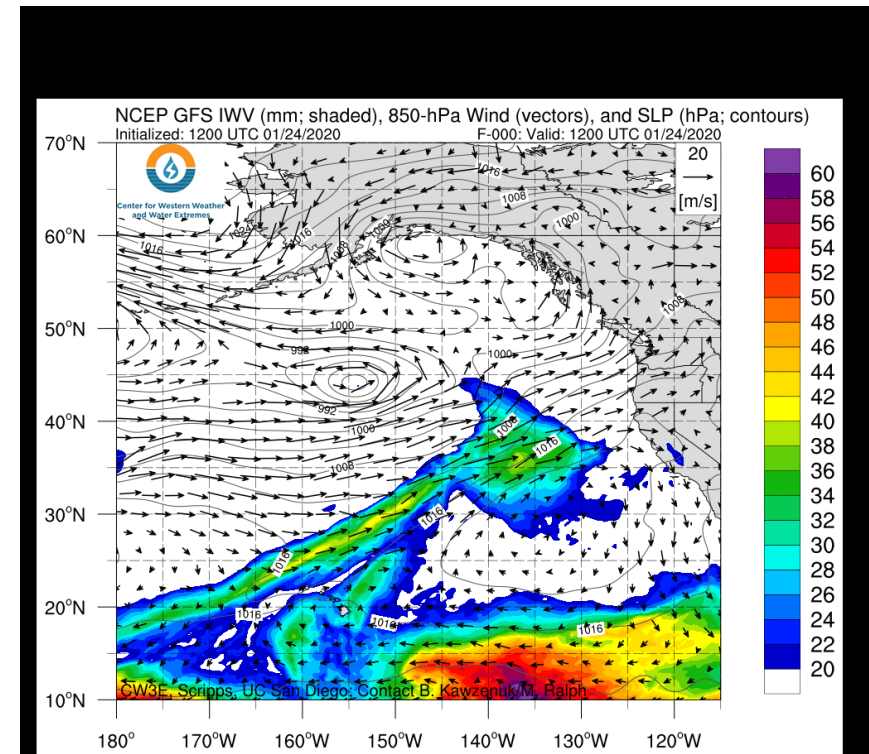
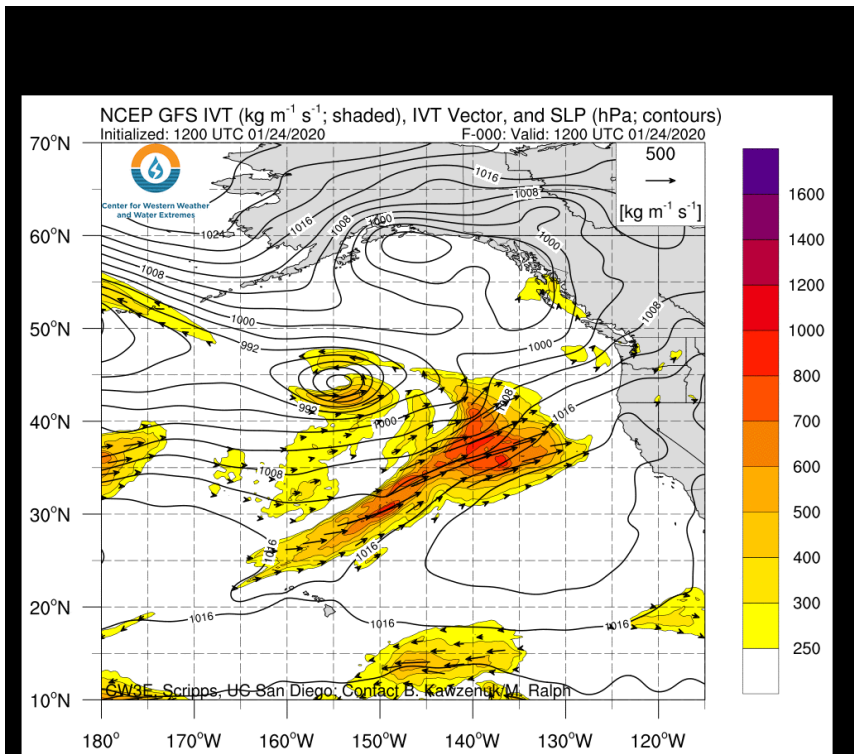




