



Quick Look at the Atmospheric River Impacting the US West Coast

Updated: 20 November 2024

A strong atmospheric river, the remnants of the “bomb cyclone,” and a future secondary cyclone will continue to impact the Pacific Northwest and Northern California into Sat 23 Nov.

Forecast Highlights:

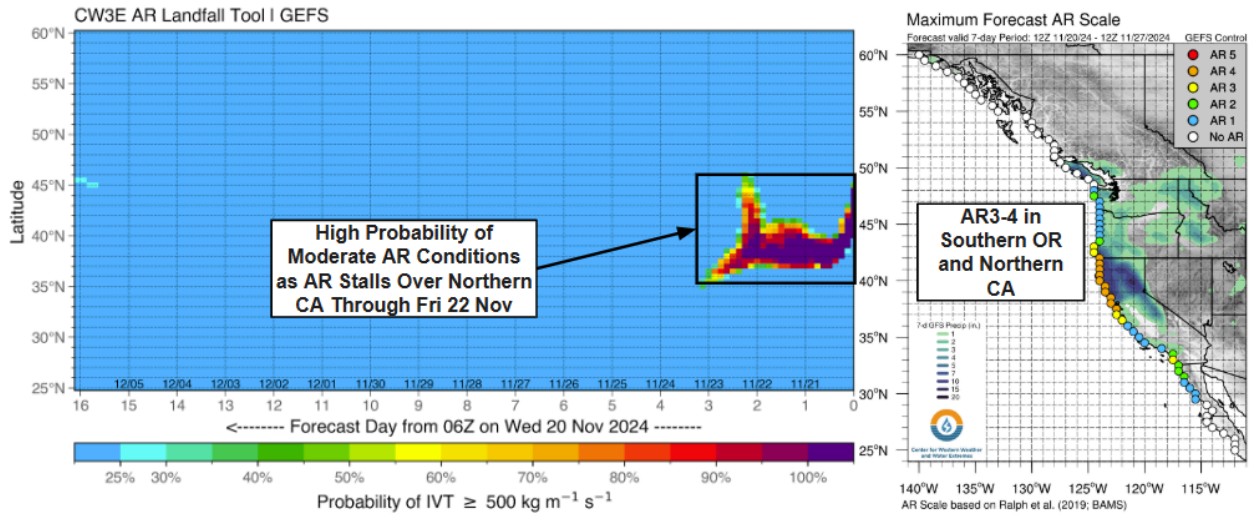
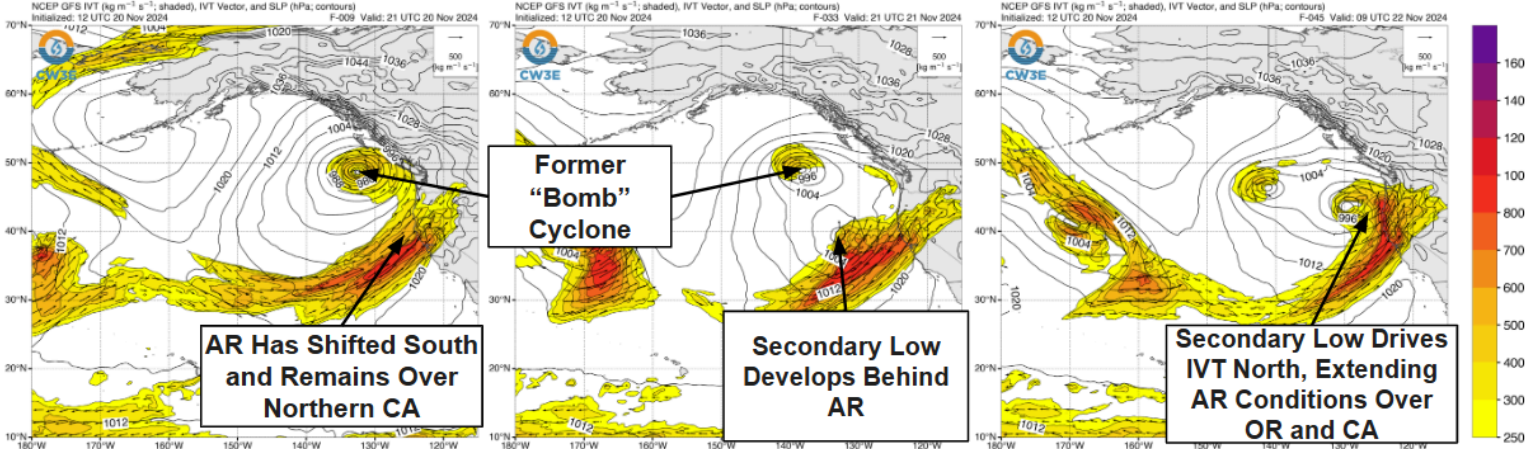
- A strong atmospheric river moved onshore over the Pacific Northwest yesterday and has slowly progressed down the coast over Northern California, where it is forecast to remain until Sat 23 Nov.
- A secondary surface cyclone is forecast to develop off the Northern California coast tomorrow (Thu 21 Nov), bringing a second wave of high IVT into Northern California and Southern Oregon.
- CW3E’s AR Landfall tool derived from both the GEFS and EPS models contain very high confidence (>95%) in moderate AR conditions (>500 kg m⁻¹ s⁻¹) continuing over Northern California into Fri 22 Nov.
- The GEFS model is forecasting AR3-4 conditions from the Bay Area to Southern Oregon through Fri 22 Nov; several members contain AR5 conditions in Northern California. There is generally good agreement amongst ensemble members regarding duration of the event and timing of maximum IVT.
