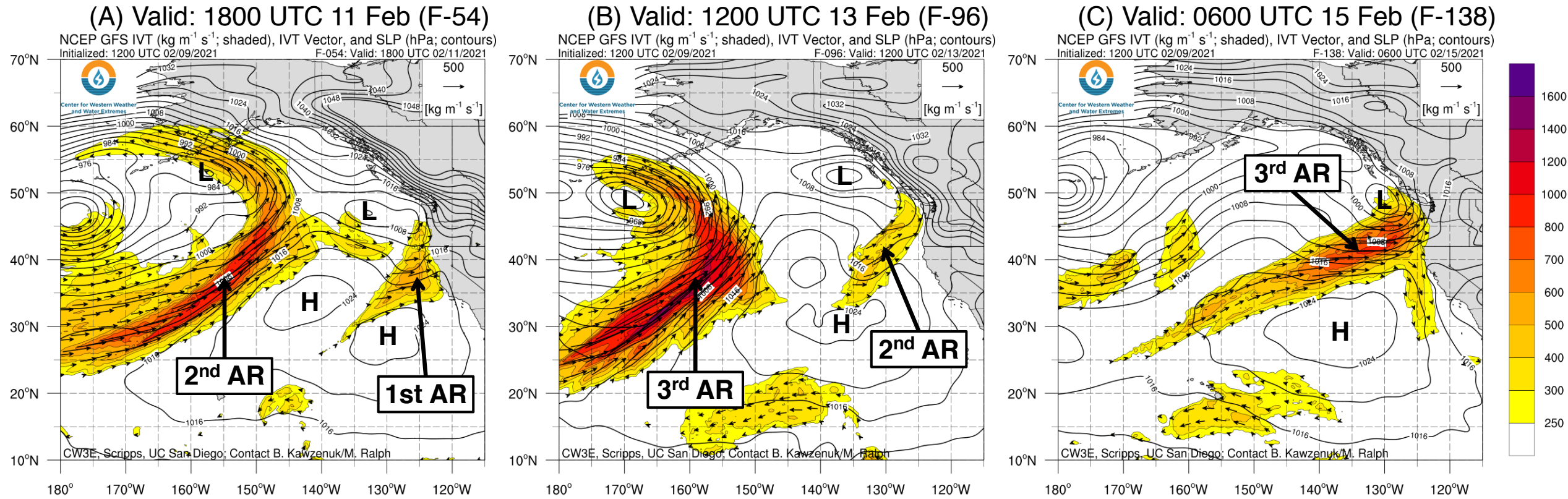


Unsettled Weather Pattern Forecast to Bring Rain/Snow to Western U.S.

- A series of low-pressure systems and associated atmospheric rivers (ARs) are forecast to develop over the North Pacific Ocean and move toward the U.S. West Coast during the next 7 days
- The first two systems are forecast to bring brief periods of weak AR conditions to coastal areas, as well as light-to-moderate precipitation amounts
- The last system may bring a stronger, longer-duration AR event to Northern California and Oregon, but forecast uncertainty is still high at this time
- At least 1–3 inches of precipitation are forecast in the Pacific Coast Ranges, Sierra Nevada, Cascades, and higher terrain in north-central Utah, western Wyoming, and western Colorado during the next 7 days
- More than 4 inches of total precipitation and significant snowfall accumulations are possible in some locations

