

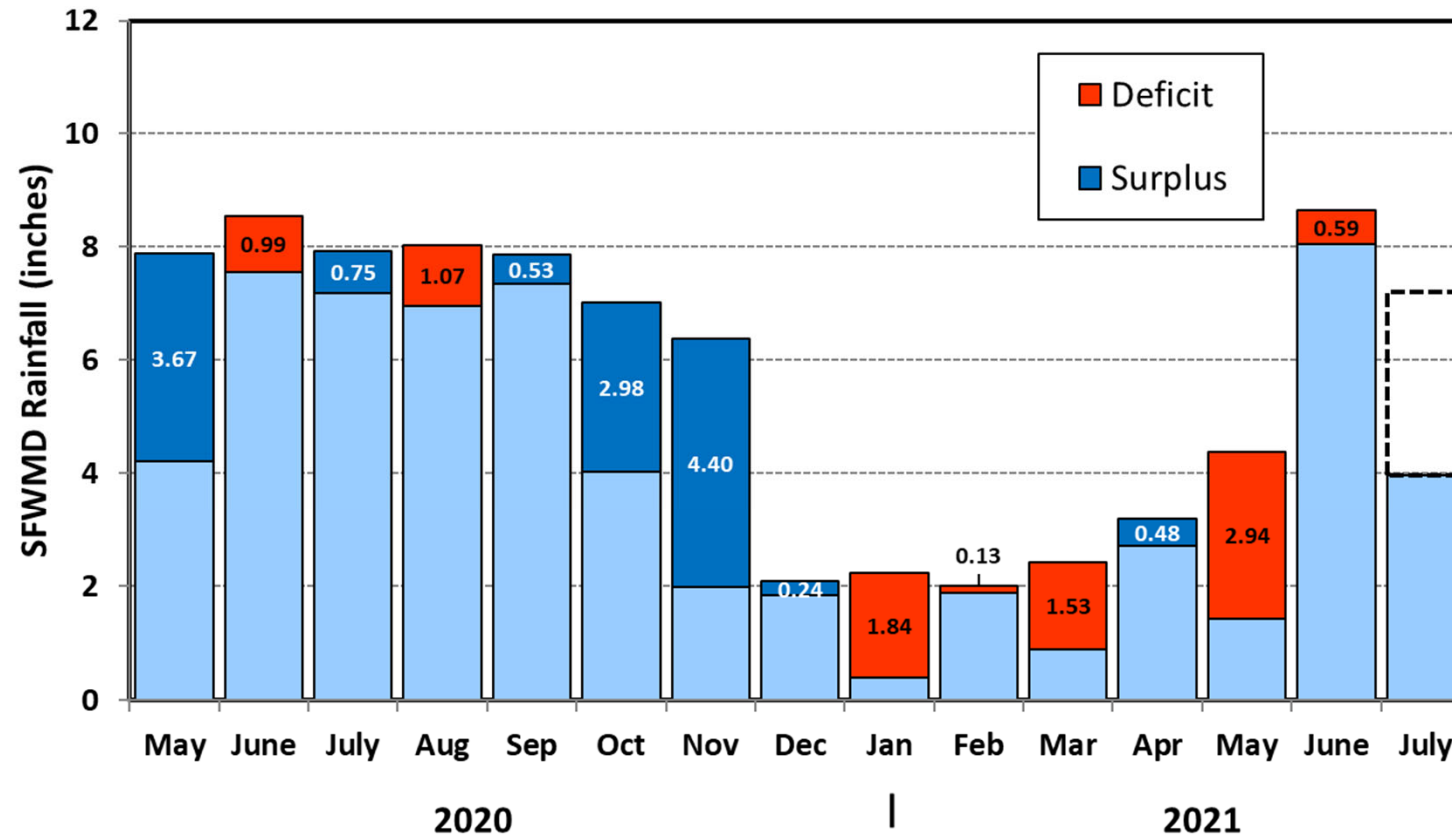
Water Conditions Summary

**South Florida Water Management District
Governing Board Meeting
July 15, 2021**



**John P. Mitnik, PE
Chief District Engineer
Assistant Executive Director**

SFWMD Rainfall Distribution Comparison (May 2020 - July 2021)



District Wide Average Rainfall

Month	Average (inches)
Jan	2.24
Feb	2.01
Mar	2.43
Apr	2.71
May	4.37
Jun	8.65
Jul	7.20
Aug	8.03
Sep	7.31
Oct	4.15
Nov	2.18
Dec	1.94

Wet
Season

2020 WET SEASON

- Started May 15, 2020.
- Jul and Sep had above average rainfall.
- October rainfall was well above normal.
- Overall, slightly above normal.

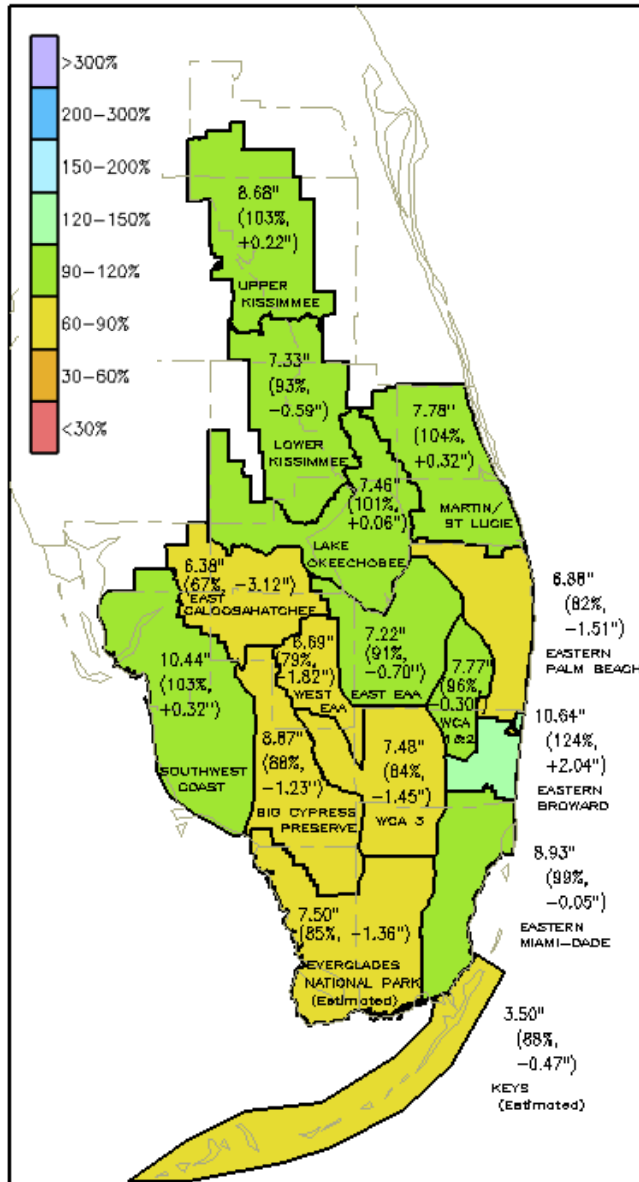
2020-2021 DRY SEASON.

- Nov rainfall was in excess of 300% of normal.
- Jan and Mar extremely dry months.
- Dec and Apr slightly above normal.
- May 2021 is the sixth driest May in POR.

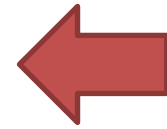
2021 WET SEASON

- Late Start May 28, 2021.
- June rainfall was below average, ~0.6" deficit.
- Wet season has equal chances of above, normal, or below normal.

02-Jun-2021 to 01-Jul-2021



DISTRICT-WIDE: 8.06" (93%, -0.59")



June 2021 Rainfall

DISTRICT-WIDE: 8.06"

- 93% of average, -0.59" deficit.
- Largest surplus is at E. Broward, +2.04".
- Highest deficit is at E. Caloosahatchee, -3.12".
- May 2021 was the 6th driest month of May since 1932.

