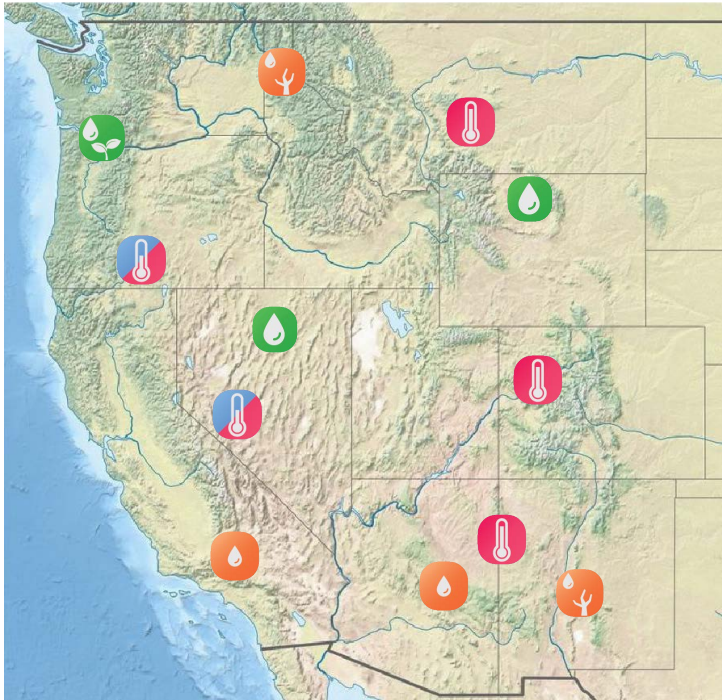










## Significant Events for Sep-Oct-Nov 2023

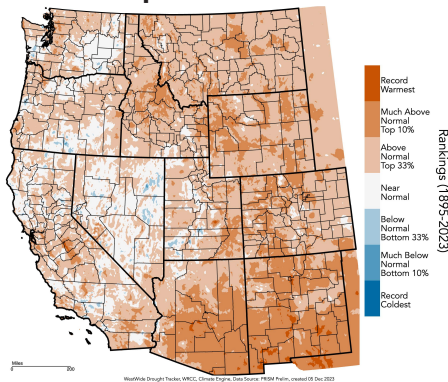
### Sep-Oct-Nov Highlights



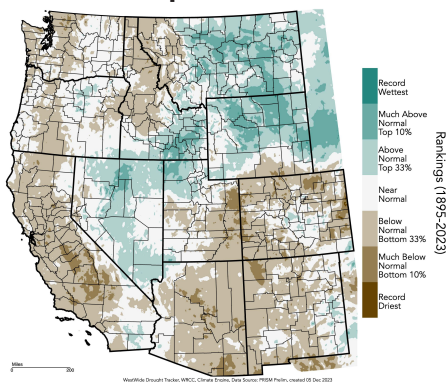
-  Drought remains in parts of the Pacific Northwest but has improved or been ameliorated in other parts thanks to Nov. and early Dec. atmospheric rivers.
-  Warm and dry conditions worsened drought in AZ, NM, and CO.
-  New Mexico had its third warmest Autumn since records began in 1895.
-  Early season snow drought conditions have developed across most of the West with below normal snowpack through early Dec.
-  El Niño strengthened through Autumn and the Sep-Nov Oceanic Niño Index was +1.8 degrees Celsius putting this event into the "strong" El Niño. Greatest impacts for the West will likely be felt during Winter.
- 

## Regional Overview for Sep-Oct-Nov 2023

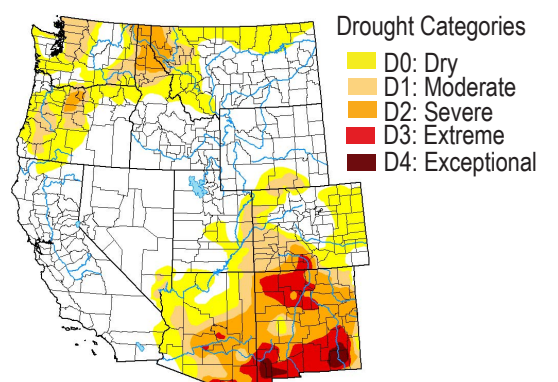
### Mean Temperature Percentile Sep-Oct-Nov 2023



### Precipitation Percentile Sep-Oct-Nov 2023



### US Drought Monitor December 5 2023



Autumn temperatures were above normal across most of the West with the greatest anomalies (+2 to +4 degrees Fahrenheit) in Arizona, New Mexico, and Montana. Notably, New Mexico saw its third warmest Autumn on record. Across the Great Basin and West coast states temperatures were near normal with anomalies generally -1 to +1 degrees Fahrenheit.

Autumn precipitation was below normal for most of California and the Four Corners states, and above normal for most of the Great Basin, Wyoming and Montana. Conditions were mixed across the Pacific Northwest but generally anomalies ranged 80-110 percent of normal. The dry autumn comes on the heels of a dry monsoon season for Arizona and New Mexico worsening drought conditions.

