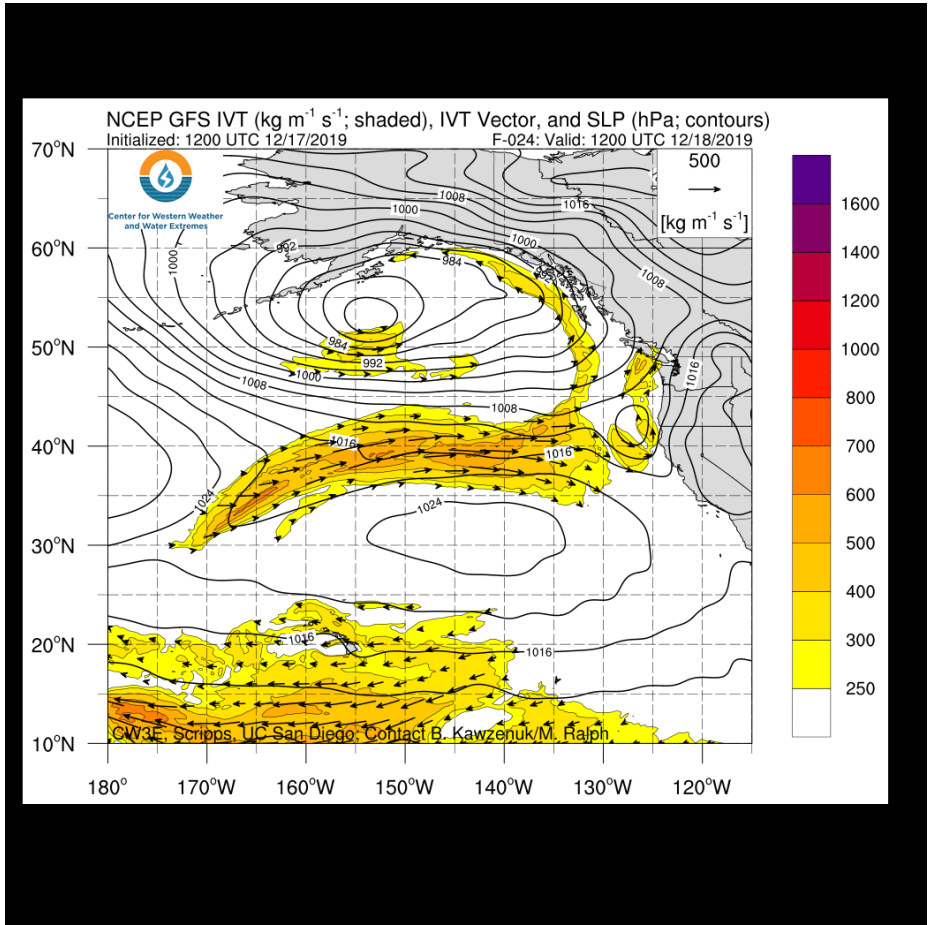
CW3E AR Outlook

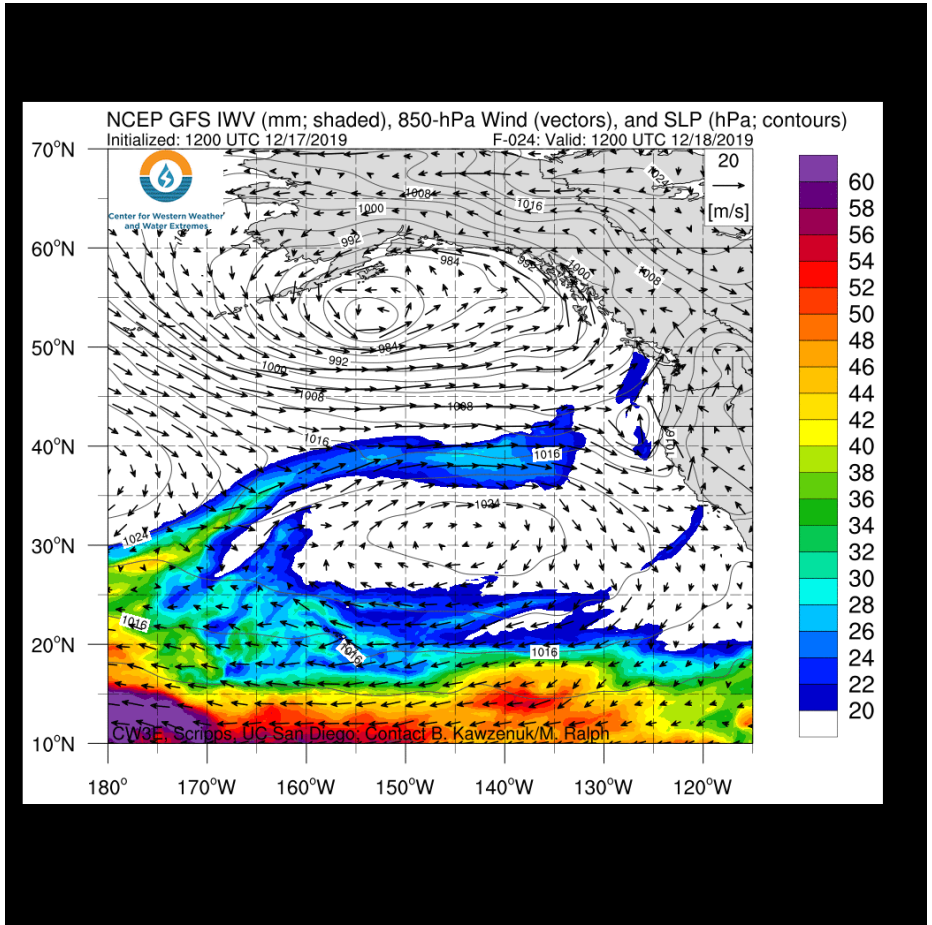
For California DWR's AR Program

Center for Western Weather and Water Extremes
SCRIPPS INSTITUTION OF OCEANOGRAPHY AT UC SAN DIEGO