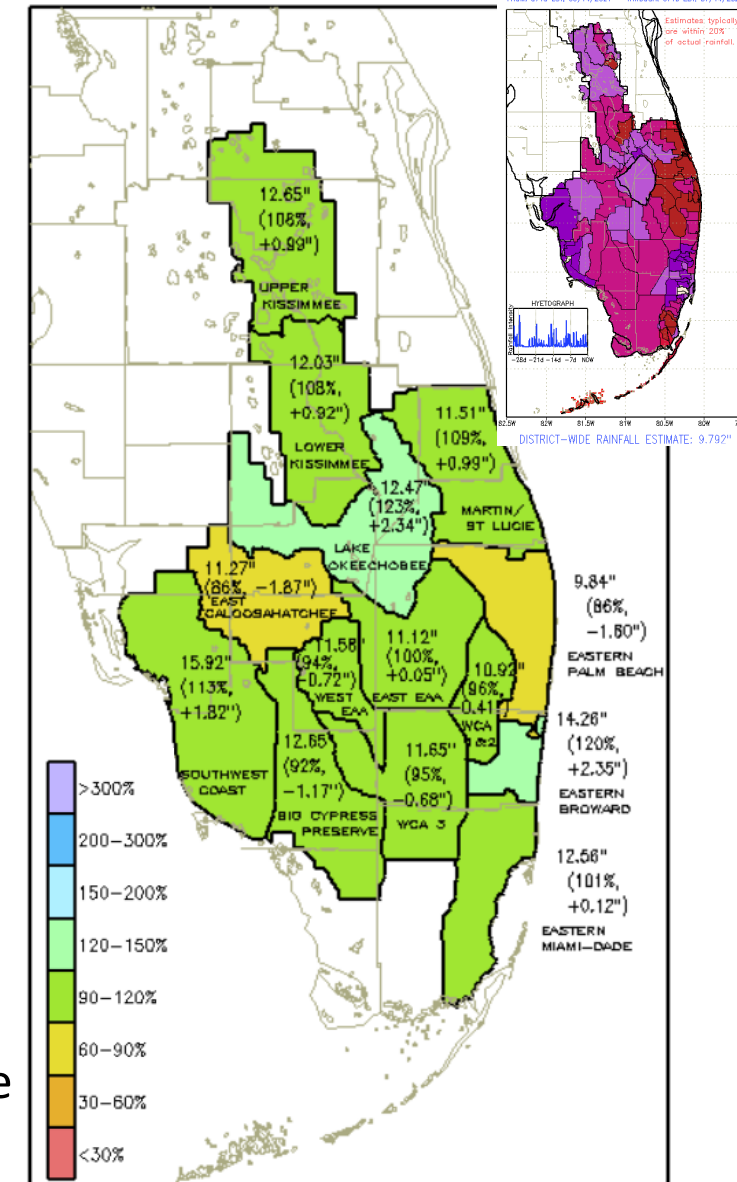
Wet Season Rainfall

29 May 2021 – July 13 2021

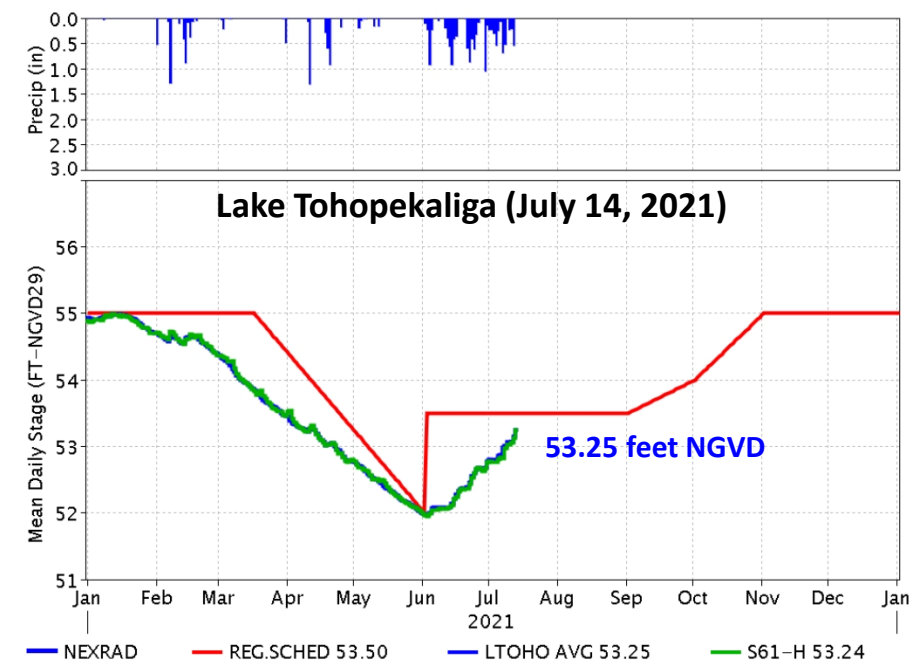
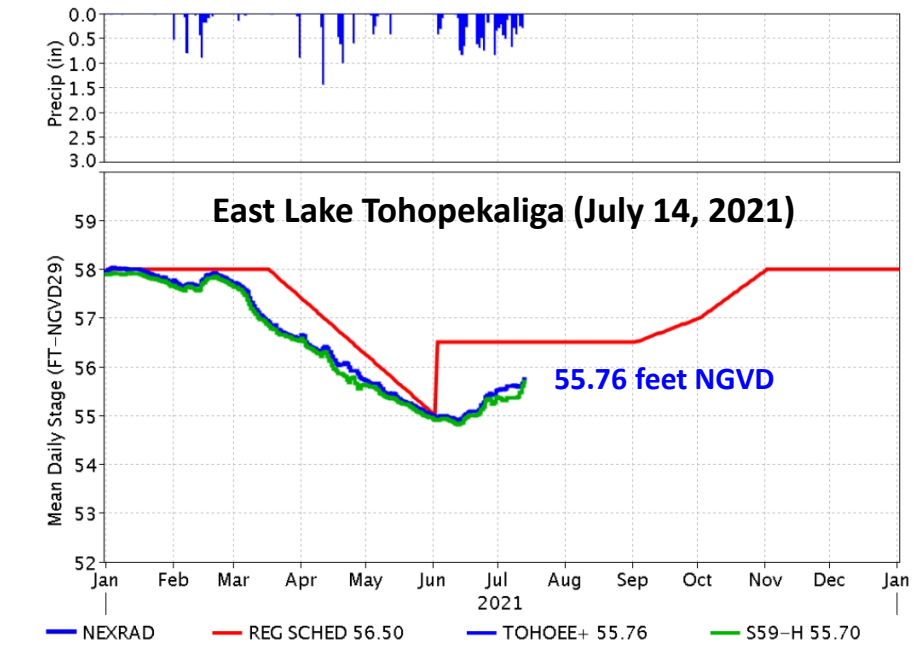
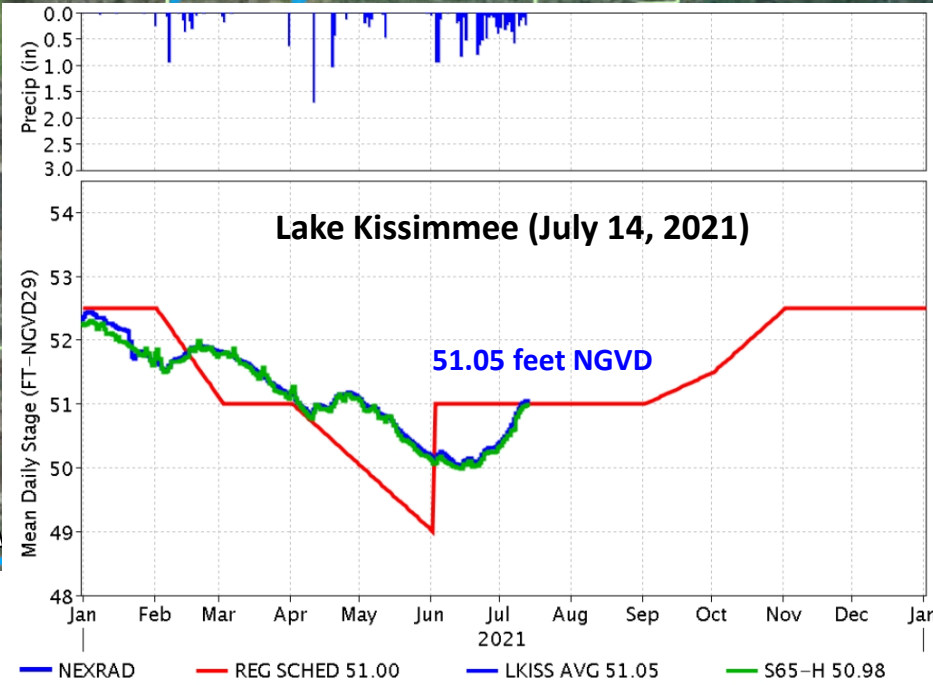
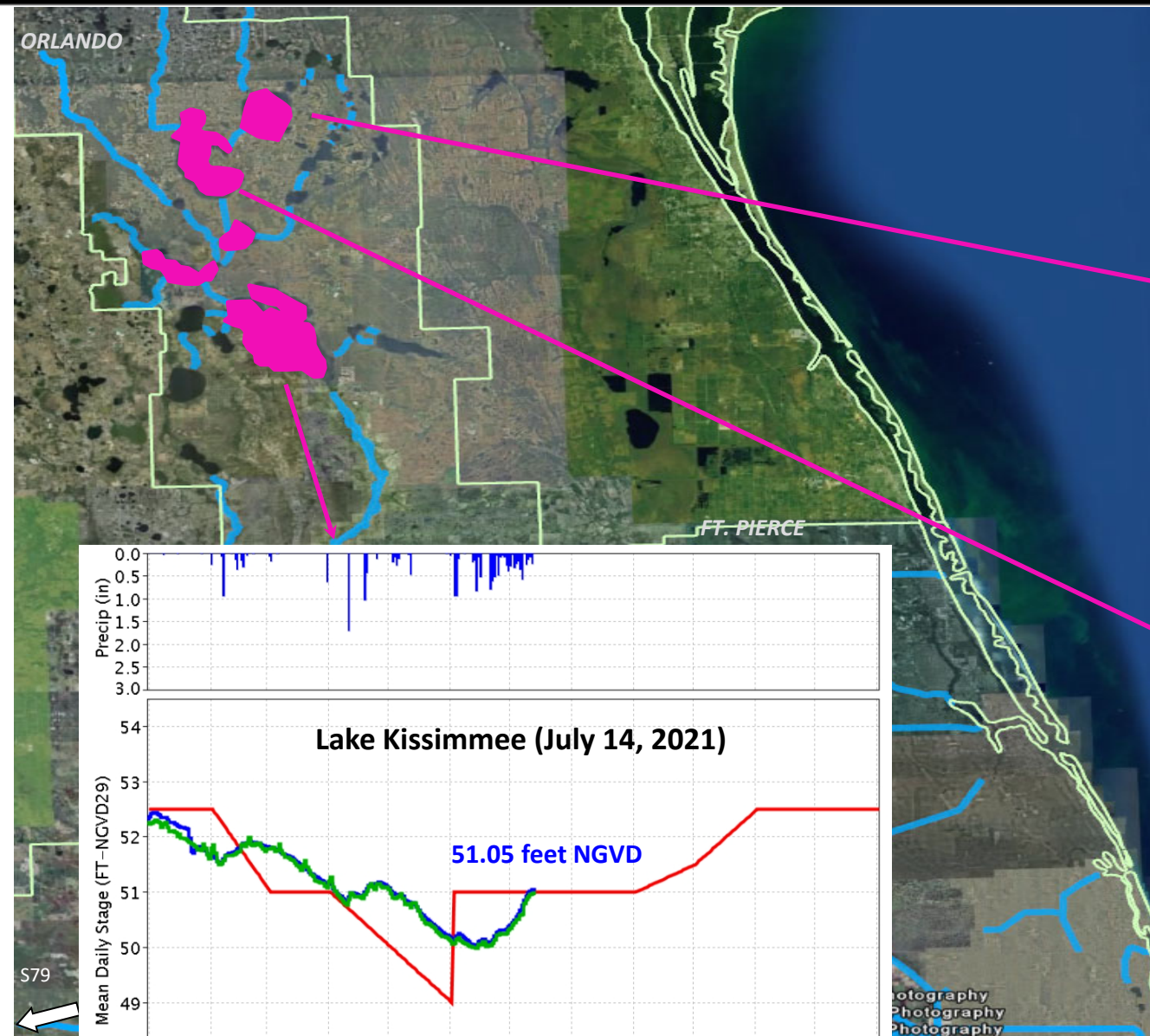
DISTRICT-WIDE: ~12.36"

- Wet season started May 28th
- 103% of average, +0.36" surplus.
- Regional variability of 85% - 120%
- Largest surplus is at E. Broward and Lake Ok, +2.35"; largest deficit is at E. Caloosahatchee and E. Palm Beach, ~-1.8".
- TS Elsa brought ~1.5".

