

National Drought Summary for February 27, 2024

Summary

Several weather systems moved across the contiguous U.S. (CONUS) during this U.S. Drought Monitor (USDM) week (February 21-27). Their fronts and surface lows spread rain and snow across parts of the West at the beginning and end of the week, and over the Tennessee to Ohio Valleys and Appalachians at mid-week. These systems were associated with an upper-level circulation pattern that consisted of low-pressure troughs just off the west coast and east coast, with a high-pressure ridge over the central part of the country. The ridge brought above-normal temperatures to much of the CONUS, from the Rocky Mountains to Appalachian Mountains, with weekly temperatures averaging 15-20 degrees F above normal from Texas to the northern Plains and Upper Mississippi Valley. Temperatures averaged near to cooler than normal in parts of the interior West to Pacific Coast and along the Eastern Seaboard. The ridge also inhibited precipitation from the Rockies to Mississippi Valley. The precipitation in the West was mainly over mountain ranges but was not enough to improve drought conditions. The precipitation in the Midwest was enough to prevent further drought expansion or intensification where it was wetter than normal for the week. In other areas, drought or abnormal dryness expanded or intensified in parts of the Plains and Midwest, and a few parts of the Pacific Northwest, Gulf of Mexico coast, and Mid-Atlantic coast.

Northeast

Half an inch to 1.5 inches of precipitation fell this week over southwestern parts of the Northeast region, with less than a fourth of an inch the rule over northern and eastern parts. No change was made to the USDM depiction, with moderate drought continuing in only a couple spots western New York and Nantucket Island.

Southeast

A few areas from Virginia to northern Georgia received half an inch of precipitation this week, while most of the region experienced less than a fourth of an inch. Recent dry conditions have contributed to an outbreak of wildfires across parts of the region. Widespread heavy rains from a week ago ended drought along the west coast of Florida; D1 was removed with the D0 that remains reflecting dryness that still shows up at the 9 to 12-month time scales. D0 expanded in southern Alabama and into the extreme western portions of the Florida panhandle where the Standardized Precipitation Index (SPI) shows dryness at 1-month to 2-year time scales, several drought indicators show drying soils, and streamflow is low. D0 expanded in North Carolina and was introduced into South Carolina, with D1 developing in eastern North Carolina, due to 1- to 3-month SPI, dry soils, and low streamflow.

South

Northern parts of Tennessee received 0.5-1.5 inches of precipitation this week, but most of the South region was dry with no precipitation occurring. Much warmer-than-normal temperatures accompanied the dryness, with daytime maximum temperatures in excess of 90 degrees F recorded in Texas. Dallas/Fort Worth reached 94 on February 26, which was a daily record and 31 degrees above normal. The hot temperatures increased evapotranspiration which drew moisture out of the soils. The recent dry weather, accompanied by low relative humidity and windy conditions, contributed to an outbreak of wildfires across parts of the region. D0 expanded in southwest Texas where air temperatures were hot, soils were hot and dry, and the last 3 months were drier than normal. Dry 1- to 3-month SPI values prompted expansion of D0 in eastern Oklahoma and adjacent parts of northeast Texas and western Arkansas. Dead fields in Sebastian County, Arkansas, were reported via the CMOR (Condition Monitoring Observer Reports) reporting system. D0 expanded in southern Mississippi, adjacent parts of Louisiana, and southeast Texas where SPI was dry, streamflow was low, and some soil moisture indicators showed dryness, and D0 expanded in southeast Tennessee where 1- to 2-month SPEI (Standardized Precipitation Evapotranspiration Index) showed dry conditions. A reassessment of data resulted in the deletion of the relic D0 along the southeast Louisiana coast.

Midwest

Half of an inch to an inch of precipitation fell across eastern and southern parts of the Midwest this week mainly in Ohio, Indiana, and Kentucky while the rest of the region had little to no precipitation. The last 30 days have been very dry and much warmer than normal across western and northern parts of the region, with the above-normal temperatures increasing evapotranspiration and helping to dry soils. These short-term drought conditions resulted in expansion of D0-D1 in parts of Missouri, Illinois, Wisconsin, Michigan, Minnesota, and Iowa. In eastern and southern parts of the region, precipitation last month has kept topsoil conditions near normal but deep-layer soils are dry and streamflow is low. According to media reports, some wells have gone dry in Terre Haute, Indiana, and oak loss was common across Minnesota in 2023.

High Plains

There were a few areas of half an inch to locally 2 inches of precipitation in the High Plains region this week in North Dakota and parts of Colorado and Wyoming. But the rest of the region had little to no precipitation. Daily high temperatures reached into the 80s F some days in Kansas and up to the 50s and 60s in the Dakotas. Weekly

temperatures averaged 10 to 20 degrees above normal across most of the region, increasing evapotranspiration (ET). Since this is February and vegetation is still dormant, the above-normal ET had little effect on vegetation, but soil temperatures were well above freezing in southern parts of the region and the high ET helped to dry soils. D0 expanded in the Dakotas, and D1 crept into northwest North Dakota, to reflect the 1- to 2-month dryness and unusually warm temperatures, and D0 expanded in eastern Kansas where recent precipitation has been low and soils were drying. In Wyoming, very low mountain SWE (snow water content) and dry 1- to 4-month SPI values prompted the expansion of D0-D2.

