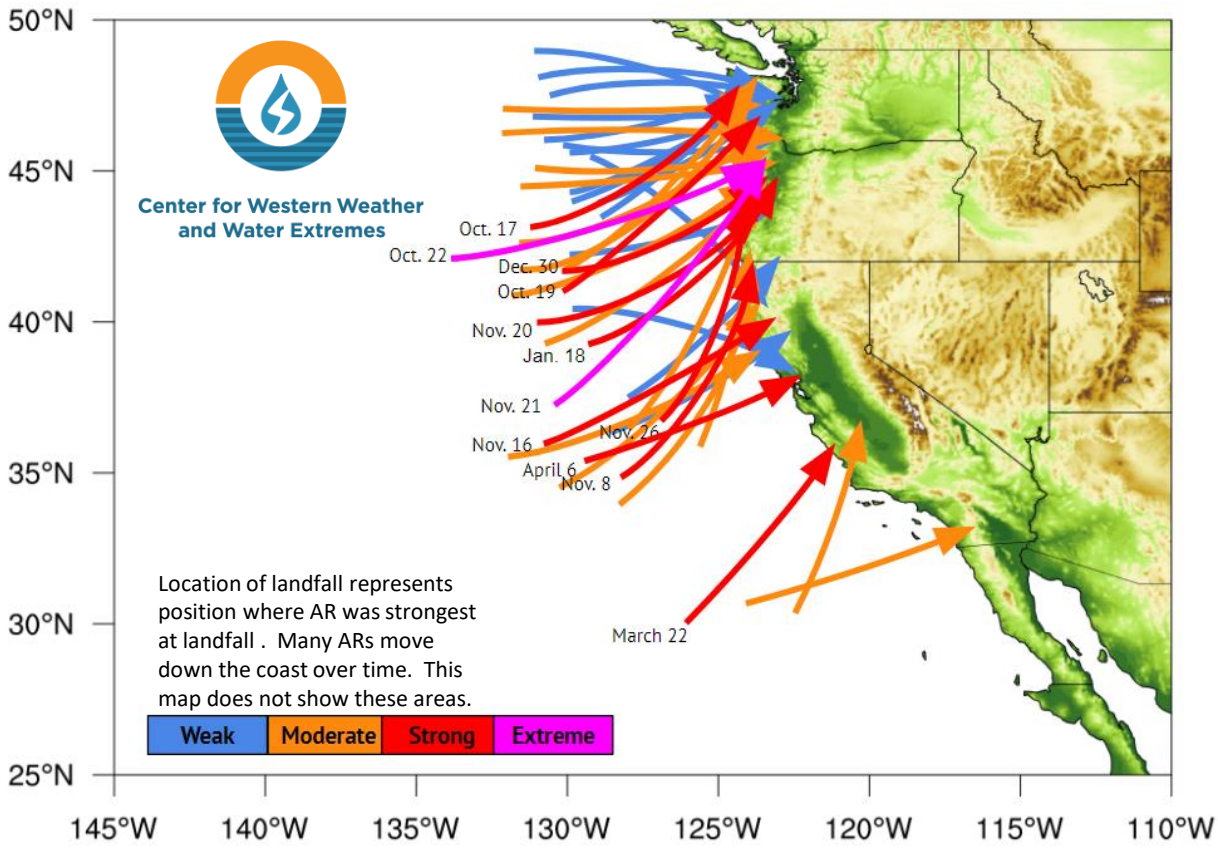
Distribution of Landfalling Atmospheric Rivers on the U.S. West Coast During Water Year 2018 Through April

AR Strength	AR Count*
Weak	16
Moderate	16
Strong	10
Extreme	2
Exceptional	0

- **44** Atmospheric Rivers made landfall on the West Coast during the 2018 water year through April



Ralph/CW3E AR Strength Scale

- Weak: IVT=250–500 kg m^{-1} s^{-1}
- Moderate: IVT=500–750 kg m^{-1} s^{-1}
- Strong: IVT=750–1000 kg m^{-1} s^{-1}
- Extreme: IVT=1000–1250 kg m^{-1} s^{-1}
- Exceptional: IVT>1250 kg m^{-1} s^{-1}

