

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
 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 27 – May 3, 2021**

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 **1,990 cfs at S-79** and a 7-day average of **2,034 cfs at S-77**. The **14-day moving average flow at S-79 is 1,628 cfs, within the optimum flow envelope (750 – 2,100 cfs; RECOVER 2020)**. Water clarity around Sanibel and Lee County remains good at this time. The harmful alga, *Karenia brevis*, persists in background to low concentrations in and offshore of Lee County.

Recommendation: We are very concerned about the level of the lake as we near the beginning of the rainy season with the long-range weather forecasts indicating a potentially rainy seasonal outlook. We strongly encourage the Corps to utilize all options to reduce lake levels prior to the wet season to prevent damaging releases to the estuaries. Releases to the Northern Estuaries should utilize adaptive management to optimize ecosystem salinities while balancing the system as a whole. These decisions should be reevaluated regularly based on current and forecasted conditions in the lake and estuaries.

USACE Action: On Saturday, 4/24/21 the USACE increased targeted flows to a 7-day average of 2,000 cfs (pulse) to the Caloosahatchee Estuary as measured at the WP Franklin Lock & Dam (S-79) and continued no releases to the St. Lucie Lock and Dam (S-80).

Lake Flows: In the past 7 days a net flow of **72,960 AF** were discharged from Lake Okeechobee, with **28,241 AF (39%)** to the Caloosahatchee through **S-77**, **1,886 AF (3%)** to the St. Lucie River through **S-308**, **1,476 AF (2%)** through **S-310** in Clewiston, **1,591 AF (2%)** through **C-10A** to the L-8 canal, and **39,767 AF (55%)** to the EAA through **S-351, S-352, and S-354**. Water conservation areas received flows of **135 AF, 1,432 AF, and 3,297 AF** at **WCA1, WCA2, and WCA3**, respectively. Everglades National Park received **902 AF**.

Lake Okeechobee Level: 13.95 ft (Low sub-band)

Last Week: 14.12 ft

Lake Okeechobee Inflow: 916 cfs

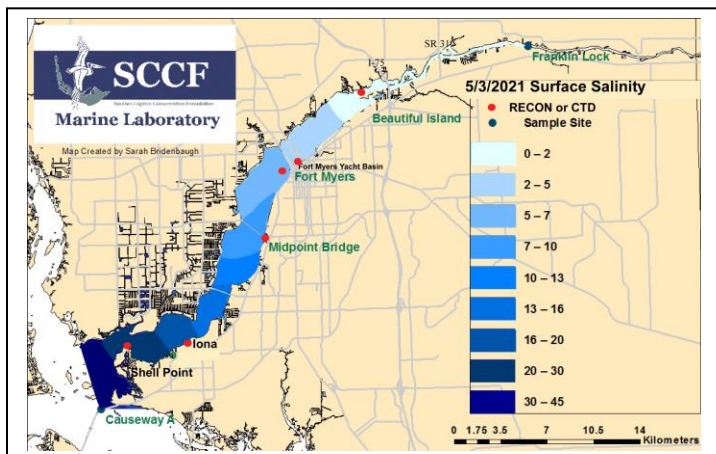
Lake Okeechobee Outflow: 4,763 cfs

Weekly Rainfall Total:

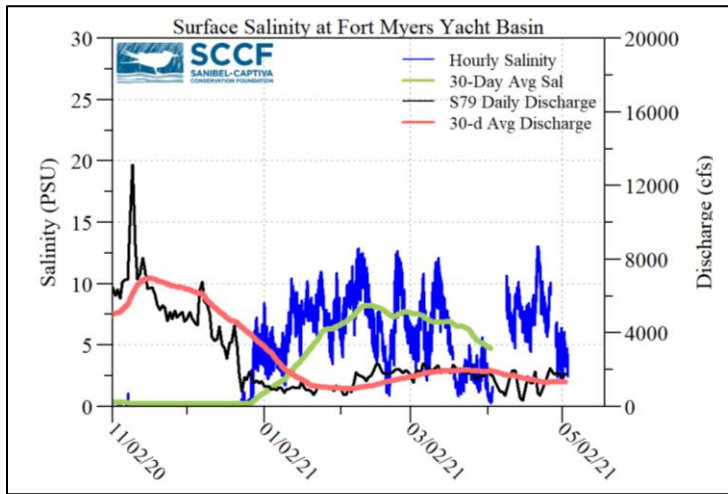
WP Franklin 0.30"

