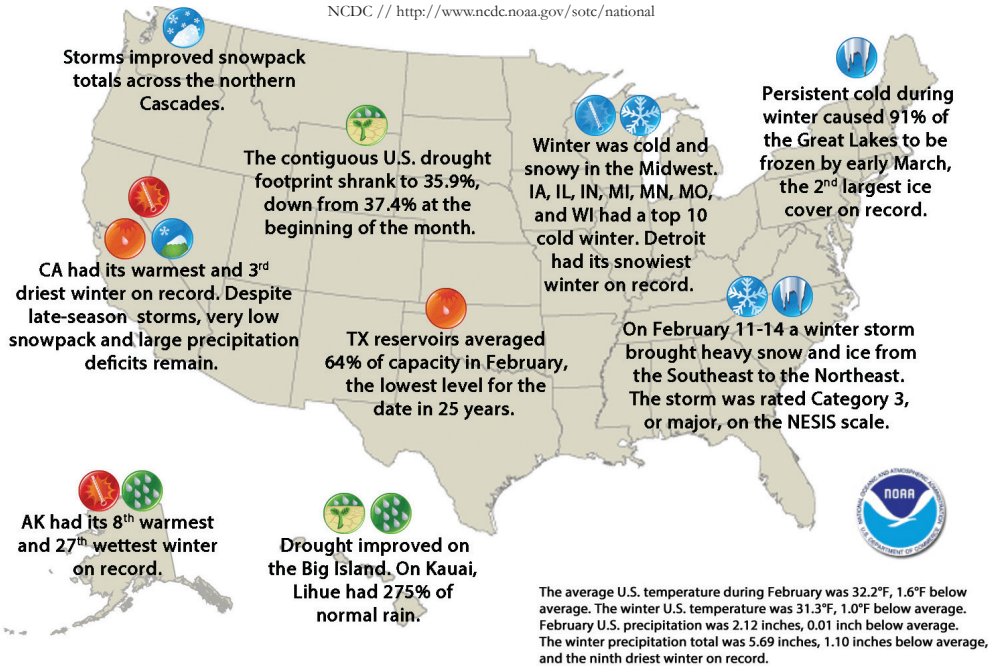
Quarterly Climate Impacts and Outlook

Western Region March 2014

Significant Events for December - February 2014



The average U.S. temperature during February was 32.2°F, 1.6°F below average. The winter U.S. temperature was 31.3°F, 1.0°F below average. February U.S. precipitation was 2.12 inches, 0.01 inch below average. The winter precipitation total was 5.69 inches, 1.10 inches below average, and the ninth driest winter on record.

Highlights for the West

High pressure persisted over the West Coast through winter keeping this region dry, warm.

Winter precipitation in bottom 10th percentile for California, Arizona, New Mexico.

Severe drought persists in California; governor declares drought State of Emergency.

California had warmest winter in 120-year record.

Above normal precipitation and snow pack in Upper Colorado, Upper Missouri, and Green River basins.

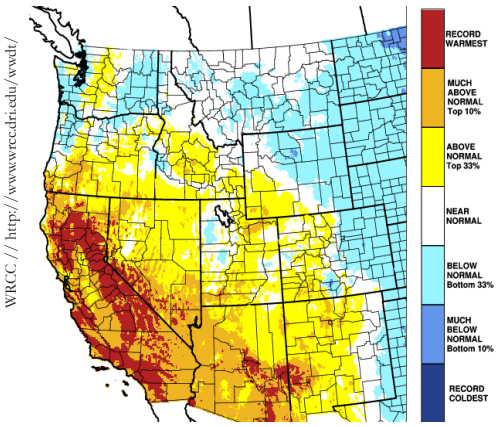
Snow pack <50% of normal in Sierra, southern Cascades.

ENSO-neutral conditions are expected to persist through spring.

