

Quick Look at the Ongoing Atmospheric River Event Over California

Updated: 4 February 2025

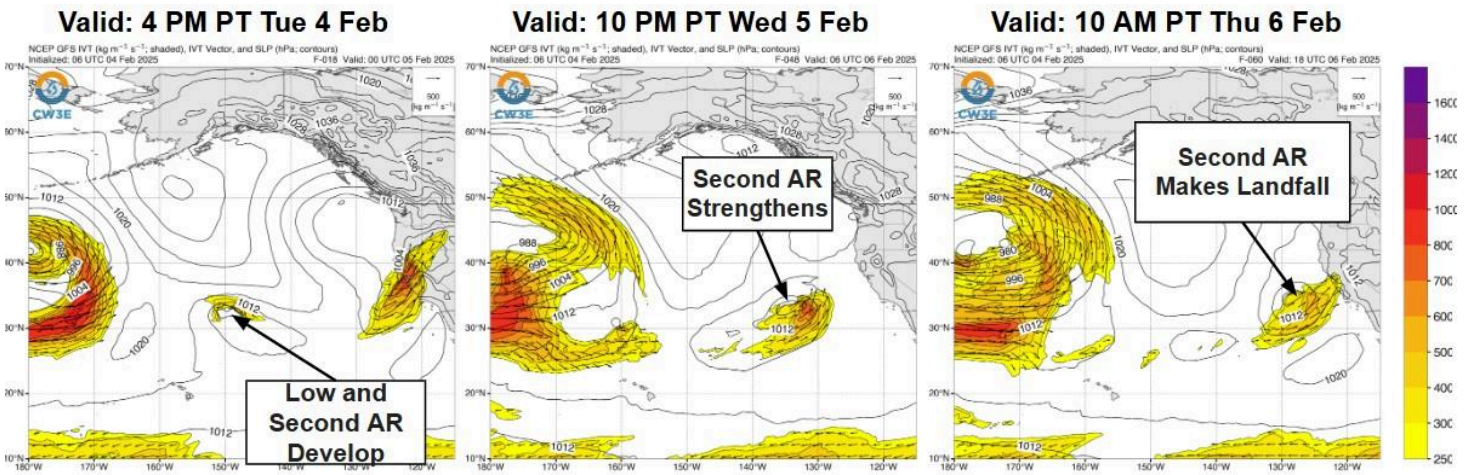
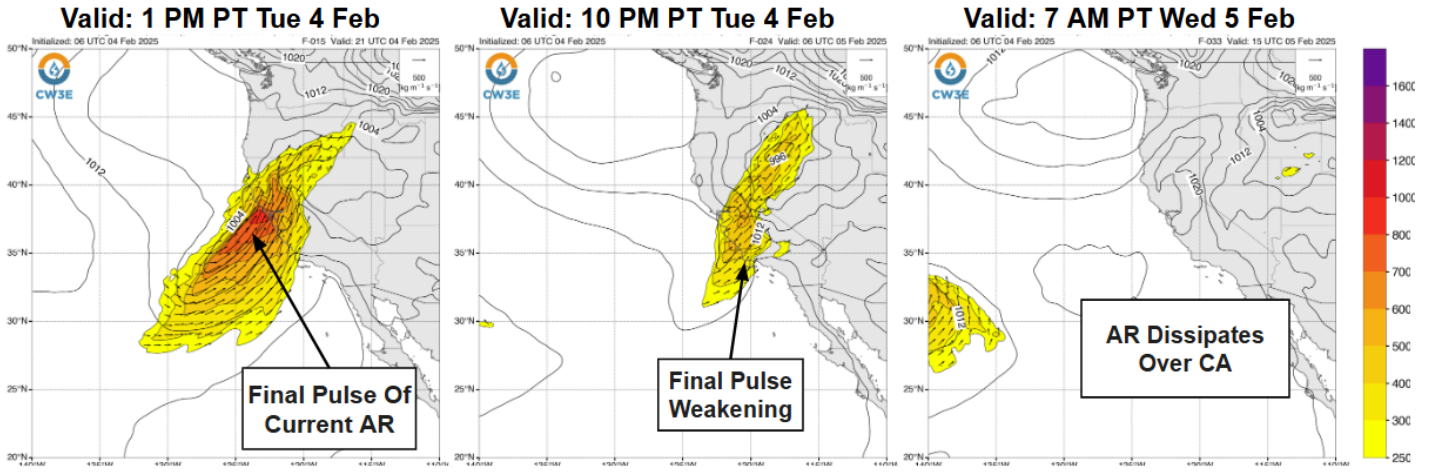
An atmospheric river continues to impact California, bringing additional precipitation, mountain snow and continued flooding threats through Wed 5 Feb.

