



United States Department of Agriculture

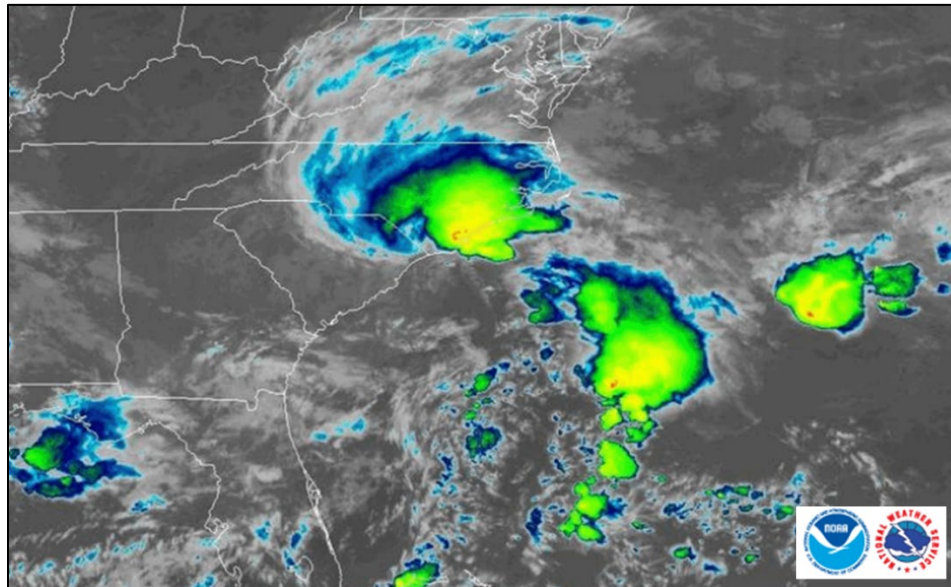
Water and Climate Update

September 19, 2024

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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Unnamed storm causes historic flooding in coastal Carolinas



A storm of historic proportions brought heavy rainfall to the coastal Carolinas on September 16, near the border of the two states. Although the storm never received a name, it caused significant impacts in the region. Per the National Weather Service report in Wilmington, North Carolina:

“Historic rainfall occurred across the Cape Fear Region of southeastern North Carolina on September 16, 2024. Gauges and automated radar estimates showed that 12 to 20 inches of rain fell in only two days, creating severe flash flooding affecting Carolina Beach, Southport, Bolivia, and Boiling Spring Lakes. Although this system never became a named tropical system, observed weather impacts including strong winds, heavy rain, and flash flooding were similar to tropical storms and hurricanes of the past.”

Related:

[Historic Flooding Rainfall with Potential Tropical Cyclone Eight: September 15-16, 2024](#) – NWS Wilmington, NC

[A once-in-1,000-year rainfall event from an unnamed storm floods homes and forces rescues in North Carolina](#) – CNN

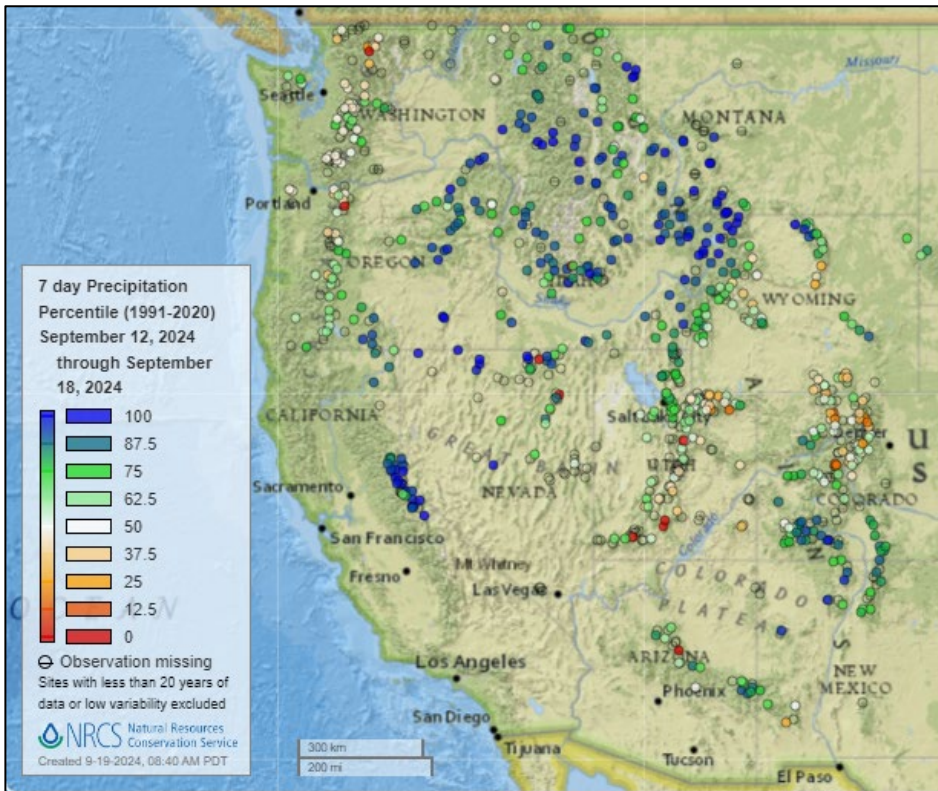
[PHOTOS: Tropical conditions impact Wilmington area](#) – Wilmington Star News

[Tropical Definitions](#) – National Weather Service

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

Precipitation

Last 7 Days, NRCS SNOTEL Network

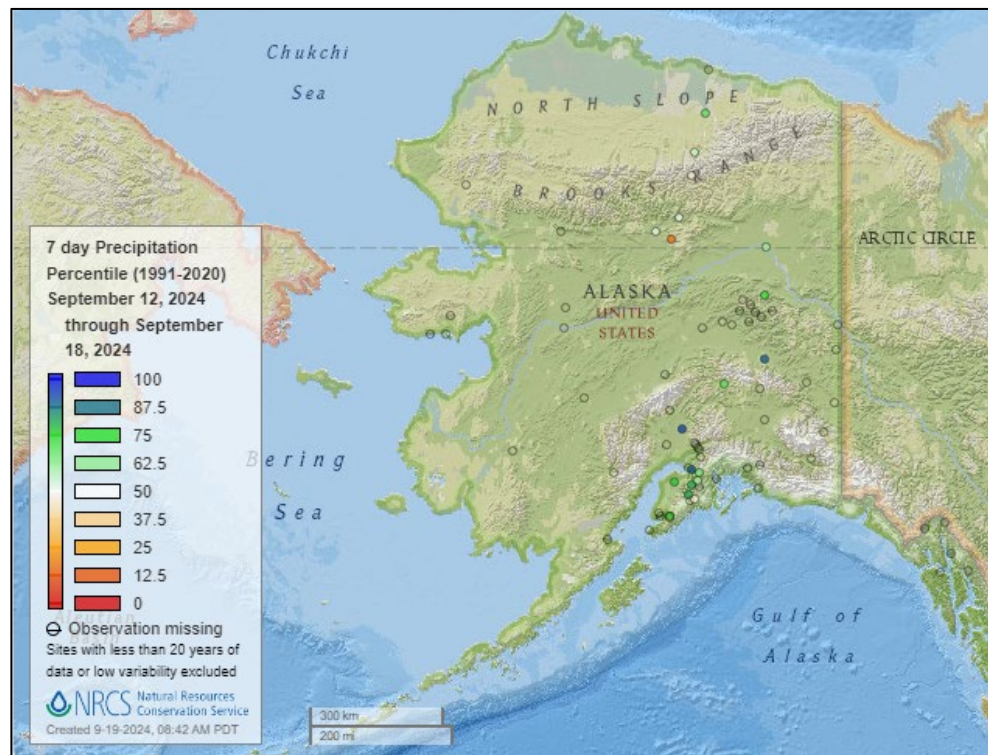


[7-day precipitation percentile map](#)

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

[Alaska 7-day precipitation percentile map](#)

