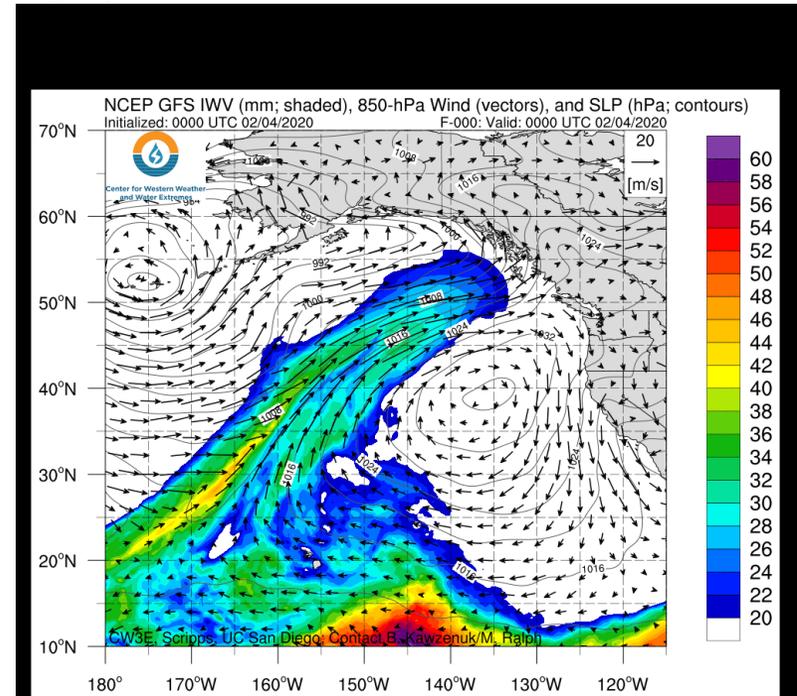
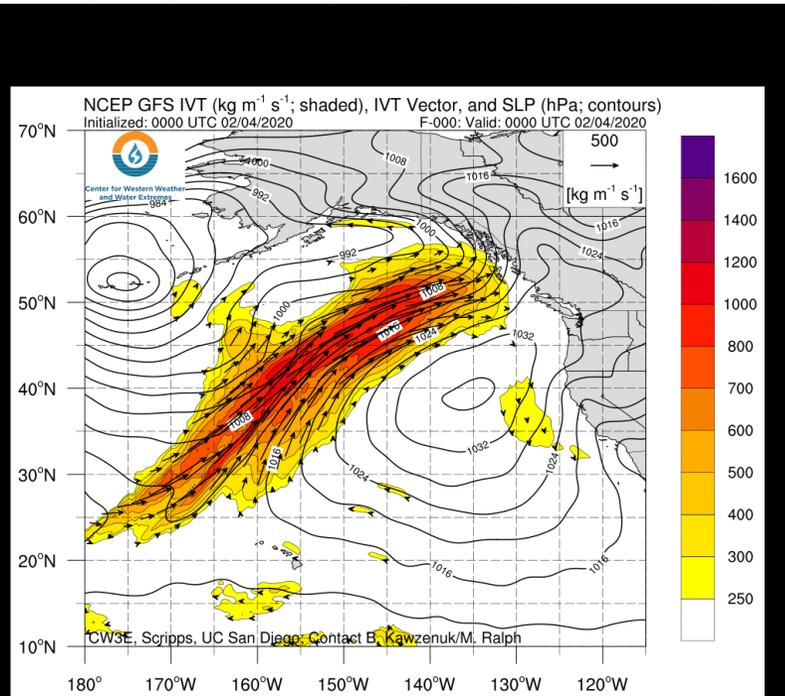




A landfalling AR will bring heavy rainfall and mountain snowfall to the Pacific Northwest

- Some areas along the Washington and Oregon coast may experience AR conditions for more than 48 hours
- Prolonged inland penetration of AR conditions is likely over the Intermountain West
- At least 2–7 inches of precipitation are expected over portions of western Washington and northwestern Oregon during the next 3 days, with at least 12" of snowfall in the North Cascades and portions of the Intermountain West
- River flooding is possible once again downstream of the Washington Cascades
- Landfalling AR activity beyond Day 4 (8 Feb) is unlikely as surface high pressure builds over the Northeast Pacific Ocean





Flooding Possible Again

Wednesday February 5th- Friday February 7th, 2020



Location:

- Rivers, streams, and urban areas in Western Washington



Details:

- Periods of heavy rain this week, especially **Tuesday night through early Friday**, will likely produce flooding on many rivers, streams, and urban areas
- Some rivers may reach flood stage as early as Wednesday afternoon.



