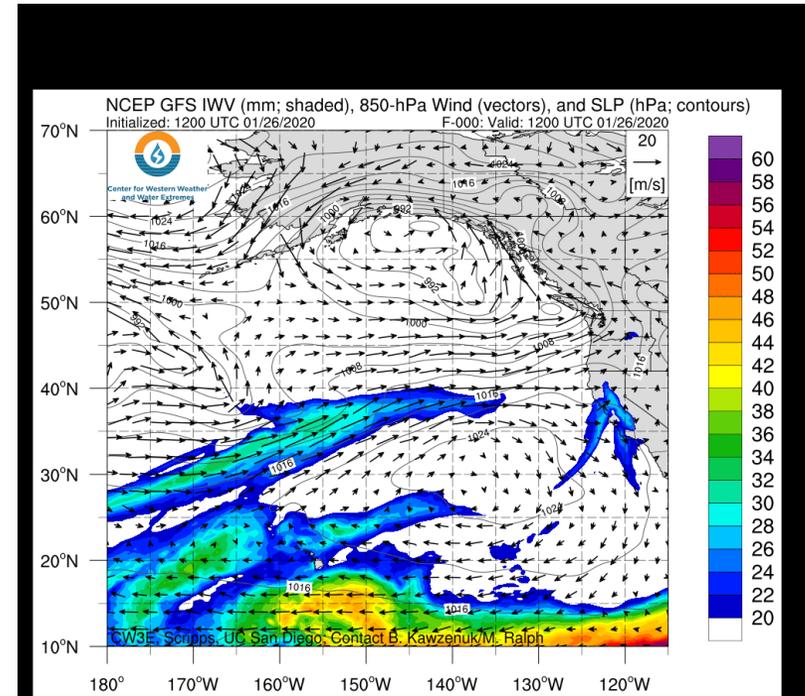
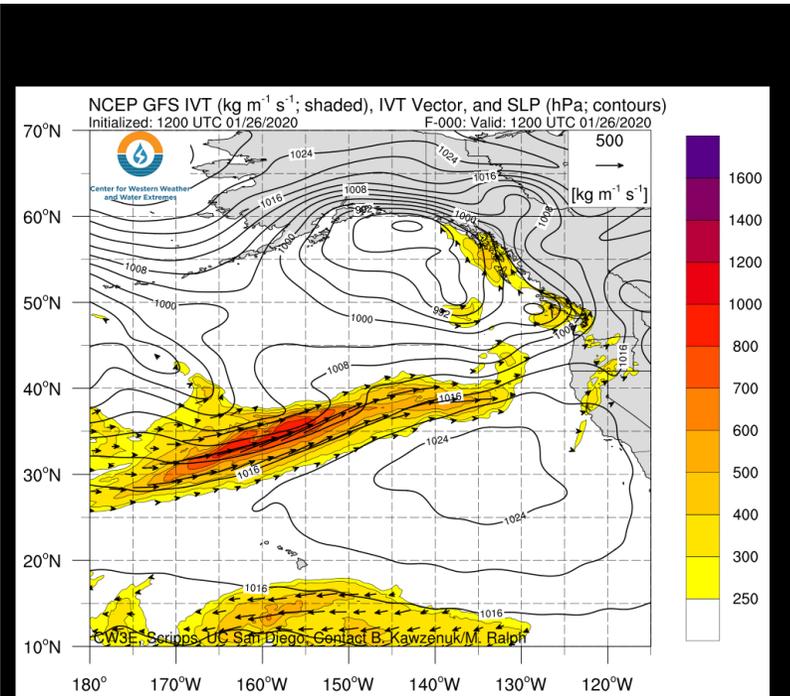


CW3E Event Summary: 26 Jan – 2 Feb 2020



Active weather pattern brings heavy rainfall and flooding to the Pacific Northwest

- A series of landfalling ARs resulted in heavy precipitation and river flooding between the last week of January and beginning of February
- The last landfalling AR produced AR3 conditions along the coast of Washington and Oregon
- Total estimated 7-day precipitation between 26 Jan and 2 Feb exceeded 5 inches over portions of western WA and northwestern OR, with more than 10 inches over the Olympic Mountains and North Cascades