## Active weather pattern will bring frequent AR activity and rainfall to the Pacific Northwest

- A series of storms over the Northeast Pacific Ocean will result in frequent episodes of AR conditions over the next 7–10 days
- Total 7-day precipitation amounts > 5 inches are forecast over extreme northwestern California, the Oregon Coast Ranges, the Olympic Peninsula, and the Cascades (some locations may receive > 10 inches)
- Long-range ensemble forecasts suggest the potential for additional landfalling AR activity during the first week of February



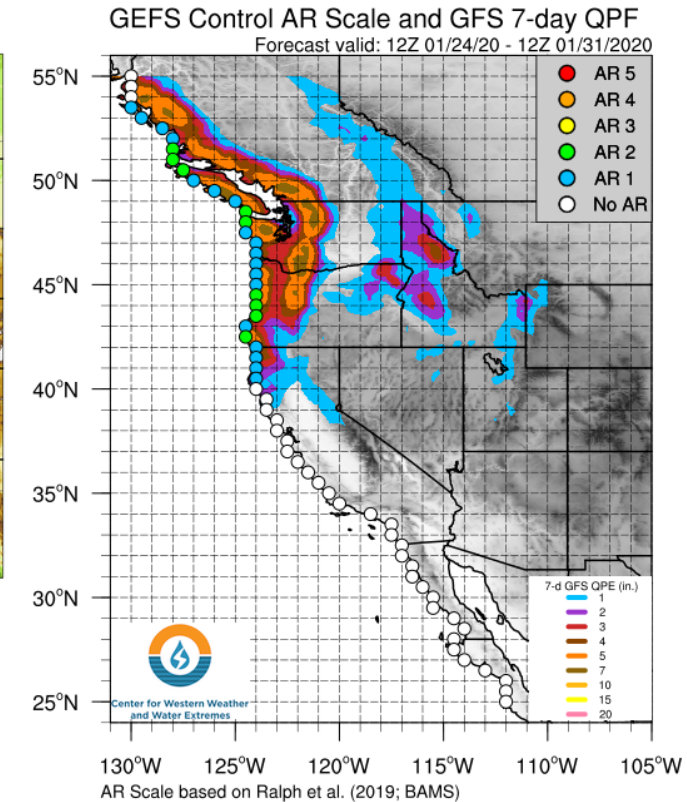
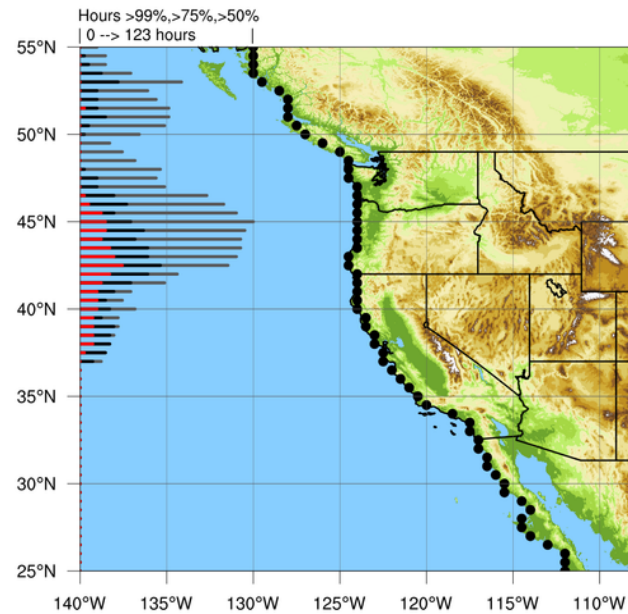
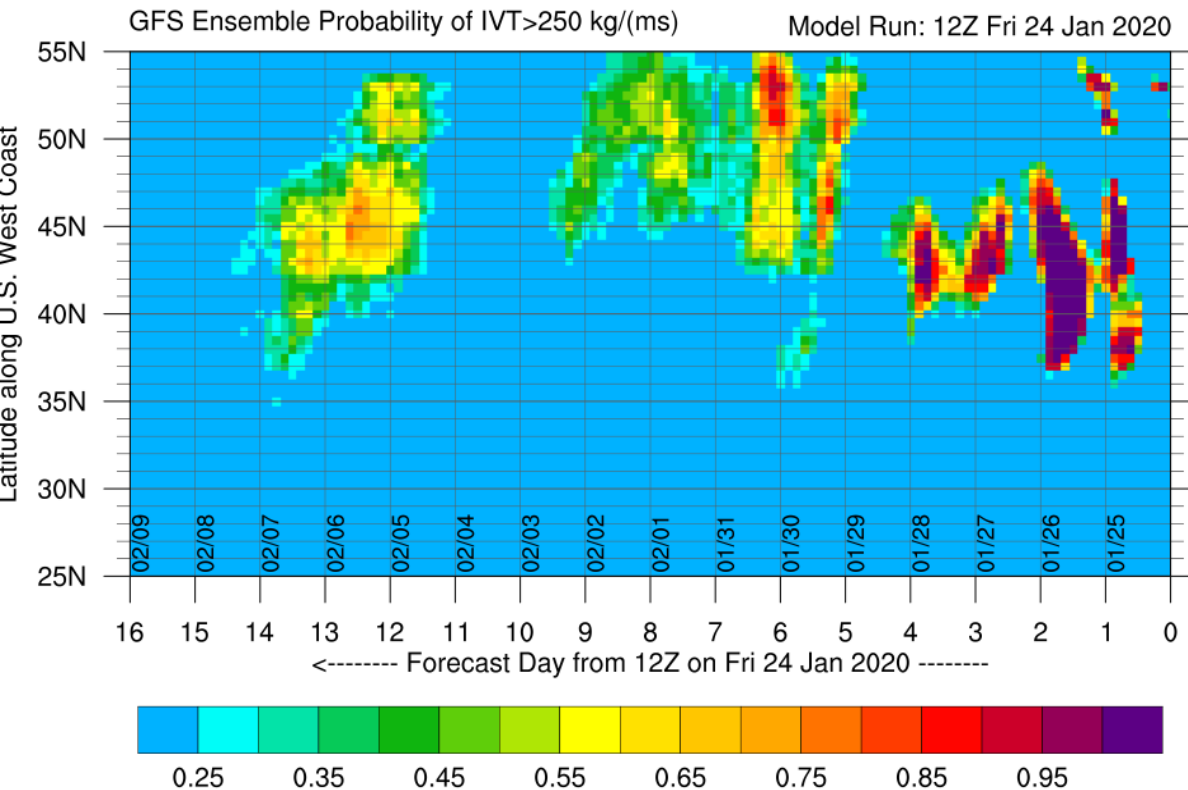
# AR Outlook: 24 Jan 2020