Prepare:

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

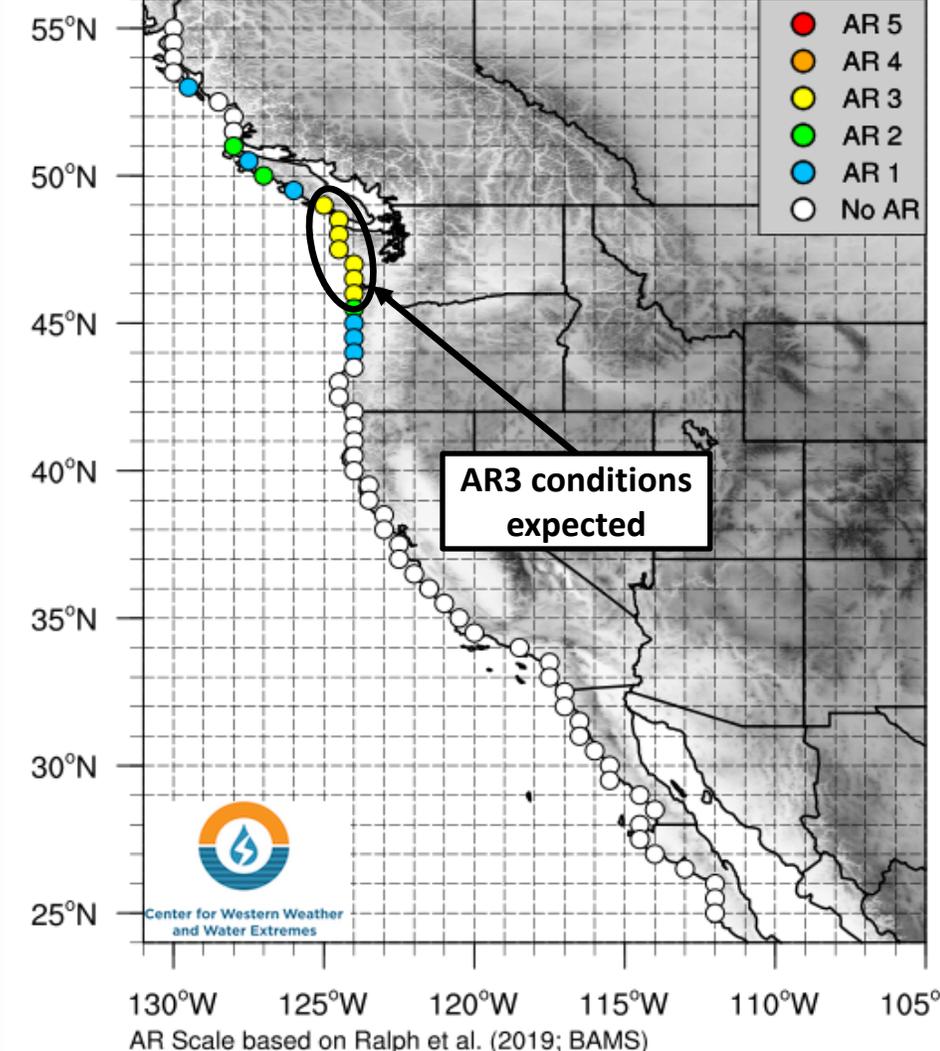


Issued 2/4/2020 by NWS Seattle

Maximum Forecast AR Scale

Forecast valid 7-day Period: 00Z 02/04/20 - 00Z 02/11/2020

GEFS Control



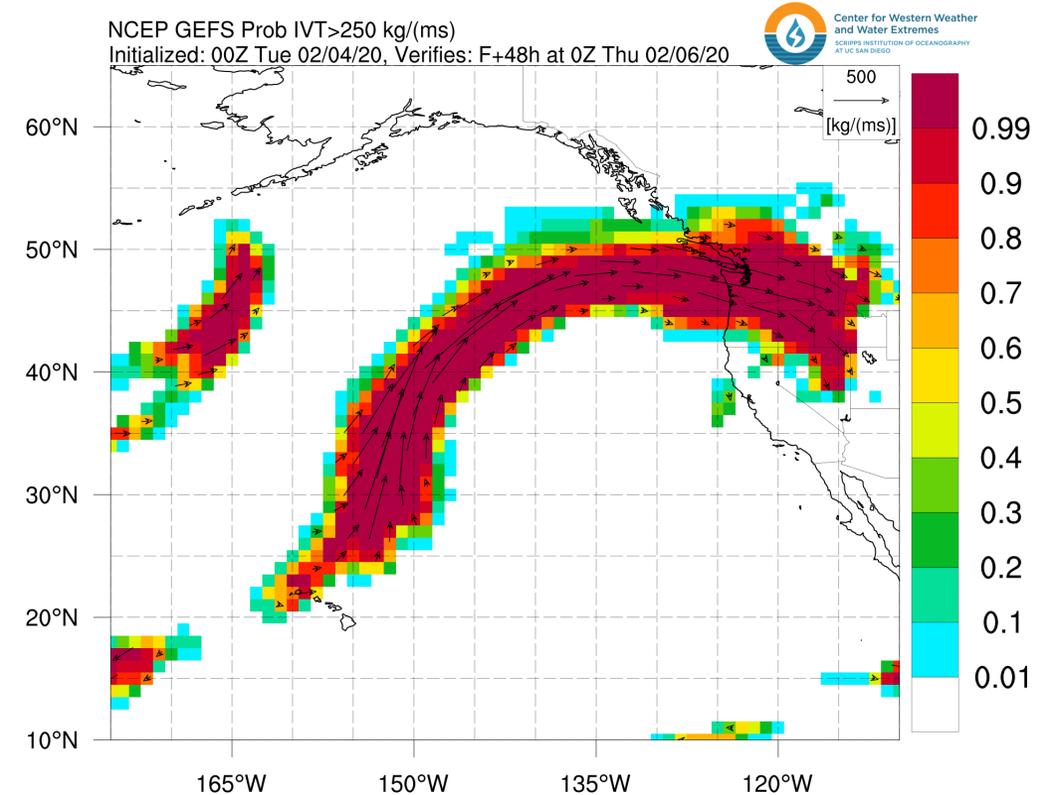
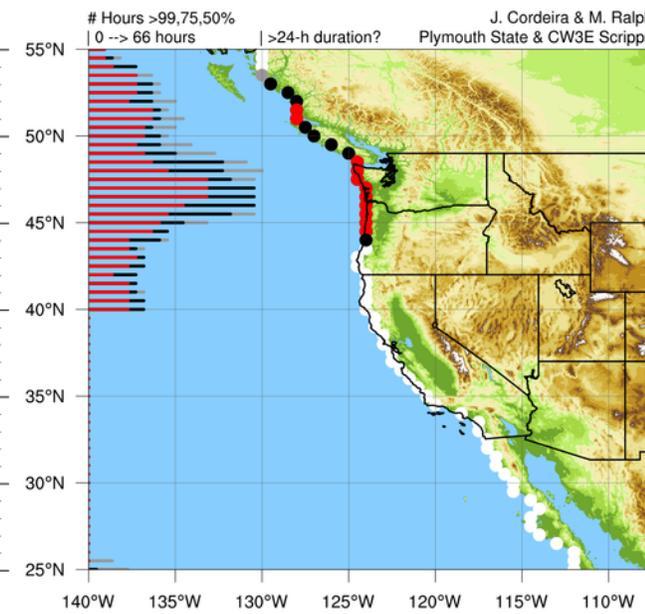
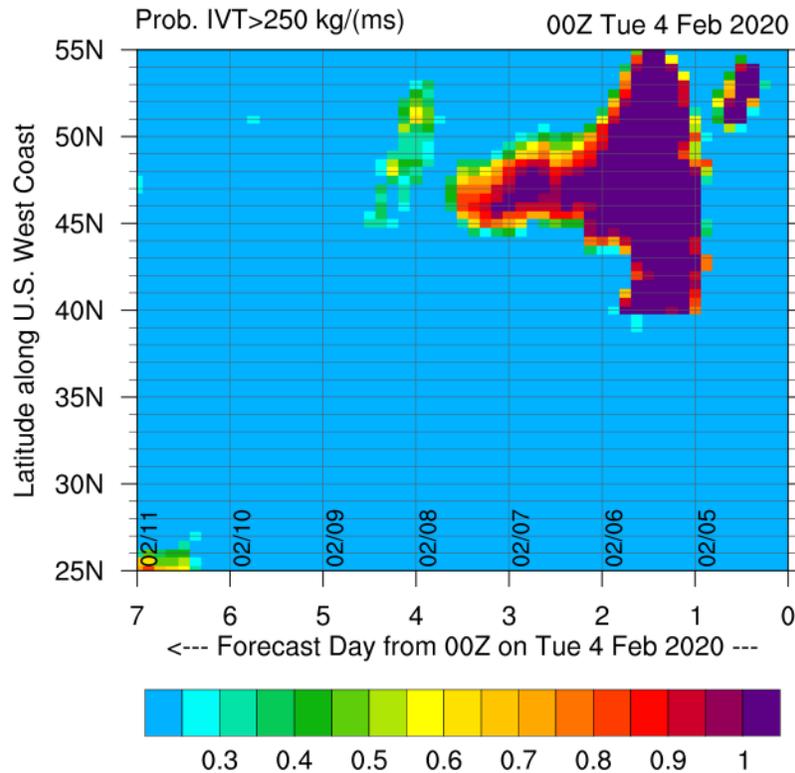
AR Outlook: 4 Feb 2020

For California DWR's AR Program



Center for Western Weather and Water Extremes

SCRIPPS INSTITUTION OF OCEANOGRAPHY
AT UC SAN DIEGO



- AR landfall tool shows high confidence (> 90%) in a prolonged period (at least 48 hours) of AR conditions over western Washington and northwestern Oregon beginning around 0000 UTC 5 Feb (late afternoon today)
- There is still some uncertainty regarding how long AR conditions will persist after 0000 UTC 7 Feb
- GEFS IVT probability maps also show high confidence in the inland penetration of AR conditions over the Intermountain West by 0000 UTC 6 Feb