CW3E Event Summary: 26 Jan – 2 Feb 2020

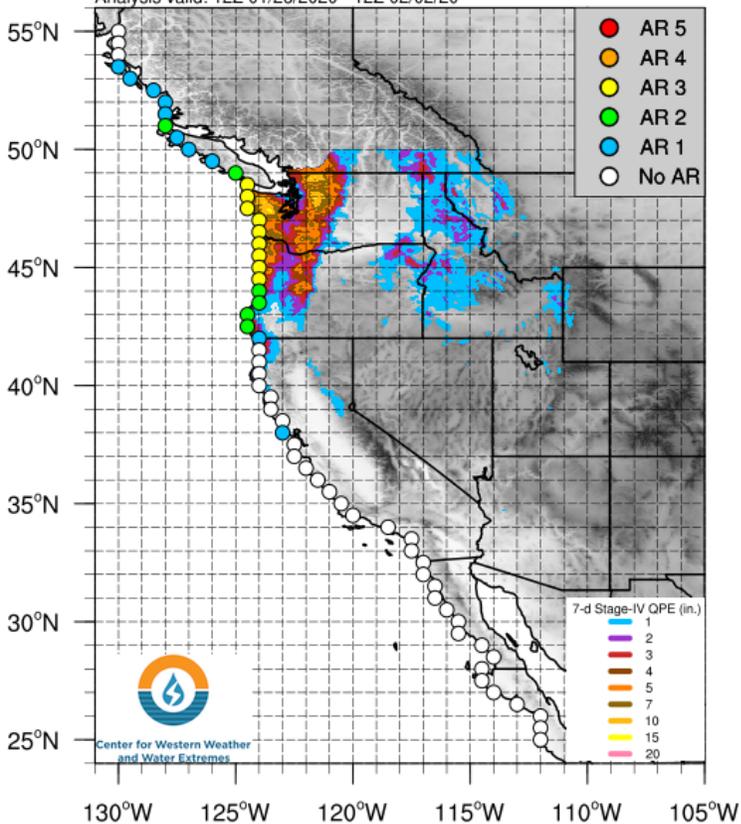


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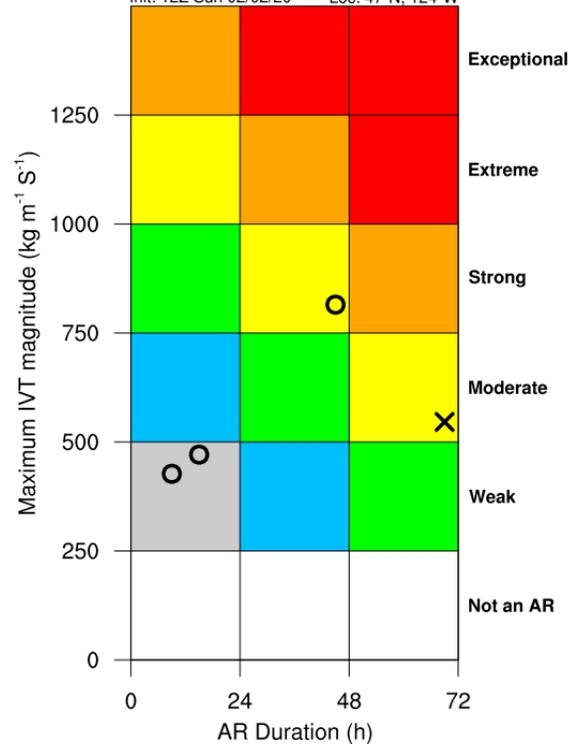
Maximum Observed AR Scale

