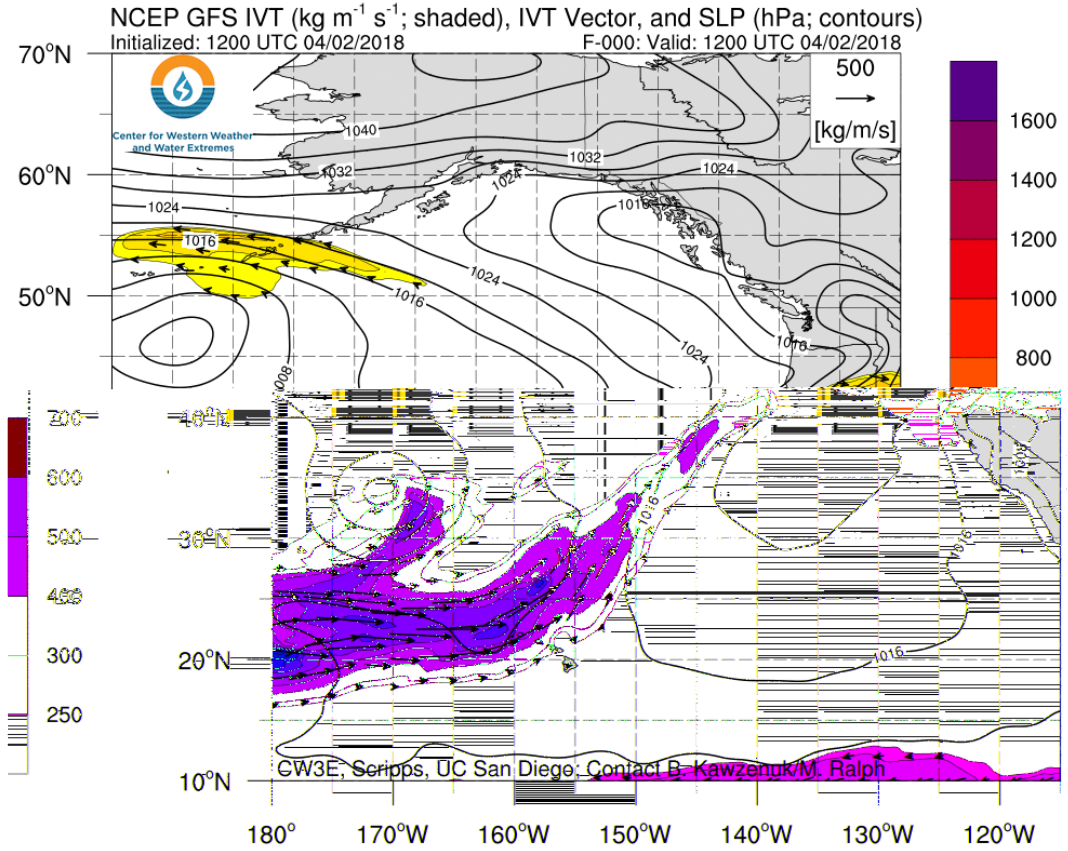
