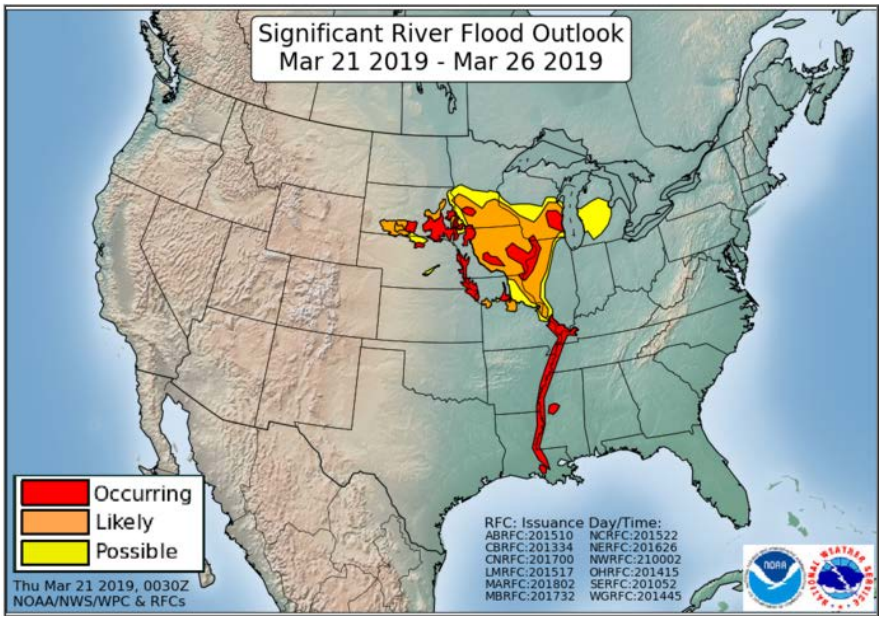
United States Department of Agriculture

Water and Climate Update

March 21, 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.

Wettest winter on record, widespread Midwest flooding



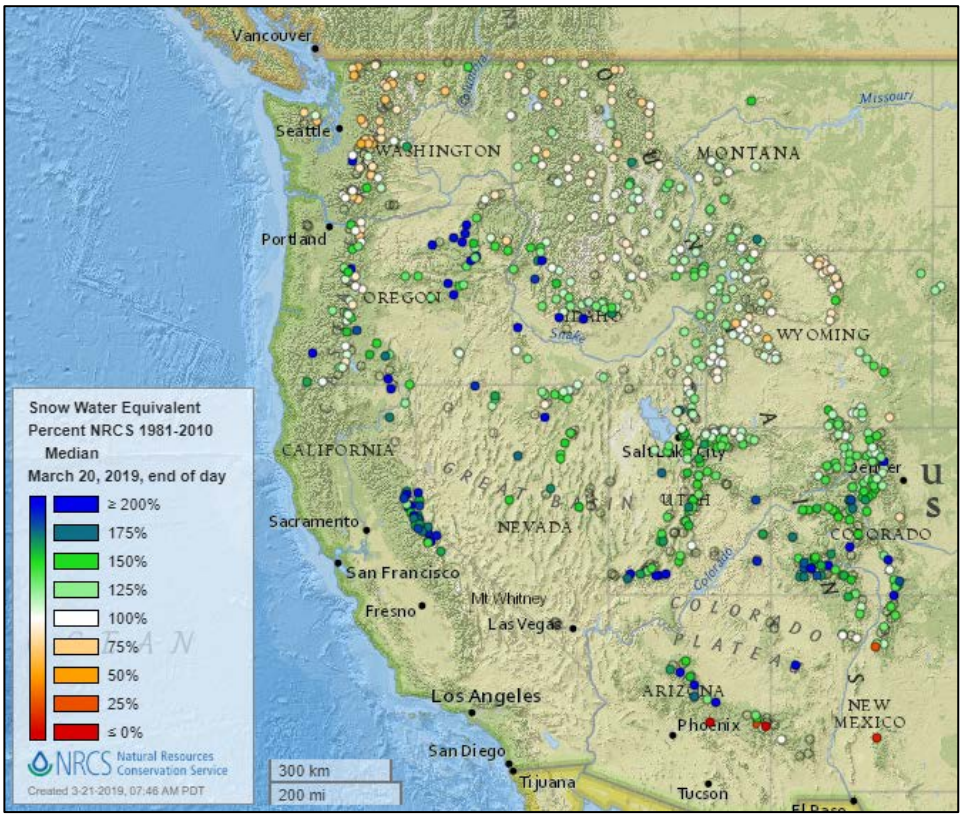
The winter of 2018-19 was the wettest ever for the U.S. Record-setting snow fell in the West and upper Midwest, culminating in the second-wettest February on record. Meanwhile, steady rainstorms crossed the Midwest with 19 states having a top 10 wettest February and Tennessee having the wettest February on record. The heavy rain from the recent Bomb Cyclone, coupled with melting snow, caused massive flooding across the region. Rapidly rising floodwaters have inundated towns and agricultural lands, leading to widespread evacuations and limited access to many disaster areas. The National Weather Service has forecast that the spring flooding could be worse than the historic floods of 1993 and 2011.

Related:

U.S. records wettest winter capped by a cooler, wetter February 2019 - NOAA
US Just Sloshed Through the Wettest Winter on Record – U.S. News and World Report
Nebraska governor calls flooding "most widespread destruction we've ever seen in our state's history" – CBS News
'It looked like an ocean': Severe Midwest flooding could last all spring – USA Today
Floodwaters threaten millions in crop and livestock losses – KCTV5 News (MO)
U.S. farmers face devastation following Midwest floods – Reuters
Forecasters: 'Potentially historic' flooding threatens South – MSN.com
NOAA: Historic, widespread flooding will continue through May – WCPO (OH)

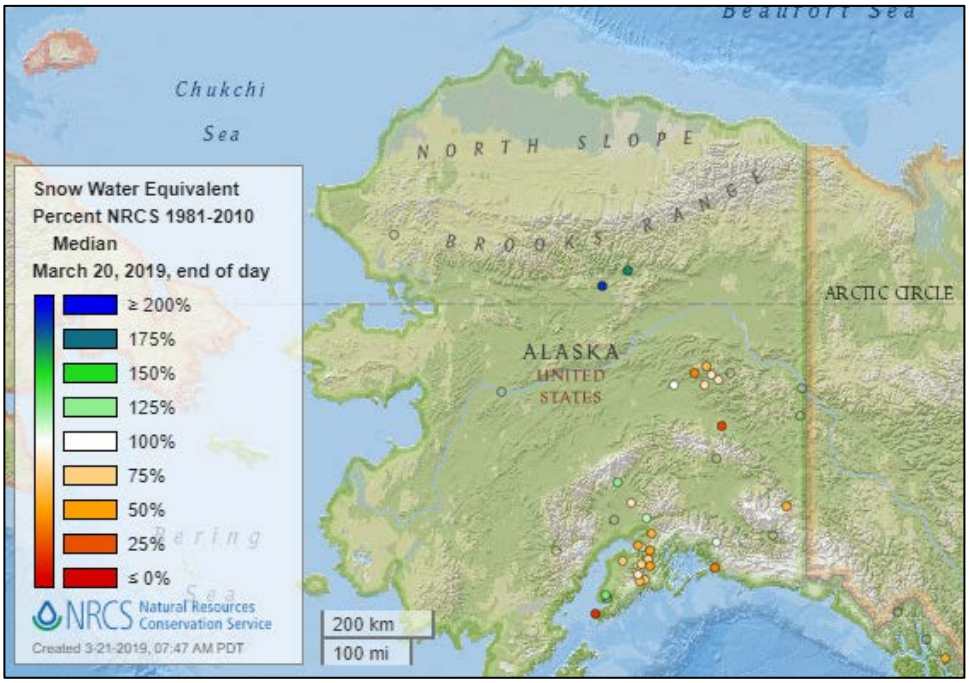
Snow

Current Snow Water Equivalent, NRCS SNOTEL Network



[Snow water equivalent percent of median map]

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

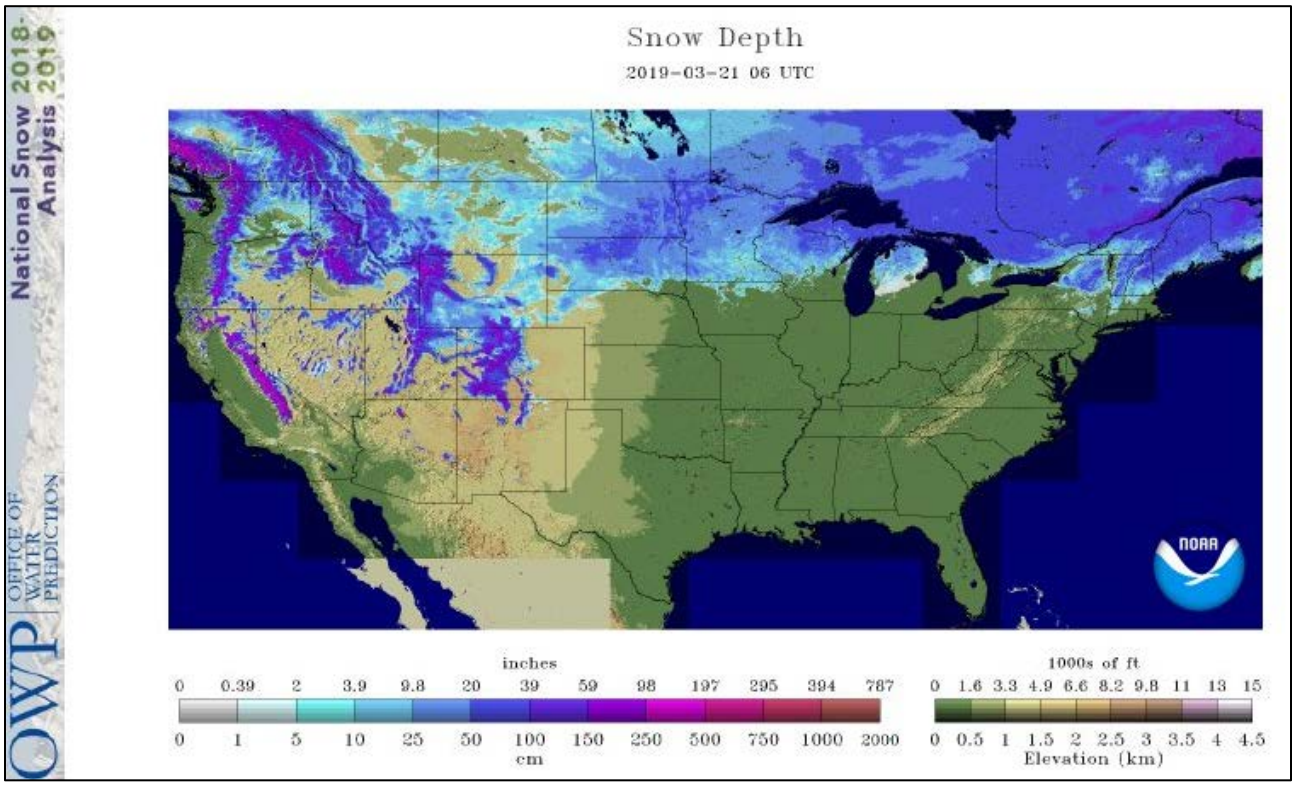


[Alaska snow water equivalent percent of median map]

