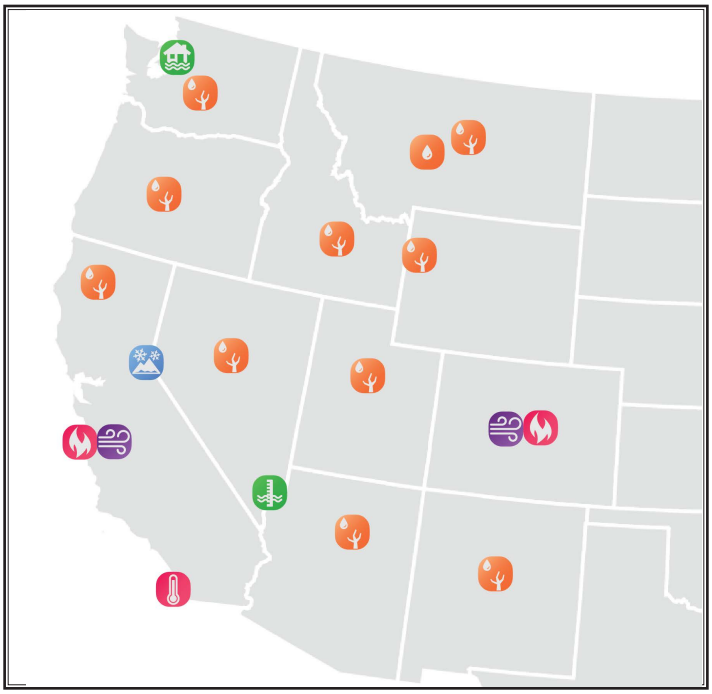
Quarterly Climate Impacts and Outlook

Western Region

March 2022

Significant Events for Dec-Jan-Feb 2022

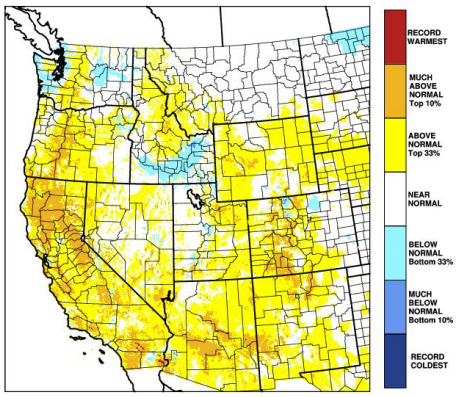


Dec-Jan-Feb Highlights

- The Central Sierra Snow Lab, CA observed its snowiest December (193.7 in.) since 1979.
- Dillon, MT observed its driest winter in 69 years.
- San Diego, CA set an all-time winter maximum temperature record of 91°F on February 12.
- The majority of the mountains in the West were experiencing snow drought (low-to-no snow conditions) at the end of February.
- Extreme to exceptional drought covers 24% of the West and includes all Western States.
- Downslope winds and dry conditions favored winter wildfires in CA and CO.
- Lake Mead's (NV) water surface elevation rose briefly before beginning a decline to below 1,063 feet (an all-time low) as of this writing.
- Western WA continued to experience wet conditions with additional riverine flooding.

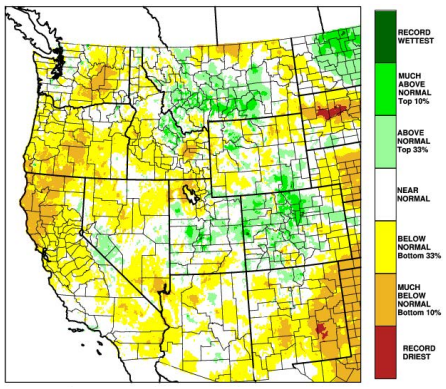
Regional Overview for Dec-Jan-Feb 2022

Mean Temperature Percentile
Dec-Jan-Feb 2022



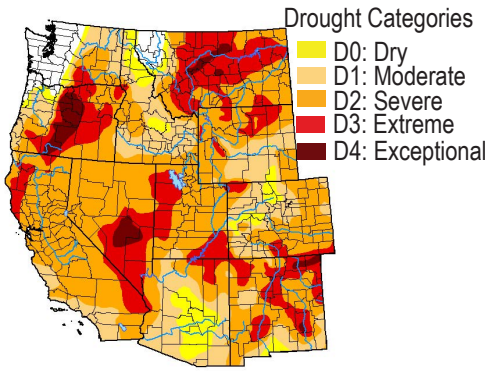
Mixed temperature anomalies prevailed across the West with high pressure conditions favoring inversions leading to cooler than normal temperatures in lower elevations such as the Snake River Plain and east of the Washington Cascades. Above normal temperatures were observed in mountain regions in California, Colorado, Arizona, and Oregon.

Precipitation Percentile
Dec-Jan-Feb 2022



Despite a wet December, high pressure-induced dry conditions during January and February–record dry in southern Oregon, much of California, and northern Nevada–created widespread below normal conditions throughout the West for the Dec-Jan-Feb period. Central Montana, central Utah and much of Colorado experienced above normal precipitation.

