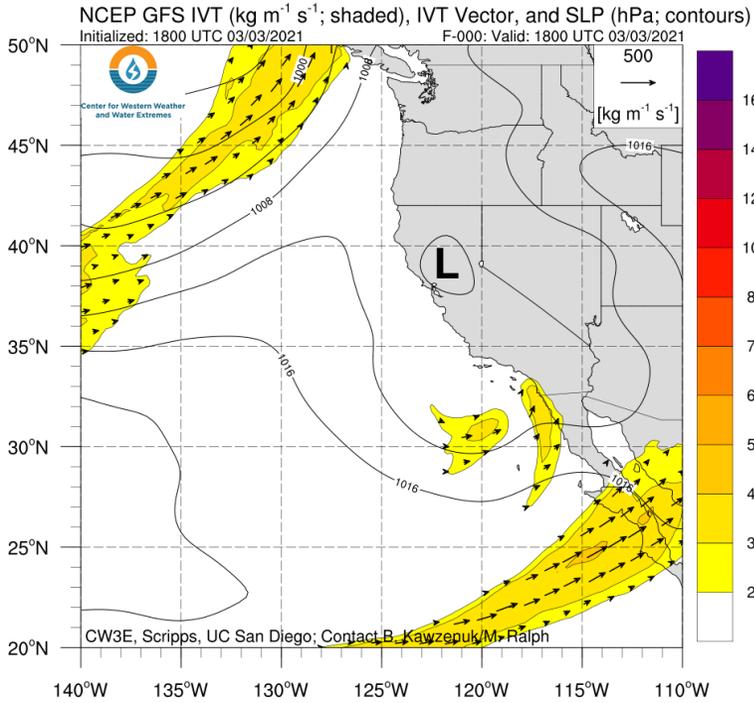


Cutoff low forecasted to bring precipitation to most of California this week

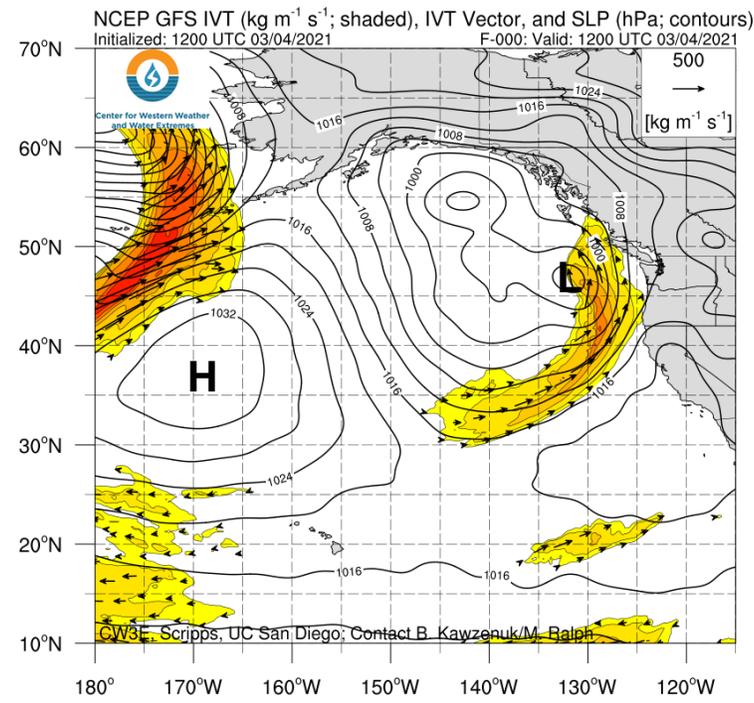
- Two separate systems impacted Southern California and Northern California last week
- A cutoff low produced locally heavy rain in San Diego County on 3 Mar
- A slow-moving AR and associated midlatitude cyclone produced 3–5 inches of precipitation in portions of the Pacific Coast Ranges during 4–7 Mar
- A mid-tropospheric trough and low pressure system will make landfall over CA mid week
- This system is forecast to produce precipitation throughout nearly all of California
- Precipitation amounts are forecast to be ~1–2 inches over the Northern Sierra Nevada and Transverse ranges with up to 3 inches in San Diego and Shasta Counties
- While precipitation amounts are not forecasted to be extremely high with this event, the precipitation could help improve drought conditions throughout the state

