United States Department of Agriculture

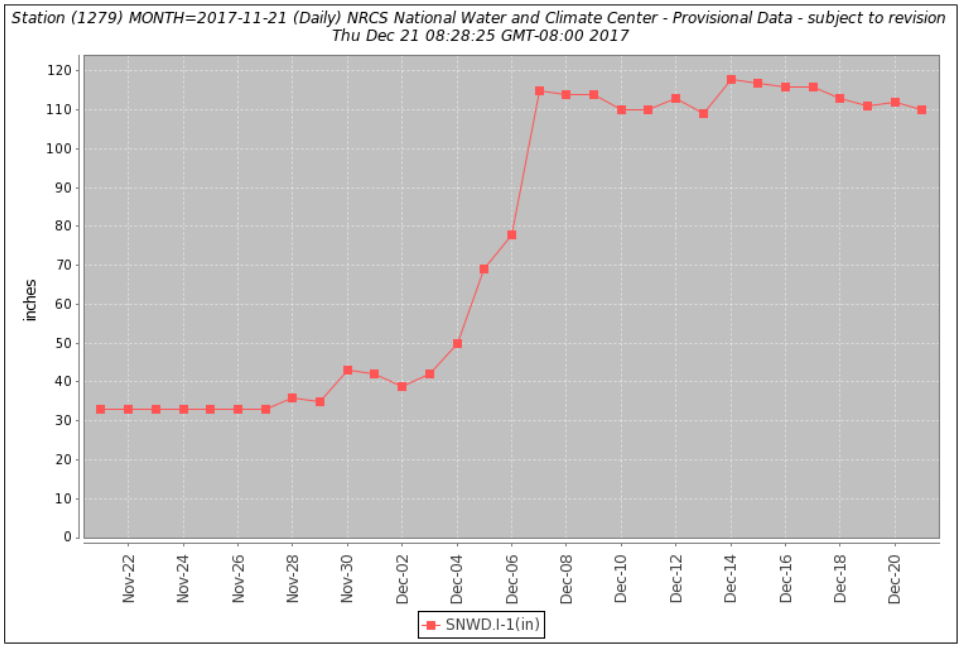
Water and Climate Update

December 21, 2017

The Natural Resources Conservation Service produces this weekly report using data and products from the National Water and Climate Center and other agencies. The report focuses on seasonal snowpack, precipitation, temperature, and drought conditions in the U.S.

Snow 2
Precipitation 3
Temperature 7
Drought 9
Other Climatic and Water Supply Indicators 12
Short- and Long-Range Outlooks 15
More Information 17

Record snowfall in Valdez, Alaska, on December 6



Snow depth at Nicks Valley SNOLITE site, Alaska

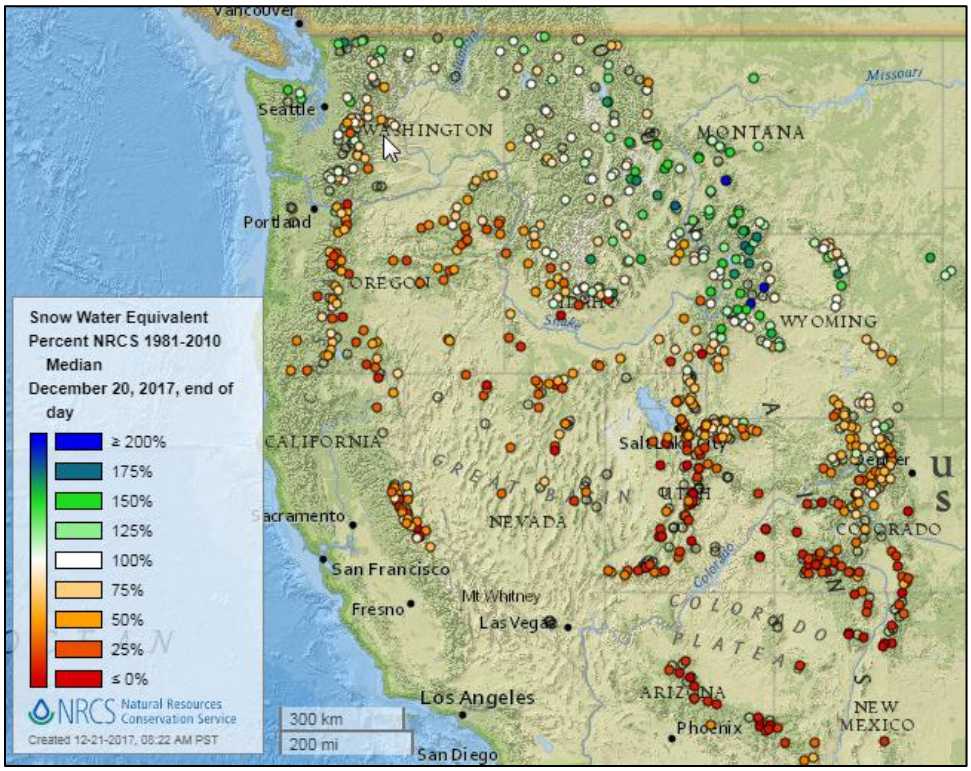
On December 6, a record snowfall occurred in Valdez, Alaska, with snow at one point falling at a rate of over 10 inches per hour. The total snow accumulation was 40 inches over a 12-hour period. Valdez is reported as the snowiest incorporated city in the U.S., with an average of 314.1 inches annually. The recent storm totals at the nearby Upper Tsaina River SNOTEL station show a 20-inch snow depth increase from the storm on December 6, and the Nick's Valley SNOLITE station reported an increase of 37 inches of snow depth on that day.

Related:

Alaska just recorded one of the most extreme snowfall rates on record: 10 inches per hour – Alaska Daily News
The Snowiest Place in Each State – The Weather Channel

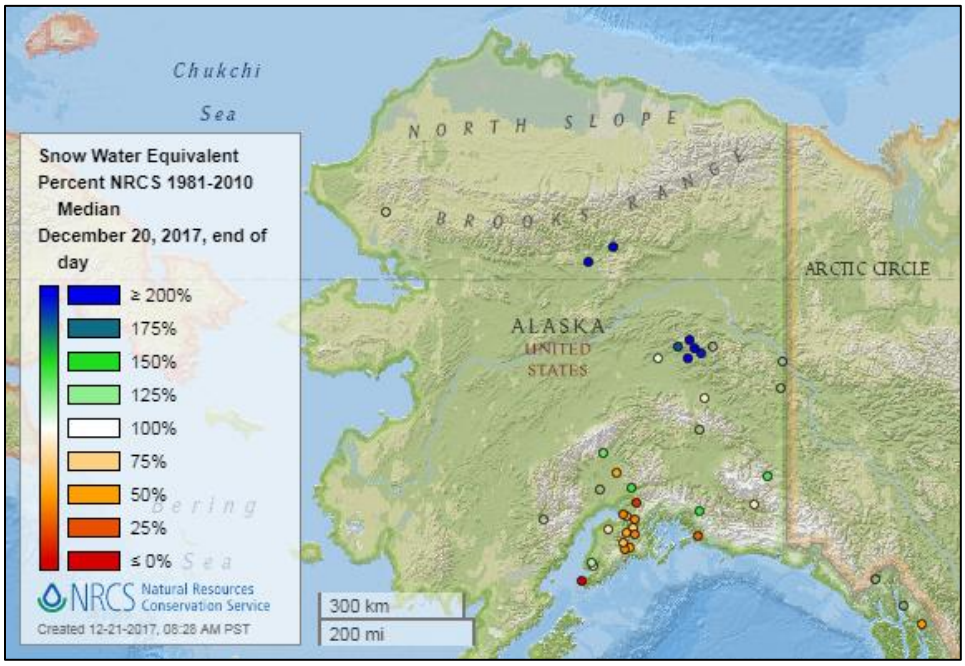
Snow

Current Snow Water Equivalent, NRCS SNOTEL Network



[Snow water equivalent percent of median map]

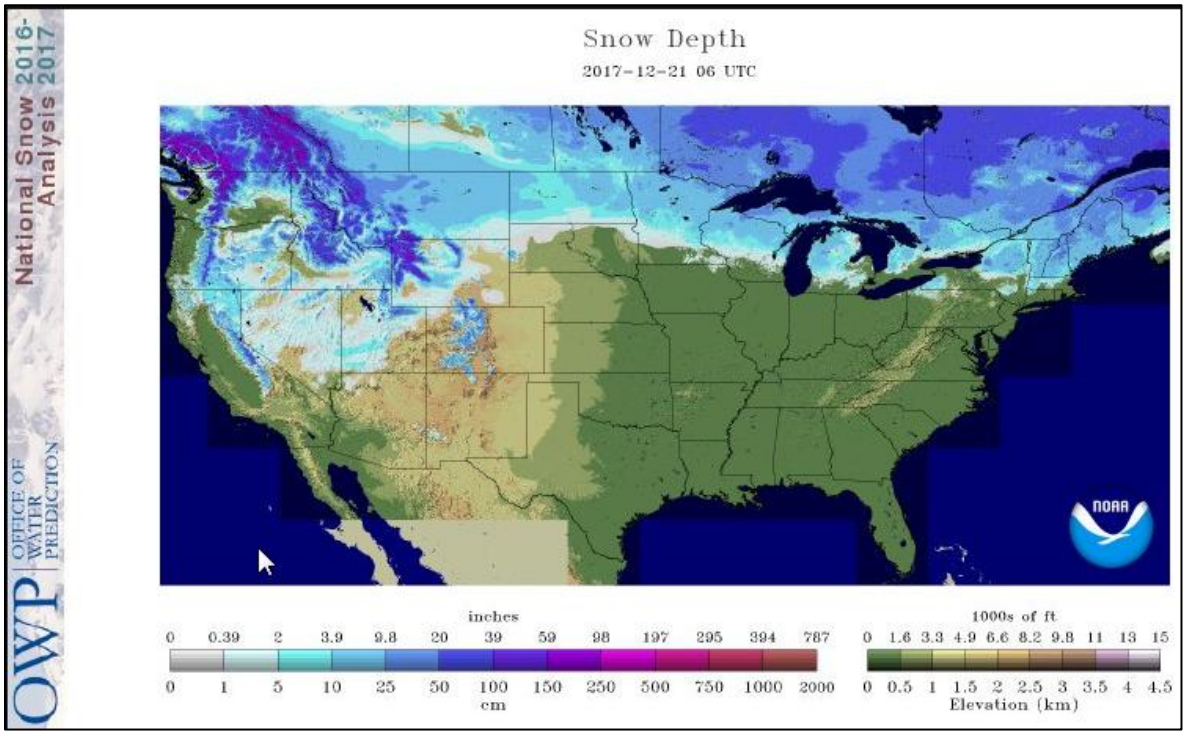
See also:
[Snow water equivalent values (inches) map]



