United States Department of Agriculture

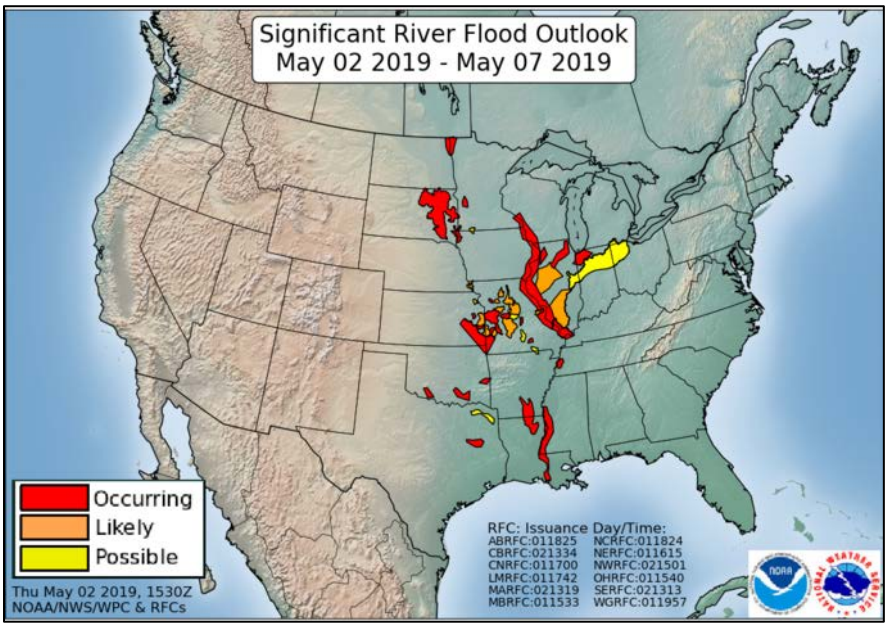
# Water and Climate Update

**May 2, 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.



## Continuing Midwest storms increase flood damages



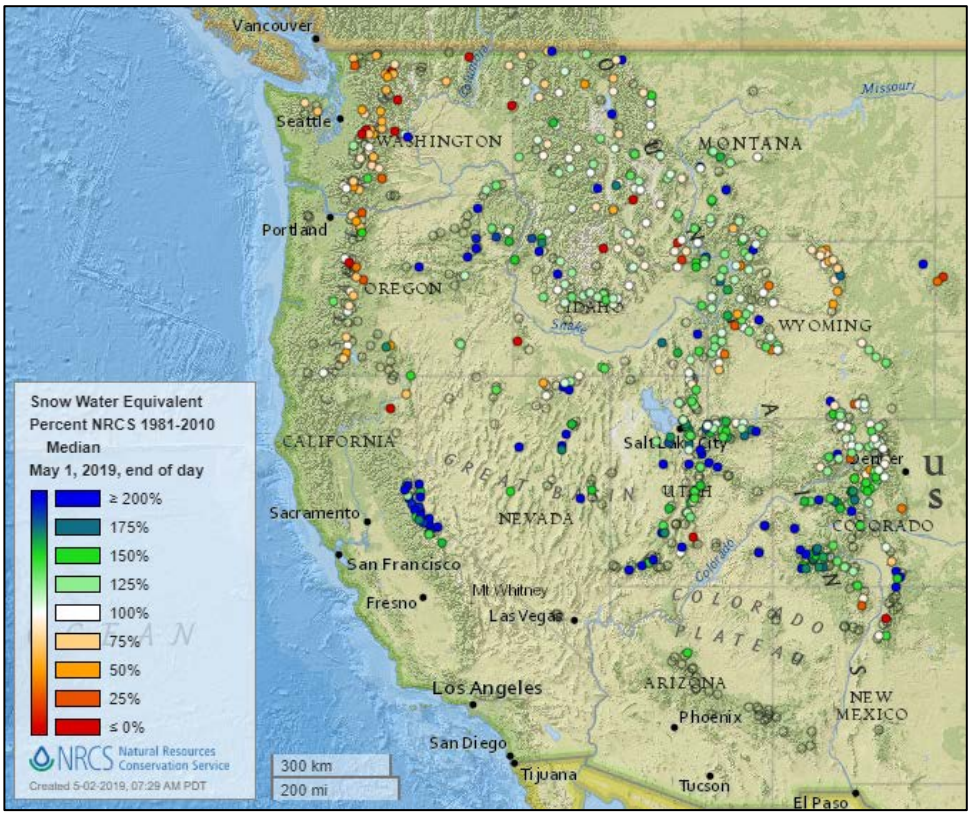

Severe storms with heavy precipitation and tornadoes crossed the Midwest this week. Another week of flooding accompanied the storms in a wide swath along the Missouri, Mississippi, and surrounding rivers. Some areas received up to eight inches of precipitation this week. In Davenport, Iowa, a section of the flood control system was breached Wednesday with evacuations in place. Flash floods in Texas and Oklahoma followed heavy rain in the area where severe storms spawned 29 tornadoes.

**Related:**

2 dead, dozens injured as severe storms continue to threaten central US – ABC News
Mississippi River rising amid dangerous Midwest flooding – CBS News
After devastating Midwest floods, crisis resources gear up to support distressed farmers – PBS NewsHour
After a portion of Davenport's downtown floods, officials monitor infrastructure 'minute by minute' – DesMoines Register (IA)
Major flood level expected along the Mississippi River as rain continues – KMOV4 (MO)
Tornadoes, storms, floods wallop South, central U.S. – USAToday
Day after tornado outbreak, more severe weather threatens Texas, Oklahoma - ABC
At least 29 tornadoes reported in Oklahoma, 3 other states; flooding now the main concern – Tulsaworld (OK)

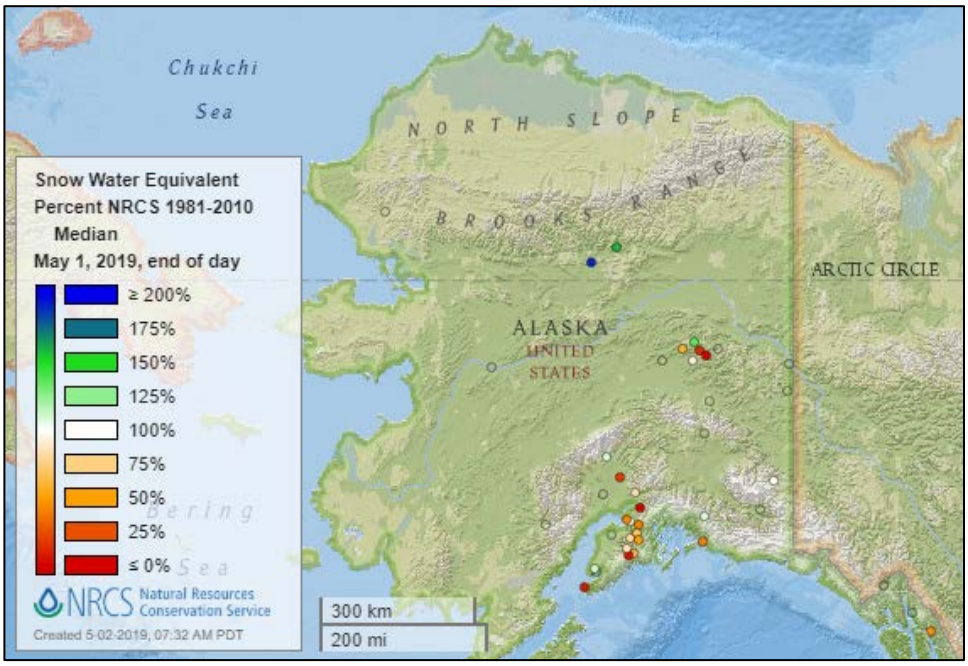
# Snow

## Current Snow Water Equivalent, NRCS SNOTEL Network




[Snow water equivalent percent of median map]

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

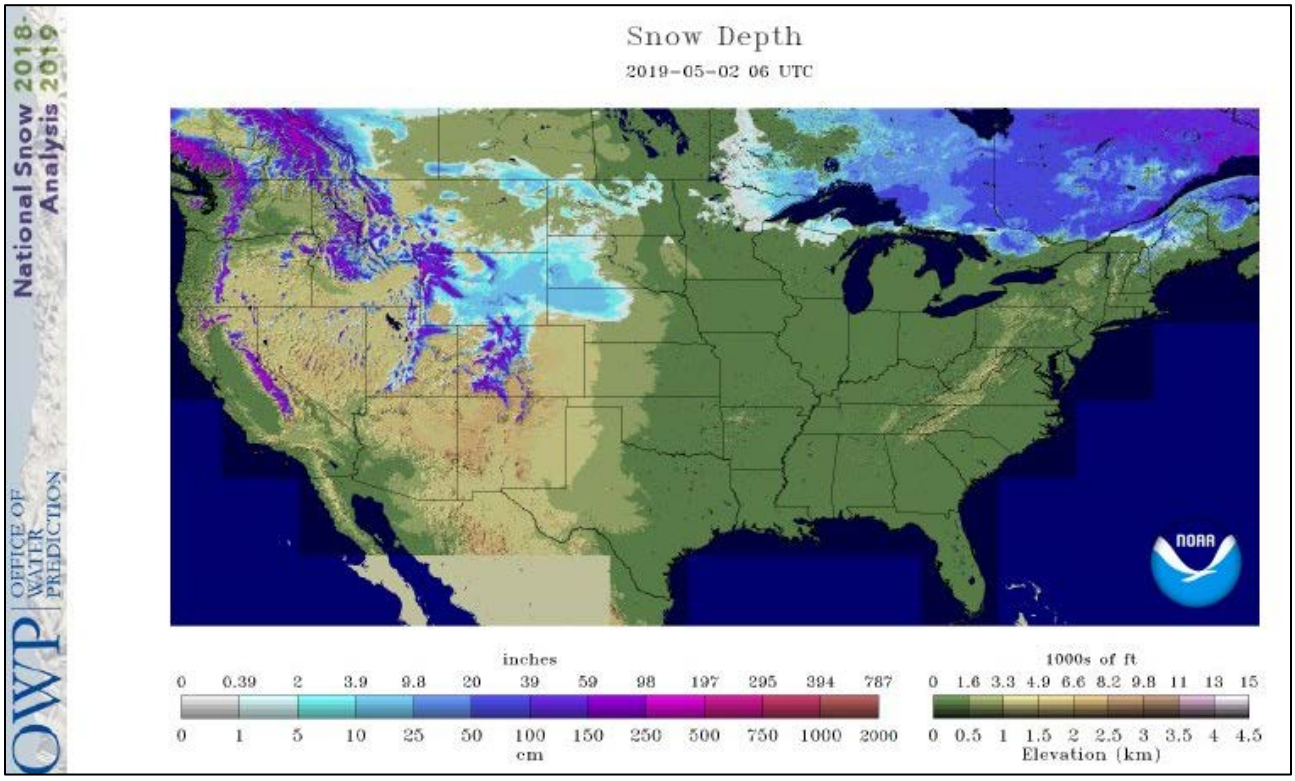



[Alaska snow water equivalent percent of median map]

