

# AR Update: 4 April 2017

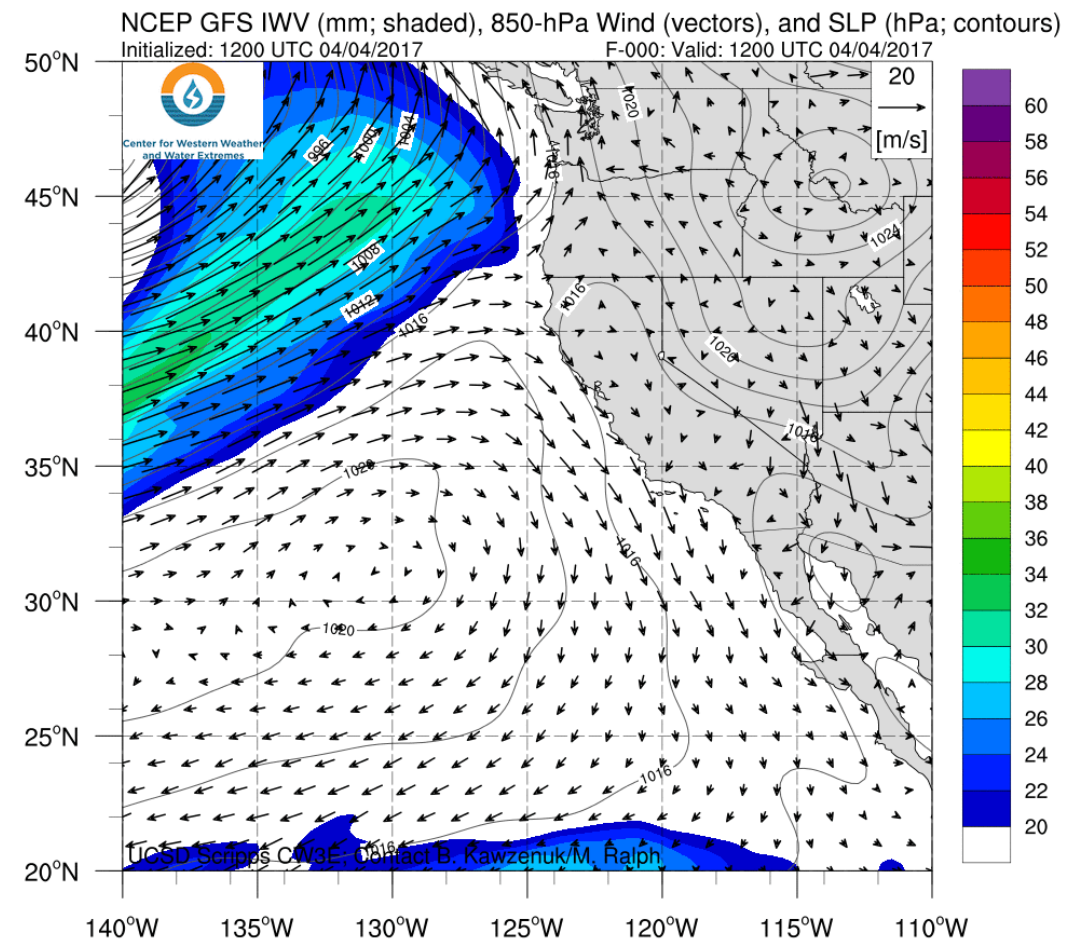
