



# Monthly Climate Report

NWS Reno NV

Issued: 08/06/2024



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## Weather Synopsis & Highlights:

July picked up where June left off on the heat, and raised it up another notch! After starting the first few days with more typical summer temperatures, a strong high pressure ridge settled over the Great Basin and brought a week-long heat wave to the region from the 5th-12th, with Excessive Heat Warnings in effect for much of western NV and Heat Advisories for parts of eastern CA. High temperatures each day were between 102 and 108 degrees for the main western NV communities, with lower-mid 90s for Sierra locations. Several daily record highs were established, along with new records for consecutive (4 days) and total 105+ degree days in any calendar year (5 days) at Reno. Dry conditions prevailed as well through the first 11 days of the month.

As the heat wave started to ease, moisture finally increased with isolated thunderstorms forming on the 12th mainly over the eastern Sierra and into far western NV. Red Flag Warnings were in effect due to the potential for dry lightning strikes on vegetation that became much more prone to ignition after the prolonged heat wave. The weekend of the 13th-14th brought scattered showers and thunderstorms to the region, with some storms producing heavy rainfall, and outflow winds producing blowing dust (Photo 1).

Another round of heat returned from the 19th-23rd, although it was less intense than the July 5-12 event. Highs in lower elevations were generally between 98-105 degrees, with Heat Advisories in effect for northwest and west central NV. Temperatures finally eased back closer to seasonal averages from the 24th through the end of the month, even dipping to cooler than average (highs in the 80s for western NV valleys) from the 27th-29th.

July 2024 will go down as the warmest month on record in Reno's history with an average daily temperature of 82.1 degrees and 15 days with highs of 100+ degrees, surpassing the previous records of 81.8 degrees and 14 days of 100+ degrees which both occurred in July 2018. Across the region, temperatures were generally 3-6 degrees above average for July, except 1-3 degrees above average for parts of Alpine, Mono, Lyon and Mineral counties (Figure 1).

Along with the warm temperatures from the 21st-25th came a return of monsoonal moisture that led to several rounds of showers and thunderstorms. The strongest storms brought flash flooding to southeast Reno in Hidden Valley on the 21st, and the Hoyo Canyon in western Lyon County on the 23rd and 24th. Frequent lightning strikes produced several new fire starts, with the most notable being the Stockade Canyon Fire in northern Washoe County (over 18,000 acres) and the Mill Fire southwest of Portola CA (photo 2, about 3000 acres).

Overall across the region, precipitation was below average for most areas north of US-50 (excluding isolated sites that received above average rainfall from thunderstorms), with the driest conditions in northeast CA where precipitation amounts were 25% or less of July averages. South of US-50 and in west central NV east of US-95, more areas received near to above average precipitation due to increased thunderstorm activity, with a few locations in Mono, Mineral and Lyon counties receiving near 200% of July averages (Figure 2).

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## Hydrology:

Monsoonal moisture and thunderstorms produced heavy rain in several areas mostly between July 21st and July 24th. Numerous flood advisories and flash flood warnings were issued during this period where heavy rain persisted over steep terrain, burn areas, and/or impervious surfaces. By far the most impactful of these rainfall events occurred in the late afternoon on the 21st in the Hidden Valley neighborhood of southeast Reno, where a very intense short duration thunderstorm formed due to the collision of two outflow boundaries. Radar estimates for this storm showed around 2" in less than one hour. Only one homeowner weather station on the eastern edge of the neighborhood was available for ground observations. This station reported 1.21" in 30 minutes, and while it is difficult to verify the accuracy of this measurement, it is unusual for this type of station to overestimate high intensity rainfall, and the measurement aligns well with radar estimates. The extreme intensity of the rainfall and runoff quickly exceeded the channel capacities (Figure 3), generating a debris-laden flood delivering a massive quantity of mud and rock into the Hidden Valley regional park and the neighborhood below it. Over one hundred homes were impacted, with the majority of damages to landscape, driveways, and roads (Photos 3,4 and 5). Heavy rain on July 23rd brought flooding to Stagecoach, and in Hoyo Canyon (Photo 6 and 7). Additional storms on July 24th returned to the Hoyo Canyon area where a debris-laden flood caused additional road damage (Photo 8), and led to a significant spike in the West Walker river (Figure 4). Minor flooding and rock falls were also reported along Hwy 395 in Mono county during this week at several locations (not pictured). If you have reports of additional flooding and debris impacts, please send us photos and details.

July stream flows remain near normal in most areas despite warm temperatures and high evaporative losses (Figure 5). Soil moisture as measured by [NRCS SNOTEL](#) are near normal and benefited slightly from thunderstorm rains (Figure 6). Water year to date flows from the CNRFC are near normal throughout the area with only two low flow months remaining until the end of the 2024 water year (Figure 7). The end of July reservoir storage remains above normal in major reservoirs despite drawdowns over the month in all but Rye Patch, which remained steady in July (Figure 8).

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## Drought Update:

Abnormally dry (D0) conditions were expanded in July to include much of the NWS Reno service area excluding eastern portions of Pershing, Churchill and Mineral counties and southern Mono County; these areas generally saw more beneficial recent rains. Moderate drought (D1) was also introduced in most of Modoc county, and far northern Washoe county as these areas have seen very little summer rain (Figure 9). Late spring and summer precipitation has been below normal throughout the region, with many areas near or below 50% of normal for the past 3 months (Figure 10). The Standardized Precipitation Evapotranspiration Index (SPEI) displays the impact of hot conditions on potential evaporation that has not been balanced by precipitation indicating drying conditions, and hence the expansion of abnormally dry and moderate drought conditions into the region (Figure 11).