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



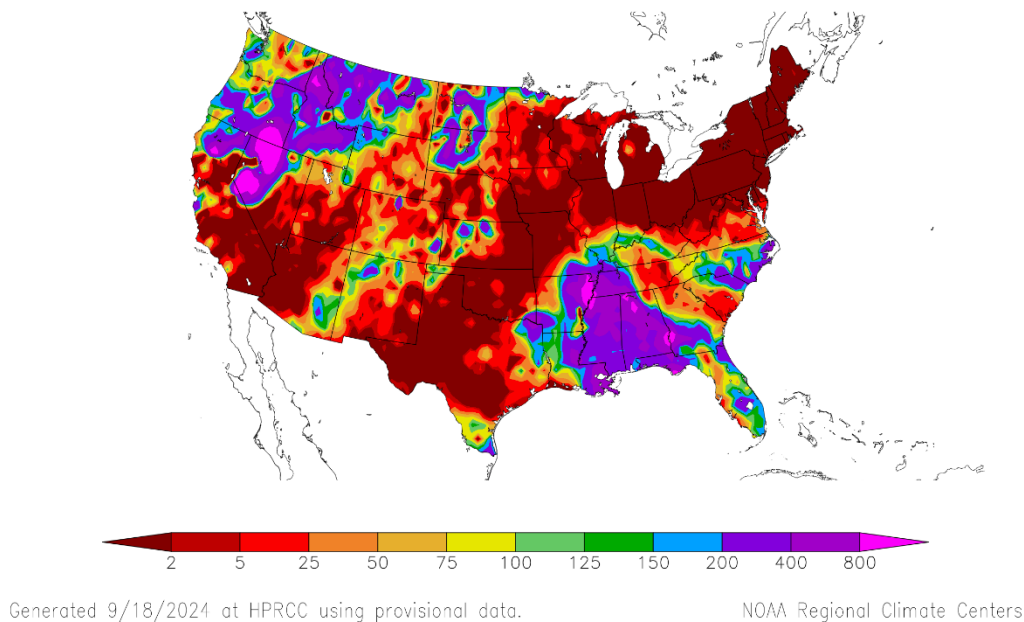
Last 7 Days, National Weather Service (NWS) Networks

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](#)

Percent of Normal Precipitation (%)
9/11/2024 – 9/17/2024



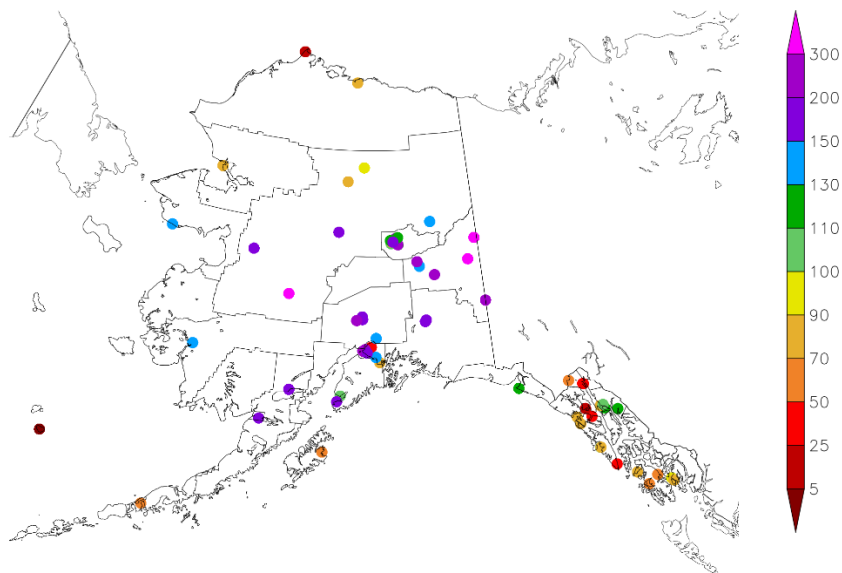
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

[7-day precipitation percent of normal map](#) for Alaska.

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

Percent of Normal Precipitation (%)
9/11/2024 – 9/17/2024



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

Source: PRISM

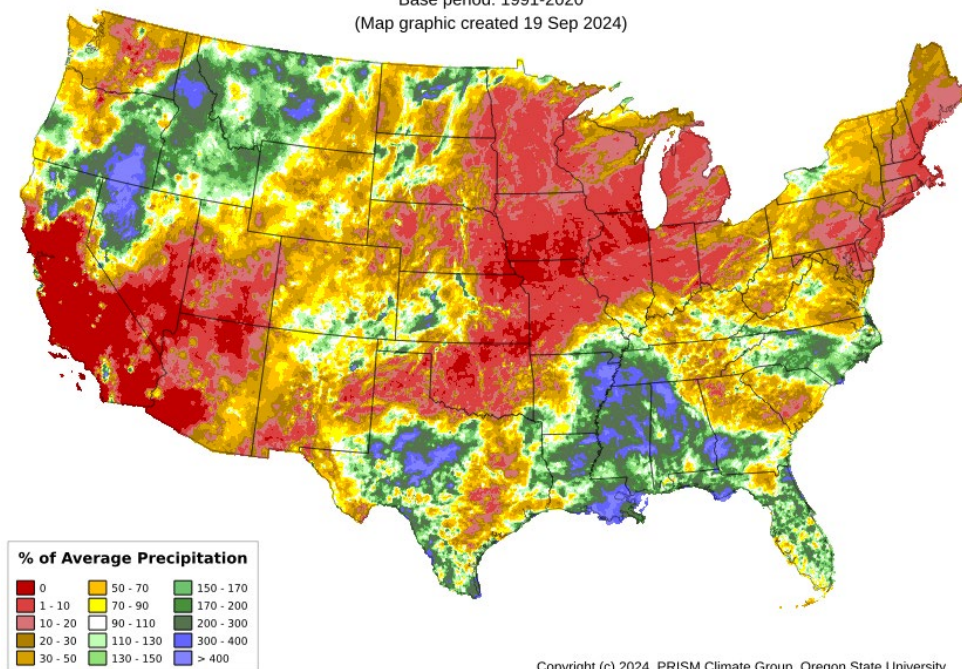
Total Precipitation Anomaly: 01 Sep 2024 - 18 Sep 2024

Period ending 7 AM EST 18 Sep 2024

Base period: 1991-2020

(Map graphic created 19 Sep 2024)

[Month-to-date national total precipitation anomaly map](#)



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

Source: PRISM

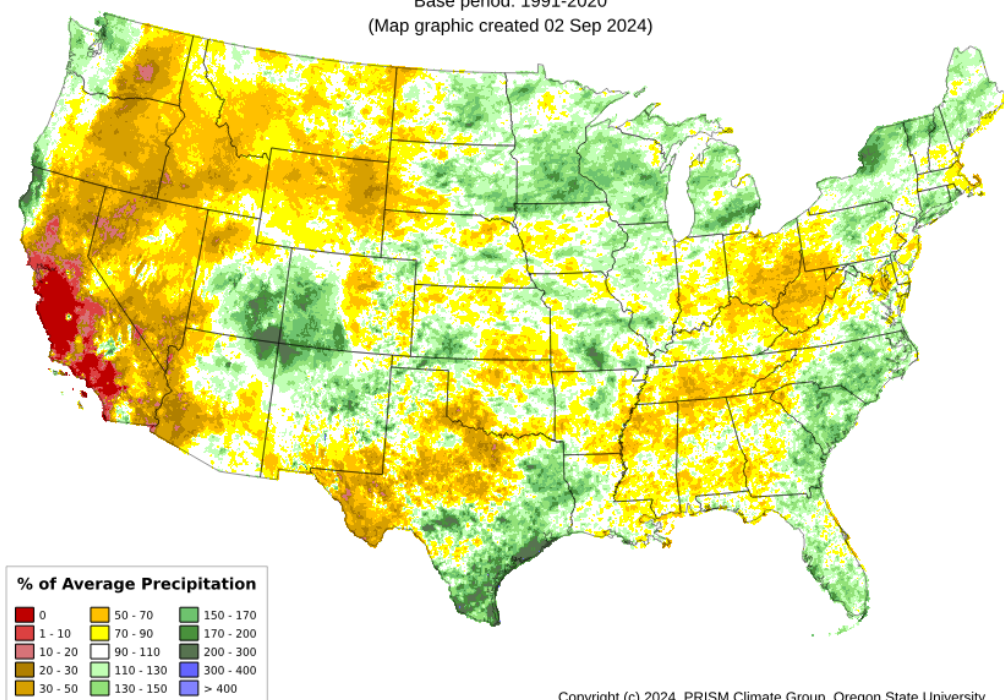
[June through August 2024 precipitation anomaly map](#)

