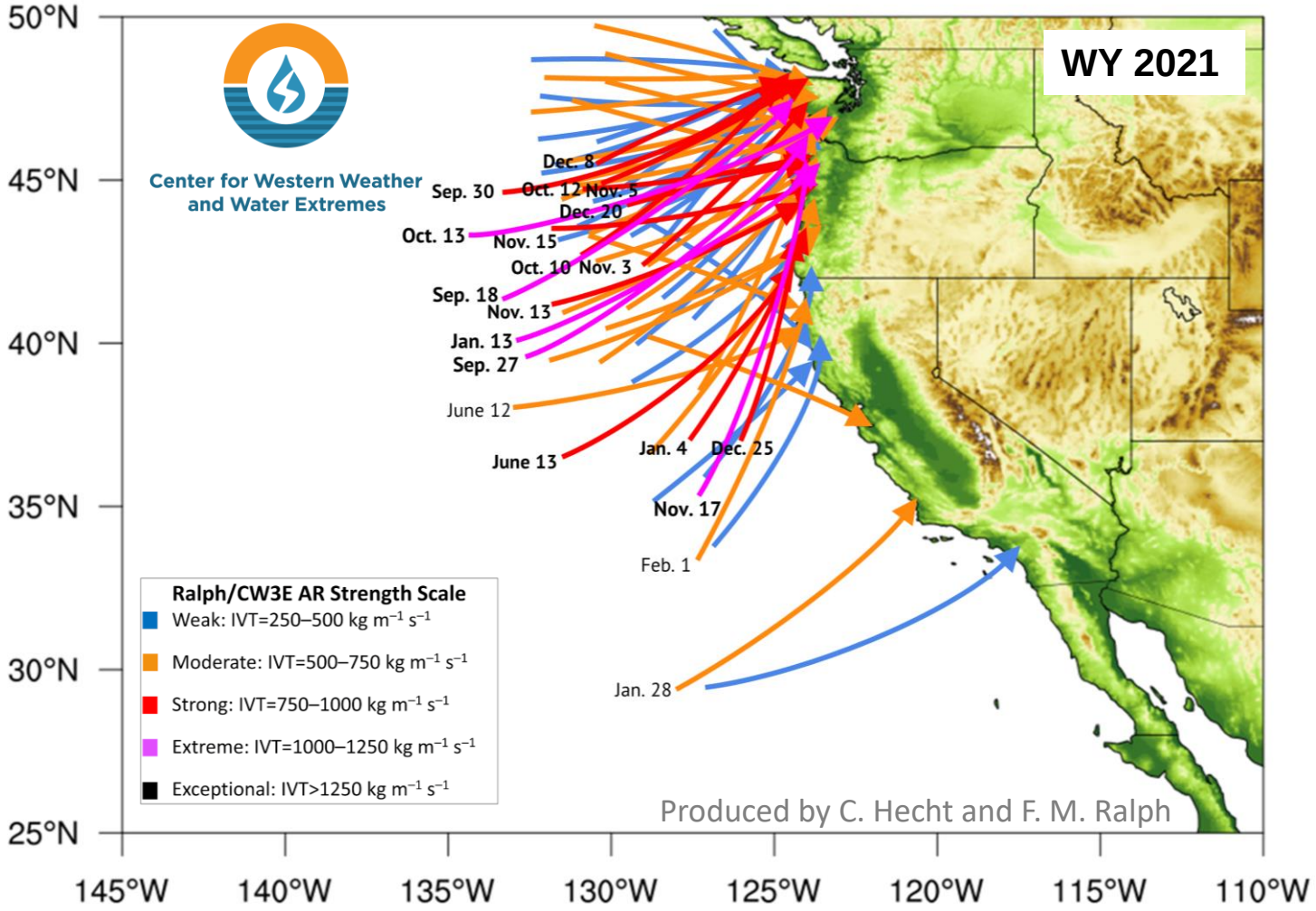
Water Year 2021 Landfalling Atmospheric Rivers