A landfalling AR will bring heavy rainfall and mountain snowfall to the Pacific Northwest this week

- A landfalling AR is forecast to impact Northern CA, OR, and WA during 18–21 Dec
- Some areas along the Oregon Coast may experience AR conditions for more than 48 hours
- At least 3-7 inches of rainfall is expected over the Oregon Coast Ranges, Olympic Mountains, and Cascade Mountains over the next 5 days, with more than 1 foot of snow possible in the North Cascades





AR Outlook: 17 Dec 2019

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Rising Rivers Later This Week

Wednesday December 18 – Saturday December 21, 2019

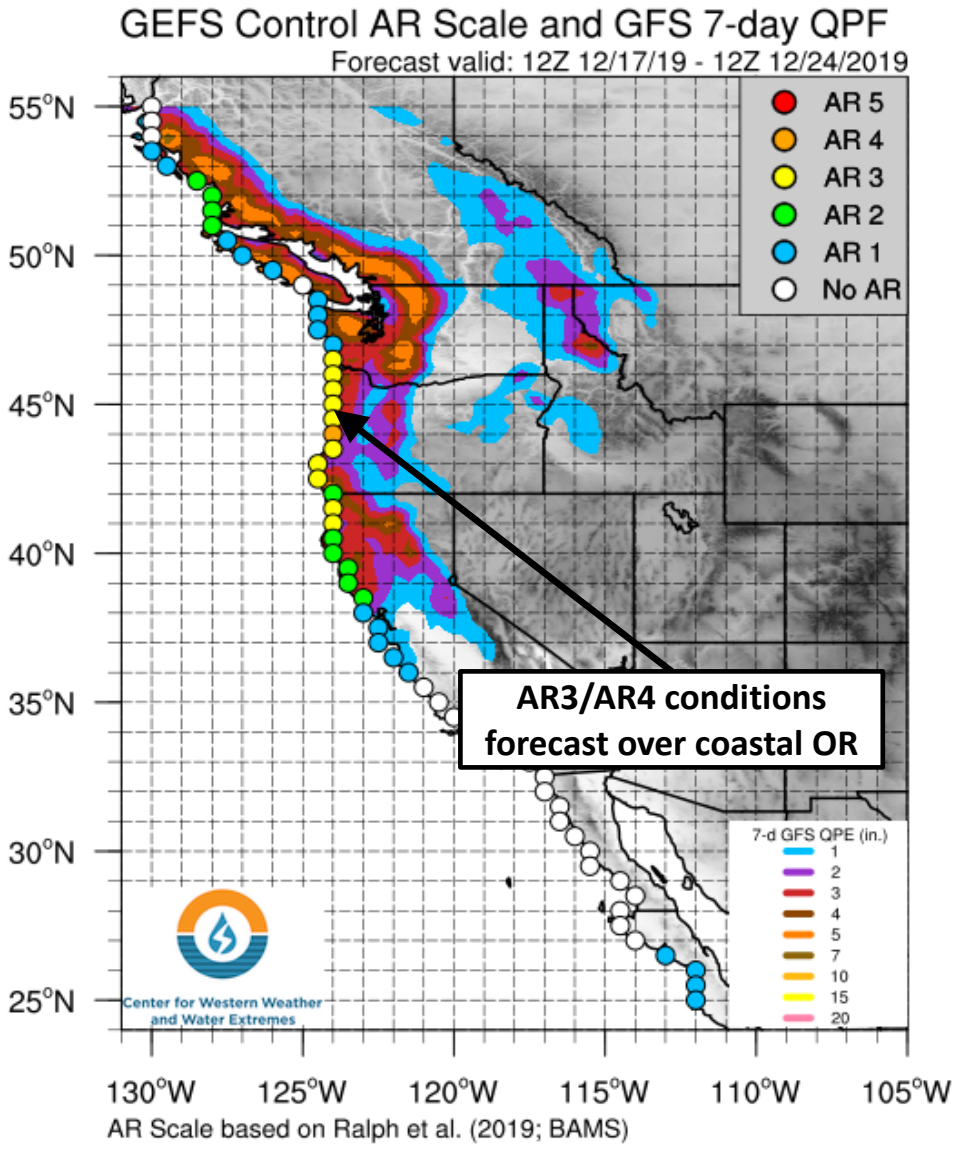
Information:

- Very wet weather is expected Wednesday into Saturday
- 3 to 6" of precipitation, heaviest across the Olympics & Cascades
- Rising rivers could lead to widespread or significant flooding

Issued by: NWS Seattle
11:30 am - December 16, 2019

Prepare:

- If you live near a river or waterway, stay tuned to latest forecasts and monitor river levels



