



Center for Western Weather  
and Water Extremes

SCRIPPS INSTITUTION OF OCEANOGRAPHY  
AT UC SAN DIEGO

# CW3E Seasonal Outlook: 12 Jan 2026

*Prepared by: J. Wang, Z. Yang, C. Castellano, M. DeFlorio, J. Kalansky*

UC San Diego



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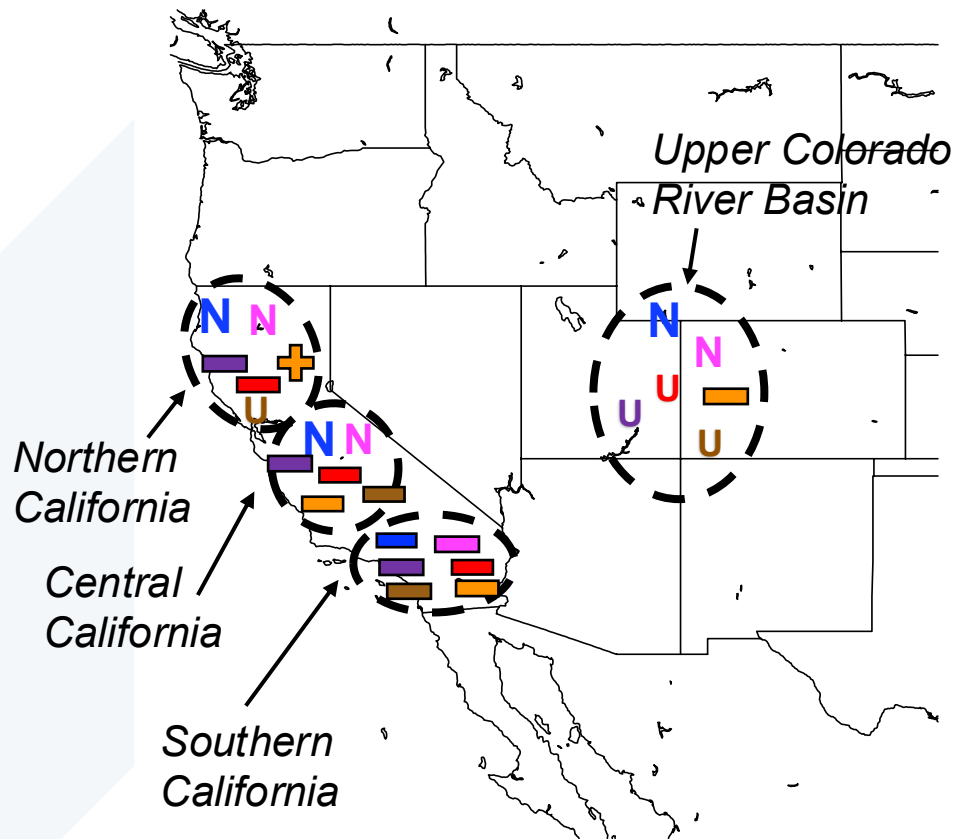
# CW3E S2S Forecasts: Glossary & Context








- The outlooks are based on CW3E's and collaborating institutions' seasonal forecast products that can be found here: [https://cw3e.ucsd.edu/s\\_and\\_s\\_forecasts/](https://cw3e.ucsd.edu/s_and_s_forecasts/)
- CW3E seasonal (3 months lead time) precipitation products are produced using statistical and machine learning models. The suite of models includes:
  - CCA (canonical correlation analysis) based statistical model
  - Machine learning model, which also includes comparison to NMME (North American Multi-Model Ensemble)
- *On the following slides, the term confidence refers to the forecasters' interpretation of the magnitude of the anomalies, the level of ensemble agreement, and the skill of the products used to generate the forecasts. All the tools used are shown in the outlook presentation.*
- *The thresholds for below-normal, near-normal, and above-normal conditions are determined by forecast product and noted on each forecast product slide*

# Summary: Jan – Mar 2026 Seasonal Forecasts



- Experimental seasonal forecast products tilt the odds towards below-normal precipitation in Southern CA for the Jan-Mar 2026 period
  - CW3E's CCA model predicts near-normal to slightly below-normal precipitation in Southern CA with high confidence
  - CW3E's Machine Learning (ML) and NOAA NMME models tilt the odds towards drier than normal conditions in Southern CA
  - All seasonal forecasts issued by other institutions are showing below-normal precipitation over Southern CA with low-to-moderate confidence
- Experimental seasonal forecast products show greater uncertainty over Northern and Central CA
  - CW3E's CCA model forecasts near-normal to slightly above-normal precipitation in Northern and Central CA with low-to-moderate confidence
  - CW3E's Machine Learning (ML) and NOAA NMME models tilt the odds towards near-normal precipitation in Northern and Central CA
  - Seasonal forecasts issued by other institutions show below-normal precipitation in Central CA and more uncertain in Northern CA