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

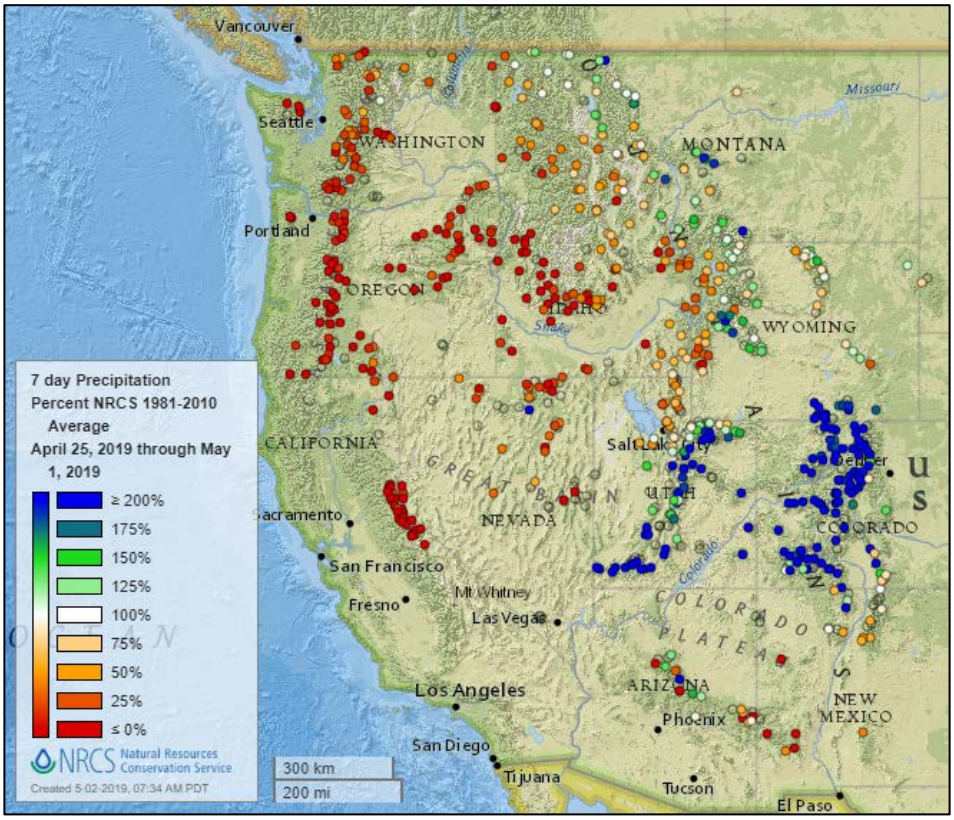
## Current Snow Depth

Source: National Weather Service Snow Analysis



# Precipitation

## Last 7 Days, NRCS SNOTEL Network

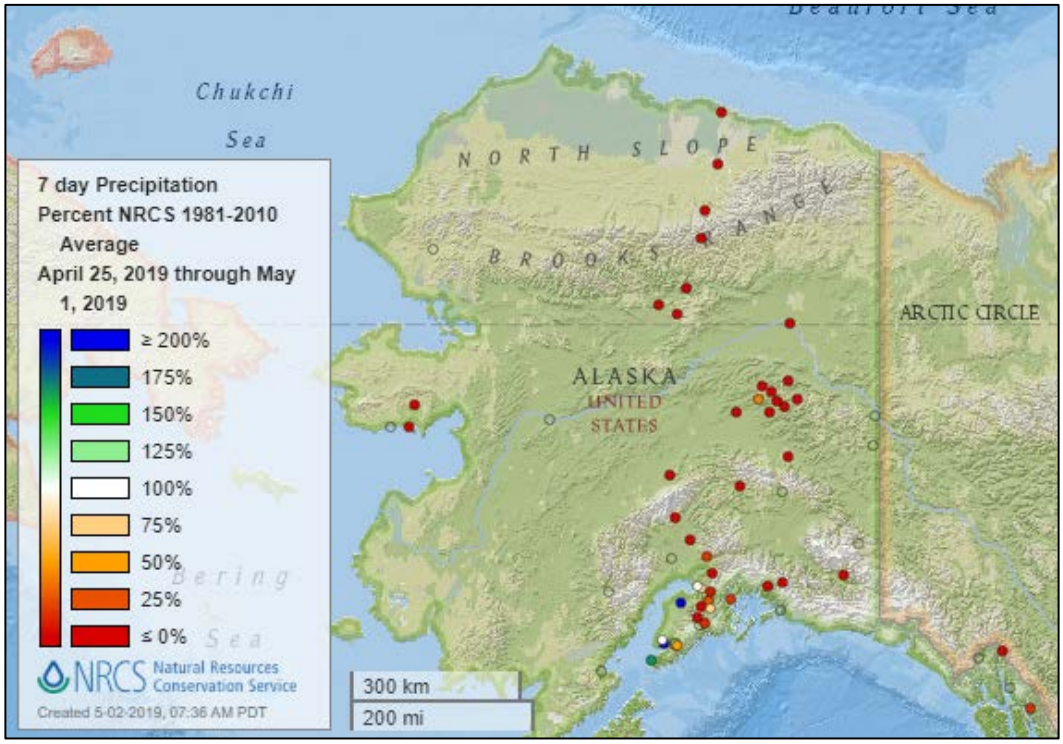



[7-day precipitation percent of average map]