AR Strength	AR Count
Weak	25
Moderate	26
Strong	13
Extreme	5
Exceptional	0

Regions Impacted by Each AR*	
State/Region	AR Conditions
Washington	64
Oregon	64
Northern CA	35
Central CA	16
Southern CA	7

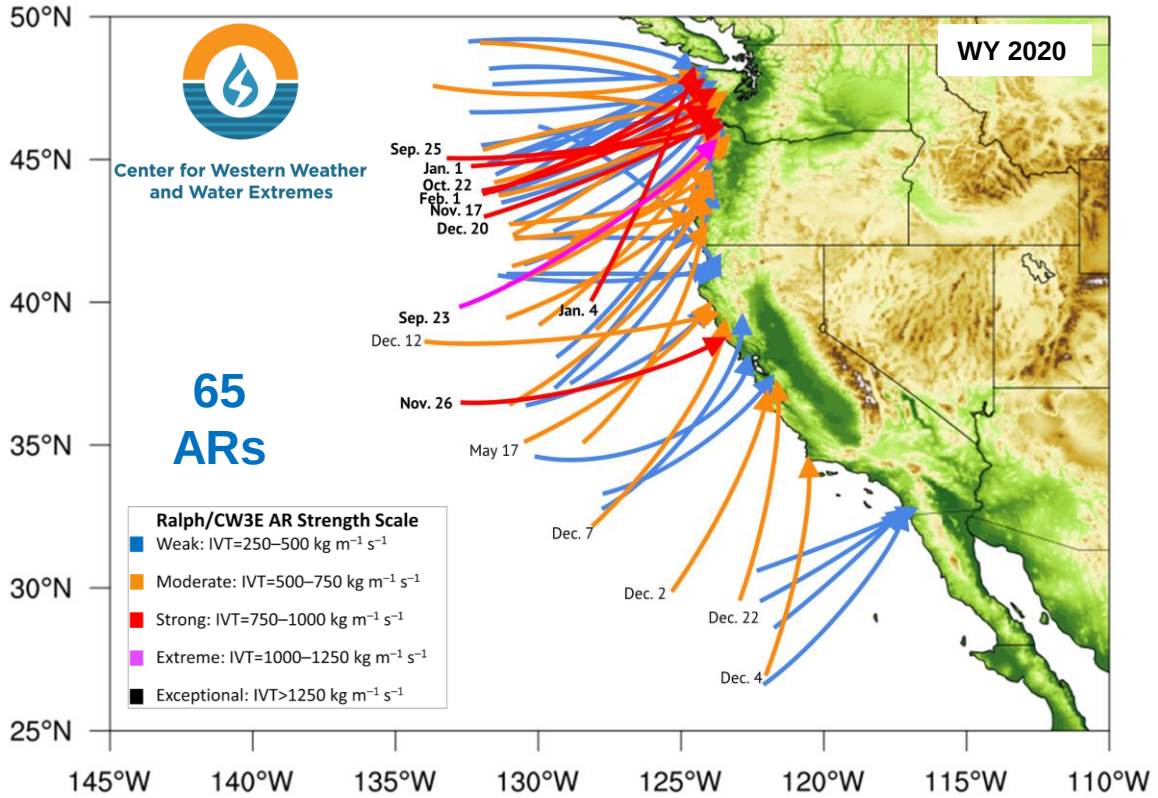
*These numbers represent the number of times an AR brought IVT >250 kg m^{-1} s^{-1} to the region