Ortona 1.25"

Moore Haven 0.92"



ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
4/27/21	2095	1456	2444
4/28/21	2053	1570	1840
4/29/21	1958	1766	2488
4/30/21	2078	1581	2325
5/1/21	1963	1476	1781
5/2/21	1763	1469	1700
5/3/21	2017	1446	1660
7-day avg	1990	1538	2034



Light Penetration				
Site	25% I _z Target Values		Turbidity Target Values	
	meters		NTU	
Fort Myers	1.12 ^c	> 1	2.3	< 18
Shell Point	2.25 ^c	>2.2	2.3	< 18
Causeway	2.48 ^m	> 2.2	4.1	< 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 5/4/21, sampling by the Lee County Environmental Lab reported moderately abundant *Microcystis*, *Dolichospermum*, and *Cuspidothrix* at the Alva Boat as specks visible on the surface with some wind driven accumulation on the ramp. *Microcystis* and *Cuspidothrix* were present as visible specks on the surface and in the water column upstream of the Franklin Locks. *Microcystis*, *Dolichospermum*, and *Aphanocapsa* were present as very sparse specks visible on the surface and in the water column at the Davis Boat Ramp.

Upstream of S-79/Franklin Conditions: On 5/4/21 the Olga Water Treatment plant reported chlorides of **68 mg/L**, apparent color **93 CU** and turbidity **2.4 NTU**. **Algae** were present at the plant intake the past week. The plant is online at **0 GPM**.

Upper Estuary Conditions: The 30-day average surface salinity at the Fort Myers Yacht Basin was 4.8 psu, within the suitable range for tape grass.

Lower Estuary Conditions: The average salinity at Shell Point RECON was 28 psu, in the suitable range for oysters and seagrass.