[Alaska snow water equivalent percent of median map]

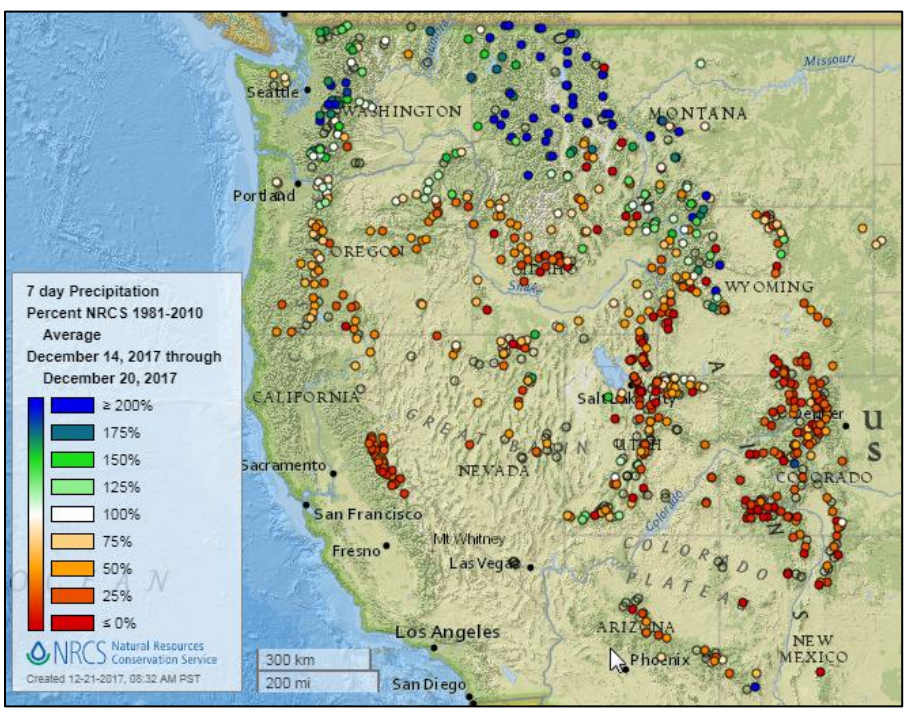
See also:
[Alaska snow water equivalent values (inches) map]

Current Snow Depth, National Weather Service Snow Analysis



Precipitation

Last 7 Days, NRCS SNOTEL Network

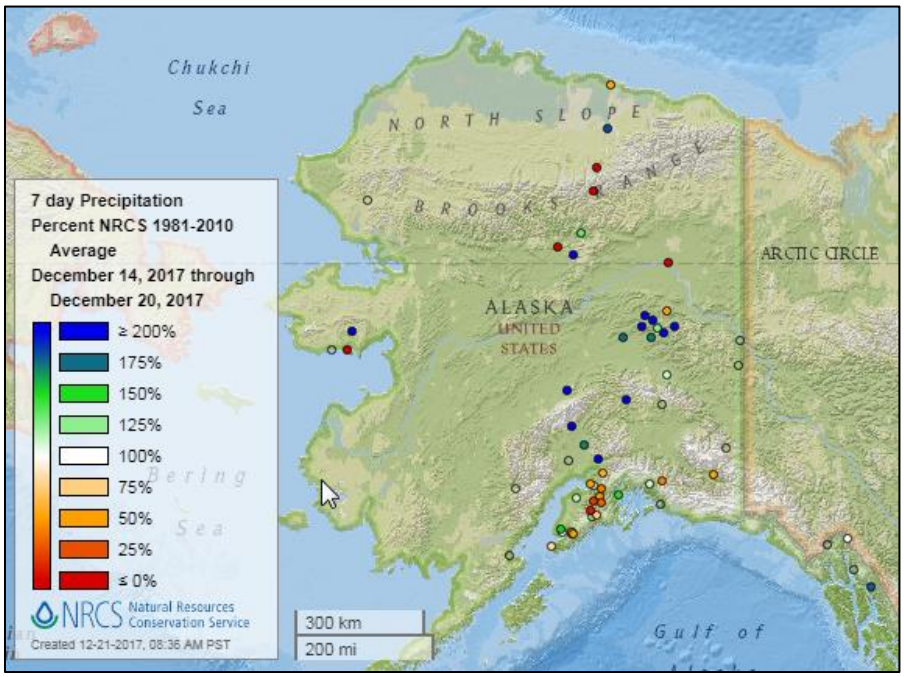


[7-day precipitation percent of average map]

See also:
[7-day total precipitation values (inches) map]

[Alaska 7-day precipitation percent of average map](#)

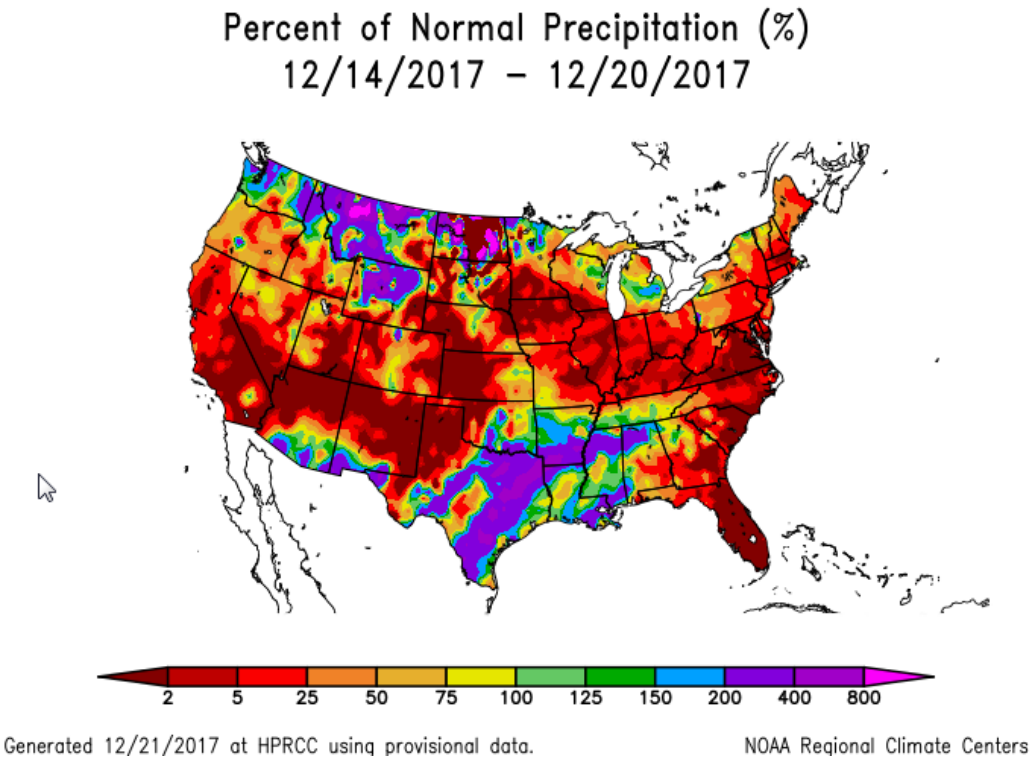
See also: [Alaska 7-day total precipitation values (inches) map](#)



Last 7 Days, National Weather Service (NWS) Networks Source: Regional Climate Centers

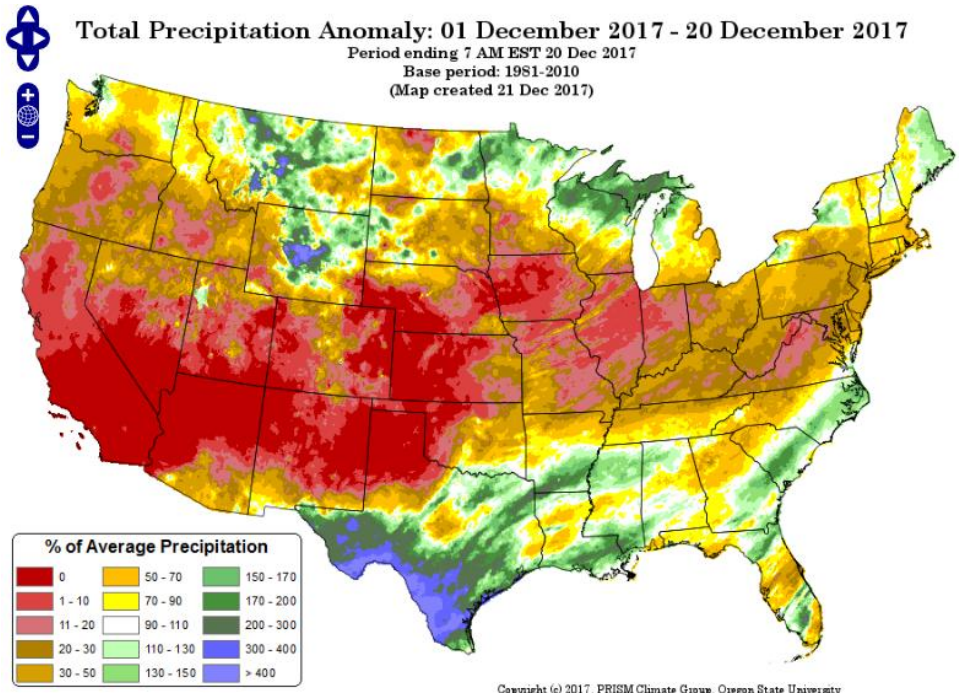
[7-day precipitation percent of normal map](#) for the continental U.S.

