

Quick Look at the Upcoming AR Activity Over the Pacific Northwest

Issued: 13 August 2025

An atmospheric river (AR) is forecast to make landfall over the Pacific Northwest Thursday evening, driving heavy precipitation over western Washington through Saturday.

Forecast Highlights:

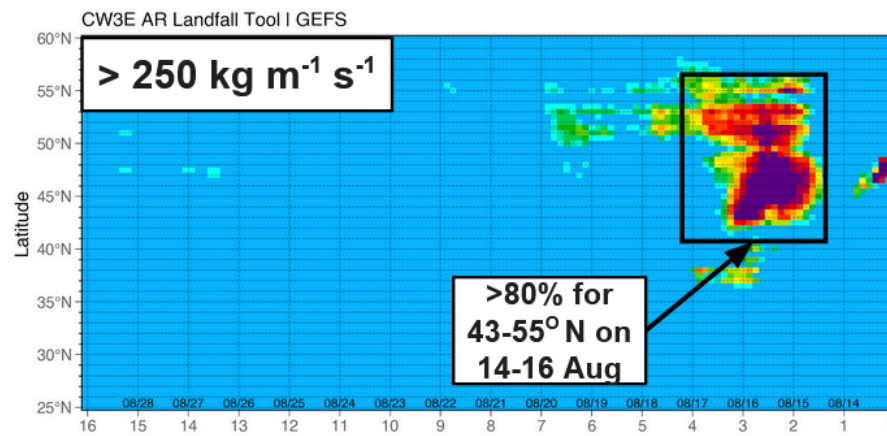
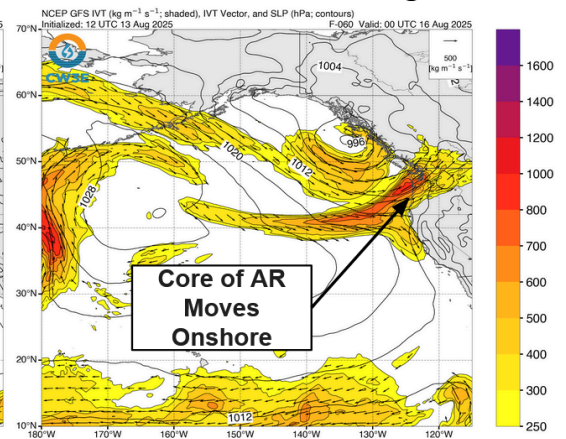
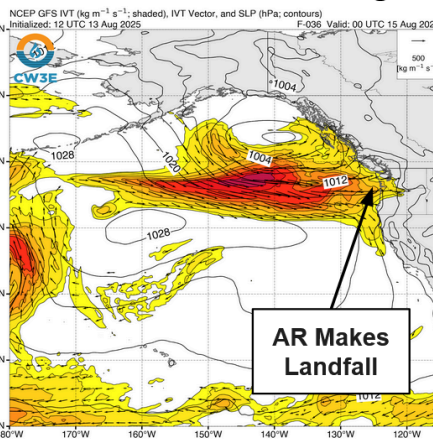
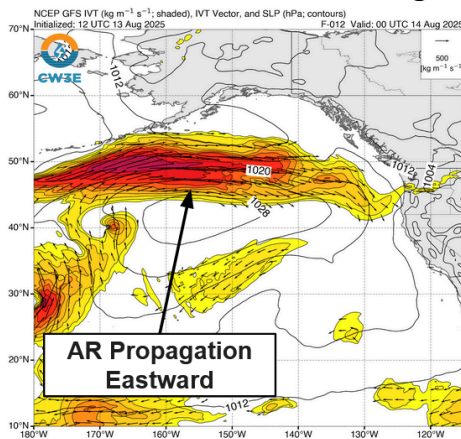
- An AR with moderate-to-strong west-southwesterly IVT ($> 500 \text{ kg m}^{-1} \text{ s}^{-1}$) is forecast to make landfall over the Pacific Northwest on Thu 14 Aug with AR conditions lasting ~24 hrs over the region.
- This AR will propagate over a high-pressure system positioned in the Northeast Pacific, limiting AR impacts to the Pacific Northwest.
- CW3E's AR landfall tool is showing a very high likelihood (near 100% probability) of AR conditions ($> 250 \text{ kg m}^{-1} \text{ s}^{-1}$) over the Pacific Northwest and British Columbia coasts for Thu 14 – Sat 16 Aug.
- Additionally, the landfall tool shows a high probability (80–90% probability) of moderate AR conditions ($> 500 \text{ kg m}^{-1} \text{ s}^{-1}$) along the coast from Central Washington to Central Oregon late on Fri 15 Aug.
- The 12Z GEFS control member is forecasting AR 2–3 [based on the Ralph et al. (2019) AR Scale] conditions for coastal Central Oregon and Washington between ~12Z 14 Aug and 12Z 16 Aug. About 60% of GEFS members are forecasting AR 3-4 conditions at a point near the Washington-Oregon border (46°N , 124.0°W).
- The NWS Weather Prediction Center (WPC) is forecasting 72-hour precipitation totals (period ending 5 AM PT Sun 17 Aug) of 2–4 in. along the coastal mountains and along the Cascades in Washington, with localized totals exceeding 5 in. for the upper elevations of the Olympic Peninsula.
- EPS and GEFS ensemble mean precipitation forecasts are showing good agreement in the forecast of the AR-driven precipitation over coastal watersheds, but show less agreement in the forecast for watersheds in the foothills of the Washington Cascades.
- The forecast AR-driven precipitation may help ameliorate the observed drought conditions and aid fire suppression efforts in Washington. The latest US Drought Monitor identified Extreme Drought conditions on the lee side of the Washington Cascades.
- Streamflow responses are expected to remain below flood levels despite the potential for heavy rains due to the extensive drought conditions experienced across the Pacific Northwest.