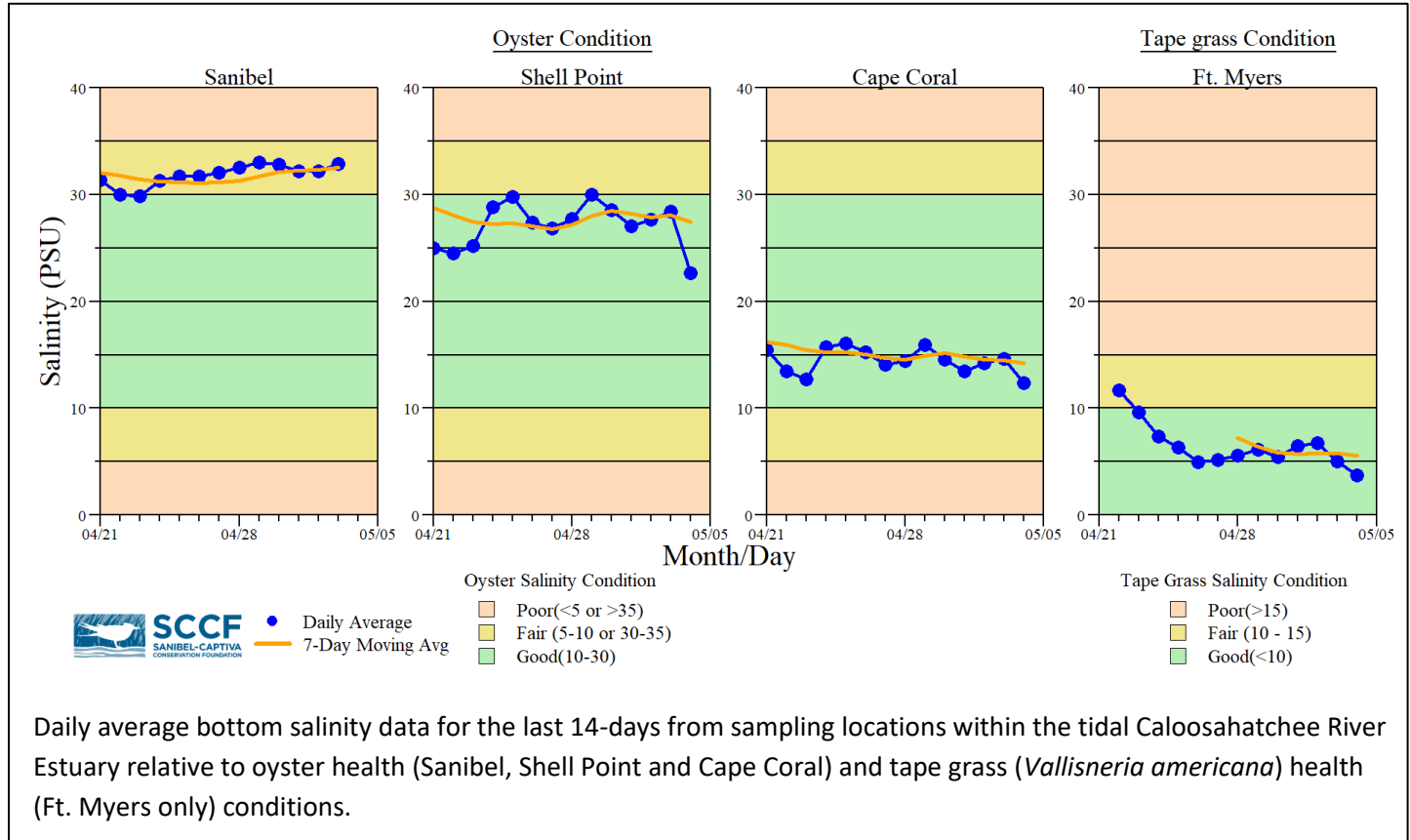
Water Quality Conditions

Monitor Site	Salinity (psu) ^a [previous week]	Diss O ₂ (mg/L) ^b	FDOM (qsde) ^c	Chlorophyll (µg/L) ^d
Beautiful Island	----- [-----]	-----	-----	-----
Fort Myers Yacht Basin	2.7 – 6.9 [2.3 – 7.9]	4.5 – 7.9	225	9.8
Shell Point	19 – 33 [16 – 33]	4.8 – 7.4	41.2	2.1
McIntyre Creek	32.2 – 33.7	-----	1.6 – 9.4	1.2 – 83.6
Tarpon Bay	31.3 – 34.4	3.3 – 8.4	2.5 – 10.4	1.0 – 73.0
Wildlife Drive	31.9 – 35.6	0.6 – 12.1	-----	1.1 – 16.4
Wulfert Flats	32.6 – 33.2	4.2 – 7.5	-----	-----

