Monthly Climate Report

NWS Reno

Issued: 06/xx/2024

Synopsis:

Mild spring weather for the first 3 days of the month descended into a quick return of winter during the weekend of the 4th-5th, with strong winds across the region and an impressive late season snowfall for parts of the Sierra and around Tahoe. While not as cold, temperatures remained below average from the 6th-9th, before a more substantial warming trend began on the 10th. Clear skies allowed for excellent viewing of the aurora borealis on the night of the 10th (Photos 1 and 2), from an unusually strong solar geomagnetic storm.

A prolonged period of warm spring weather prevailed during the middle of the month from the 12th-18th. Along with this warmup came isolated to scattered afternoon showers and thunderstorms, mainly near the Sierra from the 12th-15th (Photo 3). Temperatures then cooled back to near average from the 19th-25th, with even more cooling on the 20th. Mostly dry conditions prevailed during this week, except for isolated showers around Lake Tahoe on the 23rd and additional showers scattered across the region on the 24th. A warming trend then returned starting on the 26th, peaking on the 27th-28th and again on the 31st with highs in the mid-upper 80s for lower elevations. The final week of May was dry overall, except for isolated showers and thunderstorms on the 27th-28th.

For the month of May, temperatures were generally near average across the eastern Sierra, northeast CA, and in far western NV. However, the inner basins and ranges were around 1-3 degrees below average (Figure 1). Precipitation in May was only 25-50% of average for a majority of western NV and Mono County. Meanwhile, the majority of the eastern Sierra and northeast CA received around 50-70% of average precipitation for May, with a few locations receiving up to 90% of average precipitation (Figure 2). However, the large majority of rain and snow fell during the weekend of the 4th-5th, with only sparse precipitation for the remainder of the month.

Weather Events:

The most notable storm of the month came in on the weekend of the 4th-5th, with a persistent area of snow followed by enhanced snow shower bands producing over 2 feet of snowfall near the Sierra crest west of Lake Tahoe. The 26.4” total measured at the Central Sierra Snow Lab on the morning of the 5th was the largest single day snow total of their entire 2023-24 season! Even into the Tahoe basin and Truckee areas, snowfall totals of 6-12” were reported with this storm, mainly on the north and west shores (Photo 4). Liquid precipitation totals were generally between 0.50-1.25” for northeast CA and the eastern Sierra west of US-395 (lesser amounts east of US-395), with up to 2” near the Sierra crest. For western NV, strong winds were the main effect with gusts 55-70 mph across several locations. Precipitation was limited to 0.20-0.50” across parts of northwest NV, areas east of US-95 and foothills west of Reno-Carson City, with lesser amounts elsewhere.

No other weather events with significant impacts occurred through the remainder of May.

Hydrology:

May was a good month for melting snow. While snowmelt was a bit faster than normal, due to relatively dry and sunny conditions, there was not sufficient snow covered area or melt energy to produce flooding concerns. By June 1st only five SNOTEL sites in the Sierra had significant snow remaining and that number will be reduced to two in the next couple days. Figure 3 shows the limited spatial extent of the remaining high elevation snowpack as of late May. Snowmelt kept May streamflows near to above normal (Figure 4), with many rivers and streams reaching their seasonal peak during the mid-month warmup. While these flows were cold and fast, they were well below flood stages. While some rises are expected with early June heat, most areas will not exceed peaks seen in mid-May. The lower Humboldt saw high flows in May, but avoided anticipated minor flooding due in part to significant irrigation diversions. Mountain soil moisture as measured by SNOTEL is still slightly above normal for the east side of the Sierra, and near normal for the Humboldt Basin (Figure 5).

Water year to date streamflows reported by the CNRFC are near to above normal for the east side of the Sierra and above normal along the Humboldt (Figure 6 left side). Midway through the April-July snowmelt runoff season, forecasts have been fairly consistent (Figure 6 right side). Reservoirs remain well above normal, and very near capacity as managers try to maximize storage while meeting demands and agreements (Figure 7).

Drought Update:

Current water year precipitation in the region generally varies from 75-110%, with a few areas in western NV and the eastern Sierra at 60-75% of average precipitation. Temperatures for this water year have been near normal throughout the region, with a few areas of above normal temperatures in northeast CA, northern Washoe, and Mineral counties (Figure 8). The favorable precipitation and seasonal peak snowpack conditions have resulted in drought-free designation by the US Drought monitor, which removed areas of abnormally dry classification from western Nevada and eastern CA in early April (Figure 9).

Additional Information on Drought and Climate:

Report Drought conditions here
Nevada statewide Drought update
NV Living with Drought
Drought Monitor
New Drought.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 775-673-8100
https://www.weather.gov/rev/

WS Reno

Photo 2: Aurora Borealis view from Mt. Rose area, May 10th. Photo credit: NWS Reno

Photo 3: Afternoon showers and a rainbow near the greater Reno metro area on the 13th. Photo credit: NWS Reno.

