

Quick Look at Atmospheric River Impacting Oregon and Northern California

Updated: 1 Jan 2025

An atmospheric river (AR) will bring heavy rain to portions of Oregon and Northern California today through Friday. A shift in the weather pattern may bring drier conditions to the western US next week.

Forecast Highlights:

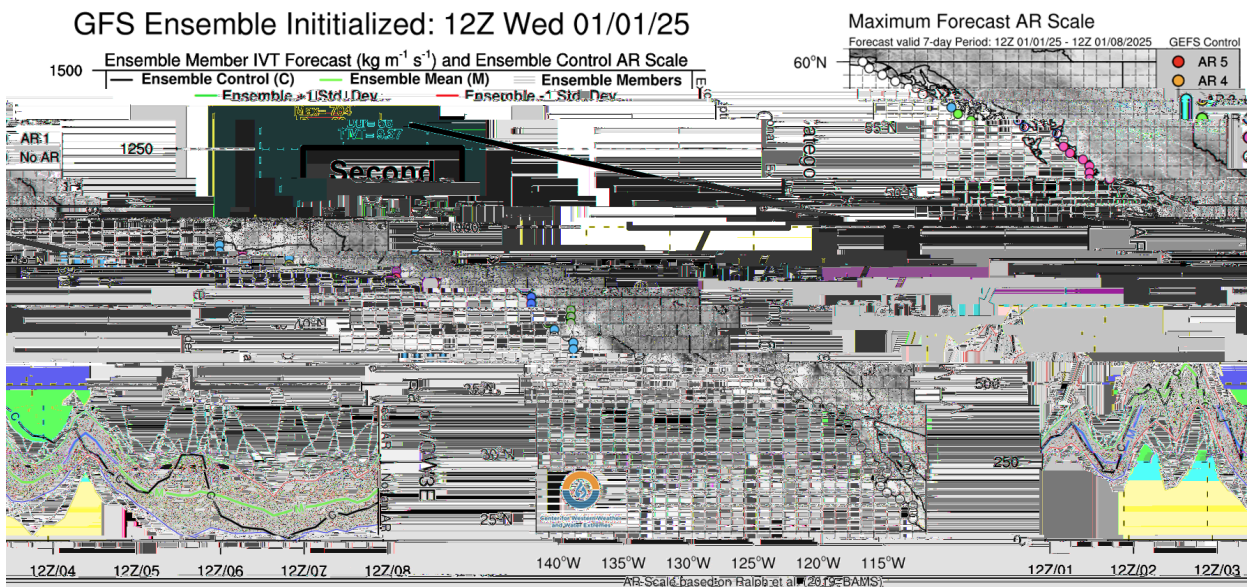
- A weak AR associated with a zonally extensive corridor of subtropical moisture made landfall early this morning near the Oregon–California border.
- After the AR moves onshore and begins to weaken, a secondary low-pressure system is forecast to develop on the cold side of the AR and drive a second pulse of stronger moisture transport to coastal Oregon and Northern California.
- The 12Z GEFS control member is forecasting AR 2–3 conditions (based on the Ralph et al. 2019 AR Scale) along the coast between Humboldt County, CA, and Lincoln County, OR.
- Uncertainty in the evolution of the secondary cyclone is leading to uncertainty in the duration and magnitude of AR conditions. About 30% of GEFS members are forecasting an AR 3 in Coos County, OR, but a majority of ensemble members are forecasting an AR 2.
- The NWS Weather Prediction Center (WPC) is forecasting at least 3–7 inches of total precipitation in the Northern California Coast Ranges, Southern Oregon Coast Ranges, and Oregon Cascades through early Sat 4 Jan, with higher amounts possible near the Oregon–California border.
- The WPC has issued a **marginal risk (≥ 5%; level 1 of 4)** excessive rainfall outlook (ERO) for the Southern Oregon and Northern California Coast Ranges today into early Fri 3 Jan. The region of marginal flood risk is forecast to expand into the Northern Sierra Nevada foothills Fri 3 Jan into early Sat 4 Jan.
- Twelve stream gages in western Washington, western Oregon, and Northern California are forecast to rise above action/bankfull stage over the next 5 days, and one stream gage is forecast to rise above minor flood stage.
- Extended range and subseasonal forecast products are indicating the potential for a regime change and drier conditions over the US West Coast early next week.
- IRI's North American Weather Regime tool is showing a moderate-to-high likelihood (> 50% probability) of West Coast Ridge conditions developing on Sun 5 Jan and continuing through mid-January. The Climate Prediction Center's 8–14 Day outlook is showing increased odds of below-normal precipitation over the western US during 8–14 Jan, particularly over California.

