



Photo by B. Hatchett

## Quarterly Report and Outlook

*Informe Trimestral y Pronóstico en línea*

[www.unr.edu/climate/climate-summary](http://www.unr.edu/climate/climate-summary)

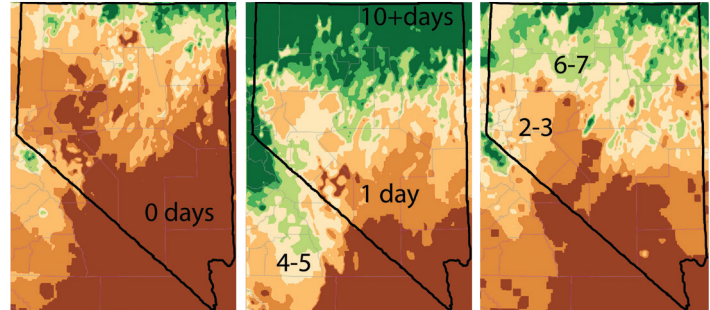
October - December 2017

## Notable Weather and Climate in Nevada

Well, *that* was an interesting autumn. Statewide, it was the ninth driest and eleventh warmest autumn on record, but that doesn't really capture everything that went on.

The northern and southern parts of Nevada experienced very different falls, as you can see from the maps to the right and below. The southernmost part of Nevada had the warmest fall since 1895. It was warm day and night, particularly in November and December. Northern Nevada, and especially the northwest part of the state, was pretty warm in November, but cooler than normal in October -- in fact, October had nighttime average temperatures among the 10 coldest years on record. December was really interesting. The south was just warm, with warmish nights and average daytime temperatures almost 7°F above normal. Courtesy of a strong ridge, the northern parts of the state warmed above normal during the day, but were often cooler than normal at night.

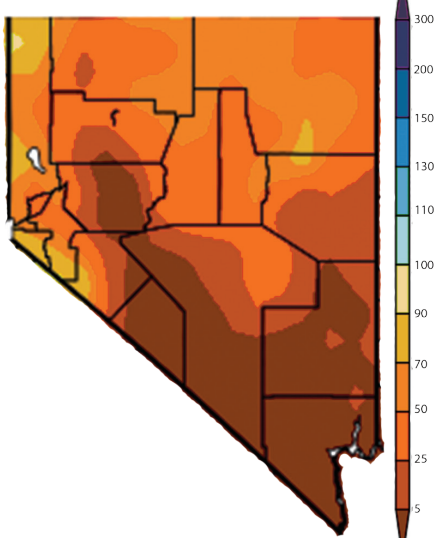
The southern part of the state was dry. At least 13 stations saw no measurable precipitation between October 1 and December 31. While the northern part of the state has been dry overall, November brought a reprieve, with monthly precipitation above the 20<sup>th</sup> century average. While it was a dry fall, last year's rain and snow have buffered drought impact so far.



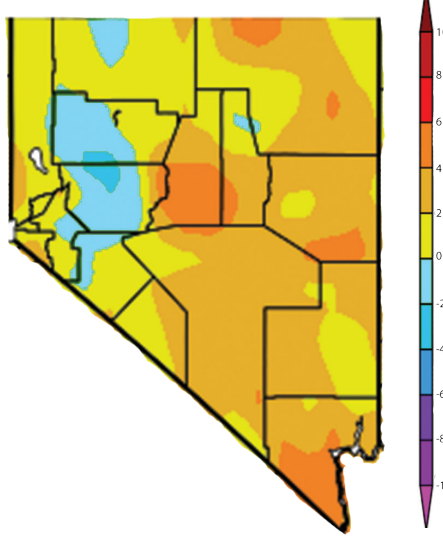
Based on daily PRISM data. Modified from ASIS imagery.

Above are the number of days with measurable precipitation in October (left), November, (middle), and December (right). Some parts of southern Nevada received no precipitation between October 1 and December 31. The northern quarter of the state and parts of the Sierra were fairly wet in November, with some areas experiencing 10 or more wet days. Many of these same areas were frequently wet in December, as well, but were still drier than normal because the storms were relatively small and did not tap into substantial tropical and subtropical moisture sources, like they did during last winter.

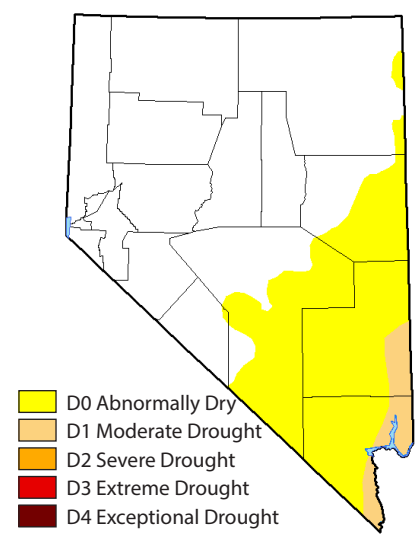
October - December Precipitation  
Percent of Normal



