Monthly Climate Report

NWS Reno NV

Issued: 1/7/2025

Weather Synopsis & Highlights:

Temperatures across the area finished between 1 to 4 degrees above average for December (Figure 1). Precipitation during December was well below average across much of Mineral, Lyon, Douglas, and Churchill counties, with these areas receiving between 25-50% of average precipitation. Meanwhile, much of the Sierra Front received between 40-70% of average precipitation. Southern Mono County east of the Sierra crest was also largely missed, with less than 25% of average precipitation. The remainder of the eastern Sierra, northeast California, and northern Washoe County received generally between 90-130% (Figure 2).

The first 10 days of December featured dry conditions with light winds, while valley inversions kept temperatures near or below average for lower elevations, although higher elevations were warm in comparison. Persistent freezing fog in valley locations in the Sierra and eastern Lassen County (Photo 1) caused several vehicle accidents along US-395 east of Susanville on the 5th. These inversions kept areas of northeast CA and northwest NV even colder until the inversions finally eased around the 11th.

A series of fast-moving storm systems finally broke through the stagnant weather pattern from the 12th through 16th. The first storm on the 12th brought 6-12 inches of snow to the Sierra crest above 7000 feet, and up to 5 inches of snow down to lake level in the Tahoe basin. Gusty winds of 40-50 mph occurred in lower elevations, with stronger gusts up to 60 mph in wind prone areas and near 100 mph for Sierra ridges. The strongest storm of the month occurred on the 13th-14th, producing heavy snowfall of 15-30 inches for most of the Tahoe basin from the crest down to lake level. Amounts dropped off to around 1 foot for the Sierra in Mono County. In far western NV, snow amounts of 2-5 inches occurred on the 14th in foothill areas near/above 5000 feet, with generally 1 inch or less down to valley floors around Reno-Carson City. One more smaller storm swept through on the 16th, producing an additional 4-10 inches of snow for the Sierra around Tahoe above 7000 feet, and up to 2 inches down to lake level. Liquid precipitation totals during these 5 days ranged from 1-3 inches across northeast CA and western portions of the Tahoe basin, with up to 5 inches near the Sierra crest west of Tahoe. Several strong wind events occurred as well, with peak gusts of 50-65 mph for lower elevations, wind prone gusts of 70 mph or greater, including a period of intense downslope wind gusts on the night of the 13th into the morning of the 14th, which overturned 5 tractor-trailers on parts of US-95 between Schurz and Hawthorne (Photo 2). Sierra ridge gusts surpassed 100 mph several times, with peak gusts of 140-160 mph along the crest on the 14th.

A few days of quieter weather returned with valley inversions from the 17th through 20th. The freezing fog with this inversion pattern was more prevalent over Lake Tahoe (Photo 3), bringing periods of poor visibility to the South Lake Tahoe Airport. Winds were so light at the Reno Airport on the 20th--the average wind speed for the day was calculated at only 0.1 mph!

More active weather quickly returned with the start of Winter Solstice on the 21st, and continued through the Christmas holiday weekend as several fast moving storm systems pushed through the region. The first storm

on the 21st produced more wind than rain or snow, with gusts 50-60 mph for lower elevations, up to 70 mph for wind prone areas, and 90-110 mph for Sierra ridge gusts. Christmas Eve brought another round of snow for the Sierra and Tahoe basin, with up to 10 inches near the crest above 7000 feet from the Tahoe basin southward to Mono County and 2-5 inches down to lake level (Photo 4). Winds again accompanied the precipitation, with peak gusts of 45-55 mph across much of far western NV southward to Mineral/Mono counties, stronger gusts to 65 mph in wind prone areas, and up to 100 mph for Sierra ridges. Additional storms after Christmas Day through the 29th brought several periods of strong wind gusts of 45-60 mph, with gusts up to 75 mph for wind prone areas, and Sierra ridge gusts up to 140 mph. Periods of snow moved through the Sierra mainly above 6500-7000 feet, with overall totals between 10-20 inches. The best rainfall for far western NV occurred on the 29th, with totals between 0.15 and 0.50 inch across the main urban areas, while some foothill sites received over 1 inch. This storm activity ended with dry conditions and lighter winds for the final two days of the year.

Hydrology:

Streamflows for December have remained near normal (Figure 3), with the only notable rise on a mainstem river in the NWS Reno Service Area occurring on the Susan River at Susanville on the 24th of December as well as toward the end of the month (28-29th). However, both times the river was well below minor flood stage, and no hydrological watches, warnings, or advisories issued for the month. The relatively warm and wet second half of the month helped improve soil moisture conditions in the mountain headwaters. In the Combined Truckee, Carson, and Walker basins soil moisture is now near normal, but still lagging somewhat in the Humboldt basin (Figure 4). Early season snowpack conditions lagged below normal during the dry first half of the month, but rebounded to above normal during the wetter second half of the month (Figure 5). The warm nature of the late month storms have reduced the low elevation snowpack and warm deeper snowpack areas. Water year to date streamflow volumes and April - July water supply forecasts lag below average in most areas, but are generally close to median (Figure 6). Reservoir storage is near normal for this time of year on the Truckee, somewhat above normal on the Carson and Walker, and well above normal on Lake Tahoe and Rye Patch (Figure 7).

Drought Update:

During December, there was an expansion of moderate drought (D1) conditions along the Sierra Front as well as into the inner-basins (Figure 8). Since October, those particular areas have experienced between 20-55% of average precipitation (Figure 9), and the 30-90 day SPI in these aforementioned areas is between -1.0 to -2.0. A reason for the higher precipitation deficits in western Nevada is because storms over the last few months have produced more strong winds with little to no rainfall. So far this water year, temperatures have been between 1 to 3 degrees above average (Figure 10), and snowfall has been below average for western NV as well as lower elevations of the Sierra and northeast CA.

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/

Photos:

US-395 : Janesville
Janesville

Photo 1: Freezing fog persisted for the first week of December in portions of eastern Lassen County. Photo courtesy of Caltrans

Photo 2: Multiple semi-trucks blown over along US-95 in Mineral County on the 14th. Photo courtesy of Nevada State Police via X.

