



# DEPARTMENT OF NATURAL RESOURCES

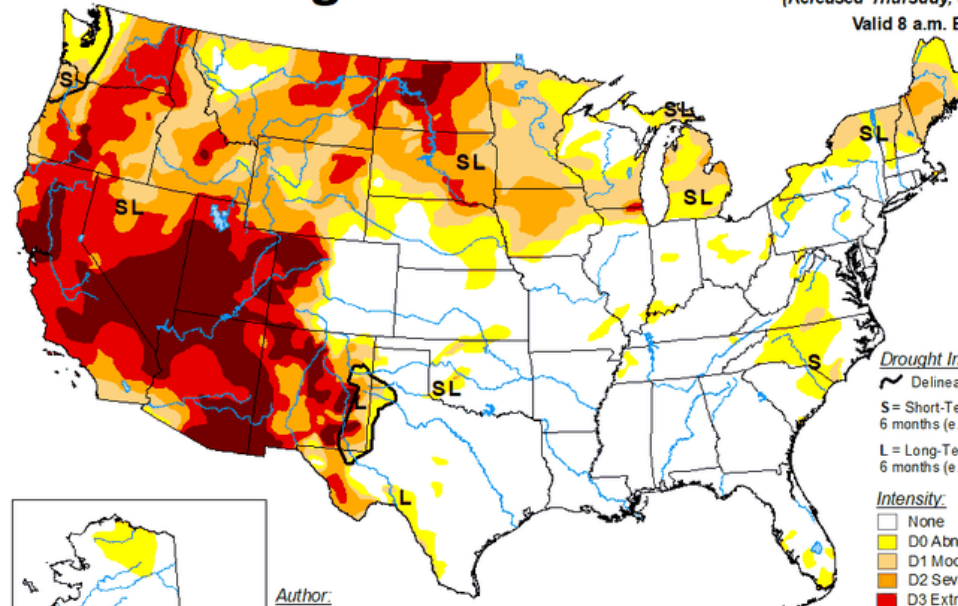
# STAND BY...

## The State Drought Task Force meeting will start soon

August 05, 2021

### U.S. Drought Monitor

June 29, 2021  
(Released Thursday, Jul. 1, 2021)  
Valid 8 a.m. EDT

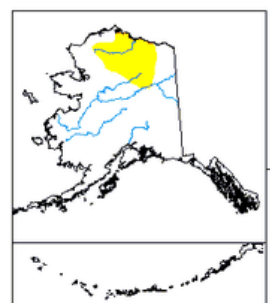


**Drought Impact Types:**  
 ~ Delineates dominant impacts  
 S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)  
 L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

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

**Author:**  
 Deborah Bathke  
 National Drought Mitigation Center

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>



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



## **Randall Doneen**

**Section Manager – Conservation Assistance and Regulation  
Ecological and Water Resources Division**

# Agenda

- Welcome Randall Doneen
- Task Force purpose, mission and roles Katie Smith
- Drought situation review and update Luigi Romolo
- Agency actions Task Force
- Drought issues discussion Task Force
- Other Topics: All Task Force
- Next steps / adjourn Randall Doneen
- Availability for media / interested parties Katie Smith



**Katie Smith**

Director

Ecological and Water Resources Division

- Forum to share information about drought related issues
- Coordinate activities with other task force members
- Identification of needs

# Task Force member responsibilities

- Be knowledgeable of your agency/organizations actions in response to drought, and provide that information to the Task Force
- Be aware of drought related issues your agency/organization is aware of, and provide that information to the Task Force as well, and
- Coordinate with other members of the Task Force during implementation of actions that are taken in response to the drought.



**Drought Status Update**  
**Drought Task Force, August 5, 2021**

**Luigi Romolo PhD**

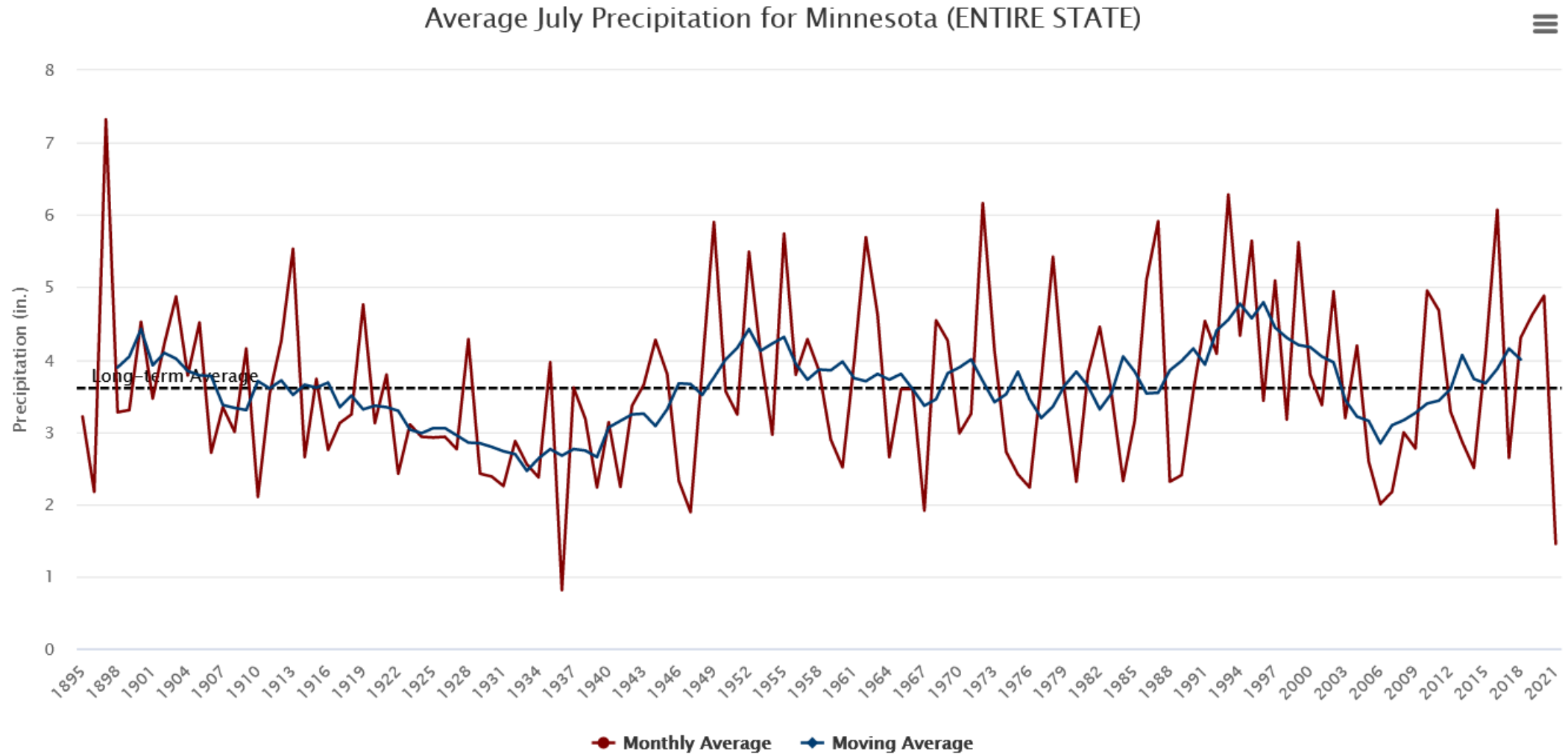
**Minnesota State Climatologist**

# Presentation Overview

- Drought Status
- Streamflow
- Lake Levels
- Fire Danger
- Crop Report
- Short term outlook
- Questions

