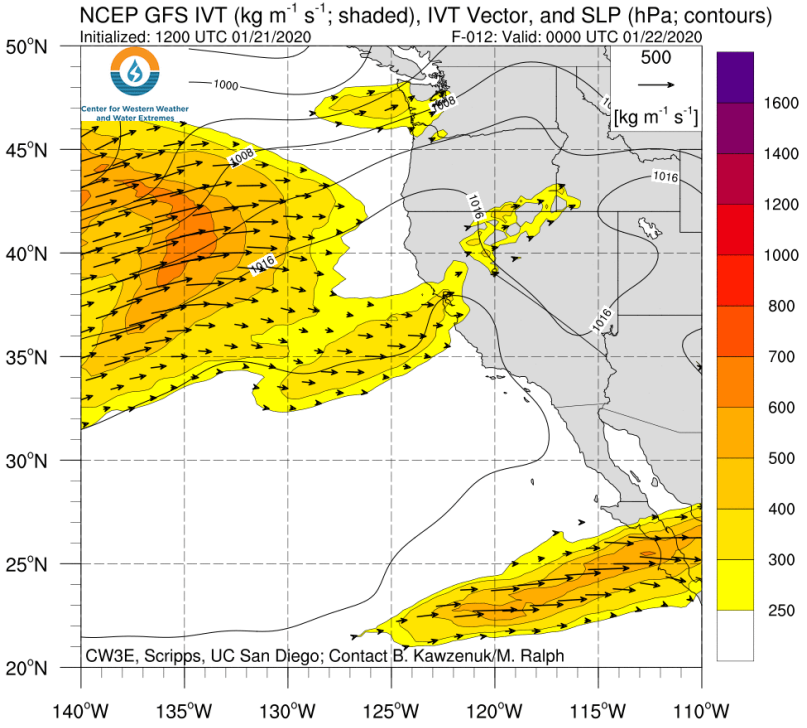
CW3E AR Outlook

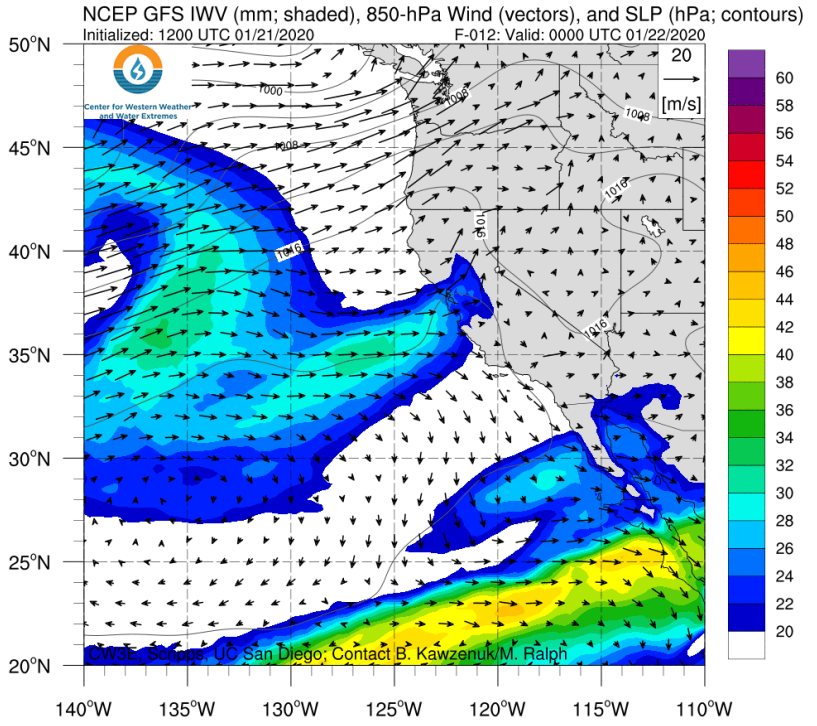
For California DWR's AR Program

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

Multiple landfalling ARs will bring heavy rainfall and mountain snowfall to the Pacific Northwest this week

- A landfalling AR is forecast to impact Oregon and Washington during 22–24 Jan
- Some areas along the coast may experience AR conditions for more than 48 hours
- At least 3–7 inches of rainfall is expected over portions of western WA and northwestern OR during next 3 days, with 1–2 feet of snow possible in the North Cascades
- A second AR is expected to bring additional precipitation to coastal OR and Northern CA on 25–26 Jan





