United States Department of Agriculture

Water and Climate Update

December 15, 2016

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.

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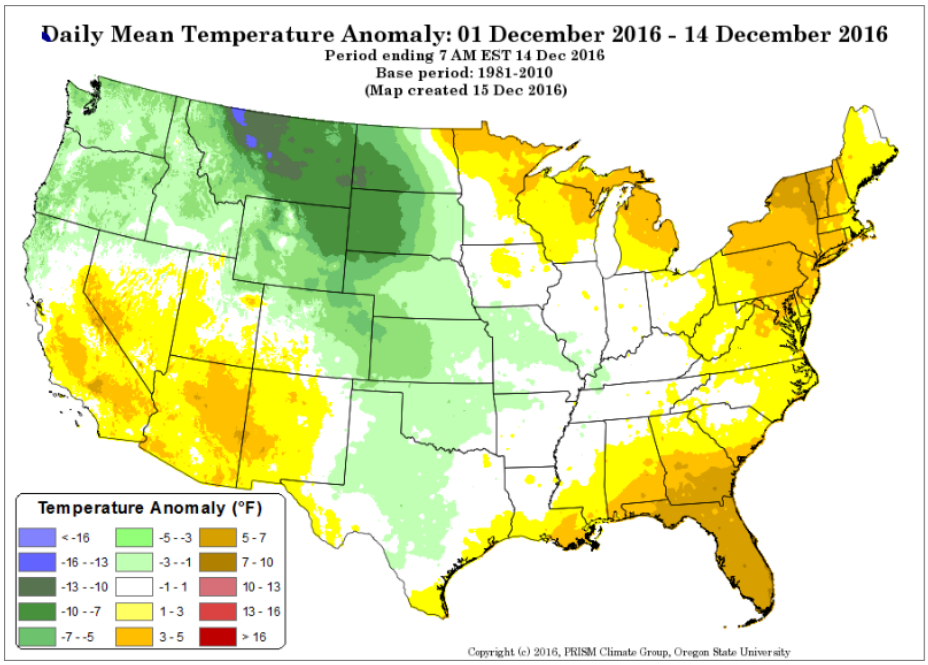
Colder than normal temperatures in December from the Northwest to the Plains



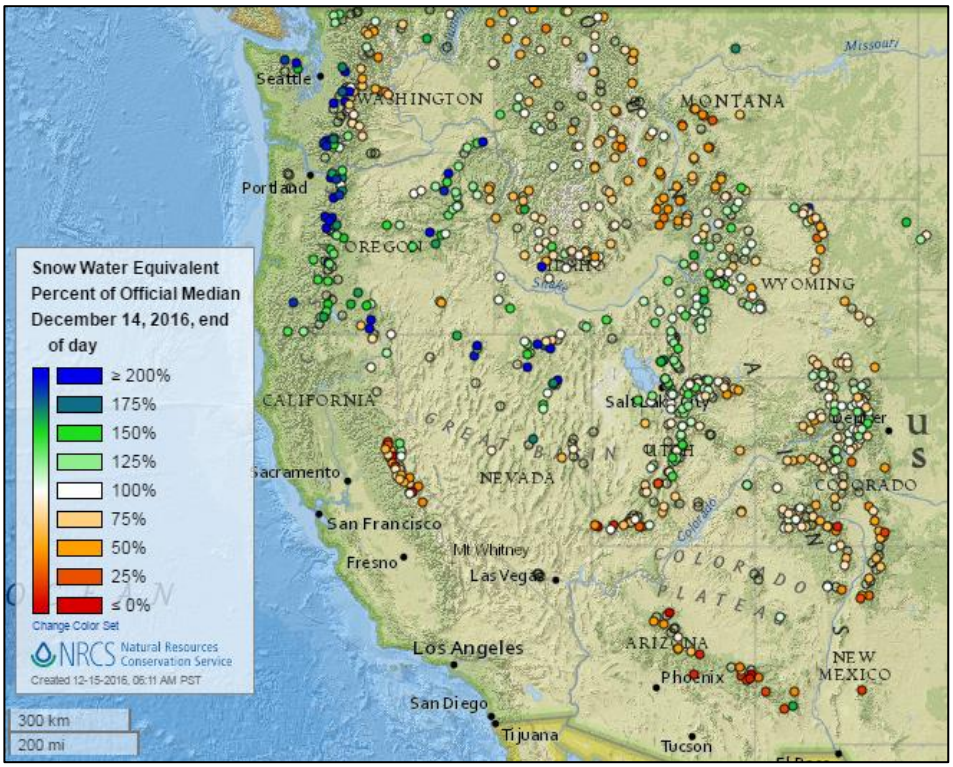
Below normal temperatures have blanketed much of the northwest and northern Plains in the first half of December, in contrast to the recent warm temperatures across the nation this fall. Northern Montana is reporting the coldest departure from normal with temperatures along the eastern Rockies over 16 degrees colder than normal. Within the last few days, very cold temperatures combined with severe wind chills have moved into the upper Midwest and are expected to reach the Northeast in the next few days.

More news:

Temperatures plunge below zero as Arctic air blankets much of northern U.S.
Arctic Assault This Week With Possible Record-Breaking Cold, Chicago to New York
First Warning Forecast: Tracking dangerously cold weather, with wind chills in the single digits
'Dangerously cold' wind chills up to -20 will grip Mass. Thursday, National Weather Service warns

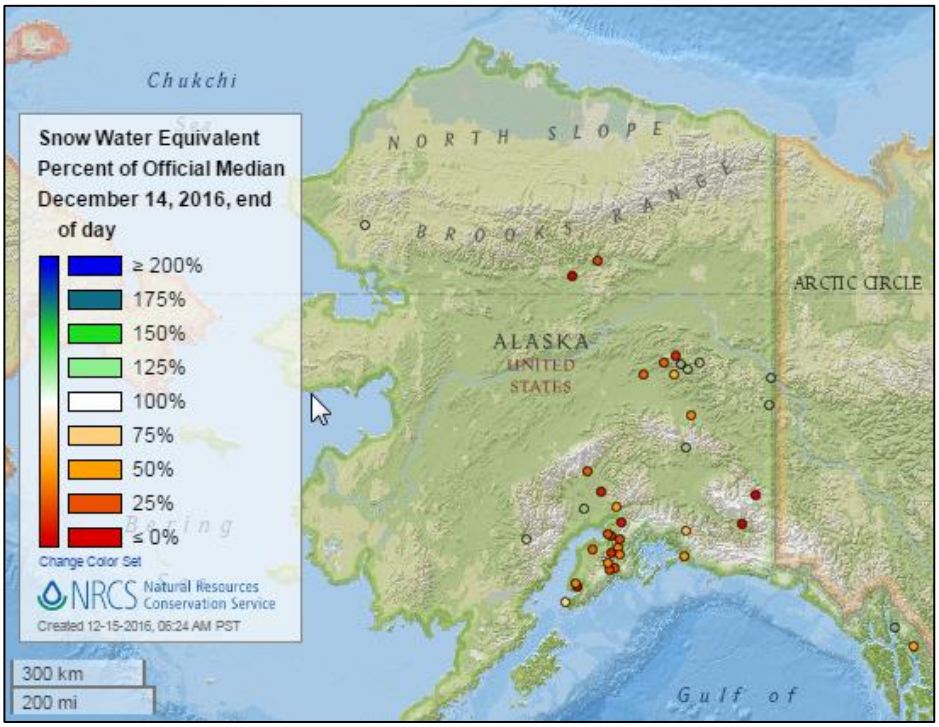
Snow

Current Snow Water Equivalent, NRCS SNOTEL Network



[Snow water equivalent percent of median map]

