

Weather and Climate Summary and Forecast

May 2025 Report

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May 3, 2025

Summary:

- April was warmer than average¹ over most of the west. Coastal zones in California and portions of the interior were closer to average or slightly below average.
- After a moderately wet March, April turned dry over most of the western US. Snowpacks are extremely low in southern basins and across the northern Cascades and Rockies, while northern California, southern to central Oregon, and southern Idaho are running above average.
- Drought conditions have continued to improve from northern California into the PNW, while southern California, across the southwest to western Texas, remains in moderate to extreme drought.
- Typical early May weather with seasonal temperatures and a few chances for rain into mid-month. Some cool nights on the horizon but no concerns about cold air and frost potential in the forecasts.
- The May forecast for the west is ambiguous, with equal chances of above to below temperatures and precipitation for most of the west. I would say we are in for a seasonal month when it's said and done.
- Heading into the first half of summer, the 90-day forecast is pointing to a high likelihood of a warmer and drier western US. If May holds to seasonal, then the forecast is pointing to a much warmer than average June and July. The monsoon season is the wild card for the southwest with greater chances for a wetter period than elsewhere in the west.

Past Month and Year to Date:

April brought largely warmer than average temperatures to the western US (Figure 1). Most regions experienced temperatures during April that were from 0.5-3.0 degrees above average, although scattered areas along the southern California coast, in Nevada and southern Idaho, portions of Arizona, and the central Rockies saw temperatures closer to normal or as much as 0.5-1.5 degrees below average (Figure 1). Much of the rest of the country was also warmer than average, especially from Texas across the south and into the mid-Atlantic where temperatures ranged from 3-7 degrees above average in April (not shown). April in the western US was quite dry, with precipitation amounts running from 80% of normal to some areas of the southwest getting no rainfall during the month (Figure 1). Portions of the Four Corners region and the northern Rockies were the exception, receiving 150-300% of normal precipitation in April. The northern

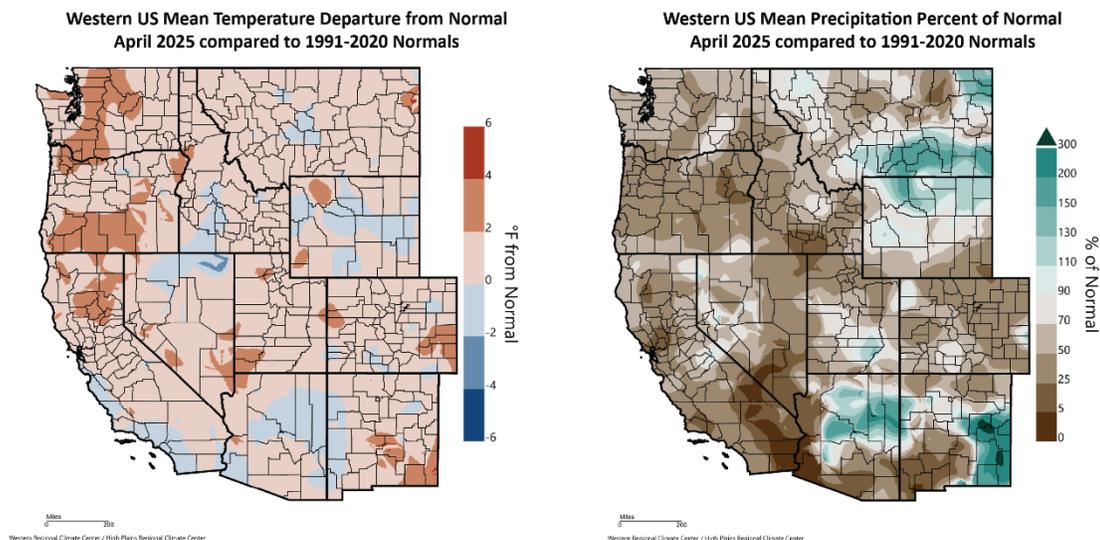


Figure 1 – Western US April 2025 temperature departure from normal (left) and percent of normal precipitation (right; images from Western Regional Climate Center and High Plains Regional Climate Center, 2025)

¹ Note that all references to normal or averages in this report are to the 1991-2020 climate normal for each weather/climate parameter unless stated otherwise. See this website (<https://www.climateofwine.com/climate-normals>) for more information on climate normal.

