

MEMORANDUM

To: USACE Colonel Andrew D. Kelly, LTC Todd F. Polk, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Drew Bartlett, Jennifer Reynolds, Lawrence Glenn, DEP Secretary Noah Valenstein

From: Periodic Scientists Conference Call Participants
 Kevin Godsea & Jeremy Conrad - J.N. "Ding" Darling National Wildlife Refuge (NWR) Complex
 James Evans & Holly Milbrandt - City of Sanibel
 Lesli Haynes & Lisa Kreiger - Lee County
 Harry Phillips & Maya Robert – City of Cape Coral
 Leah Reidenbach & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **May 26 – June 1, 2020**

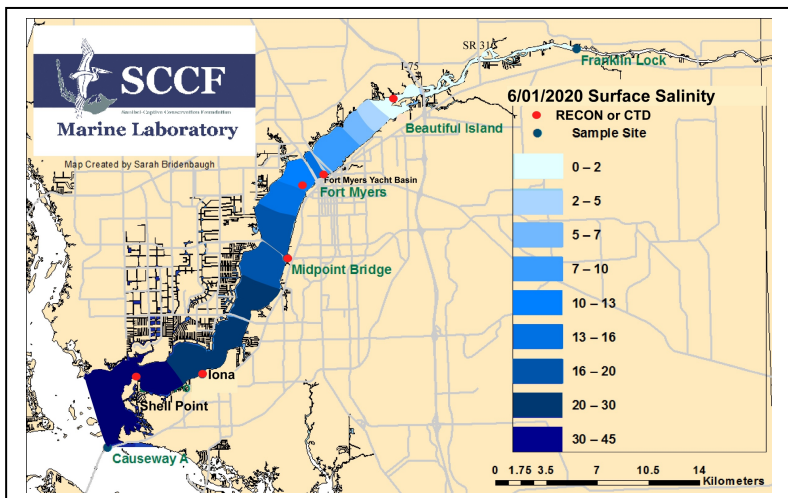
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

Caloosahatchee Condition Summary: Caloosahatchee estuary salinities are **decreasing but remain high despite recent rainfall and increased flows to a 7-day average of 2,060 cfs at S-79**. The Caloosahatchee estuary continues to need **optimum flows between 750 – 2,100 cfs** to reduce salinities to their optimum levels throughout the estuary.

USACE Action: On 5/8/20 the Corps continued pulse releases to the Caloosahatchee from Lake Okeechobee at a 7-day average of **650 cfs at S-79**. Releases to the St. Lucie estuary at **S-80** remain at **zero cfs**.

Recommendation: With the start of the wet season, Caloosahatchee estuary salinities are decreasing but still remain high. **In order to maintain optimum salinities in the estuary and avoid damaging flows as the wet season progresses, we request the District maintain flows between 750 – 2,100 cfs at S-79 over a 7-day average.** This is consistent with the draft 2020 RECOVER optimum flow envelopes for the Caloosahatchee estuary.

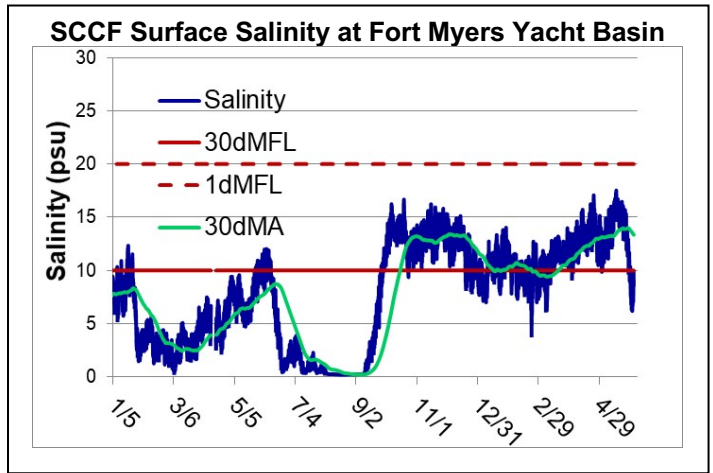
| | | |
|-----------------------------------|--|--|
| Lake Okeechobee Level: | 11.47 ft. (Beneficial Use Sub Band) | Last week: 11.24 ft. |
| Lake Okeechobee Inflow: | 3,000 cfs | Lake Okeechobee Outflow: -125 cfs |
| Weekly Rainfall Total: | WP Franklin 1.91" Ortona 5.28" | Moore Haven 2.51" |
| Salinity Beautiful Island: | 1.6 – 8.0 psu (SCCF RECON) | Previous week 5.0 – 9.6 psu |
| Salinity Fort Myers: | 6.2 – 14 psu (SCCF Surface FM Yacht Basin) | Previous week 12 – 16 psu |
| | 13 – 19 psu (SCCF RECON) | Previous week 16 – 19 psu |
| Salinity Shell Point: | 24 – 35 psu (SCCF RECON) | Previous week 27 – 35 psu |



| Salinity (psu) | | | |
|---|----------------------|--------------------------|-----------------|
| | Current Value | Sustainable Range | High/Low |
| Beautiful Is | 1.6 – 8.0 | < 5 psu | High |
| Fort Myers | 13 – 19 | <10 psu | High |
| Shell Point | 24 – 35 | 25 - 32 psu | High |
| Light (25% I_z depth meters) | | | |
| Fort Myers | 0.74 | 1 meter | Low |
| Shell Point | 2.16 | 2.2 meters | Low |
| Causeway | 3.07 | 2.2 meters | In Range |