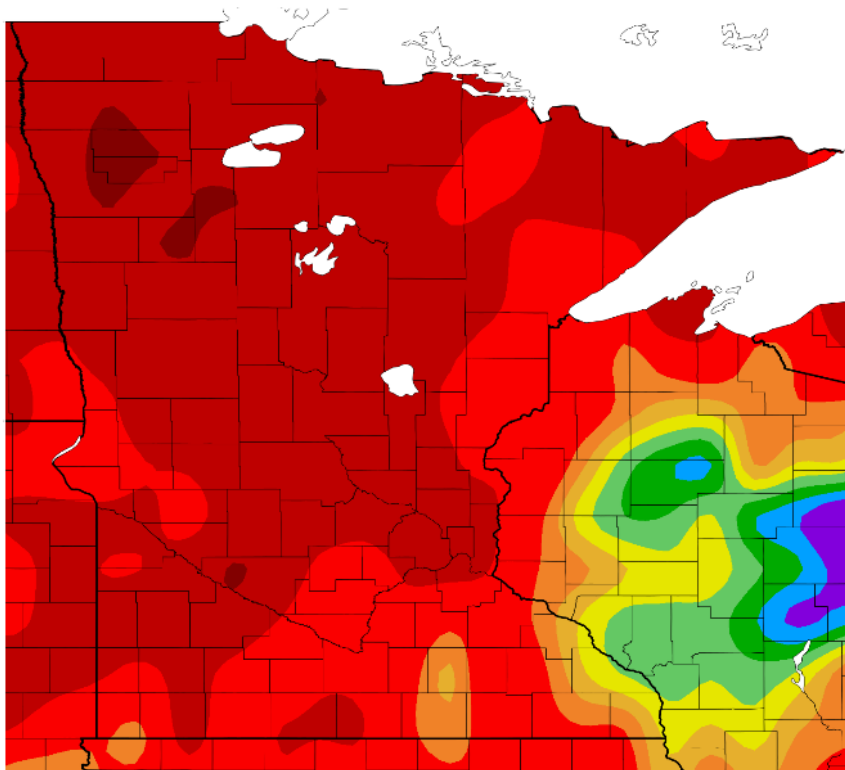


# July Precipitation (2<sup>nd</sup> driest, 1895 – 2021)

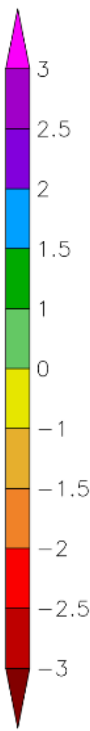
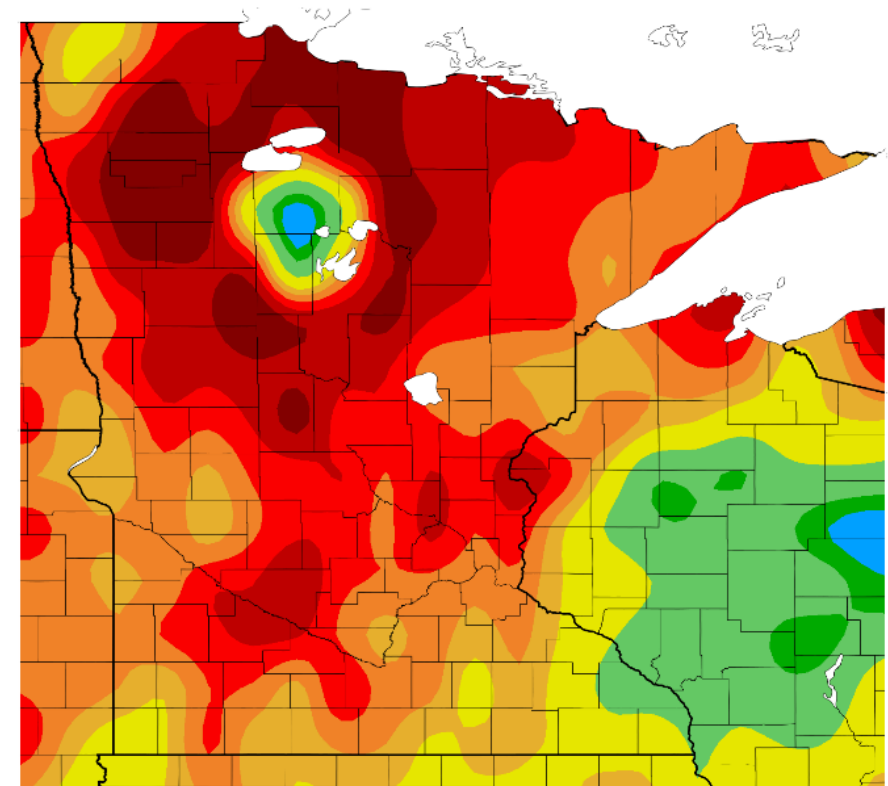


# 90 day Precipitation & SPI

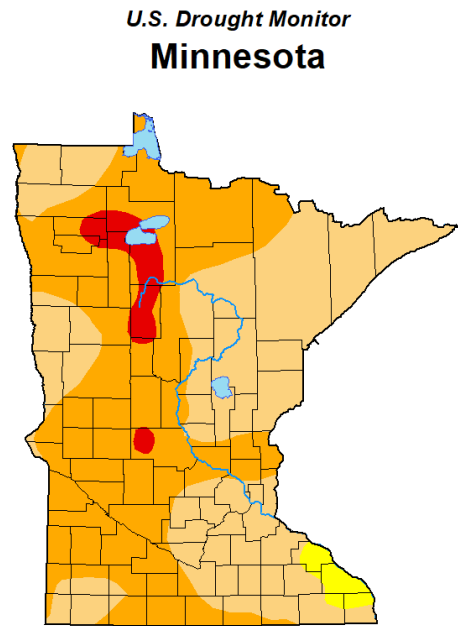
Percent of Normal Precipitation (%)  
5/5/2021 – 8/2/2021



90 Day SPI  
5/3/2021 – 7/31/2021



# Drought Map Comparison



**July 13, 2021**  
(Released Thursday, Jul. 15, 2021)  
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	98.21	52.42	3.95	0.00
Last Week 07-06-2021	0.00	100.00	92.96	39.70	0.00	0.00
3 Months Ago 04-13-2021	56.33	43.67	11.34	0.80	0.00	0.00
Start of Calendar Year 01-01-2021	1.60	98.40	23.40	0.28	0.00	0.00
Start of Water Year 09-29-2020	54.95	45.05	8.39	0.00	0.00	0.00
One Year Ago 07-14-2020	61.84	38.16	20.08	4.44	0.00	0.00

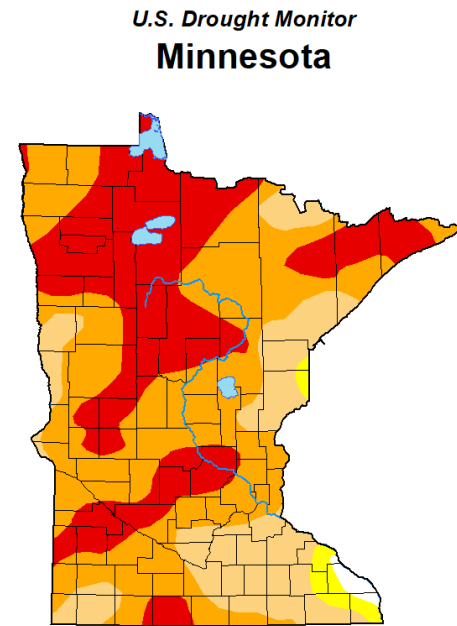
*Intensity:*

- 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:  
Adam Hartman  
NOAA/NWS/NCEP/CPC

droughtmonitor.unl.edu



**August 3, 2021**  
(Released Thursday, Aug. 5, 2021)  
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.73	99.27	97.41	78.64	35.08	0.00
Last Week 07-27-2021	0.00	100.00	97.88	75.09	22.06	0.00
3 Months Ago 05-04-2021	63.00	37.00	16.22	0.78	0.00	0.00
Start of Calendar Year 01-01-2021	1.60	98.40	23.40	0.28	0.00	0.00
Start of Water Year 09-29-2020	54.95	45.05	8.39	0.00	0.00	0.00
One Year Ago 08-04-2020	62.68	37.32	8.31	0.00	0.00	0.00