See also: [7-day total precipitation values (inches) map](#)



Month-to-Date, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

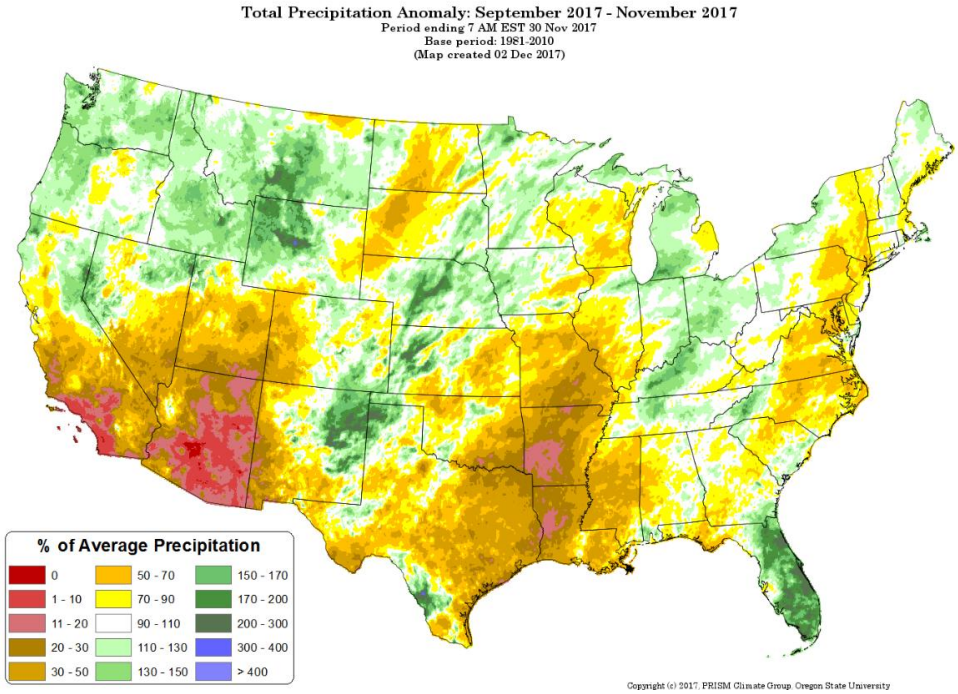


[Month-to-date national precipitation percent of average map]

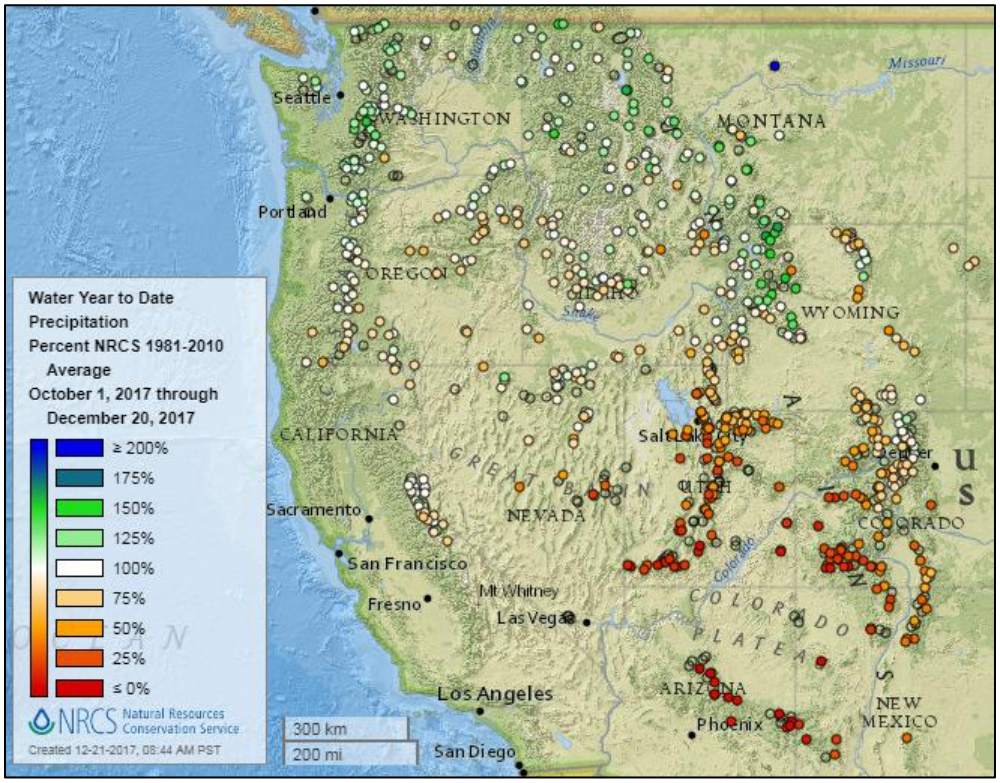
Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

[September through November 2017 total precipitation anomaly map]

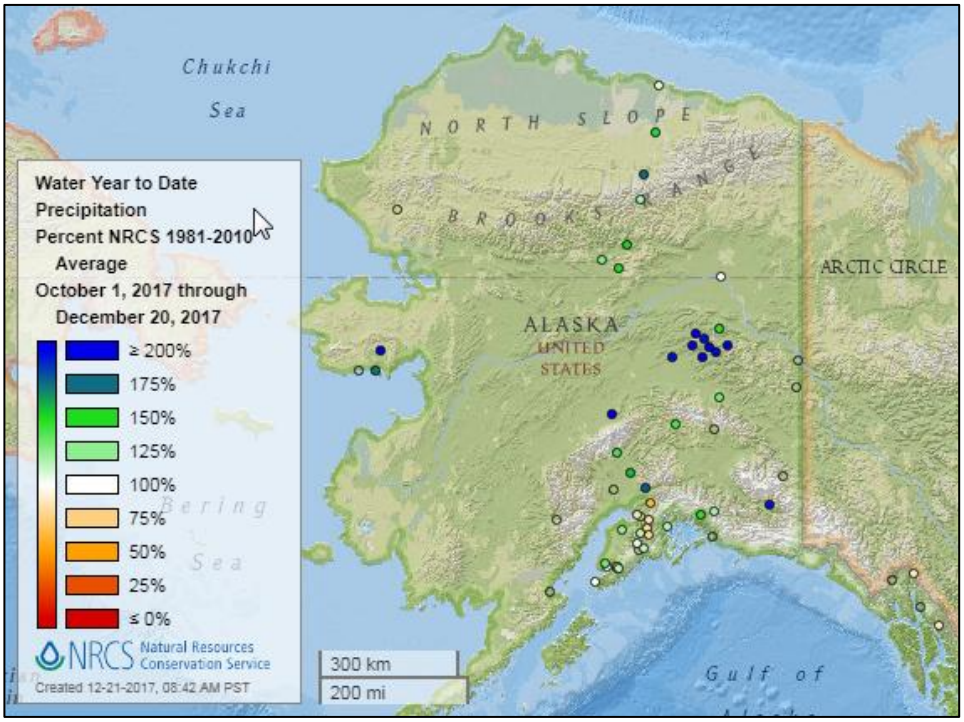


Water Year-to-Date, NRCS SNOTEL Network



[2018 water year-to-date precipitation percent of average map]

See also: [2018 water year-to-date precipitation values (inches)]



[Alaska 2018 water year-to-date precipitation percent of average map]

See also: [Alaska 2018 water year-to-date precipitation values (inches) map]

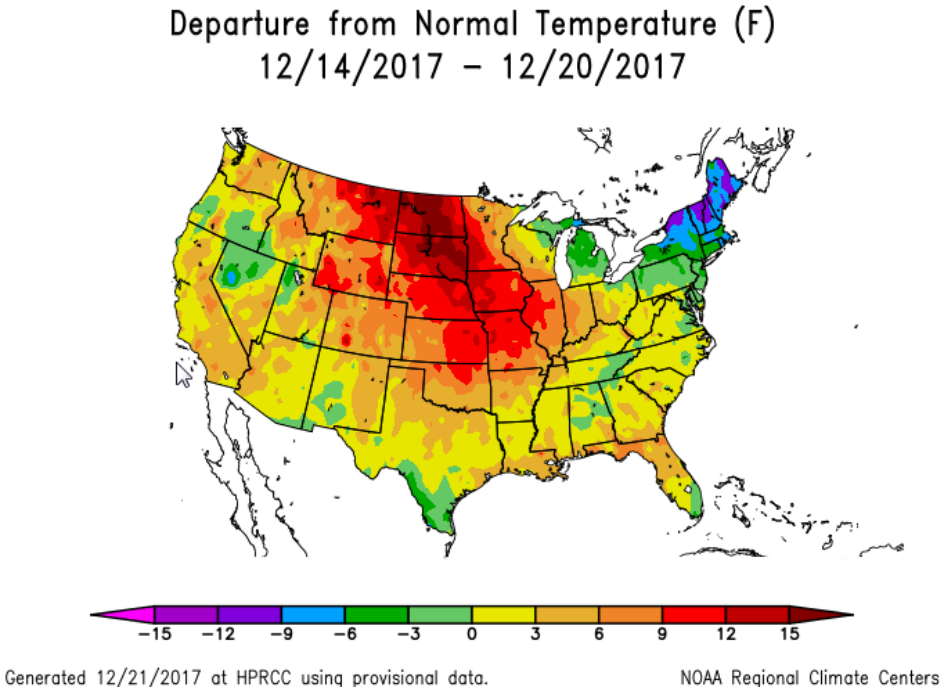
Temperature

Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

7-day temperature anomaly map for the continental U.S.