# Seasonal Synthesis Precipitation Outlook: Jan – Mar 2026



Methods	Forecast Period	Organization(s)	Nor Cal	Cen Cal	So Cal	Upper Colo
Machine Learning based Forecast (Gibson et al.)	Jan-Mar	 Jet Propulsion Laboratory California Institute of Technology  Center for Western Weather and Water Extremes SCRIPPS INSTITUTION OF OCEANOGRAPHY AT UC SAN DIEGO	N	N	-	N
CCA Seasonal Precipitation Forecast (Gershunov et al.)	Jan-Mar	 Center for Western Weather and Water Extremes SCRIPPS INSTITUTION OF OCEANOGRAPHY AT UC SAN DIEGO	N	N	-	N
Univ. of Arizona Hybrid Seasonal Forecast (Scheftic et al.)	Jan-Mar		+	-	-	-
CCSR/IRI Forecast (Robertson et al.)	Jan-Mar		-	-	-	U
NMME Seasonal Forecast	Jan-Mar		-	-	-	U
NOAA CPC Operational Outlook	Jan-Mar		U	-	-	U



 Above Normal  
 Below Normal  
**N** Normal  
**U** Uncertain/Equal Chances

# Seasonal Outlook: Jan – Mar 2026 Precipitation (CCA Model)

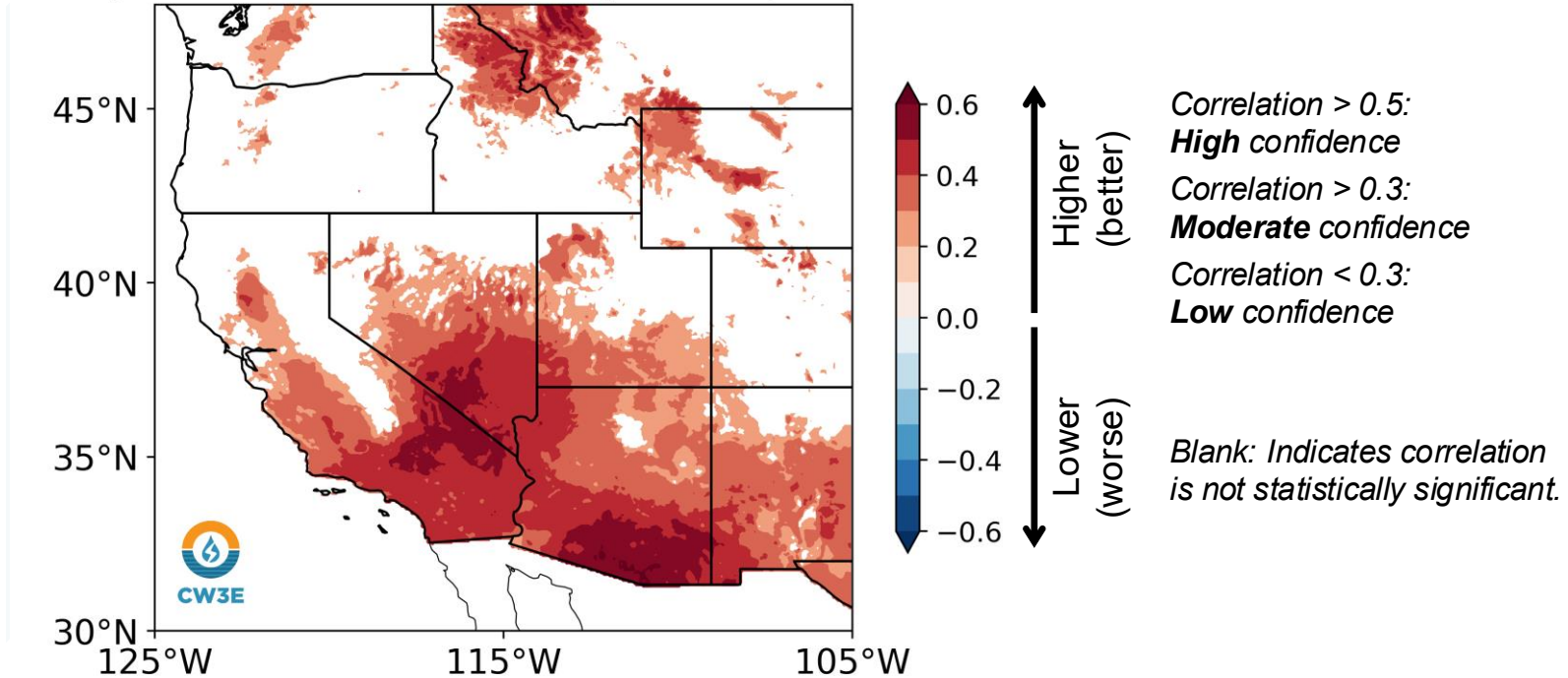
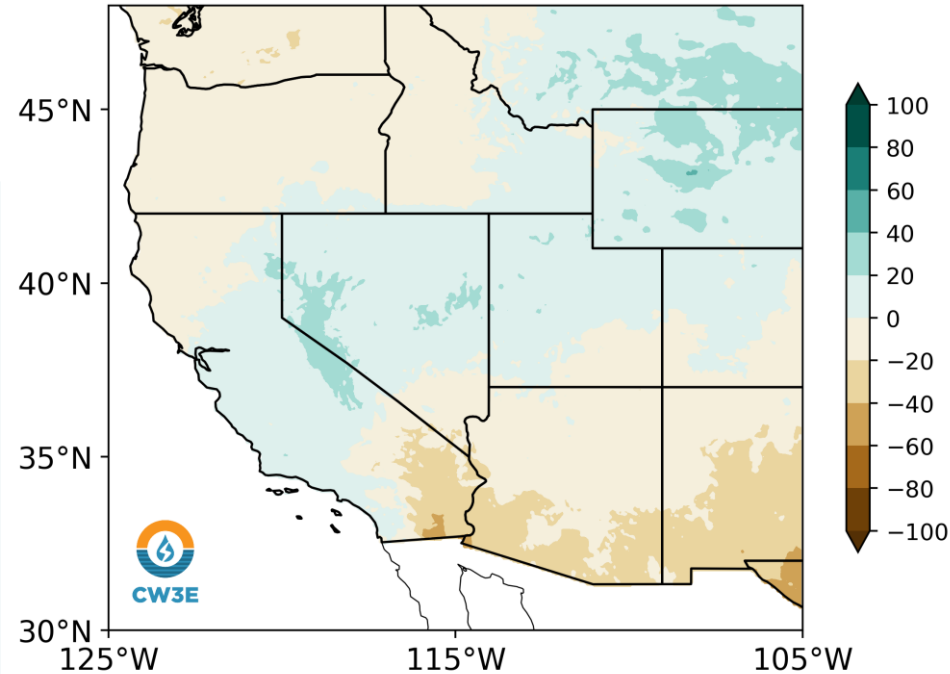
Forecast Issued Dec 2025