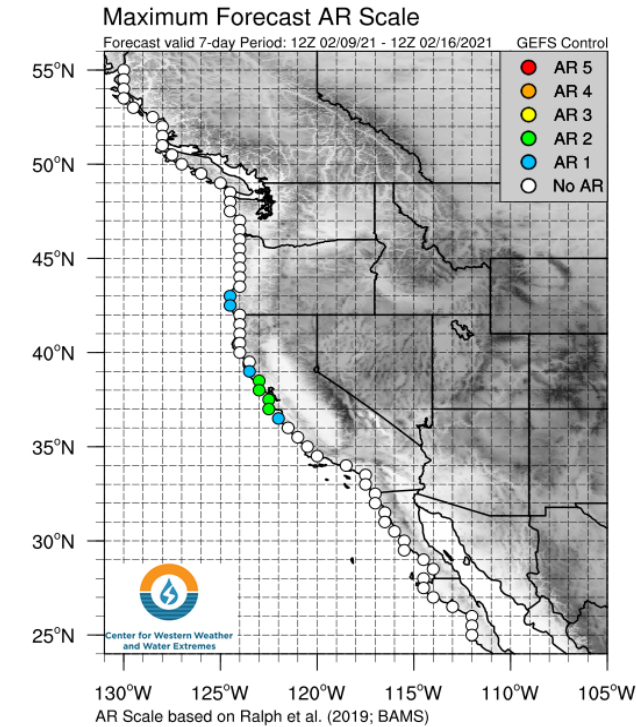
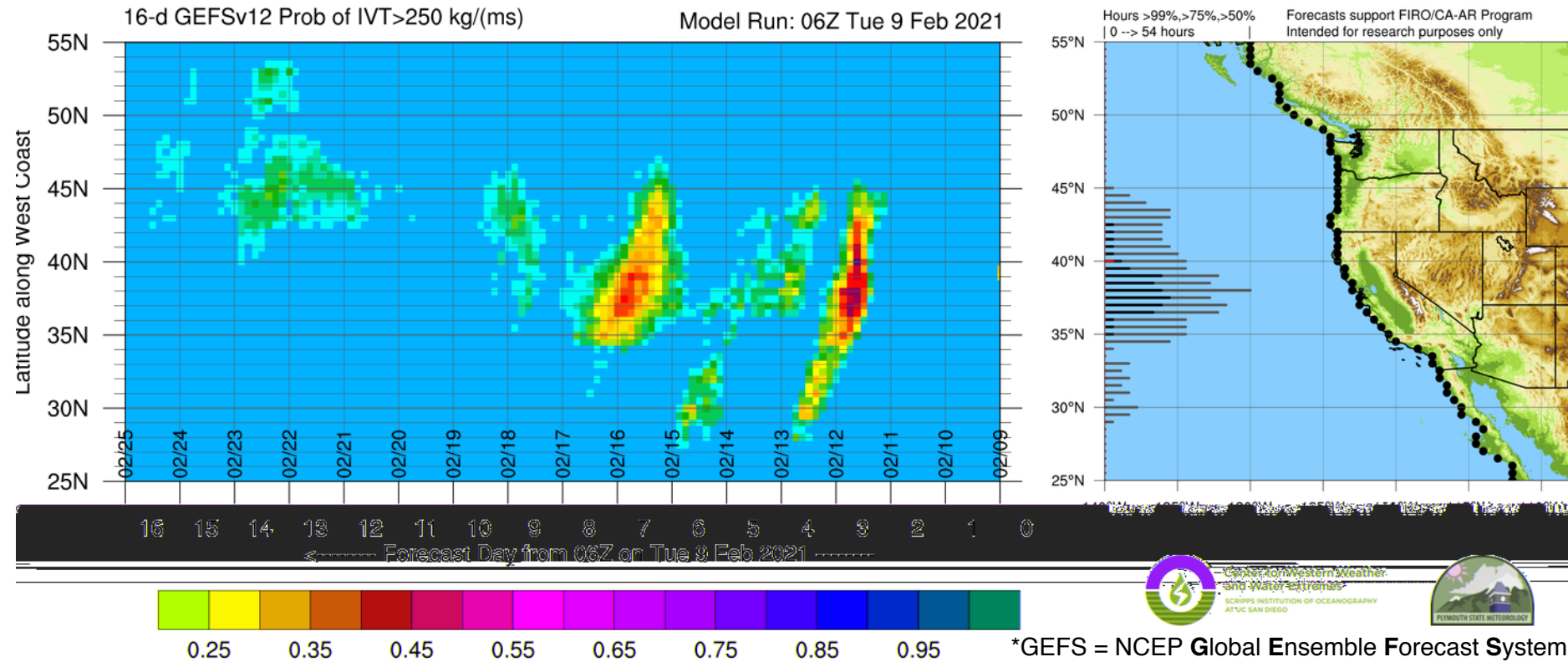
GFS IVT & SLP Forecasts



- A series of low-pressure systems and associated ARs are forecast to develop over the North Pacific Ocean and move toward the U.S. West Coast
- The first and second ARs are forecast to rapidly weaken as they approach the U.S. West Coast (Figures A and B)
- The third AR is forecast to retain its strength and make landfall on the poleward side of a surface anticyclone (Figure C)
- If this forecast verifies, the orientation of the AR (zonal) and the IVT vectors (parallel to the AR and normal to the terrain) may lead to a longer-duration and more impactful event over Northern California and Oregon