*Intensity:*

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

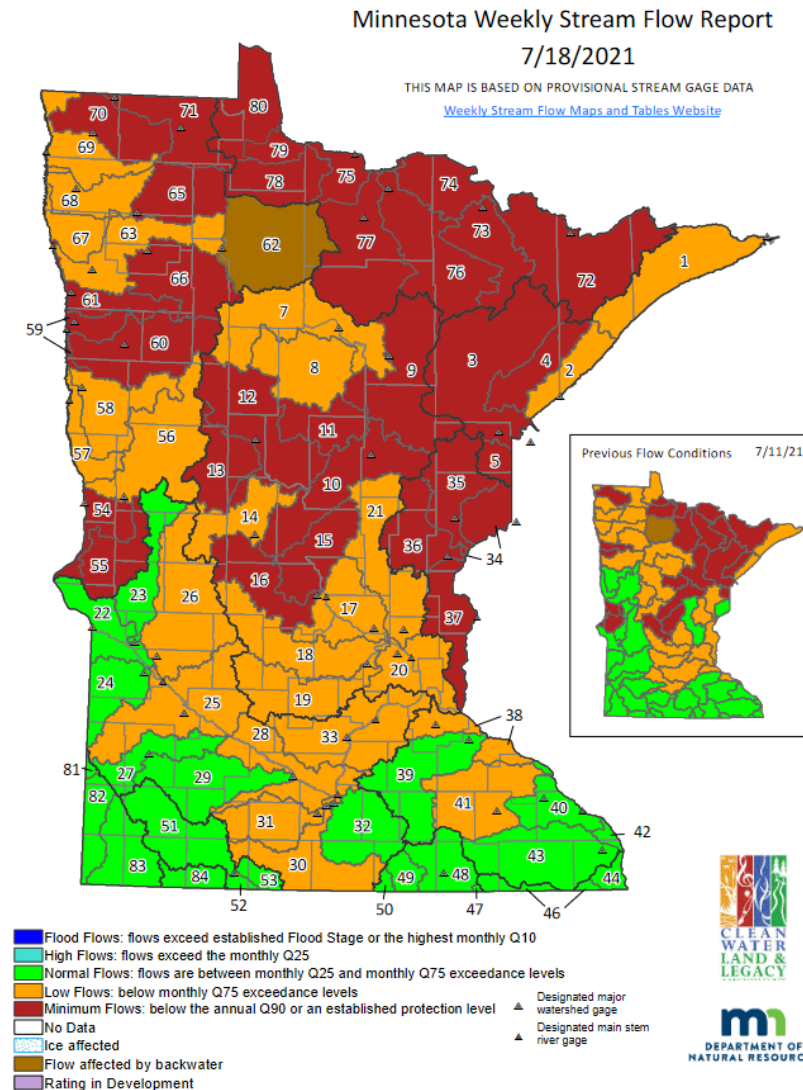
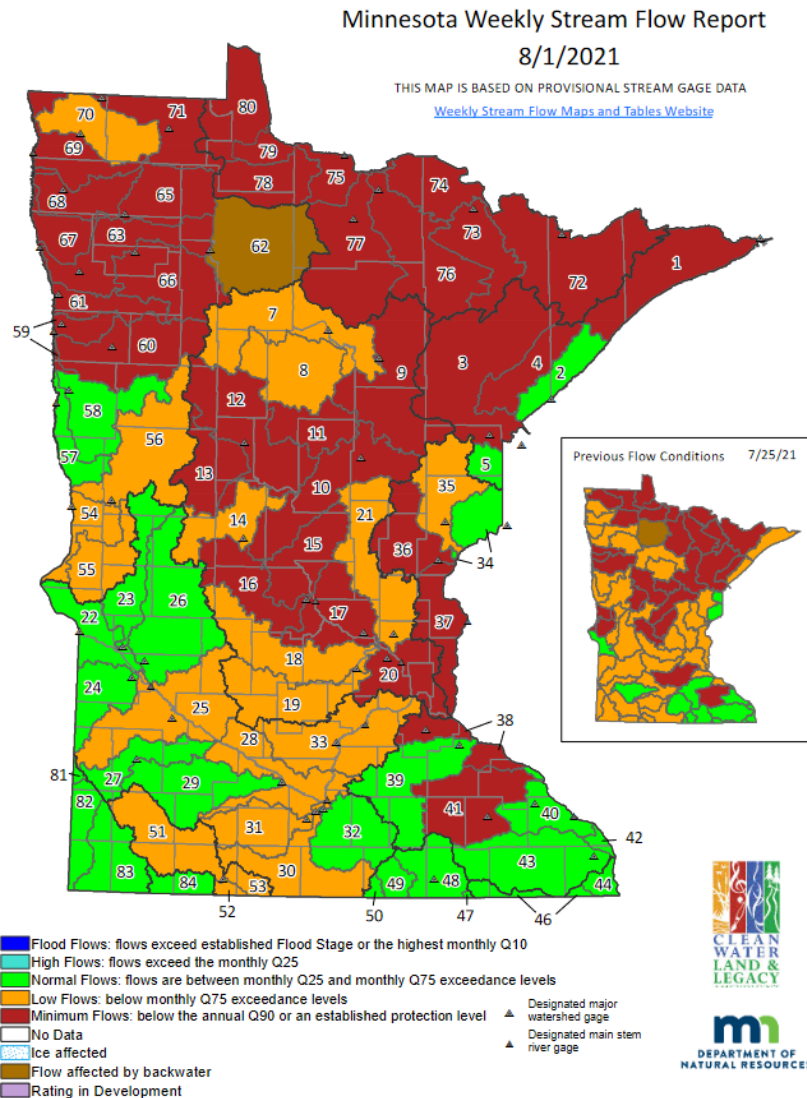
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:  
Richard Tinker  
CPC/NOAA/NWS/NCEP

droughtmonitor.unl.edu

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2021-08-03	0.73	99.27	97.41	78.64	35.08	0.00
2021-07-13	0.00	100.00	98.21	52.42	3.95	0.00
Change	-0.73	0.73	0.80	-26.22	-31.13	0.00

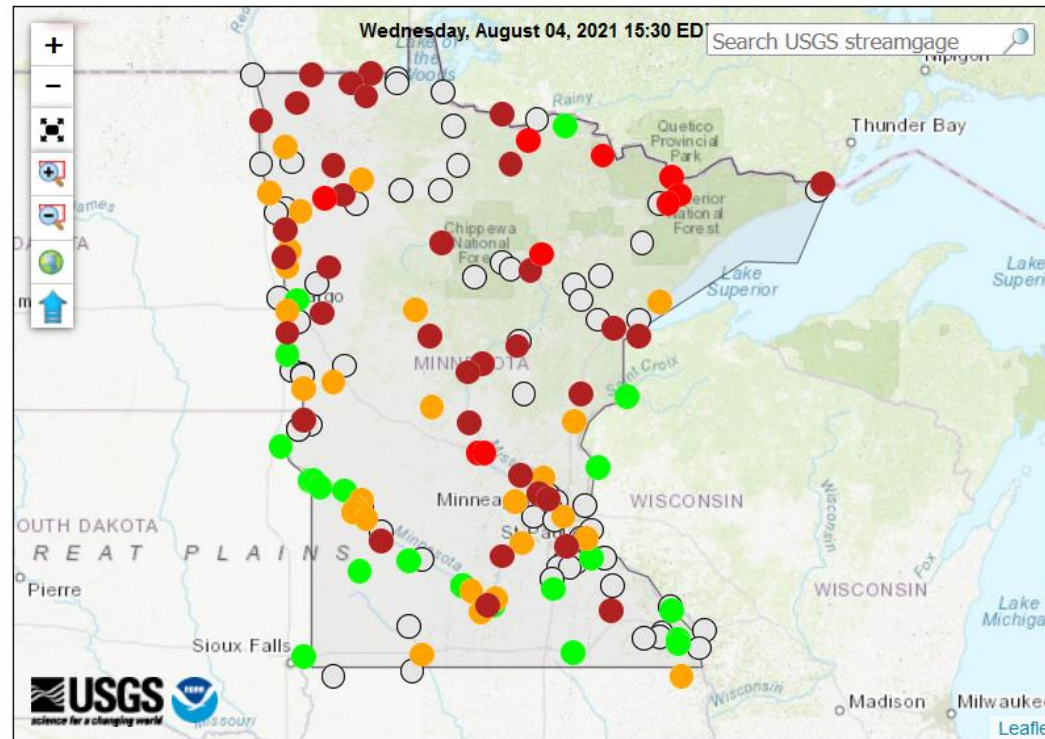
# Streamflow Conditions Maps: then and now



Source: Minnesota DNR

# USGS Streamflow compared to historical

Map of real-time streamflow compared to historical streamflow for the day of the year



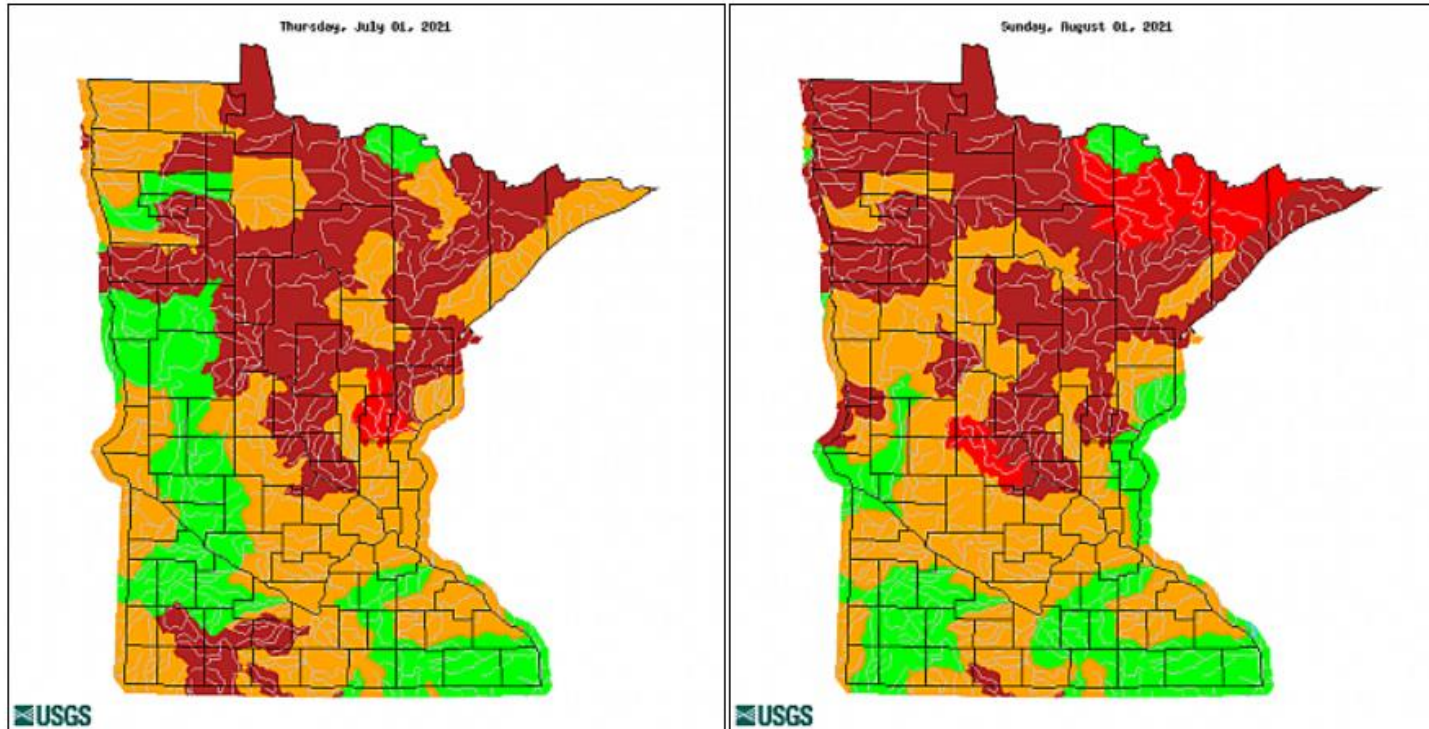
Explanation - Percentile classes							
●	●	●	●	●	●	●	○
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked



