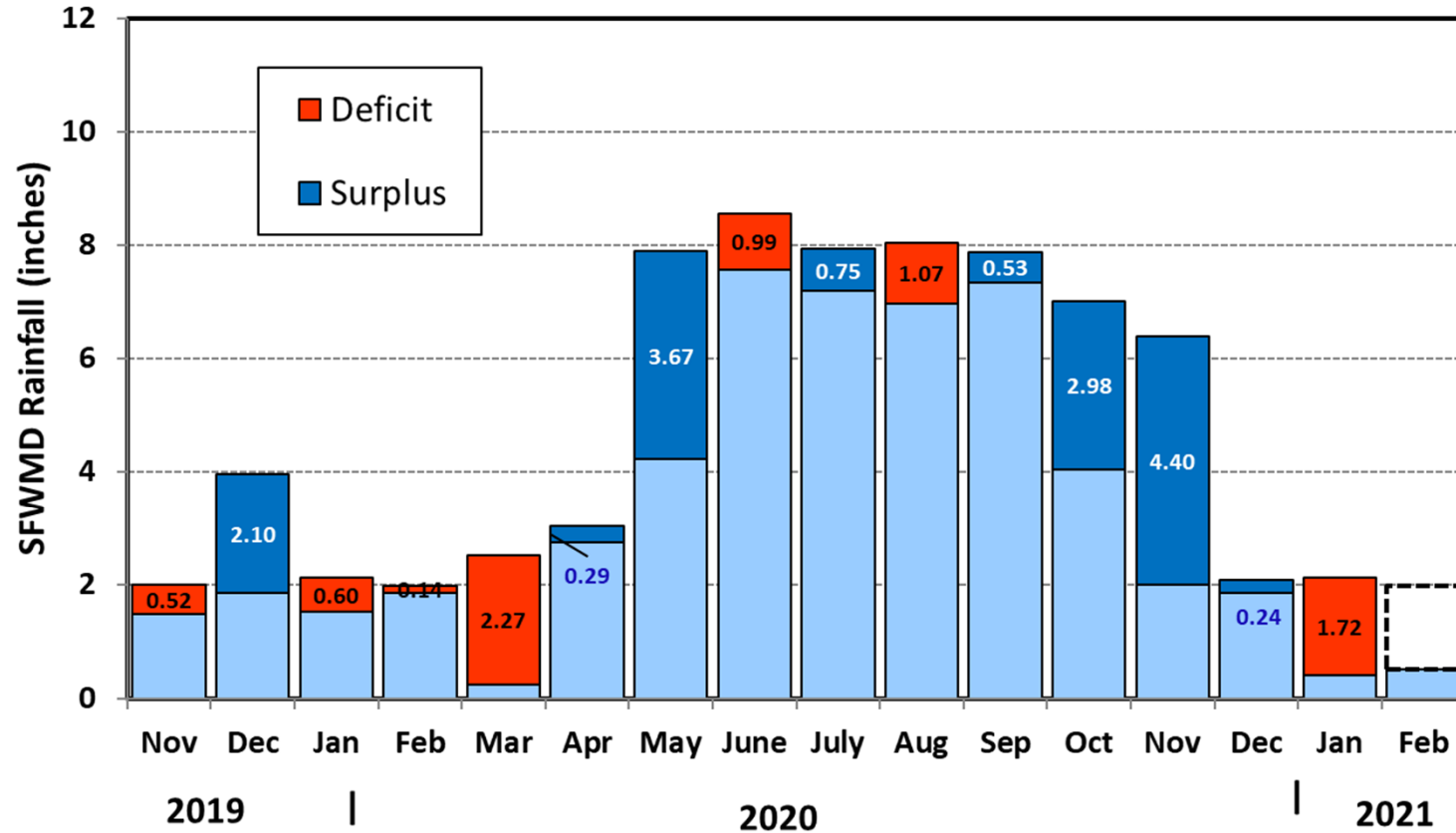


# Water Conditions Summary

**South Florida Water Management District  
Governing Board Meeting  
February 11, 2021**

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

## SFWMD Rainfall Distribution Comparison (Nov 2019 - Feb 2021)



### District Wide Average Rainfall

Month	Average (inches)
Jan	2.12
Feb	1.98
Mar	2.51
Apr	2.74
May	4.21
Jun	8.55
Jul	7.18
Aug	8.03
Sep	7.34
Oct	4.03
Nov	1.99
Dec	1.84

Wet  
Season

#### 2019-2020 DRY SEASON.

- Sep. 18, 2019 to May 15, 2020, 73% or Normal
- Driest March in 89 years of record
- May was ~ 187% of normal

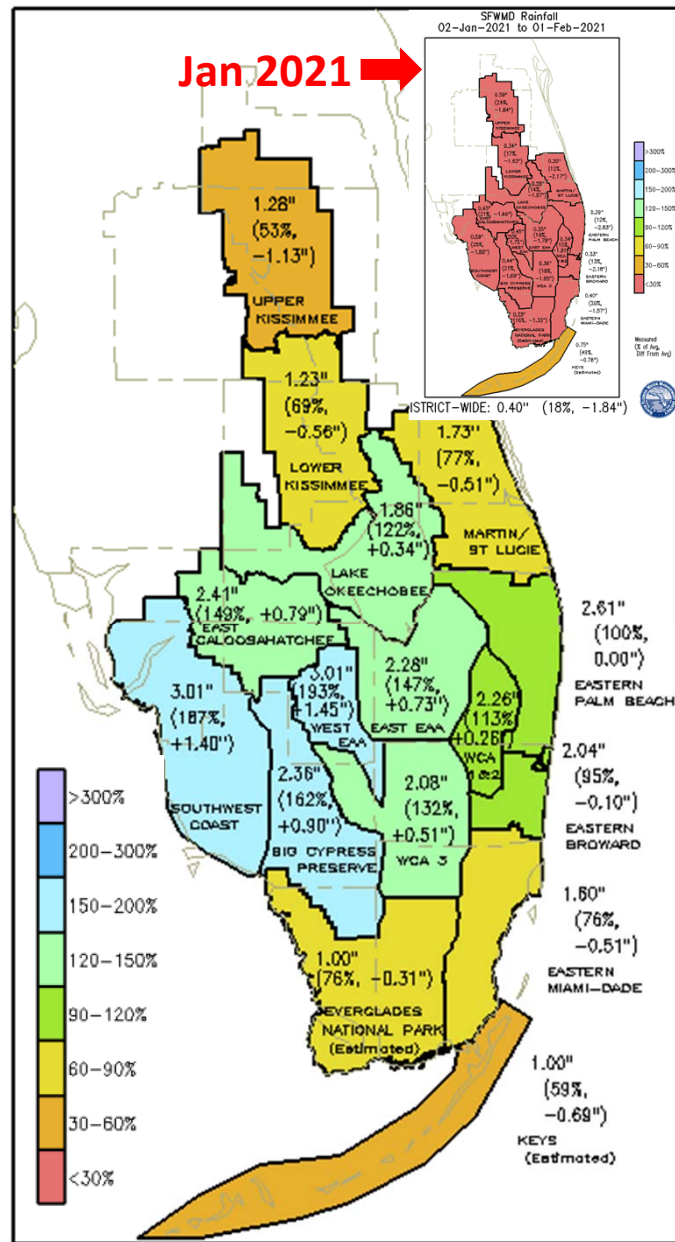
#### 2020 WET SEASON

- 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
- Dec rainfall near normal, with most rainfall falling the first week of the month
- Jan was extremely dry in the bottom 10% of POR