Plains to the Great Lakes experienced a wetter than average month as did the month's main storm track zone running from Texas northeast into the Ohio River valley where 200-300% of normal April precipitation occurred. Florida and the southeast coast remained dry during the month (not shown).

January through April temperatures are running largely between 1 degree above average to 1 degree below average (Figure 2). Coastal zones in California, much of Oregon, northwestern Washington, central Idaho, and the northern Rockies and Plains have been cooler than average, while interior California, the Great Basin, Four Corners, and central and southern Rockies have been warmer than average. The rest of the country continues to experience largely warmer than average temperatures since the first of the year, running 1-3 degrees above average from Texas and the Mississippi River valley eastward. The northern to central Plains and western Great Lakes have seen closer to average or slightly cooler year to date conditions (not shown).

Year to date precipitation over the west has been mixed with northern California and Oregon, continuing eastward to the northern Rockies, seeing a wetter than average first four months of the year (Figure 2). The rest of the western US has remained dry, with Washington moderately drier than average, and central to southern California, the southwest, Four Corners currently running 5-70% of normal. Year to date drier than average conditions are also found in the central to northern Plains, the southeast, and Florida (not shown). The dominant storm track over the first four months of the year has been from Texas into the Ohio River valley, which has brought roughly 150-300% of average precipitation.

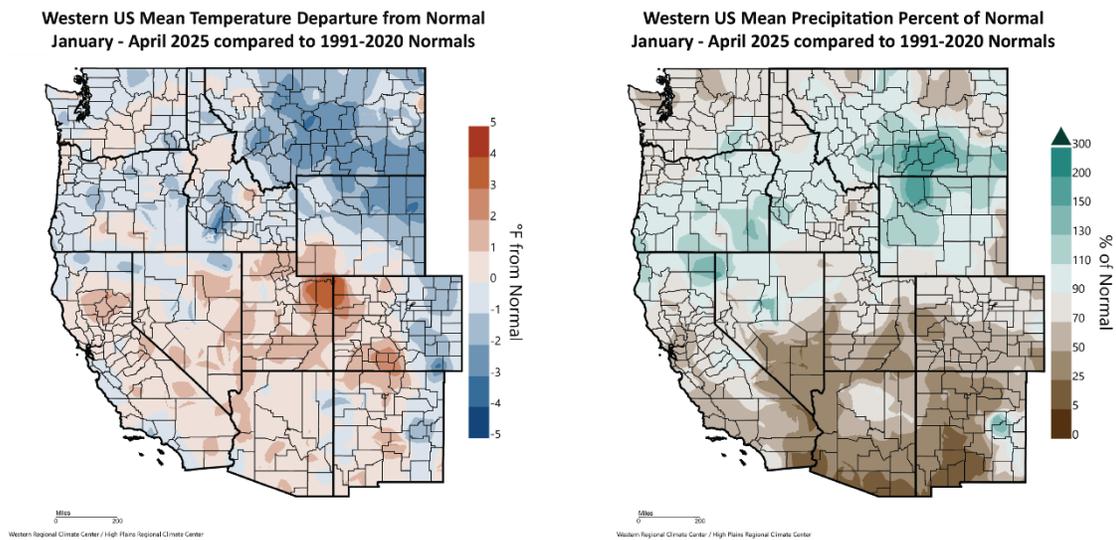


Figure 2 – Western US year-to-date (January 1 through April 30, 2025) temperature departure from normal (left) and percent of normal precipitation (right; images from Western Regional Climate Center and High Plains Regional Climate Center, 2025).

Heat Accumulation:

For the first look at growing degree-days (GDDs) over the western US for 2025, Figure 3 shows a very mixed situation with the large areas of the west seeing slightly below average accumulation and large areas experiencing slightly above average heat accumulation during March and April. Coastal zones in California, mountainous areas of the PNW and California, and northern Rockies are 0-150 GDD below average, while inland regions in California, the PNW, and the western valleys of Oregon and Washington along with Arizona and New Mexico have seen 50-200 GDD above average conditions (Figure 3). Converting the mapped data in Figure 3 to days ahead or days behind normal finds the west mostly 2-14 days behind in coastal California to 3-20 days ahead normal accumulation amounts in the inland PNW, the western valleys of Oregon, inland California, and much of Arizona and New Mexico (not shown).