West

Two to locally 5 inches of precipitation fell in the Oregon and Washington Cascade and Coastal mountains this week, with half an inch to locally 2 inches in the northern and central Rockies and southern California, and 0.5 to 1.5 inches in the Sierra Nevada and parts of coastal California. Outside of these areas, precipitation was generally less than a fourth of an inch, with rainshadow areas and the Southwest (Four Corners States) mostly dry. The precipitation was above normal for the week in some areas, particularly parts of the Cascades, Rockies, and southern California. But amounts were not enough to bring month-to-date totals to near normal values, with these areas still well below normal for the month. And snowpack improved little, with just a few inches of new snow added to most Cascade and Coastal mountain SNOTEL sites. Mountain snowpack and SWE values were still well below normal to near-record low in Washington, Oregon, Idaho, and Montana. In California, as of February 27, mountain SWE was 94% of normal in the northern Sierra Nevada Mountains, 78% of normal in the Central Sierra, and 76% of normal in the southern Sierra. In Washington, D0-D1 was expanded in the northern Cascades and D1 added to the Olympic Mountains to reflect the low snowpack and subnormal precipitation. Low SWE and 1- to 4-month SPEI values resulted in expansion of D0-D3 in parts of Montana.

Caribbean

Puerto Rico had a mixed temperature and precipitation anomaly pattern this week, with no change made to the depiction. Although some streams were low, soils and vegetation were still doing well from the rain events of two weeks ago and water reservoirs were mostly at optimal levels.

St. John and St. Croix in the U.S. Virgin Islands remain free of drought/dryness thanks to ample precipitation earlier in February, while St. Thomas remains in moderate drought. In the past week, rainfall reported by CoCoRaHS observers ranged from 0.37 to 1.07 for St. Thomas, 0.32 to 4.10 for St. Croix, and 0.09 to 0.80 for St. John. Flooding was an issue for St. Croix this week. The water levels in the U.S. Geological Survey

wells on St. Thomas and St. Croix have risen in recent days, while St. Johns well has held steady in the past week.

Pacific

This week had a mixed temperature and precipitation anomaly pattern across Alaska. With SWE values mostly near to above normal, no change was made to the depiction, so Alaska continued free of drought and abnormal dryness.

Hawaii had a drier than normal week and for the month to date in February. Windward rainfall this week has been enough to prevent worsening, so no change was made to the depiction in Hawaii, where D0 and D1 continue.

The Republic of Palau received 1.78 inches at Palau IAP, remaining free of drought.

Of the Mariana Islands, Guam and Rota remained in moderate drought. Guam received 0.74 inches, while Rota reported 0.72 inches. Saipan IAP received from 0.10 to 0.52 inches at two reporting locations, leading to deterioration from moderate to severe drought this week. These islands need an inch weekly to meet minimum water needs.

Most locations in the Federal States of Micronesia were in some level of dryness or drought. Precipitation was mixed for the week with Kapingamarangi and Pohnpei reporting 11.65 and 12.97 inches, respectively. After receiving nearly 13 inches of rain, Pohnpei improved from moderate drought to abnormal dryness. Lukunor reported 4.10 inches of rain and improved from moderate drought to abnormal dryness. Chuuk Lagoon and Nukuoro remain abnormally dry. Woleai remains in moderate drought, while Pingelap, Ulithi and Yap remain in severe drought. There was no data for Fananu.

The Republic of the Marshall Islands mostly received less than 2 inches of precipitation for the week, except for Ailinglaplap, which reported 3.05 inches. Wotje remained in severe drought and received no rain this week. Kwajalein deteriorated from moderate to severe drought this week, receiving just 0.37 inches. Jaluit remained abnormally dry and reported 2.49 inches, while Majuro, also abnormally dry, got 1.52 inches. The Majuro reservoir held 25.95 million gallons on Feb. 25.

American Samoa remained free of drought, but have had some unusual heat recently. Pago Pago and Siufaga Ridge received less than an inch of rain this week, while Toa Ridge reported 1.45 inches. Pago Pago received more than 7 inches of rain weekly in the previous three weeks.

Looking Ahead

In the two days since the Tuesday valid time of this USDM, Pacific moisture continued to move across the Coastal and Cascade ranges in the Pacific Northwest, with precipitation falling in areas east of the Mississippi River and in parts of the southern Plains. For February 29-March 5, a ridge over the eastern CONUS will bring warmer-than-normal temperatures to much of the country east of the Rockies while a trough contributes to cooler-than-normal temperatures in the West. Forecast models predict a wet period for much of the West, in the Upper Rio Grande Valley, and from the Lower Mississippi Valley to the East Coast, as low-pressure systems and fronts bring locally heavy precipitation. The Coastal, Cascade, and Sierra Nevada mountain ranges could see 5 to 10 inches of precipitation, or locally more, while the central to northern Rockies could receive 2 to 4 inches of precipitation. Parts of southern New Mexico and western Texas could receive up to an inch of rain. An inch or more of precipitation is predicted from southern Louisiana to southern New England. Outside of these wet areas, up to half an inch of moisture could fall in the lower elevations of the West, across the northern and southern Plains, and Midwest to Northeast. Areas that could miss out on the precipitation stretch from southern California to the central Plains, where little to no precipitation is expected, and the southern Plains and Mid-Mississippi Valley to eastern Great Lakes, where less than a fourth of an inch may fall.

For much of the next 2 weeks, the atmospheric circulation is expected to continue an upper-level trough over the western CONUS and a ridge over the eastern two-thirds of the country, with Pacific weather systems migrating through the trough/ridge pattern. The Climate Prediction Centers (CPC) 6-10 Day Outlook (valid March 4-8) and 8-14 Day Outlook (valid March 6-12) favor a fairly stable pattern of warmer-than-normal temperatures from the Plains to East Coast and cooler-than-normal temperatures over the West and Alaska. The outlook is for above-normal precipitation over eastern and southern Alaska and much of the CONUS, especially east of the Mississippi River, with odds favoring near to below-normal precipitation over the northern Rockies to northern Plains and over the west coast of Alaska.

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