Forecast Highlights:

- The atmospheric river (AR) that has been impacting California was still centered over Northern California as of this morning. The system is forecast to propagate down the coast, dissipating over Central California later today.
- As the storm progates south today, another pulse of moisture is forecast to bring short duration, strong AR conditions ($IVT \geq 750 \text{ kg m}^{-1} \text{ s}^{-1}$) to Central California.
- This final pulse of AR conditions over Northern/Central California will drive some coastal locations near the San Francisco Bay Area above 100 consecutive hours of AR conditions ($IVT \geq 250 \text{ kg m}^{-1} \text{ s}^{-1}$) for this event.
- A second AR is forecast to develop in association with a surface low and mid-level shortwave trough later today (4 Feb) and make landfall over Central California early Thu 6 Feb.
- There is currently much uncertainty within the GEFS ensemble regarding the duration and intensity of AR conditions over Central California, with only 3 members in the GEFS forecasting this system to reach AR1 near San Francisco, CA (based on the Ralph et al. 2019 AR Scale).
- The current AR has already produced 6-15 inches of precipitation over much of Northern California with localized totals exceeding 15 inches. The final pulse of moisture is forecast to result in an additional 3-5 inches over the California Coast Ranges and Northern and Central Sierra Nevada.
- The second AR is likely to bring an additional 2-3 inches to the Sierra Nevada and ~1 inch to coastal California, including the Transverse Ranges.
- The NWS Weather Prediction Center (WPC) has issued a **slight risk** (level 2 of 4, $\geq 15\%$ chance of flooding) excessive rainfall outlook (ERO) over the Sacramento Valley, Sierra Nevada, San Francisco Bay Area and Coastal Ranges through early Web 5 Feb, as well as a **marginal risk** (level 1 of 4, $\geq 5\%$ chance of flooding) over the Sierra Nevada and much of the Northern and Central California coasts and Transverse Ranges.
- A **marginal risk** ERO has also been issued over the Sierra Nevada, Sacramento Valley, Northern/Central California coasts and Transverse Ranges in association with the second AR.
- Both the GEFS and EPS indicate that freezing levels are likely to drop substantially over the Sierra Nevada as the first AR dissipates. The WPC is forecasting as much as 48+ inches of additional snow over the Central/Southern Sierra Nevada through early morning Fri 7 Feb.
- A break in AR activity is expected following the second AR.

Stay alert to official NWS forecasts, watches, and warnings at [weather.gov](https://www.weather.gov) and follow guidance from local emergency management officials