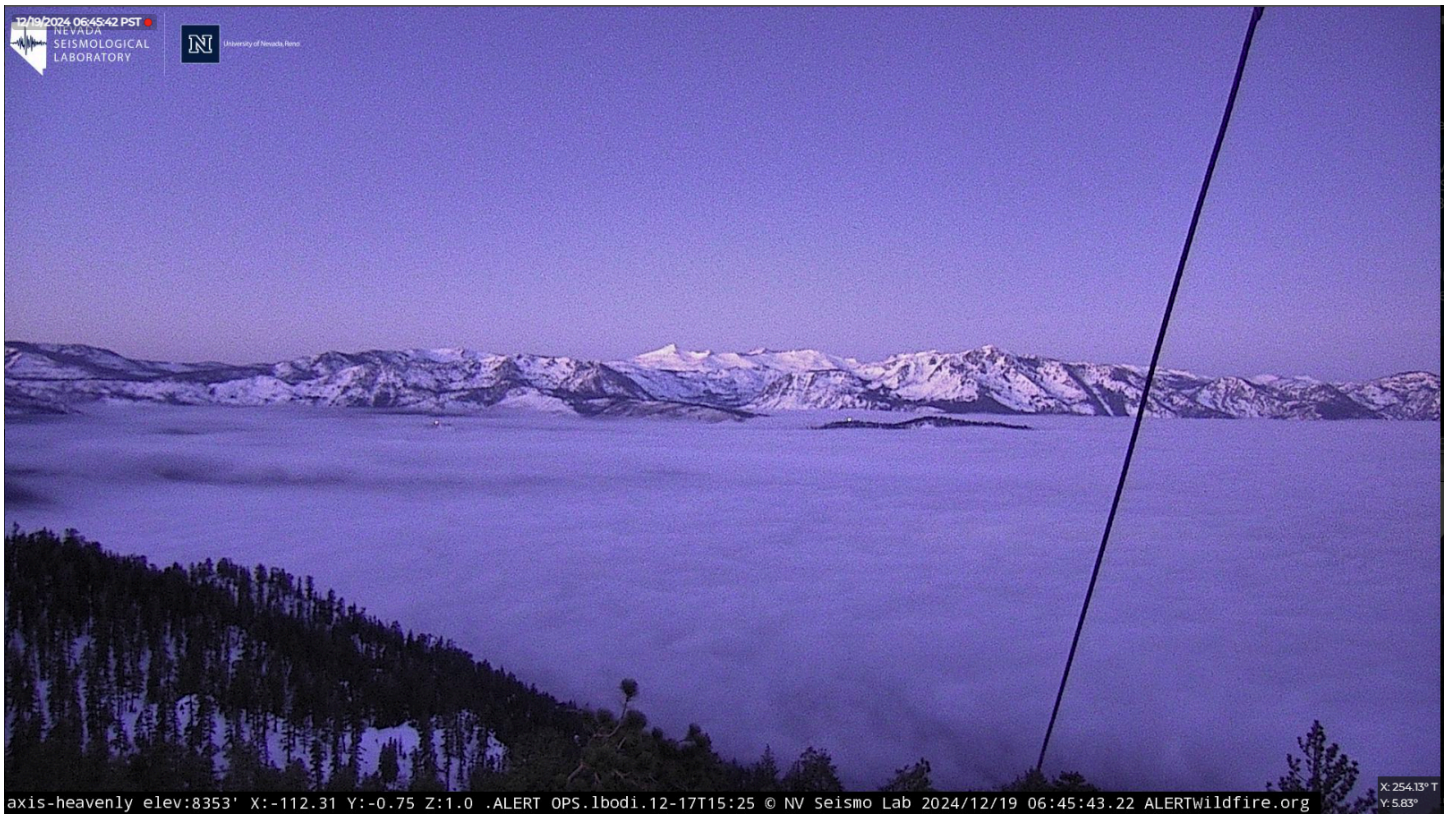

Photo 3: Dense freezing fog across the Sierra valleys on the 19th. Photo courtesy of the Nevada Seismological Laboratory via AlertWest.

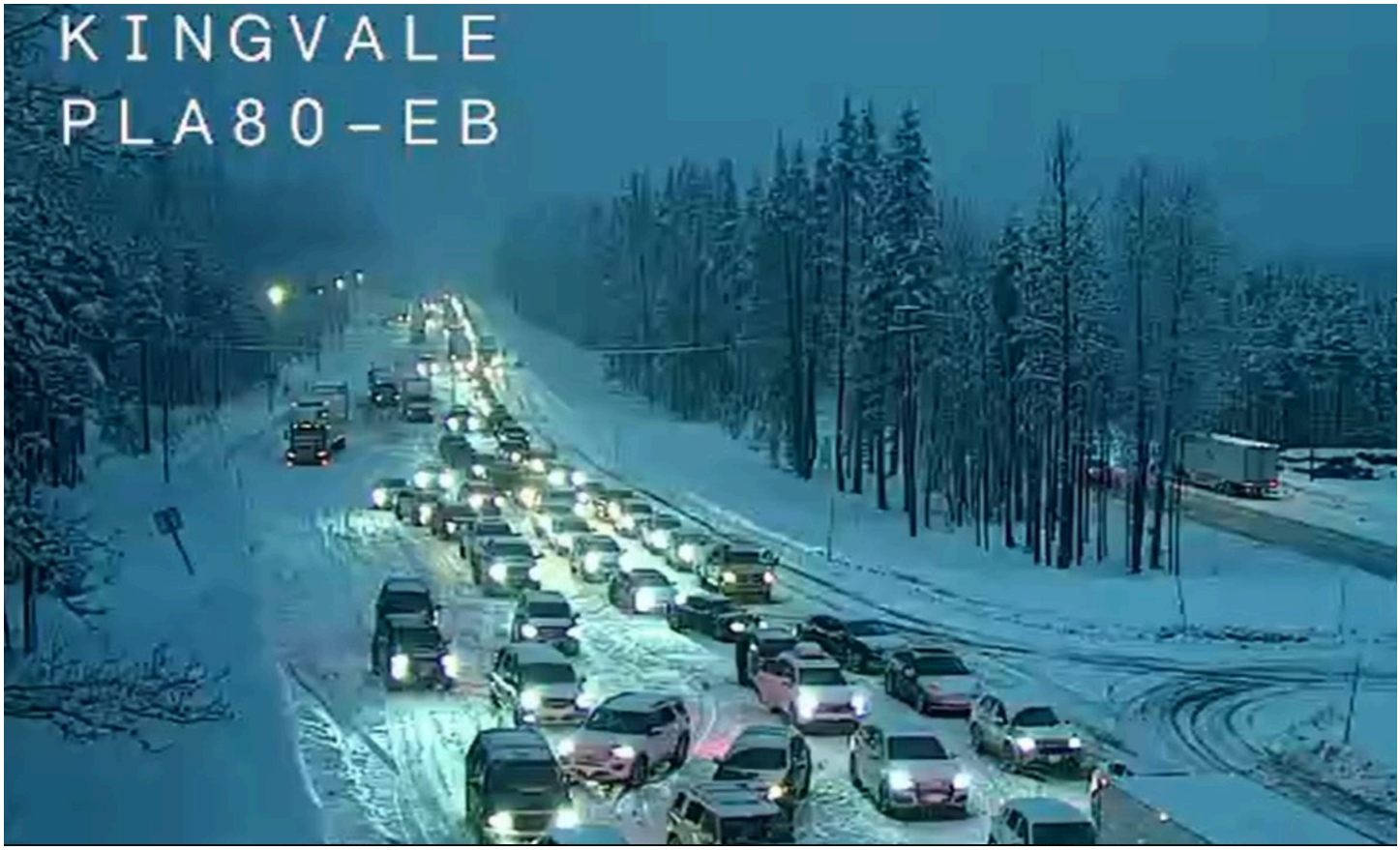

Photo 4: Snowfall on the 24th caused many accidents and temporary road closures across the Sierra. Photo courtesy of Caltrans District 3

