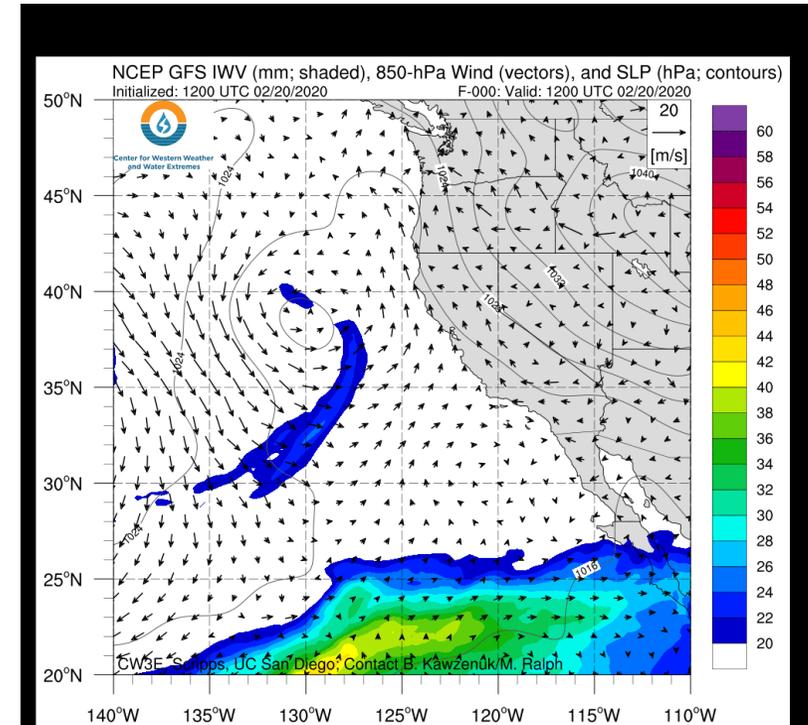
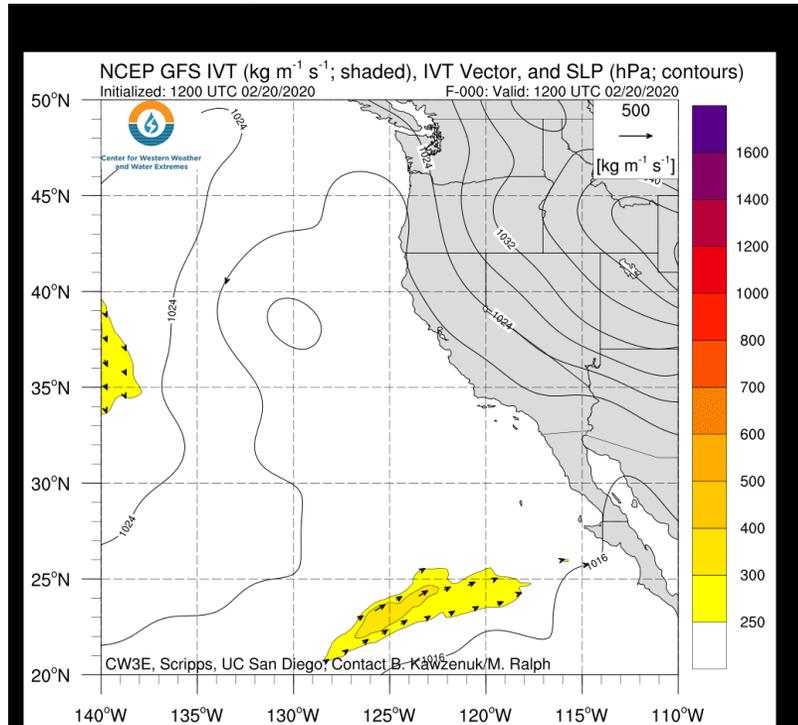




A cutoff low and landfalling AR will bring moderate-to-heavy rainfall to portions of the southwestern U.S.

- The interaction between a cutoff low off the California coast and tropical moisture over the Eastern Pacific will result in a landfalling AR over Baja California
- As time progresses, the AR will intensify and move northeastward across Arizona and New Mexico
- Some areas in southern AZ are forecast to experience AR2 conditions
- More than 0.5 inches of precipitation are forecast over portions of the southwestern U.S., with the highest amounts (> 1.5 inches) expected over the higher terrain in central and eastern AZ, as well as the San Juan Mountains in CO



