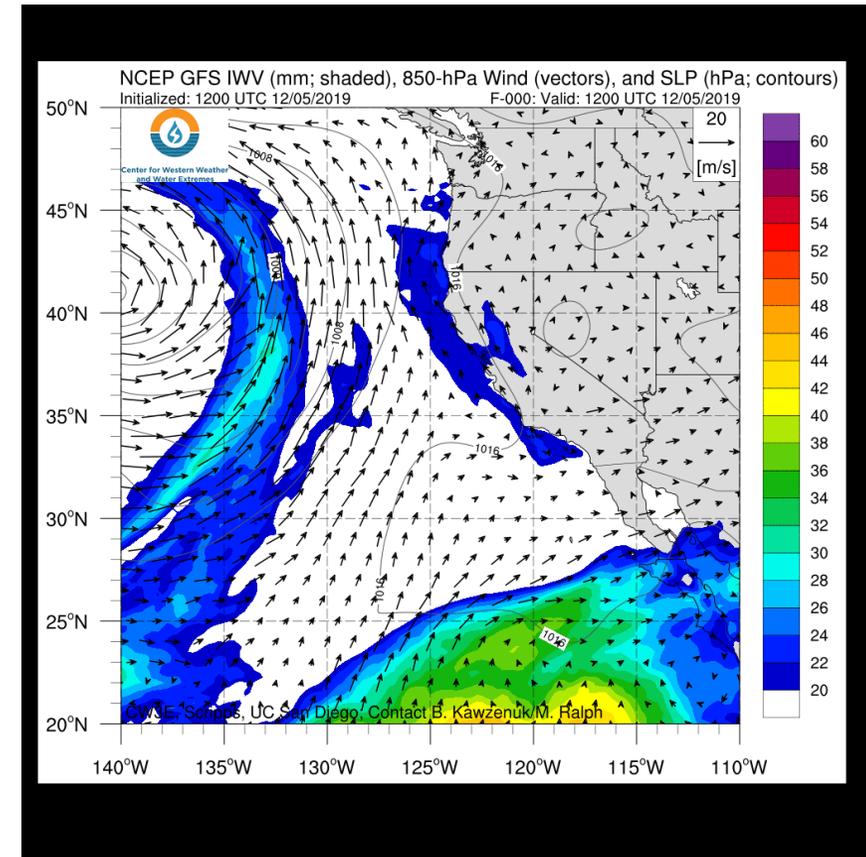
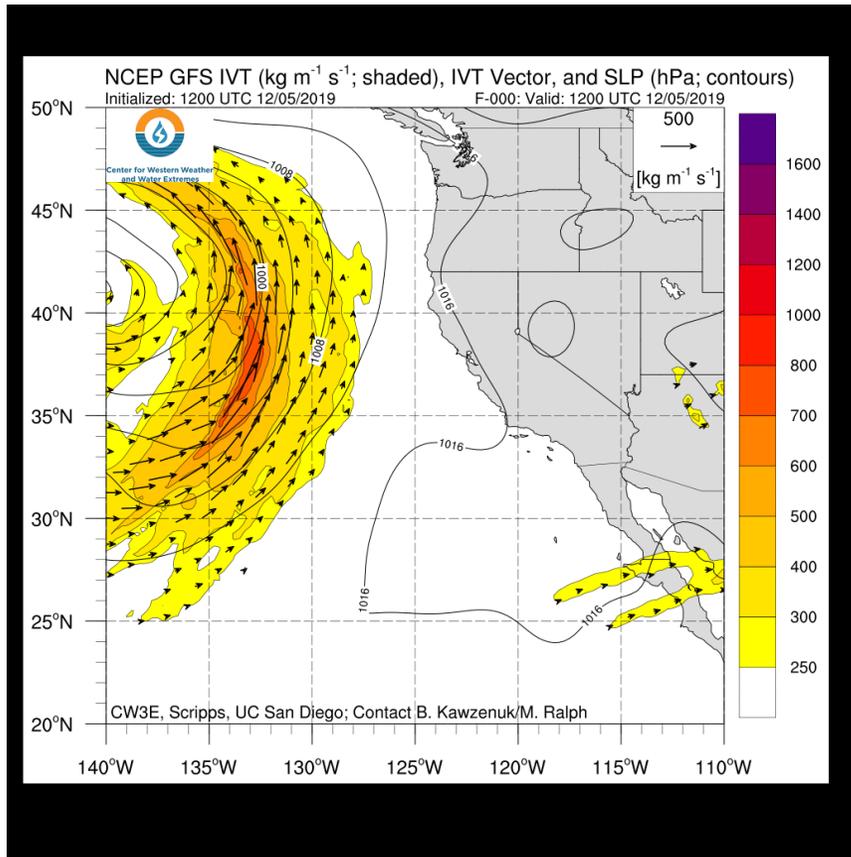