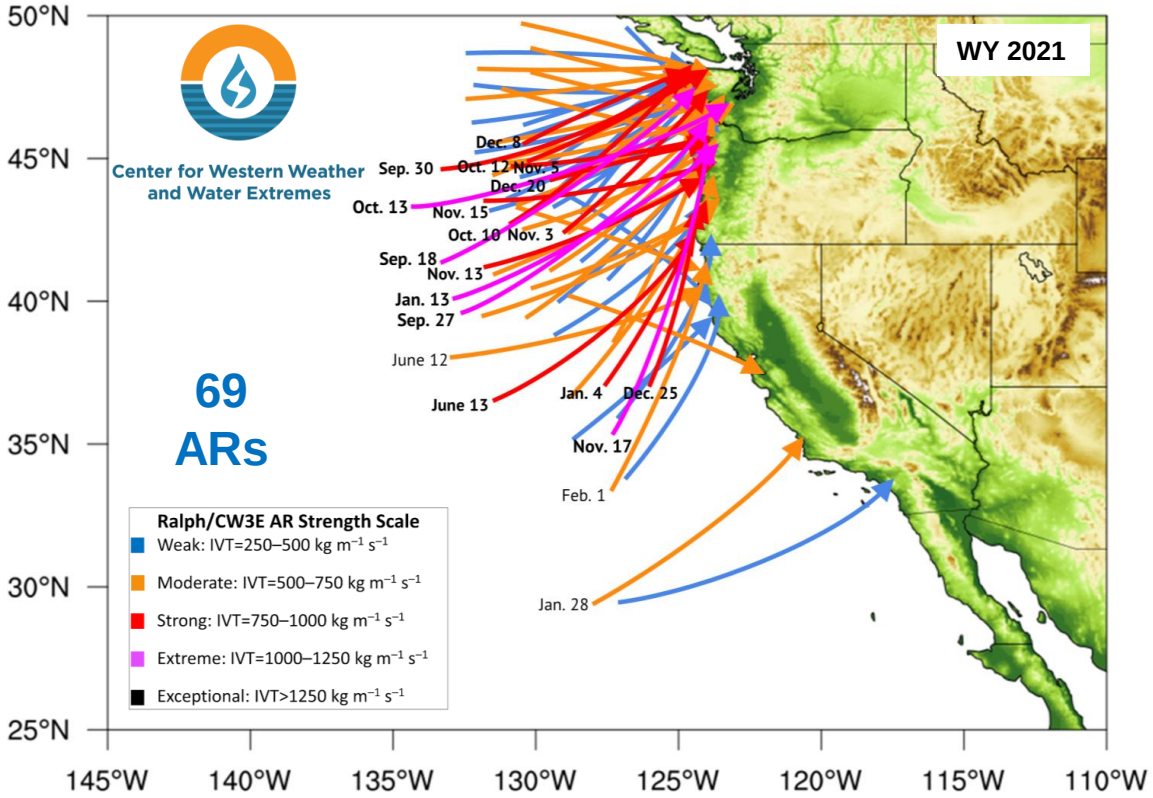
69 atmospheric rivers made landfall
over the U.S. West Coast during Water Year 2020