Figures:

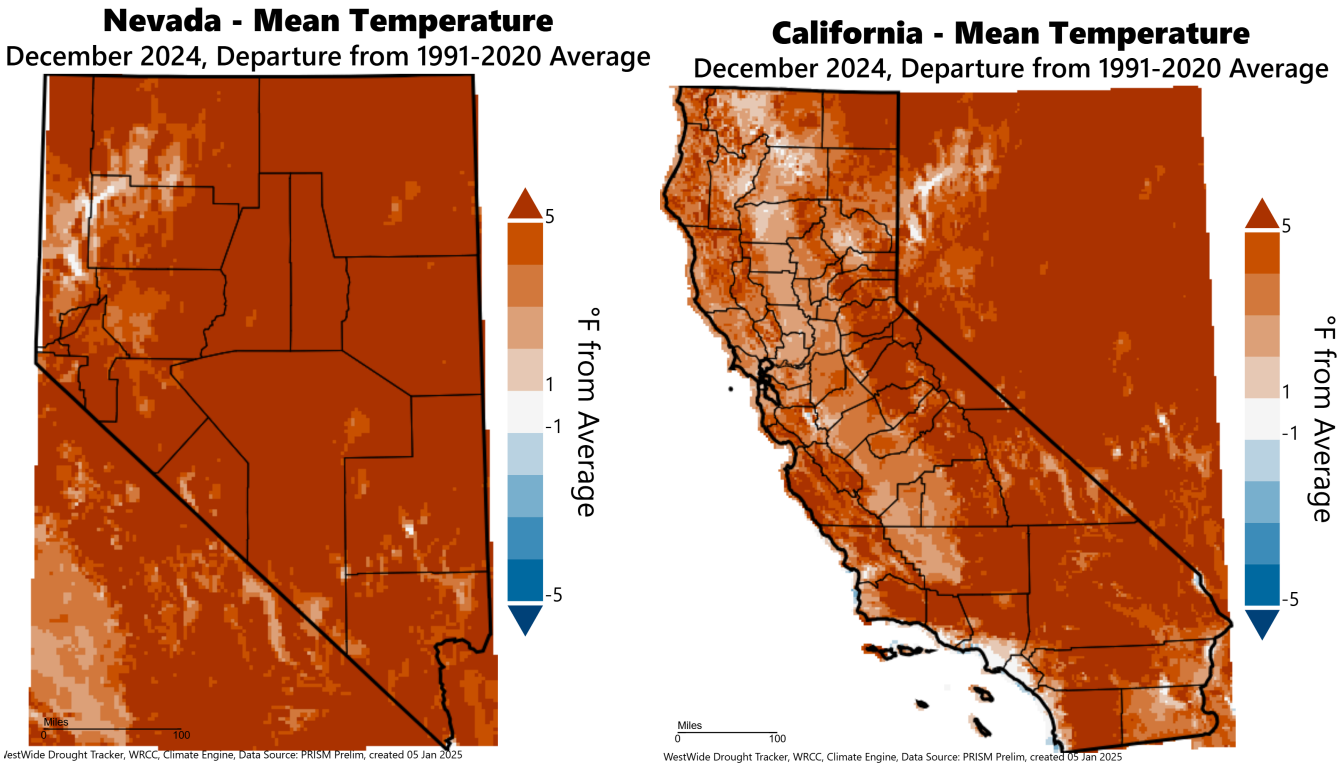

Figure 1: Nevada (left) and California (right) departure from normal temperatures for December 2024.(WWDT)