Photo 4: Snowfall on April 4th in the Truckee area. Photo Credit: @gmillikan

Figures:

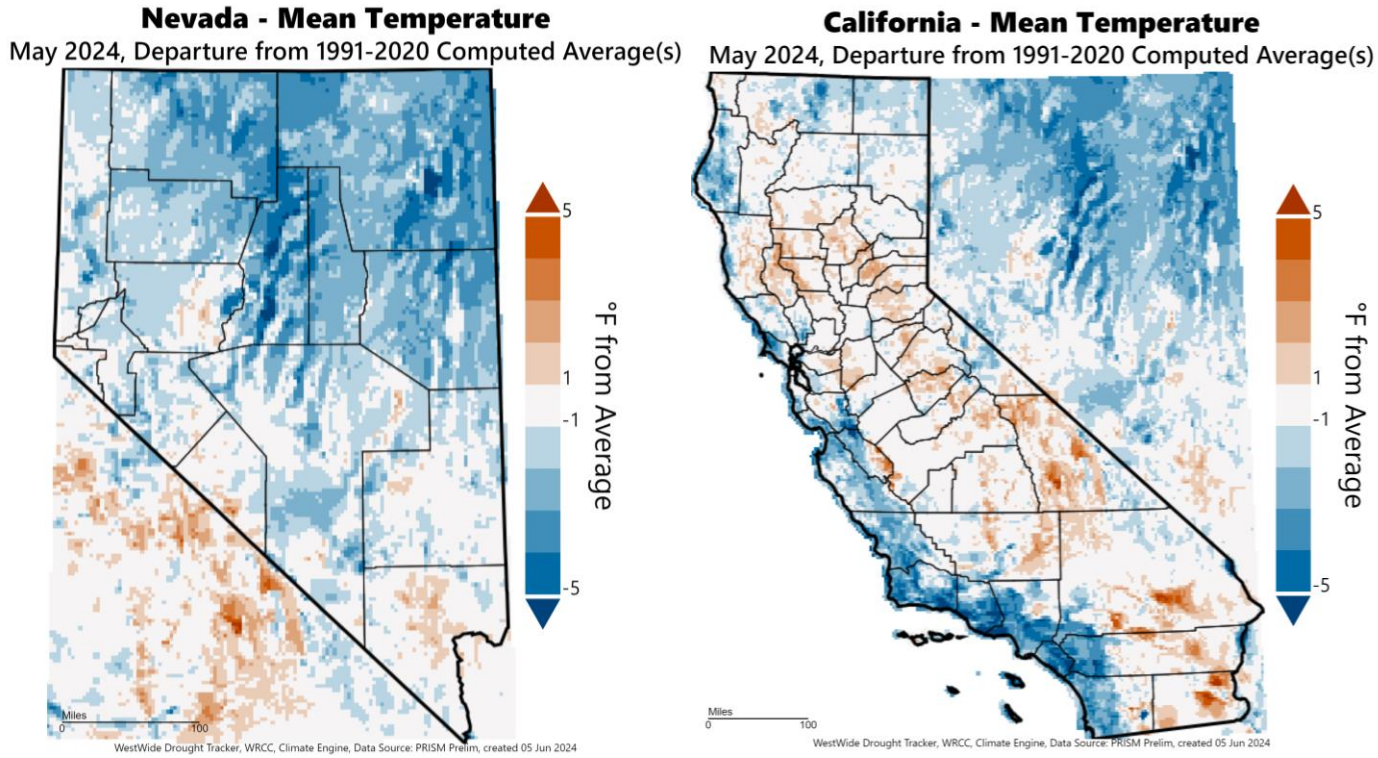

Figure 1: Nevada (left) and California (right) departure from normal temperatures for May 2024.(WWDT)

