



Pine River Dam at Cross Lake 8-29-21

## Drought Update to Sub-Committee on Water Policy

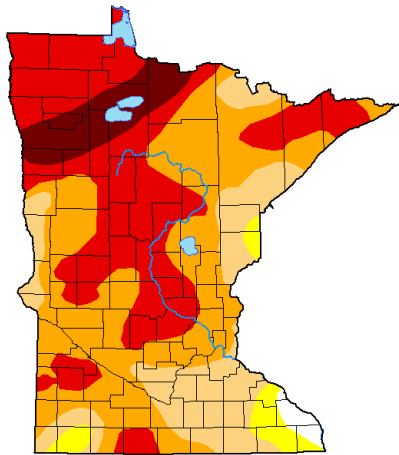
Carmelita Nelson

DNR - Water Conservation Consultant

# Drought Update

## U.S. Drought Monitor Minnesota

**August 10, 2021**  
(Released Thursday, Aug. 12, 2021)  
Valid 8 a.m. EDT



**Intensity:**

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

Richard Tinker  
CPC/NOAA/NWS/NCEP

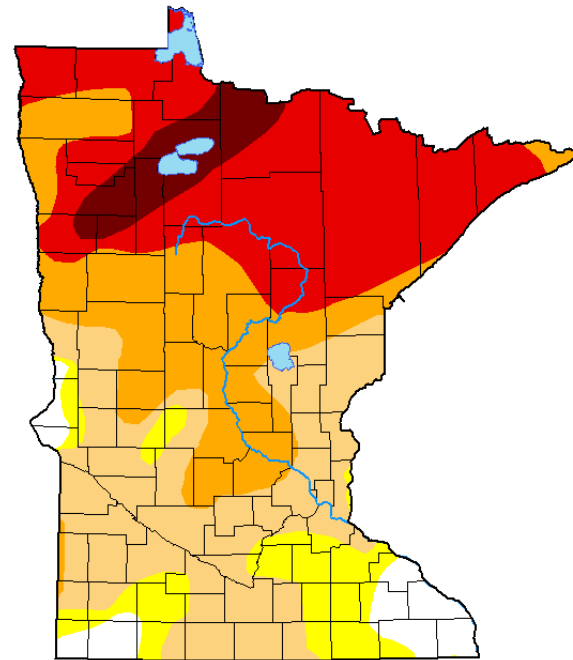


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

Week of Aug. 10 was most extensive

## U.S. Drought Monitor Minnesota

**September 14, 2021**  
(Released Thursday, Sep. 16, 2021)  
Valid 8 a.m. EDT



**Drought Conditions (Percent Area)**

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	5.29	94.71	85.62	58.74	36.14	5.82
<b>Last Week</b> 09-07-2021	5.29	94.71	85.62	58.95	36.70	5.82
<b>3 Months Ago</b> 06-15-2021	0.00	100.00	55.70	5.07	0.00	0.00
<b>Start of Calendar Year</b> 12-29-2020	1.60	98.40	23.40	0.28	0.00	0.00
<b>Start of Water Year</b> 09-29-2020	54.95	45.05	8.39	0.00	0.00	0.00
<b>One Year Ago</b> 09-15-2020	73.33	26.67	7.28	0.00	0.00	0.00