For Oregon specifically, heat accumulation (GDD) amounts for four locations that I have tracked for many years in wine regions are above both the 1981-2010 and 1991-2020 climate normals for the month of April 2025 (Figure 4). These locations are all currently tracking the same as the 2015 vintage, one of the warmest years in Oregon. These locations are mostly above the same period in 2024, except for McMinnville which is slightly below (10%) the 2024 vintage.

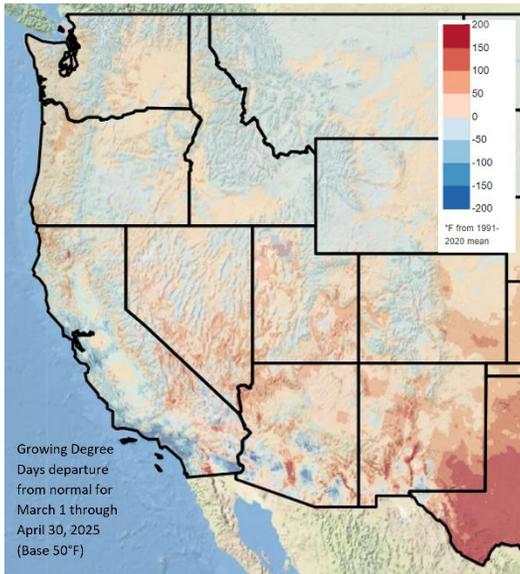


Figure 3 – Western US March through April 2025 growing degree-days (image from Climate Impacts Research Consortium, University of Idaho).

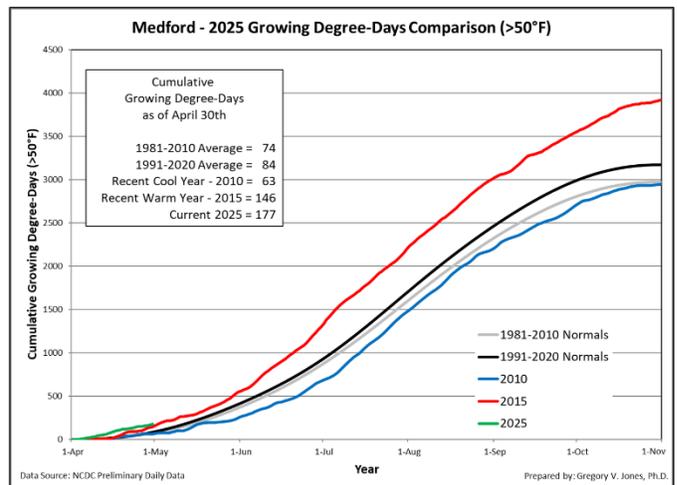
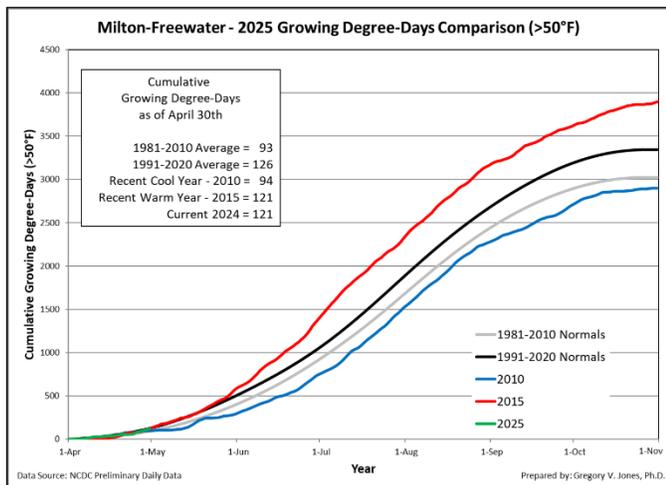
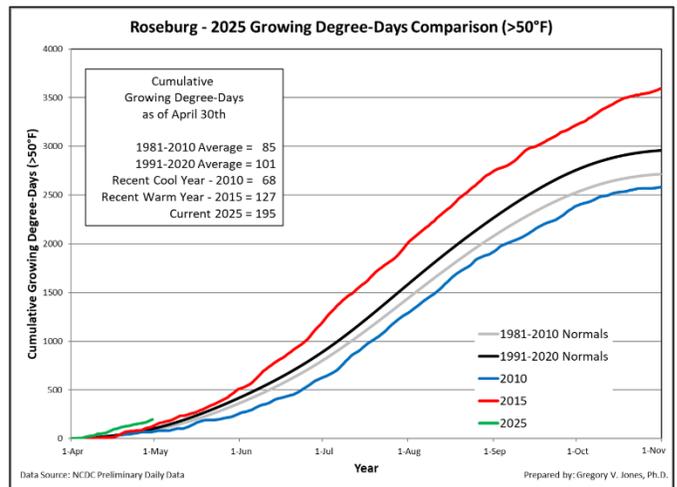
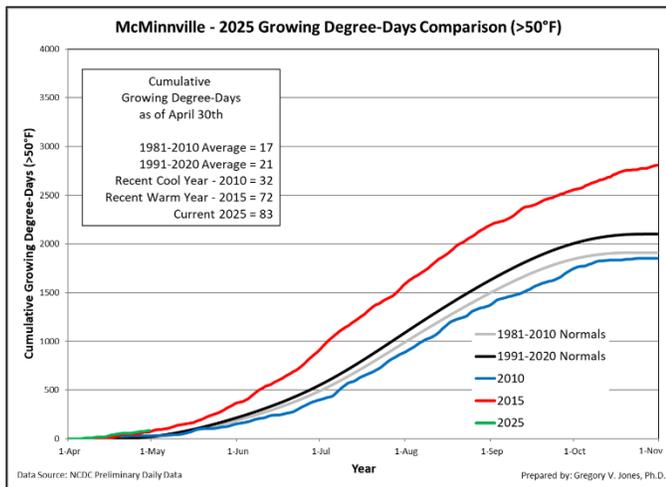


