

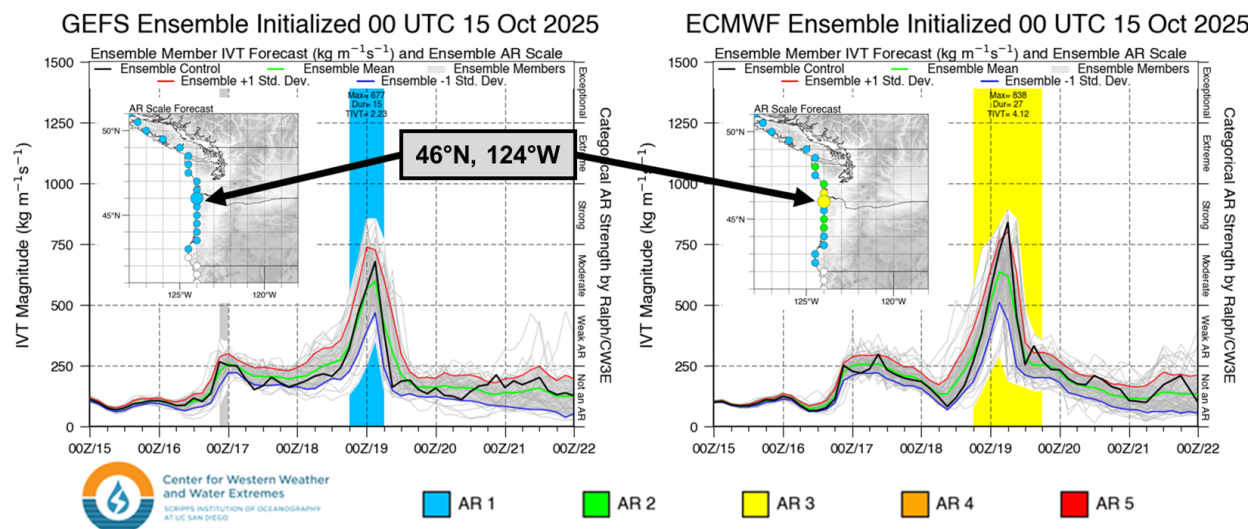
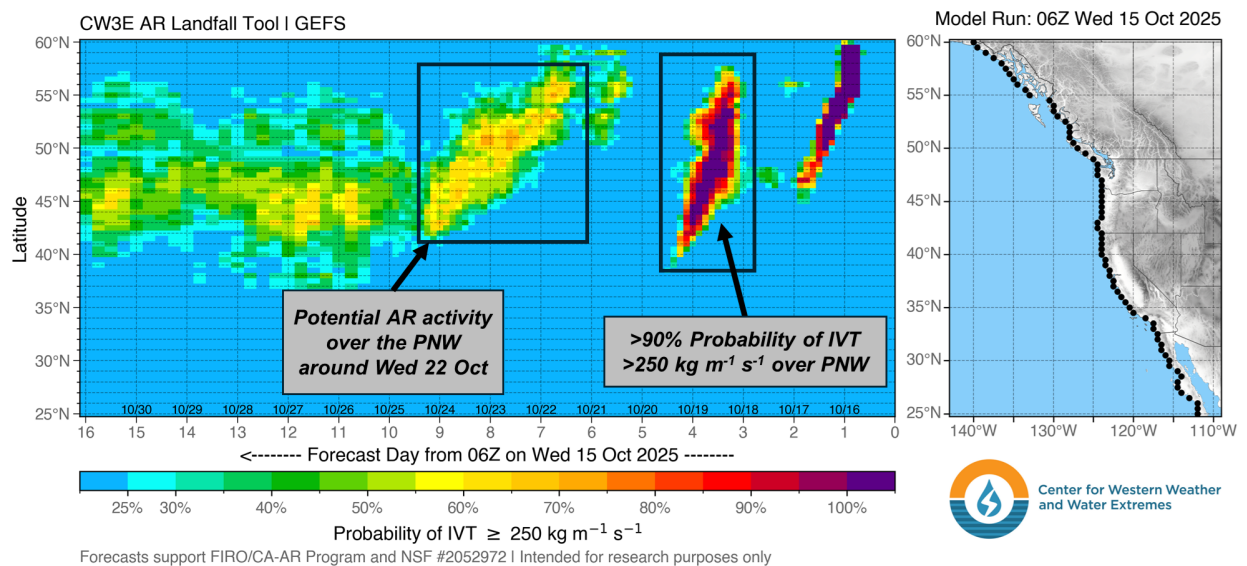
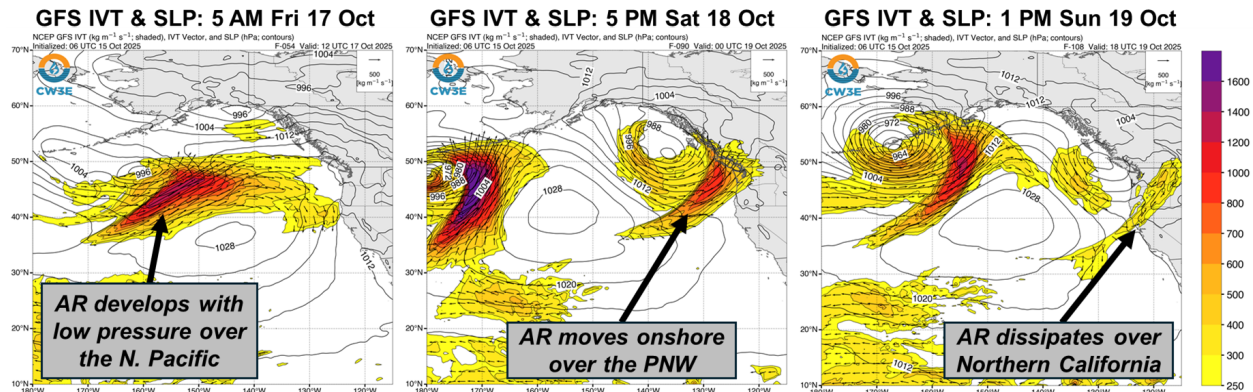
Quick Look at the Upcoming AR Over the Pacific Northwest