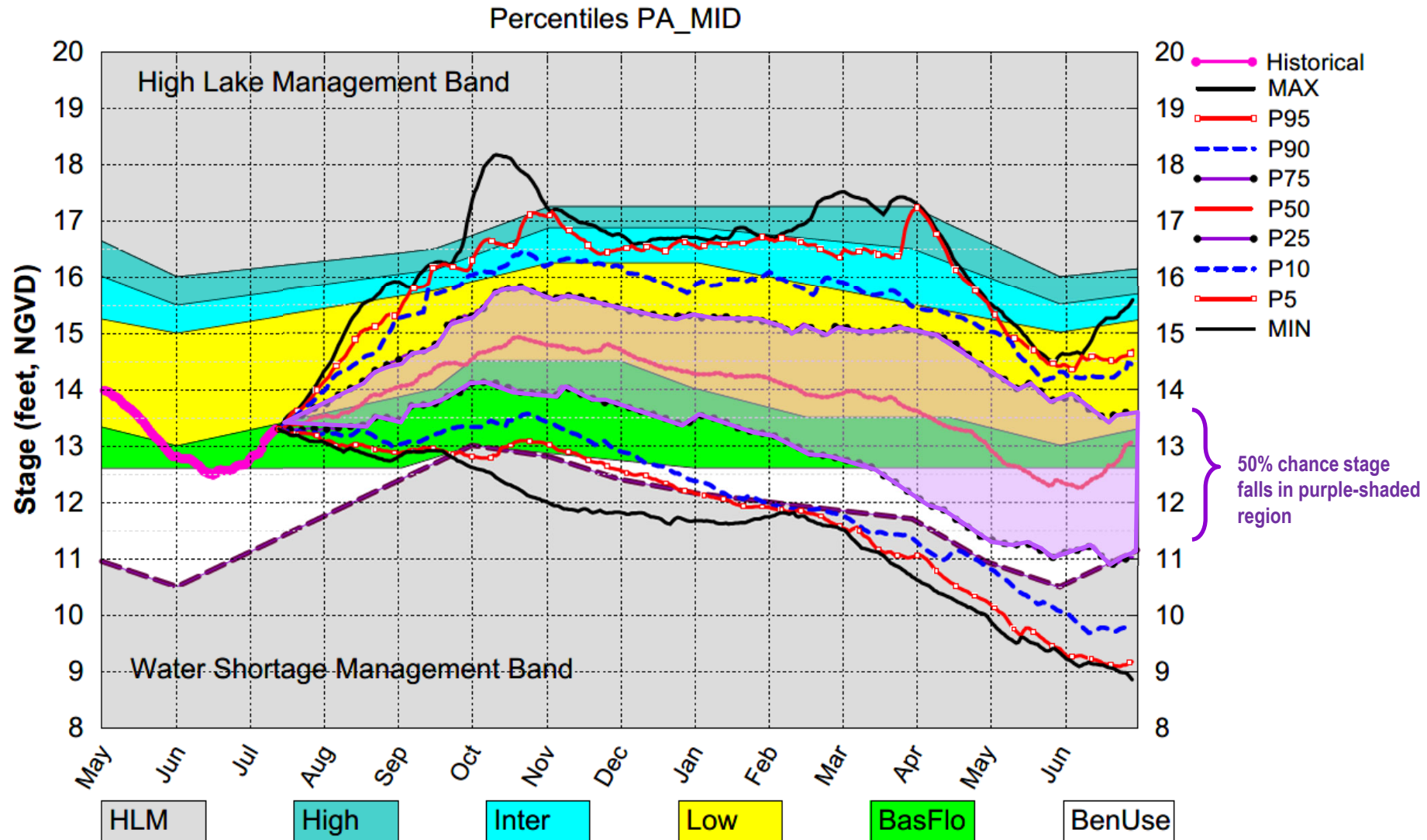
29-MAY-2021 to 13-JUL-2021



DISTRICT-WIDE: 12.36" (103%, +0.36")



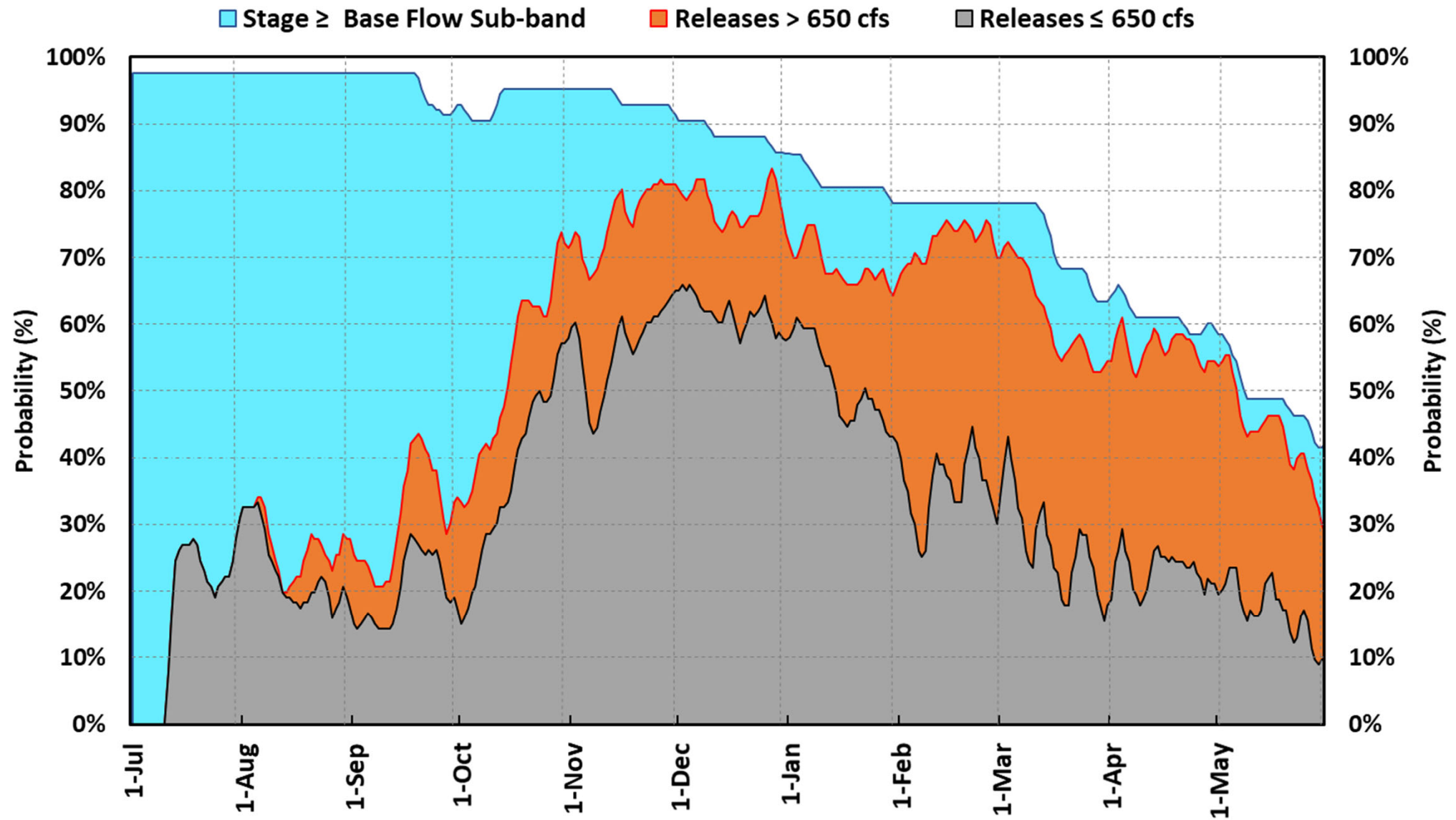
Lake Okeechobee SFWMM July 2021 Mid-Mon Position Analysis



(See assumptions on the Position Analysis Results website)

