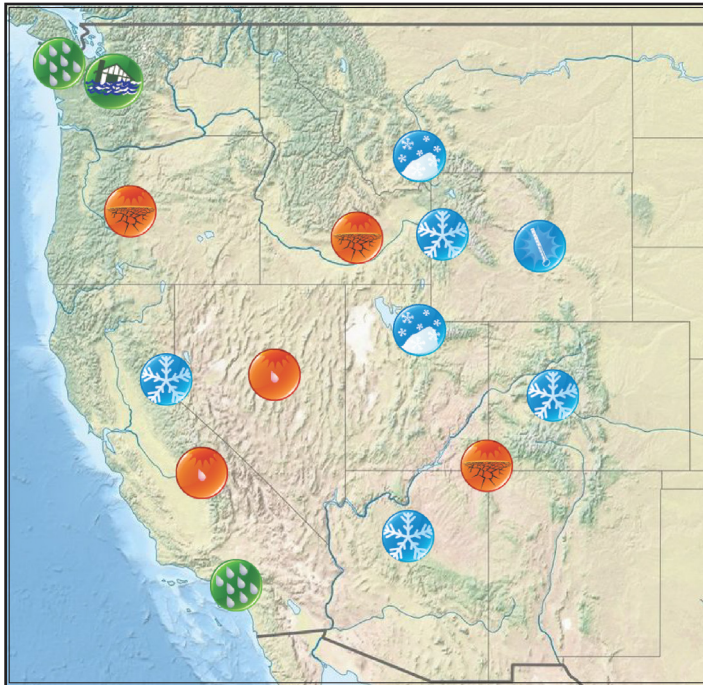




Significant Events for Dec-Jan-Feb 2020

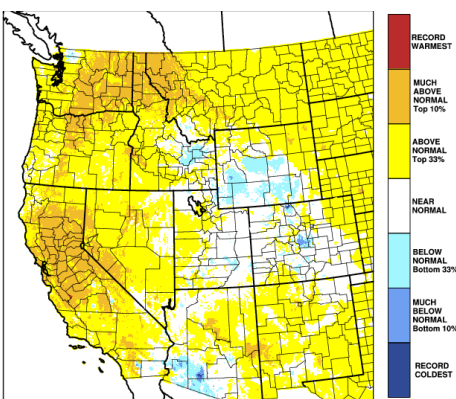
Dec-Jan-Feb Highlights



- Above normal winter temperatures observed in WA, OR, CA, NV, MT.
- Near to below normal temperatures in UT, WY, CO, AZ, NM and southern ID.
- Jan-Feb much drier than normal in CA, southern OR, and NV, exacerbating developing drought conditions in those areas.
- Wet Dec in Southern CA mitigated wildfire hazard during the peak Santa Ana wind season.
- Near to above normal precipitation observed in WY, CO, northern NM. In western WA, persistent precipitation led to flooding and landslides.
- Below normal Dec snowpack in Pacific Northwest rebounded during stormy Jan-Feb.
- Sierra Nevada snowpack went from 94% of normal at end of Dec to 45% by end of Feb.
- Neutral El Niño Southern Oscillation (ENSO) conditions are favored to persist through spring.

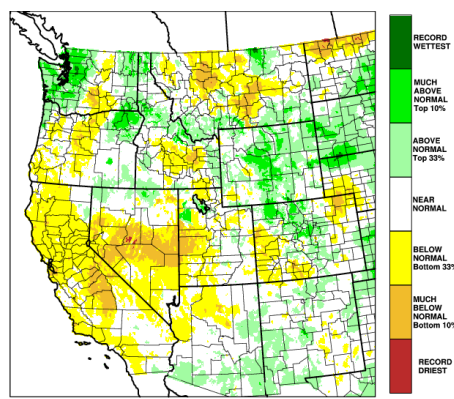
Regional Overview for Dec-Jan-Feb 2020

Mean Temperature Percentile Dec-Jan-Feb 2020



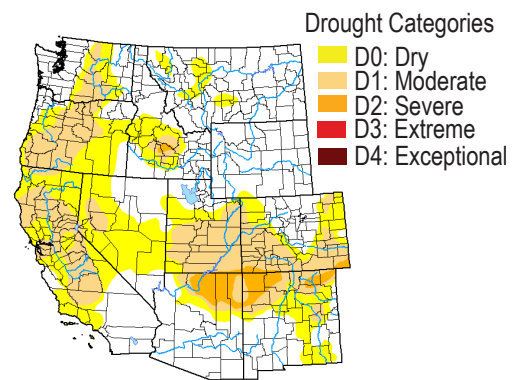
Winter temperatures were above normal for much of the West. Near to below normal temperatures were observed in the Central Rockies states. Much above normal temperatures, associated with persistent high pressure in Jan-Feb, were observed in CA and western NV. Much above normal temperatures were also observed in eastern WA, western MT, and the ID Panhandle.

