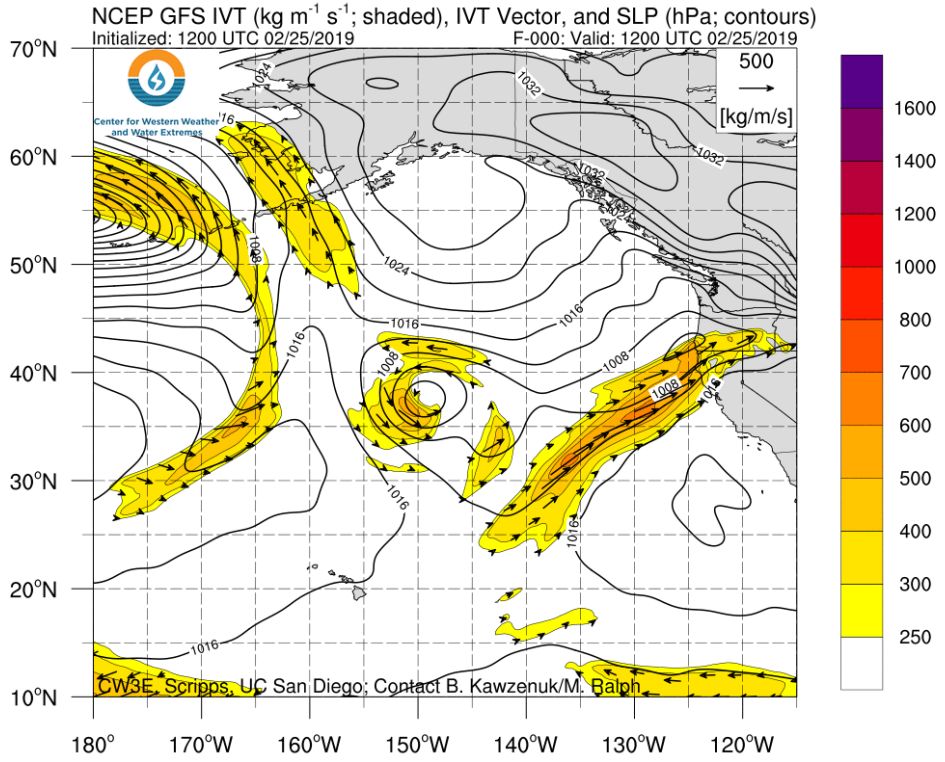
CW3E Atmospheric River Outlook

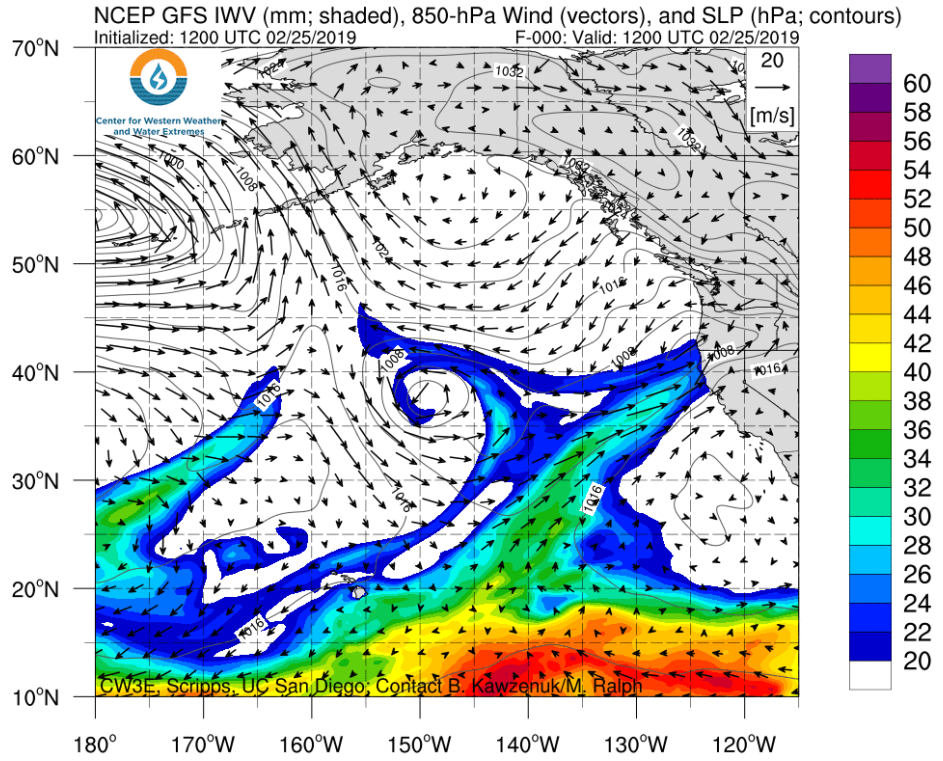
For California DWR's AR Program

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

Two ARs to bring heavy precipitation to CA over the next seven days

- The AR currently making landfall over northern CA is expected to strengthen and produce heavy precipitation over northern CA over the next three days.
- This **Category 3 AR** is forecast to produce up to 15 inches of precipitation over the Northern Sierra and 10+ inches over portions of coastal CA.
- A second AR is predicted to make landfall over Southern and Central CA on 2 March.
- The AR on 2 March is currently predicted to be weaker and of shorter duration than the first AR, but could still produce an additional 3-5 inches of precipitation over central CA.





