

Nevada Drought Update - JULY 2022

Drafted July 1 and 3, 2022

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Continued dry weather leaves Nevada in drought that is likely to continue through the summer.

Current drought conditions in Nevada and across the West

US Drought Monitor-wise, there's not much new to report. Nevada remains in at least Moderate (D1) Drought (Fig. 1). For those counting, the last time any part of the state was just Abnormally Dry (D0) was late January 2021. The last time we saw None (no drought and not even D0 Abnormally Dry) was late September 2020.

All of Clark, Lincoln and essentially all of Nye Counties are in Extreme (D3) or Exceptional (D4) Drought. In northern Nevada, Severe (D2) and Extreme (D3) Drought are widespread. Just shy of 60% of the state is in D3 or D4 Drought, compared to over three-quarters of the state at this time last year (Table 1).

There was a small degradation in central Nevada. A wet winter and spring have led to significant drought improvements in the Pacific Northwest, Montana and Wyoming. Early monsoon storms have led to improvements in New Mexico (Fig. 2).

Date	6/29 2021	3/29	5/31	6/29
None	0.0	0.0	0.0	0.0
Abornmally Dry-D0	0.0	0.0	0.0	0.0
Moderate Drought-D1	5.1	0.0	0.5	0.5
Severe Drought-D2	18.0	64.2	44.2	41.0
Extreme Drought-D3	36.3	28.3	34.0	37.2
Exceptional Drought-D4	40.6	7.5	21.3	21.3

Table 1. Percent of Nevada in each drought class from the [US Drought Monitor](https://droughtmonitor.unl.edu).

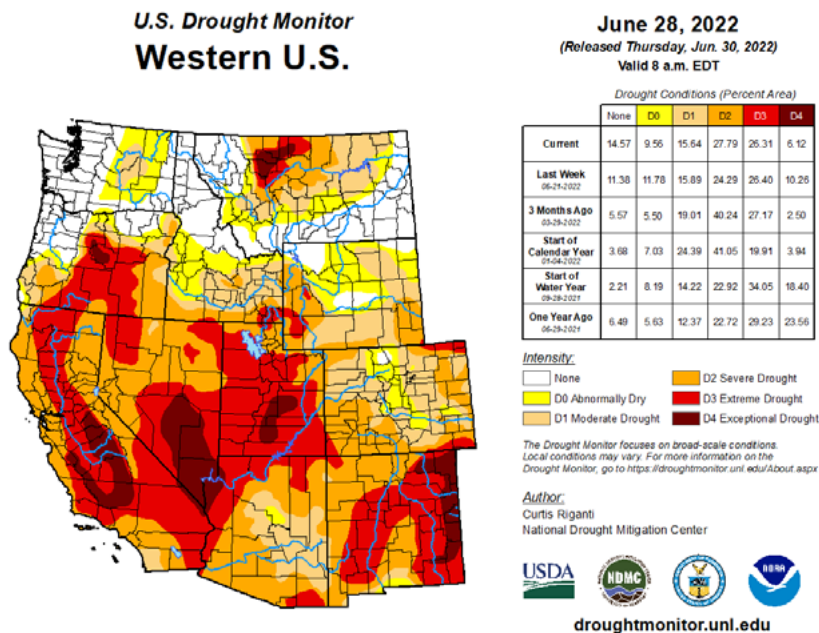


Fig. 1. Drought Monitor map for the western US, released on June 30, 2022, reflecting conditions as of June 28.