AR Outlook: 21 Jan 2020

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River Flooding Possible

Wednesday January 22 – Saturday January 25, 2020

Location:

- Rivers flowing off the Cascades and Olympics

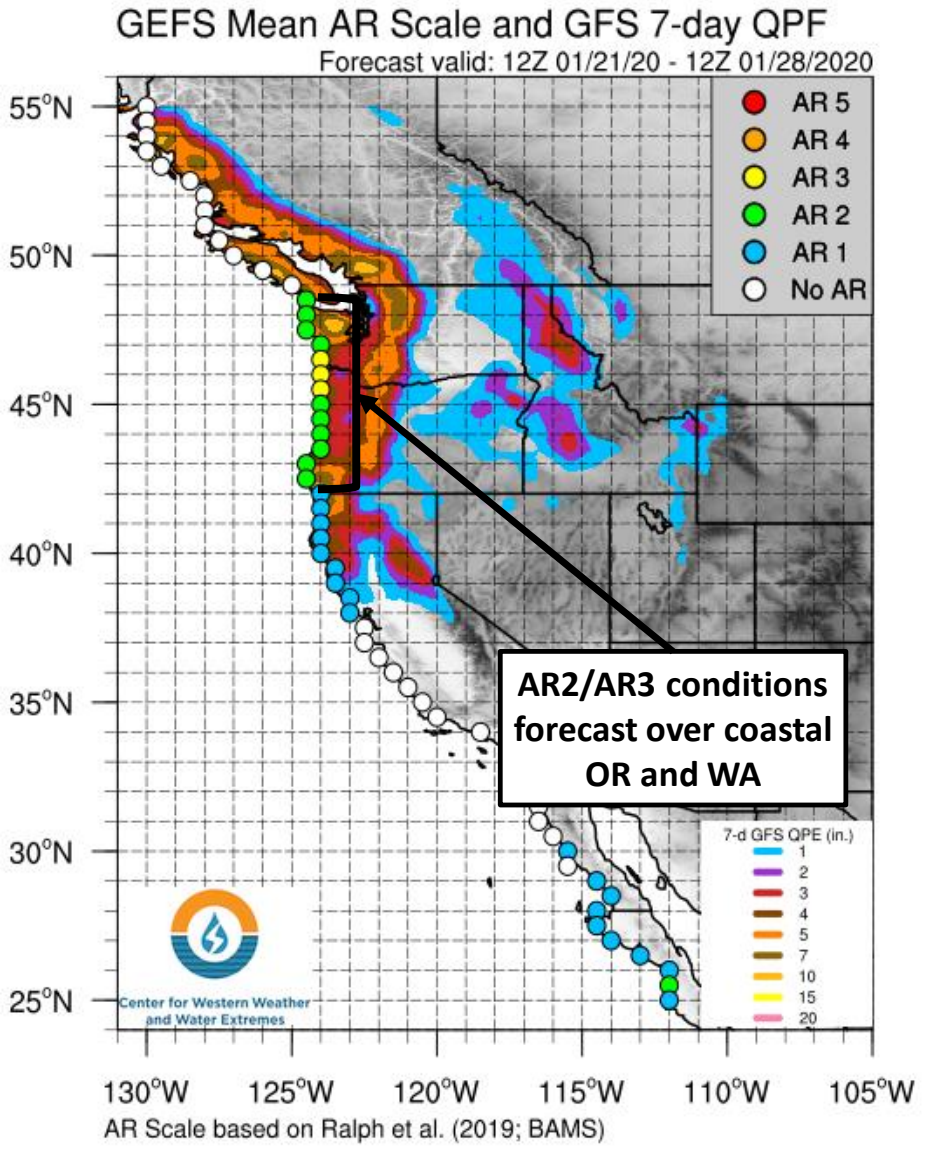
Information:

- Periods of heavy rain and rising snow levels will cause rapid rises on area rivers Wednesday into the weekend
- Flooding on many rivers is possible

Prepare:

- If you live near area rivers and waterways, keep an eye on water levels and forecasts