***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]

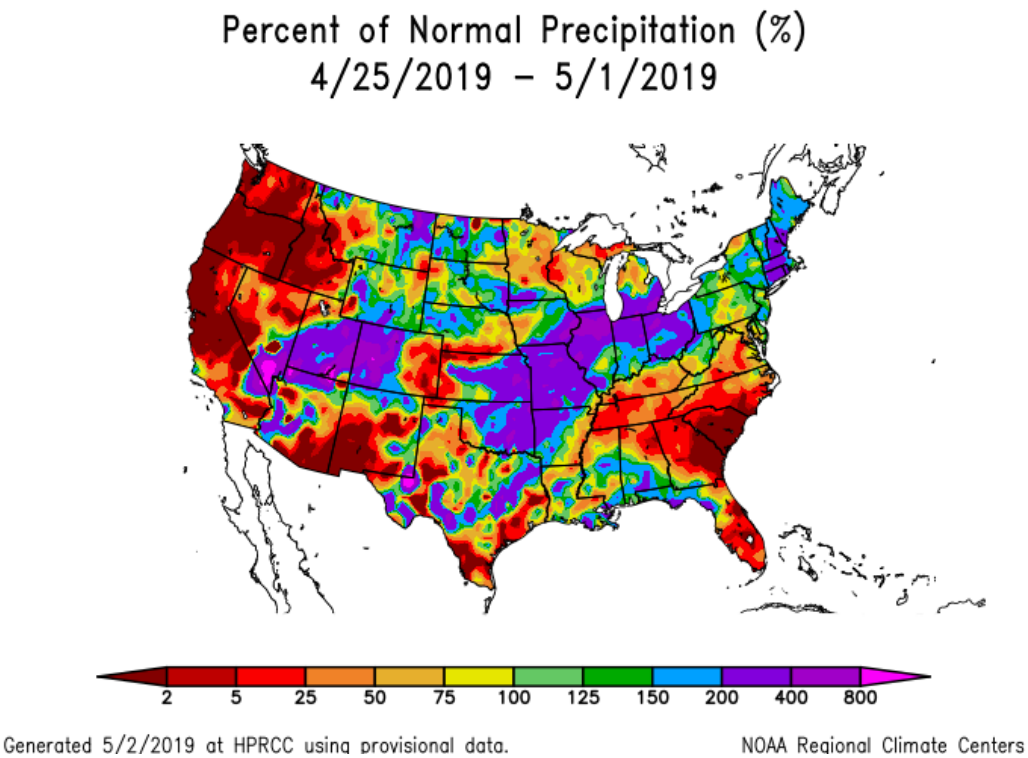


## Last 7 Days, National Weather Service (NWS) Networks

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

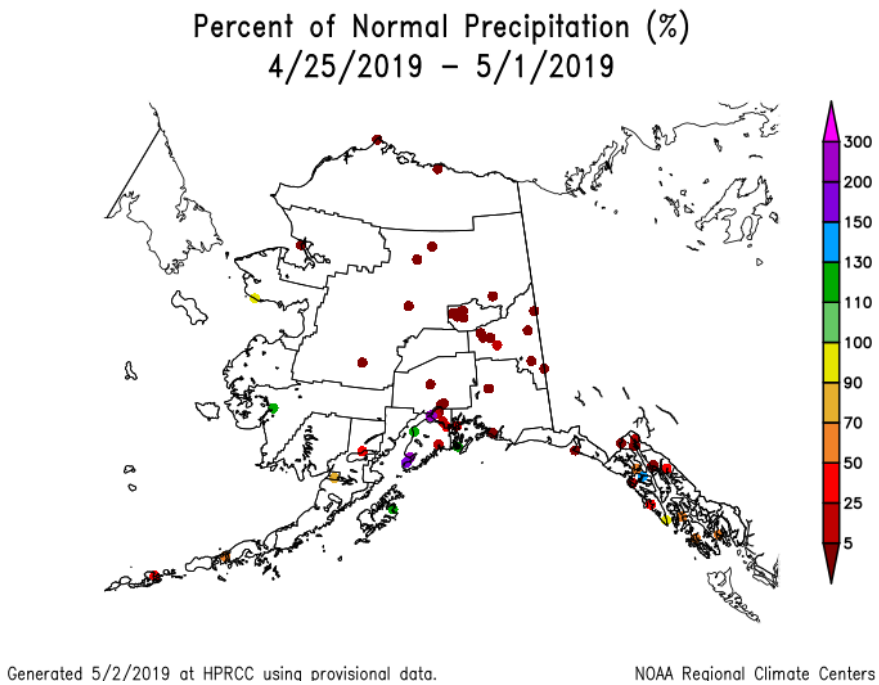



## Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

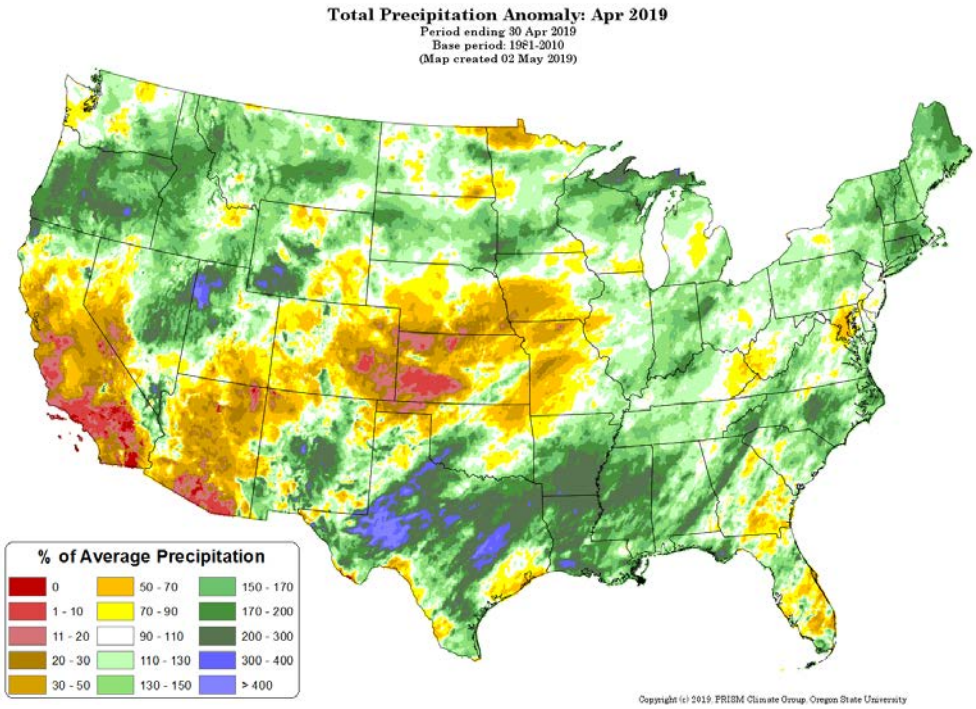
7-day precipitation anomaly map for Alaska.

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



## Previous Month, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

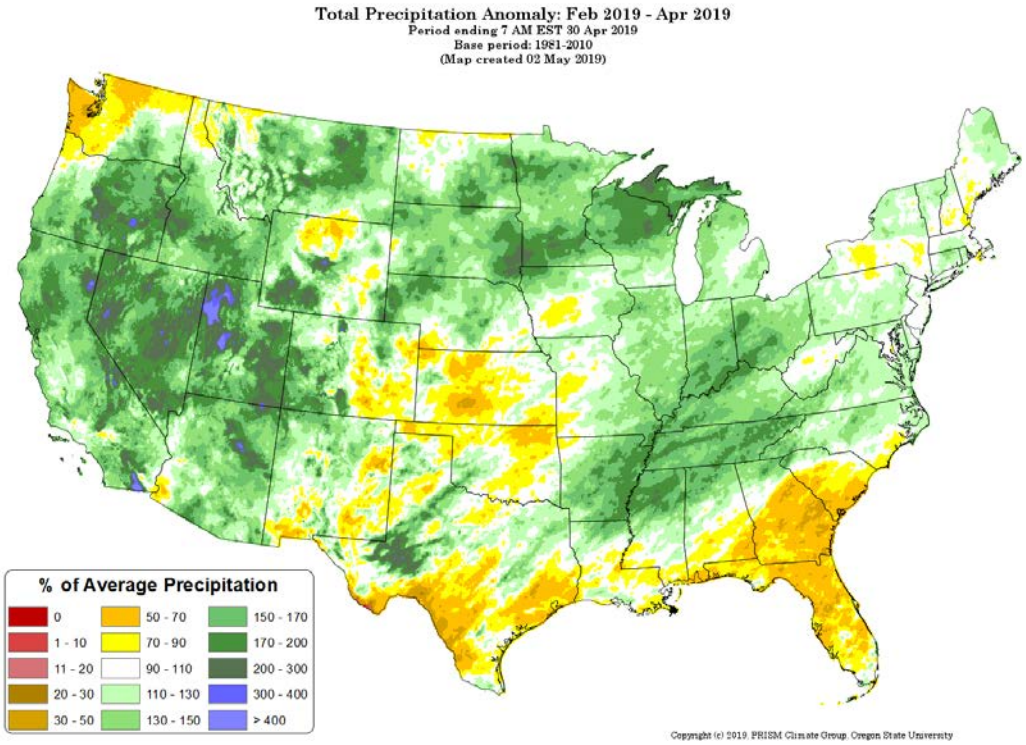



Previous month national total precipitation percent of average map

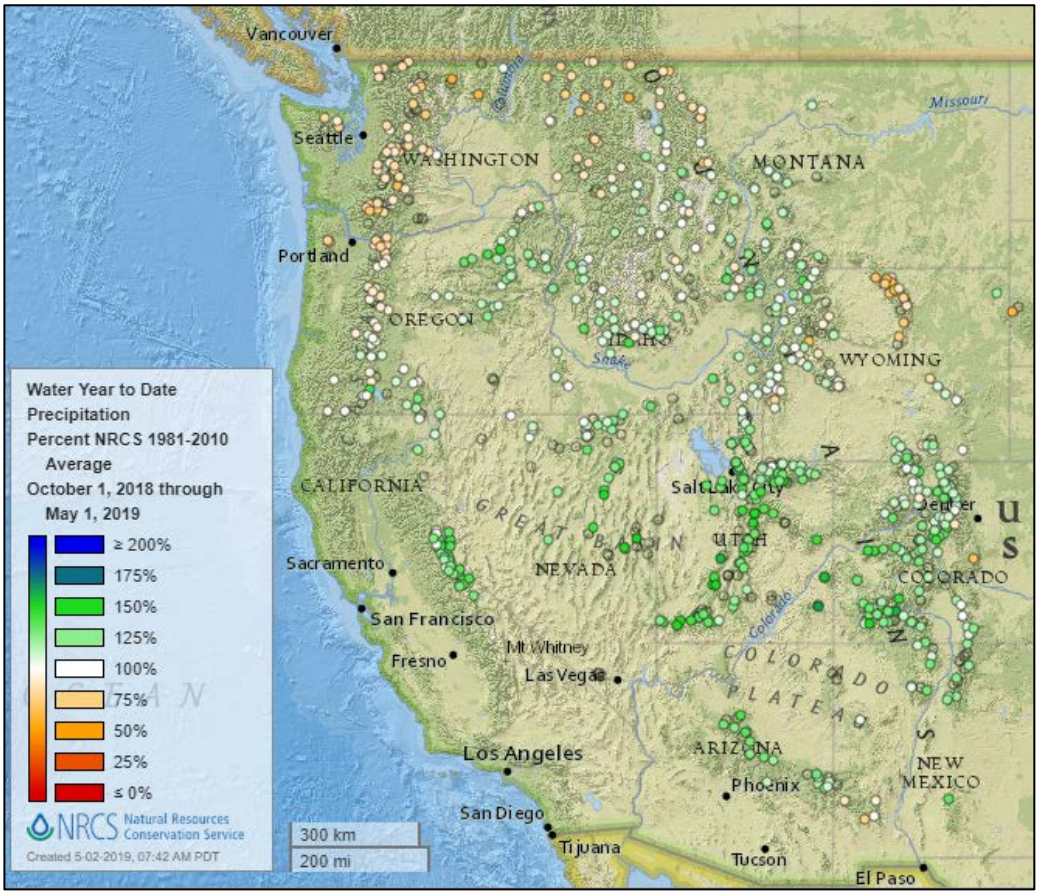
## Last 3 Months, All Available Data Including SNOTEL and NWS Networks

Source: PRISM

February through April 2019 total precipitation percent of average map

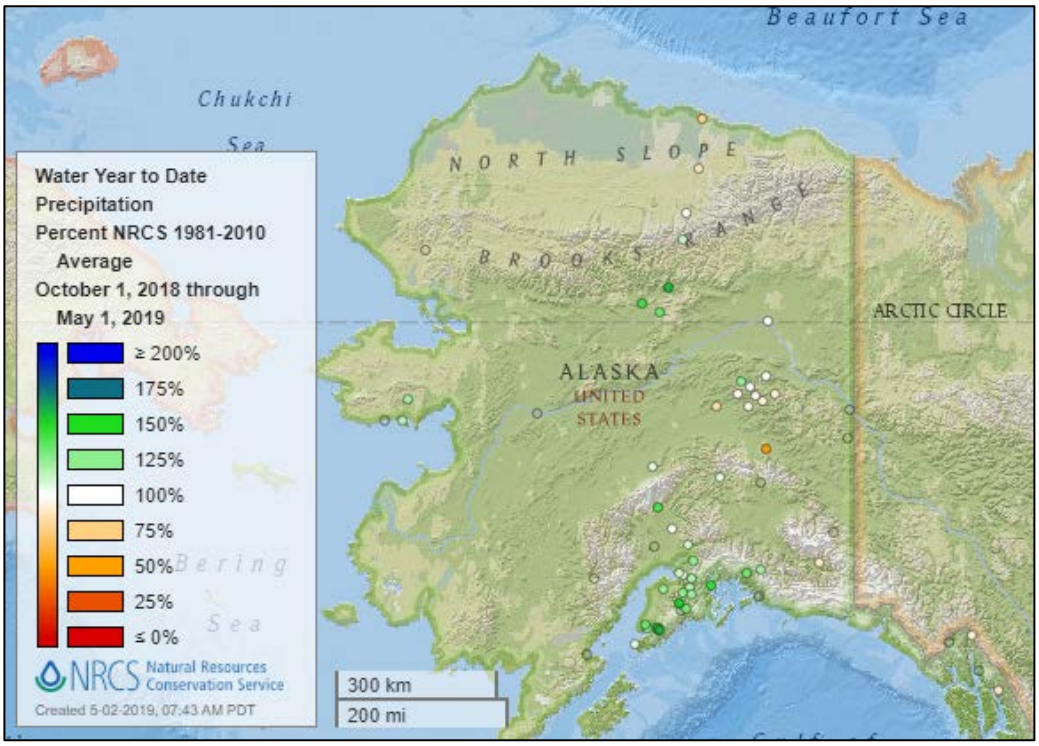


## Water Year-to-Date, NRCS SNOTEL Network




[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]