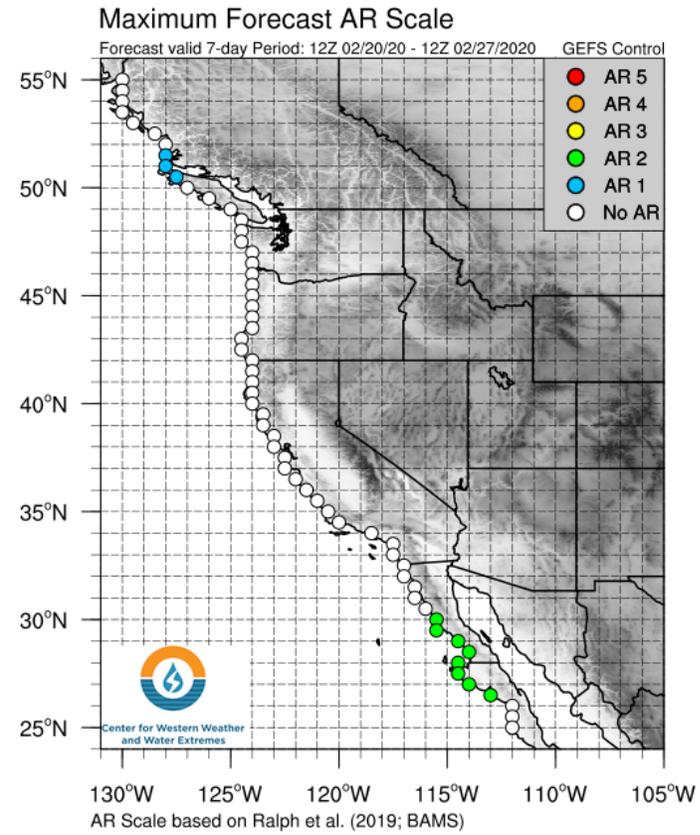
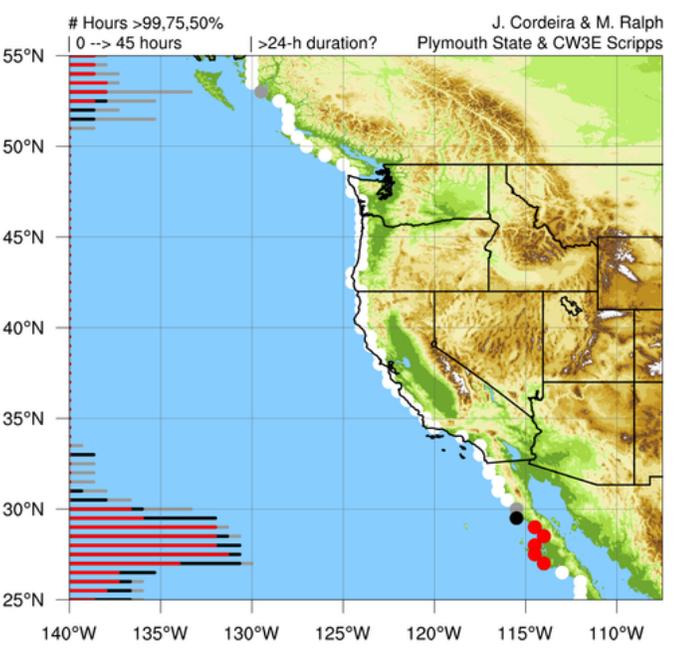
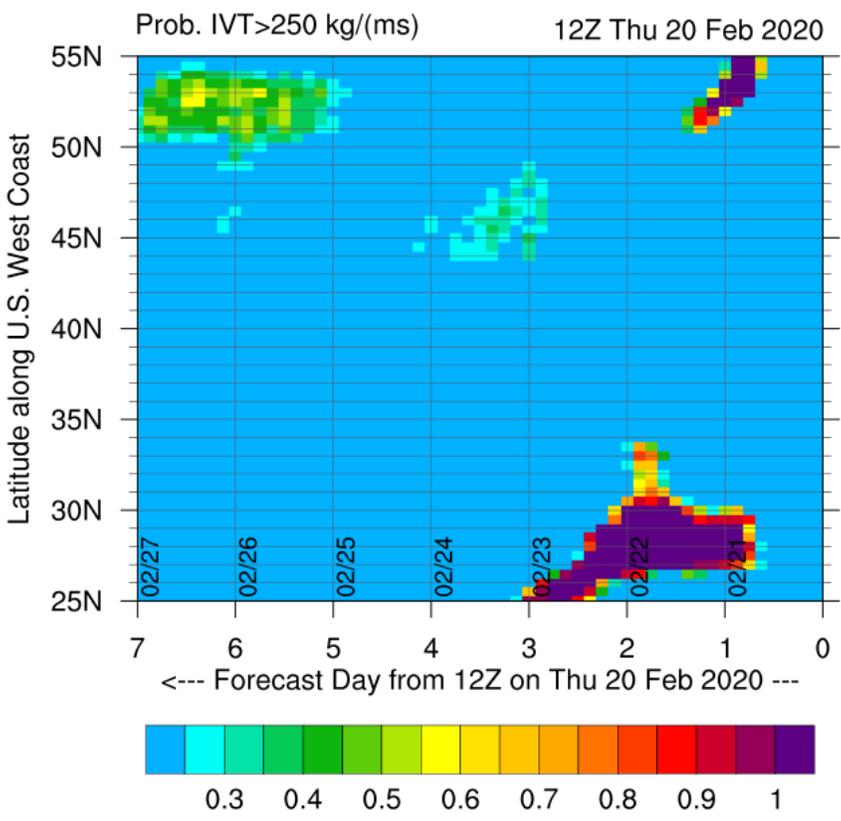
AR Outlook: 20 Feb 2020

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GEFS AR Landfall Probabilities & AR Scale (Coastal)



- Coastal AR landfall tool shows high confidence (> 90%) in at least 24 hours of AR conditions over the Baja Peninsula beginning around 1200 UTC 21 Feb
- GEFS control run is currently forecasting AR2 conditions along the coast of southern Baja California and northern Baja California Sur
- A brief period of AR conditions is also possible (> 50% probability) over extreme Southern CA

