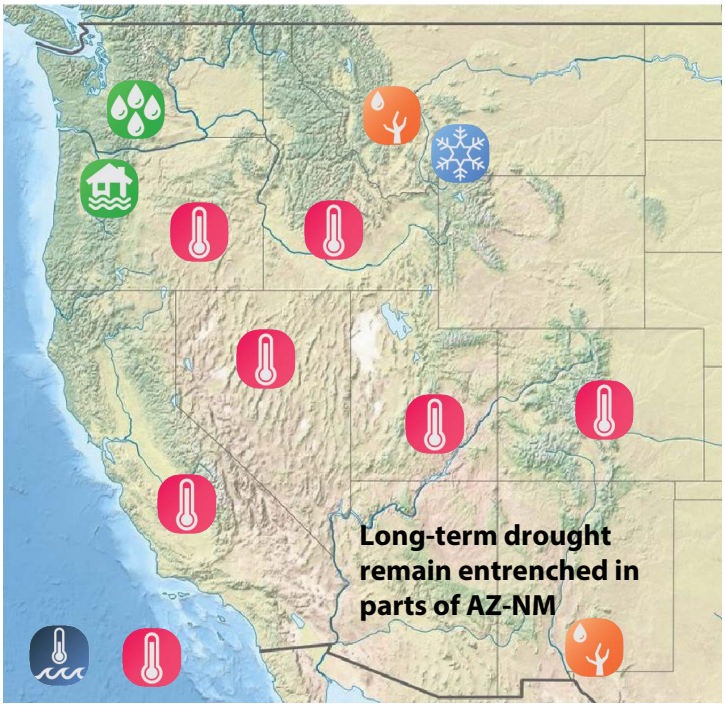
Quarterly Climate Impacts and Outlook

Western Region

March 2024

Significant Events for Dec-Jan-Feb 2024



Dec-Jan-Feb Highlights

Early December atmospheric rivers dumped 10-20 inches of precipitation in the higher elevations of Washington and Oregon causing flooding, landslides, and at least two deaths.

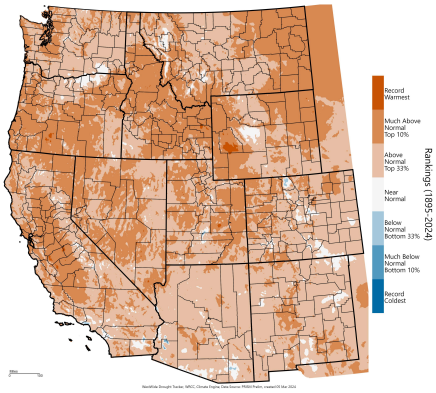
Widespread well-above normal temperatures. Eight western states saw a winter in the top ten warmest since 1895.

Snow drought persisted throughout winter in much of northern Wyoming and western Montana with record low snow water equivalent at several long-term SNOTEL stations.

El Niño peaked in mid-winter with the Nov-Jan Oceanic Niño Index at +2 degrees Celsius, and has since begun to weaken. This is now one of the top five strongest events since 1950.

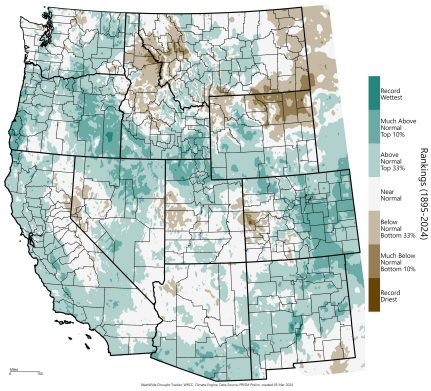
Regional Overview for Dec-Jan-Feb 2024

Mean Temperature Percentile
Dec-Jan-Feb 2024



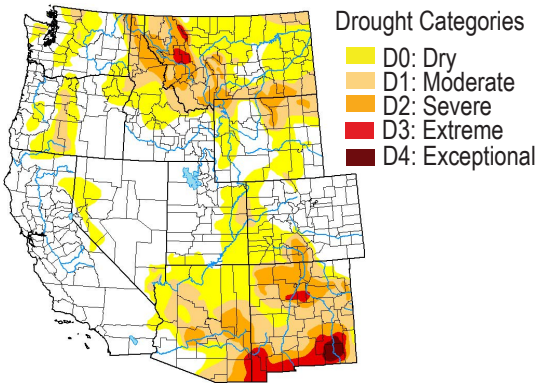
Winter temperatures were above normal throughout the West with much of the region in the top 10% warmest winters since 1895. Notably, Wyoming had the 5th warmest winter and Nevada, California, Utah, Idaho, and Oregon all had the 6th warmest. Eastern Montana had some of the greatest winter temperature anomalies of +5 to +6 degrees Fahrenheit above normal.