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

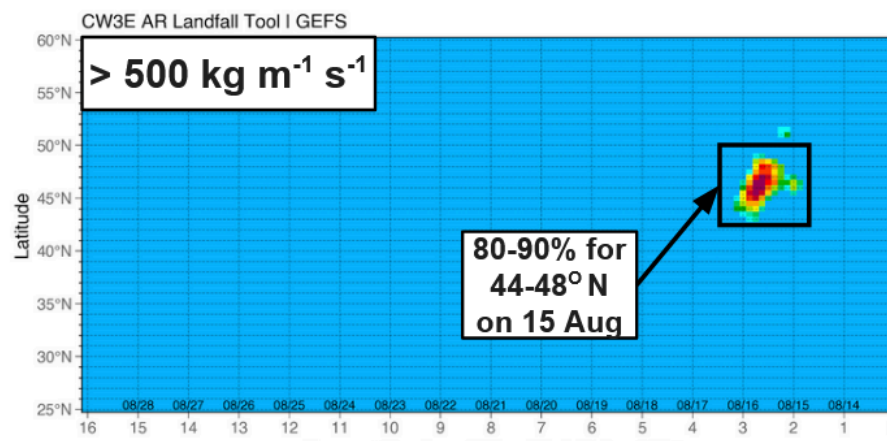
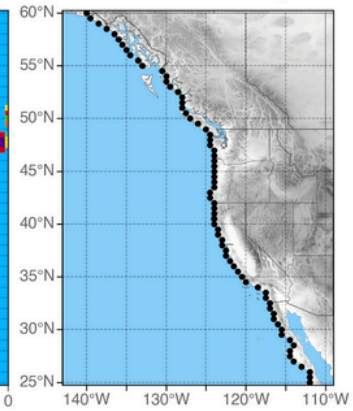
Valid: 5 PM PT Wed 13 Aug

Valid: 5 PM PT Thu 14 Aug

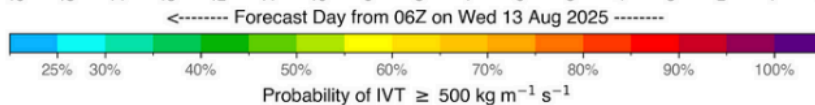
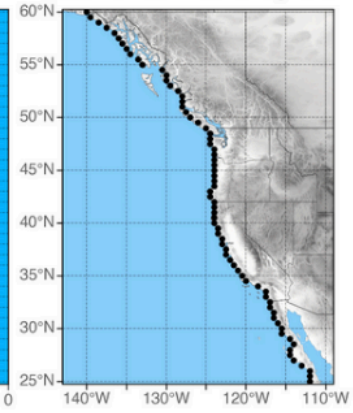
Valid: 5 PM PT Fri 15 Aug



