

Nevada Drought Update – July 2021

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Current drought conditions in Nevada and across the West

Nevada remains impacted by widespread significant drought. Changes since early June have been modest. There was no change in the extent of D4 - Exceptional Drought, but conditions in far northeastern Elko county have deteriorated from D1 - Moderate Drought and D2 - Severe Drought to D3 - Extreme Drought (Figure 1). Drought conditions worsened elsewhere in the West, particularly in Idaho, Montana and eastern Washington, with improvements mainly east of the Rockies in Colorado and New Mexico (Figure 2)

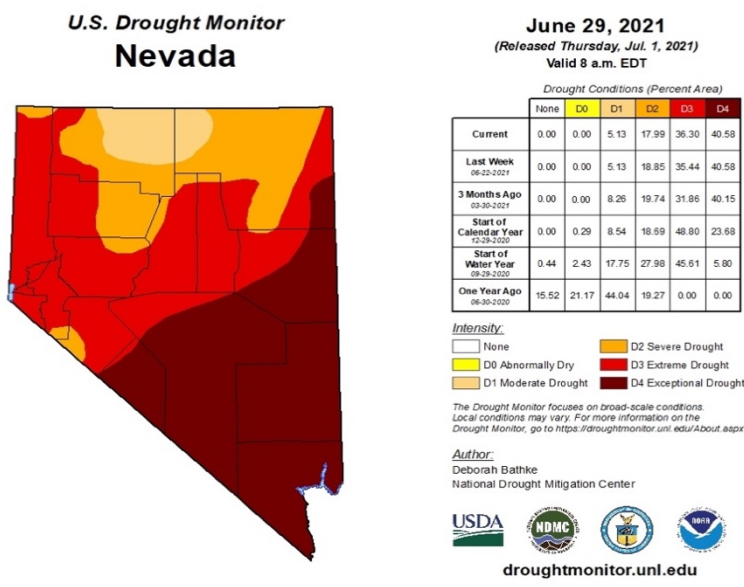
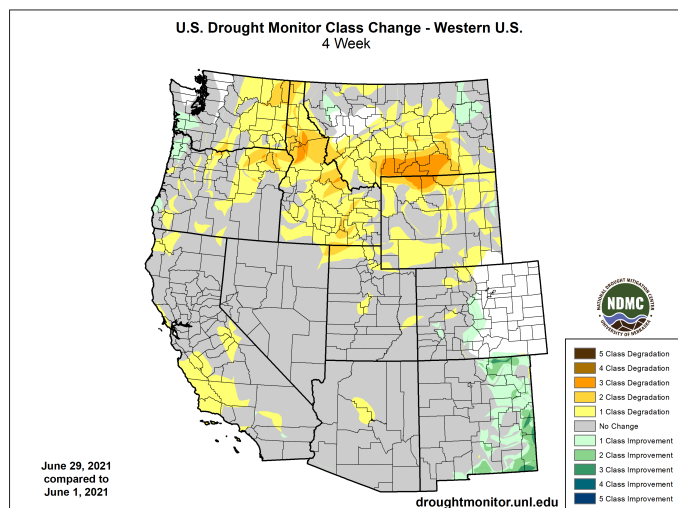
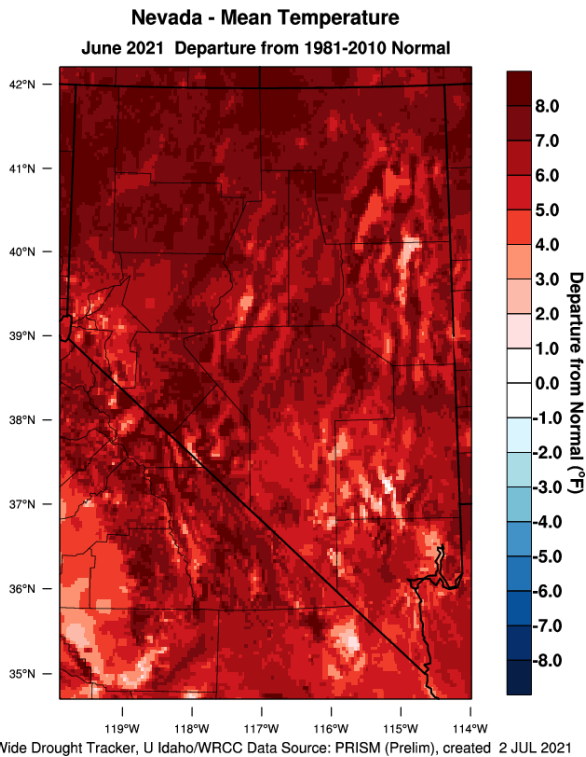