Source: NOAA/NWS WFO Seattle, WA, https://www.weather.gov/sew/

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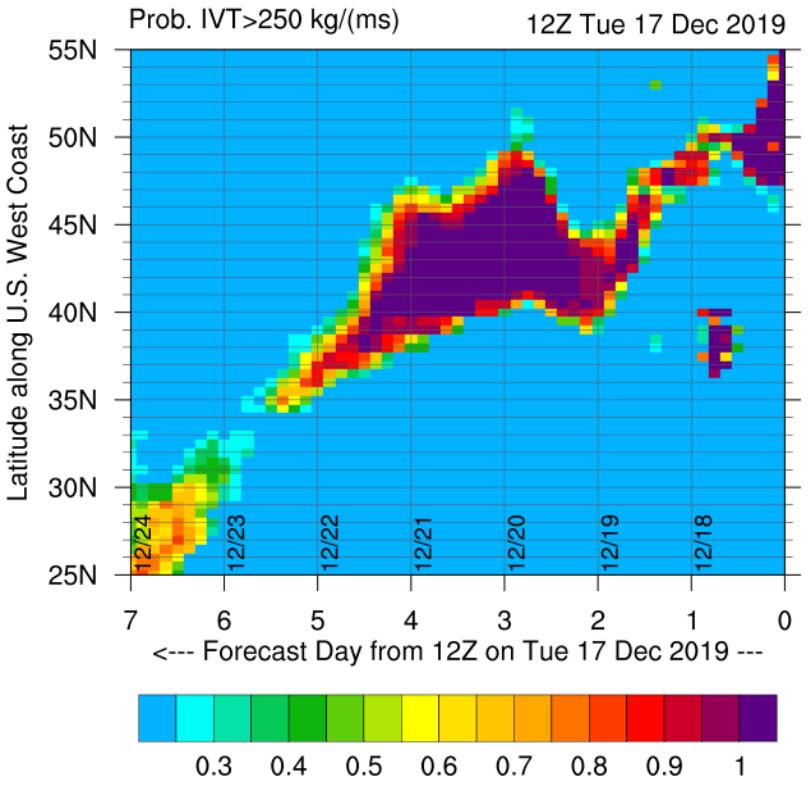

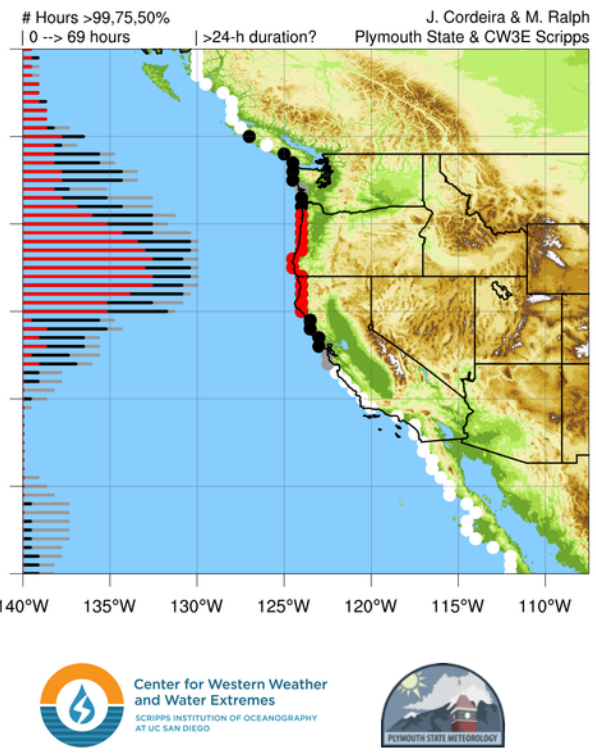

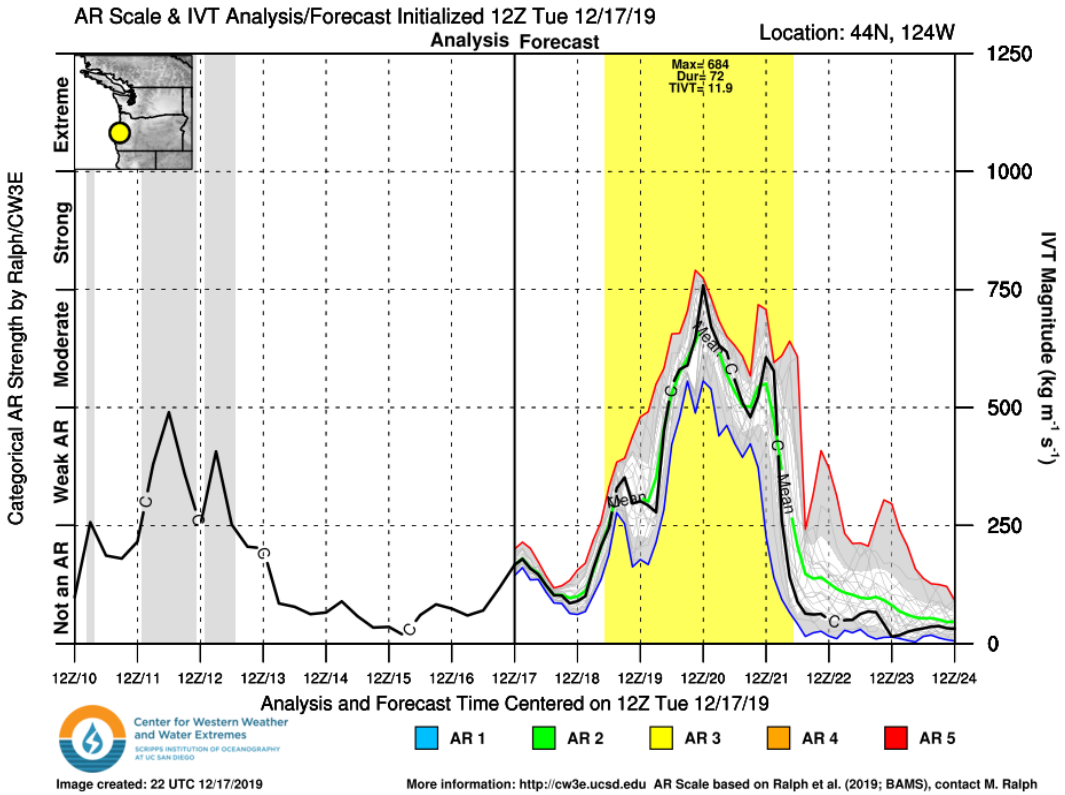

- **AR landfall tool shows high confidence (> 90%) in a prolonged period of AR conditions over coastal Northern CA and OR between 0000 UTC 19 Dec and 0000 UTC 22 Dec**
- **GEFS mean is currently suggesting AR3 conditions (max IVT > 500 kg m^{-1} s^{-1}; duration > 48 hours) in western OR, but there is some uncertainty in the duration and magnitude**
- **A second landfalling AR over the Baja Peninsula may eventually bring AR conditions to the Southwest U.S. on 23–24 Dec**