- The NWS/Weather Prediction Center (WPC) is forecasting at least 5 inches of additional precipitation over much of northern California, including 10+inches over portions of the Coast Ranges, Klamath Mountains and Northern Sierra Nevada over the next 5 days.
- Storm-total precipitation is forecast to exceed 30 percent of the normal water year total precipitation over portions of Northern California.
- NWS WPC has issued a high risk (70%) excessive rainfall outlook (ERO) over Humboldt county for Thu 21 Nov into early Fri 22 Nov, and a moderate risk (>40%) ERO over the remaining portions of the Northern California Coast Ranges and Northern Sierra Nevada for the next 3 days.
- River and stream levels have risen across coastal Pacific Northwest and Northern California and are forecast to continue rising throughout the event. Currently, two CNRFC gauges are forecast to rise above flood stage, including one station, Eel River at Fernbridge, forecast to exceed moderate flood stage midday Friday.
- Upwards of 12 inches of snow have fallen over the Klamath Mountains in 6 hours on Wednesday morning (20 Nov). The NWS is forecasting an additional 18-24 inches of snow for 20-23 Nov.
- The NWS Probabilistic Winter Storm Severity Index indicates high probabilities (40-70%) of “extreme” impacts over the Klamath Mountains, highlighting dangerous travel conditions.