For California DWR's AR Program



Center for Western Weather and Water Extremes

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- AR landfall tool shows high confidence (> 90%) in multiple episodes of AR conditions over coastal Oregon and Northern California during the next 4 days
- AR landfall tool shows the potential for additional periods of AR activity over the Pacific Northwest during Days 5–9 (29 Jan – 2 Feb), but there is significant uncertainty in the timing and location of AR conditions
- AR landfall tool shows higher forecast confidence (> 50%) in AR conditions again during Days 11–13 (4–6 Feb)
- Maximum GEFS control forecast AR Scale during the next 7 days is AR2 along the Oregon coast

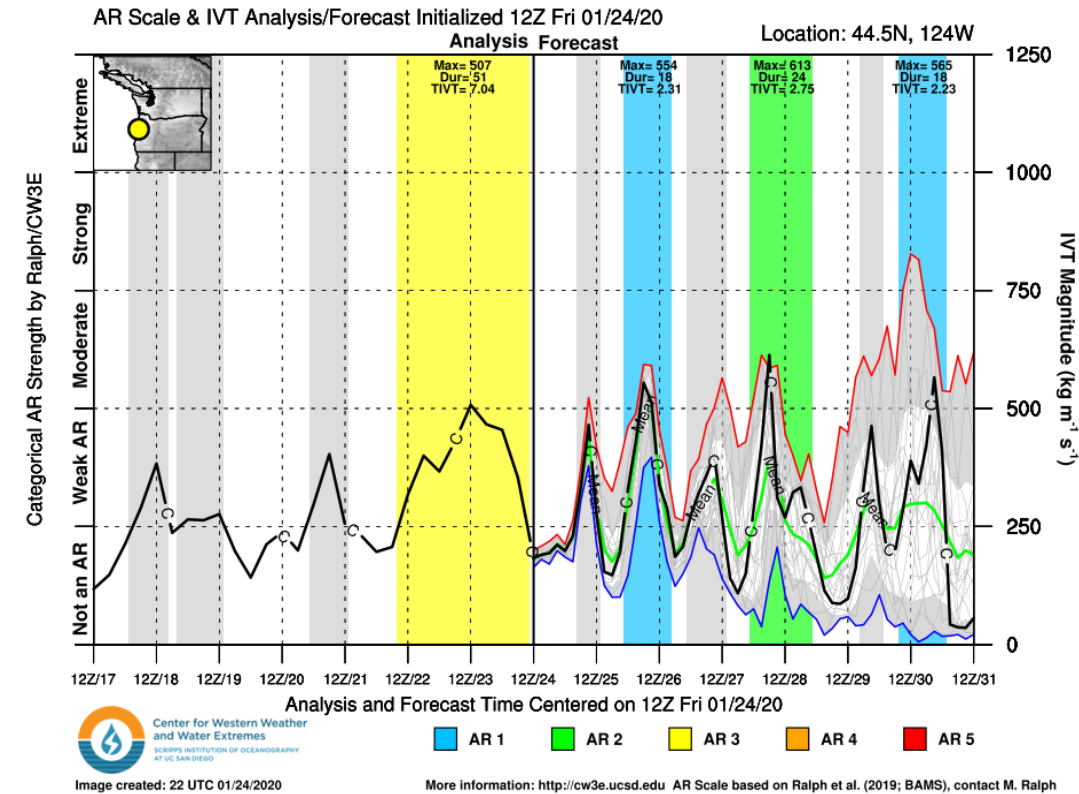
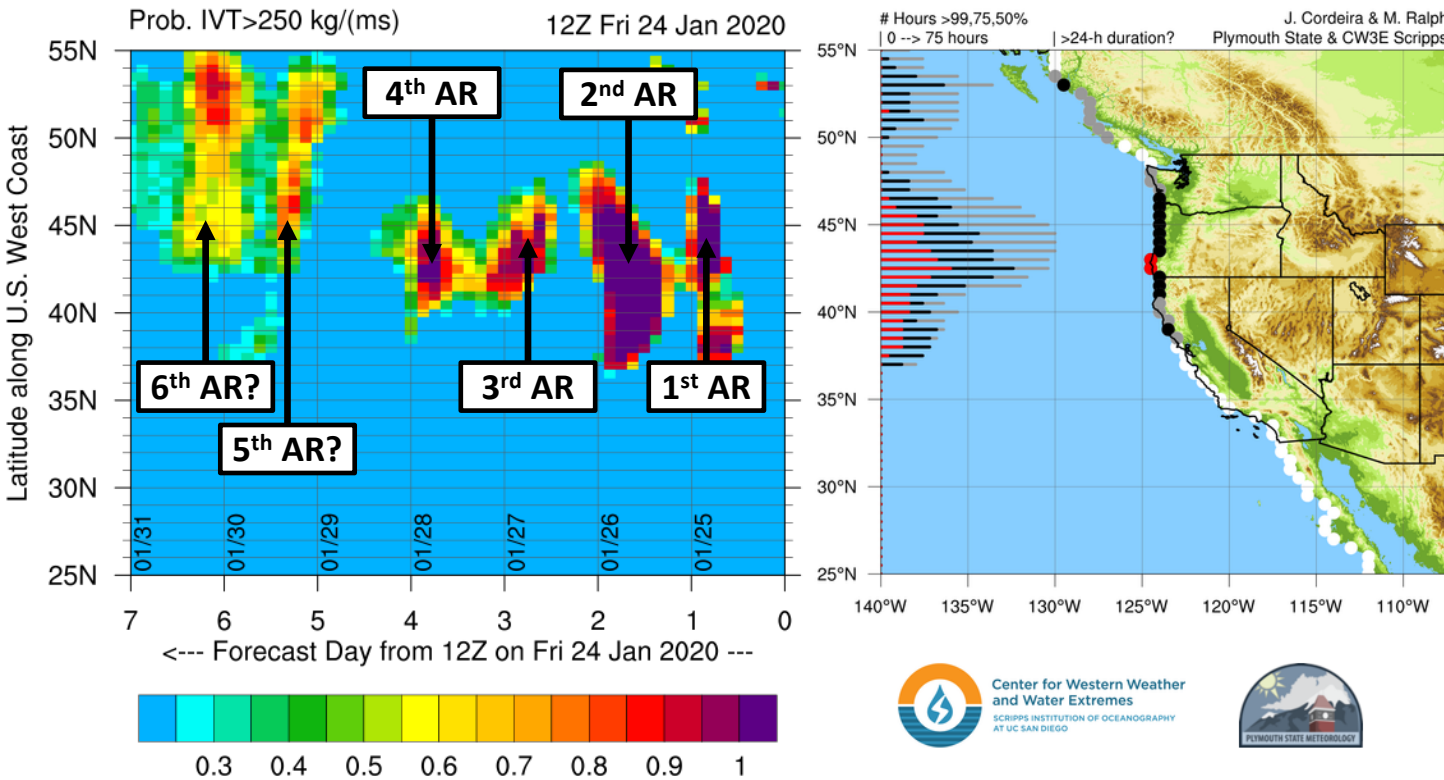
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- GEFS control IVT forecast indicates the potential for 5–6 separate episodes of AR activity along the Central Oregon coast over the next 7 days
- A study by *Fish et al. (2019)* found that “AR families” (multiple landfalling ARs occurring in close succession) are quite common in the Northeast Pacific Ocean during Dec–Feb
- Beyond 27 Jan, there are significant differences between the GEFS control and ensemble mean forecast IVT
- GEFS IVT forecast plume exhibits very large uncertainty during the 29–31 Jan period