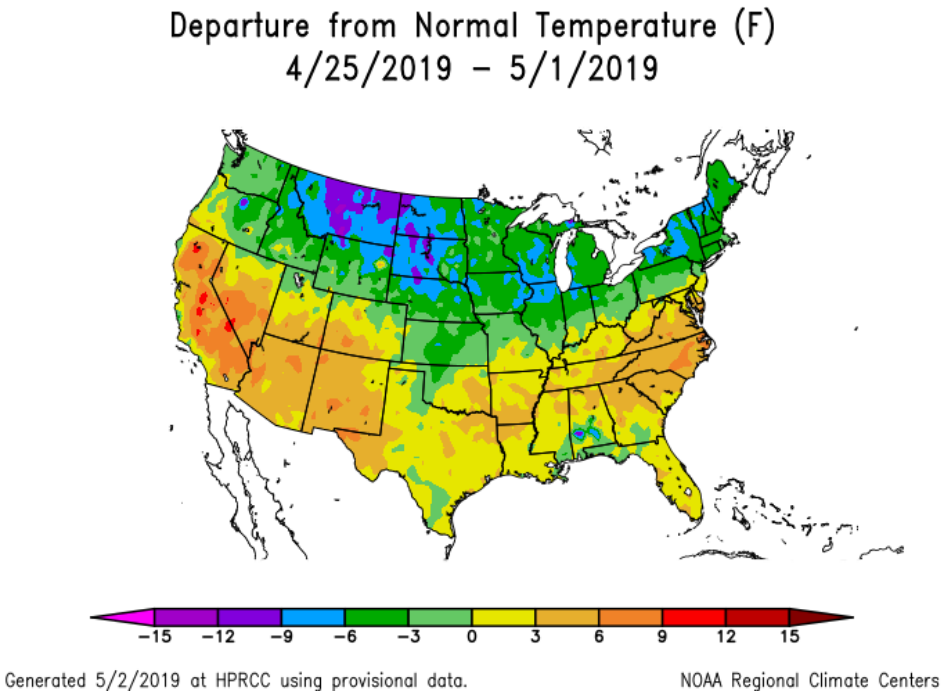
***See also:***
[Alaska 2019 water year-to-date precipitation values (inches) map]

# Temperature

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

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

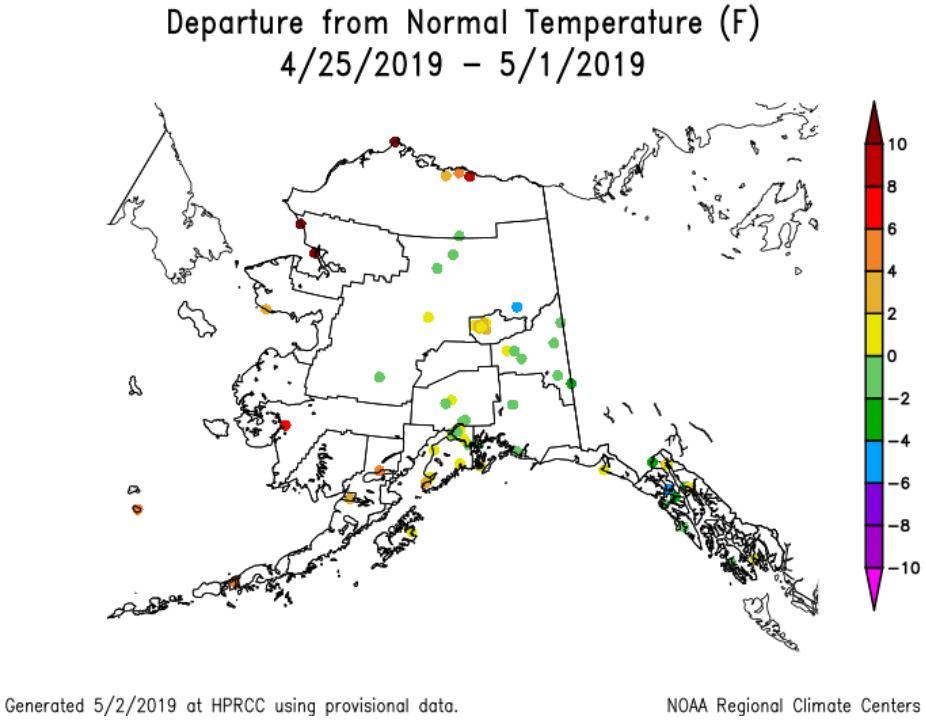
***See also:*** 7-day temperature (° F) map




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

7-day temperature anomaly map for Alaska.

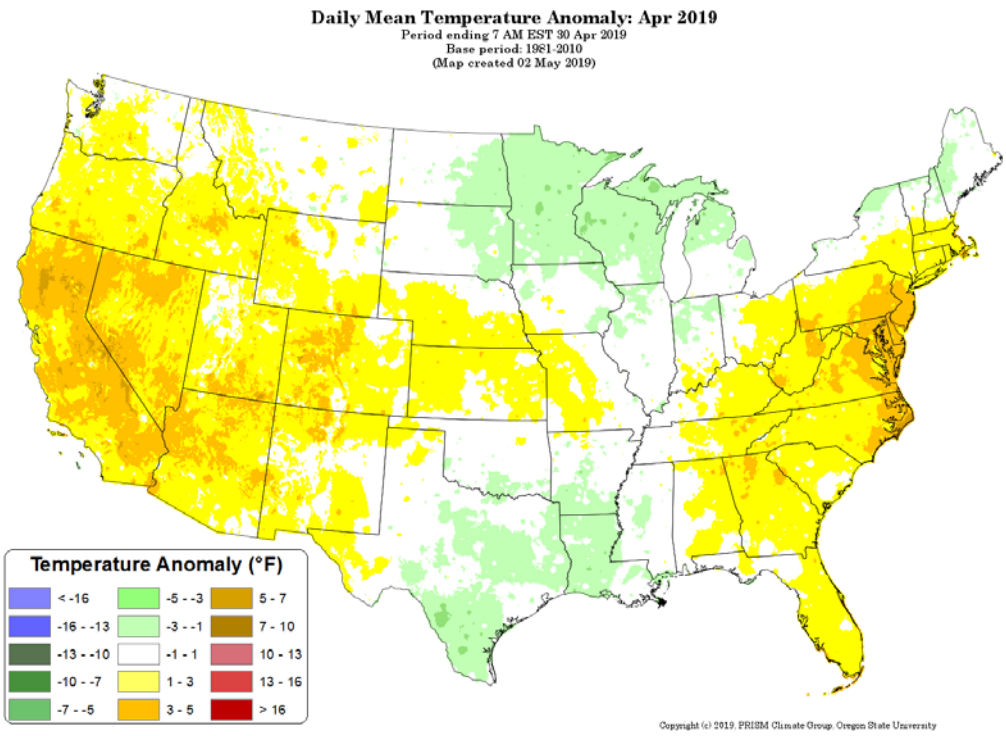
***See also:*** 7-day temperature (° F) map



## Previous Month, All Available Data Including SNOTEL and NWS Networks

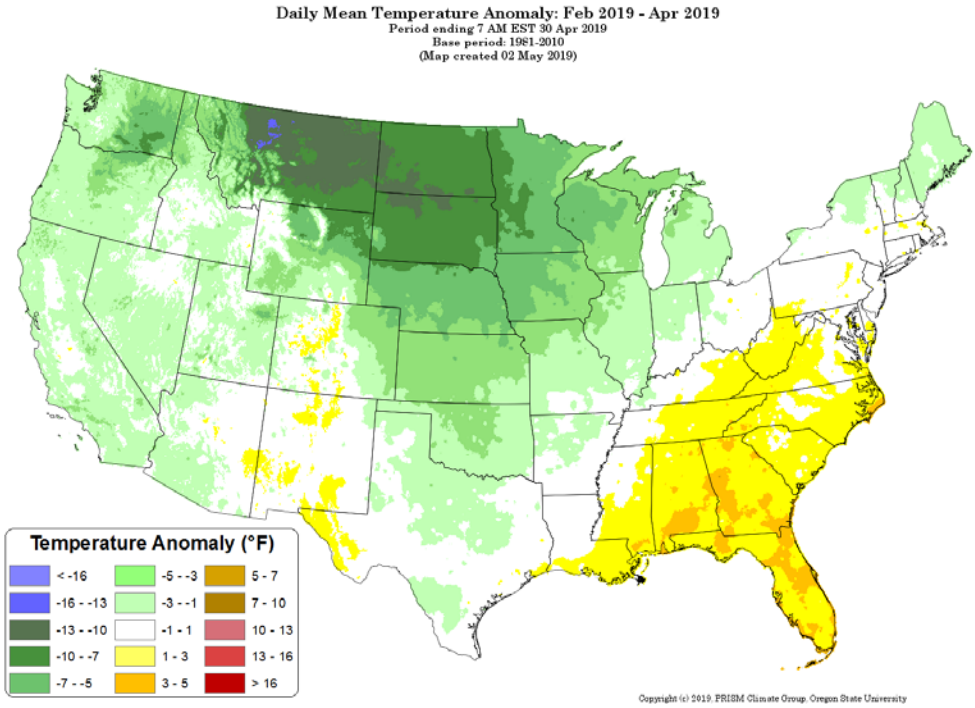
Source: PRISM

[Previous month 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]