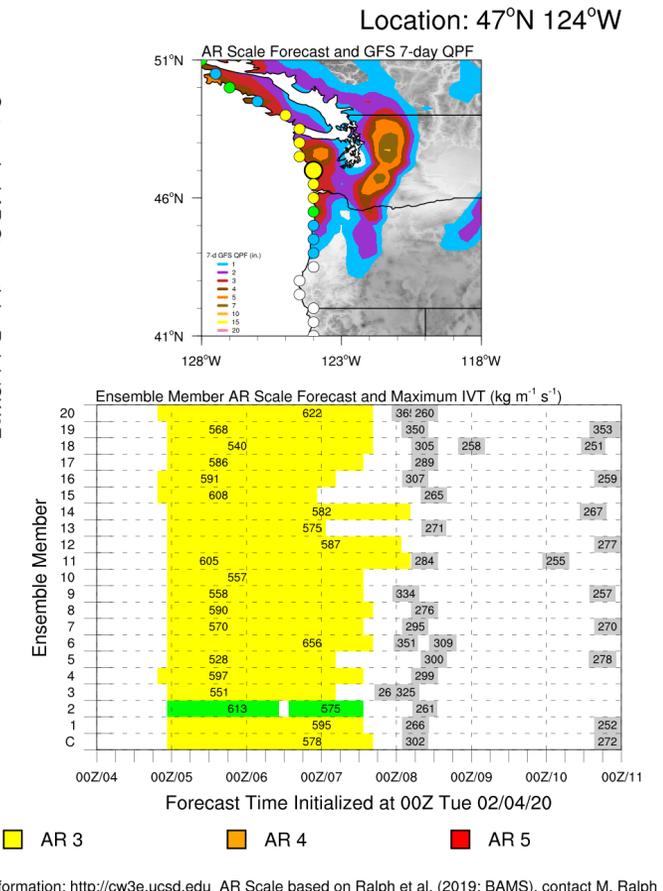
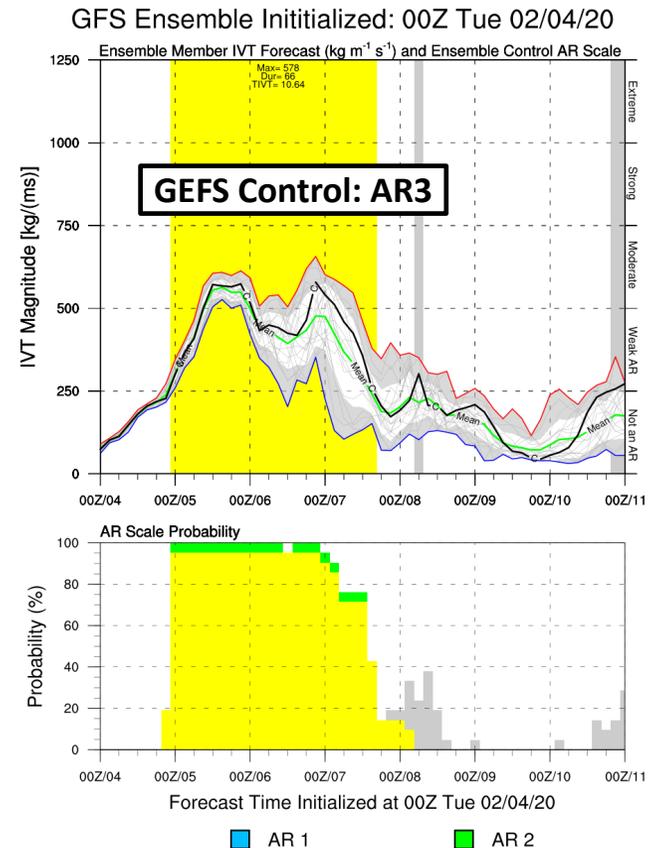
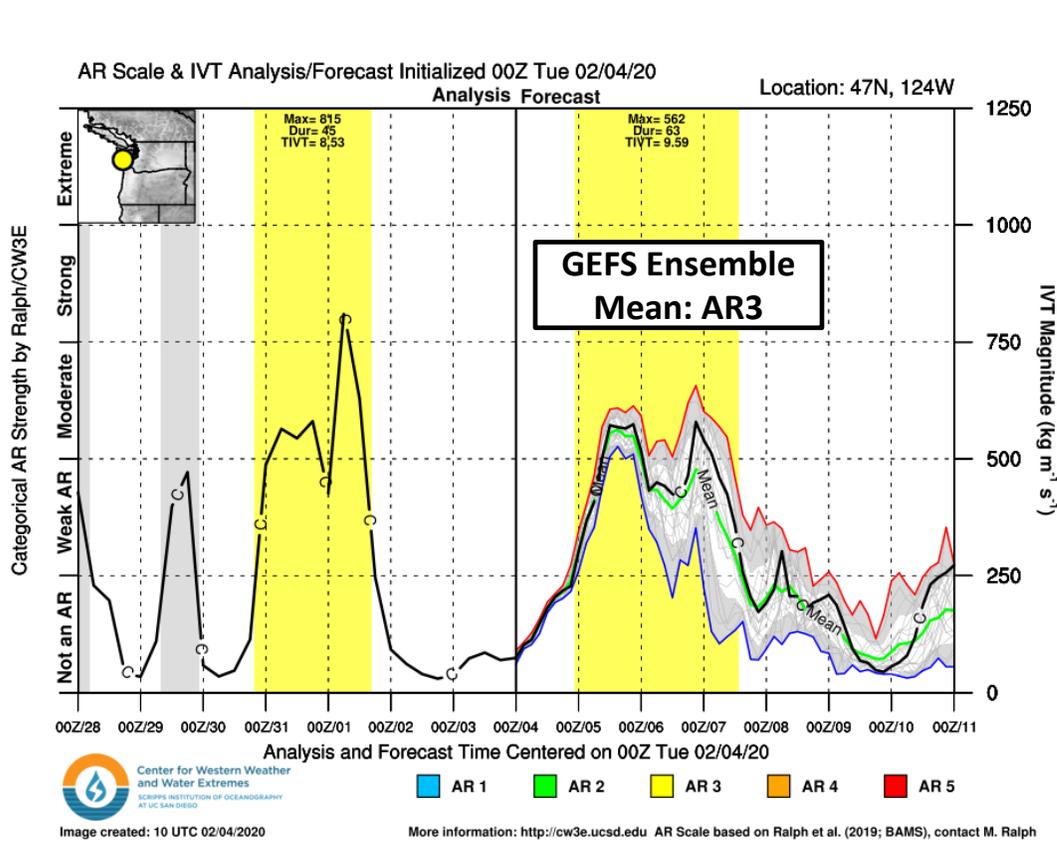
AR Outlook: 4 Feb 2020