Total Precipitation Anomaly: Jun 2024 - Aug 2024

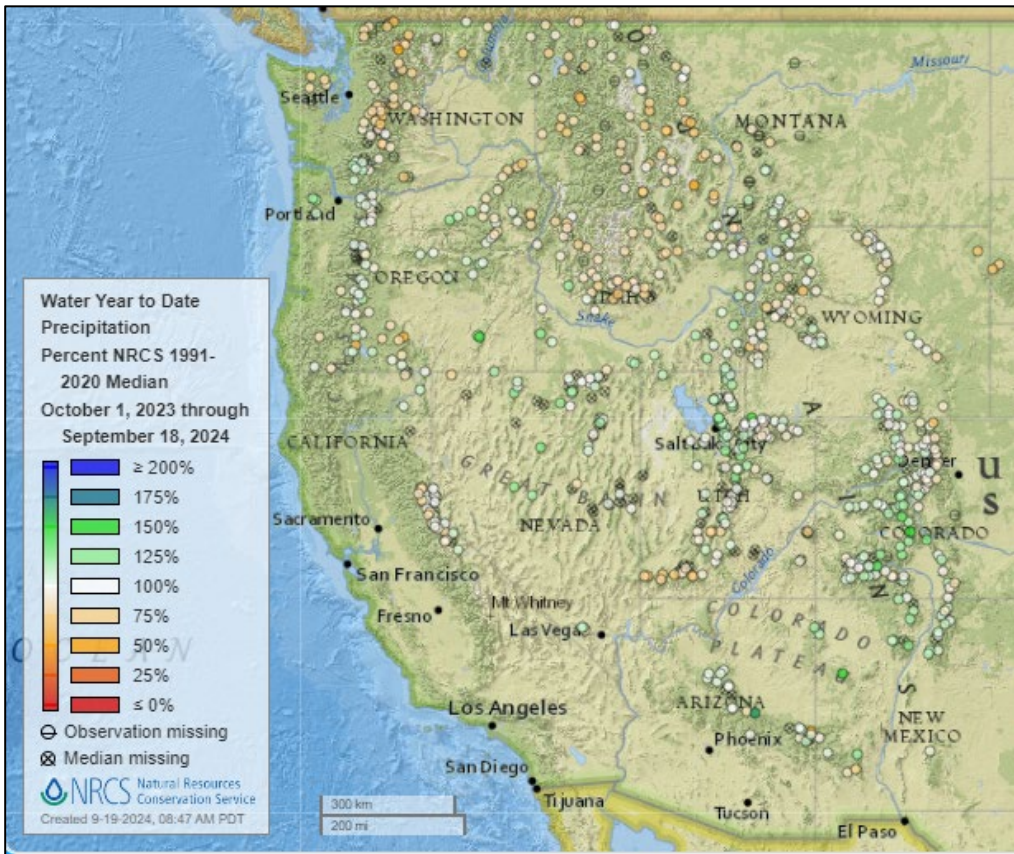
Period ending 7 AM EST 31 Aug 2024

Base period: 1991-2020

(Map graphic created 02 Sep 2024)



Water Year-to-Date, NRCS SNOTEL Network



[2024 water year-to-date precipitation percent of median map](#)

See also:

[2024 water year-to-date precipitation percent of average map](#)

[2024 water year-to-date precipitation values \(inches\) map](#)



[Alaska 2024 water year-to-date precipitation percent of median map](#)

See also:

[Alaska 2024 water year-to-date precipitation percent of average map](#)

[Alaska 2024 water year-to-date precipitation values \(inches\) map](#)

Temperature

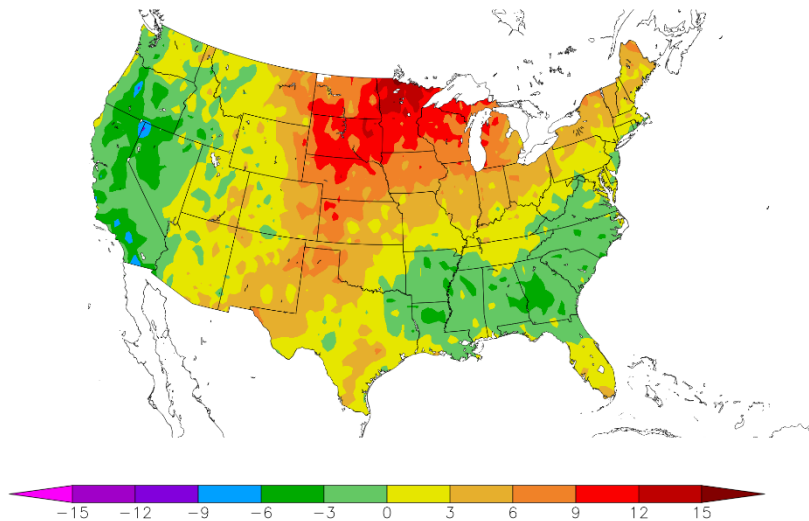
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

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

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

Departure from Normal Temperature (F)
9/11/2024 – 9/17/2024



Generated 9/18/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

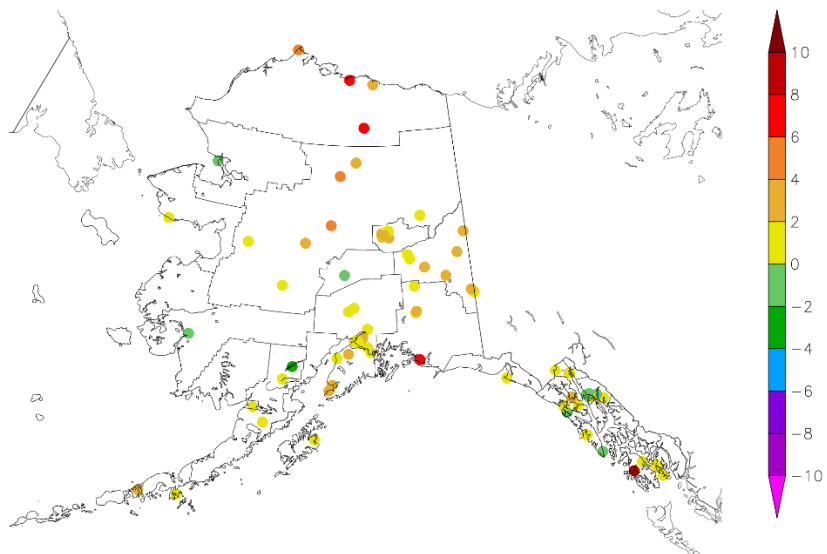
Last 7 Days, National Weather Service (NWS) Networks

Source: Regional Climate Centers

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

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

Departure from Normal Temperature (F)
9/11/2024 – 9/17/2024



Generated 9/18/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

Source: PRISM

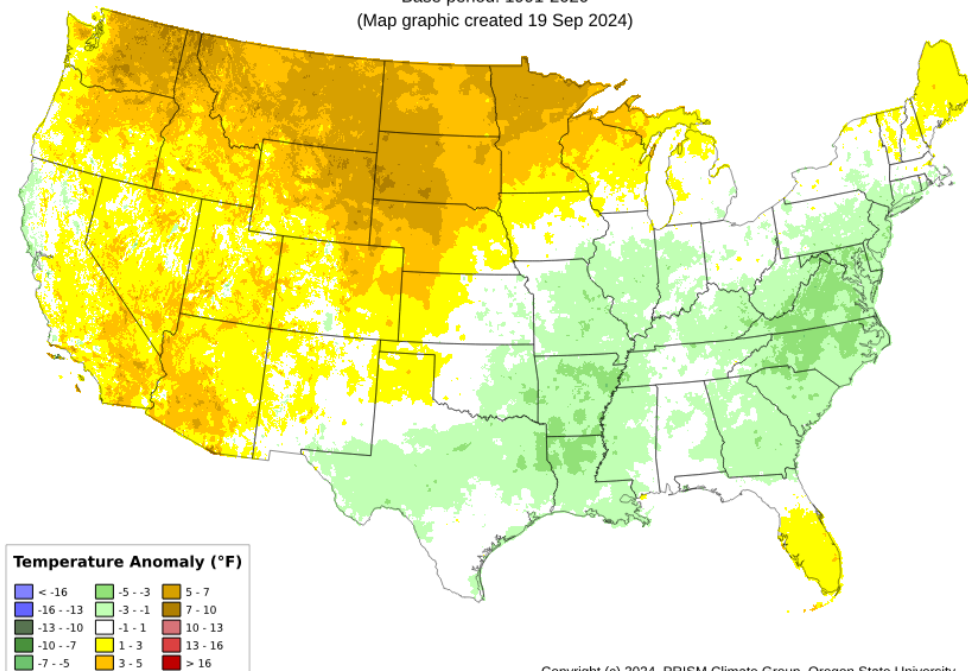
[Month-to-date
national daily
mean
temperature
anomaly map](#)

Daily Mean Temperature Anomaly: 01 Sep 2024 - 18 Sep 2024

Period ending 7 AM EST 18 Sep 2024

Base period: 1991-2020

(Map graphic created 19 Sep 2024)