# 28 – Day Streamflow Comparison Maps

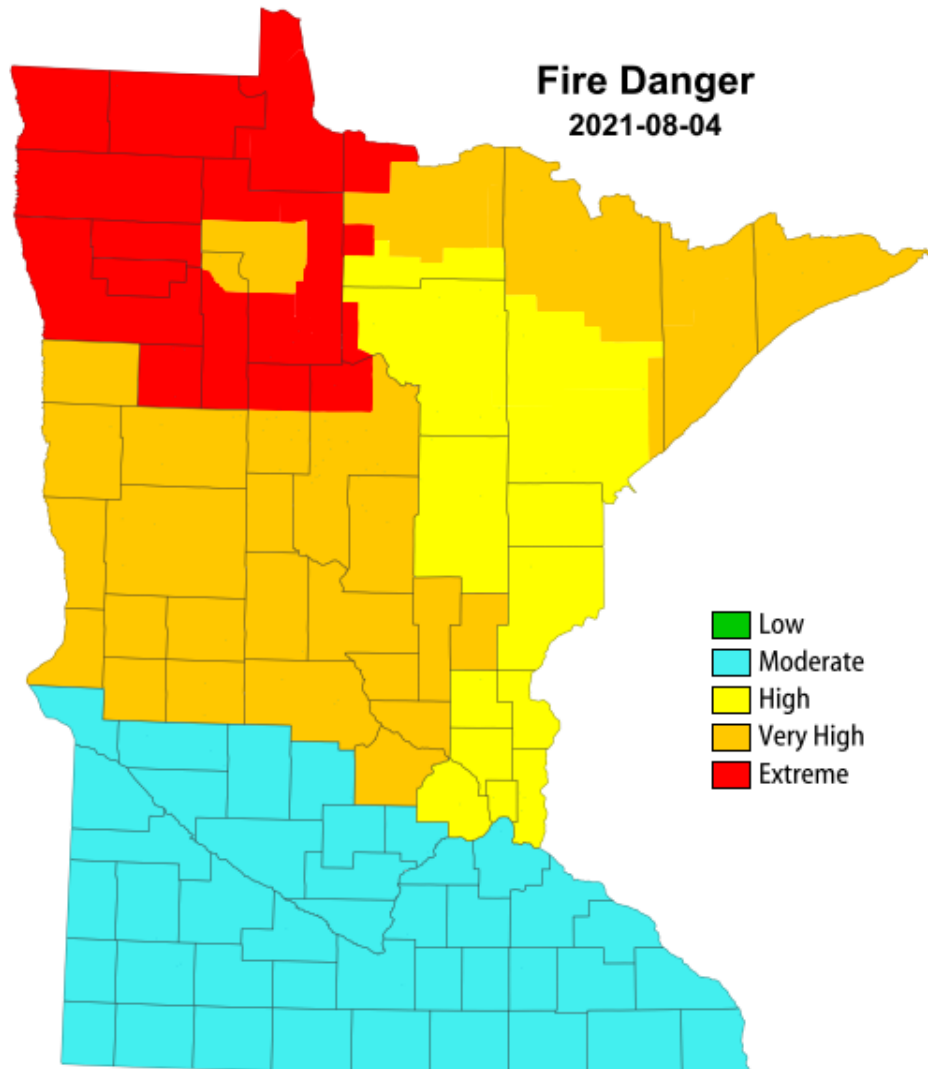
Date (YYYYMMDD): 20210701

Date (YYYYMMDD): 20210801



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

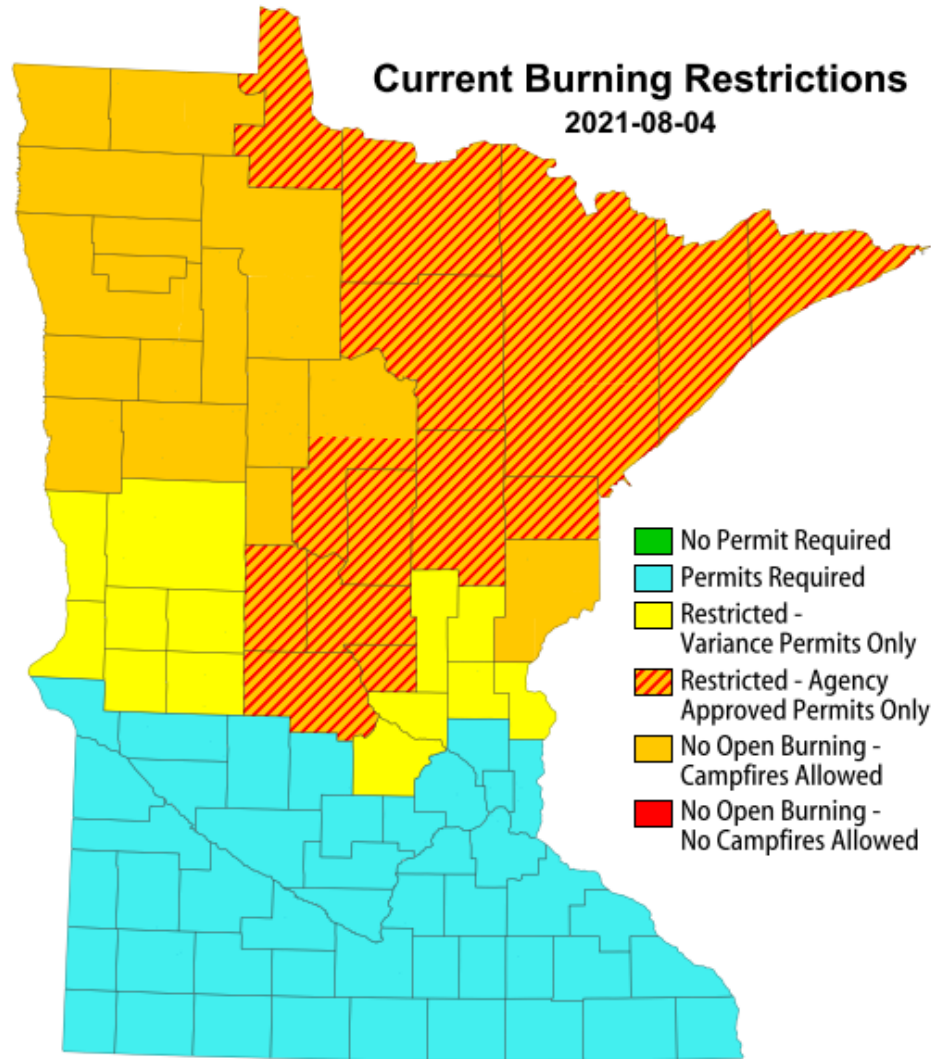
# Fire Danger: August 4, 2021



© MNDNR  
Source: Minnesota DNR

- Fire Danger at extreme levels in northwest.
- Central and northeast counties showing high to very high fire danger.
- Fire Danger moderate for southern third of the state.

# Fire Danger: August 4, 2021



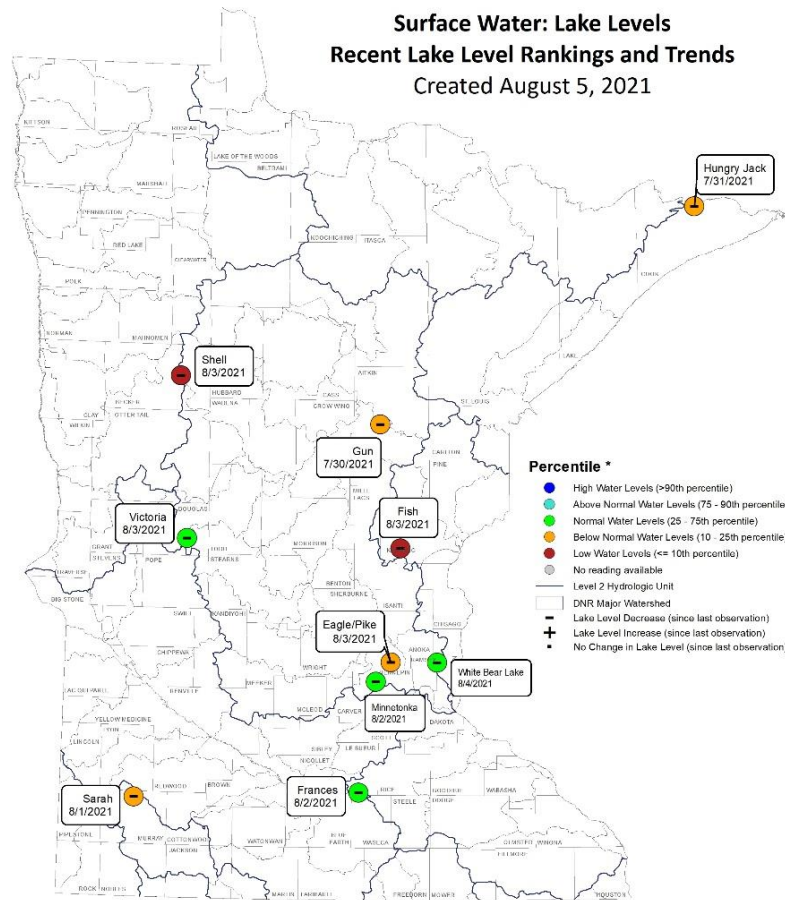
© MNDNR

Source: Minnesota DNR

- Permits required in all counties.
- No open burning in northwestern counties.
- Central and northeast counties in Restricted – Agency Approved permits only.