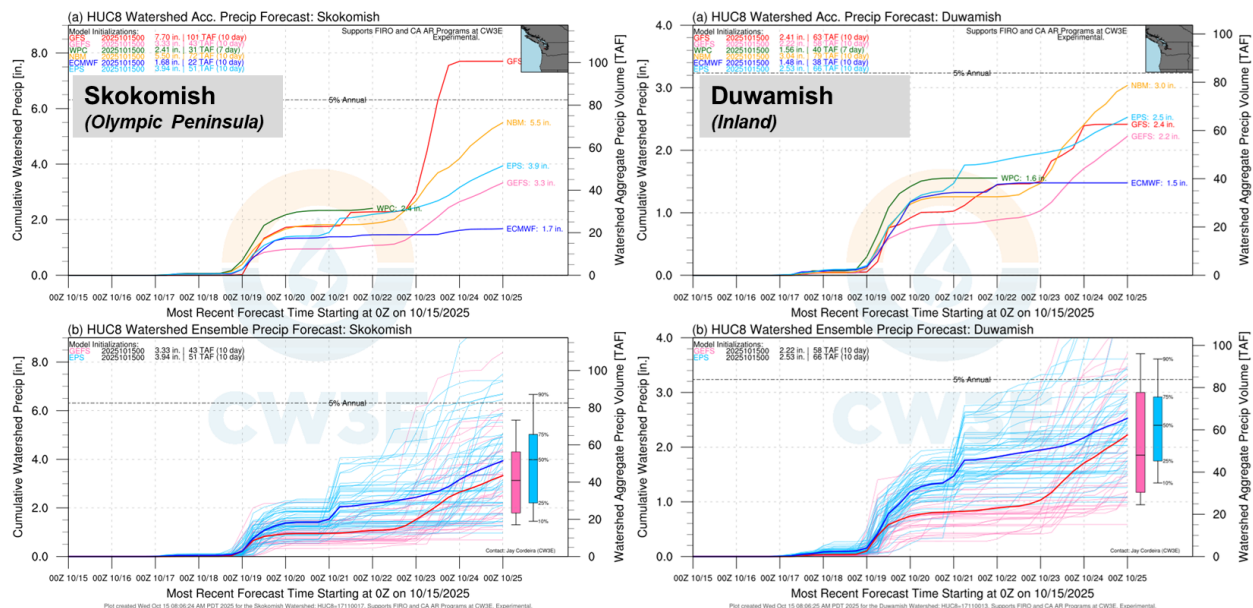
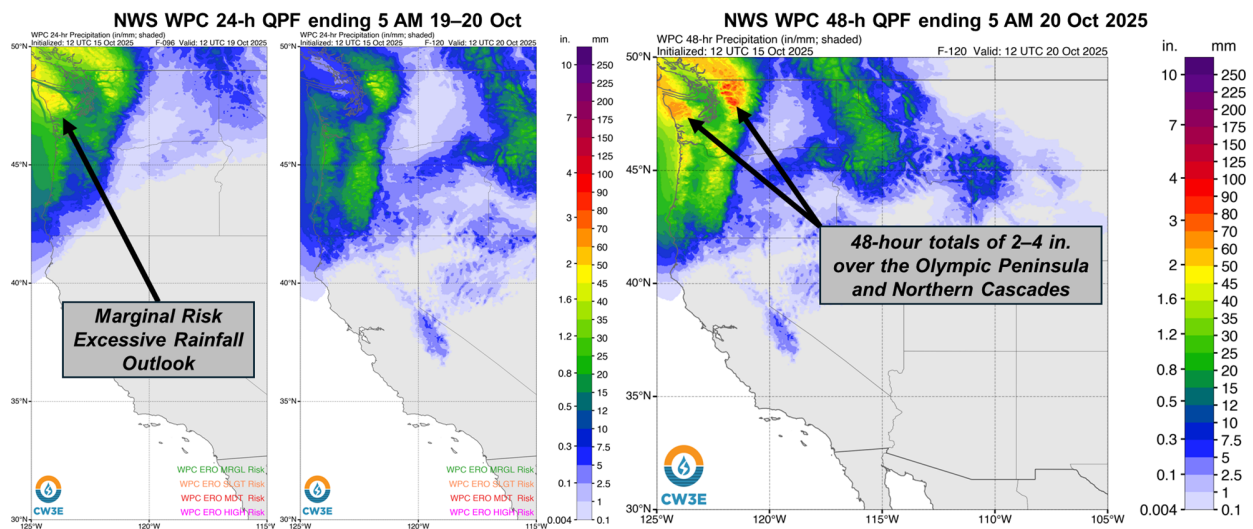
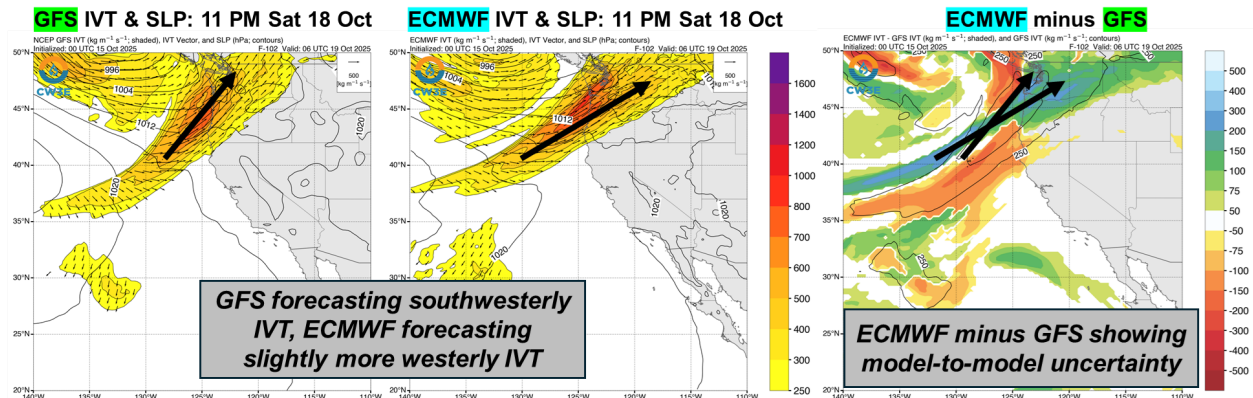
Updated: 15 October 2025