## JFM Precipitation Anomaly (% of Normal)

## JFM Historical Forecast Skill

JFM Total precipitation anomalies (%)

Skill (JFM correlation: observed and predicted precipitation)



- CW3E statistical model based on December SST favors near-normal precipitation in Northern CA (low to moderate confidence), near-normal to slightly above-normal precipitation in Central CA (low to moderate confidence), and near-normal to slightly below-normal precipitation in Southern CA (high confidence) during Jan-Mar
- The predicted dry conditions over the southwestern deserts come from weak La Niña SST pattern, while the positive anomalies over Central CA arise from the long-term warming trend in the Pacific Ocean

**CCA:** Canonical correlation analysis relating seasonal precipitation anomalies to observed monthly Pacific SST anomalies (click [here](#) for more information) **Above-normal:** >+20%; **Below-normal:** <-20%

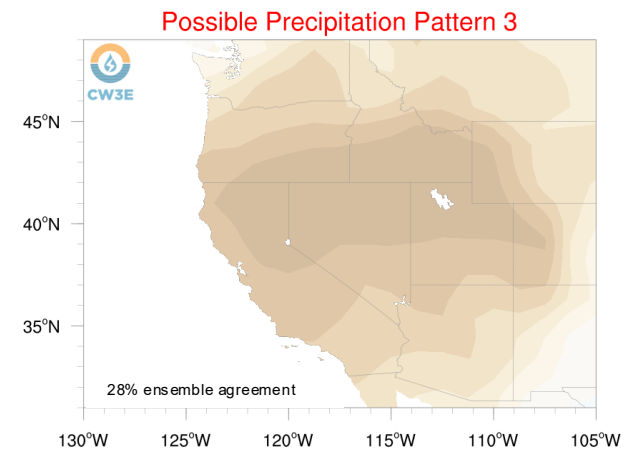
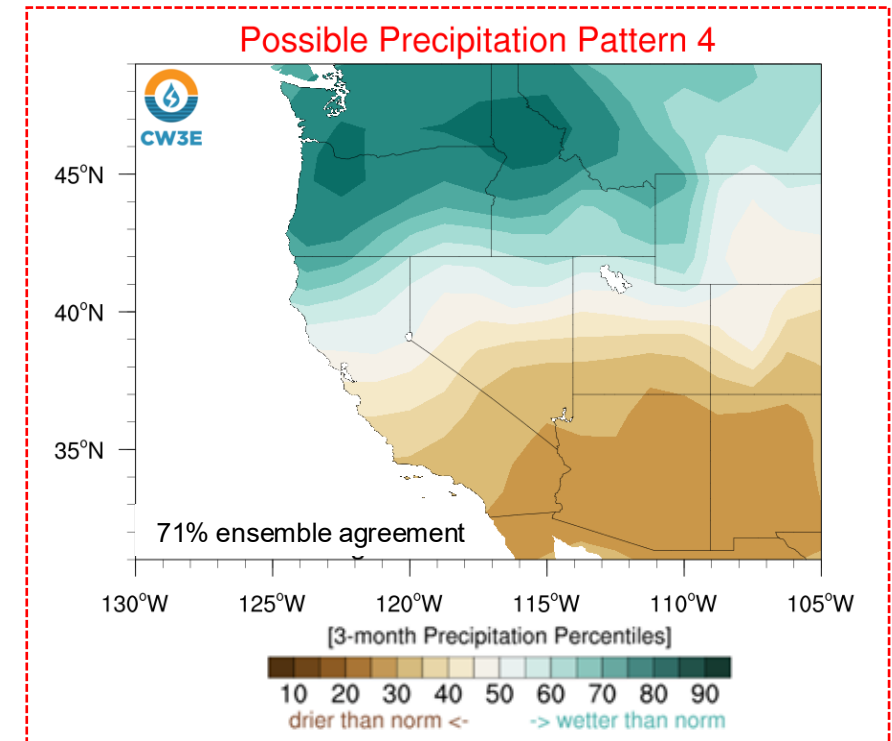
# Seasonal Outlook: Jan – Mar 2026 Precipitation (ML + NMME Models)

## Forecast Issued Dec 2025

- A majority of combined ML + NMME ensemble members are predicting patterns consistent with drier than normal conditions across the southwestern U.S. and wetter than normal conditions across the northwestern U.S. during Jan – Mar 2026, with 71% ensemble agreement.
- ML and NMME forecasts are predicting patterns consistent with drier than normal conditions in Southern CA (7/7 members).
- A majority of the ML and NMME forecasts predict near-normal precipitation over Northern and Central CA (5/7 members).