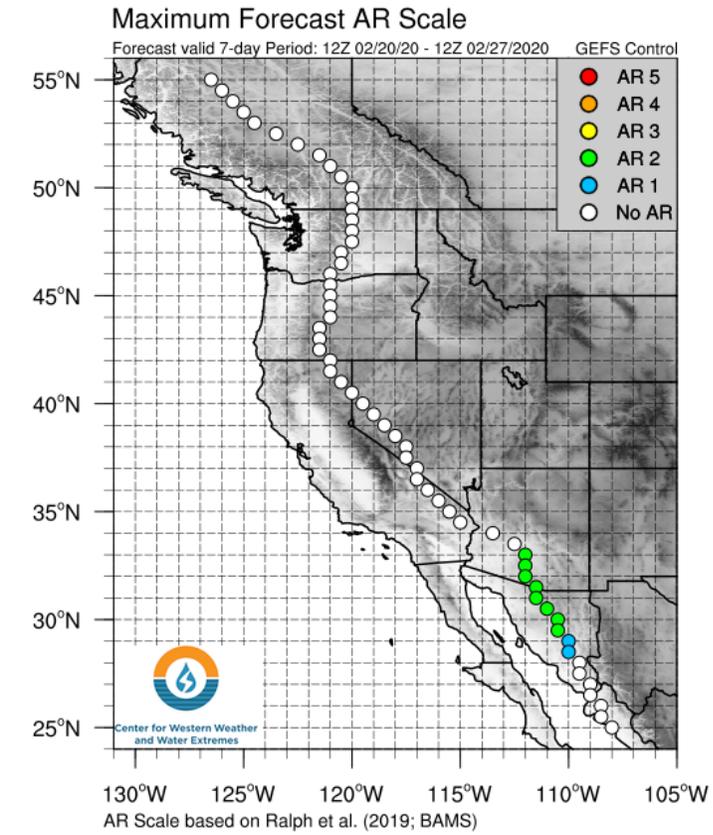
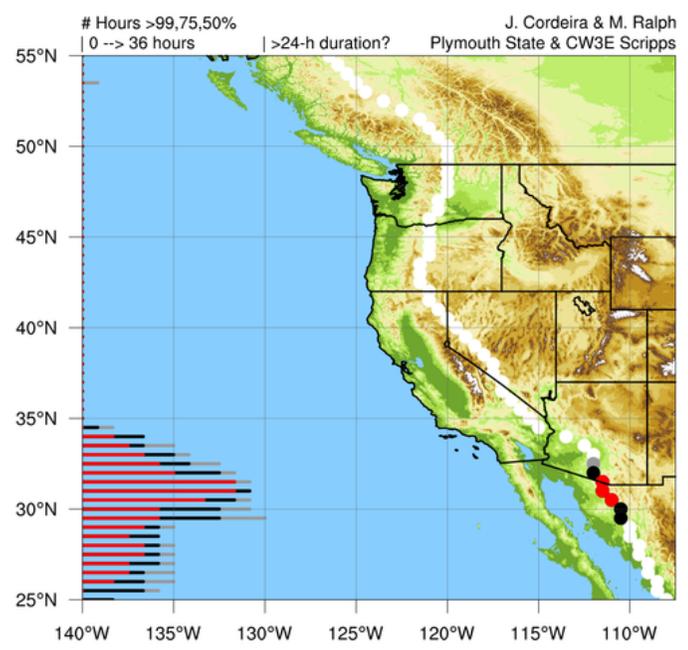
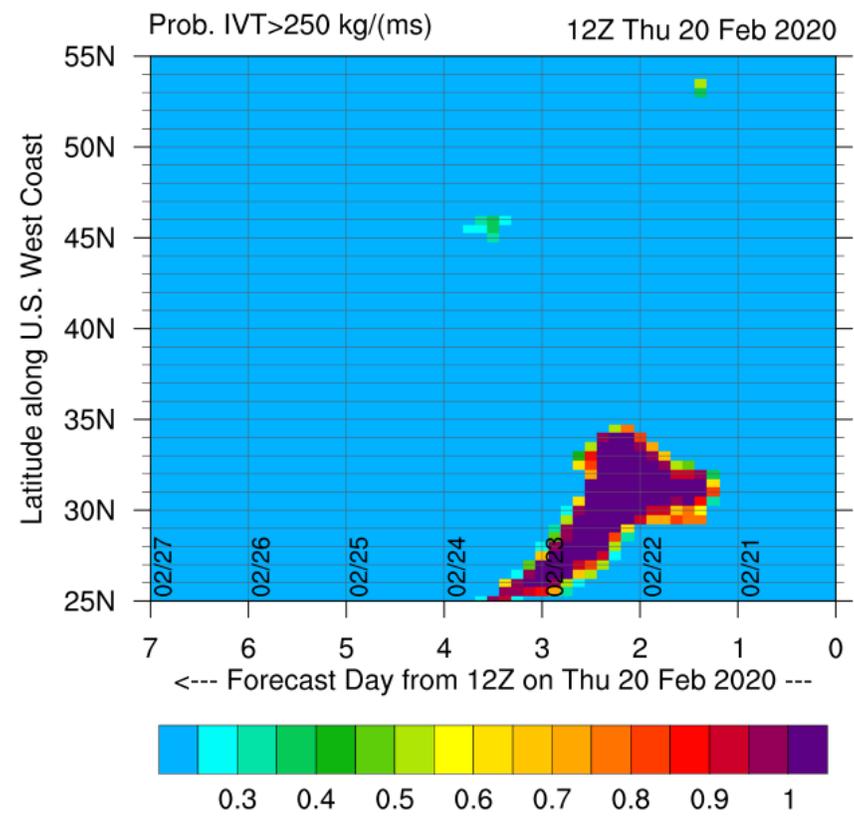
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GEFS AR Landfall Probabilities & AR Scale (Inland)



- Inland AR landfall tool shows high confidence (> 90%) in the inland penetration of AR conditions over northern Sonora and southern AZ beginning around 0000 UTC 22 Feb
- GEFS control run is currently forecasting AR2 conditions over these areas