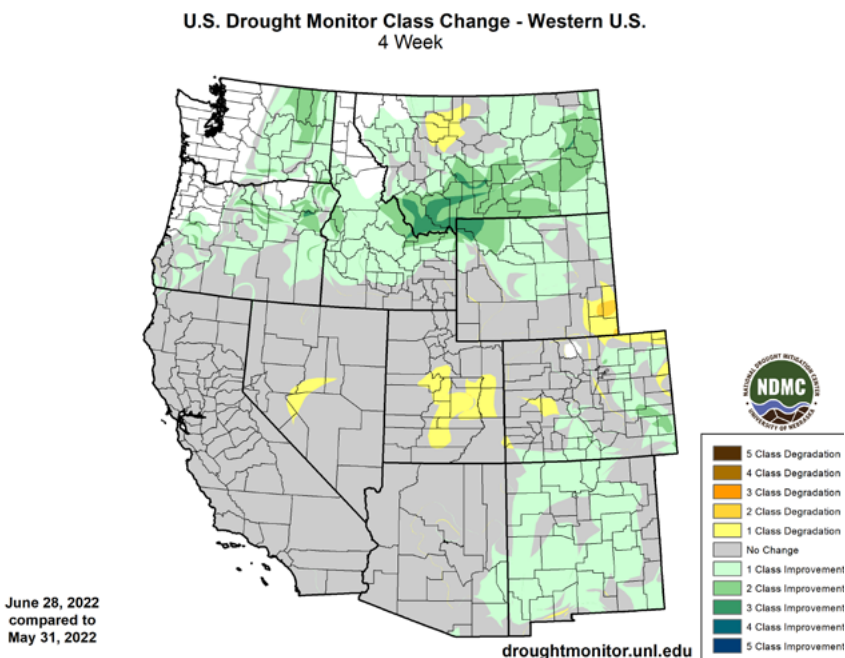


Fig. 2. Drought Monitor change map showing places where drought conditions improved (green) or worsened (yellow to brown) between late May and late June 2022.

June Temperature, Precipitation & Soil Moisture

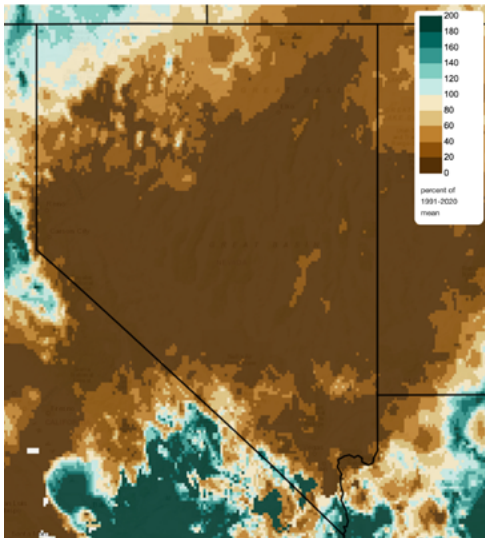


Fig. 3. Percent of average (1991-2020) June precipitation in 2022. gridMET from [Climate Toolbox](#).

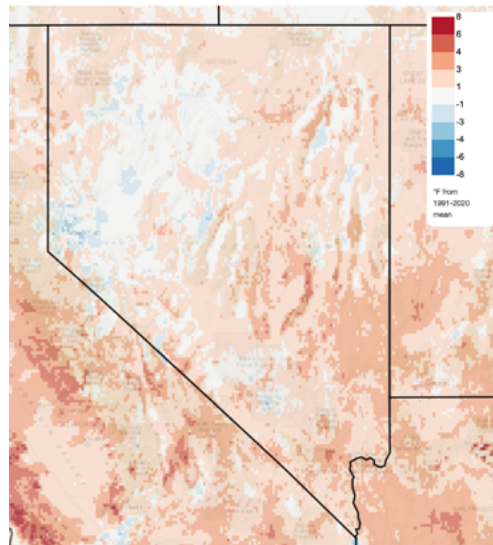


Fig. 4. Difference from average (1991-2020) June temperature (°F). gridMET from [Climate Toolbox](#).

There wasn't much precipitation in June over most of Nevada (Fig. 3). All but far northern Nevada received below-normal amounts of precipitation. Most of the state received less than 20% of normal precipitation. In many places, there was no measurable precipitation in June. June is typically a dry month, especially in southern Nevada where it is on average the driest month of the year. Even by that standard, June was dry.

Most of the state had temperatures within a degree or so of normal (Fig. 4). Northwestern Nevada was somewhat cool. This was especially true in the Reno-Sparks-Carson City area. There were some hot spots in the state, as well. Near Elko, Las Vegas and over some of the central mountains, average June temperatures were 3° to over 4°F above average.

As a reminder, these are preliminary data. They should show general conditions reasonably well, but the details may change some as additional information comes in.

At this time of year, snow has melted out almost everywhere, even in an average year, so an update on snow conditions isn't that helpful.

Remote sensing suggests that soils—both surface soils and deeper soil layers—are drier than usual over most of the state (Fig. 5). It's not entirely clear why top soil moisture is above normal in and around Storey county. That area hasn't recently gotten much rain. However, [SNOTEL](#) sites in many parts of northern Nevada are reporting near or even above normal soil moisture. This probably reflects how wet soils got during the October storms. In the Truckee Basin, soil moisture soared in October and remained well above normal until May.

