

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: **April 26 – May 2, 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 **1,247 cfs** at **S-79** with a 7-day average of **1,261 cfs (101%)** coming from the lake at **S-77**. The **14-day moving average flow at S-79 is 1,423 cfs** and has been in the **optimal flow envelope (750 – 2,100 cfs; RECOVER 2020)** for 160 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).

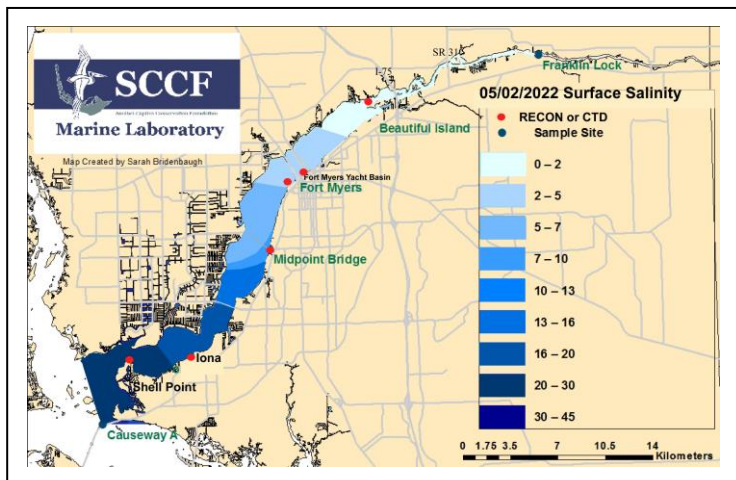
Lake Flows: In the past 7 days the total outflow from Lake Okeechobee was **43,433 AF** with **17,512 AF** to the Caloosahatchee through **S-77**, **10,322 AF** through **S-308** in Port Mayaca, **1,387 AF** through **S-310** in Clewiston, and **13,297 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **22,606 AF** (22,554 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1) with a total backflow volume of **52 AF** from **S-310**. Water conservation areas received flows of **0 AF**, **1,067 AF**, and **222 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **2,245 AF**.

Lake Level: 12.97 ft (Base Flow sub-band) Last Week: 13.08 ft Last Year: 13.97 ft

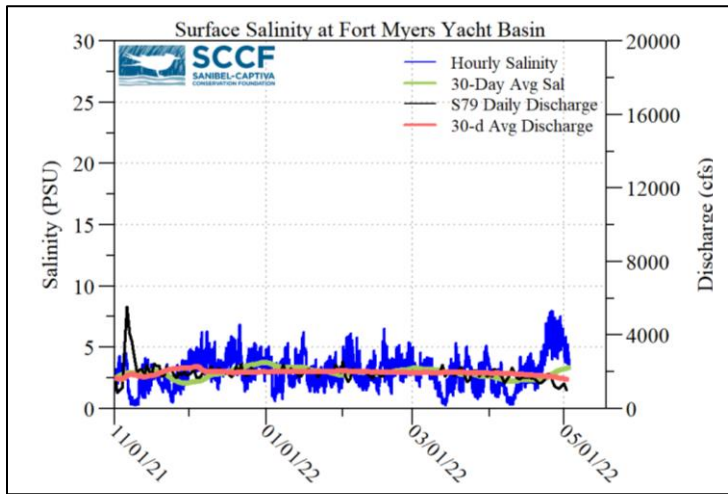
Lake Okeechobee Inflow: 1674 cfs Lake Okeechobee Outflow: 2375 cfs

Weekly Rainfall Total: WP Franklin ≥ 0.92" Ortona ≥ 0.70" Moore Haven ≥ 1.43"

7-Day Lake Recession Rate: -0.10 ft/week



Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/26/22	1630	1157	1686
4/27/22	1218	1024	1299
4/28/22	1160	1136	1308
4/29/22	1062	825	1350
4/30/22	1199	795	899
5/1/22	1372	983	1326
5/2/22	1089	679	961
7-day avg	1247	943	1261



Light Penetration				
Site	25% I _z	Target Values	Turbidity	Target Values
	meters		NTU	
Fort Myers	ND	> 1	ND	< 18
Shell Point	1.69 ^c	>2.2	2.0	< 18
Causeway	2.21 ^c	> 2.2	2.8	< 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 5/2/22 sampling for cyanobacteria by the Lee County Environmental Lab reported **moderately abundant** *Dolichospermum*, *Microcystis*, and cyanobacterial filaments at the **Alva Boat Ramp** as visible streaks and at the **Franklin Locks** as visible streaks with accumulation. *Dolichospermum*, *Microcystis*, and cyanobacterial filaments were **present** at the **Davis Boat Ramp** as visible streaks.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **3.4 psu**, within the suitable range for tape grass. Hypoxia was detected (2.1 mg O₂ L⁻¹) in the lower layer of the water column on 4/28/22. The maximum water temperature at Beautiful Island was 3° C higher than at the Fort Myers RECON on that date (31.1 vs 27.9° C).

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	0.4 – 1.7 [0.2 – 0.7]	-----	199	-----
Fort Myers Yacht Basin	3.8 – 7.7 [1.9 – 7.0]	2.1 – 6.7	177	-----
Shell Point	18 – 33 [16 – 33]	4.8 – 7.4	55.5	-----
McIntyre Creek	30.7 – 31.8 [30.1 – 33.7]	2.3 – 10.3	-----	-----
Tarpon Bay	30.8 – 33.2 [29.5 – 33.1]	4.2 – 9.3	-----	-----
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 4/29/22, the FWC reported that the red tide organism, *Karenia brevis* was not observed in samples collected statewide over the past week.

Wildlife Impacts: In the past week (4/26 – 5/2), the CROW wildlife hospital on Sanibel received 2 toxicosis patients: 2 anhinga (both died).



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 5/2/22 at 1:22 PM on a high tide (high tide: 3.08 ft @ 12:49 PM). [Lighthouse Beach Park Virtual Tour.](#)