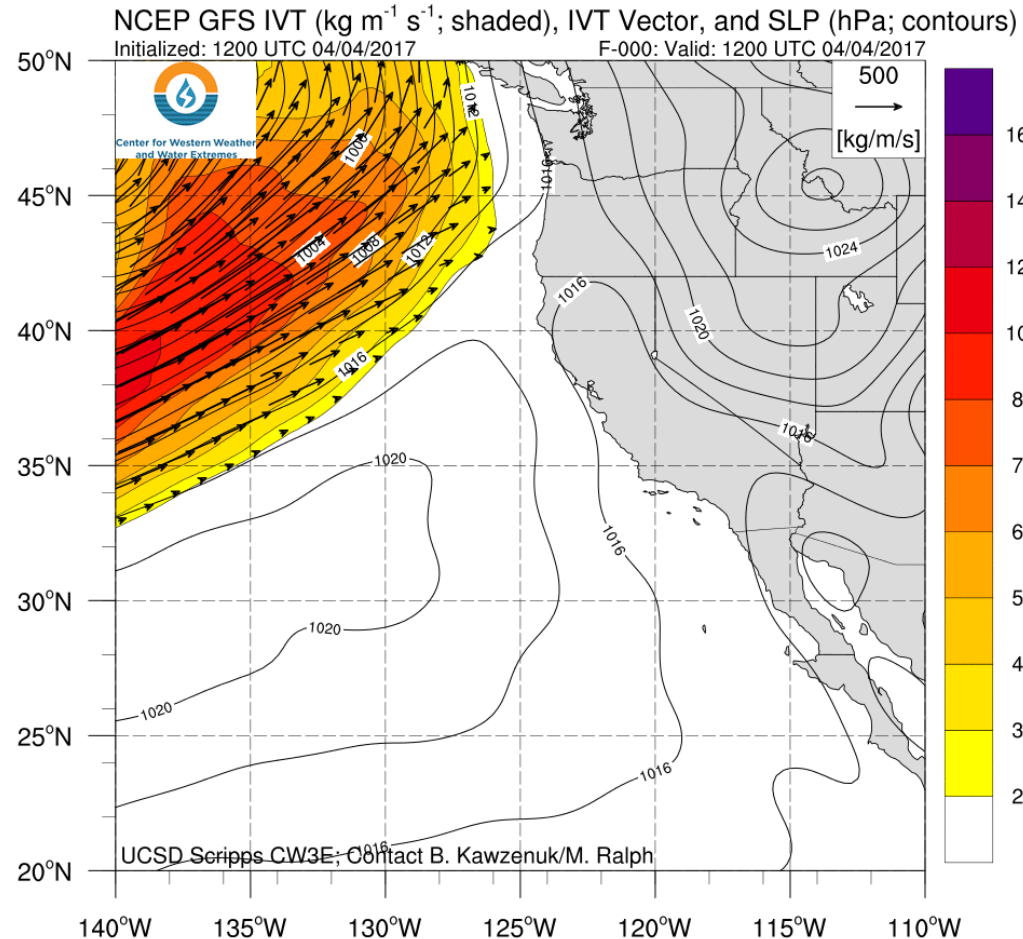
For California DWR's AR Program