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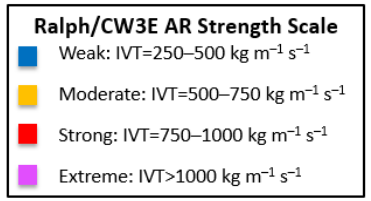
By C. Hecht and F.M. Ralph

Experimental

AR Strength by Month 2018

AR Strength	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Weak	2	1	2	3	4	2	2
Mod.	0	2	3	7	1	3	0
Strong	2	4	1	1	0	1	1
Extreme	1	1	0	0	0	0	0
Excep.	0	0	0	0	0	0	0
Total	5	8	6	7	5	6	3



Number of AR occurrences by state/region

Washington	Oregon	NorCal	SoCal
38	43	31	17

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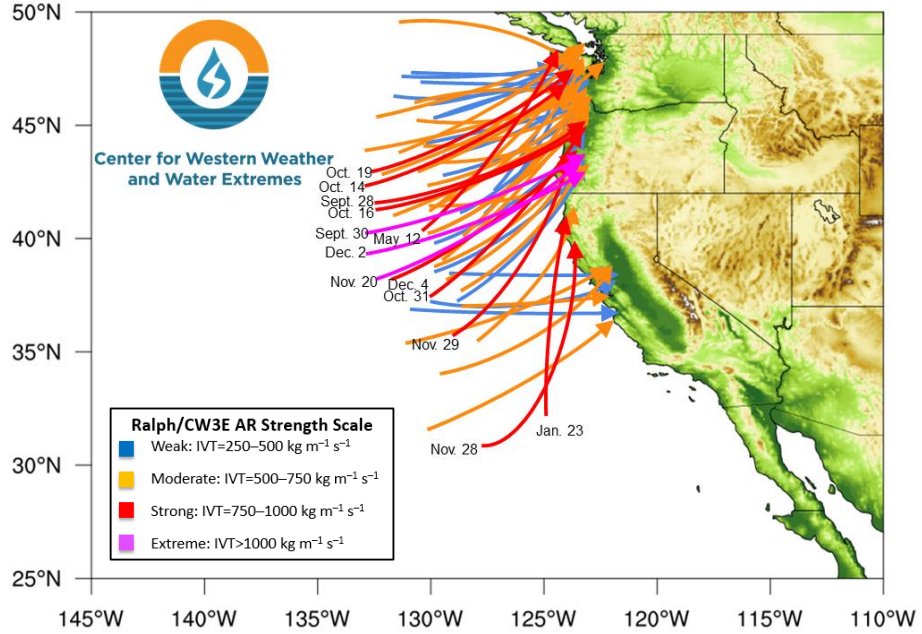
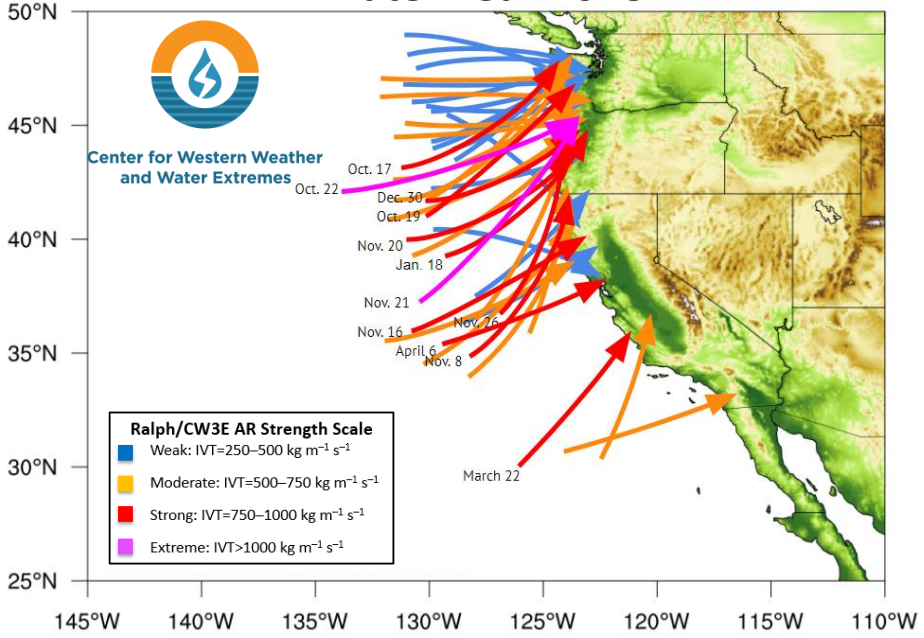
WY 2018 Compared to WY 2017

