

Quick Look at the Potential for Atmospheric River Activity Next Week

Issued: 7 November 2025

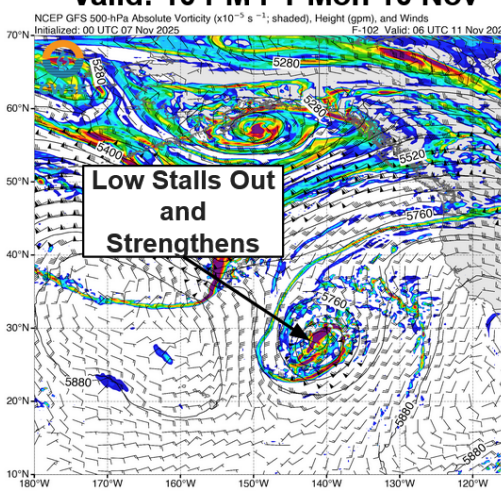
Model guidance is showing the potential for atmospheric river (AR) activity along the US West Coast and heavy precipitation over California next week..

Forecast Highlights:

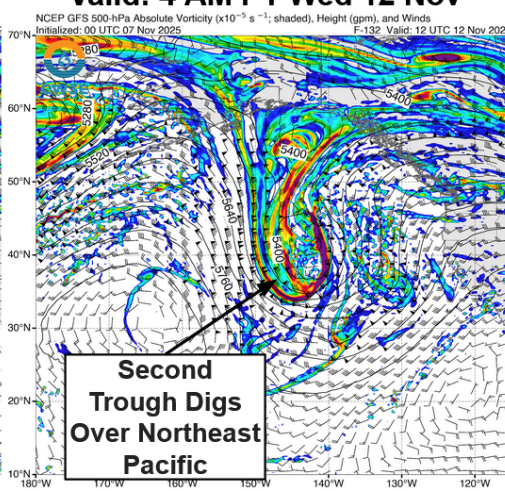
- A low-pressure system is forecast to cut-off from a trough propagating across the Northeast Pacific Sun 9 Nov to Mon 10 Nov and stall northeast of Hawaii. The low is then forecast to strengthen in response to an amplifying upstream trough, facilitating a tropical moisture export from the Eastern Pacific and resulting in an AR landfall over the US West Coast.
- The deterministic GFS and ECMWF are currently showing relatively good agreement in the location of the low at landfall and the timing of AR landfall along the US West Coast, but there is still uncertainty in the strength of the AR and the track of the low following landfall.
- The GFS deterministic is forecasting a later landfall than the majority of GEFS members. CW3E's AR Landfall tool based on the GEFS shows a very high probability (>90%) of IVT $\geq 250 \text{ kg m}^{-1} \text{ s}^{-1}$ along the US West Coast beginning early Wed 12 Nov whereas the GFS deterministic is forecasting IVT landfall late Wed 12 Nov.
- Compared to GEFS, the ECMWF EPS is forecasting a later AR landfall (late Wed 12 Nov) and a higher likelihood of AR conditions extending southward into Central and Southern California through Sat 15 Nov.
- GEFS is forecasting AR 1–2 (based on the Ralph et al. 2019 AR Scale) conditions for coastal California south of the Monterey Peninsula and over the Washington and Northern/Central Oregon coasts.
- GEFS is indicating the potential for stronger IVT magnitudes and a longer duration of AR conditions in Northern and Central California, where 30–60% of GEFS members are forecasting at least AR 3 conditions.
- There is still significant uncertainty in the timing, duration, and magnitude of AR conditions.
- CW3E's watershed precipitation tool shows that the GEFS is forecasting slightly higher 10-day precipitation totals in Northern California while the EPS is forecasting slightly higher totals in coastal Central and Southern California and the Southern Sierra Nevada. There is considerable uncertainty in forecast precipitation, with several GEFS/EPS members forecasting <0.5 inches and several others forecasting >4 inches in the Russian watershed.
- The Climate Prediction Center's Day 8–14 Hazard Outlook indicates a moderate risk for heavy precipitation over the Northern and Central Sierra Nevada and Transverse Ranges and heavy snowfall over the Northern and Central Sierra Nevada for Sat 15 and Sun 16 Nov.