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

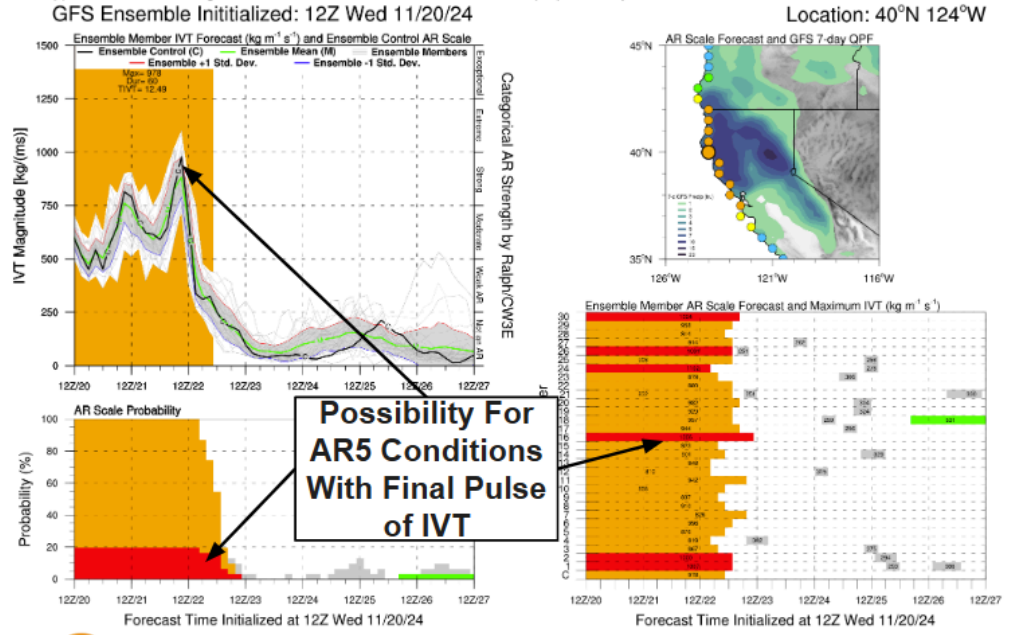
Valid: 1 PM PT Wed 20 Nov

Valid: 1 PM PT Thu 21 Nov

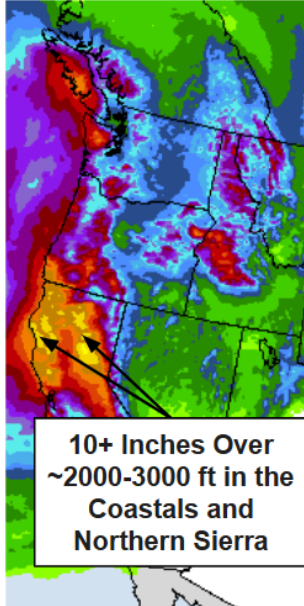
Valid: 1 AM PT Fri 22 Nov



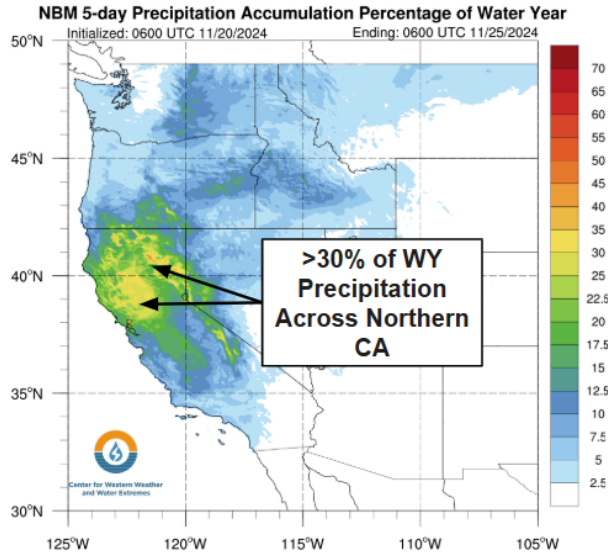
Forecasts support FIRO/CA-AR Program and NSF #2052972 | Intended for research purposes only



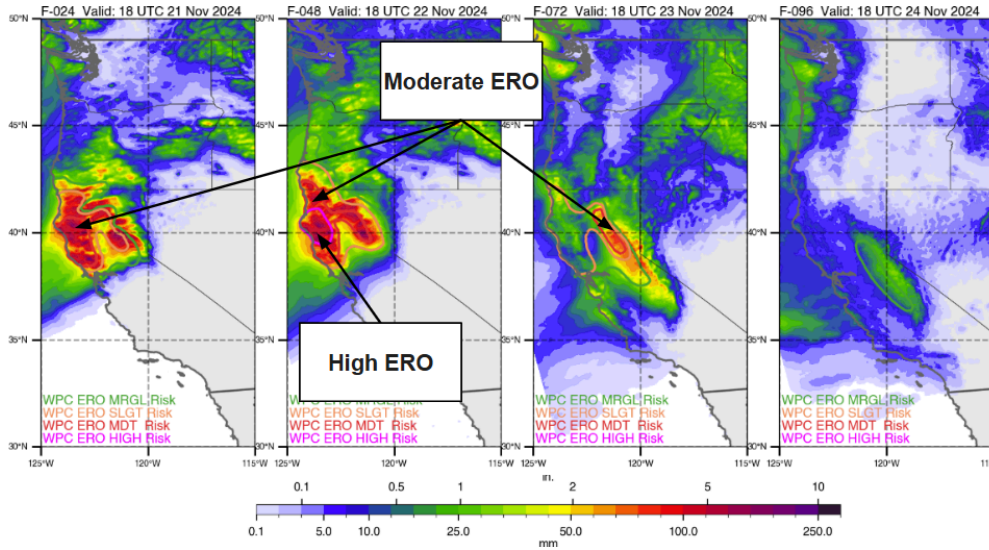
WPC 5-Day QPF: Period Ending 4 PM PT Tue 26 Nov



NBM 5 Day Accumulation Percentage of Water Year



WPC Days 1-4 QPF: Periods Ending 10 AM PT 21-24 Nov



Additional Considerations:

- Visit <https://www.weather.gov/nwrfc/> and <https://www.weather.gov/cnrfc/> for specific river and stream forecasts and <https://www.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/>

Update by M. Steen
msteen@ucsd.edu

Stay tuned to the CW3E webpage for a full AR Update