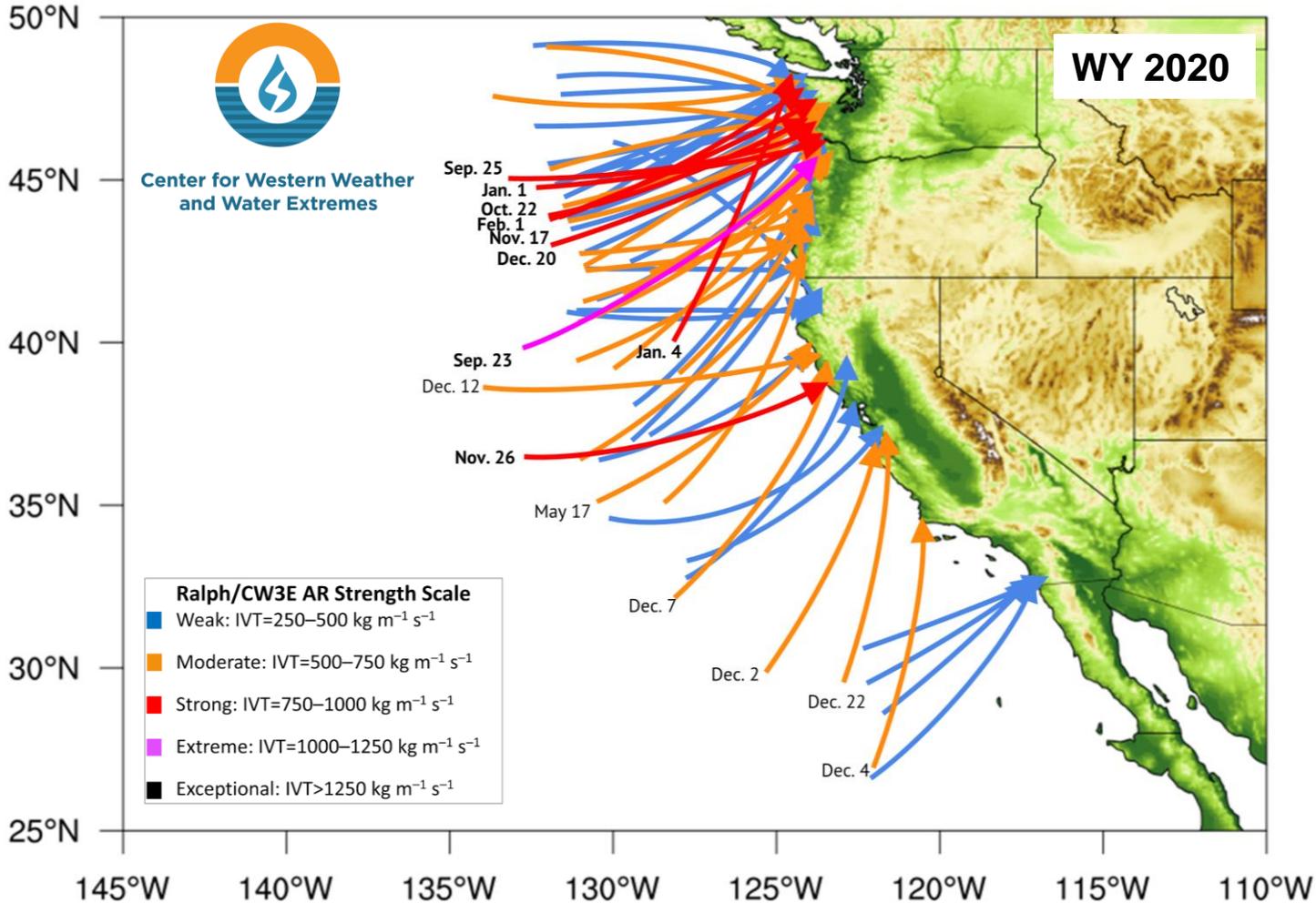


Water Year 2020 Landfalling Atmospheric Rivers

AR Strength	AR Count
Weak	31
Moderate	25
Strong	8
Extreme	1
Exceptional	0