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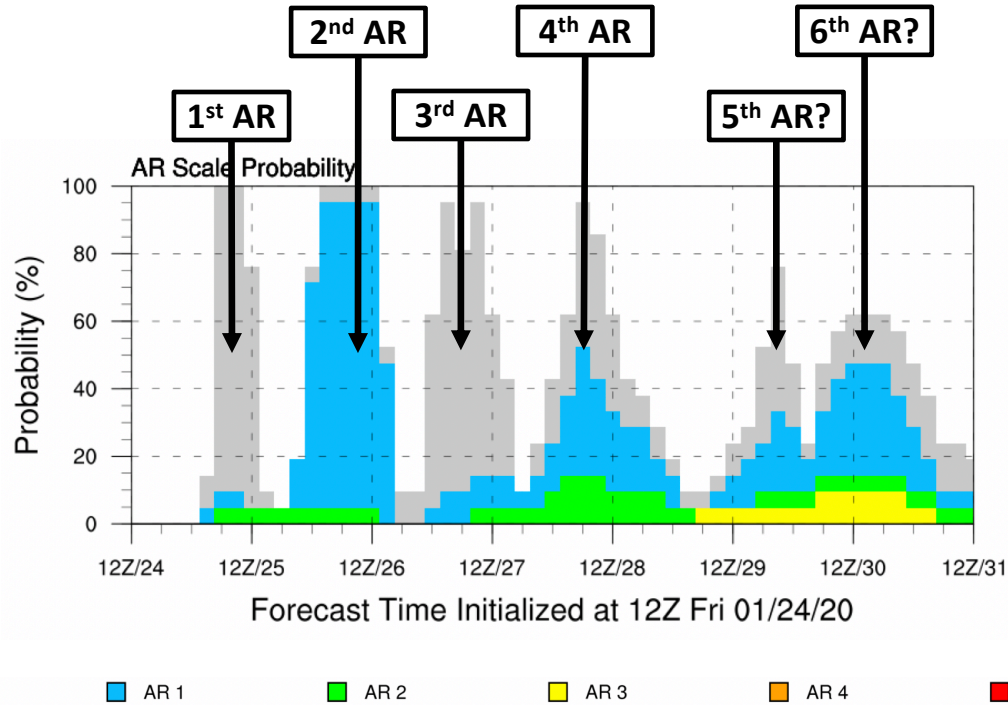
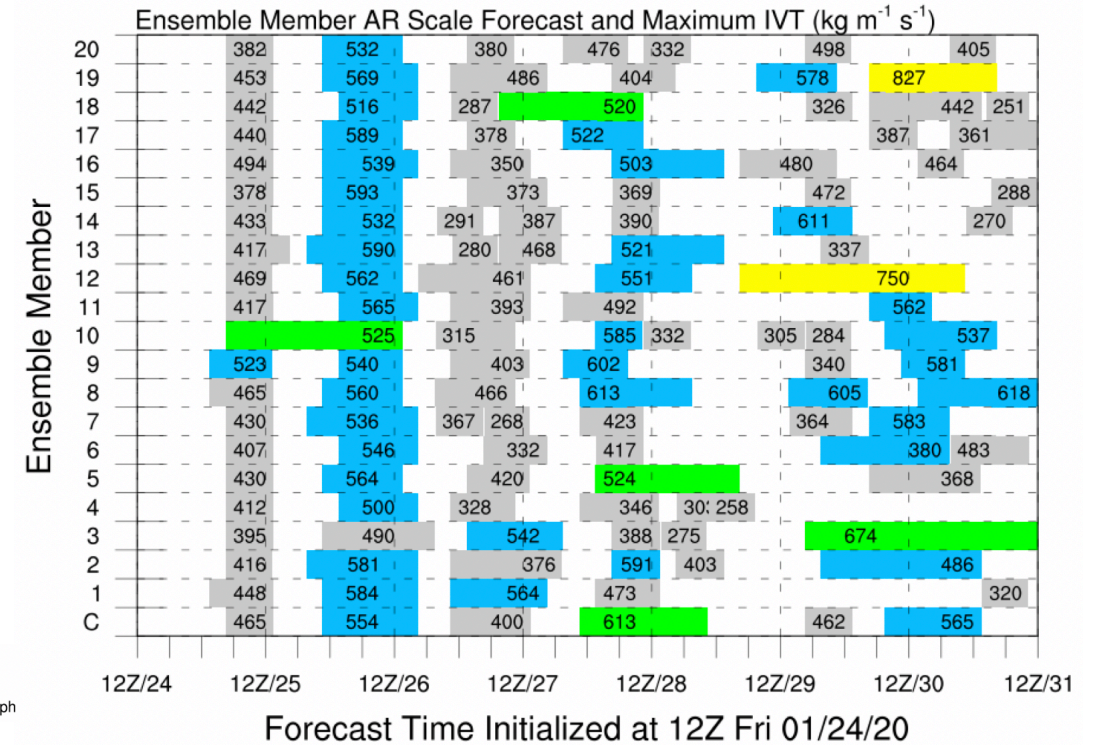