Probability of AR Conditions Along Coast

AR Scale

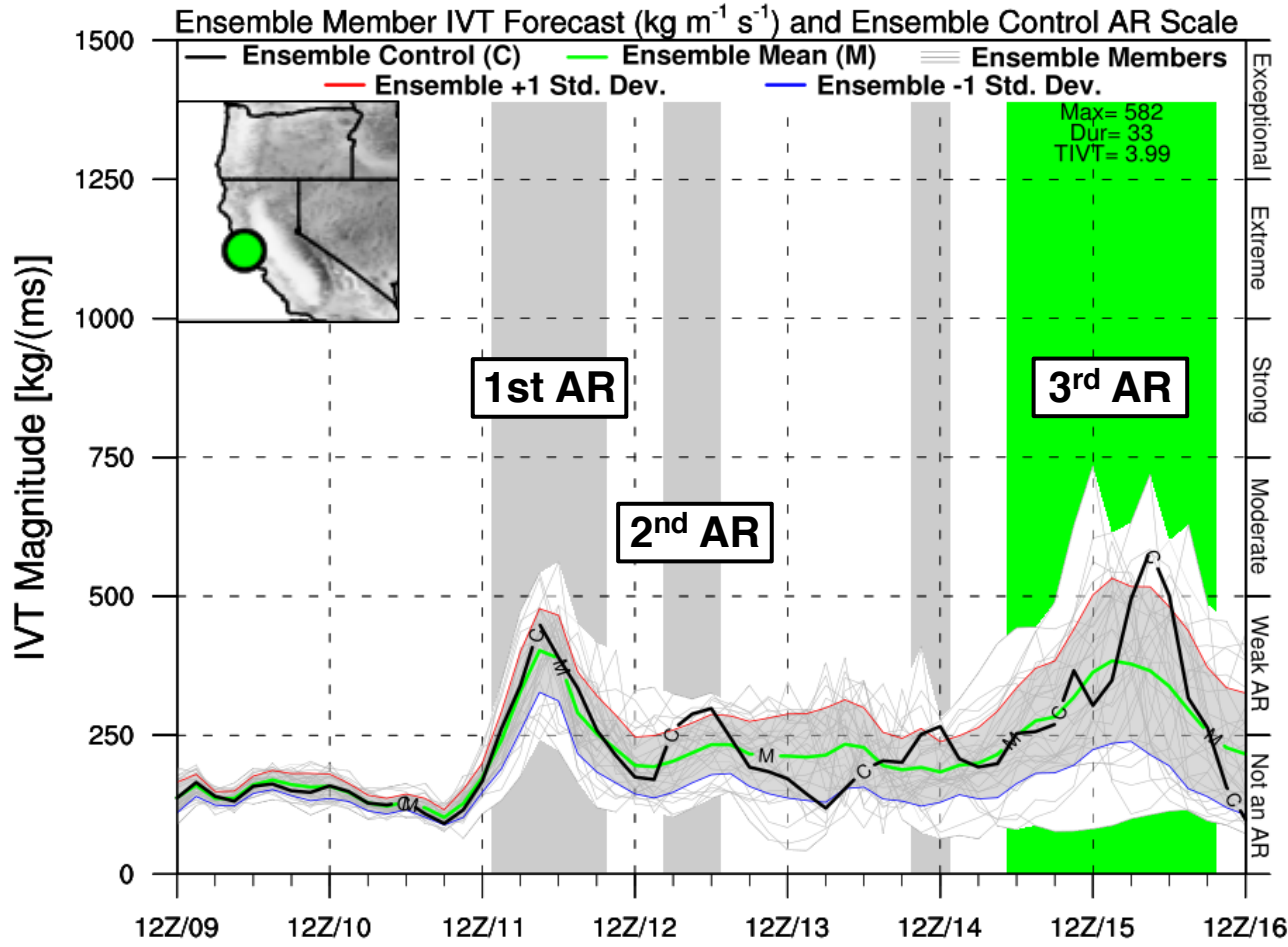


*GEFS = NCEP Global Ensemble Forecast System (United States)