Model Run: 06Z Wed 13 Aug 2025



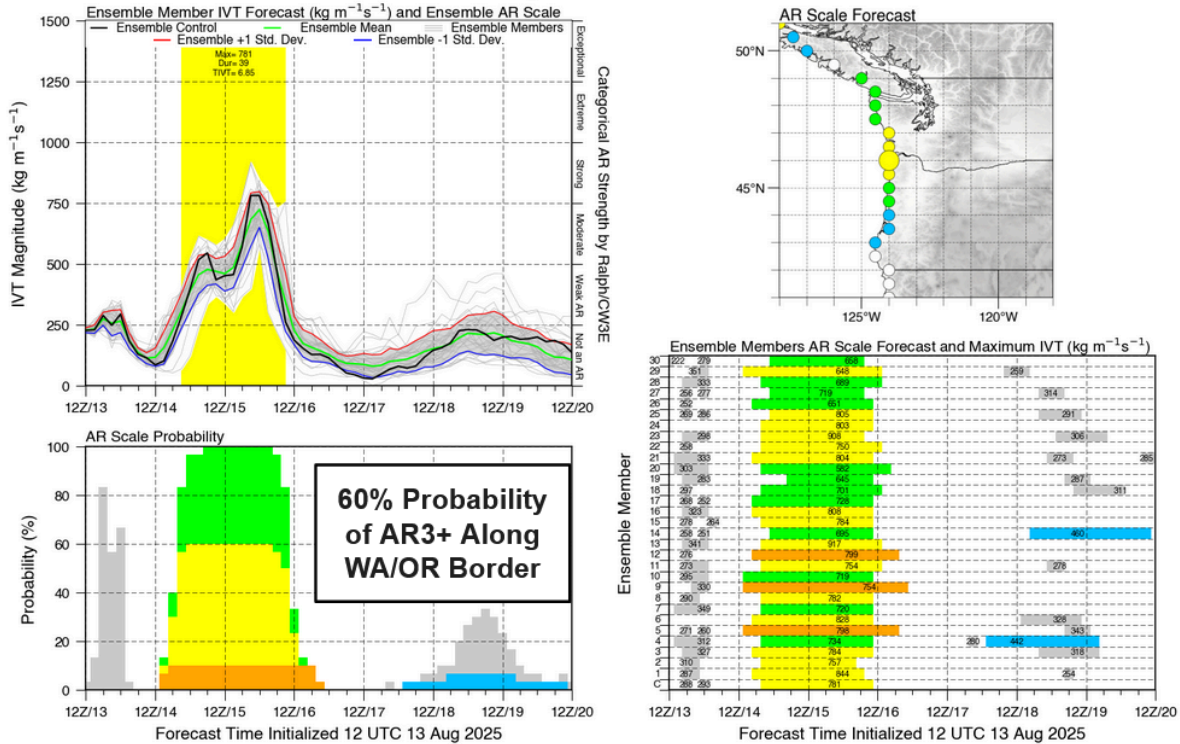
Model Run: 06Z Wed 13 Aug 2025



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

GEFS Ensemble Initialized 12 UTC 13 Aug 2025

Location: 46.0°N, 124.0°W



Center for Western Weather and Water Extremes
SCRIPPS INSTITUTION OF OCEANOGRAPHY
AT UC SAN DIEGO

