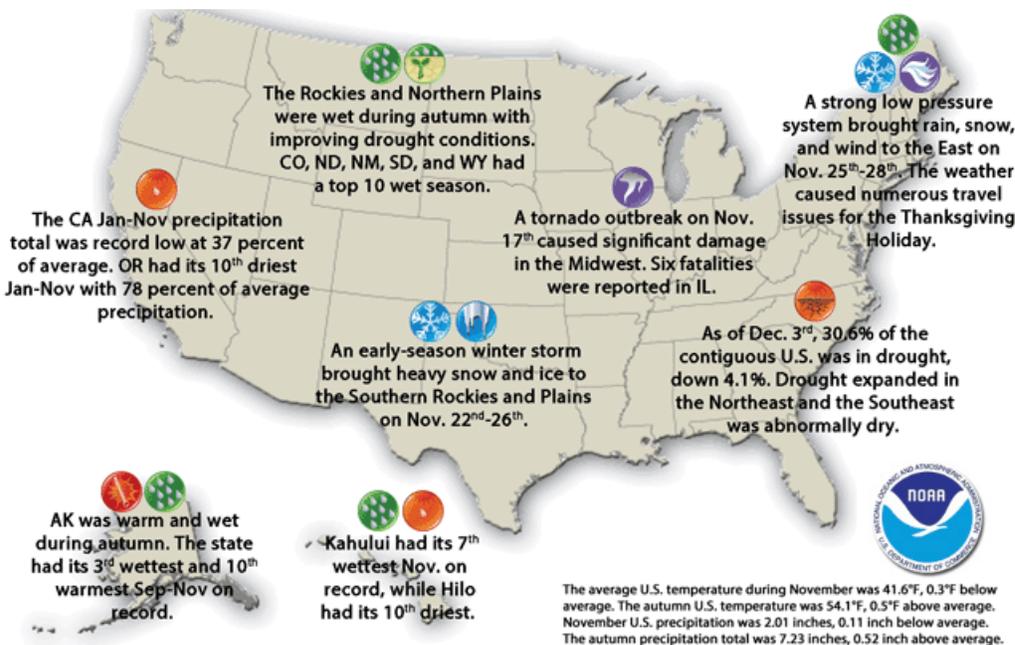


Significant events for September - November 2013

Highlights for the West



A dry start to Water Year 2014 for the coastal states maintains drought concerns.

Unprecedented rainfall inundated Colorado's Front Range and eastern New Mexico in mid-September.

California reservoir storage below average as winter begins with 10th driest autumn statewide.

Snow pack 40-60% of average in Cascades, Sierra Nevada.

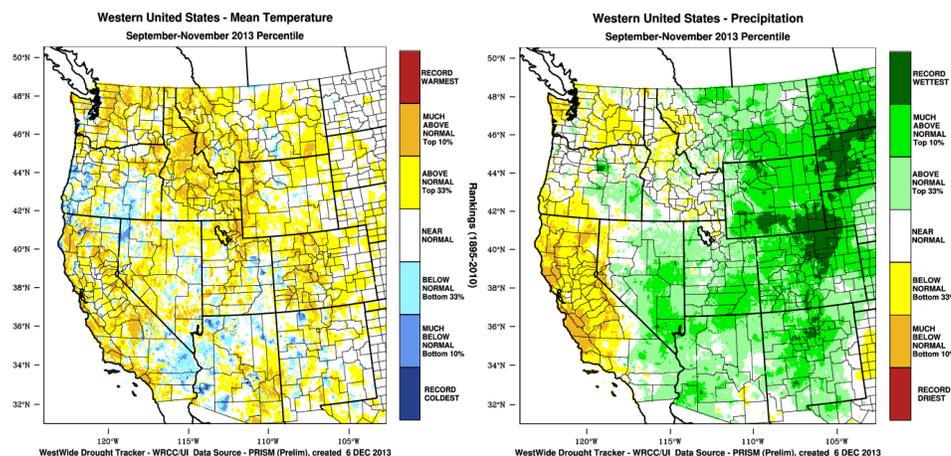
Precipitation in Rocky Mountain states among top-10 wettest for autumn season.