Analysis valid: 12Z 01/26/2020 - 12Z 02/02/20



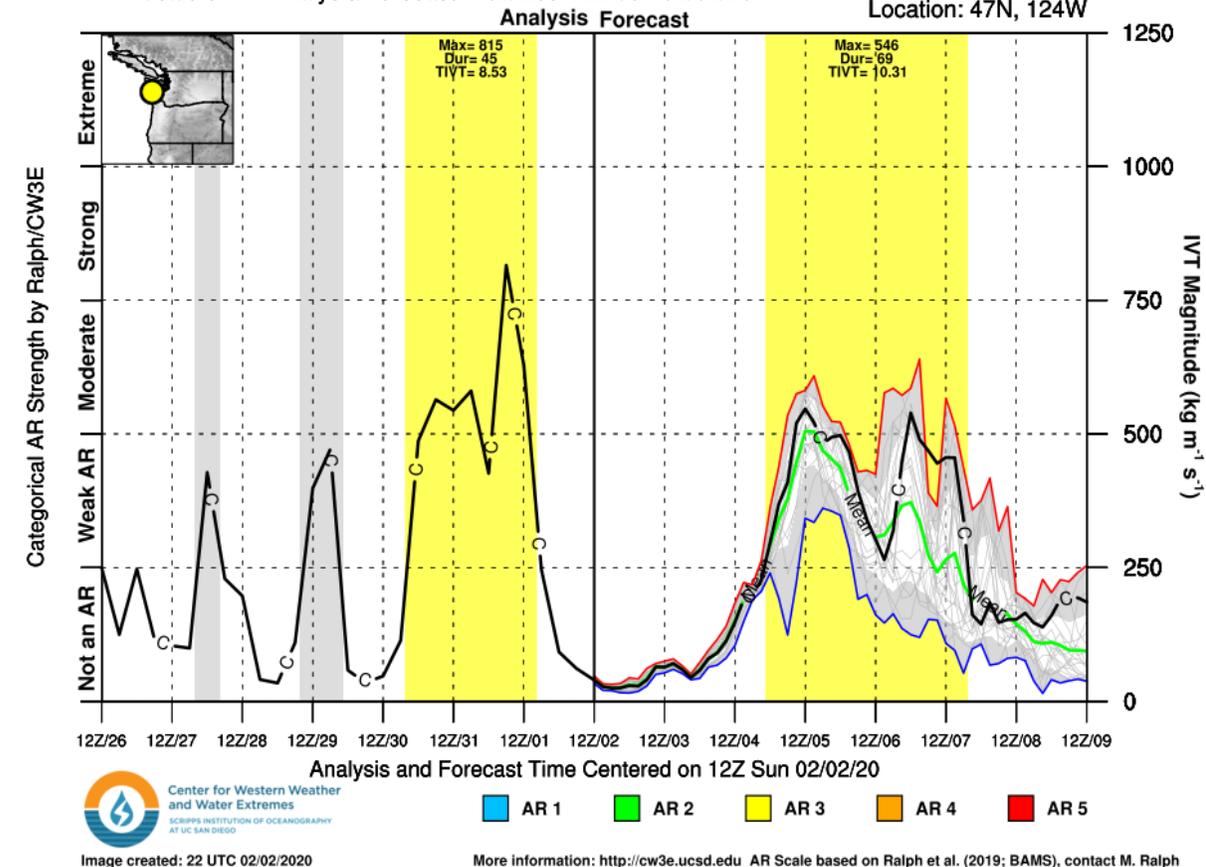
AR Scale

Init: 12Z Sun 02/02/20 Loc: 47°N, 124°W



○ Observed × Forecast

AR Scale & IVT Analysis/Forecast Initialized 12Z Sun 02/02/20



- A series of storms over the Northeast Pacific Ocean brought several episodes of AR conditions to coastal WA and OR
- Some locations along the WA and OR coast experienced AR3 conditions in association with the last landfalling AR
- An AR4 nearly verified at 47°N, 124°W (Grays Harbor), but the AR duration was 3 hours less than the criterion for AR4 conditions (≥ 48 hours)