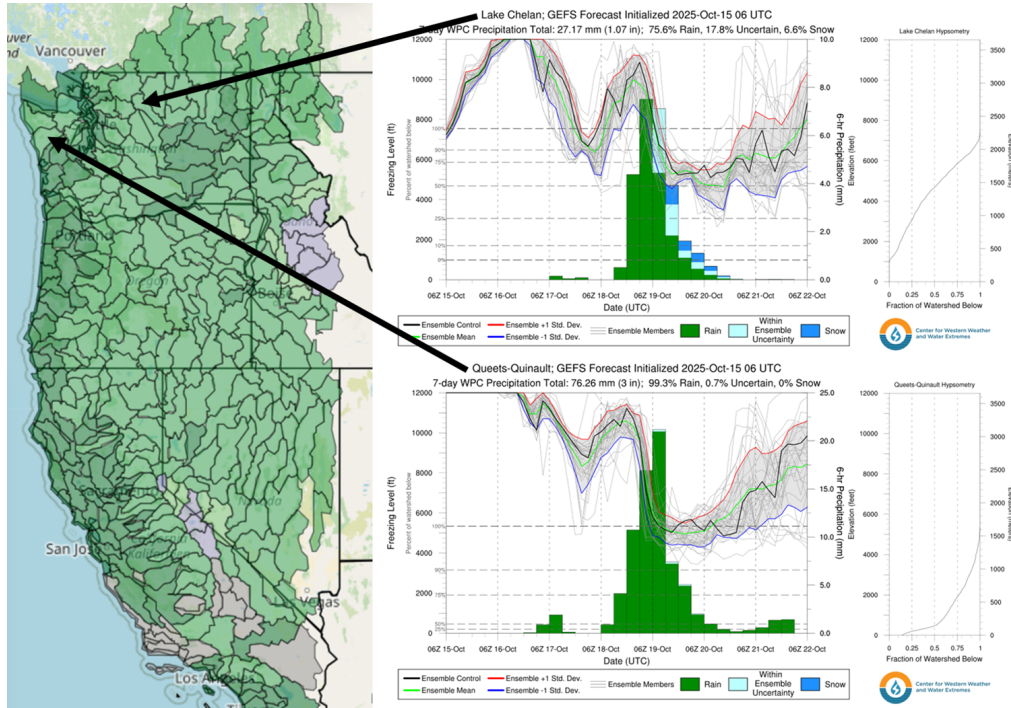
An atmospheric river (AR) is forecast to move onshore over the PNW on Saturday, although there is still some uncertainty as to the timing, intensity, and potential impacts to the region.