October - December Temperature  
Difference from Normal



January 2 Drought Monitor

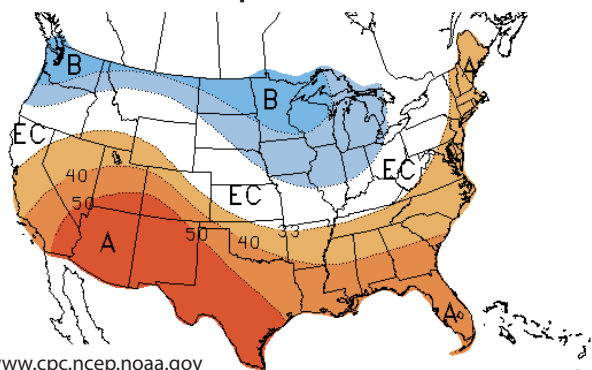


<http://www.hprcc.unl.edu/maps.php?map=ACISClimateMaps#>

<http://droughtmonitor.unl.edu>

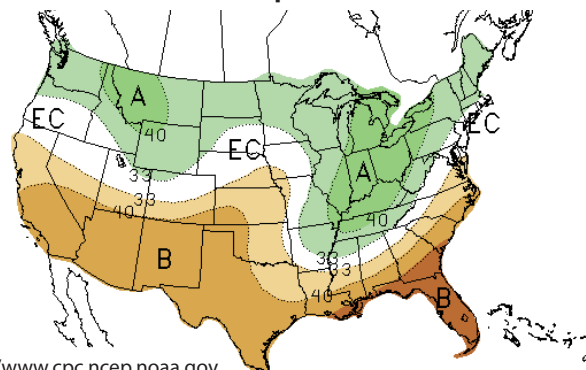
## Three-month outlook

### Temperature



<http://www.cpc.ncep.noaa.gov>

### Precipitation



<http://www.cpc.ncep.noaa.gov>

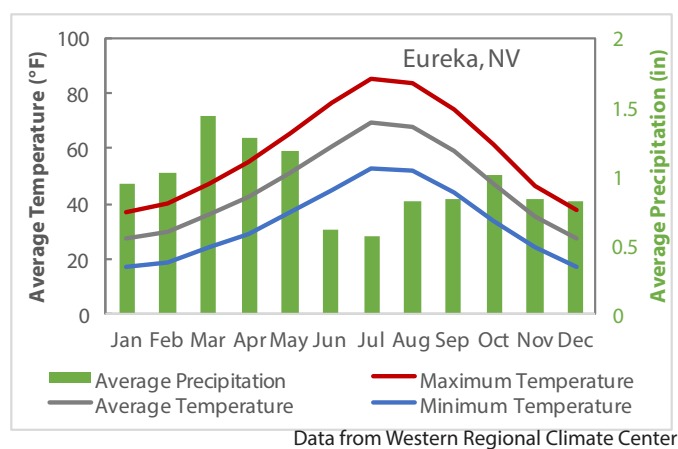
There is a pretty good chance that the rest of the winter will be warmer than average, and southern Nevada may be drier than normal, as well. This forecast for the southwestern U.S., including Las Vegas, is likely driven by the current La Niña event. Outlooks suggest that we will be in a La Niña through the rest of the winter. As is often the case, our best guess about winter precipitation amounts in northern Nevada is Equal Chances of below normal, normal, or above normal precipitation. Very helpful, I know. One thing to point out here, though, is that we shouldn't necessarily expect the rest of the winter to be dry simply because the autumn was. There is really no correlation between October-December precipitation, and January-March precipitation. That doesn't necessarily mean the water year is likely to be normal or wet, because we'd have to "make up" the precipitation that didn't fall during the autumn. It's like being out of work for a month. Even if you go back to work at a similar salary, your annual income may still be a little low. In the meantime, keep your fingers crossed for rain or snow, and my condolences to the skiers and those of you whose income is snow-dependent.

## Dear NSCO

### Is my climate normal?

Yes, it is! That's because climate gets a special definition of normal. The American Meteorological Society defines normal as, "the average value of a meteorological element over any fixed period of years that is recognized as a standard." In the U.S. we define "normals" over 30 years and update them every 10 years. The current "normal" period is 1981-2010. Normals are often shown in a climograph, like the one for Eureka, NV to the right. Monthly minimum, maximum and average temperatures are shown by lines corresponding to the left-hand axis, and average monthly precipitation is shown in green bars corresponding to the right-hand axis.

But an average isn't always the best way to define a normal. In dry places, where it's common to have mostly dry years punctuated by occasional wet years, using the average might cause you to expect too much precipitation. This is common across any data that has a long tail out to high values. Last time you were perusing a magazine at the dentist office, you may perhaps have wondered whether that recent multi-million dollar celebrity wedding skewed the average wedding cost a bit high. It did.



Data from Western Regional Climate Center

For example, the 1981-2010 average December precipitation in Nevada climate division 4 -- the southernmost part of the state -- is 0.7". Between 1895 and 2017, precipitation was less than that two-thirds of the time. The median precipitation over those 30 years was only 0.42". That's why some organizations have started using the 30-year median as the normal for precipitation and snow. So next time you hear that precipitation is below average, ask whether it's also below median.