

Quick Look at the Active Weather Pattern Bringing Precipitation to California This Weekend into Next Week

Updated: 11 February 2025

A pair of mid-level troughs and surface low pressure systems are forecast to bring precipitation to much of California beginning this weekend and continuing through the end of next week.

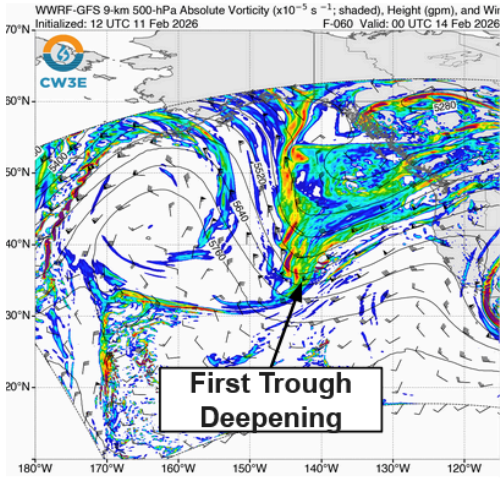
Forecast Highlights:

- A mid-level trough is forecast to deepen as it propagates east toward the US West Coast Sat 14 Feb into Sun 15 Feb. At the same time, a surface low-pressure system is forecast to form along the Oregon Coast, bringing the first round of precipitation to California.
- This first system may bring weak, short-duration AR conditions to central and southern California.
- There is uncertainty in the position of the second trough forecast to deepen off the US West Coast Mon 16 Feb into Tue 17 Feb. West-WRF initialized with the GFS indicates earlier deepening of the trough further offshore, leading to higher precipitation totals in California.
- Less than 20% of West-WRF ensemble members are indicating AR conditions reaching AR1 or higher (based on the Ralph et al. 2019 AR Scale) across central and southern California between Sun 15 Feb and Tue 17 Feb.
- The NWS Weather Prediction Center (WPC) is forecasting 1–2 inches of precipitation across California with localized totals >2 in. for the 72-hour period ending 4 PM PT Mon 16 Feb.
- Precipitation with the second trough is forecast to be higher in the West-WRF initialized with the GFS, with 5–8+ inches across the Sierra Nevada and 2–4 inches along the coast for the 72-hour period ending 4 PM PT Thu 19 Feb. In comparison, the West-WRF initialized with the ECMWF is forecasting 3–5+ inches across the Sierra Nevada and 1–3 inches along the coast during the same period. This precipitation should be beneficial for much of California following the recent extended dry period.
- There is large ensemble spread in the ensemble 10-day precipitation forecasts for watersheds in the Sierra Nevada and the central and southern California coasts. Both the GEFS and EPS have members forecasting <3 inches and >7 inches over the Upper Yuba Watershed.
- Freezing levels over the Sierra Nevada are forecast to fall from ~9,500 feet to near 5,000 feet between 14 and 18 Feb leading to much of the precipitation, especially from the second trough, to fall as snow.
- Both the GEFS and EPS are showing high probabilities (>80%) of snowfall \geq 24 inches across the Sierra Nevada by 4 PM PT Thu 19 Feb, which would be beneficial to the below-average snowpack presently observed across the region.
- CW3E's Atmospheric River Reconnaissance field campaign is planning a sequence of flights to sample the trough, nearby essential atmospheric structures, and regions of high forecast sensitivity with the goal of improving precipitation forecasts along the US West Coast.

