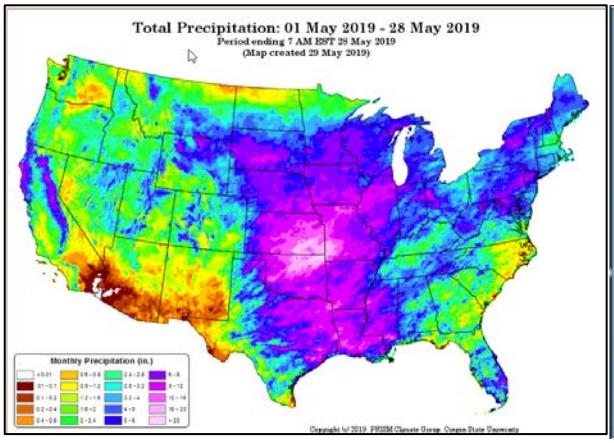
United States Department of Agriculture

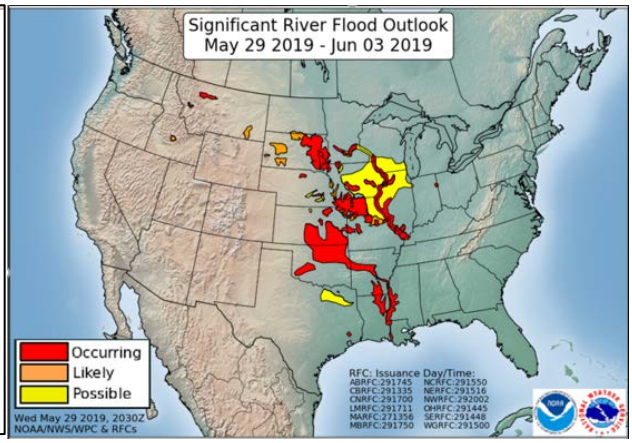
Water and Climate Update

May 30, 2019

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.

Severe weather, tornadoes, and historic flooding prompt emergency declarations





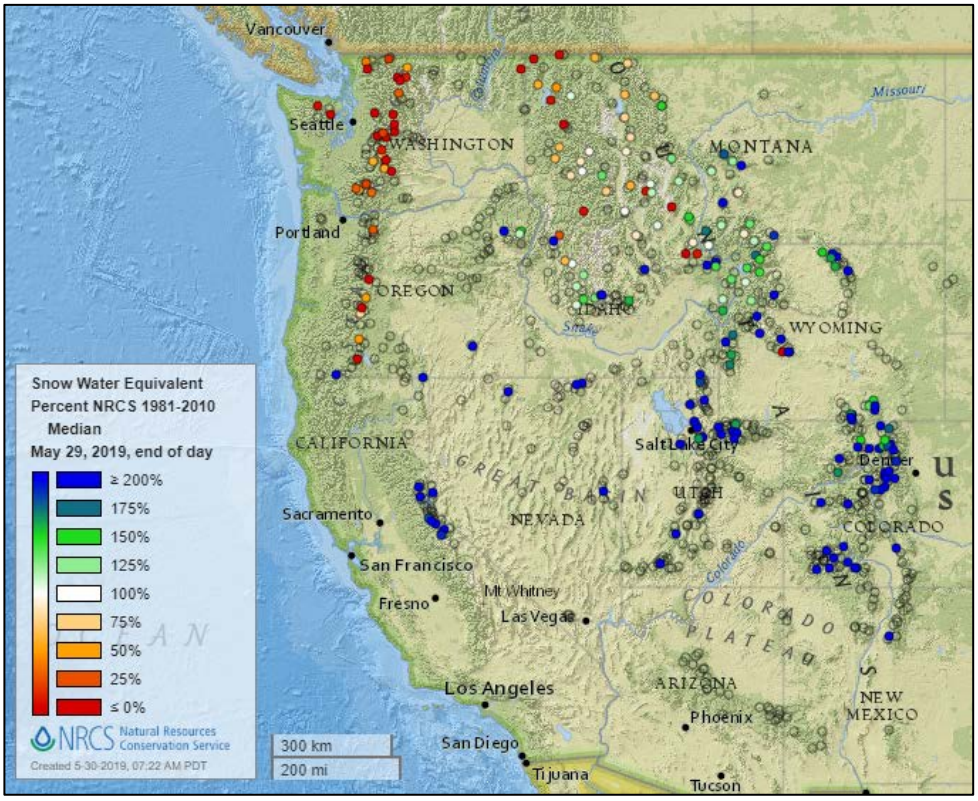
Major emergency declarations have been issued by the governors of Kansas, Oklahoma, Missouri, and parts of other states. The stationary severe weather systems have delivered from 6 to over 20 inches of precipitation this month, shown in the purple and pink areas on the PRISM map at left. The outlook is for continued flooding across the Midwest and Plains, indicated in red on the map at right. Millions of people are in the path of the severe weather, and tens of thousands are without power with damage costs mounting. The catastrophic tornado damage is forecast to decrease by the weekend. However, flooding is expected to be a slow-moving disaster along many rivers.

Related:

Tornado touches down near Kansas City as severe weather prompts warnings as far east as New York City – The Tennessean (TN)
Tornado crushes parts of Kansas, and millions are still under a severe weather threat - CNN
Tornado, severe weather outbreak most 'prolonged stretch' in 8 years -- and here's why – Fox News
Dangerous floods leave Plains, Midwest 'at the mercy of Mother Nature' – NBC
Tornadoes Injure Dozens In Ohio And Indiana, Kill At Least One – Huffpost.com
'Slow-motion disaster' along Arkansas River: Every large community will see major flooding within 7-10 days – USA Today
Governor increases funding after flooding of 'historic magnitude'; tornado watch set for large part of state – Arkansas Democrat-Gazette (AR)
President grants emergency federal disaster declaration for Kansas counties – KAKE.com (KS)
President Trump Approves Governor Parson's Major Disaster Declaration for flooding in Missouri KFVS12 (MO)

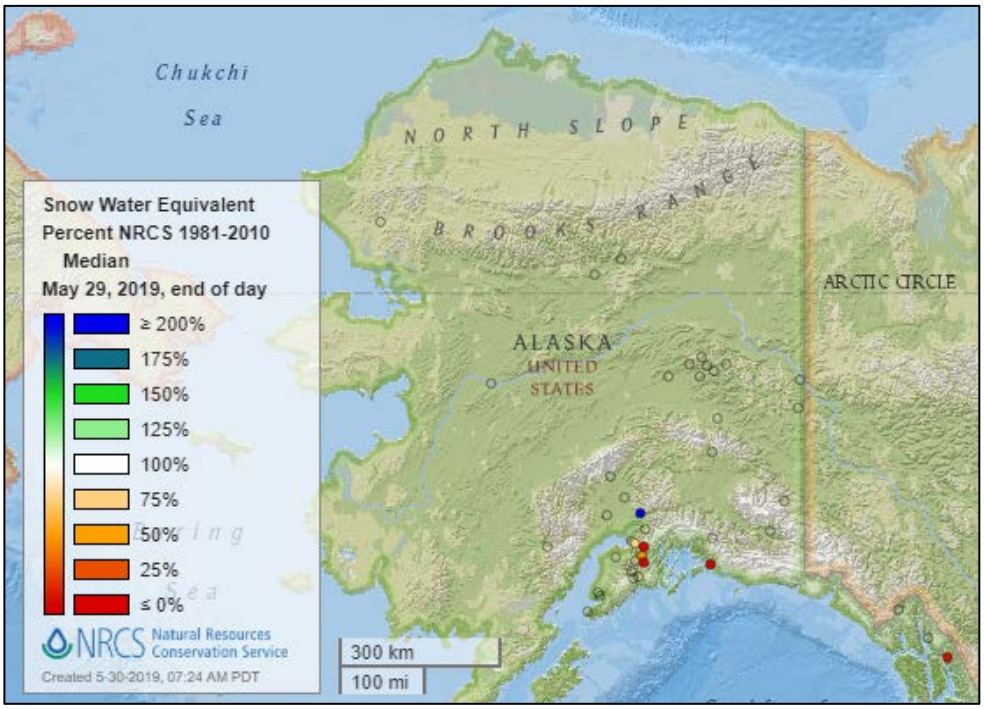
Snow

Current Snow Water Equivalent, NRCS SNOTEL Network



[Snow water equivalent percent of median map]

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

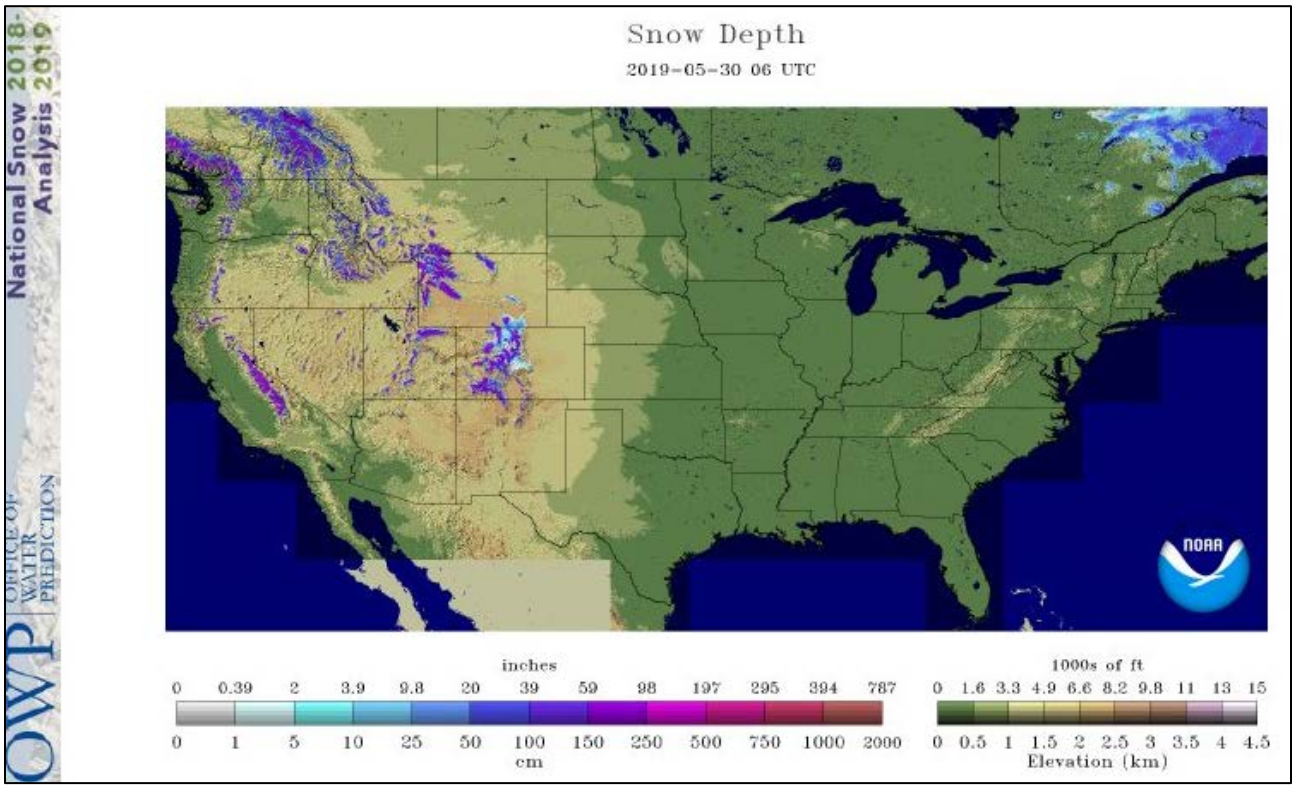


[Alaska snow water equivalent percent of median map]

