

National Drought Summary for January 7, 2025

Summary

On January 4 and 5, a low pressure system developed across the Central Great Plains and then tracked eastward to the Mid-Atlantic. Along its track, widespread precipitation (1 to 2 inches, liquid equivalent) was observed throughout eastern Kansas, Missouri, the Ohio and Tennessee Valleys, Central Appalachians, and Mid-Atlantic. Total snowfall amounts were near or more than a foot in portions of these areas. This winter storm also resulted in freezing rain for the Ohio Valley and parts of Virginia and West Virginia. Drought improvements were generally made to portions of the central and eastern U.S. where precipitation amounts exceeded 1 or 1.5 inches, liquid equivalent. Drought coverage and intensity continued its decline for the Upper Ohio Valley and New England. After the winter storm exited the East Coast, an arctic air outbreak overspread the eastern two-thirds of the lower 48 states. A favorable start to the wet season coupled with above-normal snowpack supported a decrease in drought coverage across the Pacific Northwest. Conversely, drought worsened for southern California and the Southwest. Alaska and Puerto Rico remained drought-free, while short-term drought intensified across Hawaii.

Northeast

Recent precipitation and consistent with the NDMC drought blends, abnormal dryness (D0) and moderate drought (D1) were decreased across parts of central and southwestern Pennsylvania. Likewise, precipitation (more than 1 inch, liquid equivalent) resulted in a minor reduction in D0 across eastern West Virginia. Since the beginning of December, drought continued to decrease in spatial coverage and intensity throughout New England due to beneficial precipitation during the past 30 days and associated improvements in streamflow, groundwater, and soil moisture.

Southeast

Precipitation (more than 1 inch) at the beginning of January resulted in a 1-category improvement across parts of northern Alabama, while a minor increase in moderate drought (D1) occurred in eastern and southeastern parts of the state. Based on 90-day SPI along with NASA SPoRT soil moisture, abnormal dryness (D0) and moderate drought (D1) were expanded across eastern and south Georgia. Increasing 30 to 90-day precipitation deficits support an expansion of moderate drought (D1) across eastern North Carolina and south-central Virginia. In addition, 28-day streamflows are now below the 20th percentile in much of the designated D1 area. No changes were made this past week to Florida, but nearly all the state is designated with either D0 or D1.

South

Based on 30 to 120-day SPI, 28-day streamflow, and soil moisture, a 1-category degradation was made to portions of the Edwards Plateau of Texas. SPIs at various time scales and soil moisture supported a 1-category degradation as well for parts of the Rio Grande Valley. Heavy rainfall during late December supported additional improvements across southeastern Texas. Recent rainfall (1 to 2 inches) prompted a 1-category improvement to parts of Mississippi and Tennessee. Despite the recent rainfall, 28-day average streamflow and 90-day SPI support a continuation of D1-D3 intensity for the Tennessee Valley. Although precipitation was lighter this past week, the lack of any support among the indicators for D0 and D1 led to improvements to much of Arkansas.

Midwest

More than 1 inch of precipitation (liquid equivalent) supported a 1-category improvement across northwestern Missouri. Recent precipitation (around 0.5 inch, liquid equivalent) along with improving SPIs at various time scales and with support from 28-day average streamflow above the 20th percentile, moderate drought (D1) was reduced to abnormal dryness (D0) for portions of Illinois and Indiana. D1 was maintained for the northeast corner of Indiana which is consistent with SPIs dating back to 120 days. Beneficial precipitation and cooler seasonal temperatures led to a decrease in drought coverage and intensity for much of Ohio. Although soil moisture has improved in recent weeks, it remains low especially across southeastern Ohio. 28-day average streamflows are near to above average for most of western to central Ohio.

High Plains

Based on 30 to 60-day SPI along with a lack of early season snowpack, a 1-category degradation was made to southwestern Colorado. Farther to the north across northwestern Colorado, improving snowpack resulted in a minor reduction in abnormal dryness (D0). Southwestern Nebraska has received little to no precipitation during the past 7 weeks, prompting an expansion of D0. In addition, above-normal temperatures during the late fall and into the early winter exacerbated increasing short-term dryness. Heavy precipitation (more than 1 inch, liquid equivalent) for this time of year resulted in a 1-category improvement to northeastern Kansas. No changes were made to the Dakotas and early January is one of the driest times of the year.