AR Outlook: 25 February 2019

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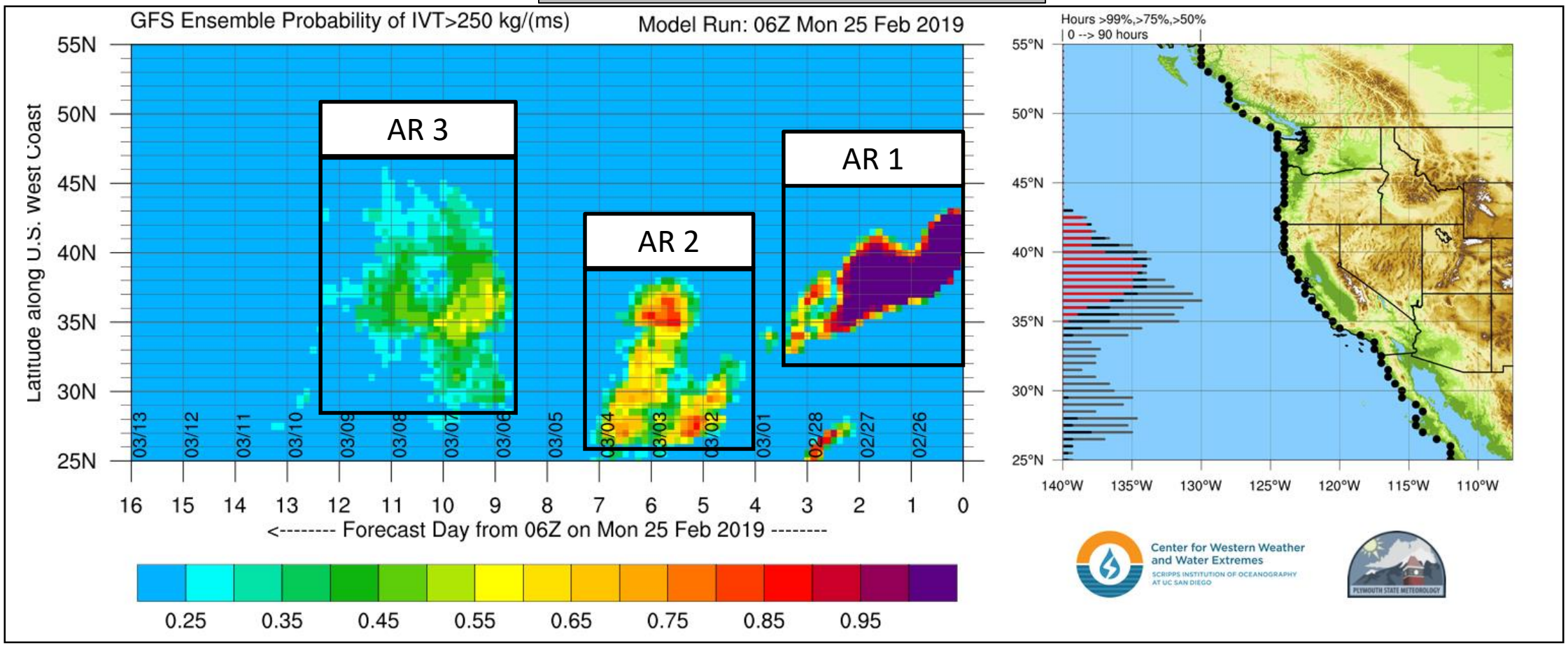
Odds of AR Conditions Along Coast



- **There is high probability (95–100%) of AR conditions (IVT > 250 kg m^{-1} s^{-1}) lasting until ~18Z (10 AM) on 2/27 in association with AR 1**
- **There is currently higher uncertainty (50–85%; location dependent) of AR conditions over California associated with AR 2**
- **Due to long forecast lead time, the probability of AR conditions along the coast associated with AR 3 is currently low (25–60%)**

AR Outlook: 25 February 2019

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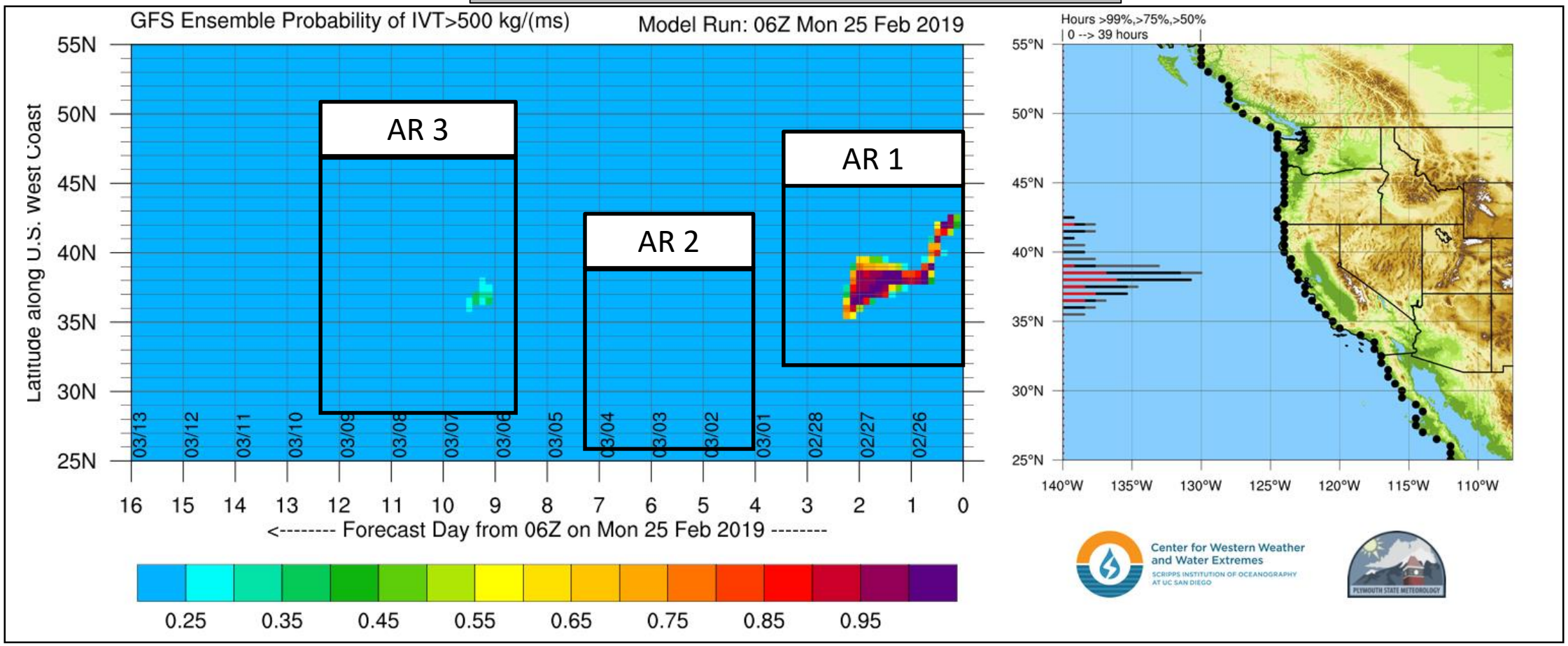
Odds of Moderate AR Conditions Along Coast



- **There is high probability (>85%) of moderate (IVT > 500 kg m^{-1} s^{-1}) AR conditions lasting until ~9Z (1 AM) 2/27 between 36N and 40N**
- **There is currently little to no probability (<25%) of moderate AR conditions associated with AR 2**
- **The GEFS is currently suggesting the slight possibility (25 – 35%) of moderate AR conditions associated with AR 3**

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The GEFS is currently suggesting moderate AR conditions over Central California.