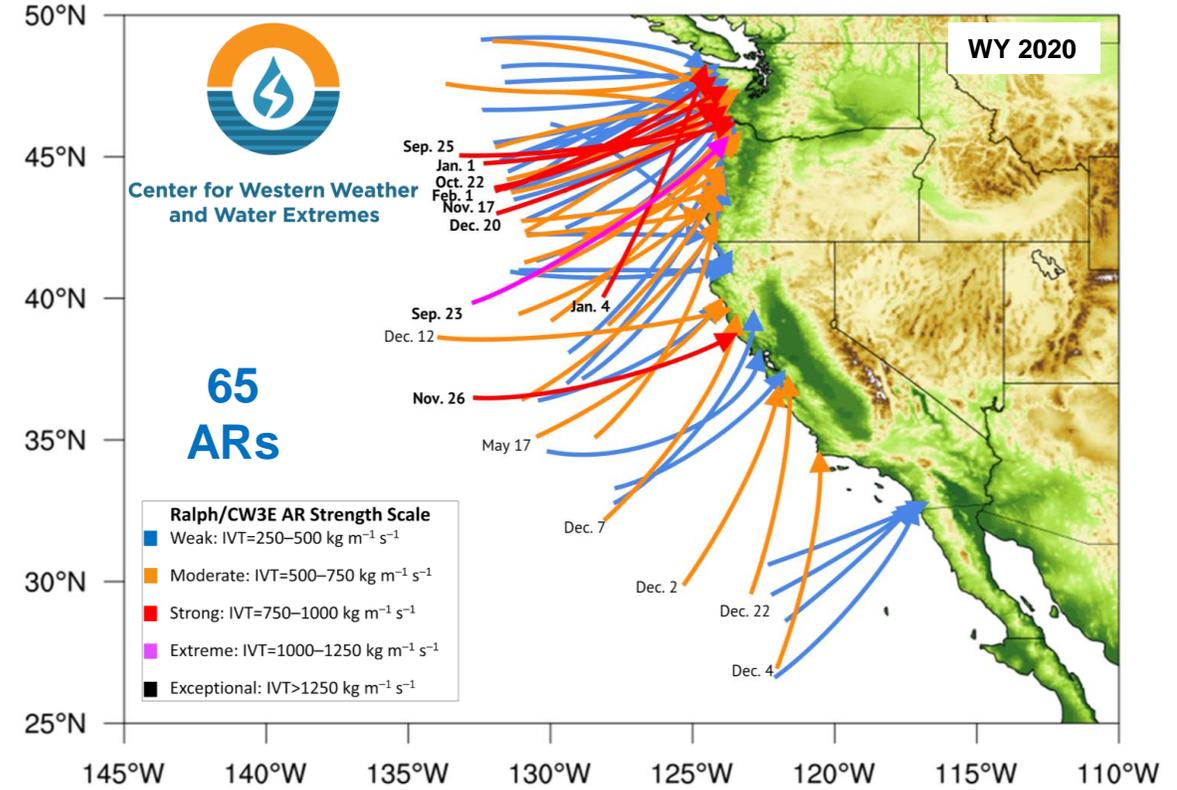
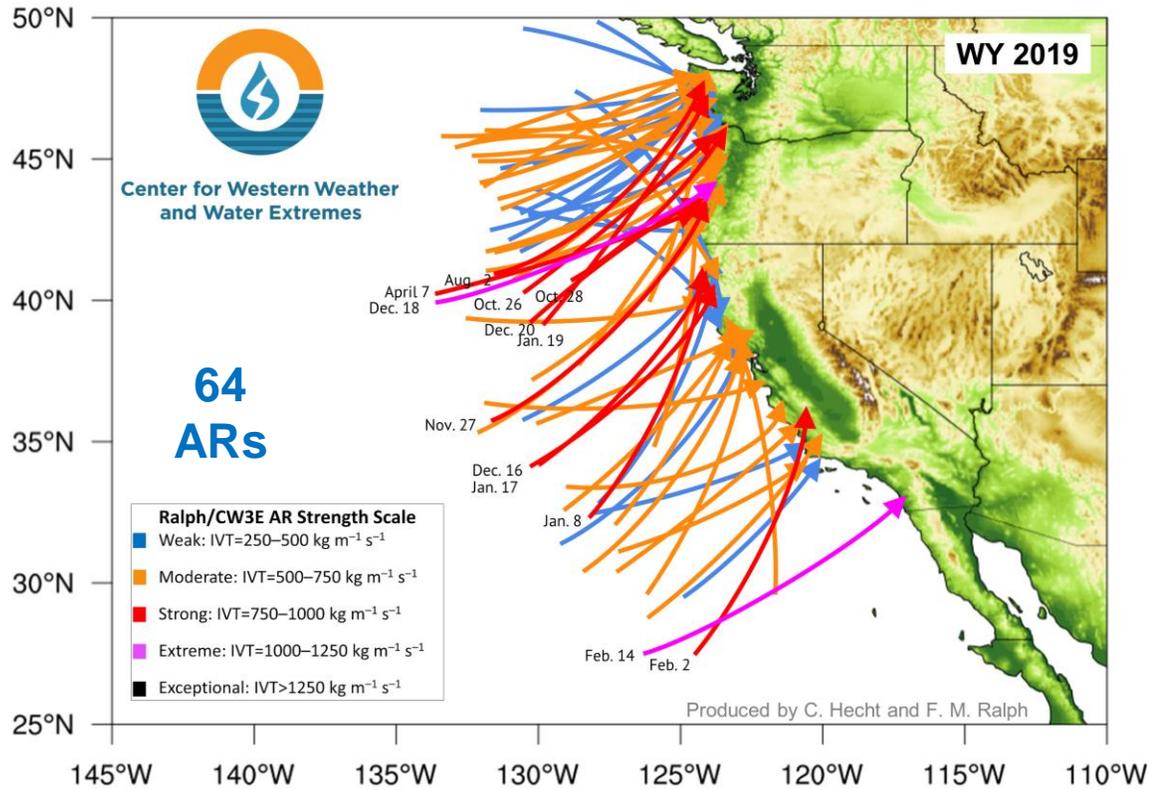
Regions Impacted by Each AR	
State/Region	AR Conditions
Washington	53
Oregon	53
Northern CA	39
Central CA	14
Southern CA	14

