



Quick Look at the Potential Atmospheric River Impacting the Pacific Northwest *Updated: 3 December 2024*

An atmospheric river is forecast to make landfall over Washington and Oregon Fri 6 Dec through Sat 7 Dec.

Forecast Highlights:

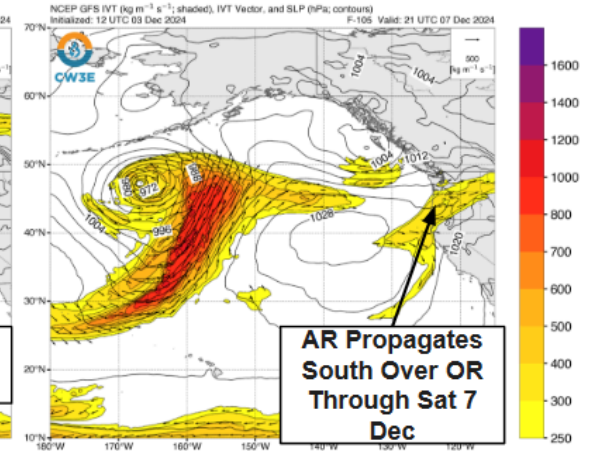
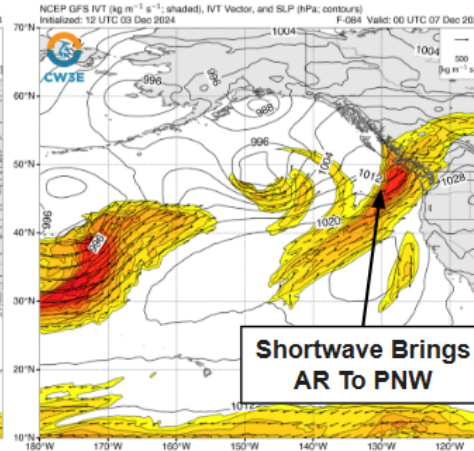
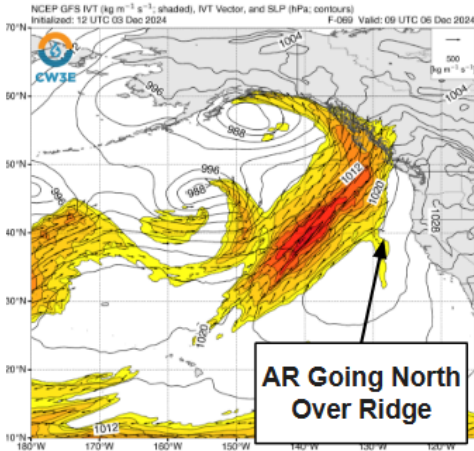
- An atmospheric river (AR) is currently propagating toward British Columbia and Southeastern Alaska due to a ridge off the US West Coast.
- As that ridge weakens a second AR is driven toward the Pacific Northwest by a shortwave trough, making landfall over the Olympic Peninsula on Fri 6 Dec. The AR is forecast to propagate south into Oregon through Sat 7 Dec.
- CW3E's AR Landfall tool derived from the GEFS model contains very high confidence (>90%) in AR conditions ($\geq 250 \text{ kg m}^{-1} \text{ s}^{-1}$) over coastal Washington and northern Oregon beginning Fri 6 Dec and continuing through Sat 7 Dec.
- The GEFS model is forecasting AR2 conditions over southern Washington and Northern Oregon and AR1 in northern Washington.
- There is uncertainty amongst ensemble members in the GEFS regarding the duration, intensity and timing of this potential AR. 55% of GEFS ensemble members are forecasting AR2 or AR3 conditions in southwestern Washington.
- The NWS Weather Prediction Center (WPC) is forecasting 3-5 inches of precipitation over the Olympic Peninsula and North Cascades during the duration of this event.
- Freezing levels are forecast to remain high enough during this event that much of the precipitation is currently forecast to fall as rain.
- At this time stream levels are only expected to rise marginally in some locations.
- While the ridge off the US West Coast is forecast to weaken slightly to allow this AR to reach the Pacific Northwest, it is likely that it remains off the California coast into early next week. As a result, conditions are expected to remain dry in California.