Issued 1/21/2020 by NWS Seattle



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

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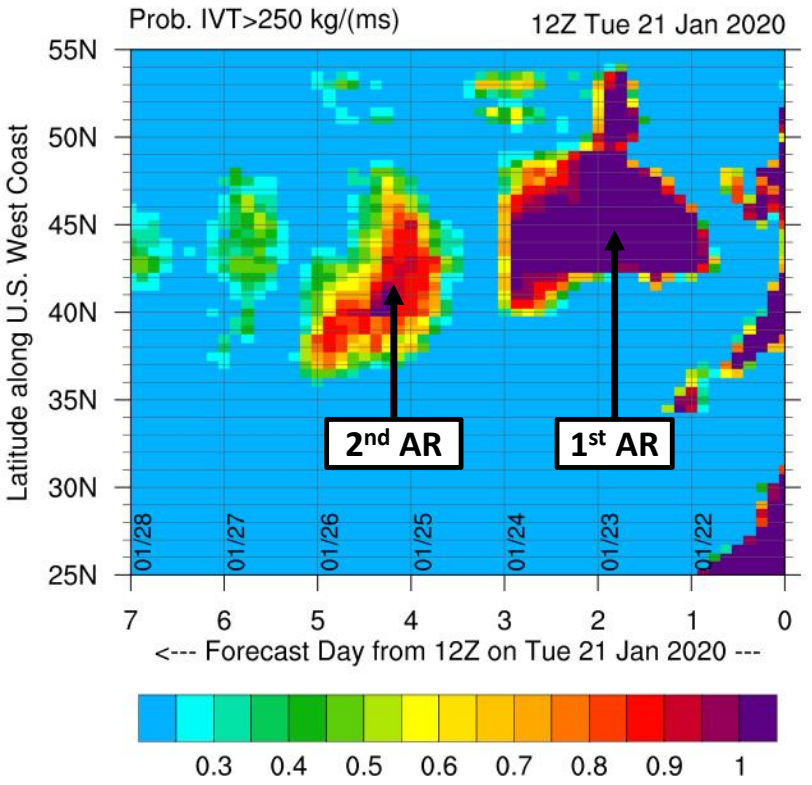