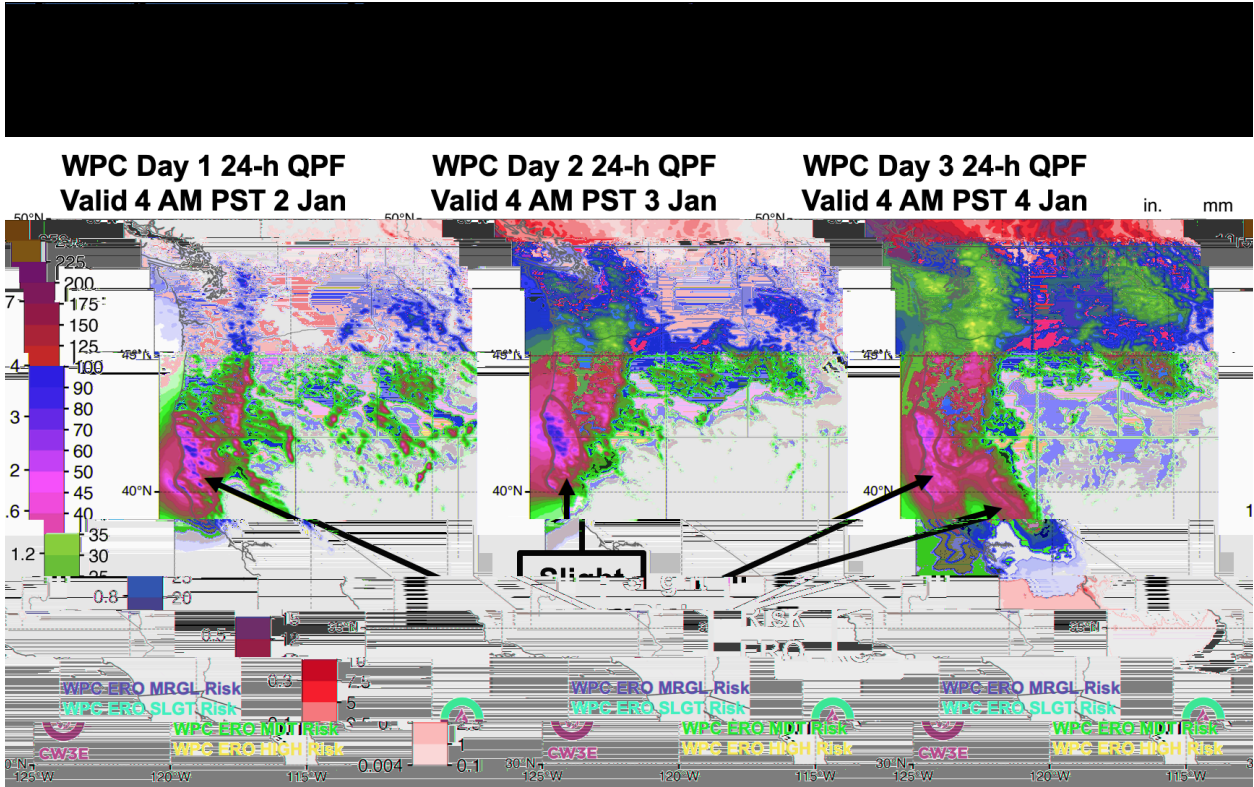
Stay alert to official NWS forecasts, watches, and warnings at [weather.gov](https://www.weather.gov) and follow guidance from local emergency management officials