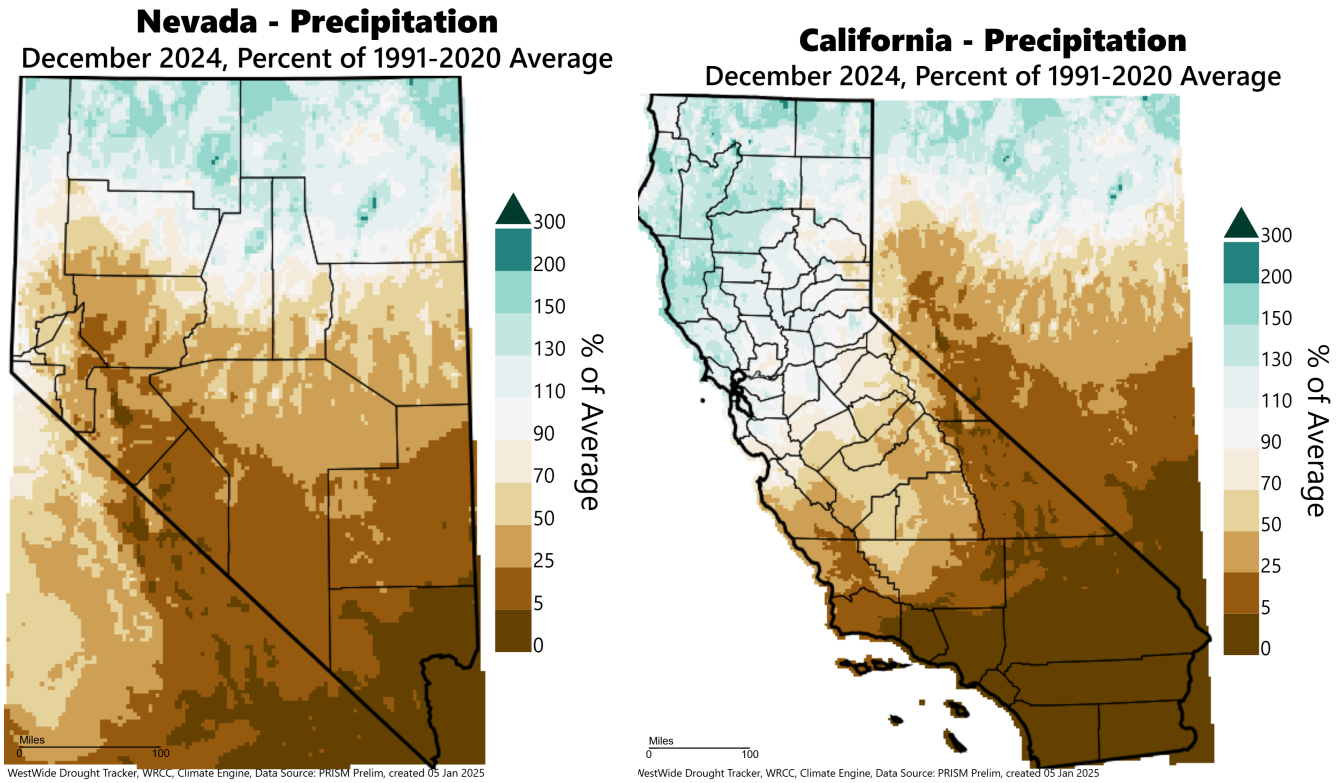

Figure 2: Nevada (left) and California (right) percent of normal precipitation for December 2024. (WWDT)

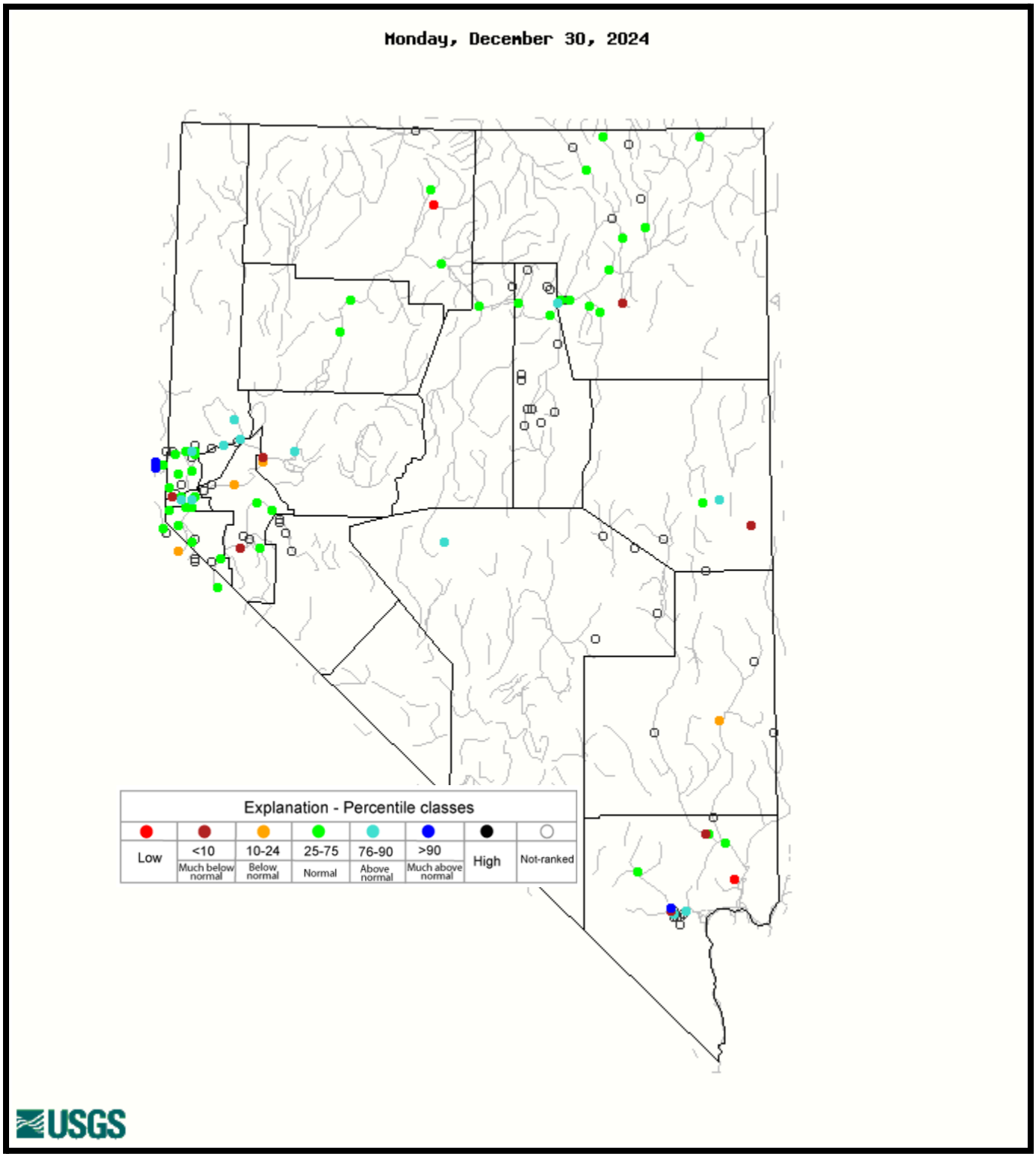

Figure 3: [USGS Monthly average streamflow] for December.