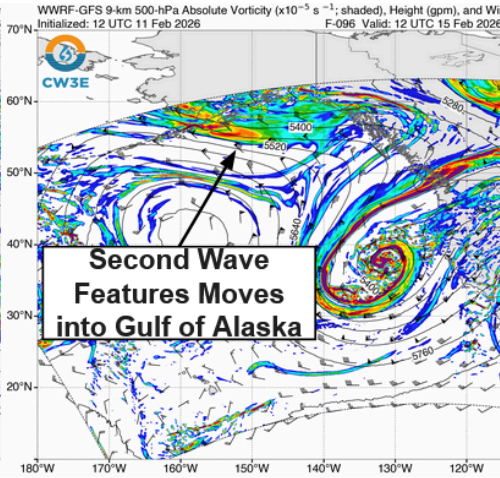
Stay alert to official NWS forecasts, watches, and warnings at [weather.gov](https://www.weather.gov)

WWRF GFS 500 hPa Heights and Vorticity

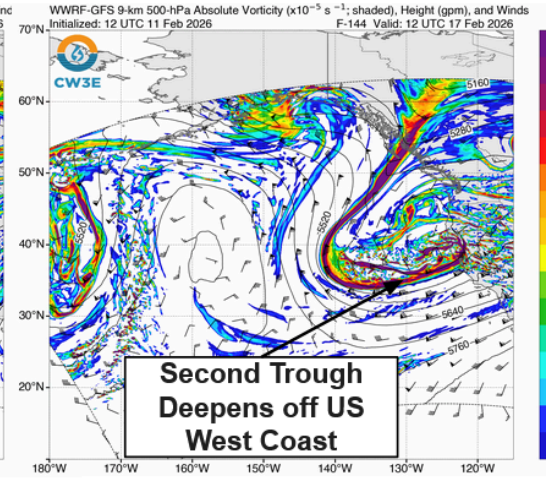
Valid: 4 PM PST Fri 13 Feb



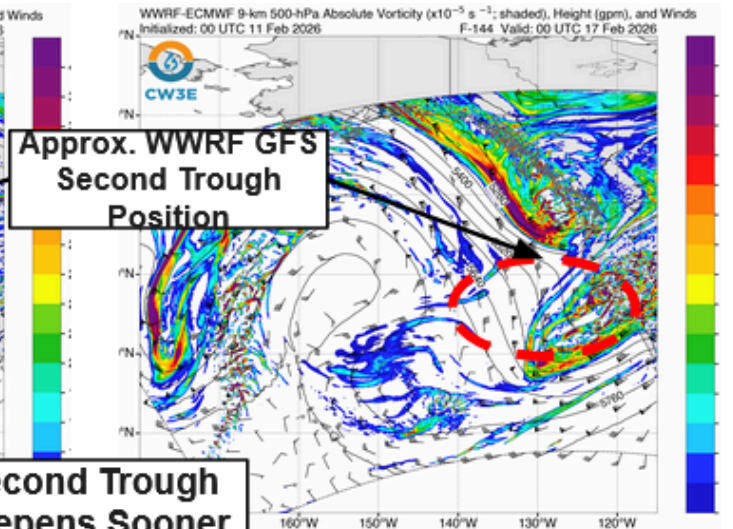
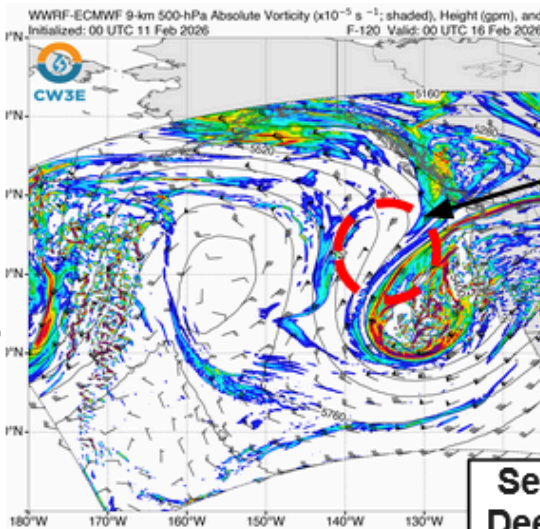
Valid: 4 AM PST Sun 15 Feb