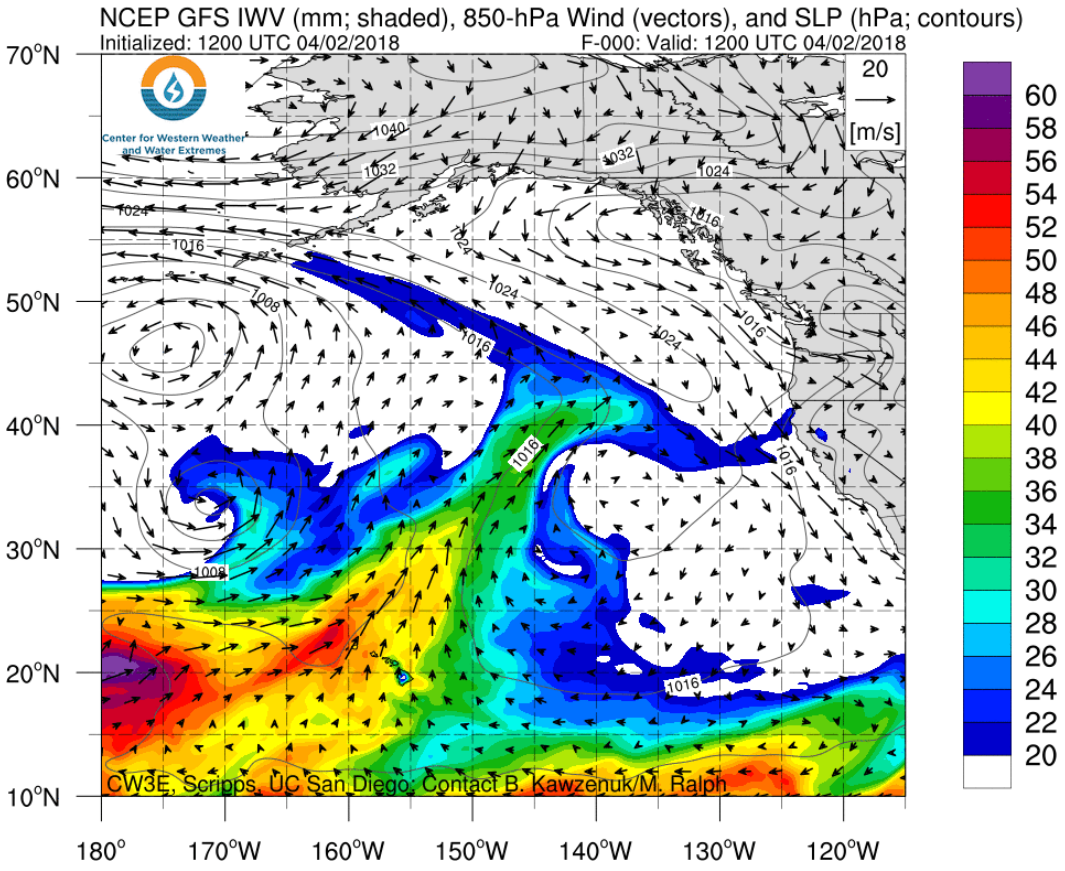
# CW3E Atmospheric River Outlook

