

Quick Look at Trio of Atmospheric Rivers to Impact USWC

Updated: 21 March 2025

A trio of atmospheric rivers are forecast to make landfall along the US West Coast (USWC) over the next week producing precipitation across the region.

Forecast Highlights:

- An atmospheric river (AR) made landfall along the Pacific Northwest (PNW) coast late yesterday and will impact Oregon and Northern California into tomorrow.
- A second AR is forecast to propagate toward the PNW and initially make landfall over coastal Southern Washington and Northern Oregon on Sun 23 Mar.
- The tail end of the moisture from the second AR is forecast to get wrapped up in a low-pressure system that will form in the Northeast Pacific, potentially bringing another period of AR conditions to the PNW coast Wed 26 Mar into Thu 27 Mar.
- The West-WRF ensemble control member is forecasting the first AR to reach AR1 (based on the Ralph et al. 2019 AR Scale) over coastal Southern Oregon and Northern California and the second AR to reach AR 2-3 over coastal Washington and Oregon.
- About 60% of West-WRF ensemble members are forecasting the second AR to reach AR3 conditions in coastal Southern Washington. Inland penetration of the second AR is also expected to produce AR 1-2 conditions in the Cascade foothills.
- The Weather Prediction Center (WPC) is forecasting the highest precipitation totals of 6–9 inches over the Olympic Peninsula and Washington Cascades over the next 7 days (precip ending 5 AM PT Fri 28 Mar) with all three ARs.
- CW3E's watershed precipitation tool shows most deterministic and ensemble mean forecasts exceeding >5% of normal annual precipitation (4.2 in.) over the next 10 days over the Howard Hanson Dam catchment. More than 50% of GEFS and EPS members are forecasting totals exceeding 5% of normal annual precipitation.
- The WPC has issued a **marginal risk** Excessive Rainfall Outlook (level 1 of 4, 5% chance of flooding) over the Olympic Peninsula and coastal Washington on Day 3 (period ending 5 AM PT Mon 24 Mar) due to rainfall from the second AR .
- The Northwest River Forecast Center is forecasting 11 stream gages to exceed action stage and 3 gages to exceed minor flood stage with the precipitation from all three ARs.
- Freezing levels are forecast to remain low over the Cascades during the first AR before rising as the second AR makes landfall. Most of the precipitation during the second AR is expected to fall as rain, increasing potential flooding risk due to rain-on-snow and increased runoff.
- NWS is forecasting 1-2 feet of snow across much of the Cascades with potentially higher snowfall totals at the highest elevations by early Mon 24 Mar. The Winter Storm Severity Index indicates moderate-to-major impacts across much of the Cascades, with localized areas of extreme impacts at highest elevations.

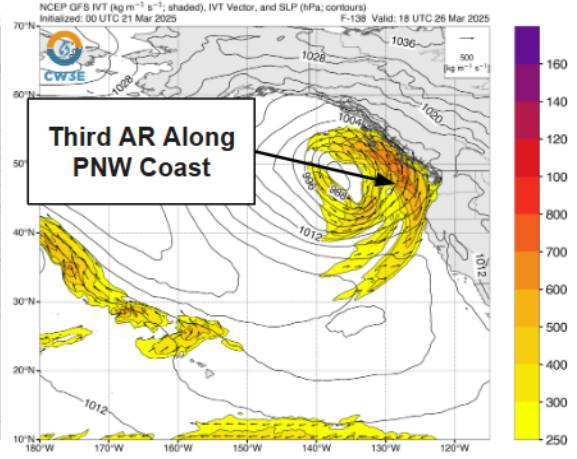
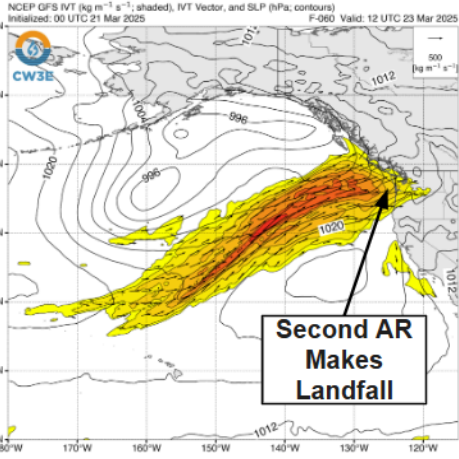
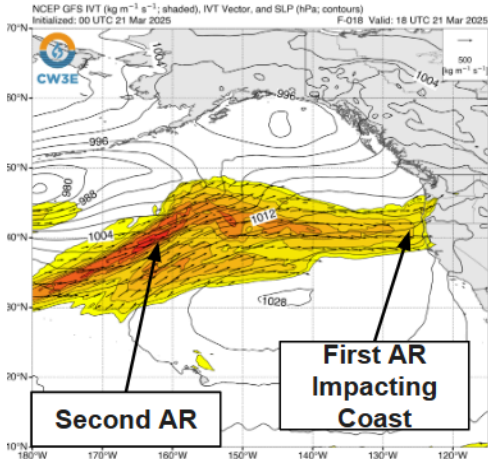
Stay alert to official NWS forecasts, watches, and warnings at [weather.gov](https://www.weather.gov) and follow guidance from local emergency management officials