- The ensemble is comprised of both CW3E ML models (4 ensembles) and NOAA NMME models (3 ensembles)

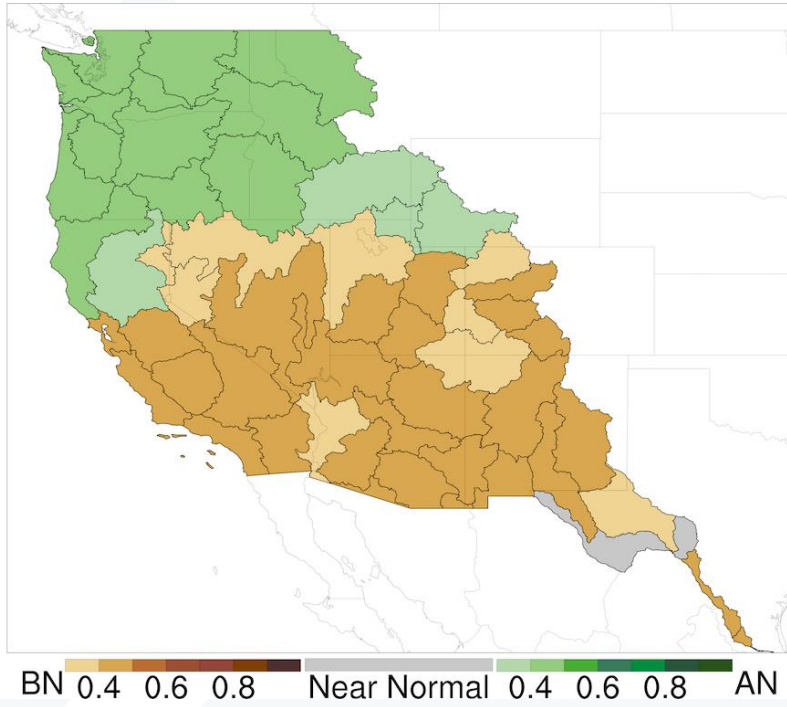
71% chance of a wet north and dry south in the Western U.S.



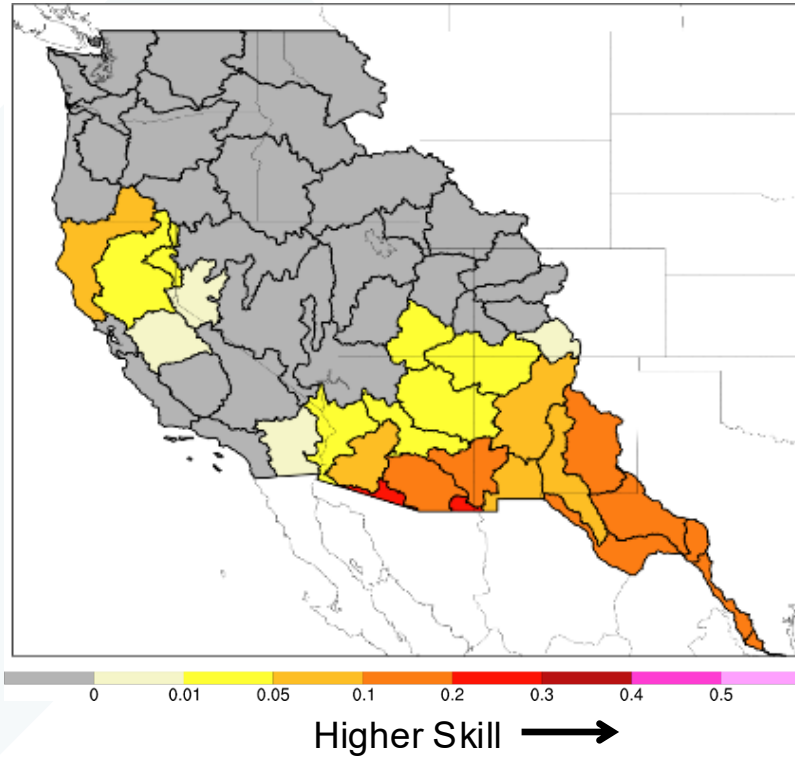
# Seasonal Outlook: University of Arizona 3-Month Precipitation Outlook

Forecast Issued Dec 2025

## JFM Precipitation Forecast



## Historical Forecast Skill (CRPSS)



- The University of Arizona produces probabilistic 3-month precipitation forecasts every month based on ensemble seasonal predictions from NCEP and ECMWF. These forecasts incorporate bias correction and climatological information to improve the prediction skill.
- The JFM precipitation forecast initialized in Dec 2025 leans toward above-normal precipitation in Northern CA and below-normal precipitation in Central and Southern CA with low confidence (<50% probability)

This graphic shows the probability of 3-month precipitation being in the below-normal (bottom third), near-normal (middle third), or above-normal (top third) category, with only the dominant category shown for each basin.