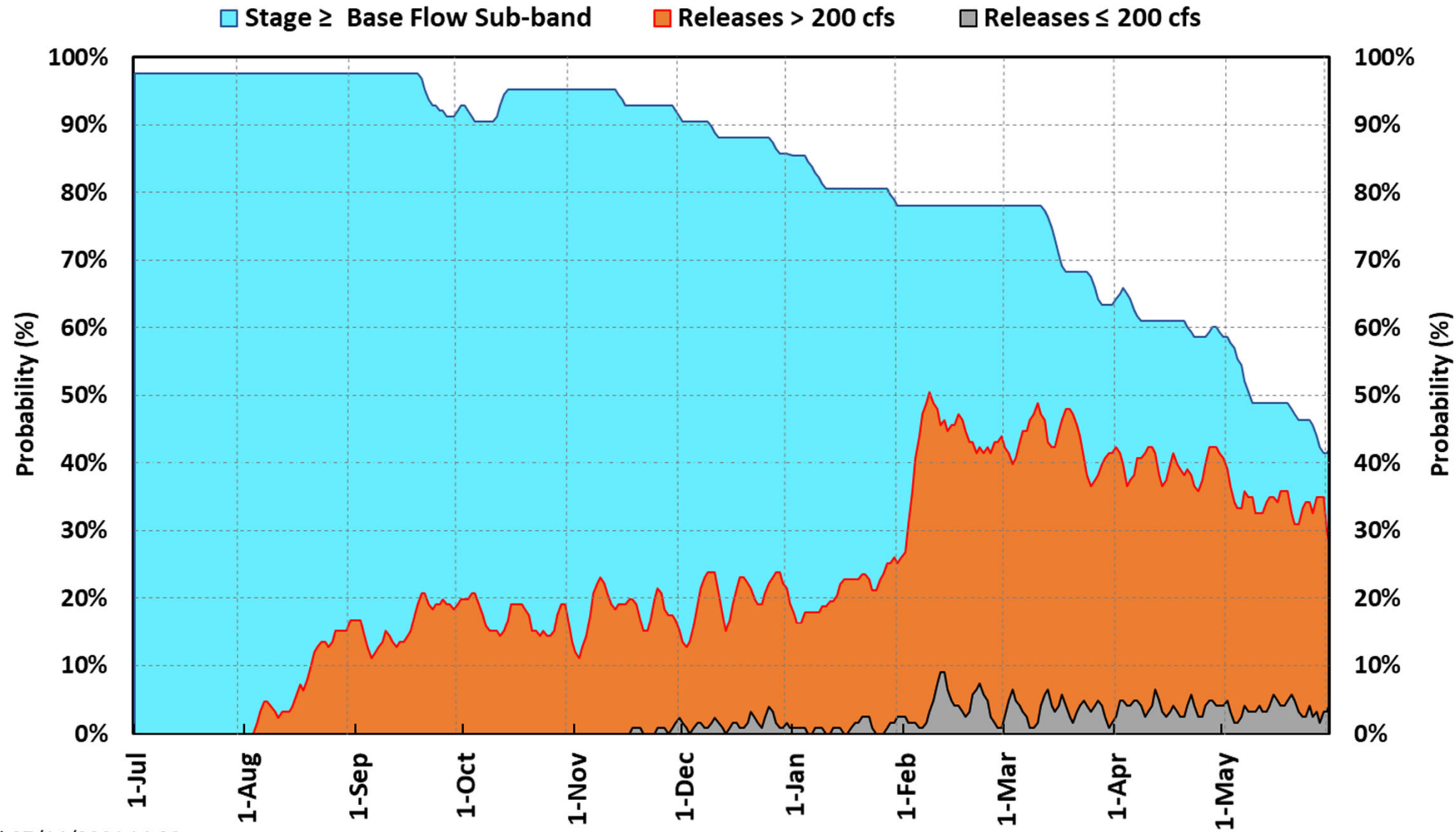
Wed Jul 14 11:16:17 2021

Mid-July 2021 PA - Likelihood of Releases to the Caloosahatchee Estuary



Wed 07/14/2021 14:29

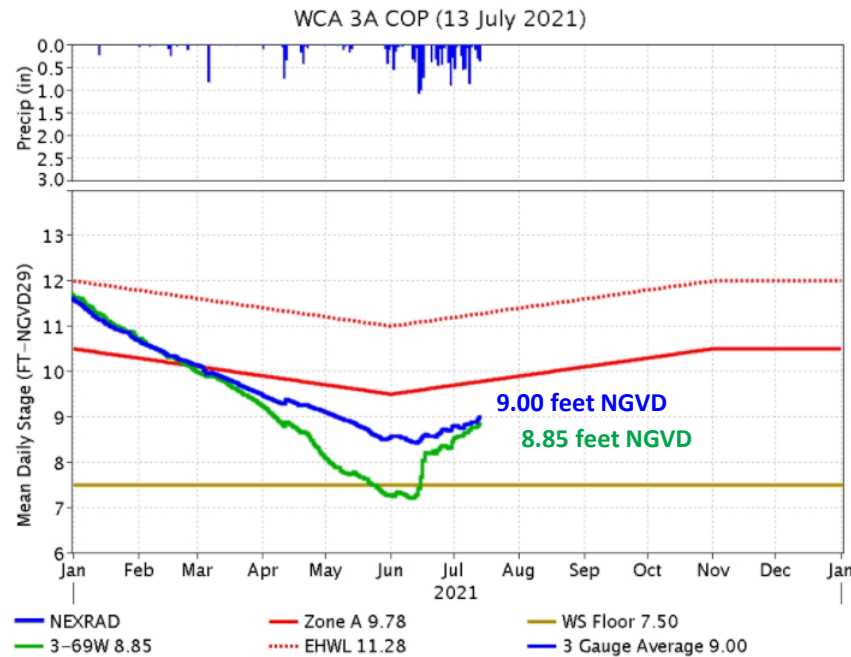
Mid-July 2021 PA - Likelihood of Releases to the St. Lucie Estuary



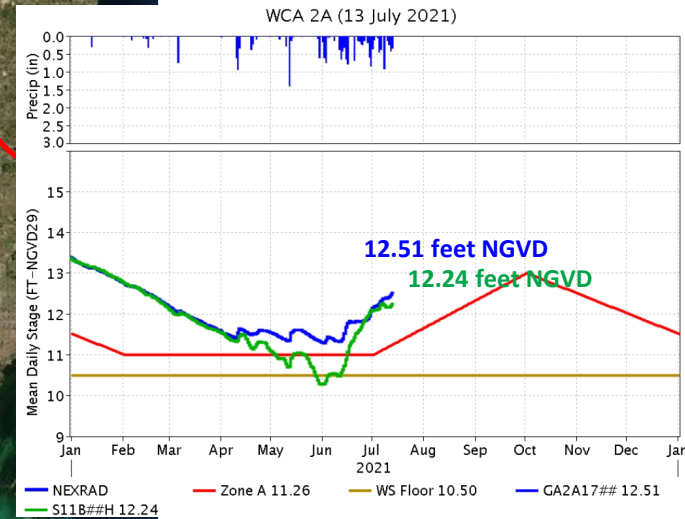
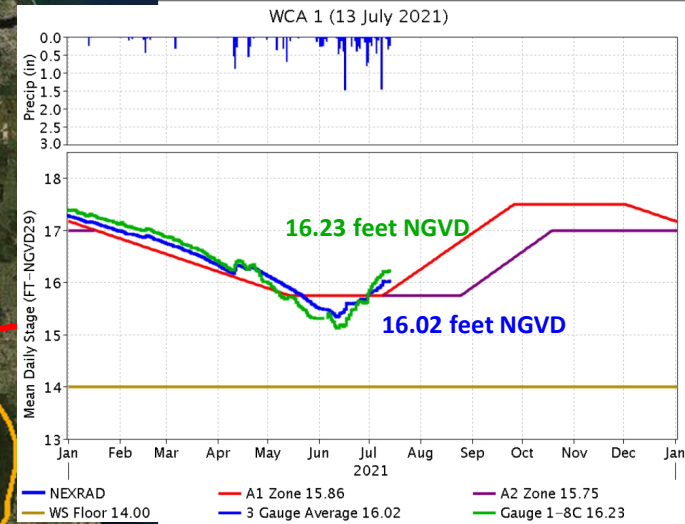
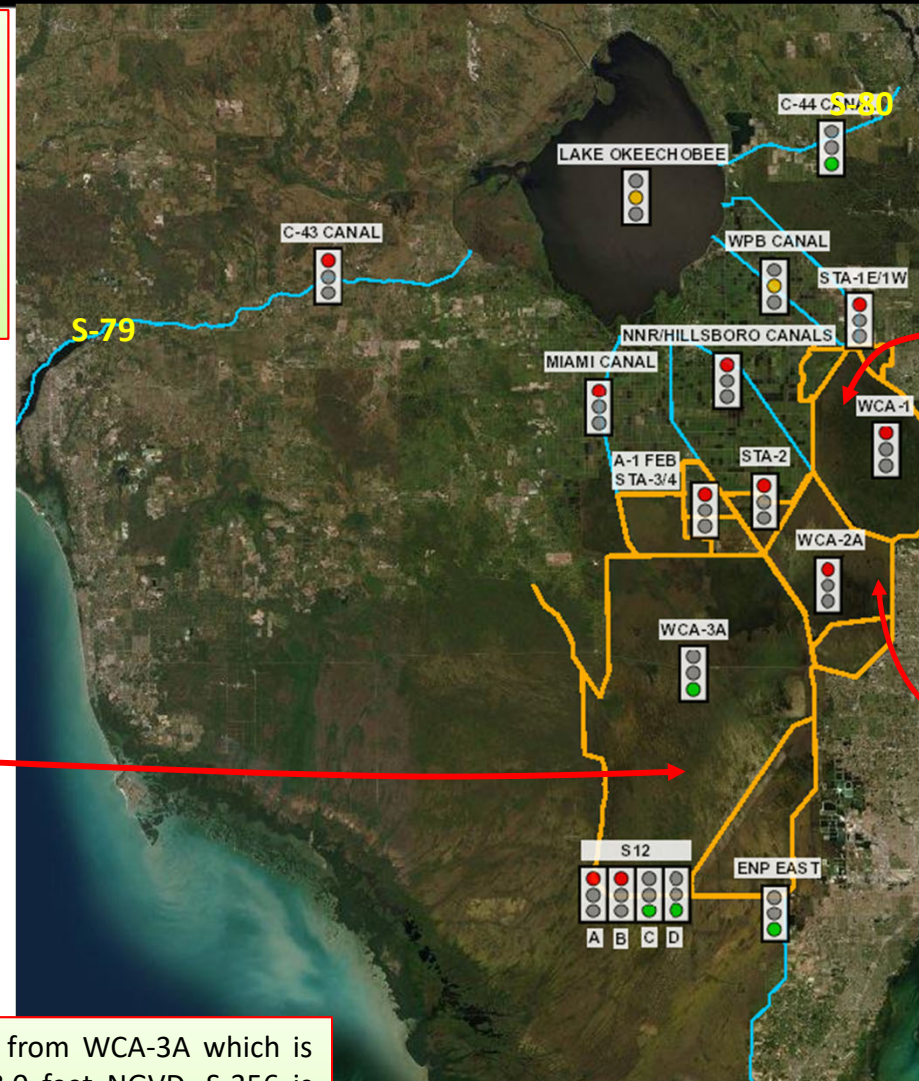
Wed 07/14/2021 14:29