Stay tuned to the CW3E webpage for a full AR Update

Valid: 11 AM PT Fri 21 Mar

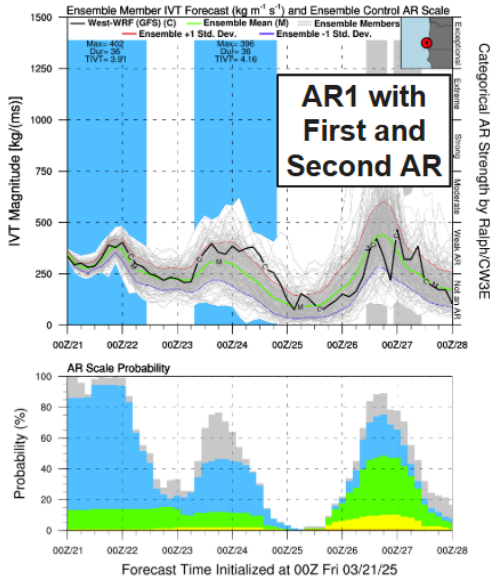
Valid: 4 PM PT Sun 23 Mar

Valid: 11 AM PT Wed 26 Mar

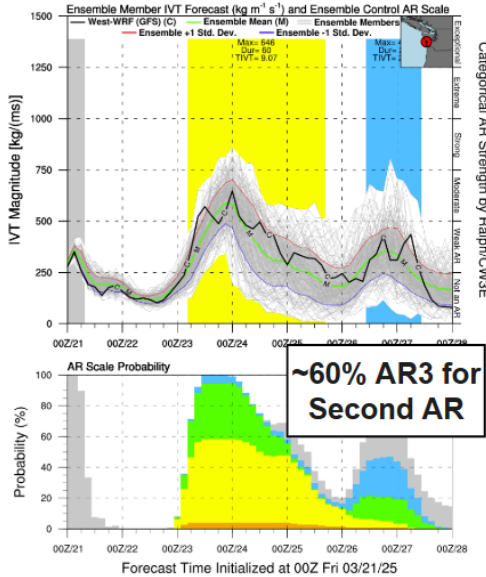


West-WRF Ensemble AR Scale

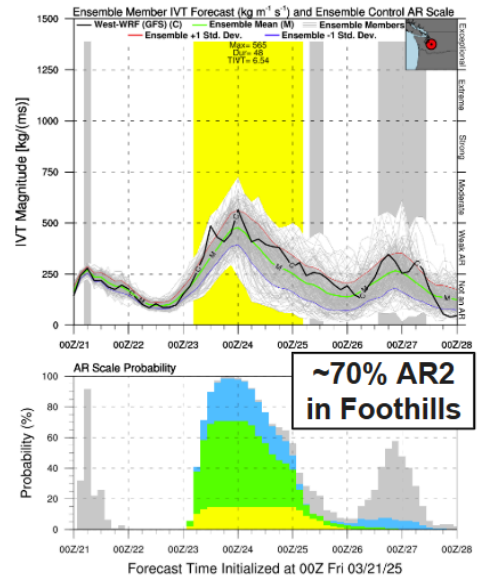
Coastal OR



Coastal WA

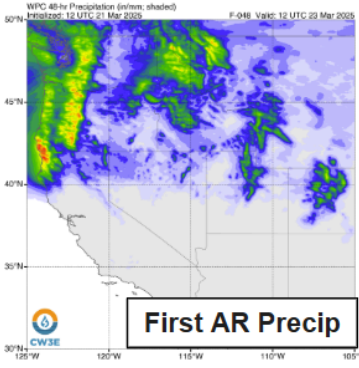