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GEFS IVT Forecast Plumes

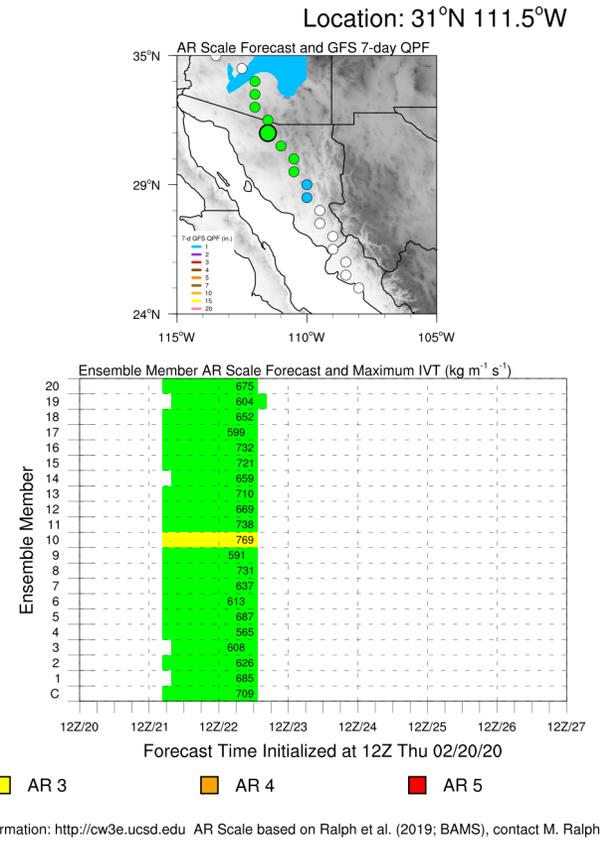
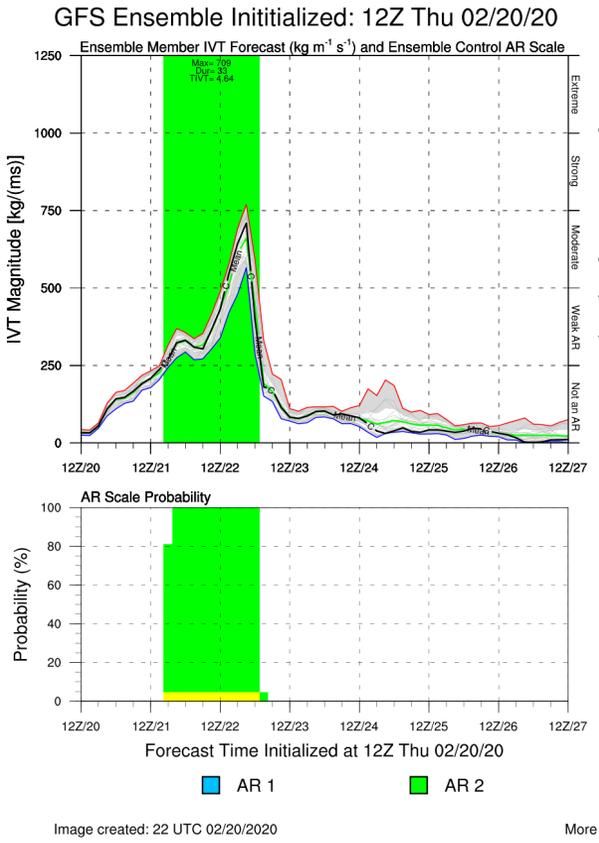
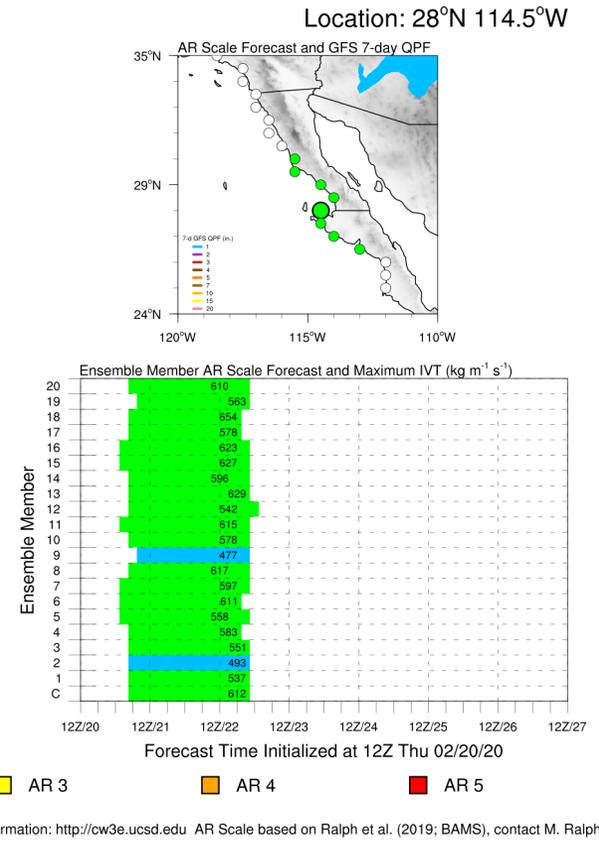
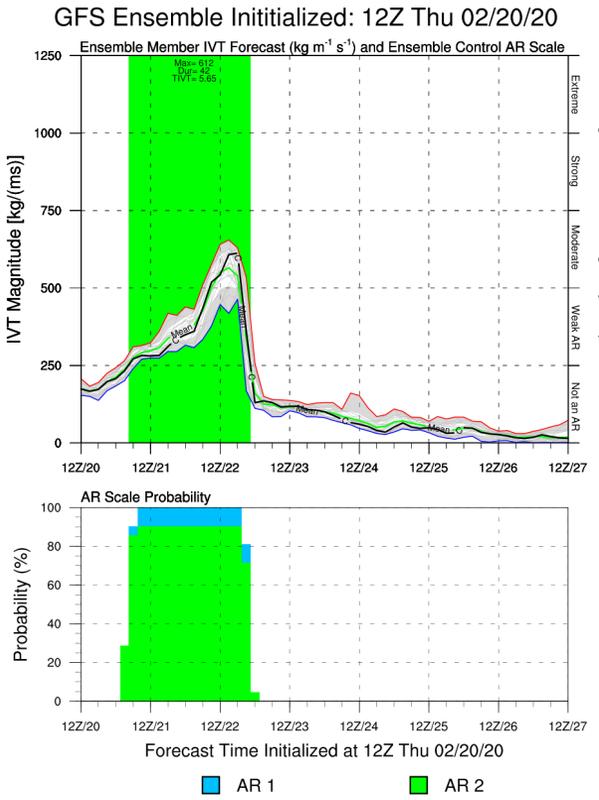


Image created: 22 UTC 02/20/2020

More information: <http://cw3e.ucsd.edu> AR Scale based on Ralph et al. (2019; BAMS), contact M. Ralph

Image created: 22 UTC 02/20/2020

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- GEFS control run is forecasting AR2 conditions at 28°N, 114.5°W (duration = 42 hours; max IVT = $612 \text{ kg m}^{-1} \text{ s}^{-1}$)
- About 90% of GEFS members are predicting AR2 conditions, but there is some uncertainty in the peak magnitude of IVT
- GEFS control run is also forecasting AR2 conditions at 31°N, 111.5°W (duration = 33 hours; max IVT = $709 \text{ kg m}^{-1} \text{ s}^{-1}$)
- All GEFS members are predicting at least AR2 conditions, but there is some uncertainty in the peak magnitude of IVT