GFS IVT & SLP Analyses

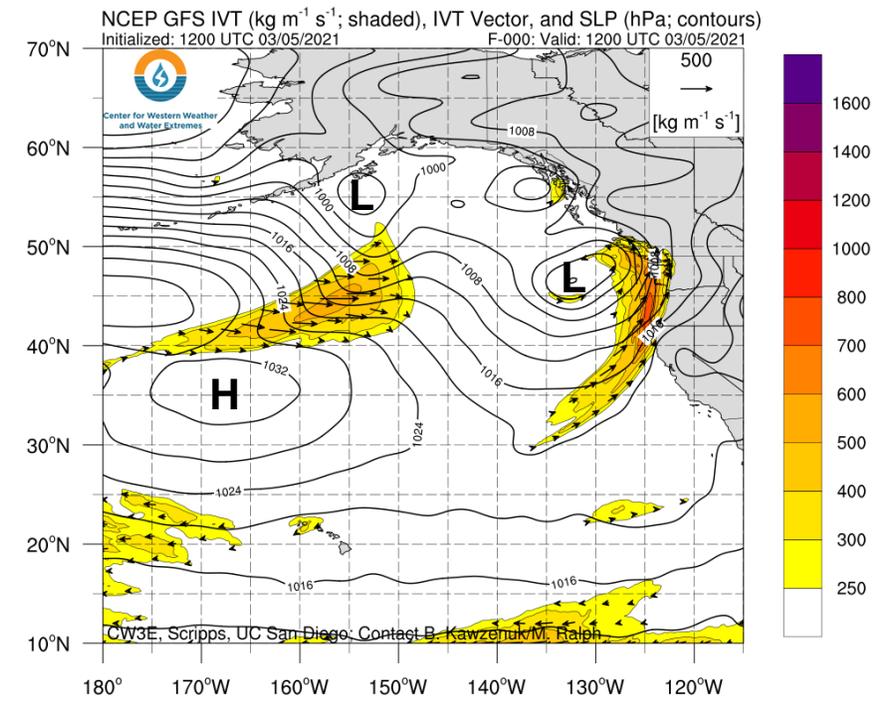
(A) Valid: 1800 UTC 3 Mar



(B) Valid: 1200 UTC 4 Mar



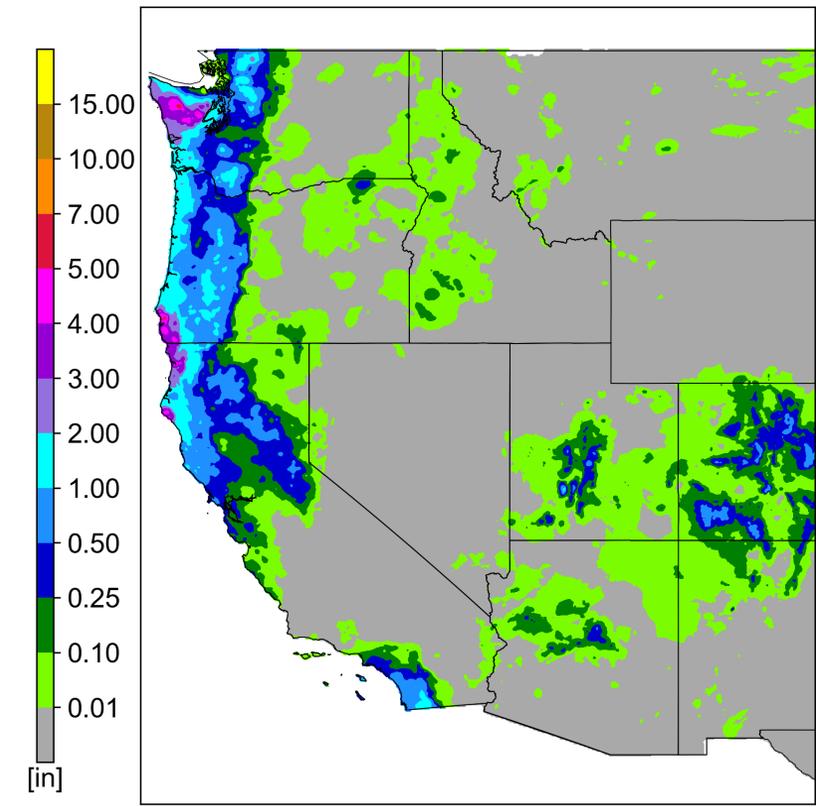
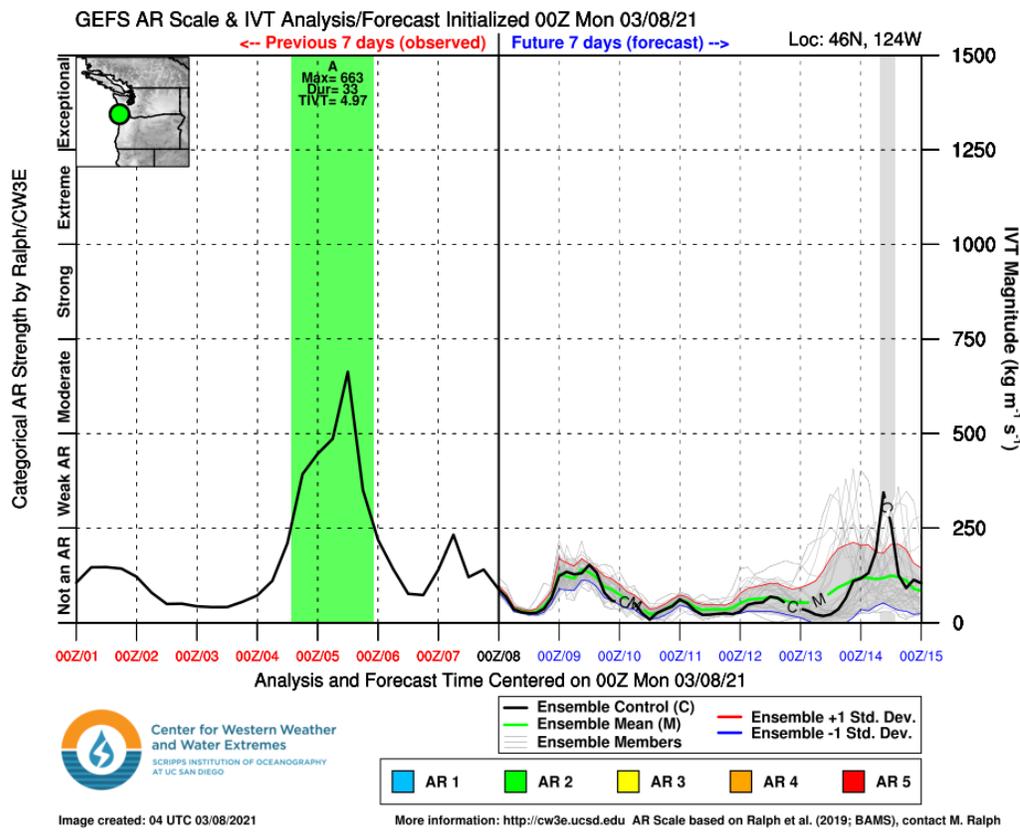
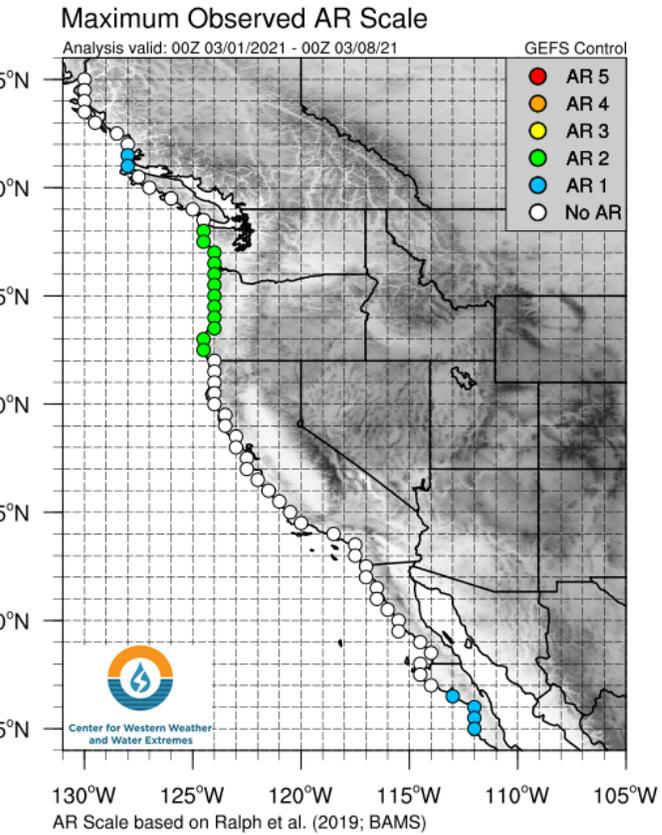
(C) Valid: 1200 UTC 5 Mar



- Locally heavy precipitation in San Diego County on 3 Mar was associated with a narrow region of enhanced moisture transport near a weak cutoff low (Figure A)
- The second precipitation event was associated with an AR that formed along the cold front of a midlatitude cyclone and made landfall along the U.S. West Coast on 4 Mar (Figure B)
- A series of mesoscale waves/secondary cyclogenesis events helped strengthen the moisture transport in the core of the AR, with maximum IVT values approaching $700 \text{ kg m}^{-1} \text{ s}^{-1}$ along the Oregon coast (Figures B and C)