Figure 4 – Cumulative growing degree-days (base 50°F, no upper cut-off) for McMinnville, Roseburg, Milton-Freewater, and Medford, Oregon. Comparisons between the current year (2025) and a recent cool year (2010), a recent warm year (2015), and both the 1981-2010 and 1991-2020 climate normals are shown (NCDC preliminary daily data).

Drought Watch – Precipitation in April was heavy to excessive in the heartland, causing floods in many areas. Heavy rains across the Plains helped drought conditions there, but extremely dry conditions were seen from the Rockies westward and many regions in the eastern third of the country. However, while the drought footprint dropped slightly,

the overall broad pattern of drought in the US did not change much from the past couple of months (Figure 5). For the continental US, the overall drought footprint dropped to 56%, with the most extreme drought categories declining to just under 20%. From southern California, across much of the southwest, and into the northern Rockies and Plains continue to have the most prolonged and severe drought situation (Figure 5). With the dry month of April, the overall drought footprint in the western US increased slightly from last month to just above 67%, with the most extreme categories remaining just over 31% of the west. A very dry April came after a moderately wet March in the PNW, resulting in some changes to the drought coverage in Washington, with just under 42% of the state, but no areas in the most extreme categories of drought. A dry April in Oregon moved the state from completely free of drought to just under 15% of the state now in lower drought categories. The mountains of northern Idaho and western Montana continue to be one of the drier regions in the northwest, but April precipitation helped lower drought coverage in some areas of each state. Montana continues to show an overall drought footprint close to 74% of the state, with the extreme categories increasing slightly to just over 13% of the state. Idaho saw its overall drought footprint increase to nearly 47% of the state, but the most extreme drought categories remained at zero. California did not change much in the overall area in drought, remaining just above 56%. The more extreme drought categories also remained close to 25% of the state now enduring severe drought, all located in the southern portion of the state (Figure 5).

While the general patterns of the current seasonal drought outlook (Figure 5; right panel) look similar to those of the past few months, some significant differences have become evident. Namely, that much of the East Coast is now forecast to see drought conditions improve, as are significant areas of the southern Plains, Texas, and eastern New Mexico. What is continuing is that large areas of southern California, the southwest, Rocky Mountains, and the northern to central Plains are likely to see drought conditions persist or develop further. For the West Coast states, central to northern California, all of Oregon, and significant portions of Washington, Idaho, and Montana are likely to stay out of drought heading into summer and our period of seasonal drought. However, portions of the northern Cascades of Washington and the Bitterroot Mountains of Idaho and Montana will likely see areas of drought persist. Drought concerns in the eastern third of the country are forecast to get better over the next three months or remain off the map completely (Figure 5; right panel).