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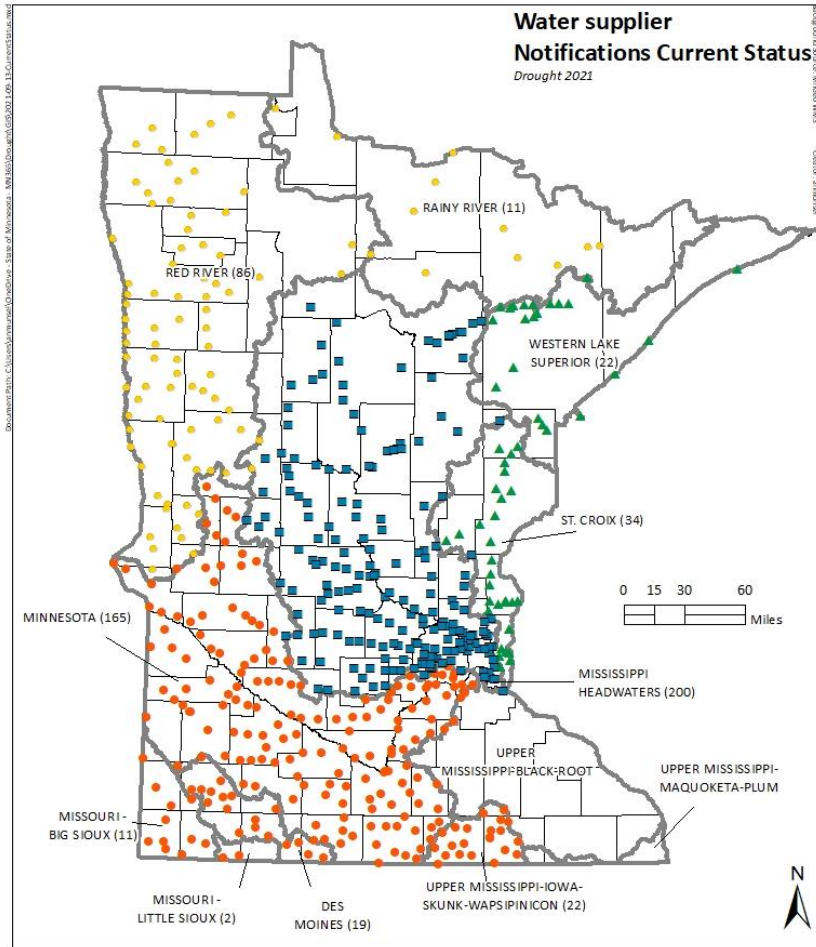
Brad Rippey  
U.S. Department of Agriculture



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

This week over 85% of the state is still in moderate drought or worse. Looking to improve due to significant rain last week and on Monday.