Image created: 22 UTC 01/24/2020

More information: <http://cw3e.ucsd.edu> AR Scale based on Ralph et al. (2019; BAMS), contact M. Ralph



- Individual GFS members exhibit significant differences in the timing, duration, and magnitude of AR conditions along the Central Oregon coast after 27 Jan
- GFS control member is currently forecasting AR2 conditions in association with the 4<sup>th</sup> AR, but less than 20% of ensemble members are forecasting AR2 conditions
- GFS control member is currently forecasting AR1 conditions in association with the 6<sup>th</sup> AR, but less than 65% of ensemble members are forecasting IVT  $\geq 250 \text{ kg m}^{-1} \text{ s}^{-1}$

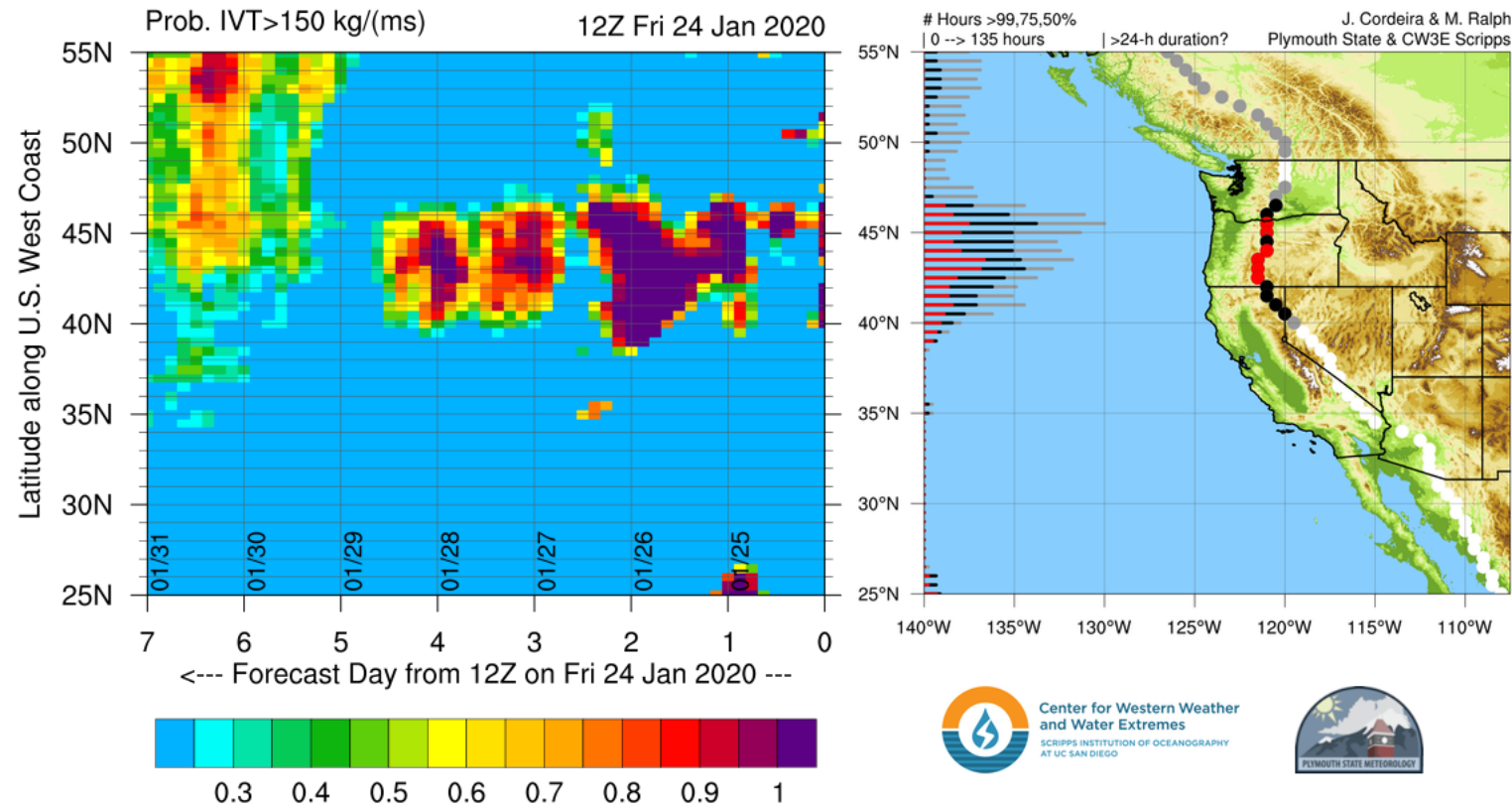
# AR Outlook: 24 Jan 2020

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- GEFS also shows high confidence (> 90%) in elevated IVT values ( $IVT > 150 \text{ kg m}^{-1} \text{ s}^{-1}$ ) over interior sections of the western U.S. during the next 4–5 days
- Inland penetration of landfalling ARs will result in unusually wet conditions across portions of the interior Pacific Northwest and the Rocky Mountains (see Slide 6)