Figure 1. Drought Monitor map for Nevada, released on July 1, 2021, reflecting conditions as of June 29, 2021.

Figure 2. Drought Monitor change map showing places where drought conditions improved (green) or worsened (yellow to brown) between early and late June 2021.



June Temperature and Precipitation



Overall, the state experienced warmer than normal temperatures in June, with most of the state experiencing temperatures at least 4°F above the 1981-2010 average (Figure 3). Some parts of the state experienced average temperatures more than 7°F above average. For reference, the June average temperature at the Reno Airport (69.2°F) is 5.7°F warmer than in Virginia City (63.5°F) which is almost 2000' higher in elevation (6,340' vs. 4,410').

Figure 3. Difference from average (1981-2010) June temperature in June 2021. Source: PRISM <https://wrcc.dri.edu/wwdt/>

June is typically dry enough that no one anticipated significant drought relief from rain over the past month. Most of the state received lower than normal precipitation (Figure 4), but storms delivered decent amounts of rain locally. For example, between June 20 and July 1, weather stations in Clark County that reported every day received between 0.01" of precipitation (Las Vegas 7.8 SW) and 2.10" (Overton). Over that same period, the Kings River Valley – Orovada 26NW station received no rain (with 1 day missing), but one of the weather stations near Winnemucca reported 0.71", despite not reporting daily.

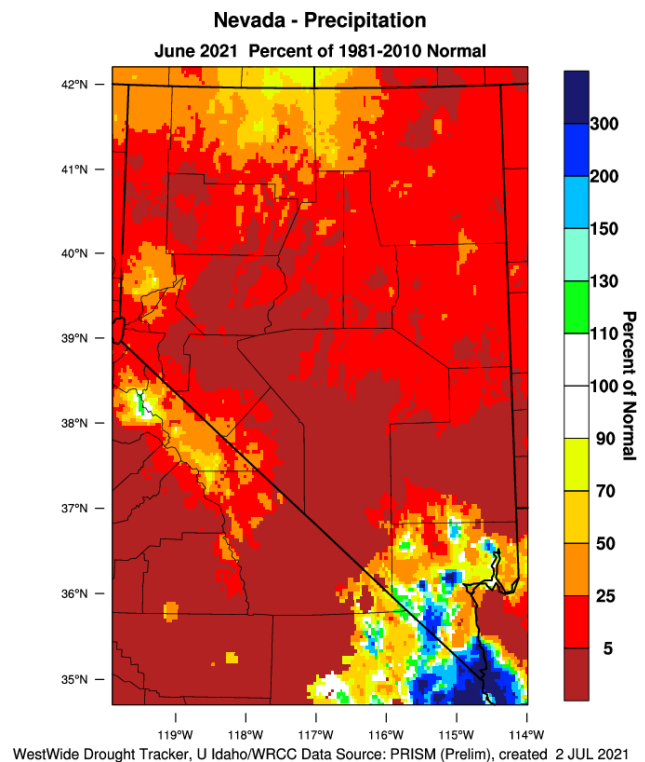


Figure 4. Percent of average (1981-2010) June precipitation in June 2021. Source: PRISM <https://wrcc.dri.edu/wwdt/>

Water Resources

Reservoirs levels remain largely lower than normal for this time of year (Figure 5), and streamflow is below or much below normal at most gaging stations in the state (Figure 6). Numerous media stories have indicated that low and dropping water levels in Lake Mead may impact power production at Hoover Dam over the coming months.