# Lake Levels



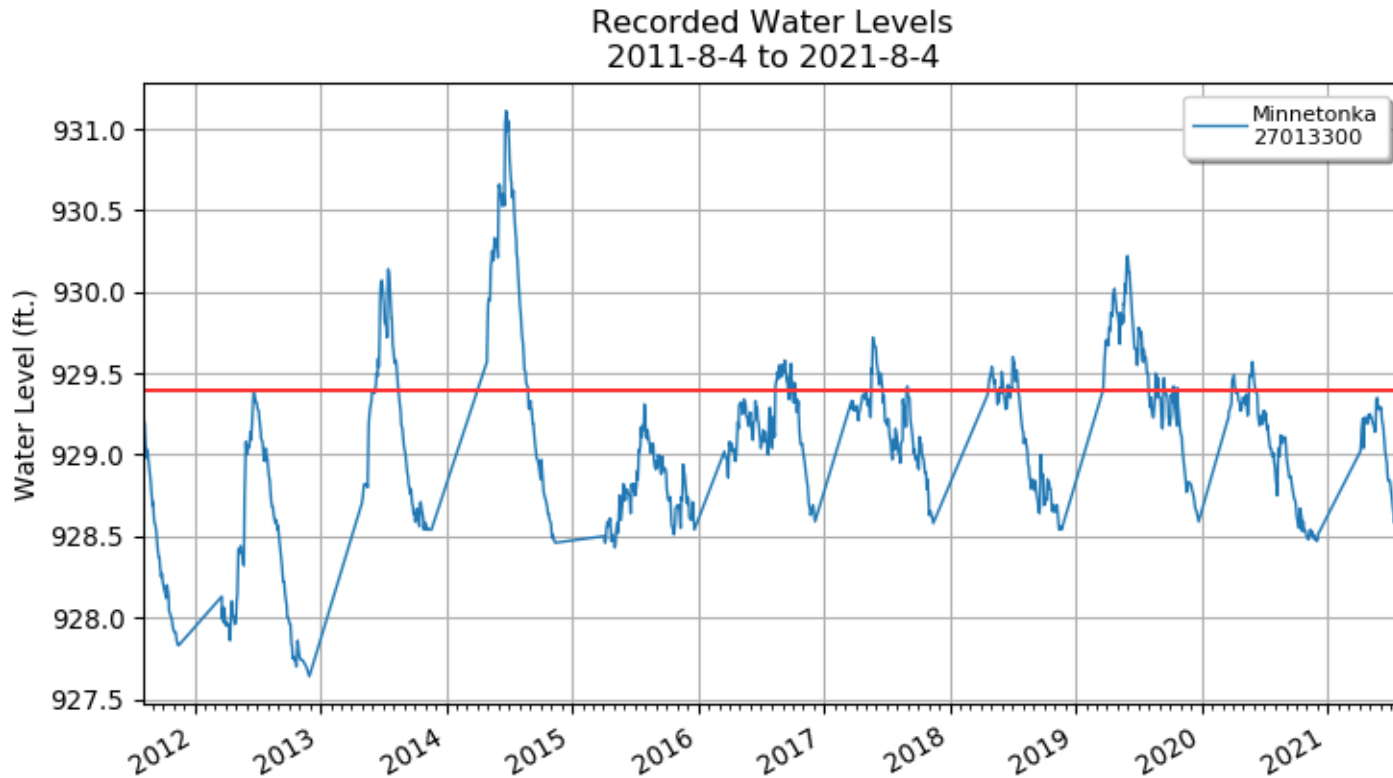
Source data from: MN DNR Lake Level Minnesota Monitoring Program.  
Percentile ranking based on last reported reading for the current month compared to all historical reported levels in the record.

For more information, contact [csg.dnr@state.mn.us](mailto:csg.dnr@state.mn.us)



- All ten of the selected lakes decreased from the previous week from 0.24 to 2.16 inches.
- Six of the lakes are in the low or below normal range.
- Four lakes remain in the normal range.
- Shell Lake in Becker County reported its lowest lake level.

# Lake Minnetonka Lake Level



- Record Low: 921.78 ft.  
12/16/37
- During the Drought of 88: just under 926 ft.
- Currently 928.39 ft., which is higher than our most recent droughts.

# Crop Report

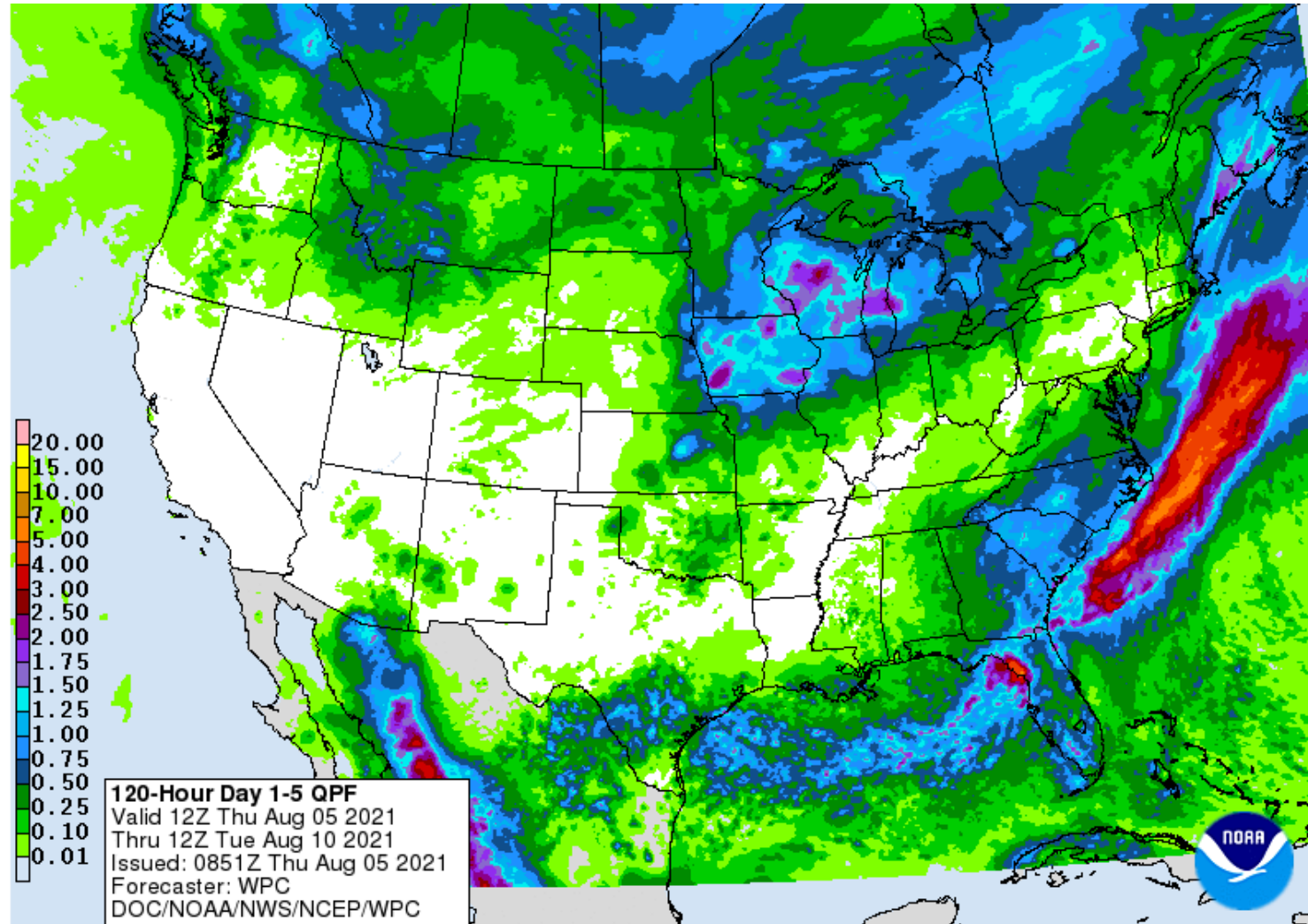
## Crop Condition as of August 1, 2021

Item	Very poor	Poor	Fair	Good	Excellent
	(percent)	(percent)	(percent)	(percent)	(percent)
Barley .....	11	29	45	15	0
Corn.....	7	16	41	31	5
Dry ed. Beans .	9	19	52	20	0
Oats.....	14	21	41	24	0
Pasture and range .....	37	40	17	4	2
Potatoes.....	1	5	28	53	13
Soybeans.....	7	16	43	31	3
Sugarbeets .....	0	4	28	54	14
Sunflowers .....	6	16	46	32	0
Wheat, spring..	13	32	43	12	0

