

National Drought Summary for December 24, 2024

Summary

A swath of precipitation (0.5 to 1.5 inches) this past week led to small improvements from parts of Oklahoma and Arkansas northeastward to the Central Appalachians. Since the major drought that affected the Central Appalachians and Upper Ohio Valley peaked in late September, drought has steadily improved across these areas the past two months. Near to above-normal precipitation during the past 30 days supported drought improvement across parts of the Northeast. Farther to the south across the Southeast, Lower Mississippi Valley, and Texas, 30 to 60-day precipitation deficits continue to increase with expanding and intensifying drought during mid to late December. December is typically a drier time of year for the Upper Midwest and Northern to Central Great Plains where little to no weekly drought change was warranted. Since the beginning of October, precipitation has generally averaged below normal across the Central Rockies, Great Basin, Southwest, and southern California. From December 17-23, enhanced onshore flow resulted in wetter-than-normal conditions across coastal northwestern California and much of the Pacific Northwest. 7-day temperatures, ending on December 23, averaged above normal throughout the West and Central to Southern Great Plains with colder-than-normal temperatures limited to the Great Lakes and Northeast.

Northeast

A one-category improvement was made to portions of western Maryland and West Virginia which received near one inch of precipitation this past week. Following the major drought that began in July and peaked later in September, frequent precipitation along with seasonably cooler temperatures have led to continued drought improvement across the Central Appalachians. Eastern Massachusetts and Rhode Island also benefited from recent precipitation and a one-category improvement was made to this region, closely following guidance from the NDMC short-term drought blend and 90-day SPI. Although precipitation was lighter (0.5 inch or less, liquid equivalent) this past week across Connecticut, southeastern New Hampshire, New Jersey, New York, Pennsylvania, and northeastern Maryland, a reassessment of SPIs at various time scales and lack of ground impacts led to a one-category improvement for portions of these states.

Southeast

Recent precipitation (near one inch) resulted in a slight reduction in abnormal dryness (D0) across southwestern Virginia. A dry week and 60-day precipitation deficits of more than 4 inches supported an expansion of moderate drought (D1) eastward across

central Alabama. Increasing 30 to 60-day precipitation deficits led to a 1-category degradation in portions of Georgia and bordering areas of South Carolina. Increasing 60-day precipitation deficits of more than 4 inches led to the addition of short-term moderate drought to portions of south Florida. In addition, soil moisture and 28-day streamflows are beginning to fall below the 20th percentile across the Atlantic coastal areas of south Florida.

South

Based on increasing short-term precipitation deficits and 30 to 90-day SPIs, abnormal dryness (D0) and moderate drought (D1) were expanded across northern Louisiana and portions of south-central Mississippi. These same indicators along with the NDMC short-term blend supported the expansion of D1 to severe drought (D2) across portions of eastern and southern Texas. Around one inch of precipitation supported a 1-category improvement across portions of Arkansas and central to southeastern Oklahoma. Recent precipitation also led to improvement across northern Tennessee to be consistent with bordering areas of southeastern Kentucky.

Midwest

Near one inch of precipitation resulted in a 1-category improvement to southeastern Kentucky. Elsewhere across ongoing drought areas of the Midwest, precipitation was light (0.5 inch or less, liquid equivalent) and no change was needed in Dx categories. Severe drought (D2) continues to be designated for northern Indiana, eastern Ohio, and northern portions of the lower peninsula of Michigan.

High Plains

Based on SPIs at various time scales, low snowpack, and the NDMC short-term blend, a 1-category degradation was made to northern Colorado along with southern and northwestern Wyoming. Snow water equivalent amounts are below the 5th percentile where extreme drought (D3) was expanded in Wyoming. These same indicators justified an expansion of abnormal dryness (D0) across southwestern Colorado. Severe drought (D2) was expanded across western Nebraska due to soil moisture percentiles falling below the 10th percentile and support from the 90 to 120-day SPI.

West

Based on increasing water year to date (WYTD: October 1-December 23) precipitation deficits, a 1-category degradation was warranted for central Nevada. For this same reason, moderate drought (D1) was added to portions of northeastern Nevada. Elsewhere, no other changes were made. WYTD precipitation was at or above-normal for much of the Pacific Northwest and northern California and below-normal for the remainder of the West region. As of December 23, snow water equivalent (SWE) was below-normal across the Northern Rockies of Montana and Wasatch Mountains of Utah. SWE was near average for the Sierra Nevada Mountains and highly variable throughout the Cascades.