# AR Outlook: 24 Jan 2020

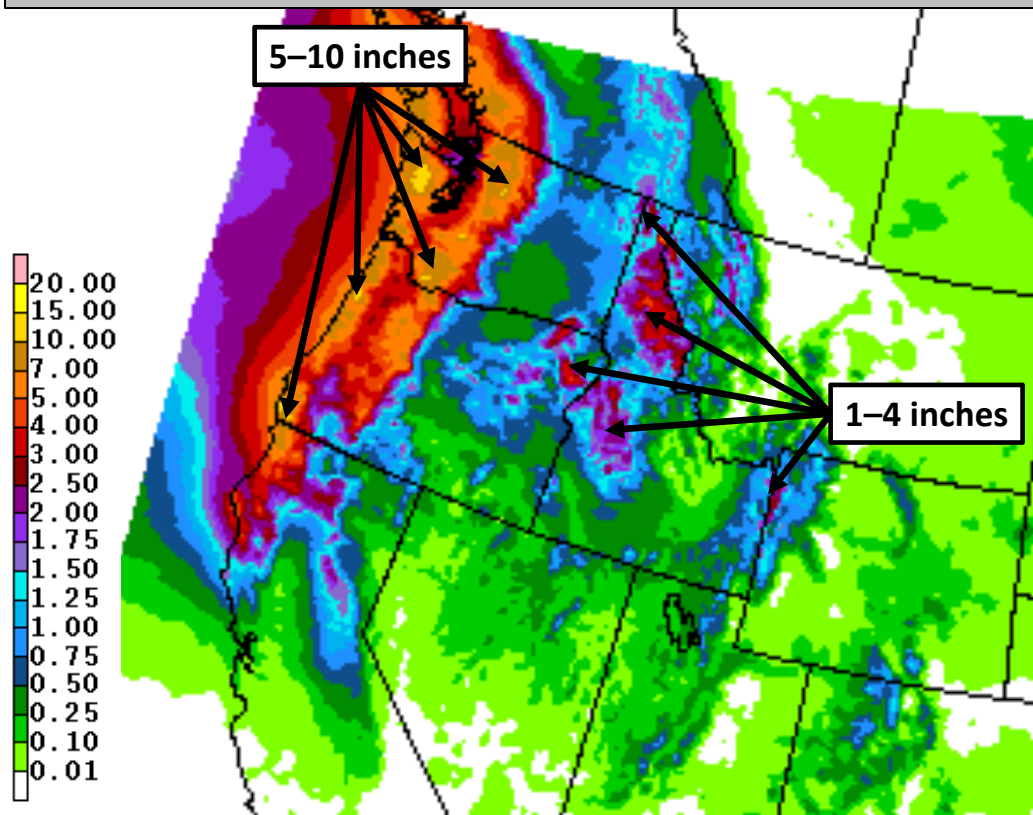
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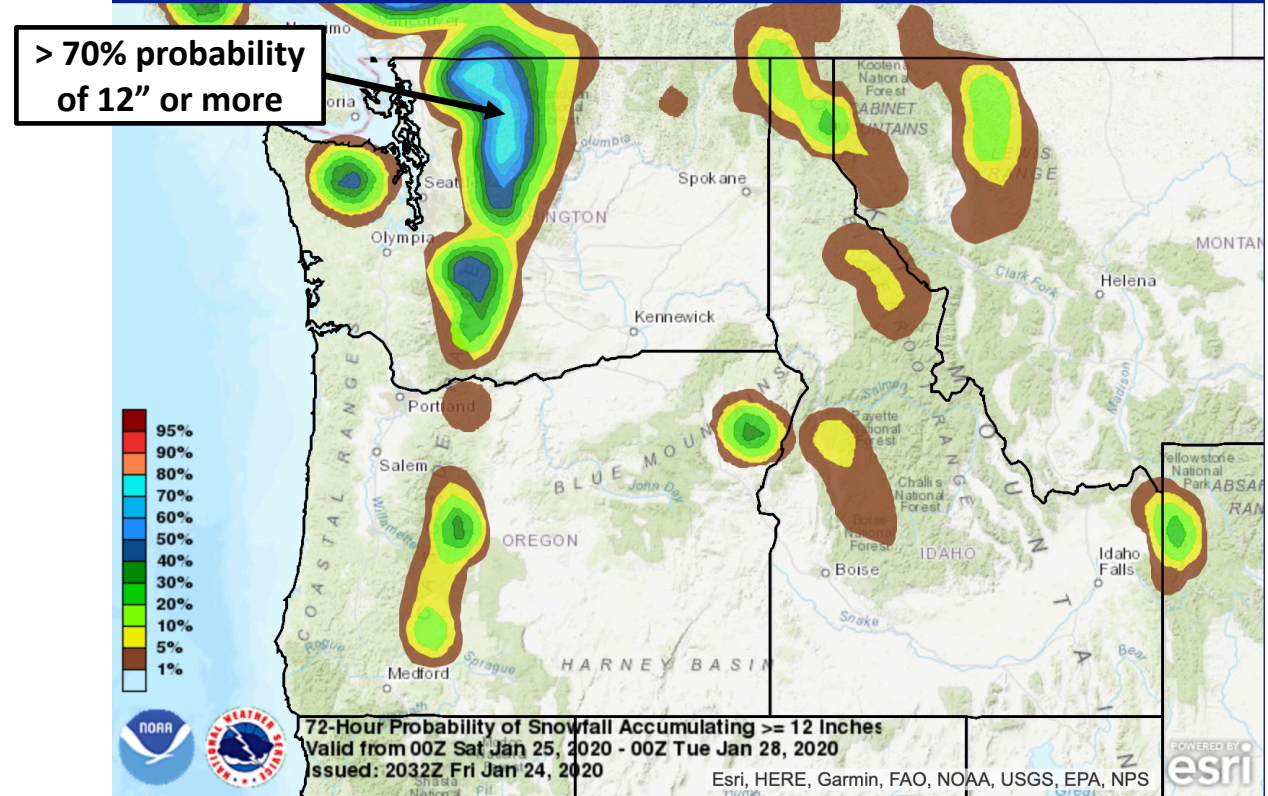
WPC 7-day QPF: Valid 0000 UTC 25 Jan – 1 Feb



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

72-Hour Probability of Snow Accumulating  $\geq 12''$

Valid 00 UTC Sat January 25 through 00 UTC Tue January 28



- More than 5 inches of precipitation are forecast over extreme northwestern California, the Oregon Coast Ranges, the Olympic Peninsula, and the Cascades over the next 7 days
- At least 12" of snowfall is very likely (> 70% probability) in the North Cascades over the next 3 days
- Lighter precipitation amounts (1–4 inches) and accumulating snow are forecast over the interior Pacific Northwest and Rocky Mountains