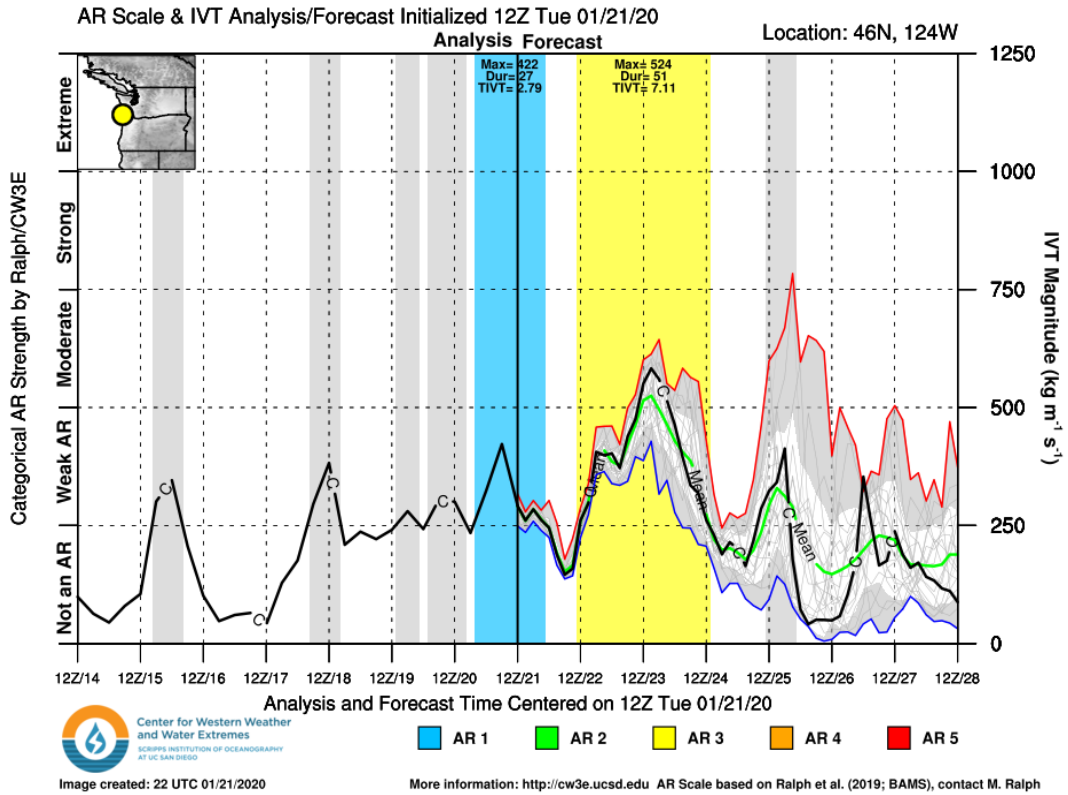

- **AR landfall tool shows very high confidence (> 95%) in a prolonged period of AR conditions over coastal OR and WA beginning around 1200 UTC 22 Jan (see 1st AR above)**
- **GEFS mean is currently suggesting AR3 conditions (max IVT > 500 kg m^{-1} s^{-1}; duration > 48 hours) in northwestern OR**
- **A second landfalling AR (see 2nd AR above) is expected to impact Northern CA and OR on 25–26 Jan, but there is some uncertainty in the timing, location, and duration of AR conditions**

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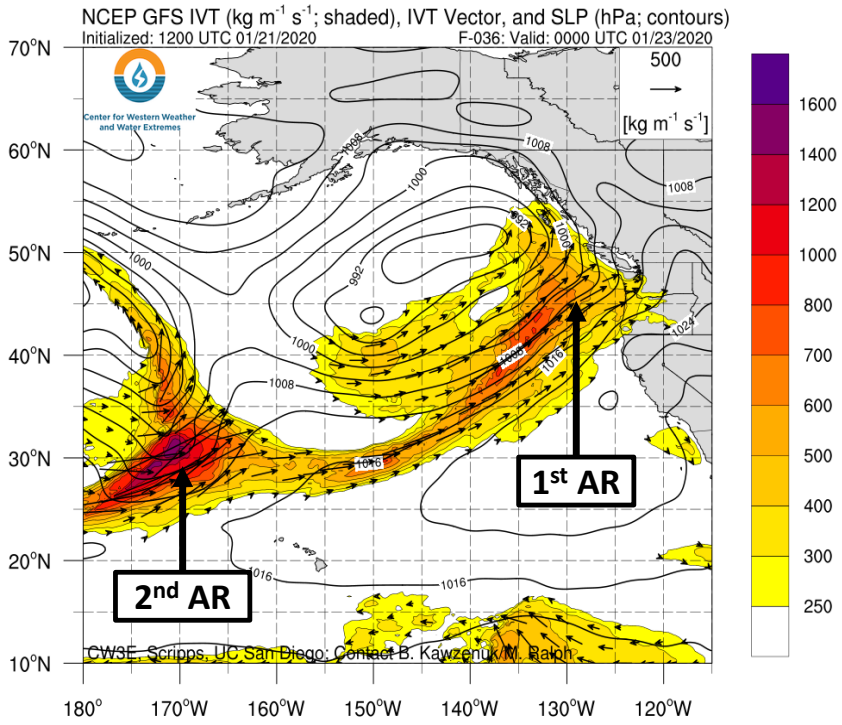
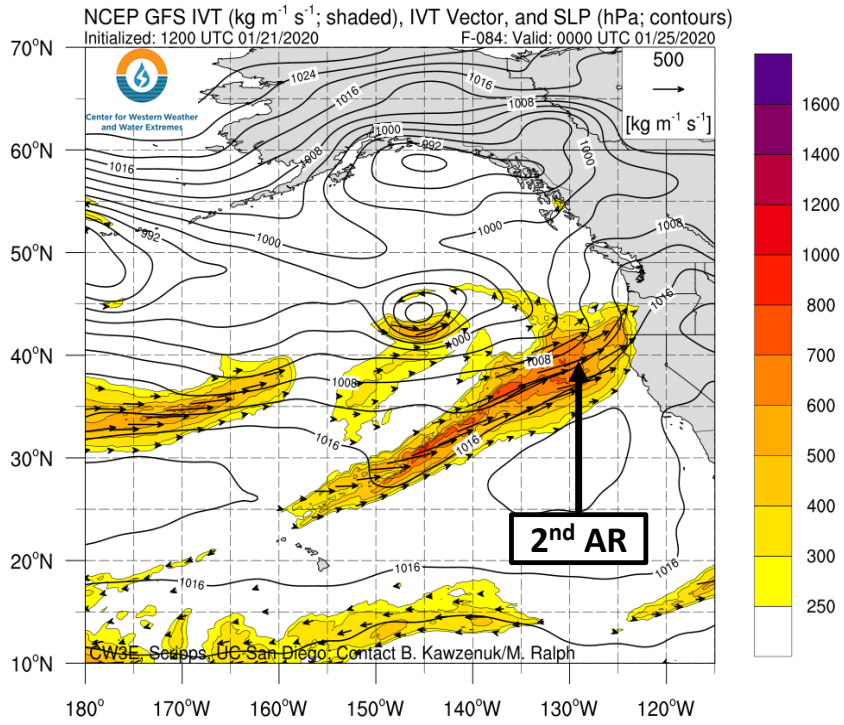
GFS IVT/IWV Forecasts