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

**Atmospheric river forecast to impact Northern California later this week**

- GFS Ensemble members are currently forecasting a potentially strong to extreme AR over Northern California later this week
- There is currently large uncertainty in the onset, duration, and magnitude of AR conditions, creating uncertainties in the potential impacts of this event
- >5 inches of precipitation could fall during this event over the high elevations of the Coastal and Sierra Nevada Mts. in NorCal
- The GFS is currently suggesting freezing levels >8,000 feet for most of this event, which may lead to most precipitation over the high Sierra falling as rain



# AR Outlook: 02 April 2018

For California DWR's AR Program

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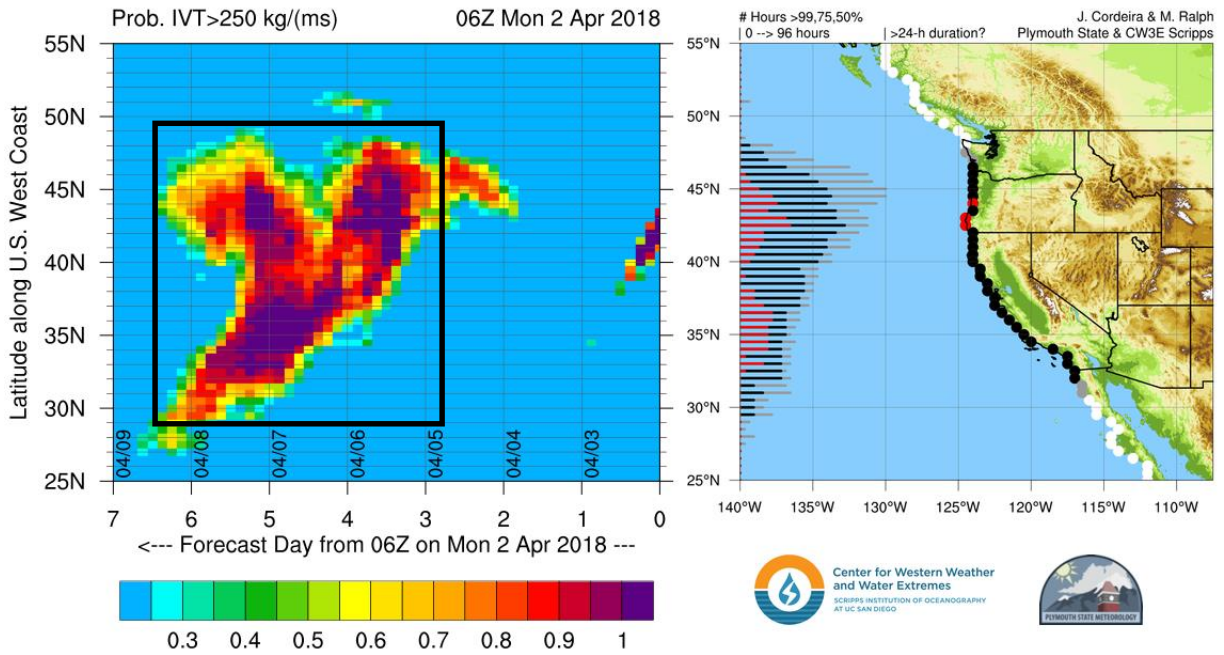
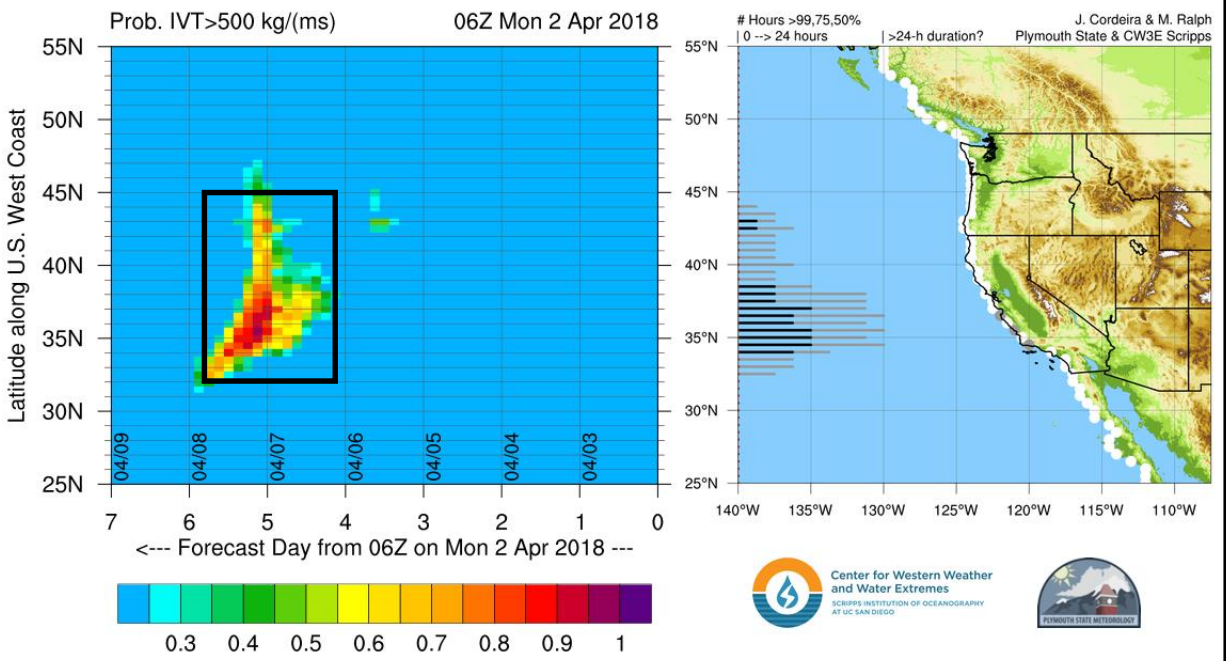
## Odds of at least a **WEAK** AR making landfall




- **There is a high probability (95–100% ) of AR conditions (IVT>250 kg $m^{-1}$ $s^{-1}$) lasting between 24 and 36 over a majority of the U.S. West Coast**