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

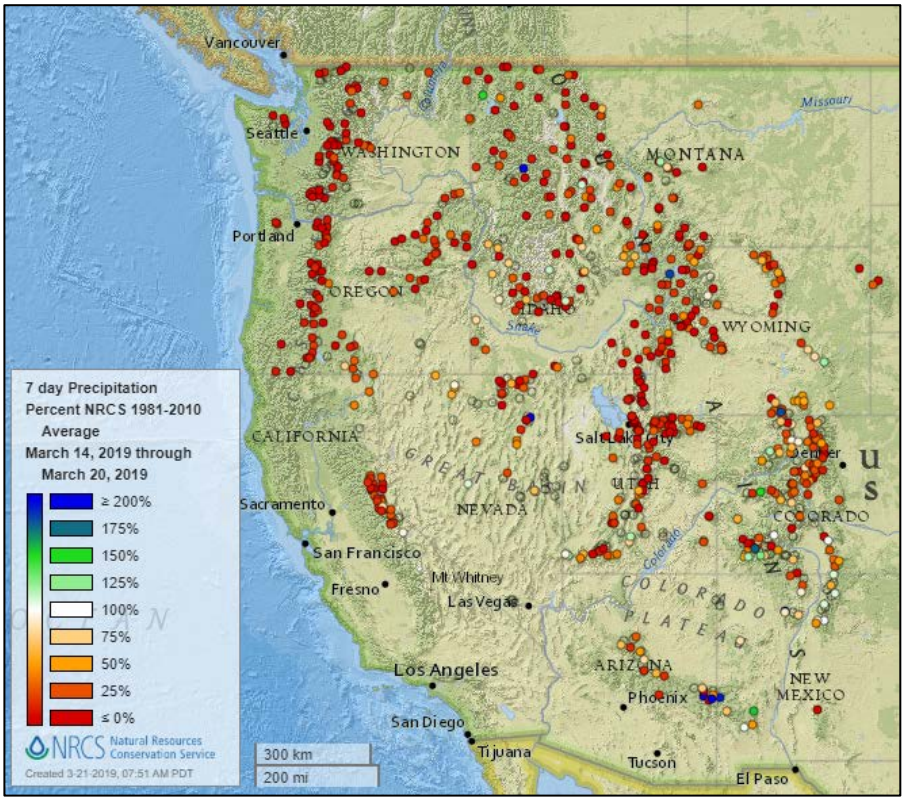
Current Snow Depth

Source: National Weather Service Snow Analysis



Precipitation

Last 7 Days, NRCS SNOTEL Network

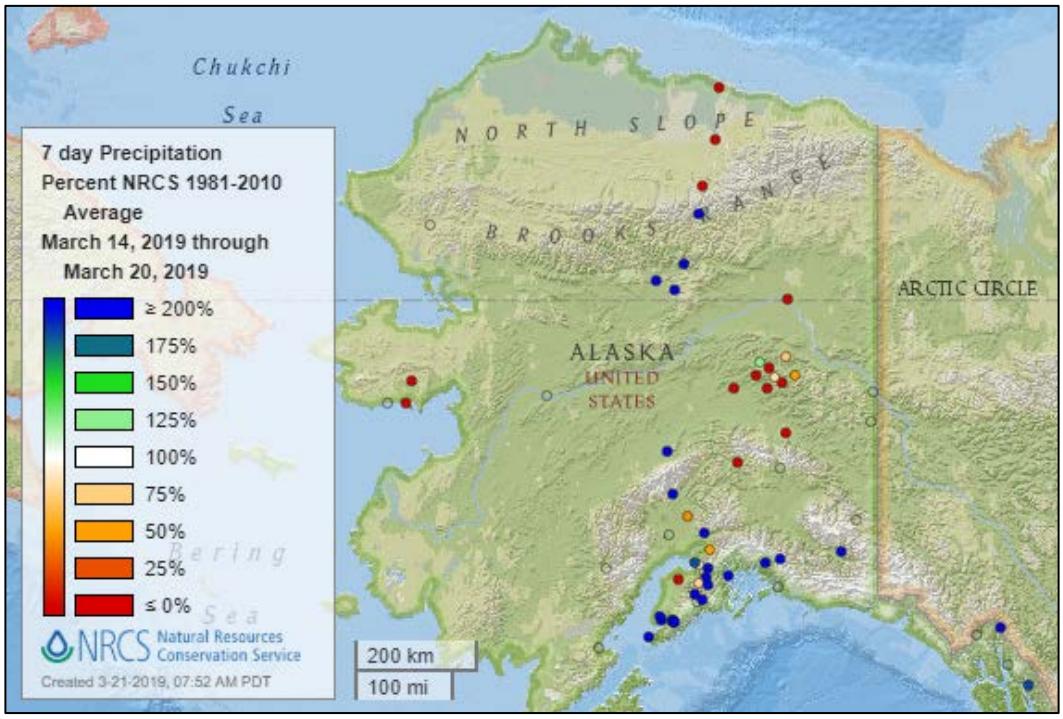


[7-day precipitation percent of average map]

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]

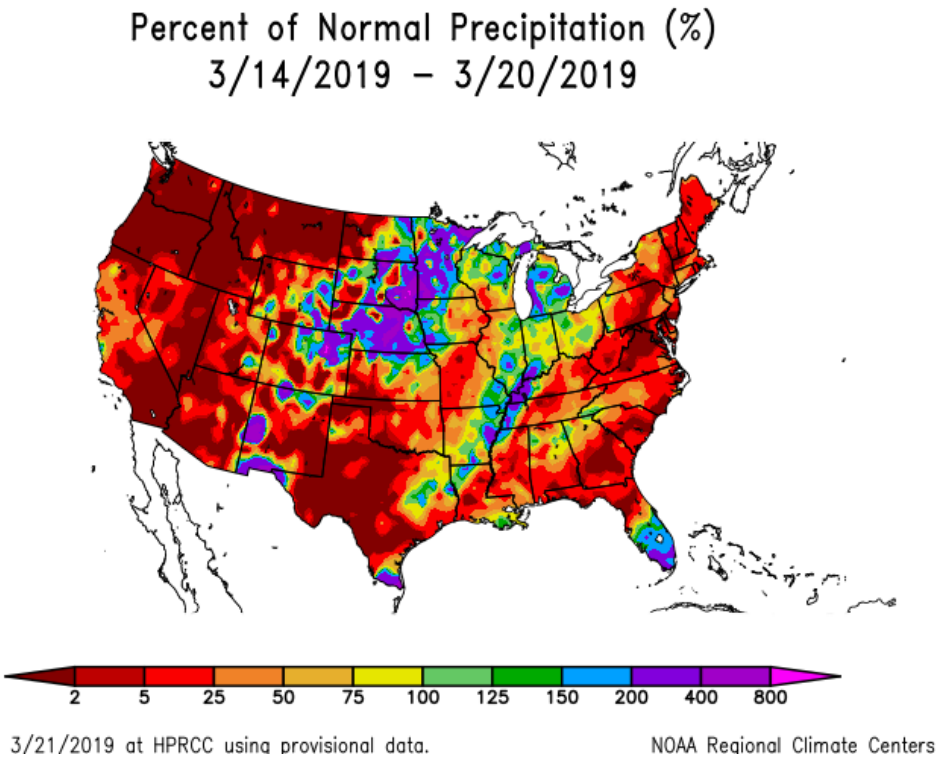


Last 7 Days, National Weather Service (NWS) Networks

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](#)

