

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: **June 9 – 15, 2020**

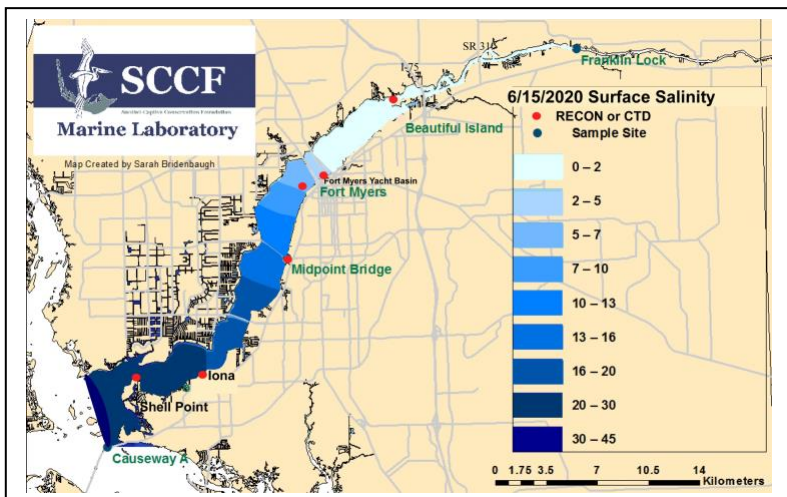
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity, and function of the system.

Caloosahatchee Condition Summary: Flows to the Caloosahatchee estuary had a 7-day average of **2,182 cfs** at S-79 due to west basin runoff, with less than a 7-day average of 71 cfs coming from the lake. Salinity levels in the upper and lower estuaries are within optimal levels for tape grass and oysters, respectively. Dense cyanobacteria blooms have been reported in the eastern and southern regions of Lake Okeechobee, with backflows from S-308 from the C-44 basin a possible contributor. *Microcystis* was moderately abundant at the Davis Boat Ramp. Water quality and clarity around Sanibel is good.

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: In order to maintain optimum salinities in the estuary and avoid damaging high 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.

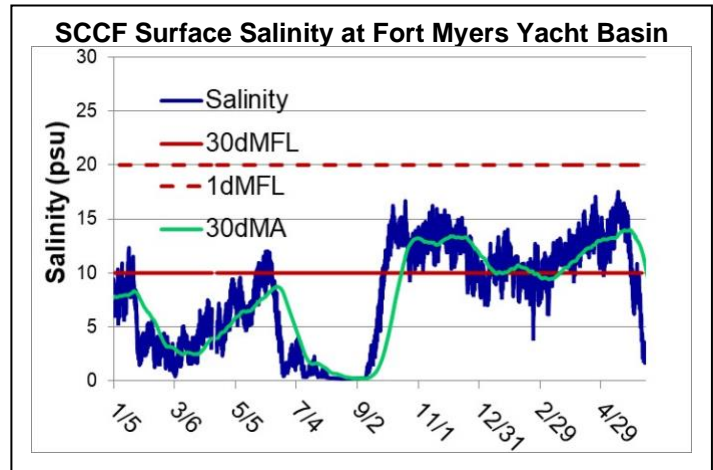
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|-----------------------------------|--|--|
| Lake Okeechobee Level: | 12.20 ft (Beneficial Use Sub Band) | Last week: 12.05 ft |
| Lake Okeechobee Inflow: | 2,554 cfs | Lake Okeechobee Outflow: -227 cfs |
| Weekly Rainfall Total: | WP Franklin 1.13" Ortona 0.28" | Moore Haven 0.00" |
| Salinity Beautiful Island: | ND psu (SCCF RECON) | Previous week 0.7 – 4.0 psu |
| Salinity Fort Myers: | 1.7 – 4.5 psu (SCCF Surface FM Yacht Basin) | Previous week 3.8 – 11 psu |
| | 3.4 – 7.7 psu (SCCF RECON) | Previous week 5.1 – 17 psu |
| Salinity Shell Point: | 13 – 33 psu (SCCF RECON) | Previous week 20 – 34 psu |



| Salinity (psu) | | | |
|---|---------------|-------------------|----------|
| | Current Value | Sustainable Range | High/Low |
| Beautiful Is | ND | < 5 psu | Low |
| Fort Myers | 3.4 – 7.7 | <10 psu | Low |
| Shell Point | 13 – 33 | 25 - 32 psu | High |
| Light (25% I _z depth meters) | | | |
| Fort Myers | 0.68 | 1 meter | Low |
| Shell Point | 1.23 | 2.2 meters | Low |
| Causeway | 2.58 | 2.2 meters | In Range |