65 atmospheric rivers made landfall over the U.S. West Coast during Water Year 2020



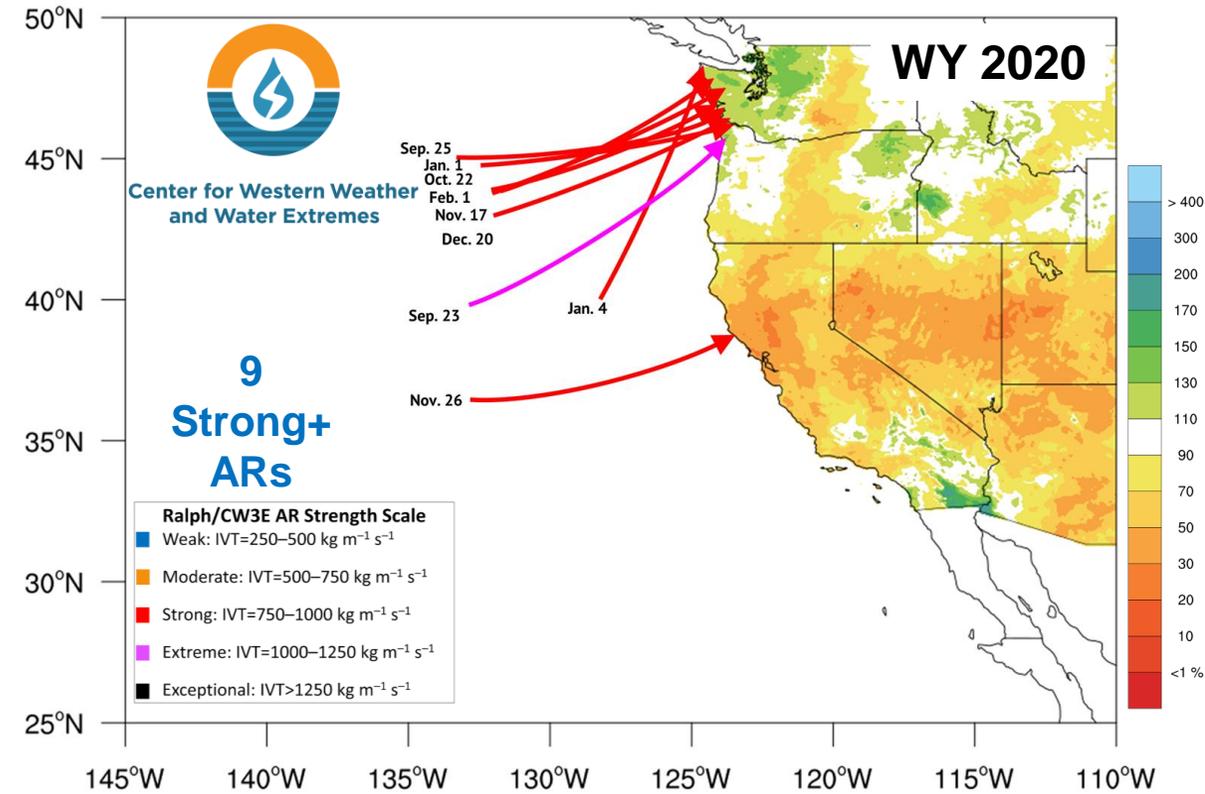