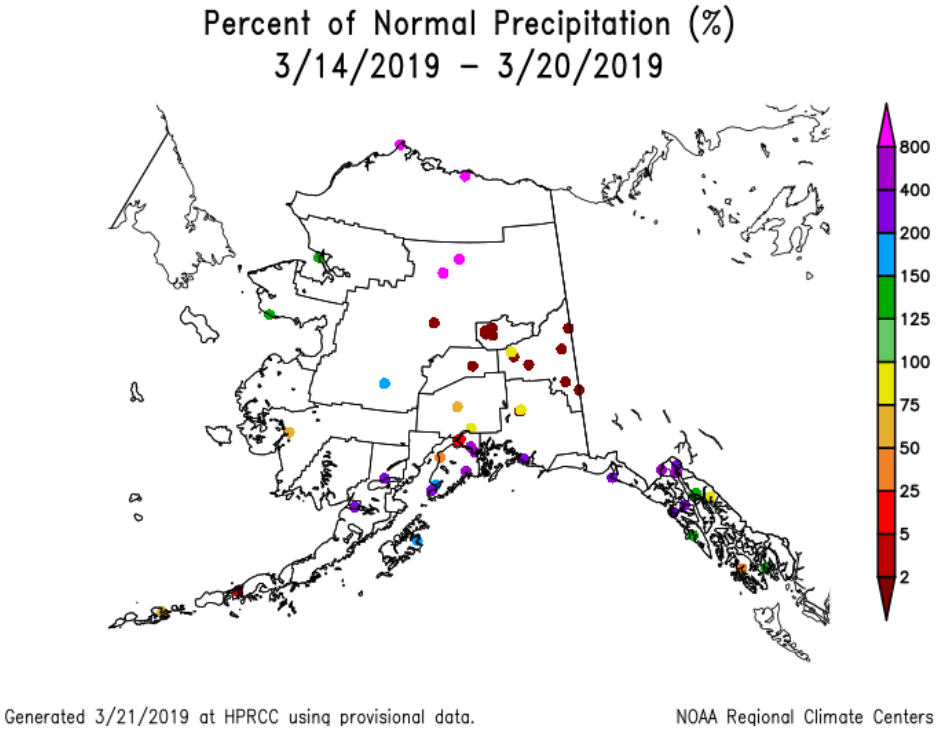


Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

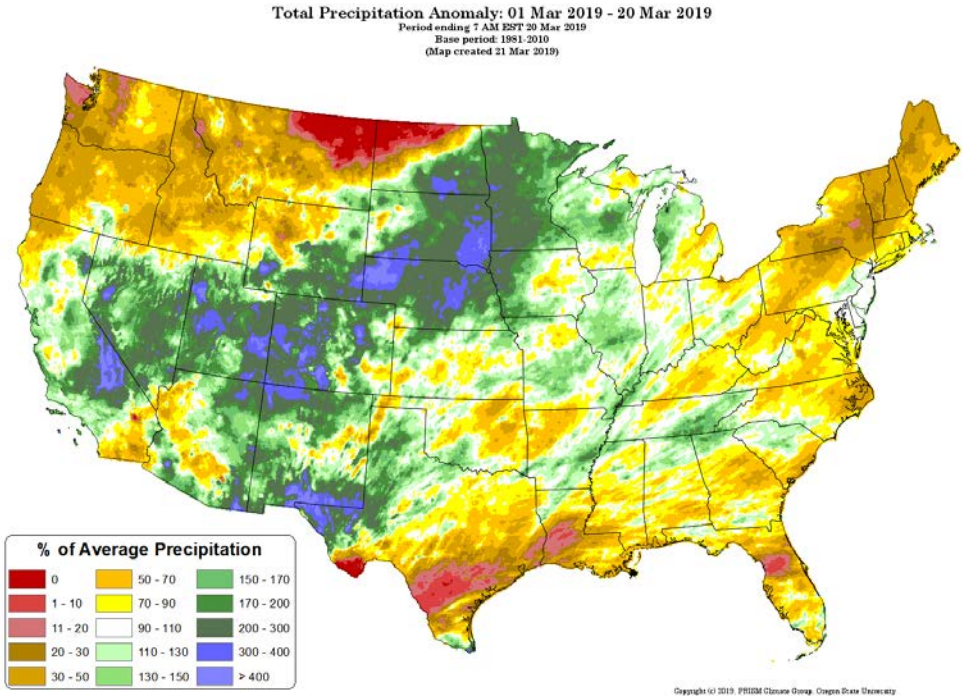
[7-day precipitation anomaly map](#) for Alaska.

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



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

Source: PRISM

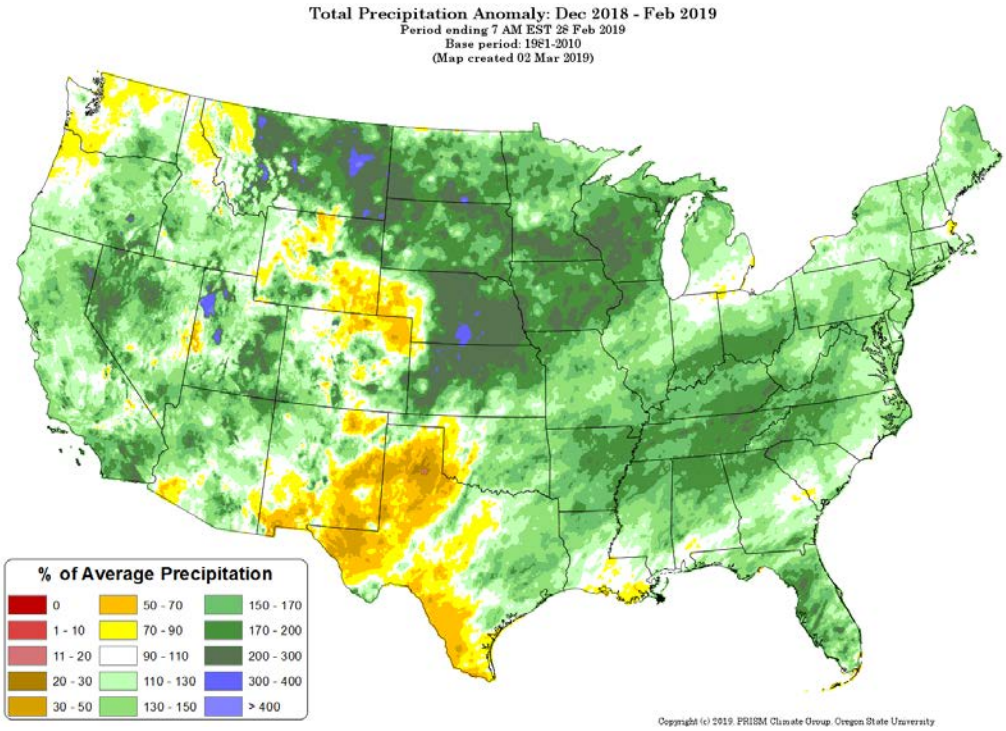


Month-to-date national total precipitation percent of average map

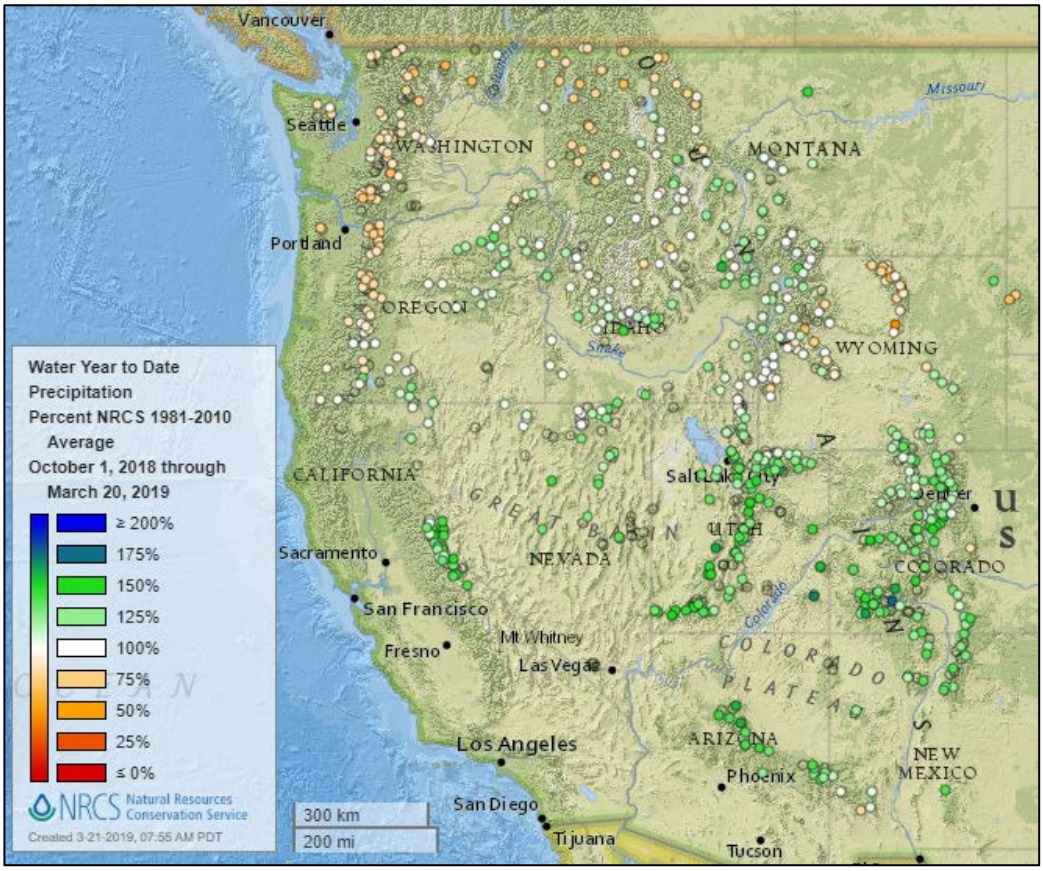
Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

December 2018 through February 2019 total precipitation percent of average map

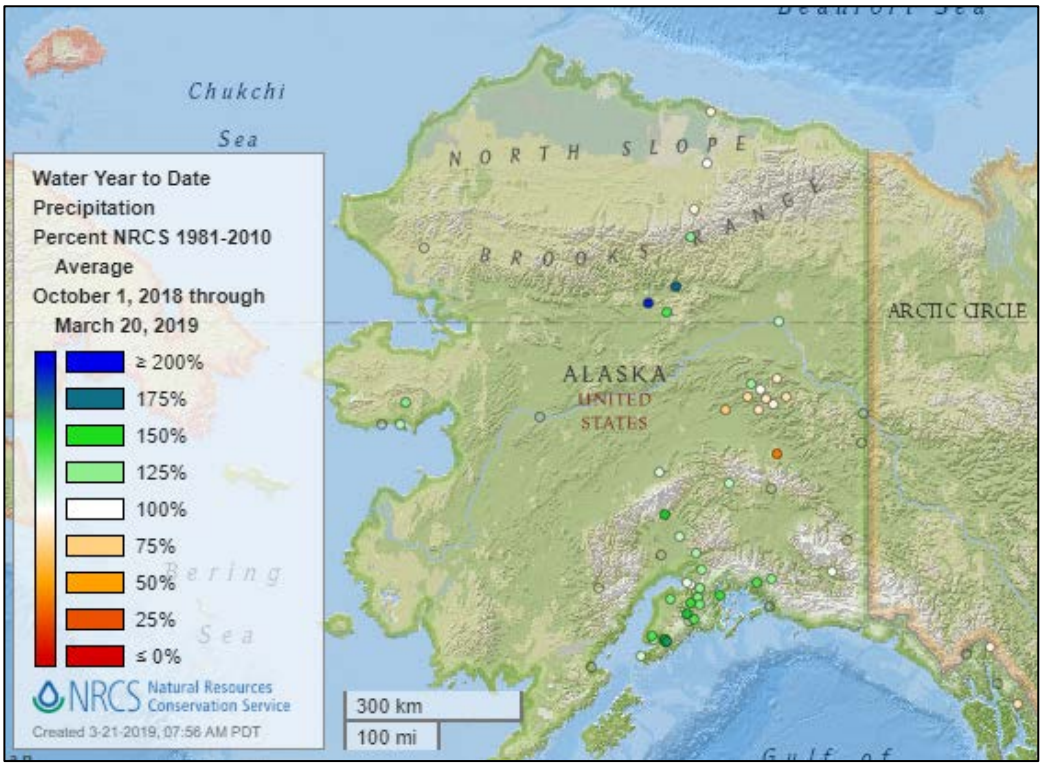


Water Year-to-Date, NRCS SNOTEL Network



[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]