Graphics provided by the Bill Scheftic and Xubin Zeng at the University of Arizona. See [Scheftic et al. \(2023\)](#) for more information about these seasonal forecasts.

# Seasonal Outlooks: CPC 3-Month Precipitation Outlook

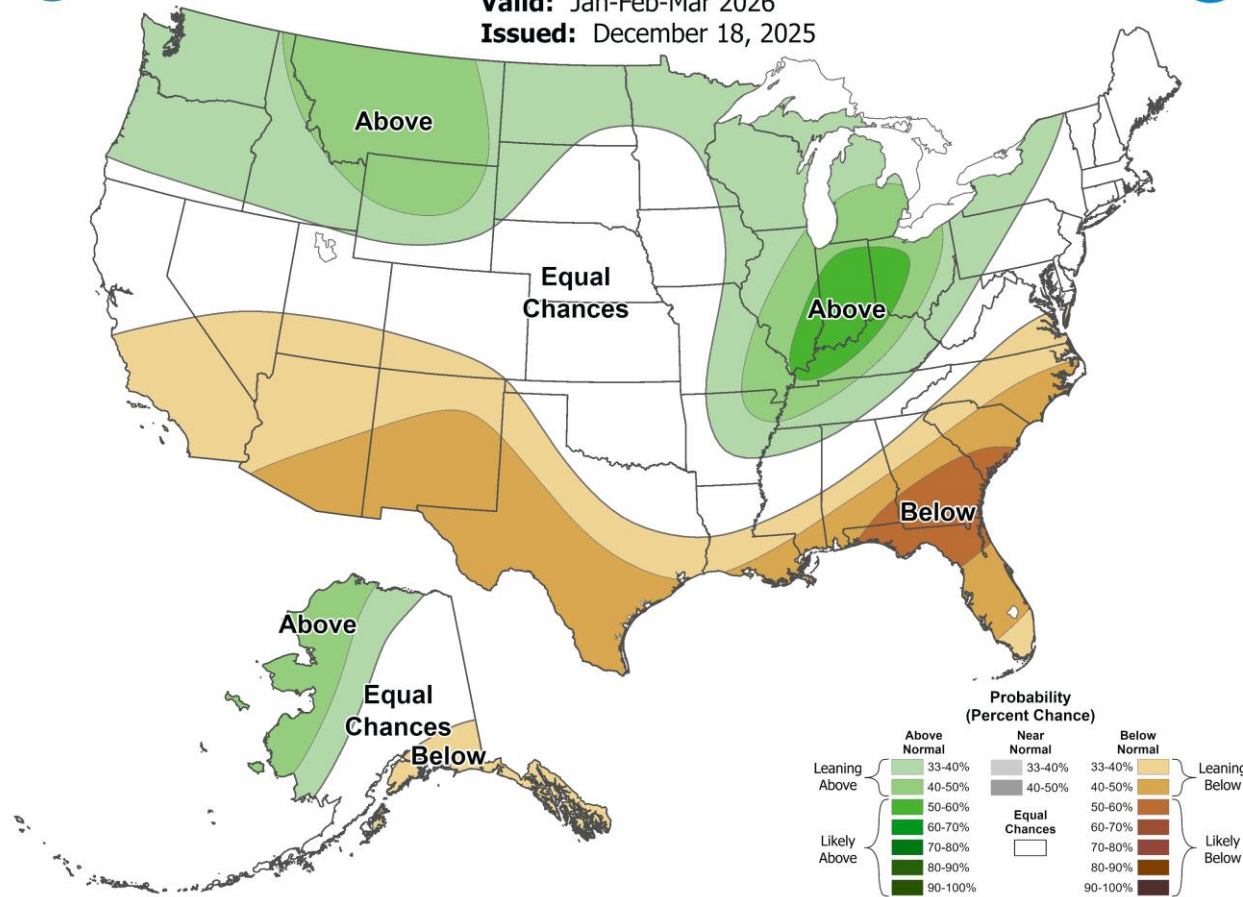
Forecast Issued Dec 2025



## Seasonal Precipitation Outlook

Valid: Jan-Feb-Mar 2026

Issued: December 18, 2025



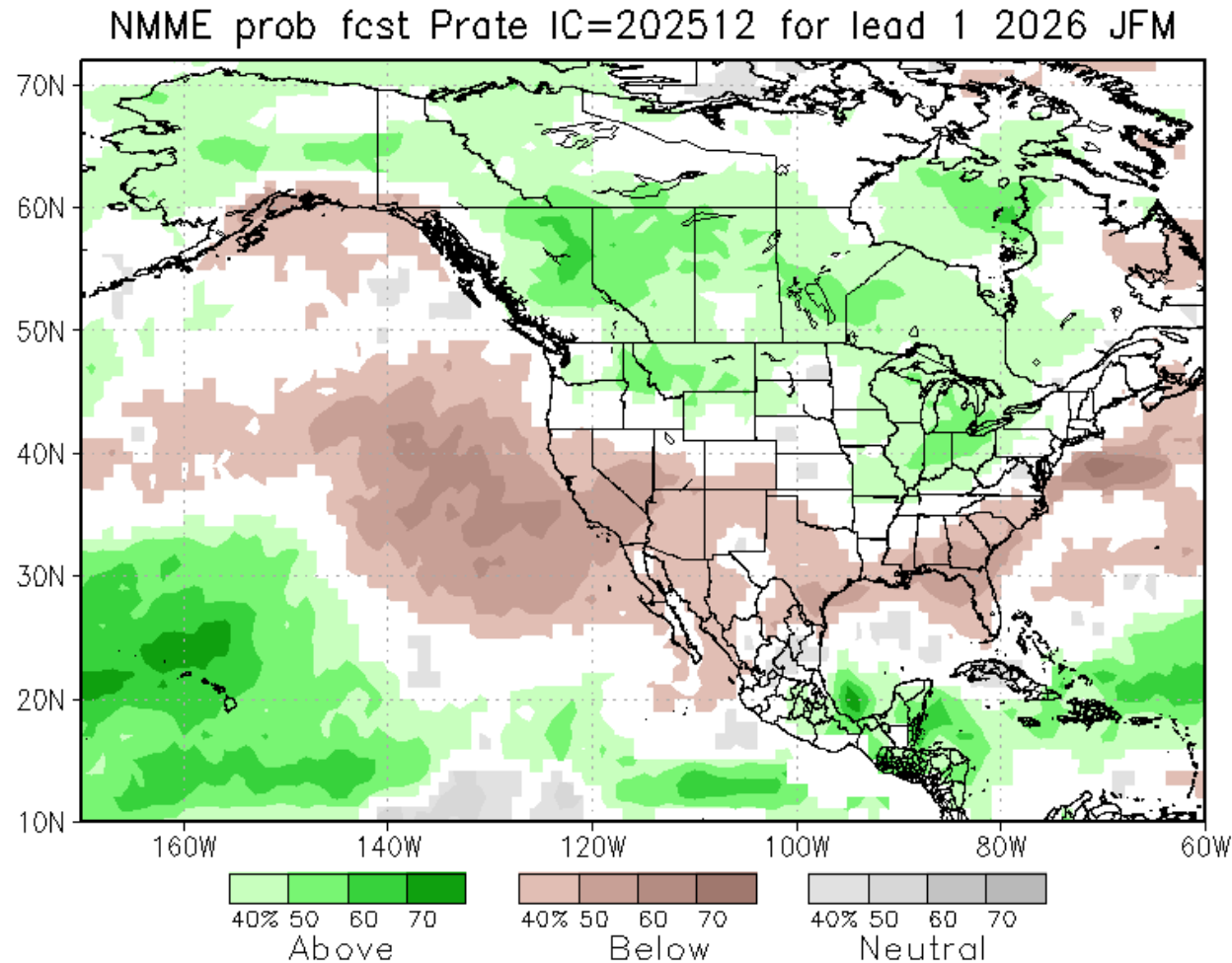
- The NOAA Climate Prediction Center (CPC) issues probabilistic 3-month precipitation outlooks for the CONUS and Alaska every month.
- These outlooks are based on a combination of dynamical and statistical models.
- The forecast issued in December leans toward below-normal precipitation in Southern CA and much of Central CA, and uncertain precipitation in Northern CA during Jan–Mar 2026.

This graphic shows the probability of below-normal (brown), near-normal (grey), and above-normal (green) precipitation during a 3-month period. Regions without shading indicate where the forecasts are more uncertain.

Graphics provided by the NOAA NWS Climate Prediction Center. For more information about this forecast product: [https://www.cpc.ncep.noaa.gov/products/predictions/long\\_range/seasonal\\_info.php](https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal_info.php).

# Seasonal Outlooks: NMME 3-Month Precipitation Outlook

Forecast Issued Dec 2025



- The CPC also issues probabilistic 3-month precipitation products every month using precipitation output from the North American Multi-Model Ensemble (NMME).
- The forecast issued in Dec is showing a moderate likelihood ( $\geq 50\%$  probability) of below-normal precipitation over Southern CA and much of Central CA, and leans toward below-normal precipitation over Northern CA during Jan–Mar 2026