See also: 7-day temperature (° F) map

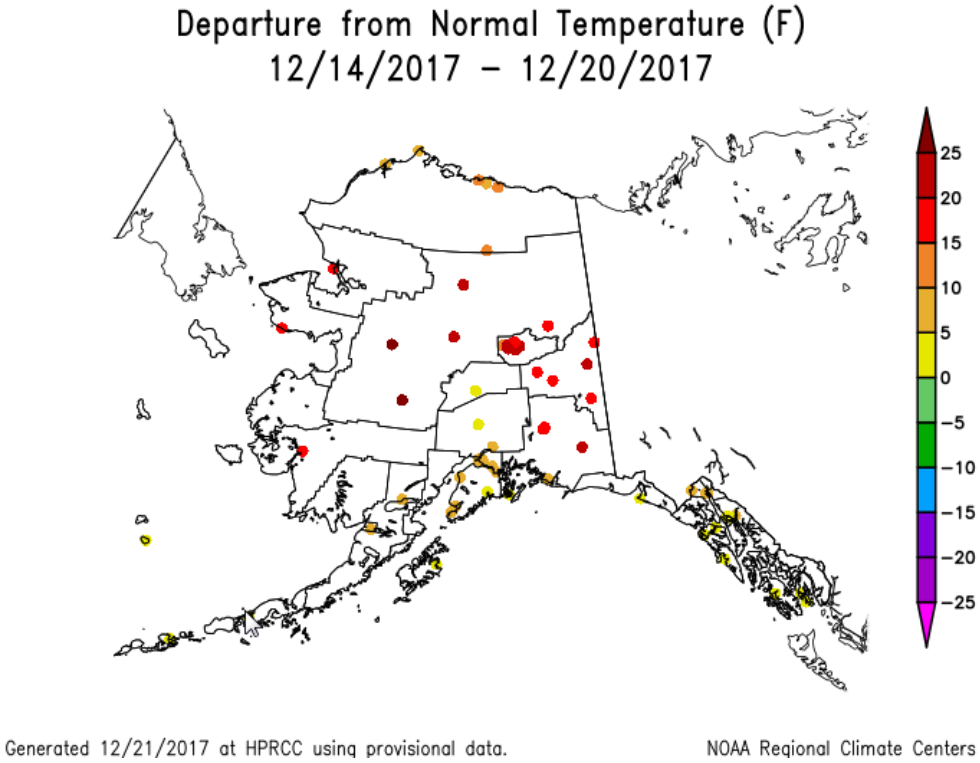


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

7-day temperature anomaly map for Alaska.

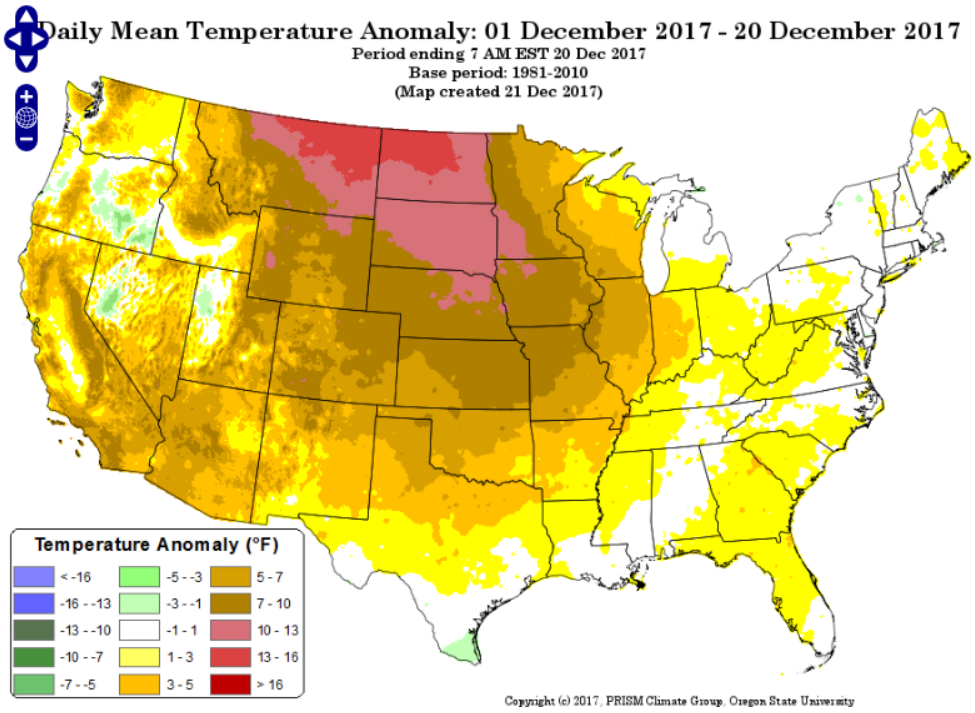
See also: 7-day temperature (° F) map



Month-to-Date, All Available Data Including SNOTEL and NWS Networks

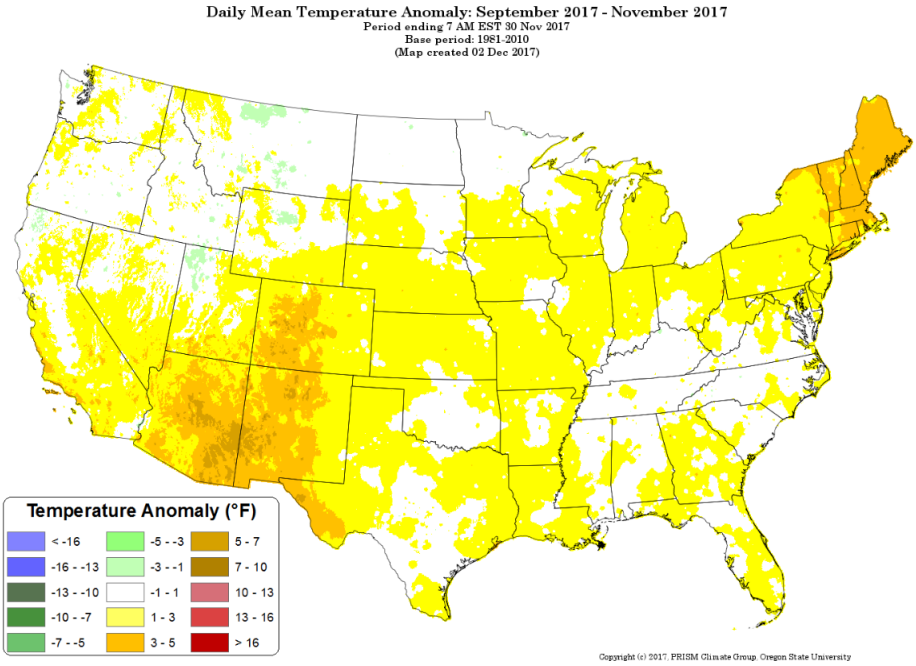
Source: PRISM

[Month-to-date national daily mean temperature anomaly map]