For California DWR's AR Program



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

GEFS IVT Forecast Plumes



- 0000 UTC 4 Feb GEFS control run and ensemble mean are predicting > 60 hours of weak-to-moderate AR conditions [AR3 based on the *Ralph et al. (2019)* AR Scale] near Grays Harbor (47°N, 124°W)
- There is generally good agreement among individual GEFS members, with 20/21 members predicting AR3 conditions at this location
- As mentioned earlier, there is some uncertainty in the duration of AR conditions beyond 0000 UTC 7 Feb

AR Outlook: 4 Feb 2020

For California DWR's AR Program



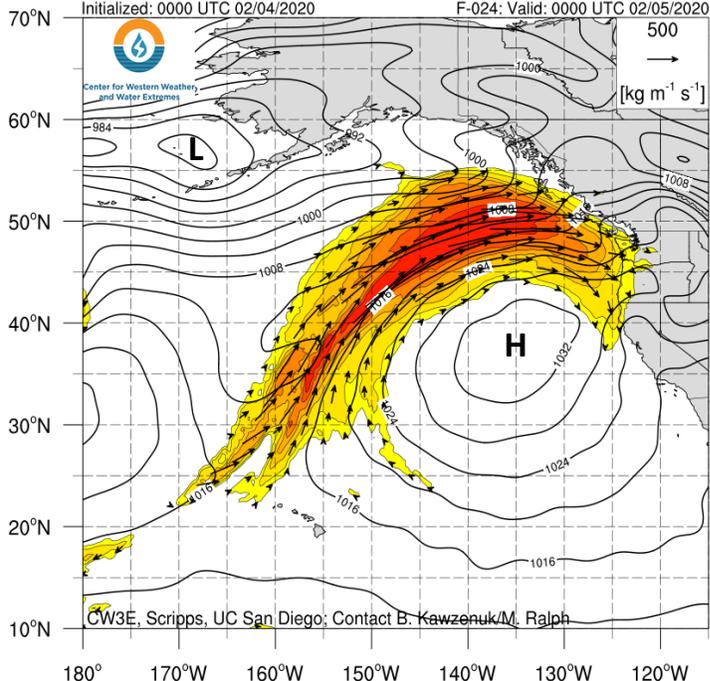
Center for Western Weather
and Water Extremes

SCRIPPS INSTITUTION OF OCEANOGRAPHY
AT UC SAN DIEGO

GFS IVT Forecasts

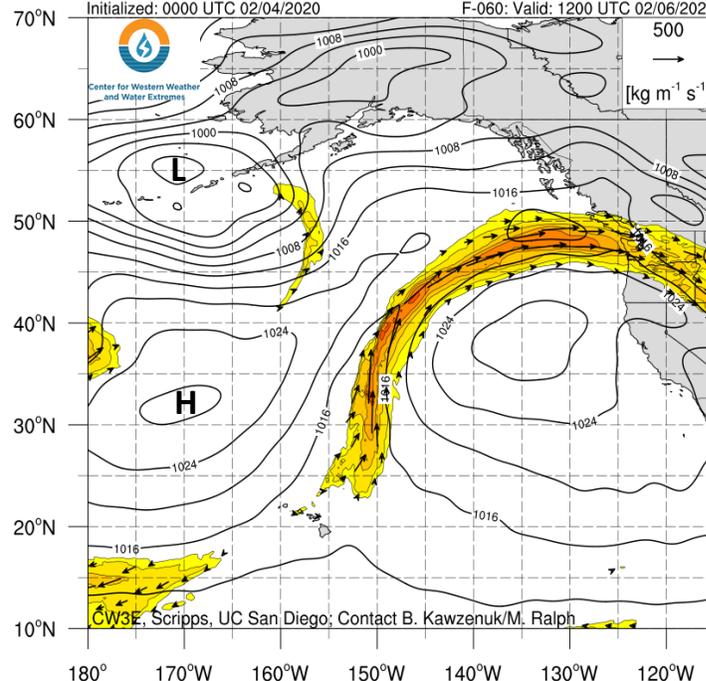
F-24 Valid: 0000 UTC 5 Feb

NCEP GFS IVT ($\text{kg m}^{-1} \text{s}^{-1}$; shaded), IVT Vector, and SLP (hPa; contours)
Initialized: 0000 UTC 02/04/2020 F-024: Valid: 0000 UTC 02/05/2020