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

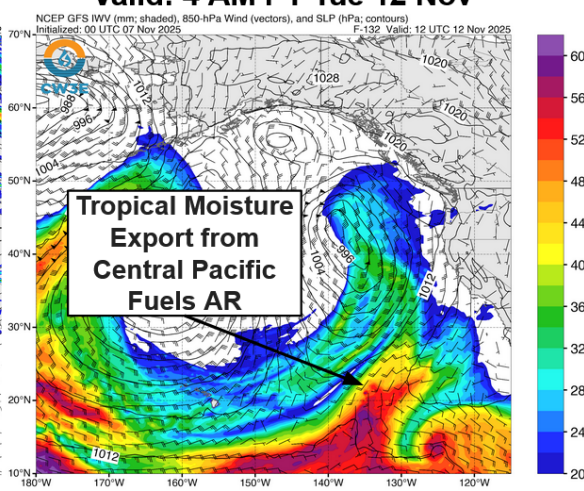
GFS 500-mb Abs. Vort
Valid: 10 PM PT Mon 10 Nov



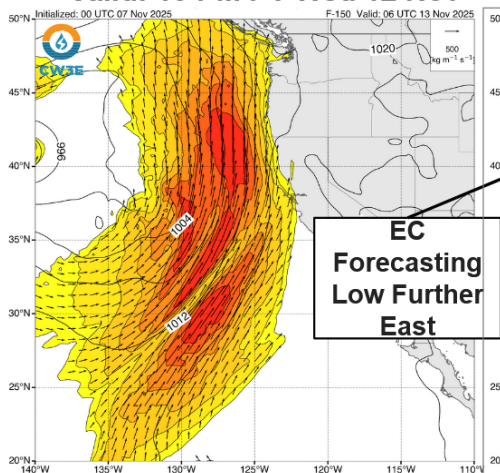
GFS 500-mb Abs. Vort
Valid: 4 AM PT Wed 12 Nov