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

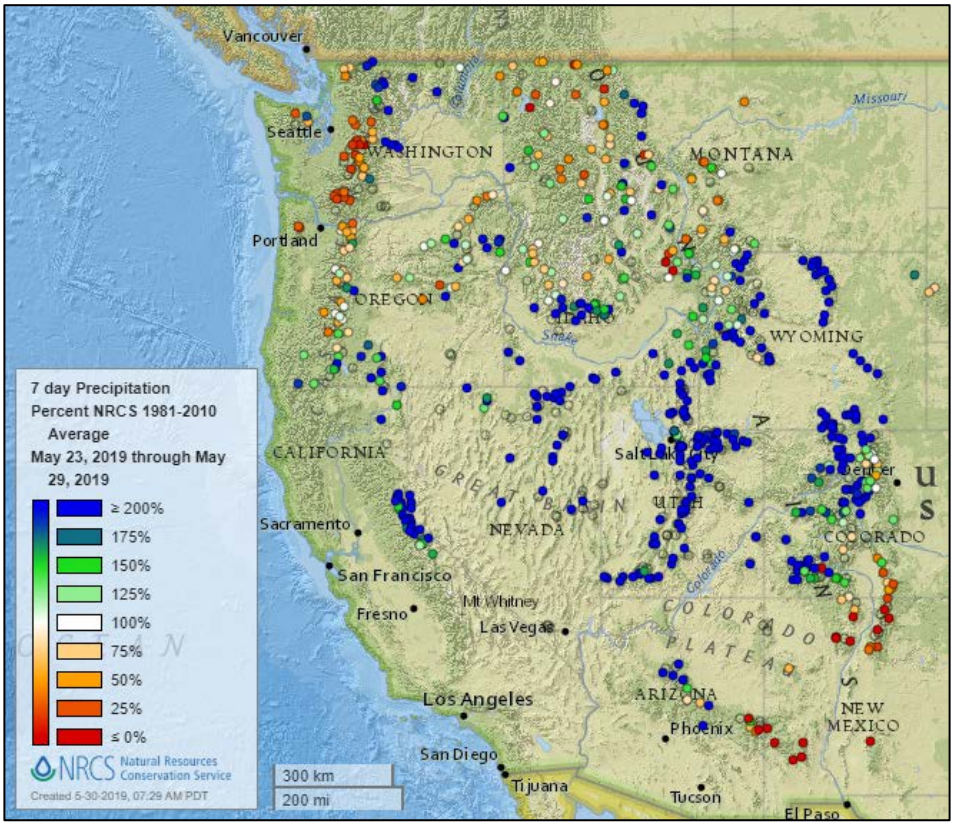
Current Snow Depth

Source: National Weather Service Snow Analysis



Precipitation

Last 7 Days, NRCS SNOTEL Network

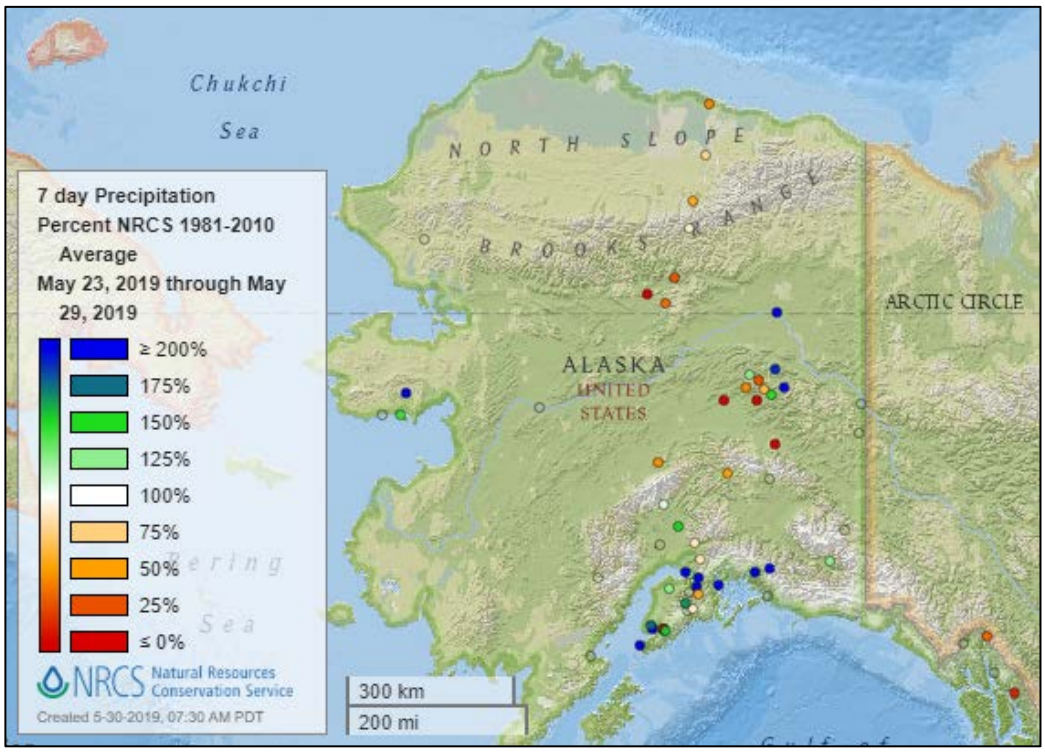


[7-day precipitation percent of average map]

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]

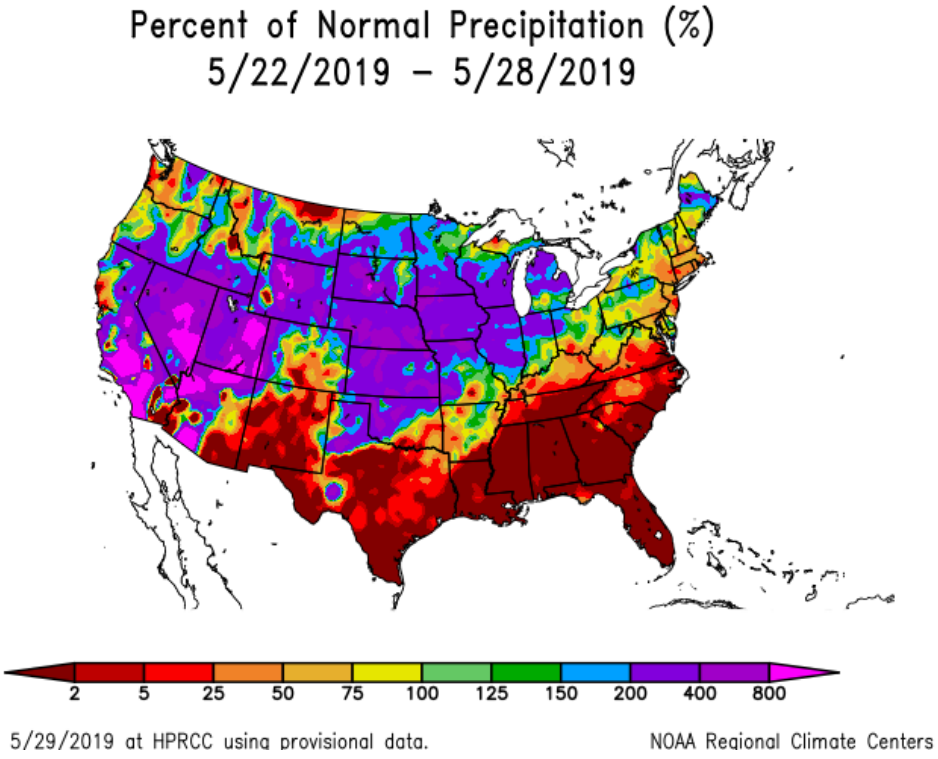


Last 7 Days, National Weather Service (NWS) Networks

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](#)

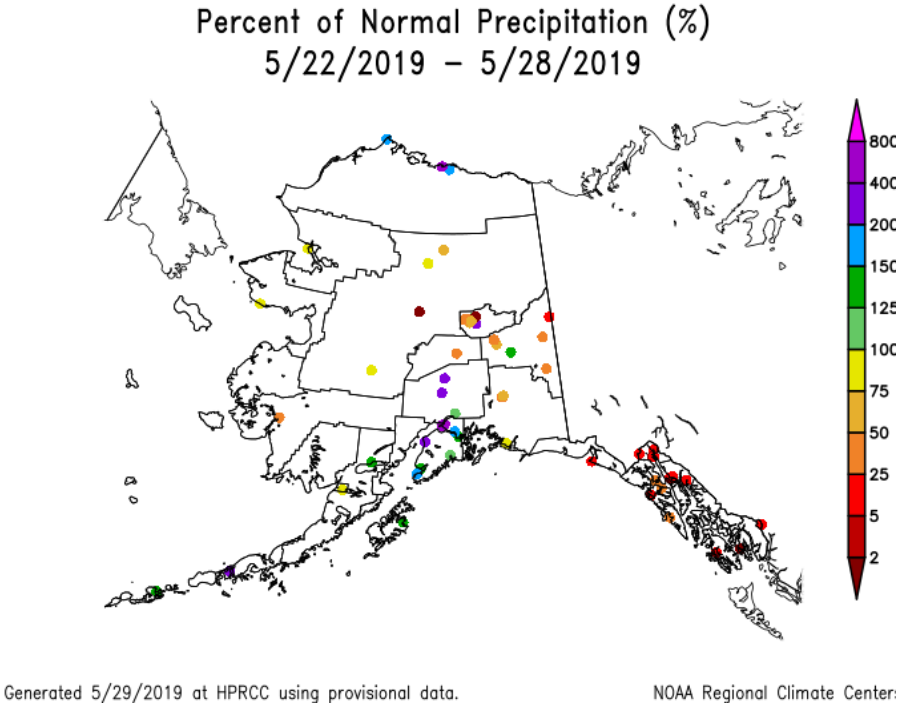


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

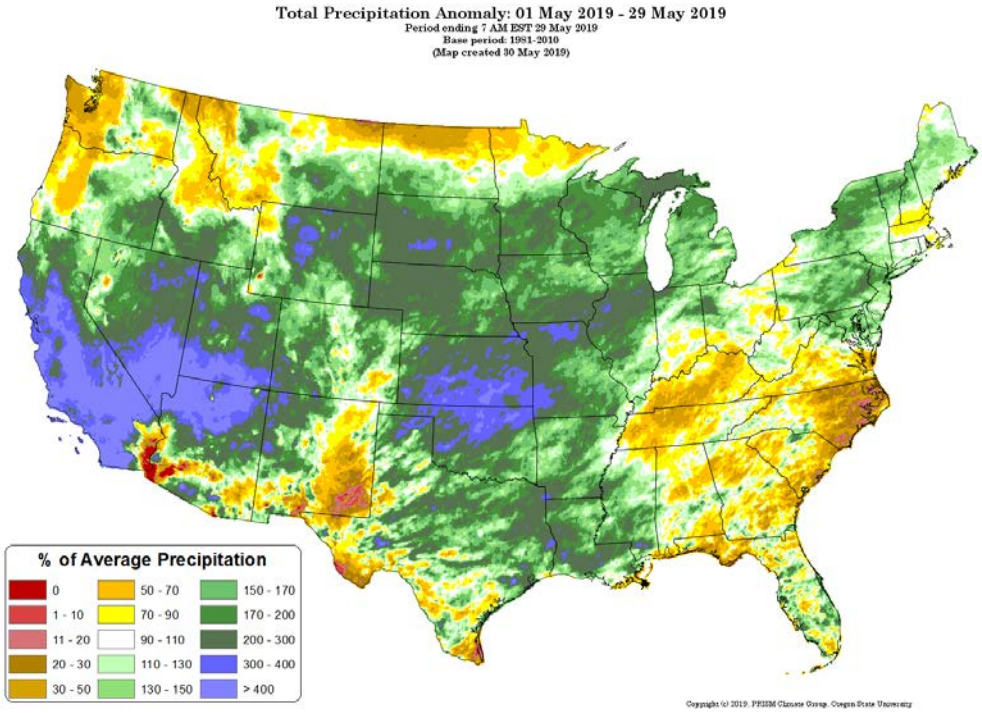
[7-day precipitation anomaly map](#) for Alaska.