GEFS AR Scale & IVT Analyses

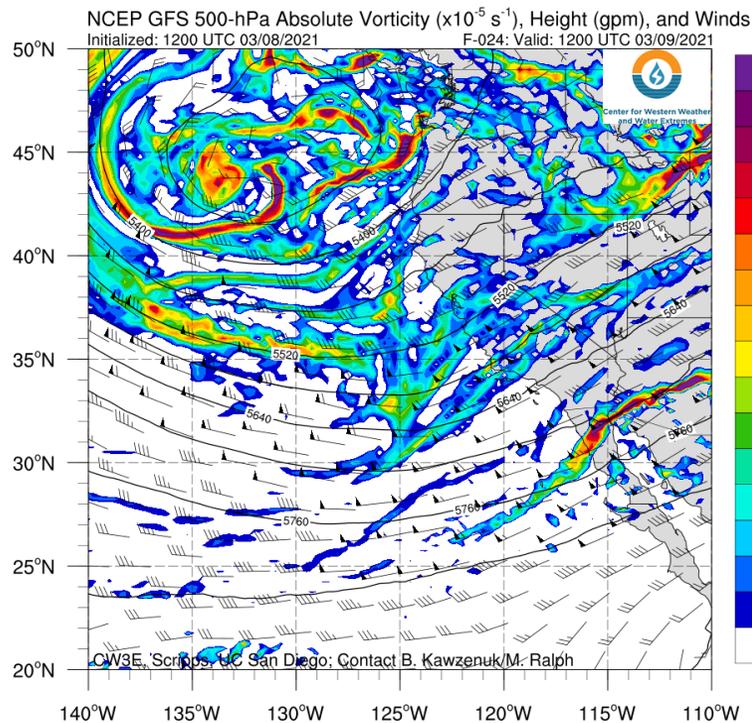
NCEP Stage IV 120-h QPE Valid: 1200 UTC 2–7 Mar



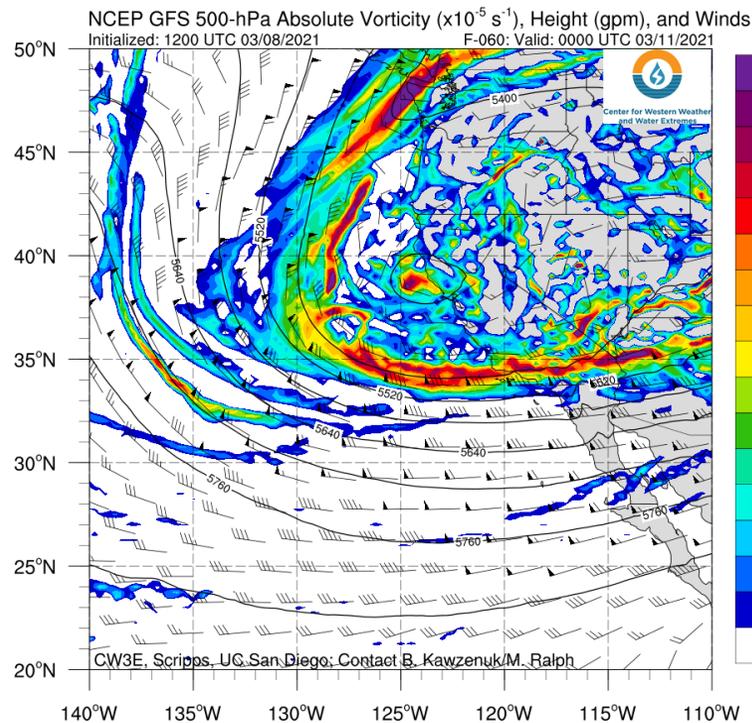
- The cutoff low produced more than 1 inch of precipitation in the Peninsular Ranges in interior San Diego County
- The AR and associated midlatitude cyclone produced as much as 3–5 inches of precipitation in portions of the Northern CA Coast Ranges, the southern OR coast ranges, and the Olympic Peninsula
- AR 2 conditions (based on the Ralph et al. 2019 AR Scale) were observed along the coast of Washington and Oregon
- A maximum IVT value of $663 \text{ kg m}^{-1} \text{ s}^{-1}$ and an AR duration of 33 hours were observed at 46°N , 124°W (near Seaside, OR)

GFS 500-hPa Absolute Vorticity, Heights, and Winds Forecasts

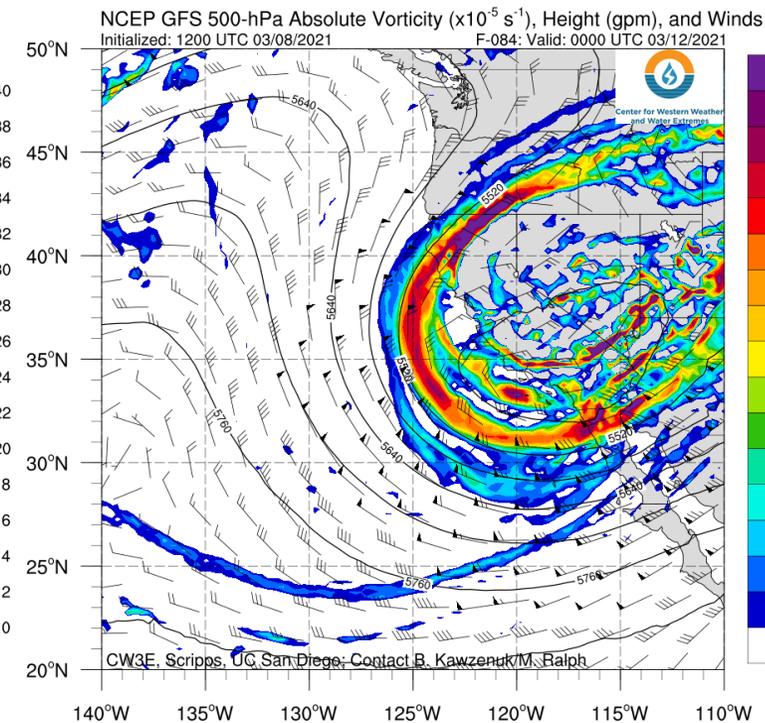
(A) Valid: 1200 UTC 9 Mar (F-24)