Presenter: John Mitnik

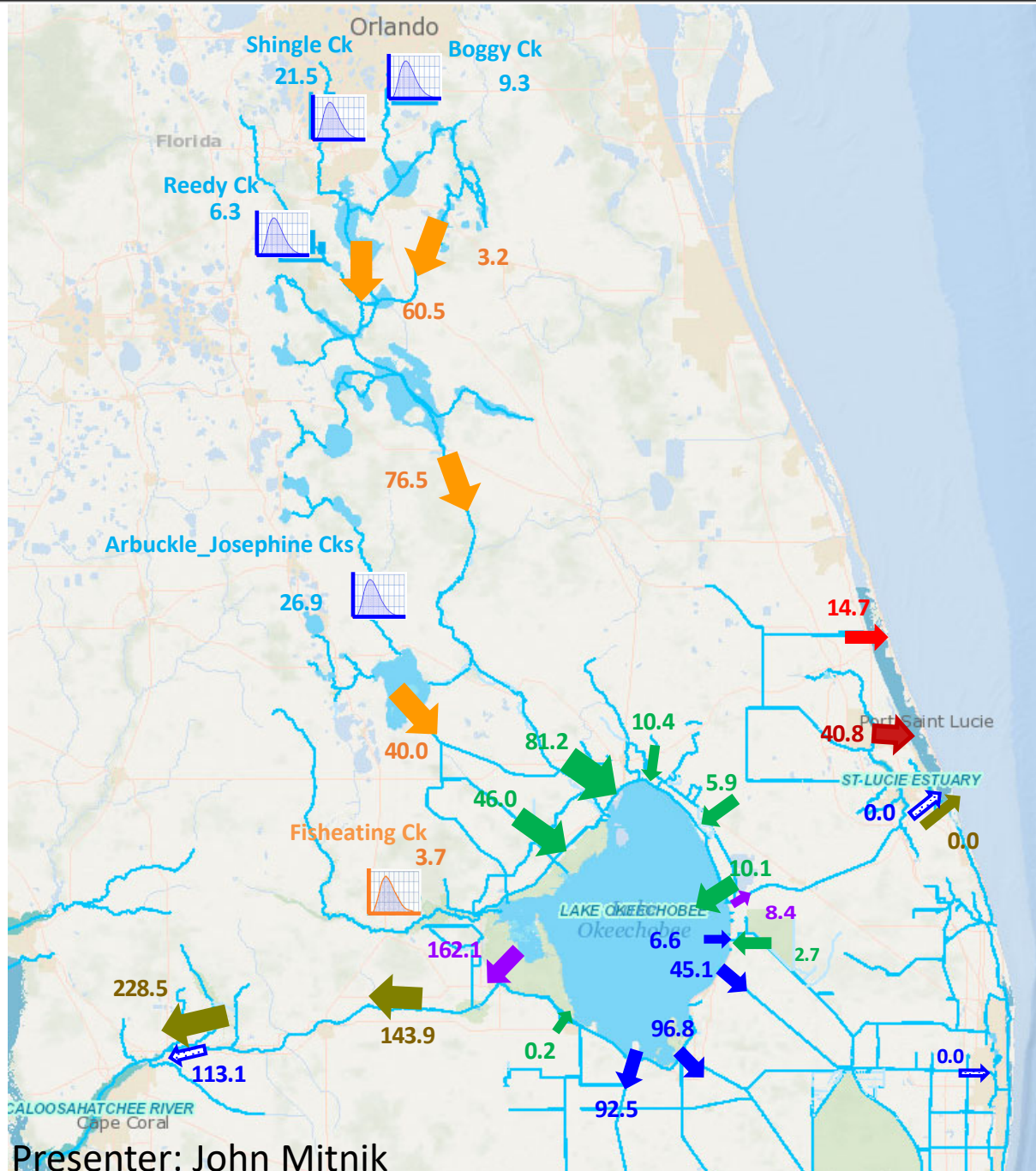
Lake Okeechobee stage is in the Base Flow Sub-band of LORS-2008 Regulation schedule. LORS release guidance suggest: Up to Maximum Practicable to the WCAs if desirable or with minimum Everglades impact; otherwise, no releases to WCAs. For Estuaries, up to 450 cfs at S-79 and up to 200 cfs at S-80. The SFWMD's Lake Okeechobee Adaptive Protocol's Release Guidance suggests no S-77 release to the Caloosahatchee Estuary unless the Governing Board recommends otherwise.



For this week, Tamiami Trail Flow Formula calls for 735 cfs releases from WCA-3A which is being delivered via S333N and S-12C. Current L-29 stage is below 8.0 feet NGVD. S-356 is pumping since June 16 to maintain canal stages in the L-31N. S-334 had been closed since June 15th. S-331 has been syphoning since June 24, S-173 has been closed since June 24. Currently only S-332D is pumping (started June 16th). S-199/S-200 have been pumping all units since July 1st. S-18C has been discharging since June 16 and S-197 has been closed since December 13, 2020. Closure period for WCA-3A structures ended July 14.



WCA-1 stage is in Zone A1, slightly above of its regulation schedule; WCA-2A stage is in Zone A and above its regulation schedule; WCA-3A stage is in Zone B, below its regulation schedule. S-12A closed January 22 and S-12B closed January 29. S-343A & B closed on January 28. S-12D closed May 17th and S-12C opened on June 16th to contribute to Tamiami Trail Flow Formula release. S-11's are open since June 30th and discharging in average about 2,700 cfs. S-10's are closed. S12-D will reopen by July 23.









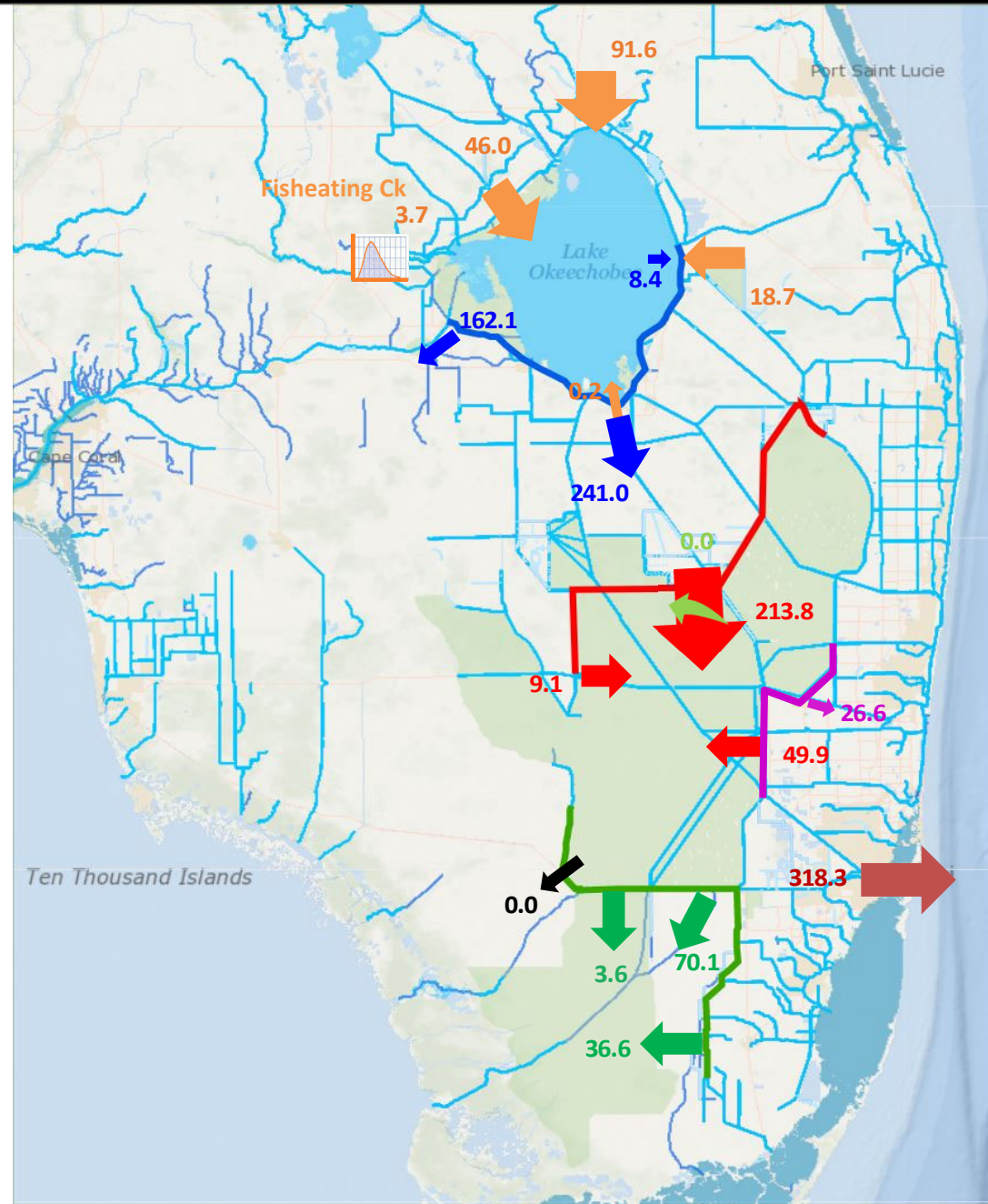
SFWMD – Selected Release Volumes for the Period May 1, 2021 to July 14, 2021 (volumes in 1,000 acre-feet)

Symbol	Description	Volume (1,000 acre- feet)	
		Season to Date	Last Month
	Upper Kissimmee to Lower Kissimmee	76.5	42.2
	Inflows to Lake Okeechobee (including Fisheating Creek)	160.2	121.9
	Lake Releases and Basin Runoff	228.5	94.5
	Lake Releases East and West	170.5	27.8
	Lake Flood Control to Estuaries	113.1	21.9
	Total Lake Releases South	241.0	6.2
	Releases to Indian River Lagoon	14.7	13.8
	Upper East Coast discharges to St. Lucie Estuary	40.8	36.2
	Uncontrolled flows - Creeks (does not include Fisheating Creek)	63.9	52.6