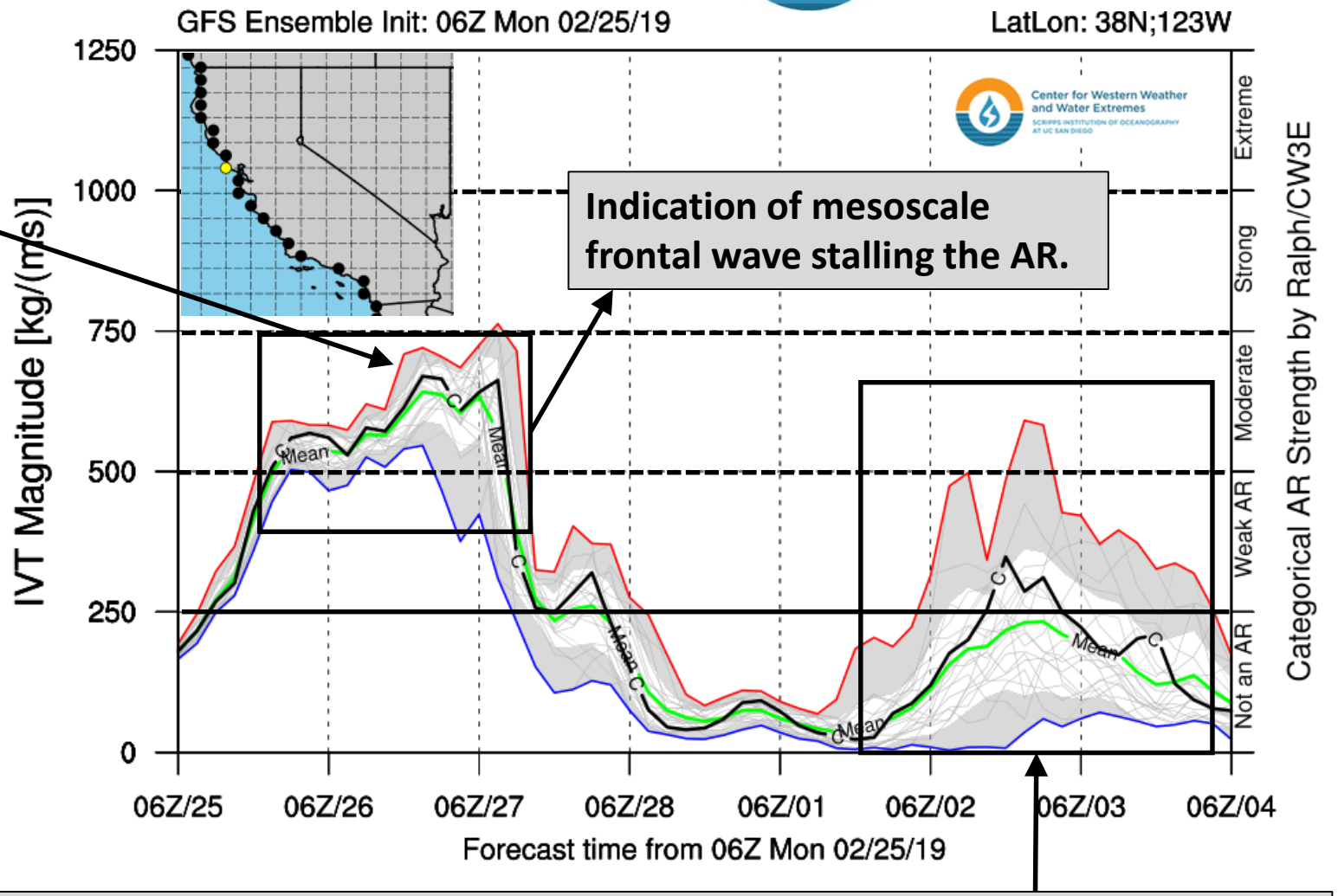
Magnitude of potential AR

- Maximum predicted IVT ~650 kg m^{-1} s^{-1}
- Mean IVT ~600 kg m^{-1} s^{-1}
- Minimum IVT ~525 kg m^{-1} s^{-1}

Forecast duration of AR conditions

- Weak 54 hours +/– 12
- Moderate 36 hours +/– 18

The second peak in IVT magnitude during AR1 that results in longer duration of AR conditions is due to the cut-off low over the eastern Pacific propagating eastward, intensifying the AR, and shifting the IVT core northward



- **The GEFS is showing large uncertainty in onset, duration, and magnitude of AR conditions in association with AR 2**
- **While uncertainty is high, the GEFS suggests AR 2 will be brief and weak**

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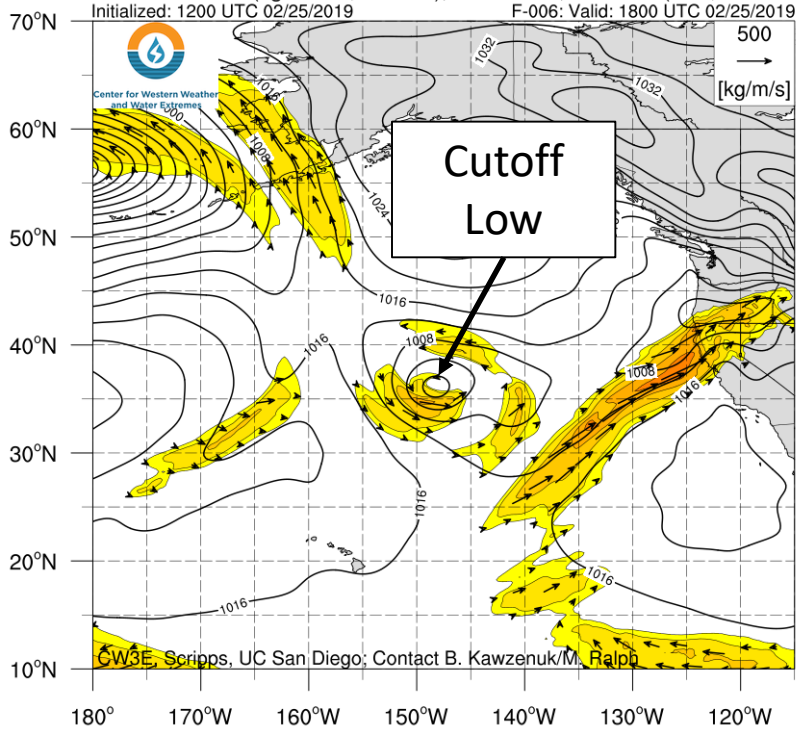
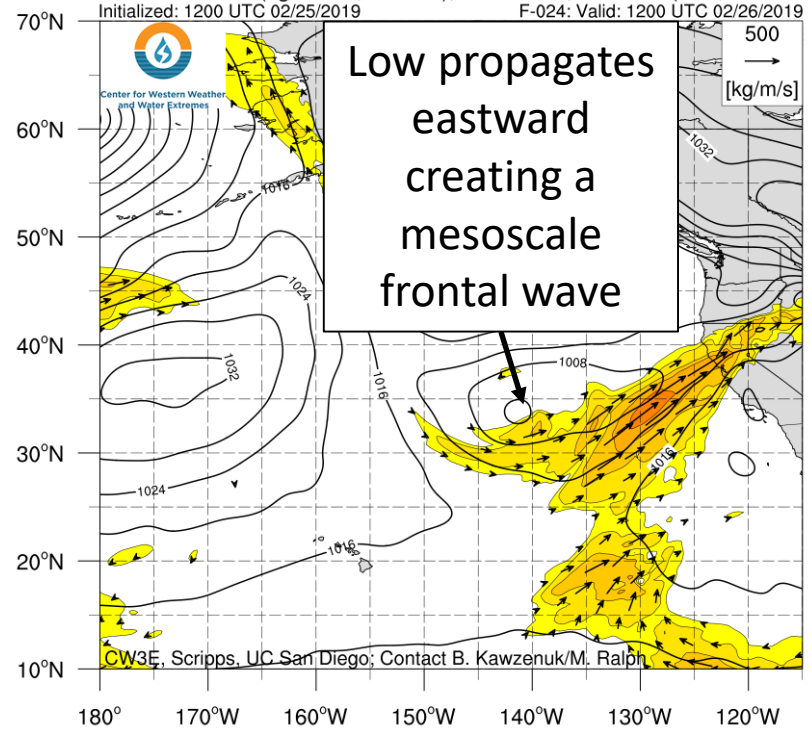
18 UTC 25 February