# Current Water Use Restrictions



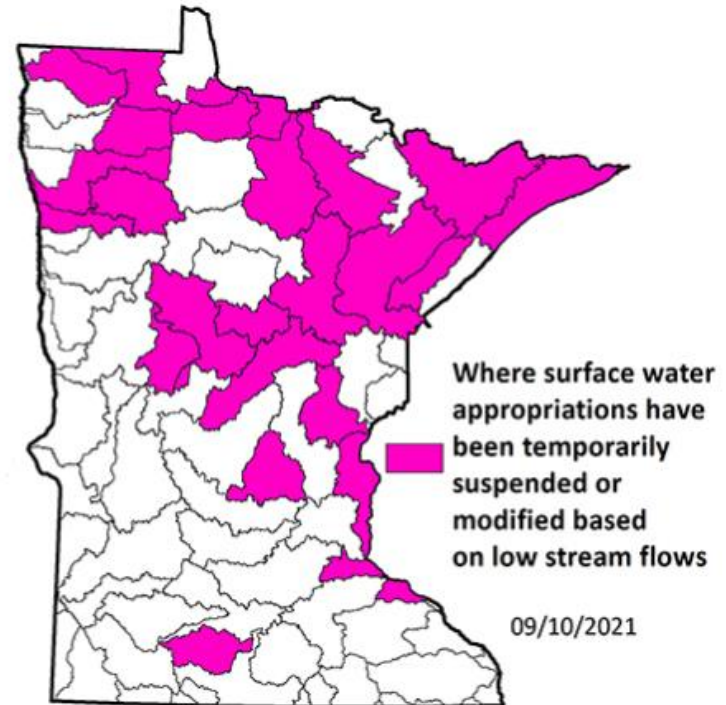
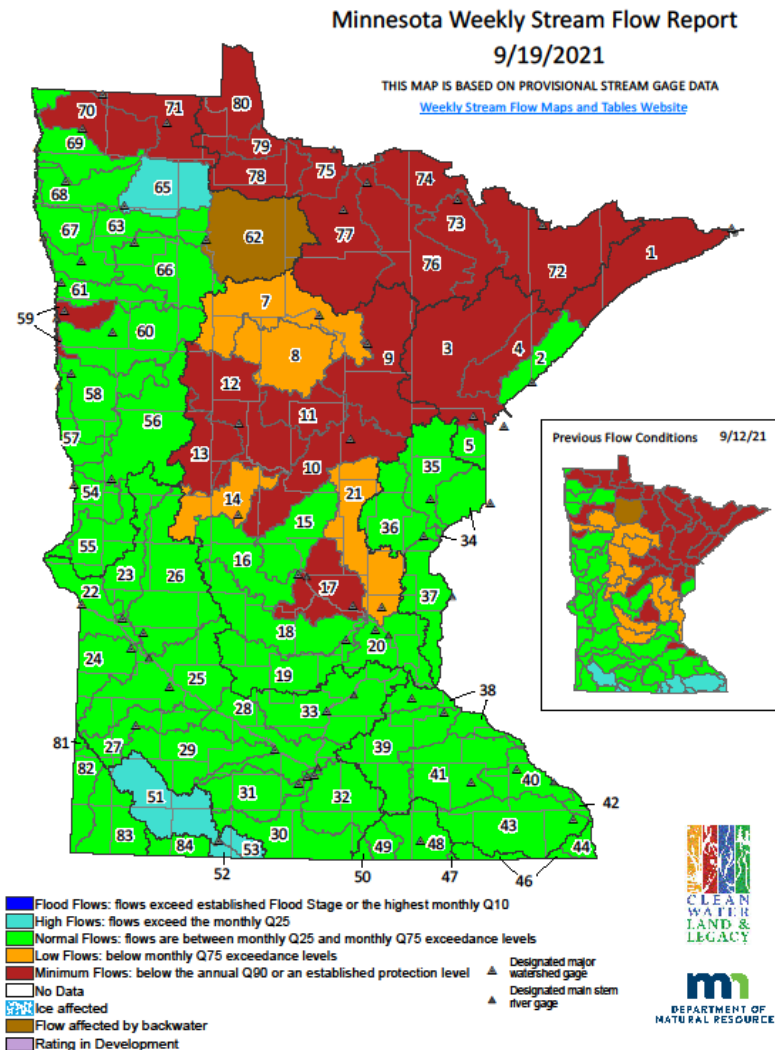
- Notified of drought warning phase 9/2/2021 (200)
- Notified of drought warning phase 7/16/2021 (505)
- Notified of extreme drought 8/17/2021 (97)
- ▲ Notified of drought warning phase 8/12/2021 (51)
- DNR Level 02 - HUC 04

Aug. 17 Extreme Drought Notifications sent to the Mississippi Headwaters, Red, and Rainy River

Sept 2 – MS Headwaters move to Warning Phase

Sept. 22 – MN, St. Croix and southern watersheds moved to drought watch phase.