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

Water Year 2021 Compared to Water Year 2020

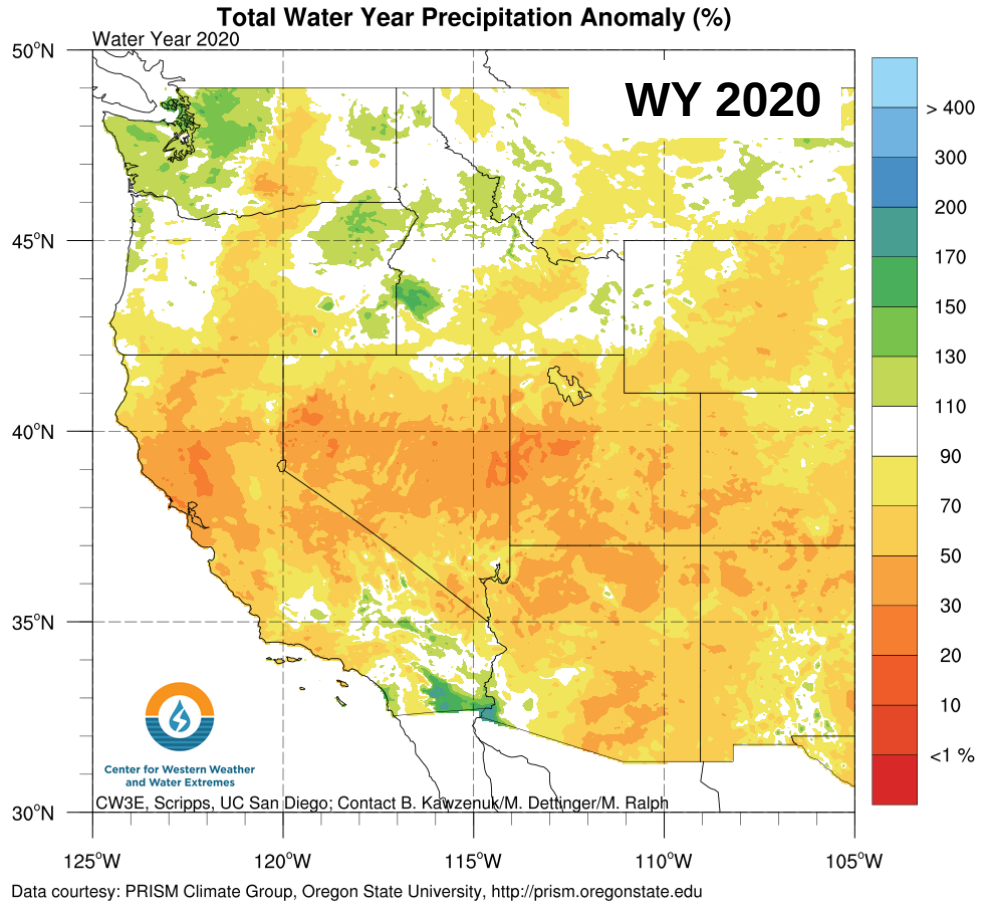


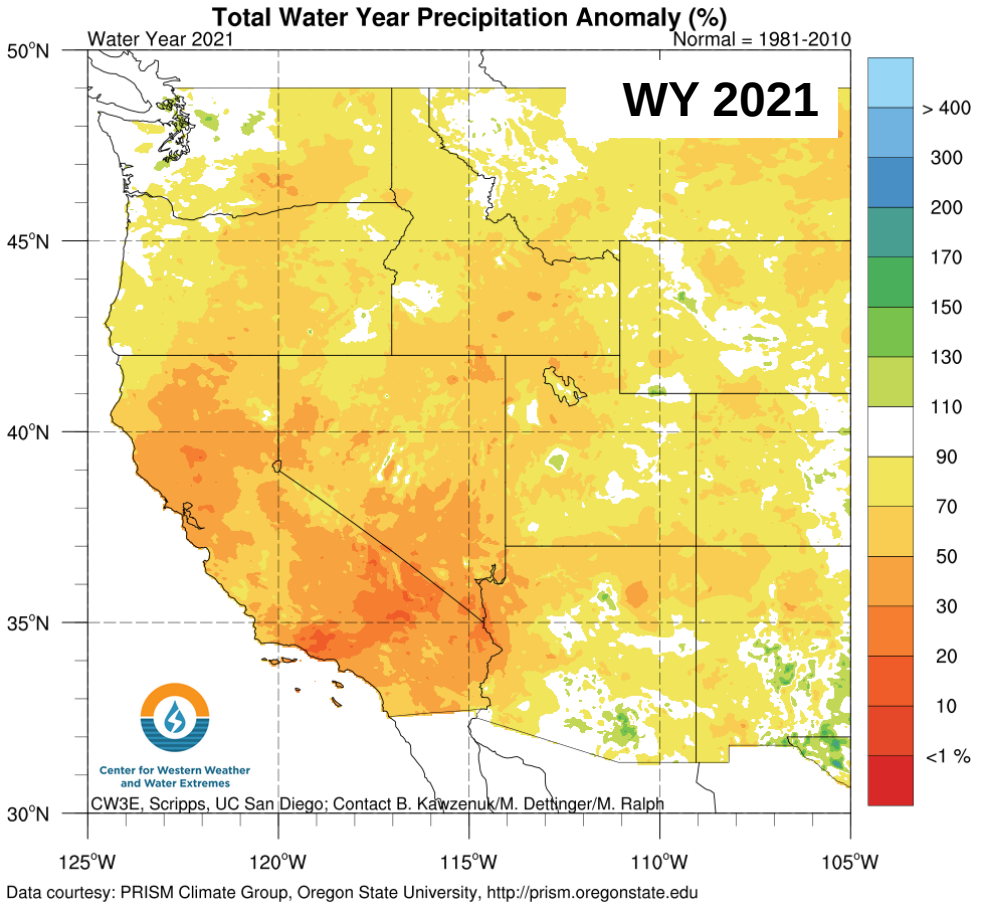


- Water Year 2021 experienced a total of **69 landfalling ARs** over the U.S. West Coast, 4 more than Water Year 2020.
- While WY 2021 experienced more ARs, a much larger majority of the ARs only impacted the Pacific Northwest.
- California only experienced AR conditions (IVT >250 kg m^{-1} s^{-1}) from 36 separate ARs during WY 2021, compared to 43 during WY 2020.

