

National Drought Summary for May 21, 2024

Summary

This U.S. Drought Monitor (USDM) week saw widespread improvement in drought-related conditions on the map across areas of the South, Plains, Midwest, Mid-Atlantic, and the West. In the Plains and Midwest, locally heavy rainfall accumulations (up to 7 inches) were observed in drought-affected areas of Oklahoma, Kansas, Nebraska, Missouri, and Iowa leading to continued improvements of conditions on the ground (vegetation health, soil moisture, surface water) as well as reductions in the longer-term precipitation deficits. Likewise, above-normal precipitation during the past several months led to removal of areas of drought on the map in Michigan's Upper Peninsula as well as in southern Wisconsin. In the South, isolated areas of central and west-central Texas saw minor improvements in response to recent rains and improving conditions during the past 30-day period. In the Mid-Atlantic, 1-6-inch accumulations were observed in areas of North Carolina and Virginia this week leading to removal of areas of Abnormally Dry (D0). Out West, some minor improvements were logged in central and northern Arizona where precipitation has been above normal since January 1. In southeastern Montana, recent rains erased Water Year (since October 1) deficits and have improved soil moisture conditions and vegetation health. Across the border in the Bighorn Mountains of north-central Wyoming, areas of Moderate Drought (D1) were removed in response to above-normal snowpack conditions observed in its associated drainage basins. In California, the states reservoirs are above normal levels moving into the dry season with the states two largest reservoirs (Lake Shasta and Lake Oroville) at 115% and 126% of their historical average for the date (May 21), respectively. In the Southwest, Lake Powell is currently 33% full (58% of typical storage level for the date) and Lake Mead is 35% full (62% of average) with the total Lower Colorado system at 42% full as of May 20 (compared to 37% full at the same time last year), according to the U.S. Bureau of Reclamation. In Arizona, the Salt River Project is reporting the Salt River system reservoirs at 95% full, the Verde River system at 70% full, and the total reservoir system at 92% full (compared to 99% full a year ago). In New Mexico, the states largest reservoir along the Rio Grande is currently at 23% full (59% of average). In the Pacific Northwest, Washington's Franklin D. Roosevelt Lake is at 87% full (176% of average for the date). In terms of degradations on the map this week, the only noteworthy ones were made in areas of South Florida where areas of Moderate Drought (D1) expanded in response to dry conditions during the past 60-day period with reports of various impacts including burn bans, lake levels dropping at Lake Okeechobee, reduced soil moisture, and some minor impact in the recreation sector due to low surface water levels. Overall, looking at the broader drought situation across the conterminous U.S., the total percentage of drought coverage is at its lowest since 2020.

Northeast

On this weeks map, no changes were made and the region remained drought-free. For the week, precipitation was generally light across the region except for isolated areas receiving accumulations ranging from 2 to 4 inches in coastal areas of Rhode Island and Massachusetts. Average temperatures for the week were 2 to 10+ degrees F above normal across most of the region with the greatest departures observed in New York, Vermont, New Hampshire, and Maine. Conversely, below-normal temperatures (1 to 4 degrees F below normal) were logged in New Jersey, Delaware, and Maryland. According to NOAA's National Center for Environmental Information (NCEI), the January 2024-April 2024 period was the 6th wettest (+3.8-inch anomaly) on record for the Northeast Climate Region. In terms of average temperature rankings for the contemporaneous period, the region experienced its 3rd warmest (+6.1 degrees F anomaly) on record.

Southeast

During the past week, moderate to heavy rainfall accumulations were observed across isolated areas of the region, including southern portions of Alabama and Georgia and in the Florida Panhandle with rainfall totals ranging from 2 to 6+ inches. Elsewhere in the region, isolated showers were observed with accumulations ranging from 1 to 3 inches. Average temperatures for the week were generally above normal (2 to 8 degrees F) except for in areas of southern and central Alabama as well as in Georgia and the Carolinas. On the map, this weeks rainfall led to the removal of areas of Abnormally Dry (D0) in North Carolina and Virginia, while areas of South Florida saw continued degradation with expansion of areas of Moderate Drought (D1) due to deteriorating drought-related conditions over the past 90-day period. According to the U.S. Army Corps of Engineers, Lake Okeechobee's water levels have been dropping since late March; however, current levels are still near normal for the date as compared to long-term averages (based on 1965-2007 averages). According to the USDA (May 19), statewide pasture and range conditions rated good to excellent are as follows: Virginia 63%, North Carolina 87%, South Carolina 82%, Georgia 65%, Alabama 82%, and Florida 42%.