## Crop Condition as of July 18, 2021

Item	Very poor	Poor	Fair	Good	Excellent
	(percent)	(percent)	(percent)	(percent)	(percent)
Barley .....	10	23	47	20	0
Corn.....	5	13	40	36	6
Dry ed. Beans .	5	15	50	28	2
Oats.....	13	21	43	23	0
Pasture and range .....	26	37	29	6	2
Potatoes.....	0	6	34	36	24
Soybeans.....	4	13	40	39	4
Spring wheat...	14	28	43	15	0
Sugarbeets .....	0	4	26	54	16
Sunflowers.....	3	13	48	35	1

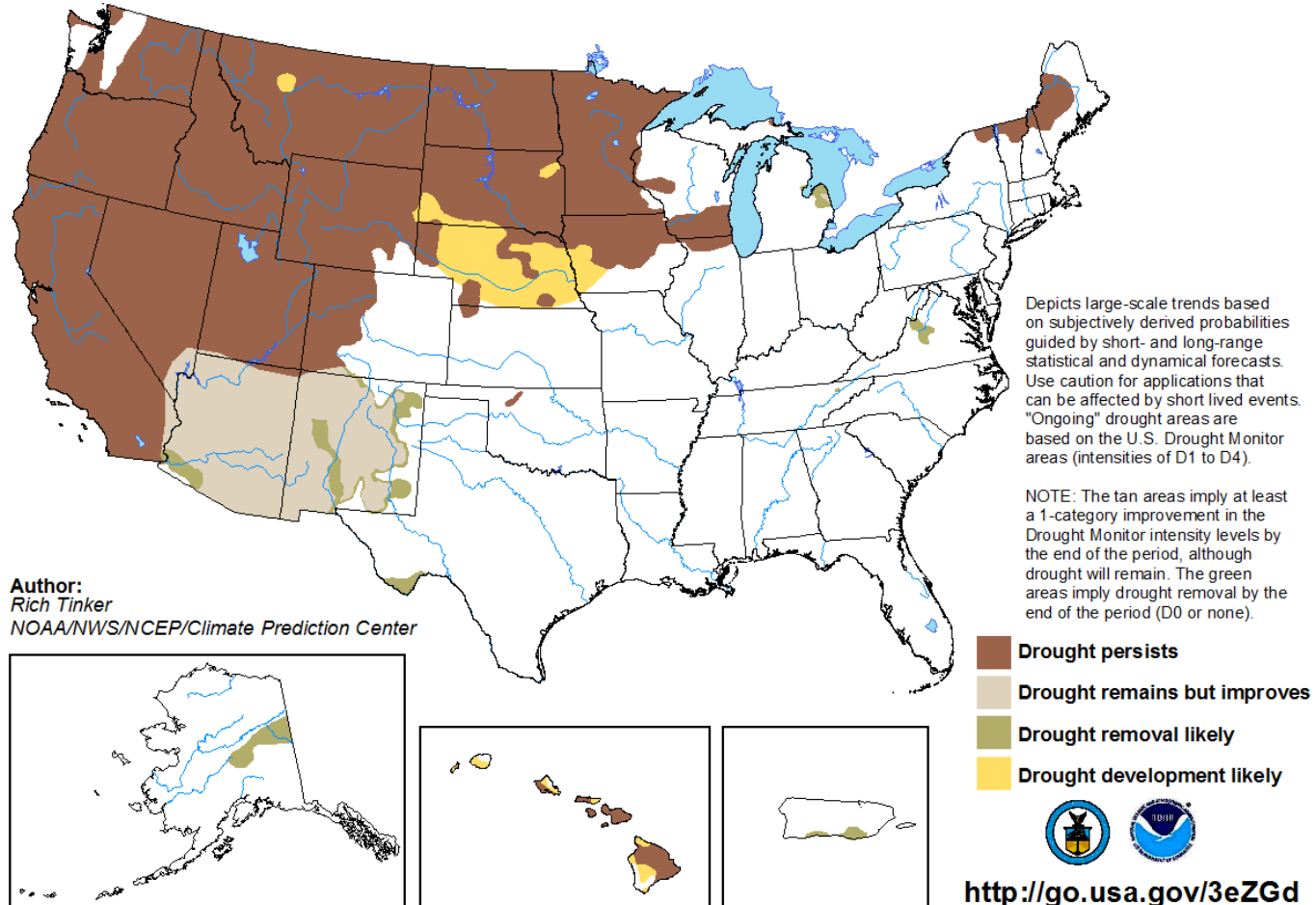
# Precipitation forecast for the next 5 days



# Drought Outlook

## U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

Valid for August 2021  
Released July 31, 2021



# Summary

- Drought continues to persist and expand, with a major increase in the amount of Extreme Drought.
- Much of the state experiencing Agricultural and Hydrological Drought, with some Ecological Drought setting in.
- Drought is expected to persist in the foreseeable future.
- Some precipitation is in the forecast but will it be enough to make a dent?

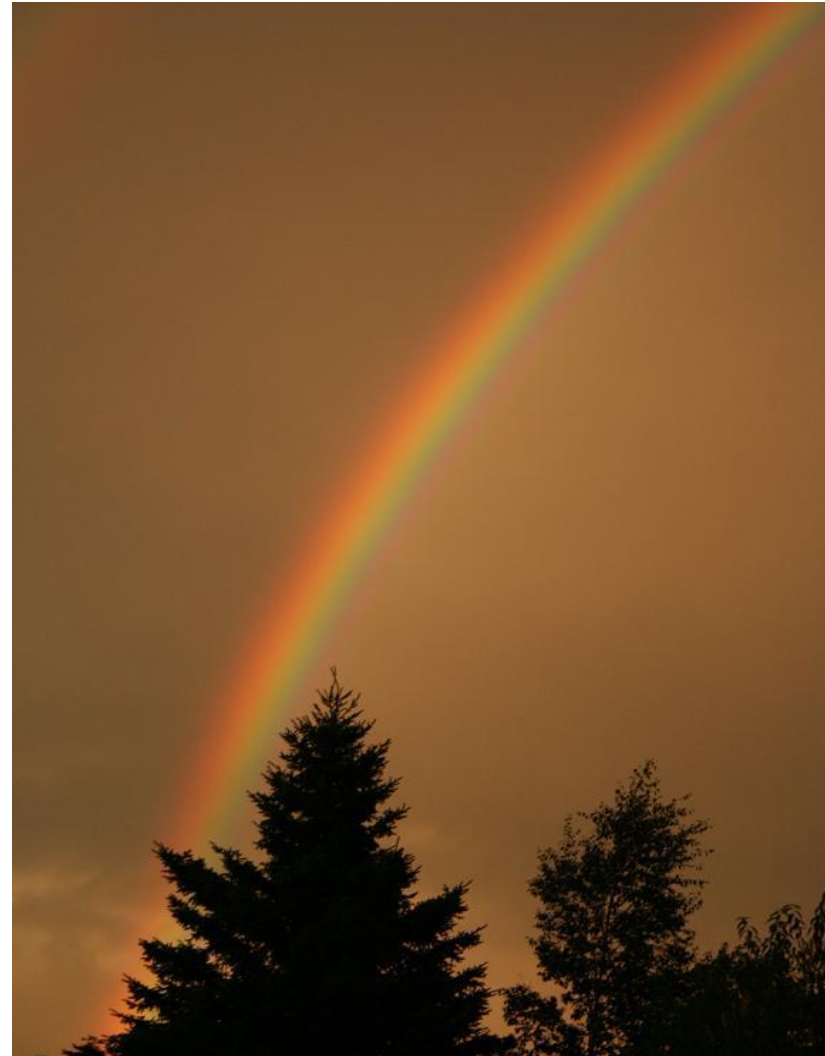


Photo Credit: Pete Boulay

Questions ?

**Thank You!**



- Reintroduce yourself
- Who do you represent?
- What recent actions has your agency / organization / government taken to respond to the drought?