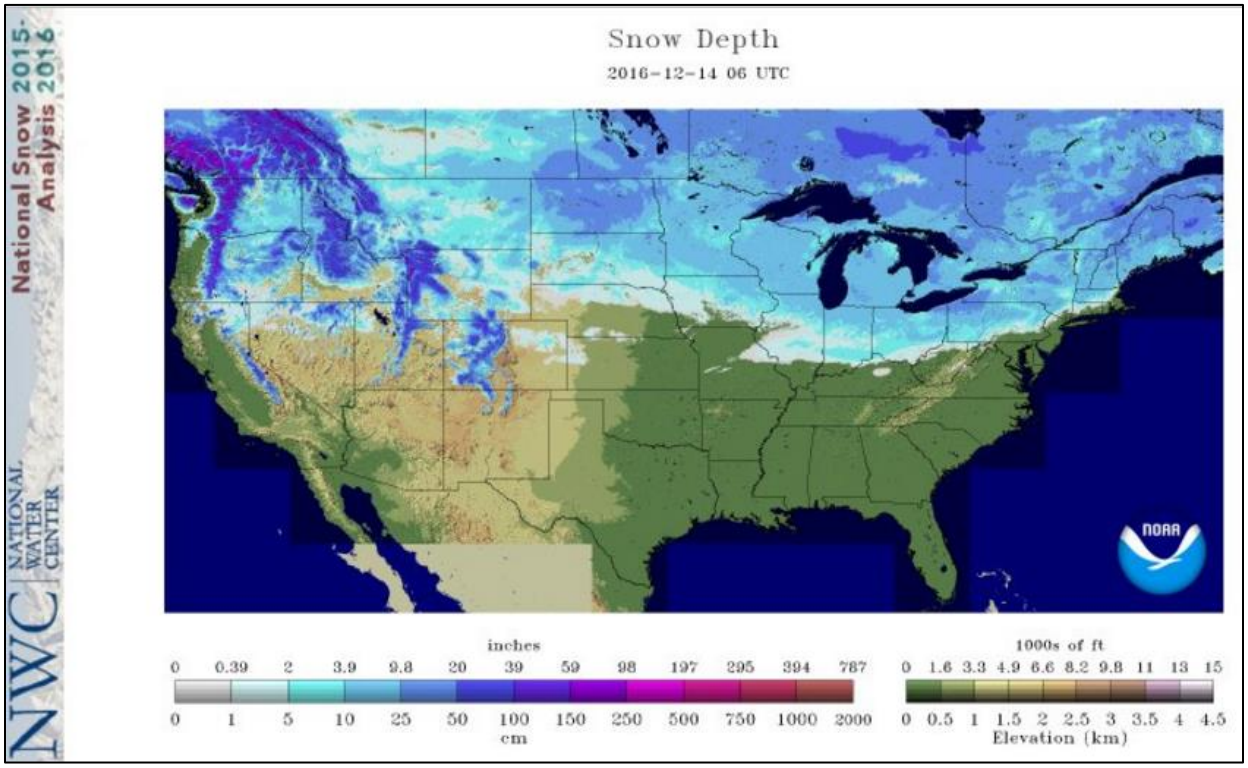
See also:
[Snow water equivalent values (inches) map]



[Alaska snow water equivalent percent of median map]

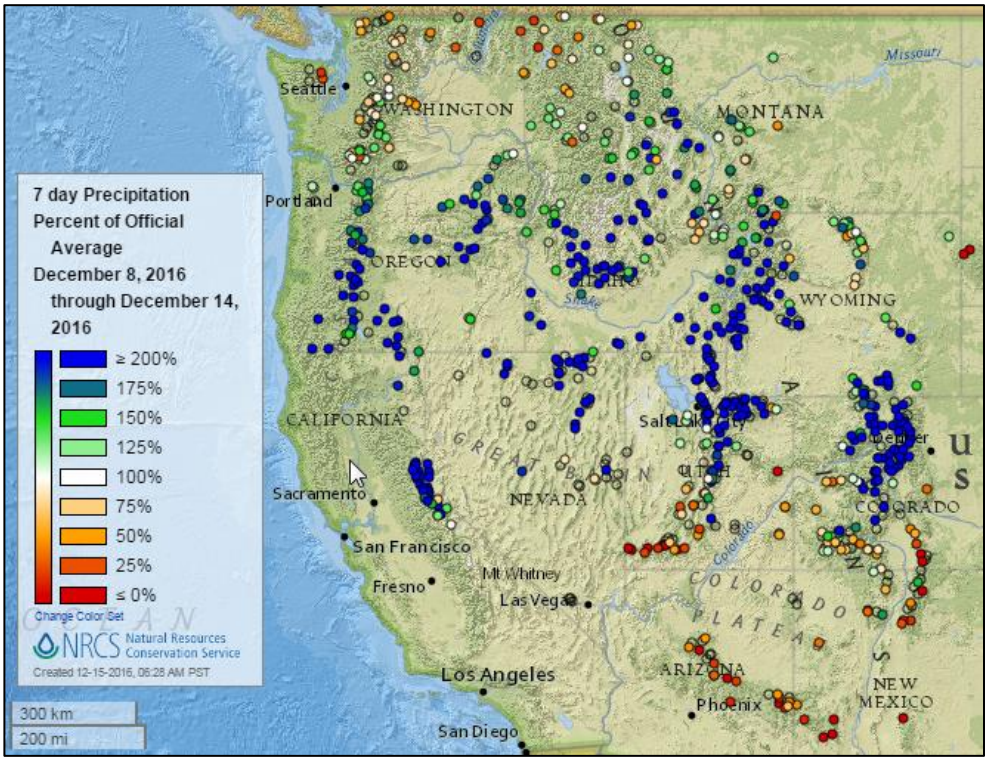
See also:
[Alaska snow water equivalent values (inches) map]

Current Snow Depth, National Weather Service (NWS) Networks



Precipitation

Last 7 Days, Western Mountain Sites (NRCS SNOTEL Network)

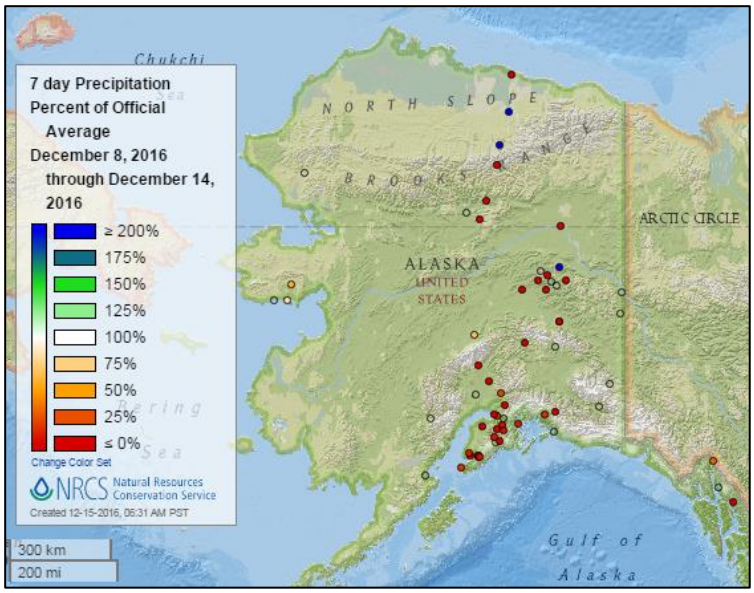


[7-day precipitation percent of average map]

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]