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

## AR conditions Forecast for Entire U.S. West Coast

- An AR is currently impacting the Pacific Northwest while another AR is forecast to make landfall over Northern CA on Thursday
- A mesoscale frontal wave that develops during the second AR could prolong the duration of AR conditions but uncertainty is currently high
- 1–5 day precipitation forecasts are >6 inches over the high elevations of the Coastal Mts., Northern Sierra Mts., and Trinity Alps
- Freezing levels are forecast to start at ~7,000 feet before dropping to ~3,000 feet, causing this to be a snow event at higher elevations
- Wet soil and the potential for rain on snow at lower elevations raises the concern for flooding in eastern California and northern Nevada

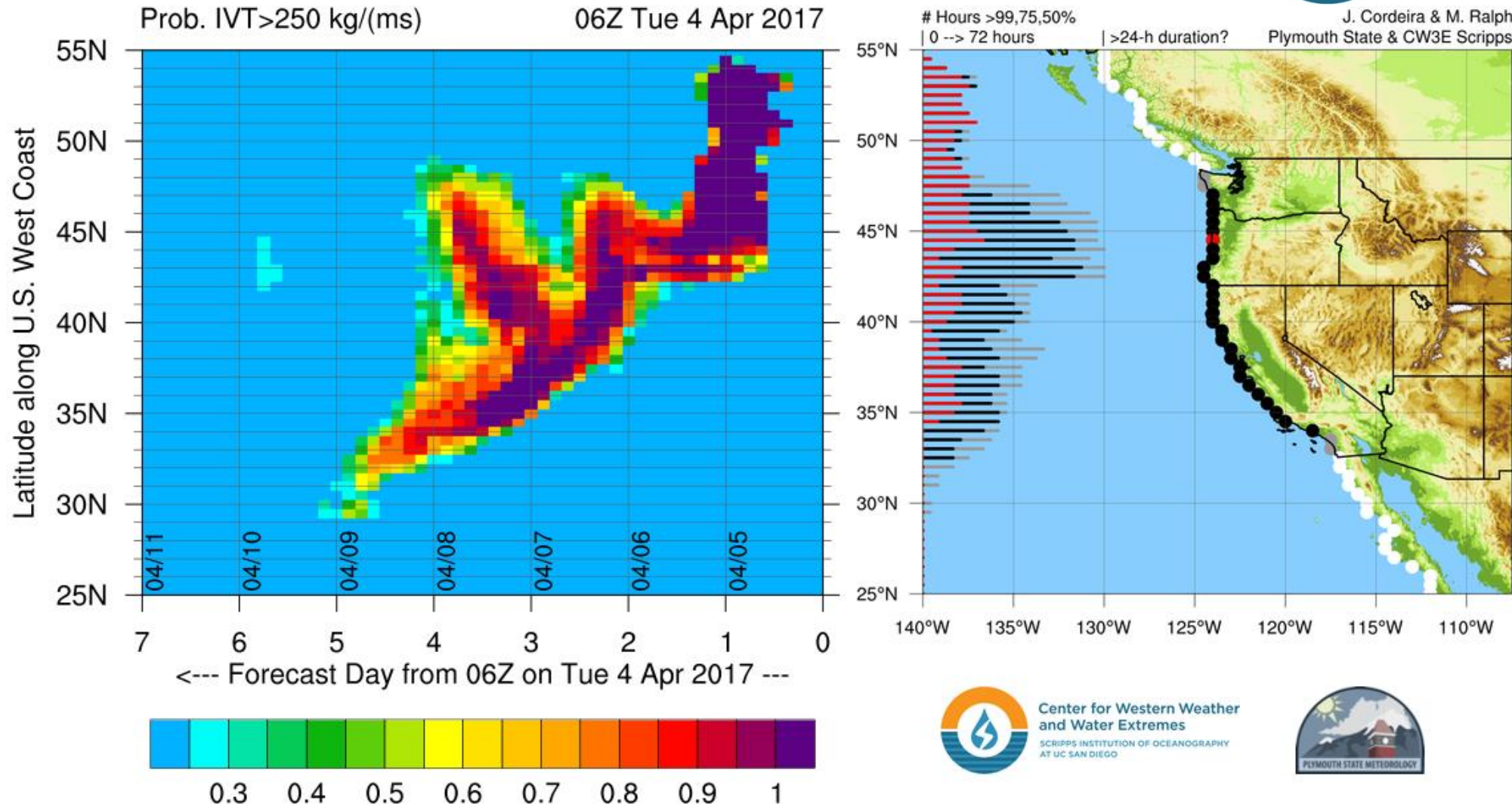


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- AR conditions (IVT > 250 kg m<sup>-1</sup> s<sup>-1</sup>) could last ~48-hrs over Northern CA from 6 to 8 April 2017
- There is high probability that the entire U.S. West Coast experiences AR conditions over the next 96 hours