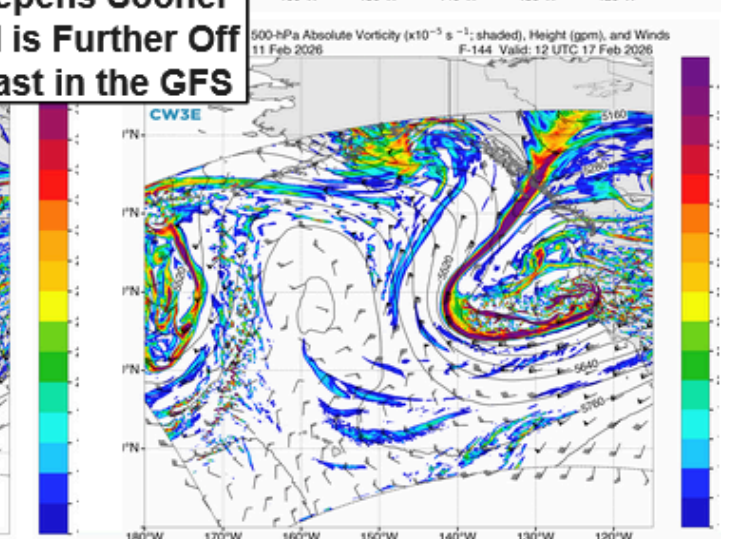
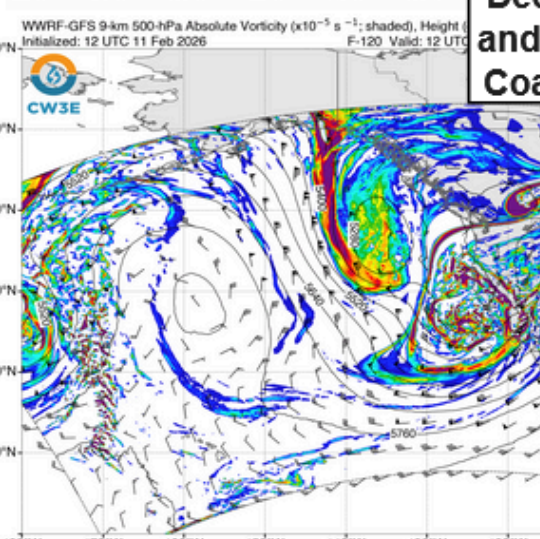
Valid: 4 AM PST Tue 17 Feb