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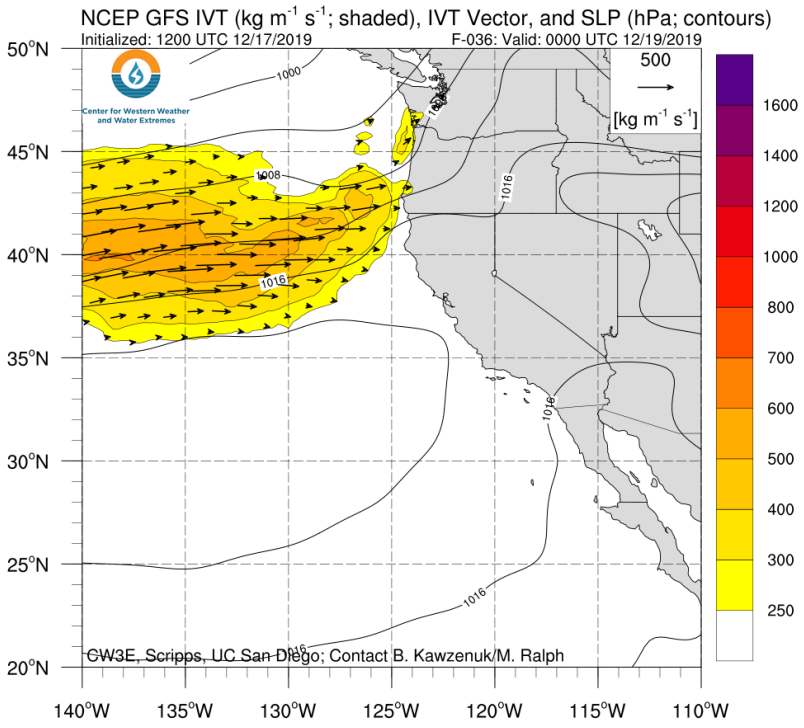
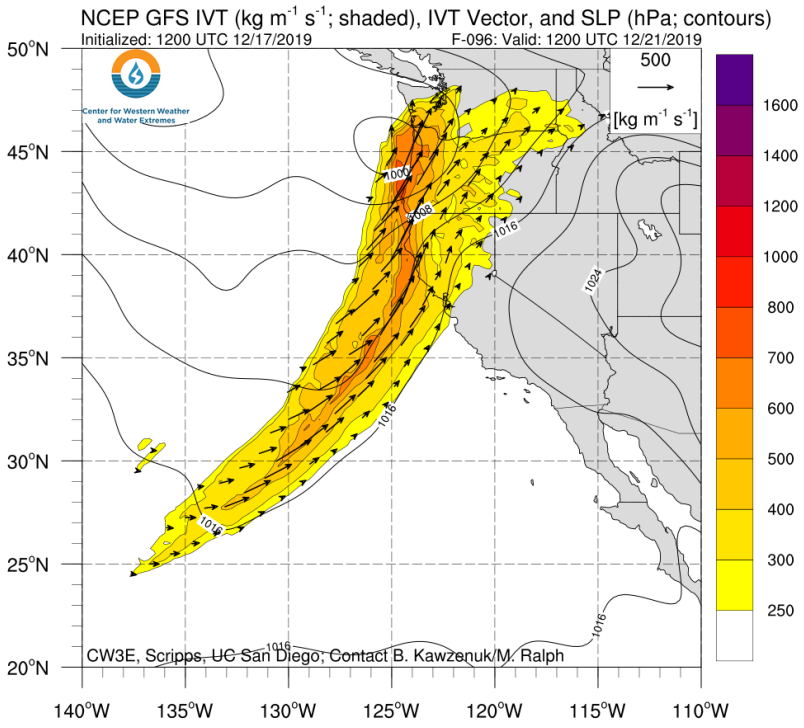
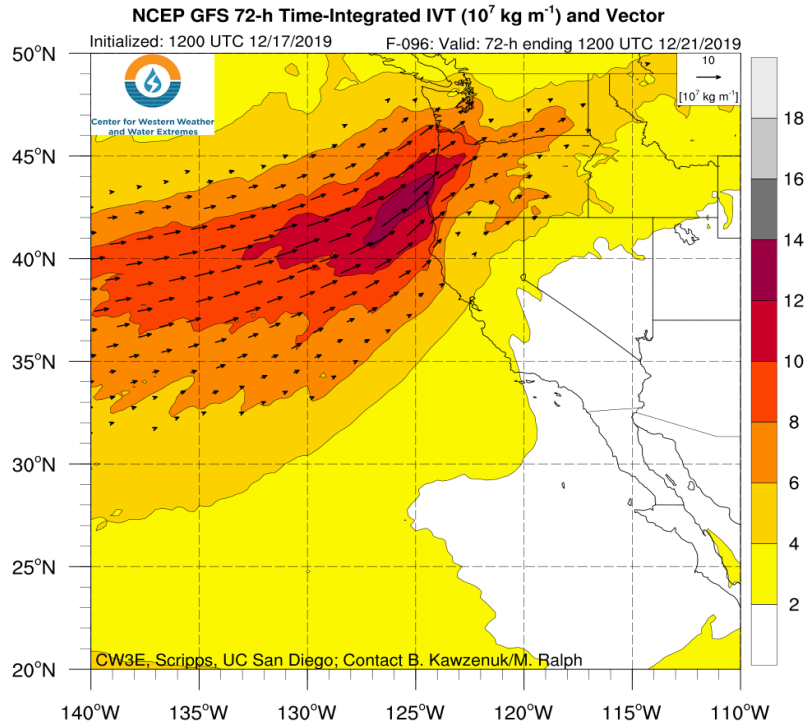
F-36 Valid: 1200 UTC 19 Dec