# Stream Flows/Suspensions



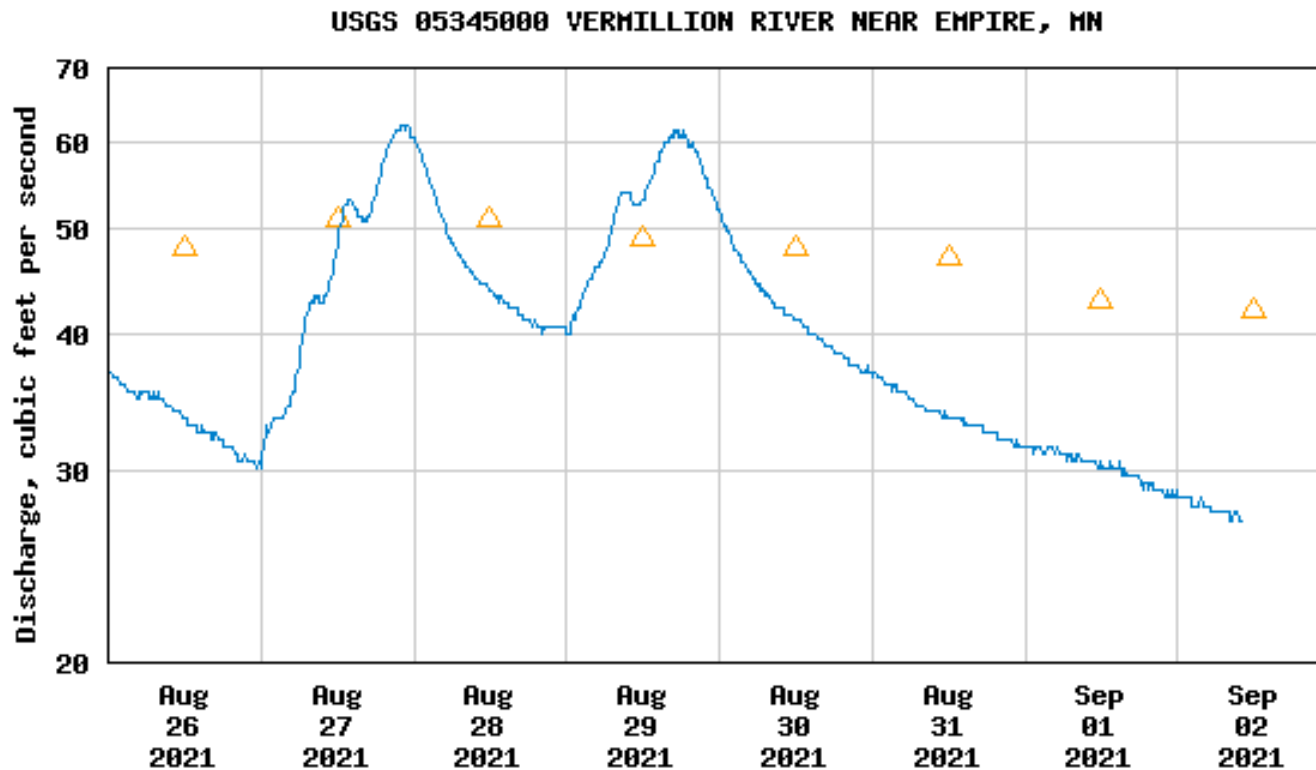
- 187 surface water suspension out of 517
- No new suspension in last 2 weeks
- ~50 reinstated
- Many factors go into decision



# Considering Reinstatement

## Discharge, cubic feet per second

Most recent instantaneous value: 26.9 09-02-2021 10:15 CDT



---- Provisional Data Subject to Revision ----

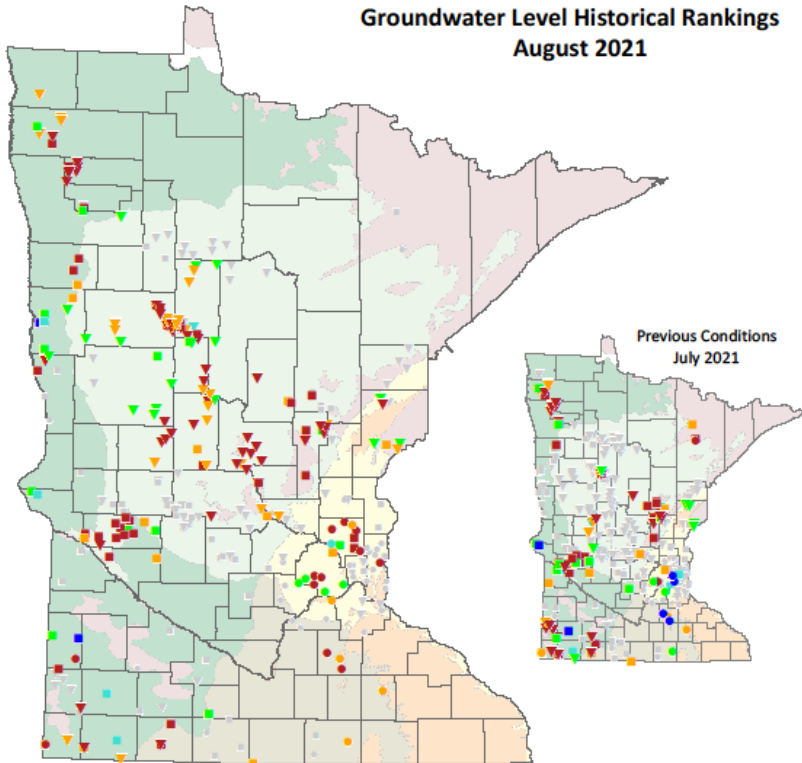
△ Median daily statistic (49 years) — Discharge



# Droughts Do Affect Groundwater

## Groundwater

Groundwater Level Historical Rankings  
August 2021



\* Percentile ranking based on last reported reading for the current month compared to all historical reported levels for that month. A water level ranked at zero means that the present reported level is the lowest in the period of record; a ranking of 100 indicates the highest in the period of record. A ranking at the 50th percentile (median) specifies that the present month reported water level is in the middle of the historical distribution.