Pacific

Puerto Rico remains drought-free with 90-day precipitation averaging above normal and most 28-day average streamflows between the 25th and 75th percentile.

Caribbean

Alaska remains drought-free although snow water equivalent values were running below normal for the Kenai Peninsula and near Anchorage.

Pacific

Troughs, the remnants of cold fronts, and disturbances in the easterly trade-wind flow brought pulses of showers to the U.S. Virgin Islands (USVI) during this U.S. Drought Monitor (USDM) week (December 18-24). Weekly rainfall totals exceeded an inch at many locations on all three islands. Groundwater levels held steady on St. John and St. Thomas, while the groundwater level on St. Croix rose slightly, and the groundwater levels remained high compared to the recent historical record. Satellite observations of vegetative health did not indicate any stressed vegetation. Based on this data, no drought or abnormal dryness continued across all three islands.

No changes were made to drought coverage and intensity across Hawaii this past week. Drought coverage remains widespread throughout Maui, Lanai, Molokai, Oahu, and Kauai.

Seasonal trade winds continued to characterize the weather over the U.S.-Affiliated Pacific Islands (USAPI) during this U.S. Drought Monitor (USDM) week (December 18-24). Dry weather is usually associated with trade winds, and the week was dry (below the weekly minimum needed to meet most water needs) at several locations in the Federated States of Micronesia (FSM) and northern Marshall Islands. But disturbances

moving in the trade-wind flow combined with the Inter-Tropical Convergence Zone (ITC) to bring several inches of rain to the southern Marshalls, Republic of Palau, and parts of the FSM and Marianas. A trough of low pressure brought periods of heavy rain to American Samoa.

In general, December has been wet in the Marianas, Palau, American Samoa, most of the Marshalls, and parts of the FSM. But some parts of the USAPI have missed out on the rain, with monthly totals below the monthly minimum required to meet most water needs. Recent dry weeks (below the weekly minimum) combined with the dry month resulted in abnormally dry or moderate drought classifications for a few islands. These include Kwajalein and Wotje (in the Marshalls) and Saipan (in the Marianas), which are abnormally dry (D0-S), and Yap (in the FSM), which is in moderate drought (D1-S).

The last four weeks have each been dry at Yap, with a December 1-22 monthly total of 1.79 inches of rain. The driest December in the 74-year record occurred in 1990 with a monthly total of 2.22 inches. The persistent dry conditions in December 2024 resulted in the initiation of moderate drought at Yap.

Abnormal dryness continued at Saipan, where the week was dry at the airport station and the monthly total rainfall was 2.99 inches, which is below the monthly minimum. The monthly total is below the monthly minimum at Kwajalein and Wotje, and this week marked the third consecutive dry week, which is the criterion for initiation of D0-S.

No analysis could be made for Fananu, Mili, Ulithi, Utirik, or Woleai due to missing data. The rest of the locations continued free of drought and abnormal dryness because the month has been wet or the dryness has not lasted long enough to trigger D0.

Looking Ahead

During late December, multiple low pressure systems will bring heavy precipitation (rain and high-elevation snow) to the Pacific Northwest and northern California. On December 27, widespread rain with locally heavy amounts (more than 2 inches) is forecast for eastern Oklahoma, eastern Texas, and Arkansas. A slow-moving low pressure system and trailing front are forecast to bring varying precipitation amounts (0.5 to 1.5 inches) to the Ohio and Tennessee Valleys, Mid-Atlantic, and Northeast.

The Climate Prediction Centers 6-10 day outlook (valid December 30, 2024-January 3, 2025) favors above-normal temperatures across the East, Southern Great Plains, and Southwest. Near normal temperatures are favored for the Northern Great Plains, Northern Rockies, and Pacific Northwest as above-normal temperatures are forecast to moderate during this 5-day period. A pattern change is forecast during the first week of the New Year with a transition towards near or below-normal temperatures for much of the lower 48 states. Elevated above-normal precipitation probabilities are forecast for

the Pacific Northwest, Great Plains, Midwest, and Northeast. Below-normal precipitation is more likely for the southern two-thirds of California and the Southwest.

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