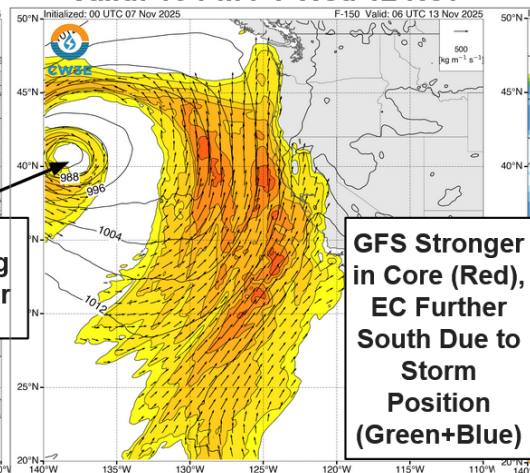
GFS IWV
Valid: 4 AM PT Tue 12 Nov



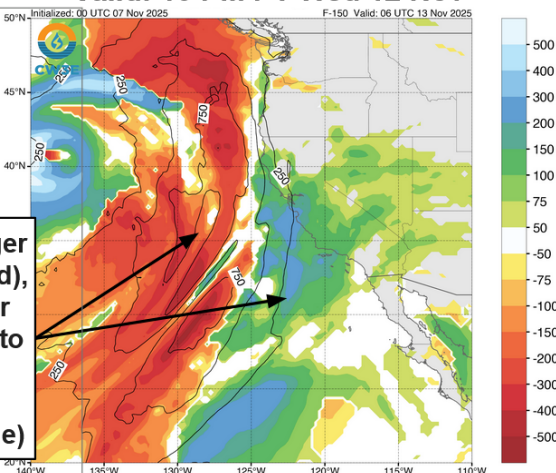
GFS IVT
Valid: 10 PM PT Wed 12 Nov



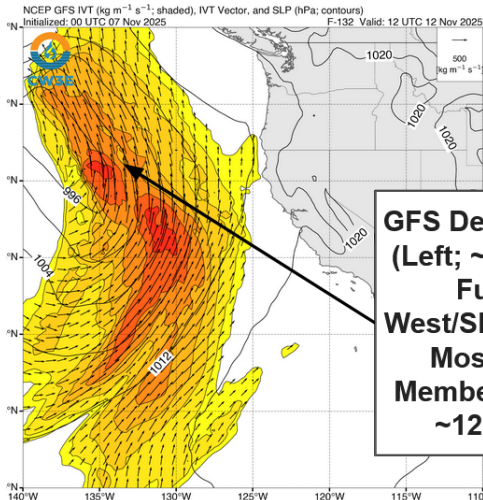
ECMWF IVT
Valid: 10 PM PT Wed 12 Nov



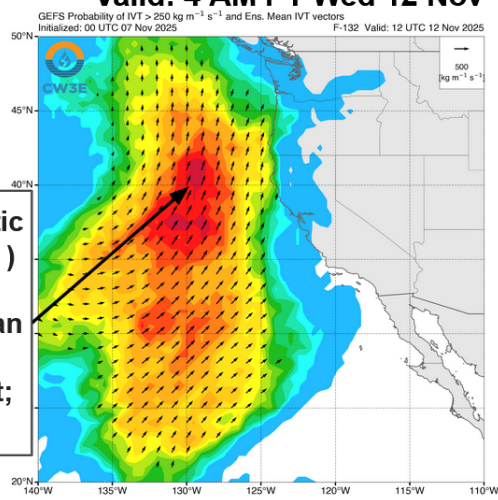
ECMWF-GFS IVT
Valid: 10 PM PT Wed 12 Nov



GFS IVT
Valid: 4 AM PT Wed 12 Nov



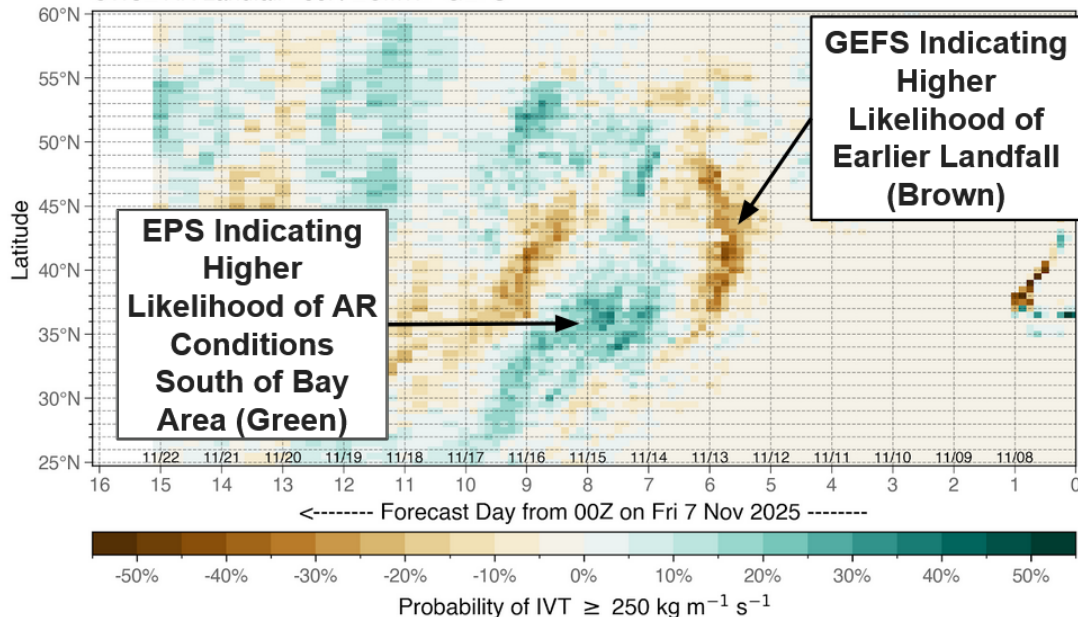
GEFS Prob IVT > 250 $\text{kg m}^{-1} \text{ s}^{-1}$
Valid: 4 AM PT Wed 12 Nov