Regional Overview for December - February 2014

Mean Temperature Percentile

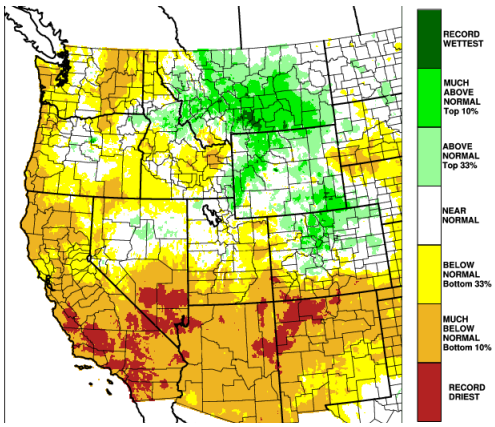
December-February 2014



Temperature percentile rankings show warmer than normal and in some cases, record warm, temperatures prevailed in the Southwest. Slightly cooler than normal temperatures were observed in the northern tier of the West. Strong inversions following a cold air outbreak in early December led to slightly below- normal winter temperatures for valleys of the Intermountain West.

Precipitation Percentile

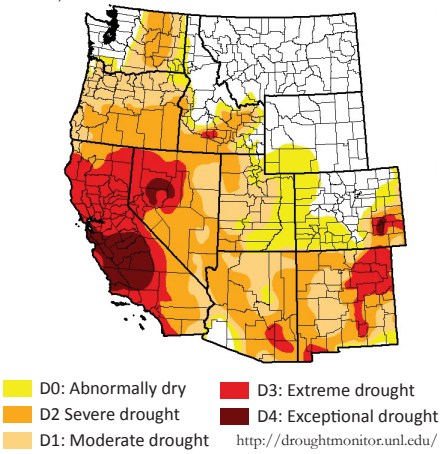
December-February 2014



Dry conditions observed in December and January in the Northwest gave way to above normal February precipitation. Pockets of the Northwest and much of the Southwest saw winter precipitation totals in the bottom 10th percentile. In contrast, precipitation totals in the top 10th percentile were observed in the Northern and Central Rocky Mountains and throughout much of Montana.

U.S. Drought Monitor

March 18, 2014



This winter saw a 10% increase in the area of the West designated as D2-D4 (extreme to exceptional drought). Most of the expansion or degredation was seen in California, Nevada, Oregon, Washington, Arizona, and New Mexico. Improvement was seen in Idaho, Wyoming, and Montana.

Contacts: Nina Oakley (Nina.Oakley@dri.edu)
Carlee Brown (cbrown@westgov.org)
Kelly Redmond (Kelly.Redmond@dri.edu)

Regional Impacts for December - February 2014

Drought, Flooding and Water Resources

Almost 100% of California is experiencing drought. 22% of the state is categorized as undergoing exceptional drought.

Heavy precipitation and high snow levels in February led to minor flooding and mudslides in California, Oregon, and Washington.

Above-normal snowpack in Wyoming, Colorado, and eastern Utah has elevated chances of spring flooding in river basins.

Agriculture

California rangelands are in poor condition; supplemental feeding or relocation of herds has become necessary.

Dry conditions in California have necessitated out-of-season irrigation and fallowing of fields.

New Mexico farmers are preparing for a short irrigation season as they will only receive 1/6 of their full water allocations.

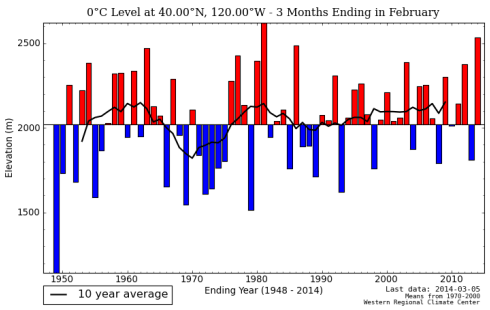
Tourism

Low snowpack in the Sierra Nevada and the Cascades kept ski resorts closed or only partially open for much of the winter.