WA Cascade Foothills

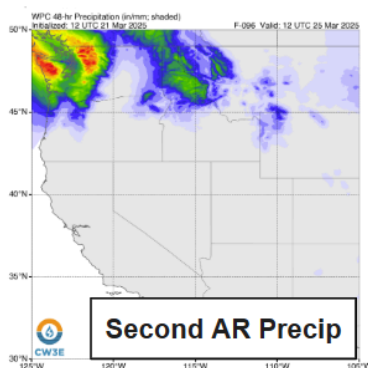


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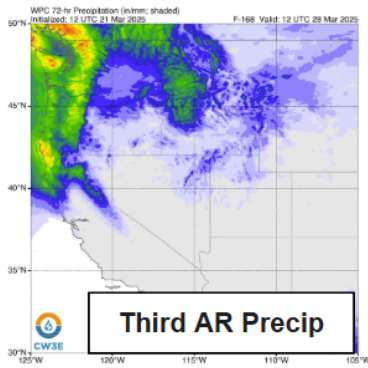
WPC 2-Day QPF: Period Ending 5 AM PT 23 Mar



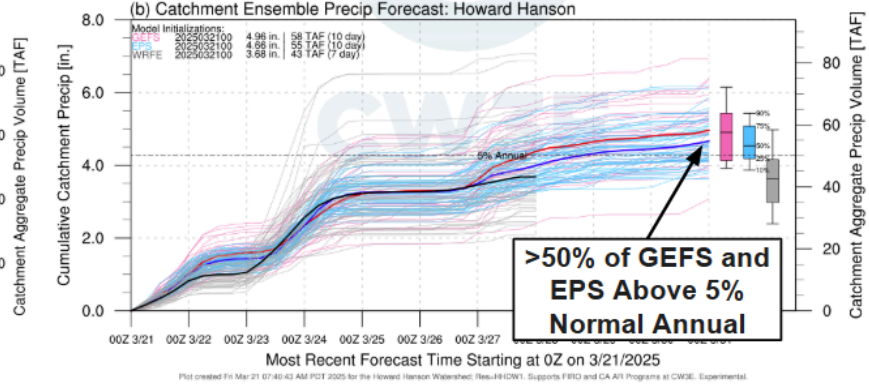
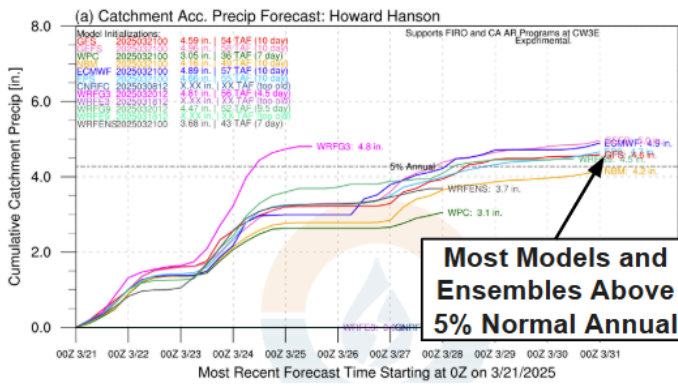
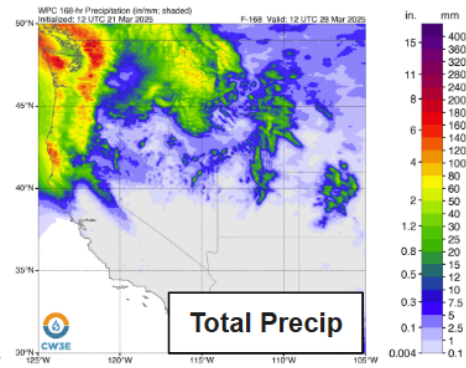
WPC 2-Day QPF: Period Ending 5 AM PT 25 Mar