## Another storm to bring AR conditions and heavy precipitation to the U.S. West Coast

- A landfalling AR associated with a large cyclone will produce heavy rainfall and mountain snowfall in Northern CA and southwestern OR on 6–8 Dec
- A second landfalling AR further south will likely bring AR conditions and lighter rainfall amounts to Southern CA on 7–8 Dec
- Long-range ensemble forecasts continue to suggest a period of less active weather over California next week



# CW3E AR Outlook



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

**NWS Forecast Office Sacramento, CA**  
 Weather.gov > Sacramento, CA

Sacramento, CA  
 Weather Forecast Office

Current Hazards | Current Conditions | Radar | Forecasts | Rivers and Lakes | Climate and Past Weather | Local Programs

Winter Storm Watch | **WinterStorm** | Storm Timeline

**Winter Storm On The Way**  
 December 6-8, 2019

**Impacts**

- Significant mountain travel delays
- Chain controls and road closures
- Ponding of water and minor roadway flooding

**Precipitation Forecast**

- Valley: 1.00-3.00"
- Foothills/Mountains: 2.00-5.00", locally higher
- Thunderstorms Saturday and Sunday

**Snow Forecast**

- 1-3 feet at pass levels, locally higher
- Snow levels 6500 feet lowering to 5000-5500 feet Sunday