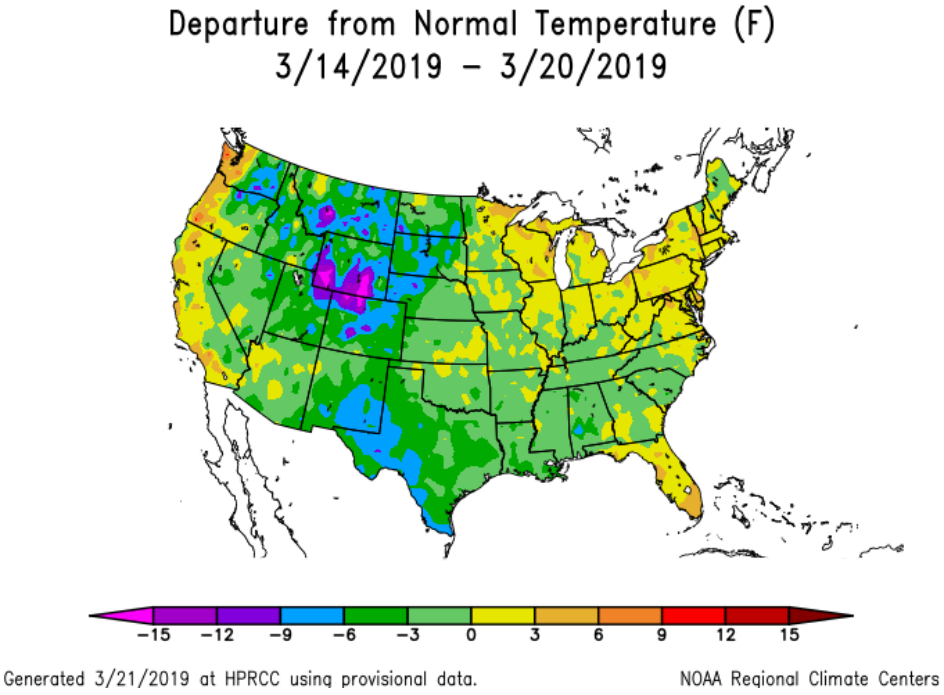
See also:
[Alaska 2019 water year-to-date precipitation values (inches) map]

Temperature

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

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

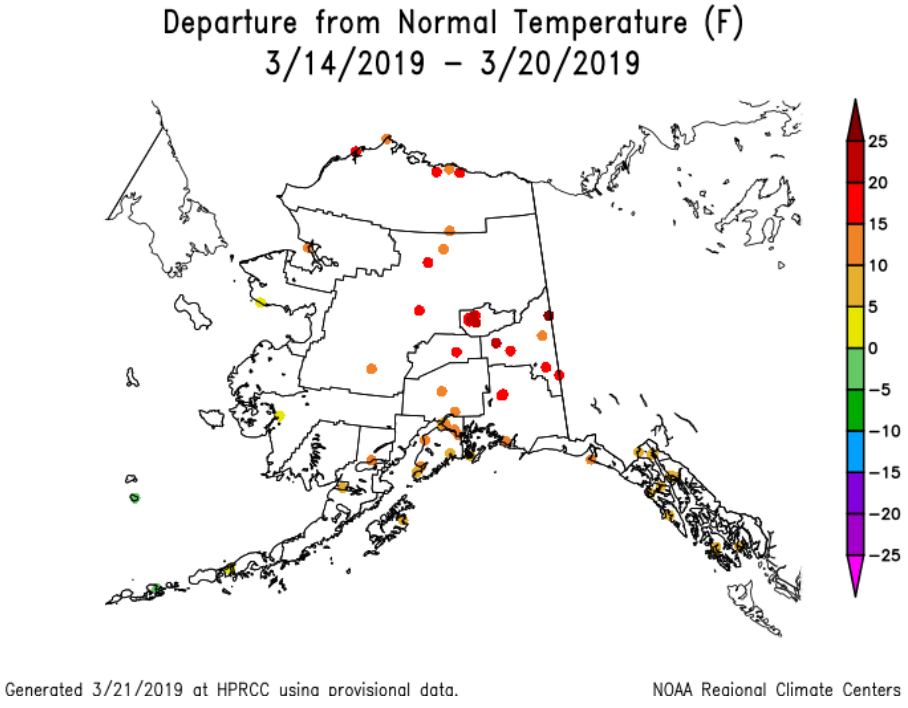
See also: 7-day temperature (° F) map



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

7-day temperature anomaly map for Alaska.

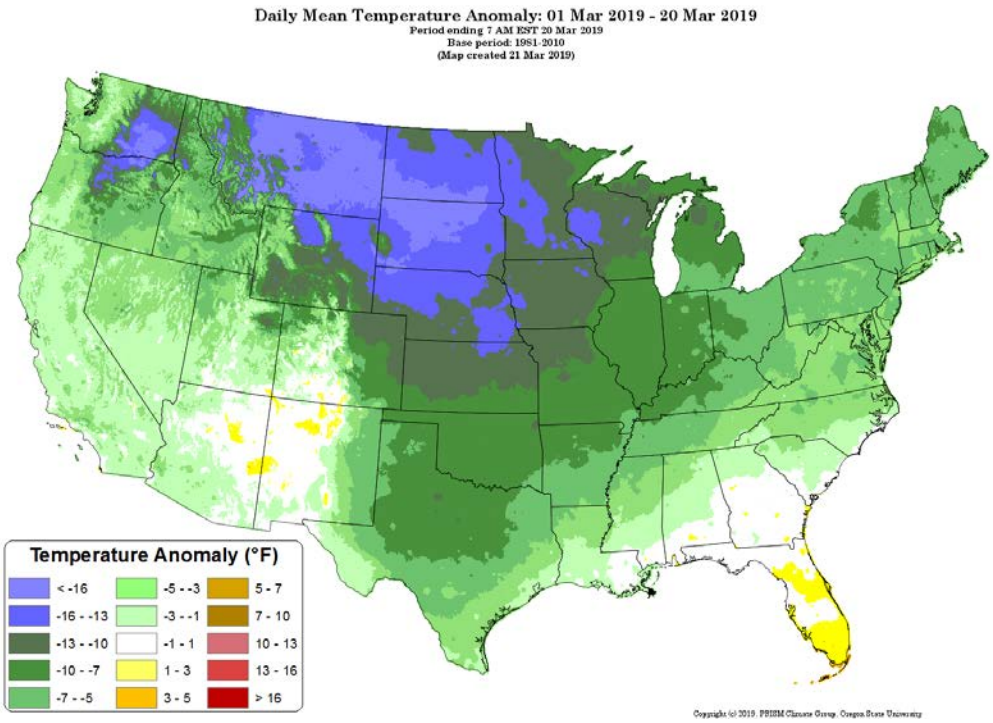
See also:
7-day temperature (° F) map



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

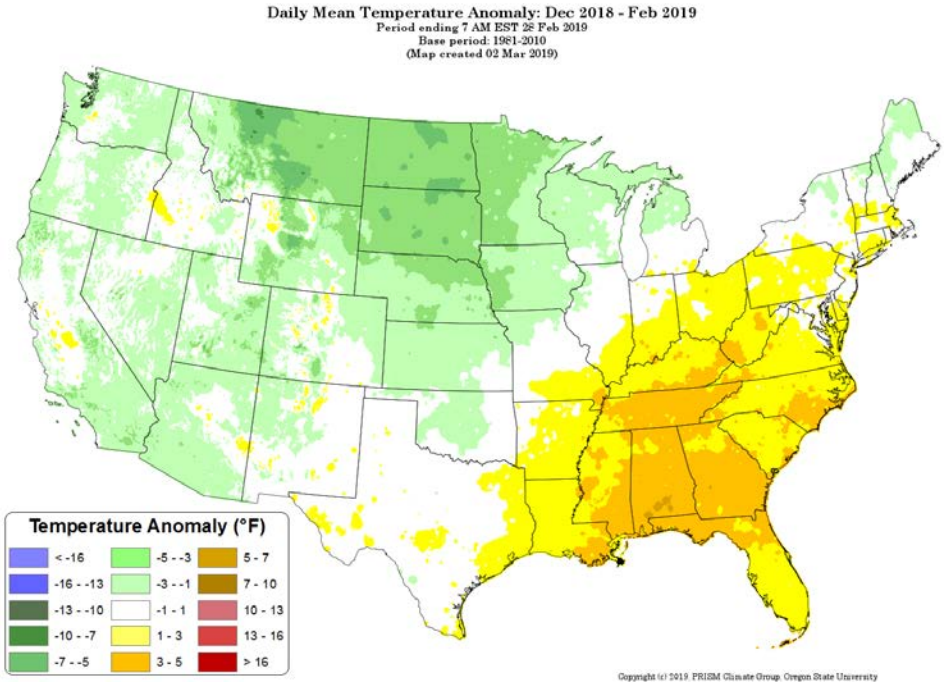
Source: PRISM

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



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

Source: PRISM

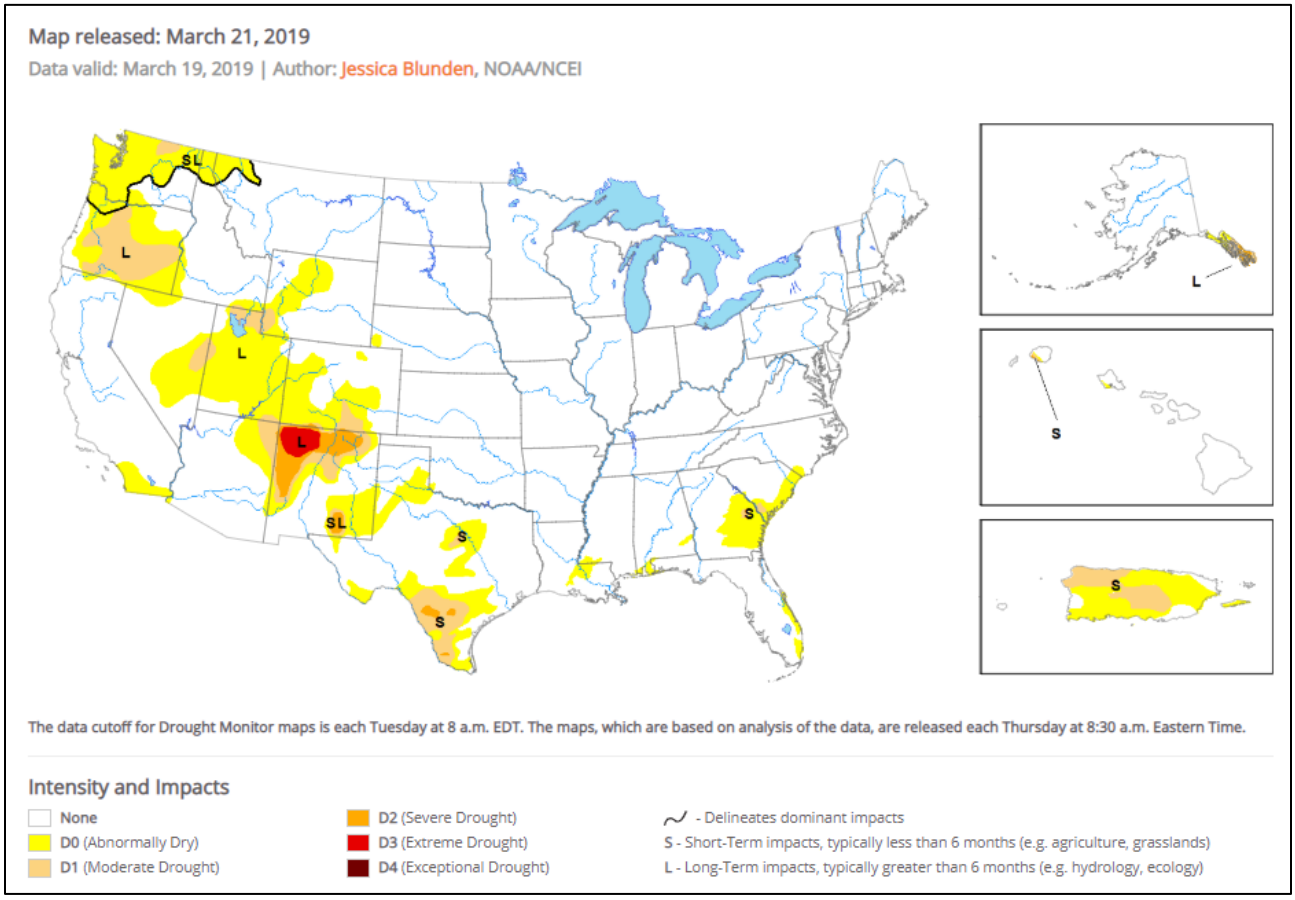


[December 2018 through February 2019 daily mean temperature anomaly map]

