

CW3E Winter Storm Outlook: 24 February 2023

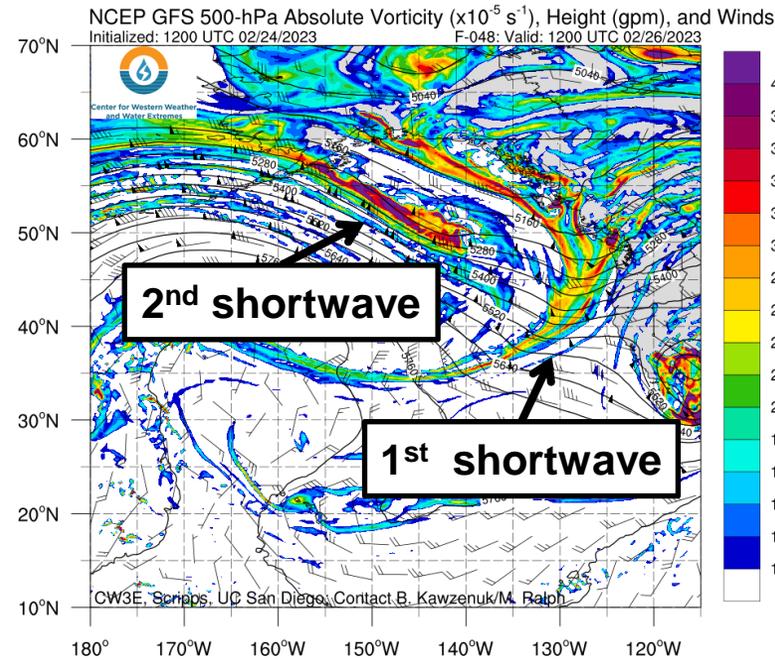
Winter Storm to Bring Additional Precipitation to the Pacific Northwest and California

- A period of unsettled weather will continue for the US West Coast, with a winter storm forecast to bring precipitation to Washington, Oregon, and California starting Sunday
- A mid-level trough is forecast to move quickly through the Pacific Northwest on Sunday, bringing precipitation primarily to the Olympic Peninsula and Cascades
- A second, stronger mid-level trough is forecast to develop over the Gulf of Alaska and shift towards the US West Coast late Sunday, bringing precipitation to locations along the Coast Ranges of Washington and Oregon, Northern California, and the Sierra Nevada early next week
- The National Weather Service (NWS) Weather Prediction Center (WPC) 5-day QPF totals are > 1.5 inch in the Olympic Peninsula and Northern Cascades, > 3 inches along the Coast Ranges of Oregon and Northern California, and > 5 inches for the Sierra Nevada through Wednesday
- Significant snowfall accumulation is expected in the Cascades and Sierra Nevada as a result of this cold winter storm, with freezing levels dropping below 1,500 meters in the Sierra Nevada during this event
- This storm will provide an additional boost to the snowpack in the Sierra Nevada, which is already well above normal for the season as a result of a prolonged period of active weather along the US West Coast
- The 00Z ECMWF is forecasting higher watershed precipitation totals (3-4inches) along the Coast Ranges of Washington and Oregon and in the northern Cascades than the GFS, while the GFS is forecasting higher watershed precipitation totals (4-6 inches) along the Sierra Nevada as compared to the ECMWF

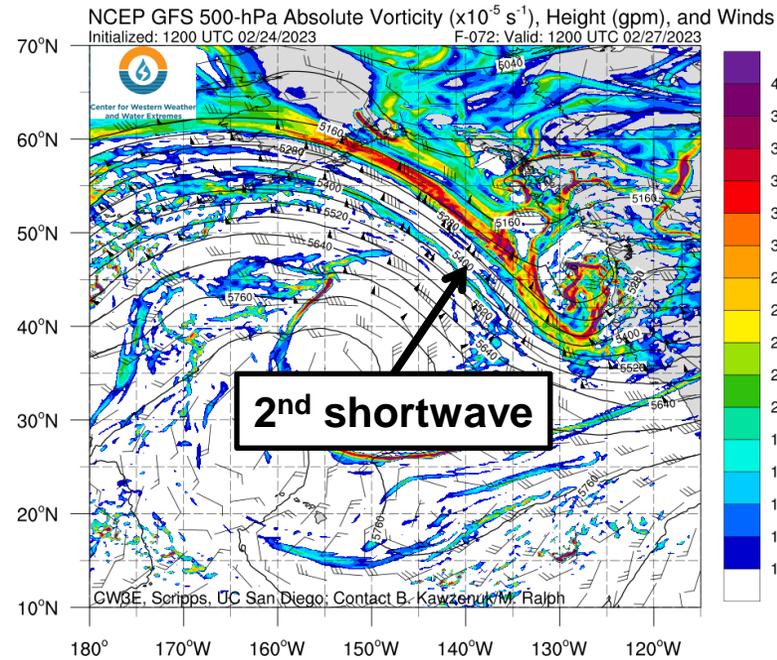
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GFS Model Forecast 500-hPa Vorticity, Height, and Wind