## Odds of **Moderate** AR making landfall




- **There is also a high probability (~90%) of moderate strength AR conditions (IVT >500 kg $m^{-1}$ $s^{-1}$) for coastal locations extending from 34 to 39˚N lasting 3 to 12 hours**

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**Several GFS Ensemble members are currently suggesting that this AR could bring strong to extreme AR conditions to the San Francisco Bay Area**

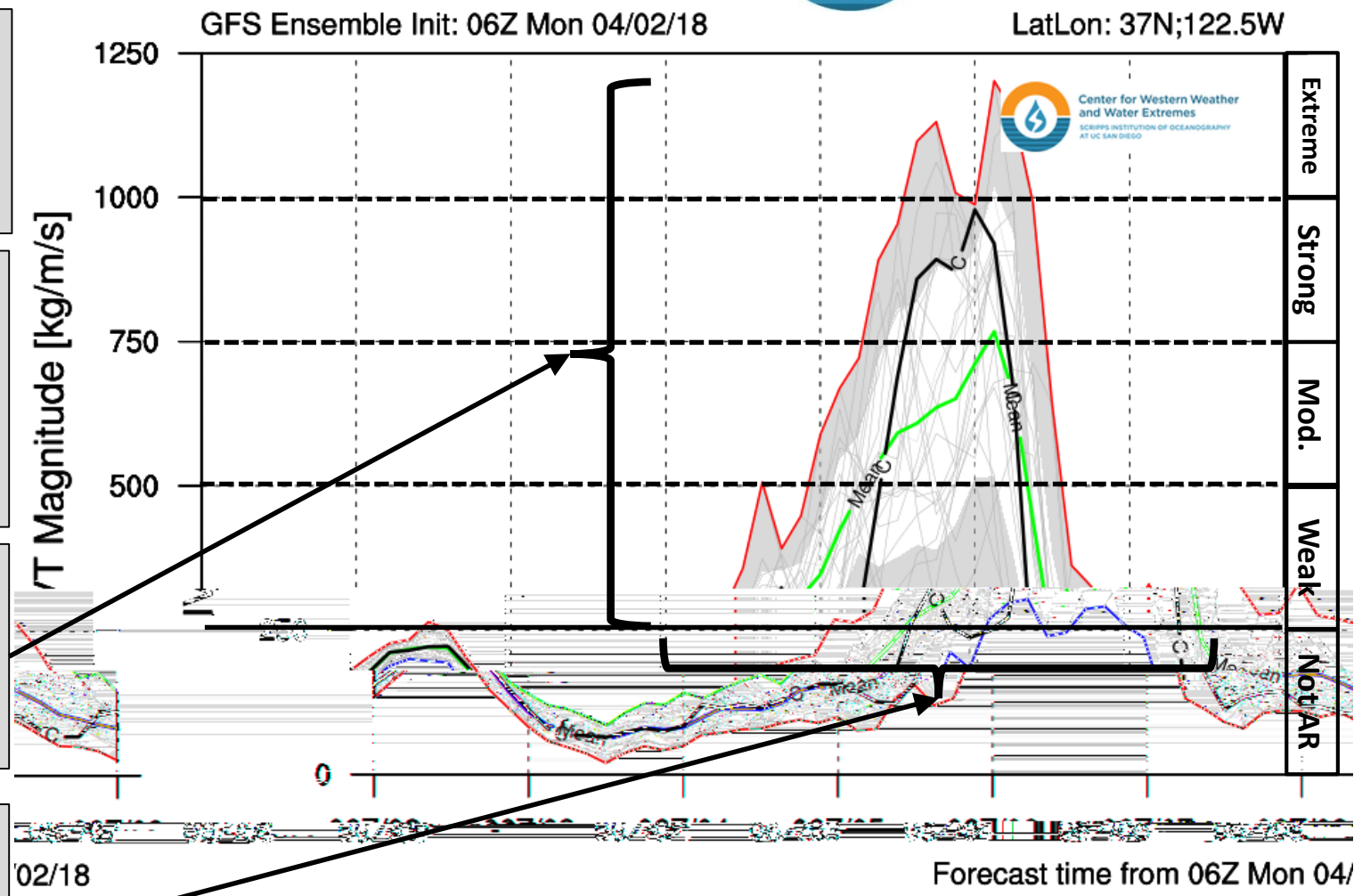
- **There is currently a large amount of uncertainty in the onset, duration, and magnitude of this AR**
- **Expect several changes in the forecast as this event approaches**