Copyright (c) 2024, PRISM Climate Group, Oregon State University

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

Source: PRISM

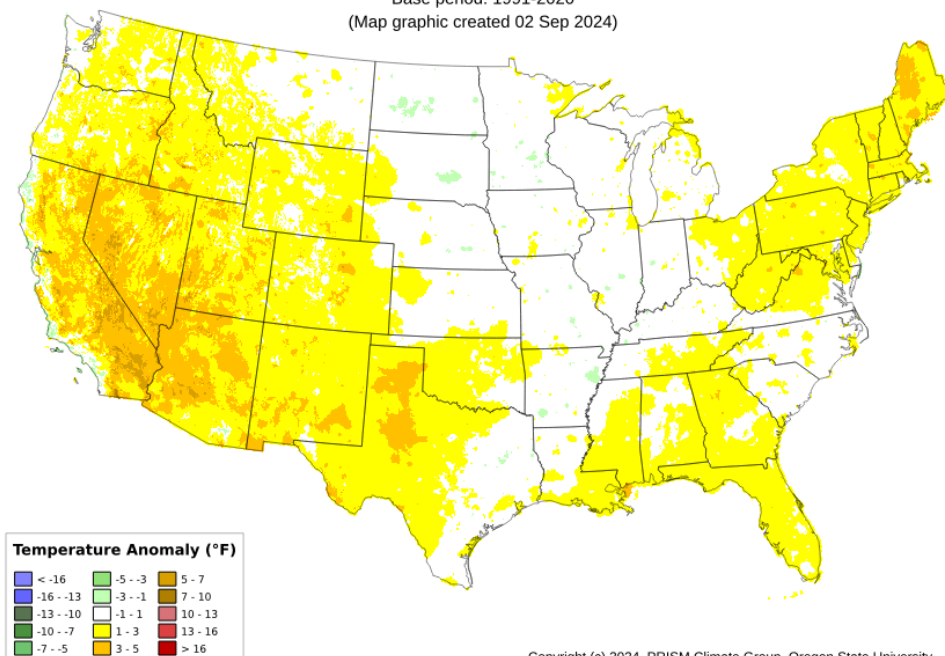
Daily Mean Temperature Anomaly: Jun 2024 - Aug 2024

Period ending 7 AM EST 31 Aug 2024

Base period: 1991-2020

(Map graphic created 02 Sep 2024)

[June through August
2024 daily mean
temperature anomaly
map](#)



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Drought

[U.S. Drought Monitor](#)

Source: National Drought Mitigation Center

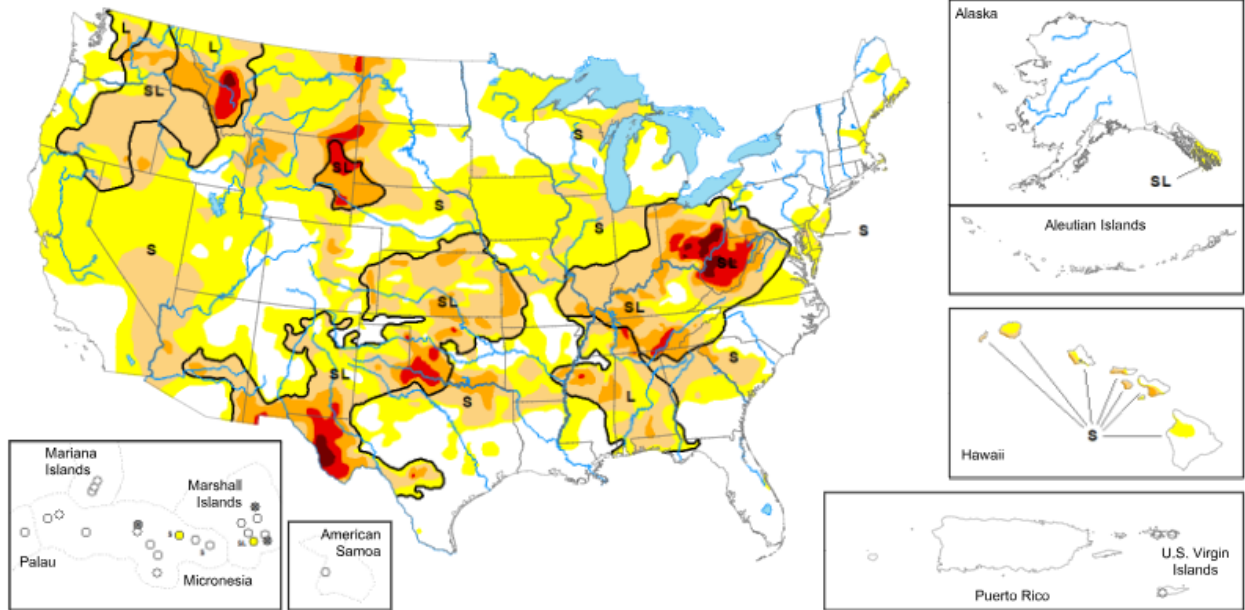
[U.S. Drought Portal](#)

Source: NOAA

Map released: September 19, 2024

Data valid: September 17, 2024

☐ View grayscale version of the map



United States and Puerto Rico Author(s):

[Brad Rippey](#), U.S. Department of Agriculture

Pacific Islands and Virgin Islands Author(s):

[Rocky Bilotta](#), NOAA/NCEI

More maps and statistics:

[U.S. States and Puerto Rico](#)

[Continental U.S.](#)

[Regions](#)

The data cutoff for Drought Monitor maps is each Tuesday at 8 a.m. EDT. The maps, which are based on analysis of the data, are released each Thursday at 8:30 a.m. Eastern Time.

Intensity and Impacts

☐ None

☐ D0 (Abnormally Dry)

☐ D1 (Moderate Drought)

☐ D2 (Severe Drought)

☐ D3 (Extreme Drought)

☐ D4 (Exceptional Drought)

☐ No Data

~ Delineates dominant impacts

S - Short-term impacts, typically less than 6 months (agriculture, grasslands)

L - Long-term impacts, typically greater than 6 months (hydrology, ecology)

SL - Short- and long-term impacts

Current [National Drought Summary](#), September 17, 2024

Source: National Drought Mitigation Center

“On September 11, Francine became the third and strongest hurricane of the season to strike the U.S. Gulf Coast, following Beryl (in Texas) in early July and Debby (in Florida) in early August. Francine briefly achieved sustained winds near 100 mph while making landfall around 5 pm CDT in Louisiana’s Terrebonne Parish. Hurricane-force wind gusts (74 mph or higher) spread as far inland as New Orleans, where a gust to 78 mph was clocked at Louis Armstrong International Airport. Meanwhile in the Mississippi Delta, antecedent dryness minimized flooding, although rainfall topped 4 inches in many locations and localized wind gusts briefly topped 50 mph. As the former hurricane drifted farther inland, days of locally heavy showers led to pockets of flash flooding, extending as far east as Alabama and the Florida Panhandle. Less than a week later, on September 16, Potential Tropical Storm Eight moved ashore in northeastern South Carolina and delivered flooding rainfall (locally a foot or more) across southeastern North Carolina. By the morning of September 17, the end of this drought-monitoring period, much of North Carolina and portions of neighboring states had received significant rain. The remainder of the country largely experienced dry weather, leaving widespread soil moisture shortages across the Plains and Midwest—a classic late-summer and early-autumn flash drought. In the western U.S., a cooling trend was accompanied some rain and high-elevation snow, heaviest across the northern Rockies and environs. As the long-running Western heat wave subsided, late-season warmth replaced previously cool conditions across the Plains, Midwest, and Northeast. Nationally, nearly one-half (46%) of the rangeland and pastures were rated in very poor to poor condition on September 15, according to the U.S. Department of Agriculture, up from an early-summer minimum of 19%.”

National Drought Summary – Looking Ahead

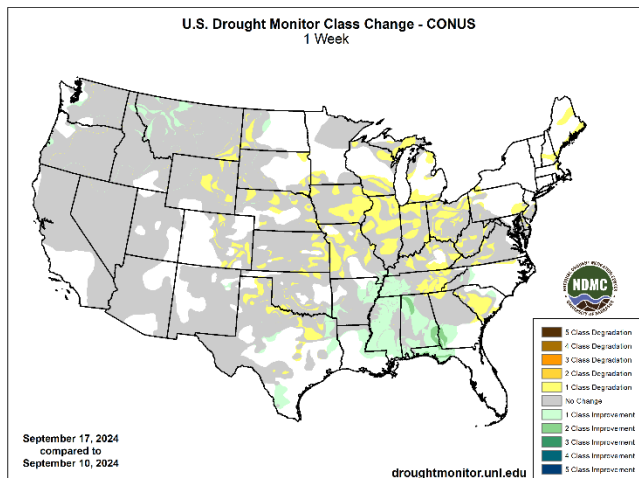
“During the next 5 days, active weather across the nation’s mid-section could lead to significant precipitation in from the central sections of the Rockies and Plains into the upper Midwest. While rain could slow agricultural fieldwork, including harvest activities, rangeland, pastures, and recently planted winter wheat will benefit from a boost in topsoil moisture. In contrast, generally dry weather will prevail across the remainder of the country, excluding the Atlantic Coast States. However, the western Caribbean Sea will need to be monitored for tropical cyclone development, with possible future implications for the eastern U.S.