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## Additional Information on Drought and Climate:

[Report Drought conditions here](#)

[Nevada statewide Drought update](#)

[NV Living with Drought](#)

[Drought Monitor](#)

[New Drought.gov](https://www.newdrought.gov)

[California Nevada Drought Early Warning System](#)

[NOAA CPC Drought page](#)

[CNAP Drought tracker](#)

[California Nevada River Forecast Center](#)

[WRCC Drought Tracker](#)

[WRCC Enso page](#)

[WRCC Monthly Climate Summaries](#)

[Evaporative Demand Drought Index](#)

[US Seasonal Drought Outlook](#)

Contact NWS Reno Climate Team

[rev.climate@noaa.gov](mailto:rev.climate@noaa.gov) 775-673-8100

<https://www.weather.gov/rev/>

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## Photos:

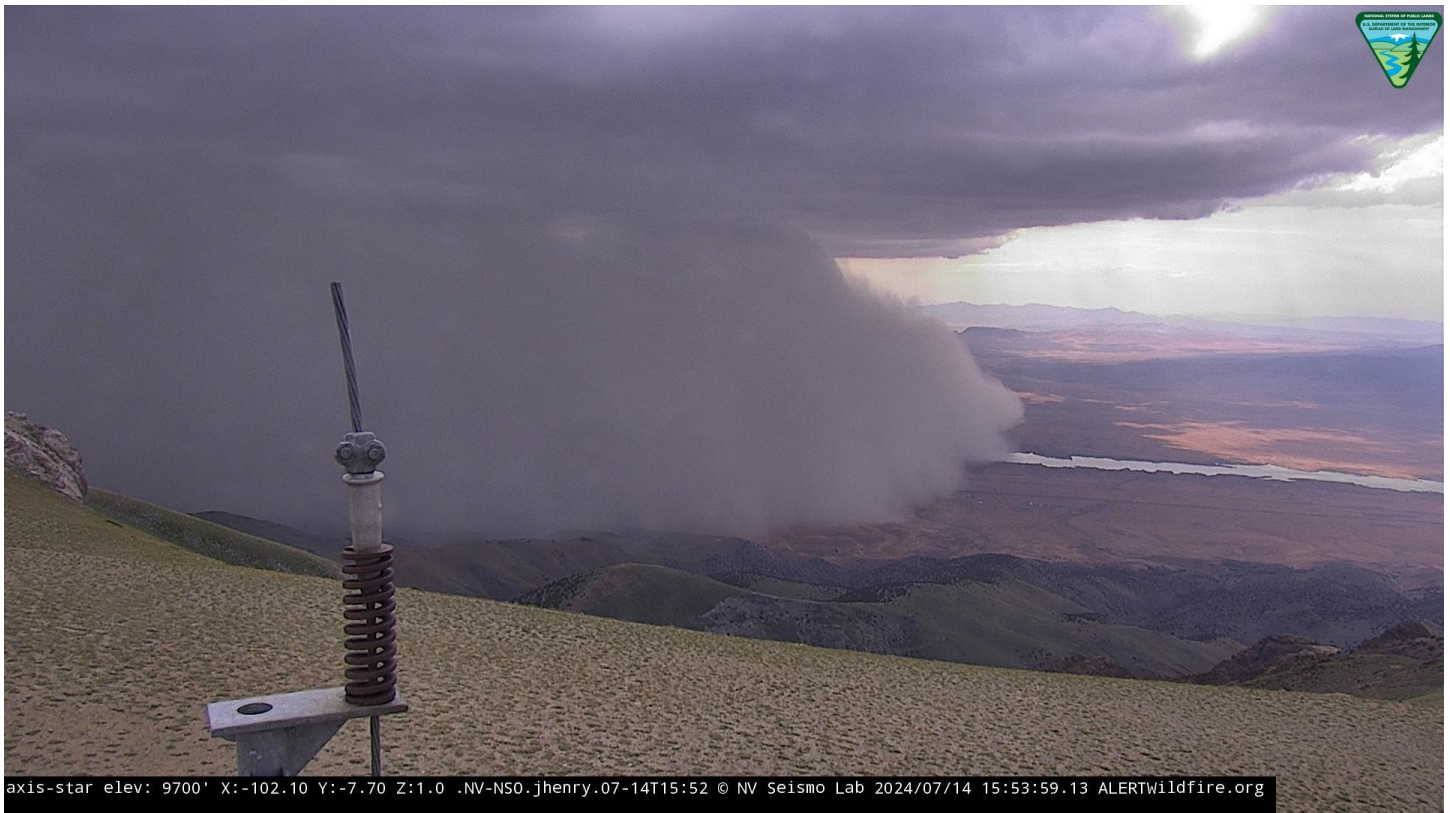


Photo 1: Thunderstorm triggered haboob (dust storm) along the Carson Sink July 14th.



Photo 2: Smoke from the Mill Fire July 22nd.



Photo 3: Image of the most severely damaged home from the Hidden Valley flooding on July 21st. More common impacts included mud and debris on landscapes, driveways, and roads.



Photo 4: Tennis Courts in Hidden Valley Regional Park after July 21st flood event.



Photo 5: One of many roads in the Hidden Valley neighborhood impacted by mud during the July 21st flood event.



Photo 6: Flooding in Hoye Canyon Lyon County July 23rd.



Photo 7: Flooding in Stagecoach NV, Lyon County July 23rd.



Photo 8: Flooding in Hoyo Canyon, Lyon County July 24th.