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

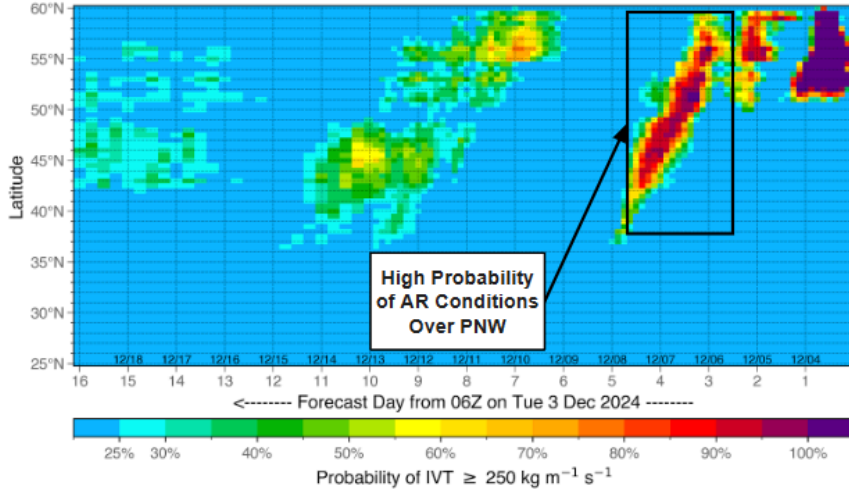
Valid: 1 AM PT Fri 6 Dec

Valid: 4 PM PT Fri 6 Dec

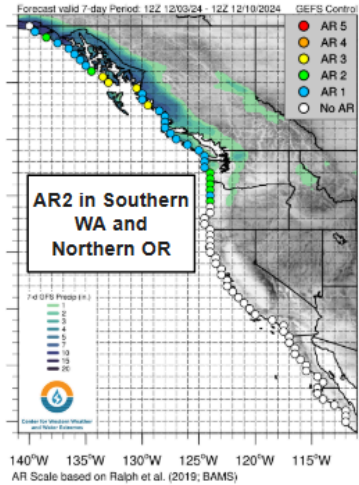
Valid: 1 PM PT Sat 7 Dec



CW3E AR Landfall Tool | GEFS



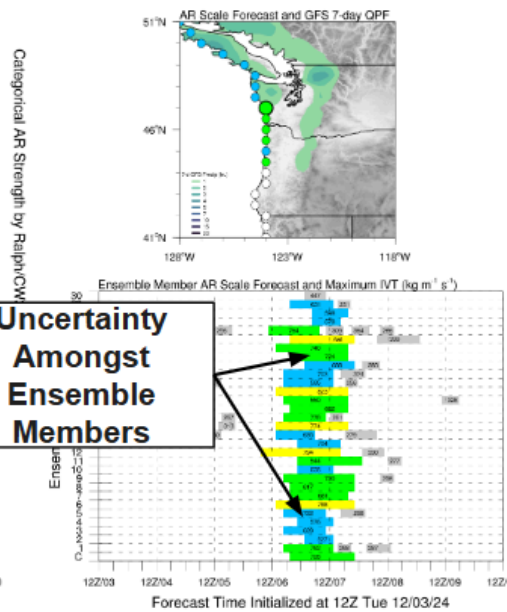
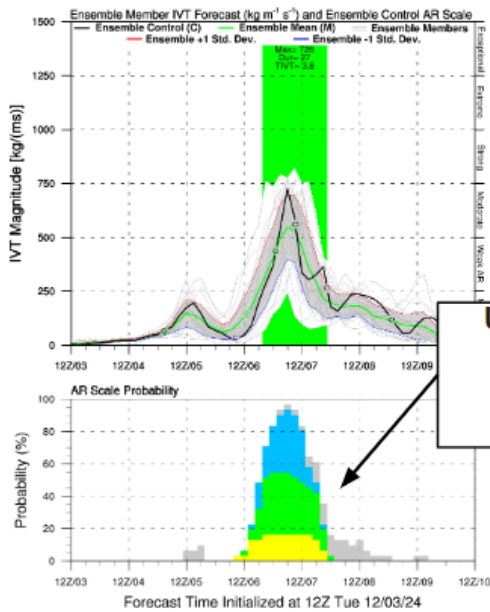
Maximum Forecast AR Scale