(B) Valid: 0000 UTC 11 Mar (F-60)



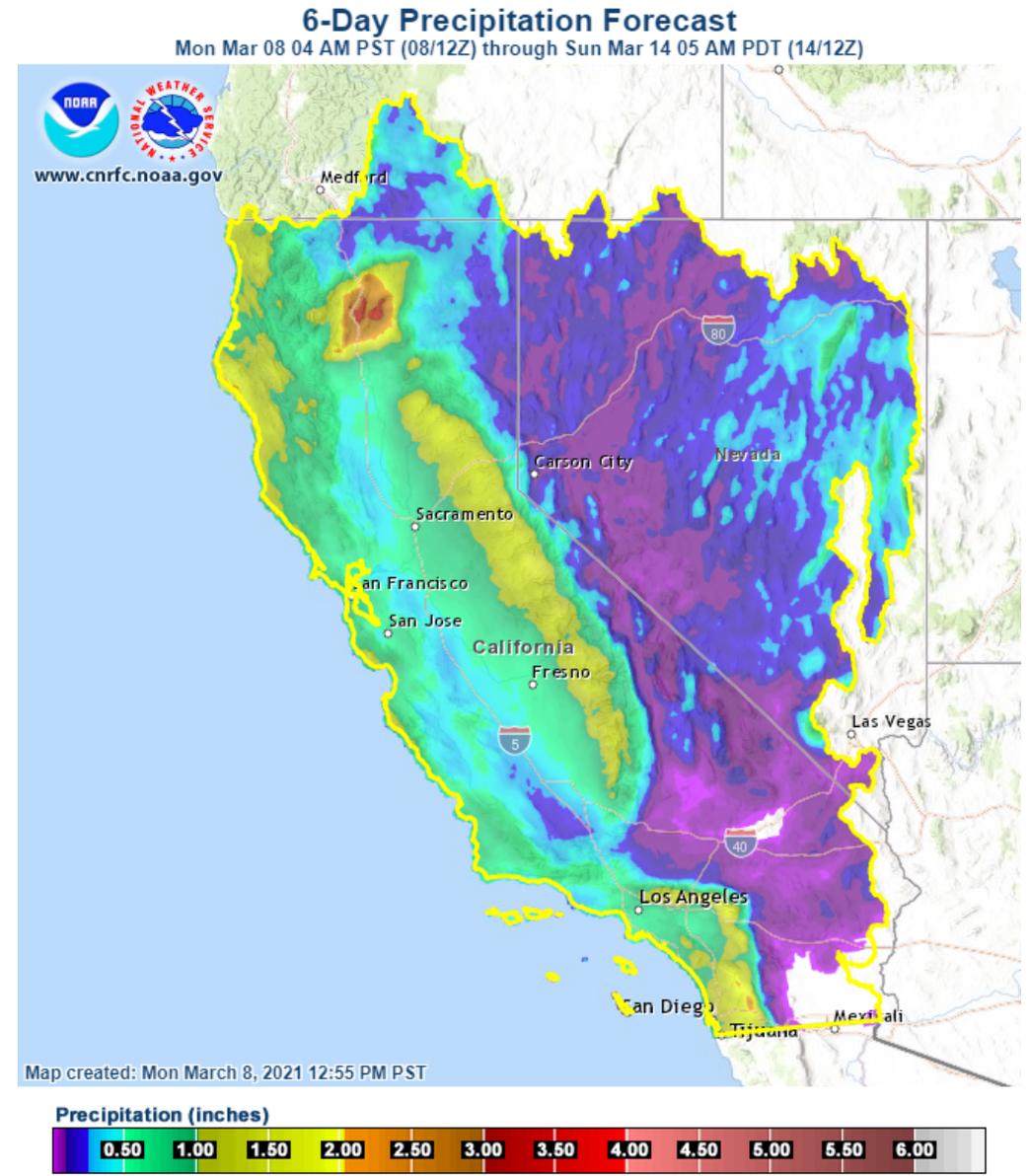
(C) Valid: 0000 UTC 12 Mar (F-84)



- A large mid-tropospheric trough and cutoff low pressure system is currently over the Northeast Pacific and is forecast to propagate southeast towards the USWC (Figure A)
- The cutoff low will move over Northern California on Wednesday afternoon (Figure B)
- The low will continue to move south and inland over CA bringing precipitation to most of the state on Wednesday-Thursday (Figure C)
- Moisture values are relatively low with this system (IWV <20 mm), but there will be sufficient moisture and forcing for ascent to produce precipitation and some thunderstorms throughout CA Tuesday-Thursday.