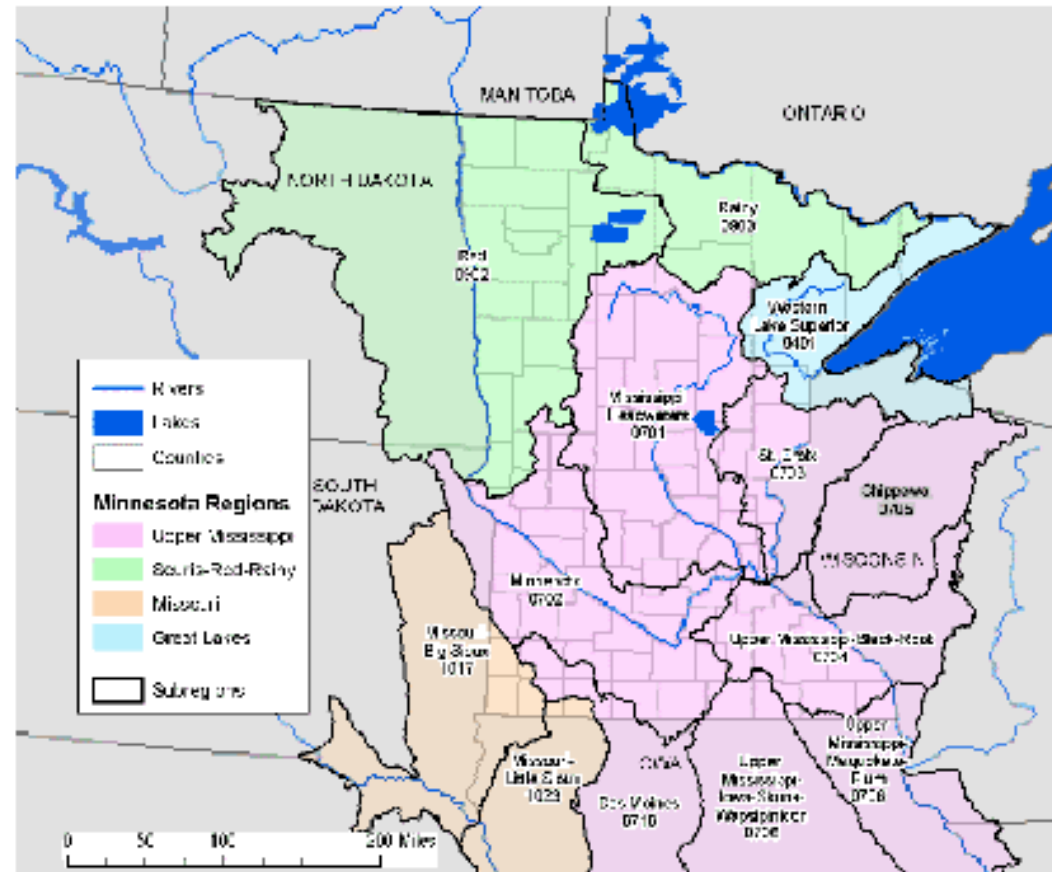


# Agenda

- Welcome  
Randall Doneen
- Task Force purpose, mission and roles  
Katie Smith
- Drought situation review and update  
Luigi Romolo
- Agency actions  
Task Force
- Drought issues discussion  
Task Force
- Other Topics: All  
Task Force
- Next steps / adjourn  
Randall Doneen
- Availability for media / interested parties  
Katie Smith

## Minnesota Statewide Drought Plan

This plan provides a framework for preparing for and responding to droughts to minimize conflicts and negative impacts on Minnesota's natural resources and economy.



# Minnesota Statewide Drought Plan

Drought Phase/Triggers	State and Federal Actions	Water Users and Suppliers Actions
<p><b>NON-DROUGHT PHASE</b> A significant portion of the watershed is not under drought conditions according to the U.S. Drought Monitor.</p> <p>The U.S. Drought Monitor is a weekly index depicting the location and intensity of drought conditions using a blend of quantitative and qualitative indicators. Drought conditions referenced in this plan are keyed to the U.S. Drought Monitor.</p>	<ul style="list-style-type: none"> <li>• Develop/maintain precipitation, stream flow, groundwater and water quality monitoring programs.</li> <li>• Conduct state and regional water studies and coordinate actions.</li> <li>• Assist water suppliers and other users in developing conservation measures.</li> <li>• Continue and improve water conservation education.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop/update/implement water supply plans (including drought preparedness and response and water conservation programs).</li> <li>• Adopt conservation rate structures and ordinances.</li> <li>• Establish mutual aid agreements, interconnections, conservation education, redundant/alternative supplies, etc.</li> <li>• Minimize water supply system losses and improve water use efficiency.</li> </ul>

# Minnesota Statewide Drought Plan

Drought Phase/Triggers	State and Federal Actions	Water Users and Suppliers Actions
<p><b>DROUGHT WATCH PHASE</b>            A significant portion of the watershed (see map) is “Abnormally Dry” or in a “Moderate Drought”.</p>	<ul style="list-style-type: none"> <li>• Inform Drought Task Force of conditions.</li> <li>• Intensify selected monitoring activities.</li> <li>• Initiate public awareness.</li> <li>• Notify water suppliers of moderate drought conditions.</li> <li>• Monitor Mississippi River flows and coordinate with the U.S. Army Corps of Engineers (USACE) and hydropower facility owners.</li> </ul>	<ul style="list-style-type: none"> <li>• Monitor potential conflicts and problems and notify DNR of source conflicts.</li> <li>• Public water suppliers provide conservation information and request customers to implement voluntary measures to reduce water use.</li> </ul>

# Minnesota Statewide Drought Plan

Drought Phase/Triggers	State and Federal Actions	Water Users and Suppliers Actions
<p><b>DROUGHT WARNING PHASE</b>            A significant portion of the watershed is in a “Severe Drought”, or for public water suppliers using the Mississippi River, the average daily flow at the USGS gage near Anoka is at or below 2000 cfs for five consecutive days.</p>	<ul style="list-style-type: none"> <li>• Convene Drought Task Force.</li> <li>• Increase public drought awareness.</li> <li>• Notify water suppliers of severe drought conditions.</li> <li>• Monitor implementation of the Mississippi River System-Wide Low-Flow Management Plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Public water suppliers implement appropriate water use restrictions contained in their water supply plans.</li> <li>• Other water users implement appropriate conservation measures.</li> <li>• Public water suppliers implement water use reduction actions with a goal of reducing water use to 50% above January levels.</li> <li>• Dam operators implement the Mississippi river System-Wide Low-Flow Management Plan.</li> </ul>

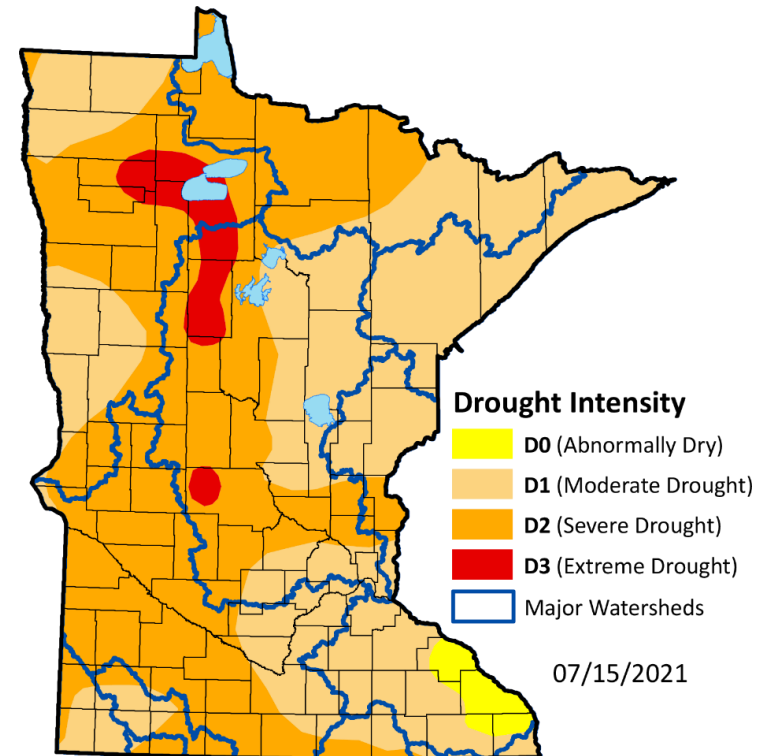
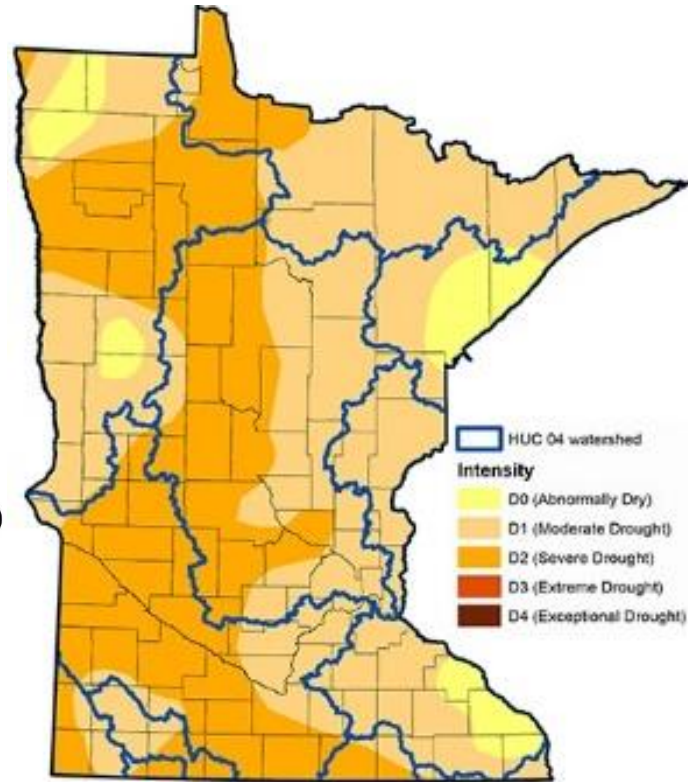
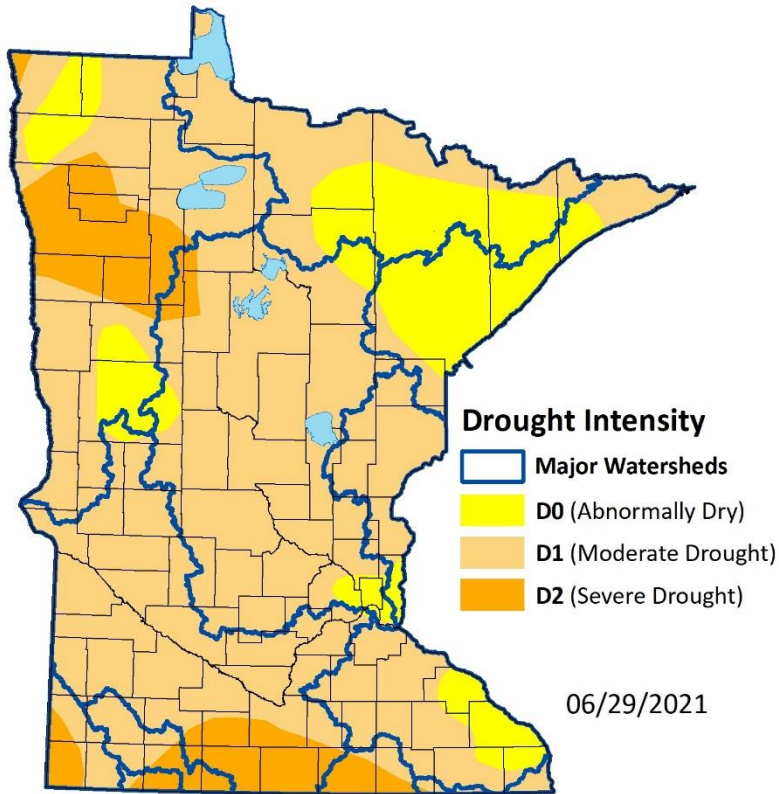
# Minnesota Statewide Drought Plan