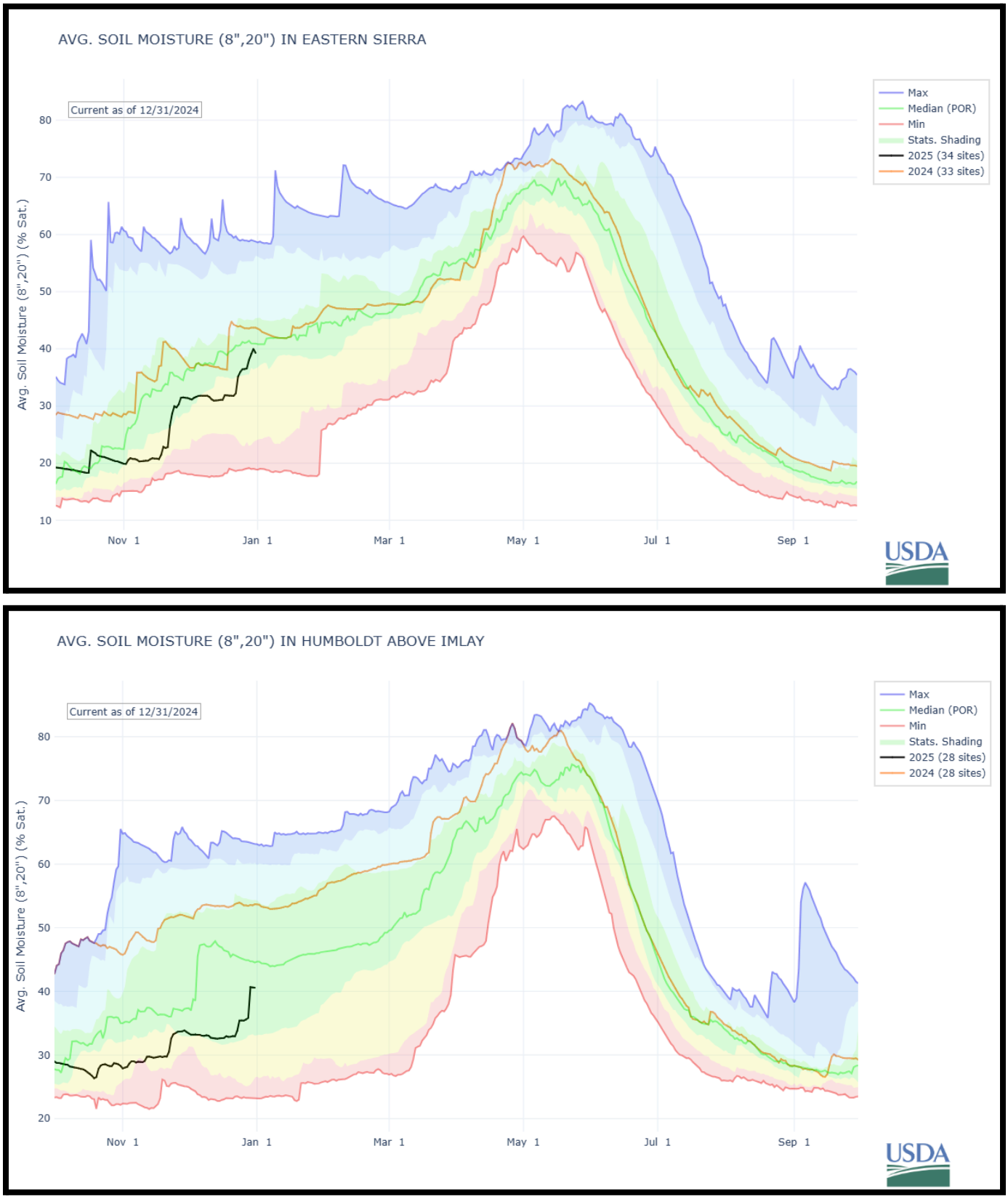

Figure 4: NRCS SNOTEL soil moisture for the combined Tahoe, Truckee, Carson and Walker basins (upper), and Humboldt basin (lower) indicated in black for the first three months of water year 2025. Water year 2024 is plotted in orange for additional perspective.

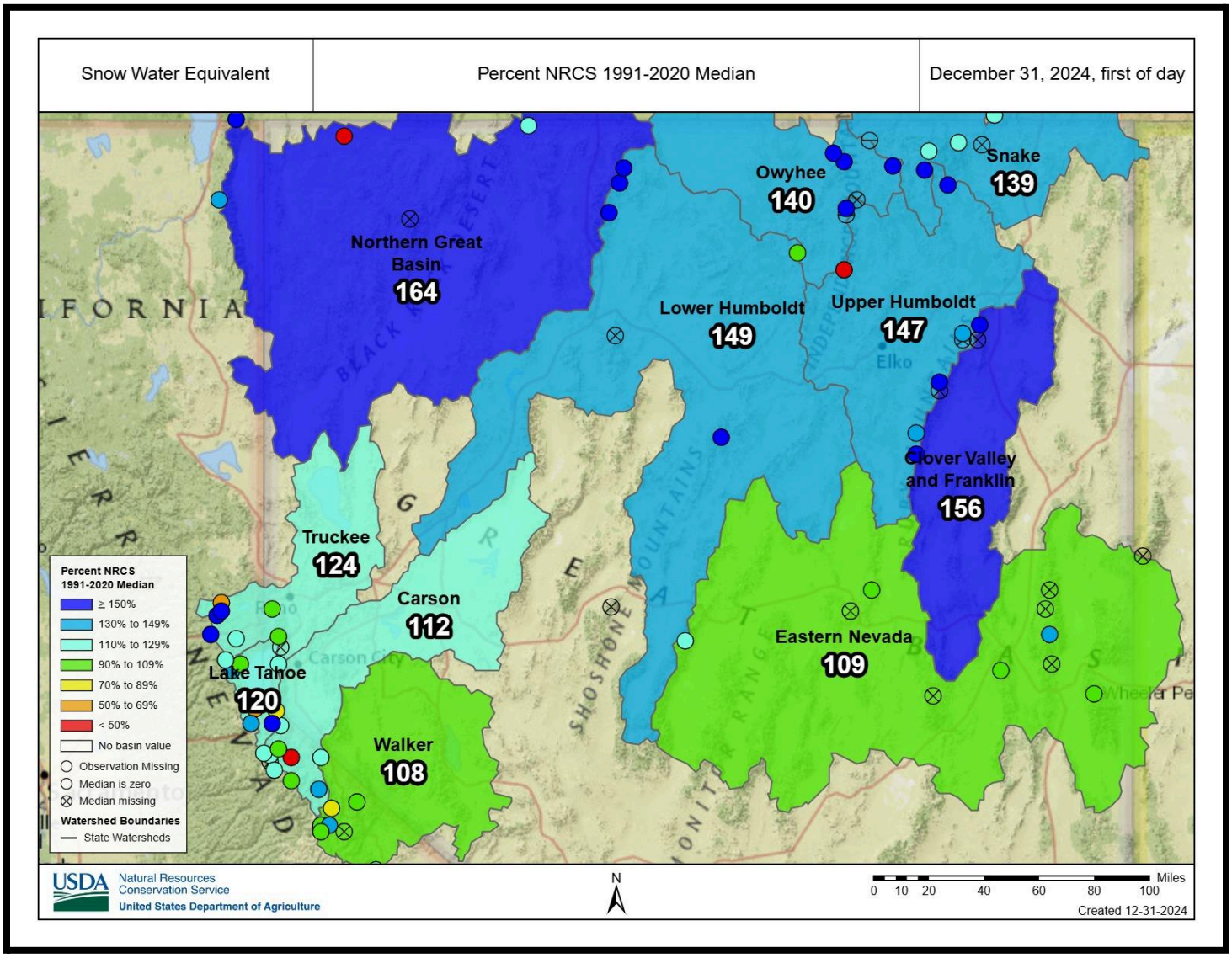

Figure 5. NRCS % of median snow water equivalent for late December. Note we typically have about 1/3rd of our peak snowpack at the end of December.

