

Quick Look at the Weekend AR Activity and Impacts over the US West Coast

Updated: 27 December 2024

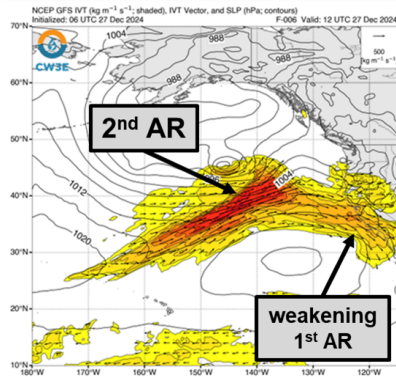
A weakening AR today will make way for a second AR that is forecast to bring impactful rainfall to Southern Oregon and Northern California over the next three days.

Forecast Highlights:

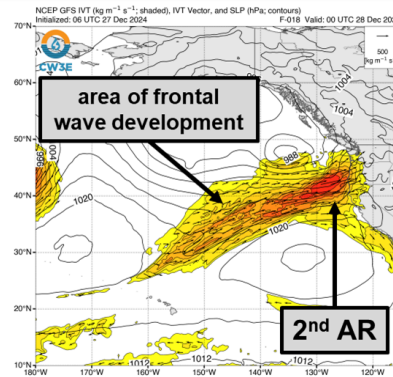
- An AR that made landfall earlier today, Fri 27 Dec is forecast to shift south and weaken along the coast of California, with primarily northwesterly IVT over coastal California.
- A 2nd AR is forecast to move onshore later today, Fri 27 Dec over coastal Oregon and Northern California with west-southwesterly IVT $> 500 \text{ kg m}^{-1} \text{ s}^{-1}$ in the core of the AR.
- A mesoscale frontal wave is forecast to develop along the tail of the 2nd AR, with a secondary pulse of IVT $> 800 \text{ kg m}^{-1} \text{ s}^{-1}$ forecast to move onshore over Northern California early in the day on Sun 29 Dec.
- The 12Z GEFS control member is forecasting AR2-3 conditions (based on the Ralph et al. 2019 AR Scale) over coastal Southern Oregon and Northern California, with high confidence in AR3 conditions near Cape Blanco in coastal Southern Oregon.
- The NWS Weather Prediction Center (WPC) is forecasting 24-hour precipitation totals of 1–3 in. over the next three days in Southern Oregon and Northern California, with the highest rainfall totals expected between 4 AM Sat 28 Dec - 4 AM Sun 29 Dec. NWS WPC has forecast 72-hour precipitation totals between 2–5 in. over Southern Oregon and Northern California, with 7–10 in. over the Klamath Mountains and Northern California Coast Ranges.
- NWS WPC has issued a **slight risk** ($\geq 15\%$; **level 2 of 4**) excessive rainfall outlook (ERO) over the Klamath Mountains and Coastal Ranges of Southern Oregon and Northern California, and **marginal risk** ($\geq 5\%$; **level 1 of 4**) ERO between the Washington/Oregon border and Northern California, extending to the northern Sierra Nevada during this period.
- Multiple model quantitative precipitation forecasts over the Upper Klamath watershed are showing high confidence of $> 10\%$ of normal annual precip in the next 3 days from this AR.
- The NWS Northwest River Forecast Center (RFC) has forecast 1 location to rise above moderate flood stage, 4 above minor flood stage, and 18 above action/bankfull stage over the next 10 days. The NWS California-Nevada RFC has forecast 1 location to rise above minor flood stage and 9 above action/monitor stage over the next 5 days.
- Freezing levels are forecast to remain high during this AR, resulting in the highest NWS 72-hour snowfall totals of 12–36 in. along only the highest elevations of the Cascades and Northern Sierra Nevada, with isolated moderate to major NWS Winter Storm Severity Index conditions forecast in these areas.