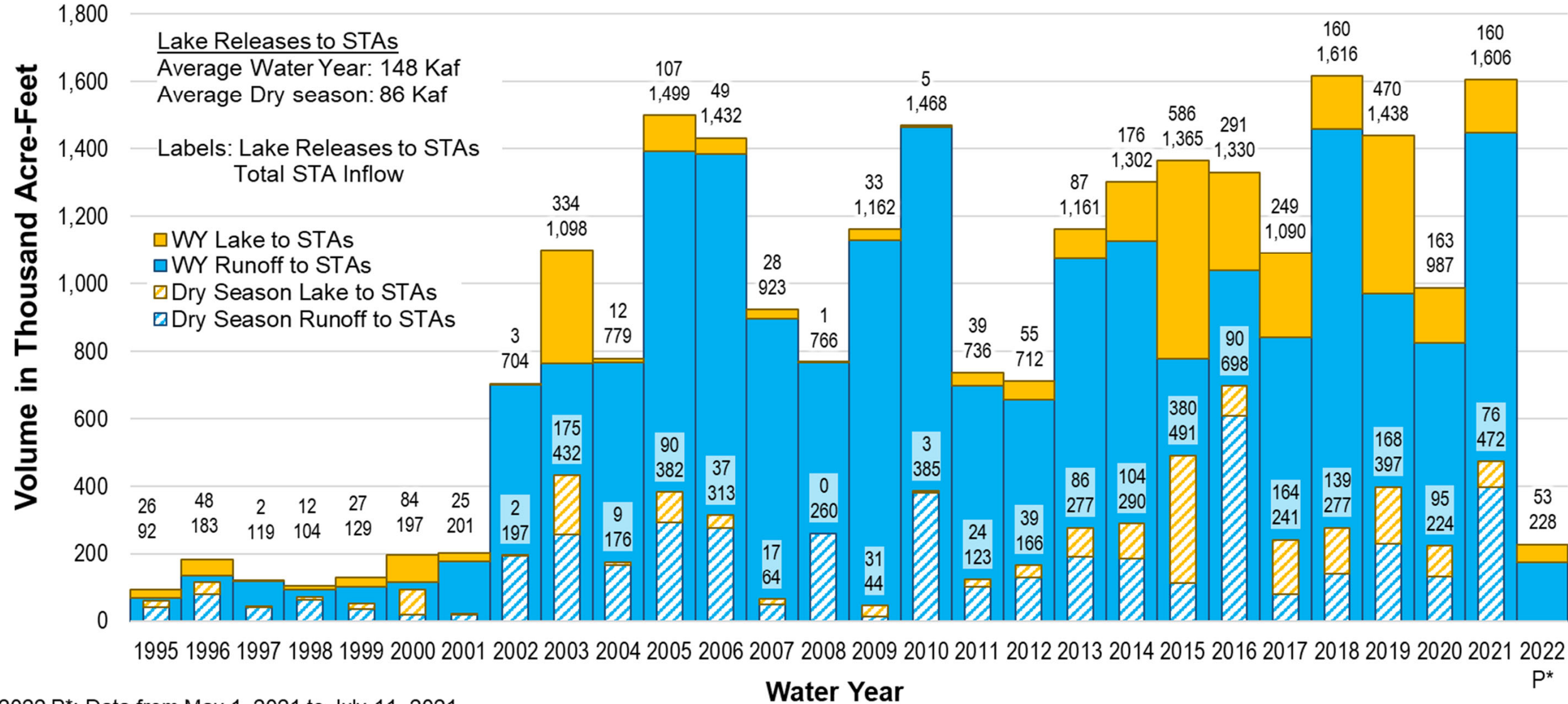
1,000 acre-feet = 325.9 Million Gallons

**SFWMD –Volumes Flowing
Down the System
May 1, 2021 to July 14, 2021**
(volumes in 1,000 acre-feet)

Symbol	Description	Volume (1,000 acre- feet)	
		Season to Date	Last Month
	Lake Okeechobee Inflows	160.2	121.9
	Lake Okeechobee Outflows	411.5	34.0
	WCAs Inflows	272.8	228.1
	ENP / Detention Cell Inflows	110.3	64.0
	WCAs to East	26.6	12.8
	Flows to Intracoastal	318.3	275.3

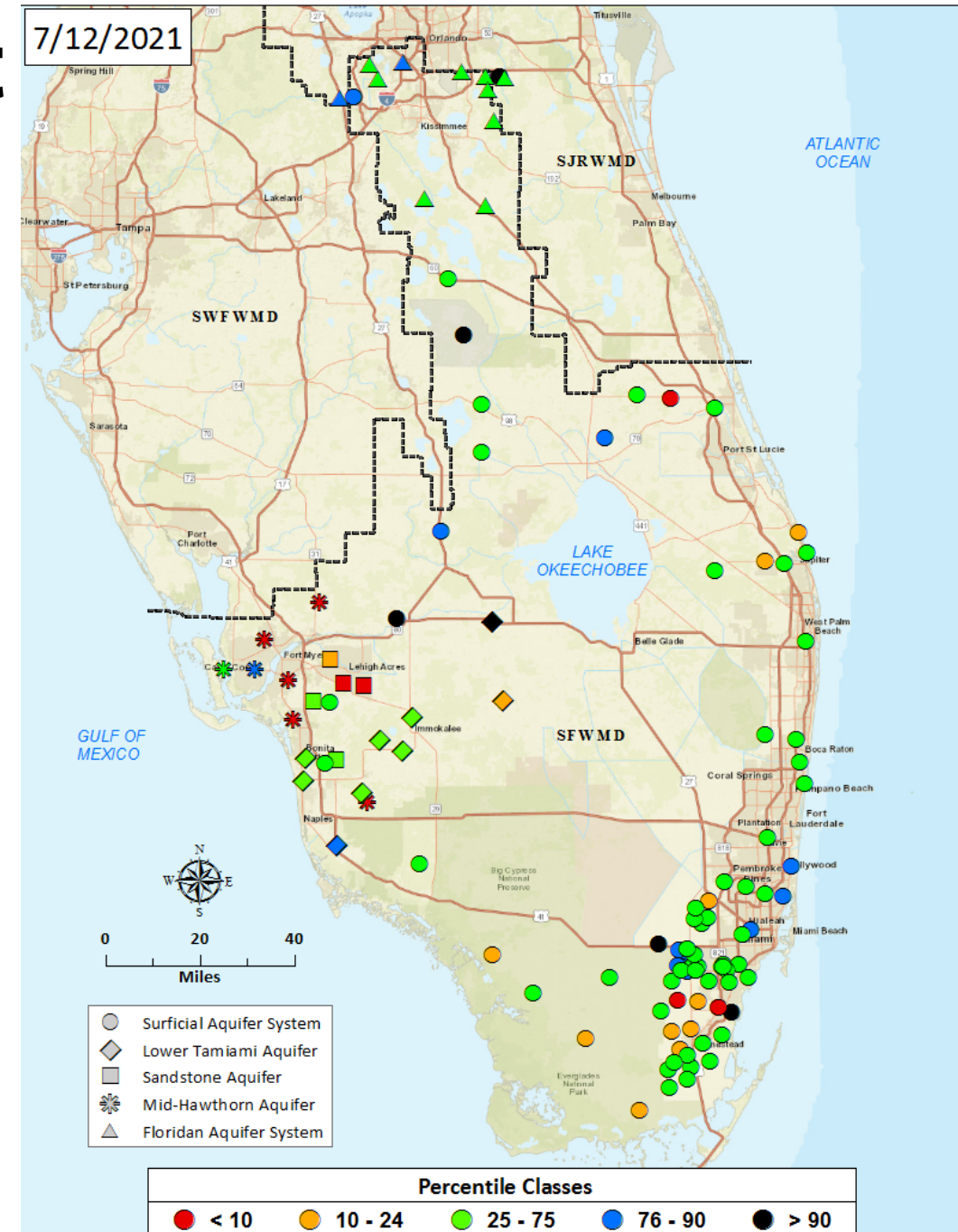


Total STA Inflow and Lake Releases to STAs



Status of Lower West Coast Groundwater Conditions

- Surface and groundwater levels generally increased throughout the District over the last week.
- Most of the USGS real-time wells in the Kissimmee Basin within the District boundaries are at median levels and higher for this time of year.
- Surface and groundwater levels increased in over half of the Lower East Coast stations during the past week.
- Approximately 85% of the Biscayne aquifer wells are at median levels and higher for this time of year. Groundwater levels are on the low side in ENP, WCA-3A, and C-111 Basin.
- Groundwater levels increased in most of the stations on the Lower West Coast over the last seven days.
- Real-time groundwater levels:
 - Each dot represents a monitor well, continuously monitoring water levels.
 - Color coding corresponds to statistical comparison of current water levels compared to historical for this time of year.

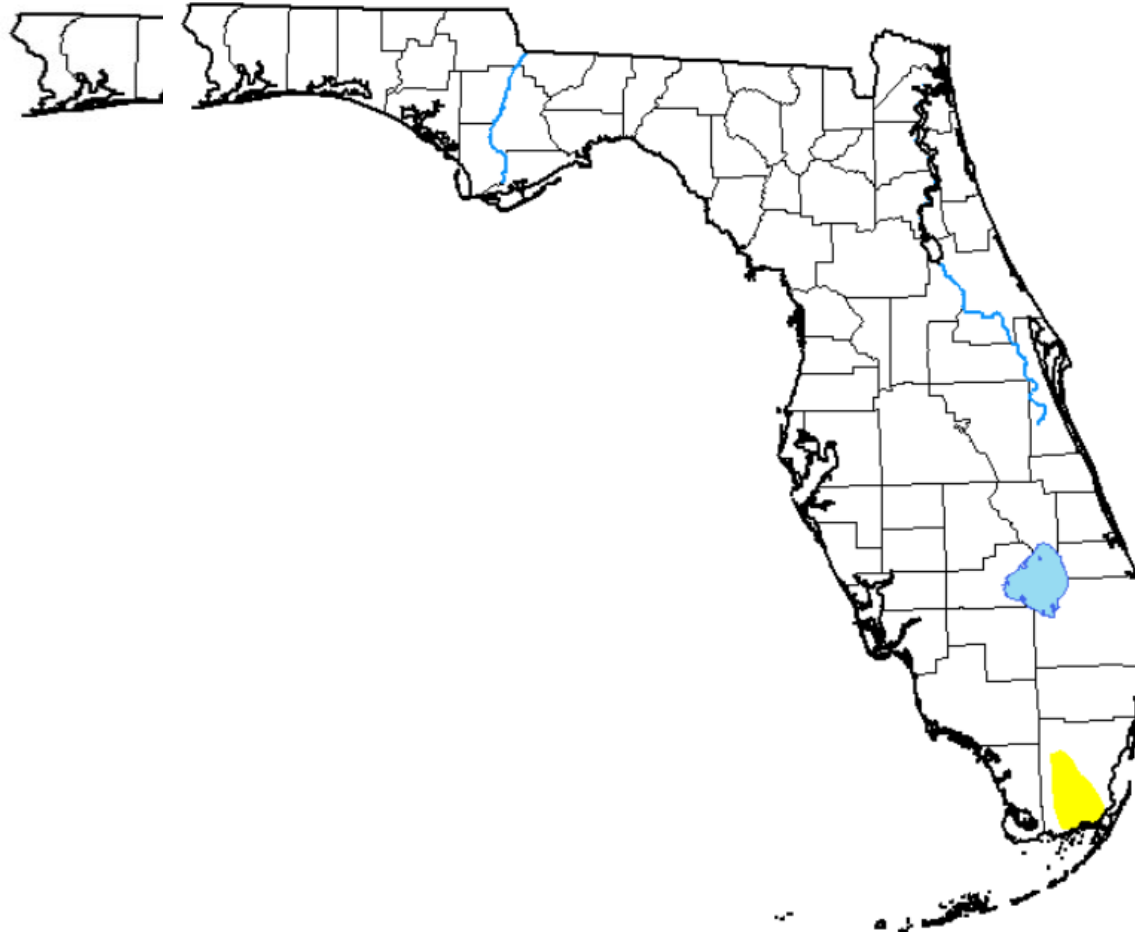


U.S. Drought Monitor Florida

July 6, 2021

(Released Thursday, Jul. 8, 2021)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	D4
Current	98.87	1.13	0.00	0.00	0.00	0.00	0.00
Last Week 06-29-2021	88.65	11.35	0.00	0.00	0.00	0.00	0.00
3 Months Ago 04-06-2021	51.16	48.84	7.87	0.00	0.00	0.00	0.00
Start of Calendar Year 12-29-2020	89.27	10.73	0.00	0.00	0.00	0.00	0.00
Start of Water Year 09-29-2020	100.00	0.00	0.00	0.00	0.00	0.00	0.00
One Year Ago 07-07-2020	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Intensity:

