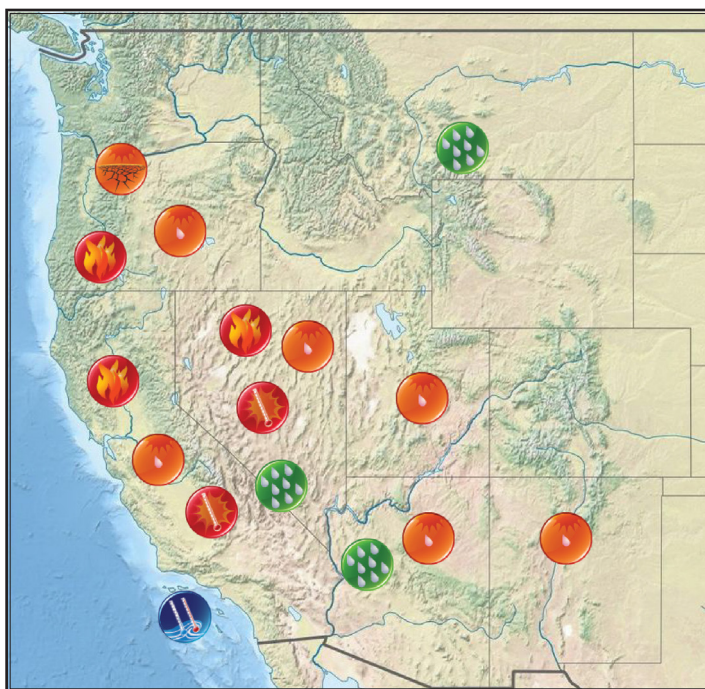


Significant Events for June-August 2018

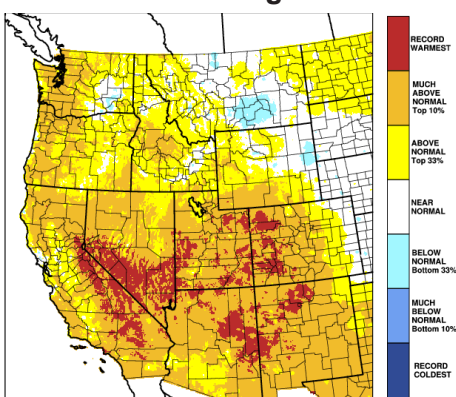
Jun-Jul-Aug Highlights



-  Above normal summer temperatures across much of the West; UT warmest on record; CA, NV, AZ, NM 2nd, and OR 9th warmest.
-  Many significant temperature records set in CA, NV in July
-  Above normal monsoon-related precipitation observed in AZ, southeastern CA; flood impacts
-  Wetter than normal summer across southern MT
-  Improvement of drought conditions in some areas of the Southwest, deteriorating conditions in Pacific Northwest
-  Large wildfires destroyed thousands of homes; associated smoke caused severe and persistent impacts to air quality in some areas
-  Anomalous to record warm ocean temperatures in southern CA are likely to impact marine ecosystems
-  ENSO-neutral conditions currently present, El Niño conditions slightly favored to develop in autumn

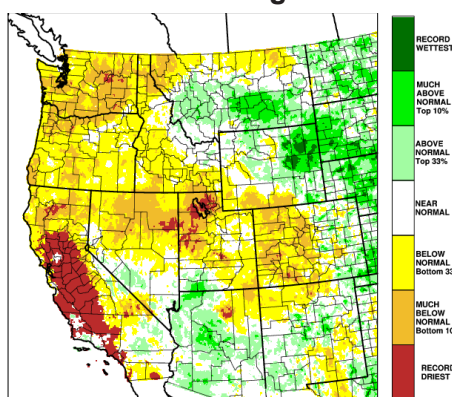
Regional Overview for June-August 2018

Mean Temperature Percentile Jun-Jul-Aug 2018



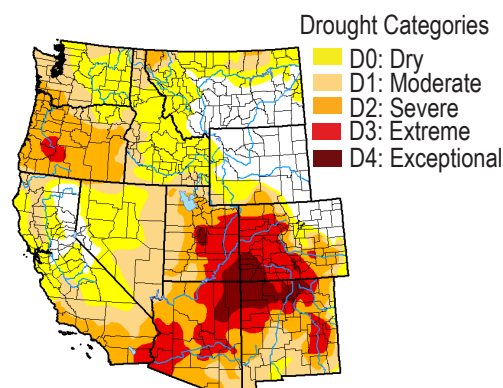
Summer temperatures were near normal across the Inland Northwest and above normal elsewhere in the region, especially in the Southwest. July temperatures were notably anomalous: Reno and Elko, NV, as well as CA locations including Death Valley, Bishop, and Fresno recorded their all-time warmest months on record; Portland, OR, reported its second warmest month on record.

