

Quick Look at Atmospheric River Bringing Rain and Mountain Snow to California

Updated: 11 March 2025

An atmospheric river ahead of a shortwave trough is forecast to bring substantial precipitation to California tonight into Thursday.

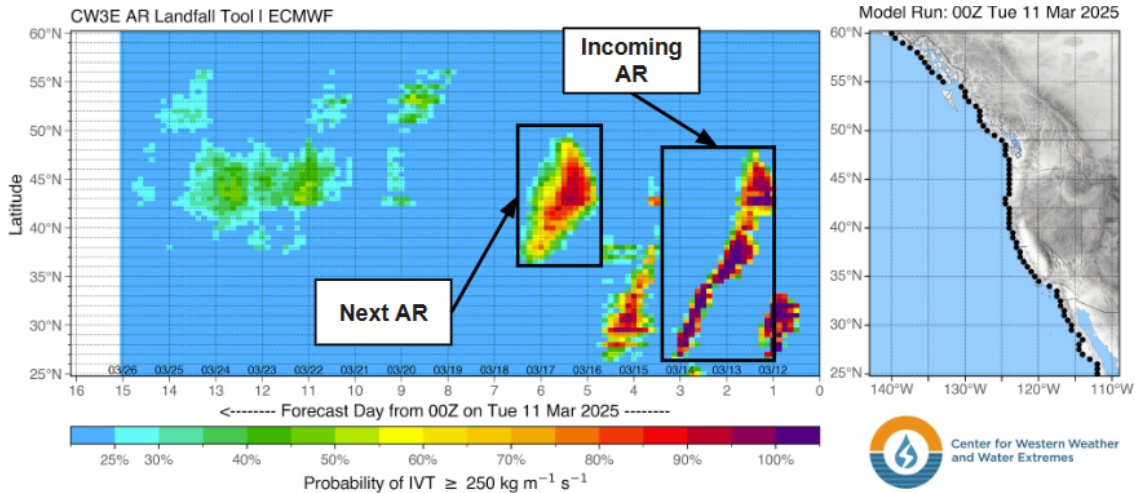
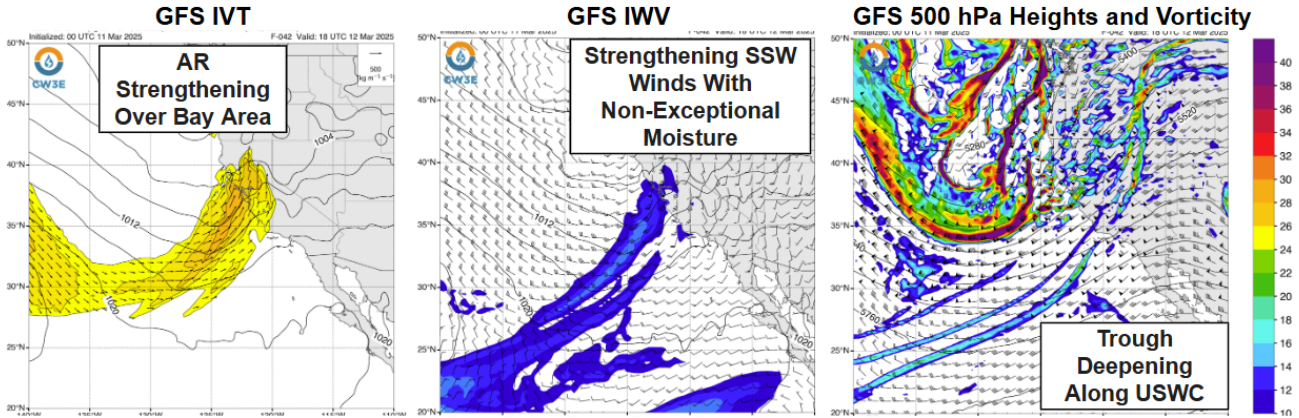
Forecast Highlights:

- An atmospheric river (AR) is forecast to make landfall along the Pacific Northwest coast tonight and propagate down the coast to California as a shortwave trough deepens behind it.
- The AR will strengthen as it propagates south due to strengthening south-southwesterly winds. Moderate AR conditions ($IVT \geq 500 \text{ kg m}^{-1} \text{ s}^{-1}$) are forecast over the San Francisco Bay Area.
- While atmospheric moisture is not expected to be exceptional, the southwesterly direction of moisture transport is optimal for orographic enhancement of precipitation along the Sierra Nevada, California Coast Ranges and Transverse Ranges.
- CW3E's Landfall Tool based on the EPS shows very high confidence (>95% confidence) in AR conditions ($IVT \geq 250 \text{ kg m}^{-1} \text{ s}^{-1}$) beginning over the PNW coast today and along the California coast into early Thu 13 Mar.
- The EPS is also showing high confidence (>80% confidence) in AR conditions over the PNW and far Northern California with a second AR making landfall this weekend.
- The Weather Prediction Center (WPC) is forecasting 3-5 inches over the Sierra Nevada and Transverse Ranges and 2-4 inches over the Coast Ranges for 5 AM PT 12-14 Mar.
- The WPC has issued a **slight risk** Excessive Rainfall Outlook (level 2 of 4, 15% chance of flooding) over the Transverse Ranges on Day 2 (5 AM PDT 12-13 Mar) and the Peninsular Ranges and coastal Southern California on Day 3 (5 AM PDT 13-14 Mar). Additionally, a **marginal risk** Excessive Rainfall Outlook (level 1 of 4, 5% chance of flooding) has been issued across coastal California and the Sierra Nevada foothills on Day 2.
- The California-Nevada River Forecast Center is currently forecasting 5 stream gages to exceed the action/monitor stage due to precipitation from the first AR. The Northwest River Forecast Center is showing three stations in southeastern Oregon eclipsing minor flood stage.
- As shown by CW3E's watershed precipitation tool, every GEFS and EPS member is forecasting 10-day precipitation totals exceeding 5% of normal annual precipitation in the Upper Yuba Watershed, and >75% of EPS members are forecasting 10-day precipitation totals exceeding 10% of normal annual precipitation in the Santa Ana Watershed.
- Freezing levels are forecast to fall from ~9,000 feet over the Sierra Nevada to < 4,000 feet as the AR and trough propagate over California.
- The National Weather Service is showing the potential for 3+ feet of snowfall across the Sierra Nevada by early Fri 14 Mar. The Winter Storm Severity Index indicates major-to-extreme impacts over the Sierra Nevada through early Fri 14 Mar.

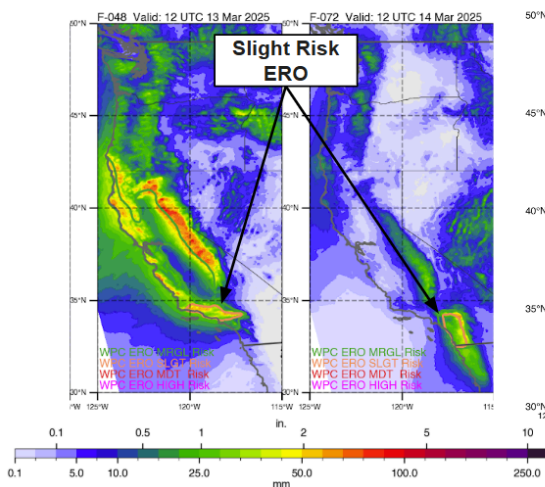
Stay alert to official NWS forecasts, watches, and warnings at weather.gov and follow guidance from local emergency management officials

Stay tuned to the CW3E webpage for a full AR Update

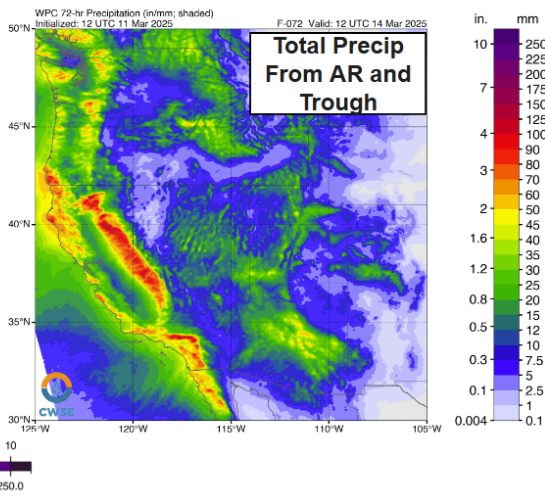
GFS Model Forecasts: Valid 11 AM PT 12 Mar 2025