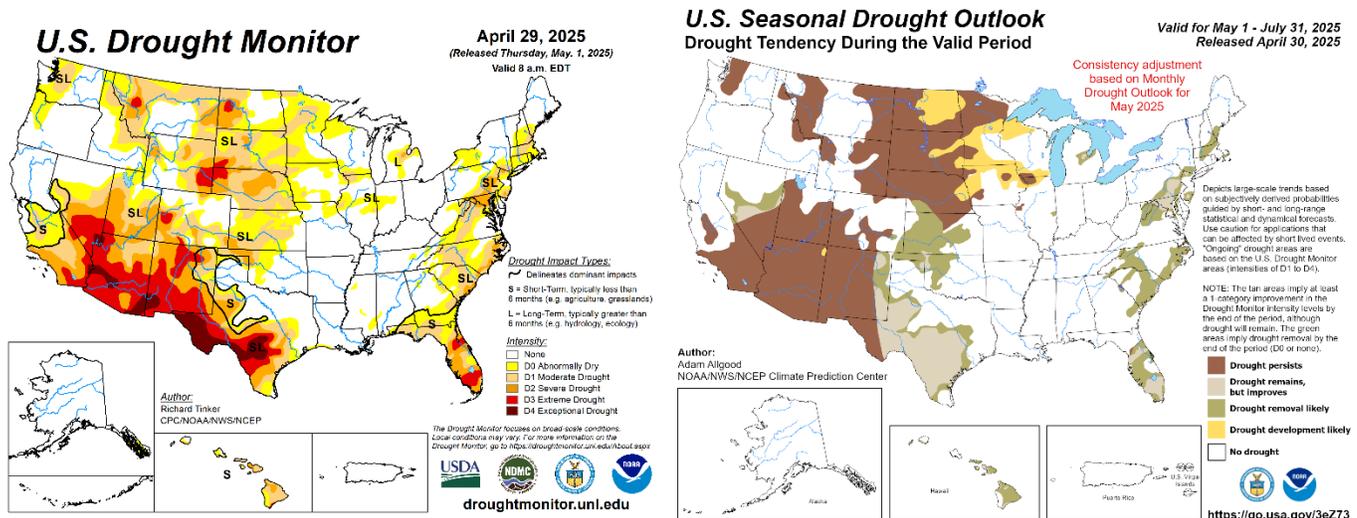


Figure 5 – Current US Drought Monitor and seasonal drought outlook.

ENSO Watch – The Climate Prediction Center (CPC) has issued its final La Niña advisory as conditions in the Tropical Pacific Ocean show areas across the central Pacific experiencing near-average sea surface temperatures (SSTs) over most of the basin (Figure 6). Tropical Pacific atmospheric conditions also show anomalies that are consistent with the move to full ENSO-neutral. Observations and models are continuing to show a trajectory of SSTs remaining near average over the next few months, with ENSO-neutral prevailing through the summer, into fall, and possibly even into the winter of 2025-2026. Heading into summer, the overall effect of ENSO on weather conditions for the west coast continues to weaken, but can still be influential in some years. However, the current 90-day forecast (see below) appears to have less of an overall influence from ENSO conditions than it has over the past six months or so.