Precipitation Percentile Jun-Jul-Aug 2018



June and August brought above normal precipitation to southern MT. Monsoon precipitation was variable throughout the season, though many Southwest locations ended up with near to slightly above normal precipitation. West Coast states were generally dry, typical for the summer season, but the combination of warm and dry conditions resulted in expansion of drought in some areas.

US Drought Monitor August 28 2018



At the end of the summer season, 58% of the West was experiencing moderate or worse drought conditions. About 4% of the region reported exceptional drought conditions, nearly the same as at the start of the season. Improvement in drought conditions occurred in much of AZ and NM this season, while OR saw severe drought conditions expand from 18% to 79% of the state's area.

Regional Impacts for June-August 2018

Weather Impacts

June snowmelt combined with above normal precipitation resulted in flooding in several western WY and MT communities

Mid-July flash flooding damaged homes and farmland in southern UT and central NM, also caused debris flows and road closures

Intense July thunderstorms initiated multiple debris flows in the eastern Sierra Nevada, in some cases causing road closures and damage to infrastructure

Early July heatwave impacted Los Angeles area; due to energy demand, tens of thousands were without power at some point during the event

Agriculture/Water

Abrupt warming in early July caused damage to avocado and lemon crops in coastal southern CA

Persistent warm, dry conditions have stressed Douglas firs in OR

Ranchers in southwestern OR struggled to provide cattle with adequate water, forage

Warm June temperatures and snowmelt runoff caused algal blooms in Puget Sound, turning water orange; more frequent blooms expected given a warming climate

Large and Impactful Wildfires in the West

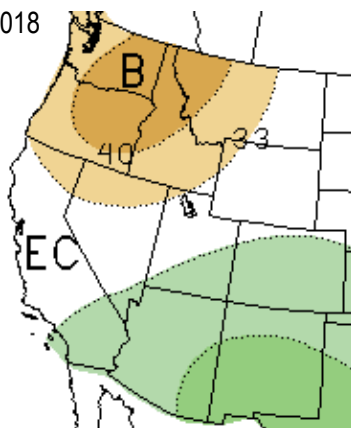
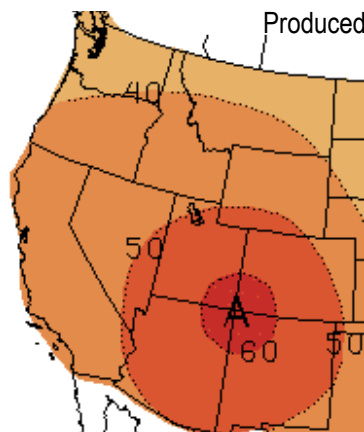
One of the summer's most impactful wildfires was the Carr Fire near Redding, northern CA. The fire was ignited July 23 and subsequently burned over 229,000 acres and destroyed 1079 residences. Further south, the Mendocino Complex began July 27 and burned over 459,000 acres and destroyed 157 residences. In northern NV, the Martin Fire and South Sugarloaf Fire combined burned over 650,000 acres. In southwestern OR, the Taylor Creek and Klondike Fires were ignited by lightning on July 15 and burned over 191,000 acres. Wildfires produced unhealthy air quality in both immediate and downwind areas; smoke impacts were reported as far east as the Midwest.



Regional Outlook for Oct-Nov-Dec 2018

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.

CPC outlooks favor above normal autumn temperatures throughout the West, with the highest probability for above normal temperatures (>60%) in the Four Corners region. The highest probability for above normal precipitation (33-40%) spans the Southwest and the Pacific Northwest has the highest probability of below normal precipitation (33-40%). Equal chances of above, below, and normal precipitation are given for the areas in between. These outlooks are consistent with the elevated probability of the development of weak El Niño conditions during the autumn season.

Western Region Partners

Western Regional Climate Center
wrccl.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.wrfo.noaa.gov