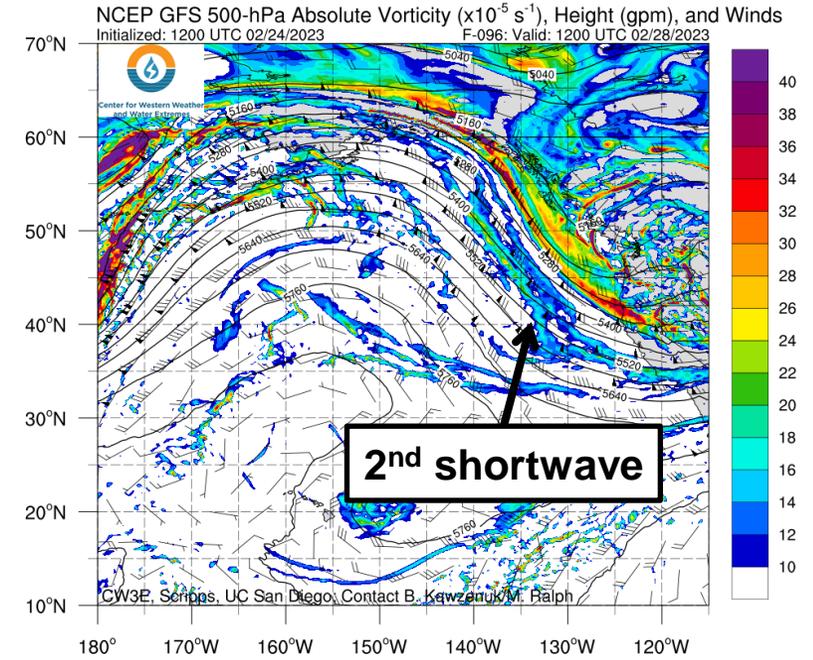
Valid: 4 AM PST 26 Feb (F-48)



Valid: 4 AM PST 27 Feb (F-72)



Valid: 4 AM PST 28 Feb (F-96)

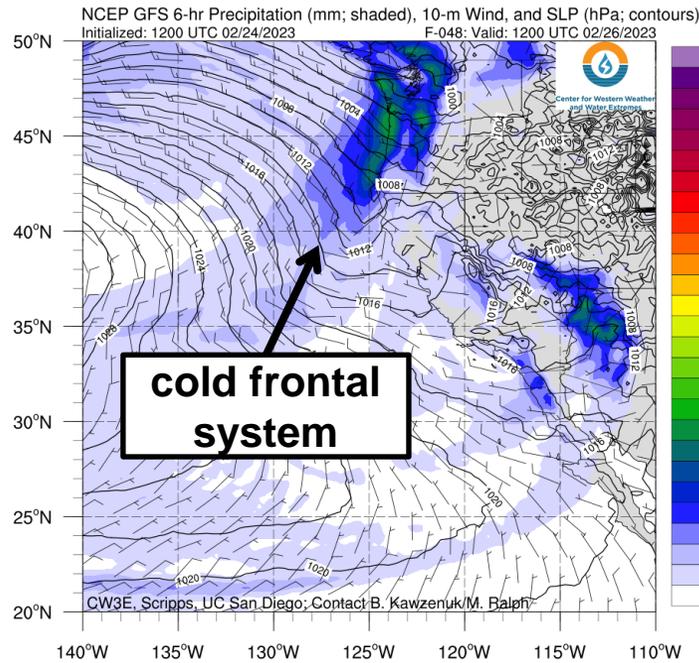


- A mid-level shortwave trough is forecast to move onshore over the Pacific Northwest on Sunday, bringing unsettled weather to the Olympic Peninsula and the Northern Cascades
- The second, stronger shortwave trough is forecast to move towards the US West Coast from Sunday into Monday
- This second shortwave trough is forecast to develop into a strong cut-off low over the Southwest US next week