Drought Phase/Triggers	State and Federal Actions	Water Users and Suppliers Actions
<p><b>RESTRICTIVE PHASE</b></p> <p>A significant portion of the watershed is in an “Extreme Drought”, or for public water suppliers using the Mississippi River, the average daily flow at the USGS gage near Anoka is at or below 1500 cfs for five consecutive days.</p>	<ul style="list-style-type: none"><li>• Notify water suppliers of extreme drought conditions.</li><li>• Closely monitor river flows.</li><li>• Continue drought awareness efforts to encourage conservation.</li></ul>	<ul style="list-style-type: none"><li>• Follow MDNR allocation restrictions.</li><li>• Public water suppliers implement water use reduction actions with a goal of reducing water use to 25% above January levels.</li><li>• All appropriators conserve water and minimize non-essential water uses.</li></ul>

# Minnesota Statewide Drought Plan

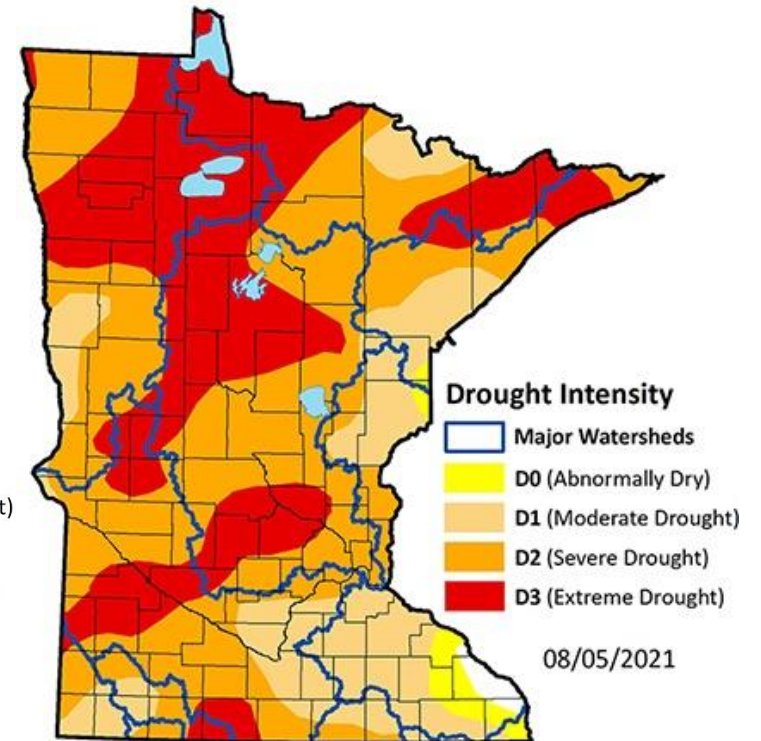
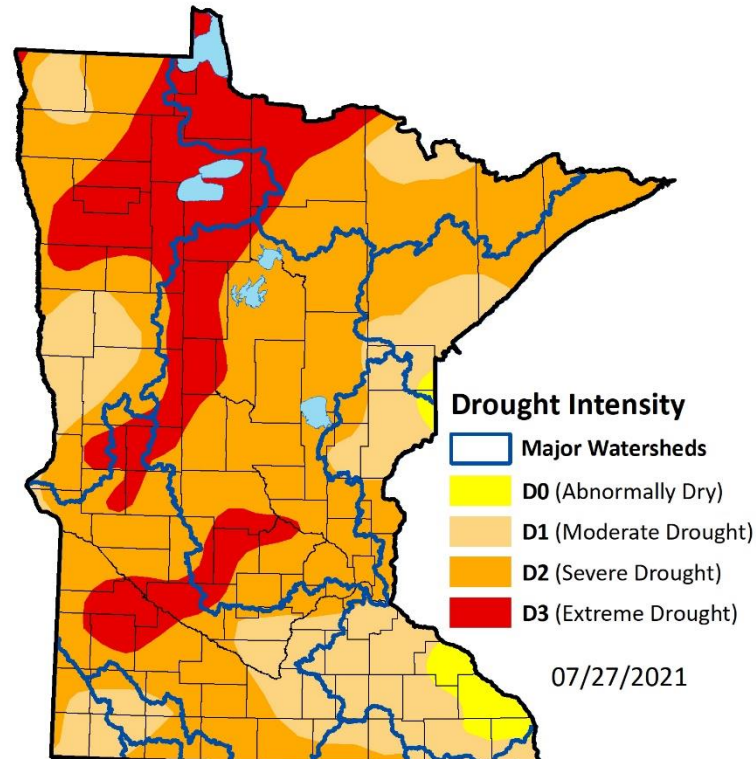
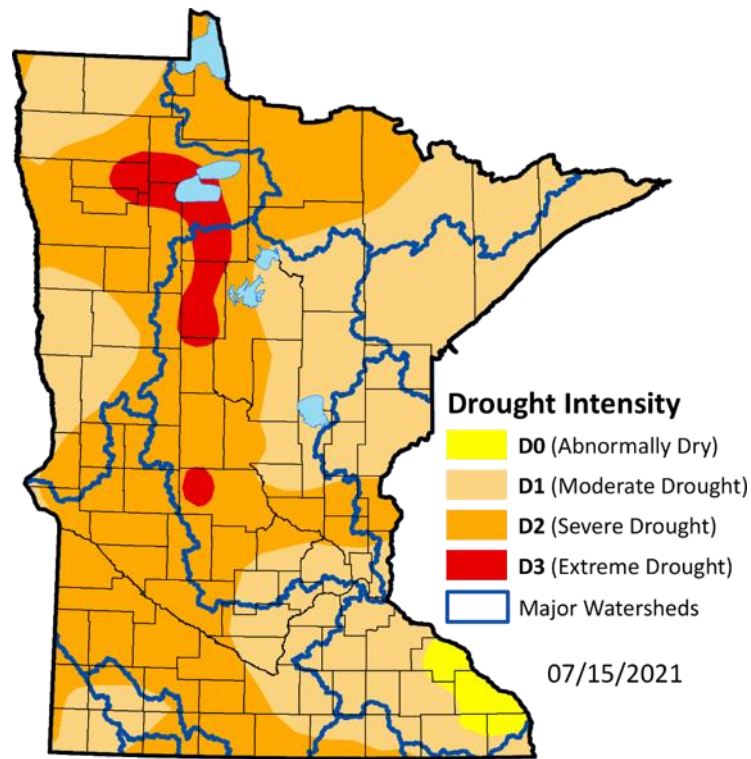
Drought Phase/Triggers	State and Federal Actions	Water Users and Suppliers Actions
<p><b>EMERGENCY PHASE</b></p> <p>A significant portion of the watershed is in an “Exceptional Drought”, or highest priority water supply needs are not being met, or there are threatened or actual electricity shortages due to cooling water supply shortages, or for public water suppliers in the Twin Cities, the average daily flow of the Mississippi River USGS gage near Anoka is at or below 1000 cfs for five consecutive days.</p>	<ul style="list-style-type: none"><li>• Advise Governor on need for emergency declaration.</li><li>• Minnesota Division of Homeland Security and Emergency Management implements MN Emergency Operations Plan (MEOP).</li><li>• Consider request to the USACE for the release of water from the Mississippi River Headwaters Reservoirs.</li></ul>	<ul style="list-style-type: none"><li>• Public water suppliers implement mandatory water use reduction actions with a goal of reducing water use to January levels.</li><li>• Limit water used based on highest priorities defined in Minnesota Statutes 103G.261.</li><li>• Implement measures consistent with an emergency declaration.</li><li>• Provide bottled water, hauled water, and sanitation supplies to users, as needed.</li></ul>

# Drought Warning Progression





# Drought Restriction Progression



- Meet again August 19, 2021
- Others...

## **Your questions**

State Drought Task Force Meeting



## State Drought Task Force Meeting