CW3E Landfall Tool

ECMWF - GEFS Probabilities of IVT $> 250 \text{ kg m}^{-1} \text{ s}^{-1}$

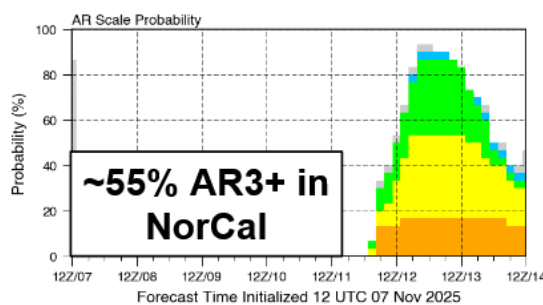
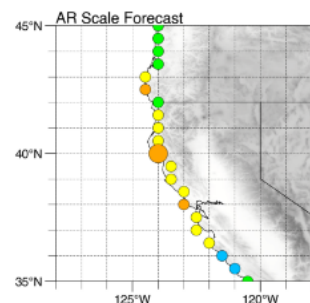
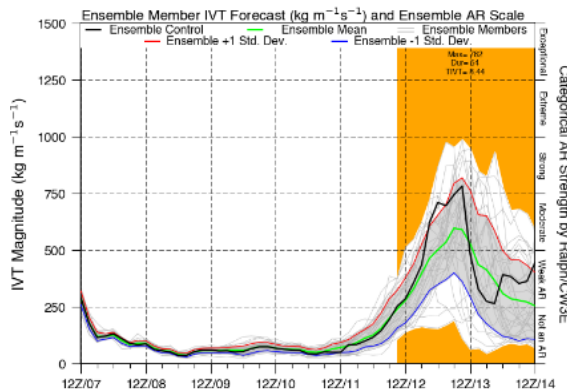
CW3E AR Landfall Tool | ECMWF-GEFS



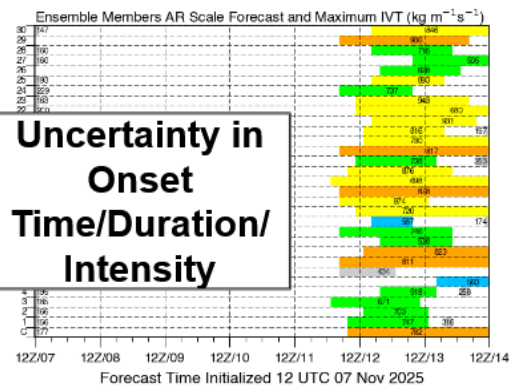
Forecasts support FIRO/CA-AR Program and NSF #2052972 | Intended for research purposes only