Stay tuned to the CW3E webpage for a full AR Update

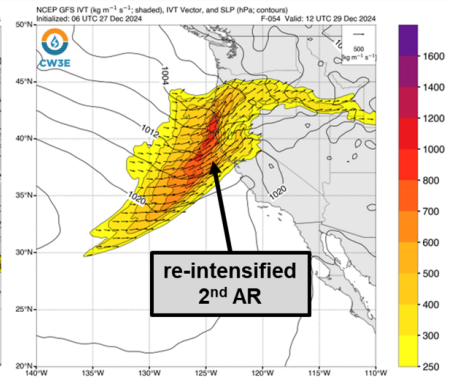
GFS IVT & SLP Valid: 4 AM Fri Dec 27



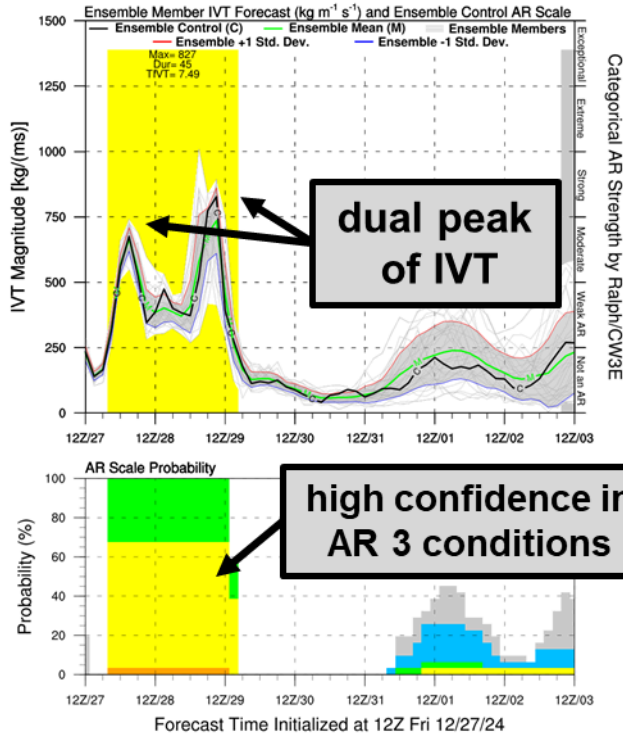
GFS IVT & SLP Valid: 4 PM Fri Dec 27



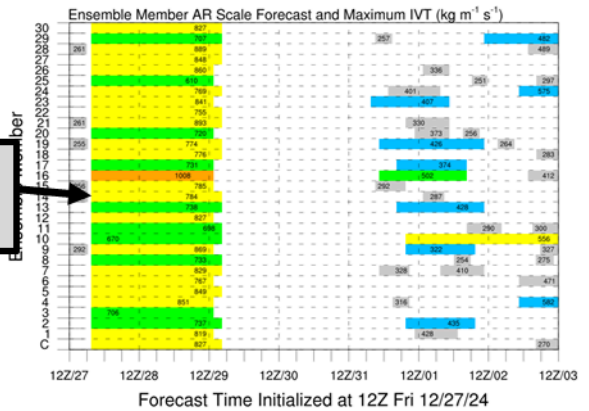
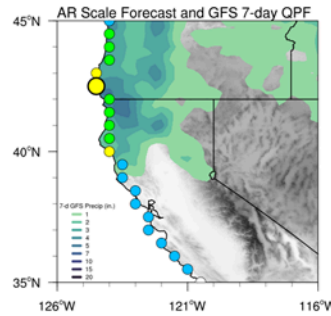
GFS IVT & SLP Valid: 4 AM Sun 29 Dec



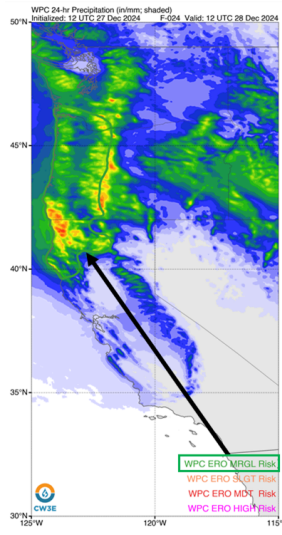
GFS Ensemble Initialized: 12Z Fri 12/27/24



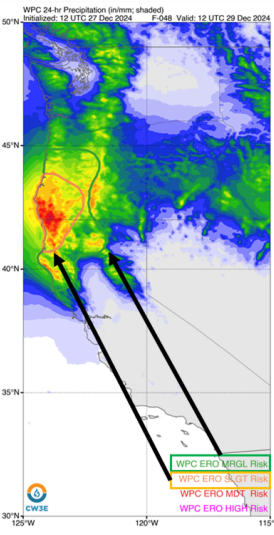
Location: 42.5°N 124.5°W



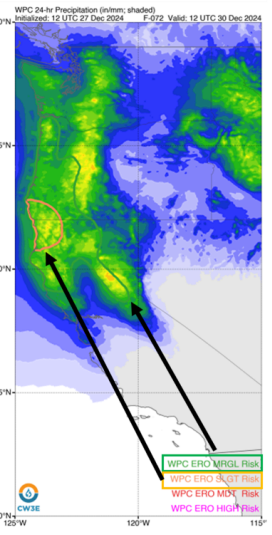
NWS WPC Day 1 QPF
4 AM 27 Dec - 4 AM 28 Dec