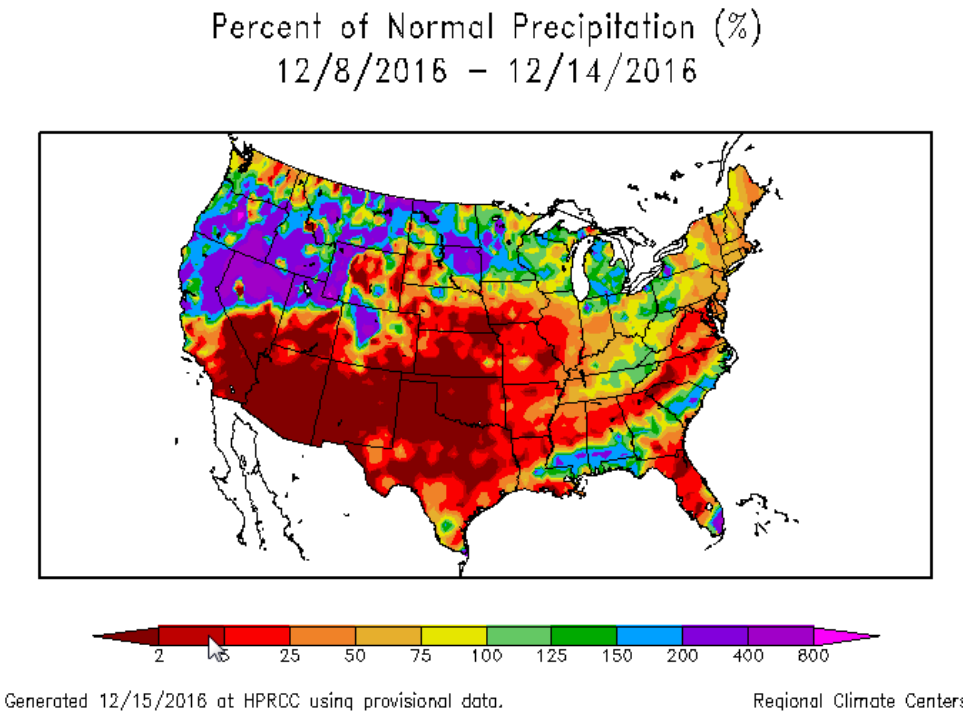


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

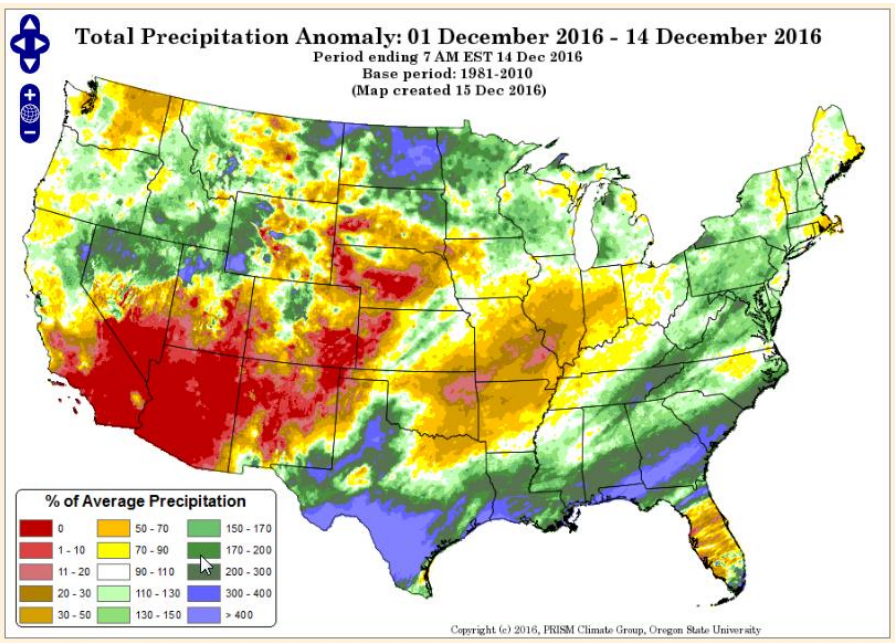
[7-day precipitation percent of normal map](#) for the continental U.S.

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



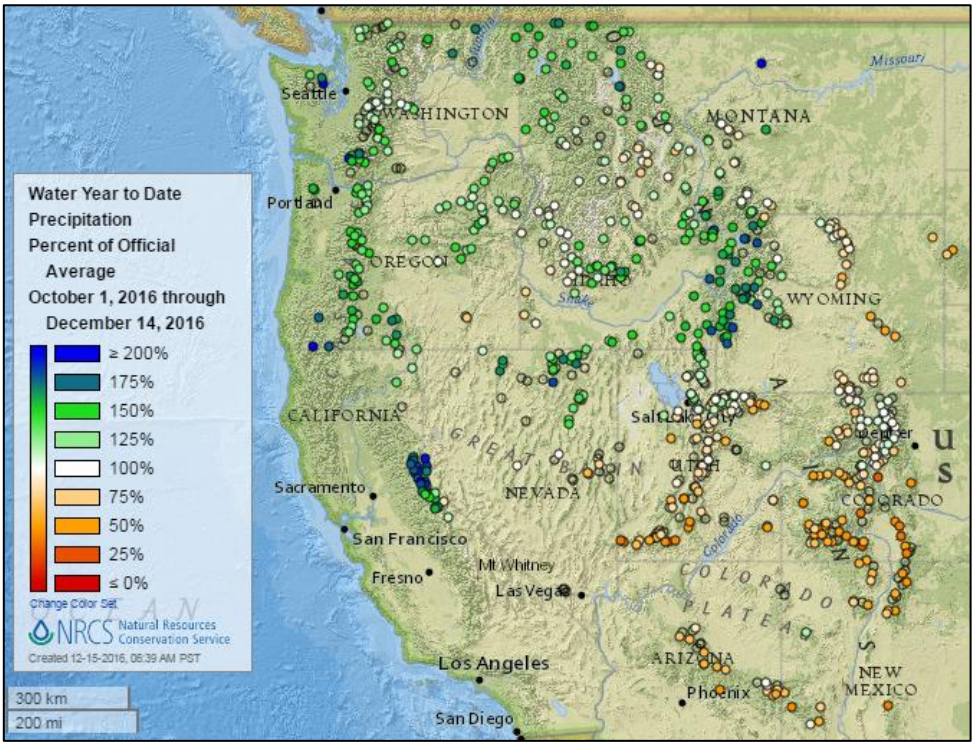
Month-to-Date, All Available Data Including SNOTEL and NWS Networks

Source: PRISM



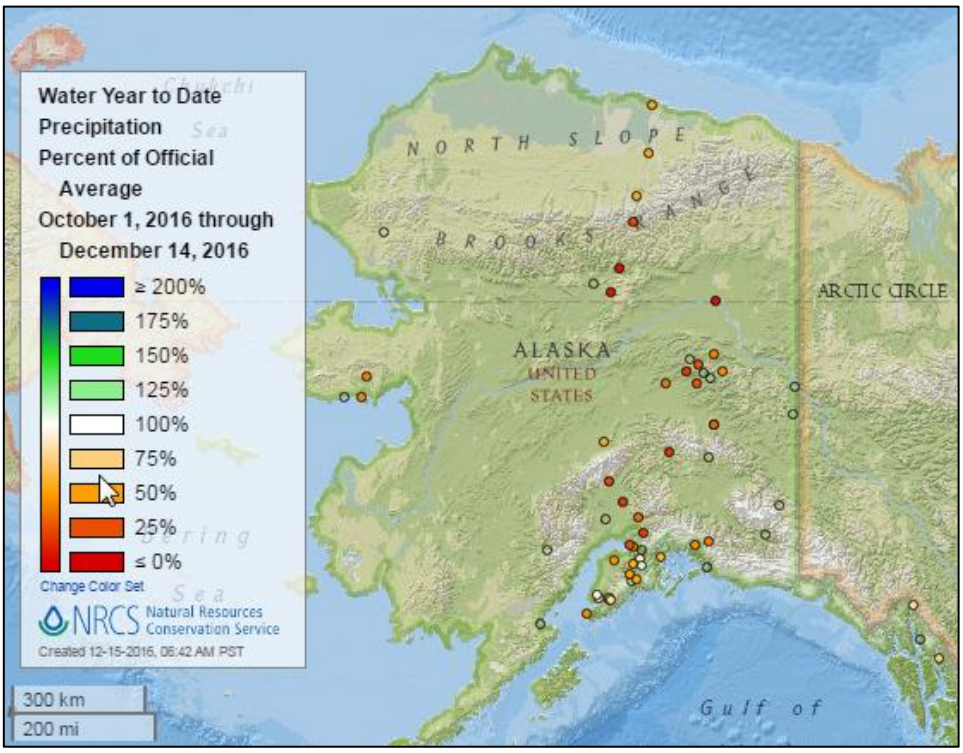
[Month-to-date national precipitation percent of average map](#)