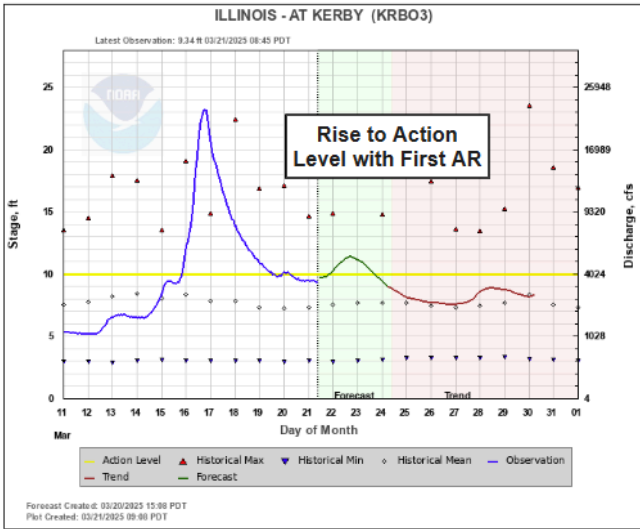
WPC 3-Day QPF: Period Ending 5 AM PT 28 Mar



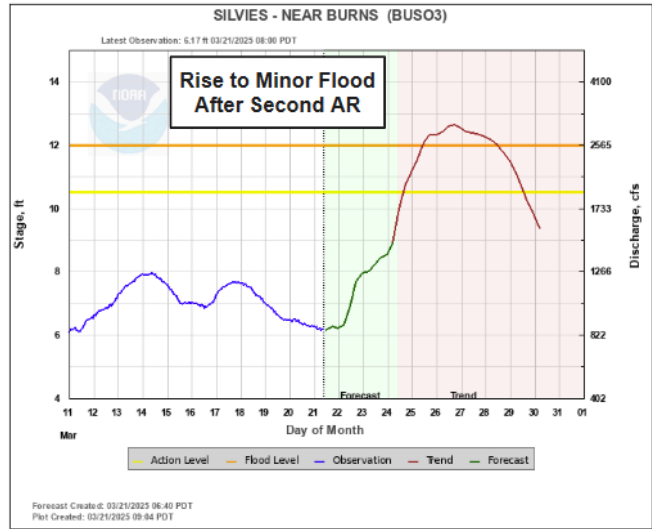
WPC 7-Day QPF: Period Ending 5 AM PT 28 Mar



