## Water Year 2019 Landfalling Atmospheric Rivers



AR Strength	AR Count		64 atmospheric rivers made landfall over the U.S. West Coast
Weak	19	50°N — 45°N —	during Water Year 2019
Moderate	32		WY 2019
Strong	11		Center for Western Weather and Water Extremes
Extreme	2		
Exceptional	0	40°N	April 7 Aug 2 Oct 8
Regions Impac	ted by Each AR		Dec. 18 Dec. 20 Jan. 19
State/Region	AR Conditions	35°N -	Nov. 27
Washington	48	30°N —	Ralph/CW3E AR Strength Scale Dec. 16 Jan. 17   Weak: IVT=250-500 kg m <sup>-1</sup> s <sup>-1</sup> Jan. 8   Moderate: IVT=500-750 kg m <sup>-1</sup> s <sup>-1</sup> Jan. 8
Oregon	54		
Northern CA	49		Strong: IVT=750–1000 kg m <sup>-1</sup> s <sup>-1</sup>
Central CA	29	05°N	Exceptional: IVT>1250 kg m <sup>-1</sup> s <sup>-1</sup> Exceptional: IVT>1250 kg m <sup>-1</sup> s <sup>-1</sup> Produced by C. Hecht and F. M. Ralph
Southern CA	21	14	.5°W 140°W 135°W 130°W 125°W 120°W 115°W 110°W



## Water Year 2019 Compared to Water Year 2018



**Center for Western Weather** and Water Extremes



- Water Year 2019 experienced a total of 64 landfalling ARs over the U.S. West Coast, 9 more than Water Year 2018 •
- Water Year 2019 also experienced 13 ARs that were associated with Strong or greater IVT magnitudes compared to 14 during . WY 2018



## Water Year 2019 Compared to Water Year 2018





- N. CA experienced AR conditions (IVT >250 kg m<sup>-1</sup> s<sup>-1</sup>) from 49 unique ARs, whereas S. CA experienced conditions from 21
- In WY 2019, N. CA experienced 13 more ARs and Southern CA experienced 3 more ARs than WY 2018

CW3E

Center for Western Weather and Water Extremes

 The differences in total ARs between WY 2018 and WY 2019 lead to more precipitation falling over a majority of CA during WY 2019





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

- Six ARs impacted California during February 2019
- The AR that impacted Northern California between 25 and 27 February produced an impressive 21.36 inches of precipitation over Venado, CA
- The large precipitation accumulations associated with this late February AR combined with the moist conditions created by numerous ARs that impacted the region in the previous weeks caused the Russian River in Guerneville, CA to rise to 45 feet, 4.5 ft. below the flood of record
- Visit <u>https://cw3e.ucsd.edu/cw3e-ar-update-25-27-february-post-event-summary/</u> for a full summary on the event