Jan 2021 →

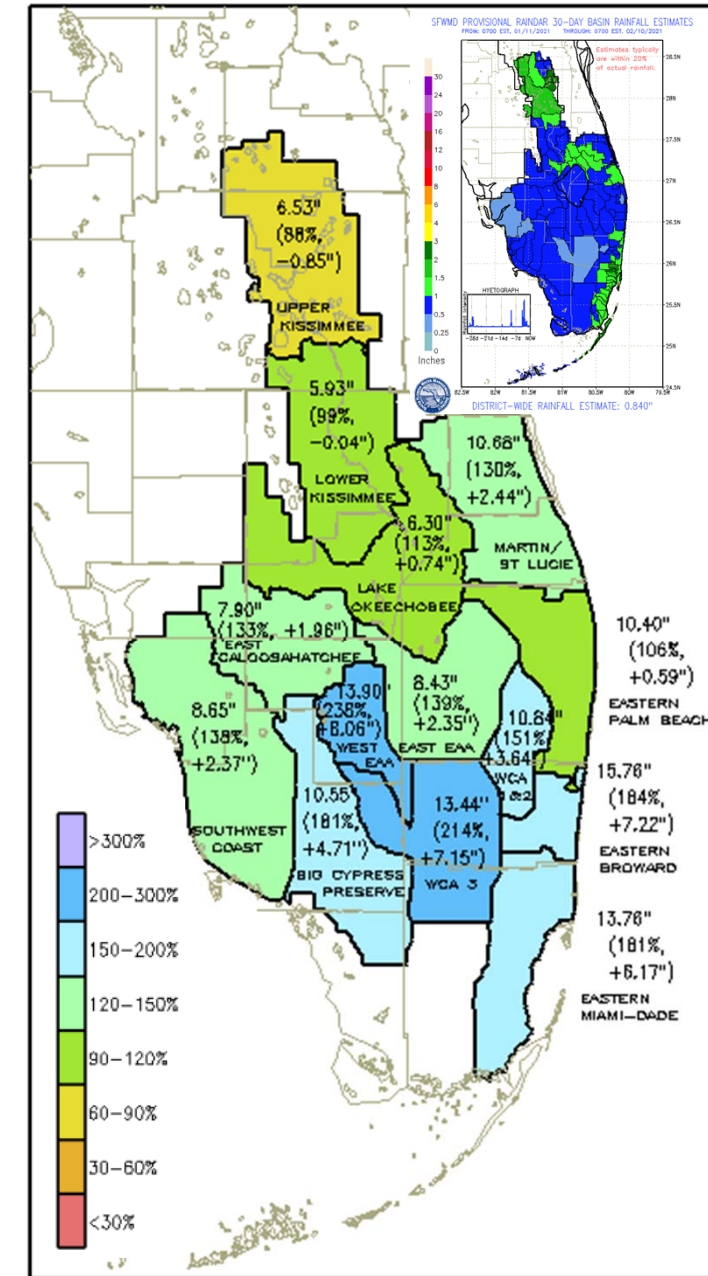


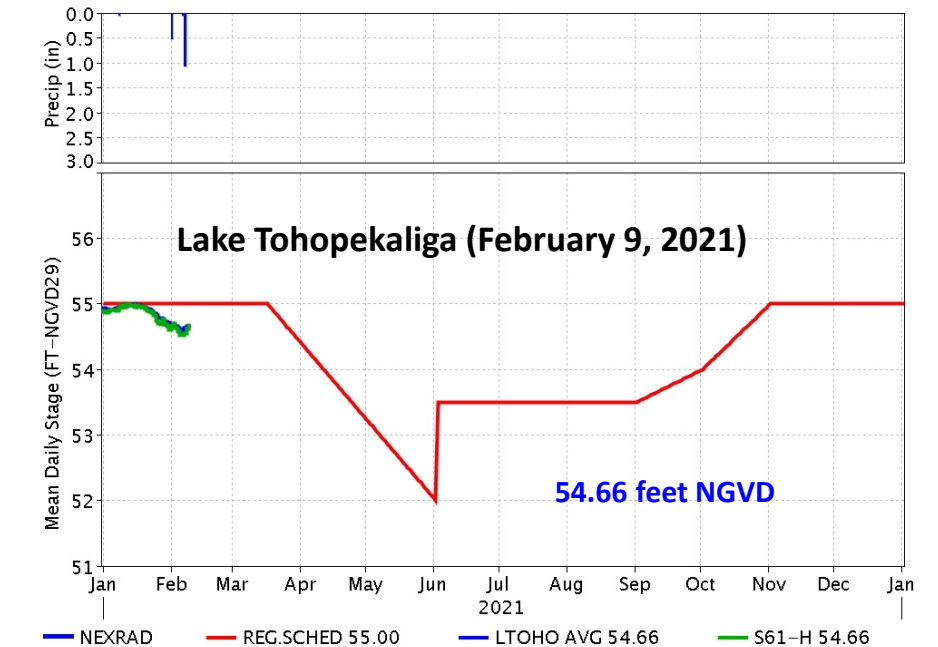
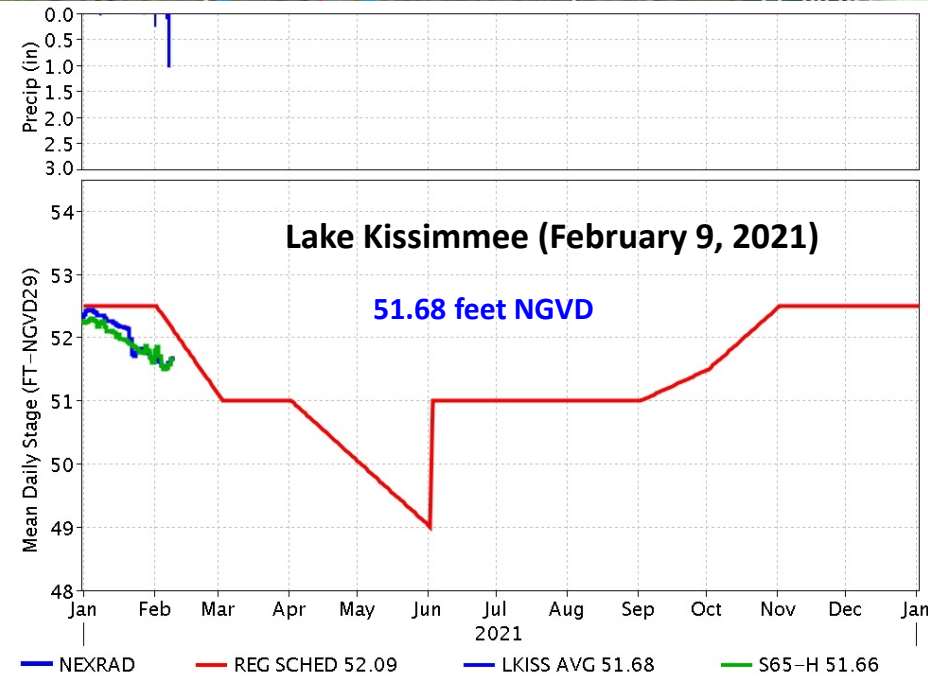
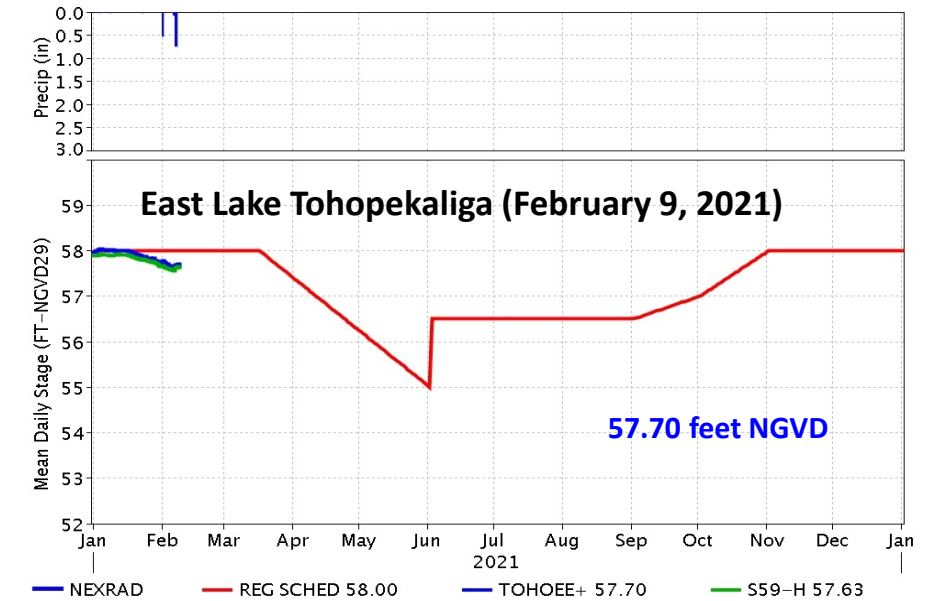
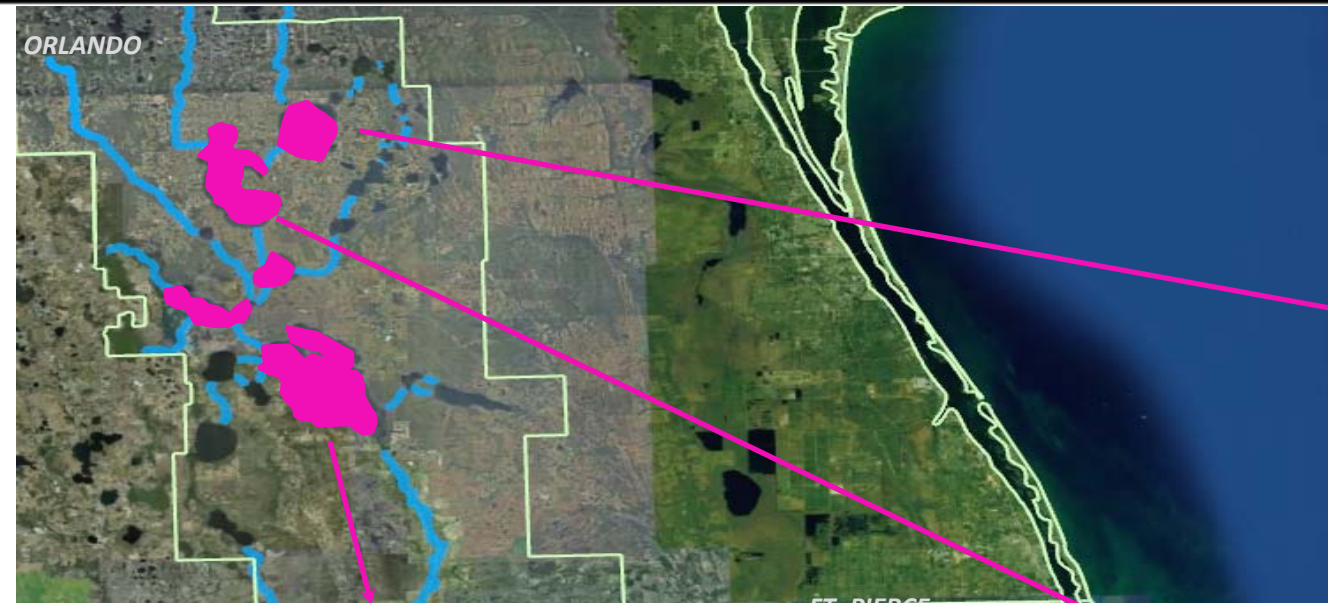
## Dec 2020 Rainfall DISTRICT-WIDE: 2.08"

- 124% of average, +0.24" surplus
- Higher rainfall fell in central portion of the District
- Most rainfall fell the first week of December