F-96 Valid: 1200 UTC 21 Dec



F-96 Valid: 1200 UTC 18–21 Dec



- **A zonally elongated AR is expected to make landfall along the Oregon coast around 0000 UTC 19 Dec**
- **Over the following 48–72 hours, a series of frontal waves is forecast to propagate along the main AR axis, resulting in a prolonged period of enhanced moisture transport over coastal OR**
- **The last frontal wave is expected to develop into a weak surface low off the Oregon coast by 1200 UTC 21 Dec**

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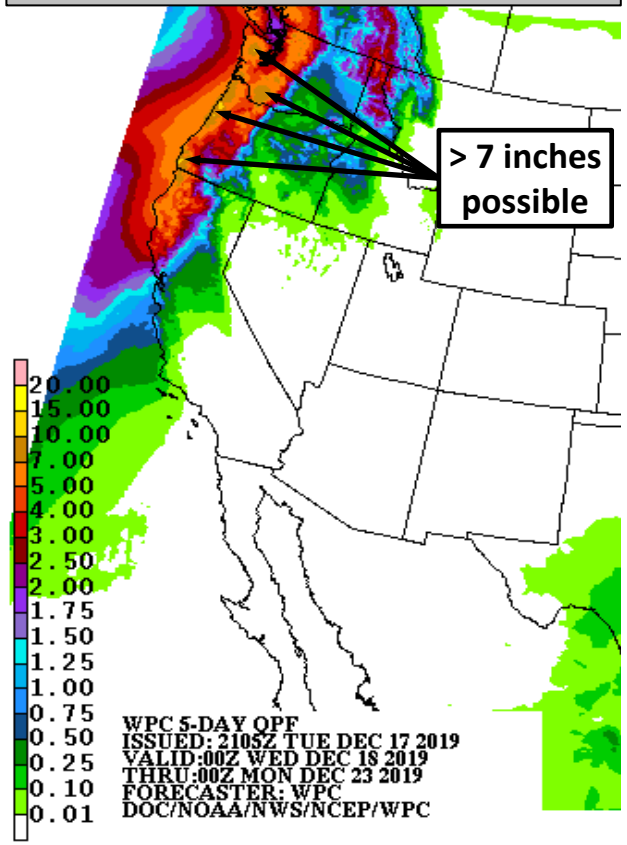
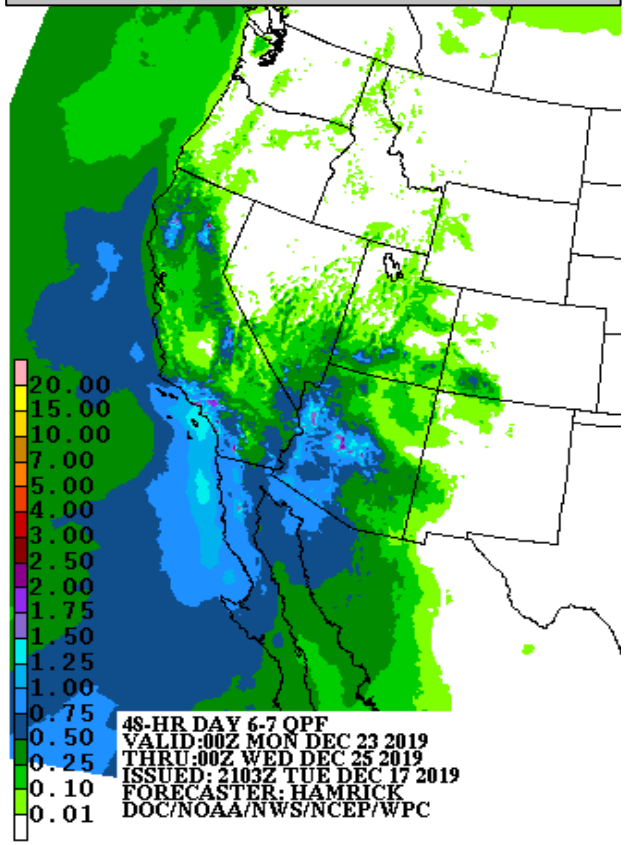
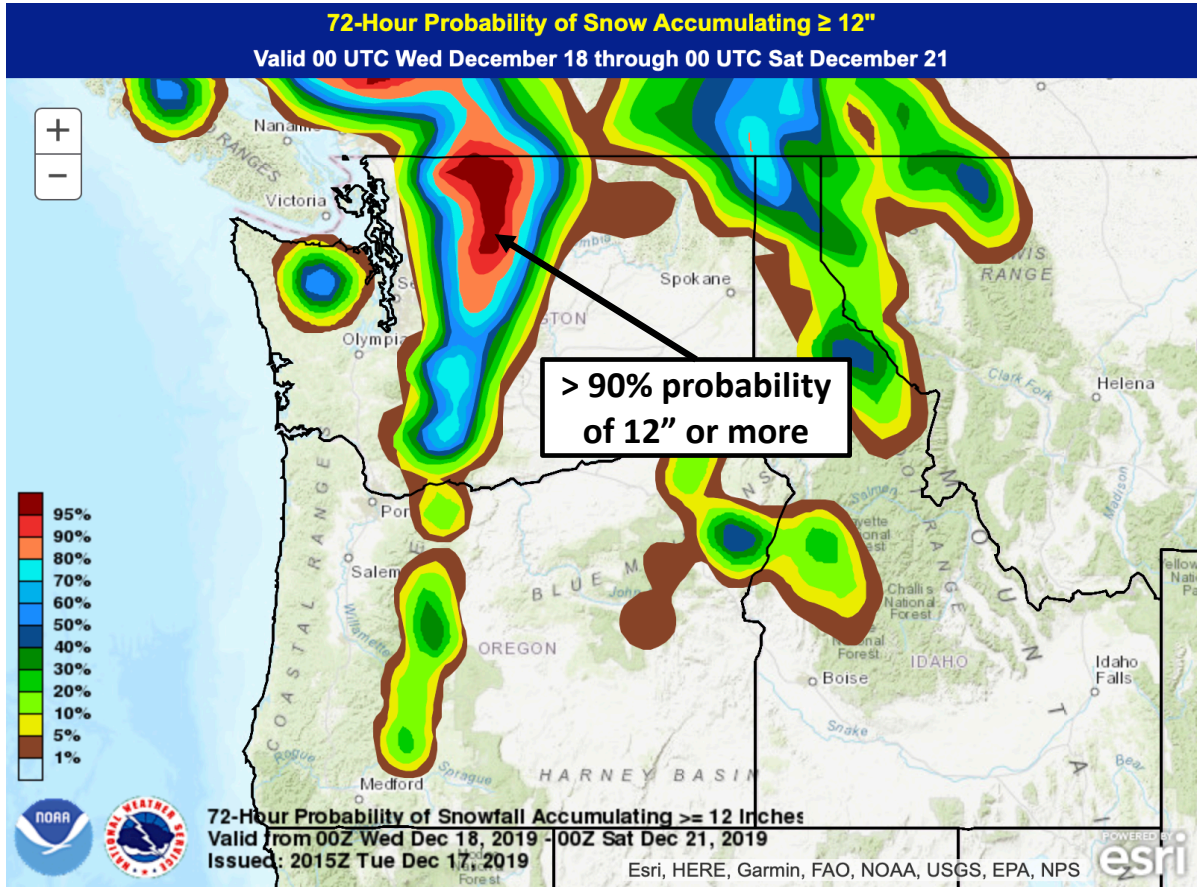
WPC 5-day QPF:
Valid 0000 UTC 18–23 Dec



