

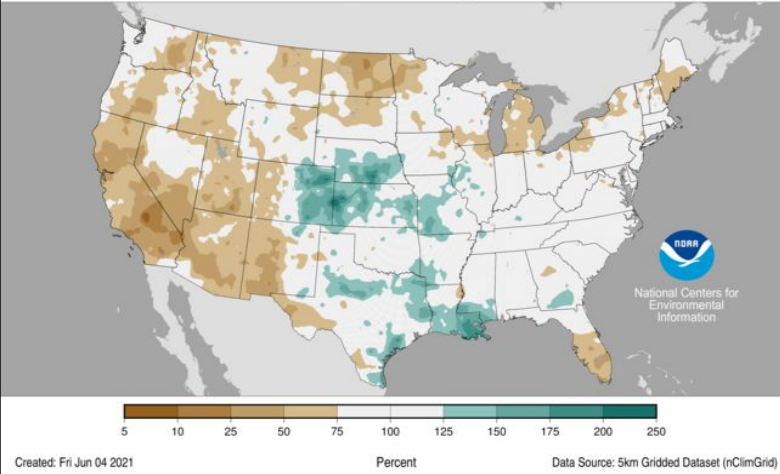


Increasing Fire Weather and Water Resource Concerns this Summer as Drought Conditions Persist or Worsen Across the Northern Plains and Great Lakes Region

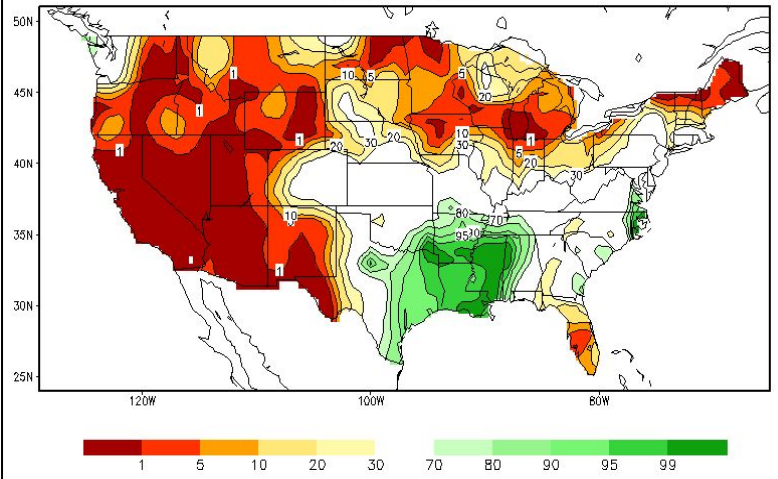
Setting the Stage: Early Summer Heat, Limited Rain and Snow, and Dry Ground

2021 has been a dry year so far with very little rain and snow across much of the Northern Plains and portions of the Great Lakes region. Early summer heat was experienced across much of the region, with several new temperature records being set in early to mid June. This early excessive heat combined with dry conditions noted across much of the region has resulted in very dry soil, leading to continued or worsening drought conditions.

Precipitation Percent of Average
January–May 2021
Average Period: 20th Century



Calculated Soil Moisture Ranking Percentile
JUN 17, 2021



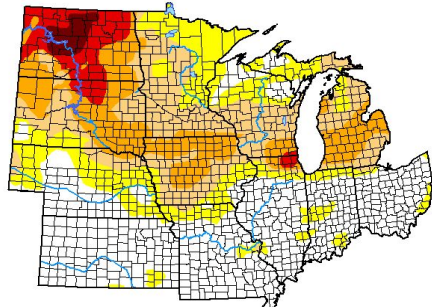
ABOVE LEFT: Precipitation percent of average across the U.S. from January - May, 2021 (Source: www.ncdc.noaa.gov)

ABOVE RIGHT: Calculated soil moisture ranking percentiles across the U.S. (Source: cpc.ncep.noaa.gov)

Assessing Drought Conditions

The U.S. Drought Monitor notes that 60% of the north central U.S. is experiencing some degree of drought conditions, with 21% of the region experiencing severe, extreme, or exceptional drought conditions. The long-range forecasts for much of the Northern Plains and Great Lakes region are favoring hot conditions through the rest of the summer, with drier conditions expected across western portions of the Dakotas (see next page for these seasonal temperature and precipitation/rain outlooks). These odds, combined with the excessive heat that occurred in early to mid June, lead to increasing concerns for persistent or worsening drought conditions.