Precipitation Percentile Dec-Jan-Feb 2020



Scattered areas across the northern tier of the West reported above normal precipitation due to an active, poleward shifted storm track. In contrast, western OR and the Southwest observed near-to-below normal precipitation, due to persistent ridging during Jan and Feb. Precipitation was above normal in western WA; rain shadowing favored drier conditions east of the Cascades.

US Drought Monitor Mar. 3 2020



By the end of Feb, 24% of the West was experiencing drought conditions as compared to 17% on Dec 3. Drought conditions expanded in CA, NV, and OR and emerged in the ID Snake River Plain, northeastern CO, and southeastern NM. Improvements were seen in the Four Corners states and western OR. Several storms with a southerly track kept drought conditions out of southern CA and AZ.

Regional Impacts for Dec-Jan-Feb 2020

Extreme Weather

CA reported its driest Feb on record, WA experienced its 2nd wettest Jan on record.

Quillayute, WA experienced its all-time wettest month on record in Jan with 30.78 in of precipitation.

In Jan, Jackson Hole, WY, recorded 168 in. of snowfall and Breckenridge, CO recorded 120 in., both set monthly snowfall records.

Drought, Flooding and Water Resources

Stormy conditions in western WA resulted in widespread landslides, damaging roads and blocking access to small towns such as Paradise, WA.

At the end of Feb., snow water equivalent (SWE) was 103% of median in Pacific Northwest, 107% in Upper Colorado, 82% in Great Basin, and 45% of average in the Sierra Nevada.

Agriculture

Warm temperatures caused early budding of fruit trees in OR; subsequent cool temperatures slowed budding and reduced potentially damaging insect populations.

Feb weather was beneficial for calving and lambing in CO, ID, WA, and OR.

Notable Intermountain West Avalanche Cycles

Oct snowfall followed by dry spells in Nov and Dec created a favorable scenario for the formation of persistent weak layers and widespread snowpack instability in the Intermountain West. In MT, over 50



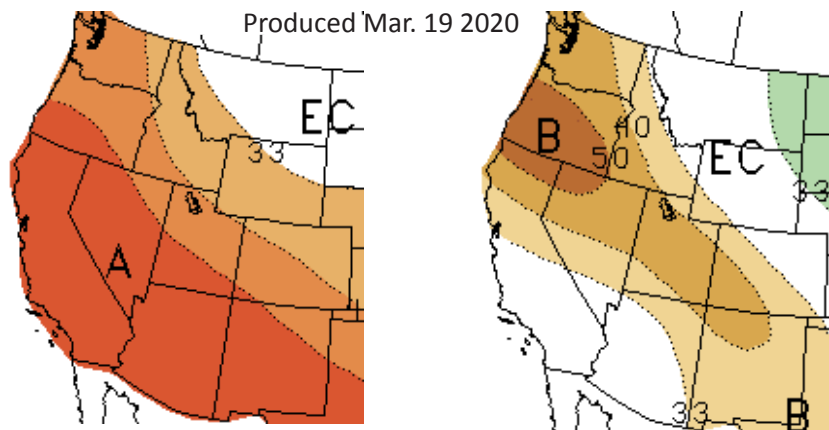
Avalanche debris at Alta ski resort in UT in early Feb. Photo: Deseret News

avalanches were reported on 17 of the first 20 days of 2020 following storms with strong southwesterly winds. Large avalanches continued to be observed in Feb. Heavy snowfall in ID resulted in an avalanche at the Silver Mountain, ID, ski resort on Jan. 7 that killed three skiers. During Feb 6-7, the Wasatch Mtns. of UT saw an active avalanche cycle with over 40 avalanches in Little Cottonwood Cyn. causing two days of road closures and a requirement that people stay indoors. This avalanche cycle began with colder, lower density snowfall events and was followed by a warm, moist, windy storm depositing higher density snow atop lower density snow. Known as an “upside-down storm”, this scenario often leads to snowpack instability.

Regional Outlook for Apr-May-Jun 2020

CPC Temperature Outlook

CPC Precipitation Outlook



A = Above normal B = Below normal EC = Equal chances. Numbers indicate percent chance of temperatures in warmest/coolest one-third and precipitation in wettest/driest one-third.

Above-normal temperatures are expected for the western U.S. for Apr-Jun. The highest (>50%) probabilities of above-normal temperatures are forecast for CA, NV, AZ, and NM. Probabilities of above-normal temperatures decrease to the northeast, with eastern MT having equal chances of above- or below-normal temperatures. Below-normal precipitation is most likely (>50%) in OR, far-northern CA and northwestern NV. Greater odds (33%-40%) of below-normal precipitation are forecast for WA, ID, northern CA, NV, UT, western CO, and NM. Southern CA, western AZ, MT, eastern CO, and WY have equal chances of below- or above-normal precipitation.

Western Region Partners

Western Regional Climate Center
wrc.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.ncdc.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.wr.noaa.gov/