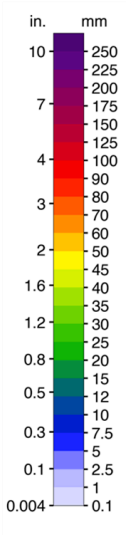
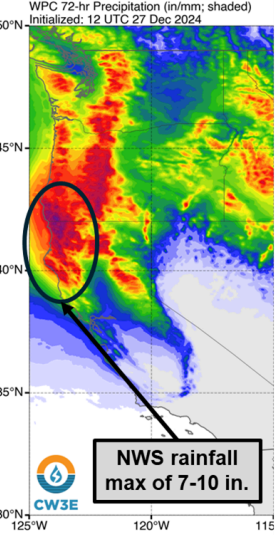
NWS WPC Day 2 QPF
4 AM 28 Dec - 4 AM 29 Dec



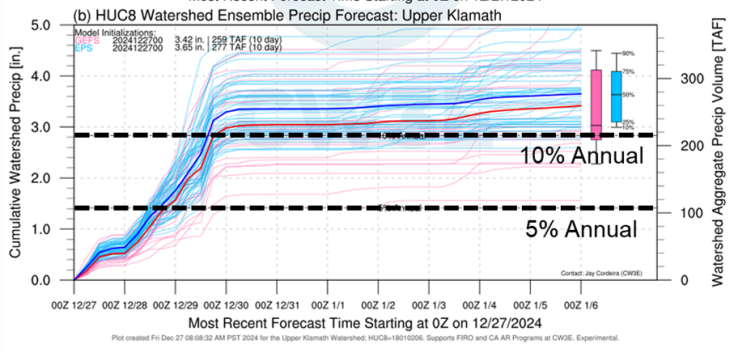
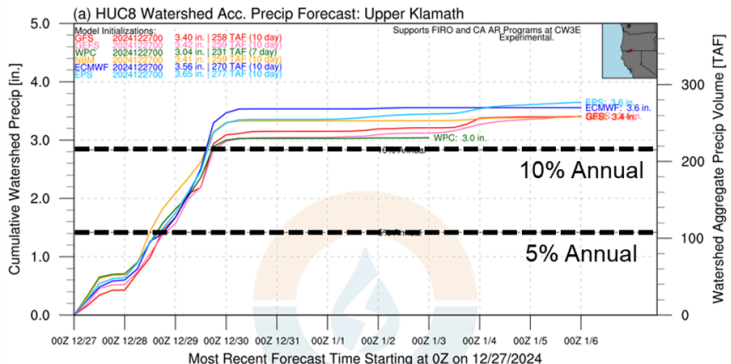
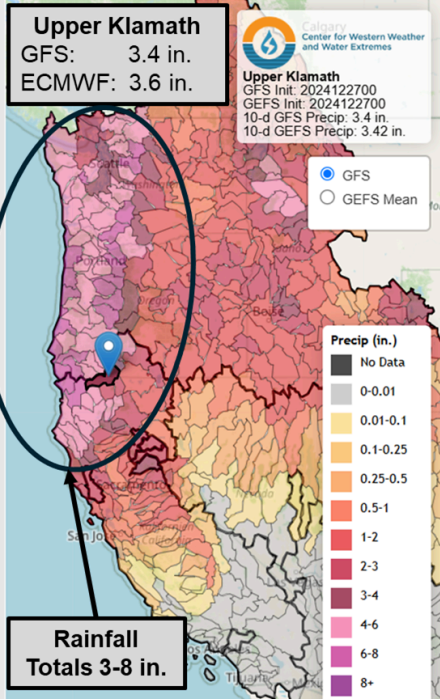
NWS WPC Day 3 QPF
4 AM 29 Dec - 4 AM 30 Dec



