Drought Outlook Support Briefing

Climate Prediction Center/NCEP/NWS/NOAA

June 17, 2025

http://www.cpc.ncep.noaa.gov/products/Drought

Current Drought Conditions



U.S. Drought Monitor June 10, 2025

• CONUS

- 30% of area in drought (D1-D4), 48% of area in D0-D4.
- Drought over much of the West, Northern Plains, and Florida.
- Alaska: little drought
- Hawaii: D0-D3 conditions

https://droughtmonitor.unl.edu/CurrentMap.aspx

Recent Drought Evolution





Over the past three months:

- CONUS
 - Drought category improvement across much of the CONUS except in portions of Pacific northwest and Rockies.
- D0 removal in Alaska
- Drought intensification in Hawaii

https://droughtmonitor.unl.edu/Maps/ChangeMaps.aspx

Precipitation and Temperature Ranks (NOAA/NCEI)

MAM2025 relative to 1895-present

Divisional Precipitation Rank (131 March - May 2025 years) Near Normal 11/3 11/0 Wettest Driest 1/3 Contiguous U.S. (Hover over a Climate Division) Precip:8.90in Mean: 7.93in Anomaly:0.97in Rank:24th Wettest

Precipitation

Temperature



- Abnormally dry conditions in portions of Pacific Northwest and central Plains
- Abnormally warm conditions across much of the CONUS

https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/mapping

Precipitation

Anomalies

Prop Anomalies (mm) 17DEC2024-14JUN2025 Prop Anomalies (mm) 16MAY2025-14JUN2025 Prop Anomalies (mm) 17MAR2025-14JUN2025 50N 400 300 401 200 100 50 -50 301 30N 100 -200 -300 400 201 10N + 140W 120₩ 1000 120₩ 100W 120₩ toow % of Normal 30-day Accumulated Prop % of Normal 16MAY2025-14JUN2025 90-day Accumulated Prop % of Normal 17MAR2025-14JUN2025 180-day Accumulated Prop % of Normal 17DEC2024-14JUN2025 50N 800 40N 400 200 150 25 30N 308 50 25 ιa 20N 10N |--- 140W 120₩ 100W 10N + 140W 120% 1000 120W 100W вάγ 1-month 6-month 3-month

https://www.cpc.ncep.noaa.gov/products/Global_Monsoons/American_Monsoons/NAMS_precip_monitoring.shtml

Standardized Precipitation Index (SPI)



SPI (through June 14, 2025) Meteorological drought

Southwest shows long-term drought but has no indication of a short-term drought.

Precipitation deficits are present in portions of central Plains and western Midwest over timescales ranging from 3 to 24 months.

Evaporative Demand Drought Index (EDDI)

3-month EDDI categories for June 9, 2025 45°N 40°N 35°N 30°N 25°N 120°W 110°W 100°W 90°W 80°W 70°W Drought categories Wetness categories EW2 EW3 EW4 ED3 ED2 ED1 ED0 EW0 EW1 ED4 100% 98% 95% 90% 80% 70% 30% 20% 10% 5% 2% 0% (EDDI-percentile category breaks: 100% = driest; 0% = wettest)

3-month EDDI (June 9, 2025)

 ED1+ conditions in much of the eastern CONUS, with unusually high evaporative demand (ED4) in portions of the Mid-Atlantic and FL.





Generated by NOAA/ESRL/Physical Sciences Laboratory

https://psl.noaa.gov/eddi/#current_conditions

Soil Moisture Percentile



https://www.cpc.ncep.noaa.gov/products/Drought/Monitoring/smp.shtml

USGS Streamflow

Map of real-time streamflow compared to historical streamflow for the day of the year (United States)

United States v or Water-Resources Regions v



Much below-normal streamflow

(hydrological drought):

Coastal Pacific Northwest, Rockies, northern Kansas

Choose a data retrieval option and select a location on the map C List of all stations in state, State map, or Nearest stations

| Explanation - Percentile classes | | | | | | |
|----------------------------------|----------------------|-------|--------|-----------------|----------------------|------|
| | | • | | | | • |
| Low | <10 | 10-24 | 25-75 | 76-90 | >90 | High |
| | Much below normal | Below | Normal | Above normal | Much above normal | |

https://waterwatch.usgs.gov/index.php?r=us&id=ww_current

Reservoir Capacity: California



• All of the major water supply reservoirs are above or at historical average levels, except San Luis (92%).