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



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

Source: PRISM

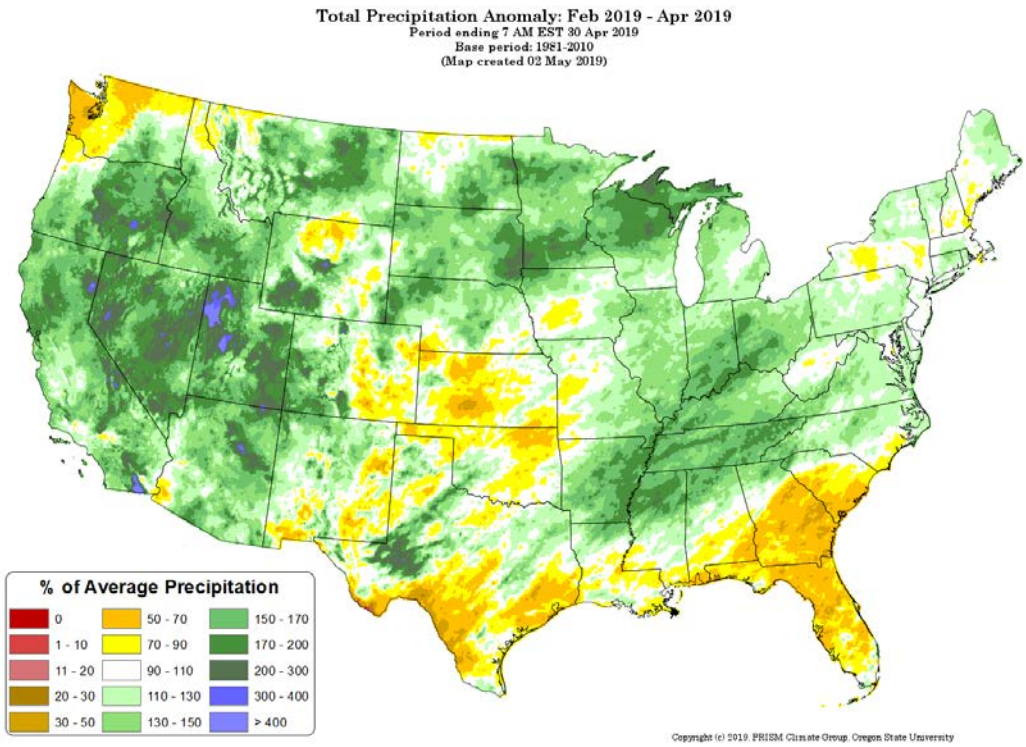


[Month-to-date national total precipitation percent of average map]

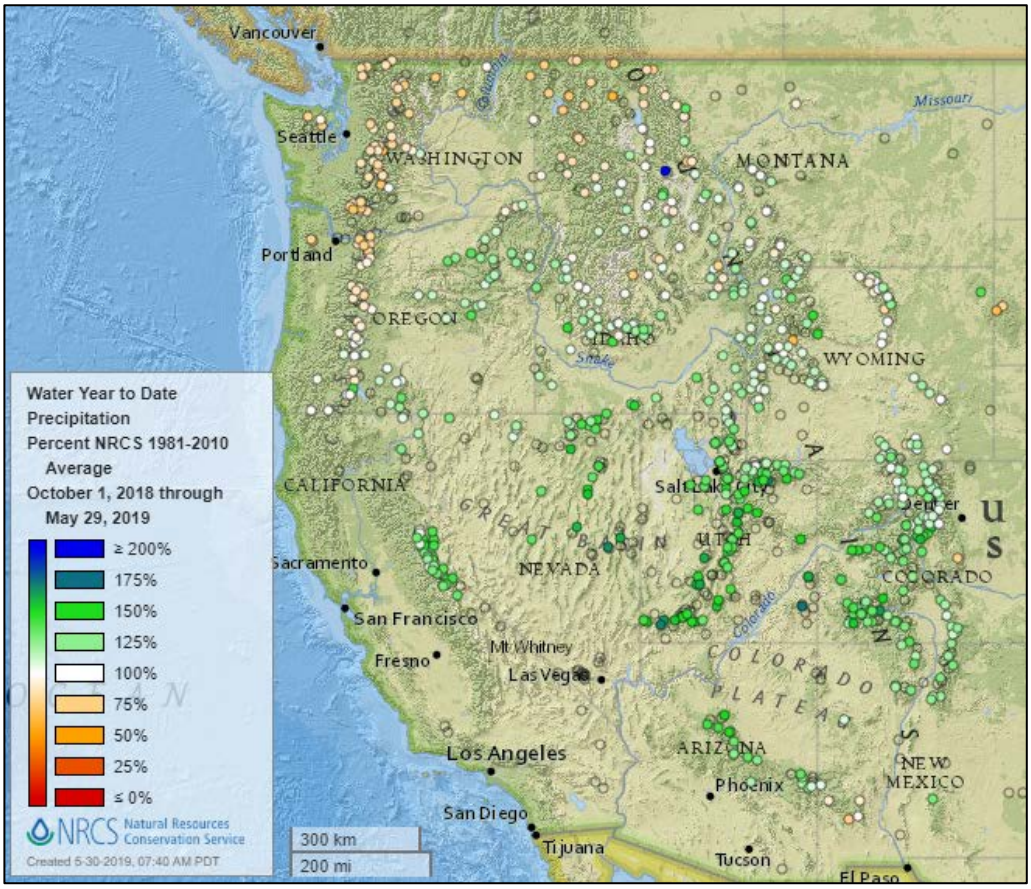
Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

[February through April 2019 total precipitation percent of average map]

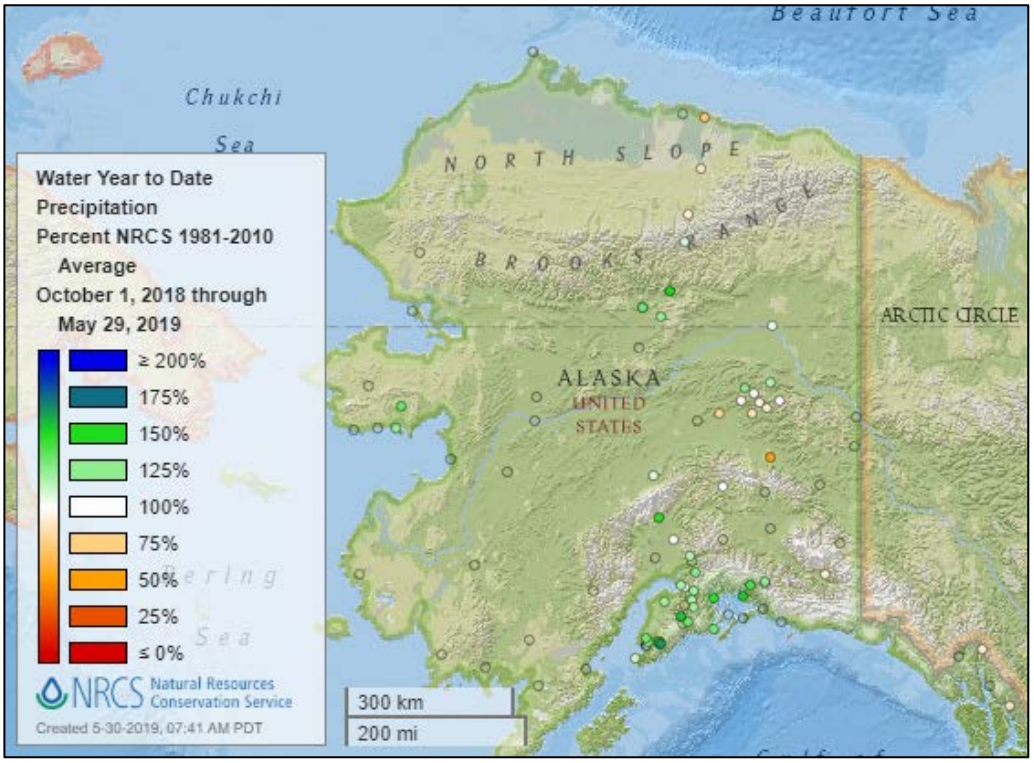


Water Year-to-Date, NRCS SNOTEL Network



[2019 water year-to-date precipitation percent of average map]

See also:
[2019 water year-to-date precipitation values (inches) map]



[Alaska 2019 water year-to-date precipitation percent of average map]

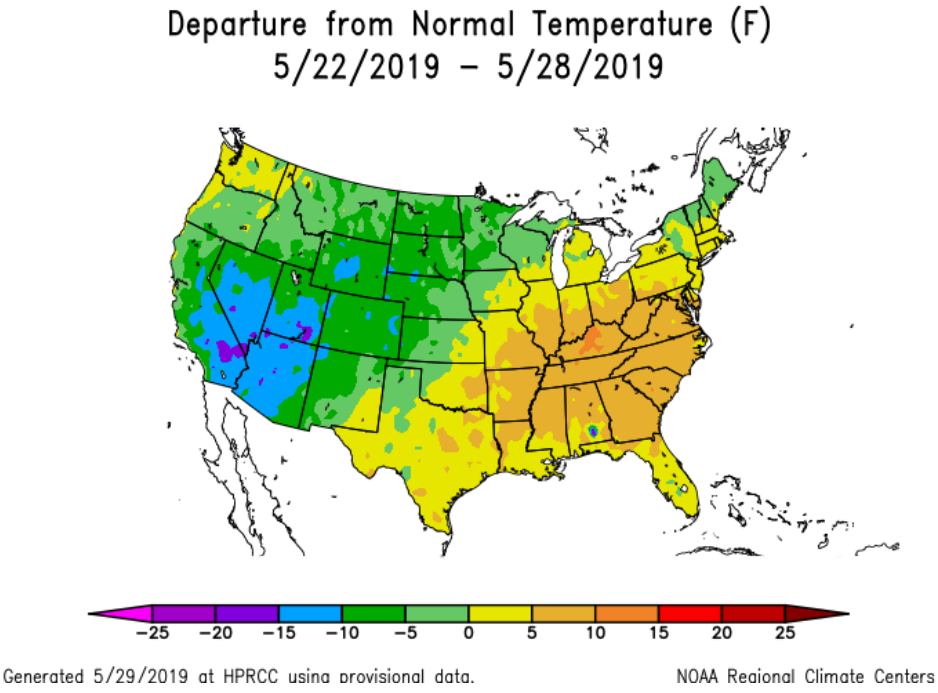
See also:
[Alaska 2019 water year-to-date precipitation values (inches) map]

Temperature

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

[7-day temperature anomaly map] for the contiguous U.S.