WPC Days 2-3 QPF: Periods Ending 11 AM PT 13-14 Mar



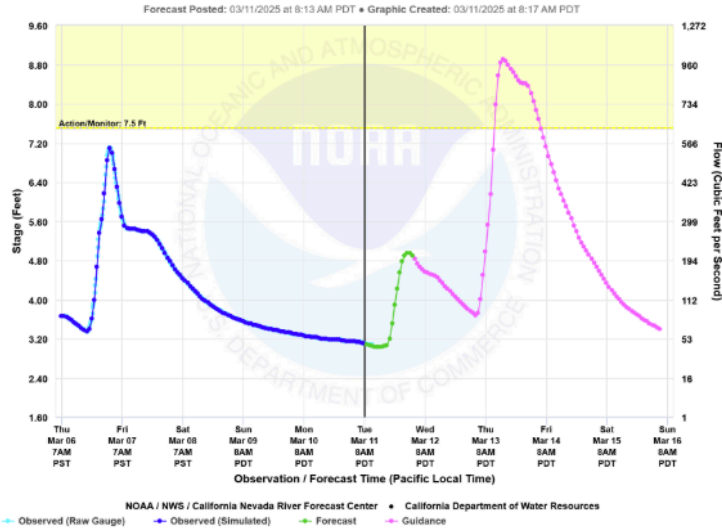
WPC 2-Day QPF: Period Ending 5 AM PT 14 Mar



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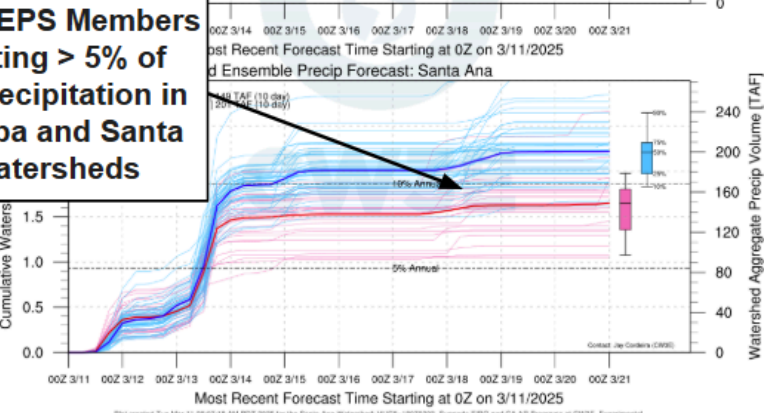