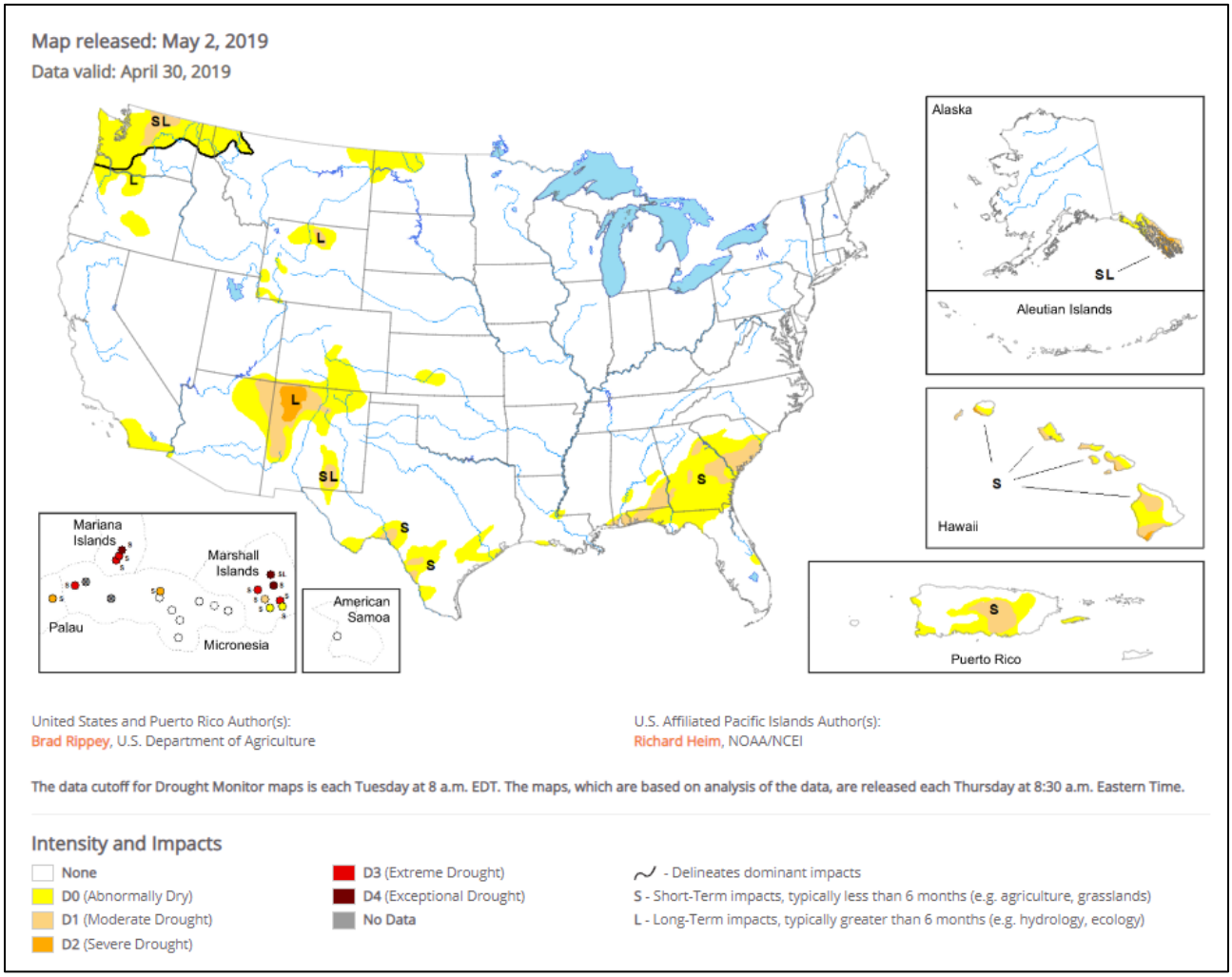
# Drought

## U.S. Drought Monitor

Source: National Drought Mitigation Center

## U.S. Drought Portal

Source: NOAA




## Current National Drought Summary, May 2, 2019

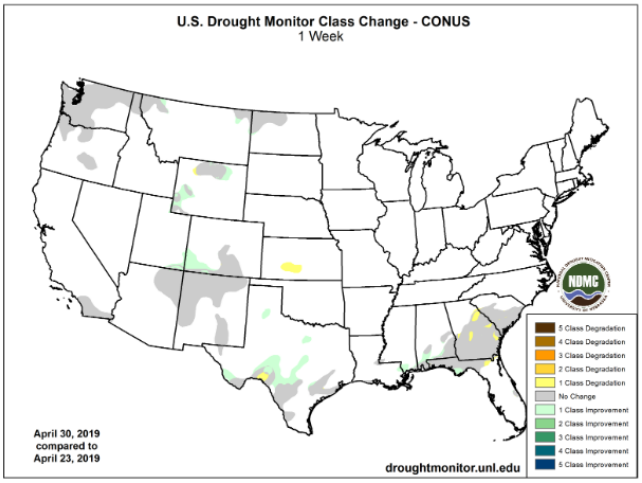
Source: National Drought Mitigation Center

"An active weather pattern maintained historically low drought coverage across the contiguous United States, with only a few areas currently experiencing dryness (D0) or moderate to severe drought (D1 to D2). Prior to April 2019, the record-low drought coverage across the Lower 48 States during the 20-year history of the U.S. Drought Monitor stood at 4.52% on May 23, 2017. During the drought-monitoring period ending on the morning of April 30, locally significant precipitation fell in dryness- and drought-affected areas across the Rockies, Intermountain West, northern Plains, and parts of the South. In contrast, little or no precipitation fell in the Far West and the southern Atlantic region."

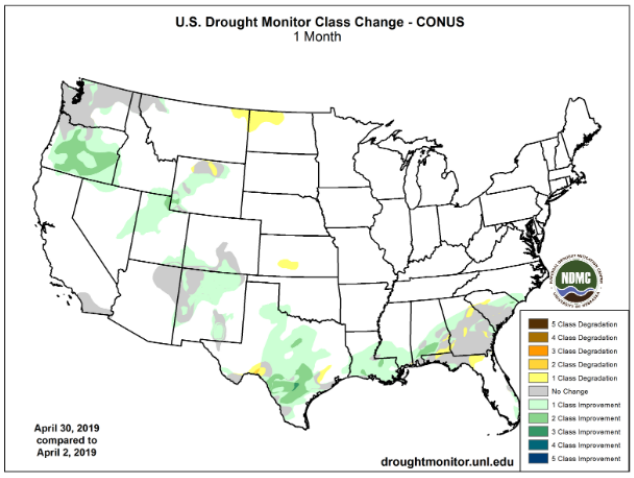
## Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