Source data from: MN DNR Groundwater Level Monitoring Program

- Droughts do affect groundwater, there is just a **lag time**.
- Aug. Groundwater Ob Well show
  - 2% high water levels
  - 3% above normal water levels
  - 19% normal water levels
  - 25% below normal water levels
  - 51% low water levels

*We need to conserve groundwater because we don't know how long the drought will last.*

# Revisions to the Drought Plan

Even before the 2021 drought, plans were underway to update the 4-page 1990 Drought Plan that was last revised in 2009.

- State climatologists ideas.
- HUC 4 watersheds caused confusion.
- GIS, monitoring, and other technology allow for precision.
- Heavy burden on water suppliers vs. other water users.

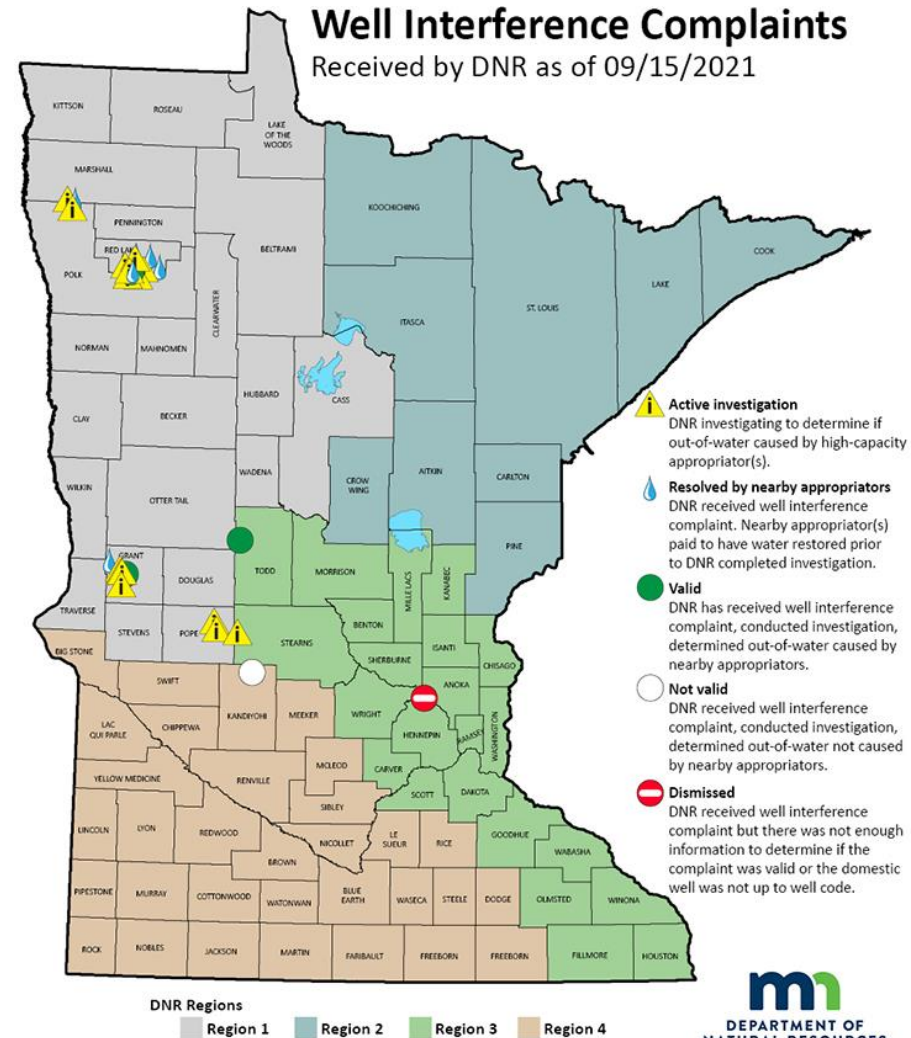
- Does not match with Local Water Supply Plan triggers and actions.
- Could tie-in better with Stream, Flow suspensions and MS River Low-Flow Plan.
- Small or very fast growing communities with limited well capacity are vulnerable.