**Magnitude of Potential AR**

- Maximum predicted IVT ~1200 kg $m^{-1}$ $s^{-1}$
- Mean IVT ~755 kg $m^{-1}$ $s^{-1}$
- Control IVT ~975 kg $m^{-1}$ $s^{-1}$

**Duration of AR conditions by strength**

- Weak: ~45 hours +/– 36 h
- Moderate: ~24 hours +/– 18 h
- Strong: ~18 hours +/– 18 h
- Extreme: ~6 hours +/– 6 h



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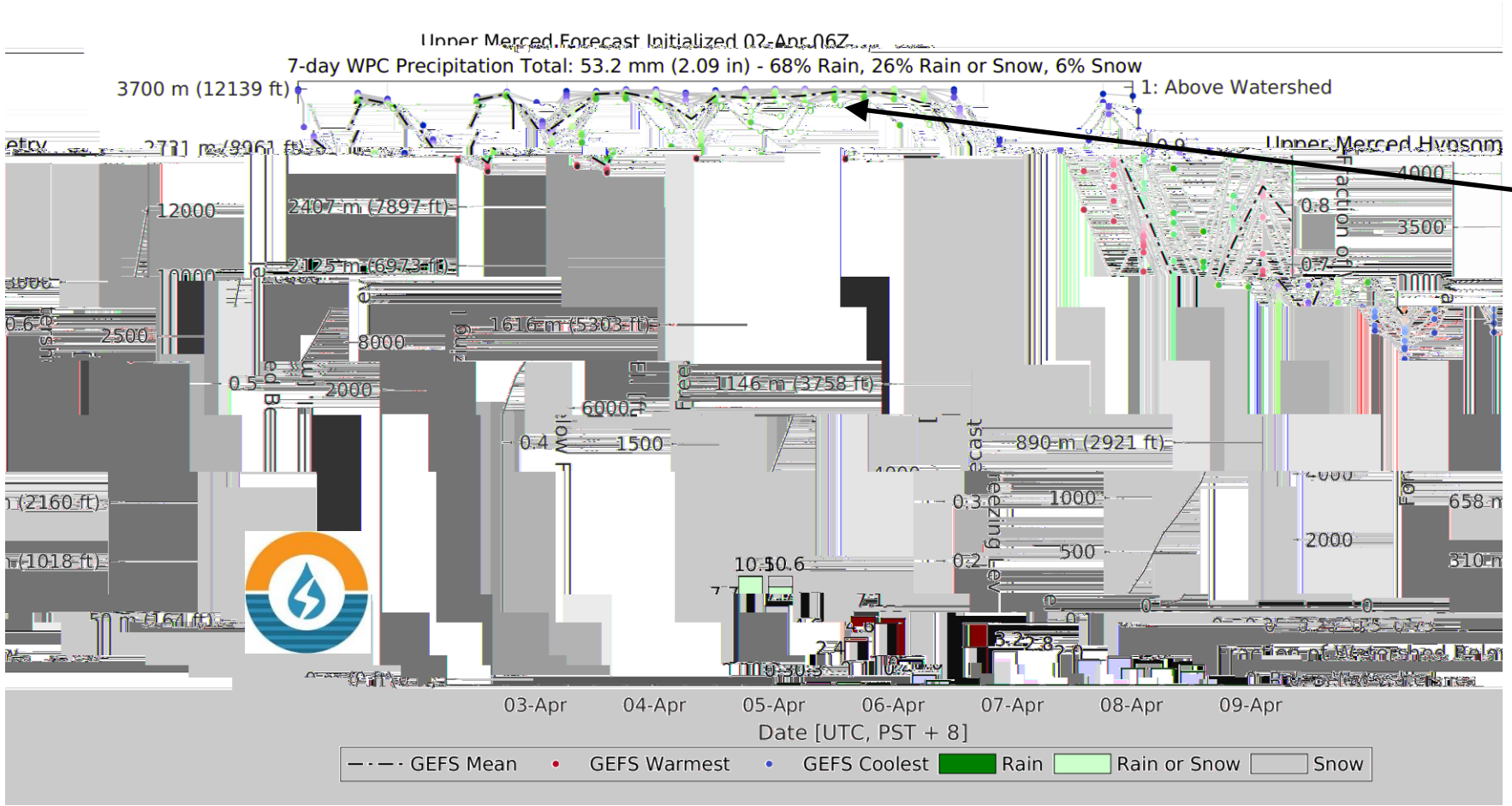