CW3E Event Summary: 26 Jan – 2 Feb 2020

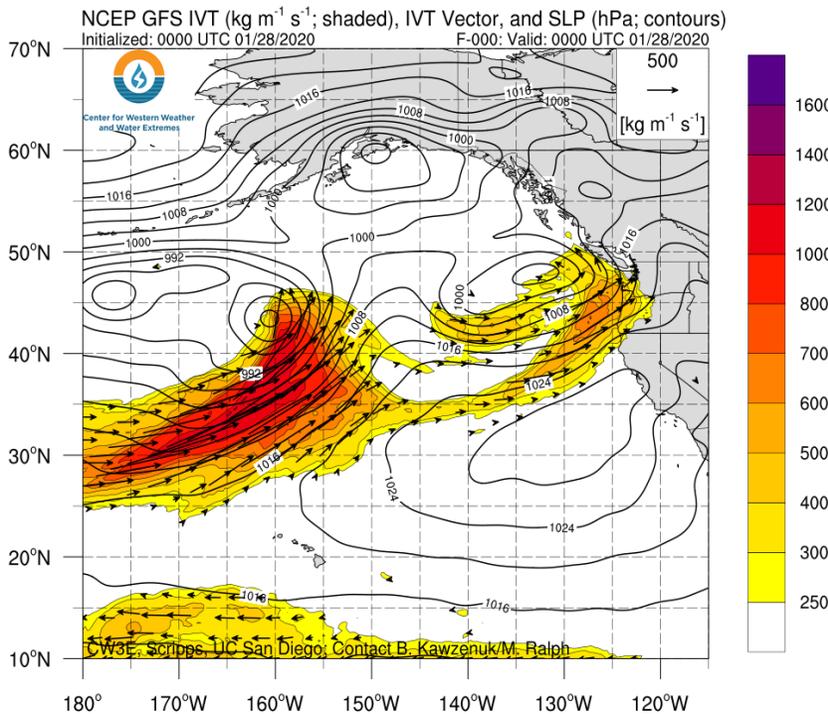


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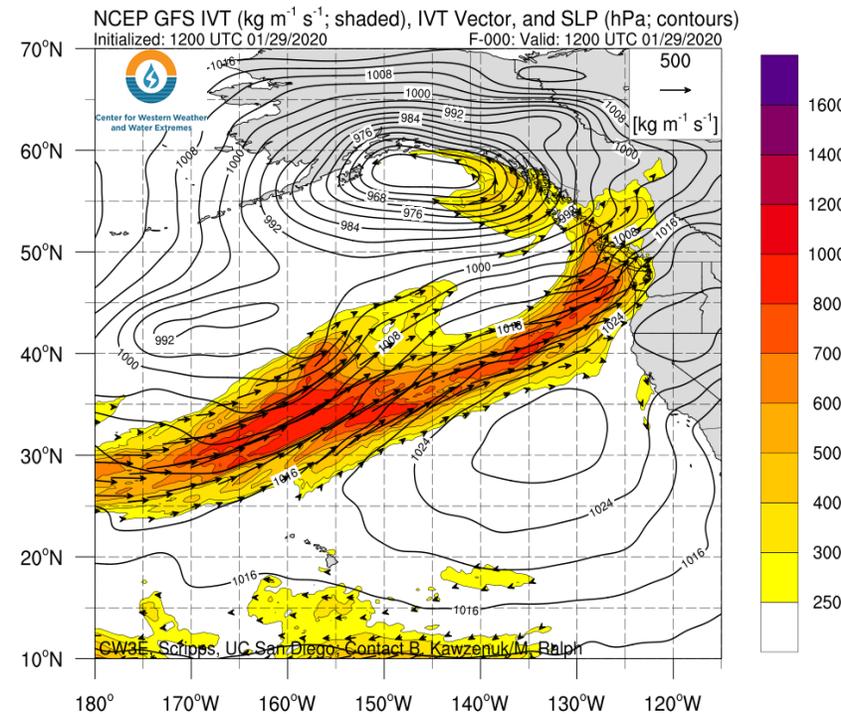
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GFS IVT Analyses