Lake Flows: In the past 7 days, 1,246 AF was discharged from Lake Okeechobee, with 999 AF (80%) to the Caloosahatchee thru S-77, 190 AF (15%) to the EAA, and a net 57 AF (5%) thru S-310. Flows to the Caloosahatchee estuary at S-79 during the past 7 days averaged 4,317 AF per day. A backflow of 15,115 AF occurred at S-308 and a backflow of 2,209 AF occurred at the L8 canal. Water conservation areas received flows of 22,445 AF, 23,673 AF, and 29,735 AF at WCA1, WCA2, and WCA3, respectively. Everglades National Park received 8,878 AF.

| ACOE Daily Reports | | | |
|--------------------|----------------|----------------|----------------|
| Date | S79 Flow (cfs) | S78 Flow (cfs) | S77 Flow (cfs) |
| 6/9/2020 | 2860 | 1450 | 0 |
| 6/10/2020 | 3009 | 1246 | 0 |
| 6/11/2020 | 2453 | 995 | 376 |
| 6/12/2020 | 2159 | 845 | 118 |
| 6/13/2020 | 1932 | 428 | 0 |
| 6/14/2020 | 1711 | 400 | 0 |
| 6/15/2020 | 1147 | 384 | 0 |
| 7 day avg | 2182 | 821 | 71 |



Cyanobacteria Status: Sampling by Lee County Environmental Lab on 6/16/20 reported the presence of the cyanobacteria species *Microcystis* at the Alva Bridge and the upstream side of the WP Franklin Lock. *Microcystis* was moderately abundant 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 9 psu, within the suitable range for tape grass. A layer of loose red macroalgae (*Polysiphonia*), was covering the bottom in some shallow areas upstream of Fort Myers. Many wedge clams and Carolina marsh clams had recently died at the sediment surface and some of the marsh clams were floating in the area on 6/12/20. Hypoxia was detected at the Fort Myers RECON on 6/15/20.

Lower Estuary Conditions: The weekly average salinity at the Shell Point RECON was 24 psu, within the optimal range for oysters. Drift algae was abundant at multiple locations in the lower estuary and San Carlos Bay.

J.N. "Ding" Darling NWR:

| Monitor Site | Salinity | Dissolved O ₂ (mg/L) | FDOM (qsde) | Chlorophyll (µg/L) |
|----------------|-------------|---------------------------------|-------------|--------------------|
| McIntyre Creek | 29.0 – 33.6 | 2.1 – 8.6 | ----- | 1.2 – 6.9 |
| Tarpon Bay | 27.7 - 34.4 | 3.8 – 8.0 | 5.9 – 14.4 | 3.5 – 8.8 |
| Wildlife Drive | 30.8 – 33.7 | 0.5 – 6.7 | ----- | 1.7 – 19.0 |
| Wulfert Flats | ----- | ----- | ----- | ----- |

Red Tide: On 6/12/20 FWC reported red tide, *Karenia brevis*, was present at very low concentrations in Manatee County: [Click here for the FWC status of red tide](#)

Shellfish Advisory: Shellfish harvest area #6222/6232 Pine Island Section 2 and Section 3 (Matlacha Pass North and South) are **OPEN** by the Florida Department of Agriculture and Consumer Services (FDACS) as of 6/12/2020 as fecal coliform results indicate the water quality meets NSSP standards.

Wildlife Impacts: The past week CROW, the wildlife hospital on Sanibel, treated 2 patients with red tide symptoms: 1 brown pelican still at CROW and 1 green heron (still at CROW).

| Caloosahatchee Stations | Chlorophyll (µg/L) | fDOM (qse) | Turbidity (NTU) | 25% I _z depth (meters) |
|-------------------------|--------------------|-------------------|--------------------|-----------------------------------|
| Target Values | < 11 | CE <70 SCB <11 | CE < 18 SCB < 5 | CE = 1 m SCB = 2.2m |
| Fort Myers | 3.8 | 256 | 2.3 | 0.68 |
| Shell Point | 2.4 | 107 | 2.0 | 1.23 |
| Causeway | 4.4 | 40.9 | 3.1 | 2.58 |

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



The wind driven accumulation of the cyanobacteria *Microcystis* along a seawall at the Davis Boat Ramp on 6/16/20. Photo: Susan Davis/Lee County Environmental Laboratory.



Seagrass in the wrack line washed up on shore during the last high tide on Captiva on 6/16/20. Photo: SCCF



Blue-green algae bloom in the Southern region of Lake Okeechobee approximately 1.5 miles away from S-308 in Port Mayaca on 6/13/20. Photo: Jacqui Thurlow-Lippisch/Governing Board, SFWMD