Temperatures near to somewhat above average.

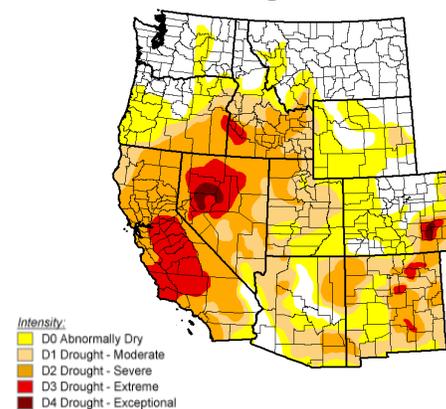
ENSO-neutral conditions are expected to persist through spring.

Regional Overview for September - November 2013

Temperature and Precipitation Percentile Rankings



Drought



US Drought Monitor 12/03/2013

Temperature percentile rankings shown in the left panel show above normal temperatures in the top 33% for much of the West. Scattered locations of below normal temperatures were observed in the Southwest and parts of Northern California and Oregon.

Much of California and the Pacific Northwest saw below normal precipitation in the autumn season. Locations east of the Sierra Nevada and Cascades saw above normal precipitation. Colorado's Front Range experienced record precipitation primarily due to the extreme rainfall event that occurred in September. (*Temperature and precipitation from the WRCC Westwide Drought Tracker*)

Drought conditions improved in nearly all states in the West this fall, with a 12% decrease in the area of the region given a drought designation D0-D4. The exceptions were California, where the area of the state experiencing extreme drought increased by 16%, and Washington, where 14% of the state entered D0 classification. (*The Drought Monitor is a collaborative product from the USDA, NOAA, other state/federal agencies, and National Drought Mitigation Center www.droughtmonitor.unl.edu/monitor.html*)

Regional Impacts for September-November 2013

Drought, Flooding and Water Resources

All reservoirs along the Pecos River in New Mexico filled this fall to >100% of average and contain a full irrigation season supply.

Well below average flow on the Snake River.

Water Year (Oct-Sep) 2013 inflow to Lake Powell 47% of average, 4th driest, follows 3rd driest in Water Year 2012. Lake Powell 44% and Lake Mead 47% full Nov 30.

Severe flooding in Colorado, New Mexico in September resulting in eight fatalities and widespread destruction.

Agriculture and Fisheries

Southwest rangelands and water storage improved, but ranchers leery of expanding record-low herds amid persistent drought.

Nearly 100,000 cattle died in early season blizzard in the Black Hills of South Dakota, and SE Montana, NE Wyoming.

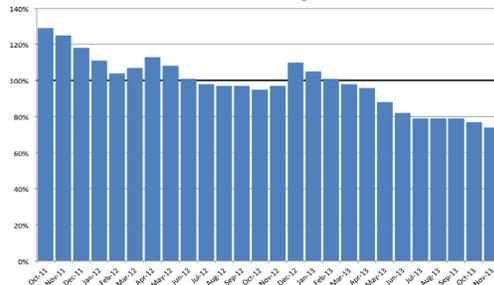
Above normal water temperatures in the Snake River caused federally listed Chinook and sockeye salmon to delay upstream migration, which can lead to reduced reproductive success.

Health and Tourism

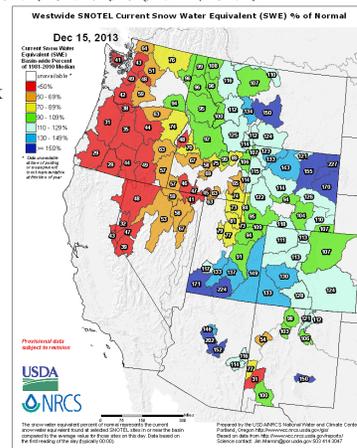
Low snowfall kept ski resorts in the Sierra Nevada and Cascades closed or only partially open for the Thanksgiving holiday.