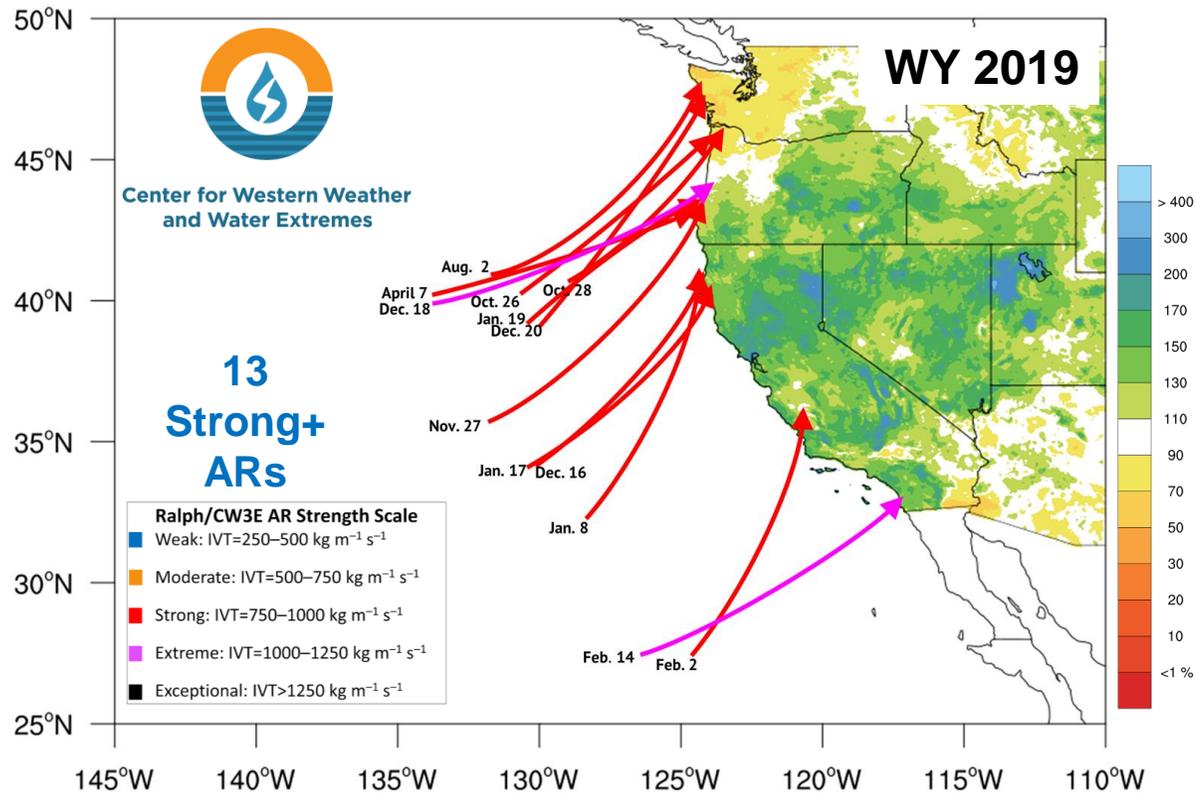
*Arrows are placed on the map where each AR was strongest over the coast