Forecast Highlights:

- A relatively quick-moving, moderate-to-strong AR with IVT $>600 \text{ kg m}^{-1} \text{ s}^{-1}$ is forecast to move over the Pacific Northwest on Sat 18 Oct, lasting for just over 24 hours.
- There is also the potential for a second AR landfall over the PNW during the middle of next week, with CW3E's AR Landfall tool currently indicating 60–70% probability of IVT $>250 \text{ kg m}^{-1} \text{ s}^{-1}$ over the PNW on Wed 22 Oct.
- Ensemble forecasts indicate uncertainty in the exact timing and intensity of the first AR over the PNW. The 00Z GEFS control is forecasting AR1 conditions (based on the Ralph et al. 2019 AR Scale) and a slightly earlier (5 PM PT 18 Oct) and lower magnitude max IVT ($677 \text{ kg m}^{-1} \text{ s}^{-1}$), whereas the EPS control is forecasting AR3 conditions with a later (11 PM PT 18 Oct), stronger max IVT ($838 \text{ kg m}^{-1} \text{ s}^{-1}$), and longer duration.
- As the AR moves onshore, the GFS is forecasting primarily southwesterly IVT over the PNW, whereas the ECMWF is forecasting slightly more westerly IVT, which can be more favorable for orographic precipitation enhancement over terrain in the Green River Basin.
- The NWS Weather Prediction Center (WPC) is forecasting 2-day precipitation totals (period ending 5 AM PT Mon 20 Oct) of 1–2 in. over much of coastal Washington and Oregon, with areas of 2–4 in. forecast over terrain on the Olympic Peninsula and Northern Cascades.
- NWS WPC has also issued a **marginal risk ($\geq 5\%$; level 1 of 4)** excessive rainfall outlook (ERO) for the Olympic Peninsula for the period ending 5 AM PT Sun 19 Oct, highlighting the potential for hydrologic impacts over the region.
- Model quantitative precipitation forecasts (QPF) from the 00Z model run are slightly higher over the Olympic Peninsula, where the GFS is forecasting 1.8 in. from the first AR as compared to the ECMWF which is forecasting 1.6 in. Inland over the Duwamish watershed, the GFS is forecasting only 1.0 in. from the first AR while the ECMWF is forecasting 1.4 in.
- Significant uncertainty remains as to the exact precipitation impacts from the potential second AR forecast to move over the PNW later this week, as illustrated by the inter-model differences in model QPF amounts beyond Wed 22 Oct.
- Freezing levels in the Olympic Mountains and North Cascades are forecast to rise above 8,000 feet as the AR makes landfall, and eventually drop below 6,000 feet as the AR passes through the region on Sun 19 Oct. Much of the initial precipitation is forecast to be rain, followed by the potential for high-elevation snow.
- The precipitation from this AR will most likely be beneficial, as the region is currently experiencing moderate to severe drought conditions, with areas of extreme drought over the far Northern Cascades based on the most recent analysis from the US Drought Monitor.

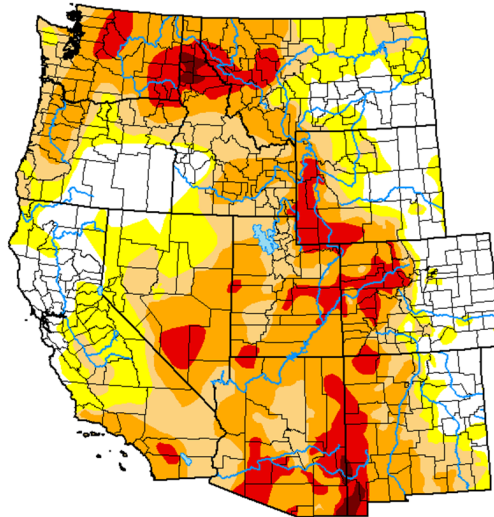






U.S. Drought Monitor West

October 7, 2025
(Released Thursday, Oct. 9, 2025)
Valid 8 a.m. EDT



Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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droughtmonitor.unl.edu

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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