WPC 48-hour QPF:
Valid 0000 UTC 23–25 Dec





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

- At least 3–7 inches of precipitation are forecast over northwestern CA and much of western OR and WA by 0000 UTC 23 Dec
- Locally higher amounts are possible in the Oregon Coast Ranges, Olympic Mountains, and Cascade Mountains
- At least 12" of snowfall is expected over the North Cascades by 0000 UTC 21 Dec, with additional accumulating snow likely afterward
- Additional rainfall (0.5–1.5 inches) is currently forecast over Southern CA and AZ on 22–24 Dec in association with the second AR

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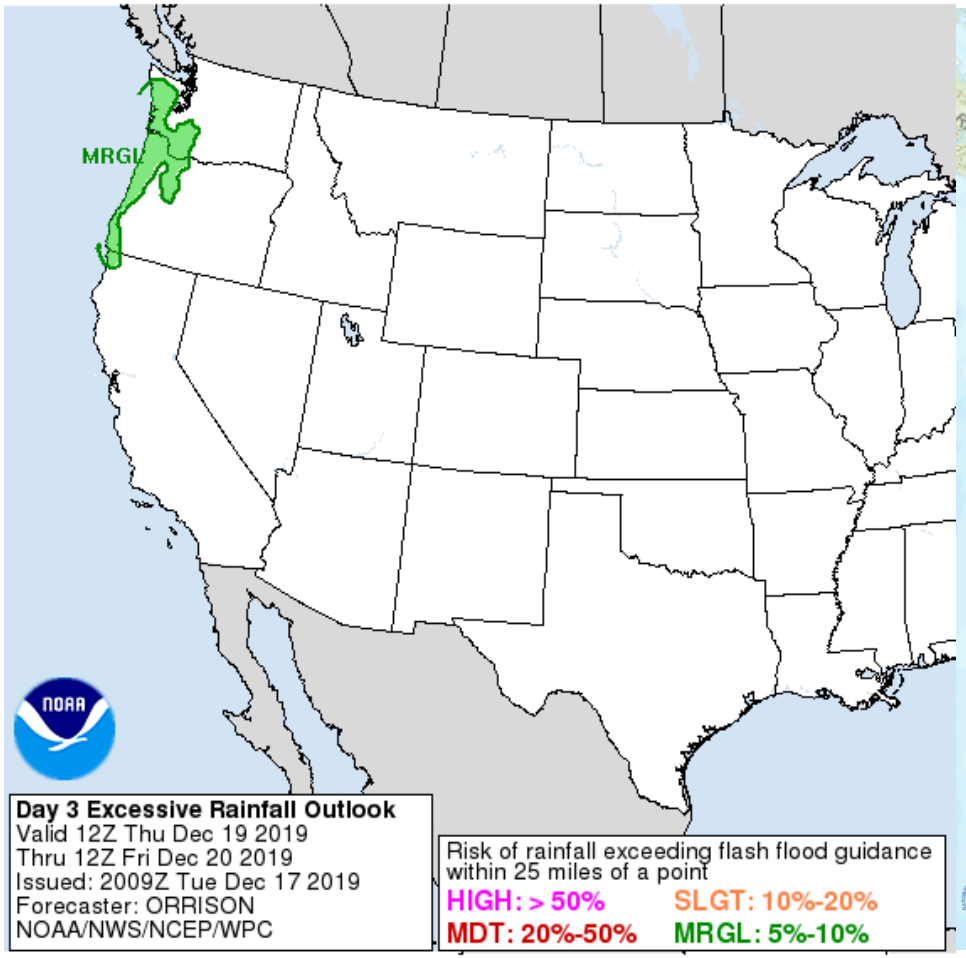
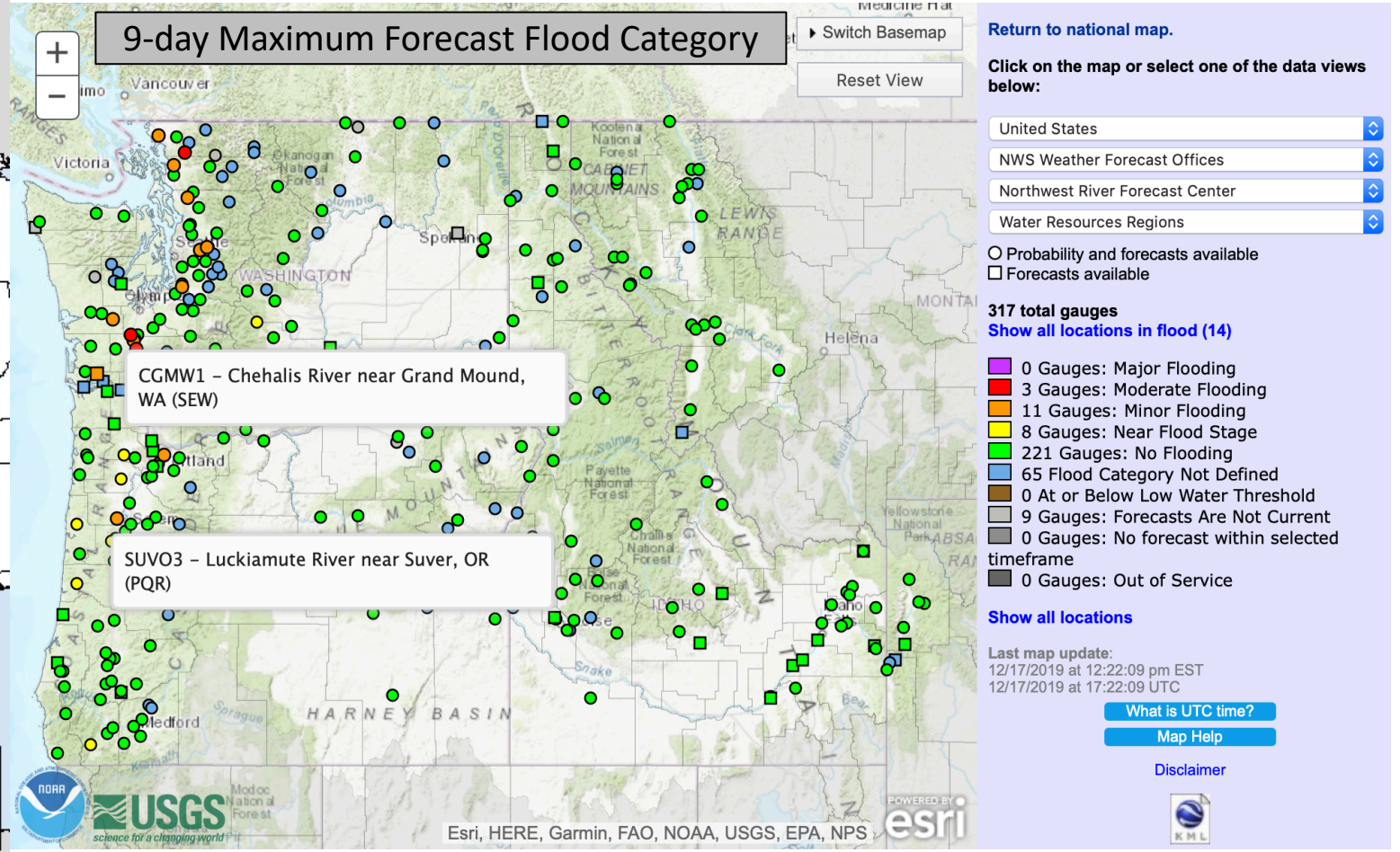


Source: NOAA/NWS WPC, https://www.wpc.ncep.noaa.gov/



Source: NOAA/NWS Advanced Hydrologic Prediction Service, https://water.weather.gov/ahps/

- **WPC has issued an Excessive Rainfall Outlook for portions of western OR and WA**
- **Heavy rainfall, particularly over the Coast Ranges and Cascades, may produce downstream flood impacts at lower elevations**

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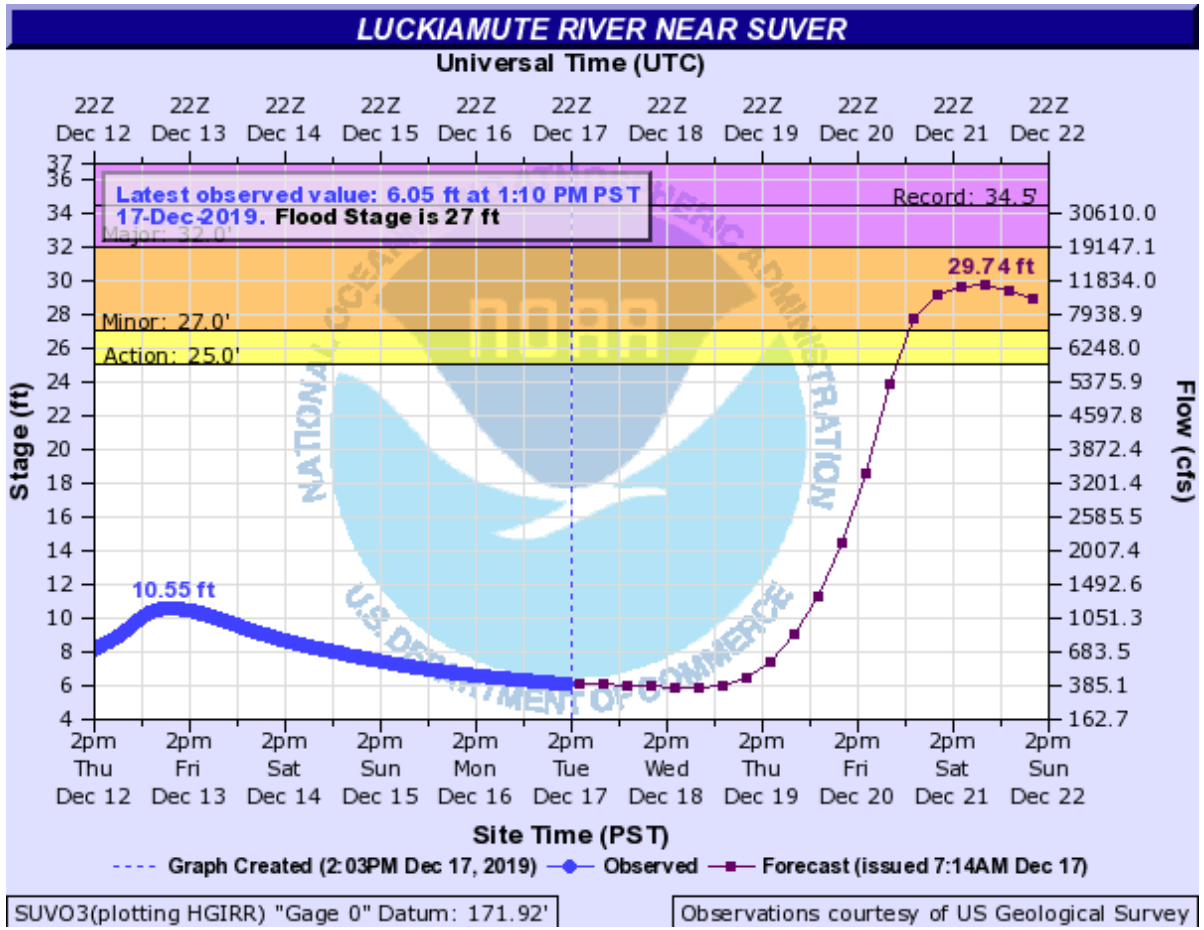