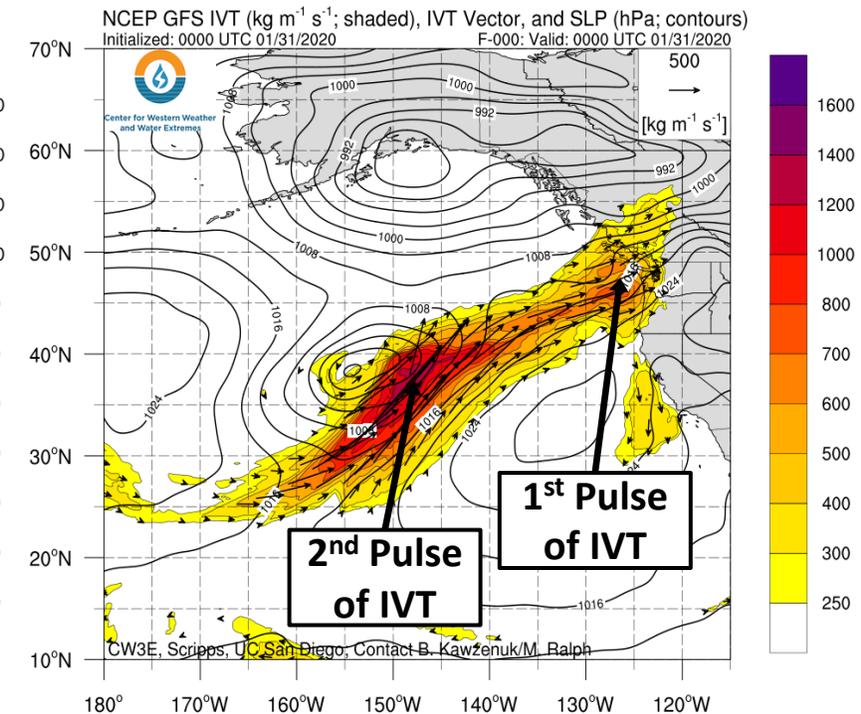
A) Valid: 0000 UTC 28 Jan



B) Valid: 1200 UTC 29 Jan



C) Valid: 0000 UTC 31 Jan



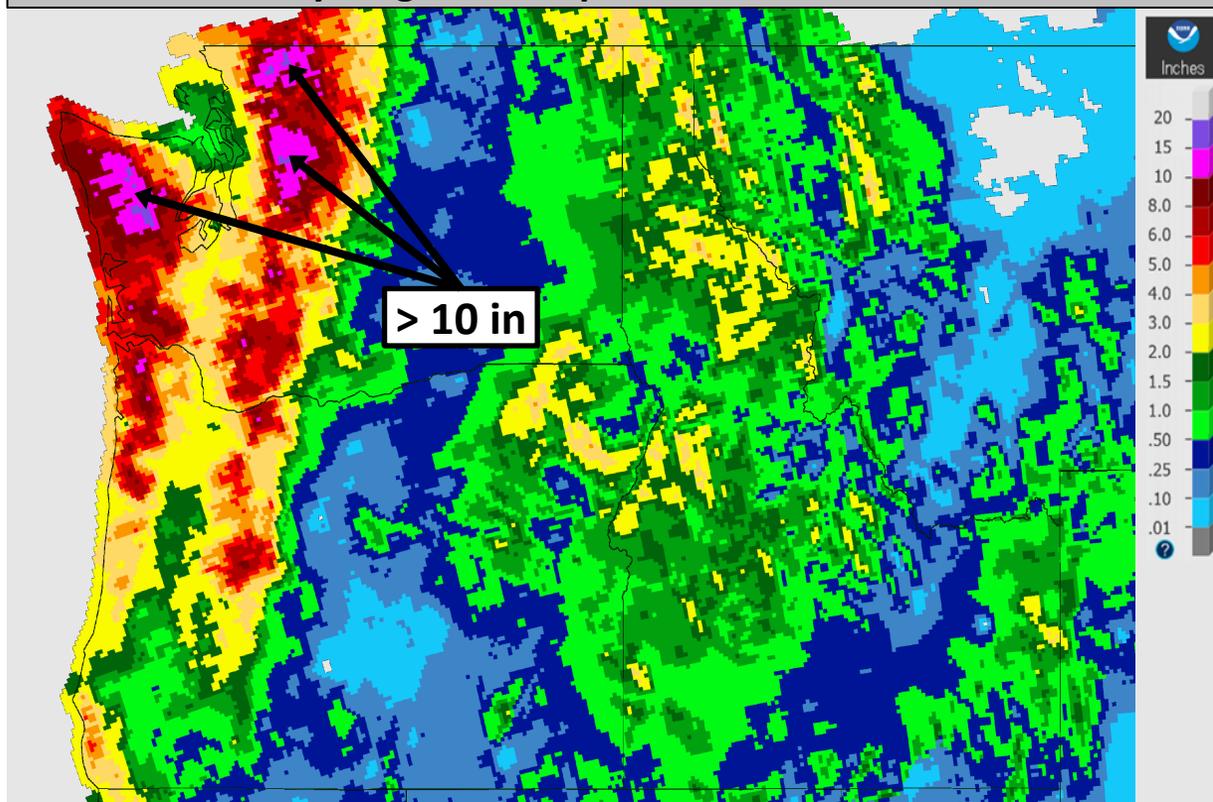
- Before 31 Jan, a series of cyclogenesis events over the Northeast Pacific Ocean brought several short-lived periods of AR conditions to the Pacific Northwest (Figures A and B)
- The main AR made landfall in coastal WA and OR just before 0000 UTC 31 Jan (Figure C)
- This AR featured two distinct pulses in IVT associated with: 1) a decaying cyclone over northern British Columbia, and 2) a second cyclone that formed north of HI and rapidly moved northeastward toward British Columbia

CW3E Event Summary: 26 Jan – 2 Feb 2020



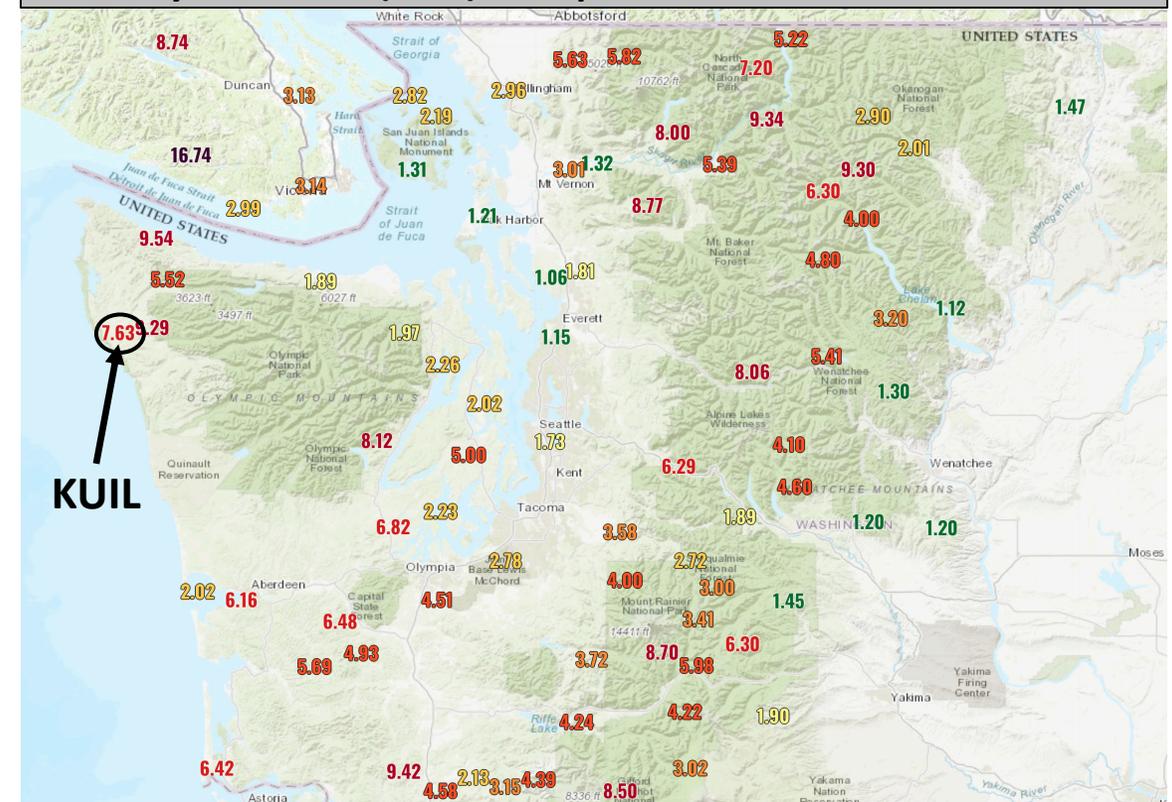
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NWS 7-day Stage IV Precipitation: Valid 1200 UTC 2 Feb