12 UTC 26 February



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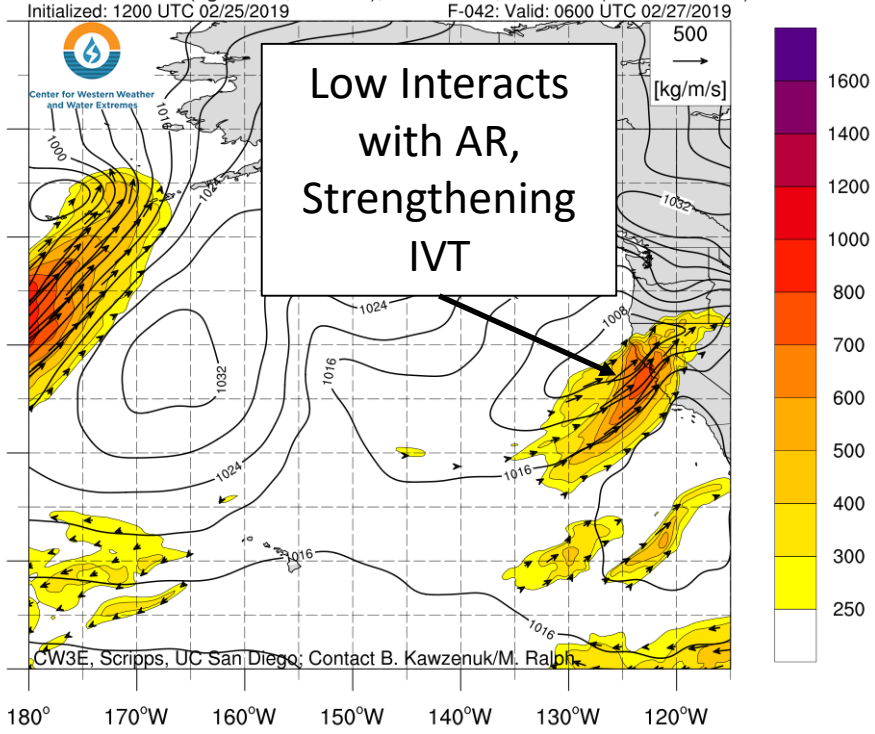

A Cutoff low in the central East Pacific is forecast to propagate eastward and interact with the AR, strengthening IVT magnitudes, shifting IVT direction to a more southerly direction, and shifting AR conditions slightly northward

AR Outlook: 25 February 2019

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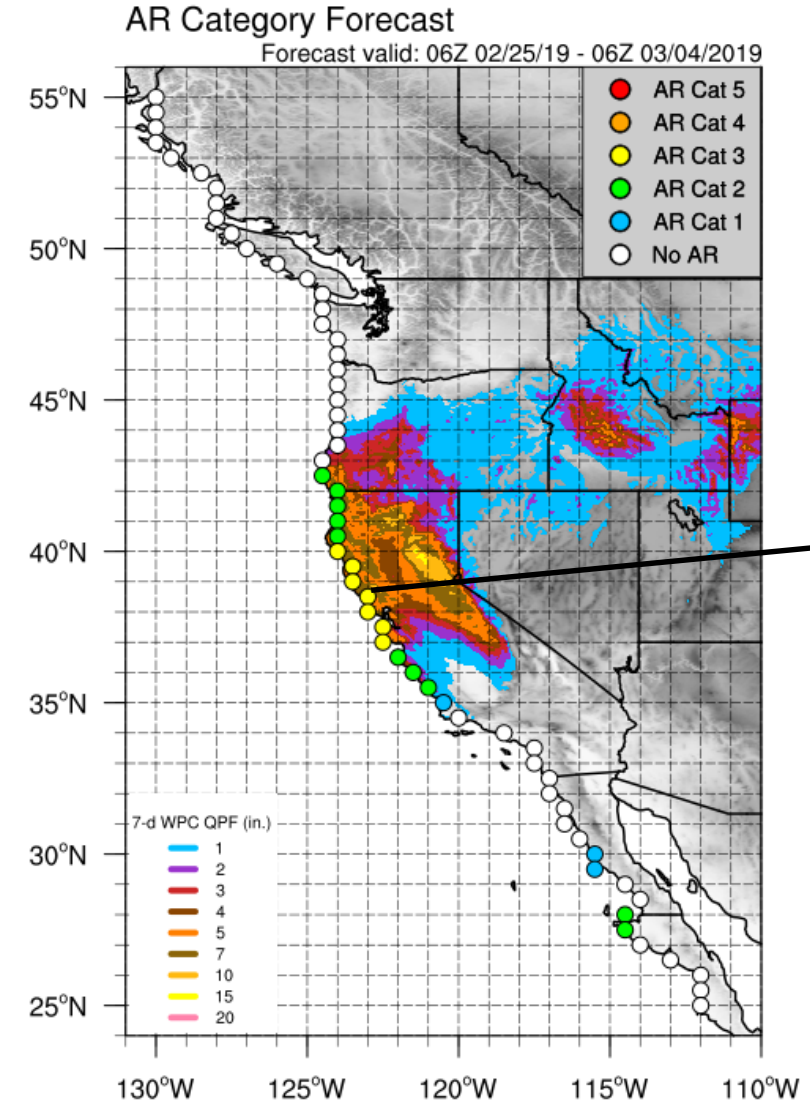