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

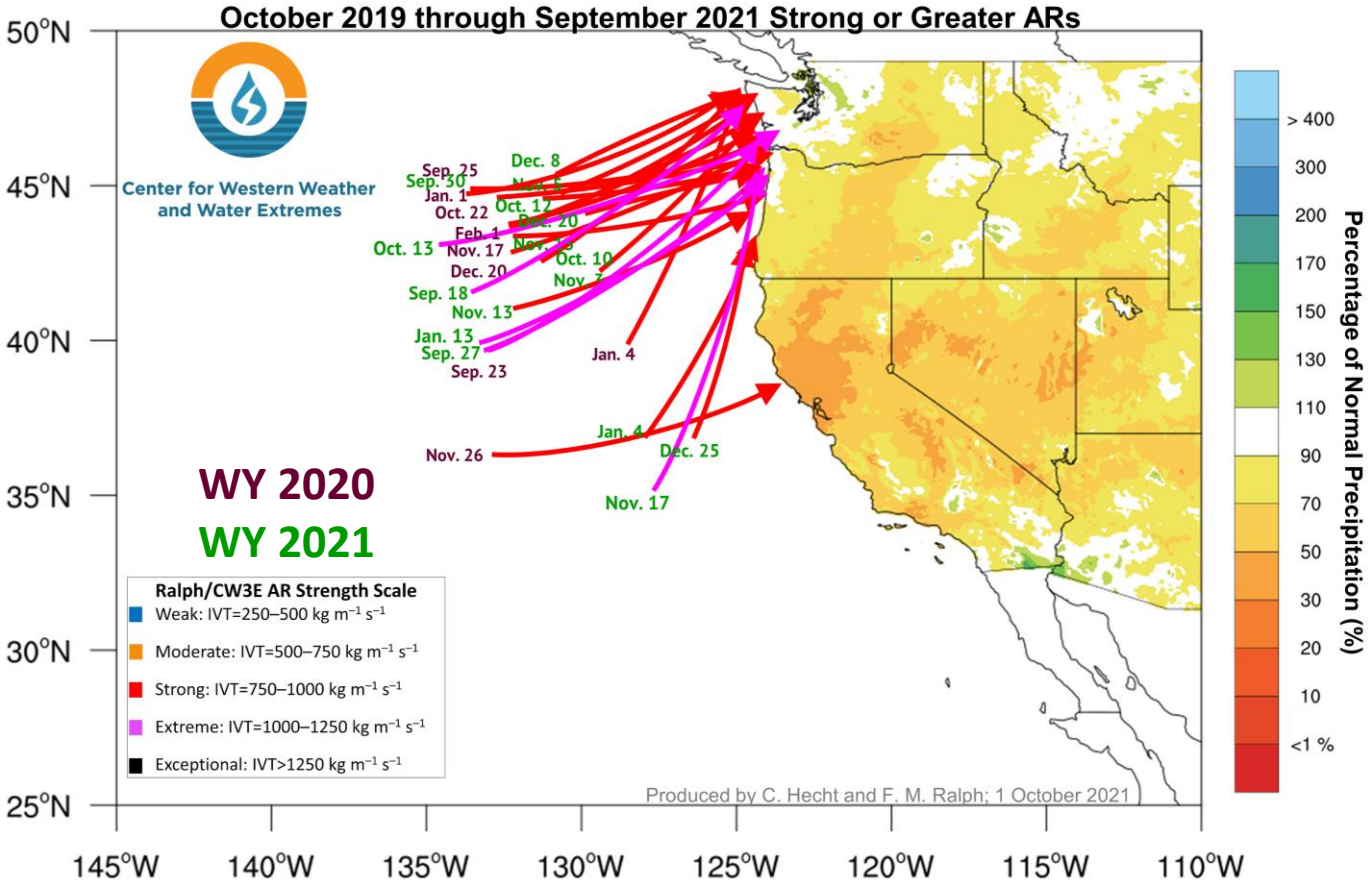
Water Year 2021 Compared to Water Year 2020