Water Year-to-Date, Western Mountain Sites (NRCS SNOTEL Network)



[2017 water year-to-date precipitation percent of average map]

See also: [2017 water year-to-date precipitation values (inches)]



[Alaska 2017 water year-to-date precipitation percent of average map]

See also: [Alaska 2017 water year-to-date precipitation values (inches) map]

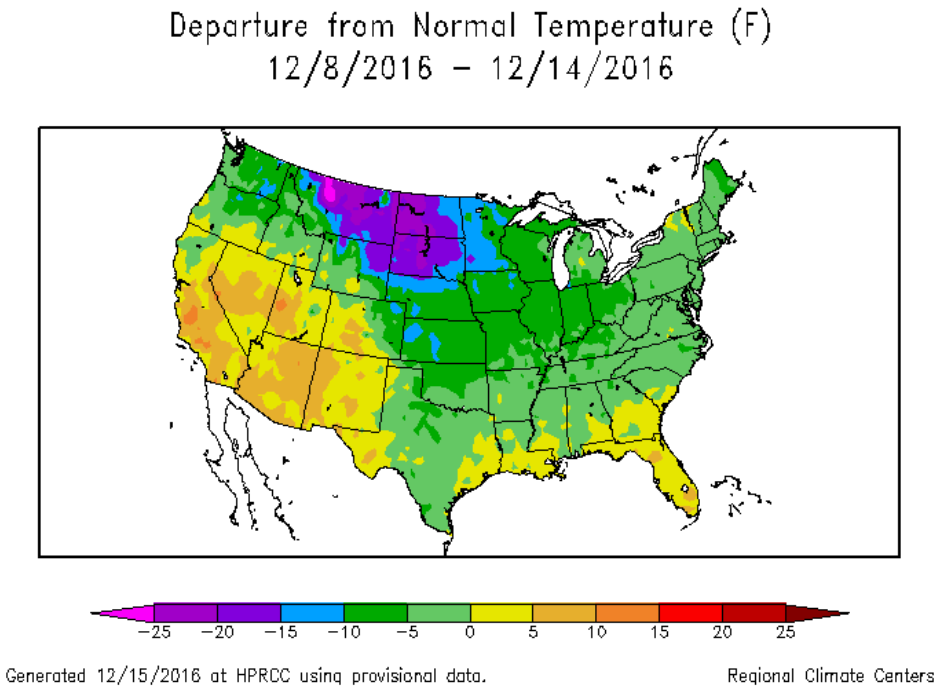
Temperature

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

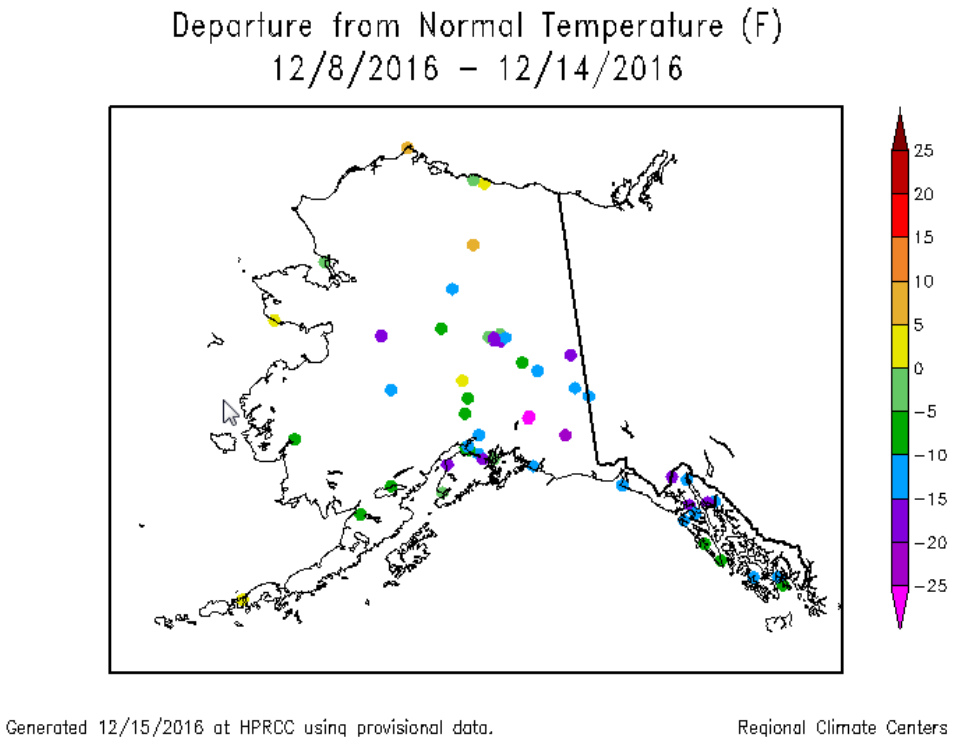


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

7-day temperature anomaly map for Alaska.