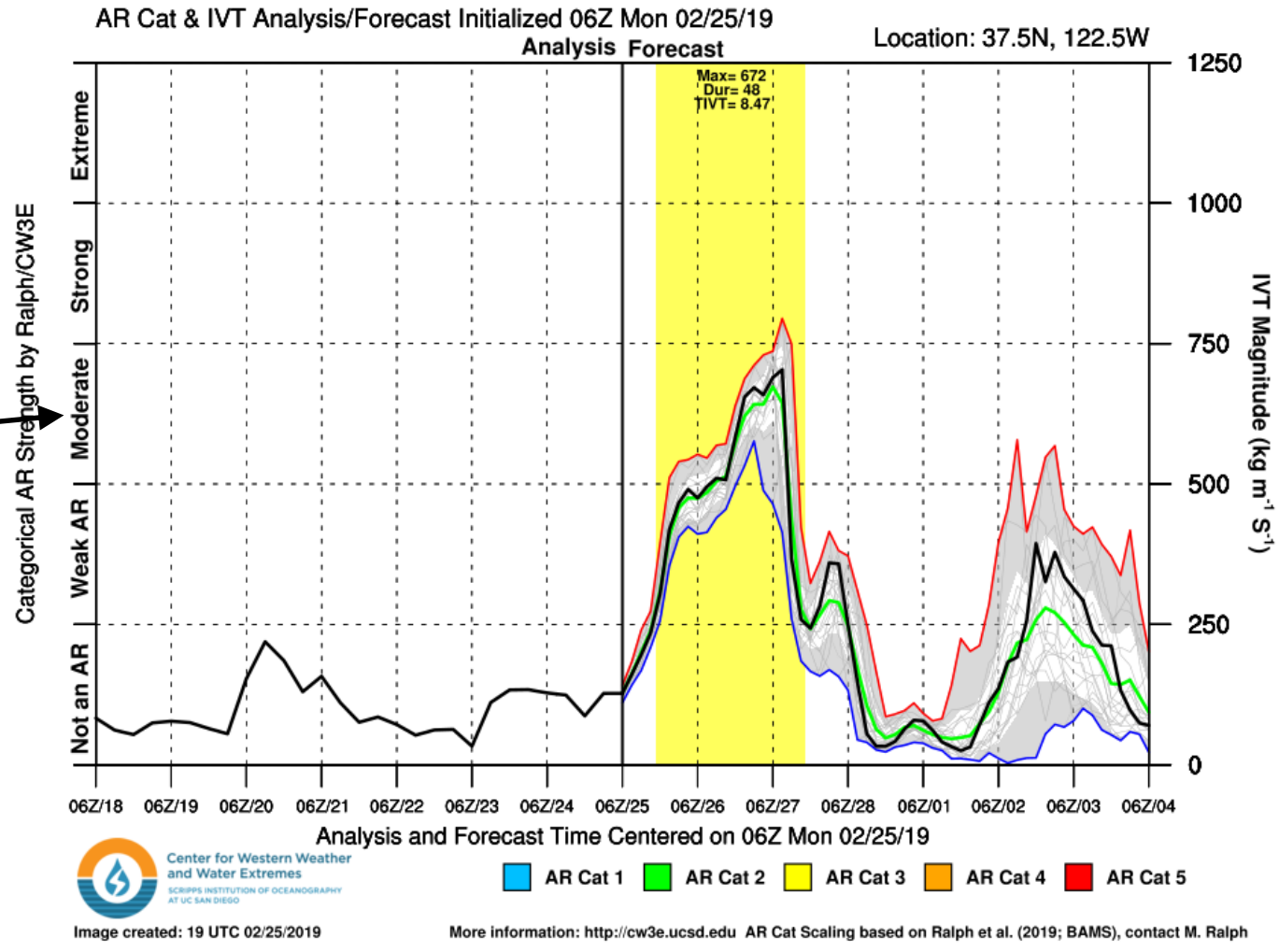

- **AR1 is currently forecast to be an AR Category 3 over coastal Central and Northern CA with IVT magnitude between 500–750 kg m^{-1} s^{-1} and duration ≥48 hours (scaling based on Ralph et al. 2019).**
- **AR2 is currently predicted to be an AR Category 1 near Big Sur.**