## Dry Season Rainfall 02 Nov - Present DISTRICT-WIDE: ~9.38"

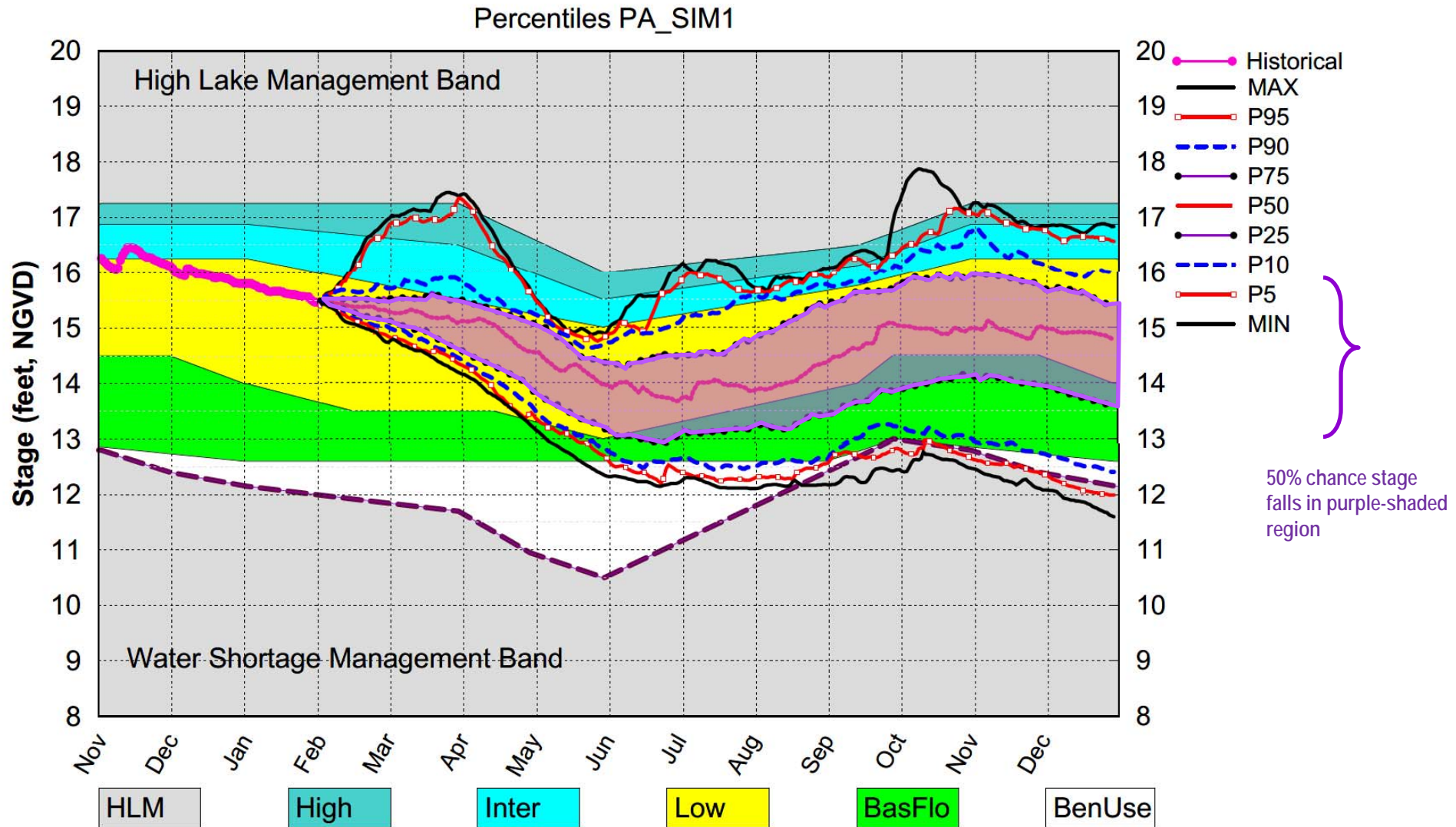
- 140 % of average, + 2.66" surplus
- Rainfall increases from north to south
- Rainfall amounts mainly generated Nov and Dec 2020
- Very little rain the last 30 days (~ 0.39")