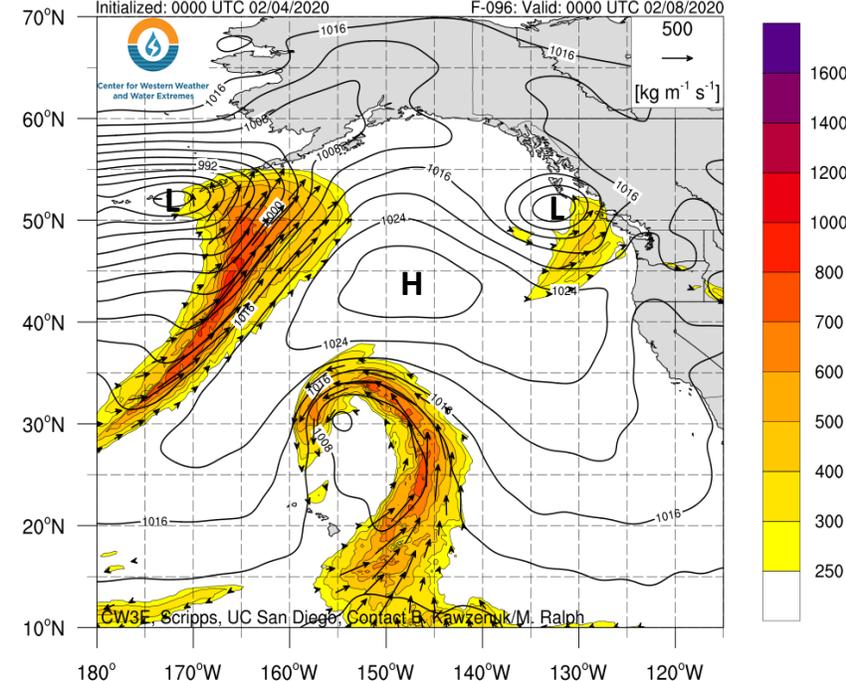
F-60 Valid: 1200 UTC 6 Feb

NCEP GFS IVT ($\text{kg m}^{-1} \text{s}^{-1}$; shaded), IVT Vector, and SLP (hPa; contours)
Initialized: 0000 UTC 02/04/2020 F-060: Valid: 1200 UTC 02/06/2020



F-96 Valid: 0000 UTC 8 Feb

NCEP GFS IVT ($\text{kg m}^{-1} \text{s}^{-1}$; shaded), IVT Vector, and SLP (hPa; contours)
Initialized: 0000 UTC 02/04/2020 F-096: Valid: 0000 UTC 02/08/2020



- An anticyclonically curved AR on the poleward side of surface high pressure is forecast to make landfall along the Washington and Oregon coast just before 0000 UTC 5 Feb
