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Official 90-day Outlooks are issued mid-month at 8:30am **Eastern Time. Please** consult the schedule of 30 & 90-day outlooks for exact release dates.

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Tools Used (see Discussion for explanation)

CCA OCN **CMP** SMT POE



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Prognostic Discussion for Long-Lead Seasonal Outlooks NWS Climate Prediction Center College Park MD 830 AM EDT Thu Aug 21 2025

SUMMARY OF THE OUTLOOK FOR NON-TECHNICAL USERS

El Niño Southern Oscillation (ENSO)-neutral conditions are present, with sea surface temperatures (SSTs) near average across most of the tropical Pacific Ocean. The ENSO Alert System Status has been updated to a La Niña Watch, which is issued when conditions are favorable for the development of La Niña within the next 6 months. ENSO-neutral considerations are most likely through the end of summer and into early fall 2025, followed by a brief period of favored La once each month near Niña conditions in the fall and early winter 2025-2026, before returning to ENSO-neutral conditions in late winter and early spring 2026. The chances of El Niño are very small through early spring 2026.

> The September-October-November (SON) 2025 Outlook favors above-normal temperatures over the majority of the contiguous United States (CONUS) and Alaska. The highest probabilities, reaching a 60 to 70 percent chance of above-normal temperatures, are over the eastern tip of the CONUS, Southwest, and Central Great Basin. Equal chances (EC) of above-, near-, and below-normal temperatures are indicated over the Northern Plains and northeastern Alaska.

For the SON Precipitation Outlook, below-normal precipitation is favored for the Central Great Basin and Southwest into the Central and Southern Plains, and parts of the Middle Mississippi, Ohio, Tennessee, and Lower Mississippi Valley regions. Above-normal precipitation is favored over western Alaska, the Pacific Northwest, and the coastal Southeast.

Elsewhere over the U.S., EC is forecast where probabilities for each category of seasonal mean temperatures and seasonal accumulated precipitation amounts are expected to be similar to climatological probabilities.

BASIS AND SUMMARY OF THE CURRENT LONG-LEAD OUTLOOKS Note: For Graphical Displays of the Forecast Tools Discussed Below See: http://www.cpc.ncep.noaa.gov/products/predictions/90day/tools/briefing

CURRENT ATMOSPHERIC AND OCEANIC CONDITIONS

Over the past four weeks, equatorial SSTs have been above-average in the eastern and far western tropical Pacific Ocean, with near-to-below-average SSTs over the more central parts of the tropical Pacific Ocean. SST departures in the Niño3.4 region reached -0.3 degrees Celsius over the last week. Below-average sub-surface temperature departures have strengthened in the east-central and eastern Pacific in recent months. The coupled ocean-atmosphere system reflects ENSO-neutral conditions. Though we are under a La Niña Watch and SSTs have been trending slightly cooler in the Niño3.4 region, ENSO-neutral conditions are currently present, thus any influence of the cooler SSTs comes into play for late fall and winter 2025-2026.

As for local impacts, local SSTs are above-average in the Gulf of Alaska, along the Southeast and East coasts of the CONUS, and along the West Coast with the exception of Southern California which is more neutral. Local interaction between soil moisture and temperature and precipitation is less of a player as we move into the fall. Still, below-average soil moisture is present over much of the western U.S., the Middle and Lower Mississippi Valley, New England, and Florida, with scattered regions of above-average soil moisture over e.g. the Mid-Atlantic, the Upper Mississippi Valley, and the Northern and Central

Plains. Local interactions with soil moisture and SSTs are considered for early leads where applicable and relevant.

PROGNOSTIC DISCUSSION OF SST FORECASTS

The North American Multi-Model Ensemble (NMME) favors a short-lived La Niña during late fall and early winter 2025. In contrast, predictions from the International Research Institute (IRI) favor ENSO-neutral to persist through winter 2025-2026. Given the recent trend of below-average tropical Pacific SSTs along with NMME forecasts, chances of La Niña are narrowly favored for winter 2025-2026. In general, ENSO-neutral is most likely through the late Northern Hemisphere summer 2025 (56% chance in August-September-October, ASO). Thereafter, a brief period of weak La Niña conditions is favored in the fall and early winter 2025-26 before reverting to ENSO-neutral.

PROGNOSTIC TOOLS USED FOR U.S. TEMPERATURE AND PRECIPITATION OUTLOOKS

<u>Dynamical model</u> forecasts from the NMME, the Coupled Forecast System Model Version 2 (CFSv2), and the Copernicus (C3S) multi-model ensemble system were used extensively for the first six leads when they are available, as was the objective, historical skill weighted consolidation and Calibration, Bridging, and Merging (CBaM) guidance, that combines both dynamical and statistical forecast information. A consolidation of statistical tools including the ENSO-OCN tool, which represents the combined influence of ENSO (when active) and decadal timescale <u>trends</u> in temperature and precipitation (utilizing the Optimum Climate Normal, OCN) and <u>dynamical models</u> is used for the first six leads. Following this, the ENSO-OCN forecast tool is used more extensively. Decadal variability and <u>trends</u> are determined from the OCN, representing the difference between the most recent 15-year period average seasonal temperature or precipitation and the average for the <u>climatology</u> period, from 1991-2020.

PROGNOSTIC DISCUSSION OF OUTLOOKS - SON 2025 TO SON 2026

TEMPERATURE

Above-normal temperatures are favored for much of the CONUS and Alaska for SON 2025. Probabilities are enhanced over the Four Corners and Southwest, reaching 60 to 70 percent chances of above-normal temperatures. This is due to agreement among NMME and C3S, presence of below-average soil moisture and a below-normal precipitation forecast, and above-normal decadal temperature trends, which all act to increase confidence in the forecast for this region. This area of above-normal temperature probabilities is shifted southward and more confident than last month, owing to differences in dynamical model forecasts from last month to this month and increased confidence. In contrast, models show decreased certainty over the Northwest and Northern Plains, possibly due to cooler temperatures from the North and a tendency for below-normal temperatures during potential La Niña events as winter approaches. However, given the weak and short-lived nature of the potential La Niña, only weak teleconnections are expected.