# Well Interference Investigations

As of 9/15/21 we have 22 well interference investigations in six counties: Grant, Polk, Red Lake, Pope, Marshall, Anoka

- 16 Active investigations
- 2 Found Valid
- 1 Found Not Valid
- 1 Dismissed
- 2 Resolved early by irrigators





# Red River-Climax, MN Field Collapse

Drone photos by neighbor, Brad Thoreson



- A bean field collapsed and fell 25' in rural Polk County.
- It stretched a quarter mile along Red River
- Geologist with Univ. of North Dakota attribute this to dry weather, drop in water levels, and recent rains



# Crop Harvest Field Updates



A lot of corn cut early for silage



Soybeans being harvested in SW MN



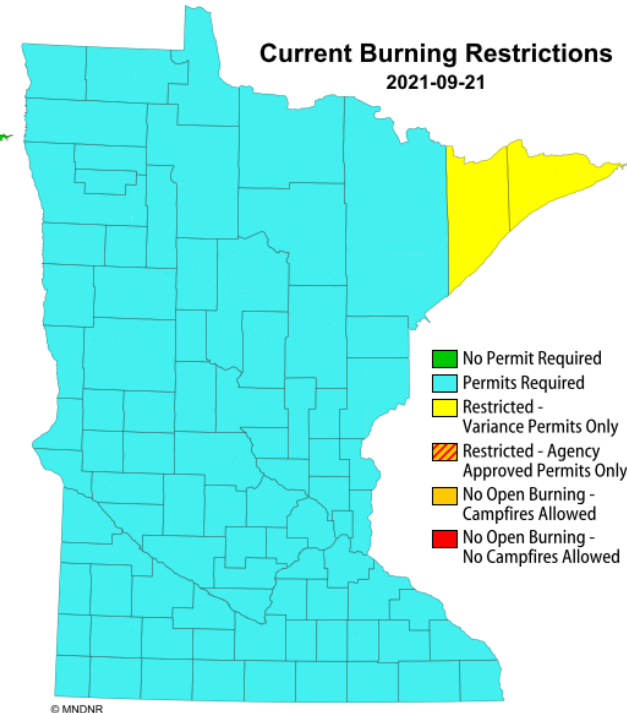
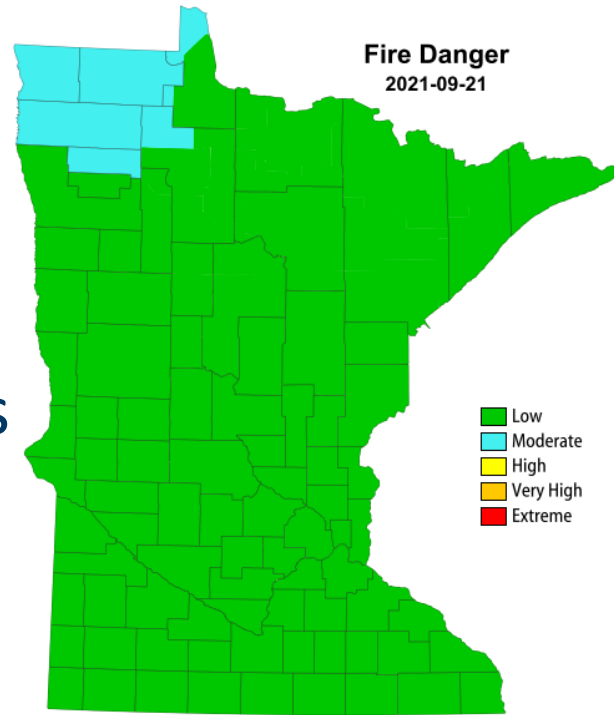
Some kernels dried down before maturation