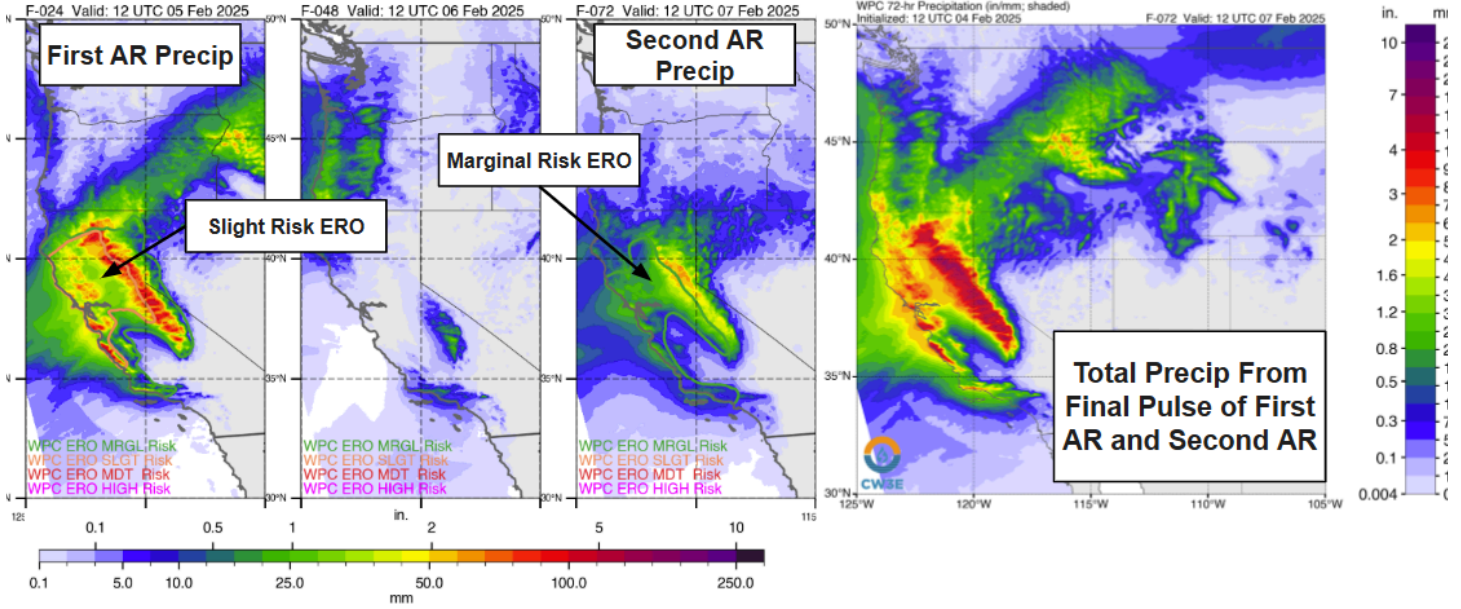
Stay tuned to the CW3E webpage for a full AR Update



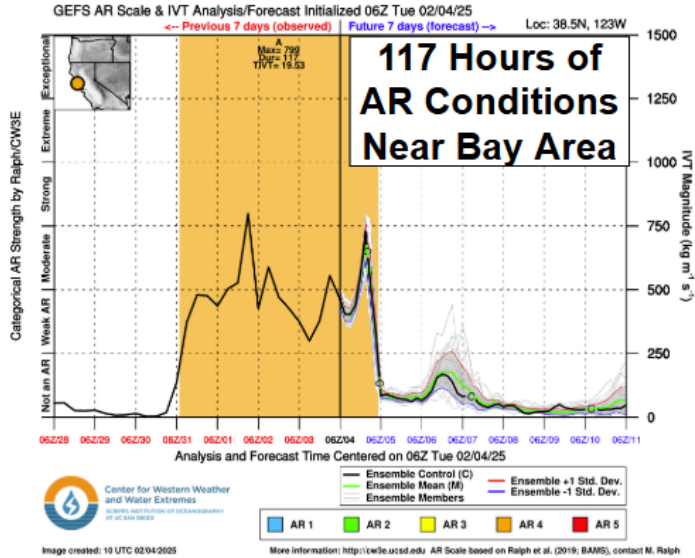
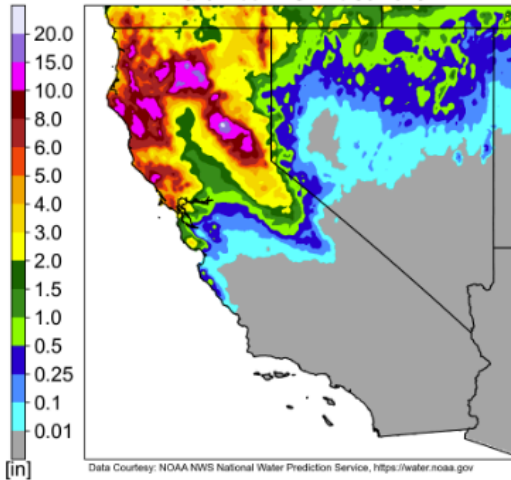
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WPC Days 1-3 QPF: Periods Ending 4 AM PT 5-7 Feb