Last 3 Months, All Available Data Including SNOTEL and NWS Networks

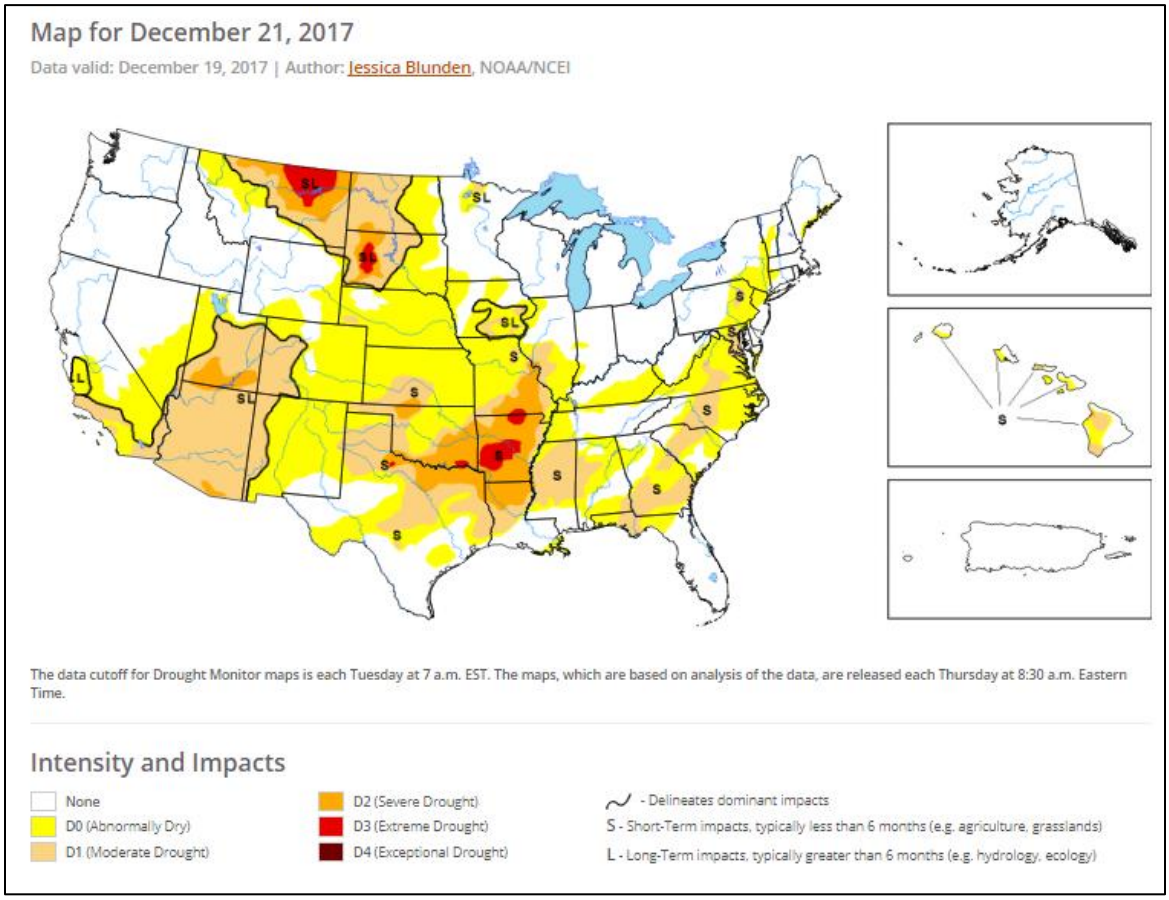
Source: PRISM



[September through November 2017 daily mean temperature anomaly map]

Drought

U.S. Drought Monitor Select map below. U.S. Drought Portal Comprehensive drought resource.



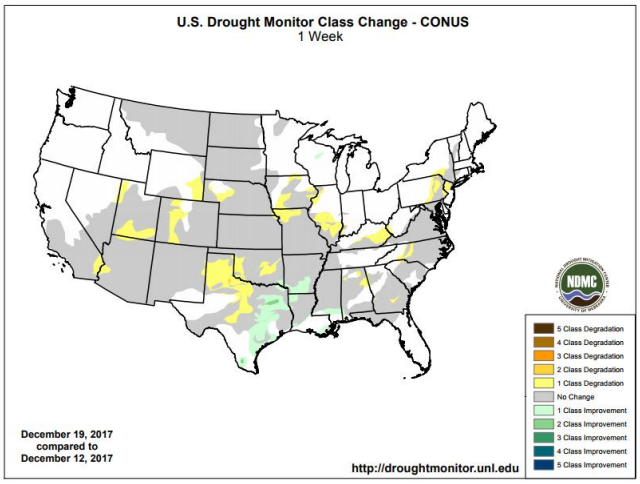
Current National Drought Summary, December 21, 2017

Author: Jessica Blunden, NOAA/NCEI

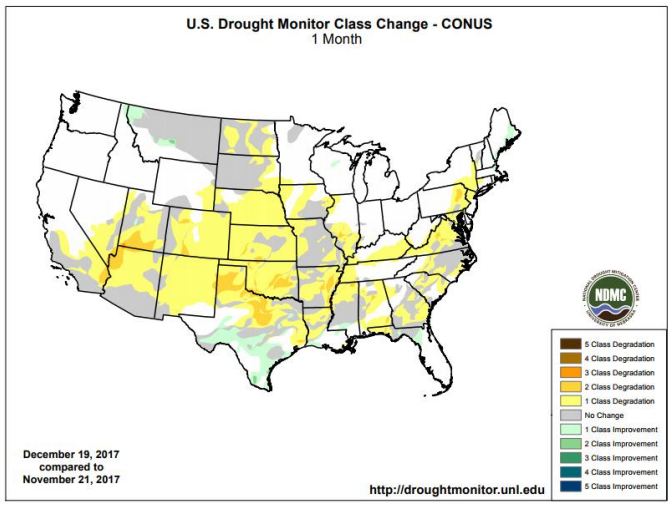
> "Snow fell across most of the Northeast, but it was dry across most of the contiguous United States, with much of the country receiving less than 0.10 inch of precipitation and many areas receiving nothing at all. Part of the South, from eastern Texas to western Alabama, did receive more than an inch of rain, with locally heavier amounts, which helped improve dry conditions. Temperatures were generally below average across the eastern third of the U.S. and above average across most of the western two-thirds. Warmth was notable in eastern Montana and the Dakotas where temperatures were up to 20°F above normal. It was around 5-10°F above normal in the central U.S., an area that continued to see dry conditions this past week. In general, drought expanded across parts of the West, Southern Plains, Midwest, Southeast, and Mid-Atlantic and contracted across part of the South."