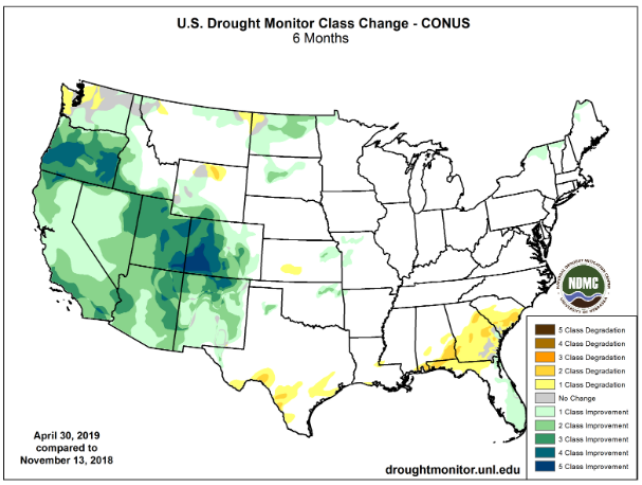
**1 Week**



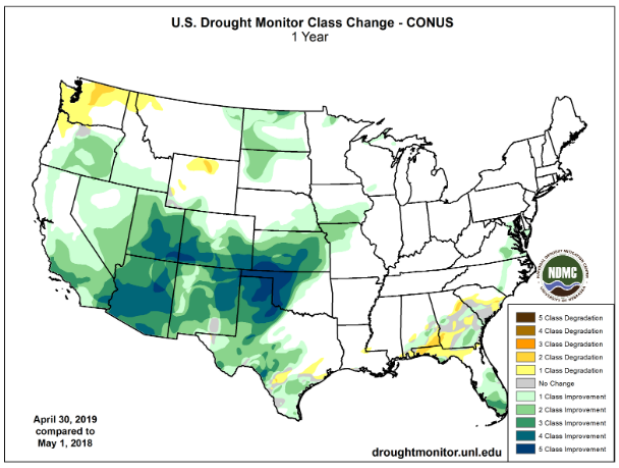

**1 Month**




**6 Months**




**1 Year**



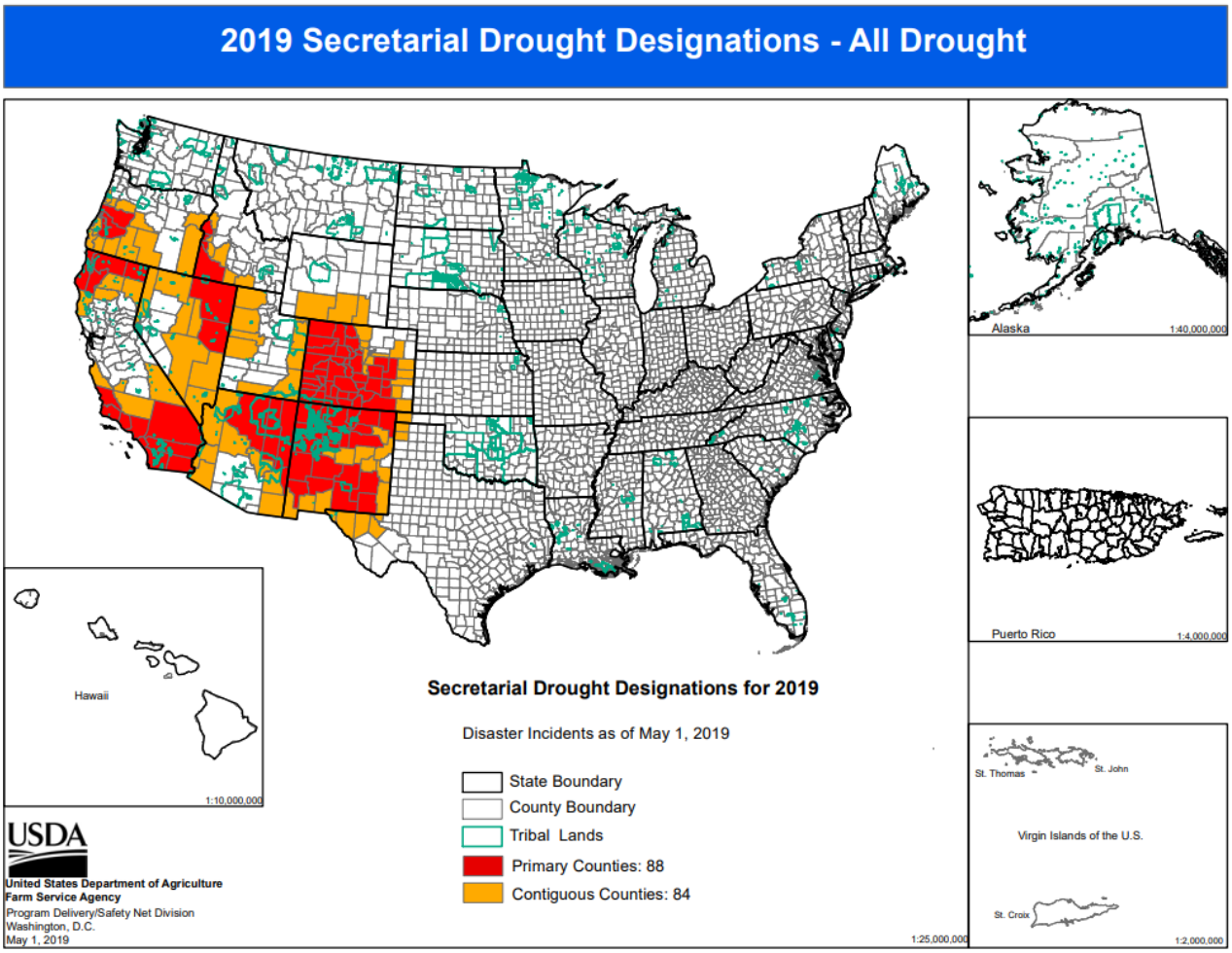

Changes in drought conditions over the last 12 months for the contiguous U.S.

## 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

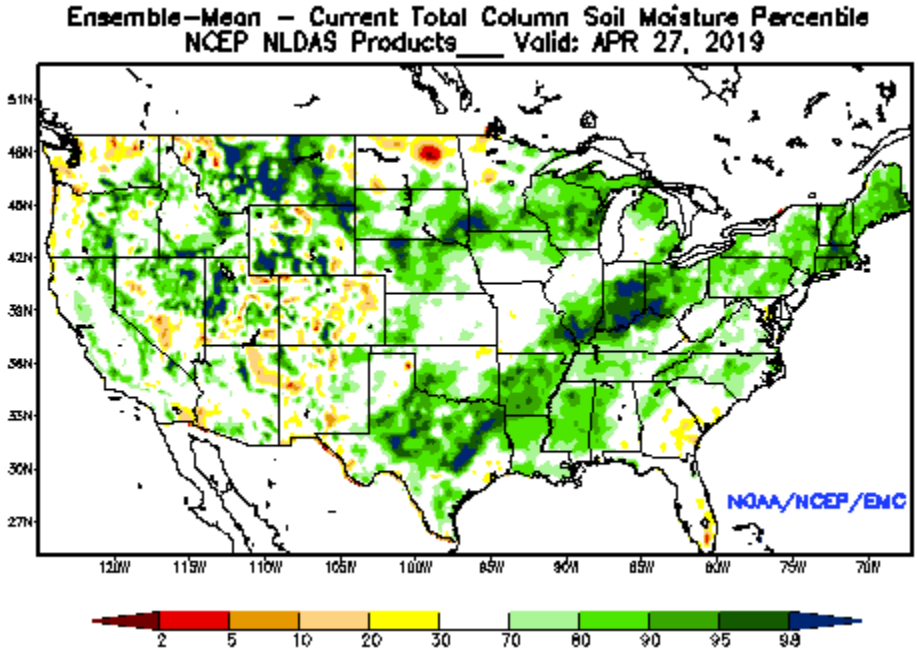
Source: USDA Farm Service Agency



# Other Climatic and Water Supply Indicators

## Soil Moisture

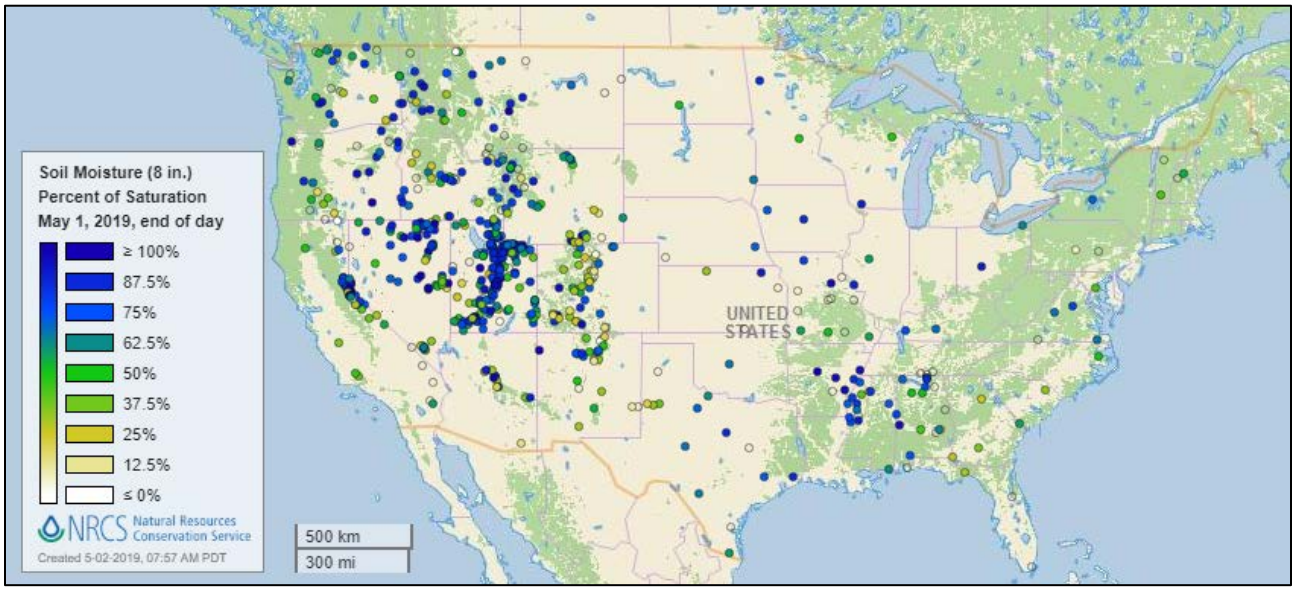
Source: NOAA National Centers for Environmental Prediction




Modeled soil moisture percentiles as of April 27, 2019

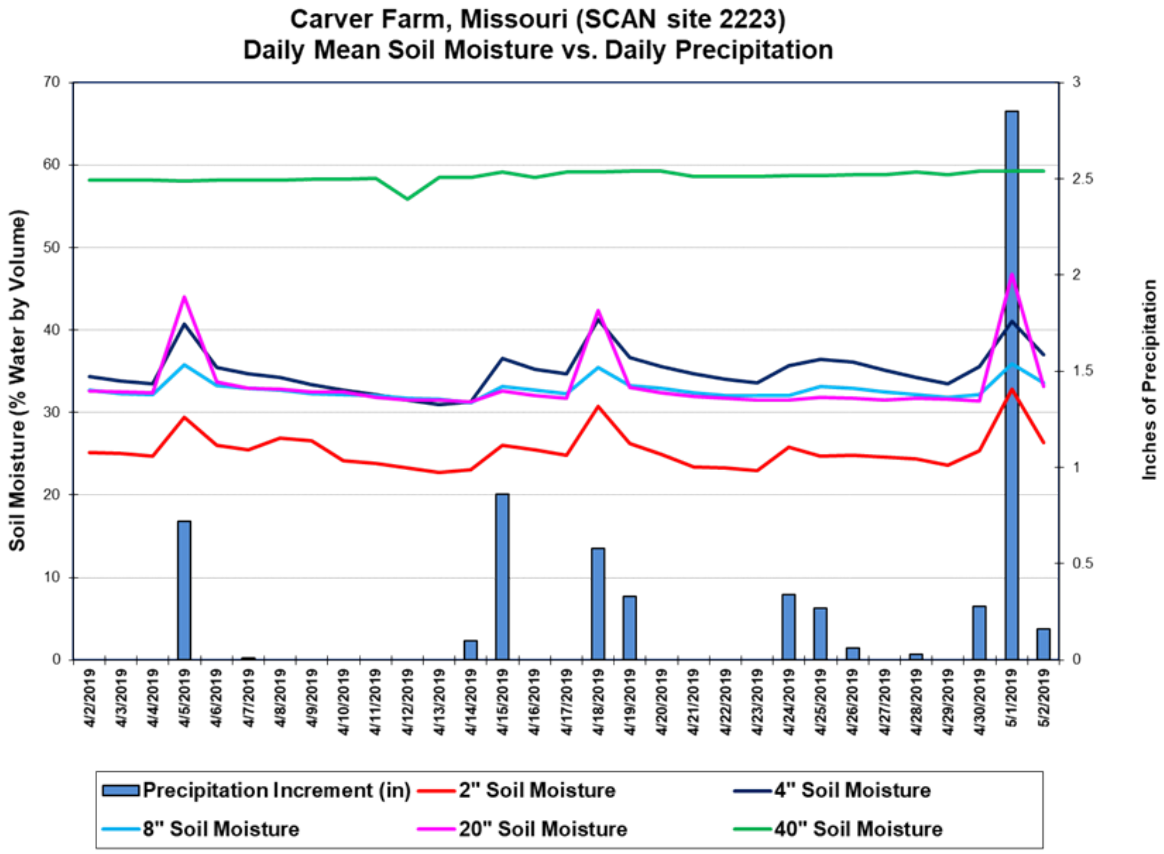
## Soil Moisture Percent of Saturation

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



## Soil Moisture Data

Source: NRCS Soil Climate Analysis Network (SCAN)




This chart shows the soil moisture and precipitation for the last 30 days at the Carver Farm SCAN site in Missouri. This site is in an area that has recently experienced heavy rainfall. On 5/1/2019 accumulated precipitation totaled 2.85 inches followed by an overall increase in soil moisture at the 2-, 4-, 8-, and 20-inch sensor levels. Soil at the 40-inch sensor level is at saturation.