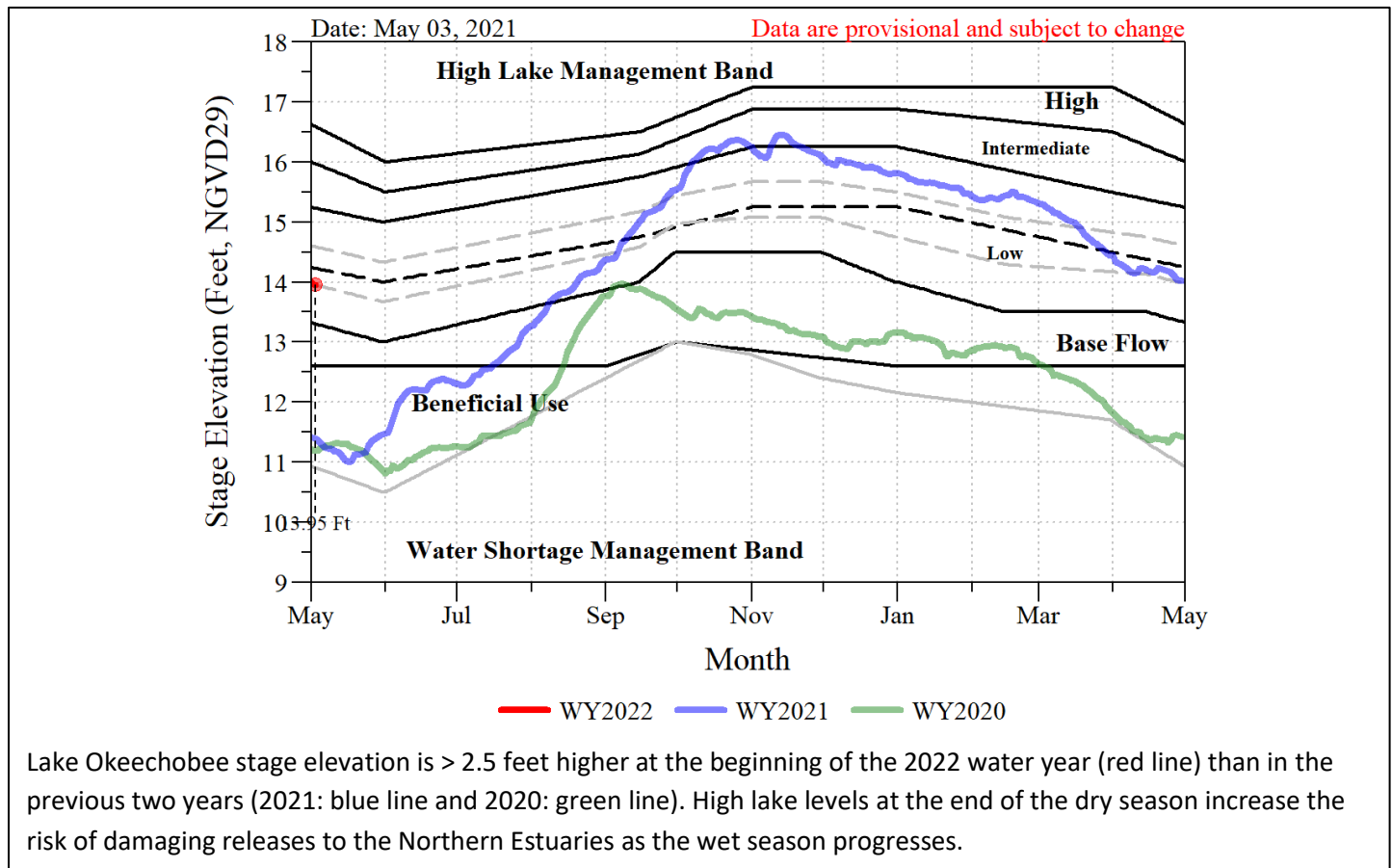
- Red** values are outside of the preferred range.
- ^a Salinity target values: BI < 5, FM < 10, SP = 25 – 32
- ^b Dissolved O₂ target values: all sites > 4
- ^c FDOM target values: BI < 70, FM < 70, SP < 11
- ^d Chlorophyll target values: BI < 11, FM < 11, SP < 11
- ^s Single sonde lower and surface layer or surface grab lab measurement

Red Tide: On 4/30/2021, the FWC reported that the red tide organism, *Karenia brevis*, persists in Southwest Florida, where it was detected in 56 samples over the past week. Bloom concentrations (>100,000 cells/liter) were observed in one sample from Sarasota County, nine samples from Charlotte County, and one sample from Collier County. *K. brevis* was also observed at background concentrations in one sample from the Florida East Coast. In Southwest Florida over the past week, *K. brevis* was observed at background to low concentrations in Manatee County, background to medium concentrations in Sarasota County, **low to high concentrations in Charlotte County**, **background to low concentrations in or offshore of Lee County**, background to medium concentrations in or offshore of Collier County, and very low to low concentrations offshore of Monroe County.

Wildlife Impacts: In the past week, the CROW wildlife hospital on Sanibel **received 30 toxicosis patients:** 2 double-crested cormorants (still at CROW), 1 herring gull (still at CROW), 8 laughing gulls (4 died, 4 still at CROW), 1 least sandpiper (released), 3 ruddy turnstones (2 died, 1 still at CROW), 14 sanderlings (9 died, 3 released, 2 still at CROW), and 1 semipalmated sandpiper (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.



Lake Okeechobee stage elevation is > 2.5 feet higher at the beginning of the 2022 water year (red line) than in the previous two years (2021: blue line and 2020: green line). High lake levels at the end of the dry season increase the risk of damaging releases to the Northern Estuaries as the wet season progresses.



Water clarity at Lighthouse Beach Park on 04/30/2021 at 09:15 on a falling tide. (Low tide: 09:34 @ 1.05 ft in Tarpon Bay.)



Water clarity at Lighthouse Beach Park on 05/3/2021 at 17:53 on a falling tide. (High tide: 16:36 @ 2.44 ft in Tarpon Bay.)



Photos of water clarity at Cape Coral parks along the Caloosahatchee River on 5/3/21. Left: Manatees congregating in a canal at Rosen Park. Center: Water clarity at Jaycee Park. Right: Water clarity at Yacht Club Public Beach. Photos: City of Cape Coral