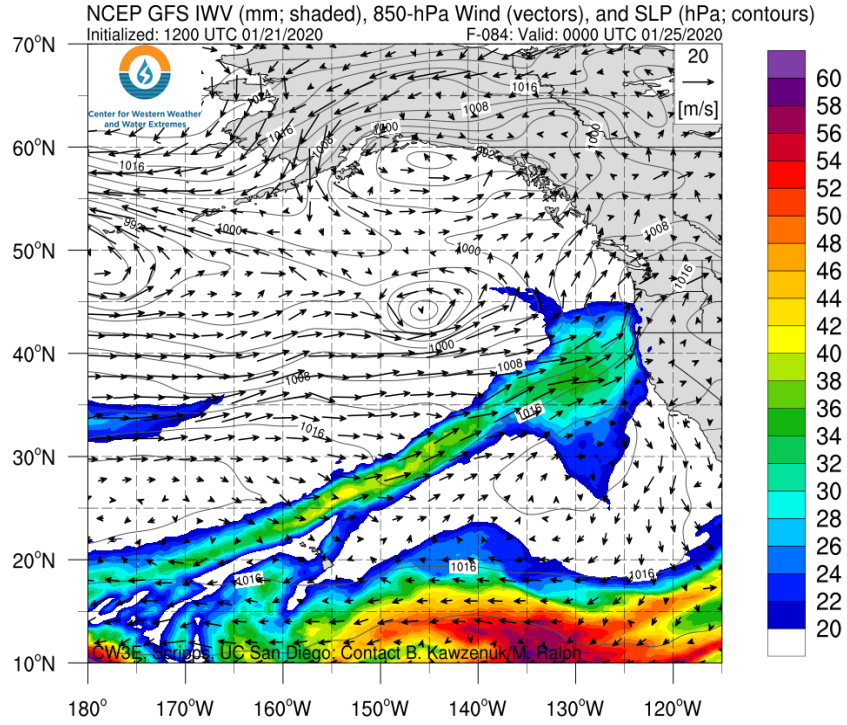
F-36 Valid: 0000 UTC 23 Jan



F-84 Valid: 0000 UTC 25 Jan



F-84 Valid: 0000 UTC 25 Jan



- **A series of surface cyclones are forecast to move across the Northeast Pacific Ocean during the next several days**
- **The two ARs will develop within the warm sector of each cyclone and eventually make landfall on the poleward side of a weak, quasi-stationary surface anticyclone centered on 30°N, 130°W**
- **The second AR will be associated with a plume of very moist air extending northeastward from near Hawaii (IWV > 30 mm near the coast of Northern CA and southern OR)**