US Drought Monitor
Mar 1 2022



Over 96% of the western U.S. is in drought, with nearly 24% in extreme to exceptional drought. Last year, 89% of the West was in drought with 42% in extreme to exceptional drought. A wet December helped ameliorate drought, but the subsequent dry spell increased rainfall deficits and limited snowpack growth. Heading into spring, low-to-no snow conditions are widespread .

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Regional Impacts for Dec-Jan-Feb 2022

Drought, Flooding and Water Resources

Extreme to exceptional drought continues across the West, with anomalously warm and dry conditions raising concerns about reduced reservoir inflows from meager mountain snowpacks, water availability challenges, and elevated wildfire hazard during summer and fall.

Many large western US reservoirs remain low. Lake Mead is at 33% of capacity (1,063 ft), Lake Powell is at 24% of capacity, Elephant Butte (Rio Grande) is at 12% of capacity, Jackson Lake is at 21% of capacity, Palisades is at 33% of capacity, American Falls is at 76% of capacity, and Shasta is at 38% of capacity.

Agriculture and Wildlife Impacts

Fall and early winter rains improved rangeland conditions, especially in AZ, however adverse (very poor to poor) conditions continue West-wide.

Winter rains improved wetland and riparian habitat and helped the avocado crop, which is forecast to increase by 15% over 2021.

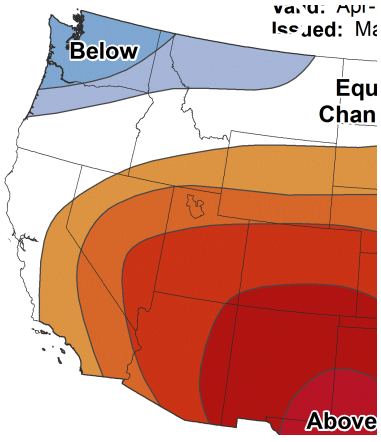
December Wildfires In Colorado's Front Range

Image: NASA Moderate Resolution Imaging Spectroradiometer

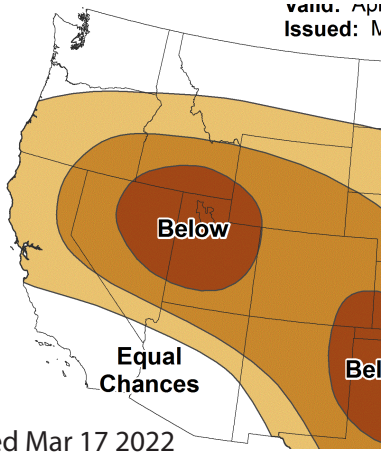
On December 30, exceptionally strong downslope winds (>115 mph) coincided with extremely dry conditions and ignitions to form the Marshall Fire. The winds brought a torrent of embers from the wildlands into urban communities throughout the Front Range, producing an urban firestorm. Downslope winds, typically strong, gusty, warm, and dry, are not uncommon in the lee of the Rockies during winter. However, following a wet spring and dry summer and fall, receptive fuels and topography combined with weather to create ideal conditions for extreme fire behavior. At least 1,084 houses were destroyed (>$500 million in losses) in what is now Colorado's worst wildfire on record. One fatality resulted.

Regional Outlook for Apr-May-Jun 2022

CPC Temperature Outlook



CPC Precipitation Outlook



Produced Mar 17 2022

A = Above normal B = Below normal EC = Equal chances.

The CPC outlook for mid-spring indicates that high pressure will form over the Western Region leading to likely warmer-than-normal conditions across the interior West and split the storm track to favor the northern and southern tiers. Enhanced storminess in the Pacific Northwest will promote cooler temperatures. Spring normally brings precipitation to the eastern Great Basin via closed lows, however there is higher confidence in fewer of these storms than normal. The forecast suggests increasing severity and extent of drought conditions from both supply (lack of precipitation and minimal snowpack accumulation) and demand (enhanced evaporative demand) sides, the latter being of great concern in the Four Corners region.

Western Region Partners

Western Regional Climate Center
wrcc.dri.edu
National Integrated Drought Information System (NIDIS) - drought.gov
Western Governors' Association
westgov.org
Western States Water Council
westgov.org/wswc
NOAA/ESRL Physical Sciences Division
esrl.noaa.gov/psd
NOAA Climate Prediction Center
www.cpc.ncep.noaa.gov
National Centers for Envir. Info. (NCEI)
www.ncei.noaa.gov
USDA/NRCS National Water and Climate Center - www.wcc.nrcs.usda.gov
National Interagency Fire Center
www.nifc.gov
Western Water Assessment
wwa.colorado.edu
Climate Assessment for the Southwest
climas.arizona.edu
California Nevada Applications Program
cnap.ucsd.edu
Climate Impacts Research Consortium
pnwclimate.org/resources
NWS Western Region Forecast Offices
www.wrh.noaa.gov/

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