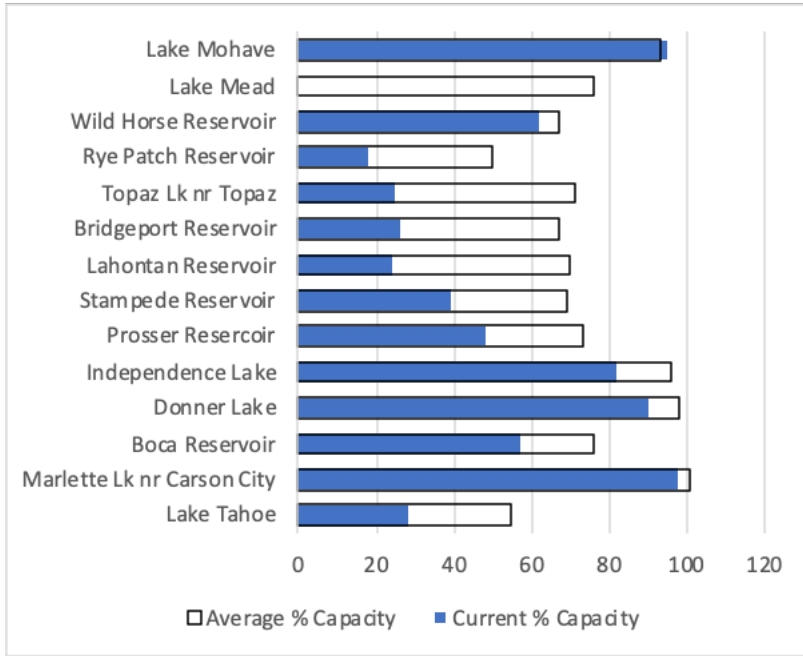


Figure 5. Current percent capacity in Nevada's reservoirs in late June 2021 relative to their average percent capacity for the time of year. Note that current percent capacity was not available for Lake Mead when the chart was produced. Source: <https://www.nrcs.usda.gov/wps/portal/wcc/home/snowpack/basinDataReports/>.

Map of monthly average streamflow compared to historical streamflow for the month of the year

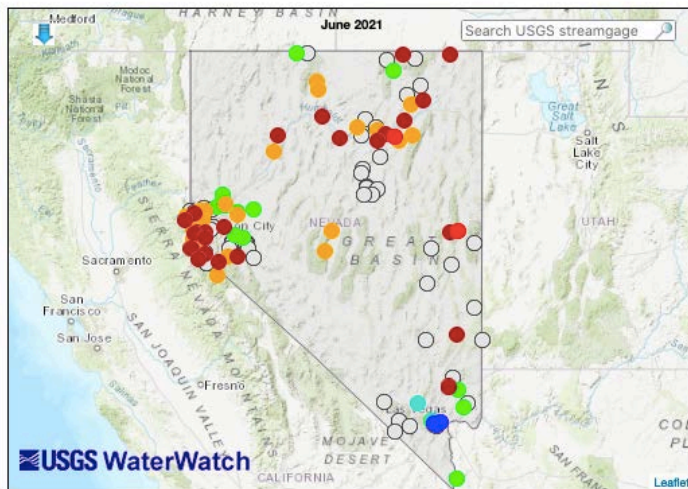


Figure 6. June average stream flow relative to usual conditions. Source: https://waterwatch.usgs.gov/index.php?id=mv01d&sid=w_gmap&r=nv

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

Soil moisture is generally below normal across the state (Figure 7). Soil moisture measured at SNOTEL stations, which are located mostly in the mountains, remains at near record lows (Figure 8). Over the period with reasonable soil moisture measurements at these stations, only 2014 had lower overall soil moisture.