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

7-day Observed (Raw) Precipitation: Valid 1200 UTC 2 Feb



Source: NOAA/NWS WRH, <https://www.wrh.noaa.gov/>

- Total estimated precipitation over the 7-day period ending 1200 UTC (4 AM PST) 2 Feb exceeded 5 inches over portions of western WA and northwestern OR, with the highest amounts (> 10 inches) over the Olympic Mountains and North Cascades
- Lighter amounts (1–3 inches) were also observed across the elevated terrain in northeastern OR, western ID, and northwestern MT
- Quillayute State Airport (KUIL) set a new record for total monthly precipitation (30.78 inches in January) and has reported measurable precipitation on 47 consecutive days

CW3E Event Summary: 26 Jan – 2 Feb 2020

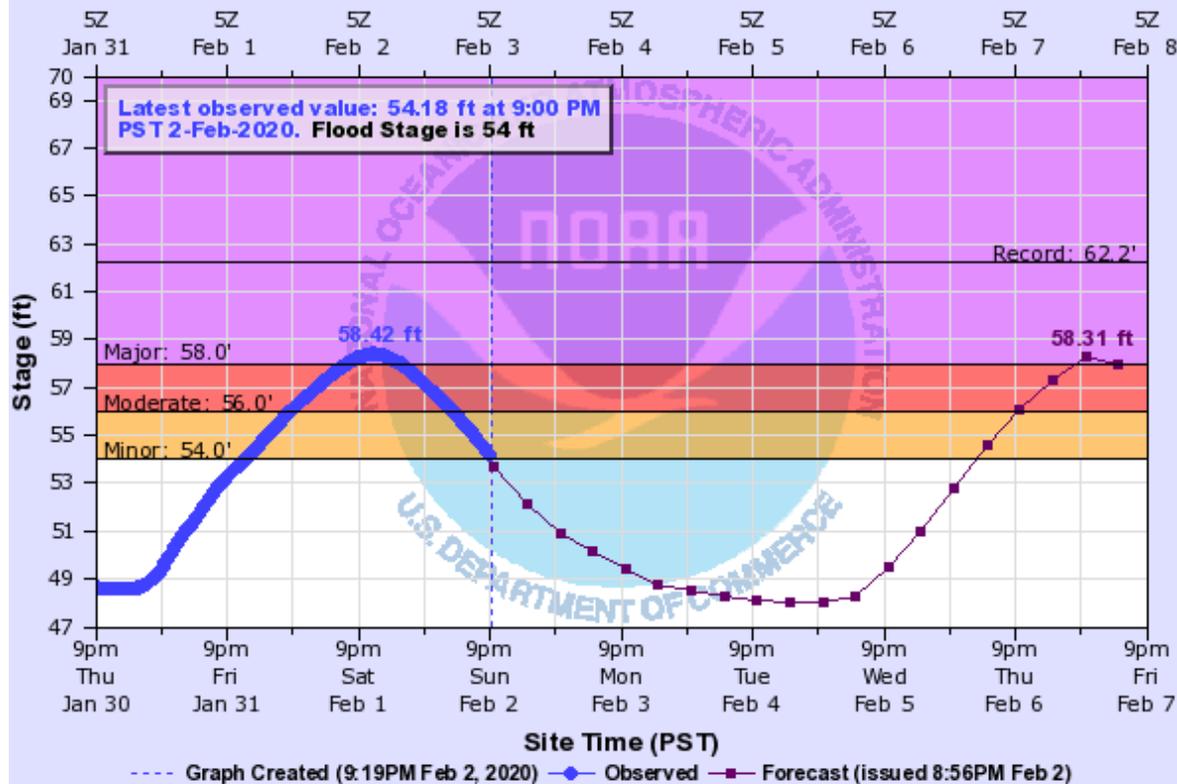


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SNOQUALMIE RIVER NEAR CARNATION

Universal Time (UTC)