South

Across portions of the region, the active pattern continued with significant rainfall accumulations observed in portions of eastern Texas, southern Louisiana, and southern Mississippi, where 7-day totals ranged from 2 to 8 inches. Moreover, beneficial rainfall continued to help ease drought-related conditions in areas of Texas and Oklahoma. On the map, isolated rainfall activity this week led to some minor improvements in north-central Oklahoma, while areas of central and west-central Texas saw minor improvements. According to Water for Texas (May 22), statewide reservoirs are currently at 77.3% full with numerous reservoirs in the eastern part of the state near

capacity, while many reservoirs in the western half of the state are experiencing below-normal levels. In terms of pasture and range conditions across the region, the USDA (May 19) is reporting statewide pasture and range conditions rated good to excellent as follows: Tennessee 74%, Mississippi 65%, Arkansas 61%, Louisiana 61%, Oklahoma 57%, and Texas 33%. Looking at climatological rankings for the January 2024-April 2024 period, the region experienced its 19th wettest (+2.32-inch anomaly) and the 11th warmest (+3.2 degrees F anomaly) on record, according to NOAA NCEI.

Midwest

On this weeks map, there were reductions in areas of drought across portions of Iowa, Missouri, Wisconsin, and Michigan. In Iowa, this weeks heavy rainfall (2 to 6+ inches) combined with improvements in conditions over a broader time scale led to reductions in areas of lingering drought across the state. Similarly, conditions have been trending towards improvement in drought-affected areas of southern Wisconsin and Michigans Upper Peninsula. According to the USDA (May 19), statewide pasture and range conditions rated good to excellent are as follows: Minnesota 61%, Iowa 72%, Missouri 71%, Wisconsin 59%, Illinois 85%, Michigan 83%, Indiana 76%, Kentucky 85%, and Ohio 88%. According to the NOAA NCEIs climatological rankings for the March-April 2024 period, the Upper Midwest Climate Region observed its 10th wettest (+1.57 anomaly) and 12th warmest (+4.8 deg F anomaly) on record.

High Plains

On this weeks map, Kansas, Nebraska, North Dakota, and the eastern Plains of Montana saw improvements in drought-affected areas. In Kansas and Nebraska, moderate to heavy rainfall accumulations (2 to 7+ inches) led to a reduction in areas of drought and provided a boost in soil moisture and streamflow levels. In North Dakota, areas of Moderate Drought (D1) were reduced in response to above-normal precipitation during the past 30-to-90-day period as well as numerous recent field reports coming into the National Drought Mitigation Centers Condition Monitoring Observer Reports (CMOR) system. According to the USDA (May 19), statewide pasture and range conditions rated good to excellent are as follows: North Dakota 68%, South Dakota 83%, Nebraska 56%, and Kansas 42%. According to the latest USDA Kansas Crop Progress and Condition Report (May 19), winter wheat condition was rated 11% very poor, 20% poor, 36% fair, 30% good, and 3% excellent. In terms of NOAA NCEIs regional climatological rankings, the Great Plains Region observed its 44th wettest (near normal) and 12th warmest (+3.9 degrees F anomaly) January-April period on record.

West

Out West, some minor improvements were made on the map in central and northern Arizona, eastern New Mexico, southern Colorado, southern Nevada, north-central Wyoming, and southeastern and central Montana. Looking at precipitation across the region, the start of the Water Year was not looking good with most of the region experiencing below-normal precipitation levels. However, the period from January 1 to current (May 21) was much more promising with above-normal precipitation observed across much of the region, with the exception of areas of the Pacific Northwest including Washington, northern Idaho, and western and central Montana as well as areas of the Southwest (eastern New Mexico and northwestern Arizona). In terms of snowpack, the Natural Resources Conservation Service SNOTEL network is reporting (May 21) the following region-level (2-digit HUC) snow water equivalent levels (percent of 1991-2020 median): Pacific Northwest 73%, Missouri 100%, California 147%, Great Basin 137%, Upper Colorado 112%, Arkansas-White-Red 140%, Lower Colorado 232%, and Rio Grande 52%. For the week, conditions were very dry across the region except for some isolated, light shower activity in eastern portions of New Mexico, Colorado, Wyoming, and Montana.

Caribbean

On this weeks map, no changes were made in Puerto Rico.

A dry, stable air mass, associated with a high-pressure ridge, dominated the U.S. Virgin Islands (USVI) during this U.S. Drought Monitor (USDM) week (May 15-21), interrupting a recent string of wet weeks. A couple CoCoRaHS stations recorded a tenth to a fourth of an inch of rain this week, but most locations received no measurable rain or less than a tenth of an inch. For St. Thomas and St. John, USGS data showed groundwater levels rapidly declining this week, but they were still in the upper third of the recent historical record. Satellite data (VHI) showed no vegetative drought stress in the USVI. Precipitation for the last several months resulted in wet Standardized Precipitation Index (SPI) values at the 1- to 12-month time scales. As a result, on the USDM map, St. John and St. Croix continued free of drought and abnormal dryness. An analysis could not be made for St. Thomas this week due to the lack of sufficient precipitation data.