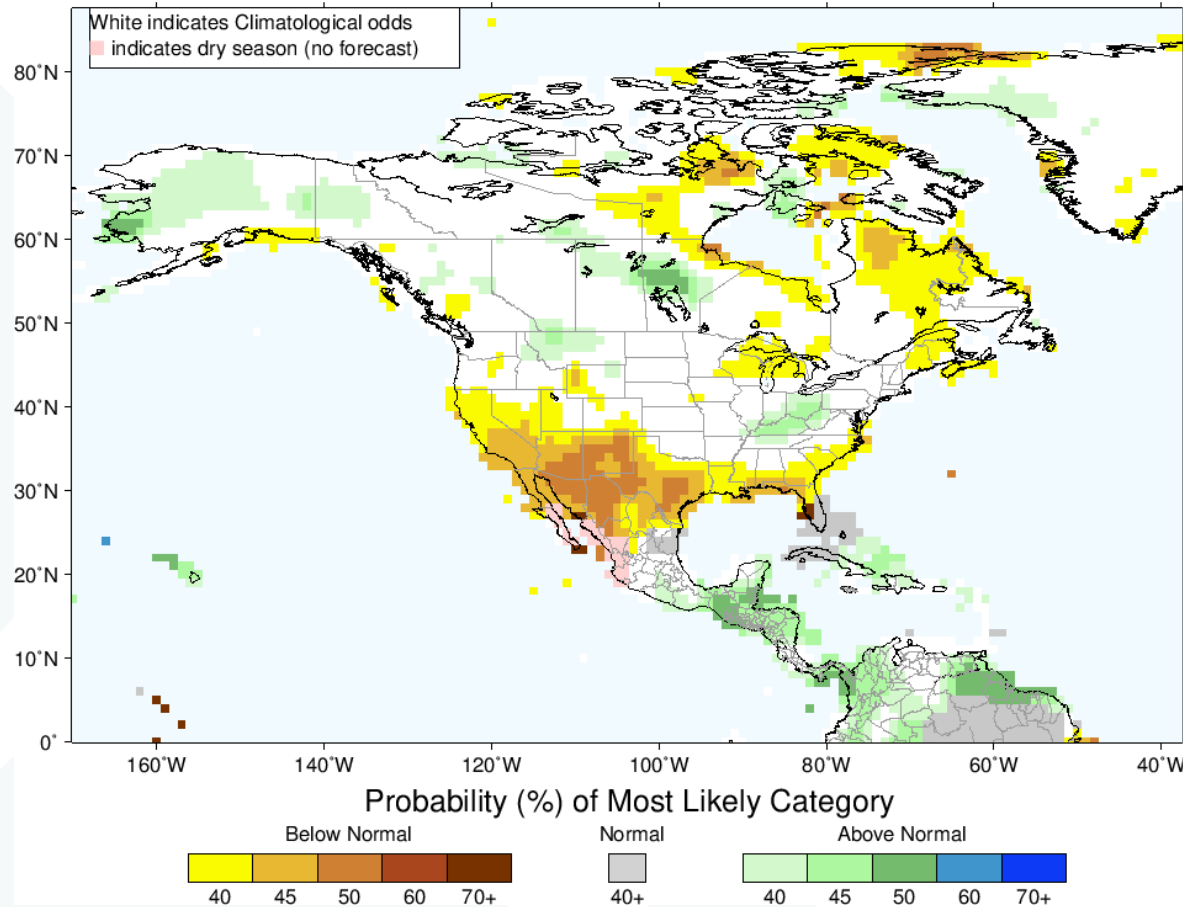
This graphic shows the probability of below-normal (brown), near-normal (grey), and above-normal (green) precipitation during a 3-month period. Regions without shading indicate where the forecasts are more uncertain.

Graphics provided by the NOAA NWS Climate Prediction Center. For more information about the forecast product: <https://www.cpc.ncep.noaa.gov/products/NMME/about.html>.

# Seasonal Outlooks: CCSR/IRI 3-Month Precipitation Forecast

IRI Multi-Model Probability Forecast for Precipitation for January–February–March 2026, Issued December 2025

**Forecast Issued Dec 2025**



- The International Research Institute (IRI) issues probabilistic 3-month precipitation forecasts every month based on calibrated forecasts from the NMME
- The forecast issued in December leans toward below-normal precipitation in CA during Jan–Mar 2026 with <50% probability

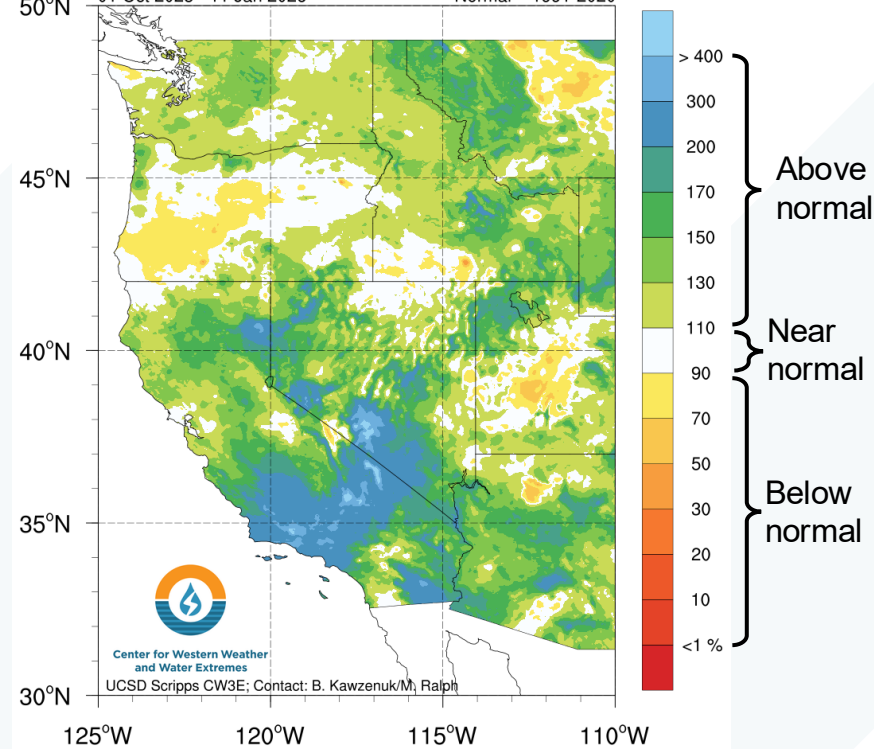
This graphic shows the probability of below-normal (yellow/brown), near-normal (grey), and below-normal (green/blue) precipitation during a 3-month period. Regions without shading indicate where the forecasts are more uncertain.