**Figures:**

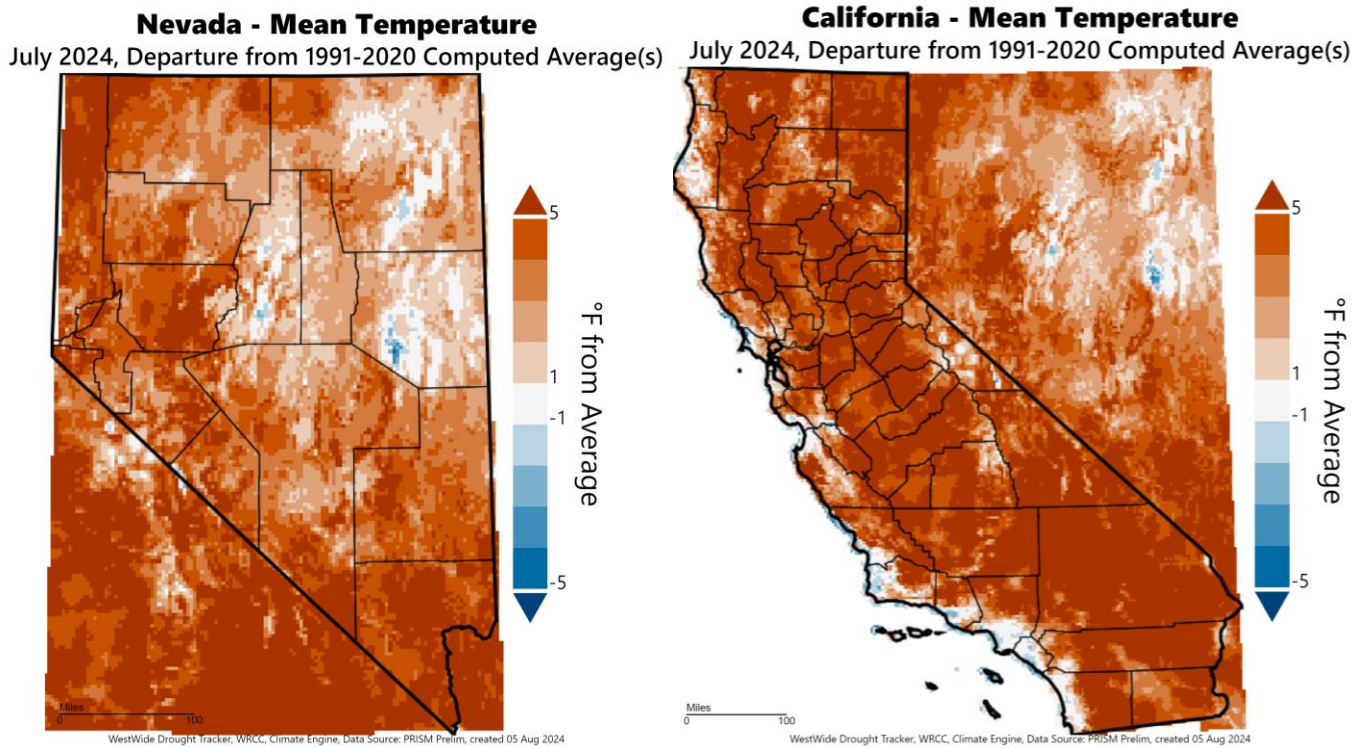


Figure 1: Nevada (left) and California (right) departure from normal temperatures for July 2024. ([WWDTr](#))

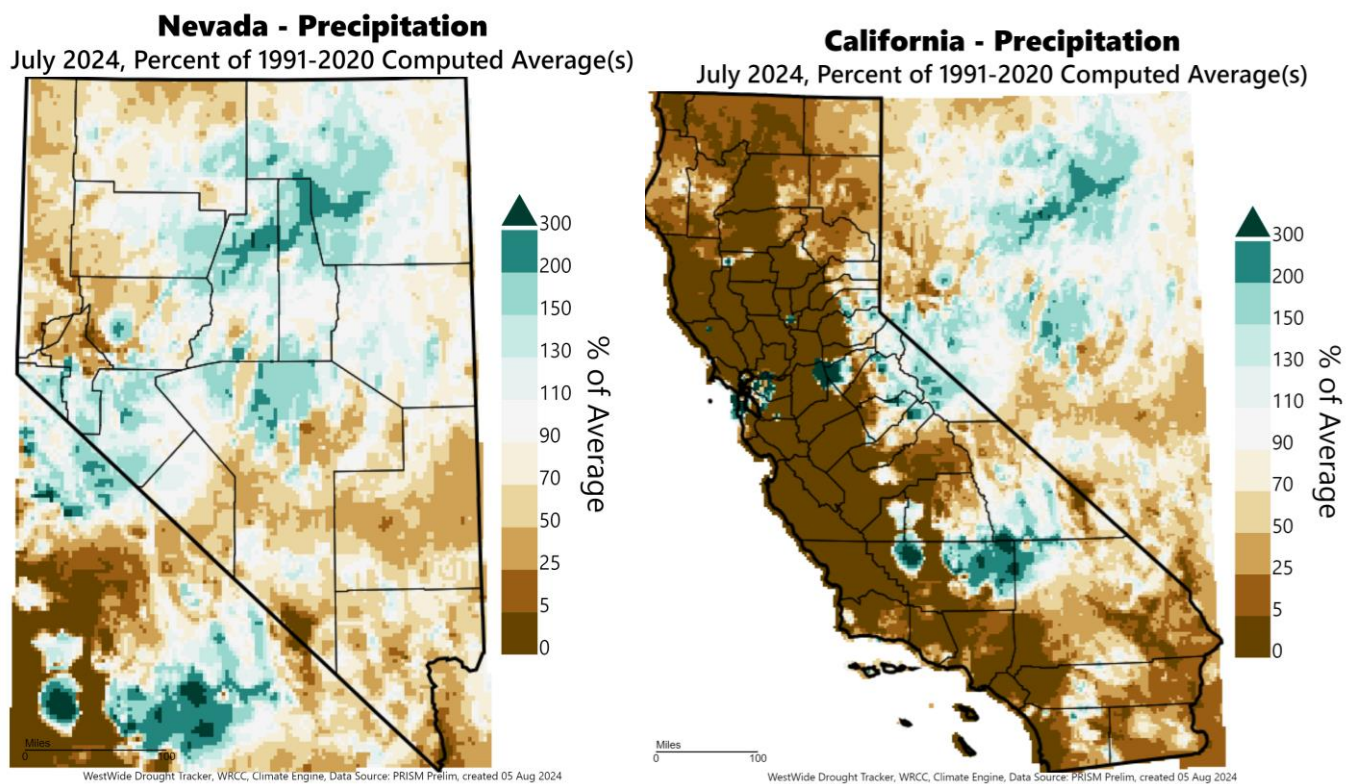


Figure 2: Nevada (left) and California (right) percent of normal precipitation for July 2024. ([WWDTr](#))