Water Year 2020 Compared to Water Year 2019



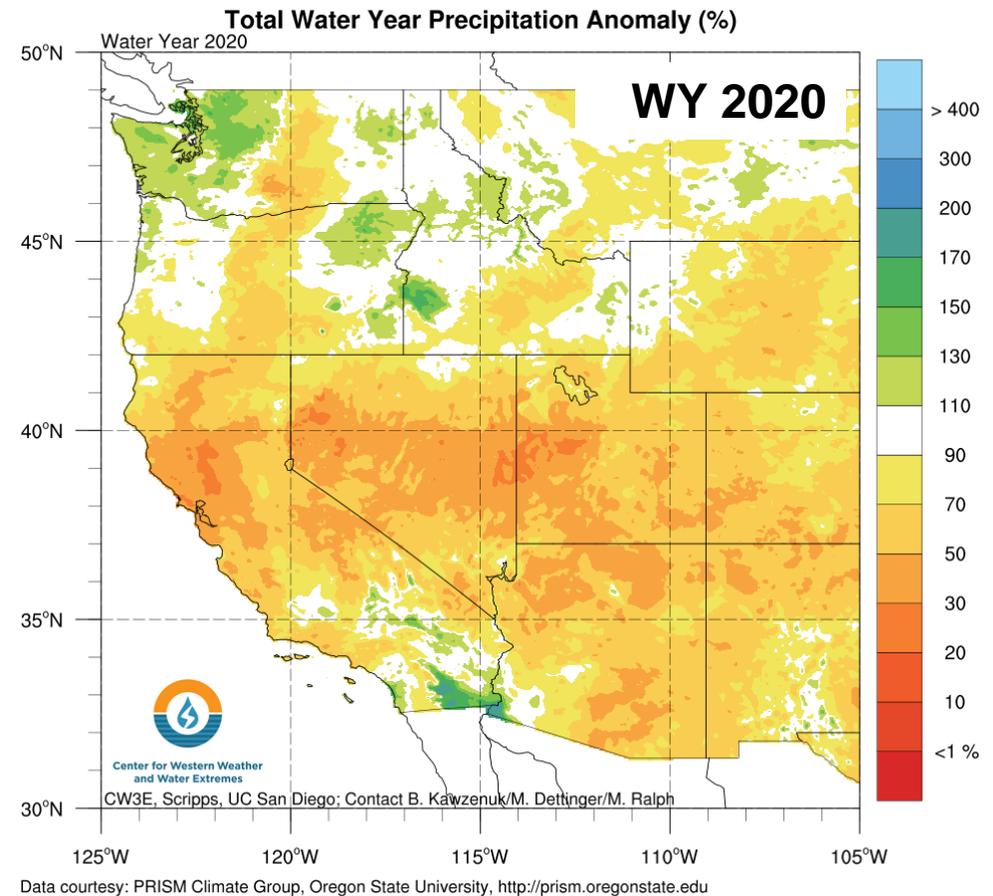
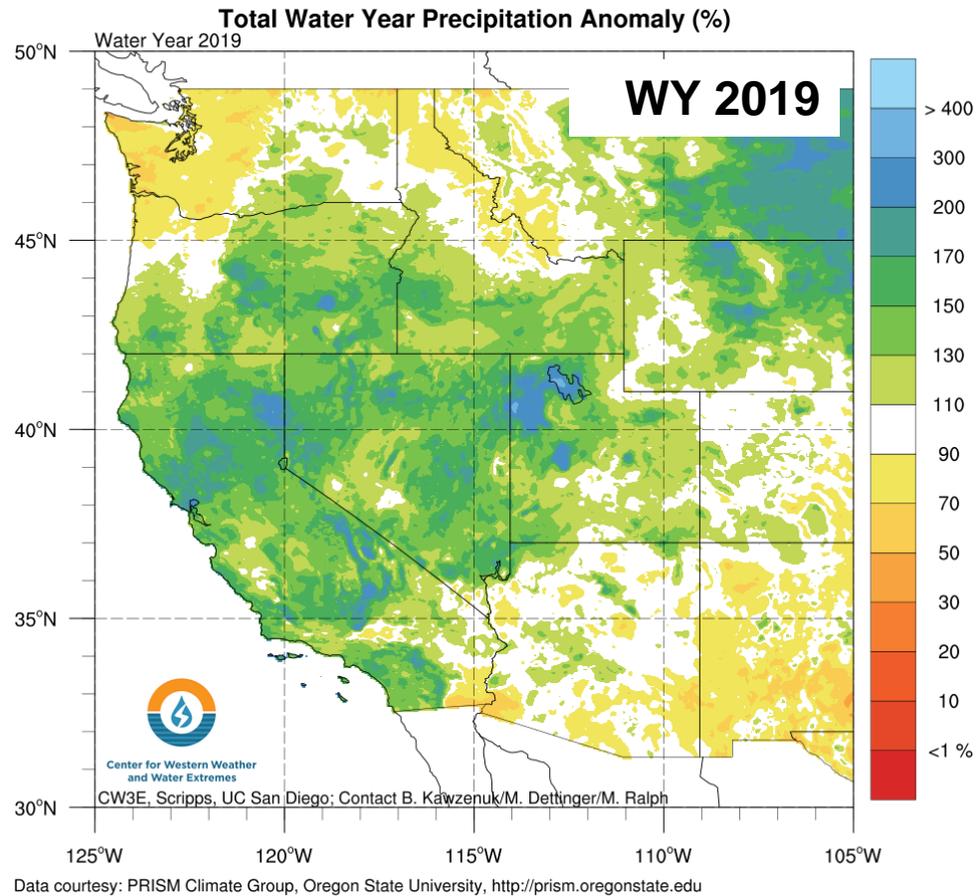
- Water Year 2020 experienced a total of **65 landfalling ARs** over the U.S. West Coast, 1 more than Water Year 2019.
- A larger majority of the Water Year 2020 ARs were weak ARs (31) as compared to Water Year 2019 (19).
- Lower precipitation across the western U.S. during 2020 compared to 2019 is likely due to a larger majority of weak ARs.