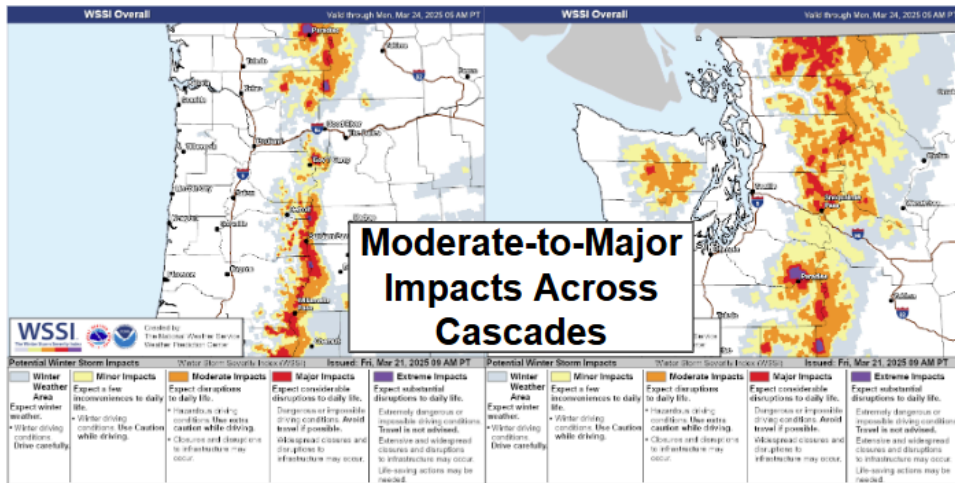
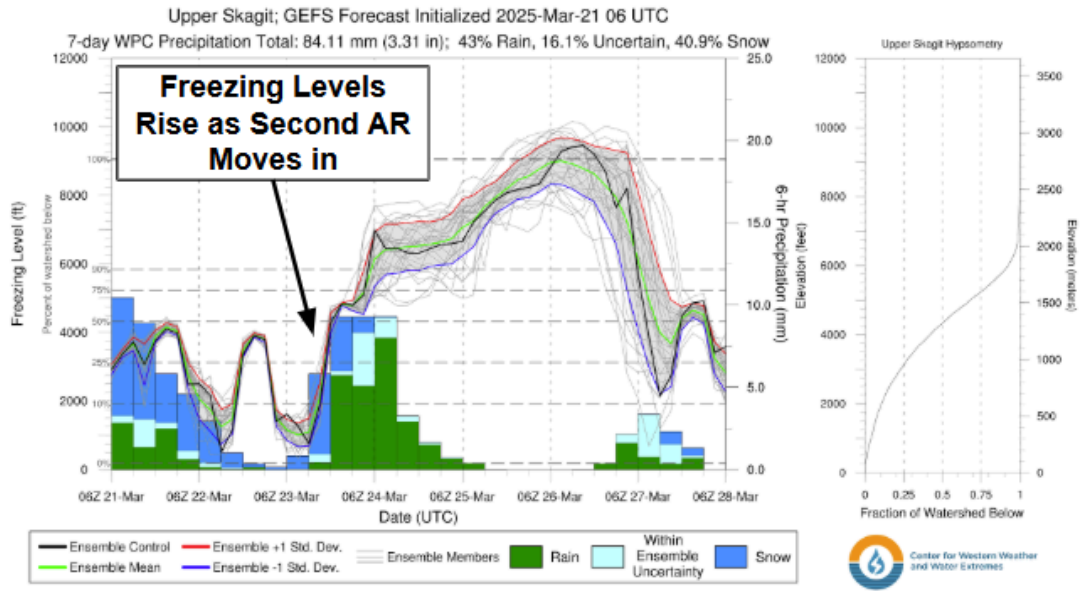
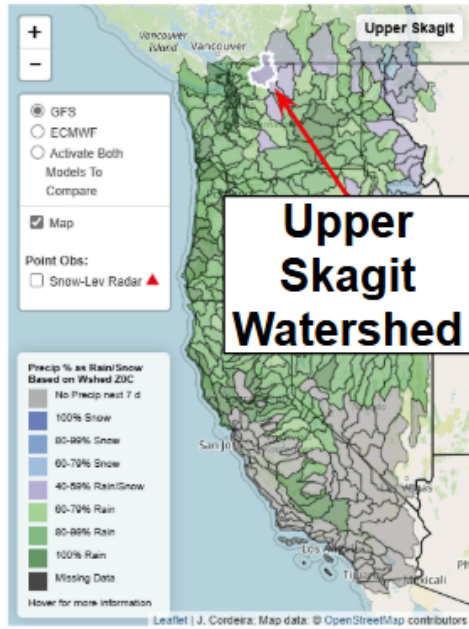
NWRFC: Illinois River in SW Oregon



NWRFC: Silvies River in SE Oregon



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Additional Considerations:

- Visit 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/>

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