AR Outlook: 20 Feb 2020

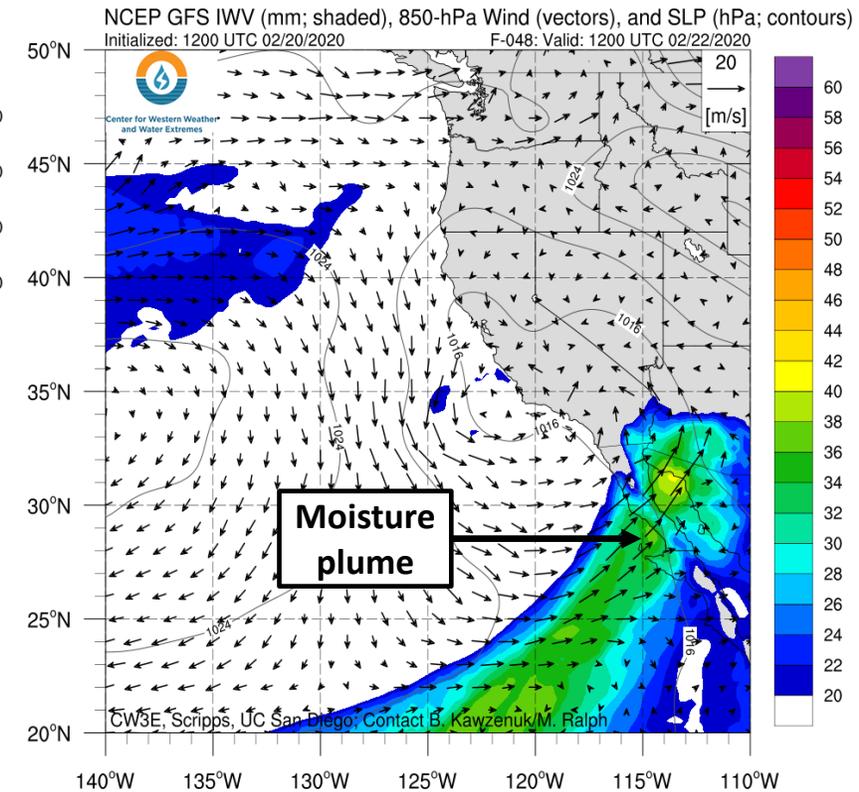
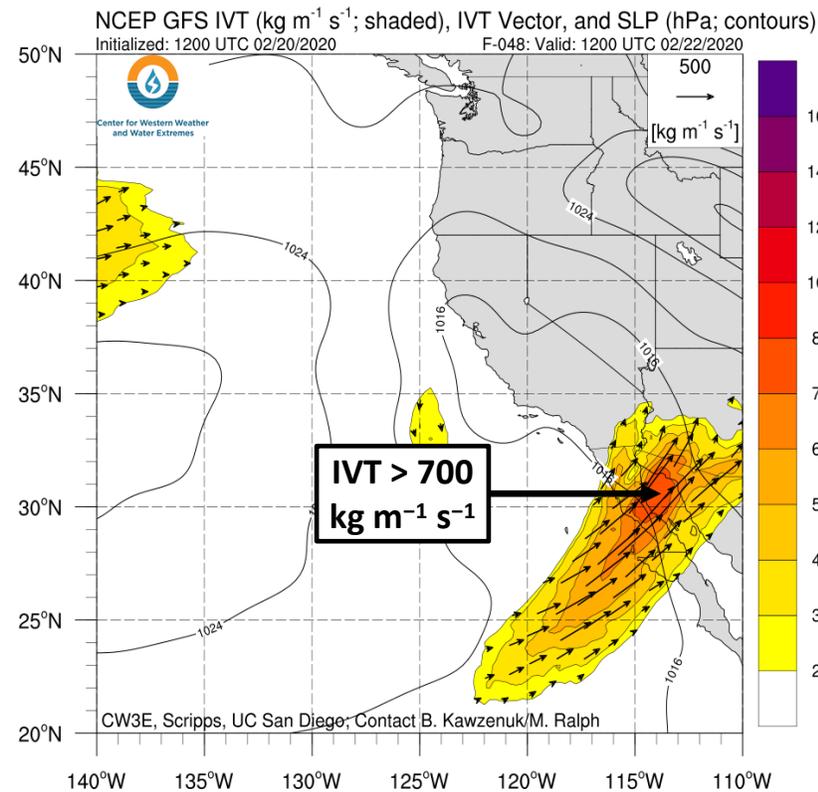
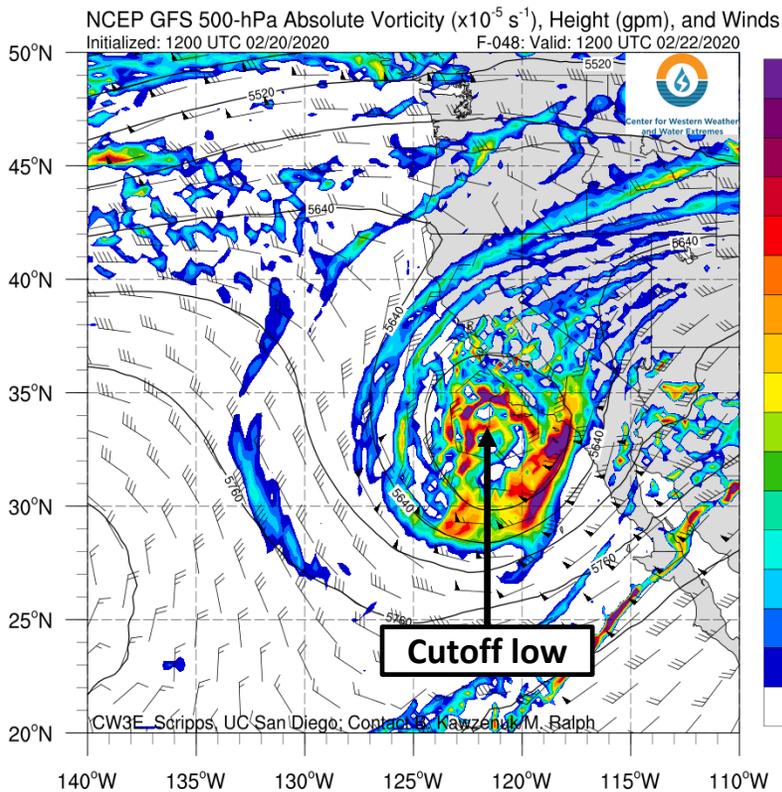
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GFS Forecasts: Valid 1200 UTC 22 Feb



- Over the next 48 hours, a cutoff low off the CA coast will interact with a region of tropical moisture over the Eastern Pacific Ocean
- Strengthening mid-level southwesterly flow will lead to the development of a region of enhanced IVT and an associated moisture plume over northwestern Mexico and southern AZ
- The orientation of the IVT vectors suggests that upslope moisture flux may play a role in enhancing precipitation amounts over the elevated terrain in central AZ