Drought

U.S. Drought Monitor
Source: National Drought Mitigation Center

U.S. Drought Portal
Source: NOAA



Current National Drought Summary, March 21, 2019

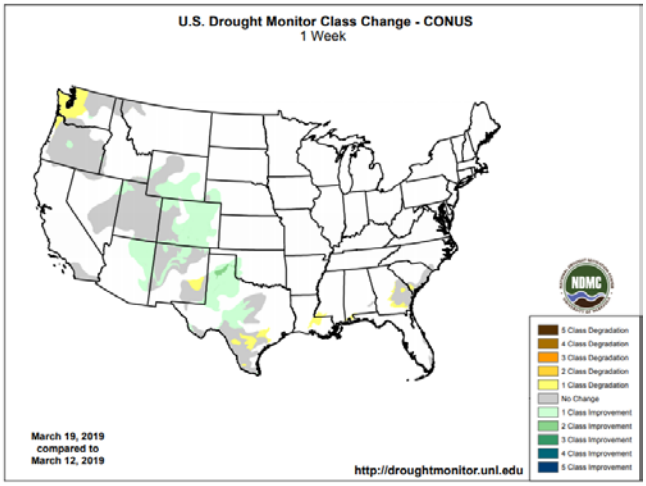
Author: Jessica Blunden, NOAA/NCEI

“A historic major winter storm impacted much of the country this past week with blizzard conditions, category-2 hurricane-force winds, heavy rain, thunderstorms, tornadoes, and flooding. Funnel clouds and tornadoes were seen in south central Arizona and southeastern New Mexico. Up to a foot of snow fell across the Denver, Colorado, area, while up to two feet fell over southeastern Wyoming, western Nebraska, and into southwestern and central South Dakota. To the south, thunderstorms rolled across Texas and parts of the lower Mississippi River Valley into the Tennessee and Ohio Valleys, including eastern Arkansas, southwestern Tennessee, and northwestern Mississippi. Heavy rainfall melted snow and led to flooding from Kansas, Nebraska, and South Dakota to the western Great Lakes. Much of the South, however, from southern Texas eastward, missed out on most of the precipitation and conditions continue to dry.”

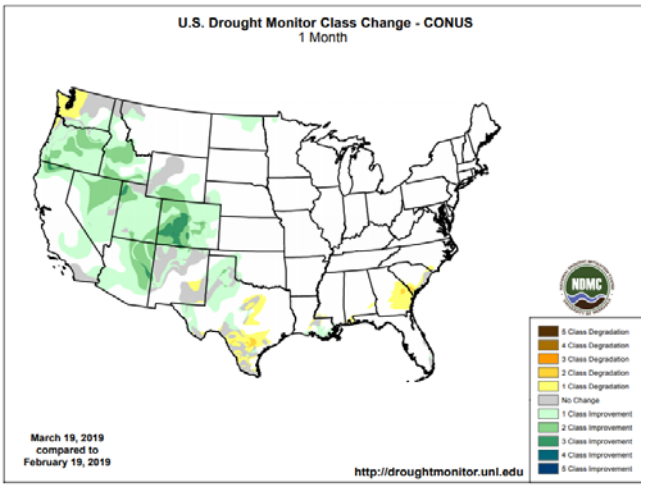
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

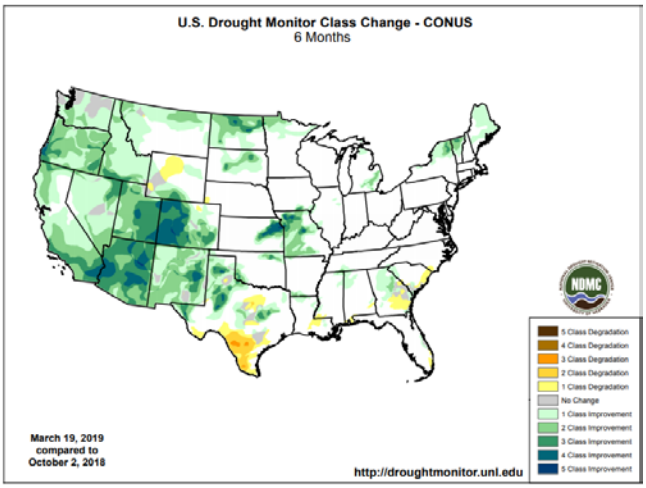
1 Week



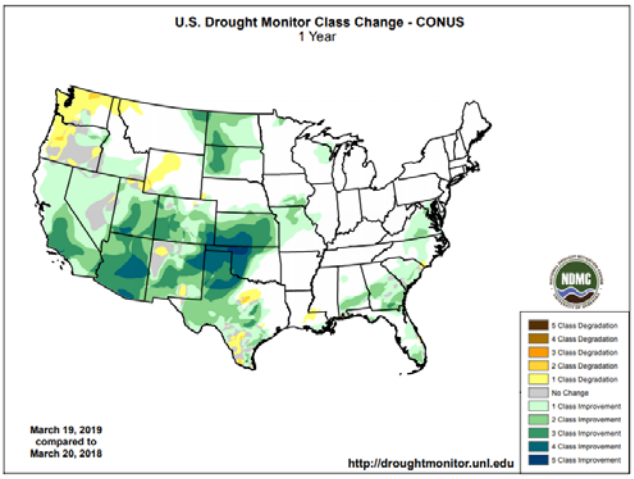
1 Month



6 Months



1 Year



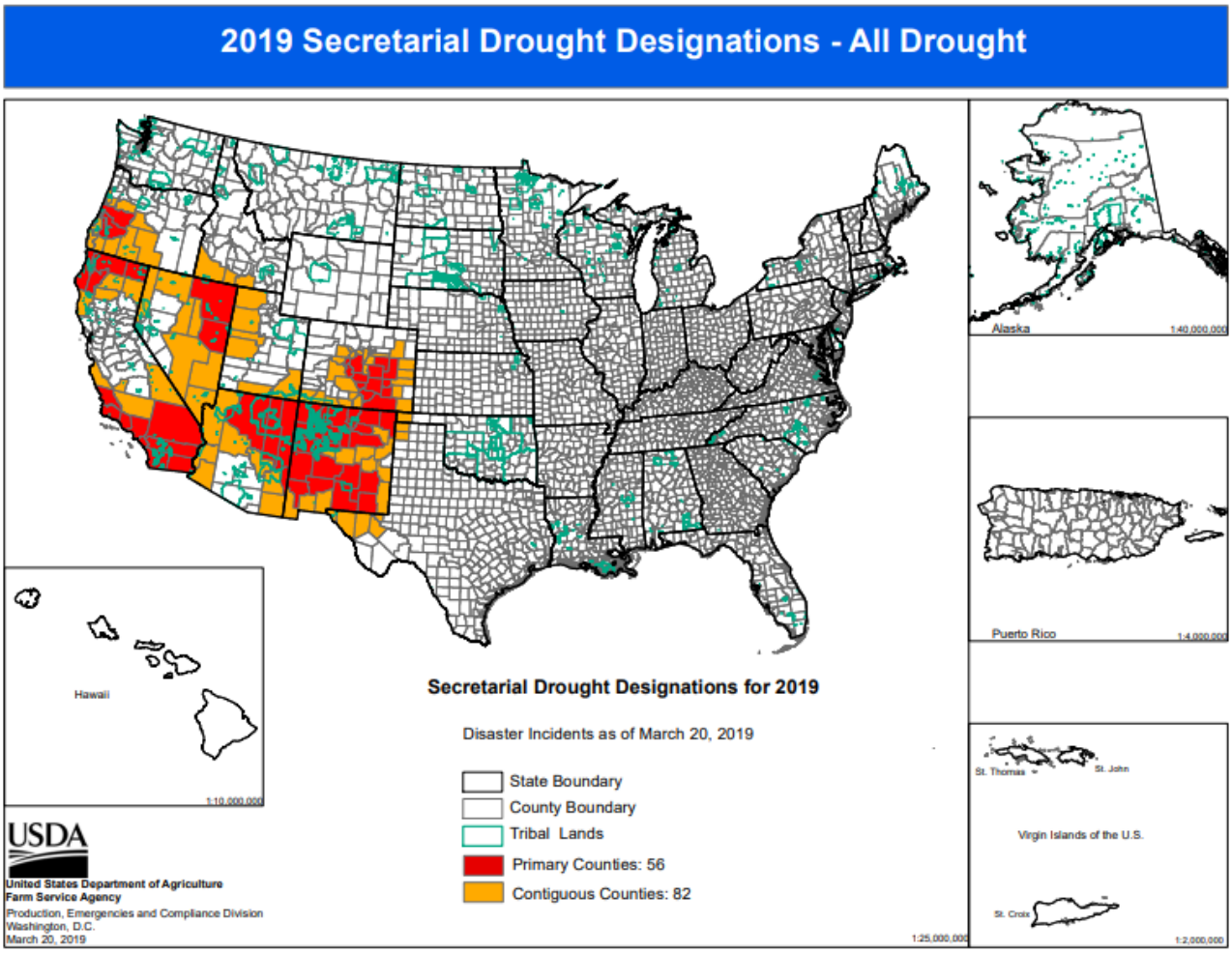
Changes in drought conditions over the last 12 months for the contiguous U.S.