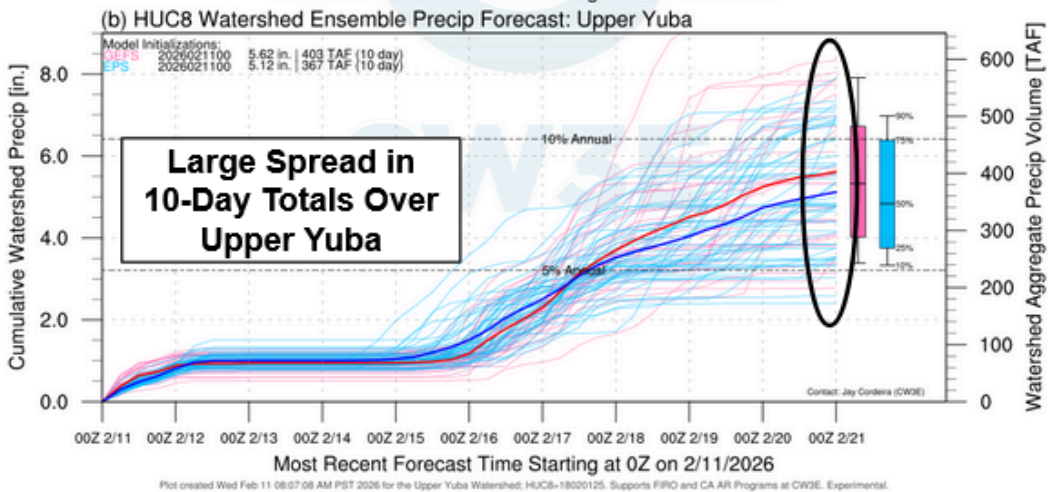
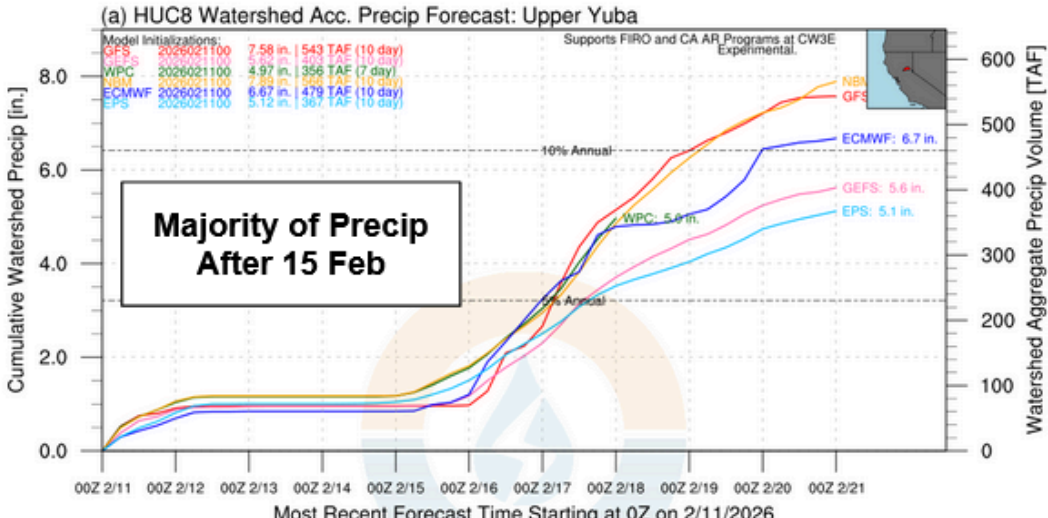