AR Outlook: 25 February 2019

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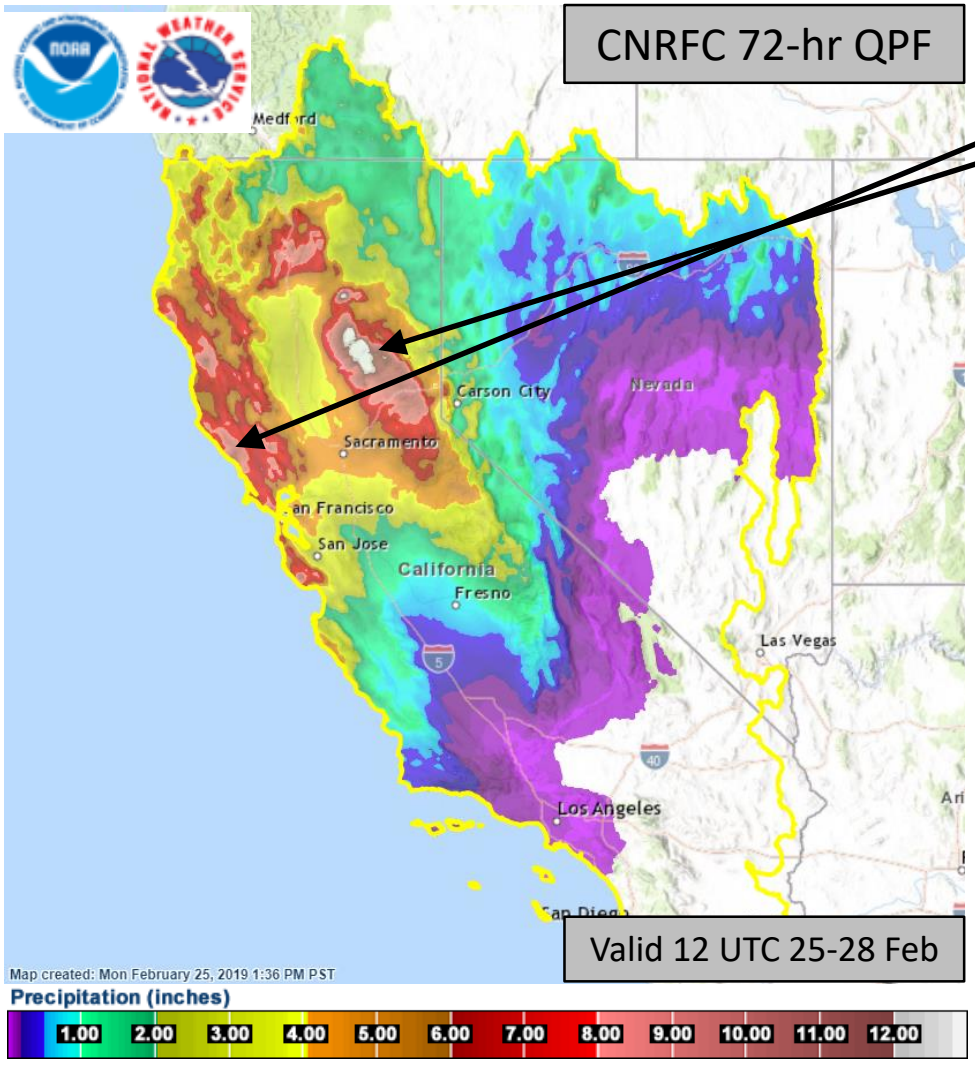
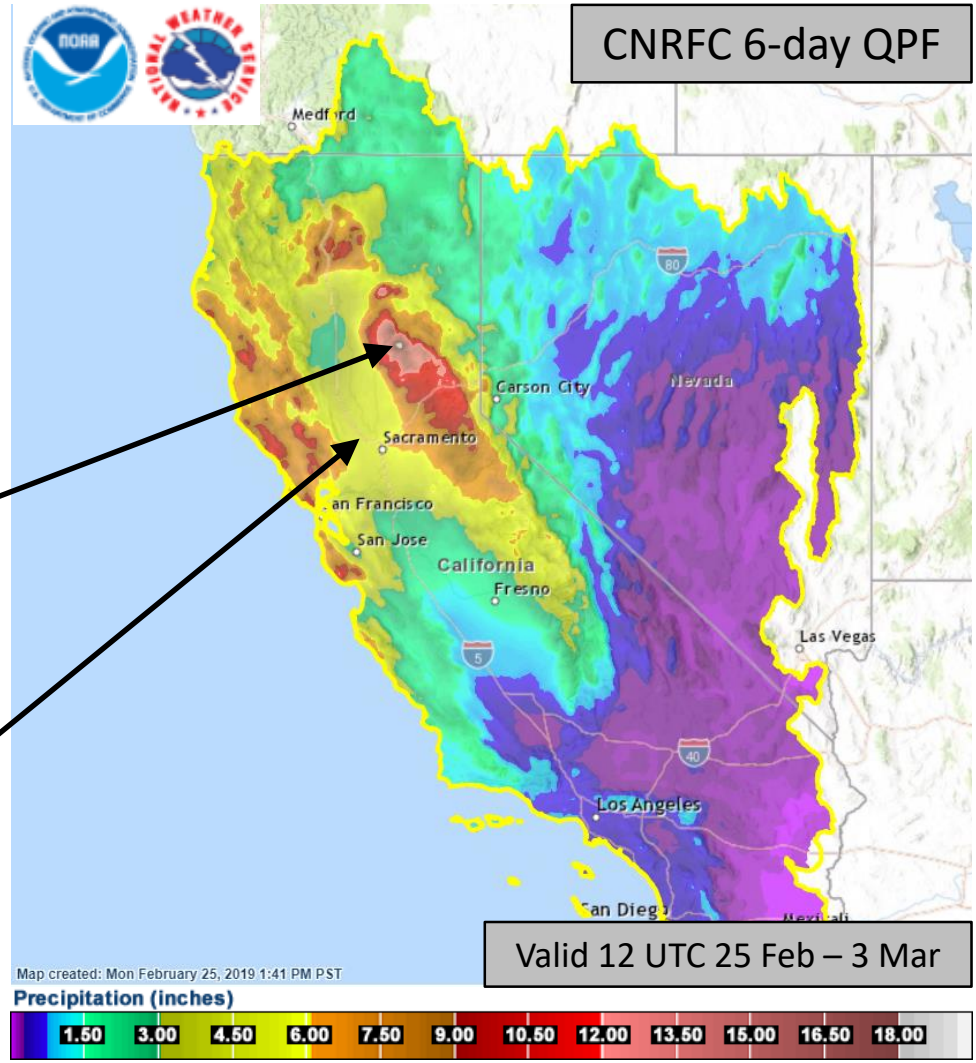


The CNRFC Is currently forecasting up to 14+ in. over the higher elevations of the Northern Sierra Nevada Mts. and up to 11 inches over the Coastal Mts. during the next 72-hours

Portions of the Northern Sierra are forecast to receive >15 in. with localized maxima up to 19 in. over the next 6 days.

Lower elevations in the Central Valley are forecast to receive up to 5 in.

NWS California Nevada River Forecast Center forecast products are located at cnrfc.noaa.gov



AR Outlook: 11 February 2019

For California DWR's AR Program

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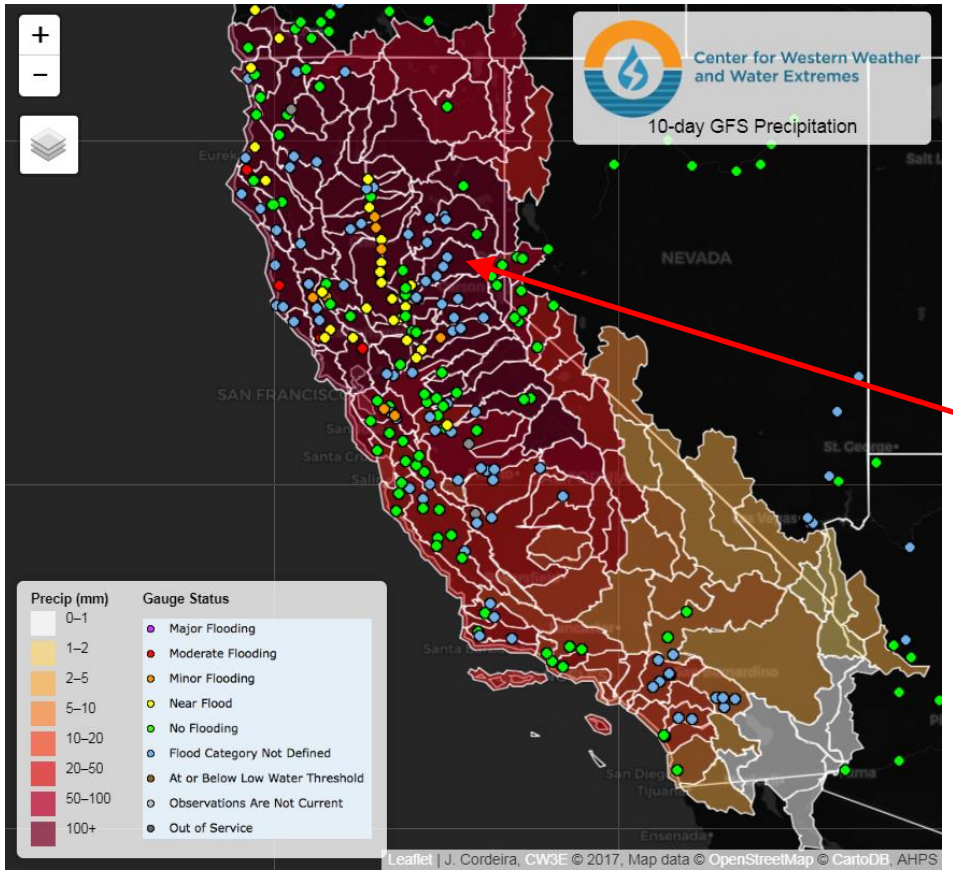