**Timing**

- Friday - Sunday
- Heaviest snow & rain Friday evening into early Sunday

Lightning Strikes

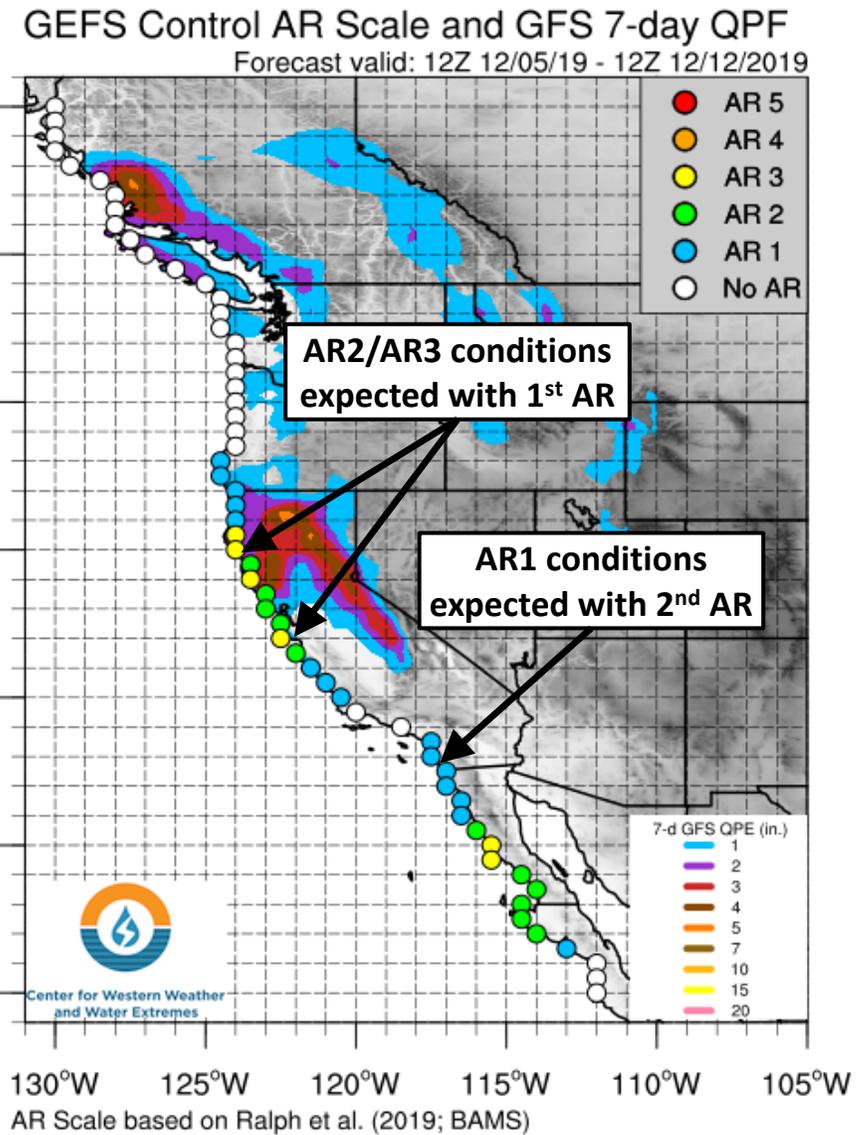
Storm Movement

Sacramento

Issued Dec 5, 2019