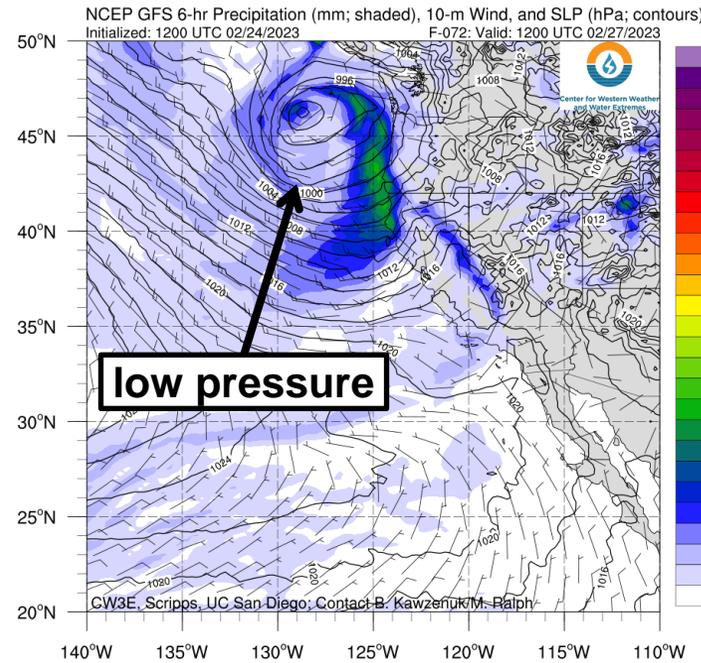
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GFS Model Forecast 6-hr Precipitation, 10-m Wind, and SLP

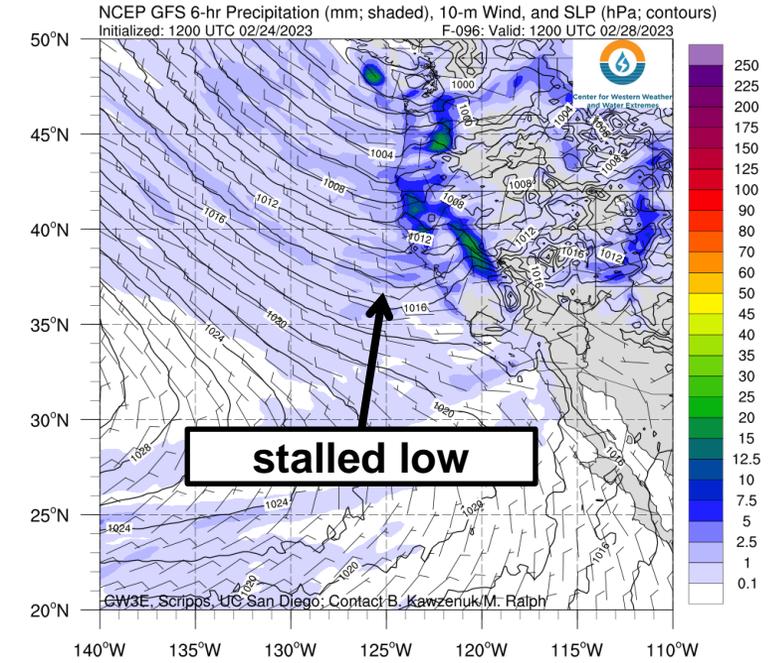
Valid: 4 AM PST 26 Feb (F-48)



Valid: 4 AM PST 27 Feb (F-72)