### Soil Moisture Data Portals

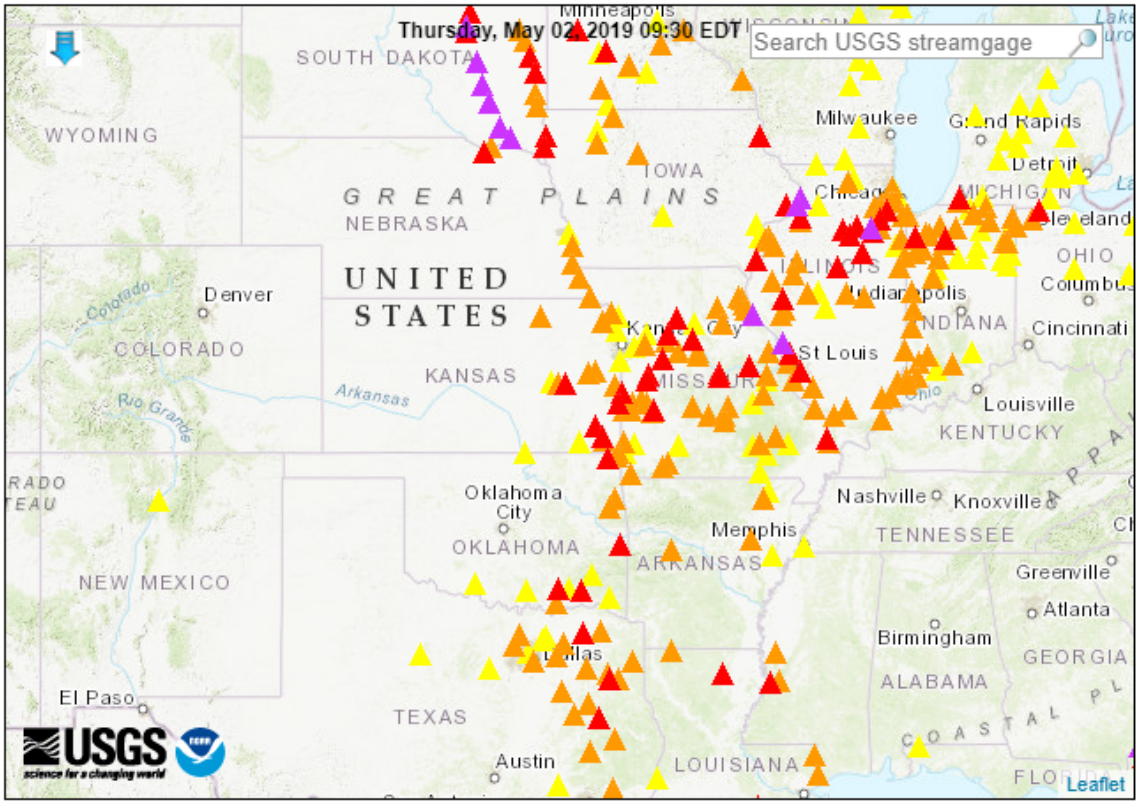
- CRN Soil Moisture
- Texas A&M University North American Soil Moisture Database
- University of Washington Experimental Modeled Soil Moisture

## Streamflow, Drought, Flood, and Runoff

Source: U.S. Geological Survey

### Map of flood and high flow conditions

(13 in major flood, 59 in moderate flood, 171 in minor flood, 110 in near flood)

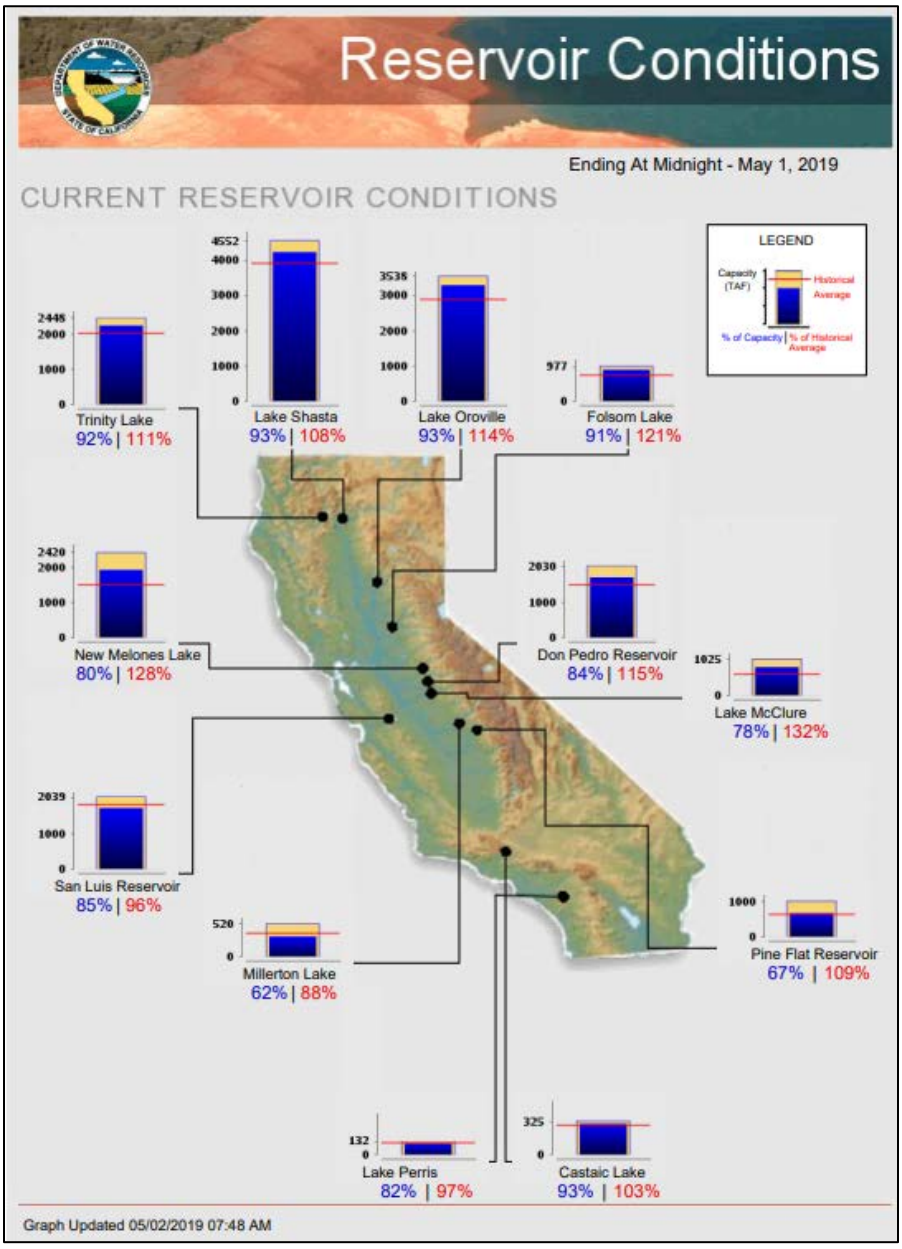



| Explanation - Percentile classes | | | | | | |
|---|---|---|---|---|---|---|
| <95 | 95-98 | >= 99 | Above action stage | Above flood stage | Above moderate flood stage | Above major flood stage |
| △ Streamgage with flood stage ○ Streamgage without flood stage | | | | | | |