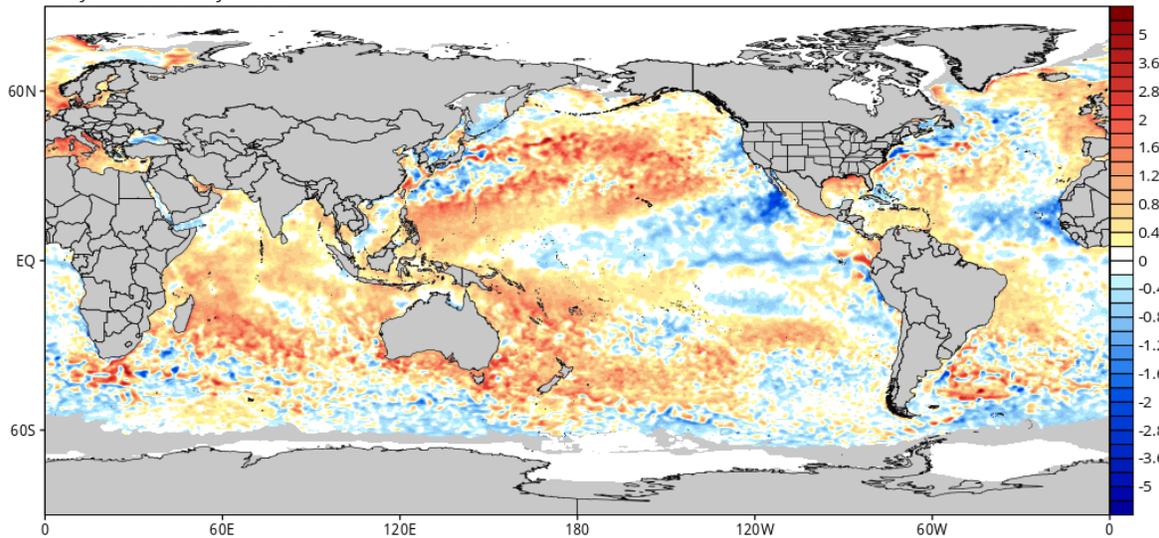


Figure 6 – Global sea surface temperatures (°C) for the period ending May 1, 2025 (image from Tropicaltibits.com).

North Pacific Watch – While the general pattern in SSTs over the North Pacific remains largely the same from the last couple of months, a shift from strong negative values has continued. A broad area of the North Pacific basin remains warmer than average, while cooler than average SSTs also remain along the western North American coast from Alaska south to Baja California and central Mexico (Figure 6). The PDO is still showing negative phase anomalies and will likely continue for the foreseeable future, but its effect tends to lessen into the boreal summer, then picks back up in the fall and transition to winter. Right now, I do not see much influence from the North Pacific SSTs, other than tamping down coastal zone temperatures, especially in California and south to Baja.

Forecast Periods:

Next 5 Days: Typical spring conditions with back and forth swings between warm and dry to cool and the potential of precipitation for many areas of the west coast. A low will spin south and bring greater chances of some rain to California and even snow to the Sierra Nevada mountains, but I wouldn't expect much. Once the system passes another warm-up likely into next week.

6-10 Day (valid May 7-11): Seasonal to above normal temperatures expected for the vast majority of the western US, with the greatest likelihood for warmer than average conditions being in the inland PNW across the northern Rockies and into the Plains. Below average to near normal temperatures are expected across New Mexico, Texas, to the Mississippi River valley, while the southeast, mid-Atlantic, and New England are more likely to see warmer than average temperatures during this period. Potential for a frontal passage or two during this period, but not much precipitation in the forecast for the West Coast. As such, northern California, the PNW, and across to the Great Lakes are likely to see below average precipitation, while the southern states from the Four Corners region across to the mid-Atlantic are likely to see above average precipitation.

8-14 Day (valid May 9-15): Generally mild to slightly warmer than average temperatures continue into mid-month. The greatest chance to see warmer than average temperatures will likely be in the Great Basin, inland PNW, and northern Rockies and Plains. The southern Plains, Texas, and western Gulf are likely to remain cooler than normal during this period, while the Great Lakes states and New England have a decent chance of seeing warmer than average temperatures. No clear signal for precipitation for the west coast, so the forecast is calling for near normal. The Basin, Four Corners, Texas, across the southern states have a decent chance of seeing wetter than average conditions during this period, while the Great Lakes and New England are likely to stay dry into mid-month.

30 Day (valid May 1-31): The May temperature outlook in Figure 7 has shifted from warmer than average in prior seasonal forecasts to equal chances of above, near normal, or below average temperatures. The rest of the country is forecast to see a warmer than average month of May, especially in the northern Plains, where the likelihood is greatest.

In terms of precipitation, the far northwest of Washington and the Great Basin are forecast as likely to be wetter than average, while the rest of the western US has equal chances in May. The very dry region of New Mexico and Texas is forecast to have a strong chance of wetter than average May, helping alleviate some of the long-term drought in the region (Figure 5). The northern Plains and Great Lakes are forecast to see a dry month, while the rest of the eastern third of the country has equal chances (Figure 7).

90 Day (valid May-June-July): The seasonal outlook from May through July has continued to point to a largely warmer than average continental US (Figure 7). Warmer than normal conditions are most likely to be seen in most of the western US, across the south, and in New England, with the northern Plains and western Great Lakes having equal chances. Along with a warmer than average forecast, the western US is also likely to see below average precipitation. The exception is the southwest, where equal chances of above average precipitation are anticipated from the start of the monsoon season (Figure 7). For the rest of the country, the Mississippi Valley into the Great Lakes has equal chances of wet to dry season, while the south and eastern seaboard are more likely to see a wetter first half of summer.