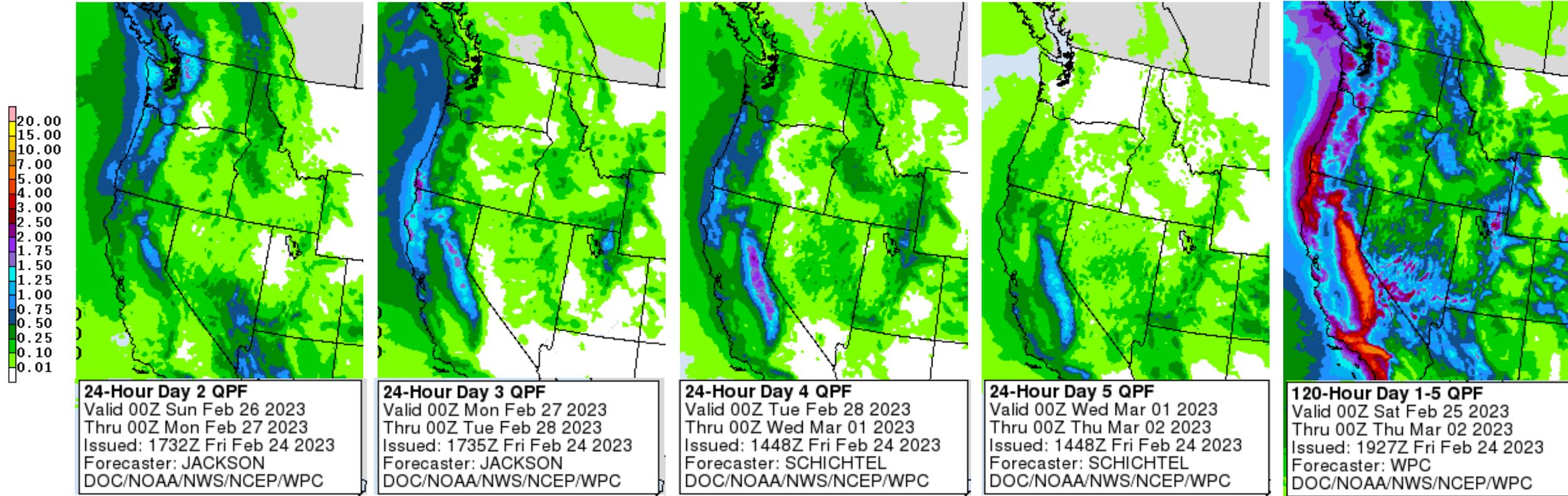
Valid: 4 AM PST 28 Feb (F-96)



- A weak frontal system is forecast to pass through Washington, Oregon and Northern California on Sunday, bringing precipitation to the Olympic Peninsula, coast ranges of Washington and Oregon, and the Northern Cascades
- A low-pressure system originating from the Gulf of Alaska is then forecast to move onshore in the Pacific Northwest and California late Sunday through Tuesday, bringing with it additional precipitation
- This surface low-pressure system will stall over the PNW on Monday and Tuesday, before dissipating over the region

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WPC Quantitative Precipitation Forecasts

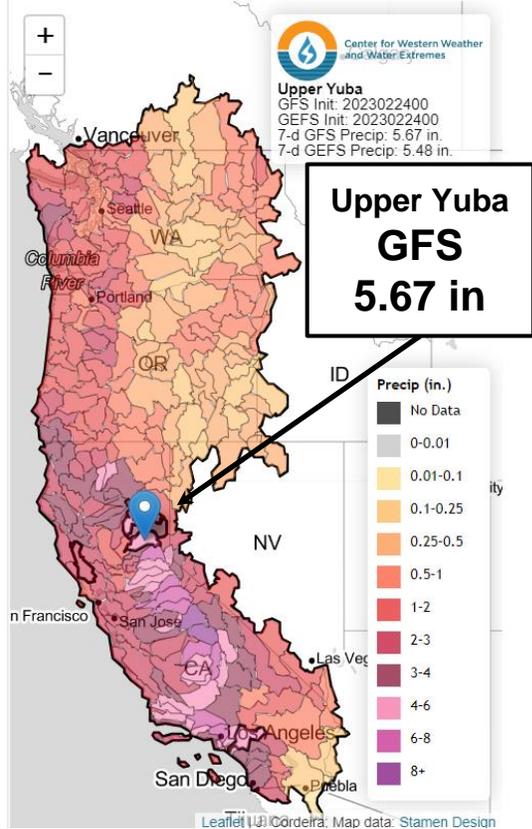


- Precipitation from this storm will accumulate in the Coast Ranges of Washington and Oregon and the Cascades (1-3 inches) late Saturday through Monday, followed by the highest accumulation in the Sierra Nevada (2-5 inches) Sunday through Wednesday
- NWS WPC's 5-day QPF totals are > 1.5 inches in the Olympic Peninsula and Northern Cascades, > 3 inches along the Coast Ranges of Oregon and Northern California, and > 5 inches for the Sierra Nevada through Wednesday