The NWS 6- to 10-day outlook for September 24-28 calls for of near- or above-normal temperatures nationwide, with the West, North, and southern Texas having the greatest likelihood of experiencing warmer-than-normal weather. Meanwhile, near- or below-normal precipitation across the western and north-central U.S., as well as northern New England, should contrast with wetter-than-normal conditions from the central and southern Plains to the Atlantic Coast, extending as far north as the Ohio Valley and southern New England.”

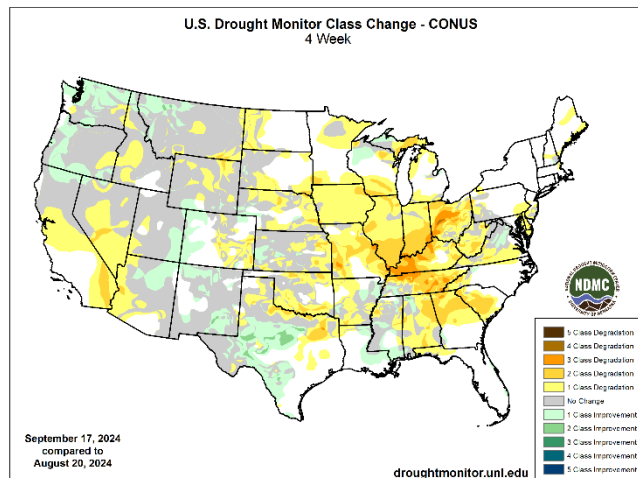
Changes in Drought Monitor Categories over Time

Source: National Drought Mitigation Center

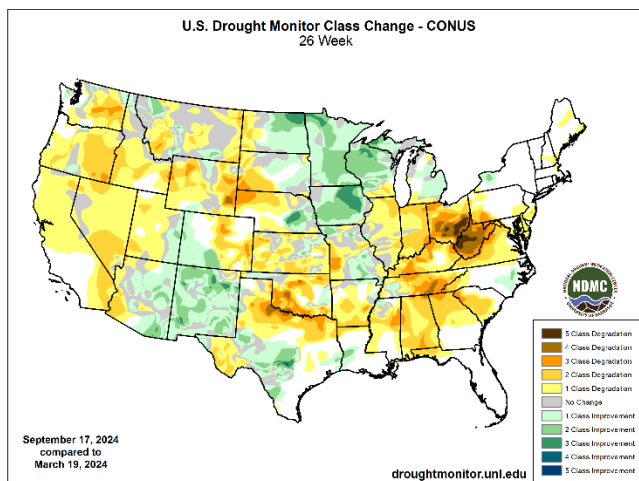
1 Week



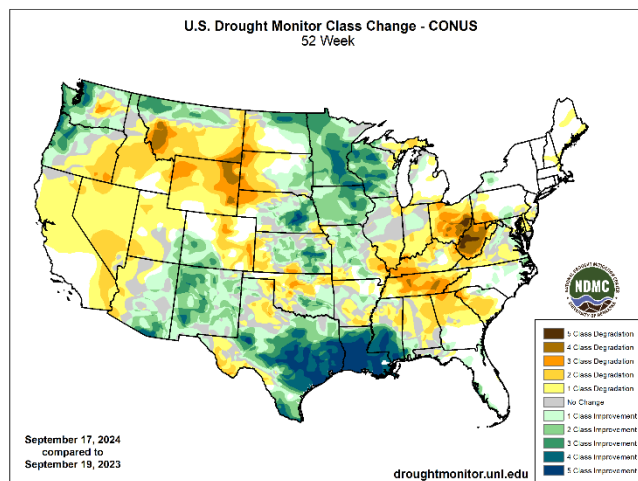
1 Month



6 Months



1 Year



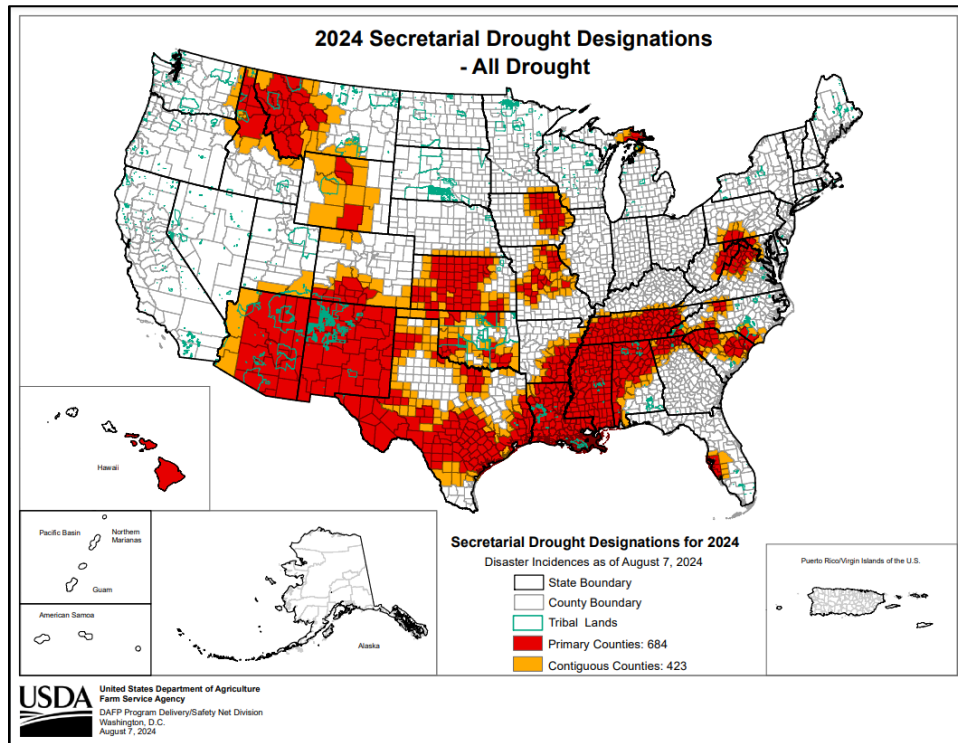
[Changes in drought conditions over the last 12 months for the contiguous U.S.](#)

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](#)

USDA Secretarial [Drought Designations](#)

Source: USDA Farm Service Agency



Wildfires: [Fire Information for Resource Management System US/Canada](#)

Source: NASA/USDA Forest Service



Current large wildland fires, as classified by the National Interagency Coordination Center

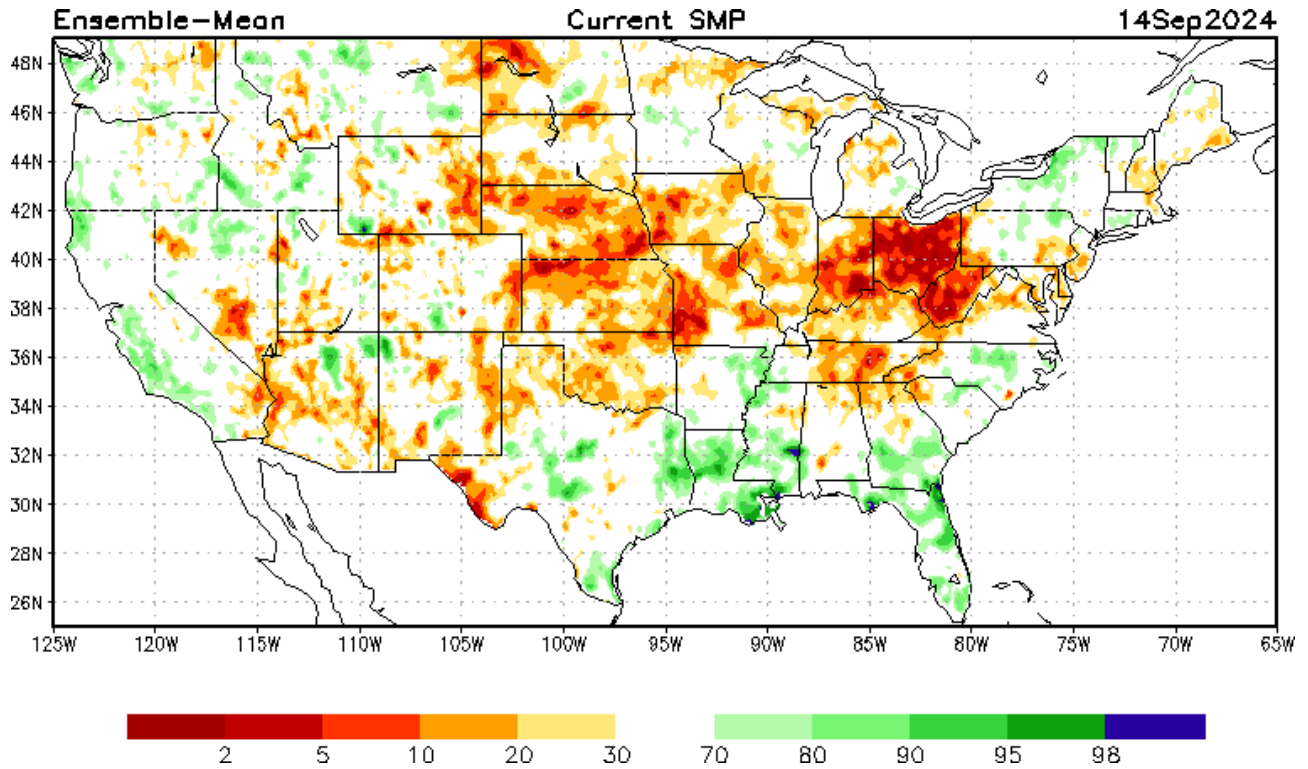
Highlighted Wildfire Resources

- [National Interagency Fire Center](#)
- [InciWeb Incident Information System](#)
- [Significant Wildland Fire Potential Outlook](#)