WaterWatch: Streamflow, drought, flood, and runoff conditions

## Reservoir Storage

### Current California Reservoir Conditions
Source: California Department of Water Resources




Current California Reservoir Conditions

### 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

# Short- and Long-Range Outlooks

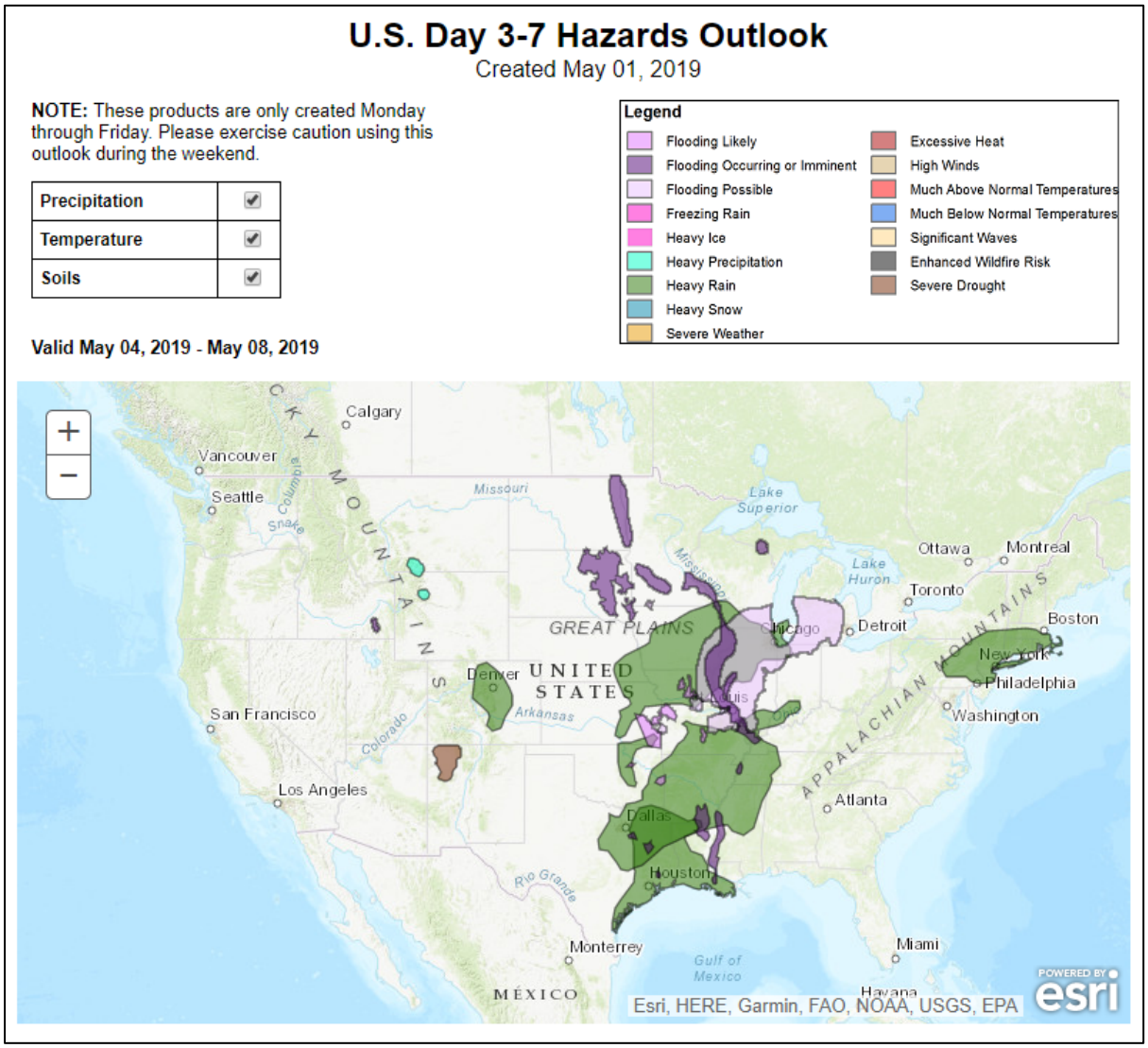
## Agricultural Weather Highlights

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

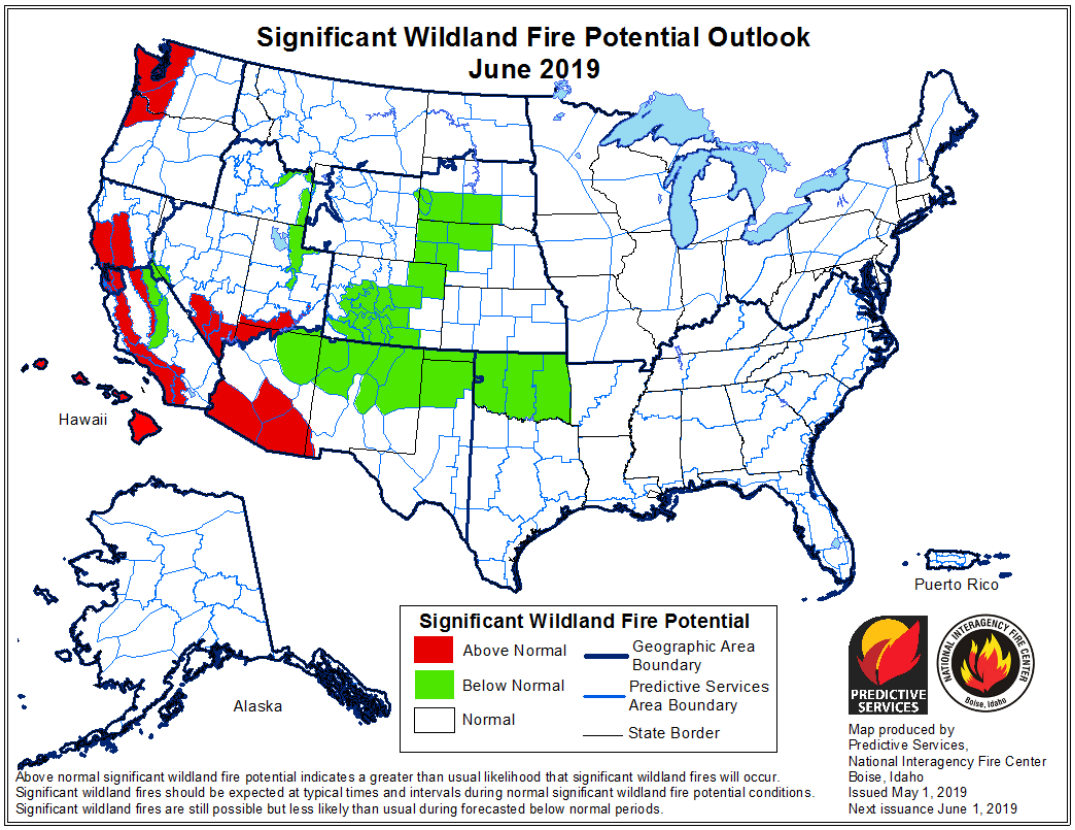
**National Outlook, Thursday, May 2, 2019**: "During the next few days, stormy weather will persist across the South, East, and lower Midwest. Additional rainfall could total 1 to 3 inches along an axis stretching from south-central Texas into southern New England. The rain could lead to an increase in flash flooding across a broad area, including the mid-South, in addition to the river flooding already occurring in parts of the middle Mississippi Valley. Elsewhere, mostly dry weather will accompany a Western warming trend, while a new surge of cold air will arrive across the northern Plains and upper Midwest during the weekend and early next week. The NWS 6- to 10-day outlook for May 7 – 11 calls for the likelihood of wetter-than-normal weather nearly nationwide. Below-normal precipitation should be limited to northern California and the Pacific Northwest. Meanwhile, warmer-than-normal conditions across the Southeast and the Far West should contrast with below-normal temperatures in most other regions, including a large area stretching from the Southwest into the Rockies, Plains, and upper Midwest."

## Weather Hazards Outlook: May 4 – May 8, 2019

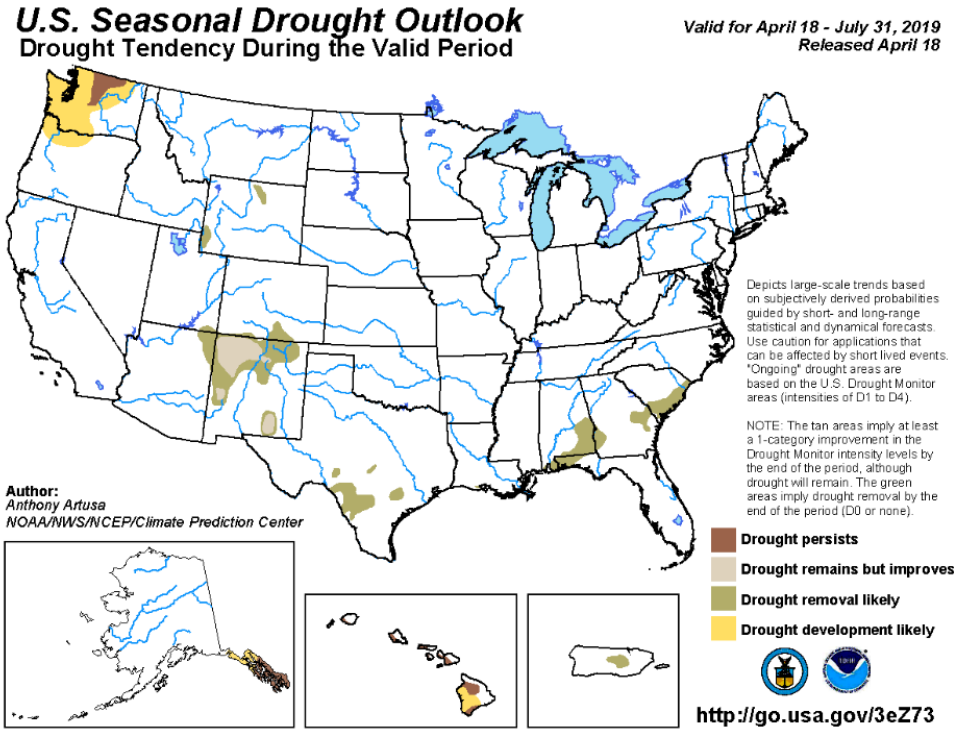
Source: NOAA Climate Prediction Center



## Significant Wildland Fire Potential Outlook
Source: National Interagency Fire Center



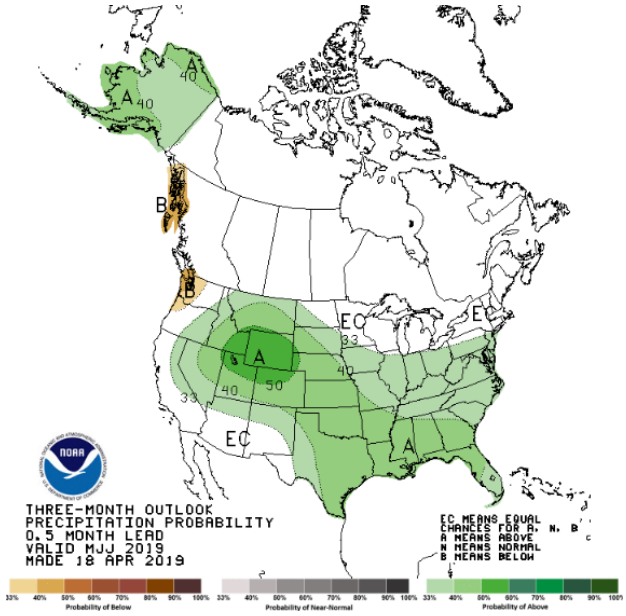

## Seasonal Drought Outlook: April 18 – July 31, 2019
Source: National Weather Service



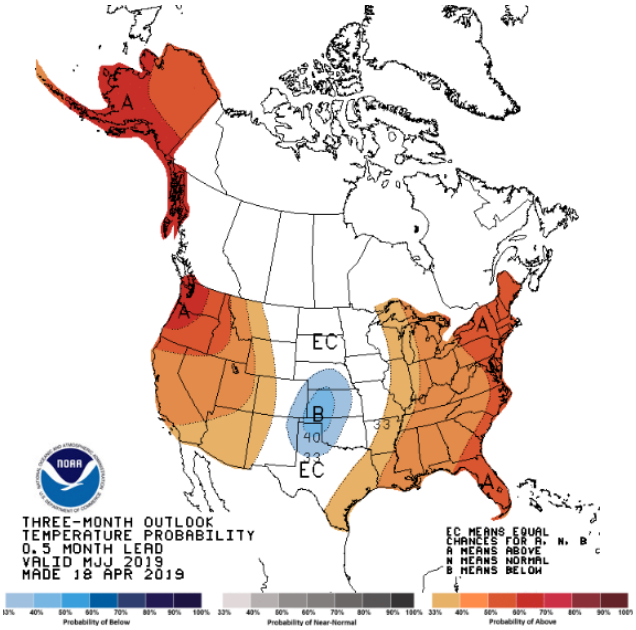
## Climate Prediction Center 3-Month Outlook

Source: National Weather Service

Precipitation




Temperature




May-June-July (MJJ) 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.