GFS IVT & SLP: Valid 4 AM PST 1 Jan and 1 AM PST 3 Jan

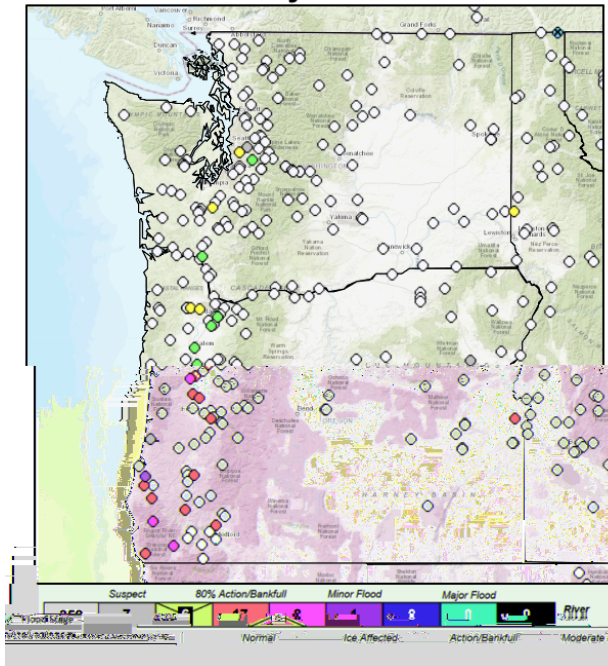


GFS Ensemble Initialized: 12Z Wed 01/01/25

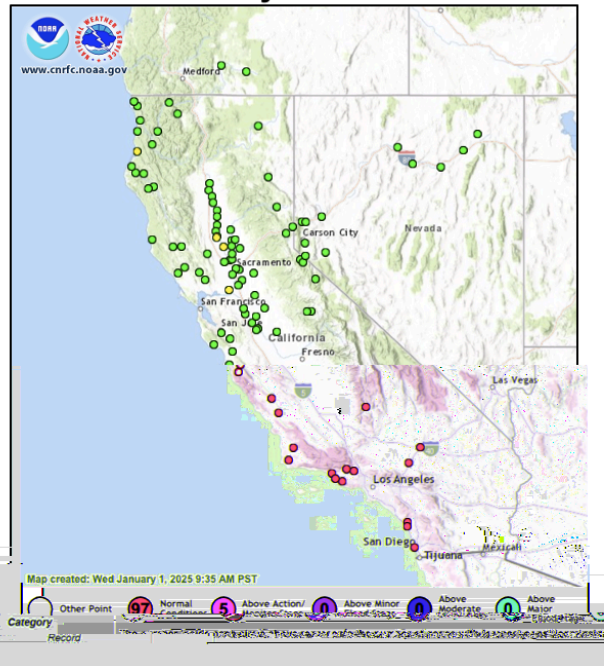


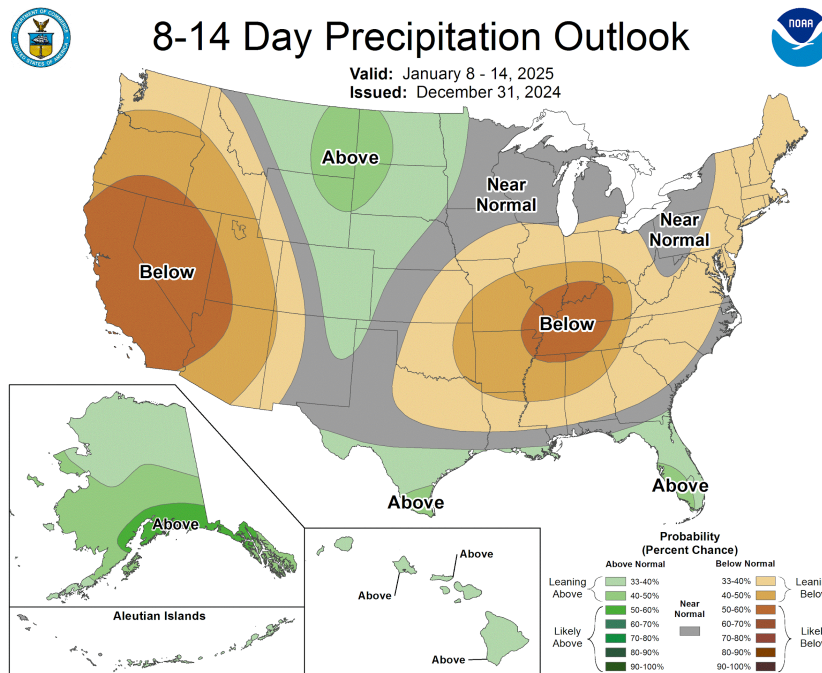
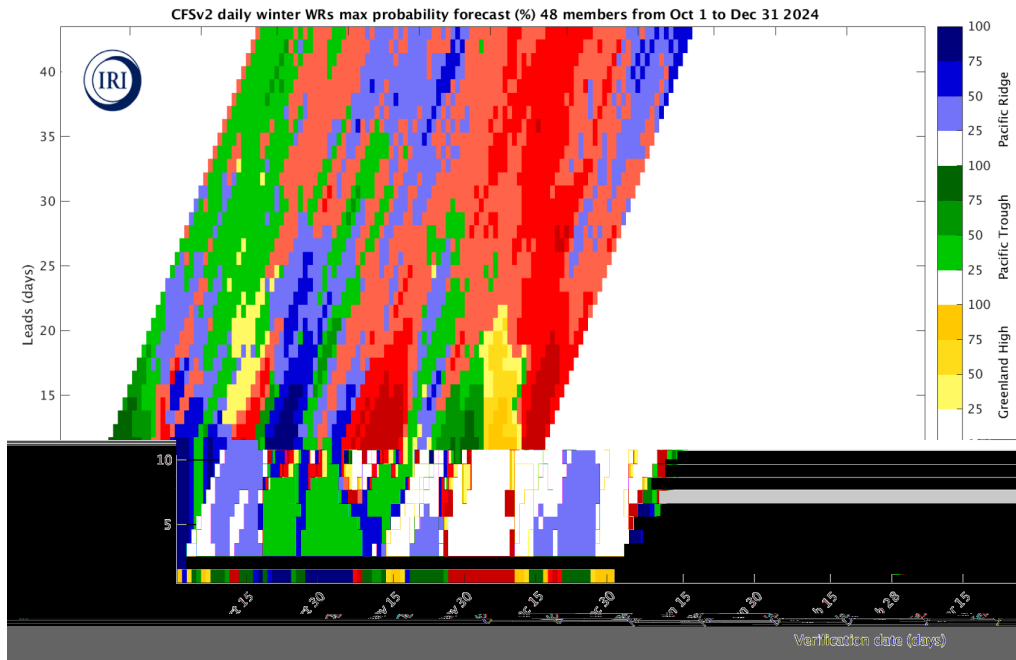


NWRFC 10-day River Forecasts



CNRFC 5-day River Forecasts





Additional Considerations:

- Visit nwrfc.noaa.gov/ cnrfc.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:
<https://cw3e.ucsd.edu/iwv-and-ivt-forecasts/>

Update by C. Castellano
c1castellano@ucsd.edu