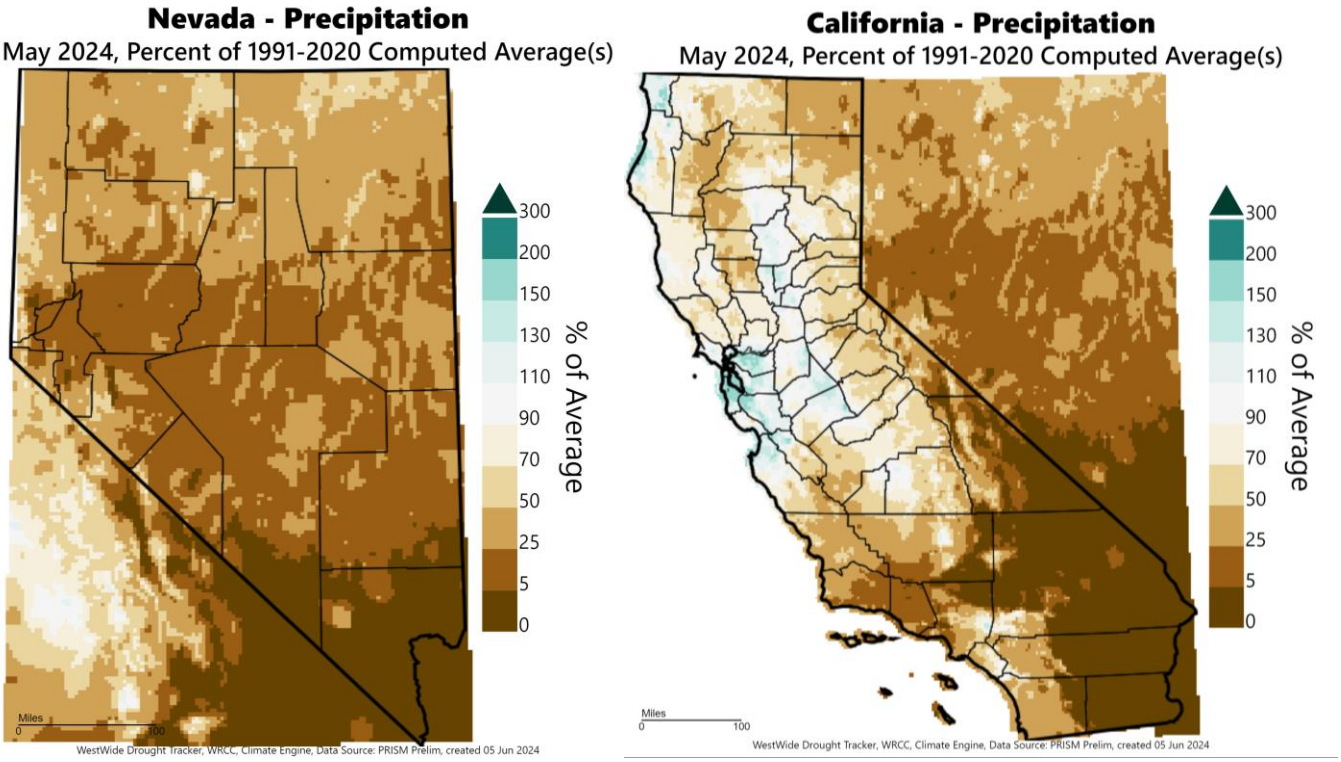

Figure 2: Nevada (left) and California (right) percent of normal precipitation for May 2024. (WWDT)