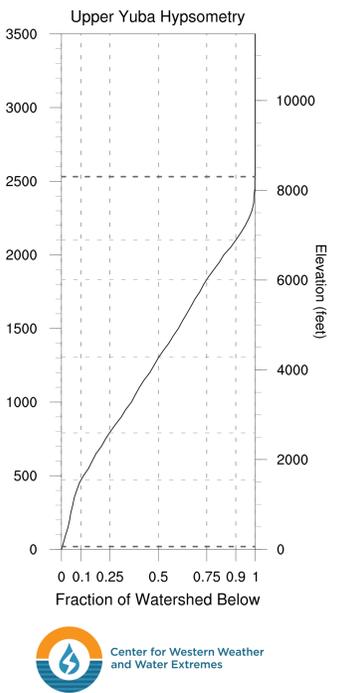
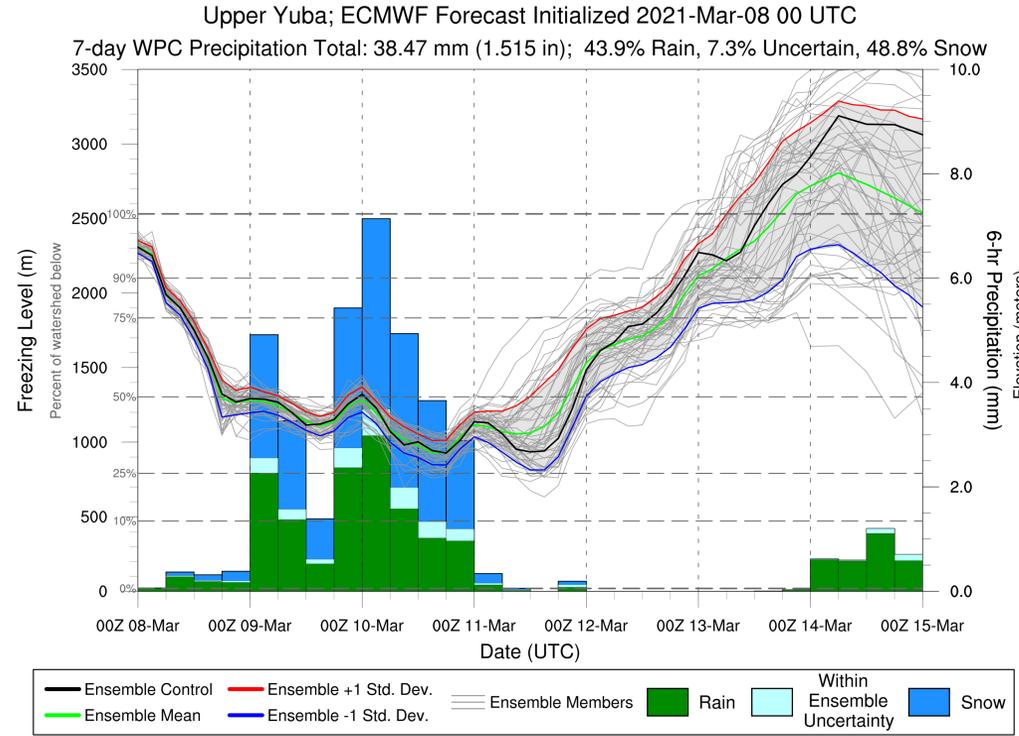
CNRFC 6-day Quantitative Precipitation Forecast

- Nearly all of CA is forecast to receive some precipitation over the next 6 days
- The CNRFC is forecasting maximum precipitation of 3–4 inches to occur over the Shasta-Trinity National Forest
- The Northern Sierra Nevada is forecast to receive 1–2 inches of precipitation
- The Transverse and Peninsular Ranges in Southern CA are forecast to receive > 1 inch of precipitation
- Localized amounts in San Diego county will likely be greater than 2 inches

