



Significant Events for Jun-Jul-Aug 2023

Jun-Jul-Aug Highlights



Remnants of Hurricane Hilary, which made landfall in mid-August as a tropical storm in southern CA, brought heavy rainfall and flooding to parts of CA and the Great Basin. Rainfall from the storm contributed to above normal summer precipitation totals for the region.



Above normal temperatures and below normal precipitation across AZ, NM, WA, and western OR led to drought expansions across the region.



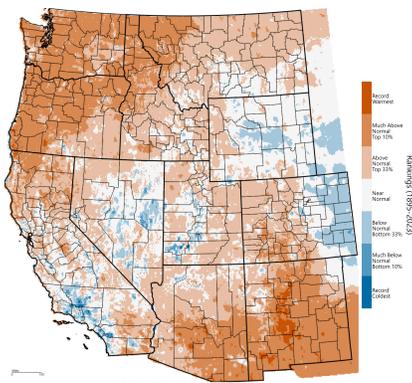
Despite a wet winter with above normal spring and summer runoff in the CO River Basin, water levels in Lake Mead sit at 34% of capacity and 64% of normal at the end of the summer.



El Niño conditions developed in early summer and have strengthened throughout the summer. El Niño is expected to continue through the winter.

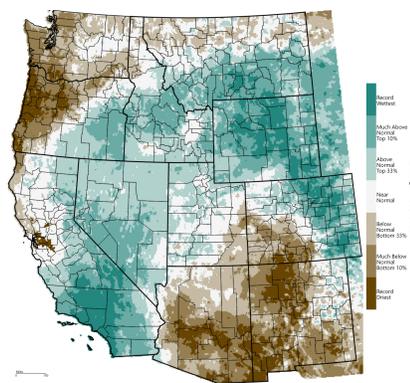
Regional Overview for Jun-Jul-Aug 2023

Mean Temperature Percentile
Jun-Jul-Aug 2023



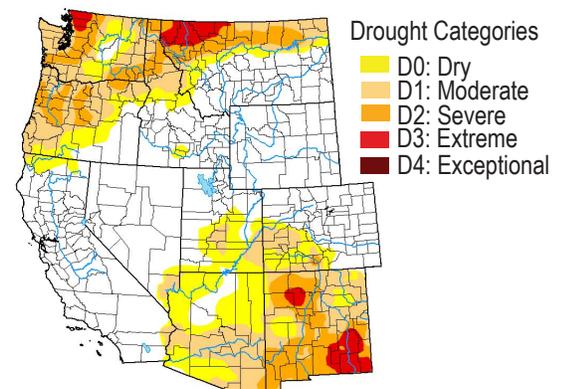
Temperatures were above normal across the Pacific Northwest and much of the southwest. New Mexico, Washington, and Oregon had the third, fifth, and seventh warmest summer on record, respectively. Most of Wyoming saw near-to-below normal temperatures with pockets of below temperatures in southern California and the Great Basin.

Precipitation Percentile
Jun-Jul-Aug 2023



Remnants of Hurricane Hilary brought heavy rainfall to southern California and the Great Basin in mid-August and contributed to much above normal total summer precipitation across the region. With a weak Southwest Monsoon most of Arizona and New Mexico saw below normal precipitation. Statewide, Wyoming had its wettest summer on record and New Mexico had its third driest summer.

US Drought Monitor
August 29 2023



31% of the western U.S. was in drought at the end of summer, with 3% in extreme drought and no areas of exceptional drought. Drought expansion during summer occurred across Arizona, New Mexico, southeast Utah, southwest Colorado and much of the Pacific Northwest. Drought amelioration occurred throughout much of the Great Basin.

Regional Impacts for Jun-Jul-Aug 2023

Flooding and Storm Impacts

Tropical and post-tropical storm conditions impacted southern California on August 20-21 as remnants of Hurricane Hilary moved onshore. Heavy rain and high winds led to flash flooding, debris flows, damaged roadways, and downed trees. At the peak of the impacts more than 50,000 people across the region were without power.

Agriculture

Tulare Lake, in the San Joaquin Valley, CA, began filling this summer after record snowfall in the Sierra Nevada. Many farms were flooded with major crop losses; about 90,000 acres in Kings County were submerged.

Drought and Wildfire

Hot and dry conditions this summer drove elevated fire danger and an active fire season across WA and OR. Impacts include damaged or destroyed structures, poor air quality, burn bans, and forest closures. As of late September there were 12 active fires in OR having burned over 127,000 acres and 7 active fires in WA having burned over 17,000 acres.

Deadly July Heat Across Desert Southwest

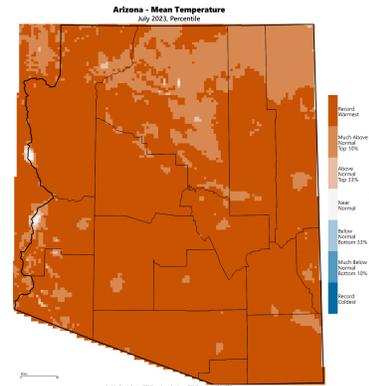
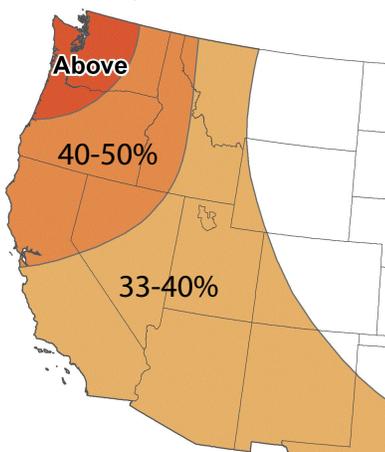


Image: July 2023 mean temperature percentile rankings for Arizona. Data: PRISM Climate Group. Map: WRCC West Wide Drought Tracker

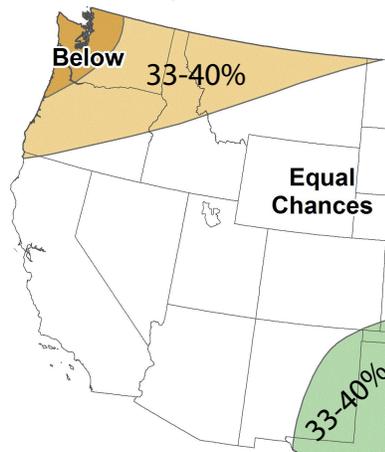
Much of the Southwest had a hot July with well above normal temperatures but the heat was particularly impactful around the Phoenix Metro area in Arizona. Phoenix recorded its hottest July on record (and hottest summer) with a mean temperature of 102.7 degrees Fahrenheit; there were 17 days with a high temperature above 115 degrees Fahrenheit (also a record). Human health impacts were widespread with 180 heat-associated deaths so far this year (most in July) in Maricopa County. Homeless populations and outdoor workers were among hardest hit groups.

Regional Outlook for Oct-Nov-Dec 2023

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 September 21, 2023.

The CPC outlook for October-December favors above normal temperatures for most of the west with the highest probabilities (40-60% chance) in the Pacific Northwest, northern California, and northwest Nevada. Below normal precipitation is favored for much of the Pacific Northwest with highest probabilities (40-50% chance) for western Washington and northwest Oregon; eastern New Mexico has a 33-40% chance for above normal precipitation. Above normal temperatures combined with below normal precipitation in the Pacific Northwest would likely continue the summer trend of drought expansion across the region.

Western Region Partners

- Western Regional Climate Center
wrc.dri.edu/my
- 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/