Lake Flows: In the past 7 days a net **138 AF** of water was discharged from Lake Okeechobee. Flows to the Caloosahatchee estuary at S-79 during the past 7 days averaged **4,100 AF**. A backflow of **20,628 AF** occurred at S-308, a net backflow of **268 AF** occurred at the L8 canal, and a backflow of **845 AF** occurred at S-310. The EAA, south of the lake, received **0 AF** from Lake O. Water conservation areas received flows of **27,326 AF**, **30,340 AF**, and **10,004 AF** at WCA1, WCA2, and WCA3, respectively. Everglades National Park received **0** flows.

| ACOE Daily Reports | | | |
|--------------------|----------------|----------------|----------------|
| Date | S79 Flow (cfs) | S78 Flow (cfs) | S77 Flow (cfs) |
| 5/26/2020 | 2354 | 1379 | -53 |
| 5/27/2020 | 2639 | 1782 | 0 |
| 5/28/2020 | 1902 | 1145 | 0 |
| 5/29/2020 | 2425 | 1219 | 0 |
| 5/30/2020 | 1684 | 1196 | 0 |
| 5/31/2020 | 2131 | 1171 | 0 |
| 6/1/2020 | 1288 | 750 | 104 |
| 7 day Avg | 2060 | 1235 | 7 |



Cyanobacteria Status: Sampling by Lee County Environmental Lab on 6/2/20 reported presence of cyanobacteria species *Microcystis* and nostocalean filaments at the Alva bridge, *Microcystis*, *Dolichospermum*, and *Cylindrospermopsis* at the upstream side of the WP Franklin Lock, and *Microcystis*, *Dolichospermum*, and *Planktothrix* at the Davis Boat Ramp

Upstream of S-79/Franklin Conditions: The Lee County Olga Water Treatment plant will be offline until further notice.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was **13 psu, above the optimal level for tape grass**. This moving average has been above 10 psu for 29 of the past 31 weeks. The weekly average salinity there dropped below 10. Hypoxia was detected daily at the Fort Myers RECON since 5/30 with the DO dropping as low as 1.7 mg/L.

Lower Estuary Conditions: The weekly average salinity at the Shell Point RECON was **31 psu, above the optimal range for oysters**.

J.N. "Ding" Darling NWR:

| Monitor Site | Salinity | Dissolved O ₂ (mg/L) | FDOM (qsde) | Chlorophyll (µg/L) |
|----------------|-------------|---------------------------------|-------------|--------------------|
| McIntyre Creek | ----- | ----- | 4.0 – 12.0 | ----- |
| Tarpon Bay | 33.8 – 35.5 | 2.9 – 7.8 | 2.5 – 10.6 | 2.4 – 72.7 |
| Wildlife Drive | 34.2 – 37.0 | 0.5 – 8.4 | ----- | 1.7 – 20.3 |
| Wulfert Flats | 11.7 – 35.2 | 3.3 – 9.1 | ----- | 1.9 – 89.6 |

Red Tide: On 5/29/20 FWC reported red tide, *Karenia brevis*, was present at background and very low concentrations in Manatee County: [Click here for the FWC status of red tide](#)

Wildlife Impacts: The past week CROW, the wildlife hospital on Sanibel, treated 4 patients with red tide symptoms; 1 double-crested cormorant (died), 2 laughing gulls (still at CROW), and 1 great blue heron (still at crow).

| Caloosahatchee Stations | Chlorophyll (µg/L) | fDOM (qse) | Turbidity (NTU) | 25% Iz depth (meters) |
|-------------------------|--------------------|-------------------|--------------------|------------------------|
| Target Values | < 11 | CE <70 SCB <11 | CE < 18 SCB < 5 | CE = 1 m SCB = 2.2m |
| Fort Myers | 3.6 | 226 | 3.6 | 0.74 |
| Shell Point | 2.0 | 31.9 | 1.0 | 2.16 |
| Causeway | 0.9 | 1.5 | 2.8 | 3.07 |

Target light penetration:
 Caloosahatchee Estuary (CE) = 1 meter
 San Carlos Bay (SCB) = 2.2 meters
 25% Iz is the depth (z) where irradiance (I) is 25% of surface irradiance.