Rim Fire (Sierra) becomes 3rd largest in California history, ends in November. Significant health and tourism effects within 150 miles.

California Reservoir Storage WY 2012 - Present

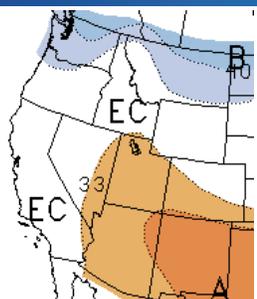


Current storage lowest since 2008. Source: California DWR



Early season snowpack status from NRCS. Warm colors indicate snow water equivalent < 89% of median and cool colors indicate > 90% of median.

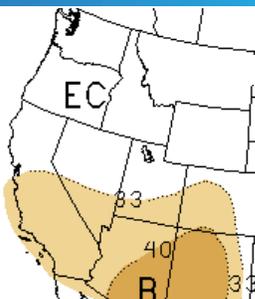
Regional Outlook for Jan-Feb-Mar 2014



Jan-Feb-Mar temperature outlook produced by CPC Dec. 19 2013

EC MEANS EQUAL CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

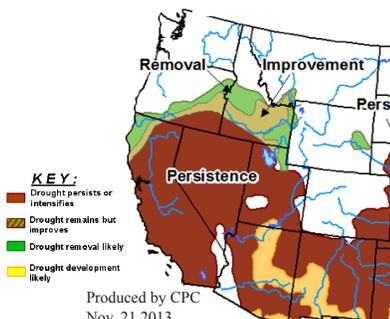
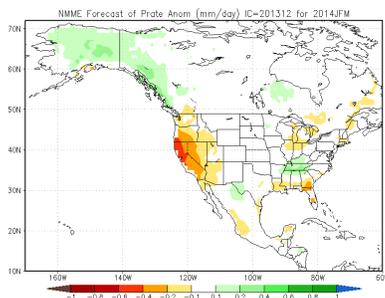
Numbers indicate percent chance of temperature in warmest one-third and of precipitation in wettest one-third



Jan-Feb-Mar precipitation outlook produced by CPC Dec. 19 2013

NOAA CPC Winter Season Outlook

Above normal temperatures are anticipated for the Four Corners states and eastern Nevada for the winter months. Below normal temperatures are expected along the northern tier of the West. Drier than normal conditions are forecast for the Southwest, while the Northwest has equal chances of normal, above normal, or below normal precipitation through the winter months.



Produced by CPC Nov. 21 2013

National Multi-Model Ensemble

Experimental product: Jan-Mar 2014 outlook from NOAA Climate Test Bed. Consensus among six models. Drier (red) or wetter (green) than normal.

NOAA Seasonal Drought Outlook

Drought expected to persist or develop throughout the Southwest for the fall season with some improvement in the Northwest.

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
- USDA/NRCS National Water and Climate Center - www.wcc.nrcs.usda.gov
- National Interagency Fire Center www.nifc.gov
- DOI WaterSMART www.usbr.gov/WaterSMART
- NOAA's Western Regional Collaboration Team www.regions.noaa.gov/western/western_region_team.html
- Western Water Assessment www.colorado.edu
- Climate Assessment for the Southwest climas.arizona.edu
- California Nevada Applications Program meteora.ucsd.edu/cnap
- Climate Impacts Research Consortium pnwclimate.org/resources
- NWS River Forecast Centers water.weather.gov/ahps/rfc/rfc.php
- NOAA Fisheries Service www.nmfs.noaa.gov
- NWS Western Region www.wrh.noaa.gov/
- State Climatologists - stateclimate.org