Other Climatic and Water Supply Indicators

Soil Moisture

Source: NOAA National Centers for Environmental Prediction

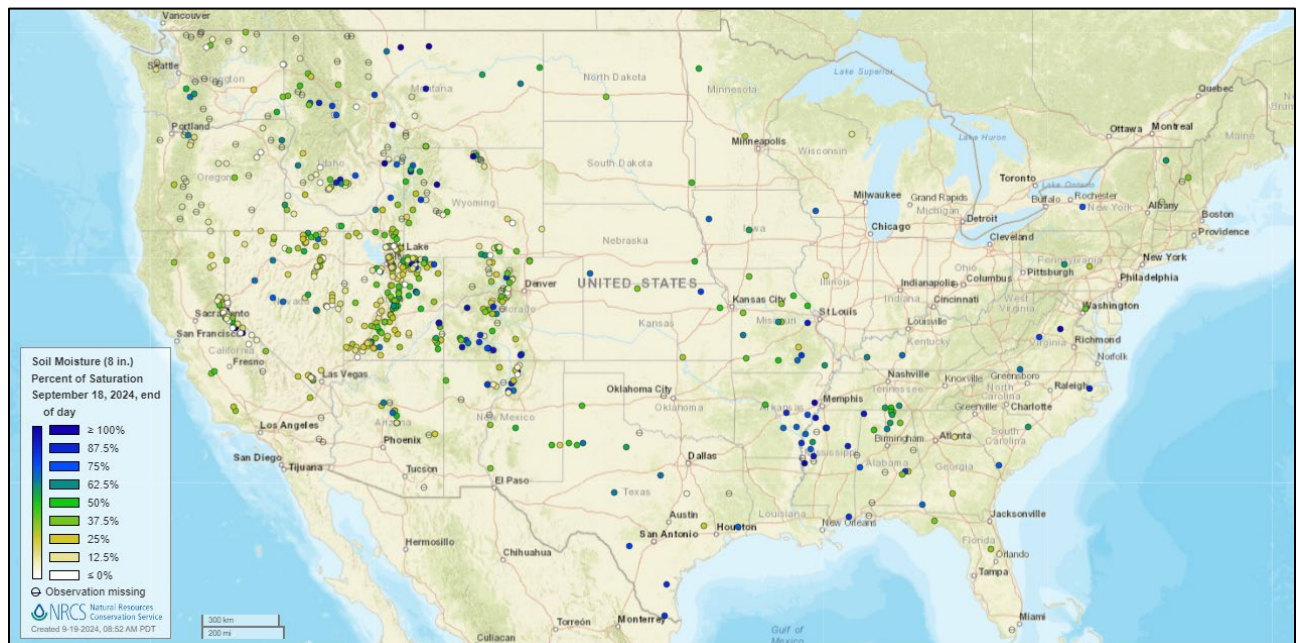


[Modeled soil moisture percentiles](#) as of September 14, 2024

Soil Moisture Percent of Saturation

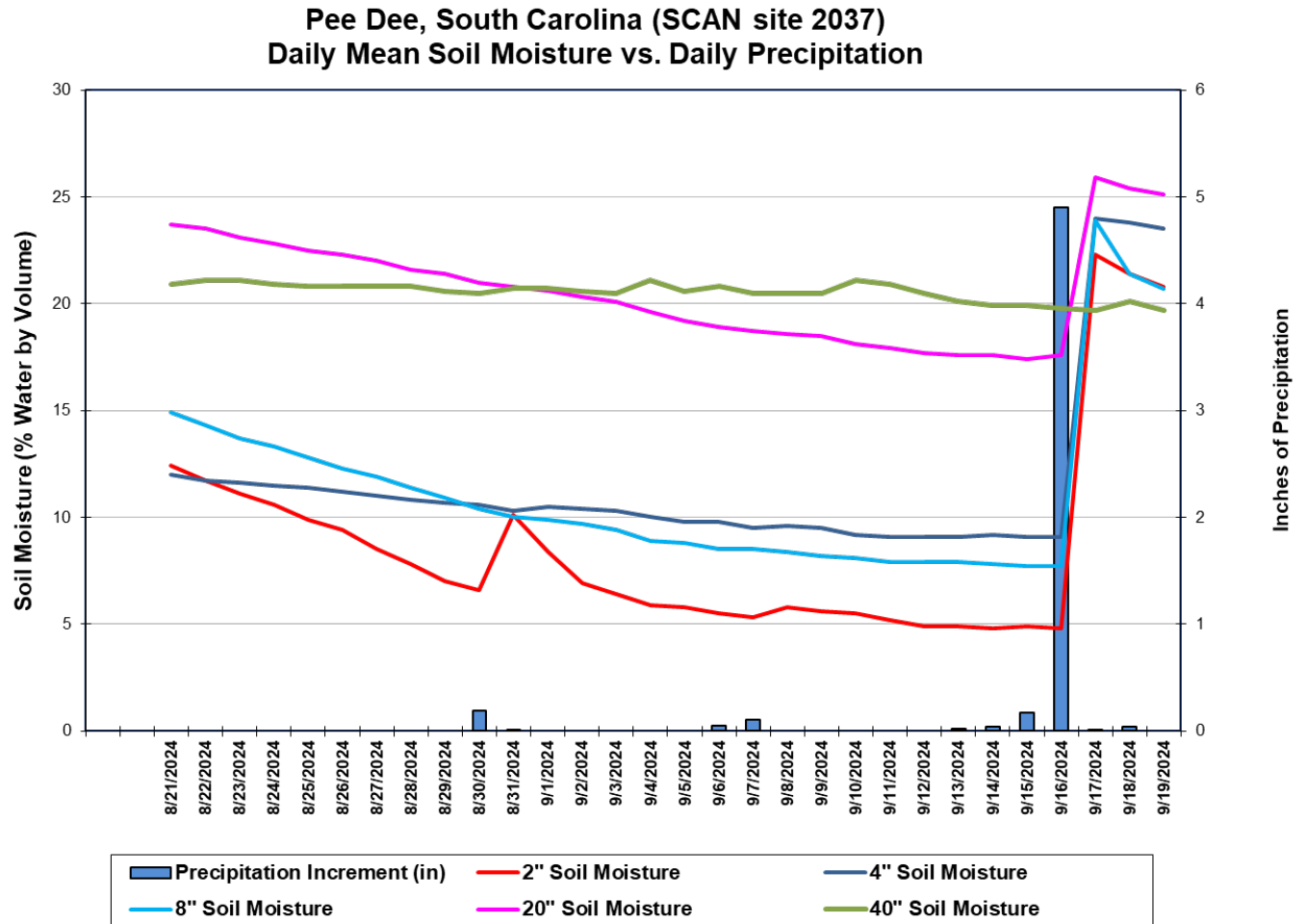
Source: NRCS SNOTEL and [Soil Climate Analysis Network](#) (SCAN)

[U.S. soil moisture map at 8-inch depth:](#)



Soil Moisture

Source: NRCS [Soil Climate Analysis Network](#) (SCAN)



This chart shows the precipitation and soil moisture for the last 30 days at the [Pee Dee](#) SCAN site in South Carolina. After Potential Tropical Cyclone Eight moved through the area and deposited 4.9 inches of precipitation at the site on September 16, soil moisture levels can be seen sharply increasing at all soil sensor depths except for the deepest sensor 40 inches beneath land surface. Total precipitation for the 30-day period was 5.54 inches.