Another significant winter storm is headed towards Norcal this weekend. Plan accordingly.

[Hide Caption](#)



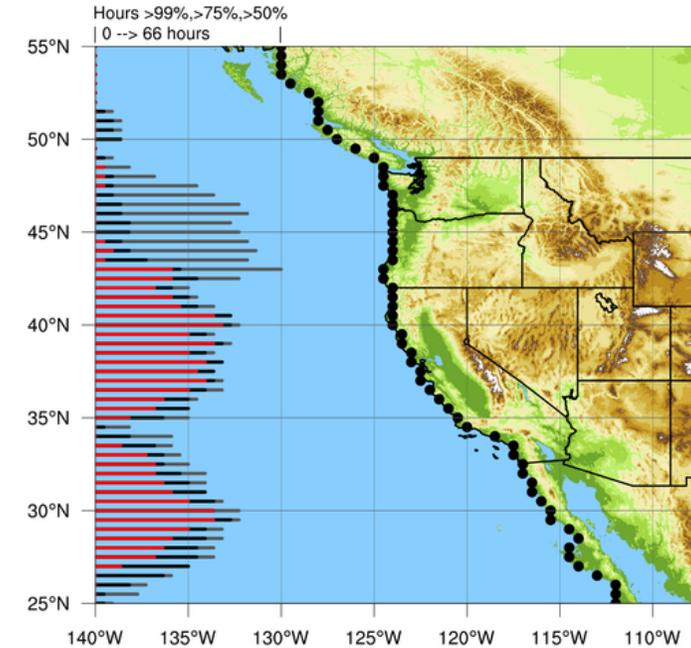
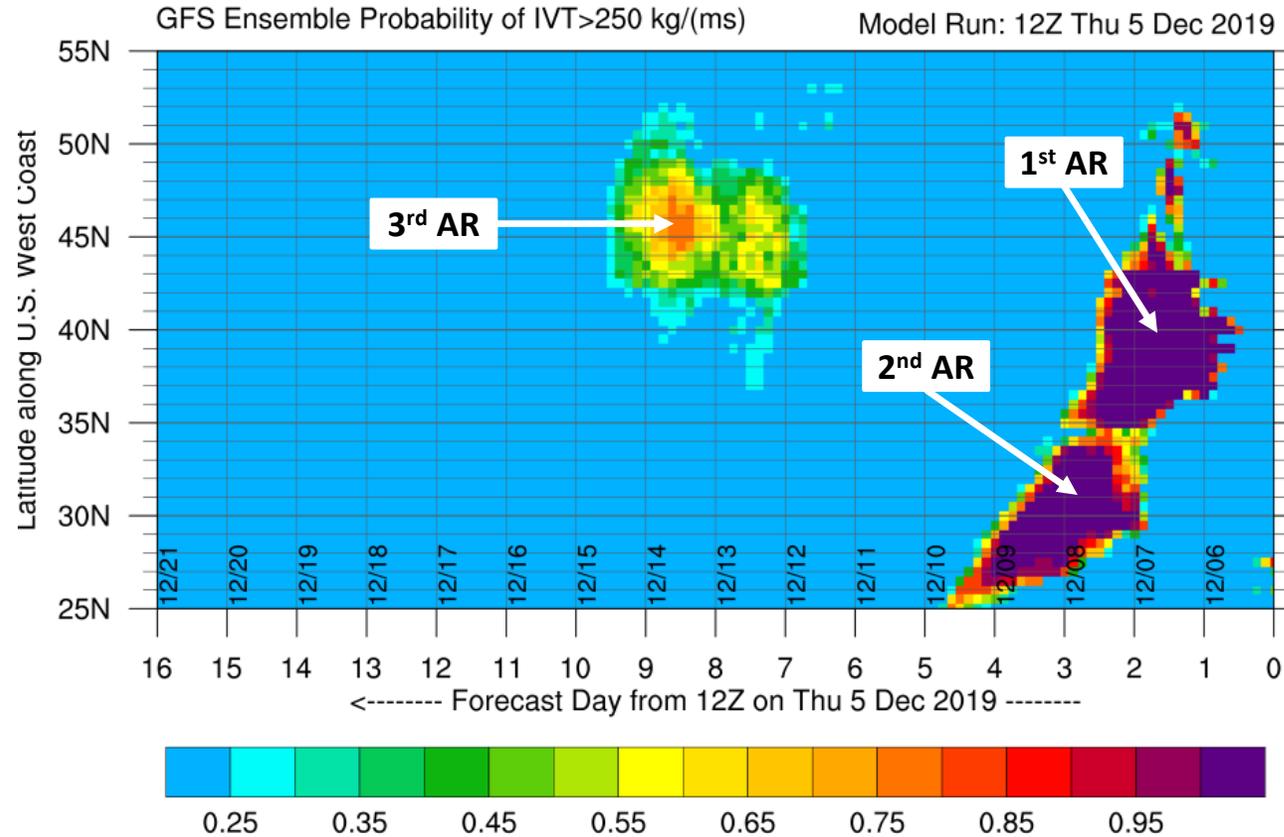
Source: NOAA/NWS WFO Sacramento, CA, <https://www.weather.gov/sto/>