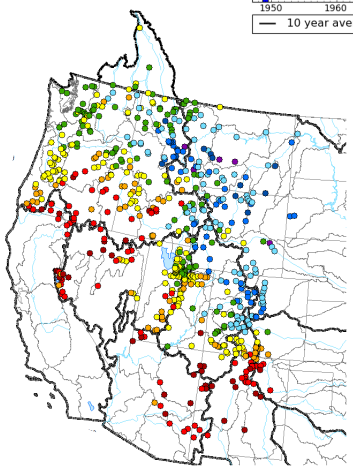
Fire

Several out-of-season fires destroyed homes and charred thousands of acres in California.

Average freezing level this winter in the central Sierra Nevada was ~2500 m (8200 ft), roughly 500 m (1600 ft) above the long-term mean. Much of the precipitation in the Sierra and Cascades this winter fell as rain rather than snow.



WRCC // http://www.wrcc.dri.edu/cwd/products/



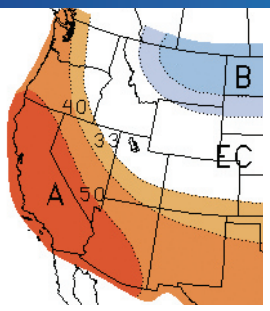
Spring streamflow forecast as of March 1, 2014 from NRCS. Above normal flow predicted in Upper Missouri, Upper Colorado River basins. Below normal flow anticipated for much of the Great Basin and Columbia River basin.

Percent of 1981-2010 average

- > 180
- 150-180
- 130-149
- 110-129
- 90-109
- 70-89
- 50-69
- 25-49
- <25

NRCS // http://www.wcc.nrcs.usda.gov/cgibin/sssfrpl

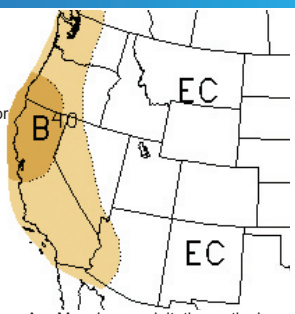
Regional Outlook for Apr-May-Jun 2014



Apr-May-Jun temperature outlook produced by CPC Mar. 20 2014

A indicates above normal
B indicates below normal
N indicates normal
EC means equal chances for A, N or B

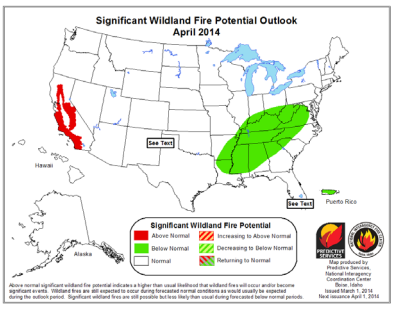
Numbers indicate percent chance of temperature in warmest one-third and of precipitation in wettest one-third



Apr-May-Jun precipitation outlook produced by CPC Mar. 20 2014

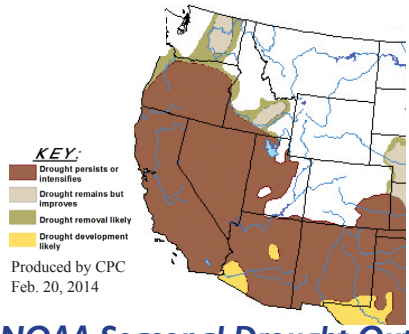
NOAA CPC Spring Seasonal Outlook

Temperatures in most of the West are likely to be above normal through the spring and into June, with the exception of Montana and the Dakotas, where temperatures are likely to be lower. Along the West Coast and in western Nevada, precipitation remains unlikely to reach normal levels. These predictions underscore the likelihood of persistant drought throughout California, Nevada, Oregon, Arizona and New Mexico.



NIFC Wildfire Outlook

Fire potential above normal for much of California. Near normal levels elsewhere in West.



Produced by CPC
Feb. 20, 2014

NOAA Seasonal Drought Outlook

Drought expected to persist/develop in the Southwest and Oregon. Some improvement seen in Washington, Idaho.

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
wwa.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

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