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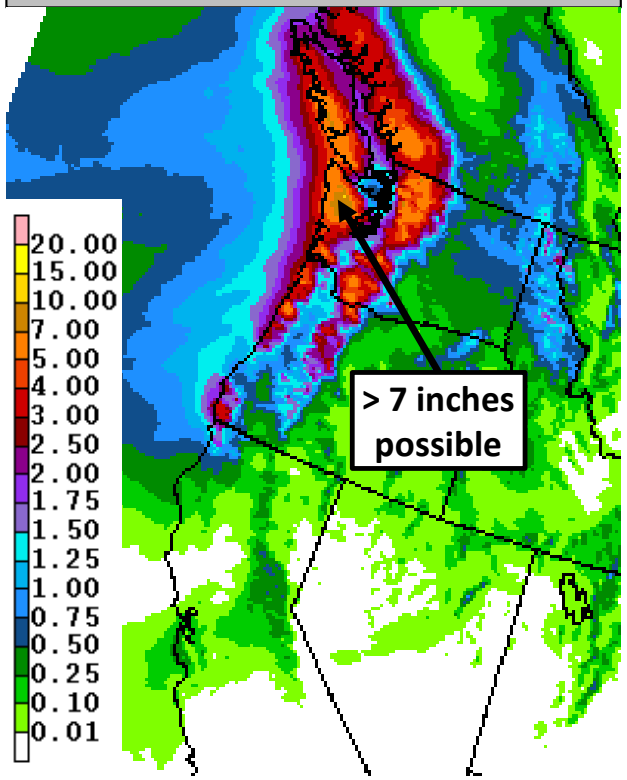
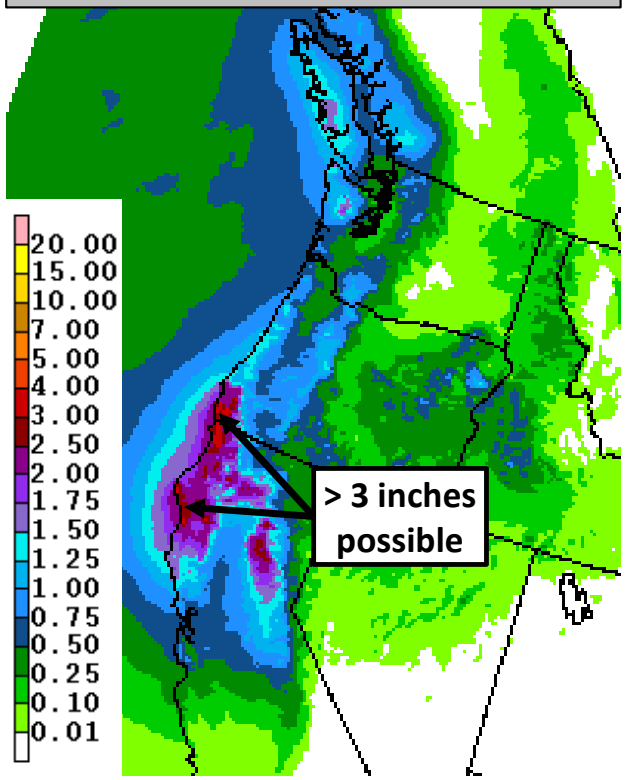
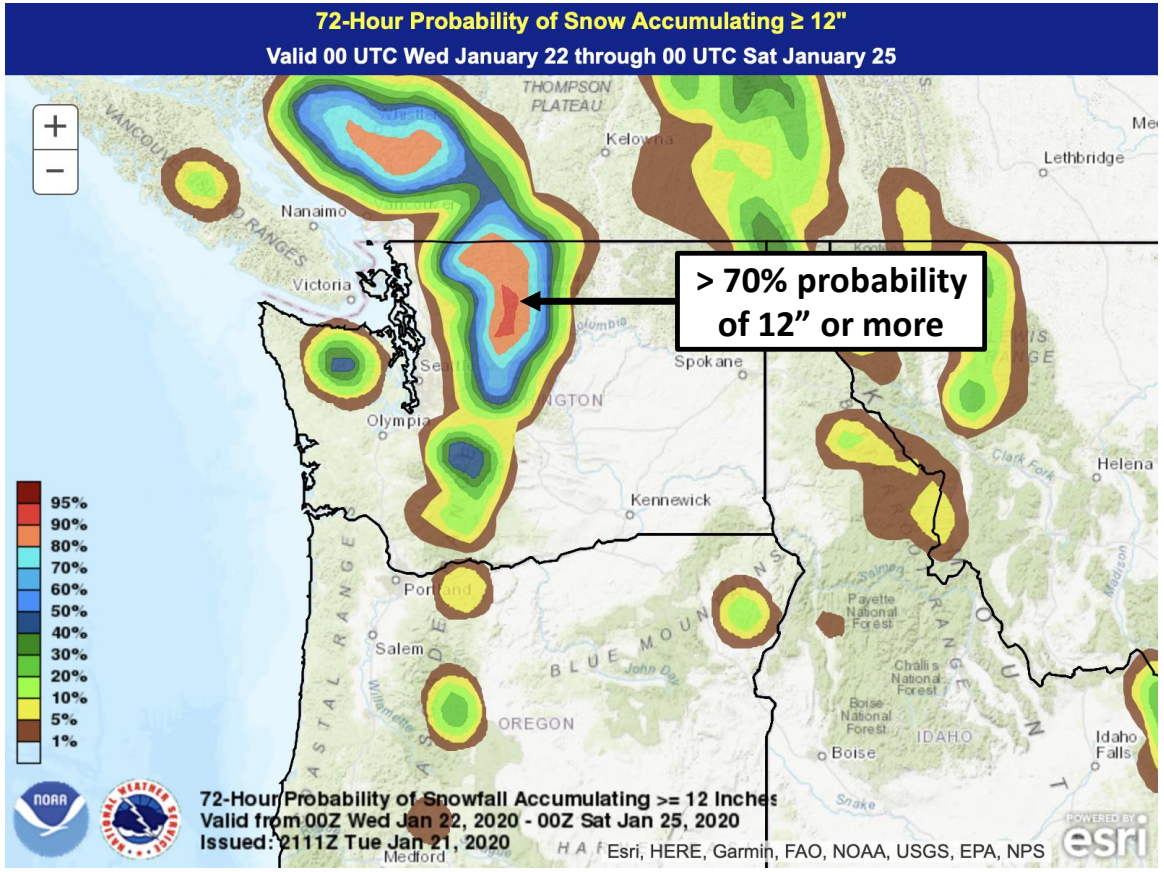
WPC 3-day QPF:
Valid 0000 UTC 22–25 Jan