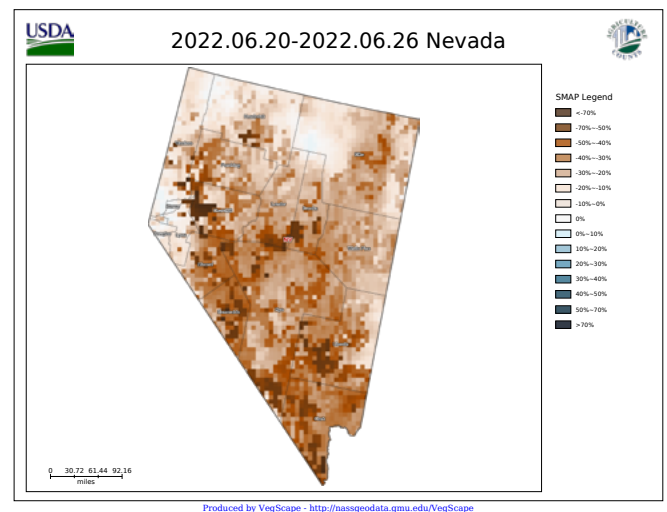
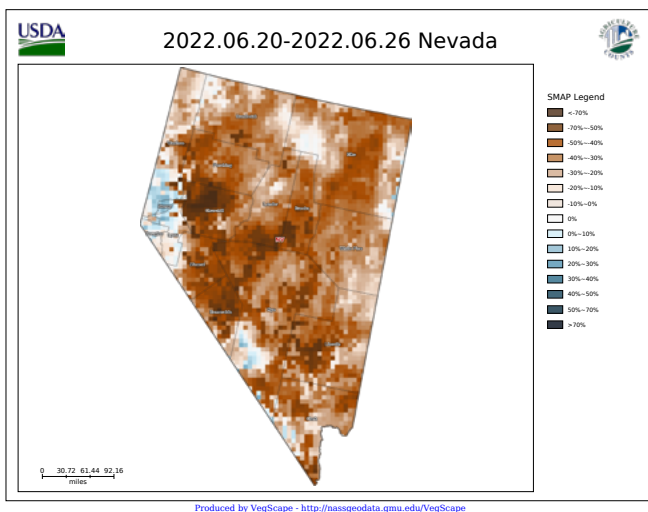


Fig. 5. Remotely sensed topsoil (left) and subsoil (right) moisture anomalies for late June 2022. Maps from [Crop-CASMA](#).

Water Resources

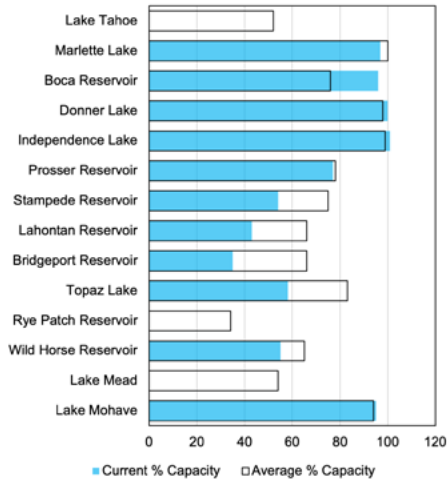


Fig. 6. Current and average percent capacity in Nevada's reservoirs at the end of June 2022. Data from the [Natural Resources Conservation Service](#). Note! When this month's report was being prepared, percent capacity information was not available for Lake Tahoe, Rye Patch Reservoir, and Lake Mead.

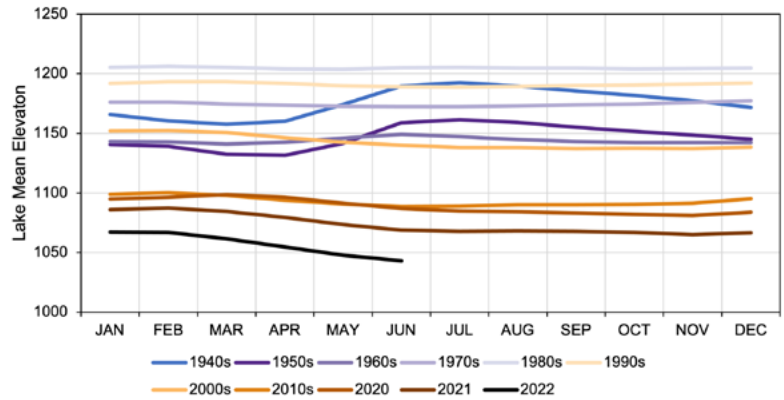


Fig. 7. End-of-month water elevation at Lake Mead averaged for each decade from the 1940s through the 2010s and compared to elevations in 2020, 2021, and 2022. Data from the [US Bureau of Reclamation](#).