## Lake Okeechobee SFWMM Feb 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

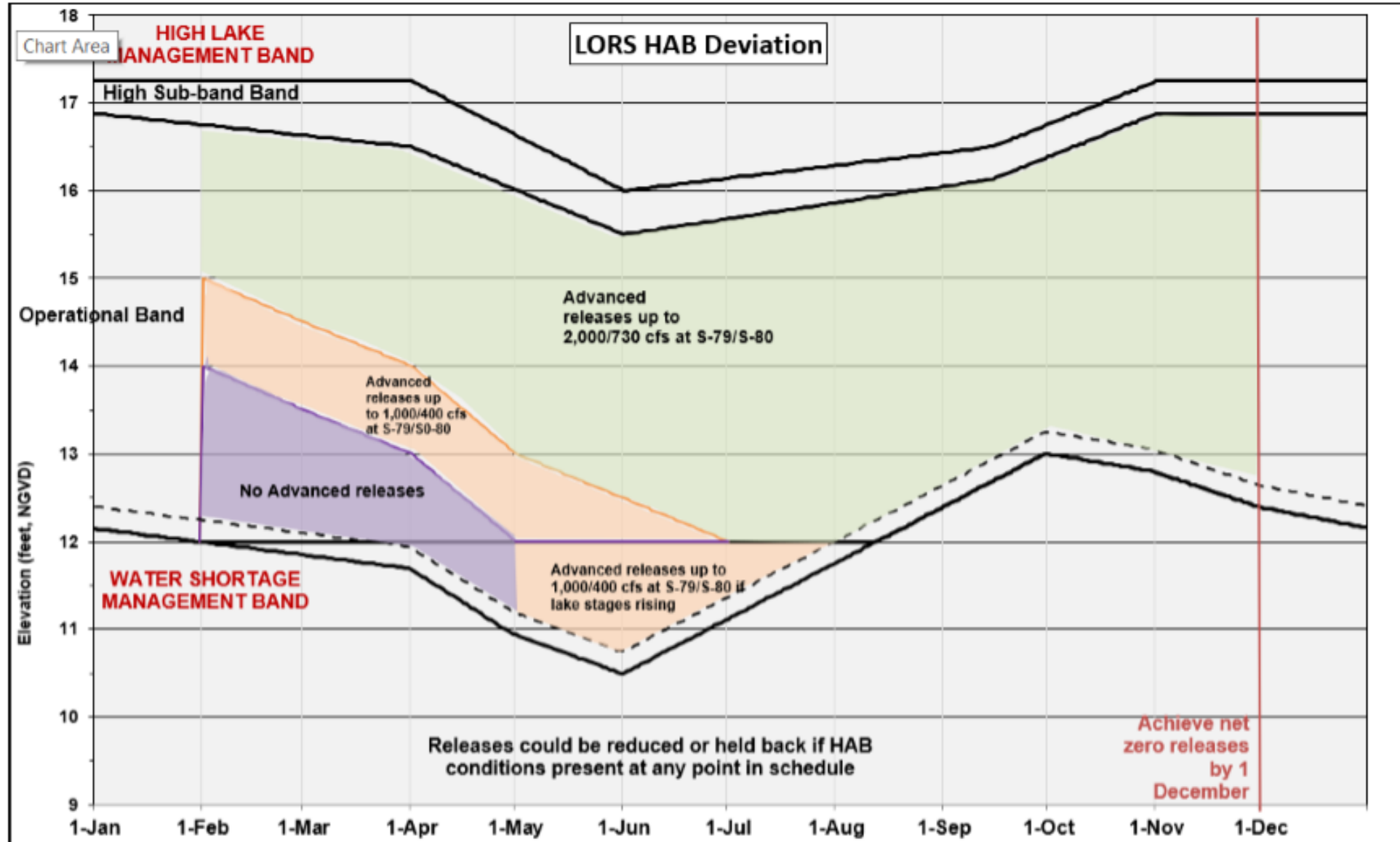
Fri Feb 5 11:50:57 2021

Presenter: John Mitnik

# Lake Okeechobee HAB Deviation

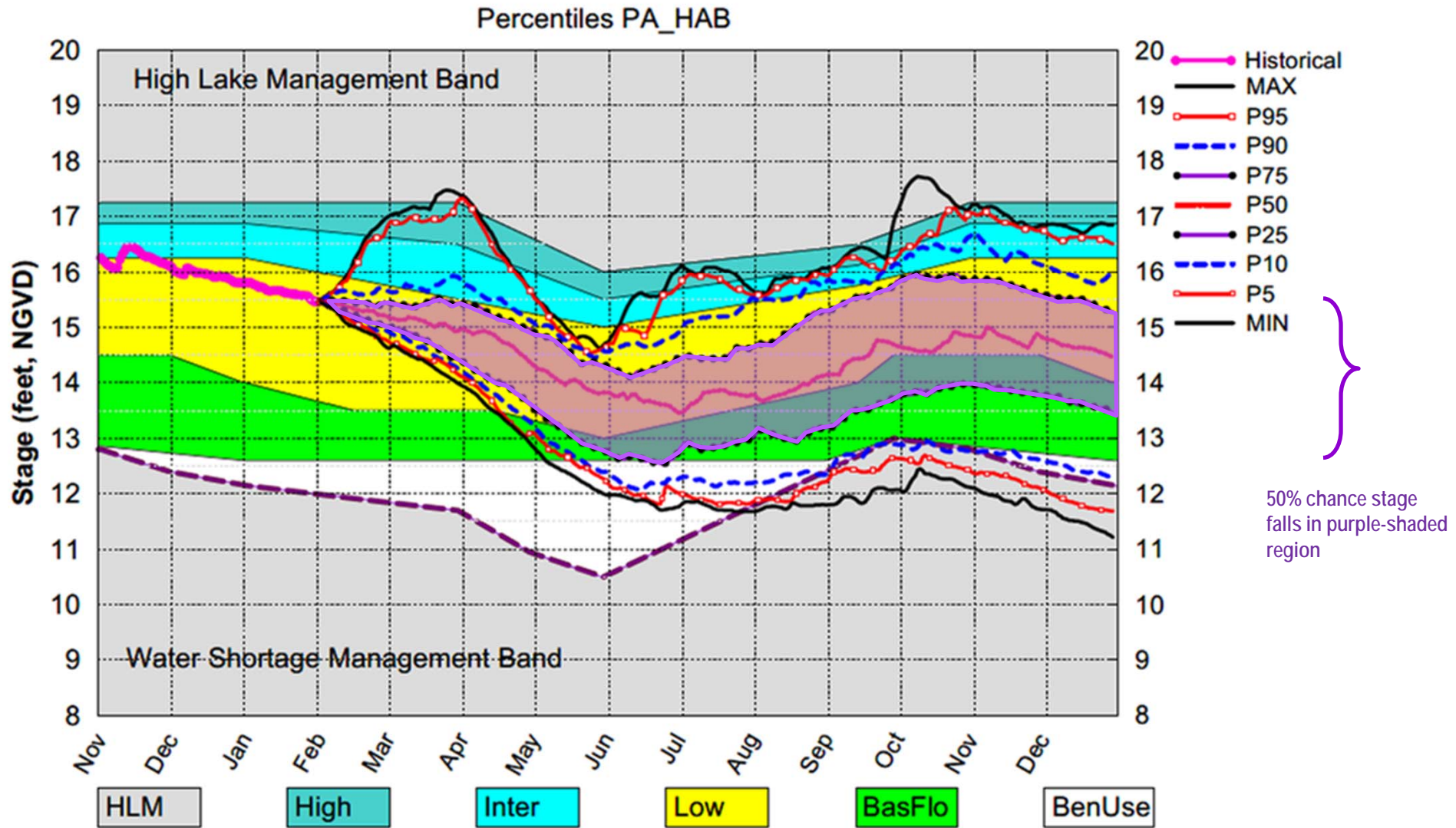
- Compare LORS 2008 to HAB Deviation Operations
- The starting point for this simulation is the Feb 1, 2021 DPA
- Simulation is approximate – Not possible to model every detail
- Switch from 650 cfs to 1,500 cfs any time LORS Part D falls in one of the Base Flow Boxes
- If Adaptive Protocols calls for releases, increase releases in the same way
- Attempt to balance with releases during the wet season

# Lake Okeechobee HAB Deviation





# Lake Okeechobee SFWMM Feb 2021 Position Analysis



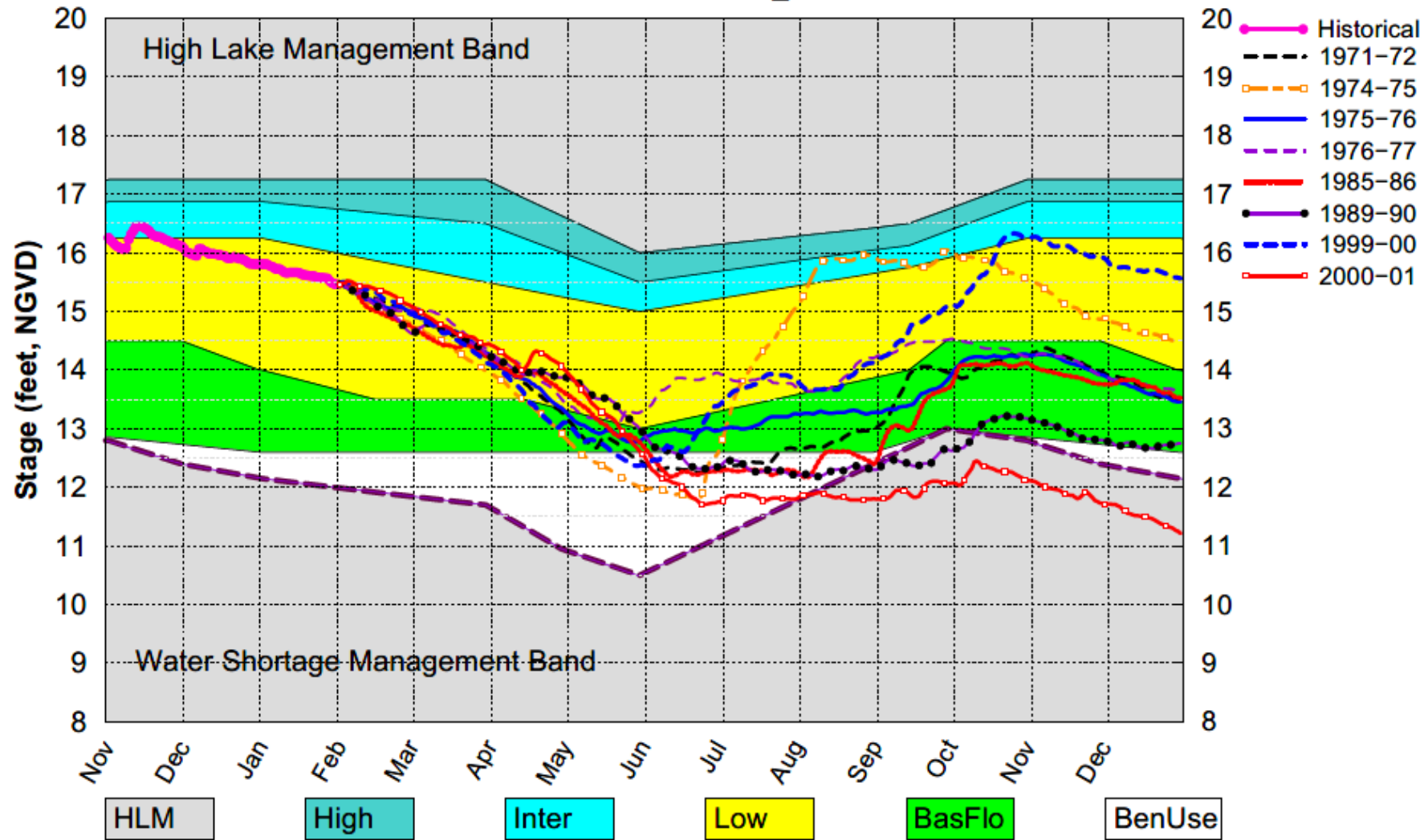
(See assumptions on the Position Analysis Results website)

Wed Feb 10 15:05:52 2021



# Lake Okeechobee SFWMM Feb 2021 Position Analysis

All La Nina Years Plot PA\_HAB



(See assumptions on the Position Analysis Results website)

Wed Feb 10 15:06:24 2021

Presenter: John Mitnik

# Lake Okeechobee System Operating Manual Update

## Conceptual Plan Evaluation

- 120,000 model runs conducted
- Narrowed to 27,000 model runs through a pareto analysis
- Corps received feedback from Project Delivery Team, stakeholders and public on the 120,000 and 27,000 runs
- The Project Delivery Team identified the top 3 plans for each sub-objective based on performance
- Corps examined the operational details of top 3 plans for each sub-objective and identified 1 representative plan for each sub-objective to further evaluate in Iteration 1

### LOSOM Sub-Objectives

1A Manage risk to public health and safety - **dam safety\***

1B Manage risk to public health and safety - **algal bloom risk in Lake Okeechobee\*\***

1C Manage risk to public health and safety - **algal bloom risk in Northern Estuaries**