WPC 48-hour QPF:
Valid 0000 UTC 25–27 Jan





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

- **At least 3–7 inches of precipitation are forecast over the northern OR Coast Ranges, the Olympic Peninsula, and the WA Cascades in association with the first AR**
- **The highest amounts (> 7 inches) are expected over the Olympic Mountains**
- **At least 12" of snowfall is very likely (> 70% probability) in the North Cascades by 0000 UTC 25 Jan**
- **Additional rainfall (1–4 inches) is currently forecast over Northern CA and coastal OR on 25–26 Jan in association with the second AR**

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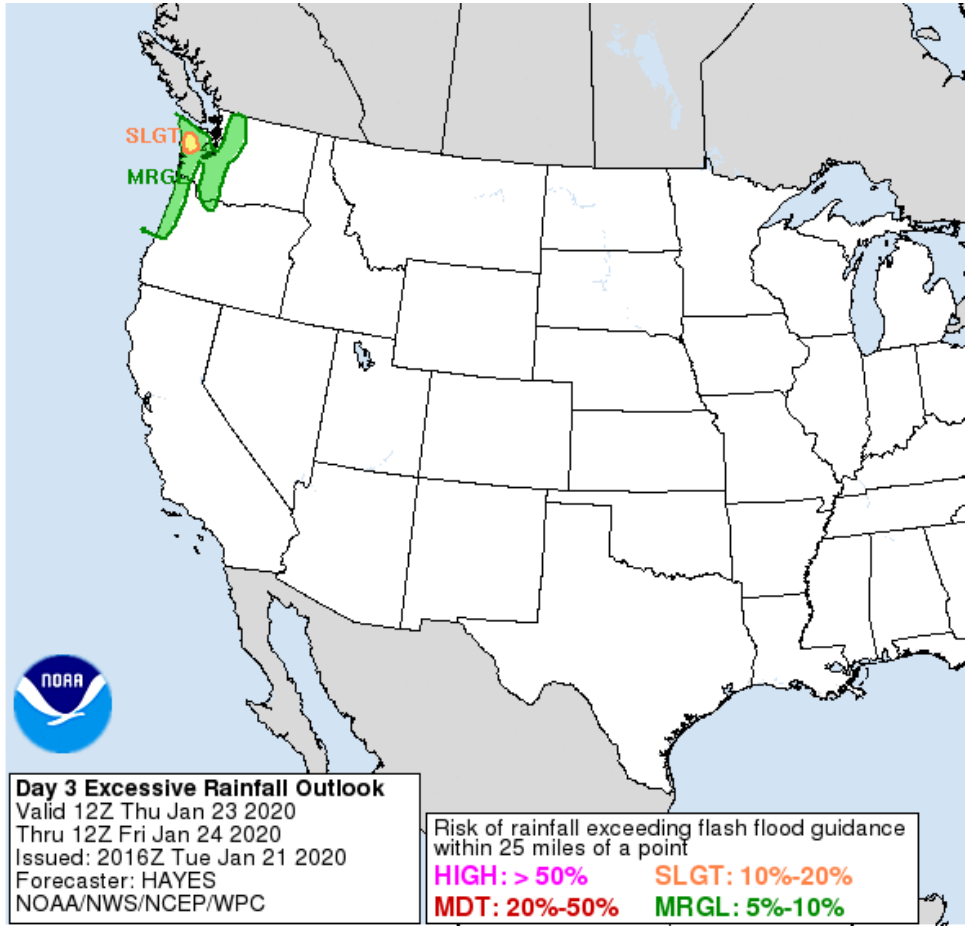
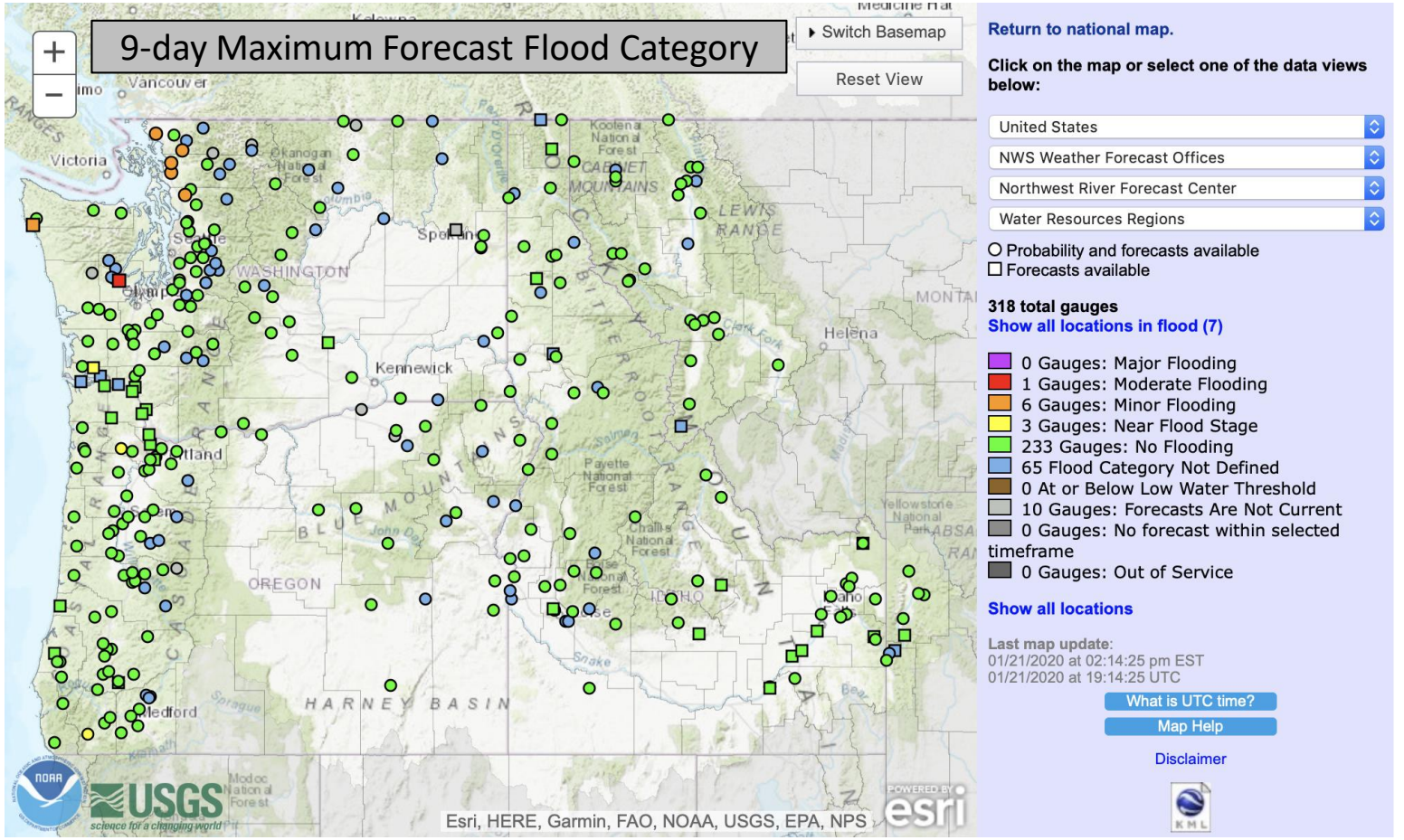


Source: NOAA/NWS WPC, https://www.wpc.ncep.noaa.gov/



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 and snowmelt over the Olympic Mountains and North Cascades may result in downstream flood impacts at lower elevations**