At the end of June, reservoir levels were above normal in most of the Truckee Basin reservoirs, as well as in Marlette Lake near Tahoe and Lake Mohave on the Colorado (Fig. 6). Reservoir levels remained below usual for the season in Stampede, Lahontan, and Bridgeport Reservoirs, and in Topaz Lake. By the end of the month, Lake Tahoe was above the natural rim, but not very far. The natural rim is at 6,223 feet. The [lake elevation](#) was 6,224.4 feet.

Lake Mead is much, much lower than normal (Fig. 7). At the end of June, the water elevation had dropped to 1,043.02 feet. The reservoir hasn't been that low since the late 1930s

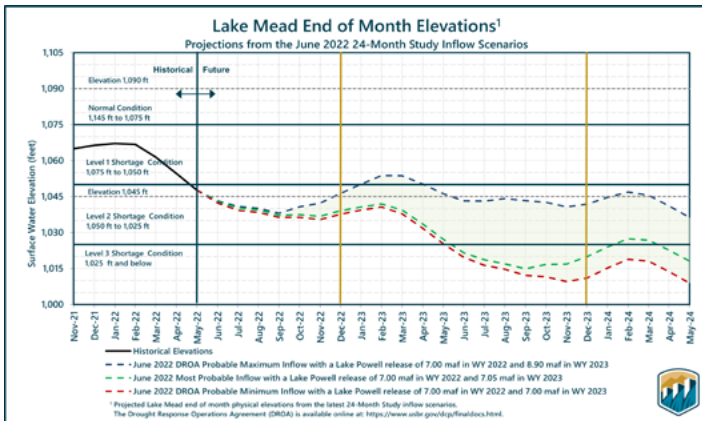
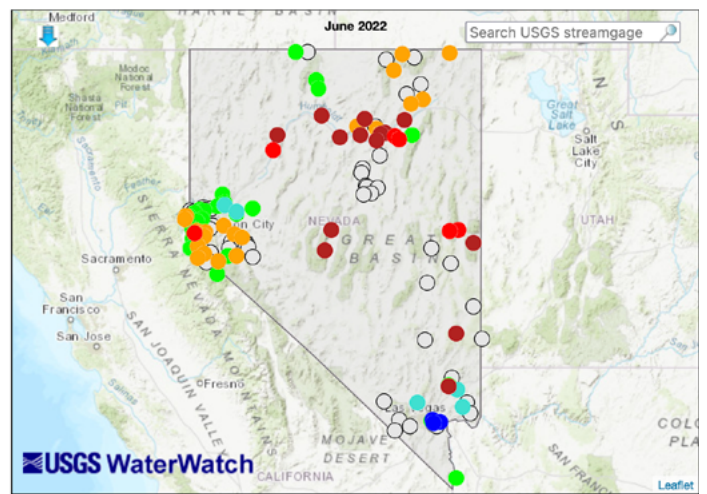


Fig. 8. June 24-month projections of Lake Mead elevation from the [US Bureau of Reclamation](#).

when it was still filling. Water levels are about 25 feet lower than at this time last year and 100 or more feet lower than the average June water elevation in the 1940s through the 2000s. Lake Mead is likely to continue dropping into the fall with some recovery expected during the winter and spring.

Streamflow in June was mostly below or much below normal in the north-central and north-eastern part of the state (Fig. 9). Above normal flows were reported in southern Nevada. In the Truckee, Carson and Walker Basins, most flows were normal or somewhat below normal.



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

Fig. 9. June average stream flow relative to usual June conditions. From [USGS Water Watch](#). You can find more information on the [percentile classes from the USGS](#).

Vegetation & Fire

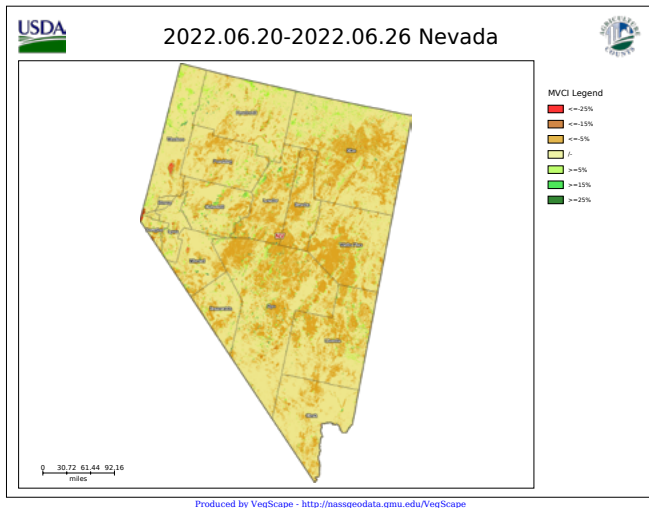


Fig. 10. Mean Vegetation Condition Index for late June. Negative values (brown) indicate places where vegetation is less robust than usual; positive values (green) where vegetation is doing better than usual. From [USDA Crop-CASMA](#).