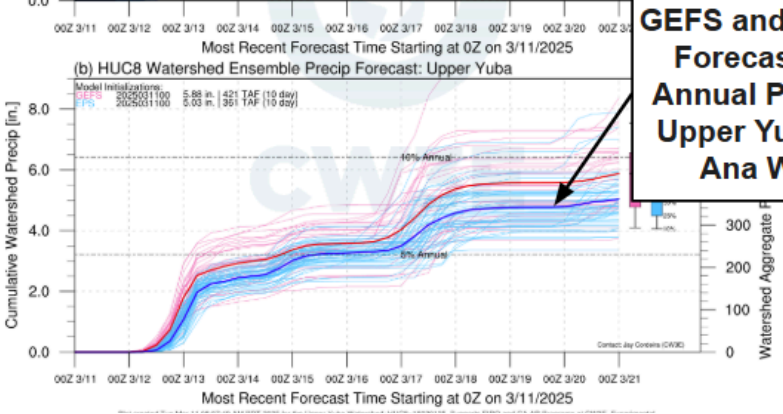
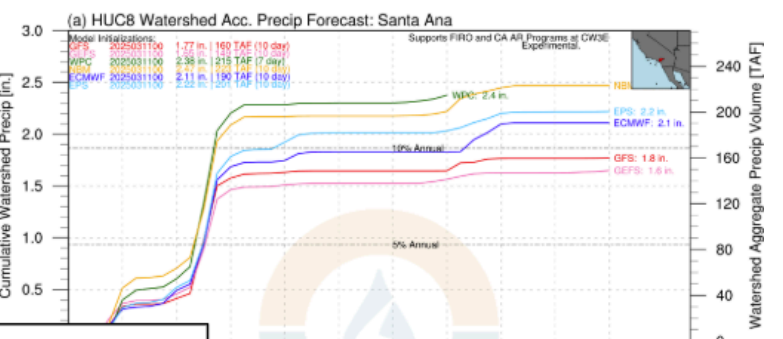
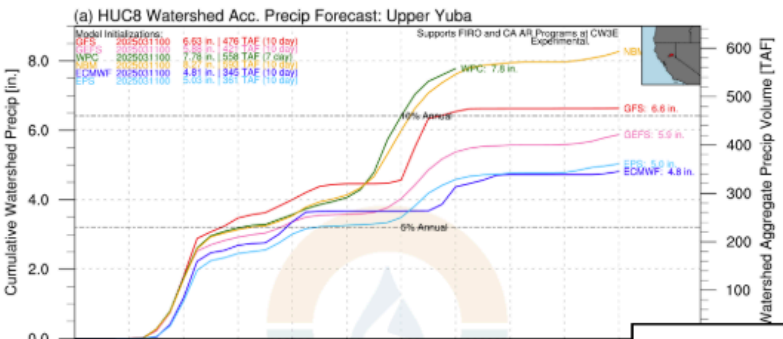
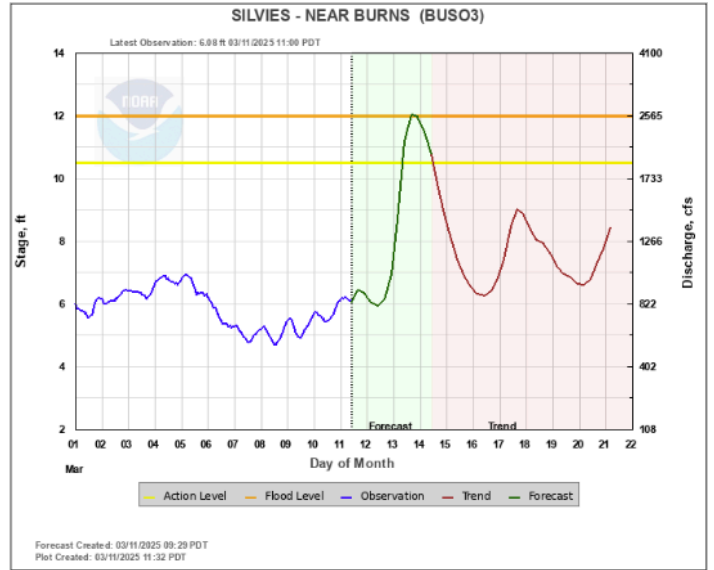
CNRFC: San Diego River in Southern California