2021.06.21-2021.06.27 Nevada

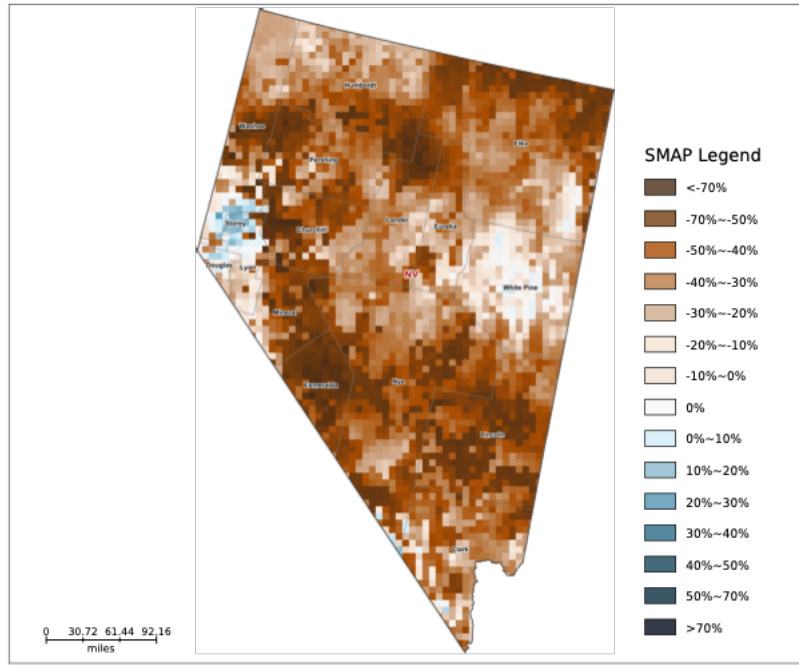


Figure 7. Soil moisture in the NASA SMAP data. Source: <https://nassgeo.csiss.gmu.edu/CropCASMA/>.

Produced by VegScape - <http://nassgeodata.gmu.edu/VegScape>

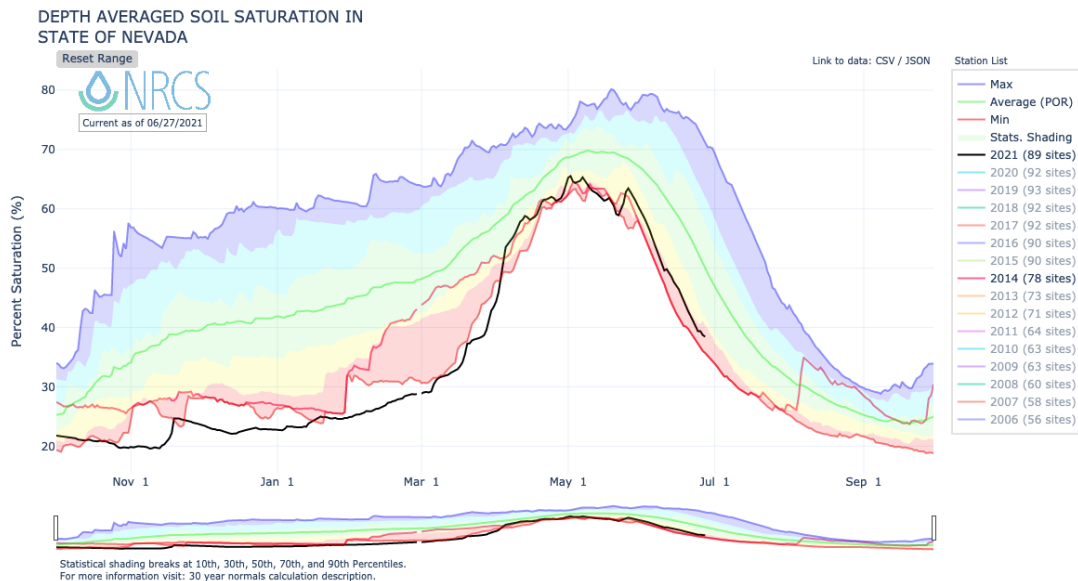


Figure 8. Soil moisture at SNOTEL stations in Nevada and the eastern Sierra Nevada as of June 27, 2021. Source: <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/nv/snow/products/?cid=nrcsprd1685435>

Vegetation, Fuels and Wildfire

Across the state, the Mean Vegetation Condition Index indicates that vegetation is stressed (Figure 9). Fuel moisture has dropped to critical levels across almost all Great Basin units (Figure 10). As of July 2, www.nevadafireinfo.org, reports a number of small fires in Nevada so far this year. Only a few fires have grown to more than 1,000 acres (Cherrywood and Wilson Creek fires in late May, and the Huff fire in late June). Although not especially large, the roughly 530-acre Petrilla fire in south Reno closed parts of the Mt. Rose Highway and I-580 between Reno and Carson City.



