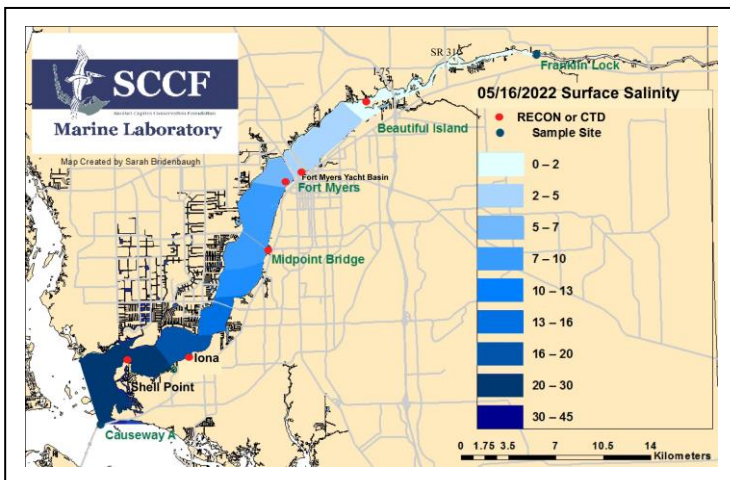
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **53,024 AF** with **14,093 AF** to the Caloosahatchee through **S-77**, **9,378 AF** through **S-308** in Port Mayaca, **1,656 AF** through **S-310** in Clewiston, and **25,666 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **18,902 AF** (18,897 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **5 AF** from **S310**. Water conservation areas received flows of **0 AF**, **3,144 AF**, and **1,466 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **379 AF**.

Lake Level: 12.69 ft (Base Flow sub-band) Last Week: 12.86 ft Last Year: 13.47 ft

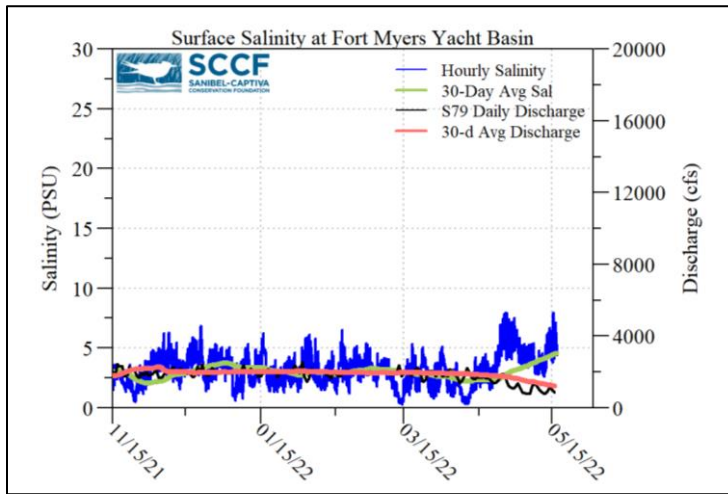
Lake Okeechobee Inflow: 1301 cfs Lake Okeechobee Outflow: 1728 cfs

Weekly Rainfall Total: WP Franklin 0.00" Ortona 0.00" Moore Haven ≥ 0.30"

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



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
5/10/22	972	695	871
5/11/22	858	643	980
5/12/22	766	838	1136
5/13/22	890	943	1232
5/14/22	1117	963	1071
5/15/22	1030	913	856
5/16/22	932	808	959
7-day avg	938	829	1015



Light Penetration				
Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.73 ^c	>2.2	1.2	< 18
Causeway	2.06 ^c	> 2.2	1.4	< 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 5/17/22 sampling for cyanobacteria by the Lee County Environmental Lab reported **abundant** *Dolichospermum*, sparse *Microcystis*, and cyanobacterial filaments at the **Alva Boat Ramp** as streaks with some accumulation. *Dolichospermum*, sparse *Microcystis*, and cyanobacterial filaments were **moderately abundant** at the **Franklin Locks** as some streaks with accumulation along the lock. *Dolichospermum*, *Microcystis* and cyanobacterial filaments were **moderately abundant** at the **Davis Boat Ramp** as streaks with accumulation along the seawall.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **4.6 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **27 psu**, within the optimal range for oysters and seagrasses.