- After the initial pulse of IVT makes landfall on 5 Feb, the AR is expected to gradually weaken and become very narrow
- Decreasing AR width introduces some uncertainty regarding the location and duration of AR conditions beyond 1200 UTC 6 Feb
- By 0000 UTC 8 Feb, the AR has dissipated, and surface high pressure begins to strengthen once again over the Northeast Pacific Ocean

AR Outlook: 4 Feb 2020

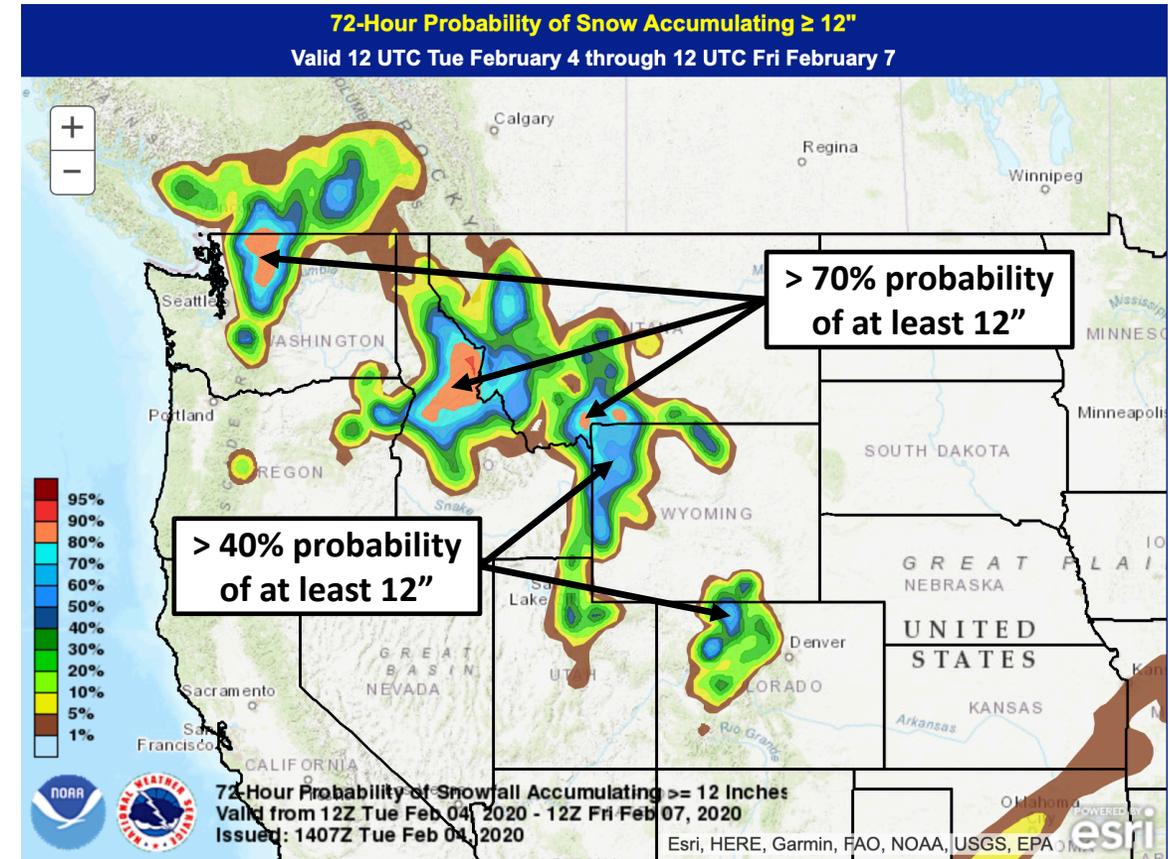
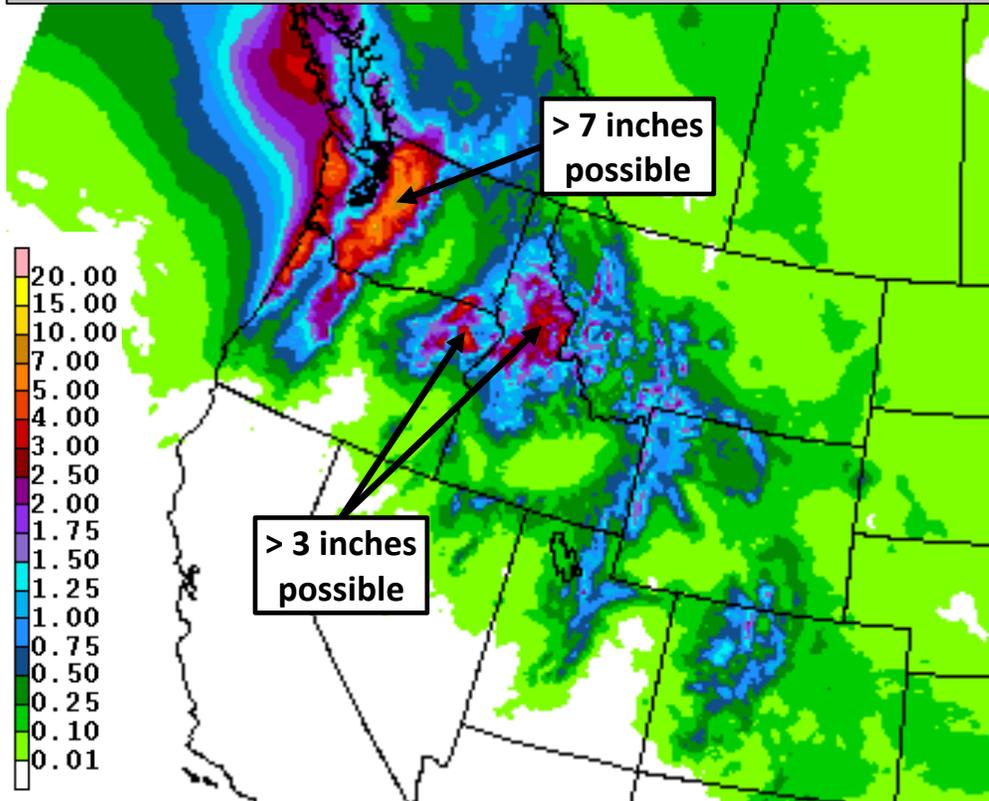
For California DWR's AR Program