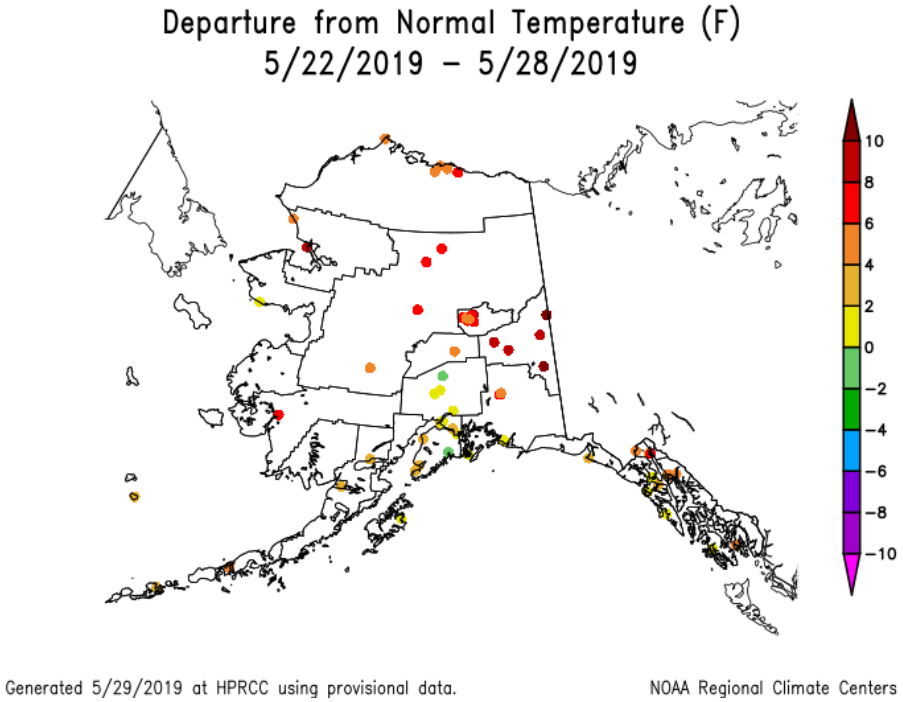
See also: [7-day temperature (° F) map]



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

[7-day temperature anomaly map] for Alaska.

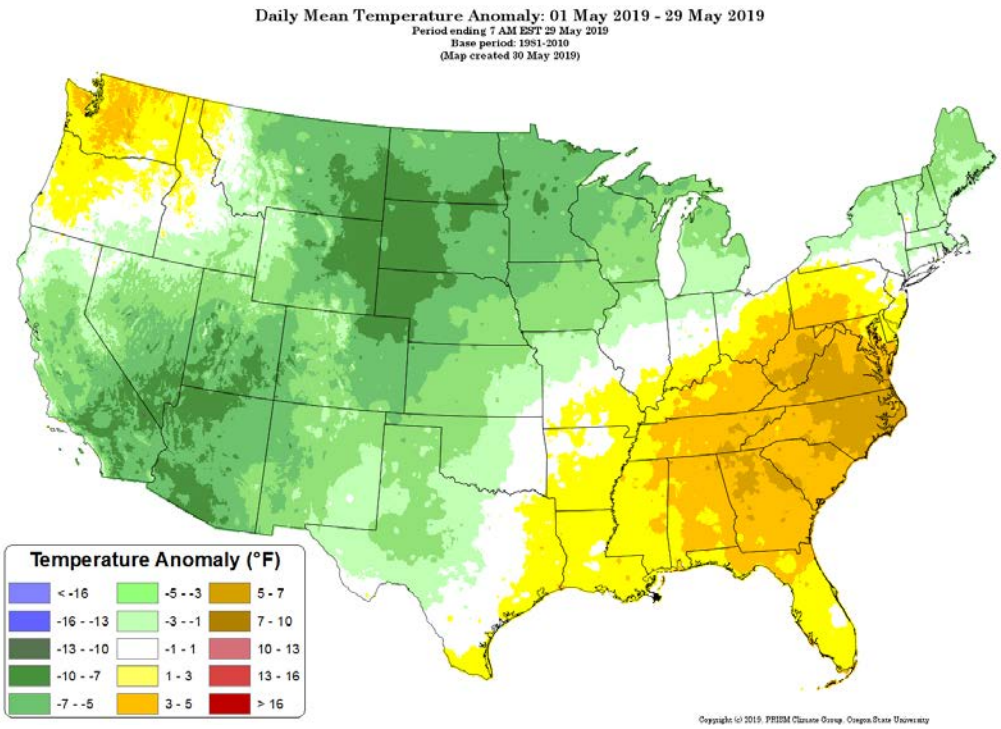
See also:
[7-day temperature (° F) map]



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

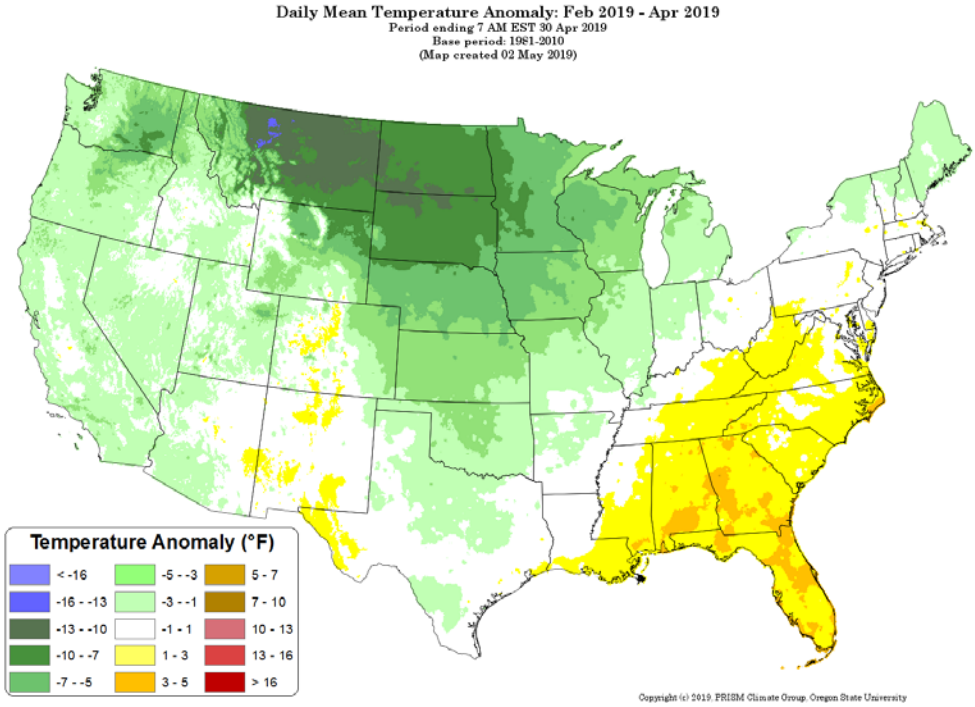
Source: PRISM

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



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

Source: PRISM



[February through April 2019 daily mean temperature anomaly map]