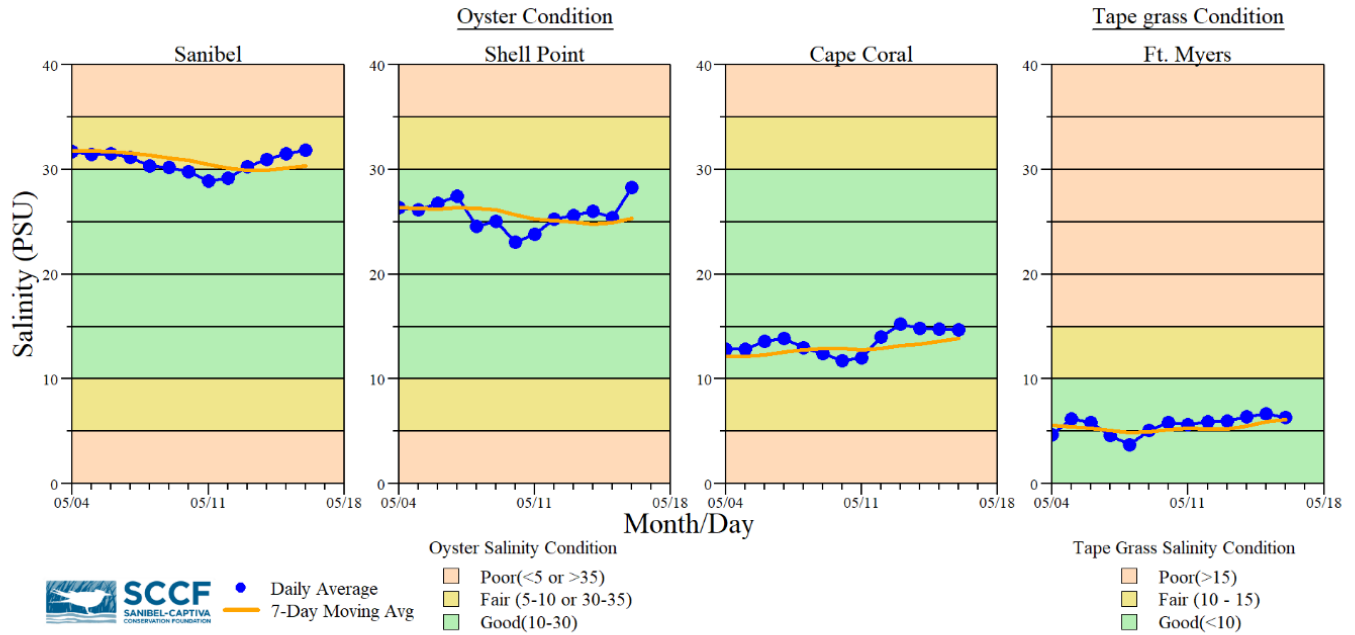
Water Quality Conditions

Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	0.5 – 1.6 [0.5 – 1.5]	-----	197	-----
Fort Myers Yacht Basin	2.8 – 7.5 [2.8 – 5.2]	4.7 – 7.2	161	-----
Shell Point	17 – 33 [17 – 33]	5.1 – 7.5	55.5	2.3
McIntyre Creek	30.3 – 32.6 [29.4 – 31.9]	2.8 – 11.7	-----	-----
Tarpon Bay	28.5 – 32.3 [29.6 – 33.0]	3.4 – 8.7	-----	-----
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 5/13/22, the FWC reported that the red tide organism, *Karenia brevis* was not observed in Southwest Florida.

Wildlife Impacts: In the past week (5/8 – 5/16), the CROW wildlife hospital on Sanibel received 5 toxicosis patients: 2 double crested cormorants (2 still at crow), 1 ruddy turnstone (died), 1 laughing gull (died), and 1 white ibis (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.

Data are provisional and subject to change.



Brown filamentous cyanobacteria (*Dapis pleousa*) and invasive green algae, *Caulerpa fastigiata* overgrowing a turtle grass meadow in the Matlacha Pass National Wildlife Refuge near McCadle Island 5/15/22. SCCF

Water clarity at Lighthouse Beach Park on 5/16/22 at 1:23 PM on a falling tide (high tide: 3.34 ft @ 12:03 PM). [Lighthouse Beach Park Virtual Tour](#).