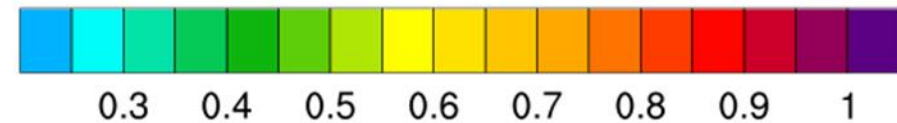
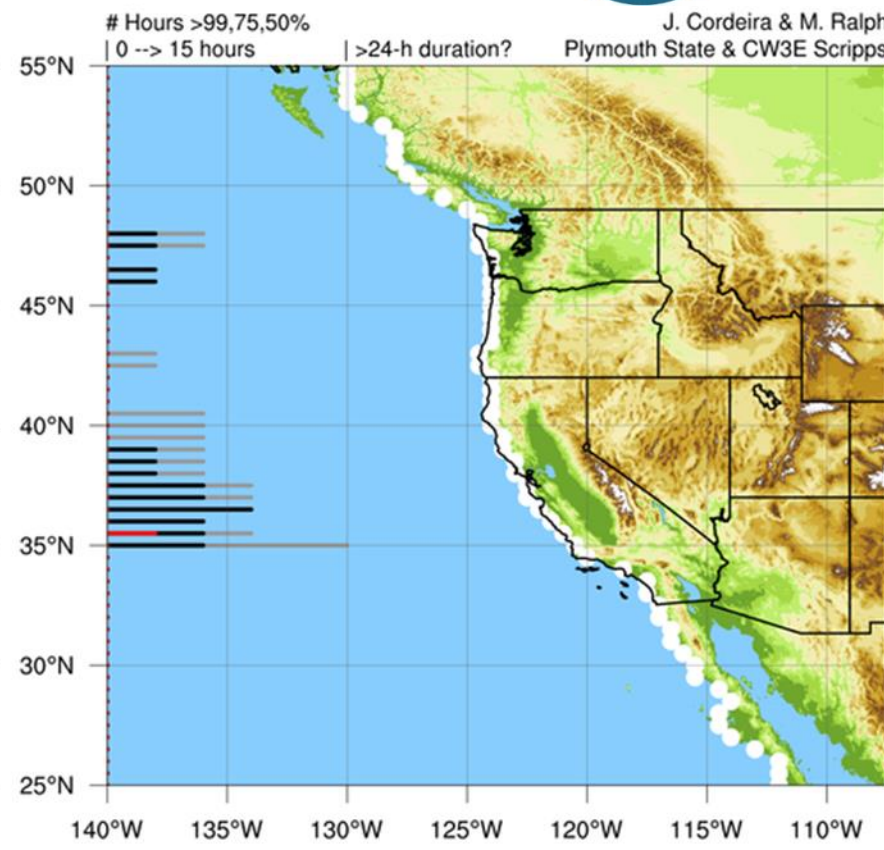
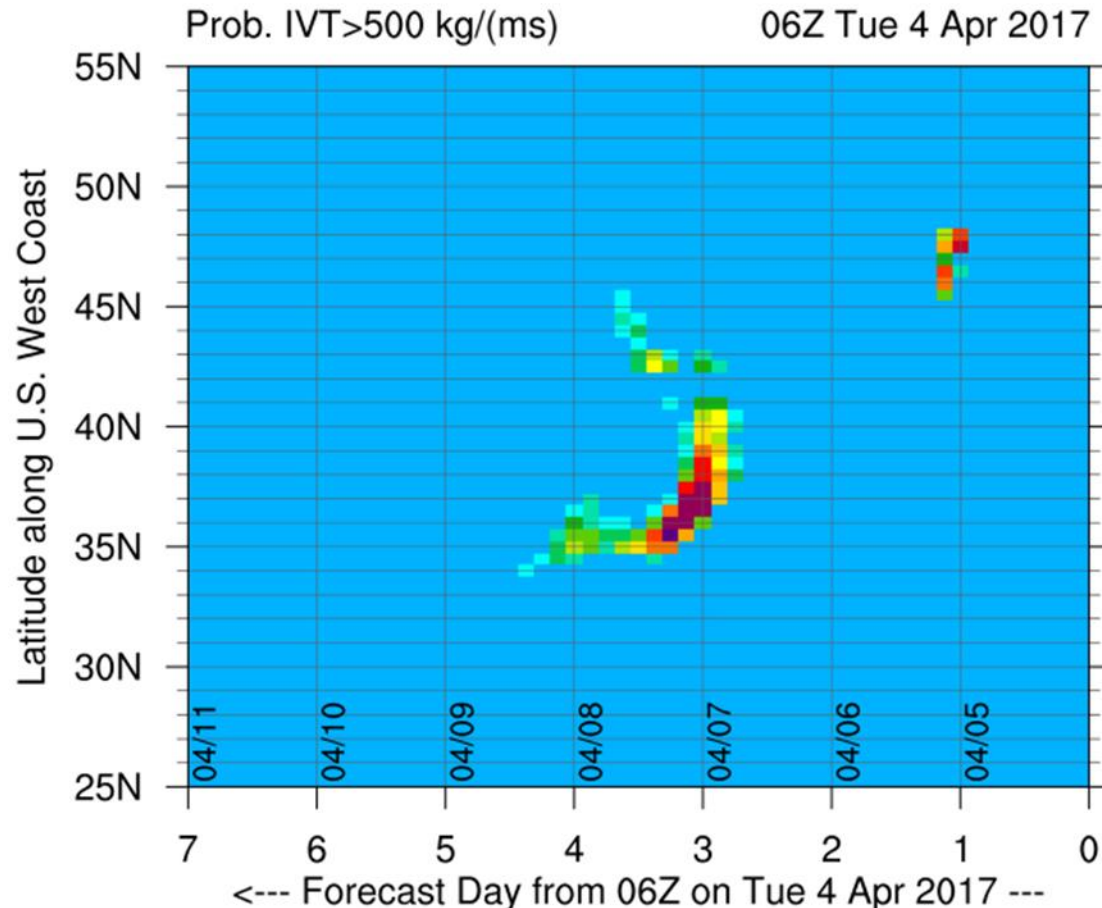