GEFS Ensemble Initialized 12 UTC 07 Nov 2025

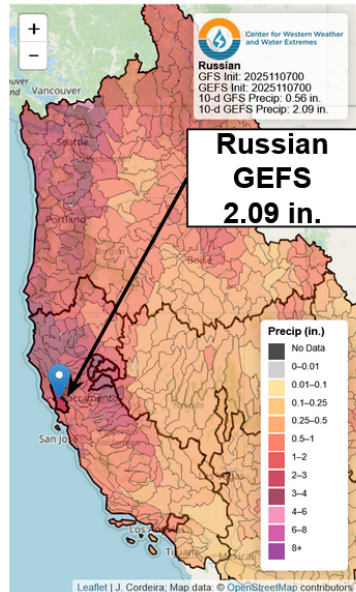
Location: 40.0°N, 124.0°W



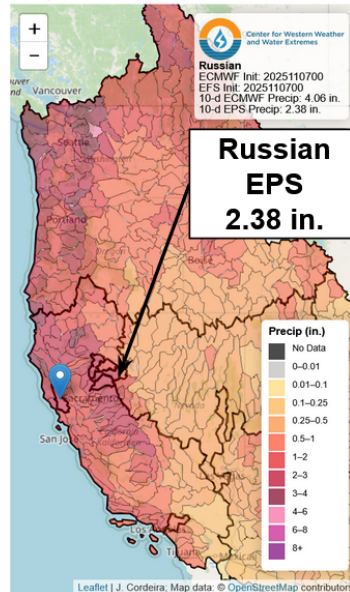
Uncertainty in
Onset
Time/Duration/
Intensity



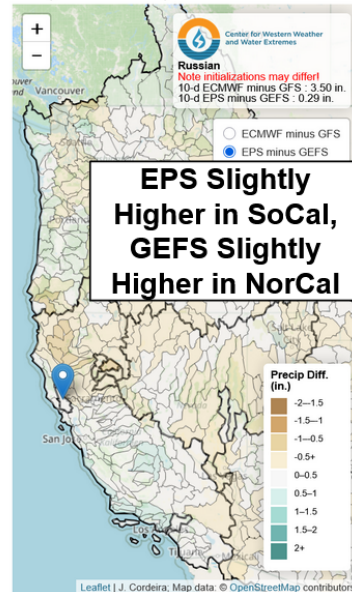
10-day GFS/GEFS Precipitation Forecasts



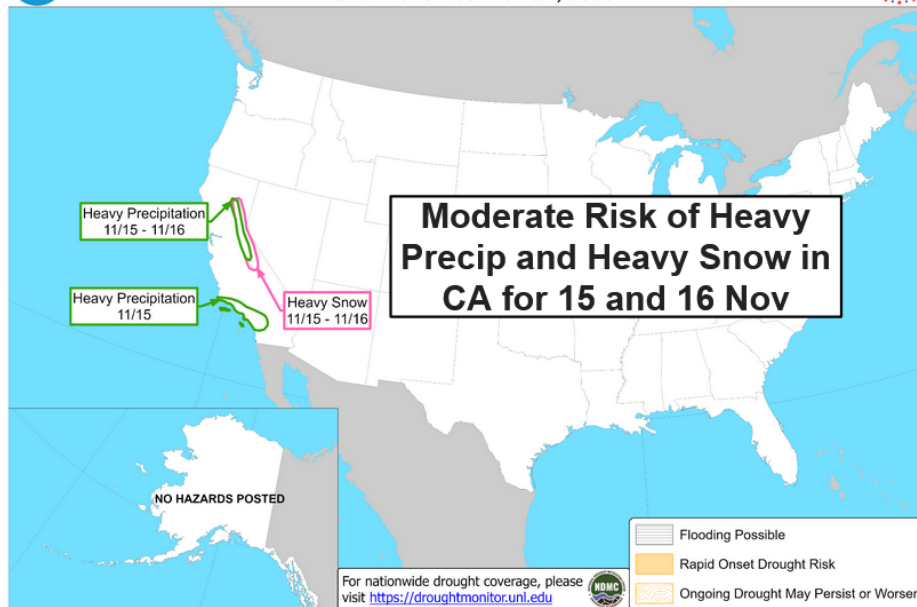
10-day ECMWF/EFS Precipitation Forecast



10-day Difference Precipitation Forecast



Days 8-14 U.S. Hazards Outlook Valid: November 15 - 21, 2025



Climate Prediction Center

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Additional Considerations:

Visit <https://www.weather.gov/cnrfc/> and <https://www.weather.gov/nwrfc/> 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
msteen@ucsd.edu