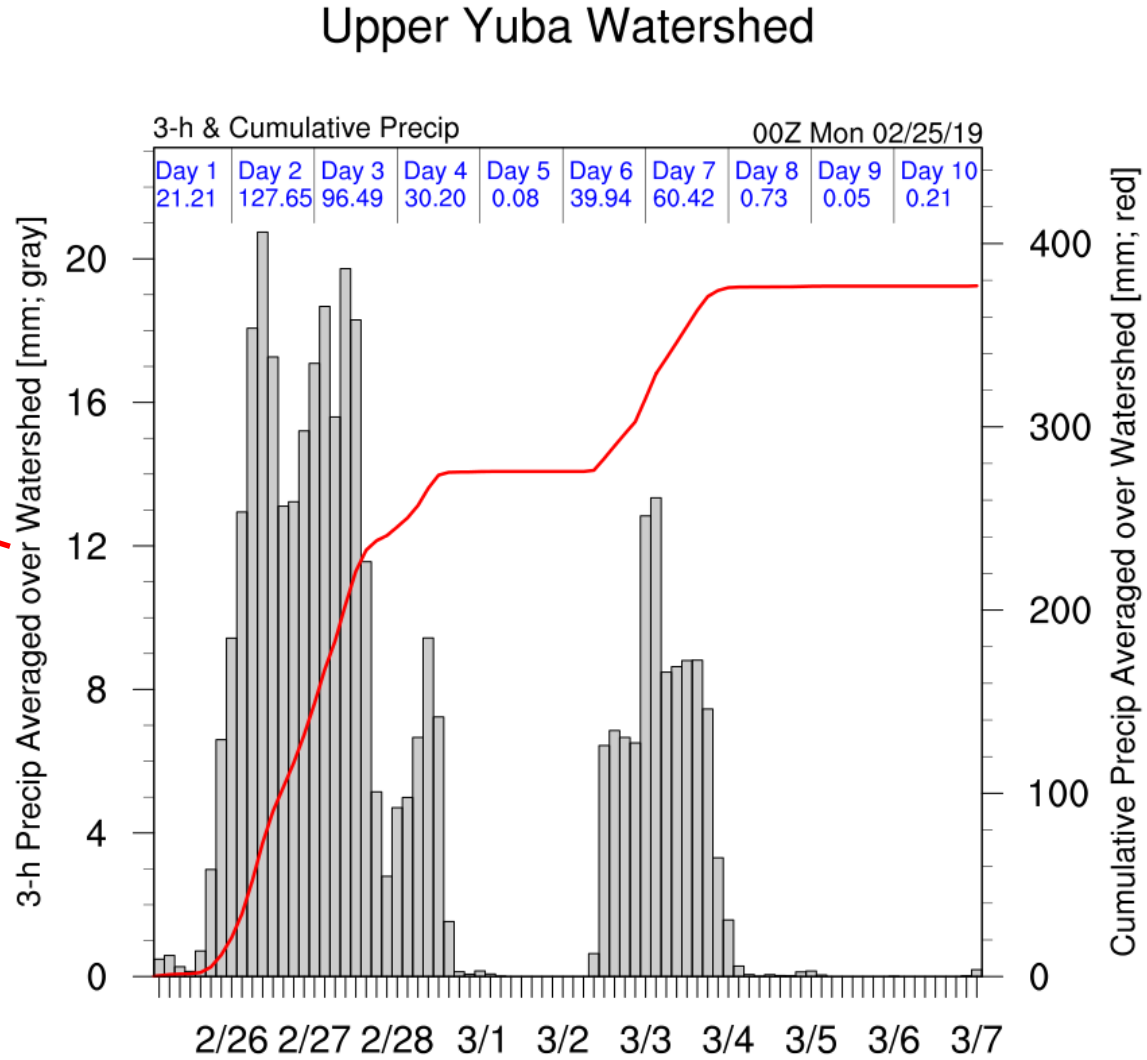

The Upper Yuba watershed is currently forecast to receive 377 mm (14.8 in) of watershed areal-averaged precipitation over the next 10-days by the GFS in association with the landfall of both AR 1 and AR 2