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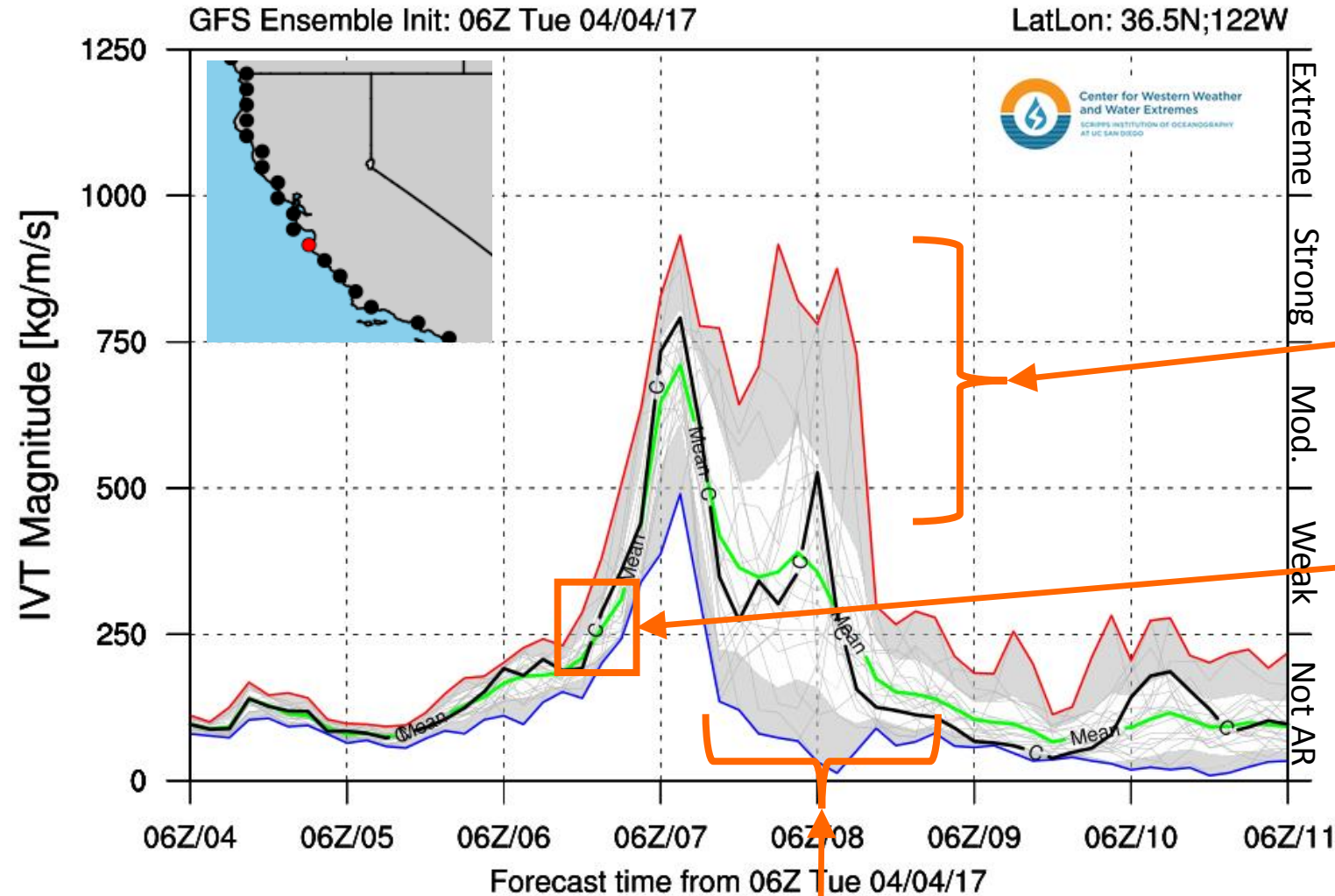
• Higher probability of moderate AR conditions ( $IVT > 500 \text{ kg m}^{-1} \text{ s}^{-1}$ ) beginning at ~10 PM PDT 06 April over Central CA and the Bay Area

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**Monterey, CA could experience strong AR conditions  $IVT > 750 \text{ kg m}^{-1} \text{ s}^{-1}$**

### Magnitude of AR over Monterey

- Maximum possible IVT  $\sim 900 \text{ kg m}^{-1} \text{ s}^{-1}$
- Mean IVT  $\sim 800 \text{ kg m}^{-1} \text{ s}^{-1}$
- Uncertainty  $\sim \pm 12\%$

### High Confidence in onset of AR conditions:

- 1 PM PT Thursday 06 April  $\pm 4 \text{ h}$

### Duration of AR conditions

- Weak:  $\sim 36 \text{ hours} \pm 20 \text{ h}$
- Moderate:  $\sim 10 \text{ hours} \pm 20 \text{ h}$
- Strong  $\sim 3 \text{ hours} \pm 3 \text{ h}$