U.S. Drought Monitor North Central States



June 15, 2021
(Released Thursday, Jun. 17, 2021)
Valid 8 a.m. EDT

	Drought Conditions (Percent Area)						
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	
Current	39.33	60.67	41.23	21.74	6.94	1.63	
Last Week 06-08-2021	41.06	58.94	35.89	18.03	6.64	1.63	
3 Months Ago 03-14-2021	33.97	66.03	28.80	14.02	1.75	0.00	
Start of Calendar Year 12-29-2020	34.48	65.52	38.13	15.29	4.66	0.00	
Start of Water Year 09-29-2020	36.74	63.26	24.70	7.70	0.84	0.00	
One Year Ago 06-16-2020	68.69	31.31	9.65	1.38	0.55	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>

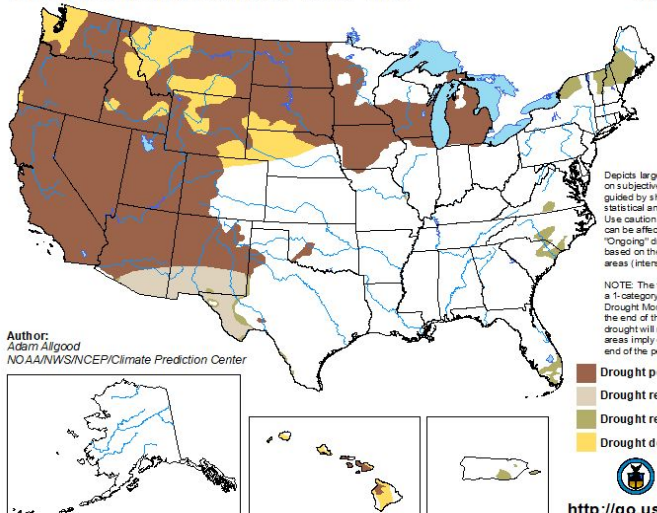
Author:
Curtis Riganti
National Drought Mitigation Center



droughtmonitor.unl.edu

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for June 17 - September 30, 2021
Released June 17



Depicts large-scale trends based on a subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short-lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensity of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

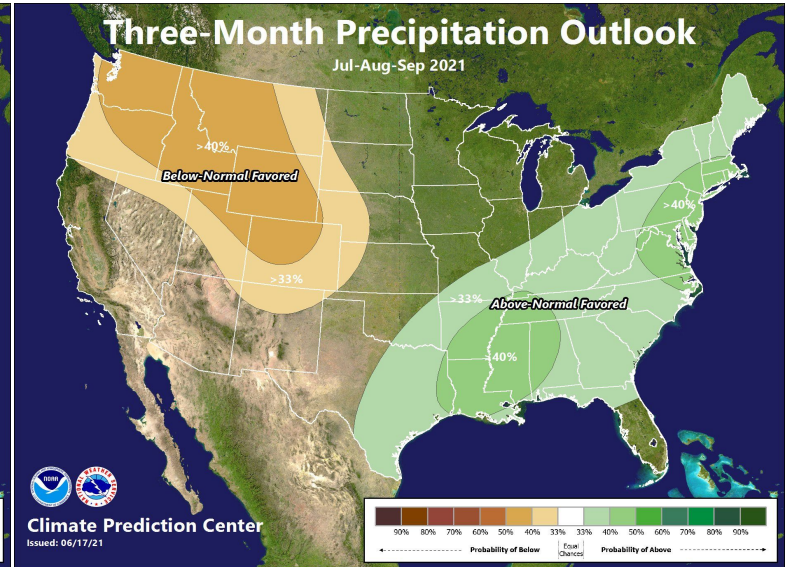
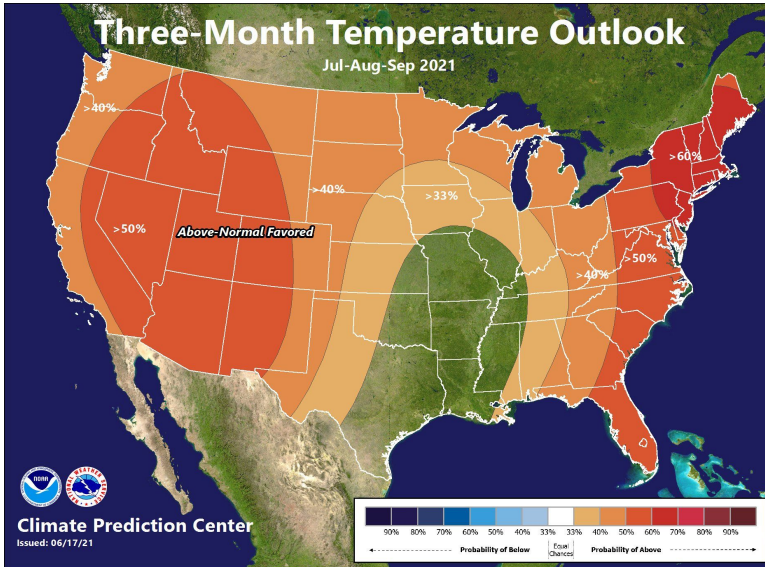
- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<http://go.usa.gov/3e273>