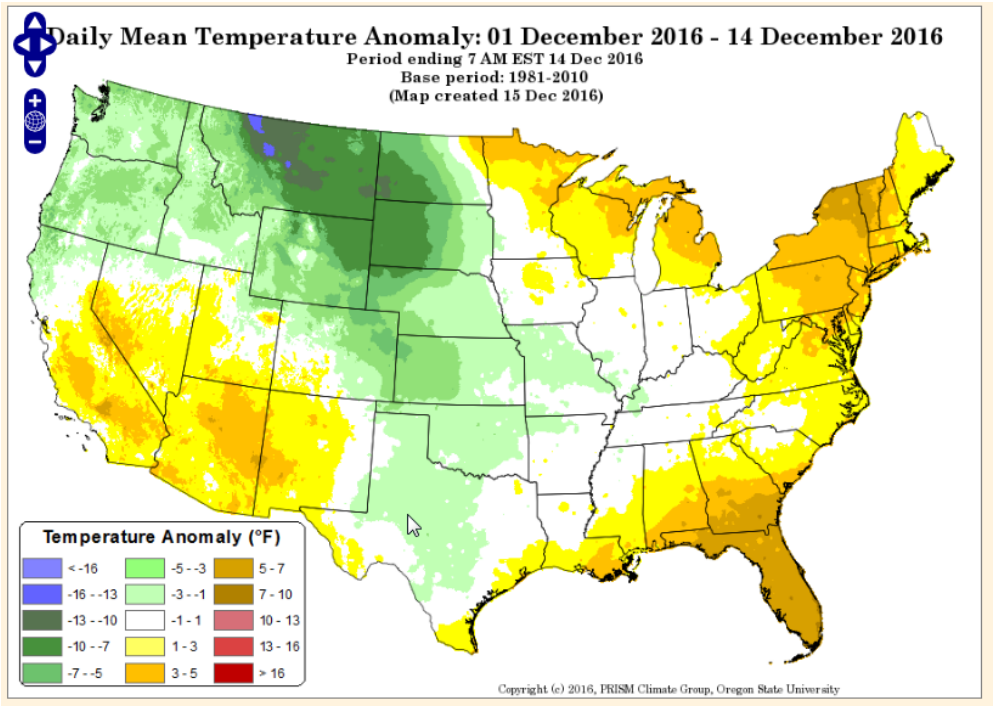
See also: 7-day temperature (° F) map



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

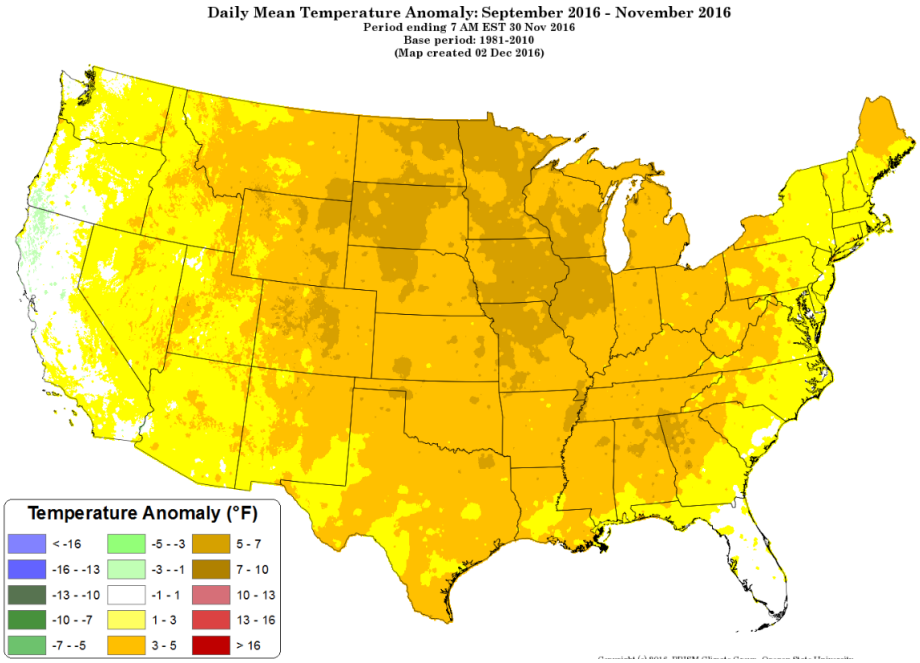
Source: PRISM

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



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

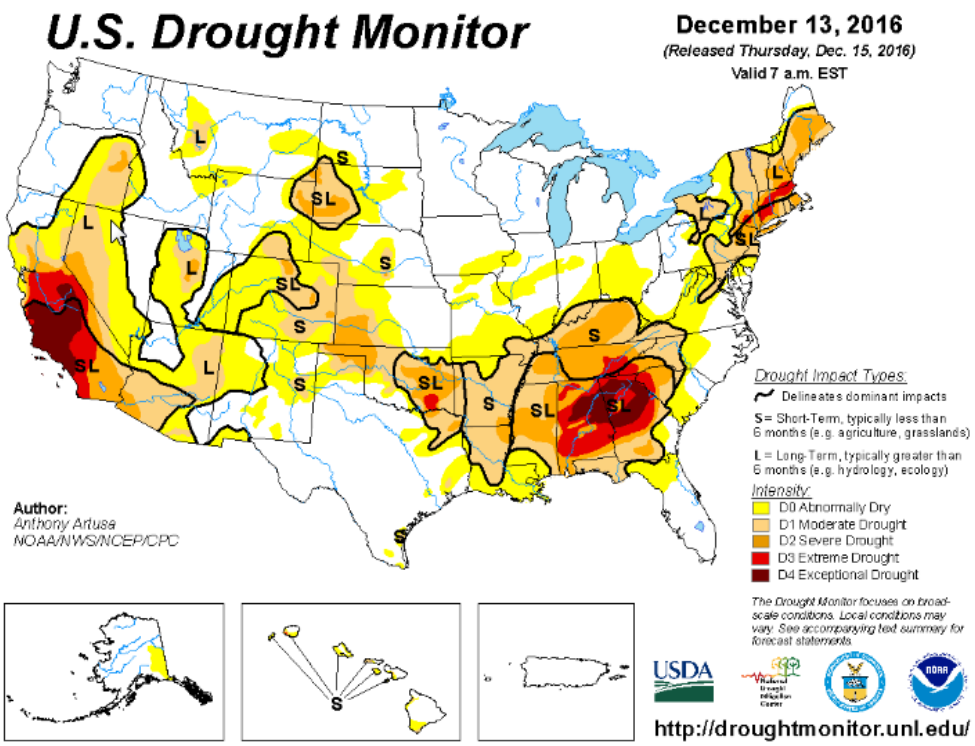
Source: PRISM



[September through November daily mean temperature anomaly map]

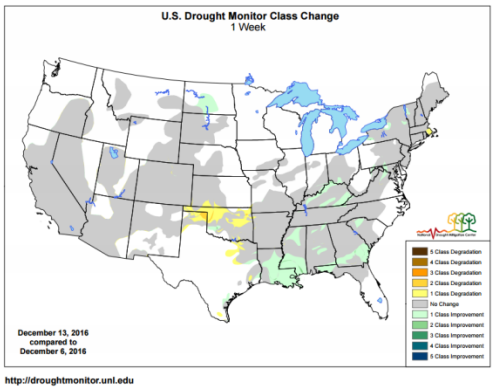
Drought

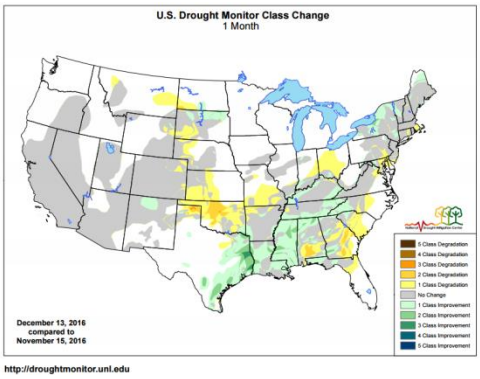
U.S. Drought Monitor See map below. U.S. Drought Portal Comprehensive drought resource.

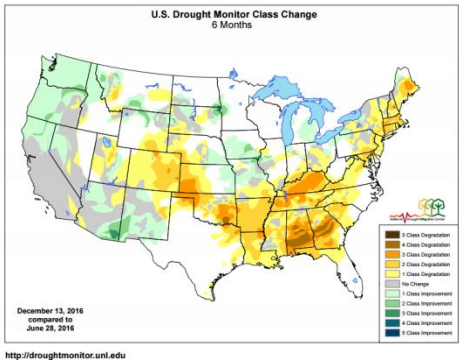


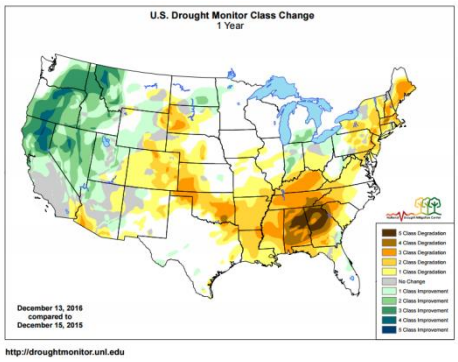
Changes in Drought Monitor Categories over Time