Pacific

In Alaska, an area of Abnormally Dry (D0) was added in the Central Interior encompassing the greater Fairbanks area and in the flats to the south of the Tanana River where snow-free conditions have prevailed during the past month.

On this week's map, no changes were made in the Hawaiian Islands. In the Hawaiian Islands, a Kona Low event impacted the island chain last week bringing cooler-than-normal temperatures and heavy rainfall accumulations to Kauai, Oahu, Molokai, and the Big Island. The event was the latest Kona Low event in the past 20 years, according to the NWS Honolulu.

Several tropical weather features brought rain to parts of the U.S.-Affiliated Pacific Islands (USAPI) during this U.S. Drought Monitor (USDM) week (May 15-21). These features included a near-equatorial trough, weak circulations, surface troughs moving in the Inter-Tropical Convergence Zone, and convergence created by surging trade winds. These features generated weekly rainfall totals of 2 to 5 inches across southern and eastern parts of the Federated States of Micronesia (FSM), the Republic of Palau, and the Marshall Islands, with as much as 7.55 inches recorded at Kosrae. Meanwhile, a dry trade-wind pattern dominated the Marianas Islands and western parts of the FSM (Yap State), where weekly rainfall totals were less than an inch in the Marianas and less than 2 inches in Yap State. A high-pressure ridge helped inhibit showers over American Samoa, where weekly rainfall totals were just over an inch. A weekly total of one inch of rain is needed to meet most water needs in the Marianas and American Samoa, with 2 inches needed for the rest of the USAPI.

The abundant rain this week added to monthly totals at Pohnpei, Kosrae, Lukunor, Kapingamarangi, and Nukuoro. With a wet week and monthly totals exceeding the 8-inch monthly minimum needed to meet most water needs, no drought or abnormal dryness was present at these locations. A wet week and/or month also kept drought and dryness away from Chuuk, Ailinglaplap, Jaluit, and American Samoa.

It was a wet week at Airai in Palau, but the May monthly total was still dry (below minimum), so abnormal dryness (D0-S) continued. Rain this week and month improved the status at Kwajalein from D1-S (moderate drought) to D0-L (long-term abnormal dryness) and at Wotje from D3-SL (extreme drought) to D2-SL (short- and long-term severe drought). Even though monthly totals at Wotje were below the monthly minimum for the last 7 months, the totals showed improved percentiles based on the historical record. The status at Majuro was changed from D0-S to D0-L to reflect dryness that lingered at the 5-month time scale.

Short- and long-term exceptional drought (D4-SL) continued at Ulithi and Yap. Based on data through this week, if no more rain falls for the rest of this month, Ulithi will have the driest May and April-May, second driest March-May, and third driest January-May in their 41-year historical record. Likewise for Yap, if no more rain falls for the rest of this month, Yap will have the third driest March-May and fourth driest January-May in their 73-year record. With dry conditions continuing, the status at Woleai was worsened from D1-S (short-term moderate drought) to D2-SL (short- and long-term severe drought), mainly reflecting the fourth driest May in a 41-year record (assuming no more rain falls this month).

In the Marianas, satellite observations (VHI) showed areas of stressed vegetation on Guam. Persistent dry conditions prompted the continuation of severe drought (D2-S) on Guam and extreme drought (D3-S) on Saipan and Rota.

Looking Ahead

The NWS Weather Prediction Center (WPC) 7-Day Quantitative Precipitation Forecast (QPF) calls for moderate-to-heavy rainfall accumulations ranging from 2 to 5 inches across areas of the eastern portions of the Southern Plains (Oklahoma), South (northeastern Texas, Arkansas, northern Mississippi, Tennessee, Kentucky) and the Midwest (Illinois, Indiana, Ohio) while lesser accumulations (1 to 2.5 inches) are expected in areas of the Upper Midwest, Mid-Atlantic, Northeast, and out West in isolated areas of the Northern Rockies, and eastern plains of Montana. Dry conditions are expected across California, the Great Basin, the Southwest, and the southern extent of the Intermountain West. Likewise, much of the Gulf Coast region is expected to experience relatively dry conditions. The Climate Prediction Center (CPC) 6-10-day Outlook calls for a moderate-to-high probability of above-normal temperatures across much of the South, Southeast, lower Mid-Atlantic, and northern portions of the Northeast. Likewise, above-normal temperatures are expected across most of the western U.S., with the exception of the Far West coastal areas from California to Washington where near-normal temperatures are expected. Conversely, below-normal temperatures are expected in eastern portions of the Central Plains and across much of the Midwest. In terms of precipitation, there is a low-to-moderate probability of above-normal precipitation across the South, Southeast, Mid-Atlantic, and Northeast, while below-normal precipitation is expected across most of the western U.S., Northern Plains, and areas of the Upper Midwest.

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