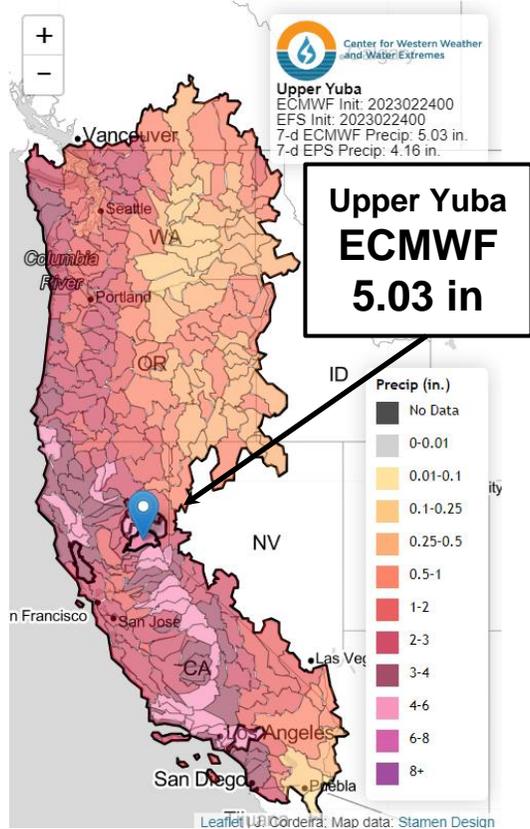
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7-day Watershed Precipitation Forecasts (Initialized 4 PM PT 23 Feb)

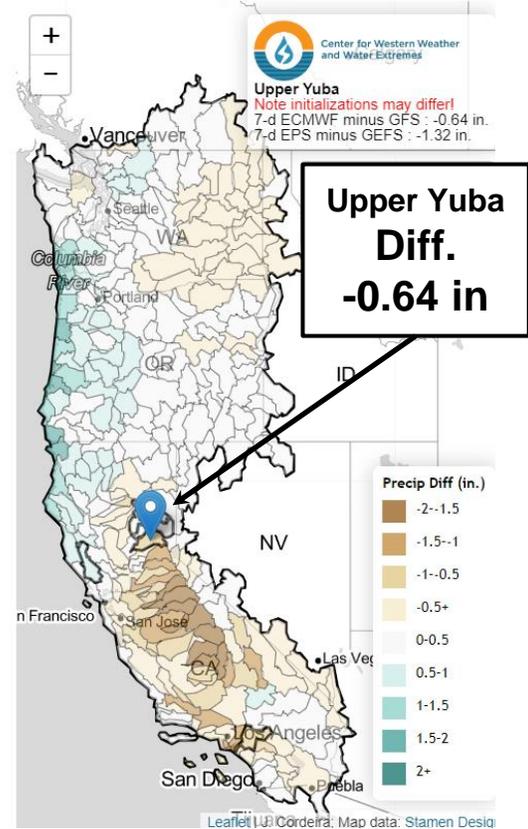
7-day GFS/GEFS Precipitation Forecasts



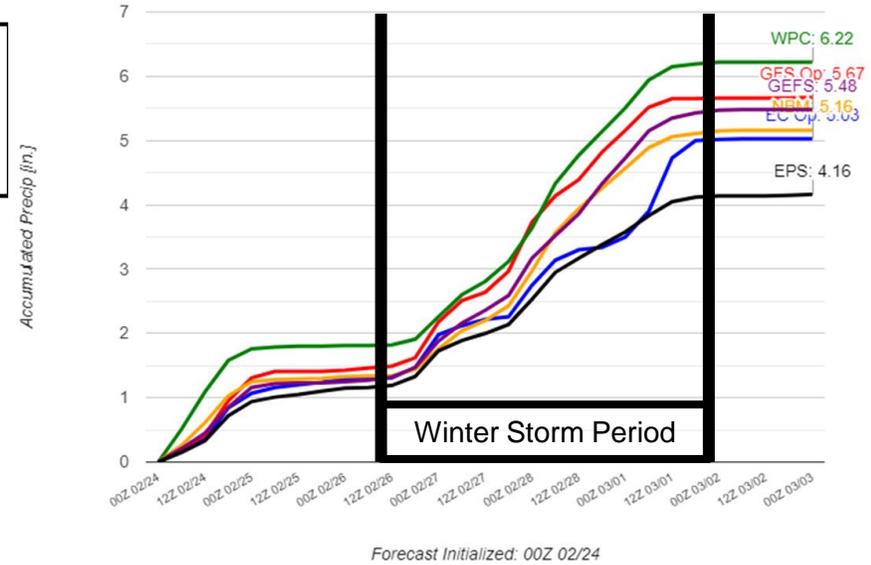
7-day ECMWF/EFS Precipitation Forecast



7-day Difference Precipitation Forecast



7-day Multi-Model QPF Comparison for Upper Yuba [in.]