2A Maintain congressionally authorized project purposes of **navigation**

2B Maintain congressionally authorized project purposes of **recreation**

2C Maintain congressionally authorized project purposes of **flood control\***

3 Improve **water supply** performance

4A Enhance **ecology in Lake Okeechobee**

4B Enhance **ecology in Caloosahatchee Estuary**

4C Enhance **ecology in St. Lucie Estuary**

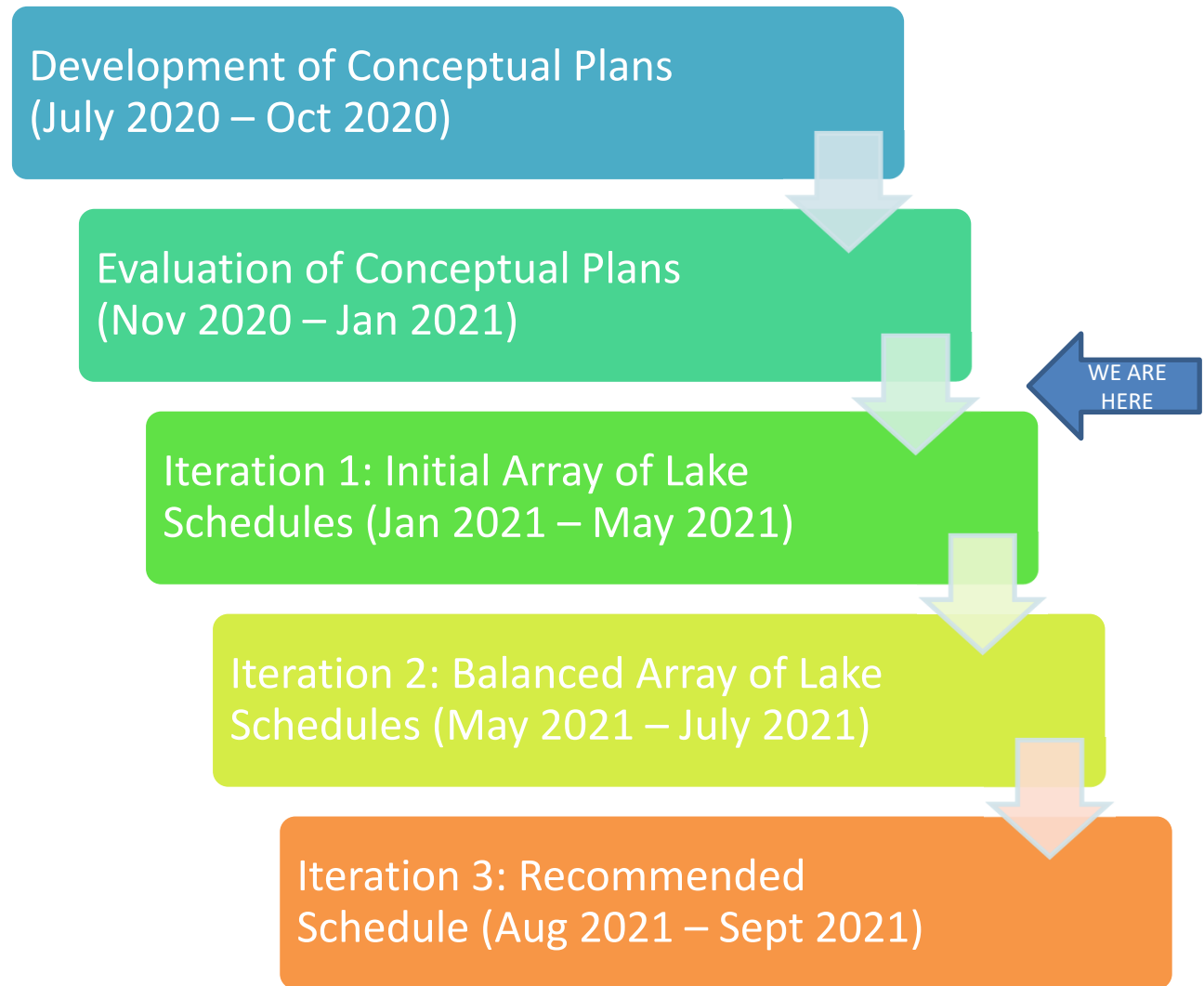
4D Enhance **ecology in South Florida**

\*All conceptual plans evaluated met dam safety and flood control objectives

\*\*Focused operations on limiting releases to estuaries, did not select plan for Lake Okeechobee

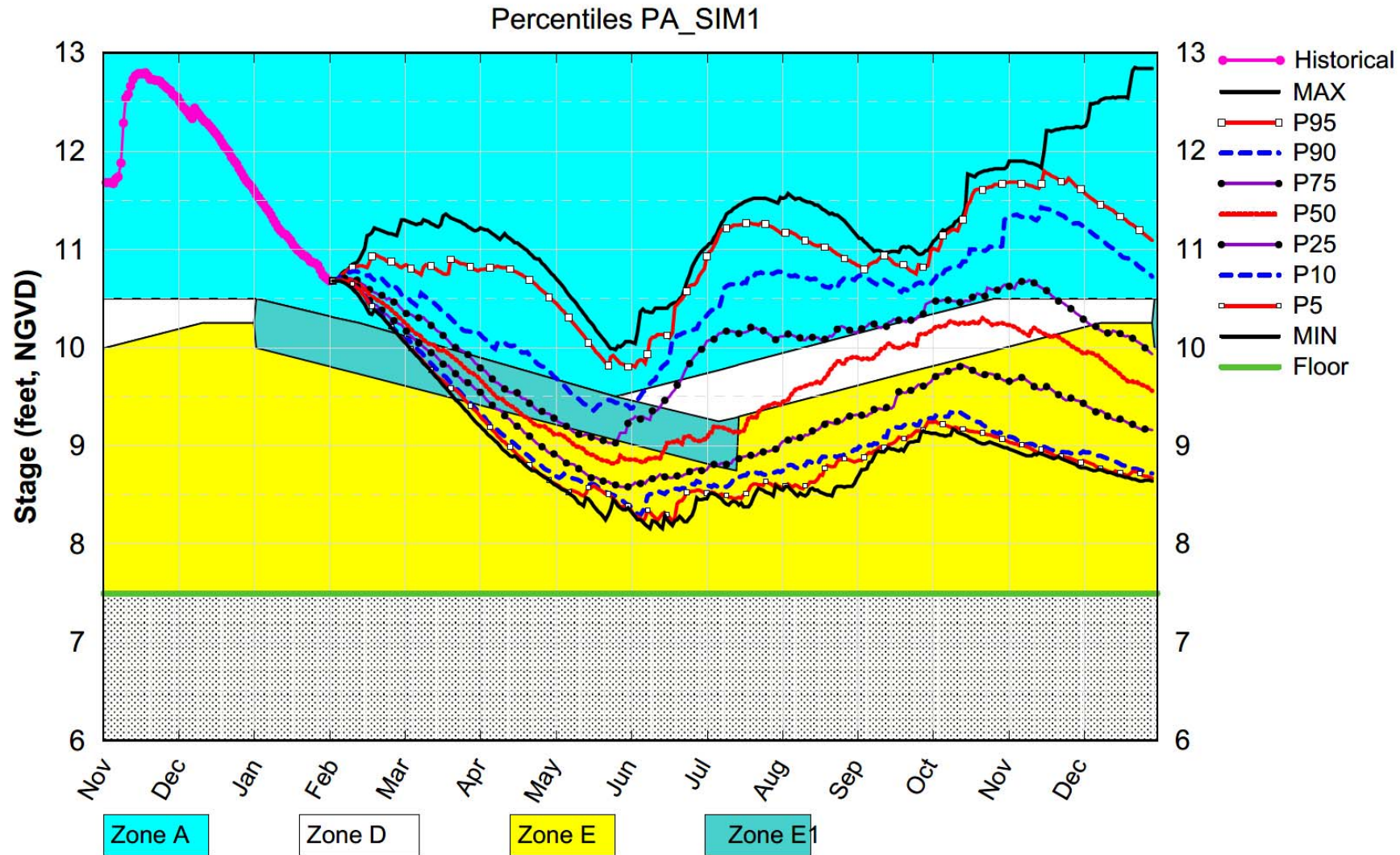
# Lake Okeechobee System Operating Manual Update

- Array of conceptual plans have been selected that perform best for each objective
  - 13 total schedules will move forward to Iteration 1 modeling
- Iteration 1 model results expected in March
  - This modeling will provide more detailed results of each of the plans that can be evaluated for benefits, effects, and trade-offs
  - Determine array for Iteration 2 that will better balance project objectives





## WCA3A SFWMM Feb 2021 Position Analysis



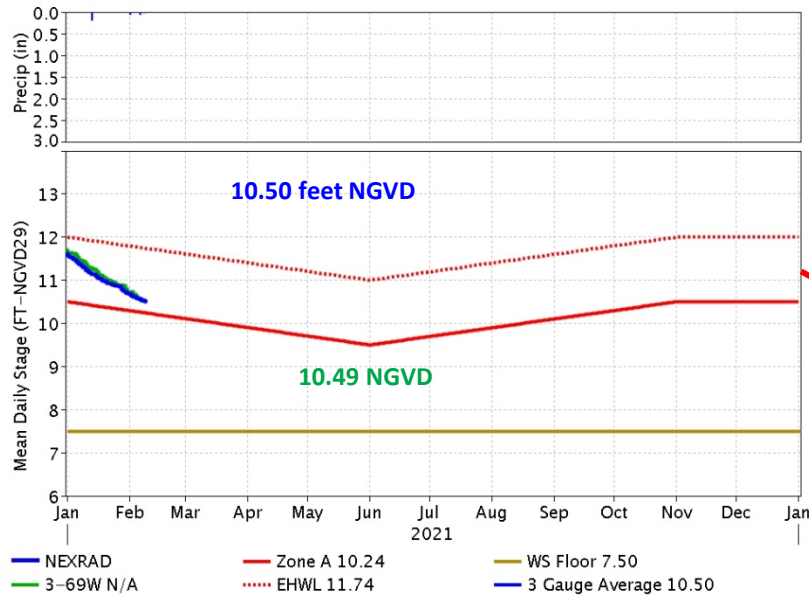
(See assumptions on the Position Analysis Results website)