- The 06Z GEFS is showing high confidence (> 80% probability) in a brief period of AR conditions ($IVT > 250 \text{ kg m}^{-1} \text{ s}^{-1}$) along the U.S. West Coast between 18Z 11 Feb and 06Z 12 Feb in association with the first system
- Weak AR conditions are also possible with the second system on 12–13 Feb, but forecast confidence is low
- A more prolonged period of AR conditions is possible (> 60% probability) with the third system, particularly over Central and Northern California, where AR 2 conditions (based on the Ralph et al. 2019 AR Scale) are possible

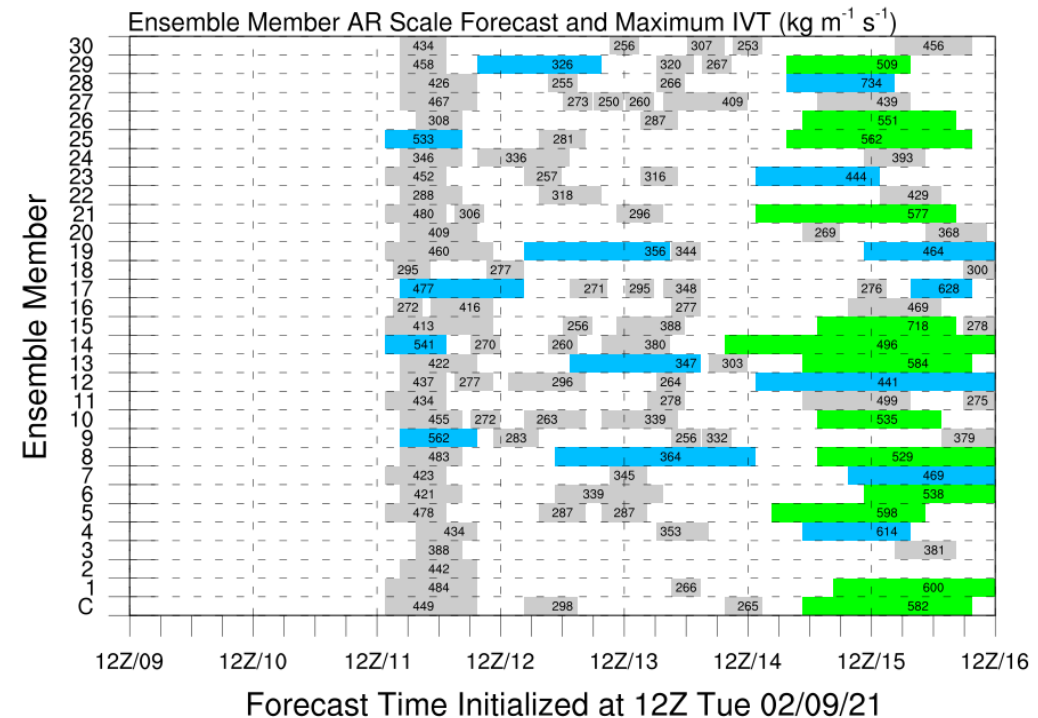
GEFS AR Scale and IVT Forecasts

GFS Ensemble Initialized: 12Z Tue 02/09/21



Categorical AR Strength by Ralph/CW3E

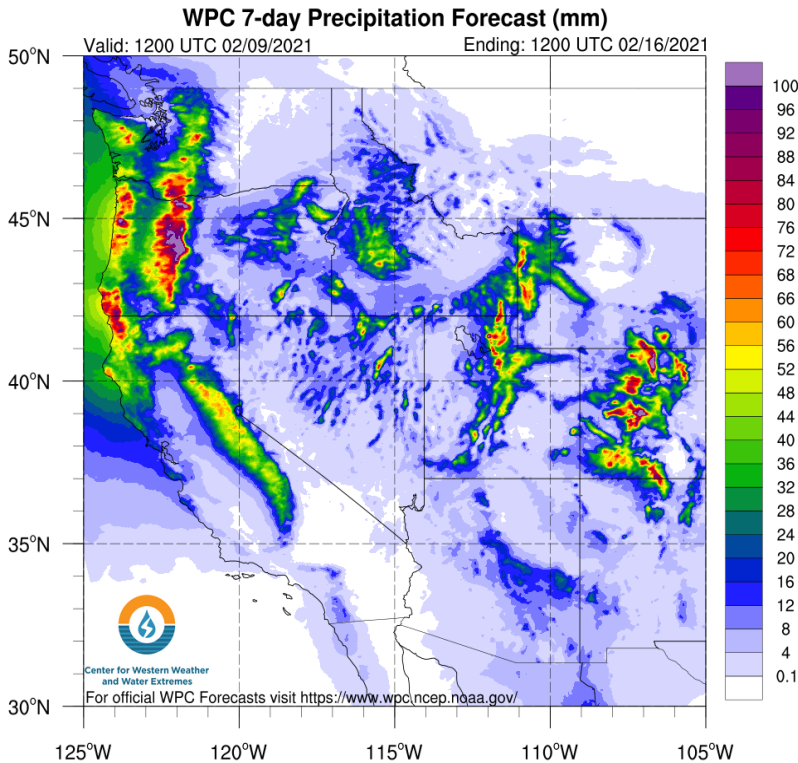
- 12Z GEFS control run is currently forecasting an AR 2 at 38°N, 123°W (near Point Reyes) in association with the third system, but there is a large degree of uncertainty in the timing, magnitude, and duration of AR conditions
- 13/31 GEFS members (42%) are forecasting an AR 2 at this location
- Several GEFS members are forecasting an AR 1 in association with each of the first two systems