Graphics provided by the International Research Institute for Climate and Society, Columbia University, <https://iri.columbia.edu>. See [Kirtman et al. \(2014\)](#) for more information about the NMME.

# Seasonal Outlook: Odds of Reaching Normal Water Year Precipitation

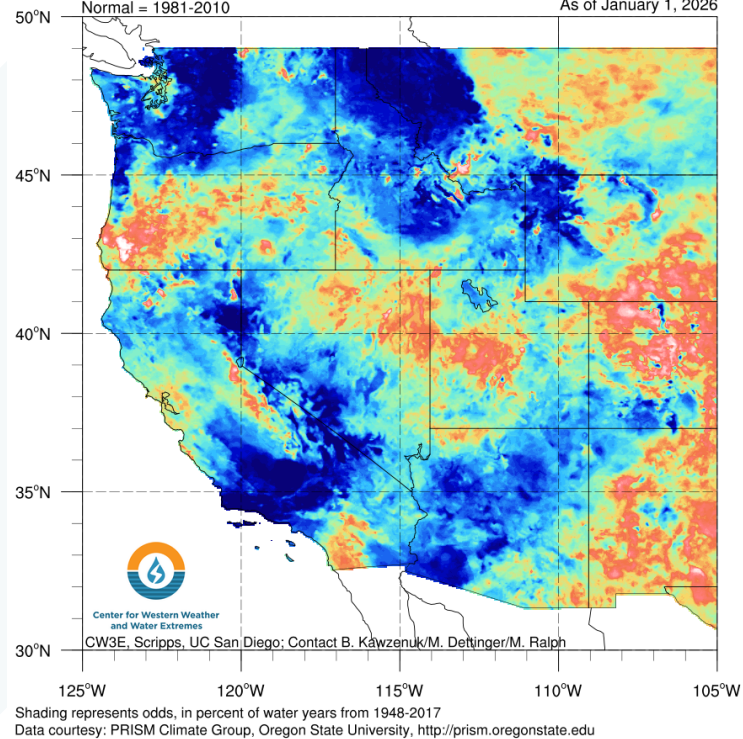
## WY-to-Date Precipitation Anomaly (% of Normal): Start of Jan 2026

PRISM Water Year to Date Precipitation Anomaly (%)  
01 Oct 2025 - 11 Jan 2026  
Normal = 1991-2020



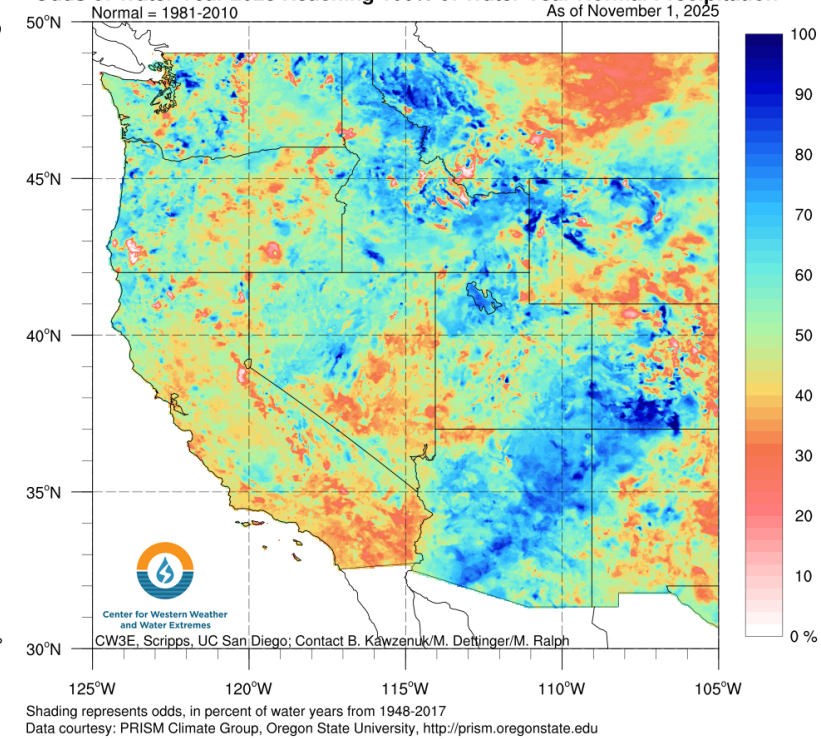
## Start of Jan 2026 Odds

Odds of Water Year 2026 Reaching 100% of Water Year Normal Precipitation  
Normal = 1981-2010  
As of January 1, 2026



## Start of Nov 2025 Odds

Odds of Water Year 2026 Reaching 100% of Water Year Normal Precipitation  
Normal = 1981-2010  
As of November 1, 2025



- As of 11 Jan, water-year-to-date precipitation was running much above-normal in CA, particularly in some portions of Central and Southern CA
- Odds of reaching normal WY precipitation have increased substantially throughout much of CA between the start of Nov 2025 and the start of Jan 2026, especially in portions of Central and Southern CA