Fri Feb 5 16:07:59 2021

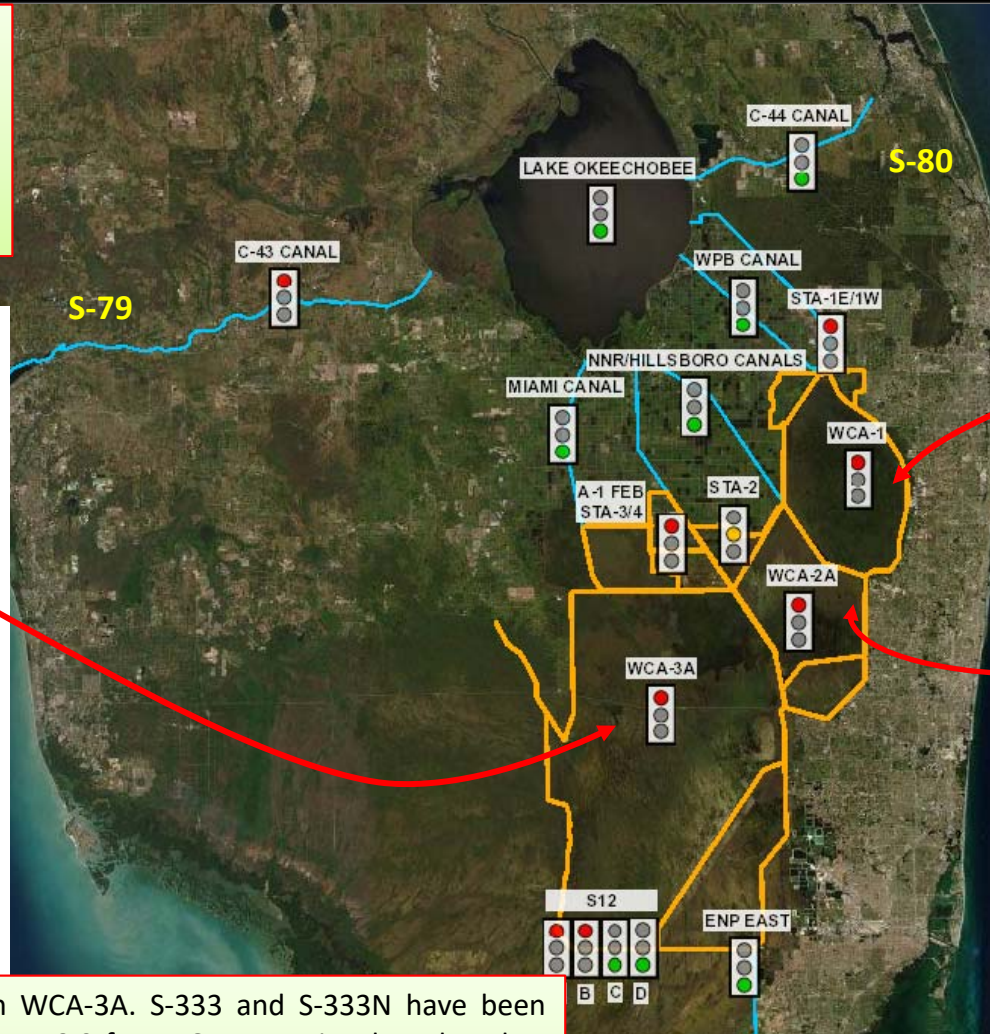


Lake Okeechobee stage is in the Low Sub-band of LORS-2008 Regulation schedule. USACE gradually transitioned out from the 3,000 cfs at S-77 and 1,500 cfs at S-80. For this week, LORS 2008 Part D is recommending S-79 up to 450 cfs and 200 cfs at S-80. USACE is implementing the HAB Deviation operations with targets of 1,500 cfs steady releases at S-79 and 0 cfs at S-80

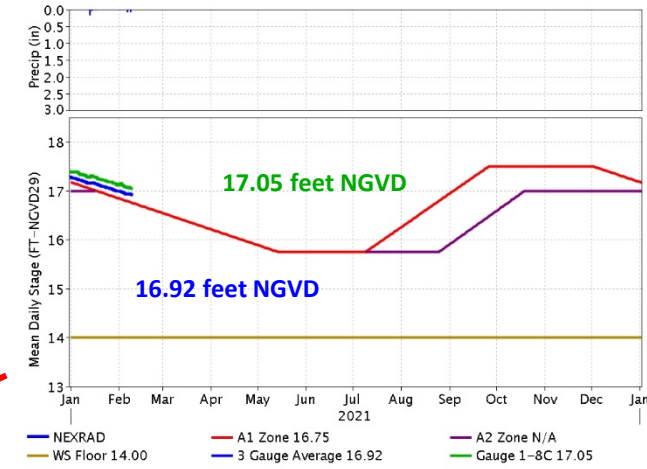
WCA 3A (9 February 2021)



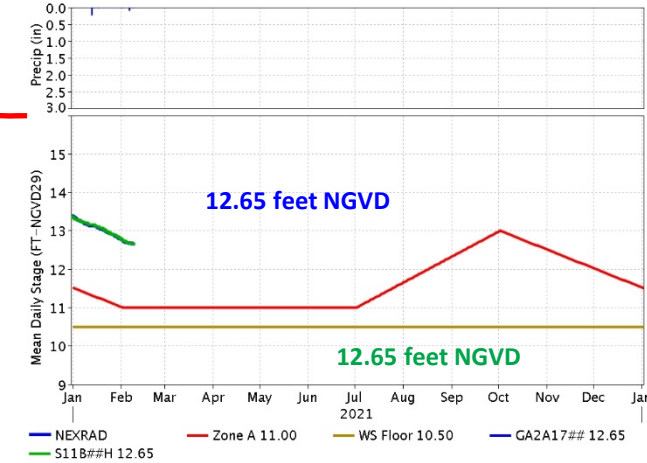
Note: With COP floor gauge switched from S333-H to 3-69W



WCA 1 (9 February 2021)



WCA 2A (9 February 2021)



Tamiami Trail Flow Formula calls for MAXIMUM releases from WCA-3A. S-333 and S-333N have been releasing since the middle of December. L-29 stage constraint is at 8.3 feet NGVD, previously reduced to provide flood mitigation for Las Palmas community. Constraint will be increased to 8.5 feet NGVD on Feb 11. S-334 was open Dec 16, 2020 to Jan 21, 2021 to move flows to the SDCS. S-356 was secured on Dec 10, 2020 but is pumping again. S-331 and S-357 continue pumping but maintaining ~0.5' higher stages. District continues to operate the detention cells to provide flood mitigation and seepage management for the SDCS (L-31N and C-111). S-199 and S-200 pumps are running. S-197 has been closed since Dec 13, 2020.

WCA-1 is in Zone A1 of the regulation schedule; WCA-2A is in Zone A of the regulation schedule; WCA-3A is in Zone A (below EHWL) of its regulation schedule. S-10s are closed. S-10s and S-11s are closed. USACE approved a temporary operational deviation to keep S-12A&B and S-343A&B open to lower stages in WCA-3A. Operations transitioned completely out of the deviation: S-12A closed Jan 22 and S-12B closed Jan 29. S-343A&B closed on Jan 28. L-28 temp pumps were secured.