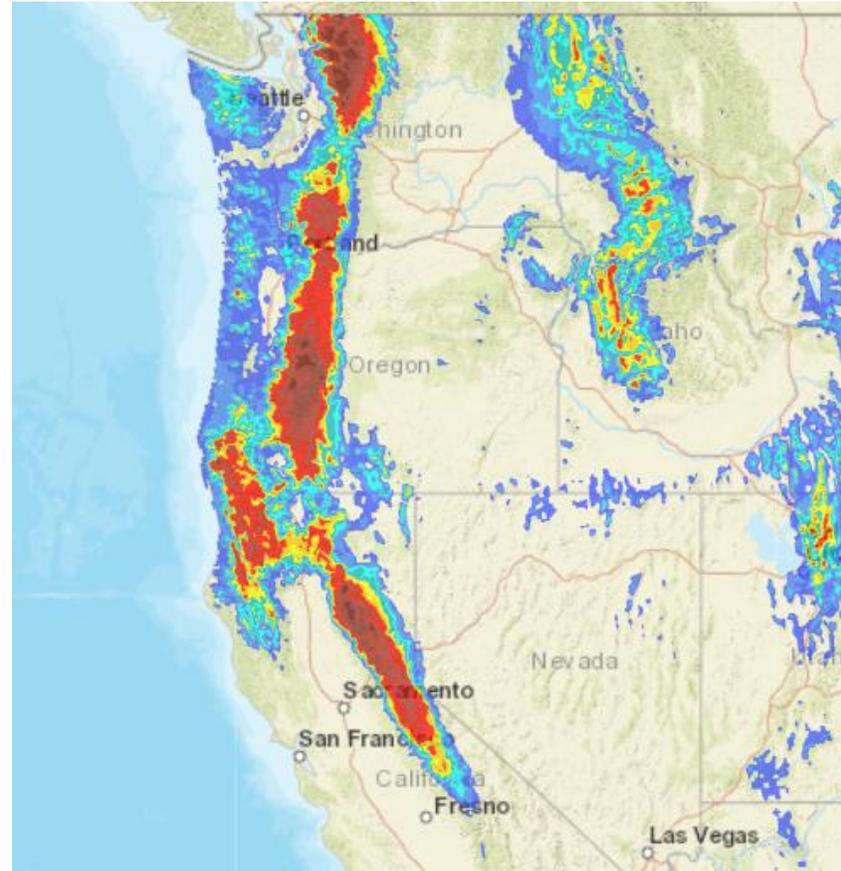
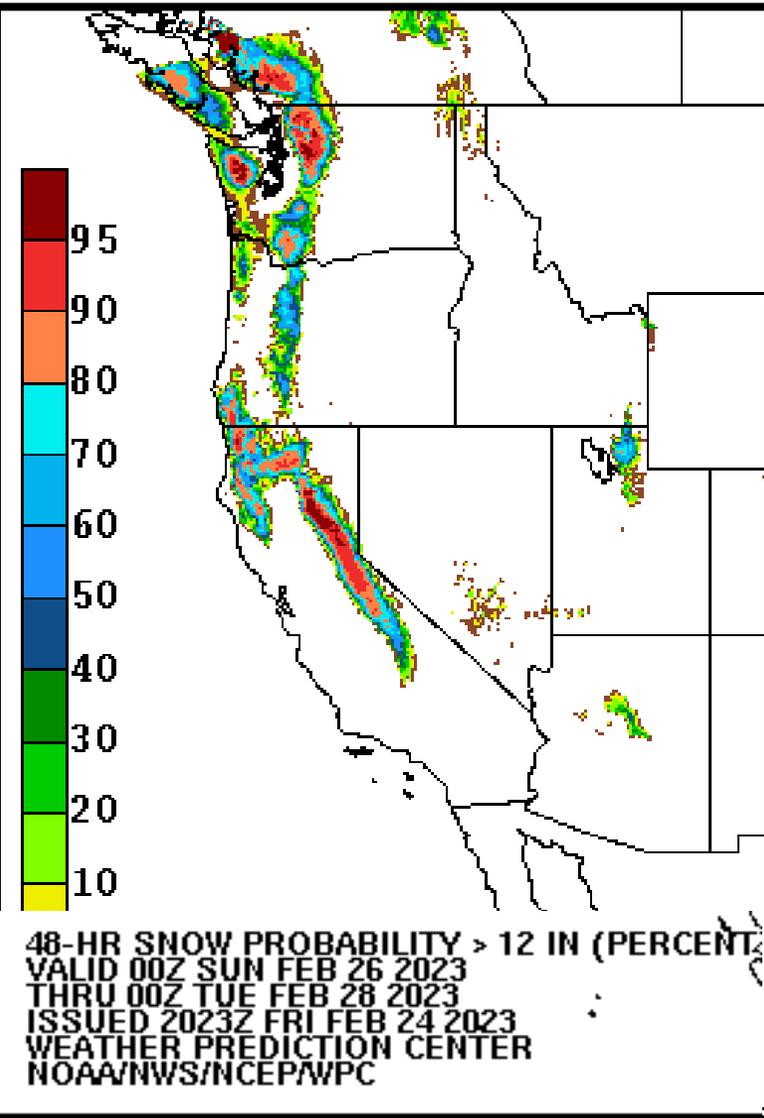
- The 00Z ECMWF is forecasting greater 7-day precipitation totals for watersheds along the Coast Ranges of Washington and Oregon and in the northern Cascades (green shading) than the 00Z GFS, while the GFS is forecast greater 7-day precipitation along the Sierra Nevada than the ECMWF (brown shading).
- The 00Z GFS is forecasting > 5.5 inches in the Upper Yuba watershed, while the ECMWF is forecasting > 5.0 inches