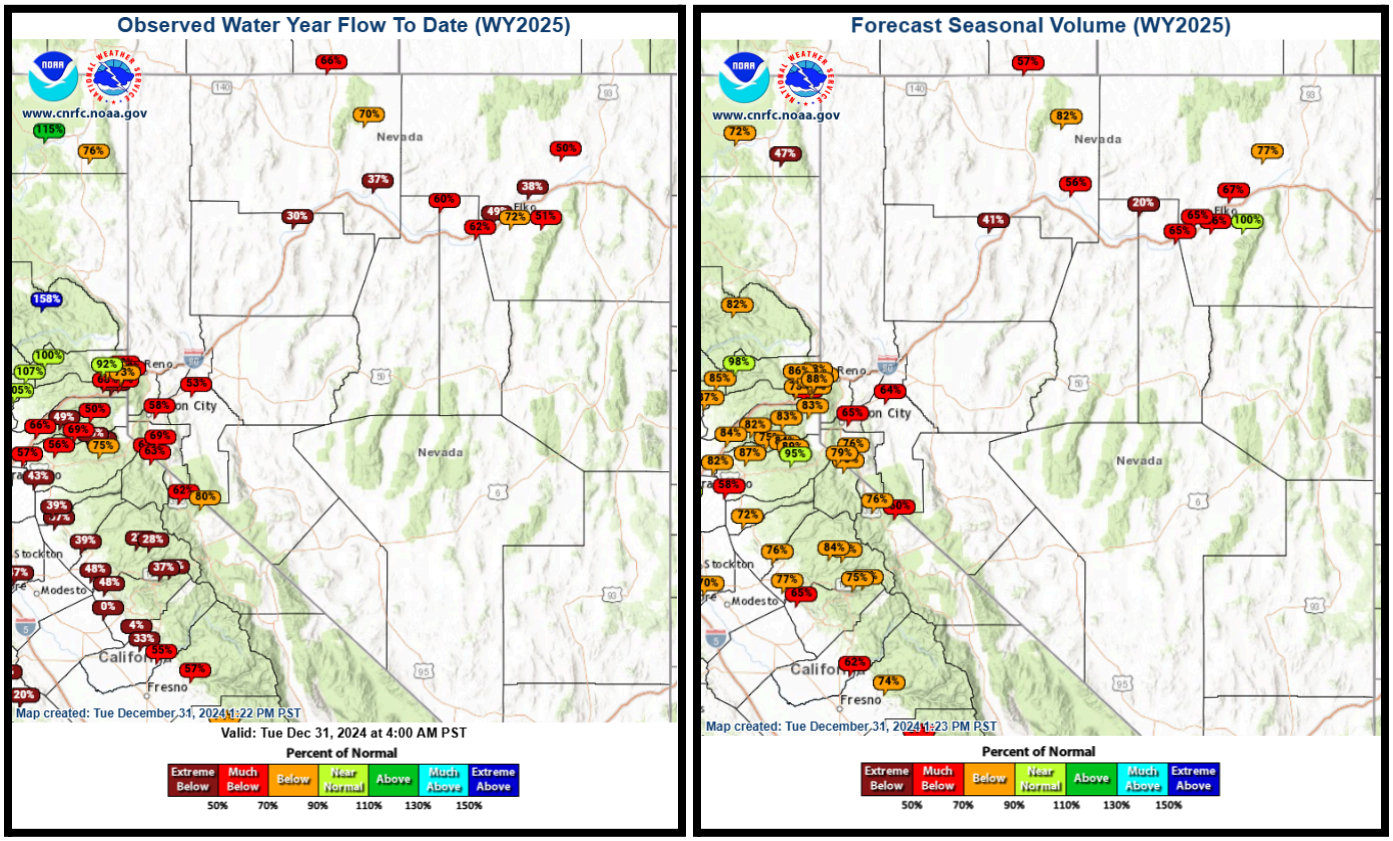

Figure 6. Left figure CNRFC Water year 2025 observed flow to date and right figure CNRFC April-July forecast volume both as % of average