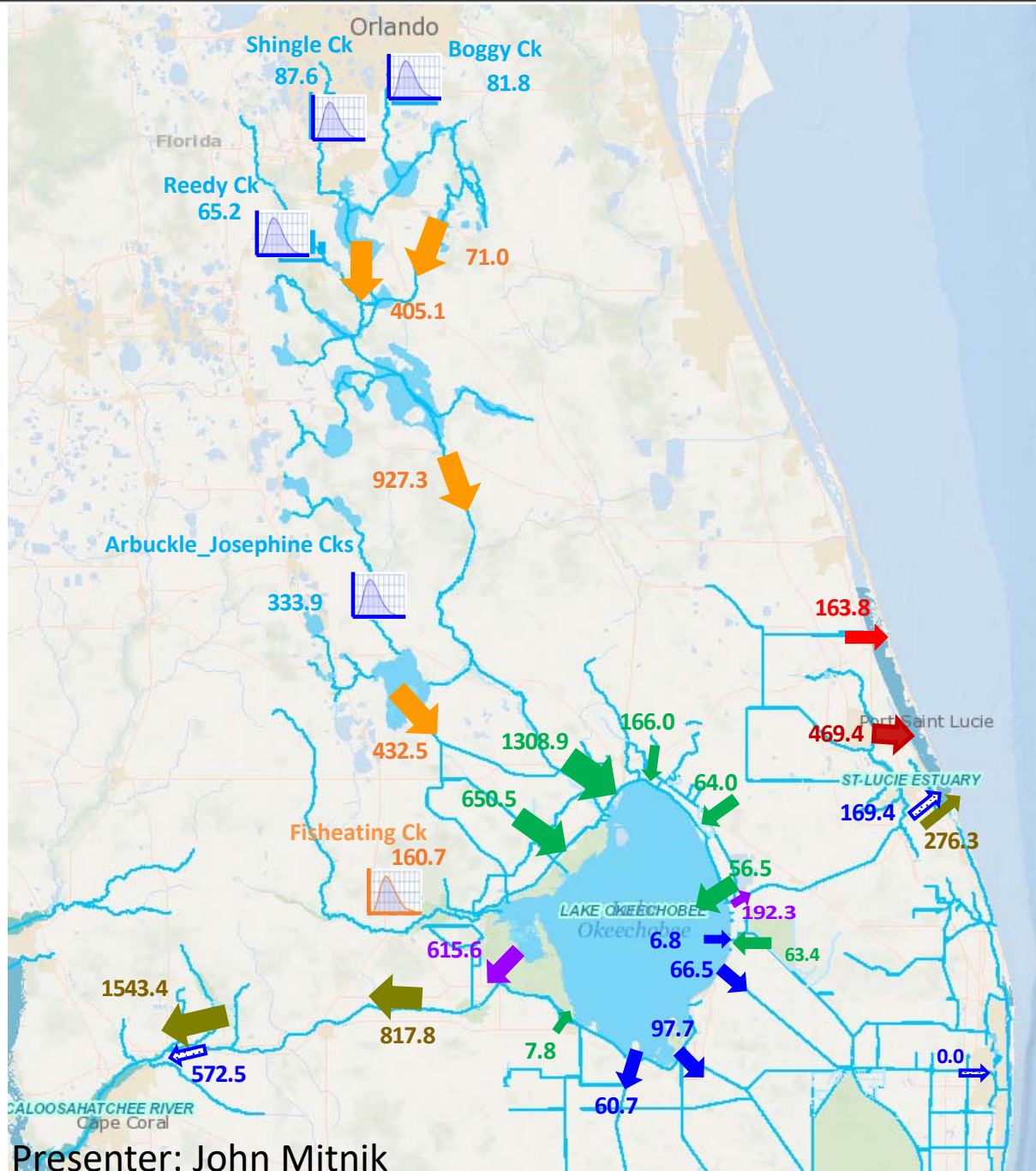


# High Water Conditions in WCA-3



Photos courtesy of  
Florida Fish and  
Wildlife Conservation  
Commission











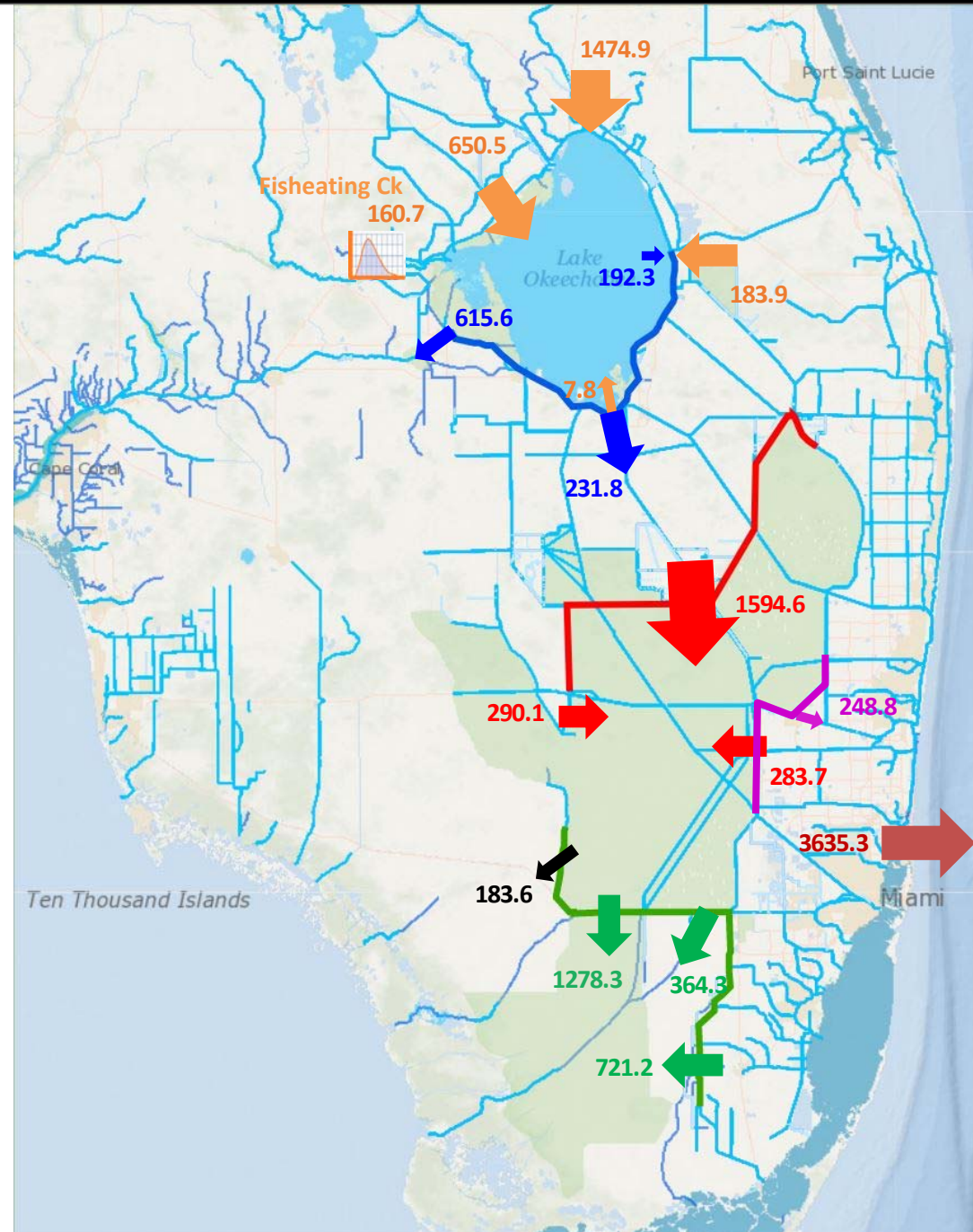
## SFWMD – Selected Release Volumes for the Period May 1, 2020 to February 9, 2021 (volumes in 1,000 acre-feet)

Symbol	Description	Volume (1,000 acre- feet)	
		Season to Date	Last Month
	Upper Kissimmee to Lower Kissimmee	927.3	51.3
	Inflows to Lake Okeechobee (including Fisheating Creek)	2477.7	127.2
	Lake Releases and Basin Runoff	1819.7	57.7
	Lake Releases East and West	807.9	38.3
	Lake Flood Control to Estuaries	741.9	28.3
	Total Lake Releases South	231.8	51.6
	Releases to Indian River Lagoon	163.8	0.0
	Upper East Coast discharges to St. Lucie Estuary	469.4	27.5
	Uncontrolled flows - Creeks (does not include Fisheating Creek)	568.6	16.4

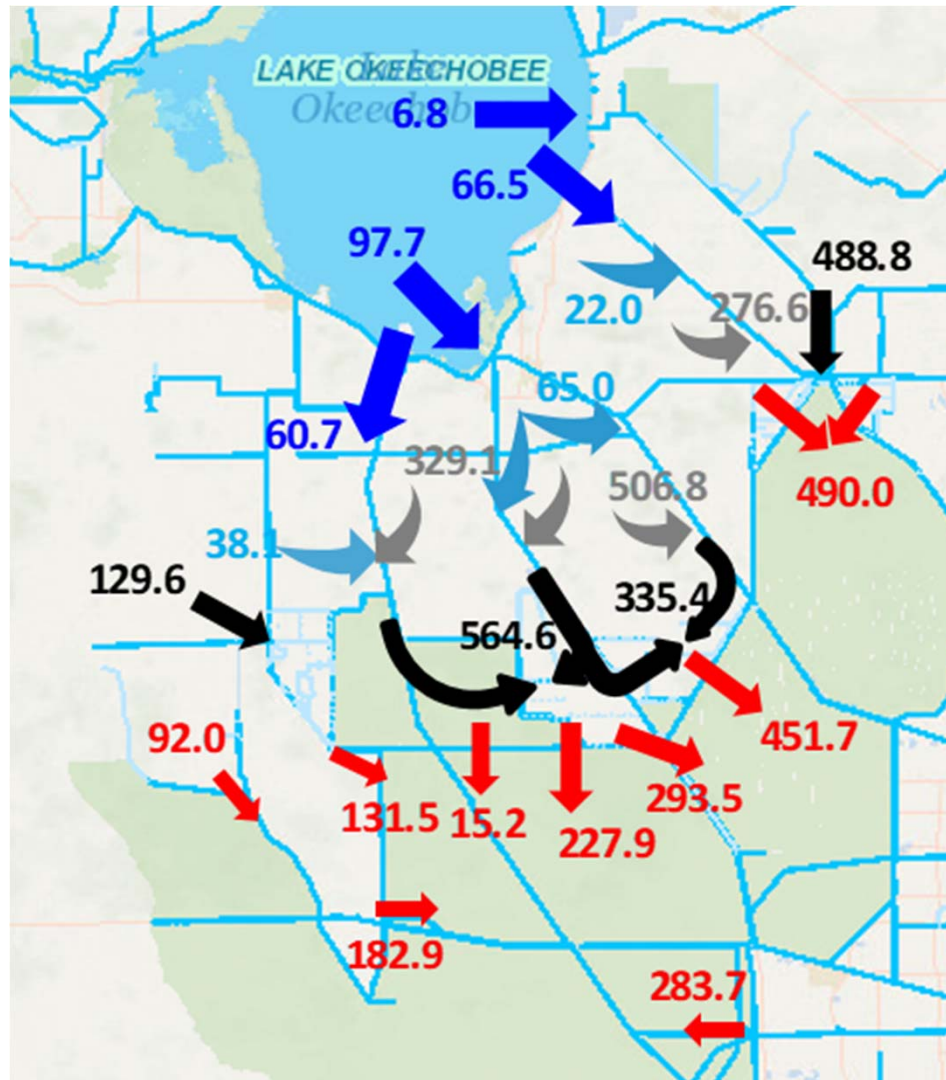
1,000 acre-feet = 325.9 Million Gallons

**SFWMD –Volumes Flowing  
Down the System  
May 1, 2020 to February 9, 2021  
(volumes in 1,000 acre-feet)**

Symbol	Description	Volume (1,000 acre- feet)	
		Season to Date	Last Month
	Lake Okeechobee Inflows	2477.7	127.2
	Lake Okeechobee Outflows	1039.7	89.9
	WCAs Inflows	2168.4	12.6
	ENP / Detention Cell Inflows	2363.8	266.7
	WCAs to East	248.8	24.3
	Flows to Intracoastal	3635.3	143.3







**SFWMD – Everglades Agricultural Area**  
**Selected Release Volumes**  
**May 1, 2020 to February 9, 2021**  
 (volumes in 1,000 acre-feet)

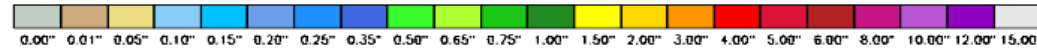
Symbol	Description	Volume (1000 acre-feet)	
		Season to Date	Month
	Total Lake Releases South	231.8	51.6
	EAA Runoff	1112.6	0.7
	Lake Delivery for Irrigation	125.1	46.6
	Inflows to STAs FEBs from Lake	95.2	5.7
	Inflows to STAs FEBs from Runoff +Other	1423.2	3.3
	Inflows to WCAs from STAs+Other	2168.4	12.6

1,000 acre-feet = 325.9 Million Gallons

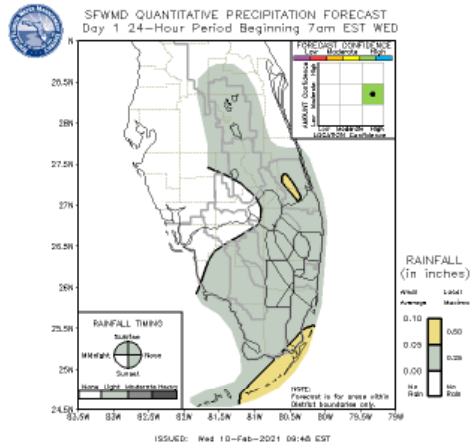


Posted 02/09/2021

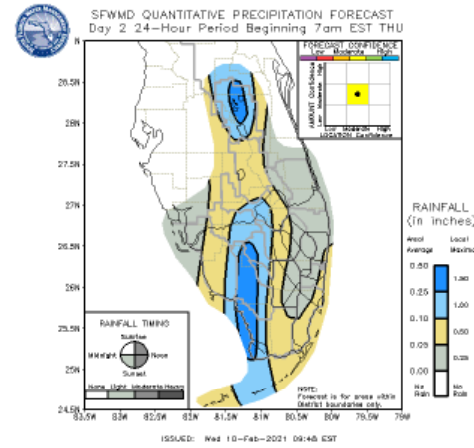
## Daily Quantitative Precipitation Forecasts