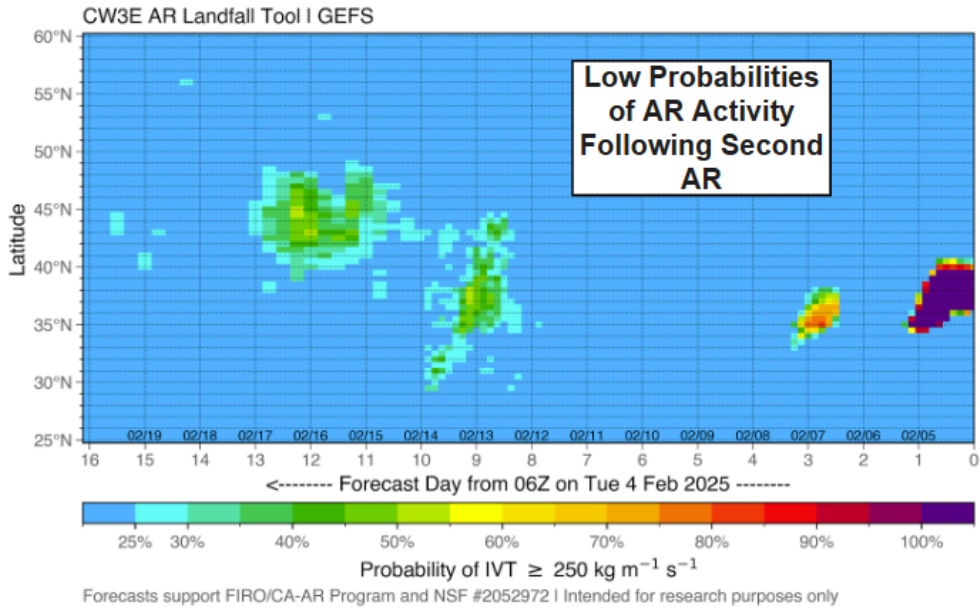
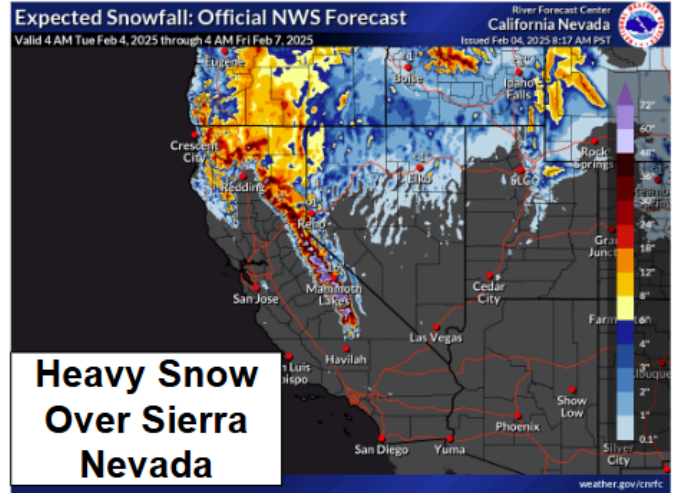
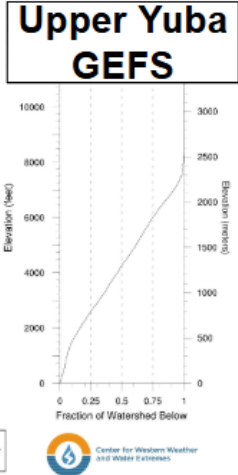
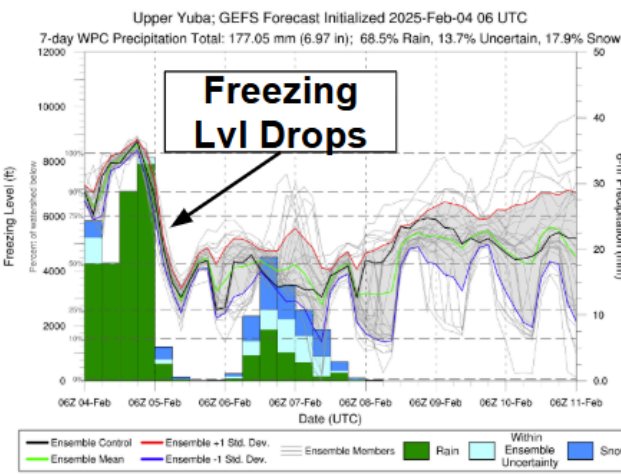
WPC 3-Day QPF: Period Ending 4 AM PT 7 Feb



NWS Stage IV 96-h QPE
Valid: 4 AM PST 4 Feb 2025



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Additional Considerations:

- Visit <https://www.weather.gov/cnrfc/> for specific river and stream forecasts and <https://www.weather.gov/> for point specific watches, warnings, and forecasts.

In-depth AR forecasts products can be found here:

<http://cw3e.ucsd.edu/iwv-and-ivt-forecasts/>

Update by M. Steen

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