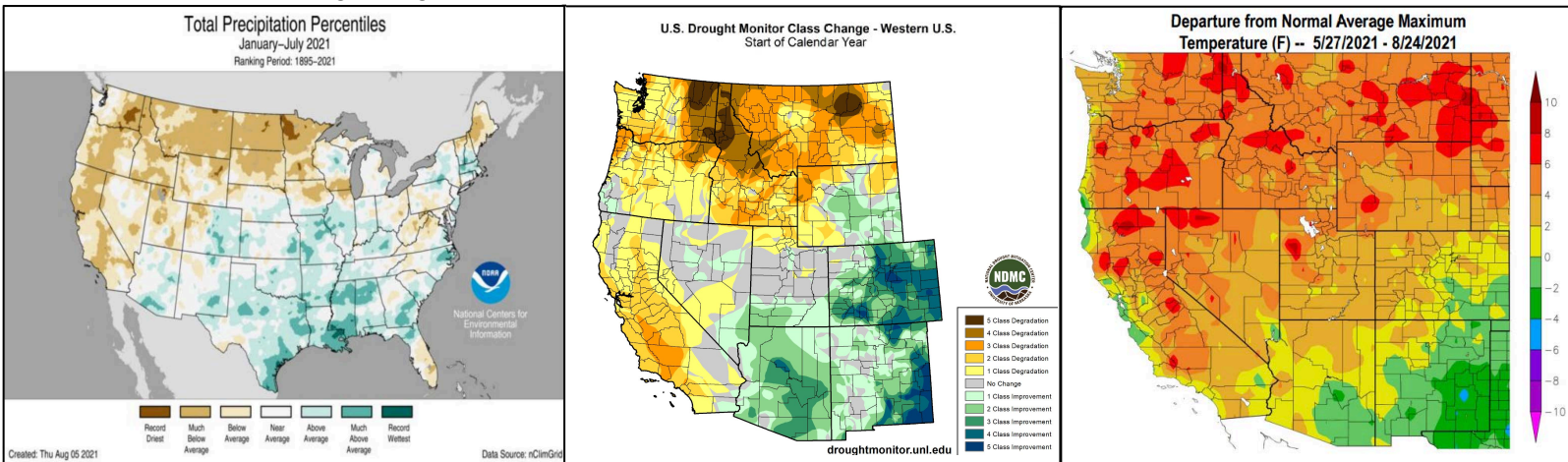


### Fall Outlook: Fire Weather and Water Resource Concerns to Continue as Drought Conditions Persist with Warmer/Drier Conditions Expected in the Western U.S.

#### Setting the Stage: 2020 Drought Conditions Worsened in 2021 from Heat and Limited Rain

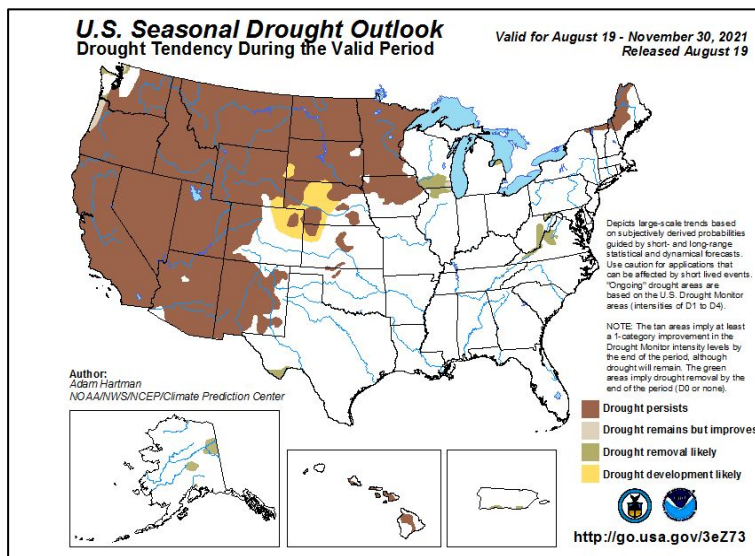
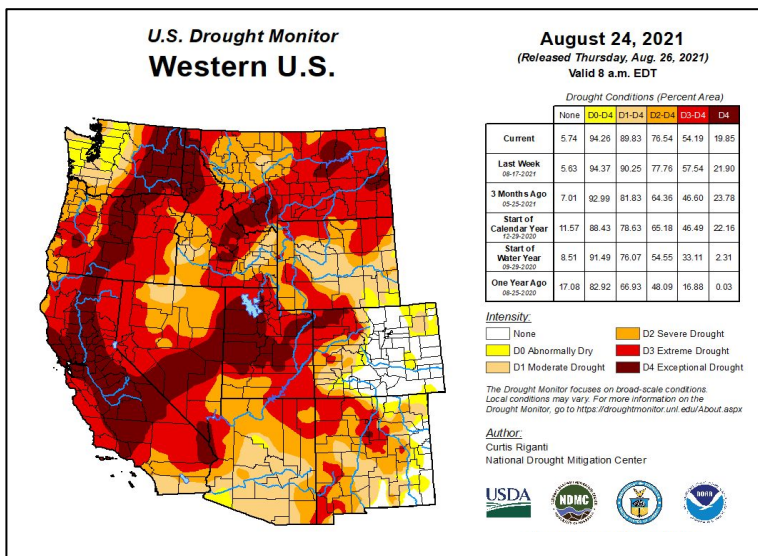
2021 started off dry due to limited precipitation late summer through fall of 2020, and these dry conditions have persisted through 2021 so far across much of the western U.S. due to very little rain (and limited snow during the winter season). Exceptions are noted across Arizona, New Mexico, Colorado, and portions of Wyoming, Utah, and Nevada where drought conditions have improved primarily due to the monsoonal moisture this summer. The summers heat quickly kicked in by early to mid June with several additional stretches of excessive heat noted across portions of the region through July and August. The combination of these conditions has resulted in very dry soils, leading to continued or worsening drought conditions across California, the Pacific Northwest, and the Northern Rockies.