Soil Moisture Data Portals

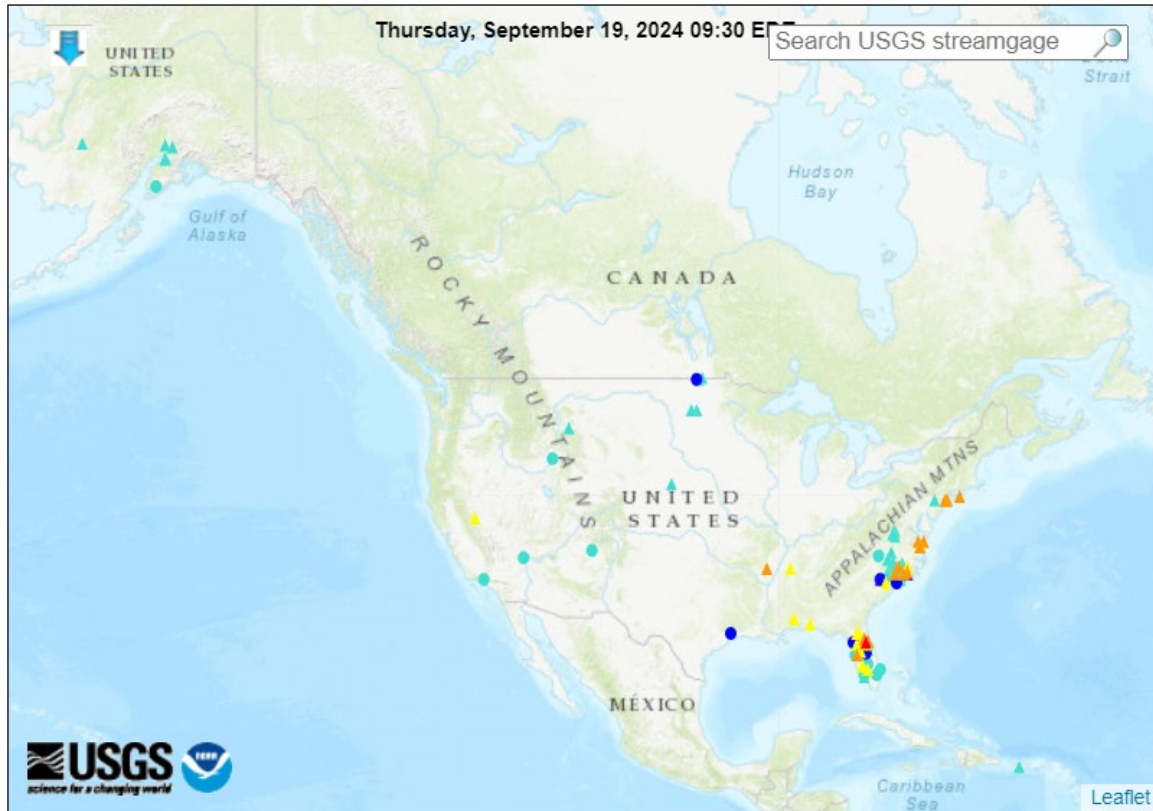
- [USCRN Soil Moisture](#)
- [National Soil Moisture Network](#)
- [NOAA Climate Prediction Center Soil Moisture](#)
- [NASA Grace](#)

Streamflow, Drought, Flood, and Runoff

Source: U.S. Geological Survey [WaterWatch Streamflow Map](#)

Map of flood and high flow conditions

(17 in floods [moderate: 1, minor: 16], 16 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

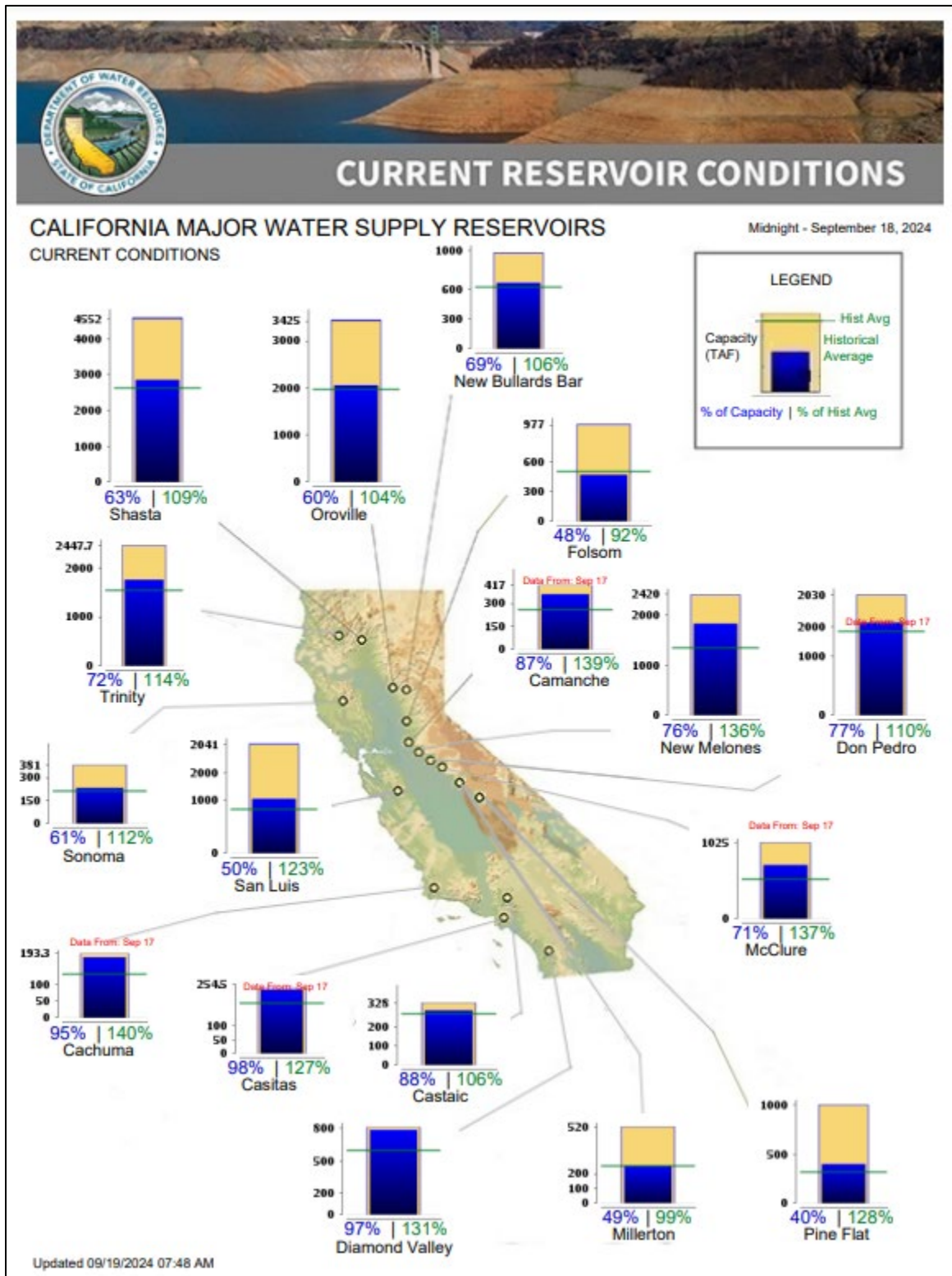
Hydromet Teacup Reservoir Depictions

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](#)

Agricultural Weather Highlights

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

National Outlook, Thursday September 19, 2024: “Favorably active weather across the nation’s mid-section should peak in intensity during the weekend, with significant precipitation (generally 1 to 3 inches) expected from central sections of the Rockies and Plains into the Midwest. Although the precipitation will slow fieldwork, including harvest activities, benefits should include a potential boost in river levels and improving topsoil moisture for pastures and winter grains. However, many areas of the country, including the South and much of the West, will experience dry weather during the next 5 days. Unusual warmth will accompany the Southern dryness; during the weekend, above-normal temperatures will also return across California and the Desert Southwest. In the Atlantic Basin, there is the potential for tropical cyclone development by early next week over the western Caribbean Sea, with implications for the U.S. if the future system enters the Gulf of Mexico. The NWS 6- to 10-day outlook for September 24 – 28 calls for of near- or above-normal temperatures nationwide, with the West, North, and southern Texas having the greatest likelihood of experiencing warmer-than-normal weather. Meanwhile, near- or below-normal precipitation across the western and north-central U.S., as well as northern New England, should contrast with wetter-than-normal conditions from the central and southern Plains to the Atlantic Coast, extending as far north as the Ohio Valley and southern New England.”