AR Outlook: 20 Feb 2020

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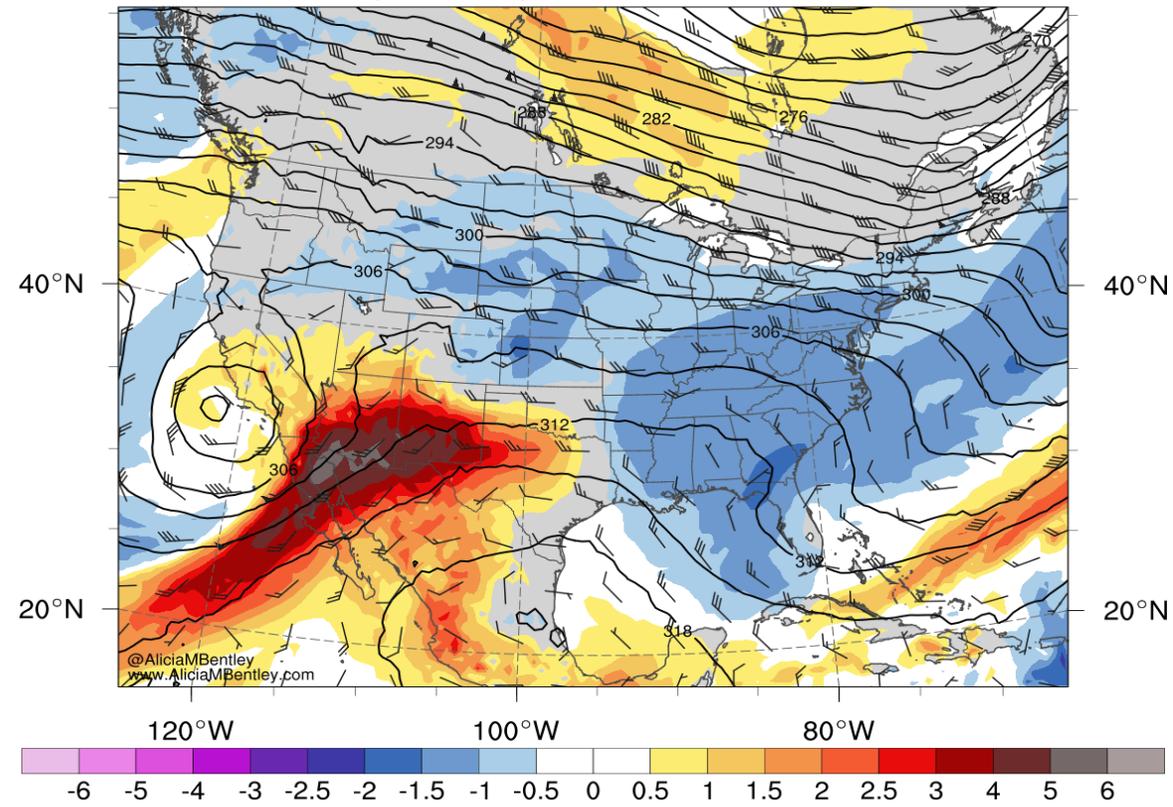
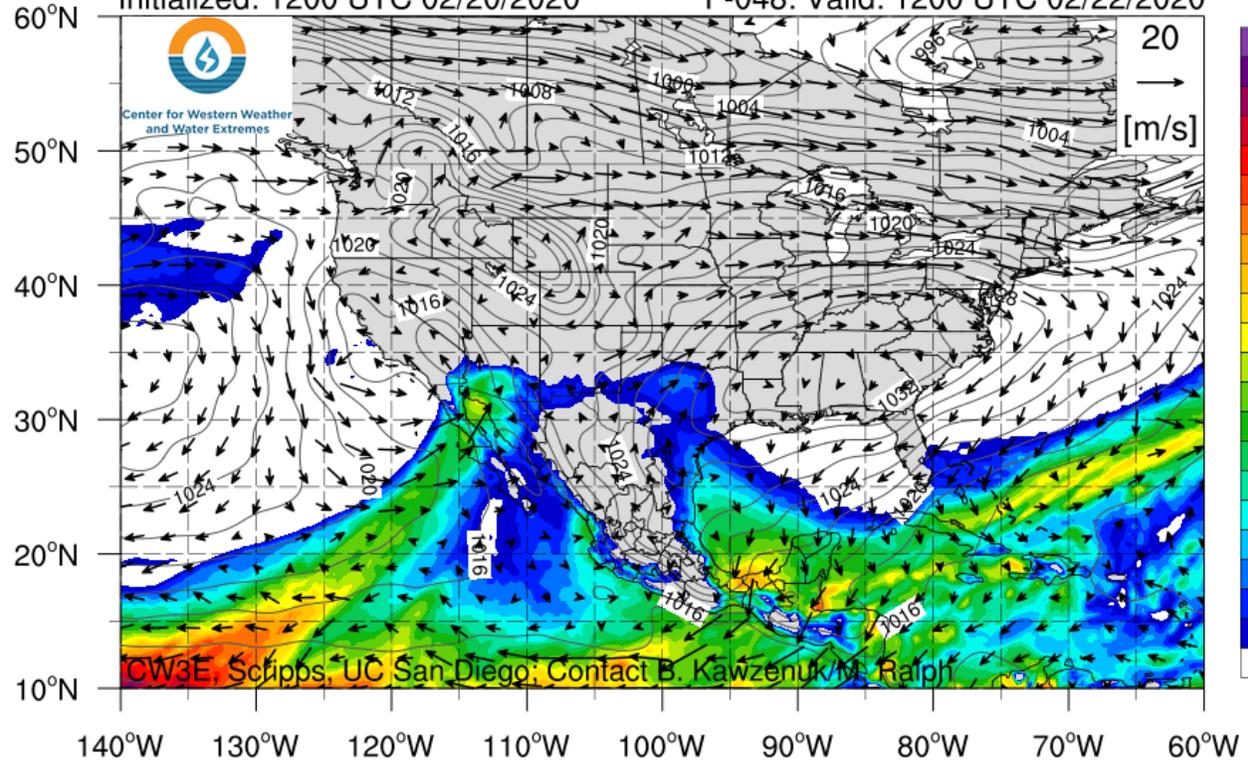
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GFS IWV Forecast: Valid 1200 UTC 22 Feb

GFS Standardized PWAT Anomaly: Valid 1200 UTC 22 Feb

NCEP GFS IWV (mm; shaded), 850-hPa Wind (vectors), and SLP (hPa; contours)
 Initialized: 1200 UTC 02/20/2020 F-048: Valid: 1200 UTC 02/22/2020

700-hPa geo. height (black, dam), wind (barbs, kt), standardized precip. water anomaly (shaded, sigma)
 Initialized: 1200 UTC 20 Feb 2020 | Forecast hour: 48 | Valid: 1200 UTC 22 Feb 2020



- The interaction between the cutoff low and tropical moisture over the Eastern Pacific Ocean will bring very moist air (for this time of year) to portions of the Desert Southwest
- Precipitable water values are forecast to exceed 4 standard deviations above normal across northwestern Mexico, southern AZ, and southern NM

Source: Alicia Bentley, <http://www.atmos.albany.edu/student/abentley/realtime.html>