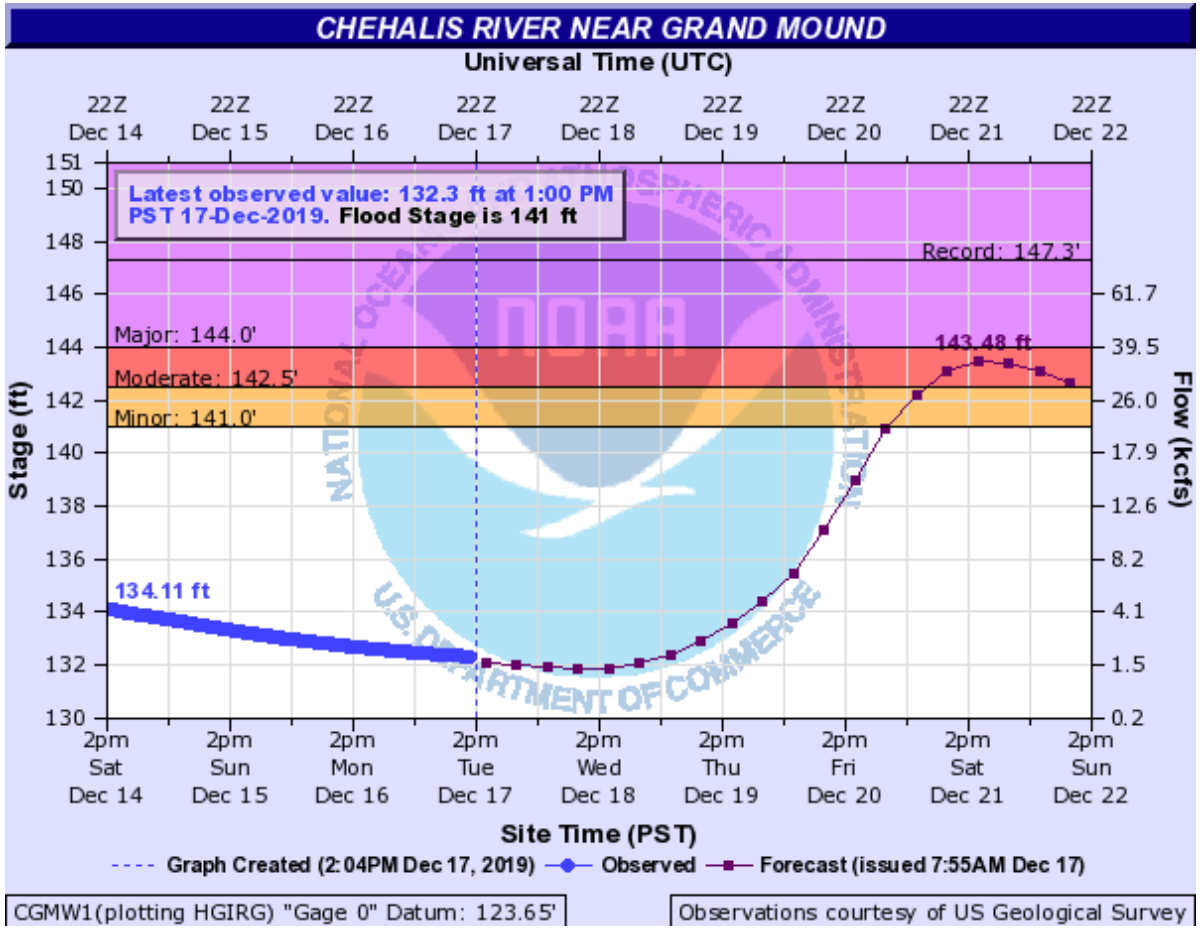

Source: NOAA/NWS NWRFC, https://www.nwrfc.noaa.gov/

- **The prolonged period of heavy rainfall, combined with rising snow levels, will result in significant increases in streamflow and stage height along rivers and tributaries in western Oregon and Washington**
- **NWRFC is anticipating minor-to-moderate river flooding in some locations on 21–22 Dec**