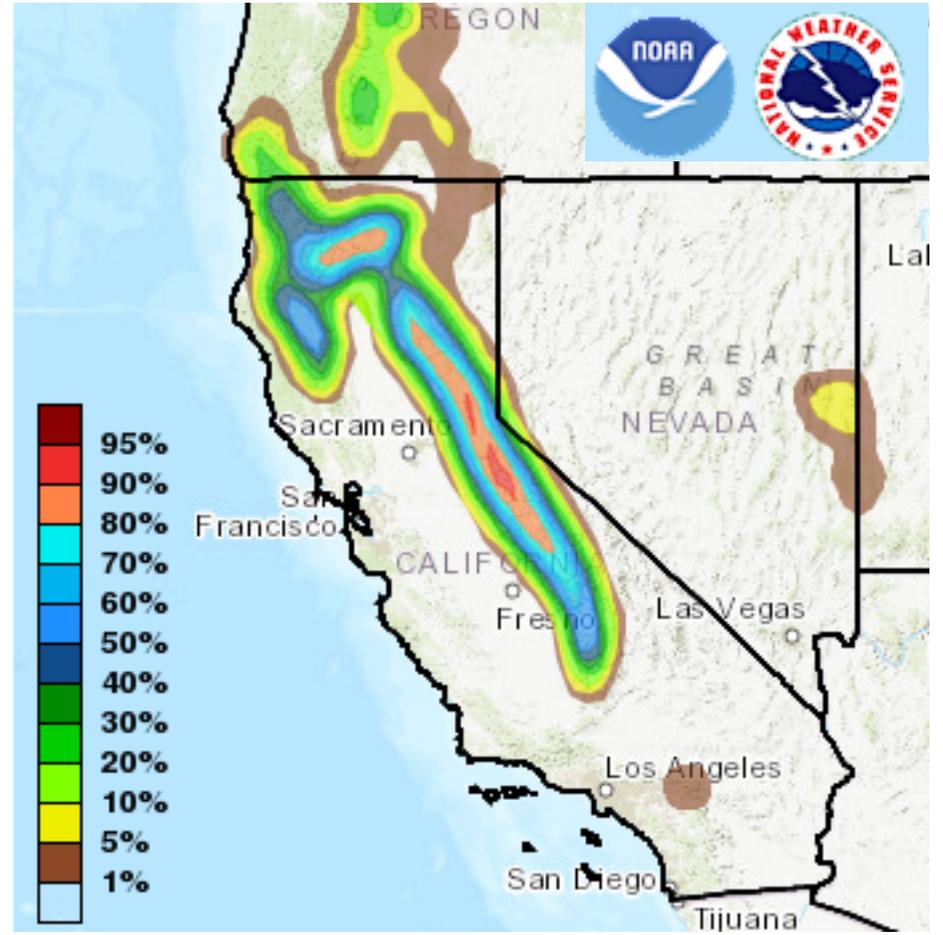


Precipitation Outlook: 8 Mar 2021

For California DWR's AR Program

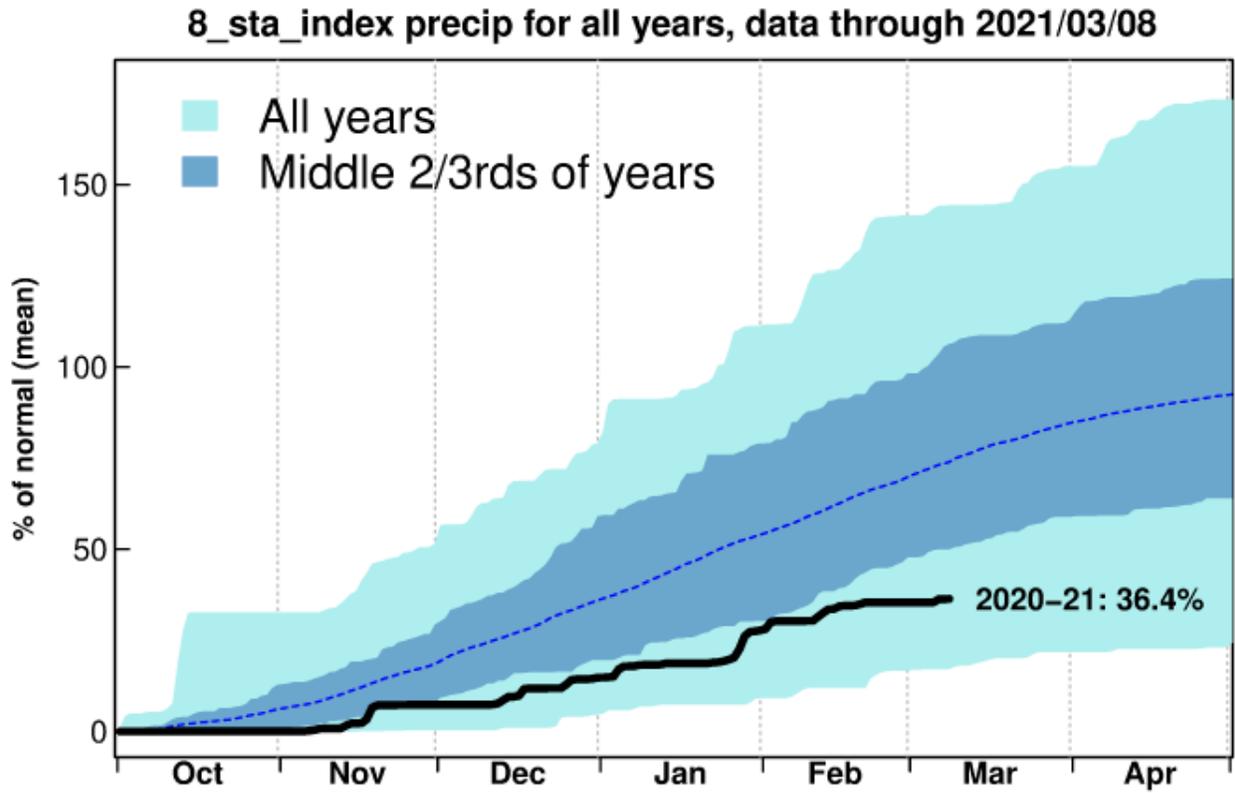
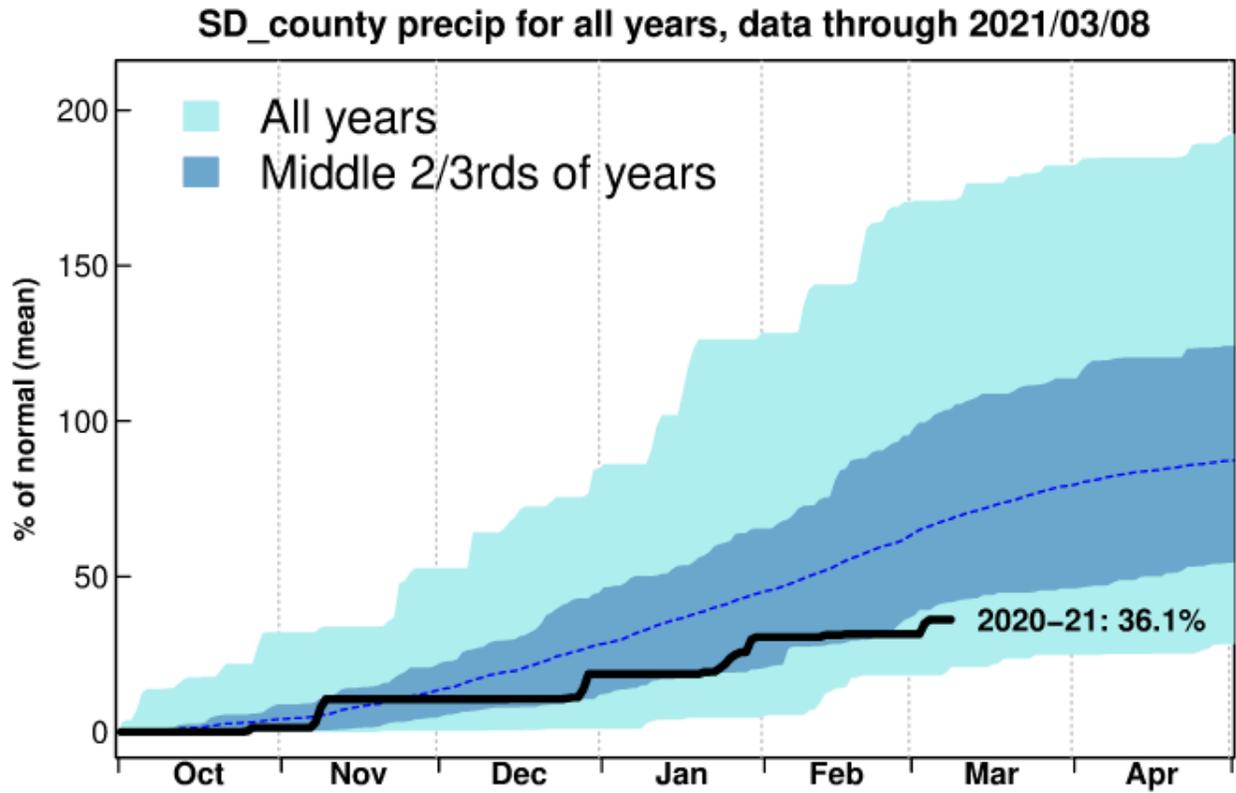


72- hour Probability of ≥ 8 inches of Snowfall Valid 12 UTC 8-11 Mar 2021



- Freezing levels during the heaviest precipitation period over the Northern Sierra Nevada are forecast to be ~3500–4200 feet resulting in a significant portion of the precipitation to fall as snow
- Most of the Sierra Nevada are forecast to receive greater than 8 inches of snow with localized amounts greater than 12 inches likely

California Precipitation Tracking



- As of 8 Mar, both San Diego County and the Northern Sierra Nevada have received only 36% of the normal total water year (Oct–Sep) precipitation
- On average, these areas receive 69% and 74% of their total water year precipitation by 8 Mar