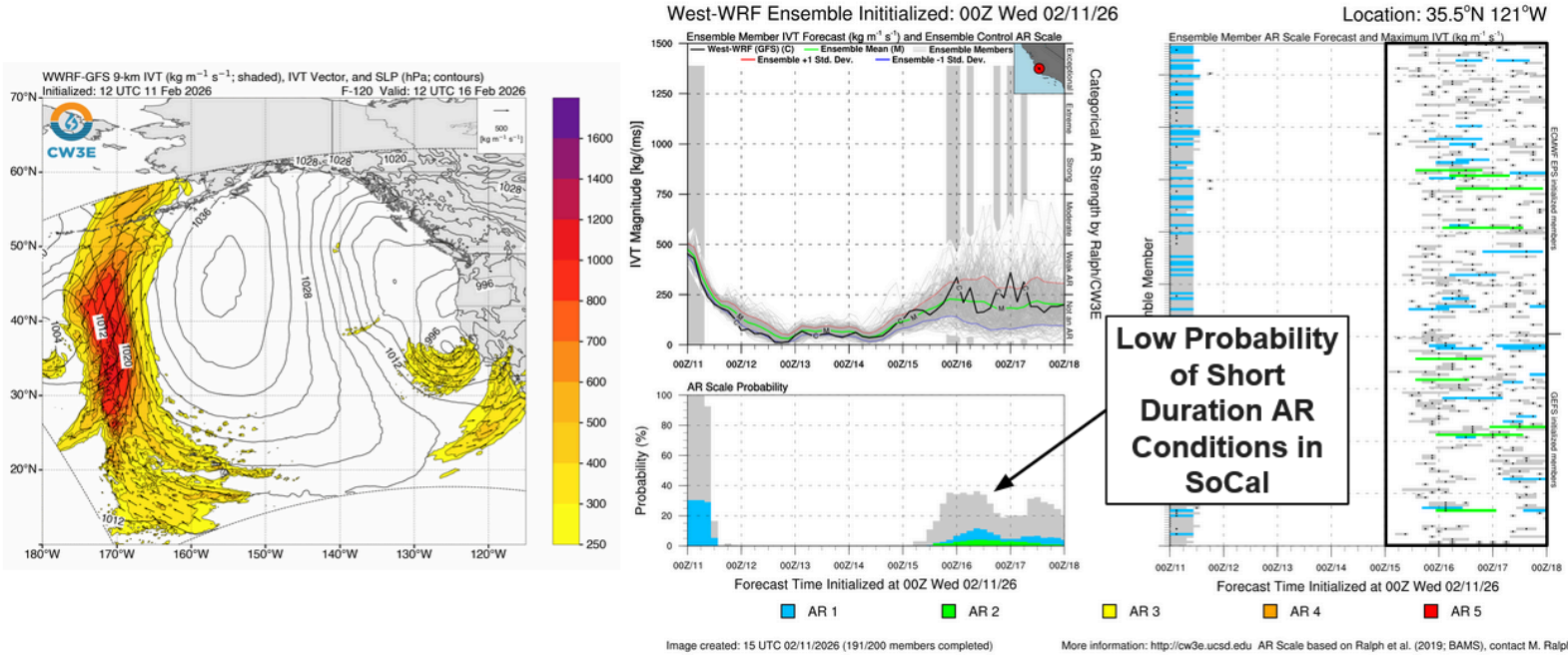