Remotely sensed estimates of vegetation suggest that it is less robust than would be expected in late June (Fig. 10). Across most of central Nevada and parts of northern Nevada, the Mean Vegetation condition Index is below normal. The June 27 [USDA Crop Progress report](#) indicates that 15% of Nevada's pasture and range are in Poor condition, 55% are in Fair condition and 30% are in Good condition. It's summer so this was inevitable. Nevada had some fire starts in June according to [Nevada-FireInfo.org](#). The Kinsley Fire in northern White Pine County burned about 3,200 acres before being contained. The Goshute Fire in Elko County has burned 1,966 acres and is about 50% contained as of today (7/1). [The Great Basin Geographic Area Coordination Center](#) also reports several much smaller (<10 acre) fires across the state. You can check fire activity outside of Nevada on [CalFire](#) or [InciWeb](#). Fire season means it's time to start thinking about air quality. Most of the state has had generally acceptable air quality in June, with [Air Quality Index](#) values mostly Good or Moderation according to [airnow.gov](#).

Thank your local firefighters on the first [National Wildland Firefighter Day](#), July 2, 2022. Notice here is a bit late, but I'm sure they'll appreciate a thank you for the hard job they do any time.

Drought Outlook

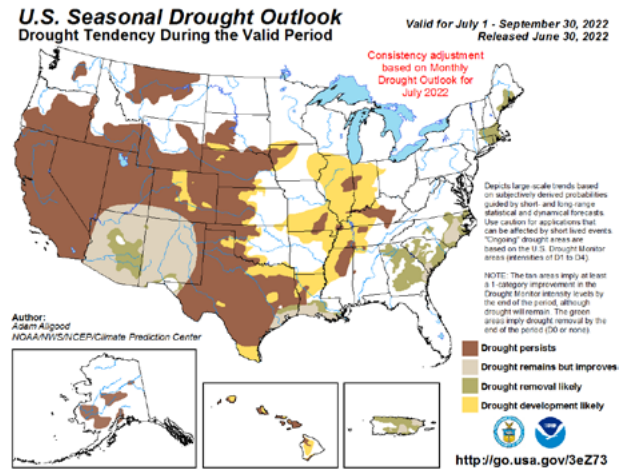


Fig. 11. Drought outlook through September. From the [Climate Prediction Center](#).

Drought is likely to remain though the summer (Fig. 11). Why? In most of the state, there's just not enough summer precipitation to end drought.

Clark County, which is relatively wet in the summer, receives 28% of its annual precipitation in July - September. Parts of northwest Nevada get less than 10% of the yearly precipitation in those months. To end drought in the next three months, [NCEI](#) estimates that it would take over 400% of the normal precipitation in northern Nevada and over 300% of the usual in southern Nevada.

With dry conditions, the [National Interagency Fire Center indicates](#) that major wildfires are more likely than normal in northern Nevada, northern California and most of the Sierra Nevada this summer (Fig. 12). The risk remains high through September in northern California.

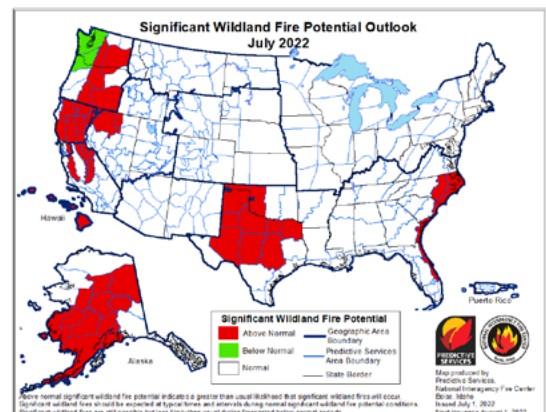


Fig. 12. Significant wildland fire potential outlook for July 2022. For August - October, visit [NIFC Predictive Services](#).