# CW3E AR Outlook



Center for Western Weather  
and Water Extremes

SCRIPPS INSTITUTION OF OCEANOGRAPHY  
AT UC SAN DIEGO



- AR landfall tool shows high confidence (100%) in AR conditions (see 1<sup>st</sup> AR above) over Central and Northern CA on 6–8 Dec
- AR landfall tool also shows high confidence in AR conditions (see 2<sup>nd</sup> AR above) over Southern CA on 7–8 Dec
- GFS long-range forecasts suggest a period of less active weather in CA but increasing potential for AR activity (see 3<sup>rd</sup> AR above) over the Pacific Northwest next week

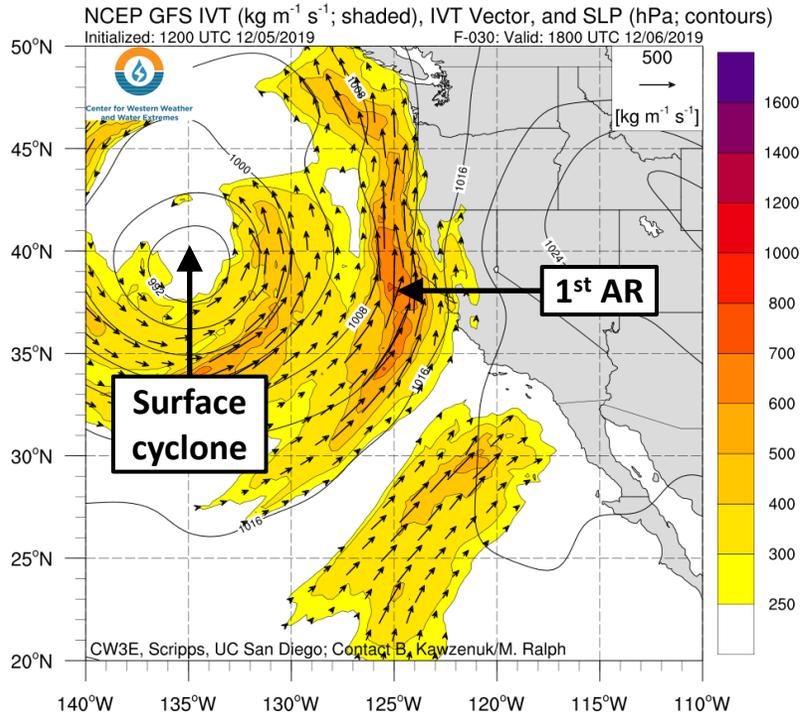
# CW3E AR Outlook



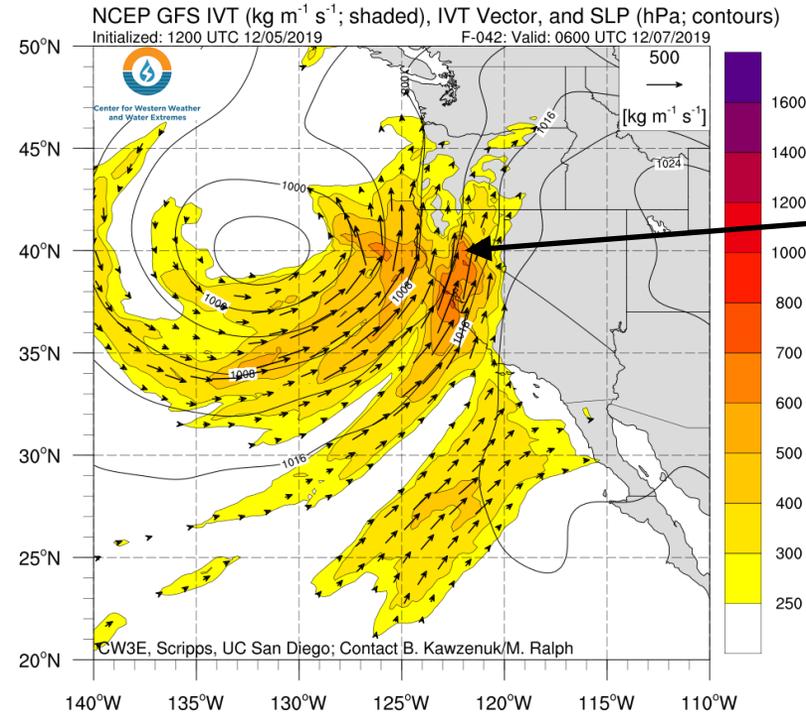
Center for Western Weather  
and Water Extremes  
SCRIPPS INSTITUTION OF OCEANOGRAPHY  
AT UC SAN DIEGO