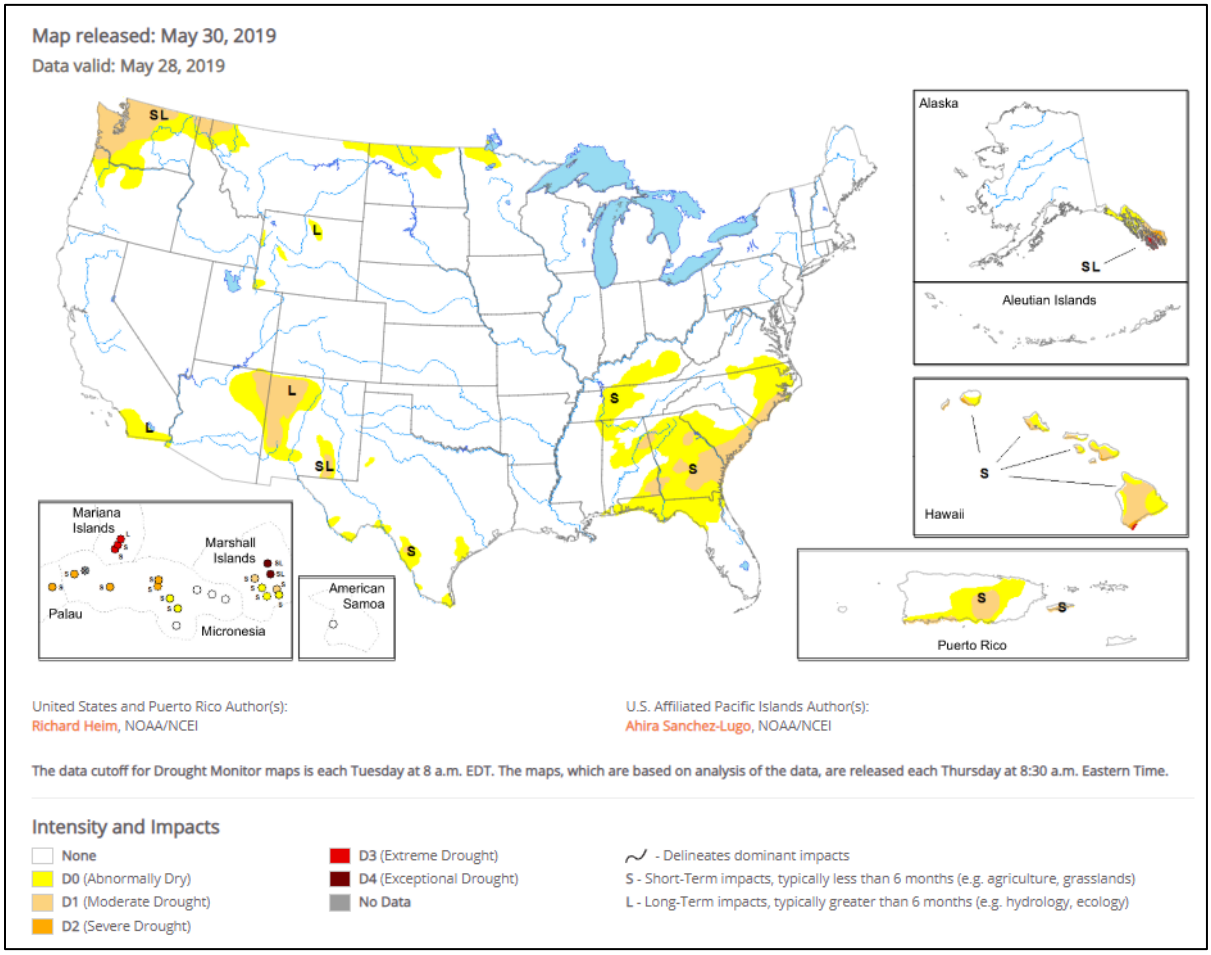
Drought

U.S. Drought Monitor

Source: National Drought Mitigation Center

U.S. Drought Portal

Source: NOAA



Current National Drought Summary, May 30, 2019

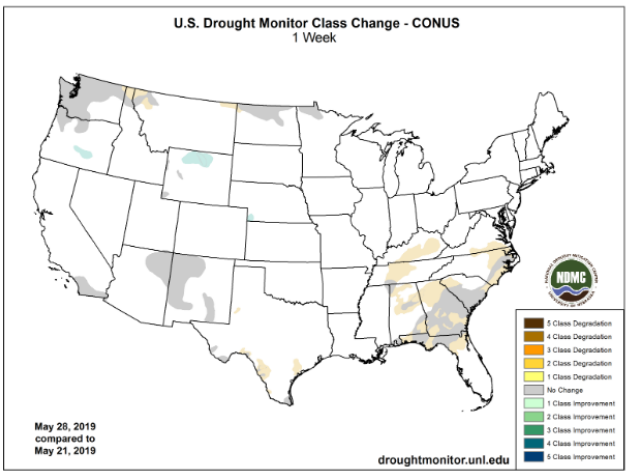
Source: National Drought Mitigation Center

"During this U.S. Drought Monitor (USDM) week, a strong high pressure ridge was anchored over the southeastern contiguous U.S. (CONUS) while an upper-level trough dominated the West. This pattern set up a southwesterly flow across the central part of the country, which funneled moist and unstable air from the Gulf of Mexico into the Plains. Pacific weather systems moving in the jet stream flow plunged into the western trough, bringing precipitation and cooler-than-normal temperatures to much of the country from the Rockies westward. The weather systems intensified as they moved into the Plains, triggering another week of severe weather and heavy flooding rains. Two or more inches of precipitation occurred across the Plains to Midwest and in upslope areas of Montana and Wyoming, with locally 5 inches or more. Weekly precipitation was wetter than normal across much of the Southwest, and from much of the Great Plains to Great Lakes. Half an inch to locally 2 inches was observed from the central Appalachians to New England, but these amounts were mostly below normal. The week ended up drier than normal across western Washington, northern Idaho and northern Montana, southern Arizona, most of New Mexico, and central to southern Texas. The subtropical high kept the Southeast drier and warmer than normal, with record high temperatures reported. As a result of this weather pattern, drought contracted in Oregon, Wyoming, and the central Plains, but expanded in the northern Rockies, Texas, the Tennessee Valley, and the Southeast."

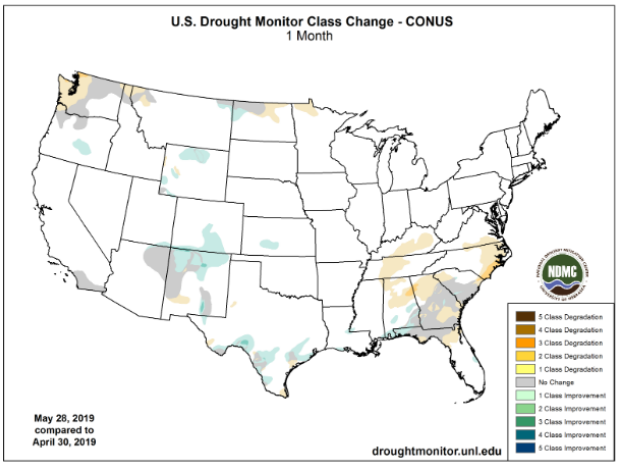
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

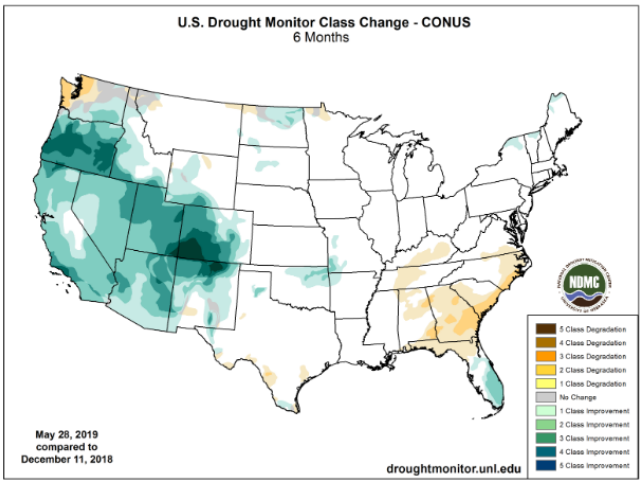
1 Week



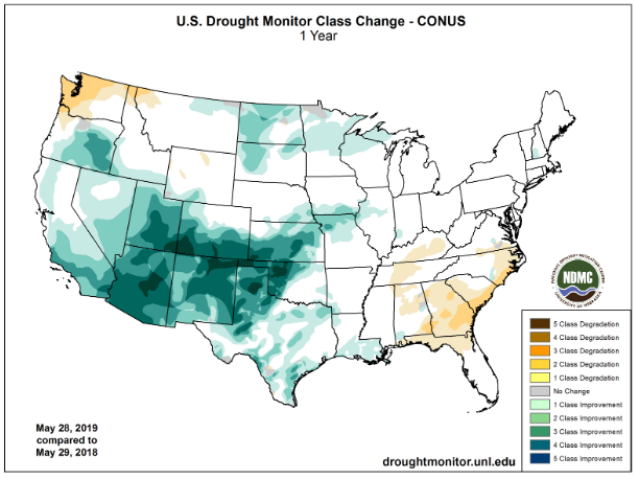
1 Month



6 Months



1 Year



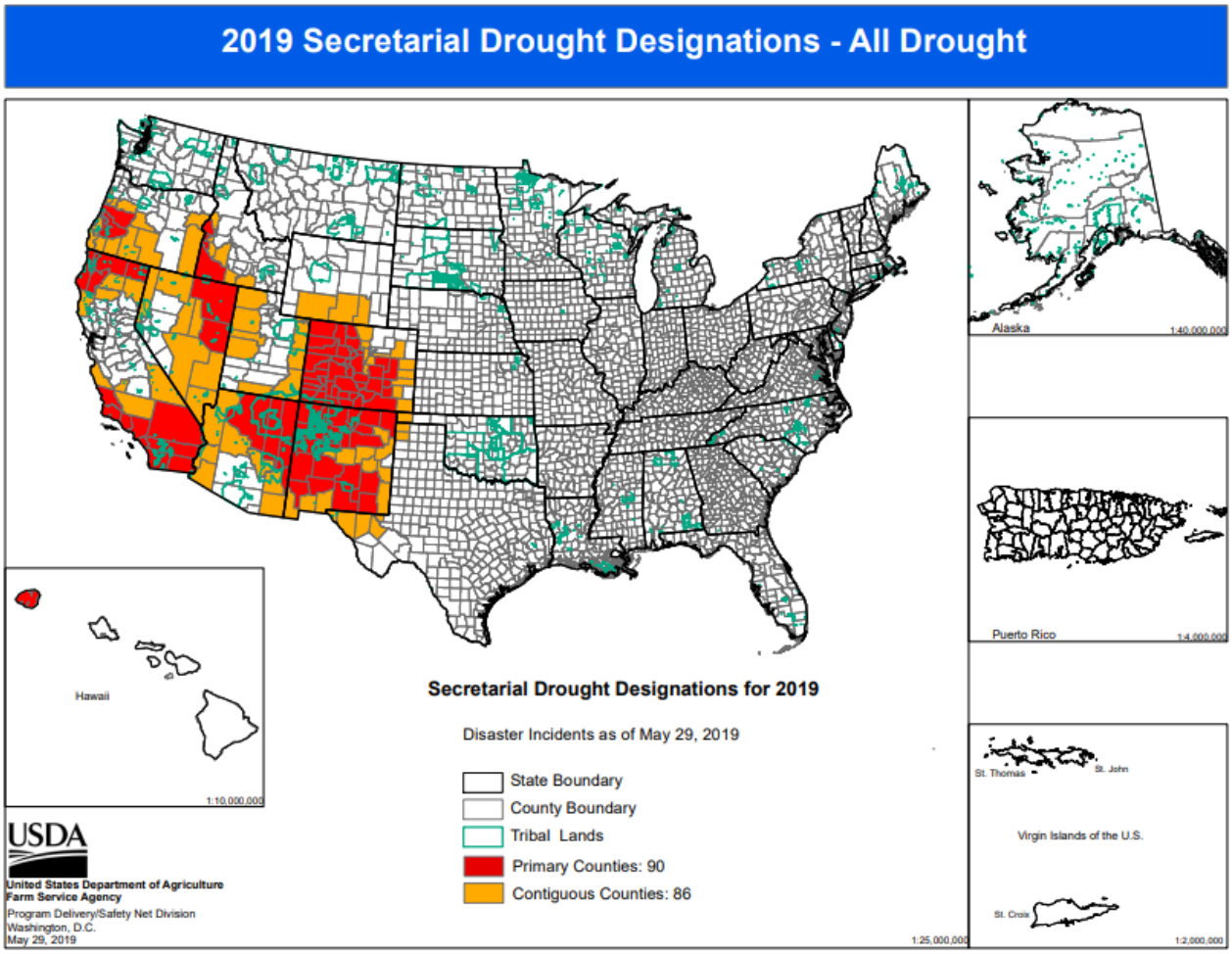
Changes in drought conditions over the last 12 months for the contiguous U.S.