- The record breaking WY 2017 experienced a total of 68 landfalling ARs over the U.S. West Coast
- 60 of the total 68 ARs occurred through April 2017, compared to 44 experienced this WY through April

Water Year 2017

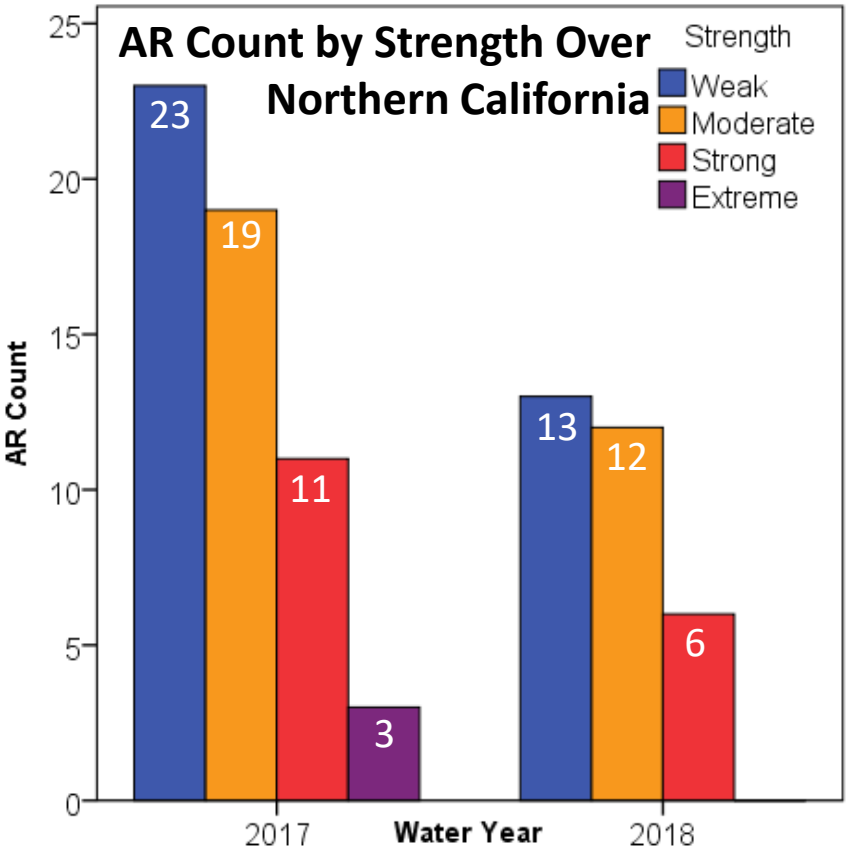


Water Year 2018

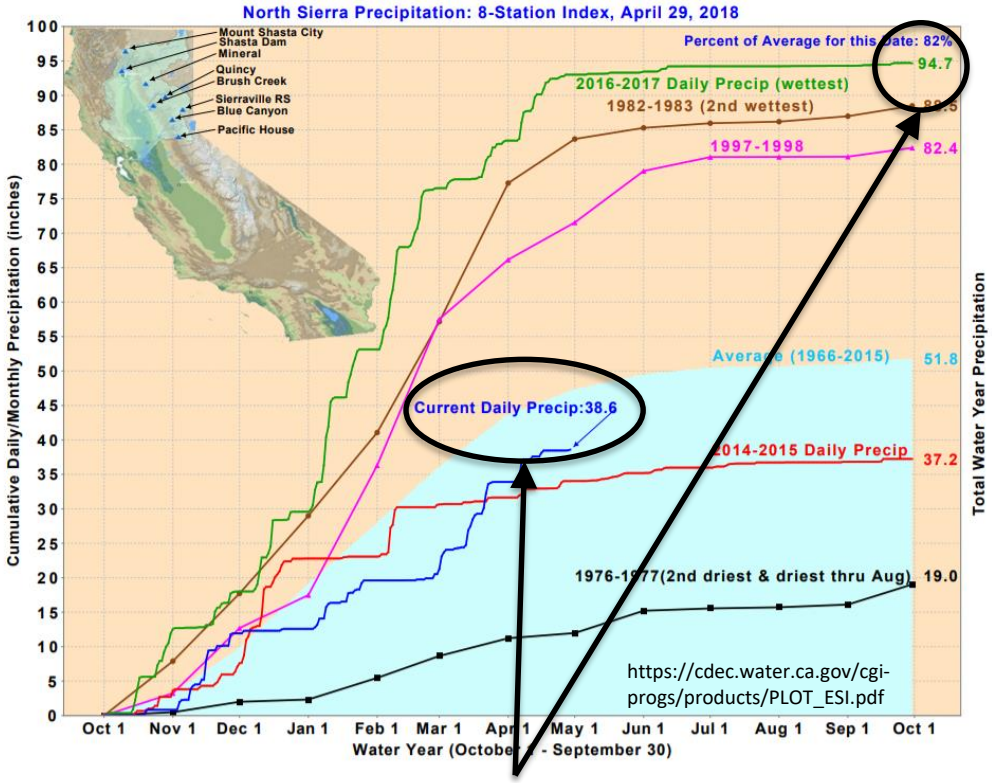


- When compared to WY 2017, a larger proportion of landfalling ARs during WY 2018 made landfall over the Pacific Northwest

Northern California Analysis



- 42 weak or mod. ARs occurred over Northern CA during WY 2017, compared to 25 during WY 2018
- WY 2017 also experienced 14 strong or extreme ARs compared to only 6 during WY 2018



- The differences in landfalling ARs resulted in large differences in WY precipitation over the Northern Sierra 8-Station Index
- The index received ~56 more ins. of precipitation during WY 2017 than WY 2018 to date (94.7 in. vs. 28.6 in.)