## GFS IVT Forecast for 1<sup>st</sup> AR

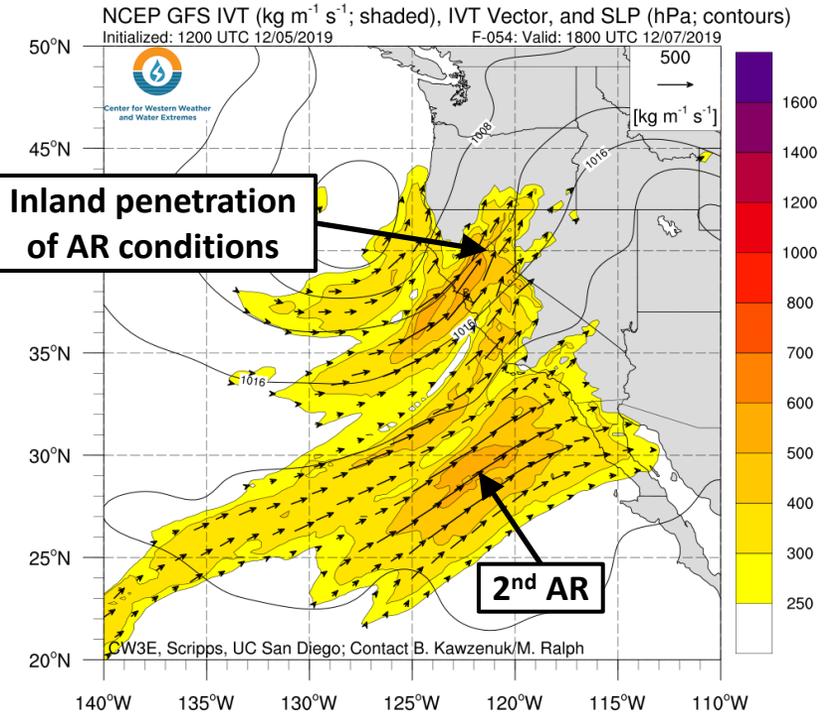
F-30 Valid: 1800 UTC 6 Dec



F-42 Valid: 0600 UTC 7 Dec



F-54 Valid: 1800 UTC 7 Dec

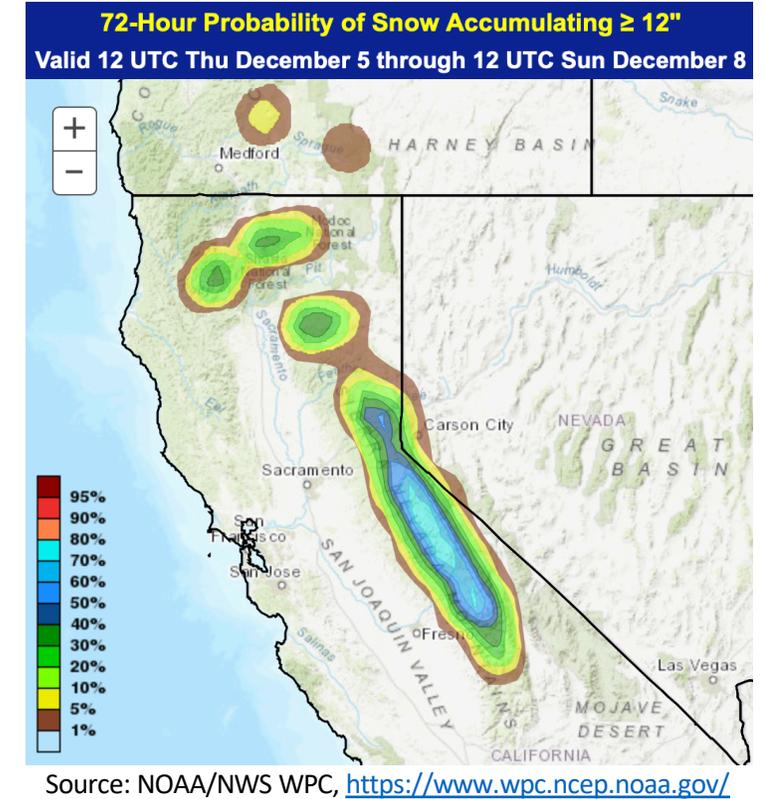