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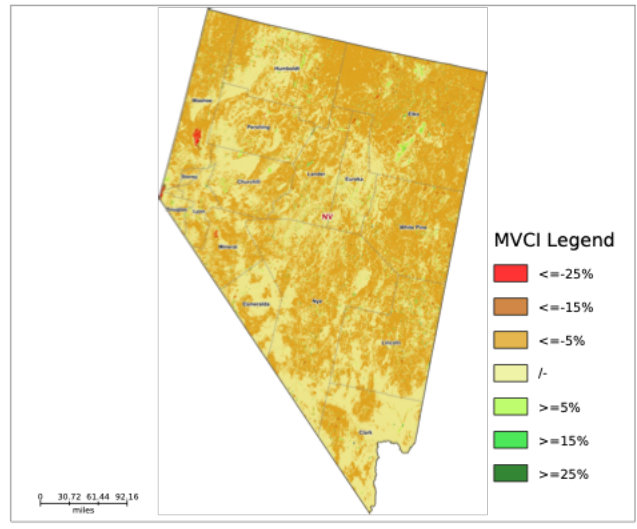


Figure 9. Mean Vegetation Condition Index for late May. Negative values (brown) indicate places where vegetation is less robust than usual. Positive values (green) where vegetation is doing better than usual.

Source:

<https://nassgeo.csiss.gmu.edu/CropCASMA/>

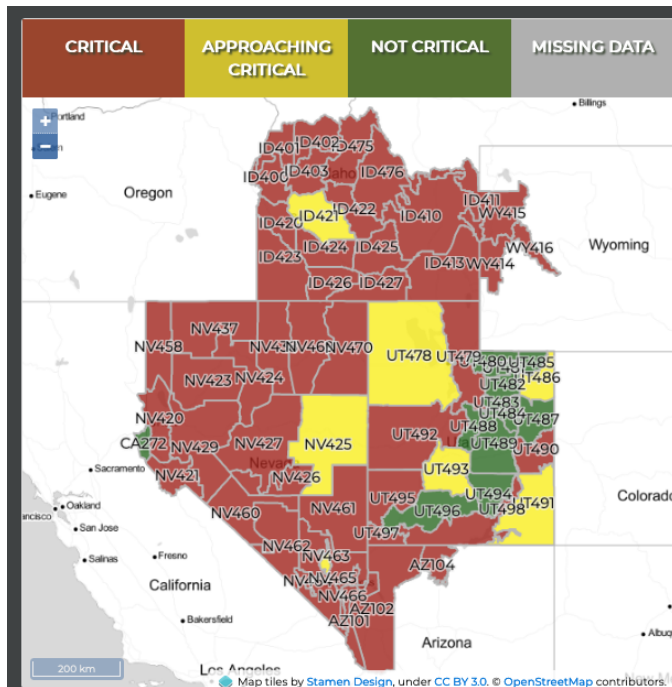


Figure 10. Fuel moisture status in and around Nevada as of June 1, 2021. Source: <https://gacc.nifc.gov/gbcc/predictive/>

Fire remains a concern because of dry fuels, coupled with hot, dry, windy weather and thunderstorms. The Great Basin Coordination Center is reporting Preparedness Level 3 (PL3) out of 5. National fire suppression resources are at PL4. The National Interagency Fire Center describes PL4 as, *“This level involves three or more geographic areas experiencing large, complex wildfires requiring IMTs. Geographic areas are competing for wildland fire suppression resources and about 60 percent of the country’s IMTs and wildland firefighting personnel are committed to wildland fire incidents.”*¹

¹ Source: https://www.nifc.gov/sites/default/files/2020-09/National_Preparedness_Levels.pdf.
IMT – Incident Management Team