**Freezing levels over the Upper Merced Watershed are forecast to remain above 8,000 feet during a majority of the AR before dropping down to ~5,000 feet after the cold front passes**

**The potentially high freezing levels associated with this AR may lead to a most of the precipitation in the high Sierras falling as rain, leading to increased runoff**

**The potential for rain on snow over the high Sierra may also contribute to increased runoff and higher river stage heights**

**Freezing level forecast products at: cw3e.ucsd.edu/DSMaps/DS_freezing.html**

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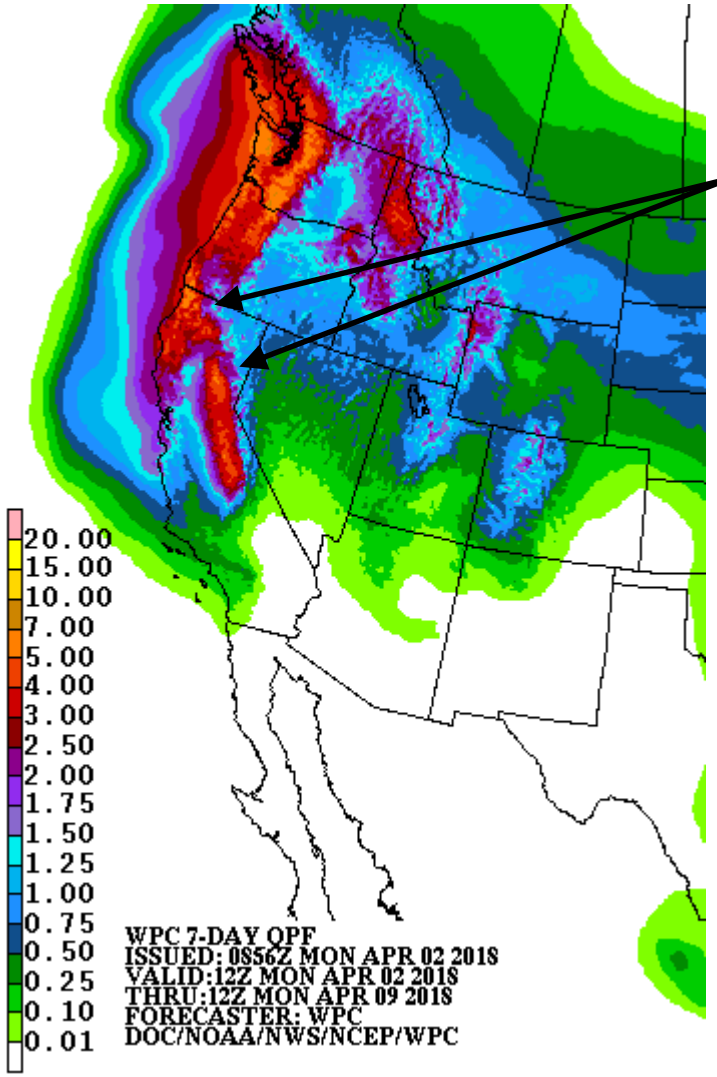