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WPC Winter Weather Forecasts

NWS WPC Experimental Probabilistic Winter Storm Severity Index – Moderate Impacts
Valid: 00 UTC 27 Feb

- Significant snowfall accumulation is expected in the Cascades and Sierra Nevada as a result of this cold winter storm
- NWS WPC 48-hr snow probability > 12 inches are highest (> 90%) for the Olympic Peninsula, Northern Cascades, and Sierra Nevada during the beginning of this winter storm
- NWS WPC's Probabilistic Winter Storm Severity Index has forecast the highest probabilities (> 90%) for Moderate Impacts along the Cascades, in the Klamath Mountains, and in the Sierra Nevada



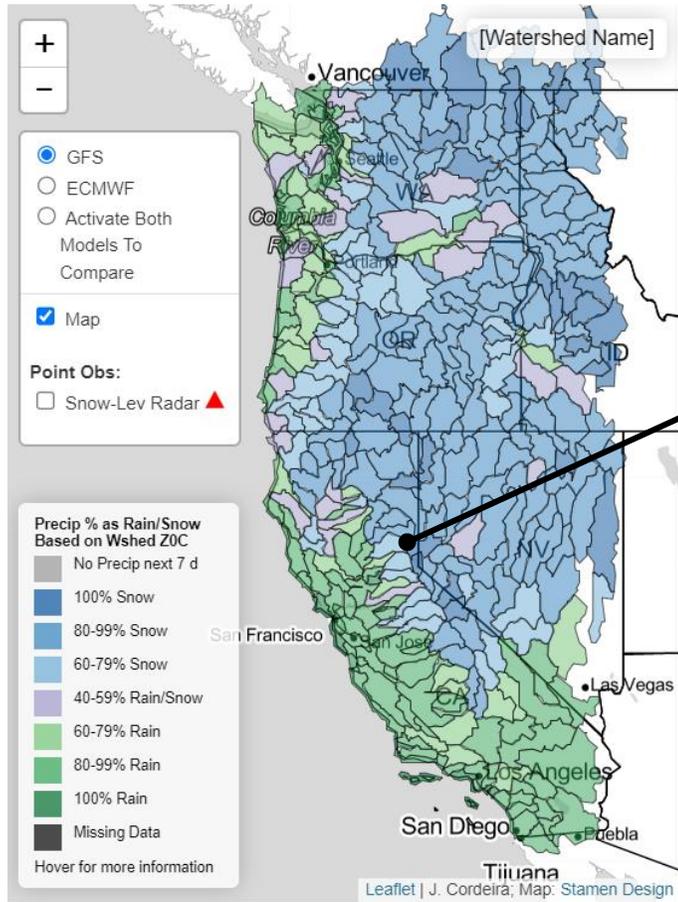
Moderate Impacts

Expect disruptions to daily life.

