

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: **March 29 – April 4, 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 **1,919 cfs** at **S-79** with a 7-day average of **1,966 cfs (102%)** coming from the lake at **S-77**. The **14-day moving average flow at S-79 is 1,867 cfs** and has been in the **optimal flow envelope (750 – 2,100 cfs; RECOVER 2020)** for 132 days.

Recommendation: With spawning months beginning 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 and will increase the availability of habitat for zooplankton upstream in the estuary. We request that the Corps continue flows of 1,800 cfs from S-79 while monitoring salinity throughout the estuary and make adjustments as needed 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 4/2/21, target flow to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) was reduced to 1,800 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 **50,603 AF** with **27,297 AF** to the Caloosahatchee through **S-77**, **6,732 AF** to St Lucie through **S-308**, **1,395 AF** through **S-310** in Clewiston, and **12,458 AF** to the EAA through **S-351**, **S-352**, and **S-354**. The total net inflow to the Lake was **11,960 AF** (11,960 AF from Fisheating Creek, S-71, S-72, S-84s, S-65EX, and S-65EX1). Water conservation areas received flows of **0 AF**, **0 AF**, and **2,682 AF** at **WCA1**, **WCA2**, and **WCA3**, respectively. Everglades National Park received **5,978 AF**.

Lake Level: 13.73 ft (Low sub-band)

Last Week: 13.88 ft

Last Year: 13.75 ft

Lake Okeechobee Inflow: 884 cfs

Lake Okeechobee Outflow: 2984 cfs

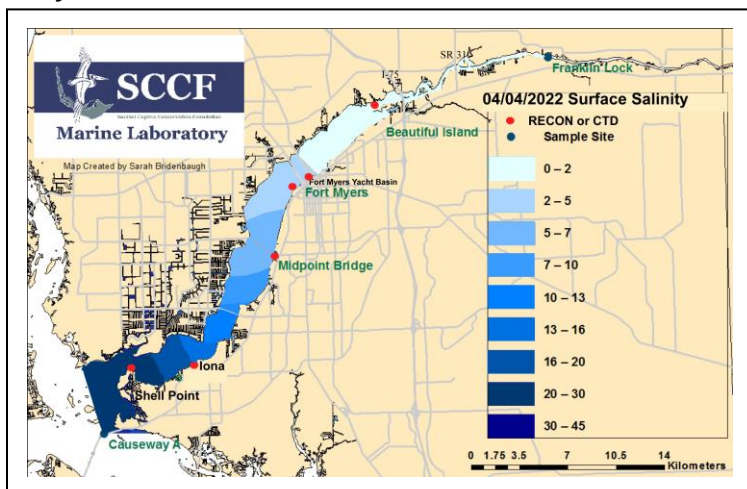
Weekly Rainfall Total:

WP Franklin **≥ 0.08"**

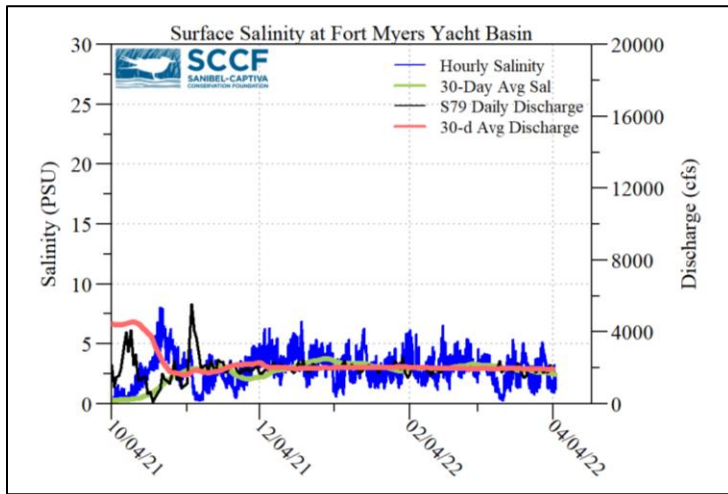
Ortona **≥ 0.00"**

Moore Haven **≥ 0.27"**

7-Day Lake Recession Rate: -0.13 ft/week



| ACOE Daily Reports | | | |
|--------------------|----------------|----------------|----------------|
| Date | S79 Flow (cfs) | S78 Flow (cfs) | S77 Flow (cfs) |
| 3/29/22 | 1930 | 1758 | 2325 |
| 3/30/22 | 1987 | 1852 | 2468 |
| 3/31/22 | 1729 | 1379 | 1834 |
| 4/1/22 | 1836 | 1125 | 1337 |
| 4/2/22 | 1753 | 1479 | 1842 |
| 4/3/22 | 2142 | 1676 | 2012 |
| 4/4/22 | 2056 | 1591 | 1944 |
| 7-day avg | 1919 | 1551 | 1966 |



| Light Penetration | | | | |
|-------------------|--------------------|---------------|-----------|---------------|
| Site | 25% I _z | Target Values | Turbidity | Target Values |
| | meters | | NTU | |
| Fort Myers | ND | > 1 | ND | < 18 |
| Shell Point | 1.56 ^c | >2.2 | 2.5 | < 18 |
| Causeway | 1.79 ^m | > 2.2 | 8.0 | < 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 4/4/22 sampling for cyanobacteria by the Lee County Environmental Lab reported the presence of *Dolichospermum* at the **Alva Boat Ramp** as sparse specks. *Dolichospermum* and *Microcystis* were moderately abundant at the **Davis Boat Ramp** and upstream of the **Franklin Locks** with streaks and accumulation along the seawall.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **2.6 psu**, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was **27.5 psu**, within the optimal range for oysters and seagrasses. Water column chlorophyll was slightly elevated at the Shell Point RECON following wind events. Diatoms were the dominant phytoplankton group at Sanibel’s causeway and beaches.