Total: 377 mm | 1064588 AcreFeet

AR Outlook: 25 February 2019

AMBASSADOR™ WRN WEATHER-READY NATION

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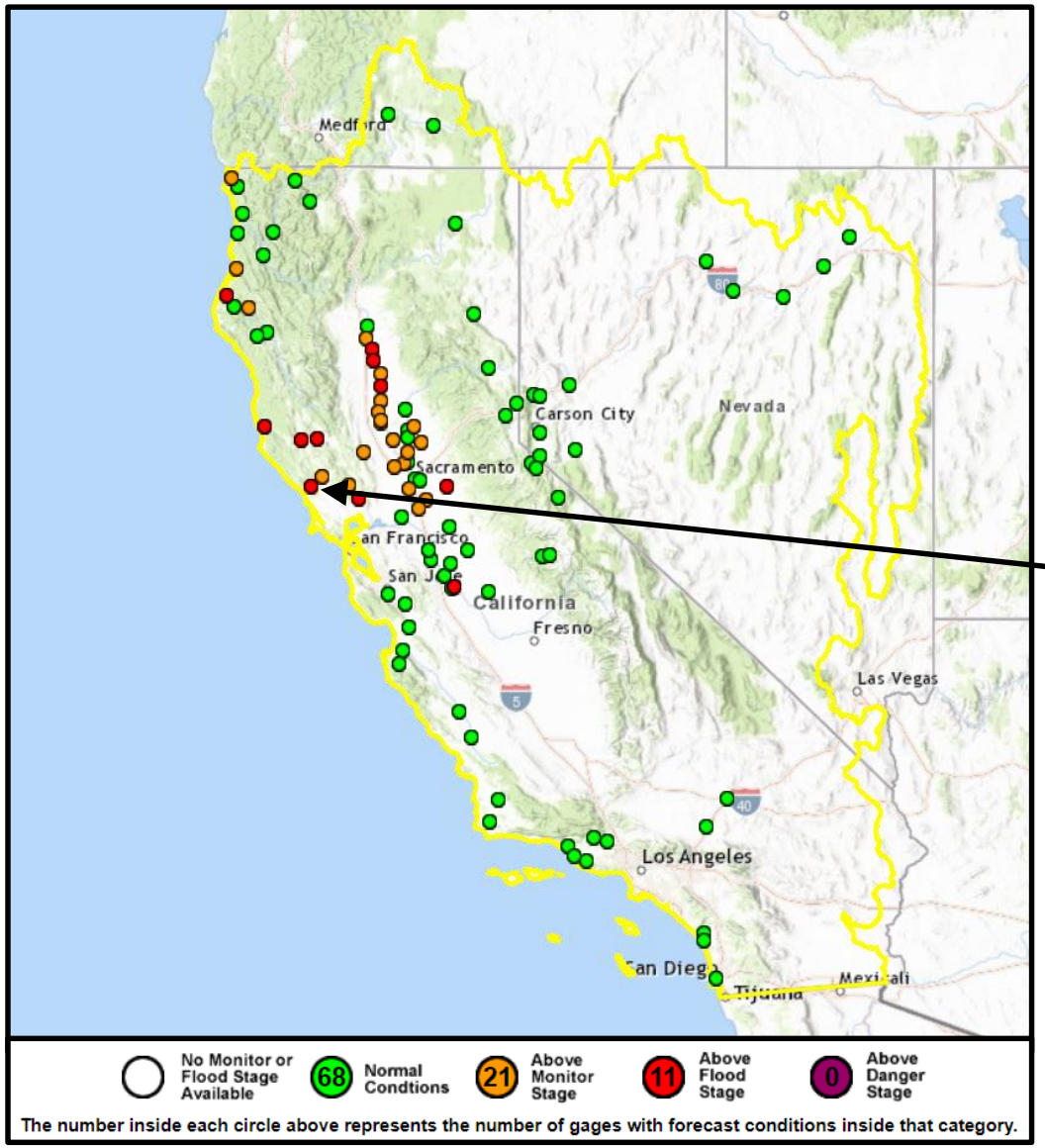
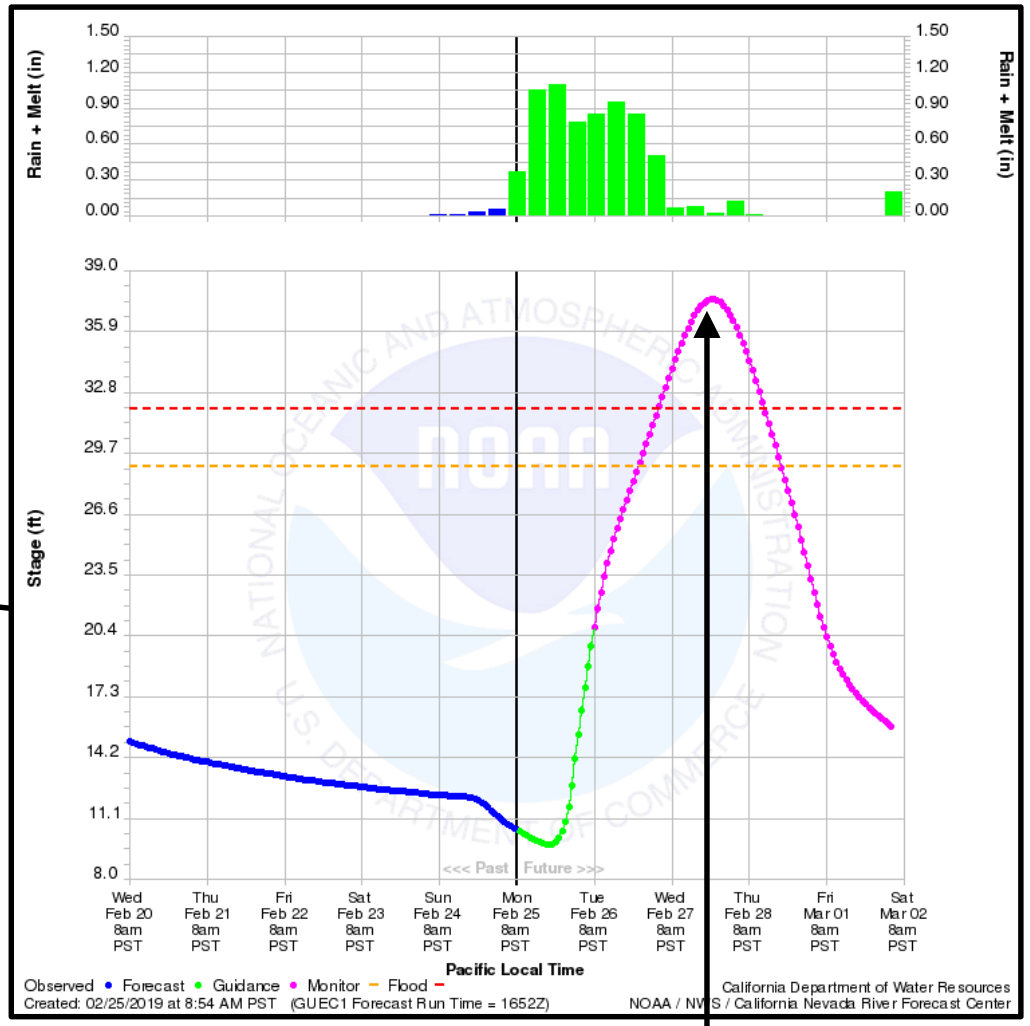


The CNRFC is currently forecasting 11 rivers to rise above flood stage and an additional 21 to rise above monitor stage over the next five days

NWS California Nevada River Forecast Center forecast products are located at cnrfc.noaa.gov



The Russian River in Guerneville, CA is forecast to rise to 37.6 feet at 9PM on 2/27, 5.7 feet above flood stage