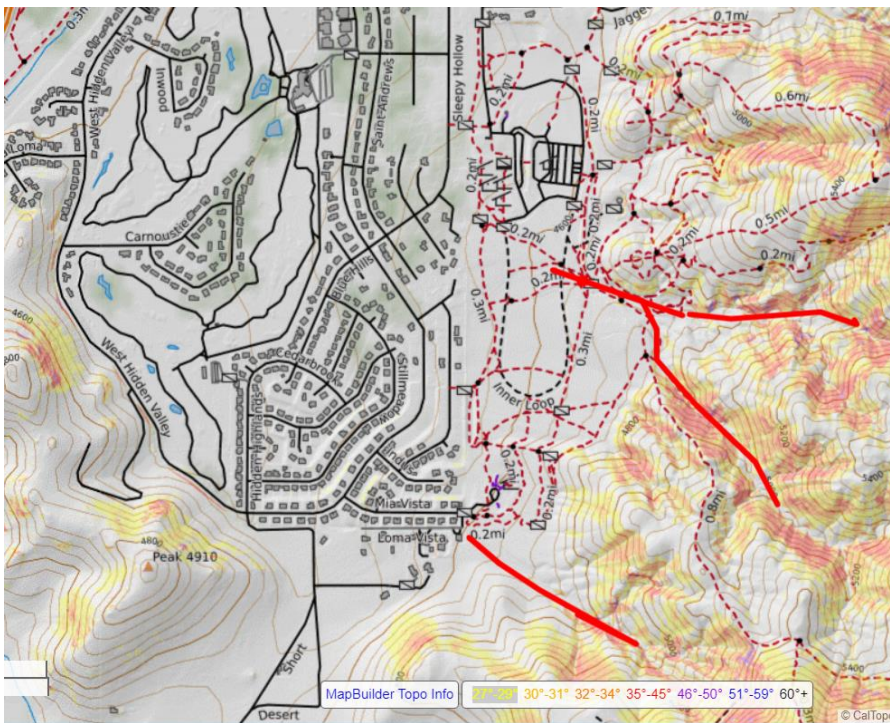


Figure 3. Map highlighting primary drainages in red that lead to debris flood damages in Hidden Valley on 7/21/24.

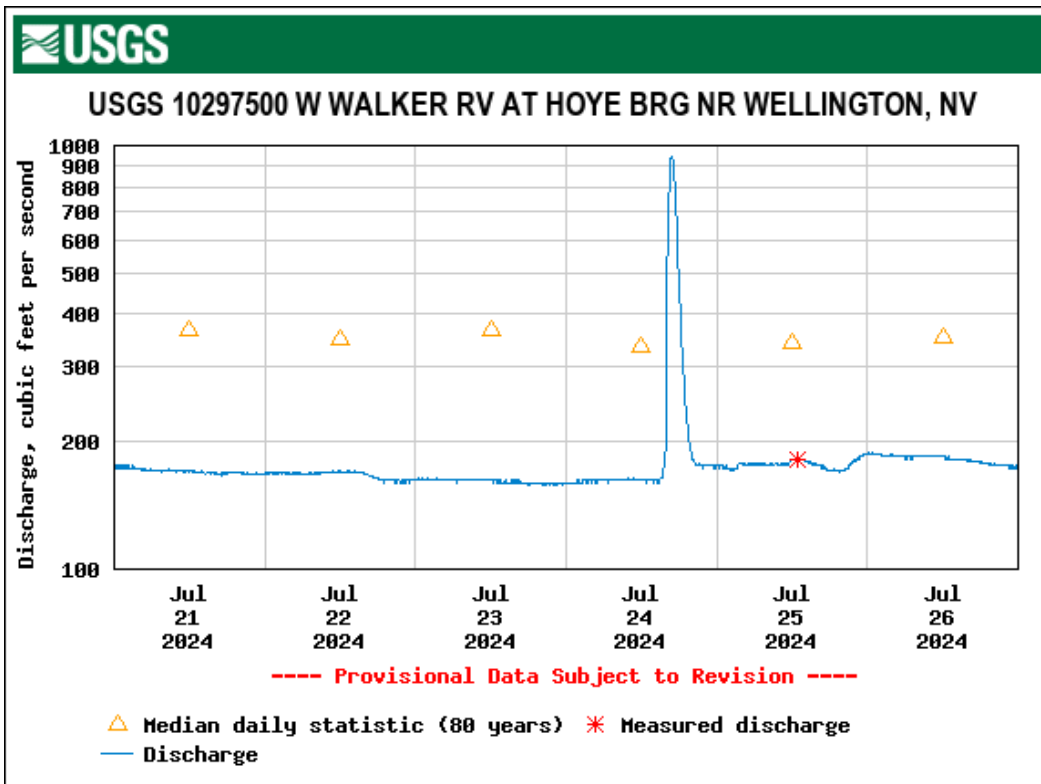


Figure 4. Thunderstorm-induced flow increased along the West Walker in Hoyer Canyon on July 24th. The West Walker remained well below flood stages.