Changes in Drought Monitor Categories over Time

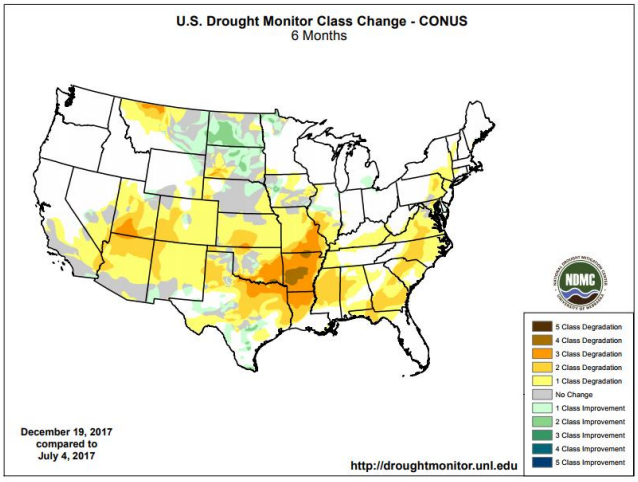
1 Week



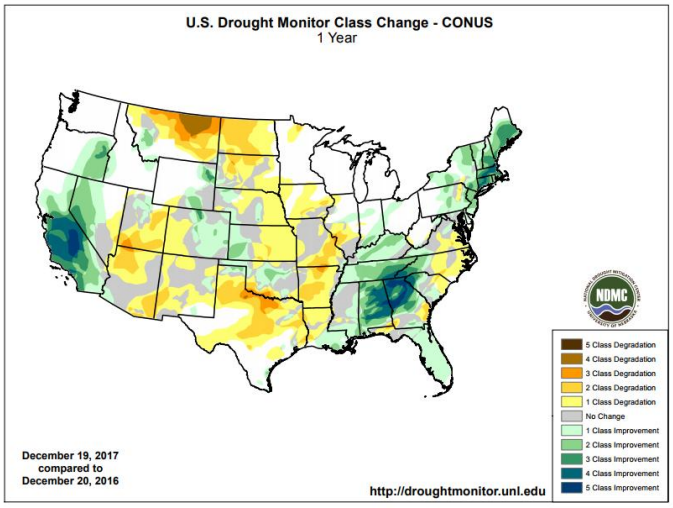
1 Month



6 Months



1 Year

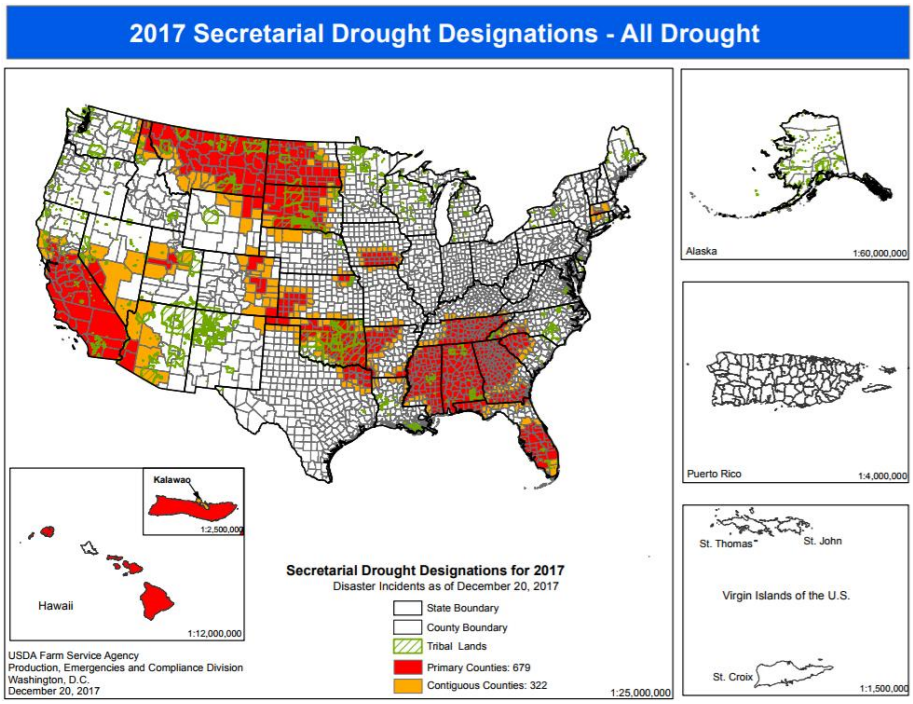


Changes in drought conditions over the last 12 months

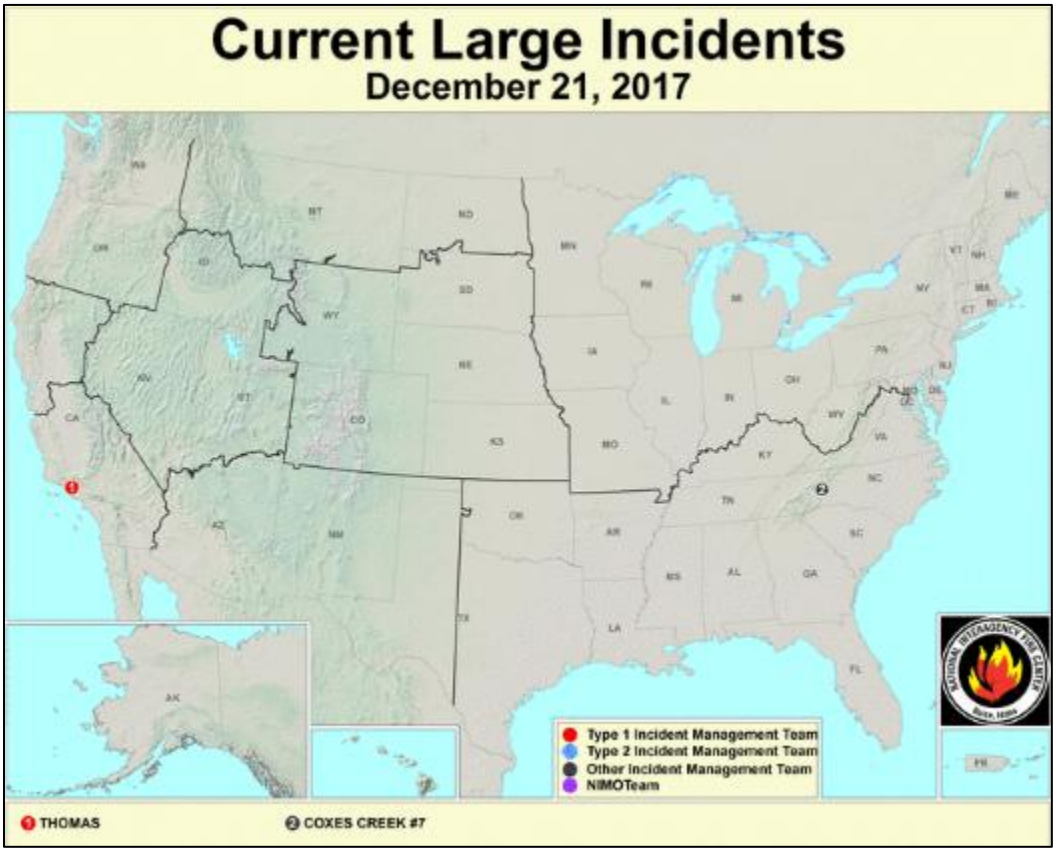
Highlighted Drought Resources

- Drought Impact Reporter
- Quarterly Regional Climate Impacts and Outlook
- U.S. Drought Portal Indicators and Monitoring
- U.S. Population in Drought, Weekly Comparison
- USDA Disaster and Drought Information

USDA 2017 Secretarial [Drought Designations]

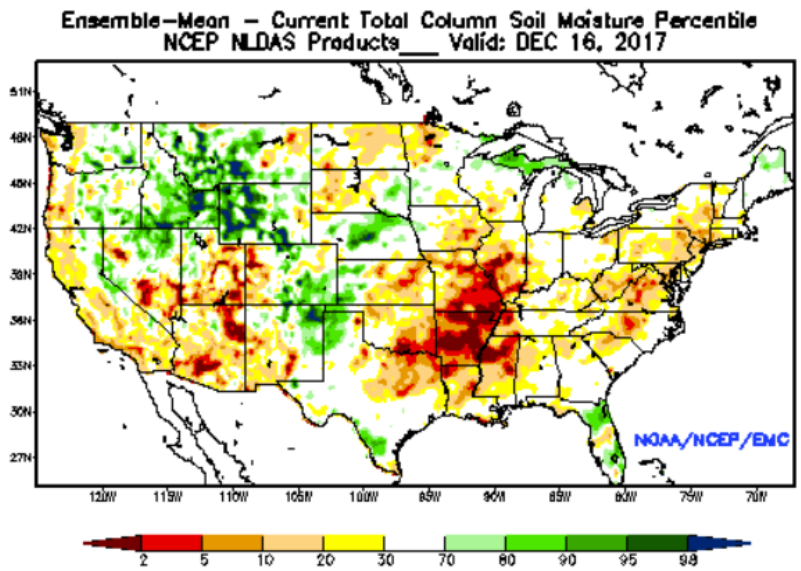


[Wildfires: USDA Forest Service Active Fire Mapping]



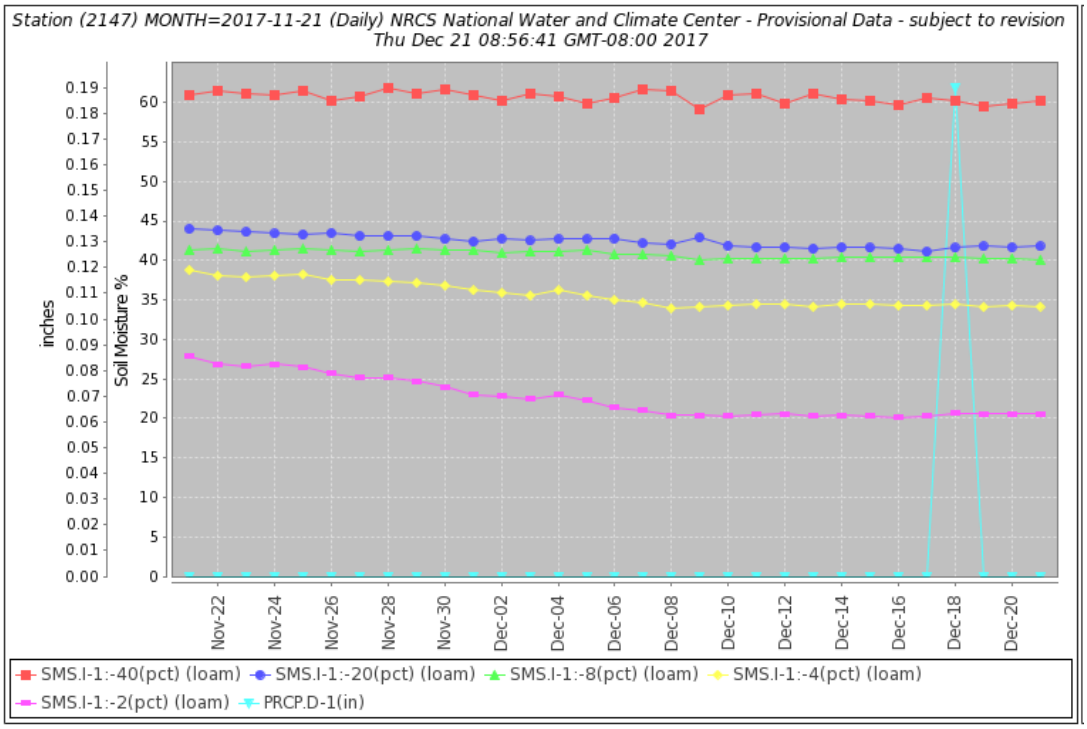
Other Climatic and Water Supply Indicators

Soil Moisture



Modeled soil moisture percentiles as of December 16, 2017.

Soil Moisture Data: NRCS Soil Climate Analysis Network (SCAN)



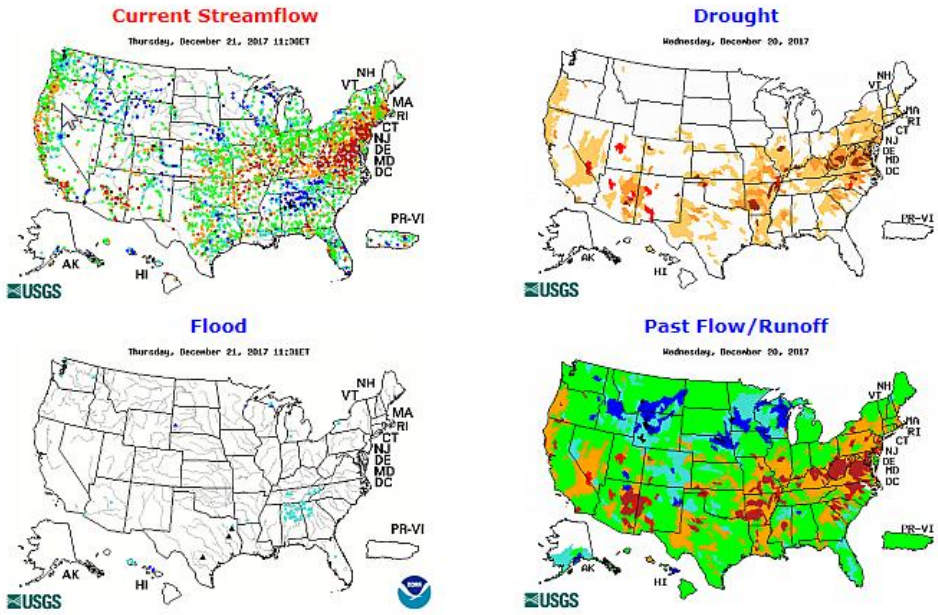
The chart shows precipitation and soil moisture for the last 30 days at the Ku-Nesa SCAN site 2147 in Kansas. The past 30 days shows mostly dry conditions with less than 0.2 inches of precipitation on December 18. All soil moisture sensors showed slight decreases during the past 30 days, with the exception of a very slight increase at the 2-inch sensor level from the recent precipitation.