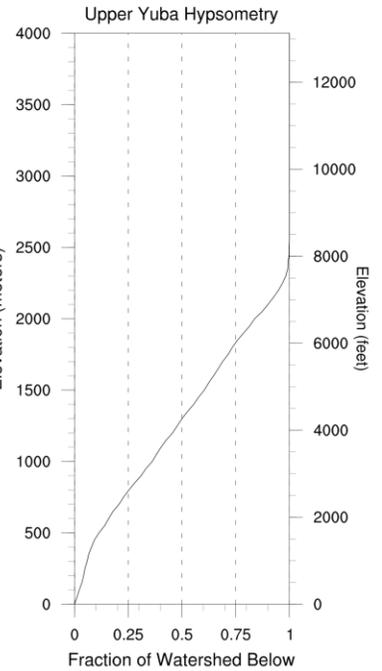
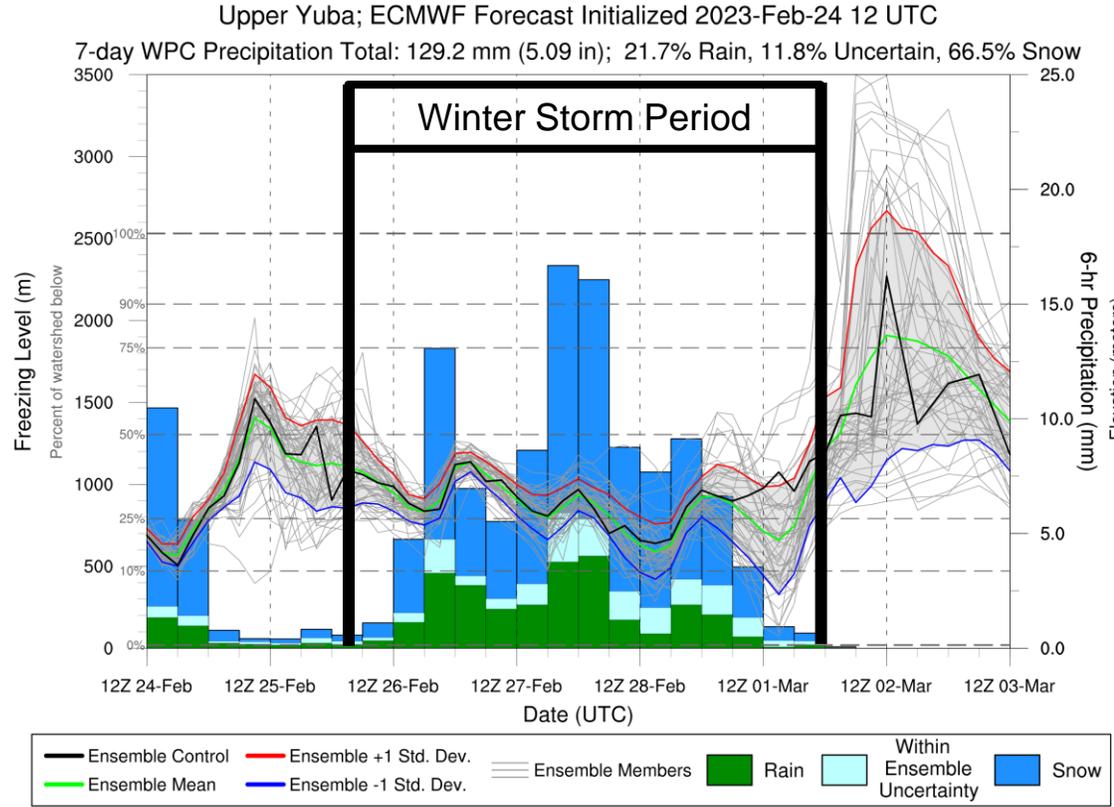
- Hazardous driving conditions. **Use extra caution while driving.**
- Closures and disruptions to infrastructure may occur.

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Freezing Level Forecast



Upper Yuba Watershed



- The 12Z ECMWF ensemble is forecasting snow levels to remain below 1,500 meters for much of Northern California and the Sierra Nevada beginning 12Z 26 Feb
- The Upper Yuba watershed is forecast to experience primarily snowfall (70% snow over the watershed) during this winter storm