WWRF
ECMWF

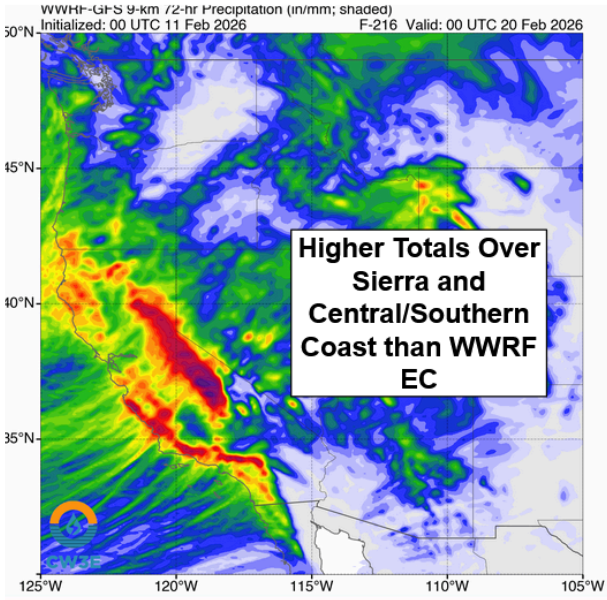


WWRF
GFS

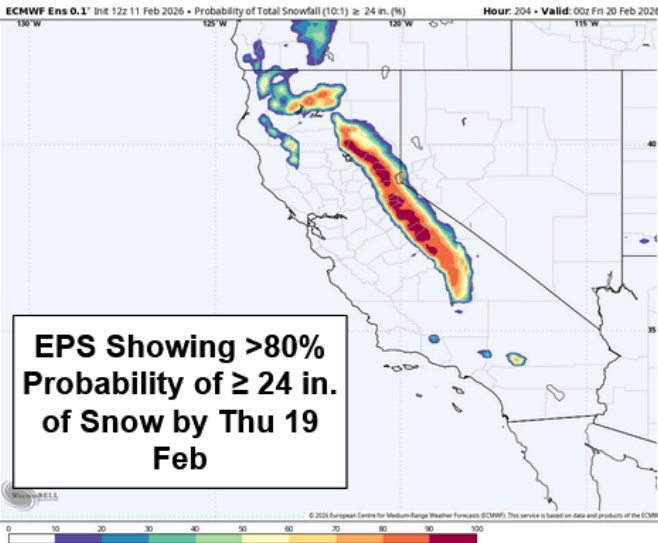
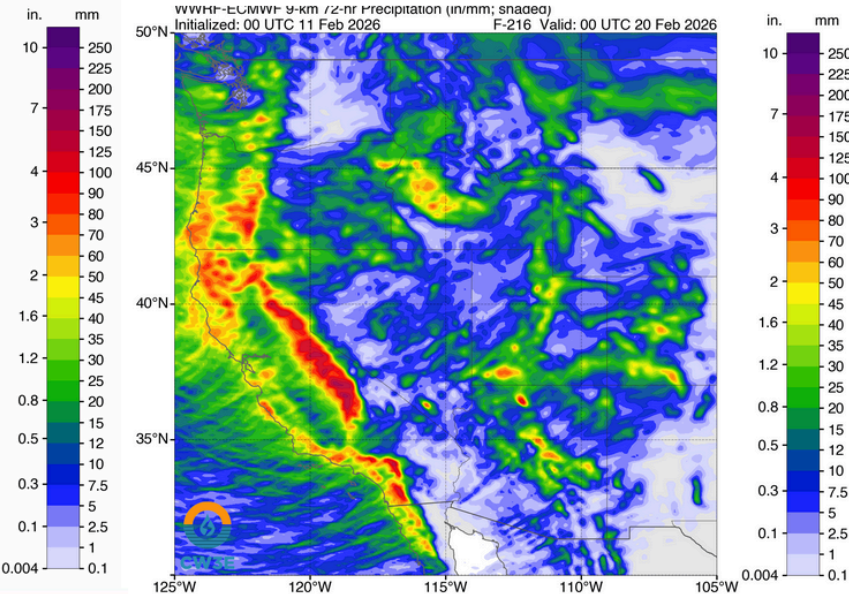




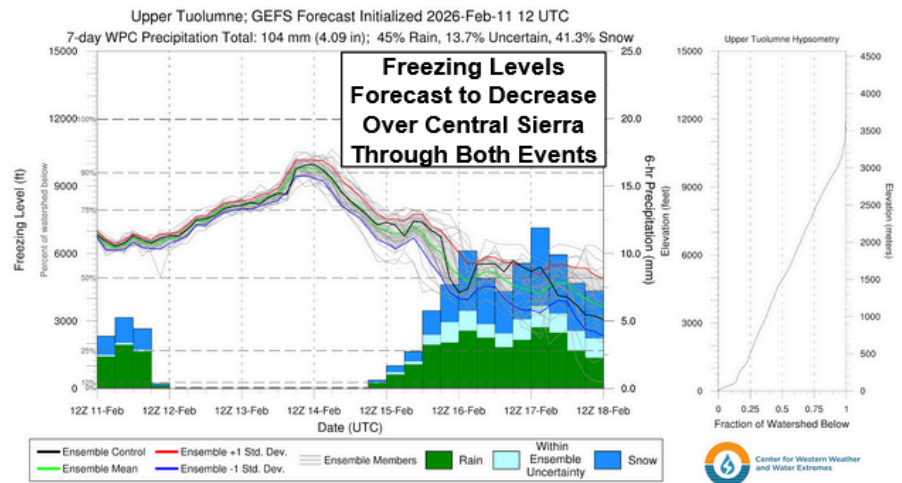
**WRF GFS 72-Hour Precipitation:
4 PM PT Feb 16–4 PM PT Feb 19**



**WRF ECMWF 72-Hour Precipitation:
4 PM PT Feb 16–4 PM PT Feb 19**



EPS forecast imagery from WeatherBell



Additional Considerations:

Visit <https://www.weather.gov/cnrfc/> for specific river and stream forecasts and

<https://www.weather.gov/> for point specific 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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