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

Secretarial Drought Designations

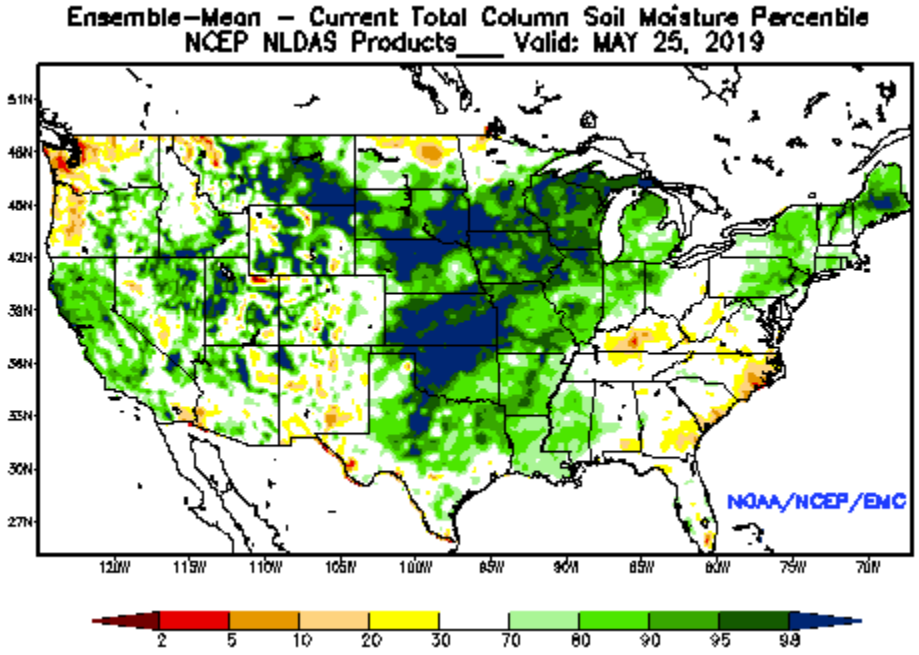
Source: USDA Farm Service Agency



Other Climatic and Water Supply Indicators

Soil Moisture

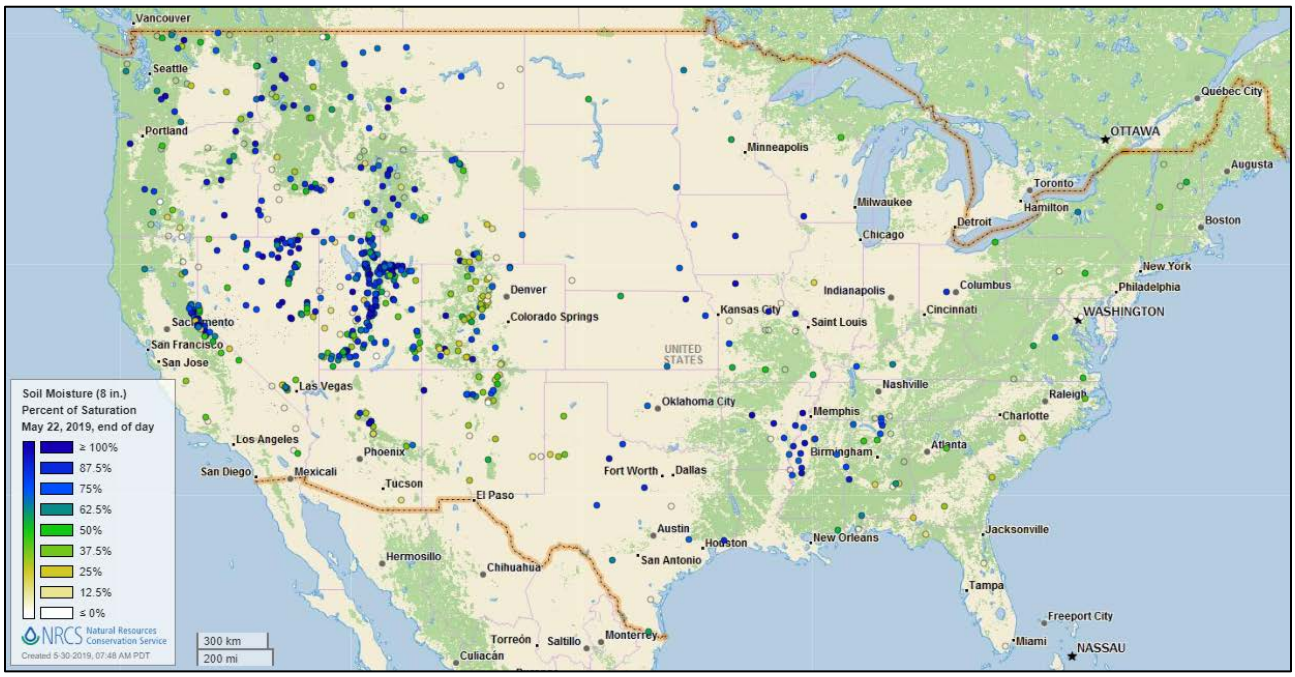
Source: NOAA National Centers for Environmental Prediction



Modeled soil moisture percentiles as of May 25, 2019

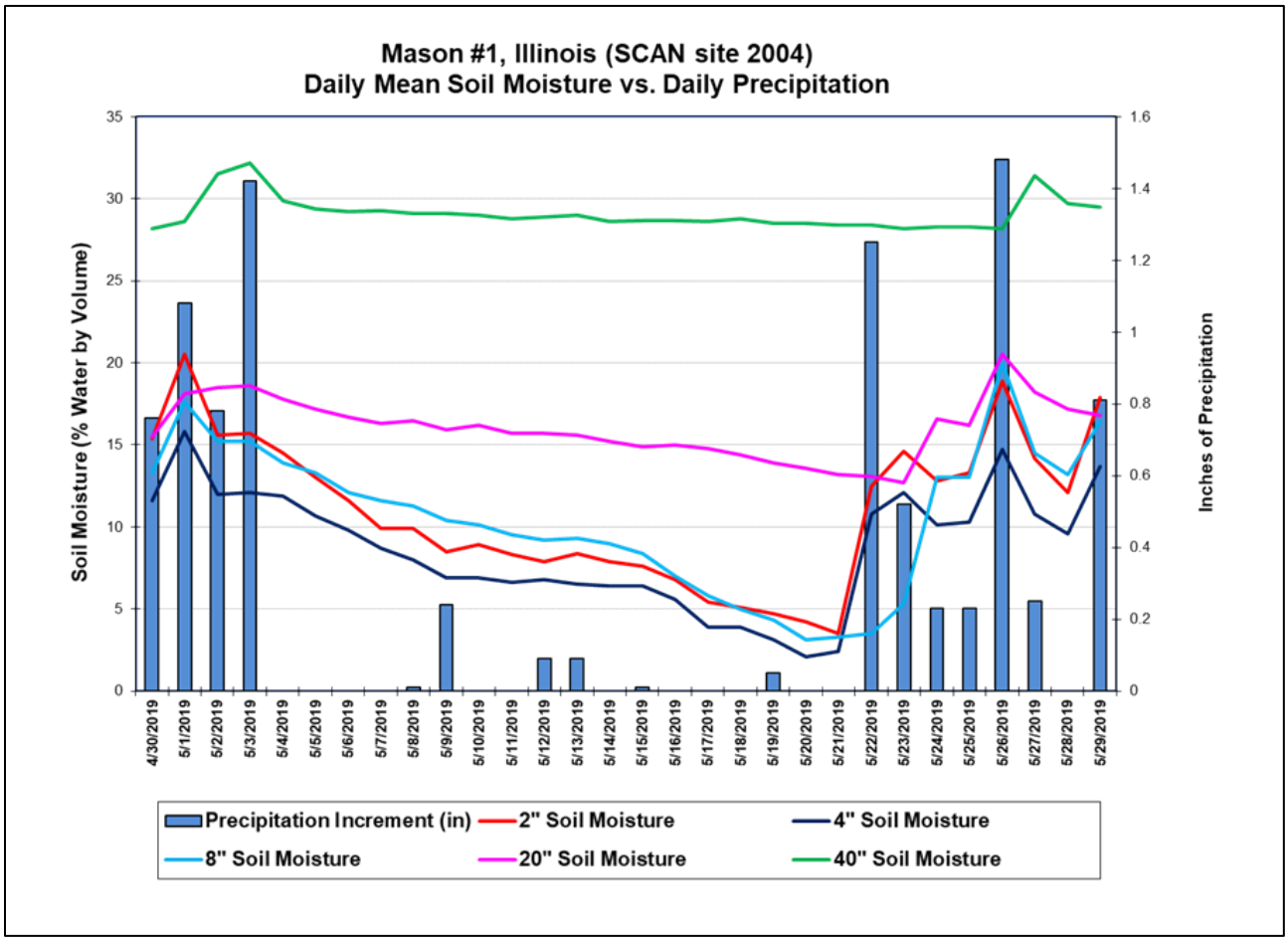
Soil Moisture Percent of Saturation

Source: NRCS SNOTEL and Soil Climate Analysis Network (SCAN)



Soil Moisture Data

Source: NRCS Soil Climate Analysis Network (SCAN)



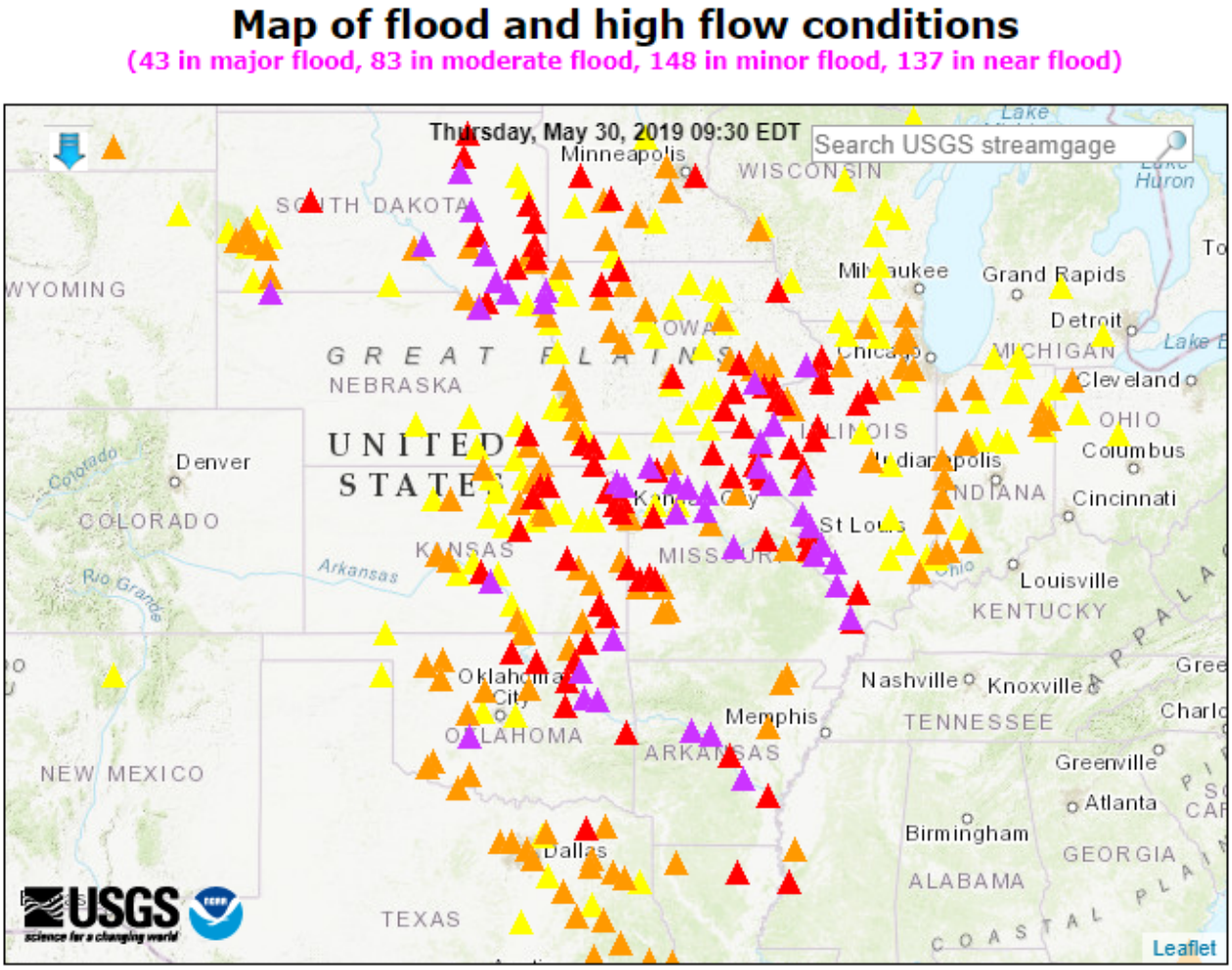
This graph shows the soil moisture and precipitation for the last 30 days at the Mason #1 SCAN site 2004 in Illinois. On 5/26/19, accumulated precipitation totaled 1.48 inches and soil moisture increased at the 2-, 4-, 8-, and 20-inch sensor levels. Soil moisture subsequently increased at the 40-inch sensor level on 5/27/19 after a delay in rainfall penetrating through the soil horizons.