July 2024

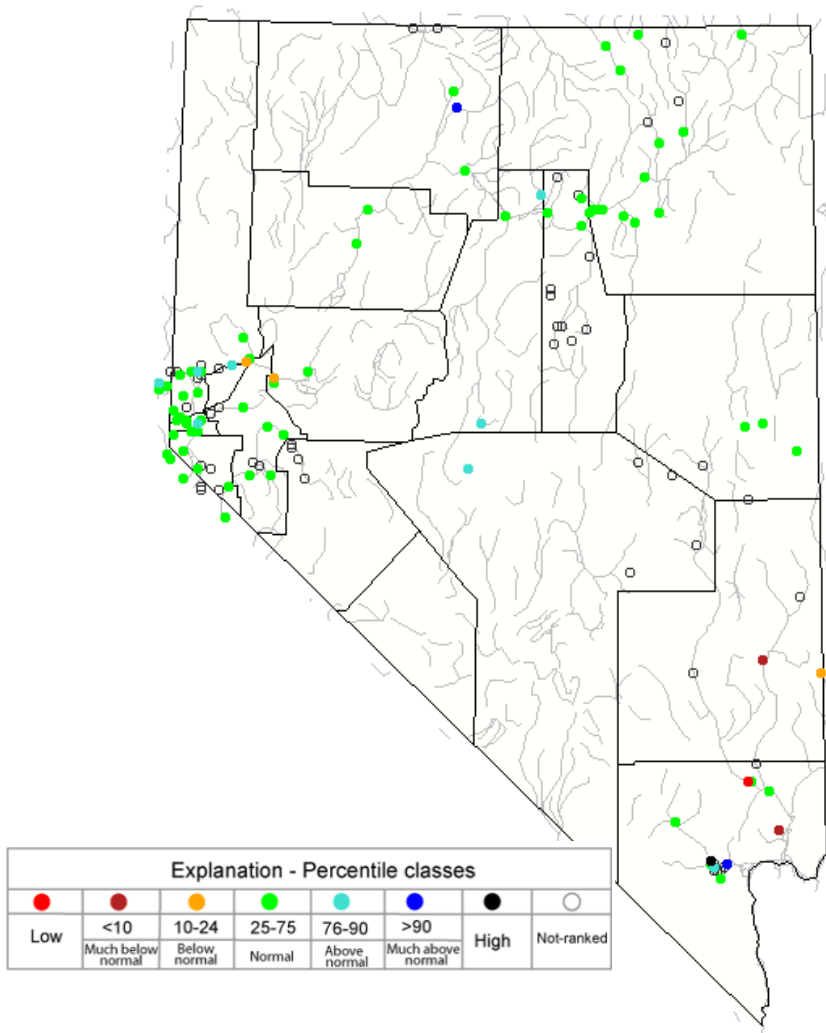


Figure 5: July 2024 [Monthly USGS streamflow](#)

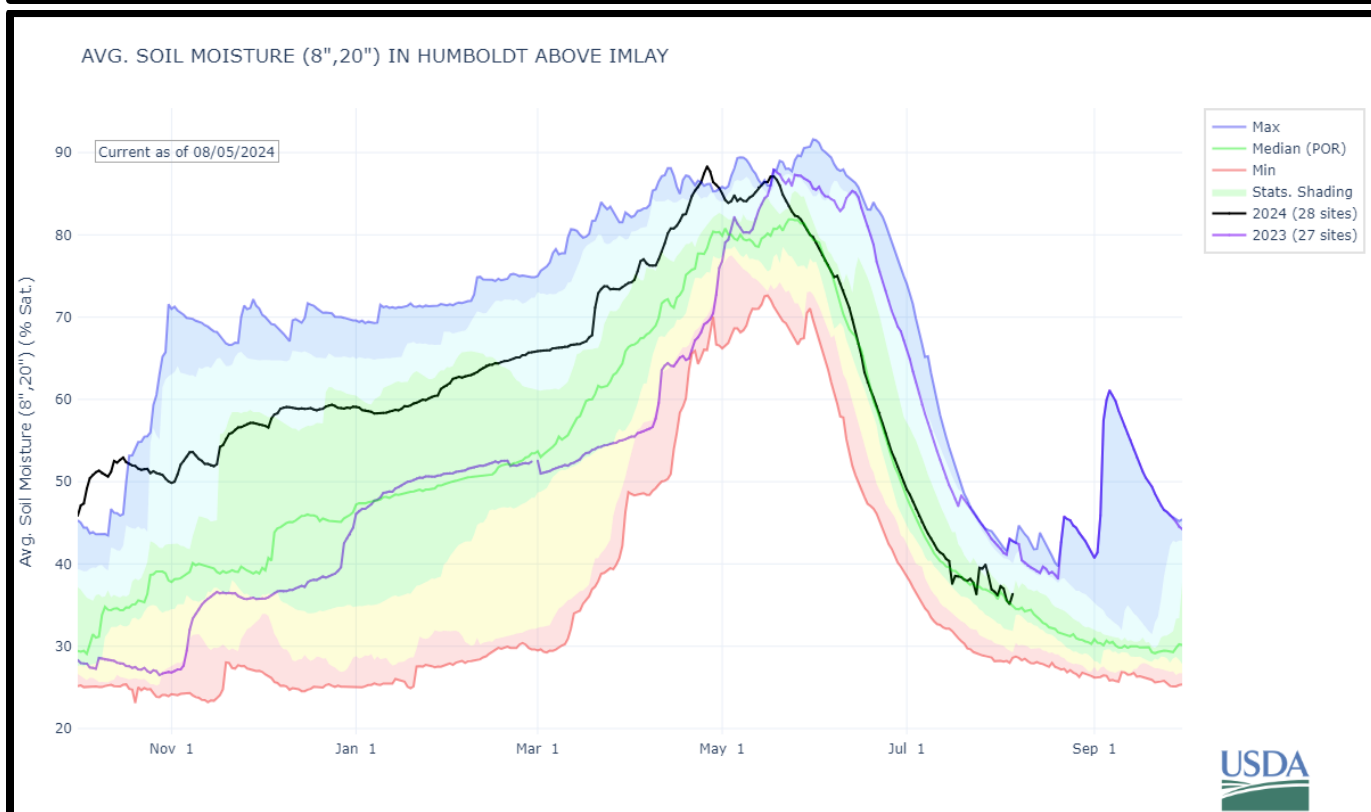
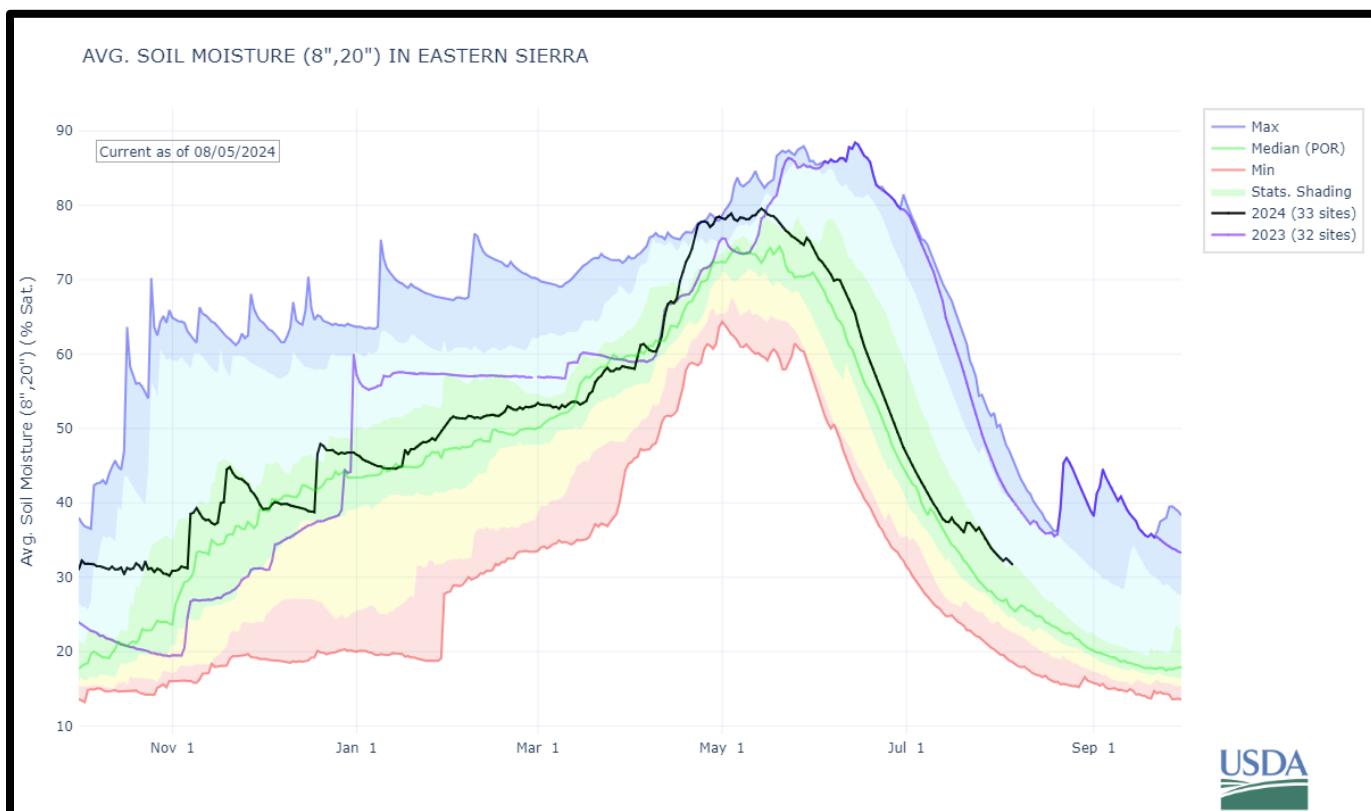