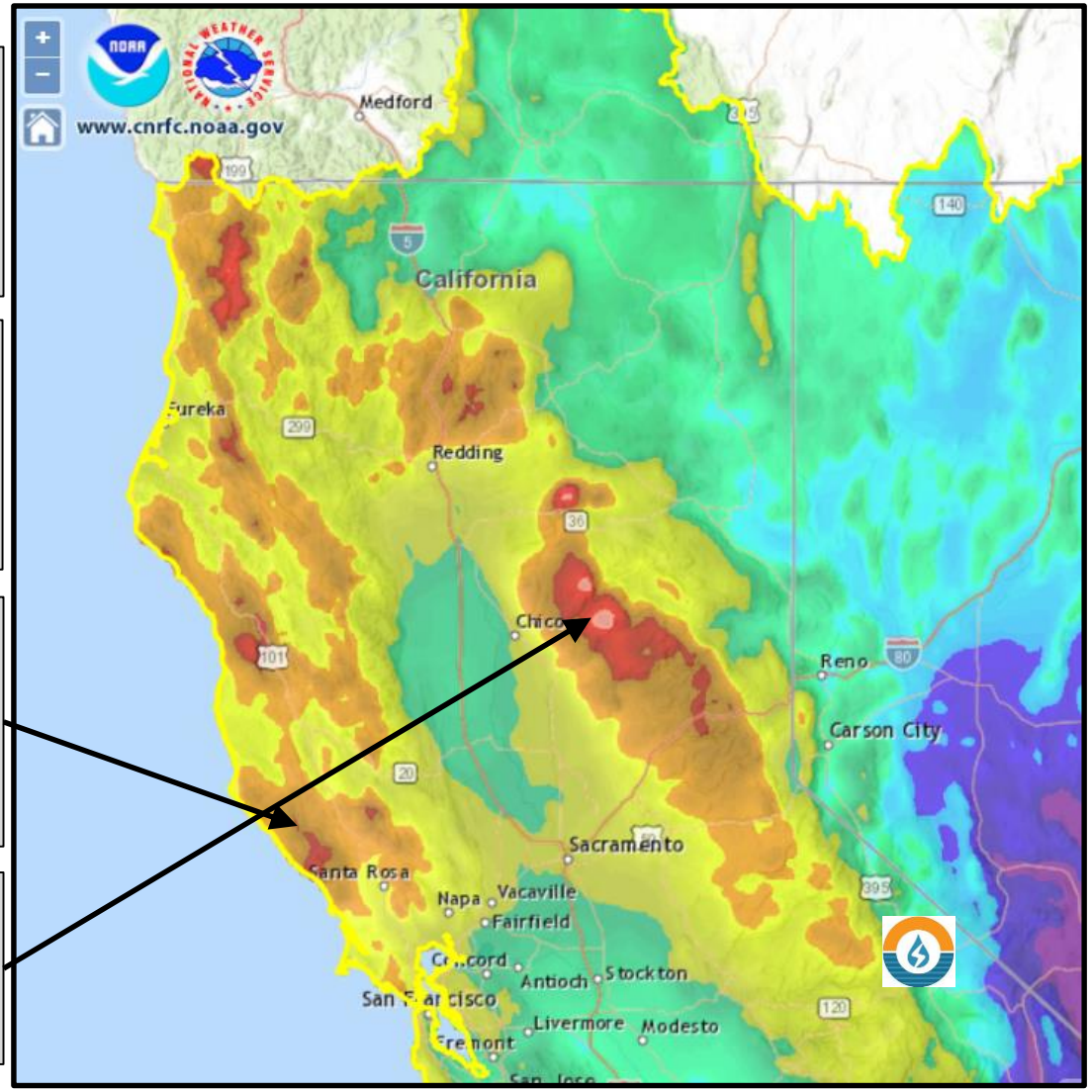



The NOAA WPC 7-day QPF is currently predicting ~5+ inches of precipitation over the Coastal and Sierra Nevada Mountains

The higher elevations in Oregon and Washington are also currently forecast to receive 4–7 inches over the next week

The CNRFC 6-day QPF is currently forecasting 4–6.25 inches of precipitation in the North Bay and Russian River Watershed

The northern High Sierra, east of Chico, is currently forecast to receive >8 inches




For official NOAA WPC QPF:
www.wpc.ncep.noaa.gov/#page=qpf

For Official NWS CNRFC Forecast Products:
cnrfc.noaa.gov