None	D2 Severe Drought	Drought
D0 Abnormally Dry	D3 Extreme Drought	Drought
D1 Moderate Drought	D4 Exceptional Drought	Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Deborah Bathke
National Drought Mitigation Center



droughtmonitor.unl.edu

sfwmd.gov

CPC Precipitation Outlook for South Florida

Last updates issued: June 30, 2021



July 2021



Jul-Sep



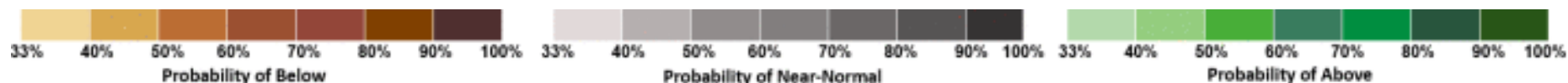
Oct-Dec



Jan-Mar

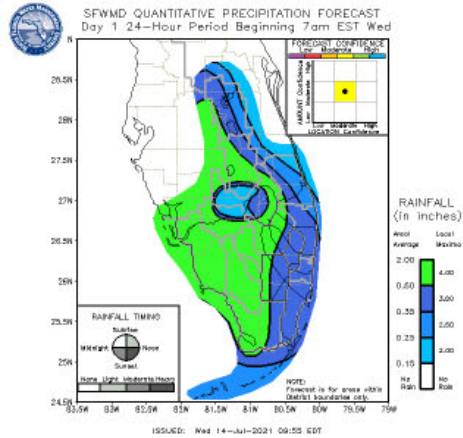
<https://www.cpc.ncep.noaa.gov/products/predictions/30day/>

- The most recent CPC precipitation outlooks for July 2021 and for the 3-month window of Jul-Sep are for equal chances of above-normal, normal, and below-normal rainfall.
- The 3-month windows of Aug-Oct, Sep-Nov and Oct-Dec indicate equal chances of above-normal, normal, and below-normal rainfall.
- The outlooks for the 3-month windows from Nov-Jan and well into the 2021-2022 dry season are for increased chances of below-normal rainfall.

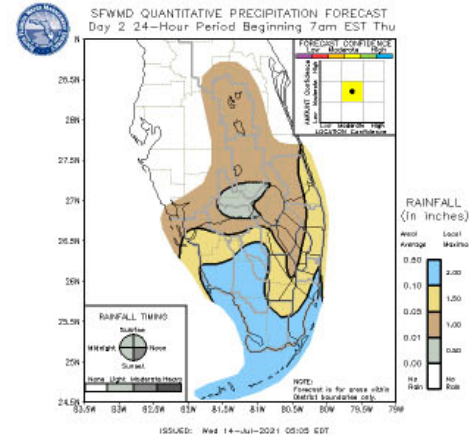


Daily Quantitative Precipitation Forecasts (Posted 07/14/2021)

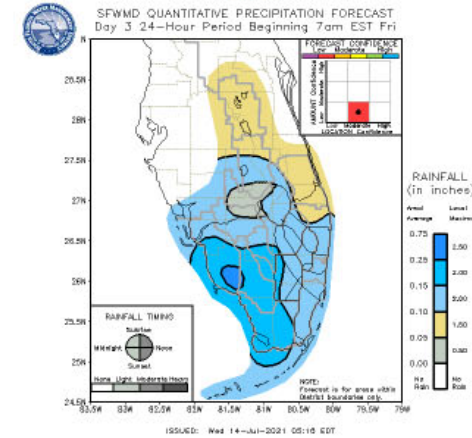
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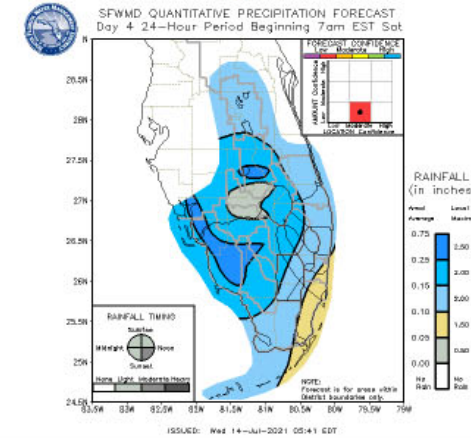
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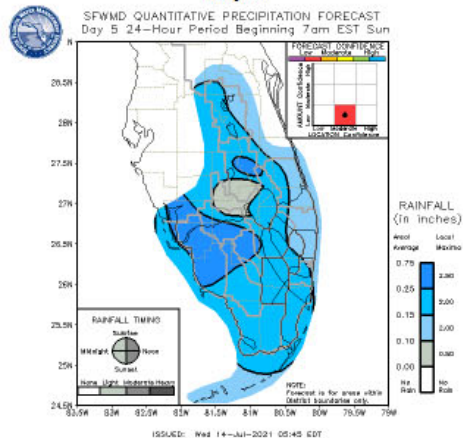
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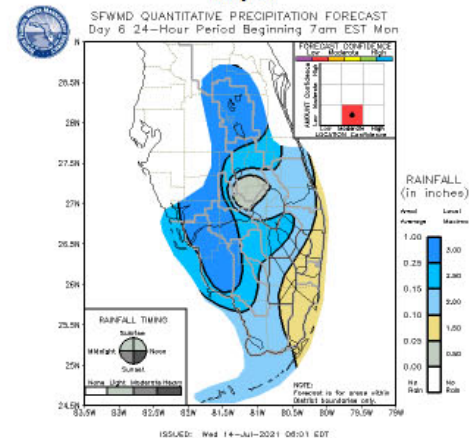
Day 4



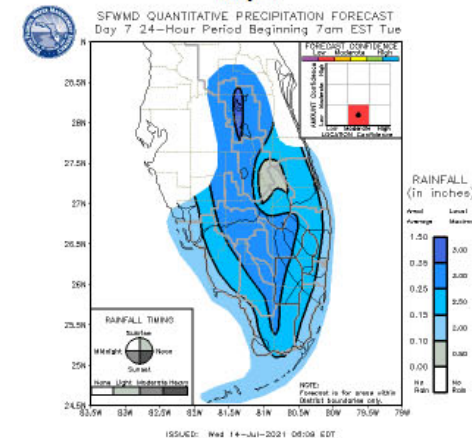
Day 5



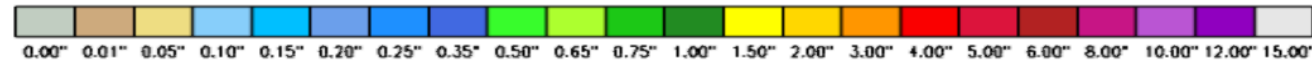
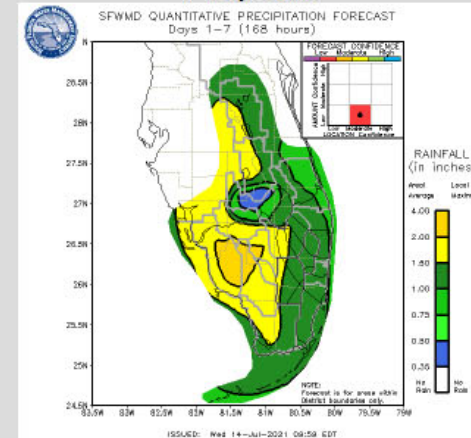
Day 6