West

A dry start to the winter and using 90-day SPI and soil moisture, moderate drought (D1) was expanded across southern California. The NDMC short-term blend, 90-day SPI, and many 28-day average streamflows below the 10th percentile supported the addition of severe drought (D2) to portions of southern California. The Santa Ana winds during early January are likely to exacerbate the worsening drought conditions. Consistent with the NDMC short-term blend along with 30 to 120-day SPI, D2 was expanded for portions of southeastern Arizona and southwestern New Mexico. Based on water year to date (WYTD: October 1, 2024 to January 6, 2025) precipitation averaging above normal and snow water equivalent (SWE) above the 80th percentile, a 1-category improvement was made to southwestern Idaho, eastern to central Oregon, eastern Washington and a small part of northwestern Montana. This 1-category improvement is also supported by NDMC drought blends and SPIs at various time scales. As of January 7, SWE was above-normal (period of record: 1991-2020) across the southern Cascades along with eastern Oregon and southwestern Idaho. SWE was highly variable for the Sierra Nevada Mountains and below-normal across the Four Corners Region.

Caribbean

Puerto Rico remained drought-free but precipitation deficits are beginning to increase for parts of northwestern Puerto Rico. However, based on vegetation indices, soil moisture, and streamflows, abnormal dryness (D0) is not warranted at this time.

It was a drier-than-normal week for the U.S. Virgin Islands, but due to short-term and long-term antecedent rainfall, no dryness or drought is designated on the Drought Monitor for St. Thomas, St. John, and St. Croix. The latter island reported 0.4 to 0.6 on New Years Eve, with an additional 0.05 to 0.2 the rest of the week. Both St. John and St. Thomas recorded several hundredths to a few tenths of an inch. This followed a relatively wet November-December, and on St. John, 2024 was one of the wettest years on record, with lesser but still above-normal amounts observed elsewhere for the year. November-December 2024 brought 14.81 to southern St. John and 14.36 to Charlotte Amalie. St. Croix was a little drier, with most locations reporting 8.8 to 13.7 slightly less in southwestern sections. Thus antecedent rainfall kept dryness-related impacts at bay this week.

Pacific

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

A poor start to the wet season resulted in a continued drought increase throughout the Hawaiian Islands. On the Big Island, a 1-cat degradation was warranted based on NDVI, precipitation deficits, and streamflow data. Severe (D2) to extreme (D3) drought were expanded across Maui. D2 was also expanded eastward along the lower slopes of Molokai. Due to lack of adequate rainfall and NDVI data, D2 coverage was increased across Oahu and Kauai.

American Samoa reported seasonably abundant rainfall recently. Pago Pago recorded 14.22 in December 2024, just barely below normal. The rainfall rate picked up for the first week of January 2025, with 9.01 observed in the last 7 days. No dryness exists in this region, and given the recent rainfall totals, no dryness-related impacts are expected for the foreseeable future.

In Palau, rainfall was slightly above normal in December 2024, at 13.52 despite about one-third of daily reports missing. Over 2 fell last week, precluding any dryness-related impacts at this time.

The only drought (designation D1 or worse) across the U.S.-Affiliated Pacific Islands continues to impact Yap in western Micronesia. For November-December 2024, Yap reported 10.01 of rain (6.24 in November and 3.77 in December, although there are a few missing daily reports). This amounts to 55 percent of normal for the days reported, and is well below the 8 per month needed to approximately keep up with environmental and human demand, even assuming some additional rainfall on the missing days. Subnormal rainfall continued into early January 2025, with just 1.14 reported (normal is approximately 1.6) for the first week of the year at the observing location Yap International Airport, but eastern parts of the state reported wetter conditions. The report from the airport remains considerably below the ideal 8-per-month rate. As a result, D1 (moderate drought) is maintained this week.

In central Micronesia, Woleai received 8.79 of rain during December 2024, and precipitation has continued apace in early January 2025, with 2.76 reported. These amounts are near normal, and sufficient to meet demand. Catchments are reported to be full. Therefore, no dryness-related impacts have been observed, and no dryness or drought designation is indicated on the Drought Monitor.