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

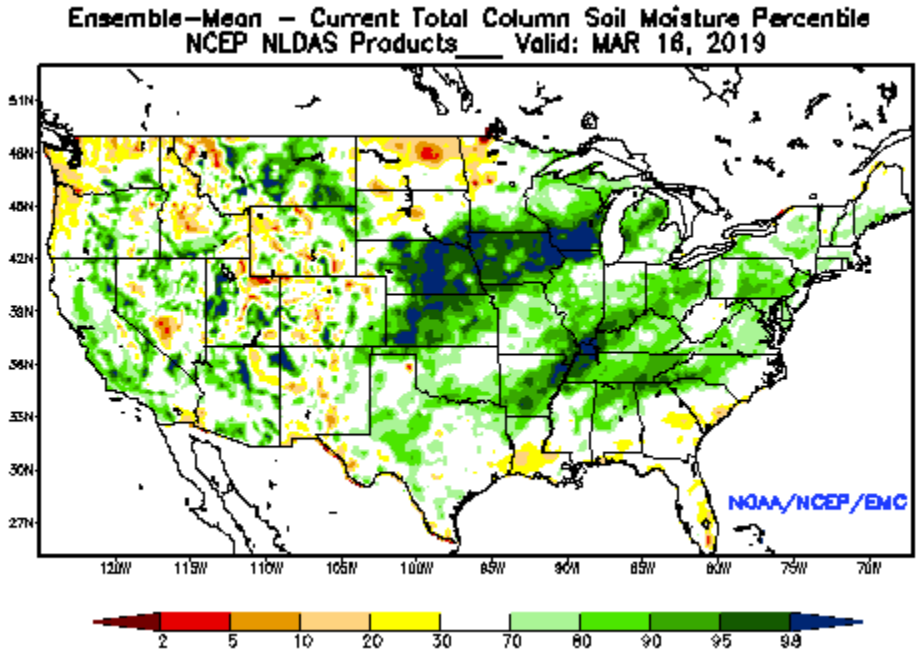
Source: USDA Farm Service Agency



Other Climatic and Water Supply Indicators

Soil Moisture

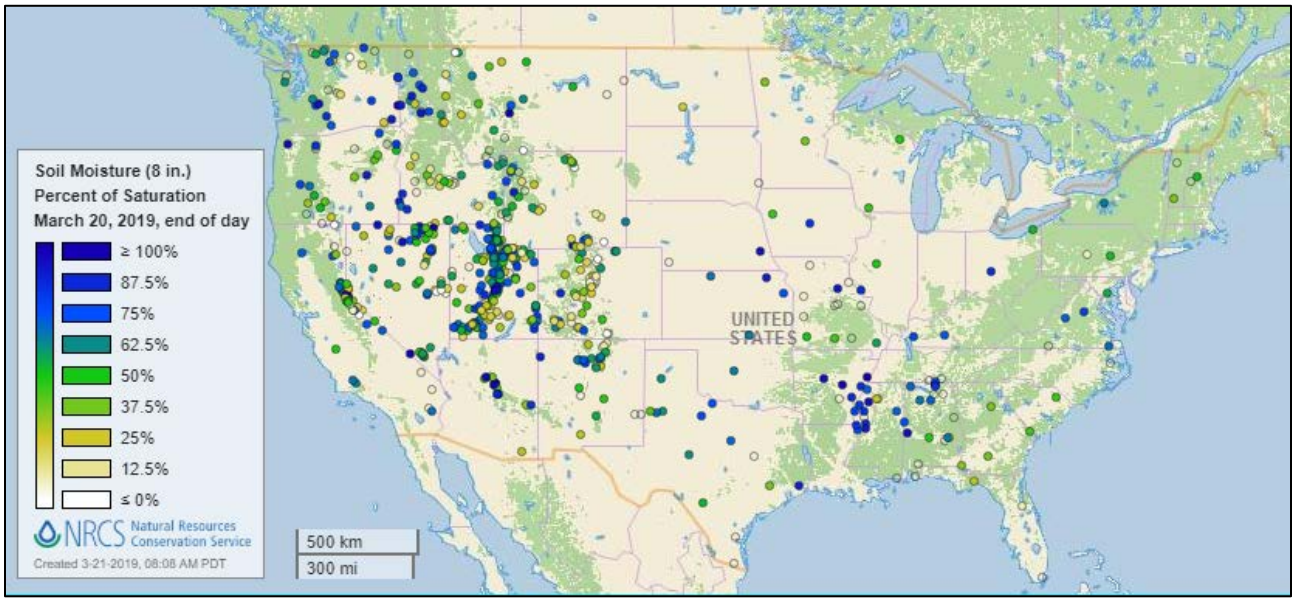
Source: NOAA National Centers for Environmental Prediction



Modeled soil moisture percentiles as of March 16, 2019

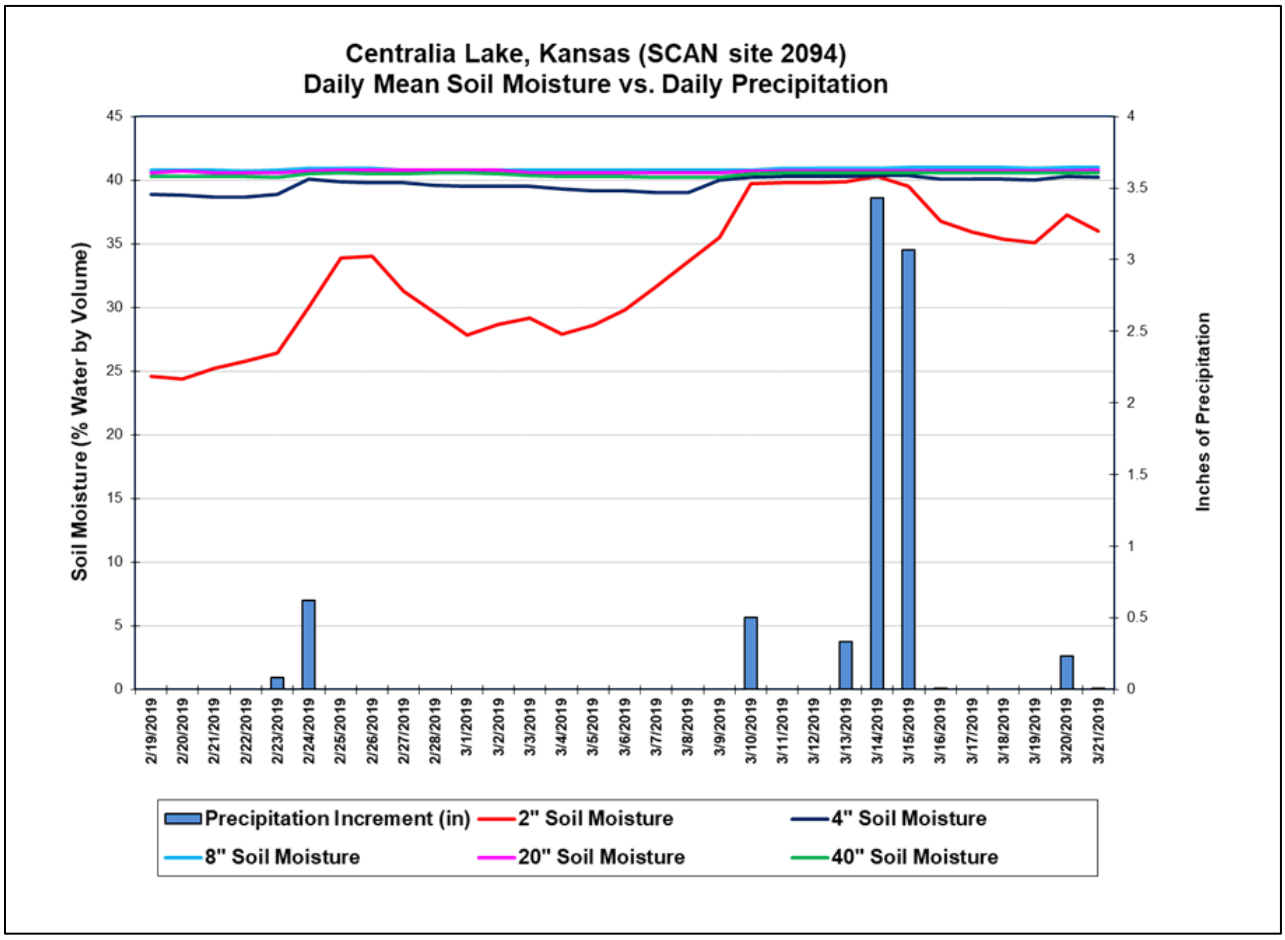
Soil Moisture Percent of Saturation

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



Soil Moisture Data

Source: NRCS Soil Climate Analysis Network (SCAN)



This graph shows the precipitation and soil moisture for the last 30 days at the Centralia Lake SCAN site in Kansas. This site is located in an area that has recently experienced significant rainfall from the Bomb Cyclone. From March 13 through 16, accumulated precipitation totaled 6.84 inches, with an increase in soil moisture at the 2-inch sensor level. The remaining sensors are at or near saturation.