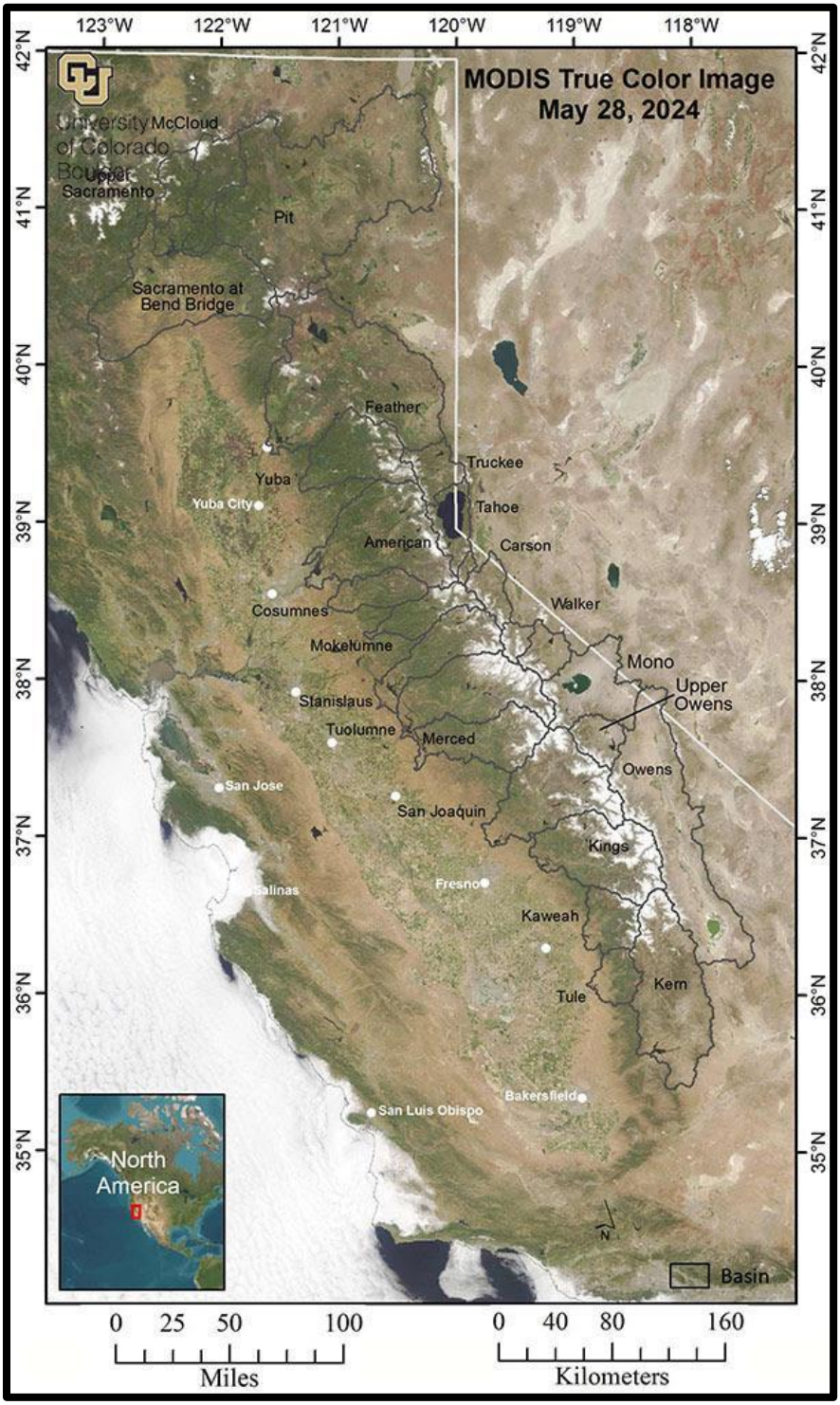

Figure 3: MODIS true color image for May 28th from [CU Boulder Sierra Nevada Real Time SWE report]

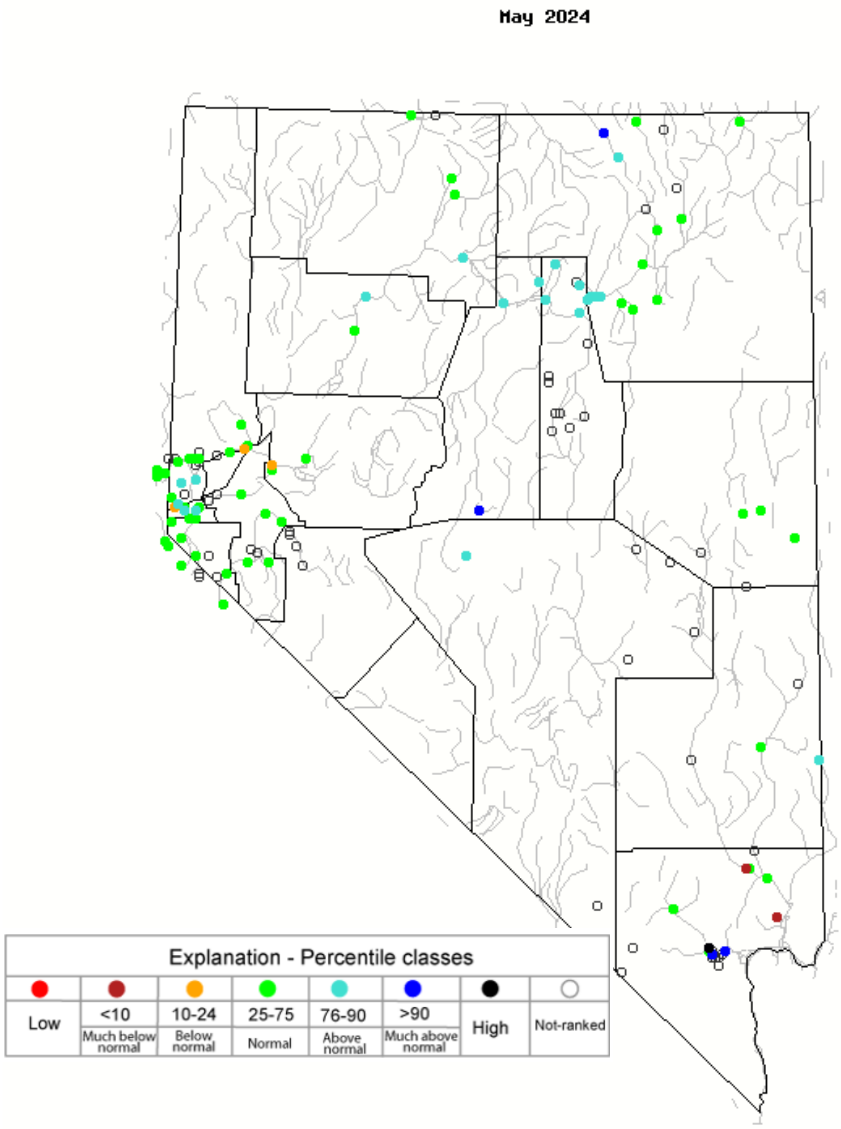

Figure 4: May 2024 [Monthly USGS streamflow]