**There is more uncertainty in IVT magnitude associated with the development of the mesoscale frontal wave, which creates large uncertainty in the duration of AR conditions over Monterey**



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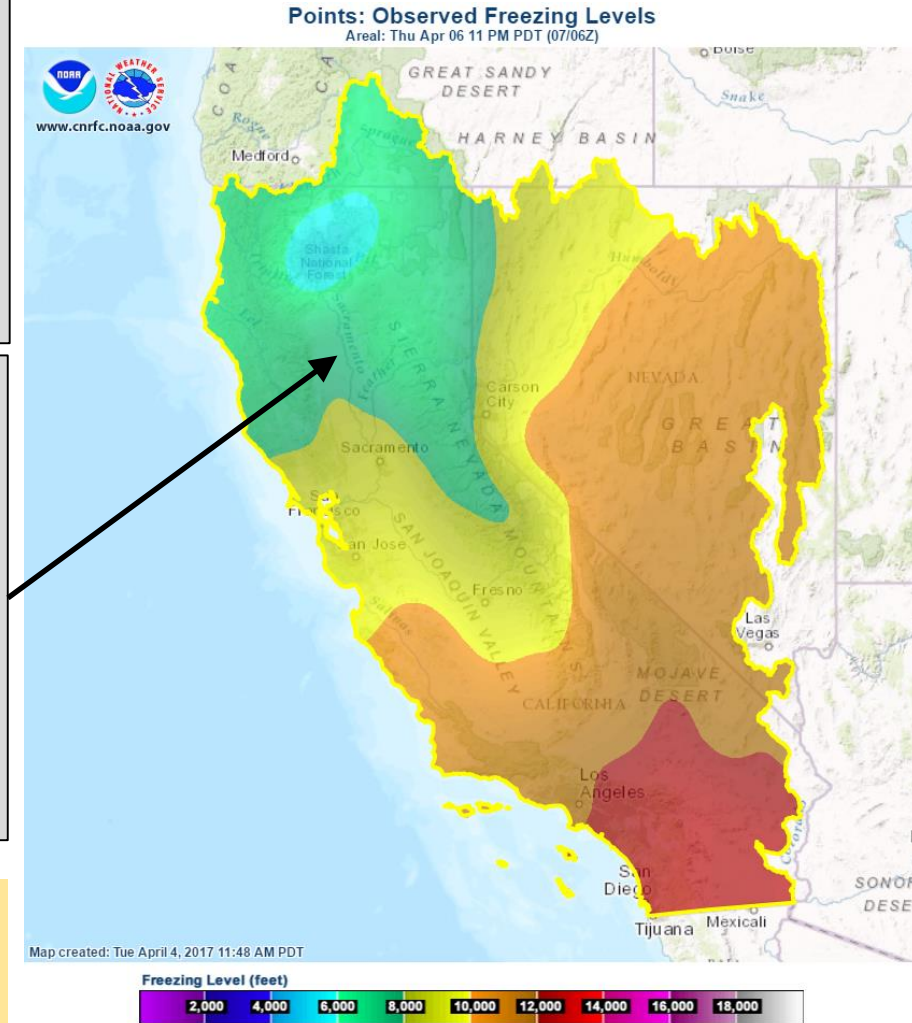