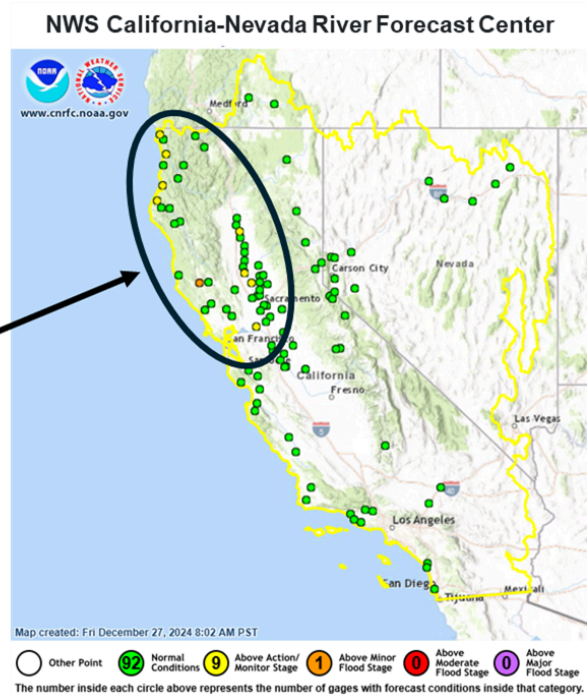
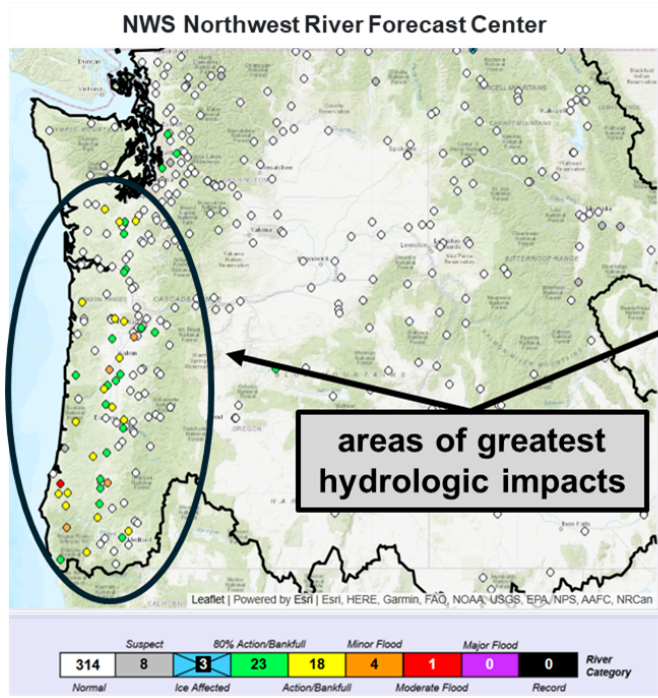
NWS WPC 72-hour QPF
4 AM 27 Dec - 4 AM 30 Dec



10-day GFS/GEFS Precipitation Forecasts

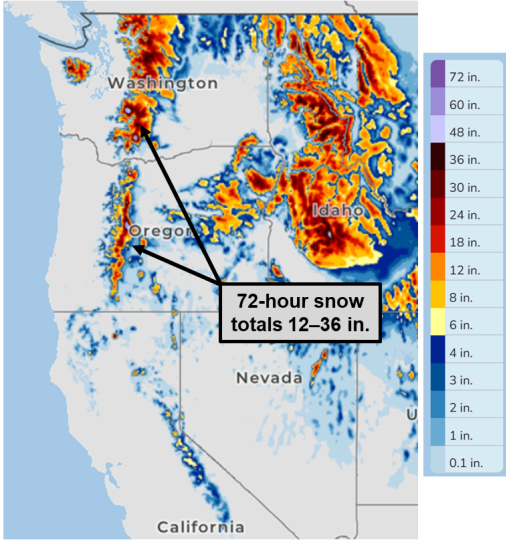


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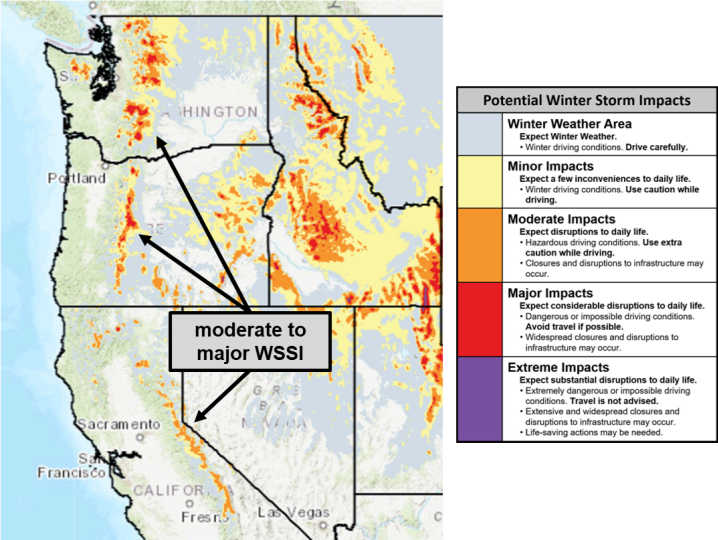


areas of greatest hydrologic impacts

NWS 72-hour Snowfall Forecast
4 AM Fri 27 Dec – 4 AM Mon 30 Dec



NWS Winter Storm Severity Index
4 AM Fri 27 Dec – 4 AM Mon 30 Dec



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 S. Bartlett
smbartlett@ucsd.edu