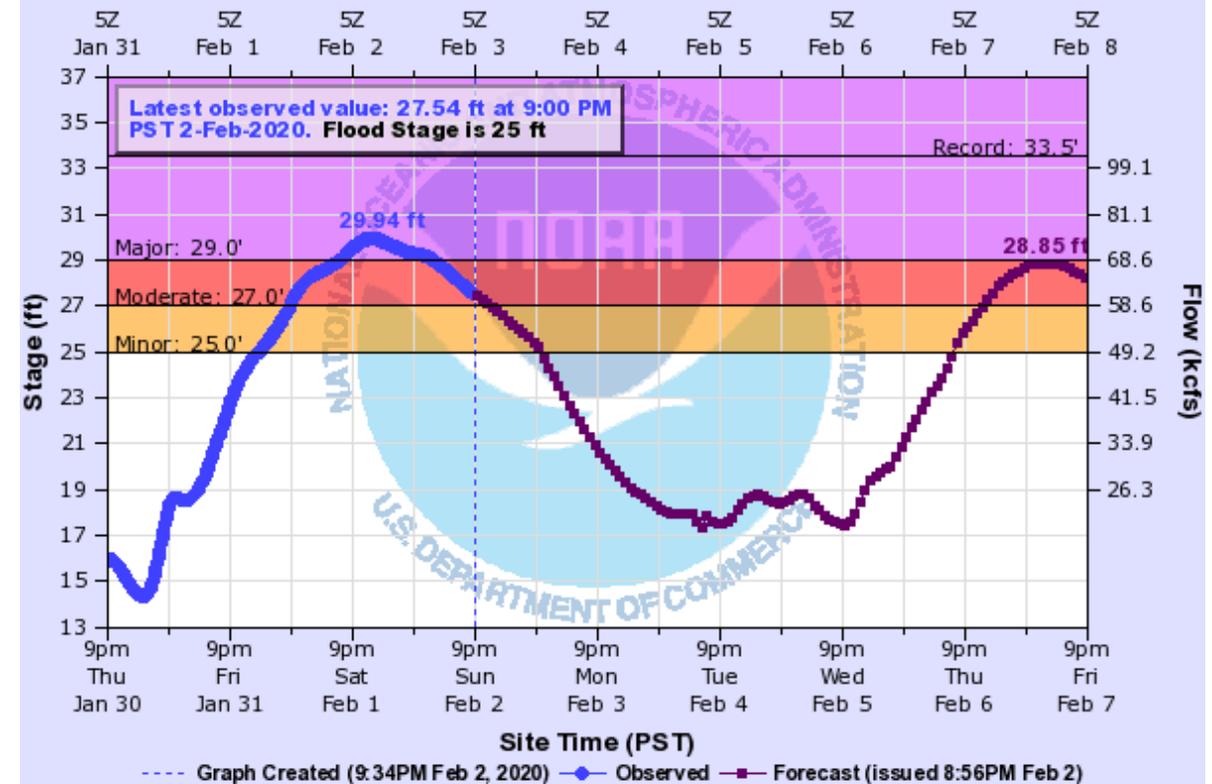


CRNW1 (plotting HGIRG) "Gage 0" Datum: 0'

Observations courtesy of U. S. Geological Survey

SNOHOMISH RIVER AT SNOHOMISH

Universal Time (UTC)



SNAW1 (plotting HGIRG) "Gage 0" Datum: -9.86'

Observations courtesy of US Geological Survey

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

- The combination of heavy rainfall, saturated soils, and melting snowpack resulted in widespread and prolonged flooding at lower elevations downstream of the North Cascades
- The Snoqualmie (near Carnation, WA) and Snohomish (at Snohomish, WA) Rivers reached major flood stage during the evening of 1 Feb

CW3E Event Summary: 26 Jan – 2 Feb 2020



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Street Flooding on SR-9 in Sumas, WA