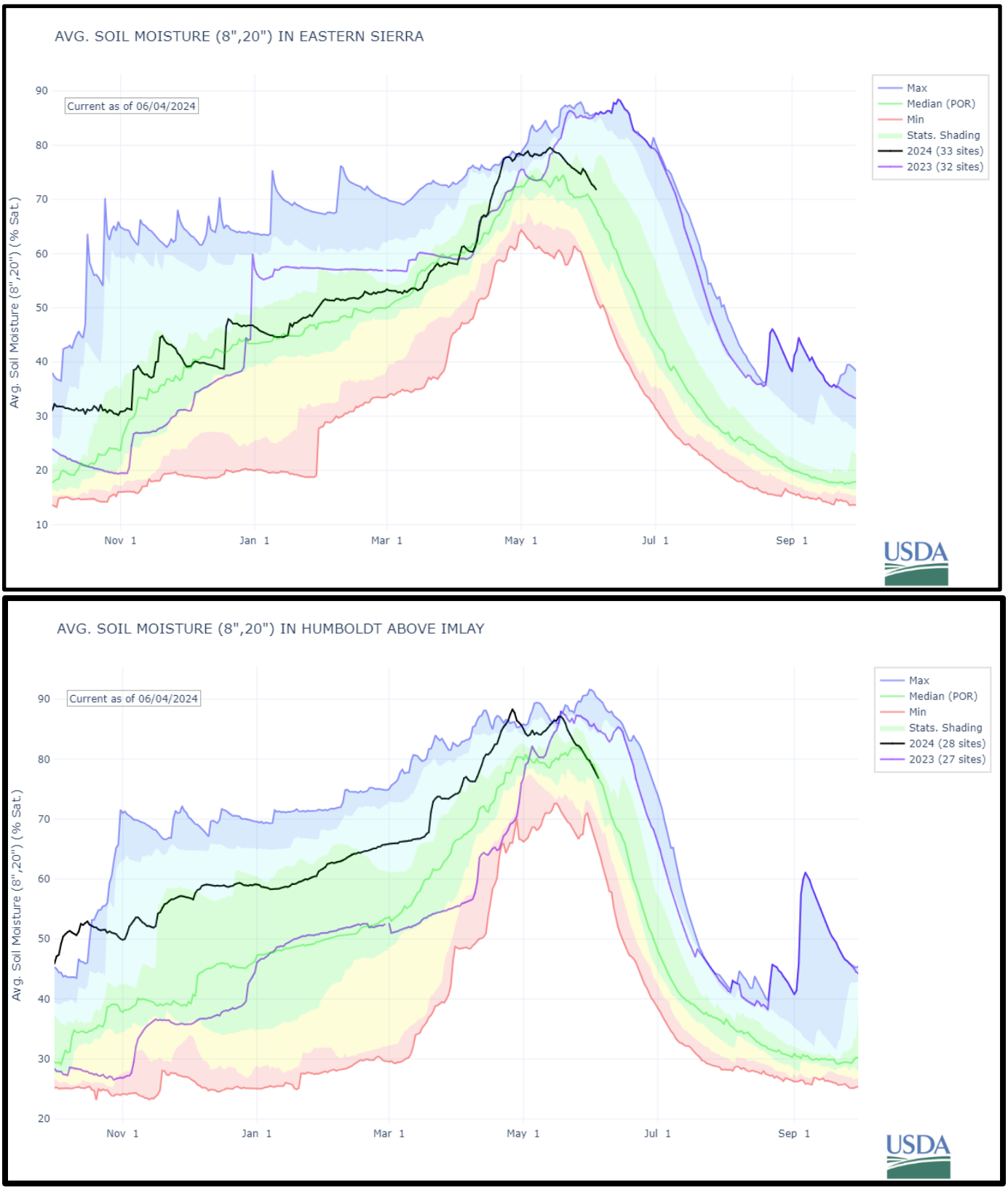

Figure 5: NRCS SNOTEL soil moisture for the combined Tahoe, Truckee, Carson and Walker basins (upper), and Humboldt basin (lower) indicated in dark black for water year 2024. Water year 2023 is plotted in purple for additional perspective.