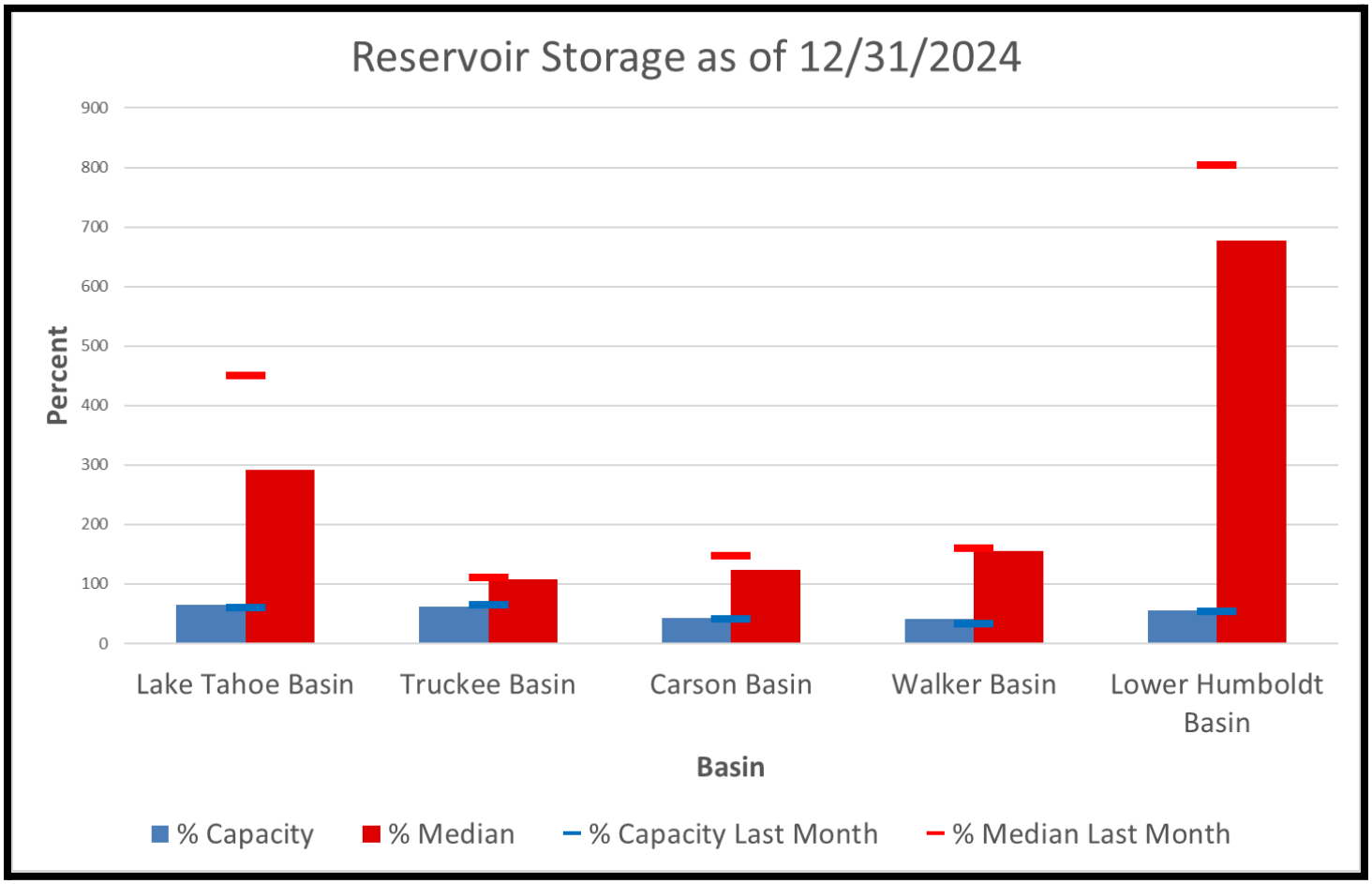

Figure 7. End of December reservoir storage relative to capacity and **median*** for this month and last month. (*note reference was recently updated to NRCS 1991-2020 median values)

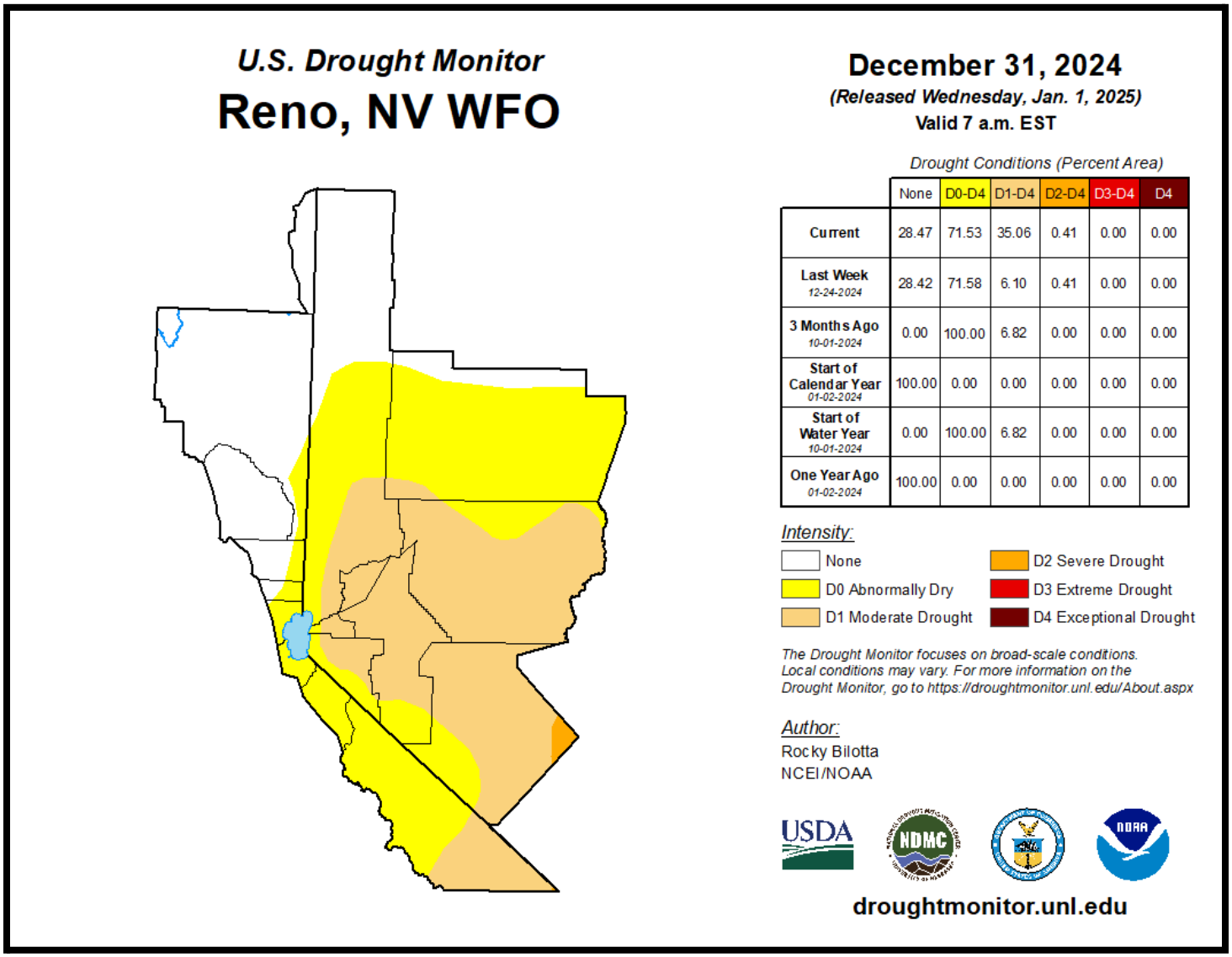

Figure 8: Late December Drought Monitor Status. Check for updates at: Drought Monitor.