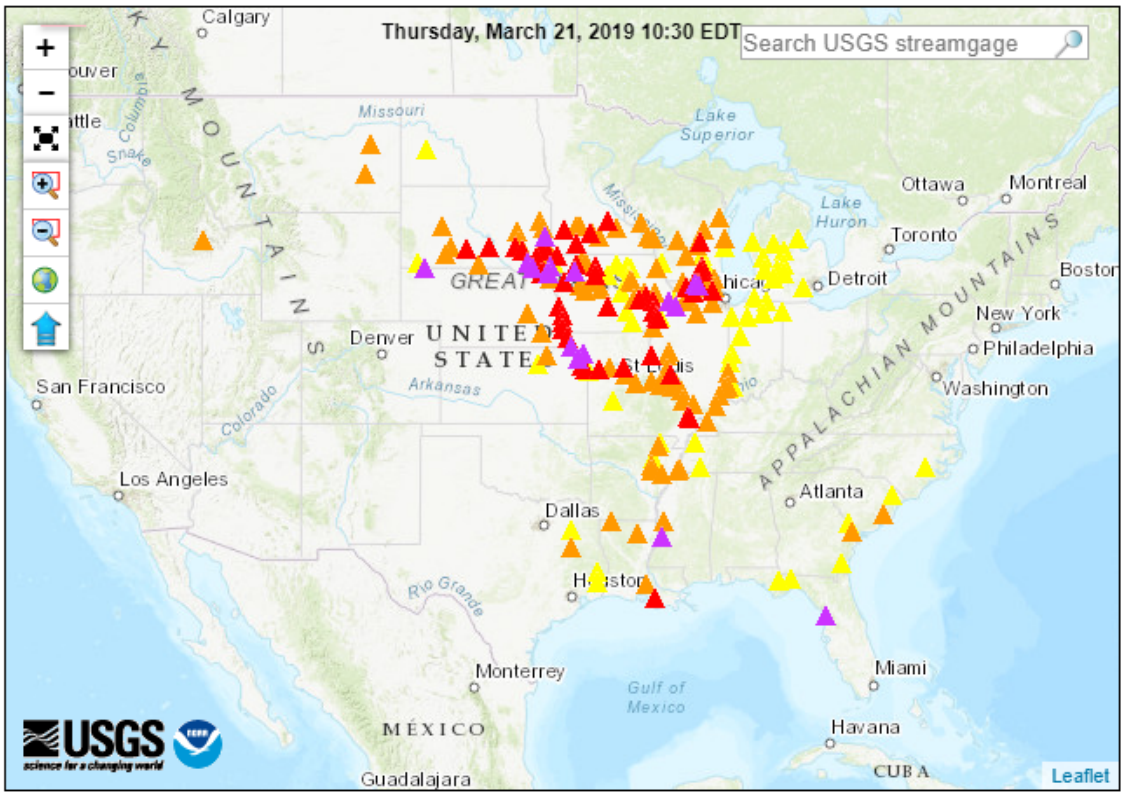
Soil Moisture Data Portals

- 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

Map of flood and high flow conditions



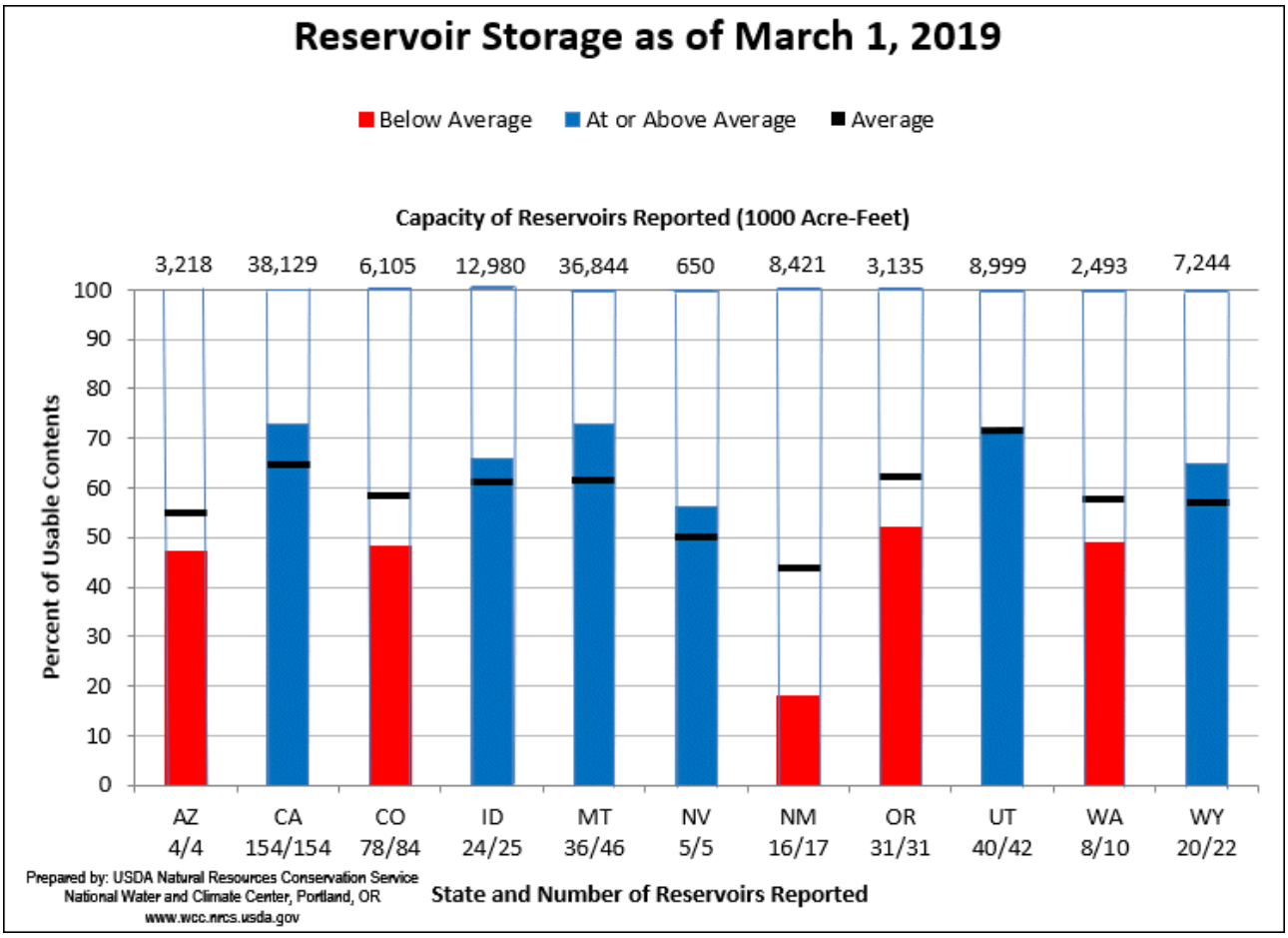
Explanation - Percentile classes						
<95	95-98	>= 99	Above action stage	Above flood stage	Above moderate flood stage	Above major flood stage
△ Streamgage with flood stage ○ Streamgage without flood stage						

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

Reservoir Storage

Western States Reservoir Storage

Source: NRCS National Water and Climate Center



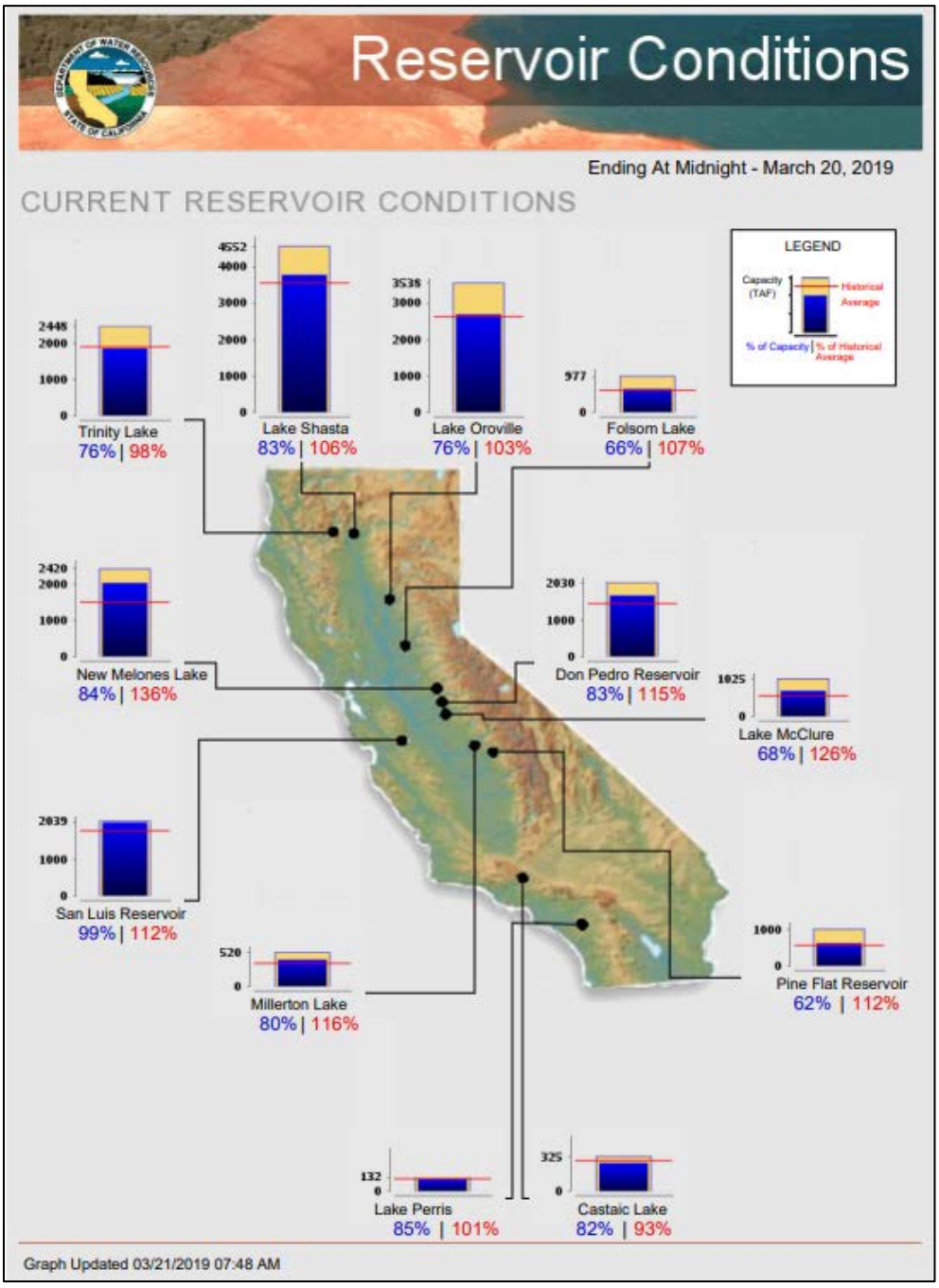
March 1, 2019 Reservoir Storage: Chart | Dataset