Click any map to enlarge









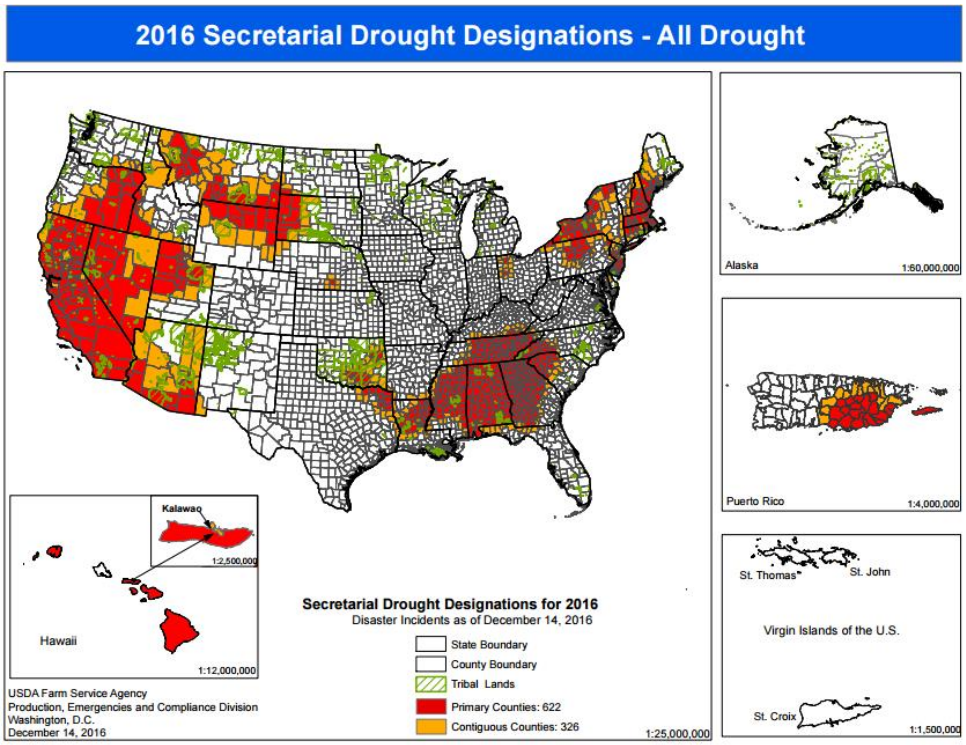
Changes in drought conditions over the last 12 months

Current National Drought Summary, December 13, 2016

Author: Anthony Artusa, NOAA/NWS/NCEP/CPC

"During the first half of the U.S. Drought Monitor week, one low pressure system tracked from the North Dakota/Minnesota border towards James Bay, Canada to the mouth of the St. Lawrence Valley, while a second low pressure system raced from the Lower Tennessee Valley to the mid-Atlantic coast. The first storm system brought moderately heavy snow to the Great Lakes region (especially downwind areas) and gusty winds to North Dakota and Minnesota, while the second storm was accompanied by widespread rainfall. During the second half of the Drought Monitor week, another frontal system moved across the central and eastern Lower 48 states, bringing additional precipitation to those regions."

USDA 2016 Secretarial Drought Designations

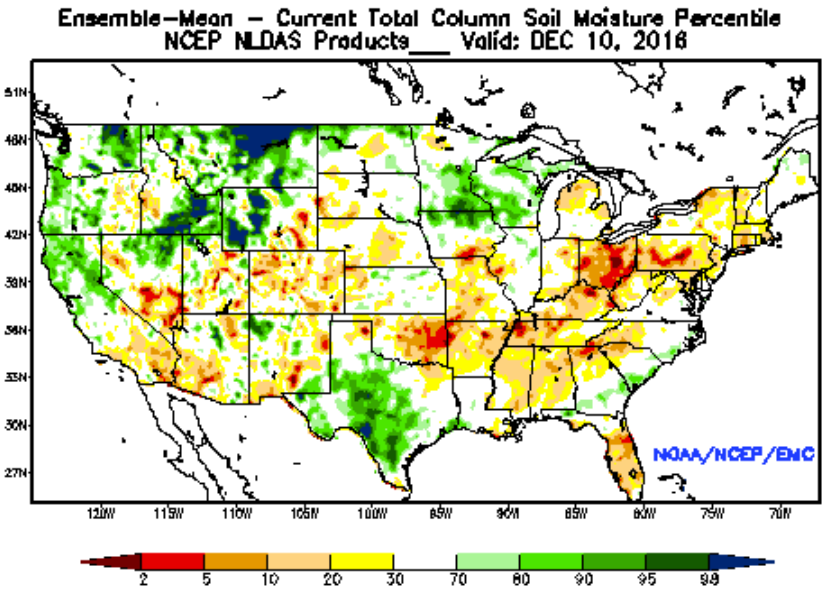


Highlighted Drought Resources

- 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

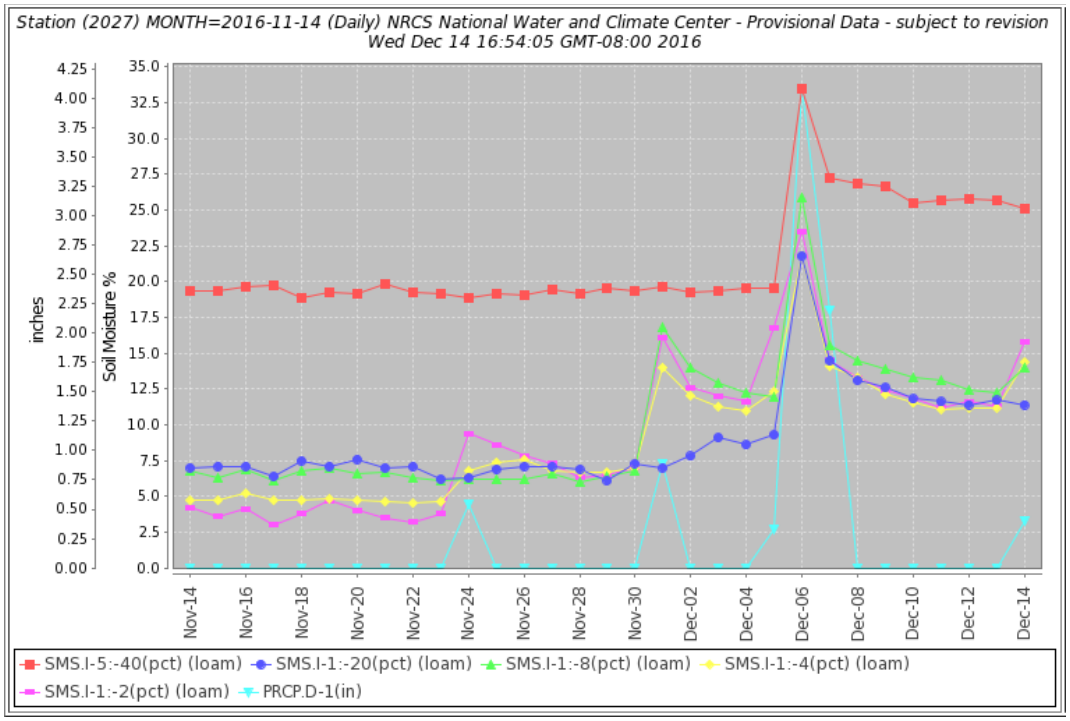
Other Climatic and Water Supply Indicators

Soil Moisture



Modeled soil moisture percentiles as of December 10, 2016.

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



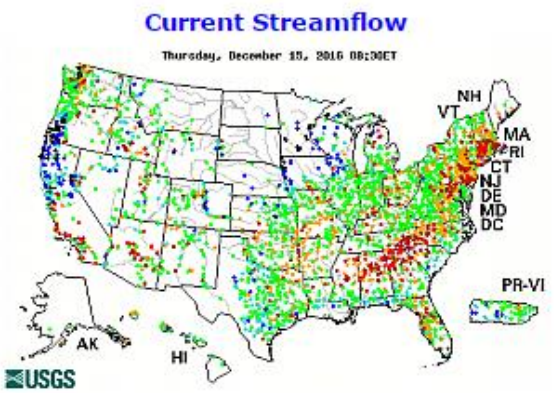
Soil moisture (at 2-, 4-, 8-, 20-, and 40-inch depths) and precipitation for the last 30 days at the Little River SCAN site 2027 in southern Georgia. The small amount of precipitation on November 24, December 1 and 14 resulted in an increase in soil moisture at all soil moisture sensor depths but the 40 inch sensor depth. The large event on December 6-7 with a total of over 6 inches of precipitation increased soil moisture at all depths.