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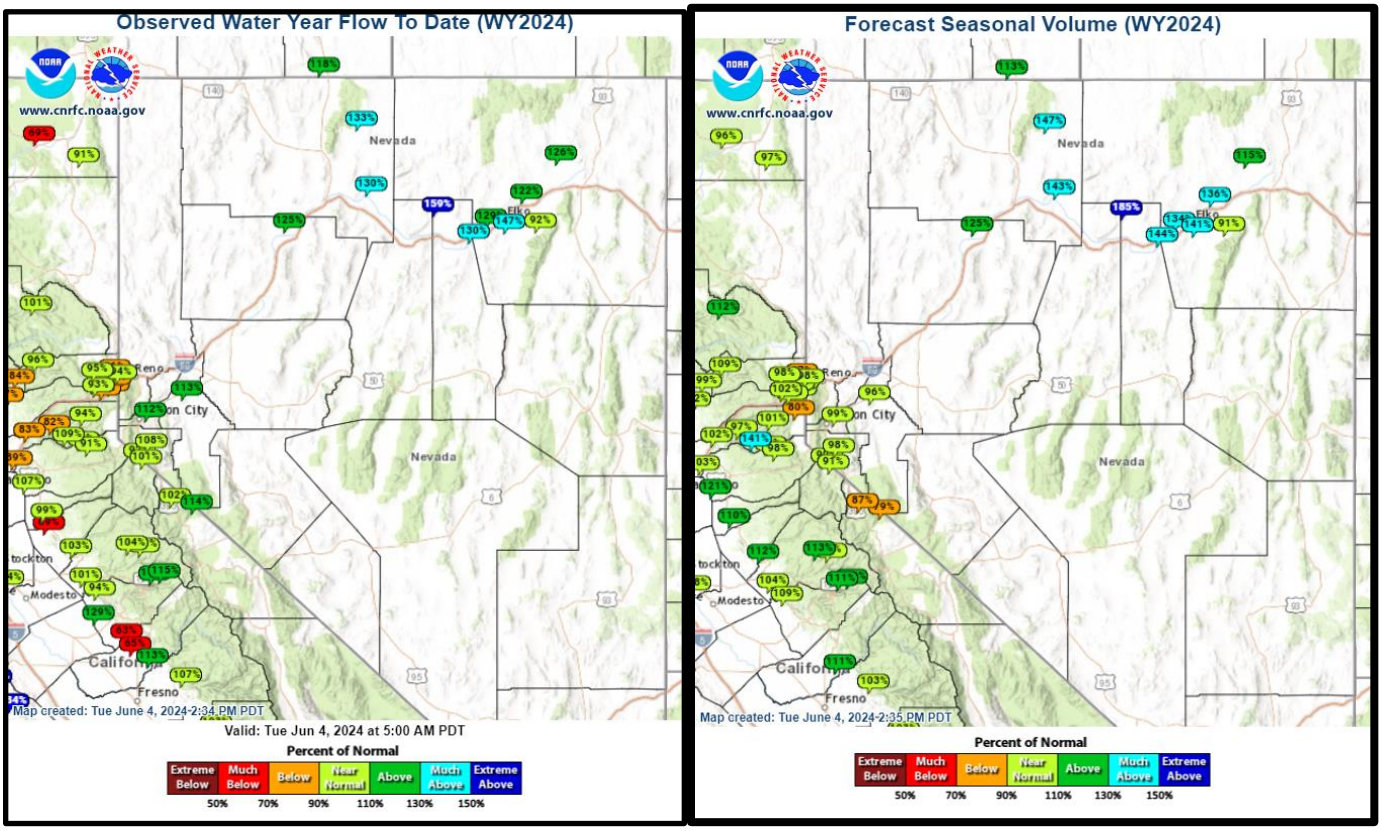

Figure 6. CNRFC Water year to date volume (Left) and April to July runoff forecasts.