Water Year 2020 Compared to Water Year 2019



- The U.S. West Coast experienced a total of 9 strong, extreme, or exceptional ARs in Water Year 2020 compared to 13 in Water Year 2019
- The 9 strongest landfalling ARs during Water Year 2020 primarily impacted the Pacific Northwest
- Only one AR brought strong AR conditions to California in Water Year 2020; there were six during Water Year 2019
- This difference in AR strength and distribution resulted precipitation accumulations of 20–70% of normal in Water Year 2020

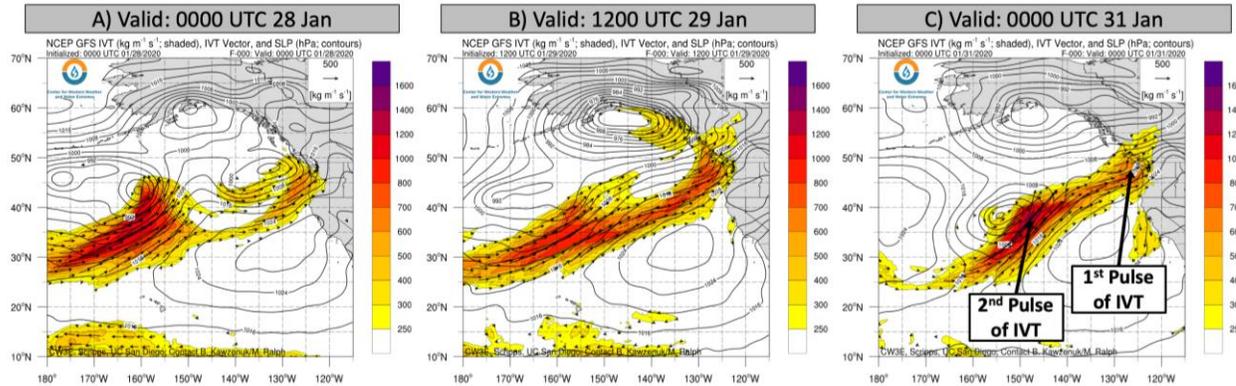
Water Year 2020 Compared to Water Year 2019