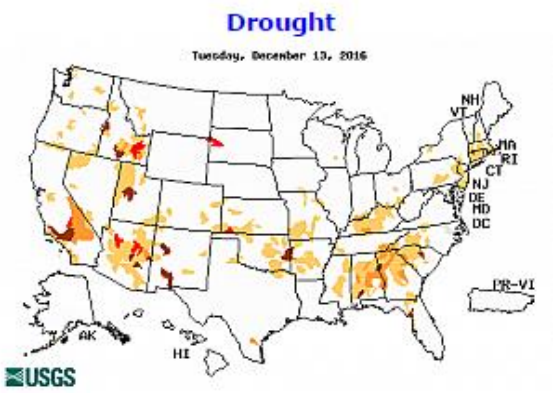
Soil Moisture Data Portals

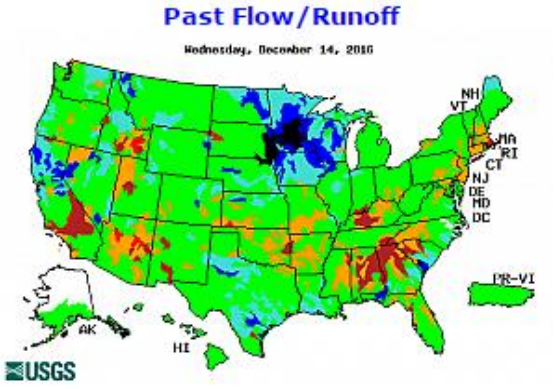
CRN Soil Moisture
Texas A&M University North American Soil Moisture Database
University of Washington Experimental Modeled Soil Moisture

Streamflow

Source: USGS







Click to enlarge and display legends

Current streamflow maps

Current Reservoir Storage

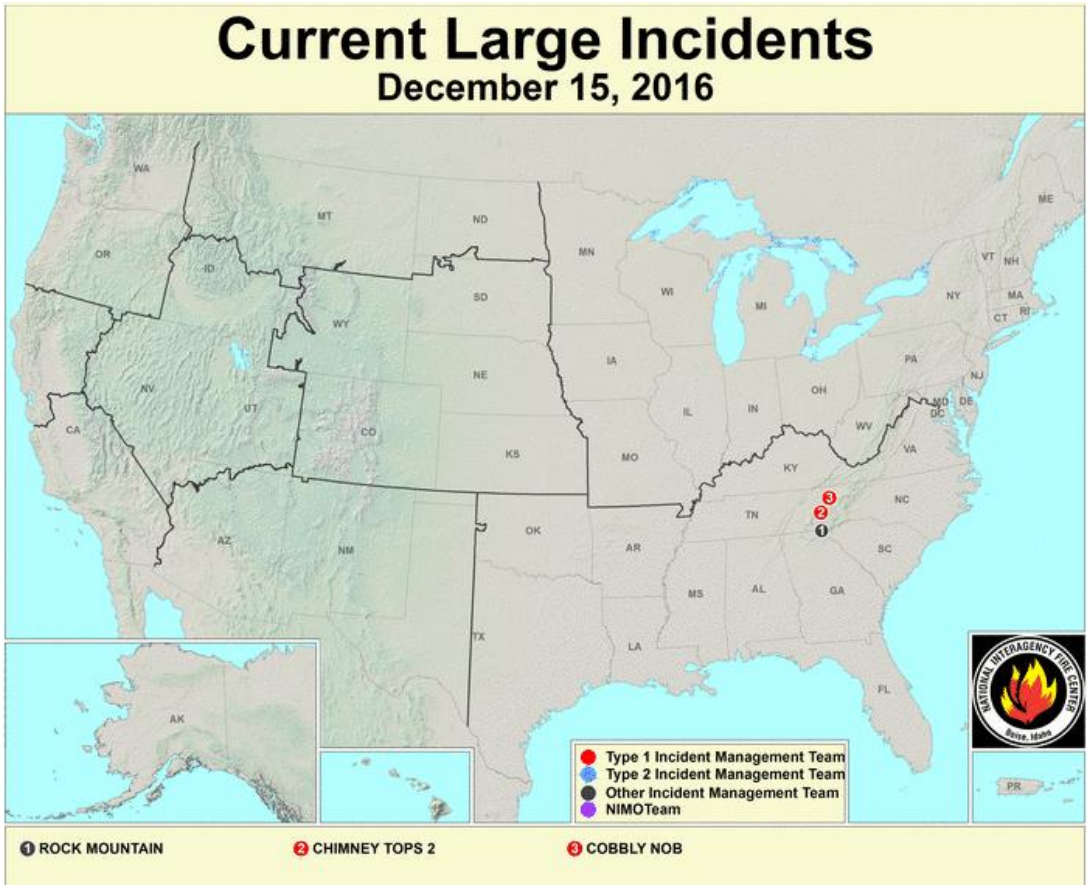
National Water and Climate Center Reservoir Data

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

California Reservoir Conditions

Wildfires: [USDA Forest Service Active Fire Mapping]