AR 1

AR 2

AR 3

AR 4

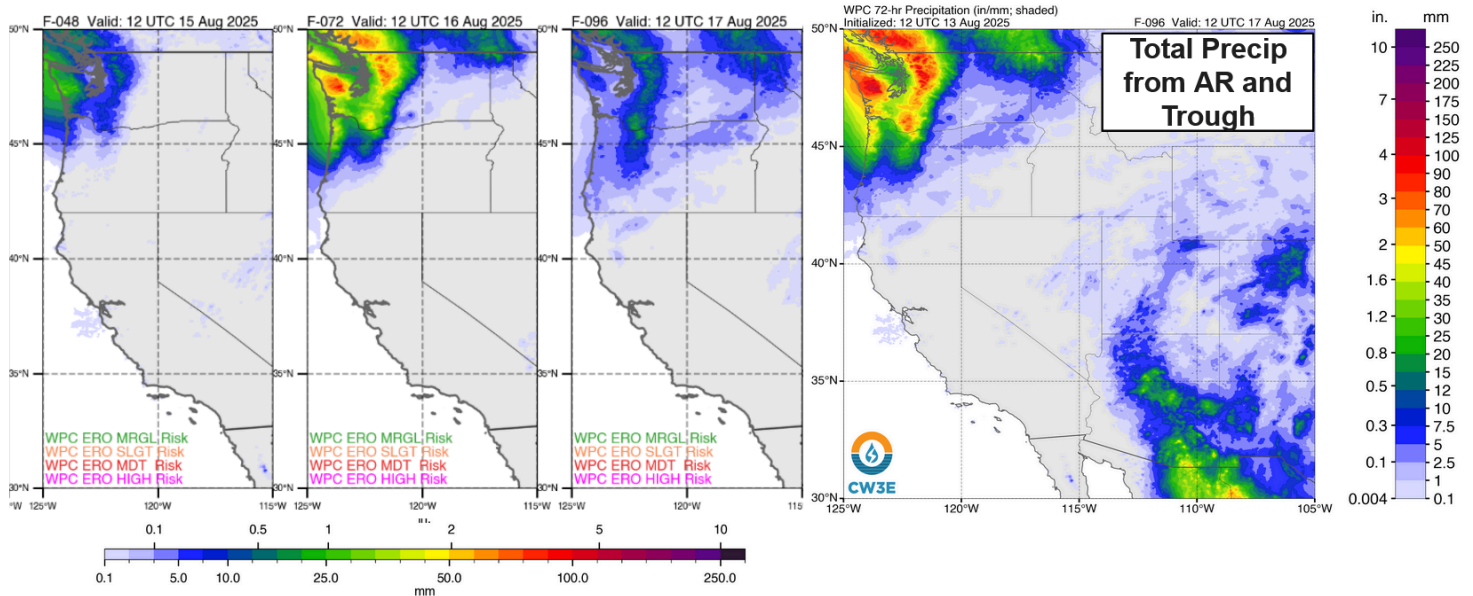
AR 5

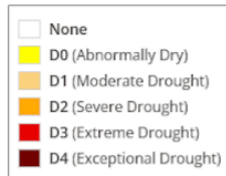
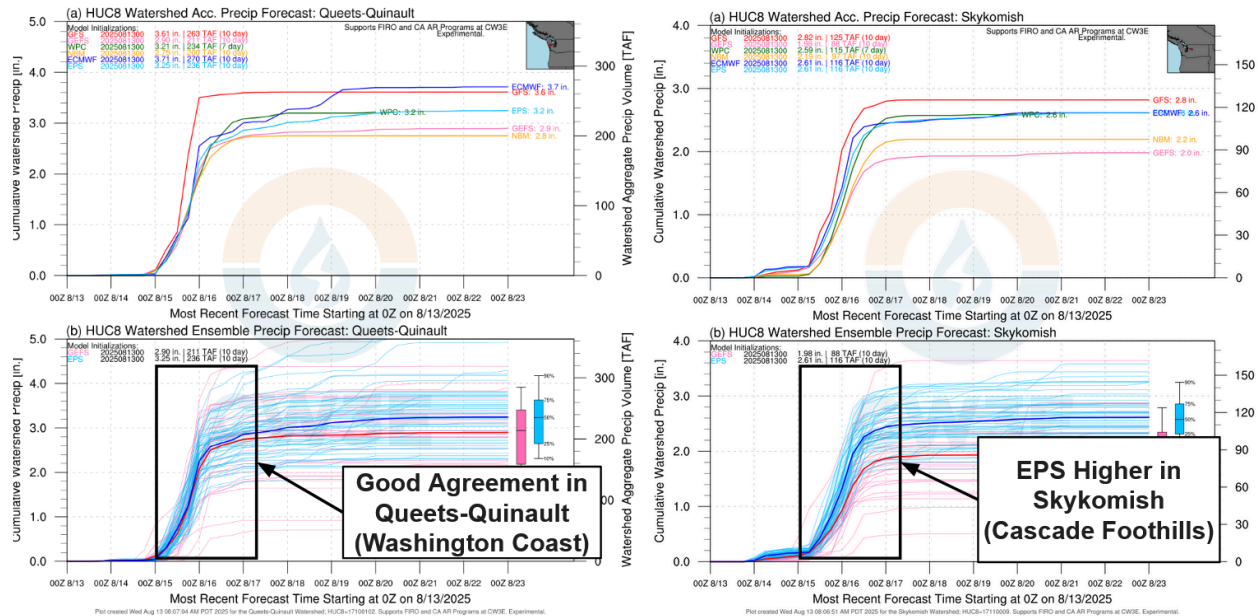
Image created 17 UTC 13 Aug 2025

More information: <https://cw3e.ucsd.edu> AR Scale based on Ralph et al. (2019: BAMS)

WPC Days 2-4 QPF: Periods Ending 5 AM PT 15-17 Aug

WPC 3-Day QPF: Period Ending 5 AM PT 17 Aug

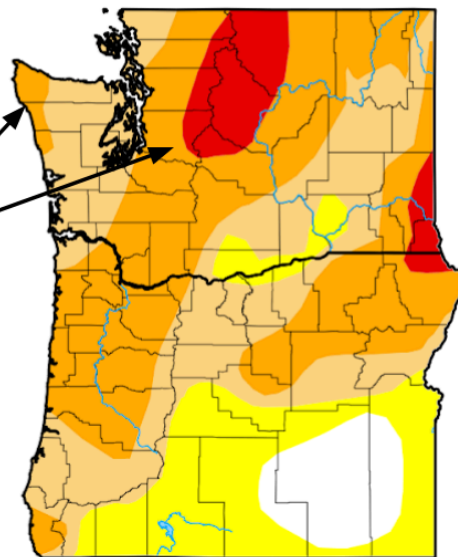




U.S. Drought Monitor

Pacific Northwest

Severe to Extreme
Drought in Region of
Highest Forecast
Precipitation



Additional Considerations:

Visit <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/>

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