Figure 6: [NRCS SNOTEL soil moisture](#) for the combined Tahoe, Truckee, Carson and Walker basins (upper), and Humboldt basin (lower) indicated in black for water year 2024. Water year 2023 is plotted in purple for additional perspective.

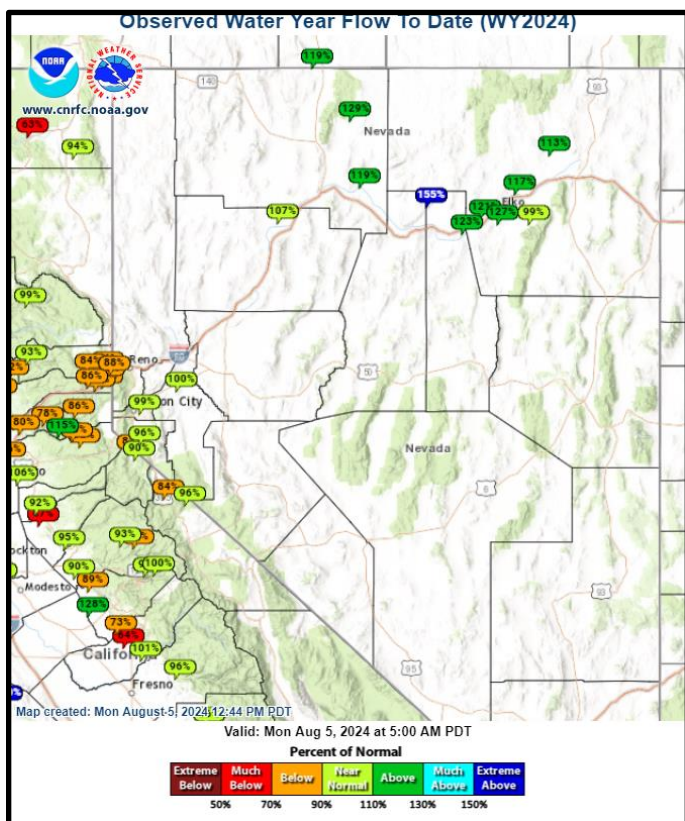


Figure 7. [CNRFC](#) Water year to date volume.