AR 1 AR 2 AR 3 AR 4 AR 5

Precipitation Impacts

WPC 7-day QPF: Valid 12Z 9–16 Feb



Mountain Snow by the End of the Week

Thursday - Friday

Impacts

- Chain controls
- Travel delays and slick roads
- Reduced visibility at times

Snow Levels

- 5000 to 6000 feet

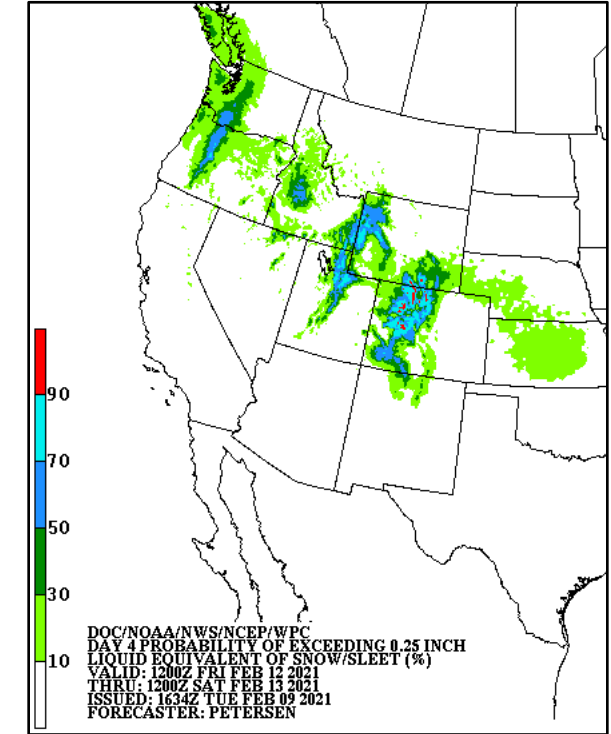
Timing

- Thursday - Friday: Moderate to heavy at times Thursday night through Friday morning.

Map showing snow levels in the Sierra Nevada region. Key locations and snow amounts are listed: Interstate 5 (8-12"), Lassen Park (8-12"), Donner Pass (6-8"), Echo Pass (4-6"), Carson Pass (6-8"), Ebbetts Pass (6-8"), Sonora Pass (6-8"), and Tioga Pass (4-6"). A color scale at the bottom indicates snow depth in inches from 1 to 36.

Issued: February 9, 2021
NWS Sacramento
Issued: February 9, 2021

WPC Day 4 Probability of Significant Snow/Sleet: Valid 12Z 12–13 Feb



Source: NOAA/NWS WPC,
<https://www.wpc.ncep.noaa.gov/>

- The NWS Weather Prediction Center (WPC) is currently forecasting at least 1–3 inches of precipitation over the Pacific Coast Ranges, Cascades, Sierra Nevada, and the higher terrain in north-central Utah, western Wyoming, and western Colorado during the next 7 days
- More than 4 inches of total precipitation are possible in some locations
- The first system is forecast to bring at least 6–12 inches of snow to portions of the Sierra Nevada
- Significant snowfall accumulations are also possible over portions of Utah, Wyoming, and Colorado as this system moves inland