Day 7

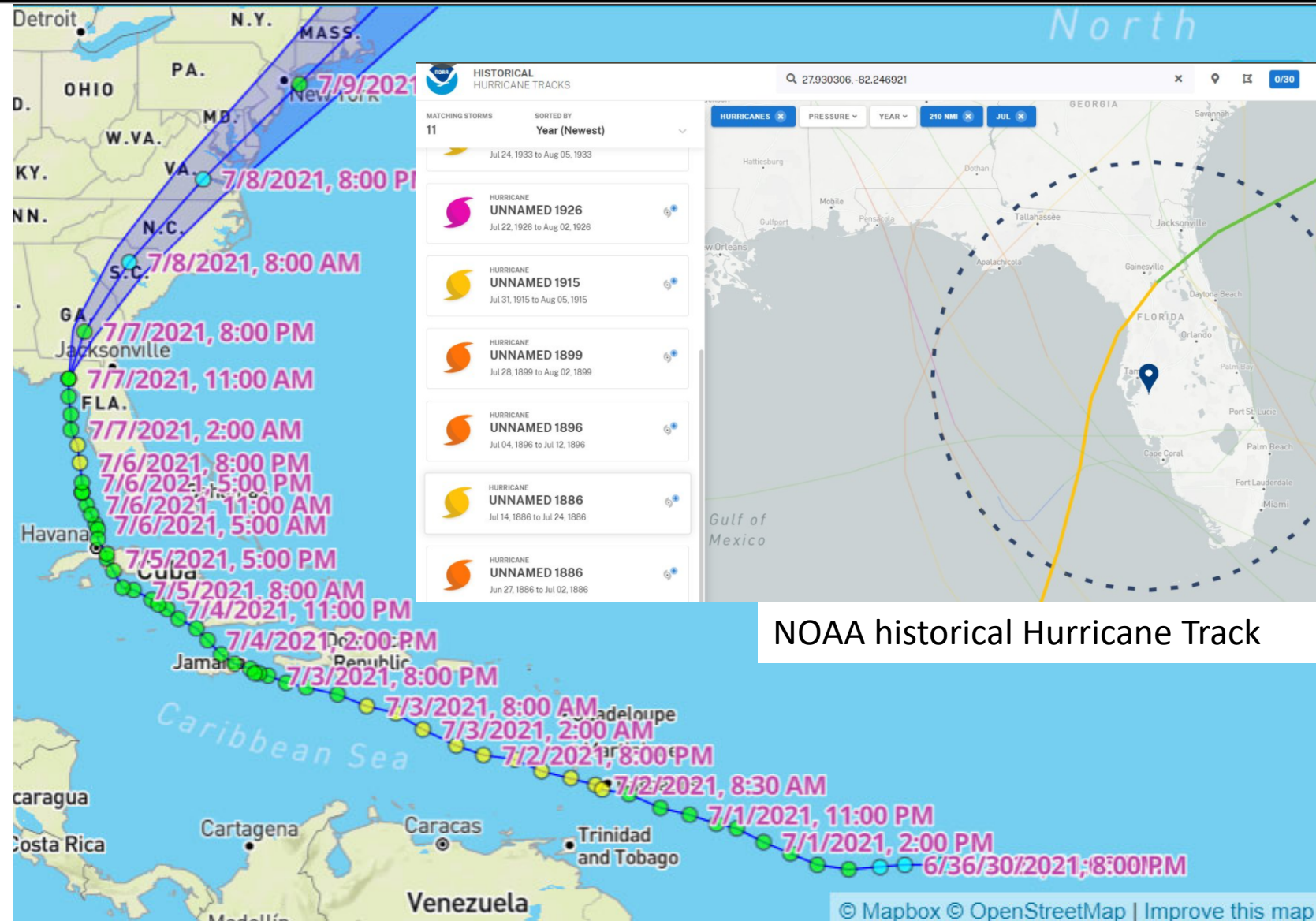


7-Day Total



Tropical Storm Elsa

- TS/Hurricane Elsa, followed a unique path compared to the historical record for July. It's been 134 years since the last hurricane with the same path (July 1886).
- Hurricane Charley in 2004 had the same path but happened on August 9 -15.
- After initially becoming the first hurricane of this year's Atlantic hurricane season, Elsa was downgraded back to a tropical storm on July 3rd; however, it became a hurricane again on July 7th.
- It is an exceptionally rare event for July.

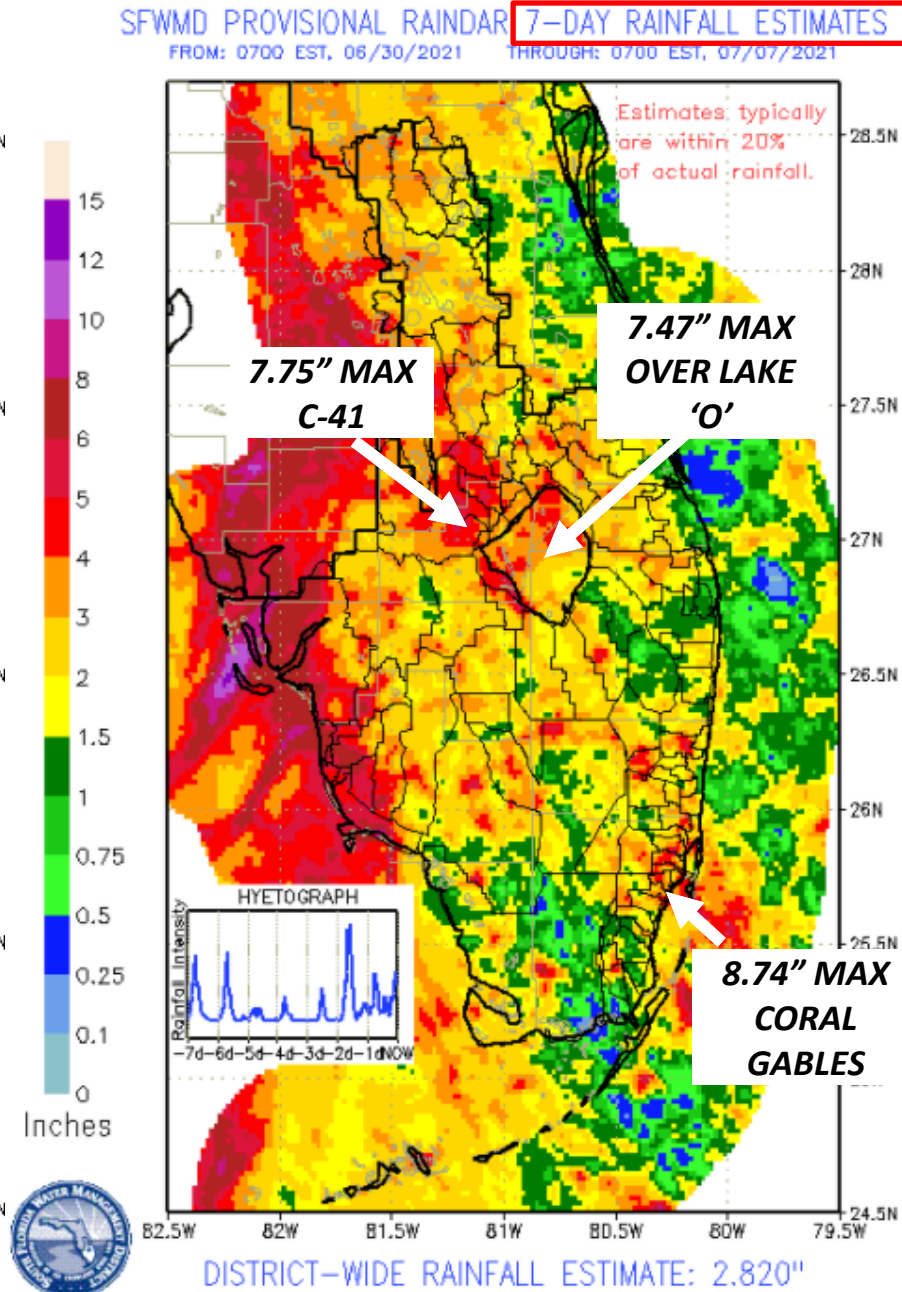
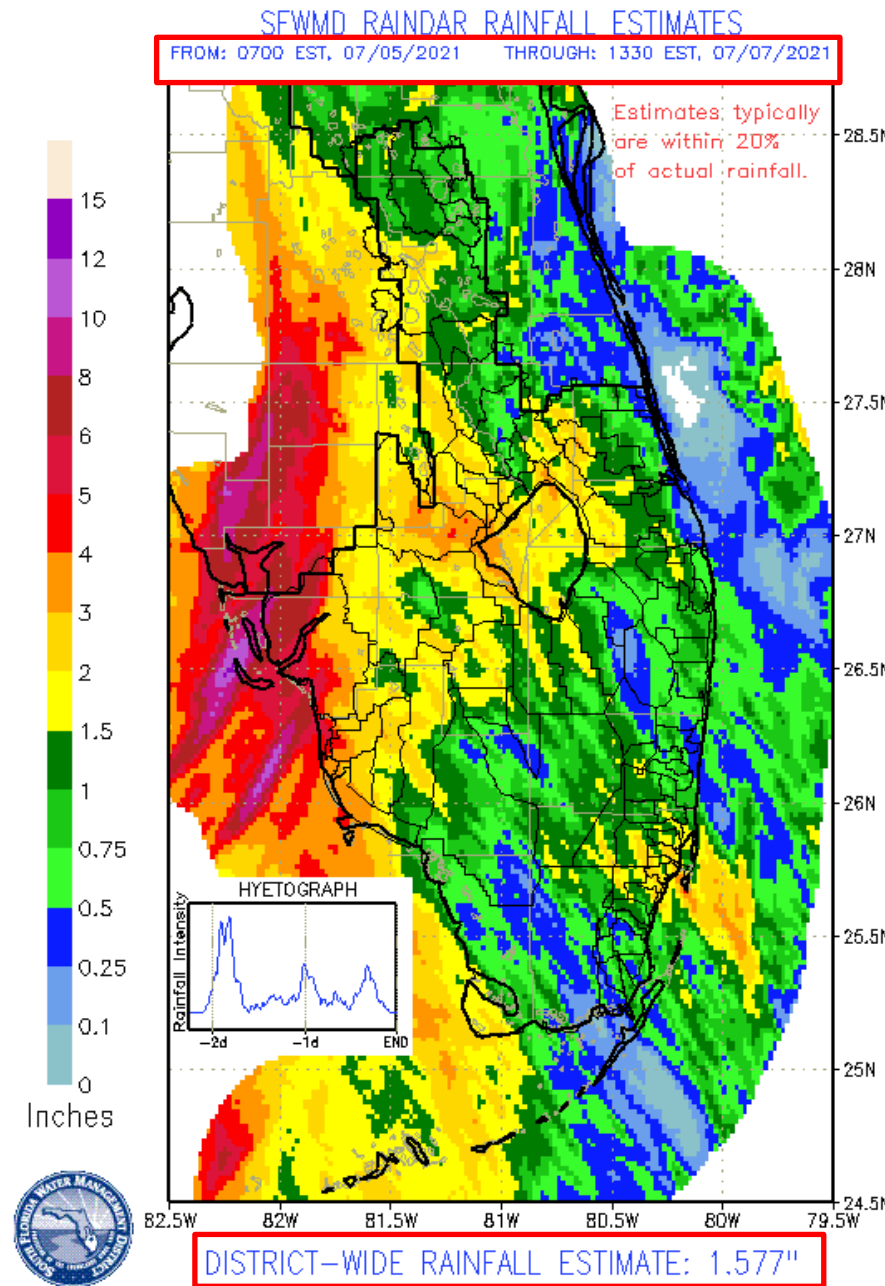


NOAA historical Hurricane Track

[Tropical Storm Elsa Tracker | Weather Underground \(wunderground.com\)](https://wunderground.com/TropicalStormElsaTracker)

Tropical Storm Elsa

- District-wide 7-day rainfall estimate (6/30-7/7): 2.82"
- Elsa mostly affected the District on 5-6 July.
 - The storm total rainfall (7/5-7/7) was 1.6".
- Wettest week-long period this wet season.
- Much above normal around & over Lake Ok.
- Pre-storm drawdown operations in the SDCS in Miami-Dade County initiated July 2nd.



SFWMD Provisional Raindar 30-day Basin Rainfall Estimates Map (6/8-7/8)

Basins with highest total rain for the period of July 5 through July 7:

- **Southwest coast:** 3.35"
- **Lake Ok:** 2.23"
- **E. Caloosahatchee:** 1.8"
- **Lower Kiss:** 1.6"

Highest estimated rainfall:

- **C-11 West:** Avg 13"; Max 17"
- **C-9 East:** Avg 12"; Max 15"
- **Golden Gate Main:** Avg 14"; Max 18"
- **Tidal Caloosahatchee:** Avg 11"; Max 19"
- **Lake Ok:** Avg 9"; Max 14"
- **S-133:** Avg 11"; Max 13"
- **Lake Toho:** Avg 10"; Max 15"