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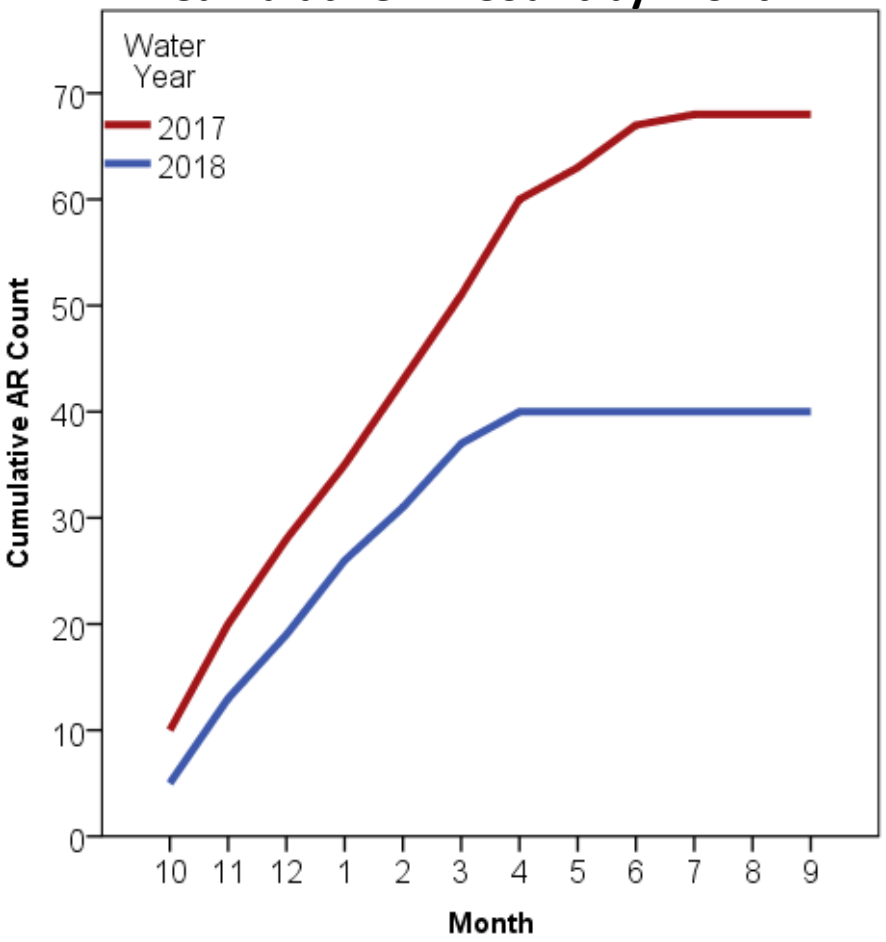
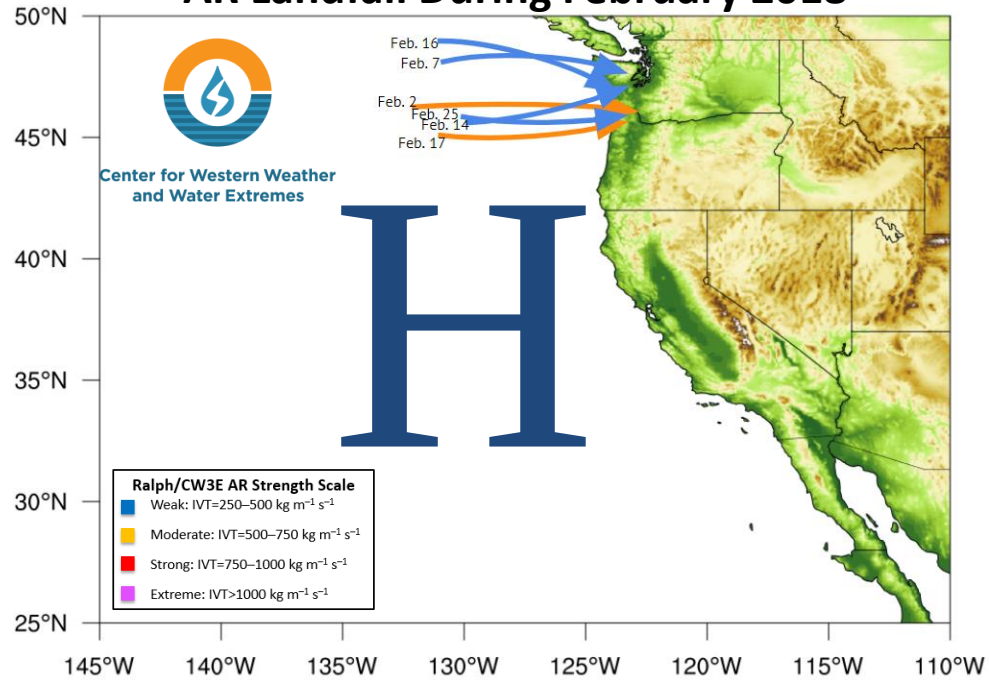
Atmospheric Rivers by Month

Cumulative AR Count by Month



AR Landfall During February 2018



- WY 2017 experienced several more AR landfalls per month when compared to WY 2018
- Feb. 2018 was also dominated by persistent ridging and high pressure over the Eastern Pacific
- All ARs that made landfall during Feb. 2018 were westerly/northwesterly oriented and over the Pacific Northwest likely leading to small impacts and leaving California dry

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Experimental