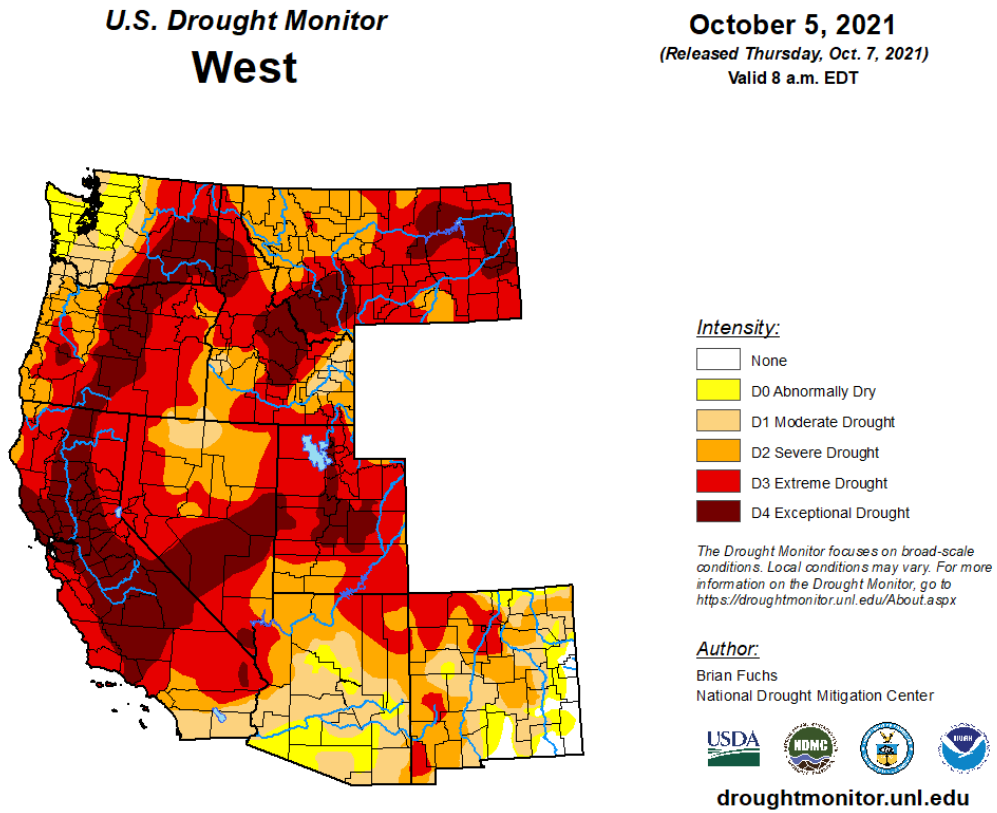




- The lack of AR activity over California for two consecutive water years has resulted in a substantial lack of precipitation.
- A large portion of California received <30% of the normal precipitation for both Water Year 2020 and 2021.
- Coastal Washington and Oregon was the only location in the Western U.S. to receive near or above normal precipitation during both water years, which is also the region that received a majority of the AR activity.

Lack of Strong or Greater Magnitude ARs





- California experienced strong or greater magnitude AR conditions only three times during WY 2020 and 2021 combined.
  - **Note**: The arrows on the map represent where each AR was strongest. An AR can bring strong conditions to CA even though the arrow is over WA/OR.
- Since 2012, California has averaged **~7** strong or greater magnitude ARs per year, highlighting the anomalously low AR activity over California the past two water years.
- The lack of strong or greater magnitude ARs over California has resulted in significantly below normal precipitation, driving exceptional drought across much of the state.