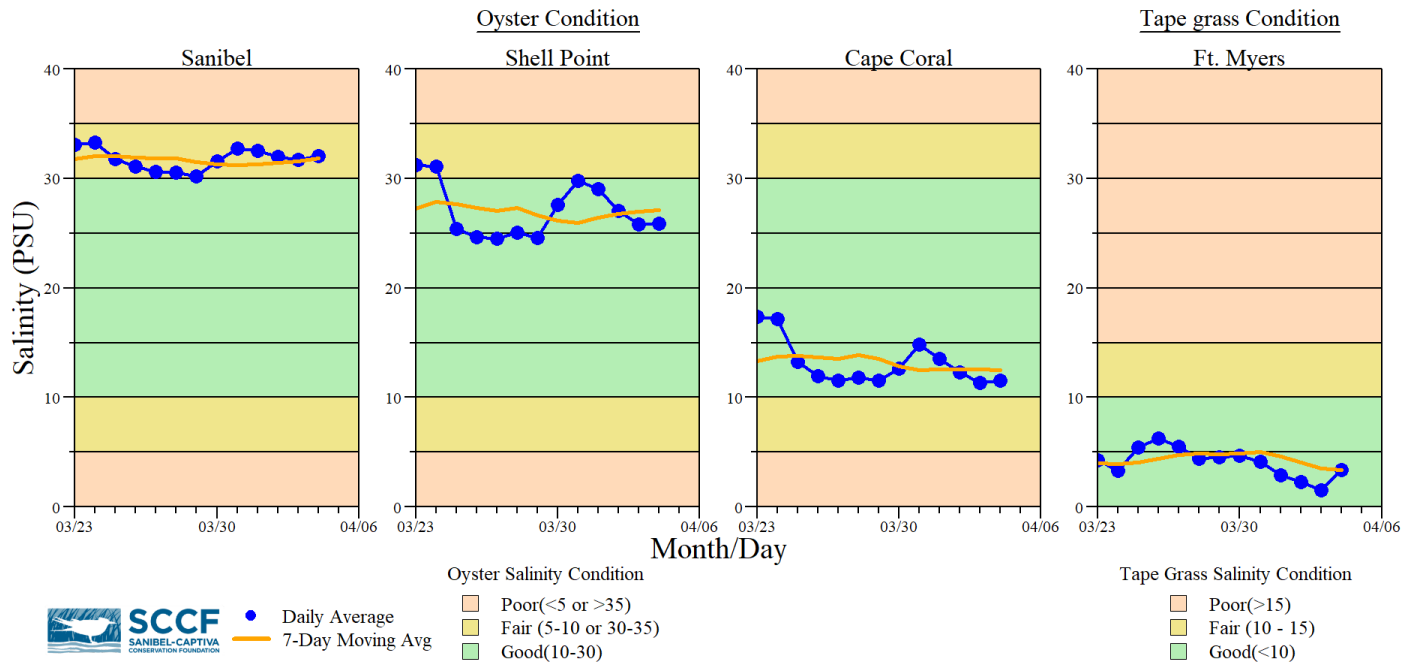
Water Quality Conditions

| Monitor Site | Salinity (psu) ^a [previous week] | Diss O ₂ (mg/L) ^b | FDOM (qsde) ^c | Chlorophyll (µg/L) ^d |
|------------------------|--|--|-----------------------------|------------------------------------|
| Beautiful Island | 0.2 – 0.4 [0.2 – 0.6] | ----- | 204 | ----- |
| Fort Myers Yacht Basin | 0.8 – 4.9 [1.2 – 4.9] | ----- | 186 | ----- |
| Shell Point | 16 – 33 [15 – 34] | 5.0 – 7.4 | 62.4 | 4.1 |
| McIntyre Creek | 32.7 – 34.3 [31.5 – 34.3] | 2.4 – 9.3 | ----- | ----- |
| Tarpon Bay | 31.7 – 34.5 [30.6 – 34.6] | 3.1 – 7.8 | ----- | ----- |
| Wulfert Flats | 25.1 – 34.3 [25.7 – 34.2] | 3.6 – 8.0 | ----- | 4.8 – 40.6 |

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 4/1/22, the FWC reported that the red tide organism, *Karenia brevis* was observed at background concentrations in one sample from Manatee County.

Wildlife Impacts: In the past week (3/29 – 4/4), the CROW wildlife hospital on Sanibel received 3 toxicosis patients: 1 laughing gull (still at CROW), 1 sandwich tern (still at CROW), and 1 royal tern (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.



Water clarity at Lighthouse Beach Park on 4/4/22 at 12:56 PM on a rising tide (high tide: 2.81ft @ 2:00 PM). [Lighthouse Beach Park Virtual Tour.](#)