Weather Hazards Outlook: [September 21 – 25, 2024](#)

Source: NOAA Weather Prediction Center

U.S. Day 3-7 Hazards Outlook

[About the Hazards Outlook](#)

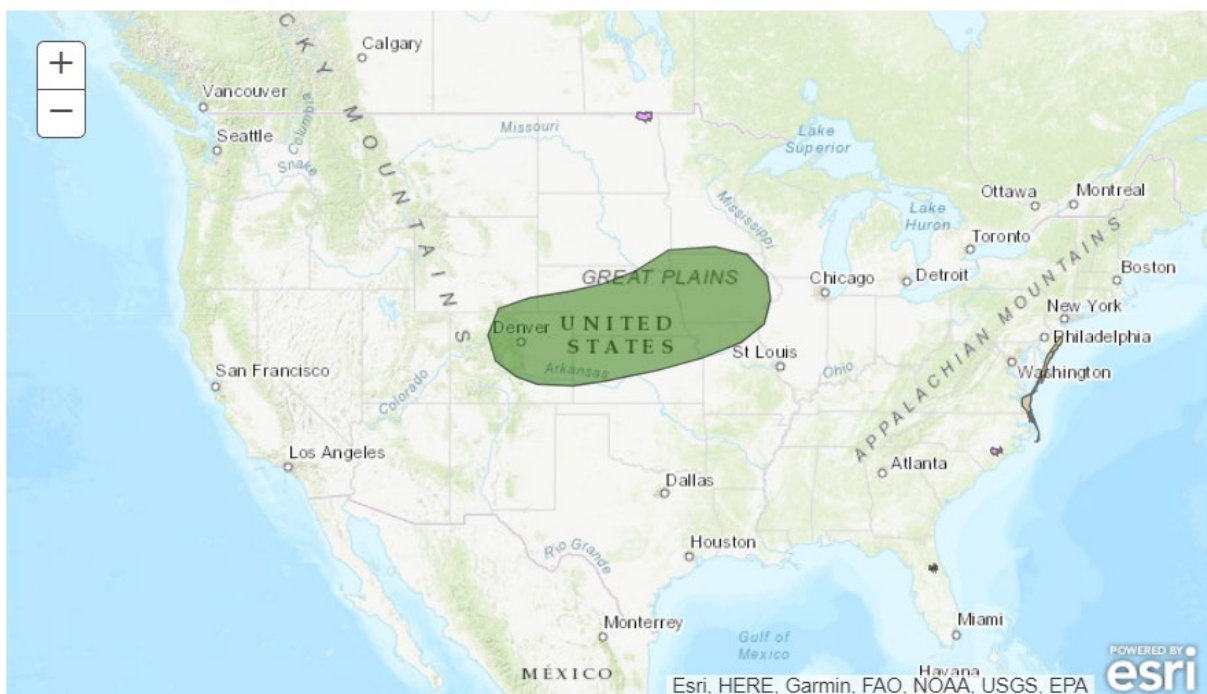
Created September 18, 2024

NOTE: These products are only created Monday through Friday. Please exercise caution using this outlook during the weekend.

Precipitation	☒
Temperature	☒
Wildfires	☒
Soils	☐

Legend	
 Flooding Likely	 Hazardous Heat
 Flooding Occurring or Imminent	 Hazardous Cold
 Flooding Possible	 Frost/Freeze
 Freezing Rain	 High Winds
 Heavy Precipitation	 Significant Waves
 Heavy Rain	 Critical Wildfire Risk
 Heavy Snow	 Severe Weather

Valid September 21, 2024 - September 25, 2024

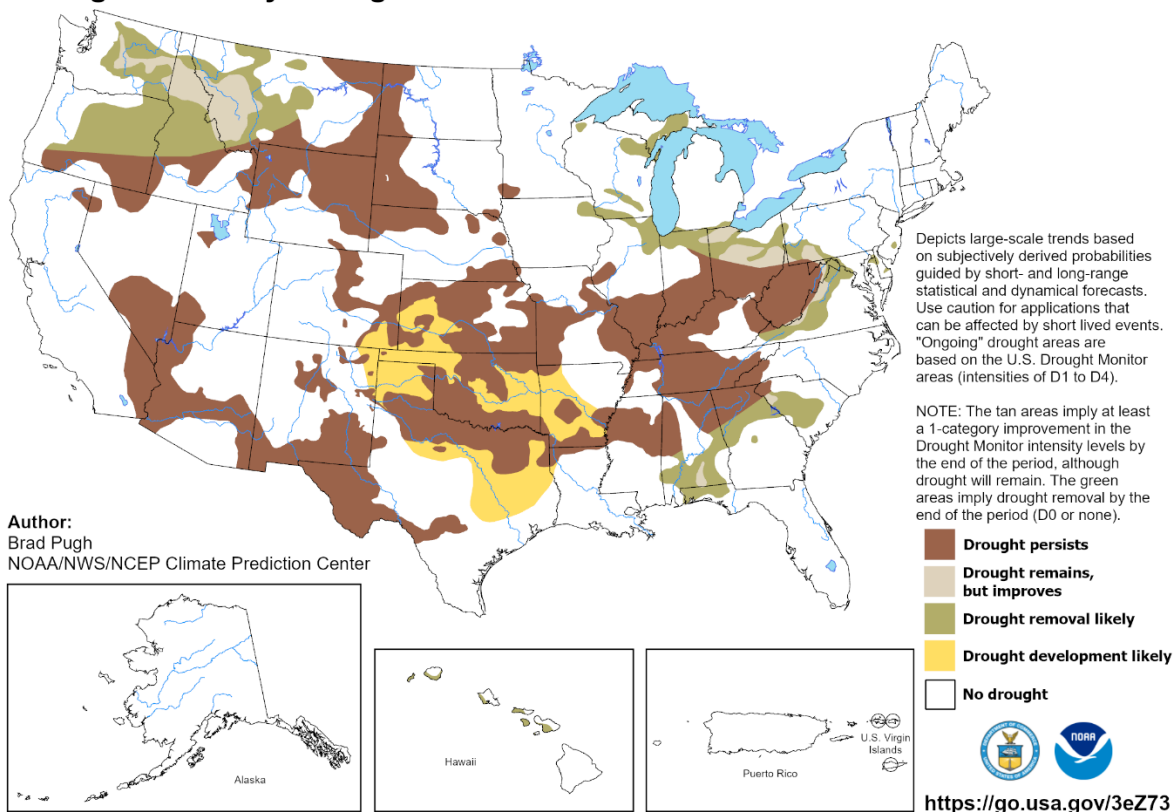


Seasonal Drought Outlook: [September 19 – December 31, 2024](#)

Source: National Weather Service

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for September 19 - December 31, 2024
Released September 19, 2024

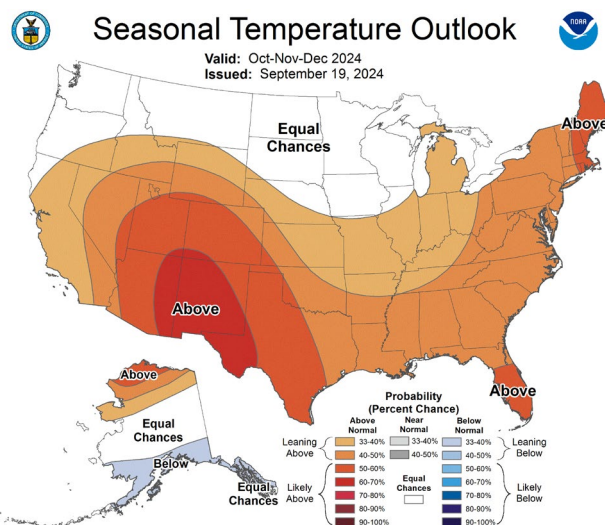
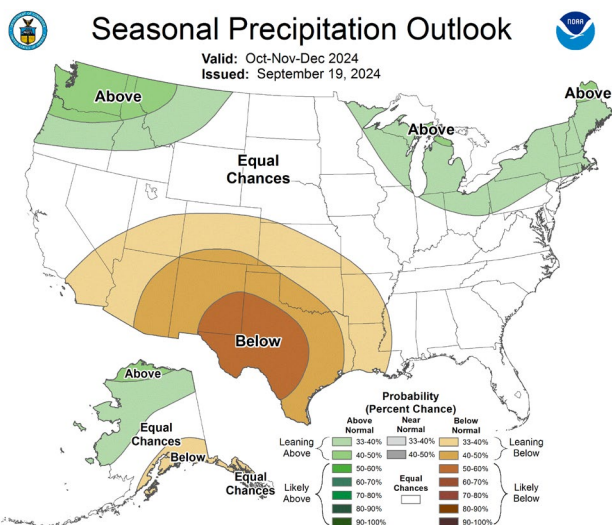


Climate Prediction Center Three-month Outlook

Source: National Weather Service

[Precipitation](#)

[Temperature](#)



[October-November-December 2024 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](#).