At the end of Autumn 25% of the West was in drought. Five percent of the region was in extreme or exceptional drought and this was confined to Arizona, New Mexico, and south-central Colorado; dry and warm Autumn conditions drove this expansion. Major drought improvements occurred in northern Montana and in parts of Oregon and Washington.

## Regional Impacts for Sep-Oct-Nov 2023

### Flooding and Storm Impacts

Around 70,000 attendees at the Burning Man festival, held in the Blackrock Desert in northwest Nevada, were stranded in early September after a rain storm created muddy conditions on the clay-silt soils of the Playa. Only about 0.5 inches of rain fell but the flat Playa expanse flooded making vehicle travel impossible.

### Agriculture and Drought

The Southwest Monsoon season officially ended September 30 and it was one of the driest and hottest on record for some. Albuquerque, New Mexico had its hottest monsoon season on record and 10th driest since 1891 with 1.92 inches of rain. This has renewed farming and ranching concerns.

### Fisheries

Fishermen in Half Moon Bay, California have been reeling from lost income due to the salmon fishery being shut down for several months. Recent droughts limited the salmon's ability to breed and there were not enough fish to open commercial season.

### Welcome drought relief accompanied by flooding and high snow levels across the Pacific Northwest

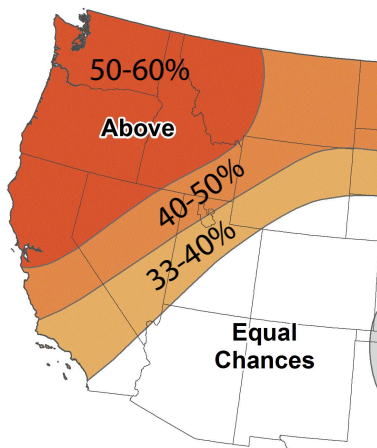


Image: Floodwaters surround a home on 6 December 2023 in Stanwood, Washington. Credit: David Ryder/Getty Images.

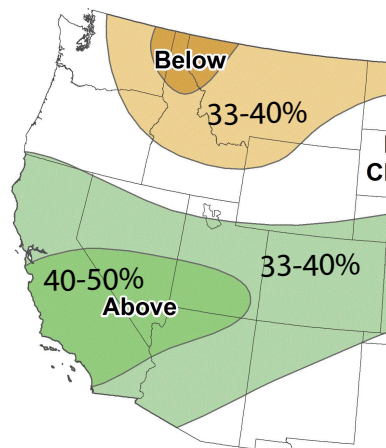
Severe and extreme drought depicted by the US Drought Monitor at the end of October in parts of the Pacific Northwest has been removed thanks to one series of atmospheric rivers in early November and another the first week of December. Early December storms were more severe and dumped 10-20 inches of precipitation in parts of Washington and Oregon causing major flooding and landslides, and at least two deaths have been reported. Initially, storms were cold and 1-3 feet of snow fell in the Cascades. Snow levels rose to over 7,000 feet during the second half of the storm cycle with major rain-on-snow and loss of snowpack in the Cascades.

## Regional Outlook for Jan-Feb-Mar 2024

### CPC Temperature Outlook



### CPC Precipitation Outlook



Numbers indicate percent chance of temperatures in warmest/coolest one-third and precipitation in wettest/driest one-third. Outlook produced December, 2023.

The CPC outlook for January-March favors above normal temperatures for much of the west with the highest probabilities (50-60% chance) in the Pacific Northwest, northern California, and northwest Nevada. Equal chances of above or below normal temperatures are found in Arizona, New Mexico, and Colorado. Above normal precipitation is favored in California, Nevada, and much of the Four Corners states with below normal precipitation favored for Montana, much of Idaho, and eastern Washington. The current strong El Niño event favors this precipitation dipole of wetter in the southern tier and drier to the north.

## Western Region Partners

Western Regional Climate Center  
[wrc.dri.edu/my](http://wrc.dri.edu/my)

National Integrated Drought Information System (NIDIS) - [drought.gov](http://drought.gov)

Western Governors' Association  
[westgov.org](http://westgov.org)

Western States Water Council  
[westgov.org/wswc](http://westgov.org/wswc)

NOAA/ESRL Physical Sciences Division  
[esrl.noaa.gov/psd](http://esrl.noaa.gov/psd)

NOAA Climate Prediction Center  
[www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)

National Centers for Environ. Info. (NCEI)  
[www.ncei.noaa.gov](http://www.ncei.noaa.gov)

USDA/NRCS National Water and Climate Center - [www.wcc.nrcs.usda.gov](http://www.wcc.nrcs.usda.gov)

National Interagency Fire Center  
[www.nifc.gov](http://www.nifc.gov)

Western Water Assessment  
[www.colorado.edu](http://www.colorado.edu)

Climate Assessment for the Southwest  
[climas.arizona.edu](http://climas.arizona.edu)

California Nevada Applications Program  
[cnap.ucsd.edu](http://cnap.ucsd.edu)

Climate Impacts Research Consortium  
[pnwclimate.org/resources](http://pnwclimate.org/resources)

NWS Western Region Forecast Offices  
[www.wr.noaa.gov/](http://www.wr.noaa.gov/)