- The one strong AR over California in Water Year 2020 resulted in 20–70% of normal water year precipitation
- Six strong (or greater) ARs over California in Water Year 2019 resulted in 150% of normal water year precipitation
- Only Coastal San Diego County and the SoCal Deserts received above-normal water year precipitation in 2020
- Outside of California, a large portion of coastal WA and OR also received near or above-normal water year precipitation where a majority of the strong ARs made landfall

Water Year 2020 Highlights

26 January to 2 February 2020



Source: Washington State Department of Transportation, <https://www.wsdot.wa.gov>

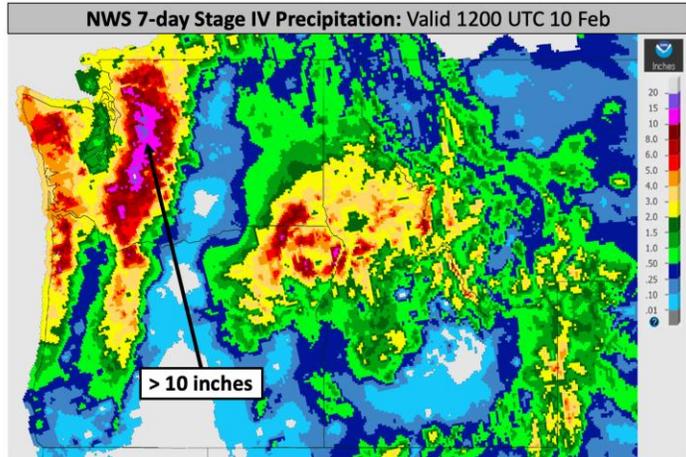


- Consecutive landfalling ARs produced heavy precipitation in late January and early February that resulted in flooding and landslides in the Pacific Northwest.
- A mesoscale frontal wave along the first AR resulted in the formation of a secondary low-pressure system and AR.
- Large precipitation accumulations associated with these successive ARs produced flooding along the Johnson Creek in Sumas, WA and a landslide near Bellingham, WA
- Visit <https://cw3e.ucsd.edu/cw3e-event-summary-26-january-2-february-2020/> for a full summary on the event

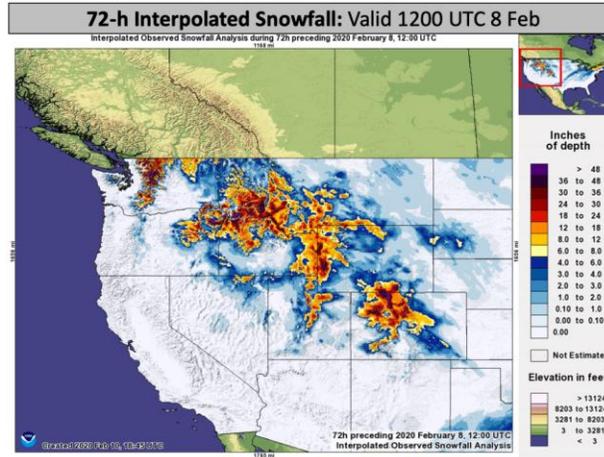
- The border crossing in Sumas, WA, was closed for more than 24 hours due to flooding along Johnson Creek
- A landslide south of Bellingham, WA, resulted in the closure of the northbound lanes on Interstate 5

Water Year 2020 Highlights

4 to 8 February 2020



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



Source: NOAA/NWS NOHRSC, <https://www.nohrsc.noaa.gov/>



Source: Washington State Department of Transportation, <https://www.wsdot.wa.gov>

- Heavy rainfall on top of saturated soils produced another round of landslides west of the WA Cascades
- Mount Rainier National Park was closed to car traffic due to debris flows across SR-706 in Ashford, WA, and SR-410 near Greenwater, WA

- A long-duration and inland-penetrating AR during the first week of February brought additional precipitation to the already wet Pacific Northwest.
- 1–3 feet of snow fell over numerous locations in the Cascades and Intermountain West.
- The additional heavy rainfall on top of saturated soils produced another round of landslides west of the Washington Cascades, resulting in numerous road closures across the region.
- Visit <https://cw3e.ucsd.edu/cw3e-event-summary-4-8-february-2020/> for a full summary on the event.