San Diego River - Fashion Valley (FSNC1)
River Forecast Plot



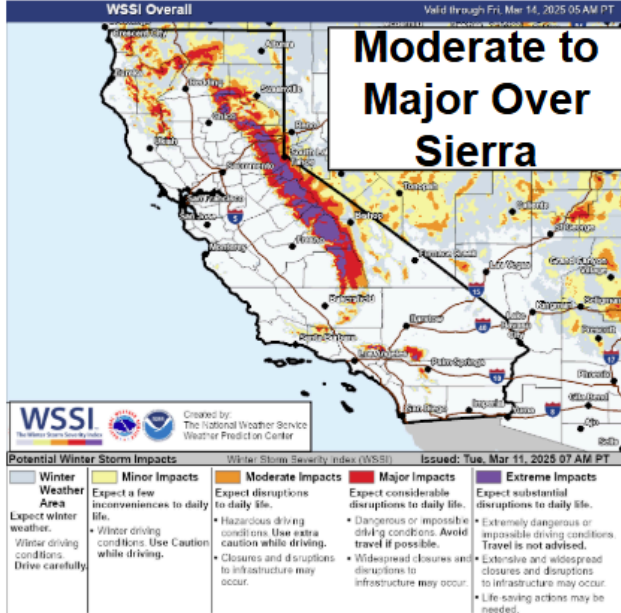
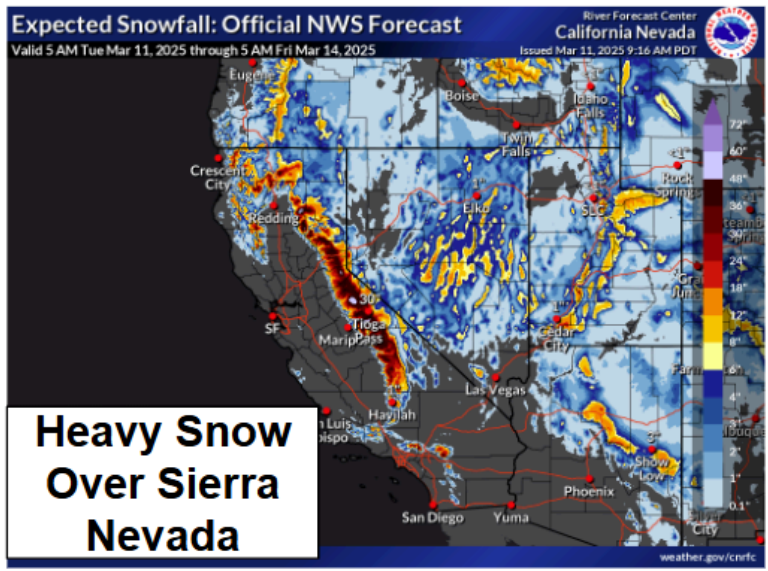
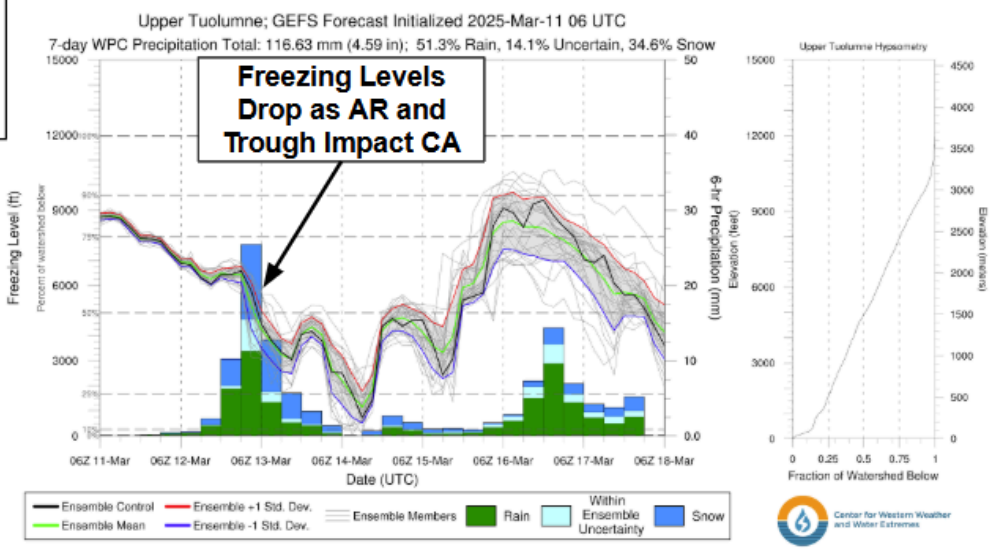
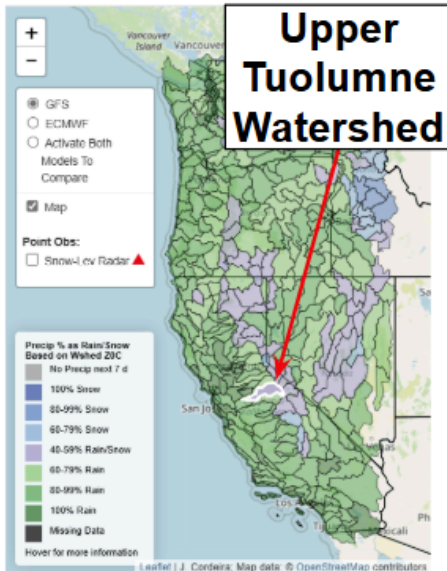
NWRFC: Silvies River in SE Oregon

SILVIES - NEAR BURNS (BUSO3)



GEFS and EPS Members Forecasting > 5% of Annual Precipitation in Upper Yuba and Santa Ana Watersheds

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Additional Considerations:

- Visit cnrfc.noaa.gov and nwrfc.noaa.gov for specific river and stream forecasts and 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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