Center for Western Weather
and Water Extremes

SCRIPPS INSTITUTION OF OCEANOGRAPHY
AT UC SAN DIEGO

WPC 3-day QPF: Valid 1200 UTC 4 Feb – 7 Feb



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

- At least 2–7 inches of precipitation are forecast over the northern Oregon Coast Ranges, the Olympic Peninsula, and the Cascades during the next 3 days, with locally higher amounts over the Washington Cascades
- Lighter precipitation (1–3 inches) is forecast over the Rocky Mountains and elevated portions of the interior Pacific Northwest, with higher amounts possible in northeastern Oregon and North Central Idaho
- At least 12" of snowfall is likely (> 70% probability) across the North Cascades, the Salmon River Mountains and Bitterroots in North Central Idaho, and the Madison Range in southern Montana

AR Outlook: 4 Feb 2020

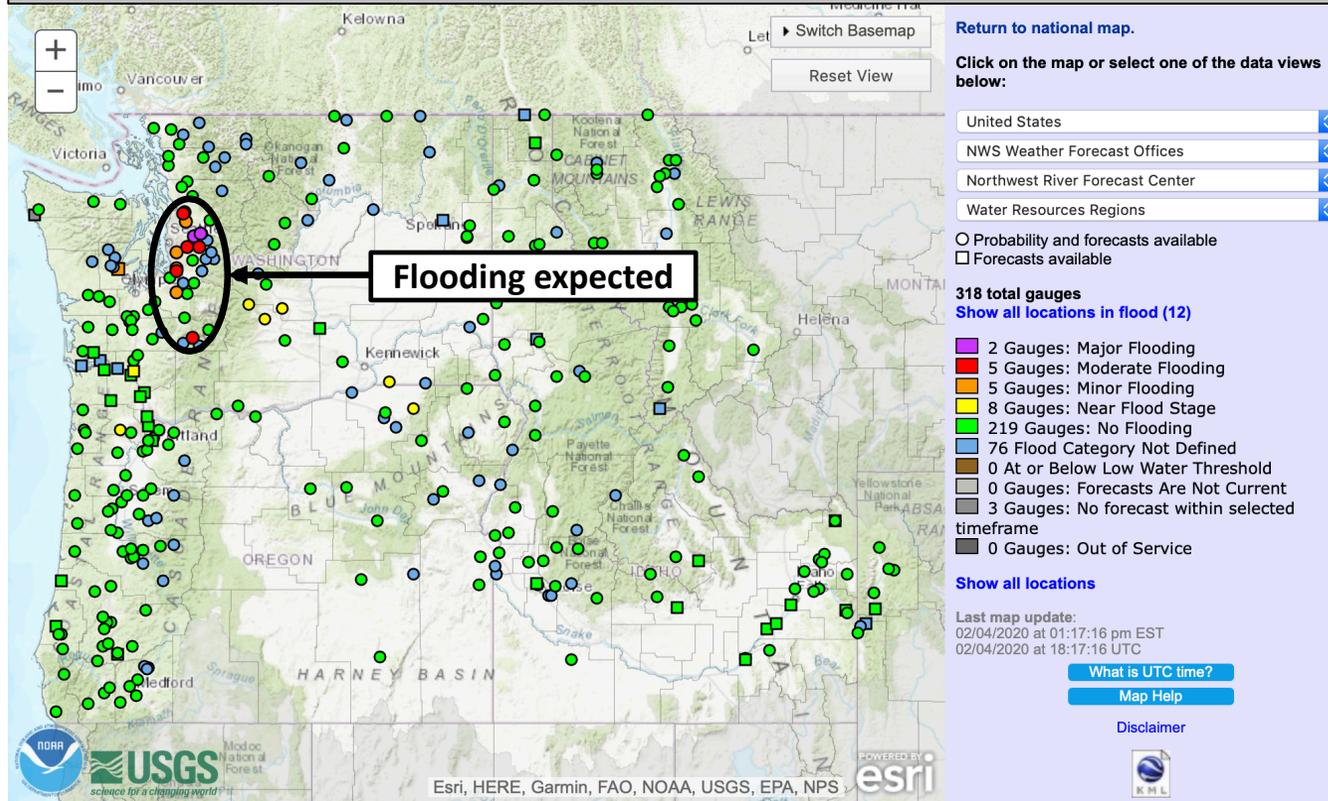
For California DWR's AR Program



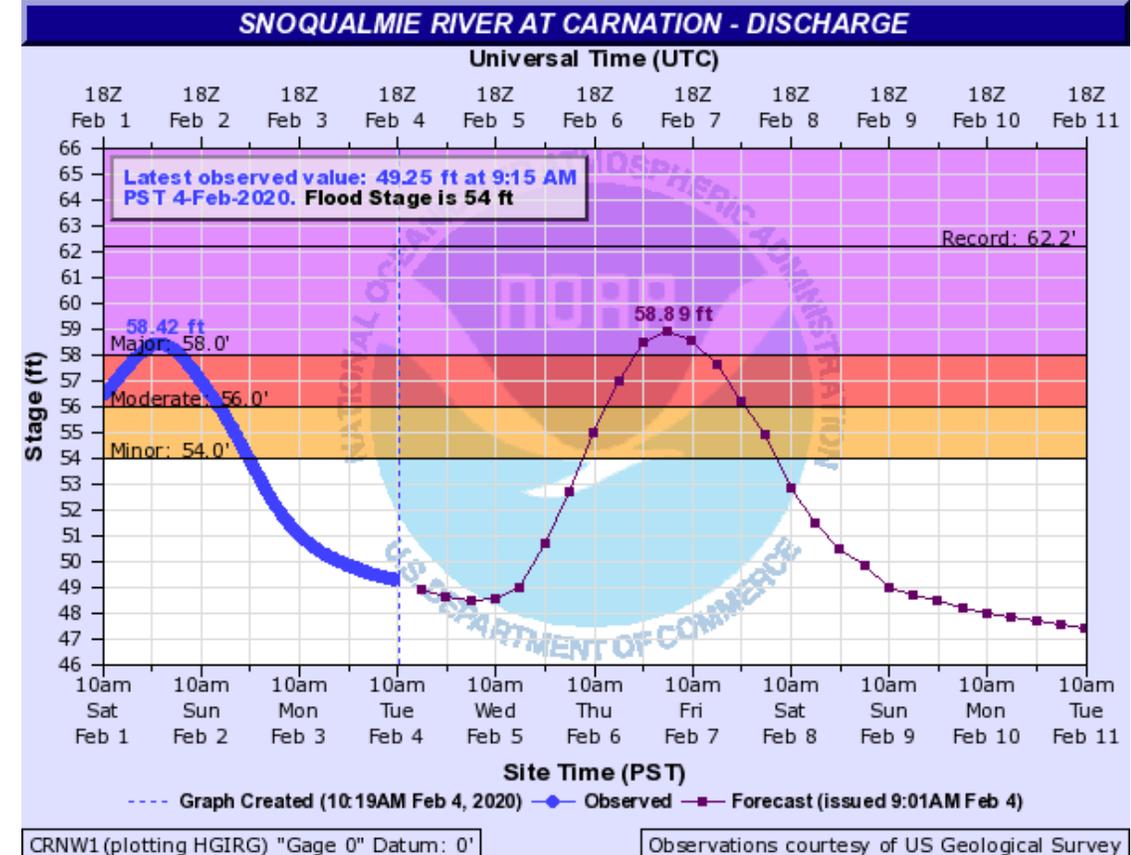
Center for Western Weather and Water Extremes

SCRIPPS INSTITUTION OF OCEANOGRAPHY
AT UC SAN DIEGO

9-day Maximum Forecast Flood Category (Through 13 Feb)



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



- Given the saturated soil conditions and previous rainfall over the past 4 weeks, river flooding is expected at lower elevations west of the Washington Cascades
- The Northwest River Forecast Center (NWRFC) is currently forecasting the Snoqualmie River (at Carnation, WA) to reach major flood stage late on 6 Feb and remain above flood stage for nearly 48 hours
- The Snoqualmie River exceeded flood stage at the same location as recently as 2 Feb