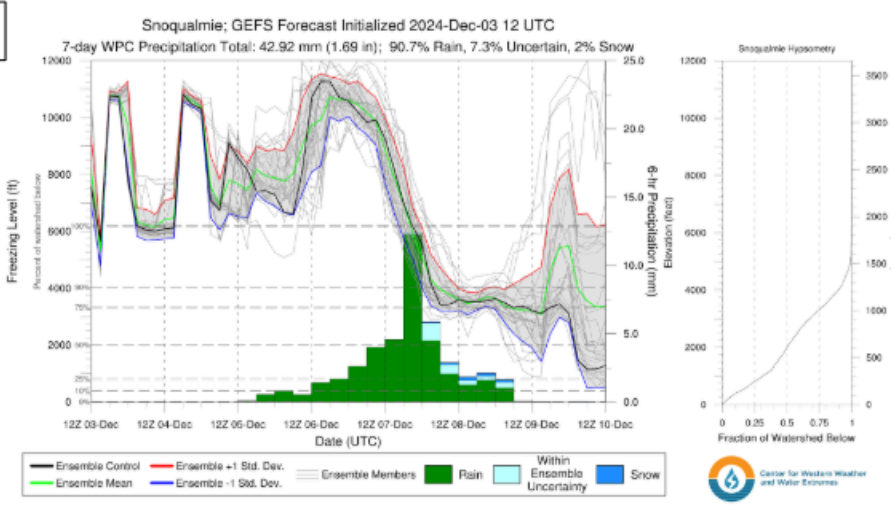
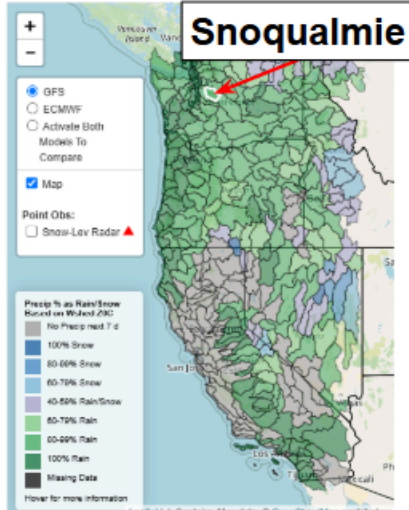
Forecasts support FIRO/CA-AR Program and NSF #2052972 | Intended for research purposes only

GFS Ensemble Initialized: 12Z Tue 12/03/24

Location: 47°N 124°W

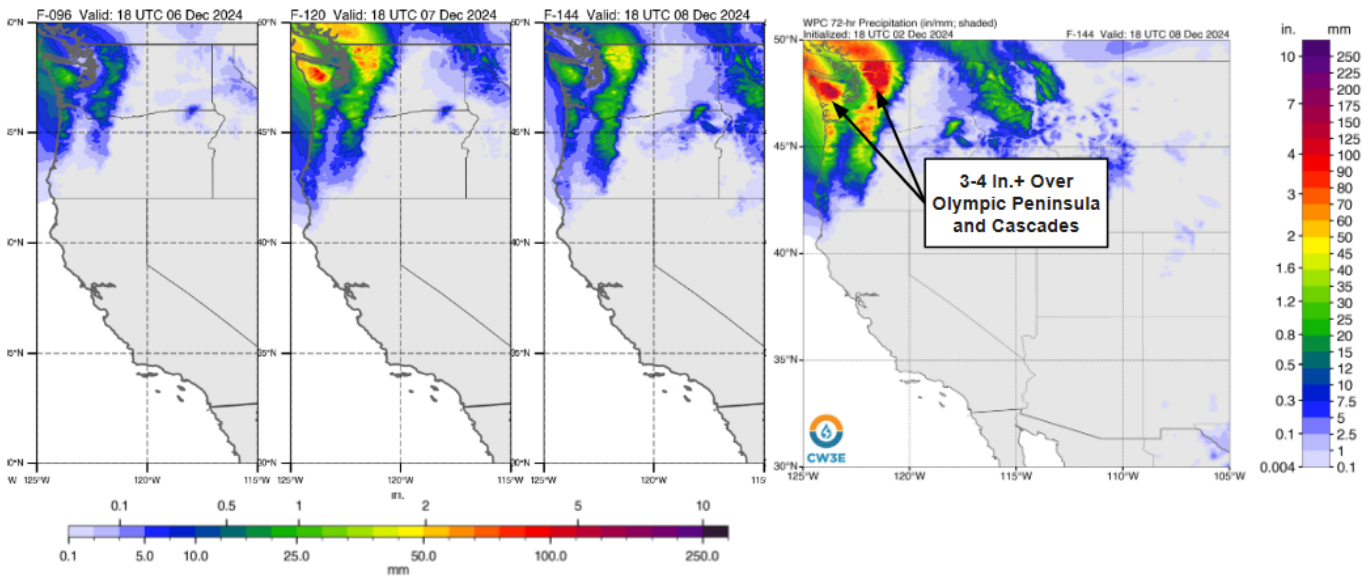


Uncertainty Amongst Ensemble Members



WPC Days 4-6 QPF: Periods Ending 10 AM PT 6-8 Dec

WPC 3-Day QPF: Period Ending 10 AM PT Sun 8 Dec



Additional Considerations:

- Visit <https://www.weather.gov/nwrfc/> and <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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