Precipitation Percentile
Dec-Jan-Feb 2024



Precipitation anomalies were mixed for the winter season. Much of Oregon, northern Nevada, northern Utah, and eastern Colorado saw much above normal precipitation while northern Wyoming and parts of northern Idaho and Western Montana had much below normal precipitation; this dryness caused record low end of winter snowpack for many mountain locations in this region and exacerbated drought conditions.

US Drought Monitor
March 5 2024



At the end of Winter 26% of the West was in drought. Two percent of the region was in extreme or exceptional drought and this was confined to New Mexico, far southeast Arizona, and western Montana. Although drought still remains in Arizona and New Mexico, the severity and spatial extent was greatly reduced throughout the winter.

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Regional Impacts for Dec-Jan-Feb 2024

Storm and Hydrologic Impacts

In mid-January a major rain-on-snow event occurred at high elevations in much of the WA and OR Cascades and caused significant loss of snowpack (4-8 inches of snow water equivalent melted). This was followed by a mid-winter heat wave that continued to melt snow and further drive the region into snow drought despite near-to-above normal winter precipitation.

Drought and Water Supply

Despite current snowpack and water year precipitation being above normal in the Upper Colorado River Basin, and a wet winter last year, Lake Mead and Lake Powell remain at critically low levels at 37% and 34% of capacity, respectively. Lake Mead is currently sitting on the edge of the Level 1 Shortage threshold and likely to fall well below the threshold by summer.

Recreation

Teton Pass Ski Area, in Choteau, MT, announced on February 8 that the resort will close mid-winter due to a lack of snow and warm temperatures.

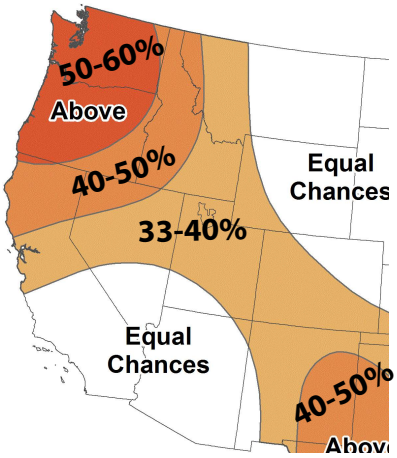
Heavy Rains from February Atmospheric Rivers Create Rare Recreation Opportunities in Death Valley

Image: Kayaking at Badwater Basin, CA. February 9, 2024. Credit National Park Service/ Michael Kohler

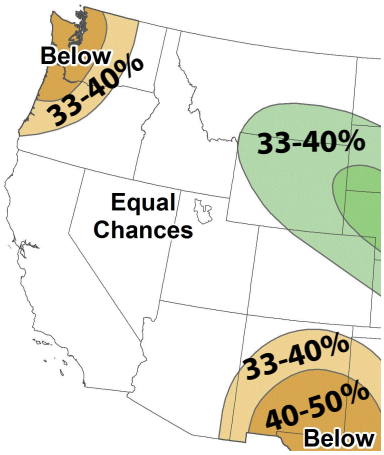
Death Valley National Park, California, typically receives around two inches of precipitation for the entire year. In the past six months, nearly five inches of rain fell primarily from two events: 2.2 inches last August from remnants of Hurricane Hilary and 1.5 inches from an early February atmospheric river. This helped to refill Lake Manly, an ephemeral lake, to about six miles long, three miles wide, and one foot deep, allowing visitors a rare chance to kayak on the lake. Flooding and road closures kept visitors from boating on the temporary lake in 2023. Prior to the initial filling in August 2023, the lake had not been present since 2005 after the region's wettest water year on record.

Regional Outlook for Apr-May-Jun 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 March, 2024.

The CPC outlook for April-June favors above normal temperatures for the Pacific Northwest (50-60% chance for Washington and Oregon) northern California, the Great Basin, and much of the Four Corners states (except for Arizona where equal chances are favored). Below normal precipitation is favored for western Washington and Oregon and most of New Mexico with odds slightly favoring above normal precipitation for most of Wyoming, southeast Montana, and northeast Colorado. El Niño is weakening and expected to transition to La Niña by the summer with a La Niña watch from the CPC currently in place. This would likely impact regional climate starting next Autumn with little Summer impacts.

Western Region Partners

Western Regional Climate Center
wrcc.dri.edu/my

National Integrated Drought Information System (NIDIS) - drought.gov
Western Governors' Association
westgov.org
Western States Water Council
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NOAA/ESRL Physical Sciences Division
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