Wild Rice growers want to flood their fields

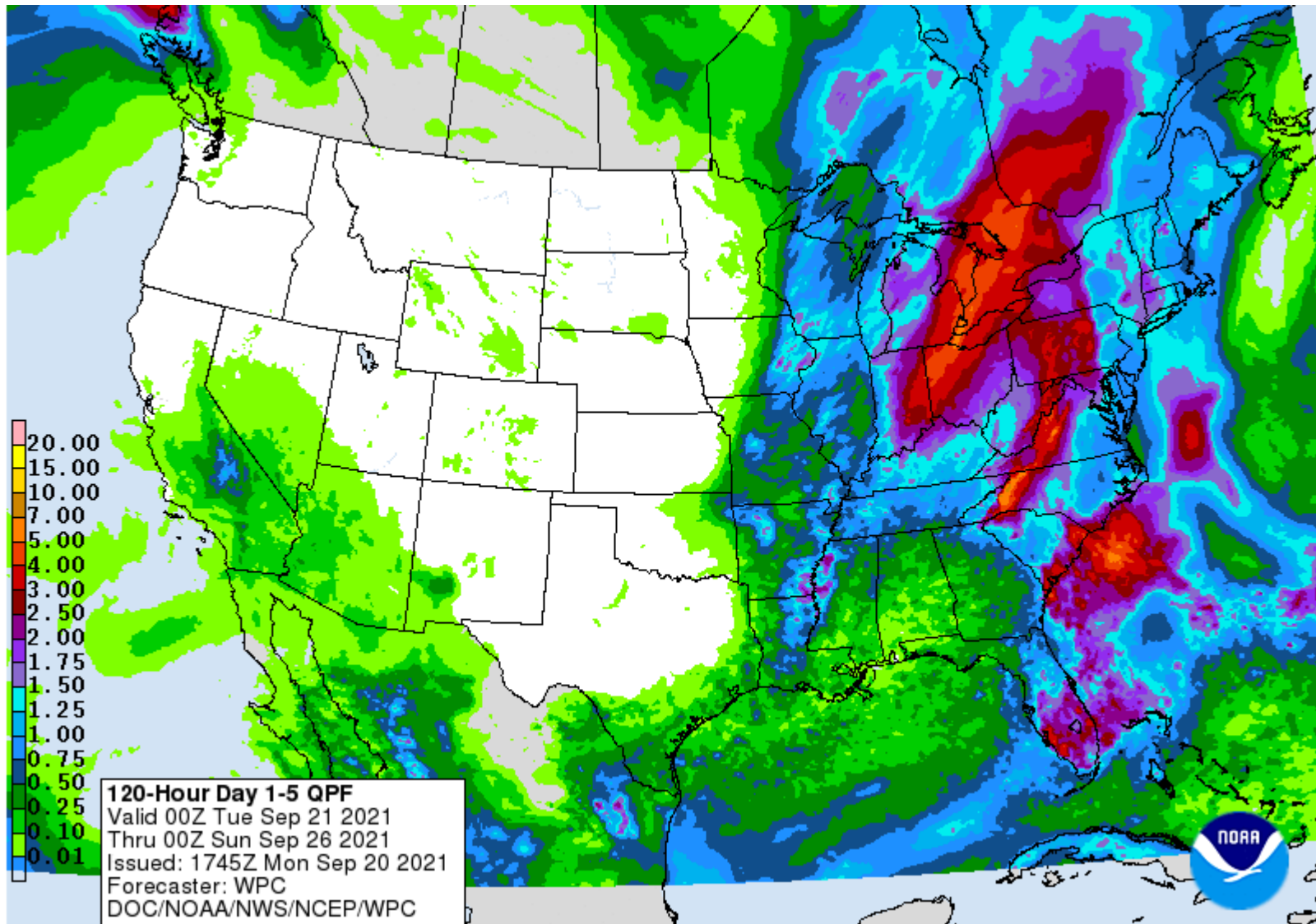
# 1,900 Wildfires in 2021

- Greenwood Fire +26,000 acres is 80% contained
- John Ek Fire 1,357 acres –min. fire
- Whelp Fire 50 acres 0% contained.





# 5-Day Forecast





Questions?

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