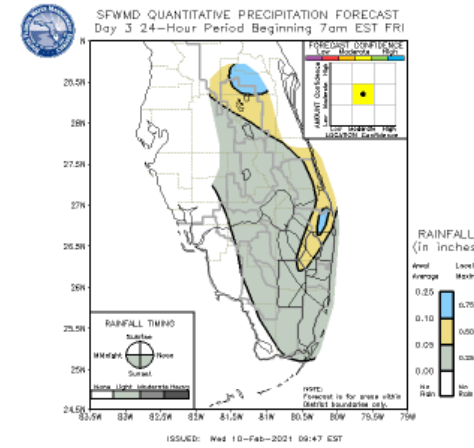
Day 1



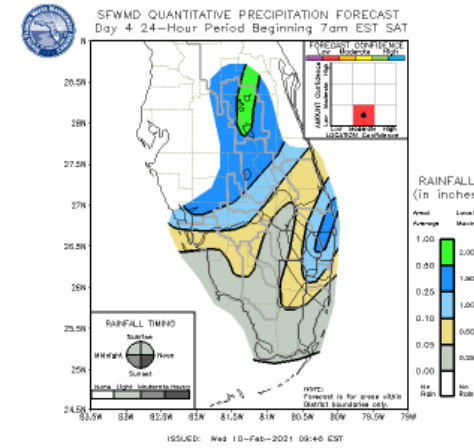
Day 2



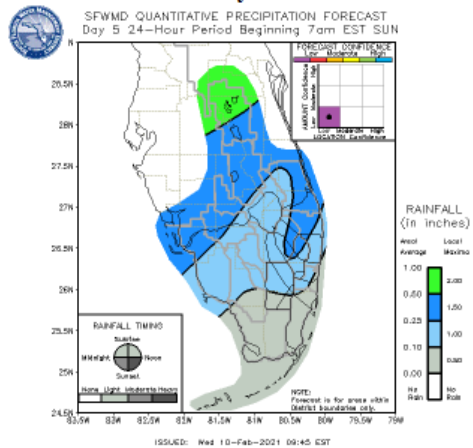
Day 3



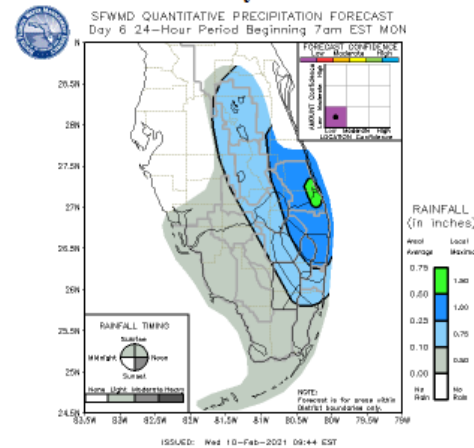
Day 4



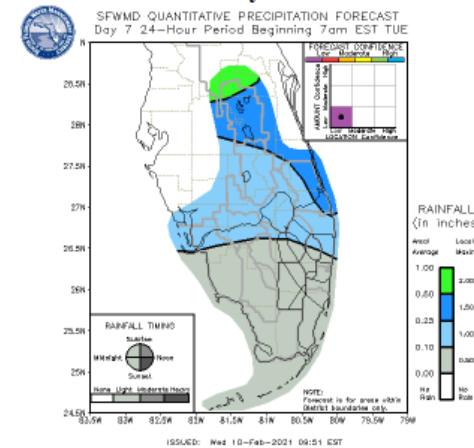
Day 5



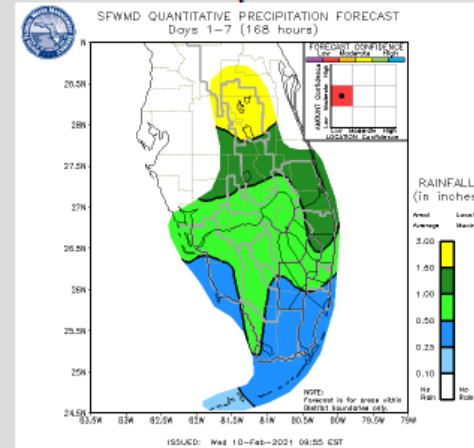
Day 6



Day 7



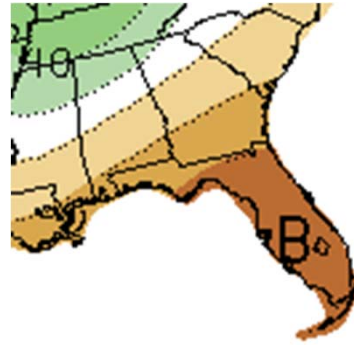
7-Day Total



# CPC Precipitation Outlook for South Florida



Feb 2021



Feb-Apr



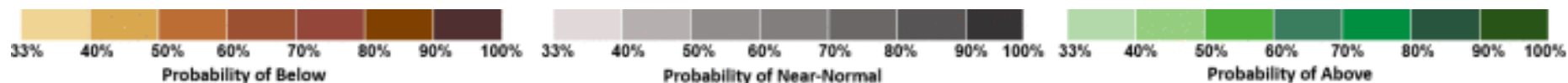
Mar-May



Apr-Jun

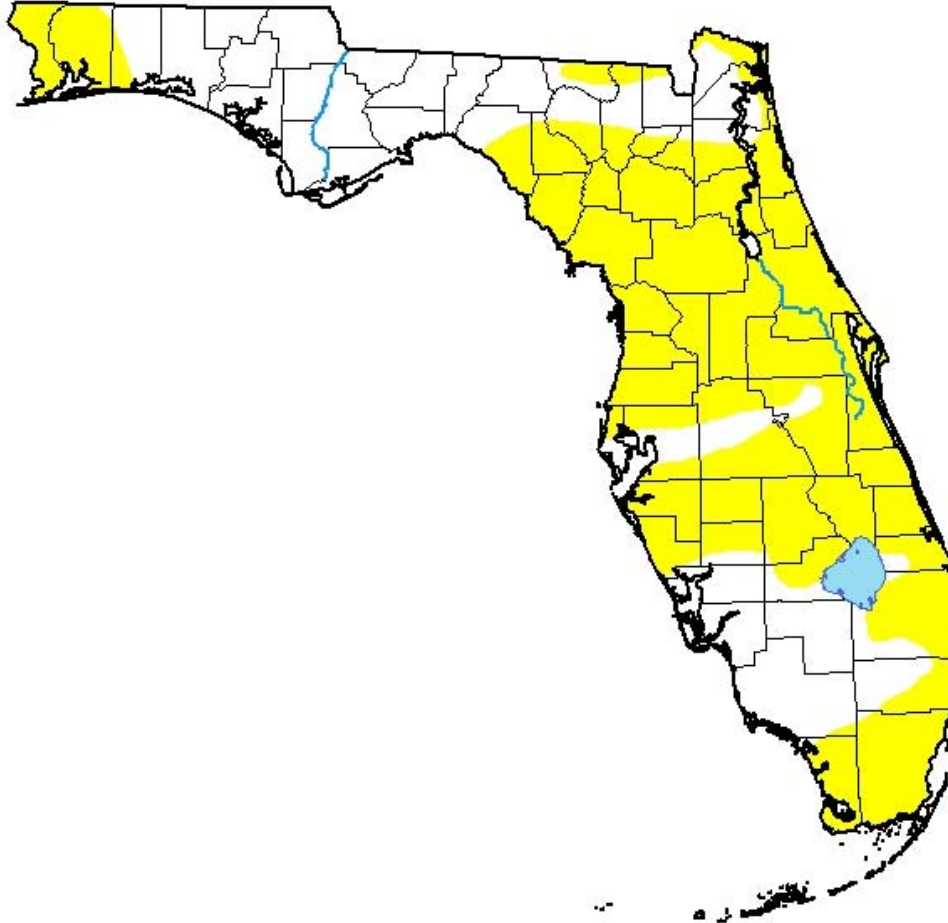
<https://www.cpc.ncep.noaa.gov/products/predictions/30day/>

- The most recent CPC precipitation outlook for Feb 2021 calls for increased chances of below-normal rainfall.
- The outlook for the 3-month window Feb-Apr call for substantially increased chances of below-normal rainfall.
- The outlook for the 3-month window Mar-May is for increased chances of below-normal rainfall.
- The outlook for the 3-month window Apr-Jun is for is for equal chances of above-normal, normal, and below-normal rainfall.
- The outlook for the transition to the 2021 wet season is for slightly increased chances of above normal rainfall.



# U.S. Drought Monitor Florida

**February 2, 2021**  
(Released Thursday, Feb. 4, 2021)  
Valid 7 a.m. EST



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	39.22	60.78	0.00	0.00	0.00	0.00
<b>Last Week</b> <i>01-26-2021</i>	78.96	21.04	0.00	0.00	0.00	0.00
<b>3 Months Ago</b> <i>11-03-2020</i>	100.00	0.00	0.00	0.00	0.00	0.00
<b>Start of Calendar Year</b> <i>12-29-2020</i>	89.27	10.73	0.00	0.00	0.00	0.00
<b>Start of Water Year</b> <i>09-29-2020</i>	100.00	0.00	0.00	0.00	0.00	0.00
<b>One Year Ago</b> <i>02-04-2020</i>	68.38	31.62	6.39	0.00	0.00	0.00

**Intensity:**

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

Brad Rippey  
U.S. Department of Agriculture



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)