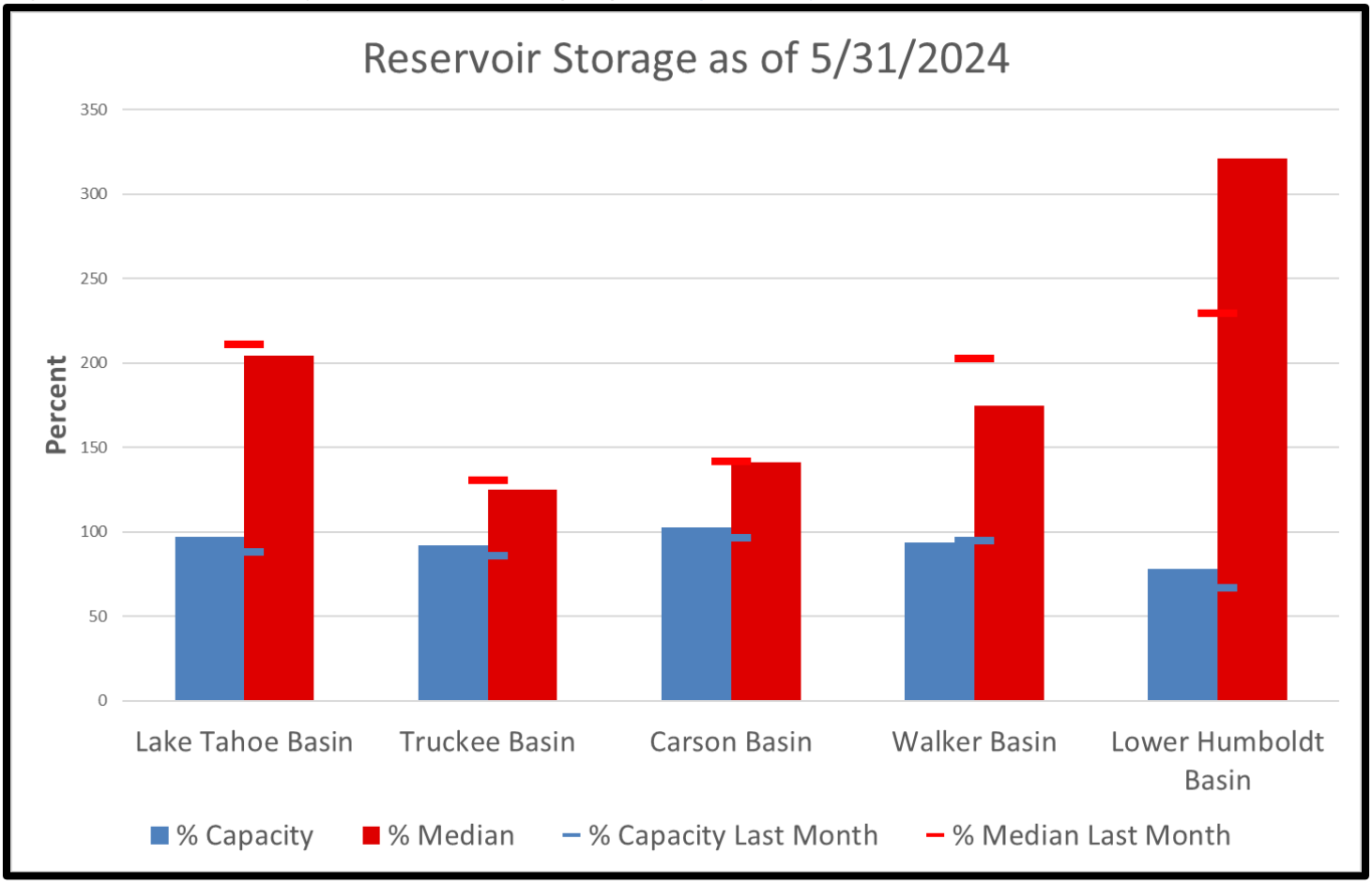

Figure 7: End of month reservoir storage relative to capacity and **median*** for this month and last month. (*note reference was recently update to NRCS 1991-2020 median values)