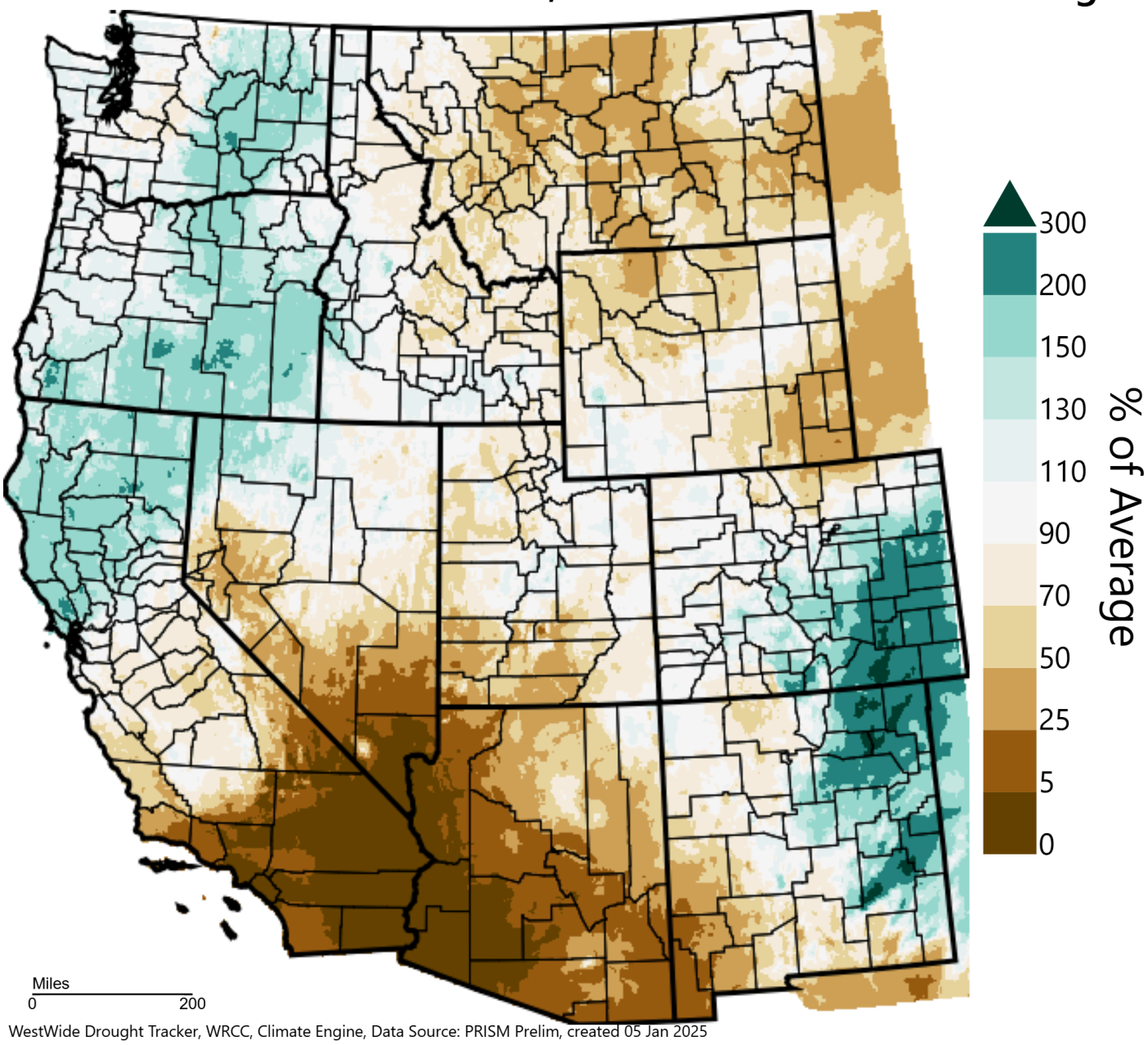

Figure 9: Water year to date precipitation. Courtesy of West Wide Drought Tracker. (WWDT)

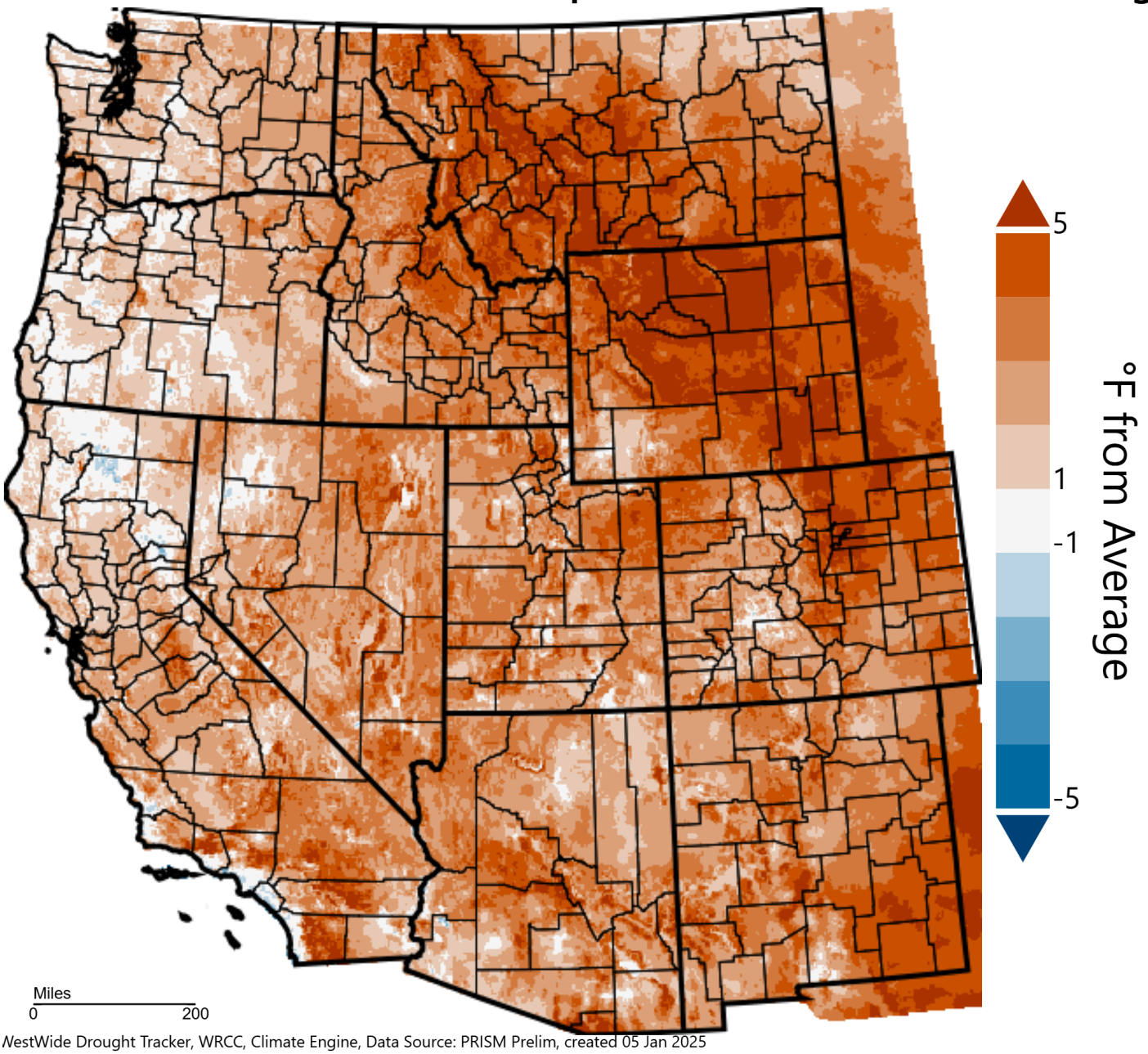

Figure 10: Water year to date temperatures. Courtesy of West Wide Drought Tracker. (WWDT)