Across east-central and south-central Micronesia, precipitation was abundant in December 2024, easily sufficient to meet demand. Monthly totals were 10.97 at Luchonoch (98 percent of normal), 14.33 at Chuuk (130 percent of normal), 14.69 at Kapingamaringi (168 percent of normal), and 19.24 in Nukuoro (180 percent of normal). Totals for the first week of January were somewhat lower in part of the region, ranging from just under 1.5 at Chuuk to about 2 inches in Lukunoch. Other locations maintained their wetter pattern. Last week, 4.12 fell on Kapingamaringi, and 6.74 soaked Nukuoro. Not surprisingly, no dryness-related impacts are reported across the region, so there is no designation for any of these locations on the Drought Monitor.

Conditions have been highly variable in eastern Micronesia. Kosrae and Pohnpei reported abundant rainfall during December 2024, with 19.49 (just over normal) and 31.74 (twice normal) reported, respectively. In sharp contrast, dryness has impacted Pingelap. Only 7.26 fell during December 2024 (56 percent of normal and slightly less than is needed to keep pace with demand. The prior three months were also considerably drier than normal, and some degree of subnormal rainfall dates back to late spring 2024. For September-December 2024, only 27.58 of rain fell, compared to a normal of 53.04 although this is only 52 percent of normal the monthly average was not too much less than would be needed to keep up with demand (32 in 4 months, so Pingelap received over 86 percent of that amount). Rainfall picked up significantly for the first week of January. About 5.5 of rain observed. For the time being, this is enough to remove the abnormally dry (D0) designation in place last week, but this location will need to be monitored closely for signs of re-development.

Kwajalein and Wotje across the northern tier of the Marshall Islands continue with an abnormally dry (D0) designation, but central and southern parts of the country report adequate rainfall of late. After normal rainfall during October and November, December 2024 brought only 6.14 to the island (75 percent of normal, and considerably less than the 8 needed to approximately keep up with demand). January started even drier, with only 0.38 reported last week. Which is under half of the already-meager 0.9 that is normal for the first week of January. In Wotje, which has one of the driest climatologies of any of the U.S.-Affiliated Pacific Islands, 5.31 of rain fell in December 2024. This is slightly more than the normal, but less than what is needed to keep up with demand. The first week of January brought no rainfall to the island, furthering their dryness-related impacts. Farther south, conditions have been wetter. Across Ailinglapalap and Majuro, December 2024 was quite wet (18.88 [203 percent of normal] and 16.74 [145 percent of normal]). Jaluit did not receive as much rain, but the 9.69 reported was near normal (93 percent) and more than is needed to keep up with demand. Rainfall totals were less impressive for the first week of January (0.5 to 1.5), but the December rains preclude any dryness or drought designations at this time.

The D0 designation at Saipan in the northern Mariana Islands persisted this week while other locations remained free of any dryness or drought designations. Most locations reported 75 to 80 percent of normal rainfall for December 2024, with amounts closer to normal at Rota (3.27 at Saipan, 4.77 at Guam, and 5.91 at Rota). Last week, the Guam Weather Forecast Office (WFO) recorded abundant rainfall, but totals were considerably lower elsewhere. Guam WFO reported 4.38 last week, including a daily-record 3.32 on January 7, but across the northern portions of that island, only about an inch fell. Other locations were drier still, reporting only a few tenths of an inch. In sum, this kept Saipan at D0 this week, with Rota likely on the cusp of abnormal dryness, but with no designation at this time.

Looking Ahead

A low pressure system is forecast to develop along the western Gulf Coast by January 10 with a rapid eastward track offshore of the Mid-Atlantic one day later. A large area of 1 to 2.5 inches of rainfall is expected for eastern Texas and the Lower Mississippi Valley, while accumulating snow occurs from the southern Plains east to the Tennessee Valley and Southern Appalachians. High elevation snow is forecast to shift east from the Cascades to the northern Rockies on January 10 and 11. Farther south across California, dry weather is likely to persist through mid-January. On January 13, another Arctic high is forecast to shift south from Canada to the Great Plains.

The Climate Prediction Centers 6-10 day outlook (valid January 14-18, 2025) favors below-normal temperatures for a majority of the lower 48 states. The largest below-normal temperature probabilities (exceeding 80 percent) are forecast for the Southeast. An increased chance of above-normal temperatures is limited to the Dakotas and Minnesota. Below-normal precipitation is most likely across the Pacific Northwest, Great Basin, and much of California. Elevated above-normal precipitation probabilities are forecast for the Southwest, Texas, and High Plains, while below-normal precipitation is slightly favored along the East Coast.

Author(s)

Richard Tinker, NOAA/NWS/NCEP/CPC

Brad Pugh, NOAA/CPC