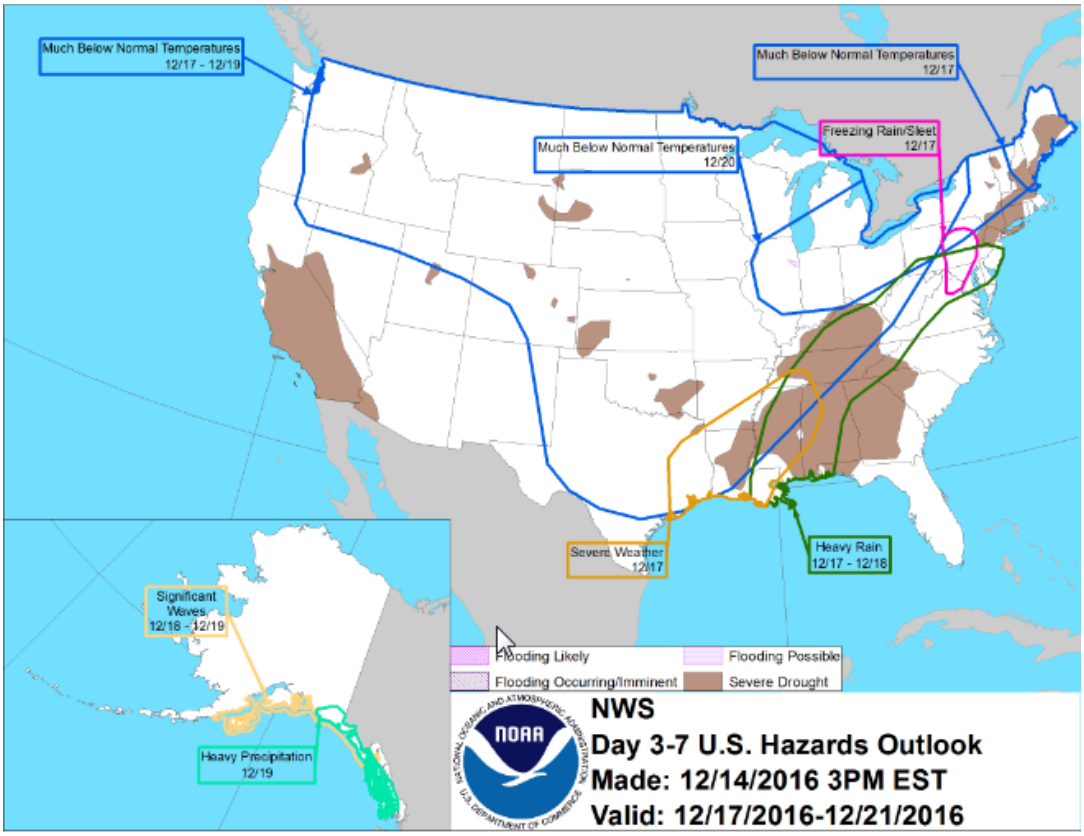
Short- and Long-Range Outlooks

Agricultural Weather Highlights

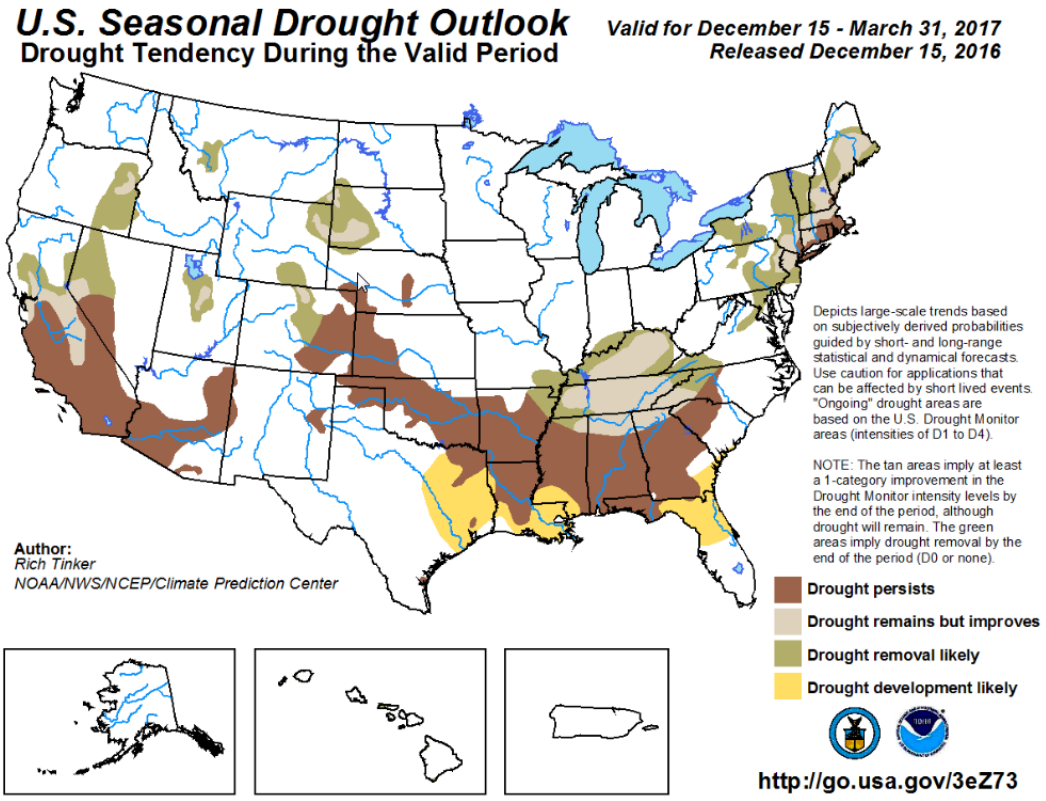
Author: Brad Rippey, Agricultural Meteorologist, USDA/OCE/WAOB

National Outlook, December 15, 2016**:** "For today, cold air will engulf the eastern half of the U.S., excluding the Deep South. Strong winds will accompany the cold blast, especially in the Great Lakes and Northeastern States—and snow squalls will continue downwind of the Great Lakes. Meanwhile, another surge of frigid air will push across the northern Plains and Northwest, and subsequently cover most of the nation. Weekend temperatures could locally plunge below -30°F from the northern Intermountain West into the far upper Midwest, and sub-zero temperatures can be expected on the central Plains. In addition, a sprawling winter storm will cross the U.S., interacting with the cold air to result in heavy snow, starting today from the Sierra Nevada to the northern Intermountain West. Storm-total precipitation could reach 4 to 8 inches in the Sierra Nevada and 1 to 4 inches across the Intermountain West. On Friday, snow will quickly spread across portions of the northern Plains and into the Great Lakes region. Wintry precipitation will reach the Northeast on Friday night and Saturday. Meanwhile, showers and thunderstorms could result in Southeastern rainfall totals of 1 to 2 inches. The NWS 6- to 10-day outlook for December 20 – 24 calls for a return to warmer-than-normal weather in many areas from the Mississippi River eastward, while near- to below-normal temperatures will persist from the Pacific Coast to the High Plains. Meanwhile, wetter-than-normal conditions across the South and Pacific Northwest will contrast with near- to below-normal precipitation in other areas, with the greatest likelihood of dry weather stretching from central and southern California into the upper Midwest."

NWS Climate Prediction Center [Weather Hazard Outlook: December 17-21, 2016]

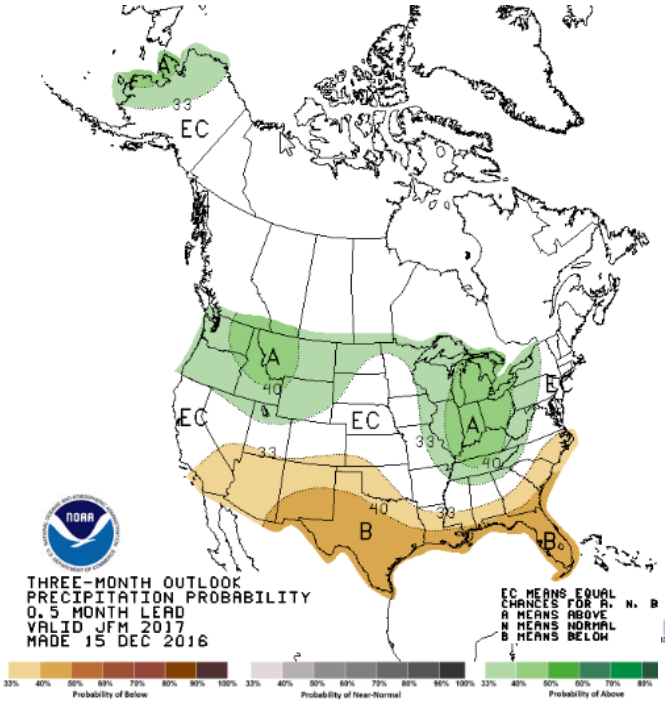


Seasonal Drought Outlook: [December 15, 2016 – March 31, 2017]



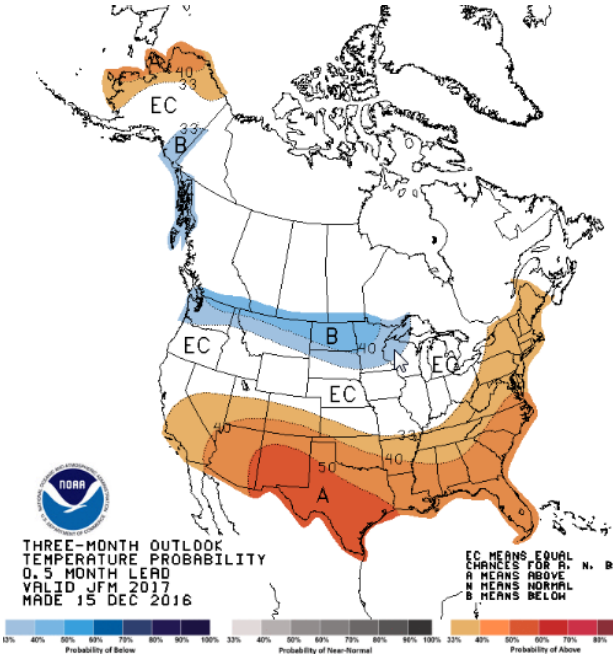
NWS Climate Prediction Center 3-Month Outlook

Precipitation



January-February-March (JFM) 2017 precipitation outlook summary

Temperature



January-February-March (JFM) 2017 temperature outlook summary

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.