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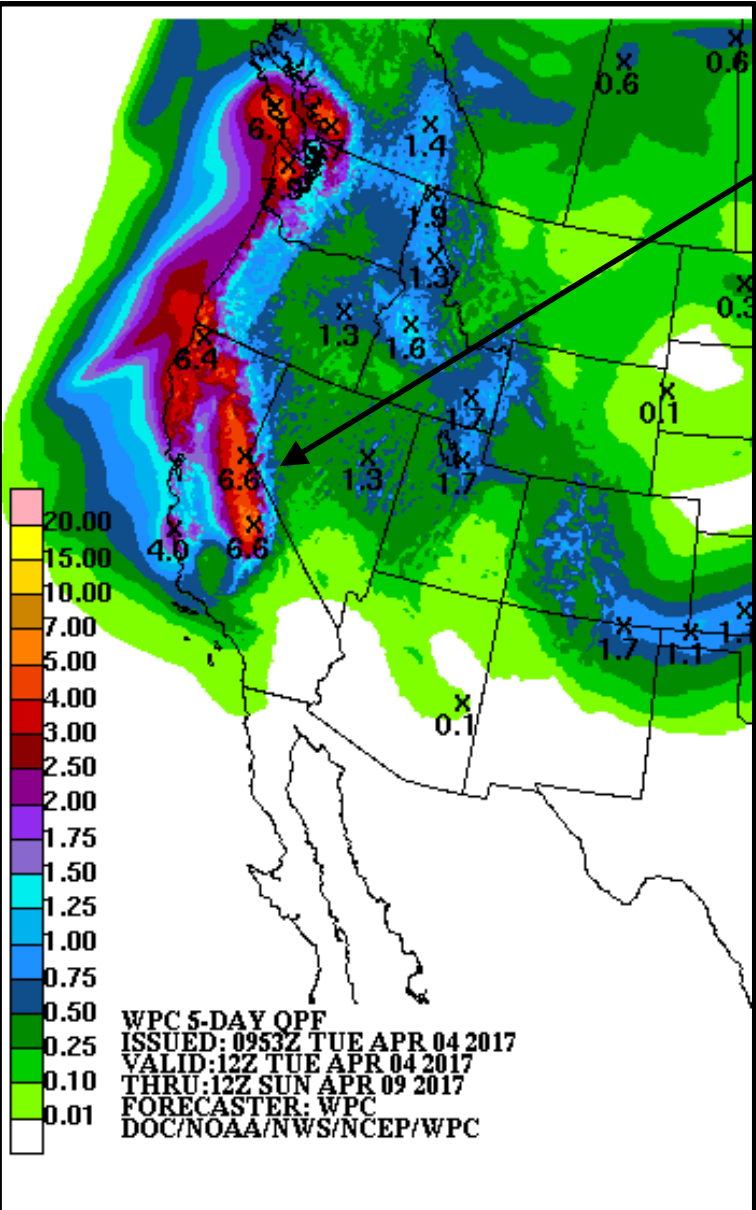
1–5 day precipitation forecasts from the NOAA-WPC are forecasting 2 to 6.6 inches of precipitation over higher elevations of the Trinity Alps, Coastal Mts., and Northern Sierra Mts. Lower elevations are forecast to receive up to 1.5 inches

During the time of forecasted maximum IVT (11 PM on the 6<sup>th</sup>), freezing levels are forecast to range from 6,000–8,000 feet over the high elevations. This would cause most of the precipitation to fall as snow. Freezing levels are forecast to fall to 3,000 feet by the weekend

For Official NOAA-NWS Precipitation Forecasts see  
[www.wpc.ncep.noaa.gov/qpf/qpf2.sht](http://www.wpc.ncep.noaa.gov/qpf/qpf2.sht)  
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Summary by C. Hecht 1 PM PT Tuesday 04 April 2017