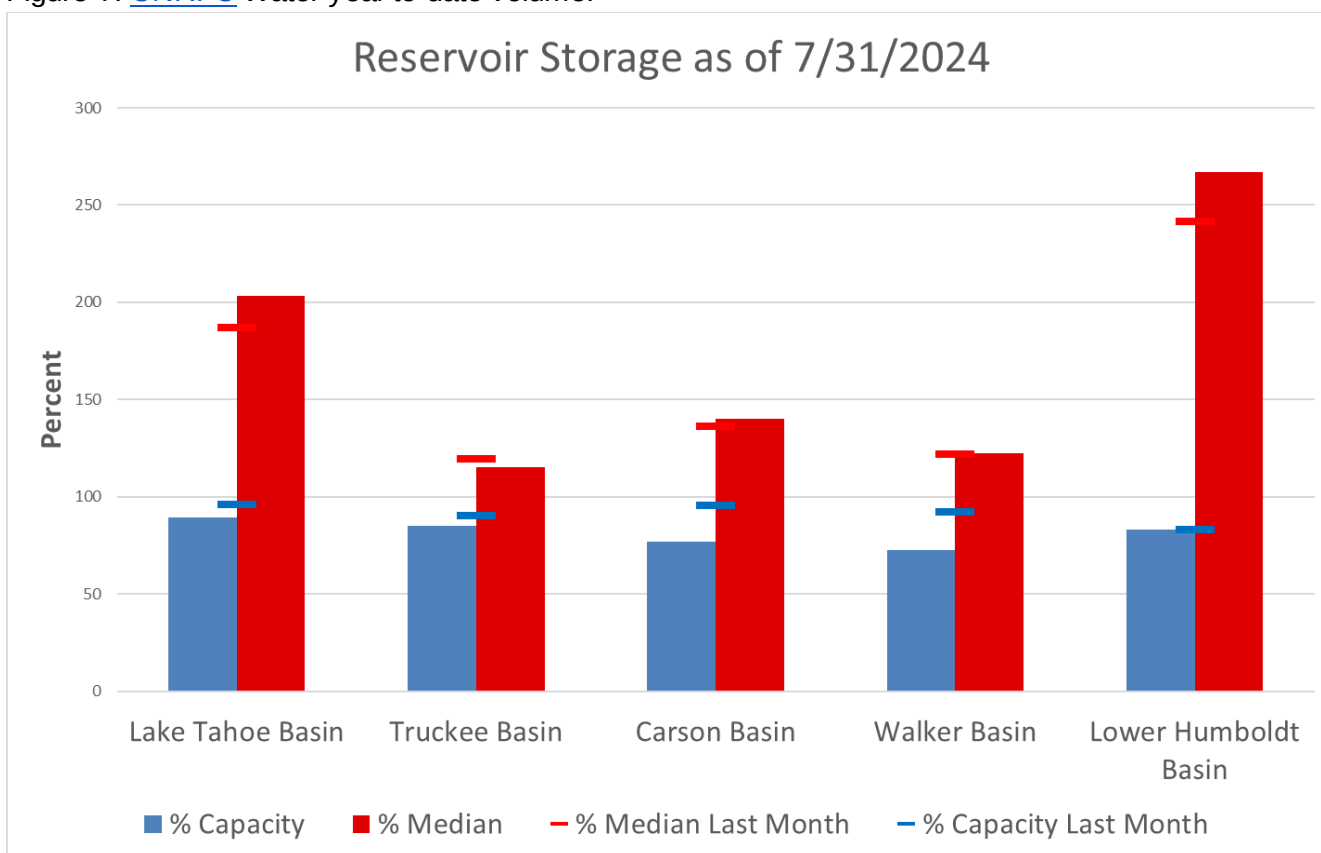
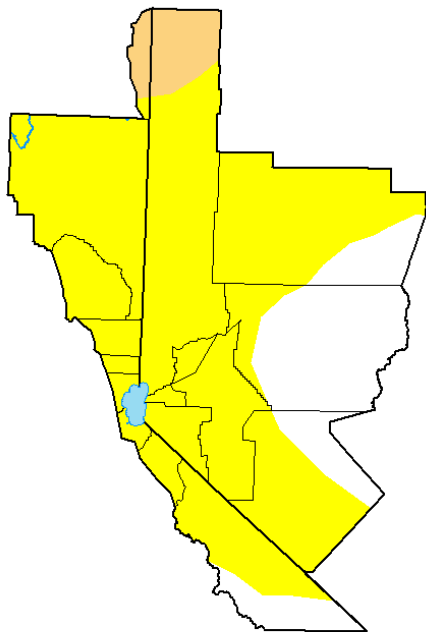


Figure 8: End of July reservoir storage relative to capacity and **median\*** for this month and last month. (\*note reference was recently update to NRCS 1991-2020 median values)

# U.S. Drought Monitor Reno, NV WFO



**July 30, 2024**  
(Released Thursday, Aug. 1, 2024)  
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

|                                             | None   | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4   |
|---------------------------------------------|--------|-------|-------|-------|-------|------|
| <b>Current</b>                              | 21.20  | 78.80 | 4.80  | 0.00  | 0.00  | 0.00 |
| <b>Last Week</b><br>07-23-2024              | 21.21  | 78.79 | 4.80  | 0.00  | 0.00  | 0.00 |
| <b>3 Months Ago</b><br>04-30-2024           | 100.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| <b>Start of Calendar Year</b><br>01-02-2024 | 100.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| <b>Start of Water Year</b><br>09-26-2023    | 100.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| <b>One Year Ago</b><br>08-01-2023           | 100.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |

## Intensity:

None D2 Severe Drought  
D0 Abnormally Dry D3 Extreme Drought  
D1 Moderate 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:

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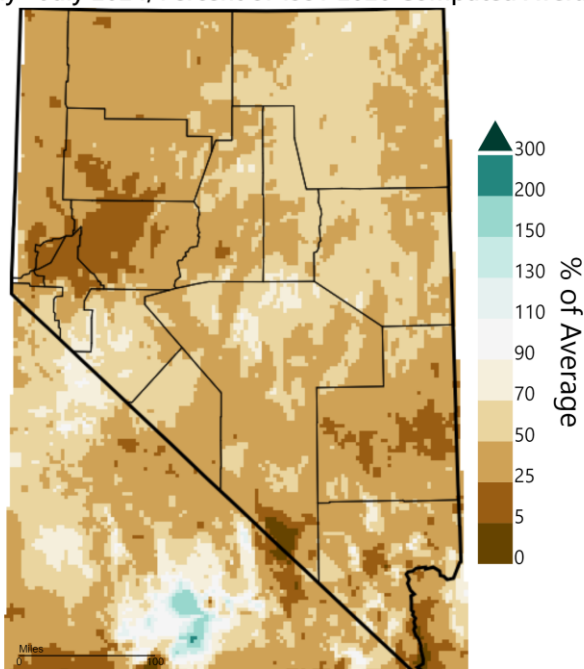


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

Figure 9: Late July Drought Monitor Status. Introduction of D1 to the Surprise Valley and far northwest NV, and expansion of D0 for most of the WFO Reno area. Check for updates at: [Drought Monitor](https://droughtmonitor.unl.edu).