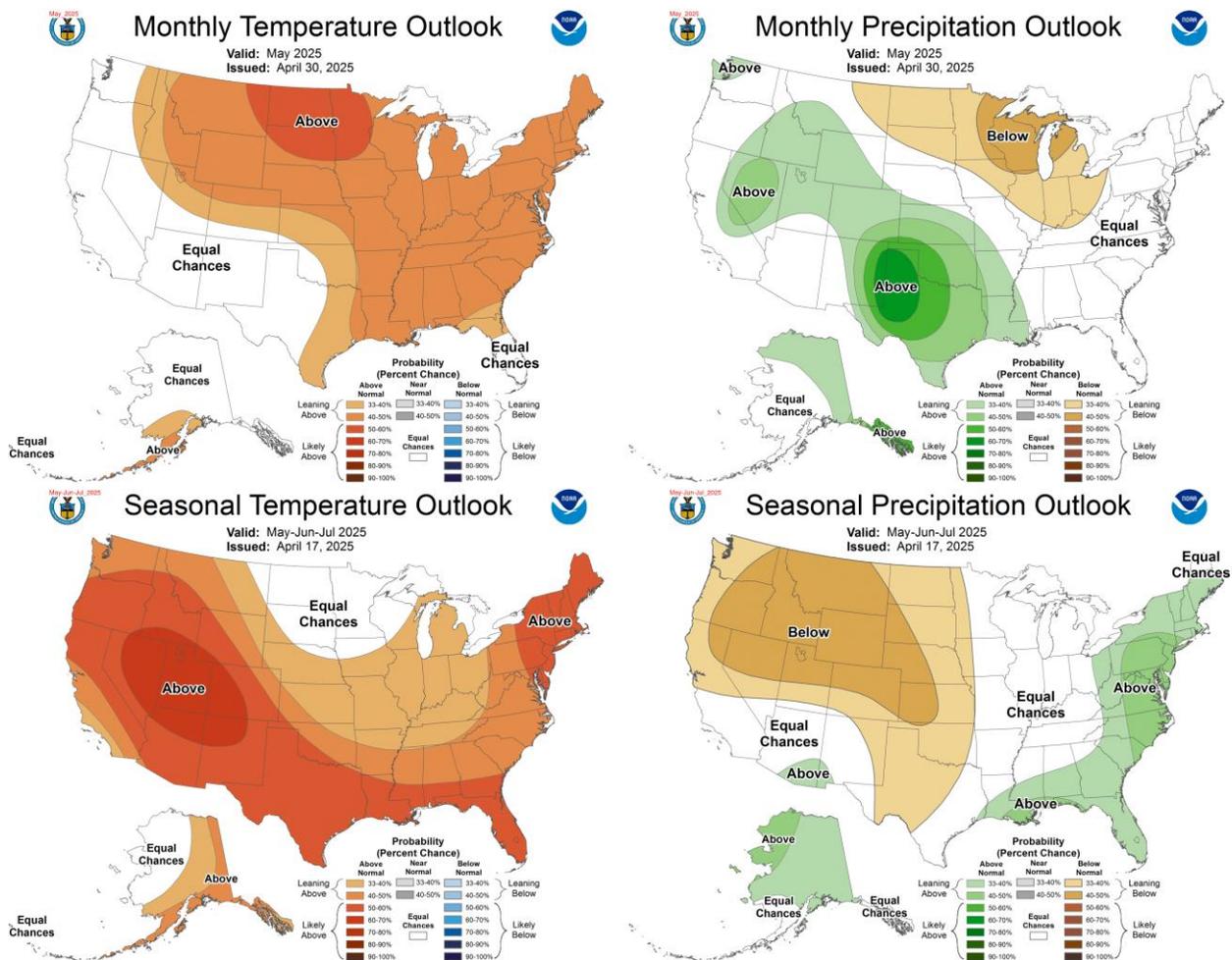


Figure 7 – Temperature (left panel) and precipitation (right panel) outlooks for the month of May (top panel) and May, June, and July (bottom panel) (Climate Prediction Center, climate.gov).

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