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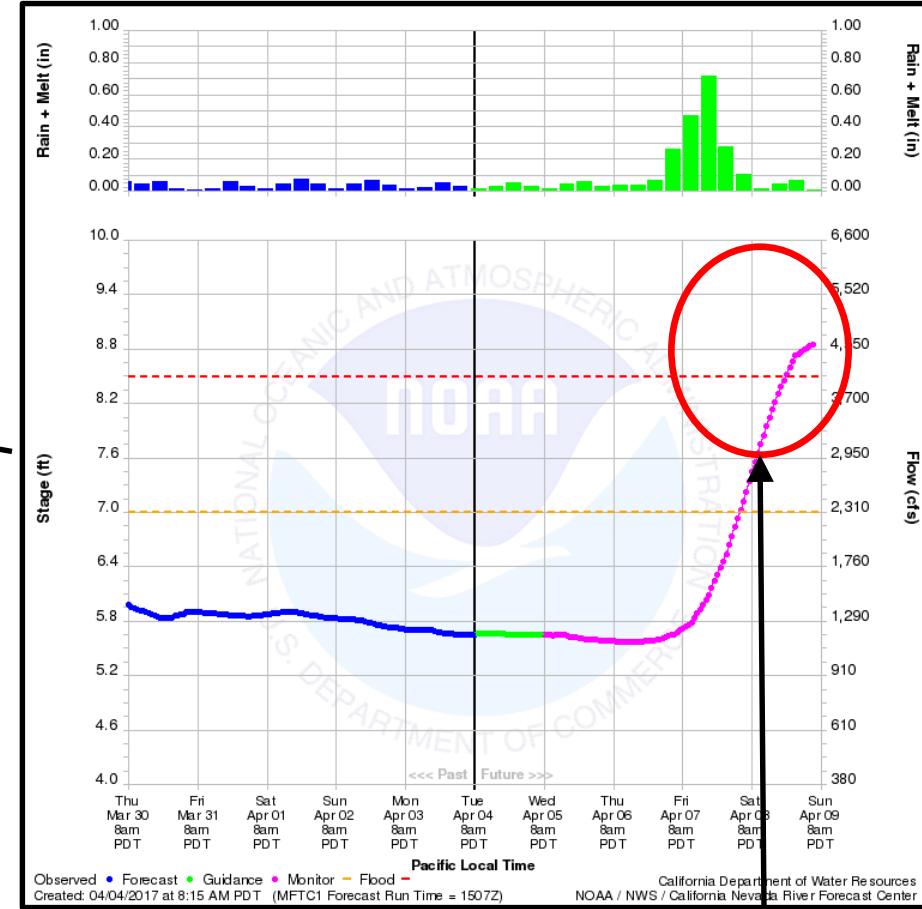
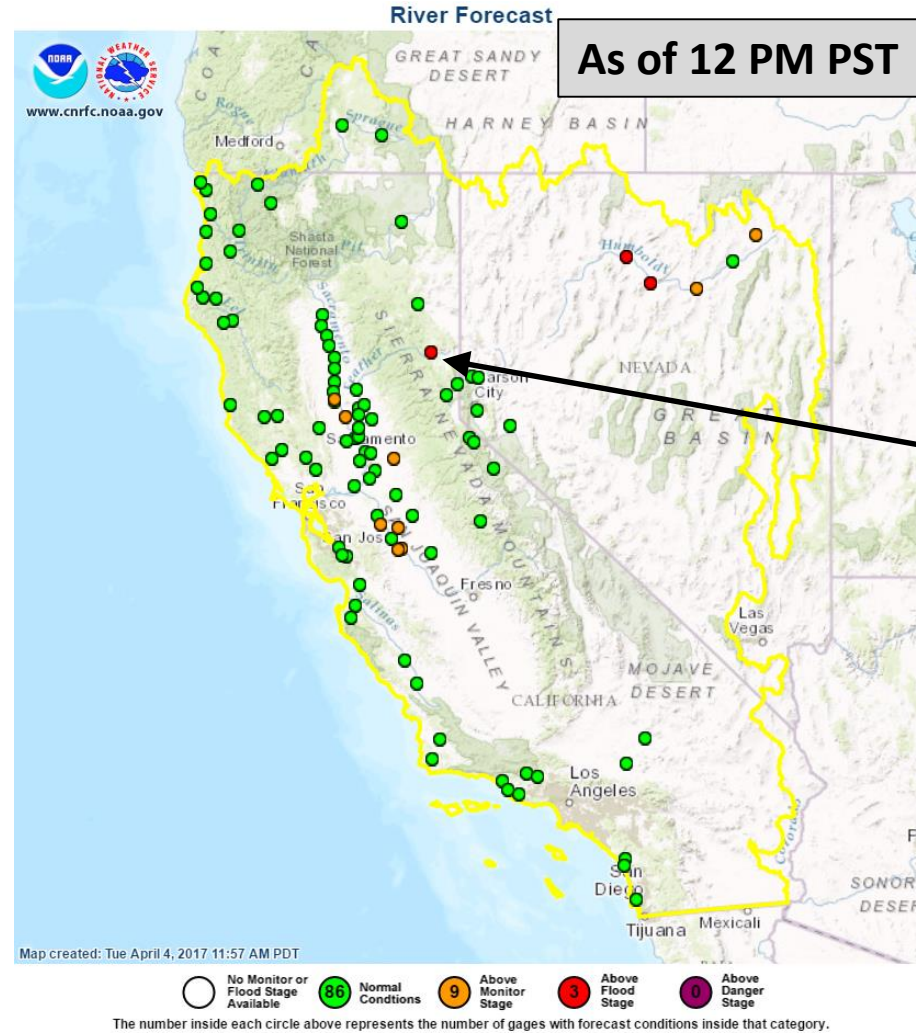
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Given the already saturated soils and the potential for rain on soft snow in eastern CA and Western NV, flooding becomes a concern

There are currently 3 Rivers forecast to rise above flood stage and an additional 9 forecast to rise above monitor stage

For official NOAA-NWS CNRFC Streamflow Forecasts see [cnrfc.noaa.gov/rfc\\_guidance.php](http://cnrfc.noaa.gov/rfc_guidance.php)



The Middle Fork Feather River at Portola, CA is currently forecast to rise 8.9 feet, .4 feet above flood stage, at 5 AM on 9 April 2017. Note: The falling limb of this event is currently not in the river stage forecast and the maximum forecast height of the river could be higher