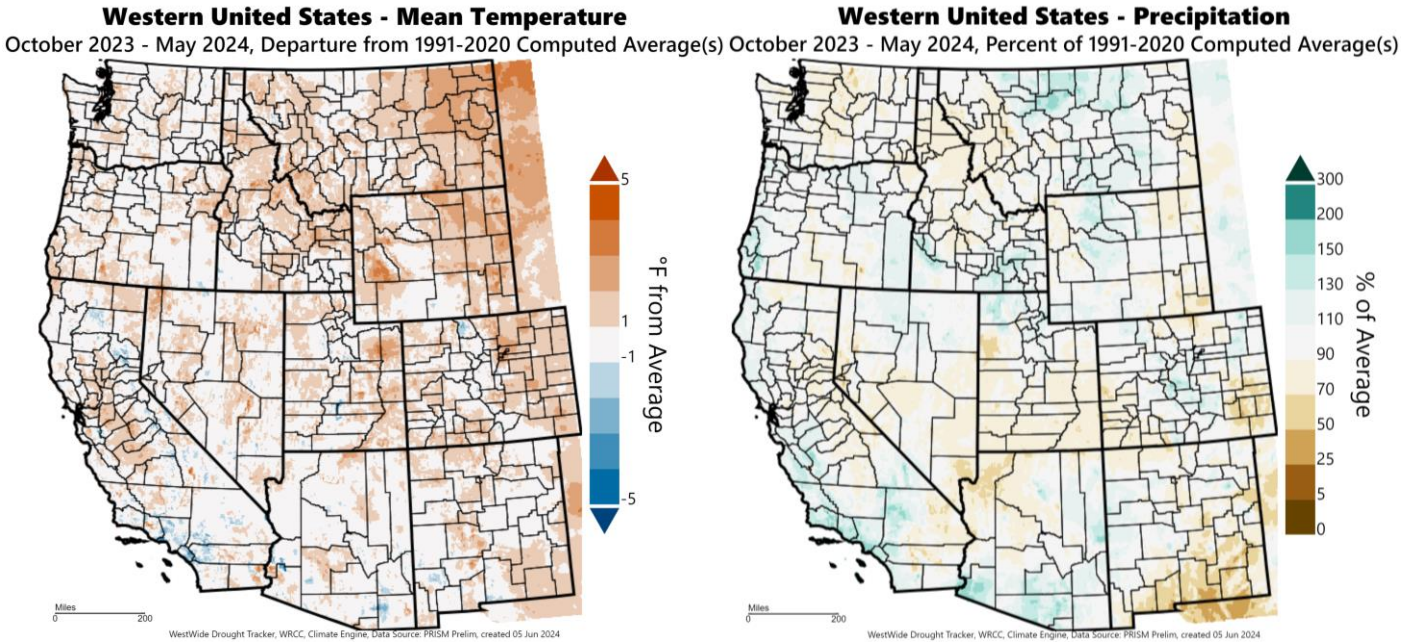

Figure 8: Current 2023-24 water year to date departure from normal temperature (left) and percent of normal precipitation (right).

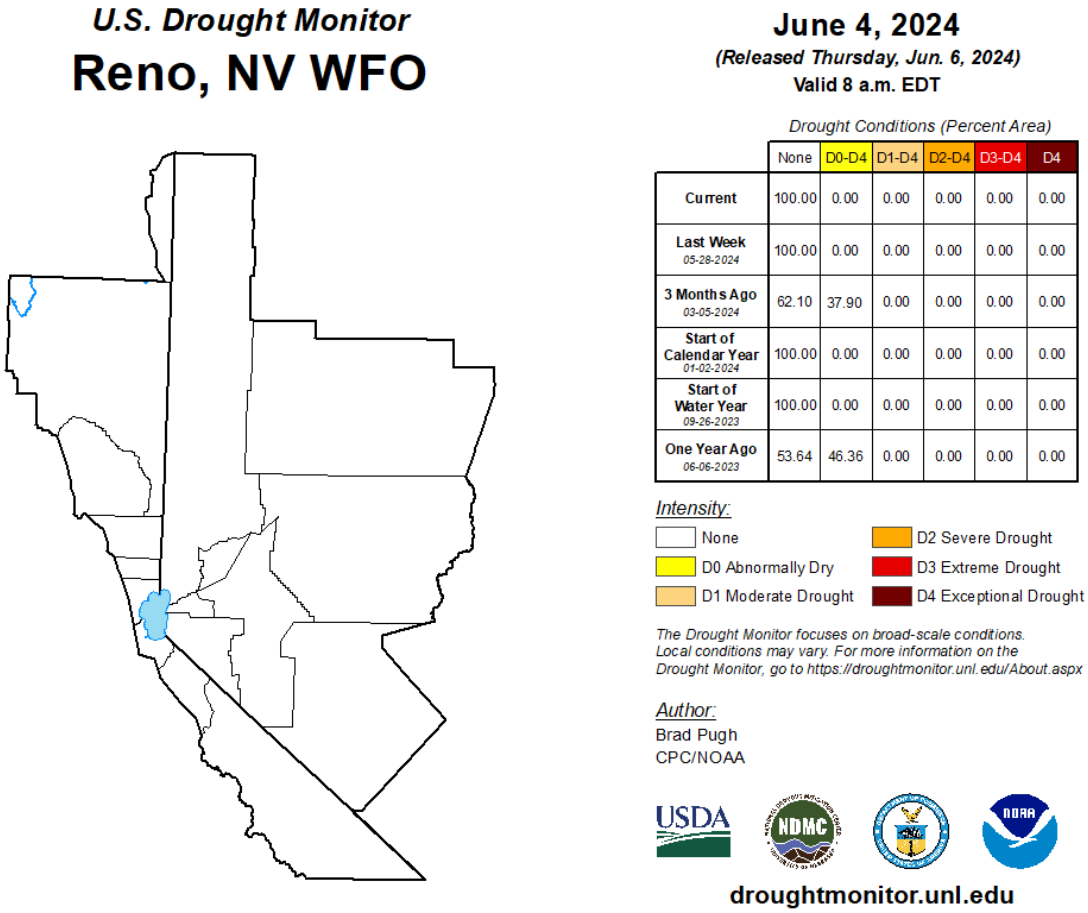

Figure 9: Early June Drought Monitor Status (no areas in D0-D4). Check for updates at: Drought Monitor.