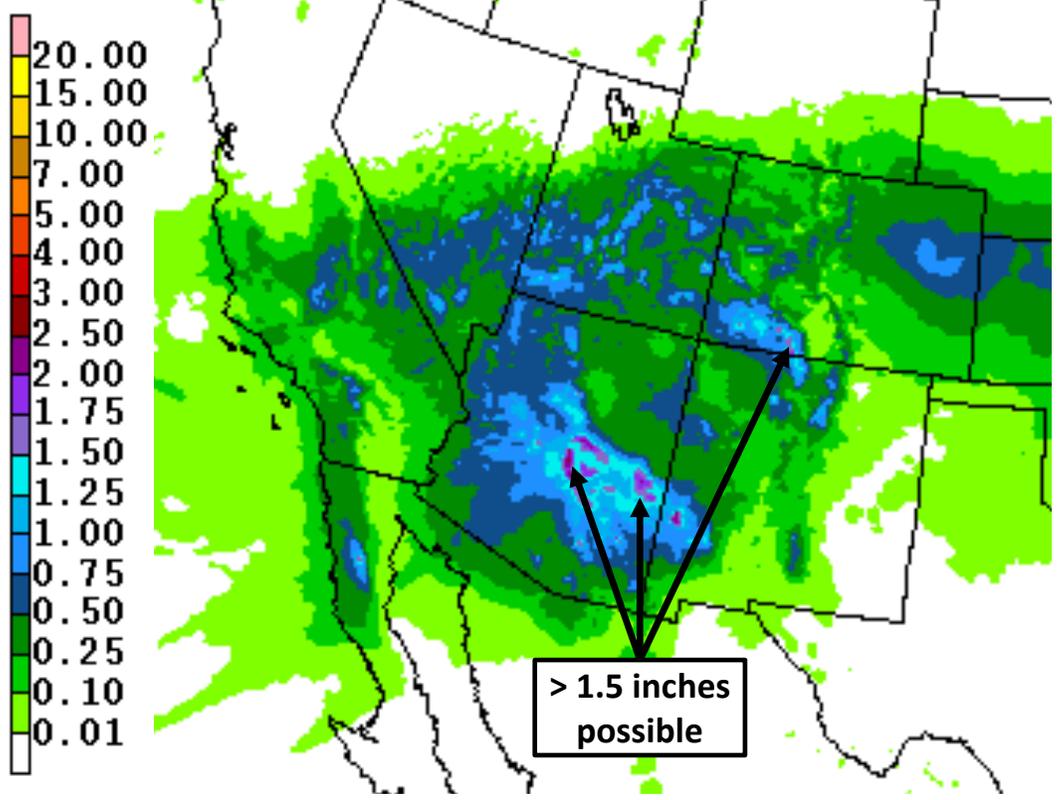
AR Outlook: 20 Feb 2020

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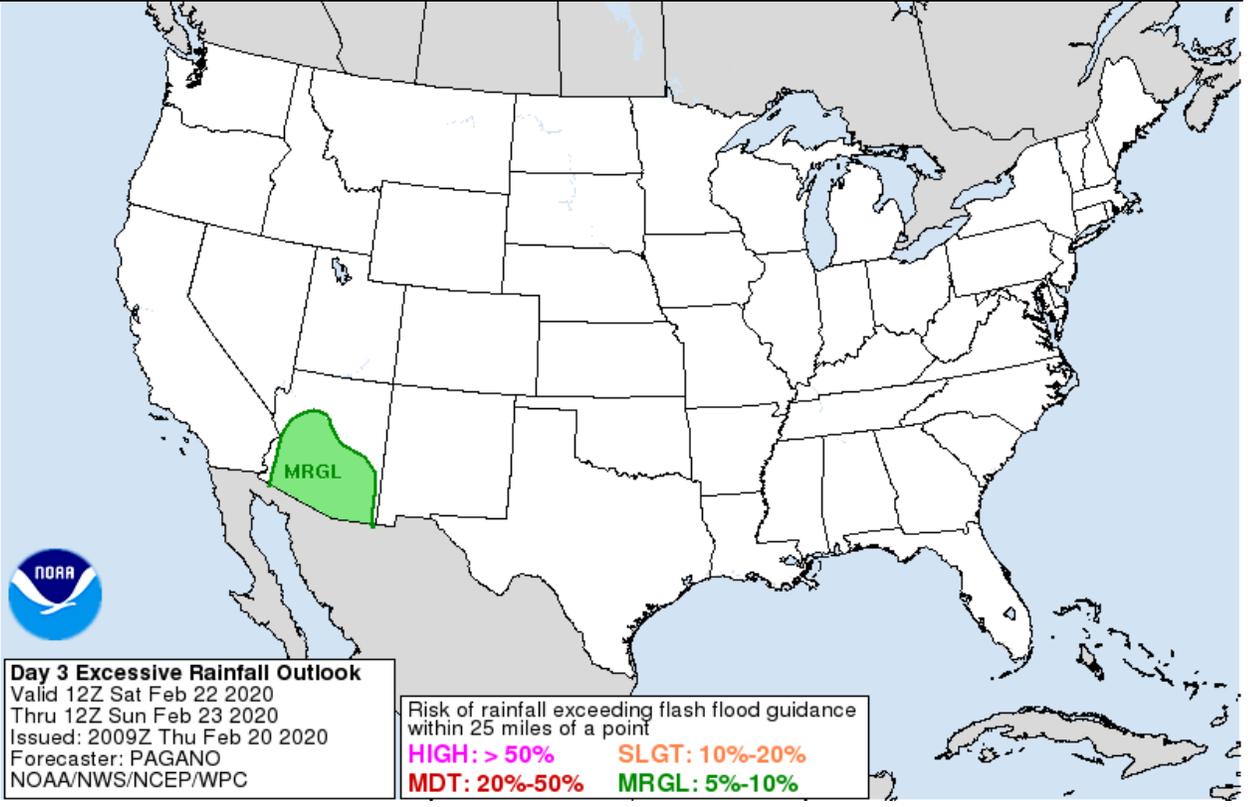


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WPC 3-day QPF: Valid 0000 UTC 21–24 Feb



WPC Day 3 Excessive Rainfall Outlook: Valid 1200 UTC 22–23 Feb



Source: NOAA/NWS WPC, <https://www.wpc.ncep.noaa.gov/>

- Widespread light-to-moderate precipitation amounts (< 0.5 inches) are forecast across the southwestern U.S., with higher amounts expected in AZ, southern NV, southern UT, and southwestern CO
- More than 1.5 inches of precipitation are possible over the higher elevations in central and eastern AZ, as well as the San Juan Mountains in southwestern CO
- NWS WPC has issued an excessive rainfall outlook for southern and central AZ