WSDOT SR 9
JOHNSON CREEK



© WSDOT

Feb 02, 2020 8:43 AM PST

Landslide along Interstate 5 near Bellingham, WA



- 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

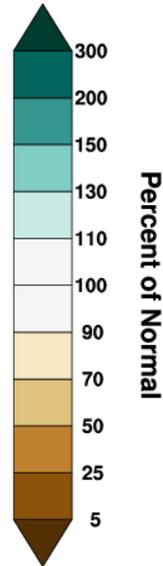
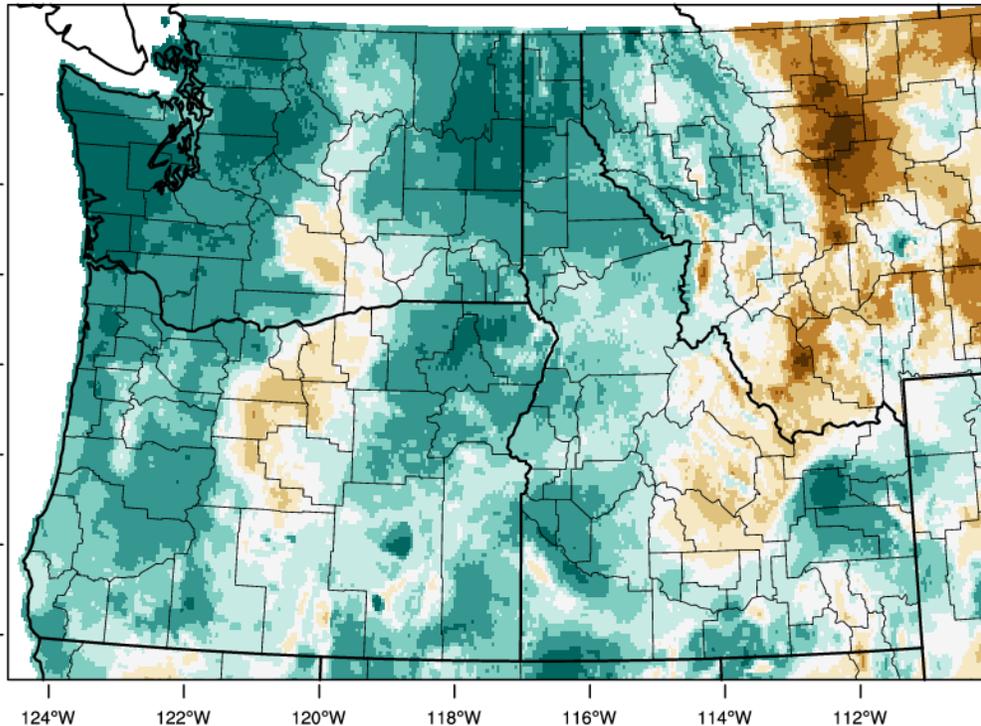
Source: Washington State Department of Transportation, <https://www.wsdot.wa.gov>

CW3E Event Summary: 26 Jan – 2 Feb 2020



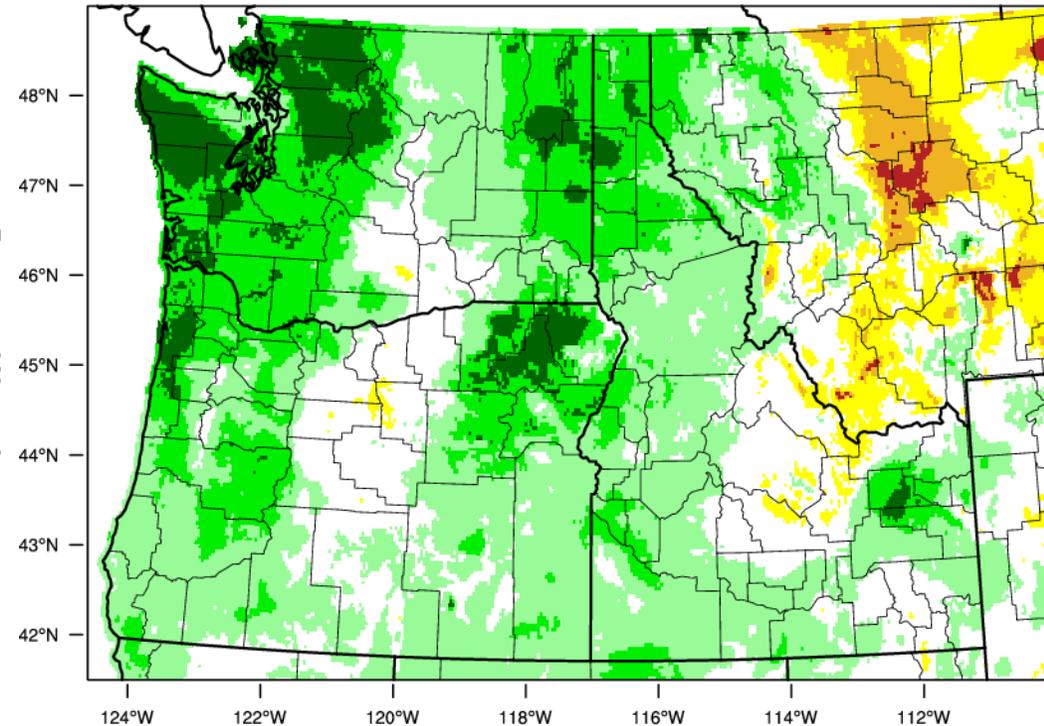
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Precipitation, Current Calendar Year, 01/01/20 to 02/01/20
Percent of 1981-2010 Normal, Northwestern United States



NW Climate Toolbox (climatetoolbox.org), created 2 FEB 2020

Precipitation, Current Calendar Year, 01/01/20 to 02/01/20
Ranking from 1979-2015, Northwestern United States



Ranking for Calendar Date (1979-2015)



NW Climate Toolbox (climatetoolbox.org), created 2 FEB 2020

Source: NW Climate Toolbox, <https://climatetoolbox.org>

- After an unusually dry start to the water year, much of the Pacific Northwest experienced wetter-than-normal conditions in January
- As of 1 Feb, total year-to-date precipitation was > 150% of normal across much of western WA, eastern WA, northern ID, western OR, and northeastern OR
- January 2020 precipitation exceeded the 90th percentile of climatology (1979–2015) in these areas