ABOVE LEFT: Total precipitation percentiles across the U.S. from January - July, 2021 (Source: [NCEI](#))  
 ABOVE MIDDLE: U.S. Drought Monitor class change from December 29, 2020 to August 24, 2021 (Source: [U.S. Drought Monitor](#))  
 ABOVE RIGHT: Departure from normal for average maximum temperatures from May 27 to August 24, 2021 (Source: [HPRCC](#))

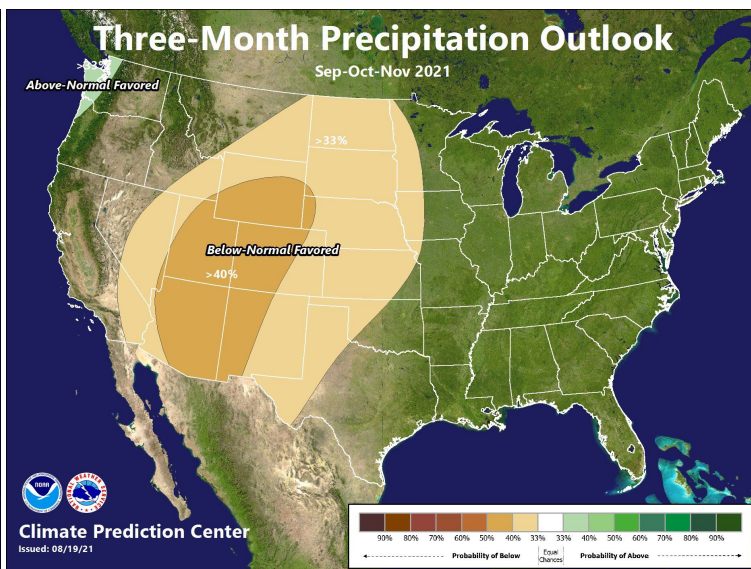
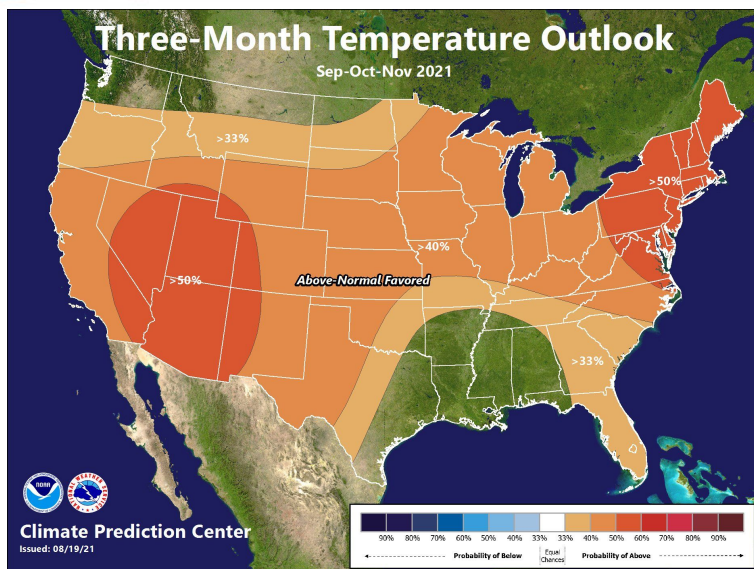
### Assessing Drought Conditions