ABOVE: U.S. Drought Monitor for the north central U.S., as of June 15, 2021 (Source: droughtmonitor.unl.edu)

ABOVE: U.S. Seasonal Drought Outlook through September 30, 2021 (Source: cpc.ncep.noaa.gov)



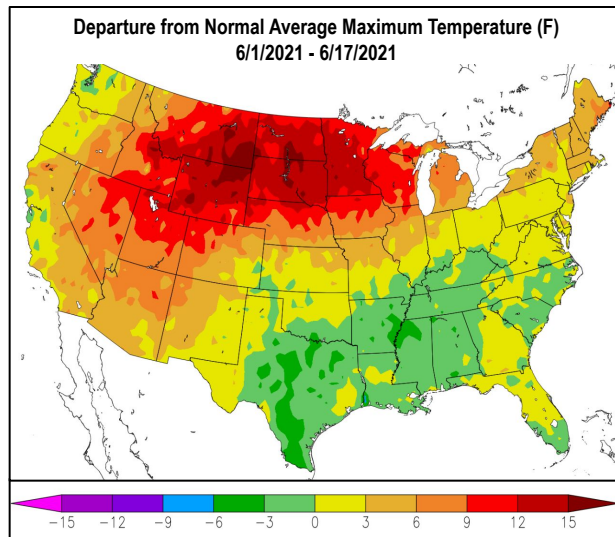
ABOVE: Temperature and Precipitation Outlooks for the 3-month period of July through September 2021 (Source: cpc.ncep.noaa.gov)

Potential Impacts

Many river gages are showing that the rivers and creeks are running below normal to much below normal for this time of year, particularly across the Dakotas, Michigan, northeastern Illinois, southeastern Wisconsin, and northern Minnesota. The combination of long-term dryness, recent extreme heat, drier air in place leading to higher evapotranspiration, and very dry soils in many areas is limiting the availability of water for growing crops.

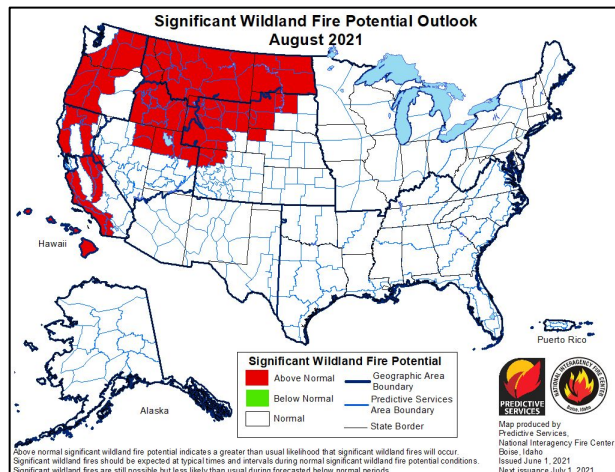
Persistent or worsening drought conditions may contribute to:

- Larger and more frequent wildfires
- Less livestock forage and water
- Increased crop stress and livestock heat-stress
- Reduced rural water supply and quality
- Reduced or adapted outdoor recreation and tourism
- Decreased air quality
- Increased production of harmful algae blooms and other ecological impacts due to reduced water levels



LEFT: Departure from normal for the average maximum temperatures from June 1-17, 2021

Source: hprcc.unl.edu



LEFT: August 2021 outlook for Significant Wildland Fire

Source: [NIFC Significant Wildland Fire Potential Outlooks](http://NIFC.SignificantWildlandFirePotentialOutlooks)

For more information visit:

Local Forecast – weather.gov

Long-Range Outlooks – cpc.ncep.noaa.gov

River Forecasts – water.weather.gov/ahps/forecasts.php

Weather & Climate Data – ncei.noaa.gov

Fire Outlook – nifc.gov/nicc

Drought Information – drought.gov

Agricultural Outlook – usda.gov/oce/ag-outlook-forum

Streamflow Data - <https://waterwatch.usgs.gov/index.php?id=ww>