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

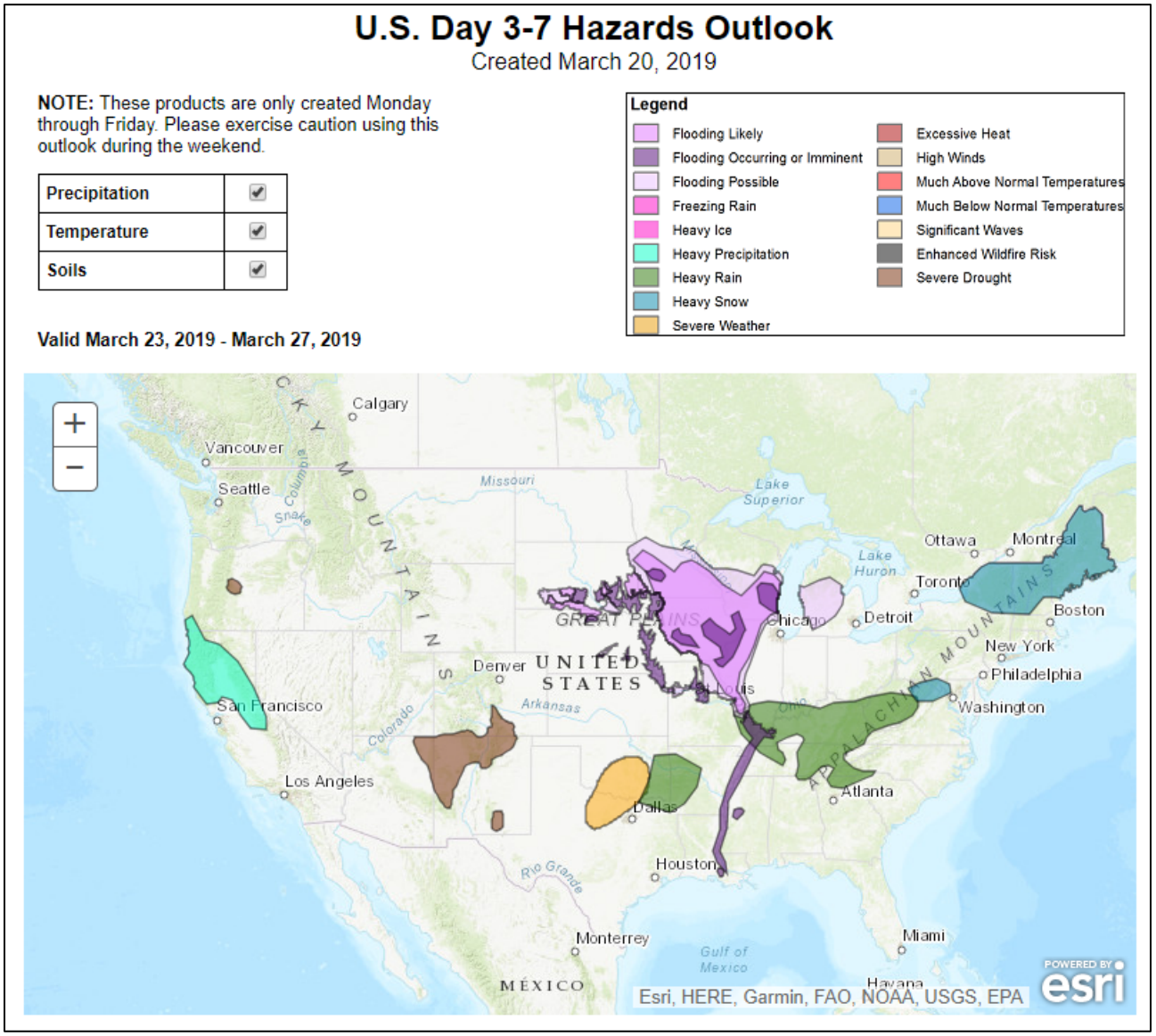
Agricultural Weather Highlights

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

National Outlook, Thursday, March 21, 2019: "A storm system will drift northward through Saturday along the middle and northern Atlantic Coast, delivering heavy rain (locally 1 to 2 inches or more) and high winds. Parts of the interior Northeast will experience a late-season snowfall. Meanwhile, the first in a series of Pacific storms will cross the western U.S. before reaching the Plains early in the weekend and the Atlantic Seaboard early next week. Storm-total precipitation may reach an inch or more along the storm's path, which will include the central Plains, southern Corn Belt, and mid-South. In the wake of that precipitation, cold air will settle across the eastern U.S. The NWS 6- to 10-day outlook for March 26 – 30 calls for near- or below temperatures and near- or above-normal precipitation across most of the country. Warmer-than-normal weather should be limited to the Four Corners region and the Pacific Northwest, while drier than-normal conditions will be mostly confined to the southern High Plains and the Northeast."

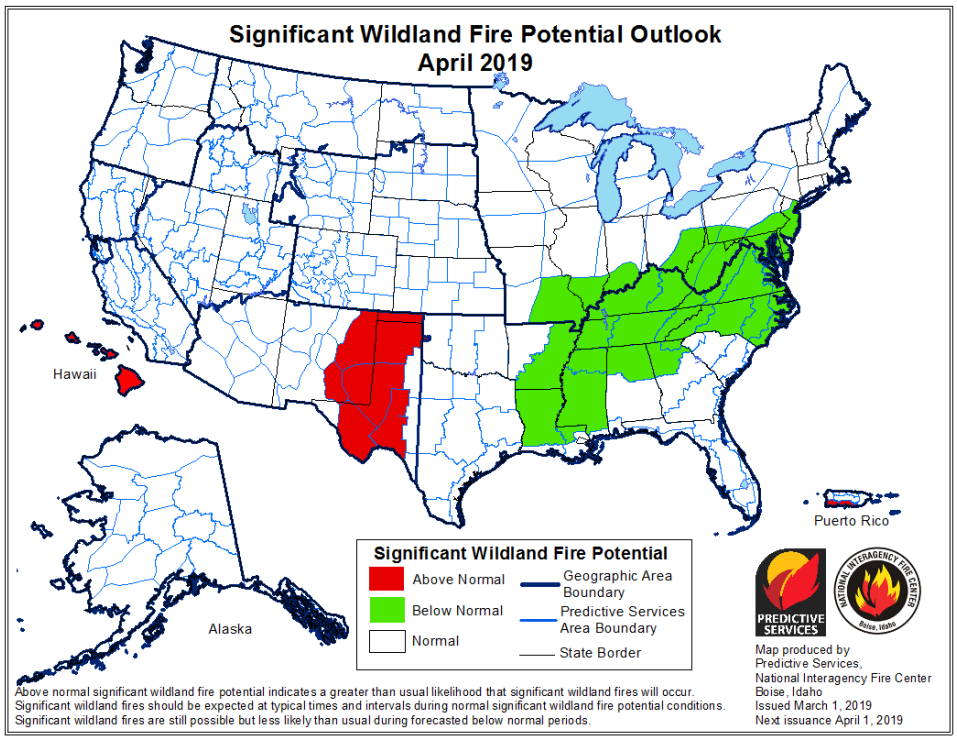
Weather Hazards Outlook: March 23 – 27, 2019

Source: NOAA Climate Prediction Center



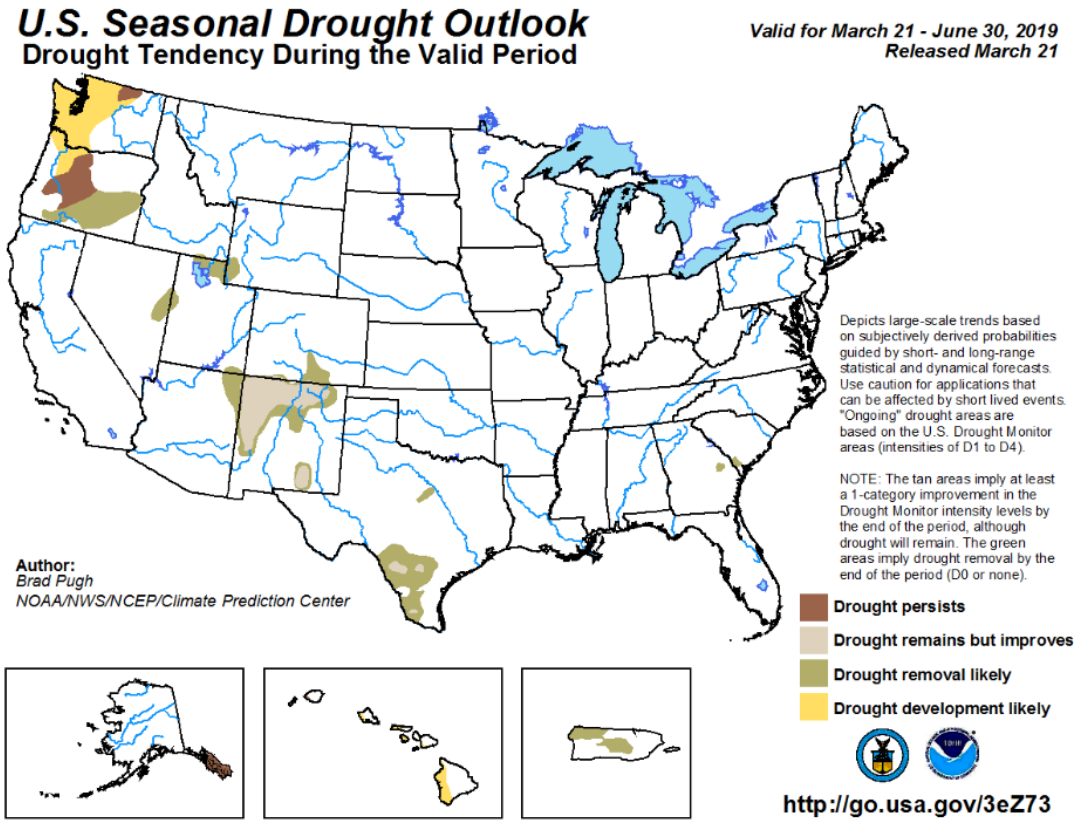
Significant Wildland Fire Potential Outlook

Source: National Interagency Fire Center



Seasonal Drought Outlook: March 21 – June 30, 2019

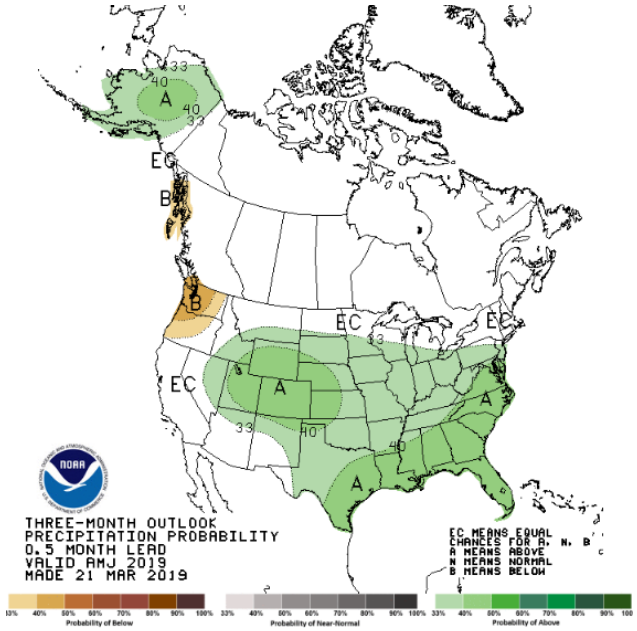
Source: National Weather Service



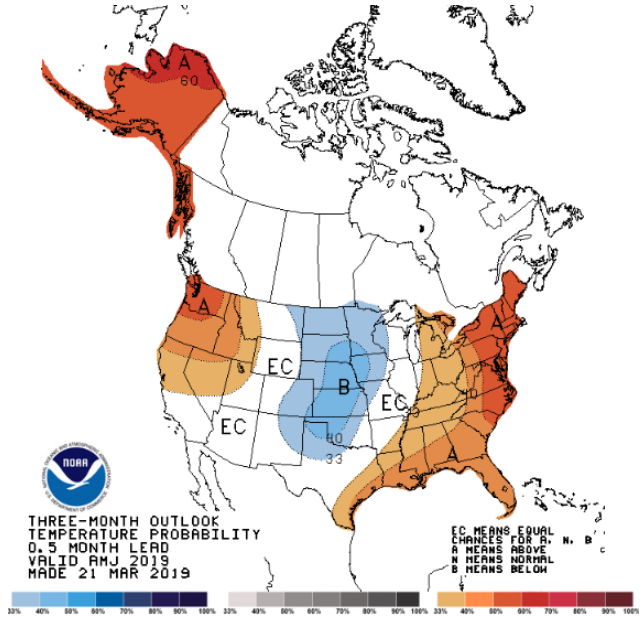
Climate Prediction Center 3-Month Outlook

Source: National Weather Service

Precipitation



Temperature



April-May-June (AMJ) 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.