conditions since the end of the 2012 drought. The late August Drought Monitor update notes that 94% of the western U.S. is experiencing some degree of drought conditions, with 54% of the region experiencing extreme or exceptional drought conditions. The long-range forecasts for much of the western U.S. are favoring warmer conditions and equal to below-normal chances for drier conditions continuing through the fall (with the exception of the far Pacific Northwest where above-normal chances for precipitation are favored). These forecasts, combined with the excessive heat and drier conditions experienced across portions of the western U.S. through the summer, lead to increasing concerns for persistent or worsening drought conditions through the fall.



ABOVE: U.S. Drought Monitor for the western U.S., as of August 24, 2021 (Source: [U.S. Drought Monitor](#))

ABOVE: U.S. Seasonal Drought Outlook through November 30, 2021 (Source: [CPC](#))



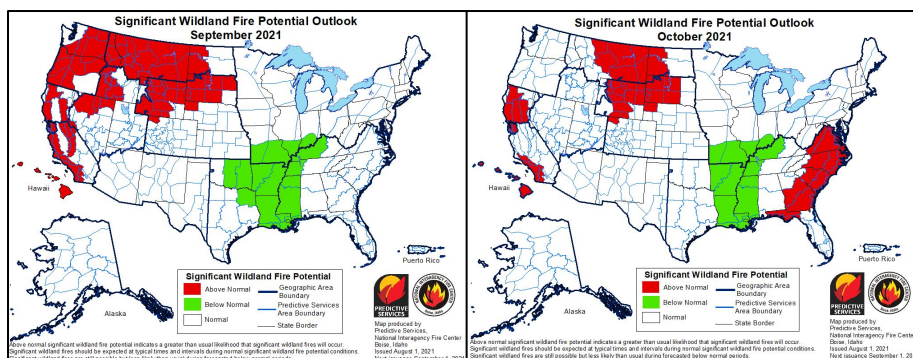
ABOVE: Temperature and Precipitation Outlooks for the 3-month period of September through November 2021 (Source: [CPC](#))

## Potential Impacts

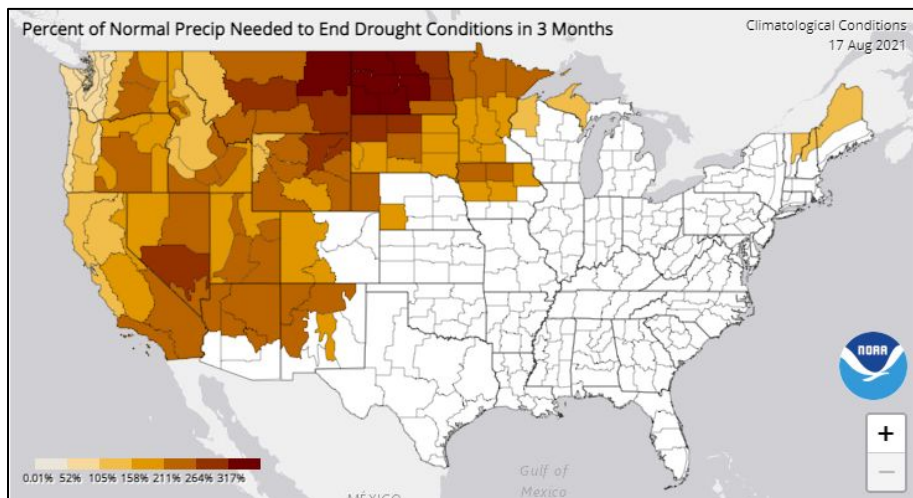
Many streamflow gauges across the region are showing that the rivers and creeks are running below normal to much below normal for this time of year. The combination of long-term dryness and steady summer heat has led to increasing concerns for significant water supply issues continuing through the fall. Given these conditions, it will require persistent above-normal rain and snow events over multiple seasons to start to see improvement in drought impacts. As a result, drought conditions will likely persist into next year.

## Persistent or worsening drought conditions

- Larger and more frequent wildfires
- Decreased air quality
- Lack of water resources for crops and livestock
- Stress on water resources for communities
- Reduced or adapted outdoor recreation and tourism



ABOVE: September 2021 and October 2021 Outlooks for Significant Wildland Fire (Source: [NIFC](#))



ABOVE: Percent of normal precipitation needed to end drought conditions in 3 months (Source: [NCEI](#))

## 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>