Soil Moisture Data Portals

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

Streamflow, Drought, Flood, and Runoff

Source: U.S. Geological Survey



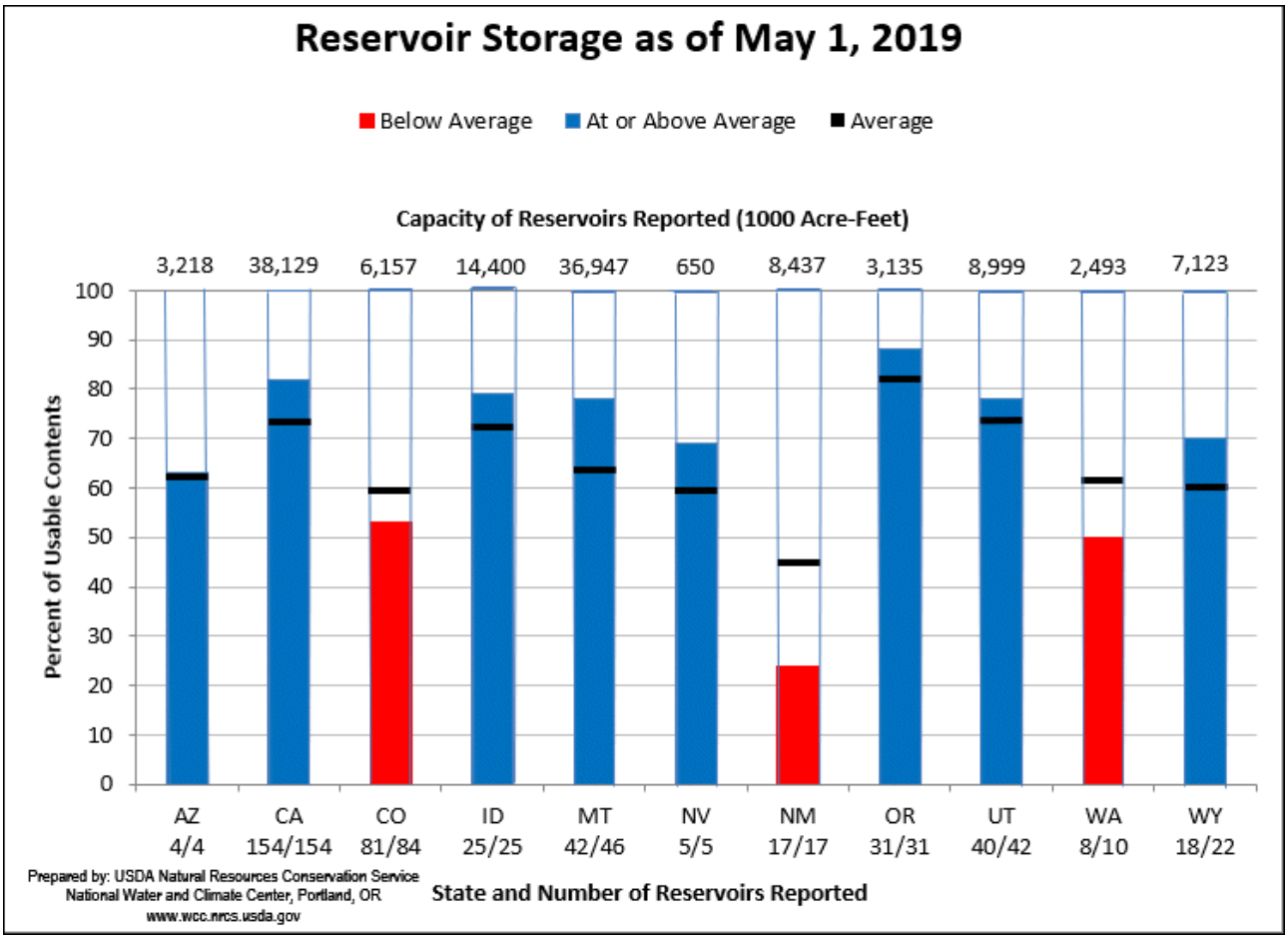
Explanation - Percentile classes						
<95	95-98	>= 99	Above action stage	Above flood stage	Above moderate flood stage	Above major flood stage
△ Streamgage with flood stage ○ Streamgage without flood stage						

[WaterWatch: Streamflow, drought, flood, and runoff conditions]

Reservoir Storage

Western States Reservoir Storage

Source: NRCS National Water and Climate Center



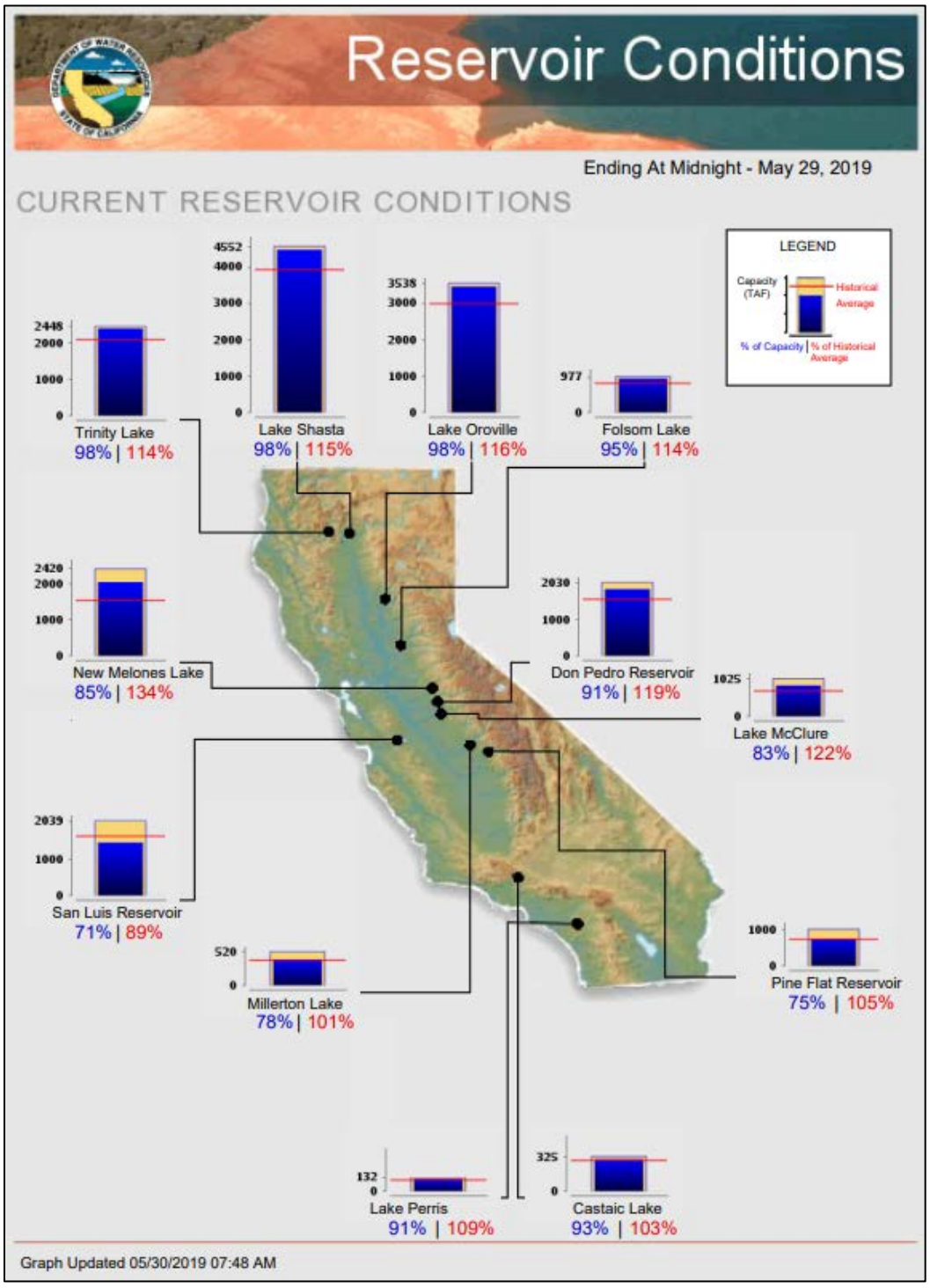
May 1, 2019 Reservoir Storage: Chart | Dataset