Soil Moisture Data Portals

- CRN Soil Moisture
- Texas A&M University North American Soil Moisture Database
- University of Washington Experimental Modeled Soil Moisture

Streamflow

Source: USGS

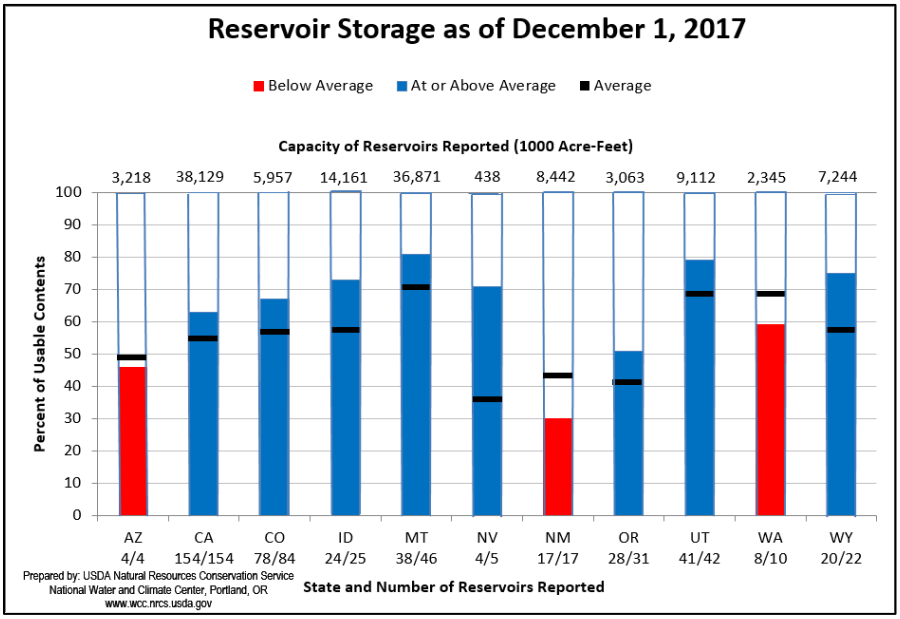


WaterWatch: Streamflow, drought, flood, and runoff conditions

Reservoir Storage

Western States Reservoir Storage

Source: NRCS National Water and Climate Center

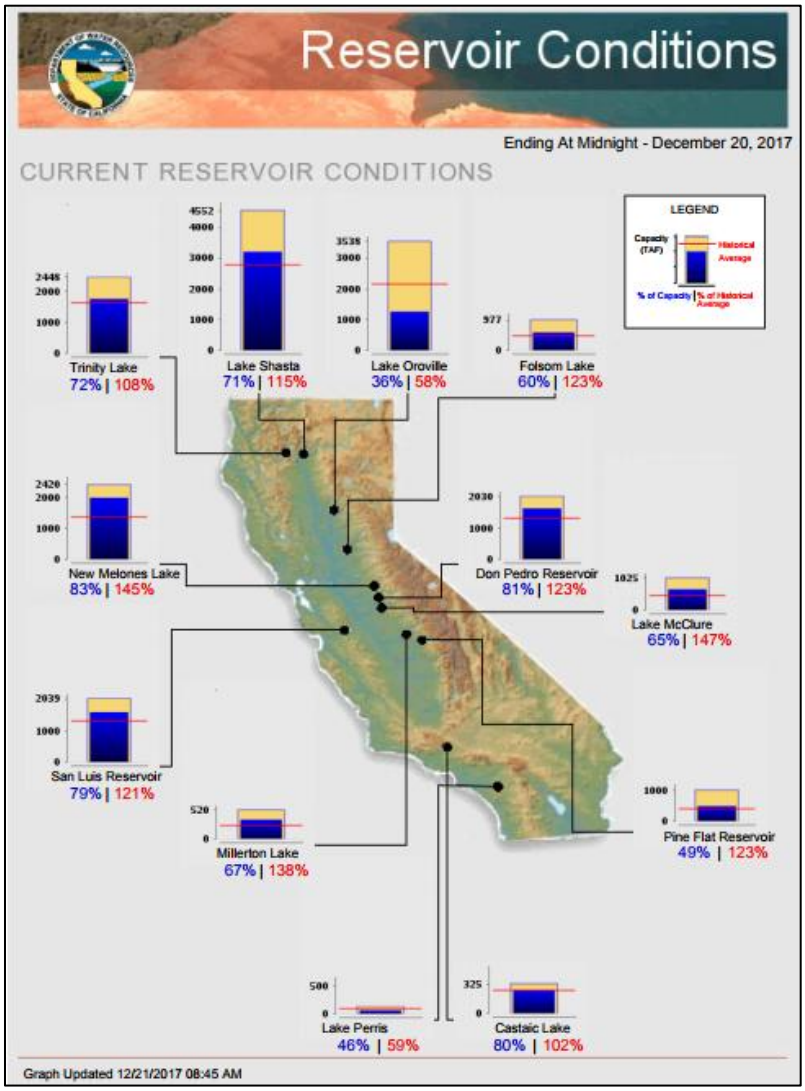


December 1 Reservoir Storage: Chart | Dataset

U.S. Bureau of Reclamation Hydromet Tea Cup Reservoir Depictions

- Upper Colorado
- Pacific Northwest/Snake/Columbia
- Sevier River Water, Utah
- Upper Missouri, Kansas, Oklahoma, Texas

Current California Reservoir Conditions Source: California Department of Water Resources