Reservoir Storage: Western CONUS

Reclamation Reservoir Storage (June 13, 2025)



4 Flagged reservoirs (lowest storage observed on June 13 in the last 30 years)**:** Lake Powell (50%), Lake Mead (51.6%), Gibson Dam And Reservoir (72.7%), Choke Canyon Dam And Reservoir (21.9%)

https://usbr.maps.arcgis.com/apps/dashboards/81aaec3e74024ce6b9a5e50caa20984e

Seasonal Drought Prediction

Seasonal Precipitation Climatology



ENSO: Recent Conditions



• May 2025: ENSO neutral conditions



https://www.cpc.ncep.noaa.gov/products/GODAS/ocean_briefing.shtml

ENSO: Official NOAA CPC Forecast

Official NOAA CPC ENSO Probabilities (issued June 2025)



ENSO-neutral is favored to persist through the boreal summer and fall, with 68% chance for July-August-September (JAS) 2025.

https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/figure07.gif

Global SST Anomaly



https://www.cpc.ncep.noaa.gov/products/GODAS/ocean_briefing_new/mnth_sst_sstdiff_glb_xy.gif

NMME Seasonal Forecasts: Global SST and Precip

IC=202506 Ensemble Mean Forecasts: Lead=1month for JAS2025

Precipitation NMME prob fcst SST IC=202506 for lead 1 2025 JAS NMME prob fcst Prate IC=202506 for lead 1 2025 JAS 90N T -60N 30N ΕQ 30S 60S -90S 120E 120E 180 120W 6ÓW 6ÔE 180 120W 6ÓW

50 60 70 60 70 50 60 70 36% 40 36% 40 50 36% 40 Below Above Neutral

SST

70

Below

90

36% 50

70

Neutral

90

36% 50

90N

60N

30N

ΕQ

30S

60S

90S

6ÖE

36% 50

70

Above

90

NMME Forecasts: Precipitation

IC=202506 Lead=1month for JAS2025

Multi-Model Ensemble Mean **Probabilistic Forecast** NMME prob fcst Prate IC=202506 for lead 1 2025 JAS NMME Forecast of Prec. rate Anom IC=202506 for Lead 1 2025JAS 70N -70N 60N 60N 50N 50N 40N · 40N 30N · 30N 20N -20N 10N 120W 100W 160W 140W 8ÓW 60W 10N 140W 120W 8Ó₩ 160W 100W 60W 40% 50 60 70 40% 50 60 70 40% 50 60 70 Above Below Neutral -0.2-0.10.1 0.2 0.4 0.8 -0.8 -0.6

NMME forecasts precipitation deficits along northern tier of the CONUS, and increases along eastern CONUS, with >40% probability.

NMME Forecasts: Precipitation



Good agreement across the NMME models and IMME in forecasting precipitation across much of the CONUS

NMME Forecasts: Temperature

IC=202506 Lead=1month for JAS2025



Multi-Model Ensemble Mean

PAC Calibrated Probability Forecast

NMME forecasts warm T2m anomalies across much of the CONUS with >60% probability for western CONUS.

NMME Forecasts: Temperature



General agreements among the NMME models and IMME in forecasting warm T2m anomalies over CONUS

CPC Objective Drought Forecasts



Drought is forecast as a multi-variate and multi-scalar phenomenon.

SPI3, SPEI3 (short-term meteorological drought): Weak dry conditions favored over Northwest

SMP3, SRI3 (agricultural & hydrological

drought): Persistence of initial drought
conditions, with indications of drought
improvement or removal in NM and
southern TX.

SPI: Standardized Precipitation Index
SPEI: Standardized PrecipitationEvapotranspiration Index
SMP: Soil Moisture Percentile
SRI: Standardized Runoff Index



CPC Objective Seasonal Drought Forecasts



The forecasts for these drought indices are integrated using CPC objective drought blends developed for forecasts to produce forecasts for integrated drought conditions.

Adjusted Objective Seasonal Drought Forecasts









NOAA NWS Climate Prediction Center

Objective Seasonal Drought Forecast

- Western CONUS
 - Drought persistence is favored in regions experiencing initial drought conditions, except in southern AZ, NM and portions of southern TX where drought improvement is favored with >40% probability. The latter is due primarily to that NMME forecasts near-normal precipitation conditions and JAS are their climatologically wet months.
 - Drought development is favored in patched areas in northern Plains with >50% probability, due to precipitation increases forecasted by NMME.
- Eastern tier of CONUS
 - Drought removal is predominantly favored, with >50% probability.



Alaska: SPI Forecasts



SPI forecasts based on NMME IC_202506

- **SPI3 (202507)**: Wet anomalies in southern Alaska.
- SPI12 (202509): Wet anomalies in central and western Alaska. Weak dry anomalies in western Alaska Panhandle.

https://www.cpc.ncep.noaa.gov/products/Drought/AK/nmme.shtml

Summary

Current drought conditions

- Drought is present over much of the Southwest, portions of Northern Plains and Pacific Northwest, and Florida.
- Short-term drought expanding across the Pacific Northwest.

ENSO forecasts for JAS2025

• ENSO-neutral conditions are favored, with 68% probability.

Objective NMME-based forecasts for JAS2025

- Precip, T2m
 - The NMME forecasts above-normal precipitation in the eastern CONUS and below-normal precipitation along northern tier of CONUS, and above-normal T2m across much of the CONUS.
- Drought
 - Western CONUS
 - Drought persistence is favored in regions experiencing initial drought conditions, with the exceptions
 of southern AZ, NM and portions of southern TX where drought improvement is favored with
 >40% probability, primarily due to that NMME forecasts near-normal precipitation conditions and
 JAS are their climatologically wet months.
 - Drought development is favored in patched areas of northern Plains with >50% probability, due to precipitation increases forecasted by NMME.
 - Eastern tier of CONUS

 $\,\circ\,$ Drought removal is predominantly favored, with >50% probability.