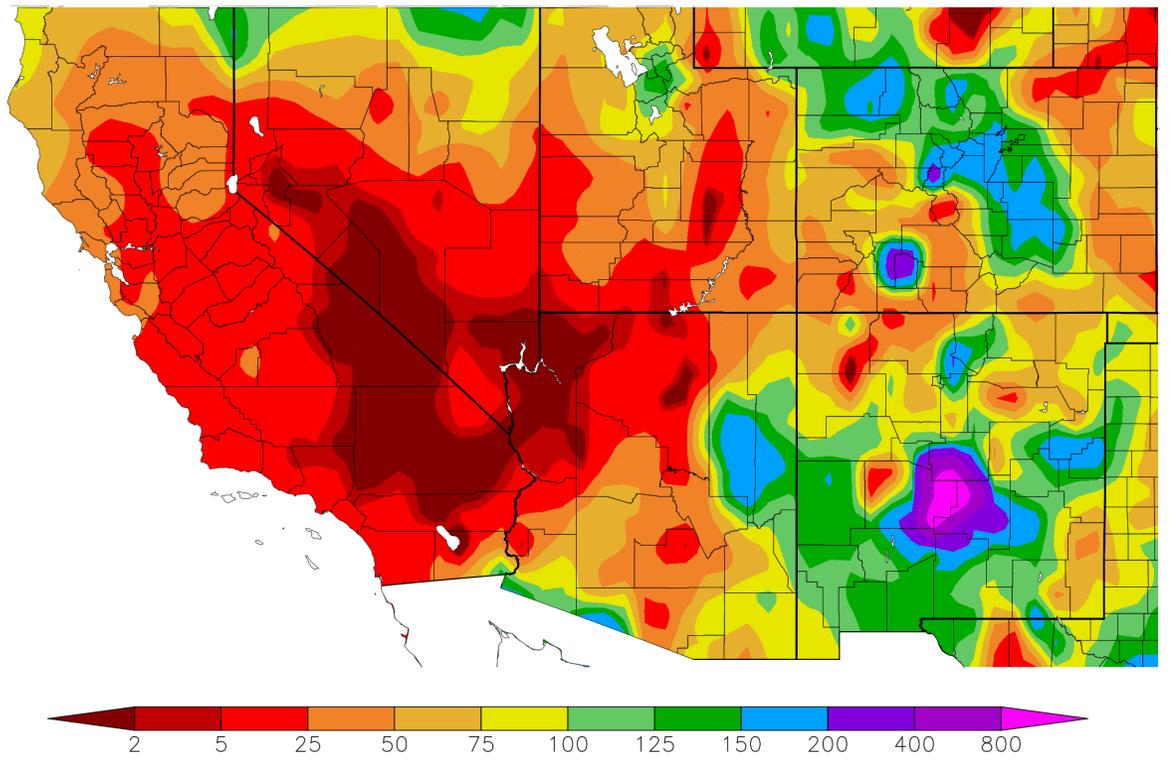
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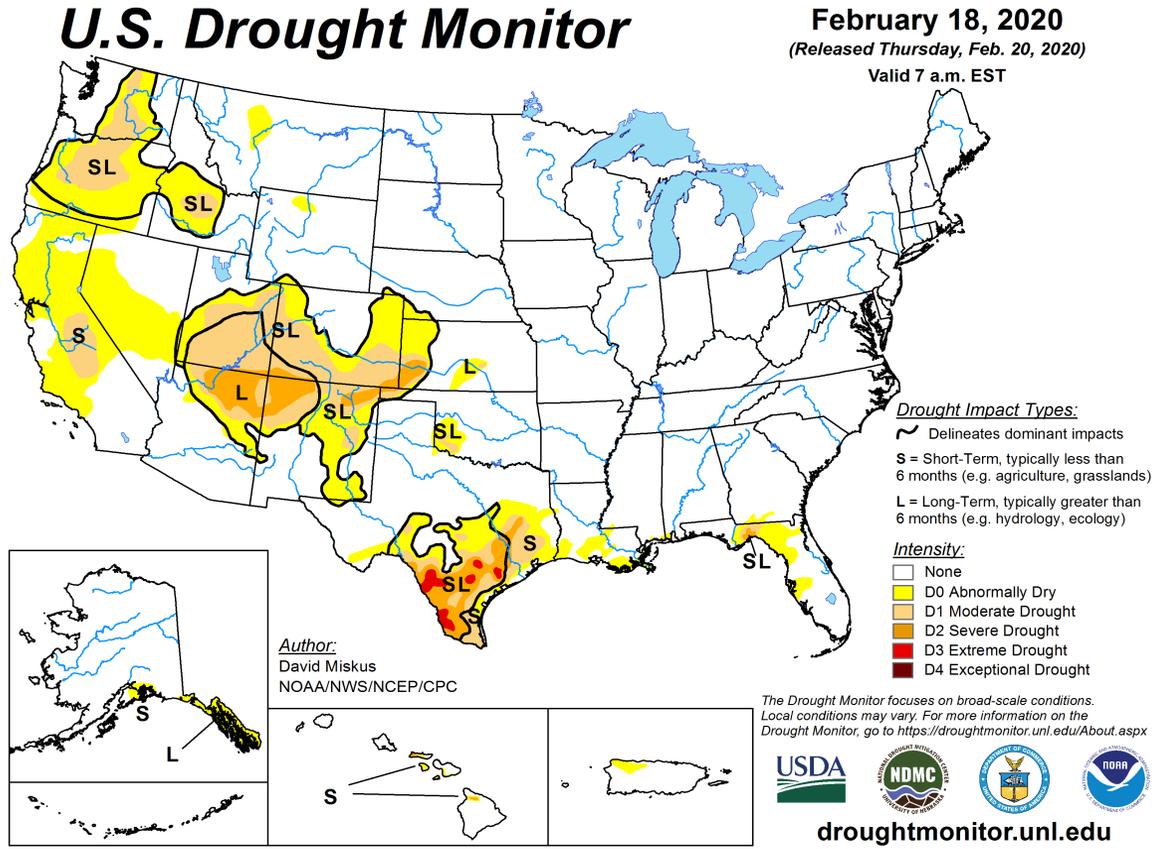


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Percent of Normal Precipitation (%): 1 Jan – 18 Feb



Generated 2/19/2020 at HPRCC using provisional data. NOAA Regional Climate Centers
Source: High Plains Regional Climate Center, <https://hprcc.unl.edu>



Source: National Drought Mitigation Center, UNL, <https://droughtmonitor.unl.edu>

- Rainfall associated with this landfalling AR will provide some relief to areas that have experienced very dry conditions in recent months
- Year-to-date precipitation is well-below normal across much of the southwestern U.S., with some areas receiving less than 10% of normal precipitation since 1 Jan
- Moderate-to-severe drought conditions have persisted over portions of the Four Corners region for more than 6 months