California Current Reservoir Conditions

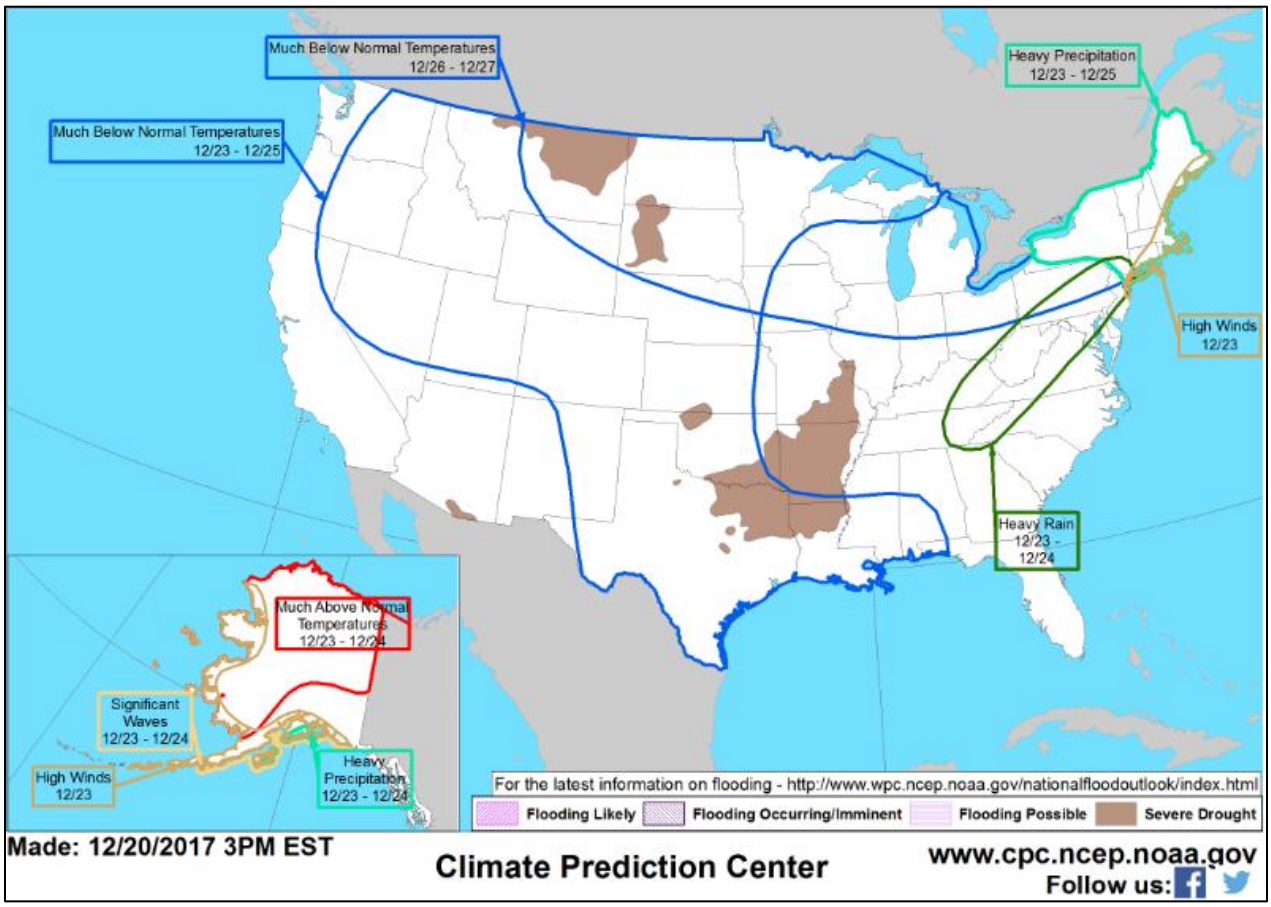
Short- and Long-Range Outlooks

Agricultural Weather Highlights

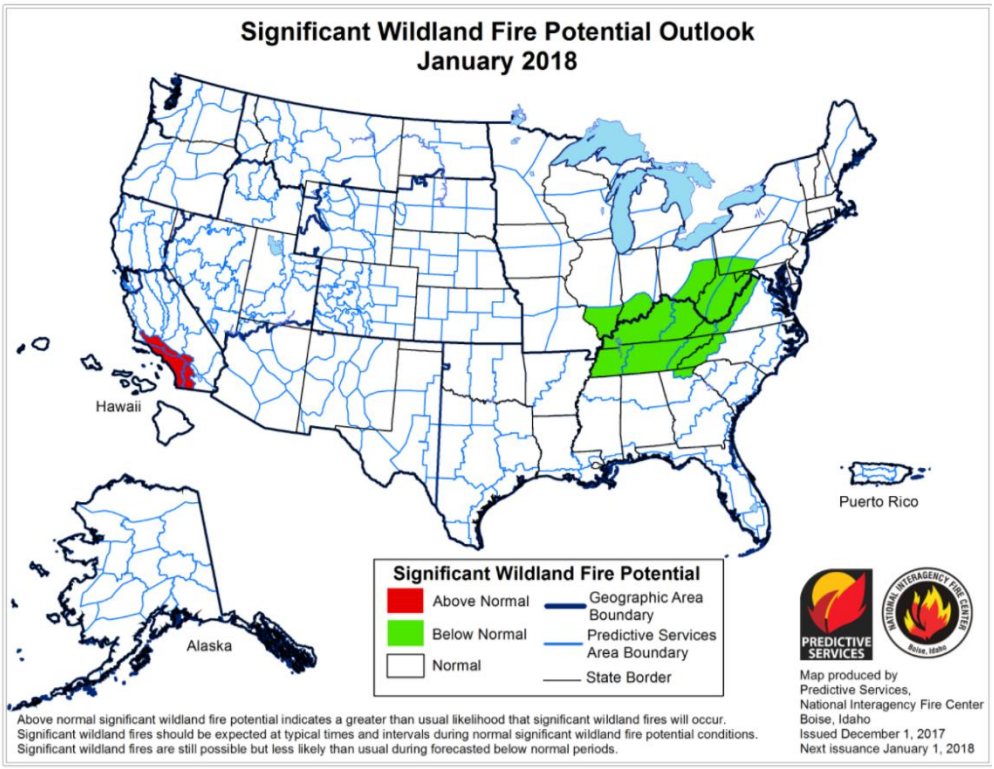
Author: Eric Luebehusen, Agricultural Meteorologist, USDA/OCE/WAOB

National Outlook, Thursday, December 21**:** "A significant weather pattern change is well underway, with sharply colder air currently engulfing the western half of the country. By week's end, cold air will stretch from the Rockies to the Appalachians, with lingering warmth confined to the Atlantic Seaboard. At the same time, mild weather will return to California and the Southwest, following a brief cold spell. Five-day precipitation totals could reach 1 to 2 inches across the South and East, with higher amounts (2 to 6 inches) expected from northeastern Texas to the central Appalachians. Although most of the precipitation will fall as rain, some snow may accumulate on December 23-24 from the middle Mississippi Valley to northern New England. Farther west, periods of high-elevation snow will continue from the Pacific Northwest to the northern and central Rockies. The NWS 6- to 10-day outlook for December 26 – 30 calls for the likelihood of colder-than-normal weather nationwide, except for above-normal temperatures in much of California, southern Florida, and the Desert Southwest. Meanwhile, near- to above-normal precipitation across most of the country should contrast with drier-than-normal conditions in a few areas, including parts of California, the Great Basin, and the lower Southeast."

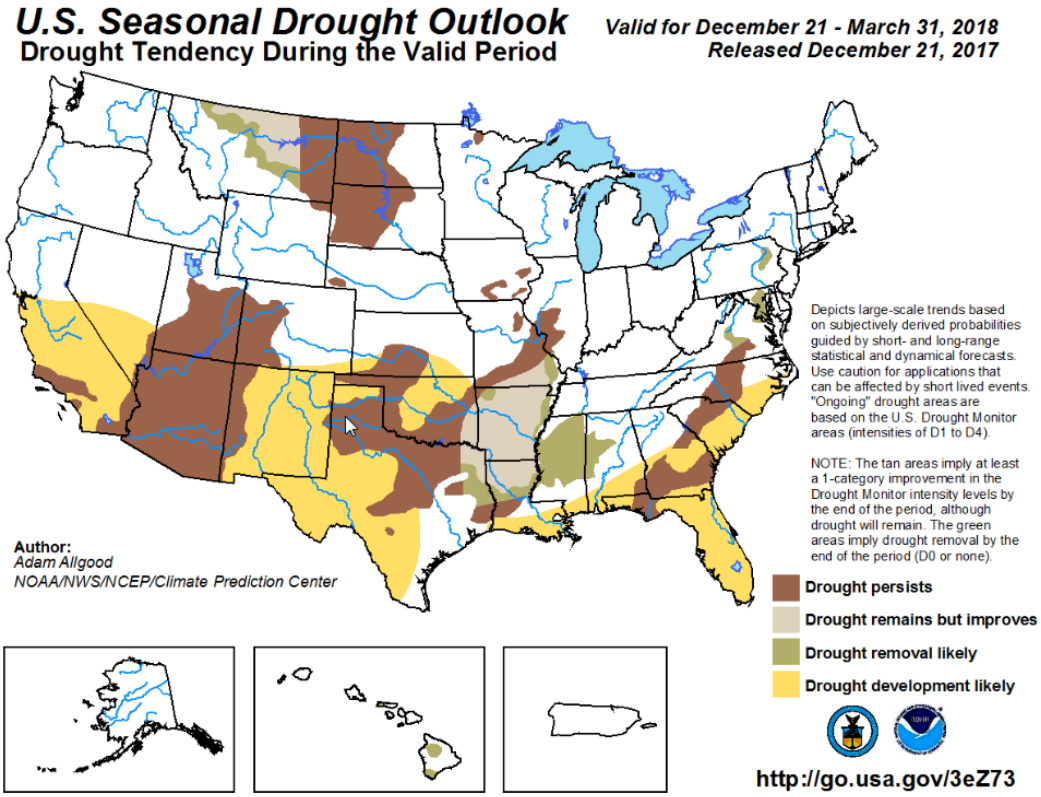
Weather Hazard Outlook December 23 – 27, 2017 Source: Climate Prediction Center



Significant Wildland Fire Potential Outlook Source: National Interagency Fire Center



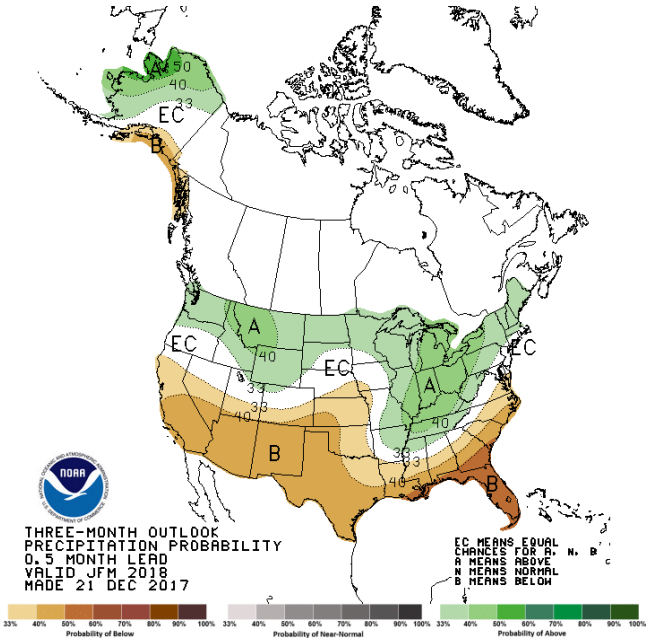
Seasonal Drought Outlook: December 21, 2017 – March 31, 2018 Source: National Weather Service



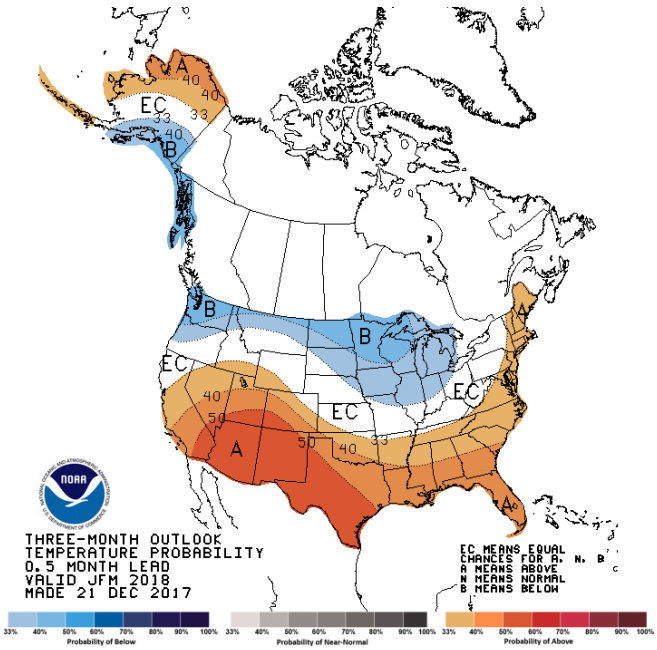
Climate Prediction Center 3-Month Outlook

Source: National Weather Service

Precipitation



Temperature



Jan-Feb-Mar (JFM) 2018 precipitation and temperature outlook summaries

More Information

The NRCS National Water and Climate Center publishes this weekly report. We welcome your feedback. If you have questions or comments, please contact us.