Probabilities for above-normal temperatures are also enhanced, reaching 60 to 70 percent, over the Northeast where there was agreement among tools, decadal trends are above-normal, and above-normal surrounding SSTs. Similar arguments apply to Florida, where there is a 50 to 60 percent chance of above-normal temperatures, but comparatively weaker as chances of above-normal precipitation may offer some cooler periods during the season. While above-normal temperatures are still favored for the West Coast, probabilities are increased from 33 to 40 percent to 40 to 50 percent over much of California due to climatology which indicates the potential for warmer fall temperatures over parts of California. However, we may see a slight moderation of temperatures along the southern coast given the presence of neutral to weakly below-average SSTs and coastal sea breezes. Similarly over the interior Southeast and Mid-Atlantic, probabilities are slightly increased from last month given lack of above-average soil moisture, and a weak tilt toward below-normal precipitation.

Above-normal temperatures are broadly favored over the CONUS through November-December-January (NDJ) 2025-2026, with EC over the northern tier where uncertainty is higher. Some La Niña-like impacts or weak <u>teleconnections</u> to the cooler forecasted SSTs may begin to appear in December-January-February (DJF)

2025-2026 through February-March-April (FMA) 2026, namely a weak tilt toward below-normal temperatures over the Pacific Northwest in DJF and January-February-March (JFM) 2026, transitioning to weak but more widespread below-normal temperature probabilities over the northern tier by FMA 2026. This is juxtaposed with above-normal temperatures over the Southwest, southern tier, and East Coast. Longer-term forecasts, from April-May-June (AMJ) 2026 through SON 2026, depict an expansion of above-normal temperatures that will eventually cover most of the lower 48 states by SON 2026. These longer lead forecasts are primarily based on decadal trends.

Confidence over Alaska is comparatively less than the lower 48 at most leads. The forecast for Alaska remains similar to last month's SON forecast, however, a weak tilt toward above-normal now stretches across much of the state as indicated by above-normal temperature trends. The strongest probabilities (50 to 60 percent) are over the Northwest where decadal trends are strongest. Moving through the remainder of the forecast period, above-normal temperatures are generally favored over parts of Alaska, though the potential for weak La Niña teleconnections leading to a weak tilt toward below-normal temperatures over the Southeast are possible during winter months.

PRECIPITATION

The SON 2025 Precipitation Outlook favors below-normal precipitation from the southern parts of the Northern Great Basin and Northern Rockies to the Southwest, and into parts of the Middle and Lower Mississippi Valley, Ohio, and Tennessee Valley regions. This Outlook shifts the below-normal probabilities southward from last month and places higher probabilities (40 to 50 percent) over parts of the Four Corners, Central, and Southern Plains. This region of below-normal precipitation is co-located with the areas of above-normal temperatures and below-average soil moisture. Probabilities are weaker over southern Arizona and New Mexico due to the potential storminess in September due to the forecast active hurricane season.

The below-normal precipitation forecast extends eastward to the Tennessee Valley, aligning with model predictions, decadal trends, and a lack of above-average soil moisture. Above-normal precipitation is indicated over the Pacific Northwest, favored by the C3S model and potential La Niña-like impacts as we approach November. Though models in NMME and C3S did not show a coherent precipitation signal over the Southeast, the forecast for an above-normal Atlantic hurricane season and climatology leads to a tilt toward above-normal precipitation.

As we shift into fall and winter 2025 and 2026, above-normal precipitation is favored over the Northwest and North Central CONUS, and over the Great Lakes stretching to the northern Gulf States. In contrast, below-normal precipitation is favored over the southern tier of the CONUS. This pattern resembles a La Niña teleconnection, but the pattern has low confidence due to the uncertainty, short-lived nature, and weakness of the potential event. From March-April-May (MAM) 2026 through SON2026, decadal trends in precipitation are increasingly relied upon to create the forecasts.

Forecasts of precipitation over Alaska are comparatively more uncertain with large areas of 33 to 40 percent chances of above-normal precipitation or EC for many of the seasons. A slight tilt toward above-normal precipitation is indicated for the western coast of Alaska in SON2025 given C3S and decadal trends. Per the Monthly Precipitation Outlook, the season may start out with above-normal precipitation over the Southeast in September, but this becomes more uncertain as the season progresses and EC is indicated for the season as a whole. The region of above-normal precipitation expands across the state through JFM2026 before shifting back to the Northwest. Much of this pattern is based on the presence of decadal trends in precipitation over Alaska, due to weak and inconsistent model forecasts.

FORECASTER: Johnna Infanti

The Climatic normals are based on conditions between 1991 and 2020, following the World Meterological Organization convention of using the most recent 3 complete decades as the climatic reference period. The probability anomalies for temperature and precipitation based on these new normals better represent

shorter term climatic <u>anomalies</u> than the forecasts based on older normals.

For a description of of the standard forecast tools - their skill- and the forecast format please see our web page at

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/tools.html
(Use Lower Cas e Letters)

Information on the formation of skill of the CAS forecasts may be found at: http://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Outlook/outlook.shtm l

(use lowercase letters)

Notes - These climate outlooks are intended for use prior to the start of their valid period. Within any given valid period observations and short and medium range forecasts should be consulted.

This set of outlooks will be superseded by the issuance of the new set next month on Sep $18\ 2025$

1991-2020 base period means were implemented effective with the May 20, 2021 forecast release. \$\$

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