Hydromet Tea Cup Reservoir Depictions

Source: U.S. Bureau of Reclamation

- 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



Current California Reservoir Conditions

Short- and Long-Range Outlooks

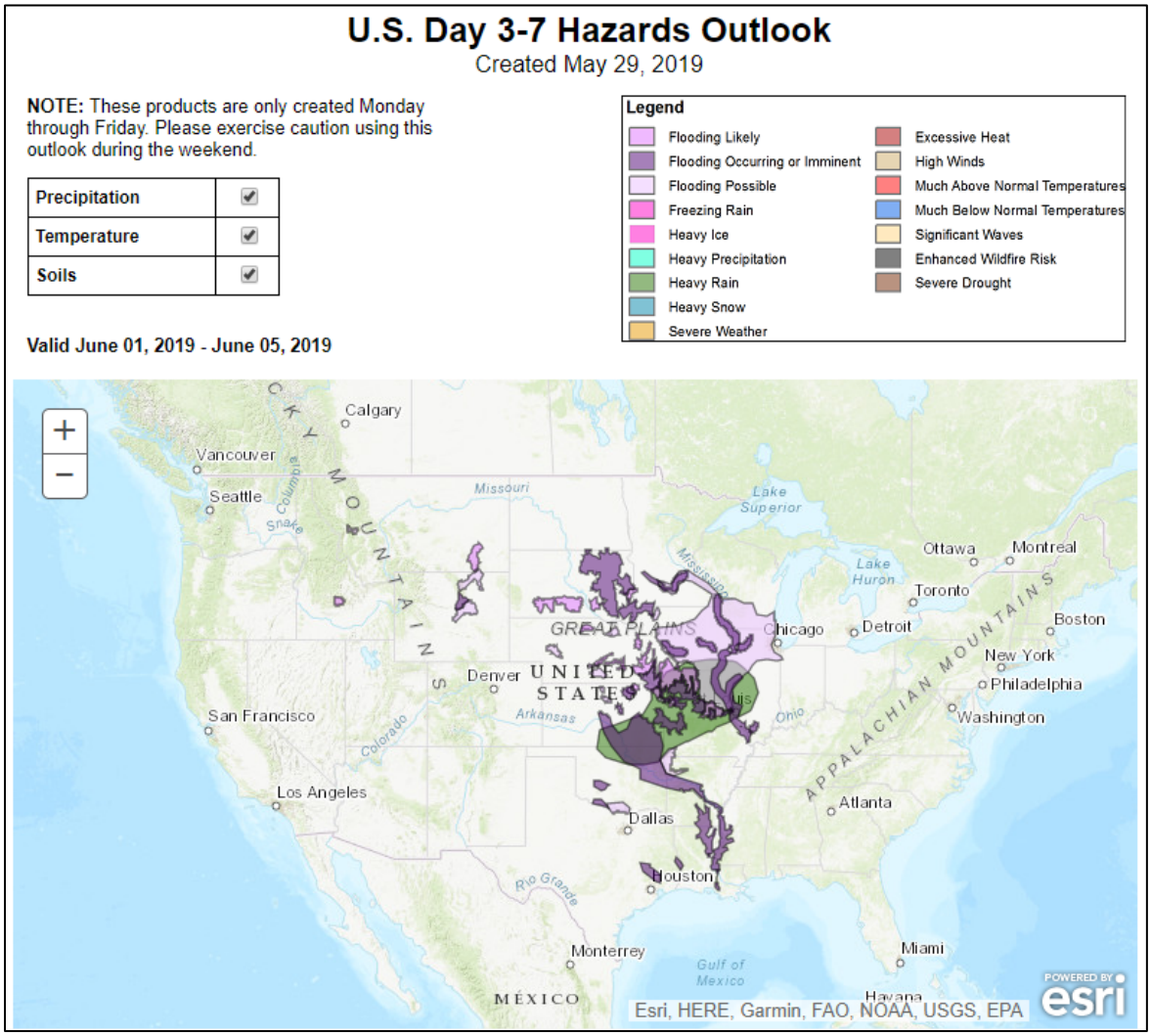
Agricultural Weather Highlights

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

National Outlook, Thursday, May 30, 2019: "The last storm in a 2-week series of significant weather systems will cross the southern and eastern U.S. during the next couple of days. However, following a brief lull in storminess across the Plains and Midwest, scattered showers and thunderstorms will return during the weekend. Although the weekend storminess could aggravate flood issues and will maintain a slow fieldwork pace in some areas, rainfall across the Plains and Midwest will be less intense and organized than previously observed. Five-day rainfall totals could reach 1 to 2 inches or more across the central and southern Plains and the Midwest. Elsewhere, hot, mostly dry weather will continue in the Southeast, while the West will experience a warming trend and lingering showers. The NWS 6- to 10-day outlook for June 4 – 8 calls for near- or above-normal temperatures and precipitation across much of the country. Cooler-than-normal conditions will be limited to the southern Rockies, the Pacific Northwest, and from the lower Great Lakes region into New England. Drier-than-normal weather should be confined to parts of the Great Lakes region and from the Pacific Northwest to the northern High Plains."

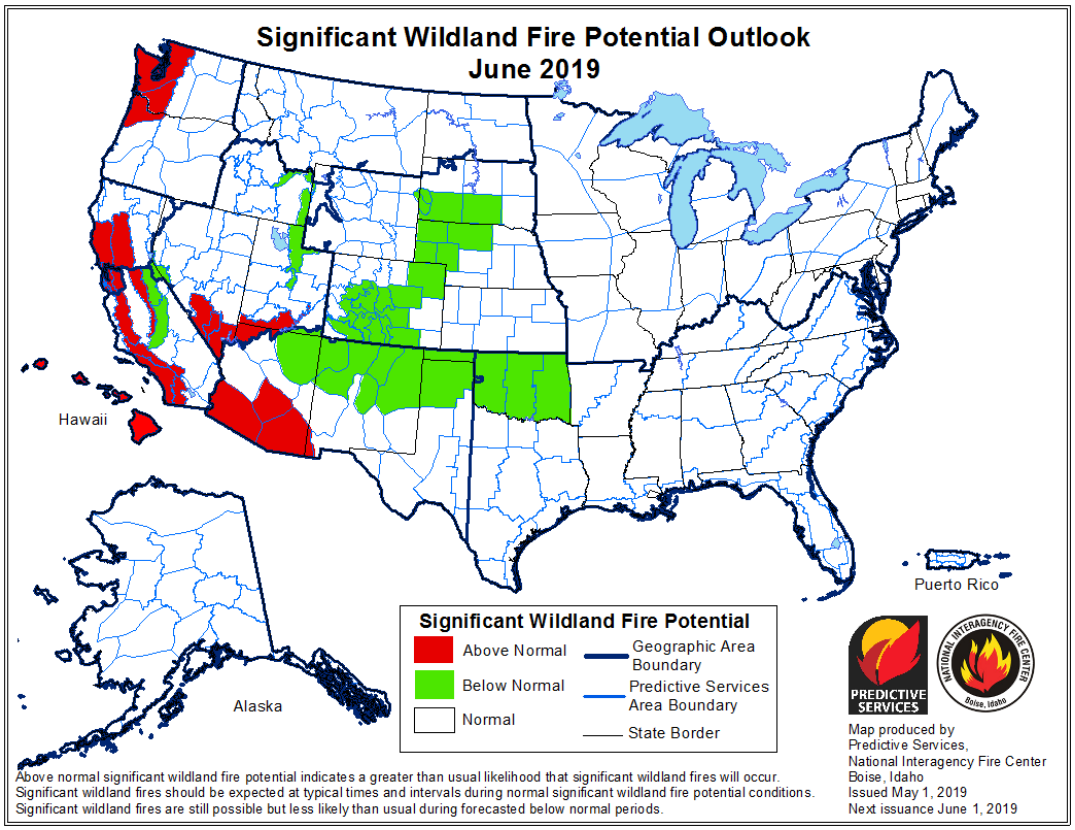
Weather Hazards Outlook: June 1 – June 5, 2019

Source: NOAA Climate Prediction Center



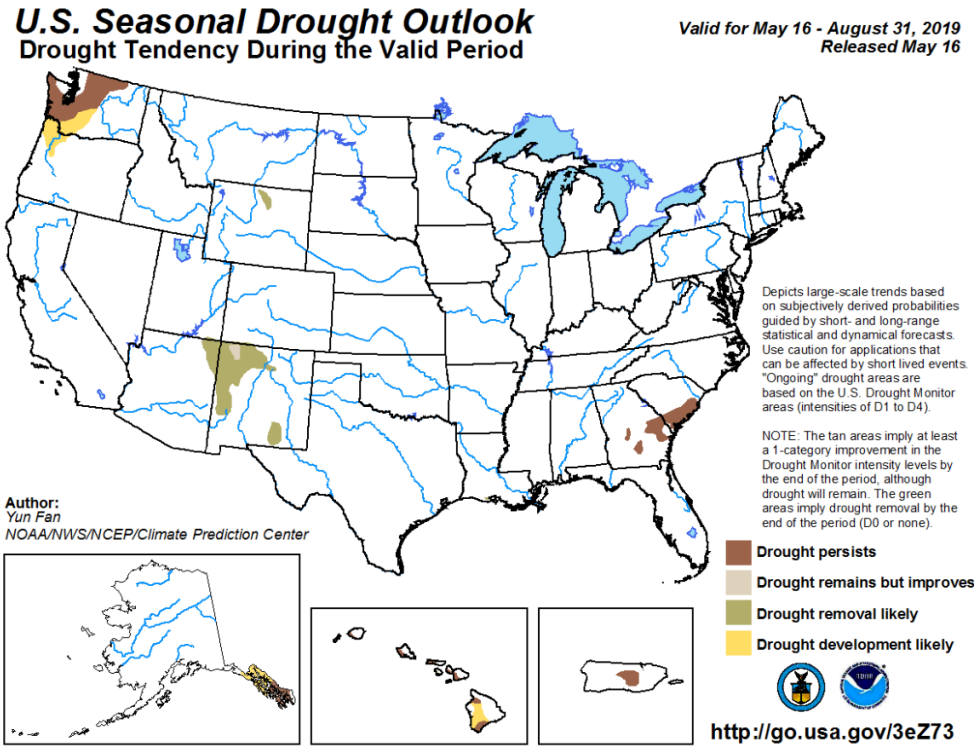
Significant Wildland Fire Potential Outlook

Source: National Interagency Fire Center



Seasonal Drought Outlook: May 16 – August 31, 2019

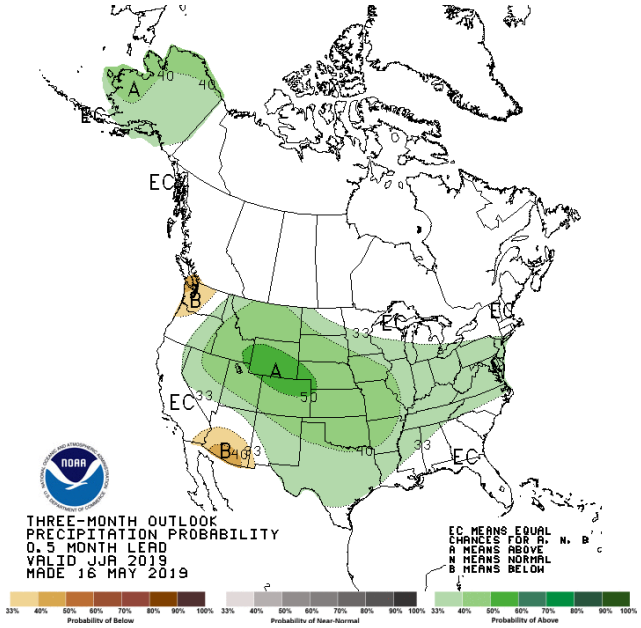
Source: National Weather Service



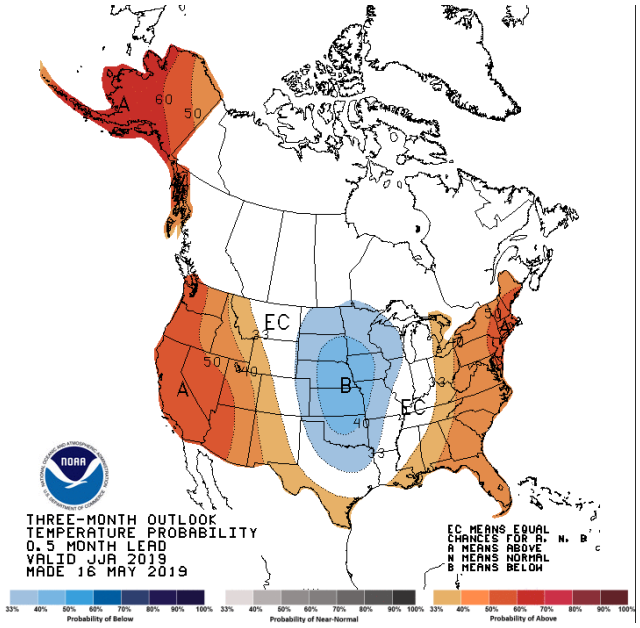
Climate Prediction Center 3-Month Outlook

Source: National Weather Service

Precipitation



Temperature



June-July-August (JJA) 2019 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.