## Nevada - Precipitation

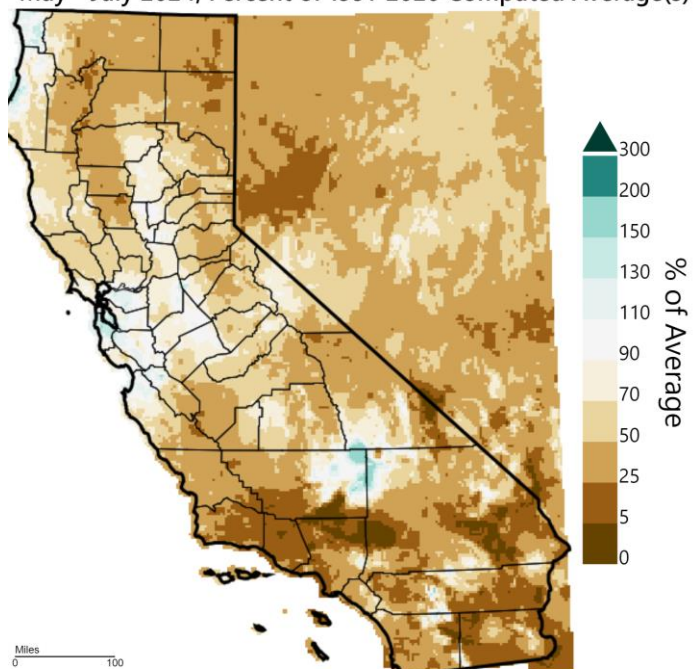
May - July 2024, Percent of 1991-2020 Computed Average(s)



WestWide Drought Tracker, WRCC, Climate Engine, Data Source: PRISM Prelim, created 05 Aug 2024

## California - Precipitation

May - July 2024, Percent of 1991-2020 Computed Average(s)



WestWide Drought Tracker, WRCC, Climate Engine, Data Source: PRISM Prelim, created 05 Aug 2024

Figure 10: Nevada (left) and California (right) departure from normal precipitation for the last 3 months. May-July 2024. ([WWDT](https://www.wwdt.org))

## Southwest - 3 Month SPEI

July 2024

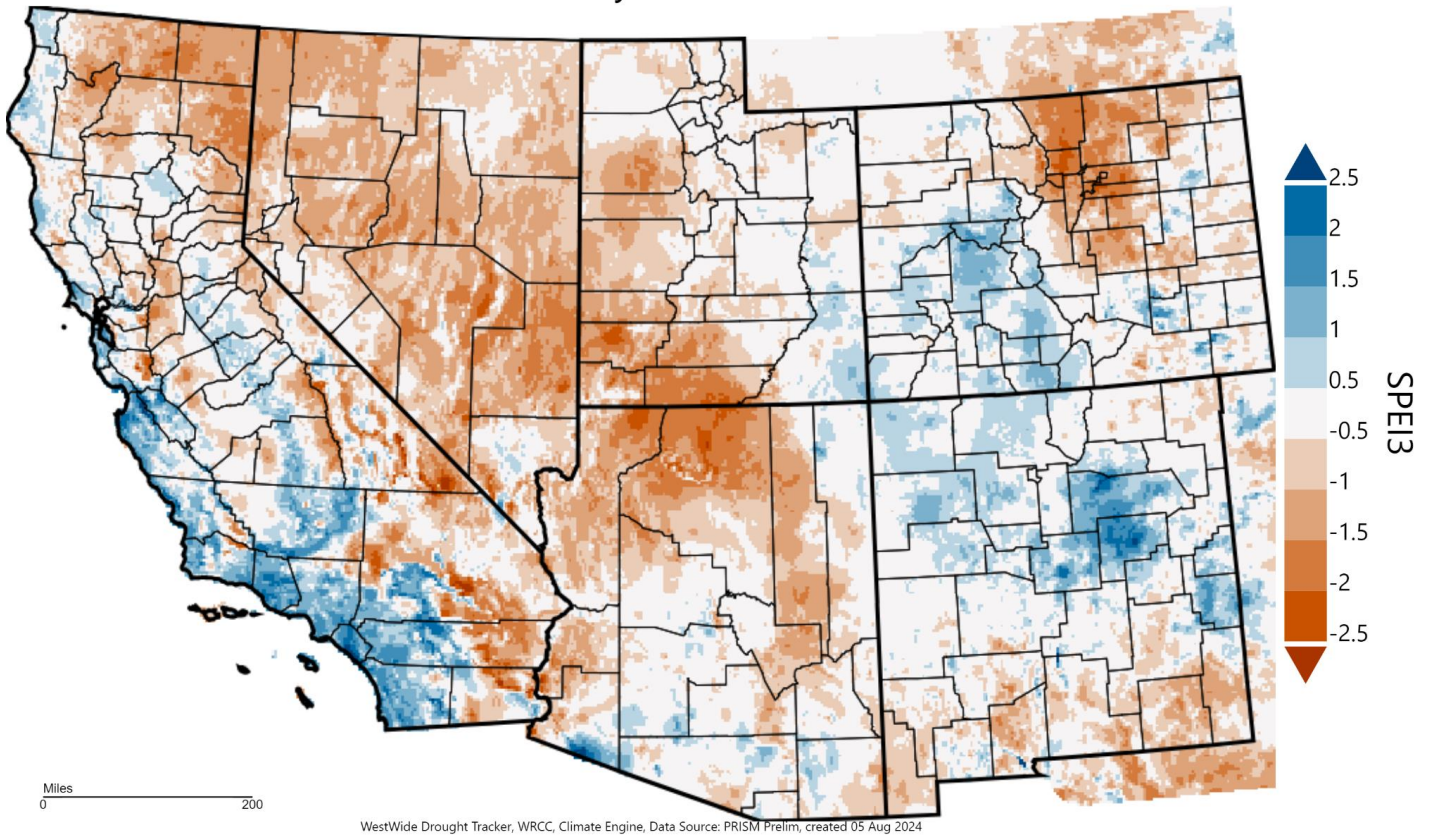


Figure 11: The Standardized Precipitation Evapotranspiration Index (SPEI) for the last 3 months (May-July).  
([WWD T](#))