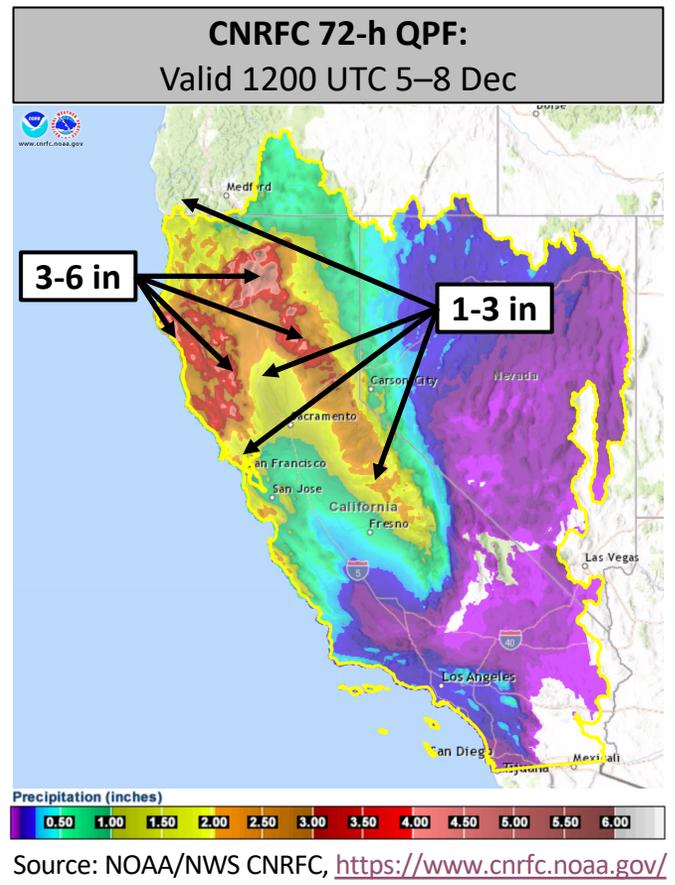
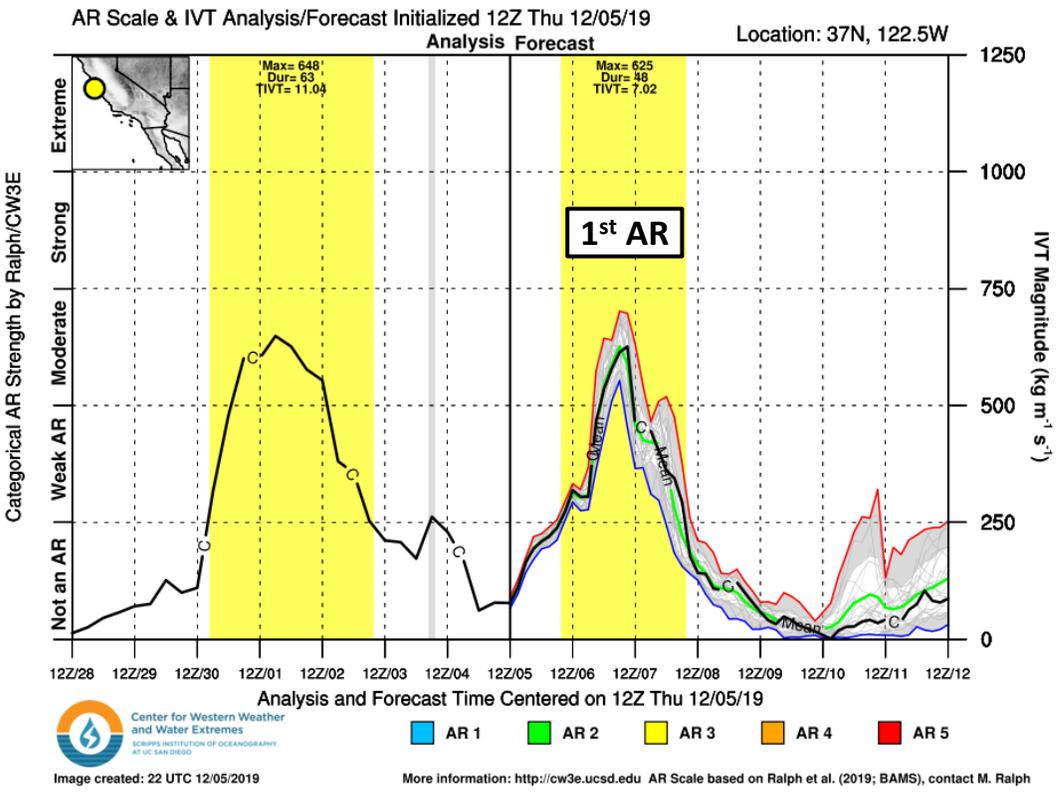


- The 1<sup>st</sup> AR, located ahead of a large cyclone over the Northeast Pacific Ocean, will make landfall along the U.S. West Coast on 6 Dec
- AR conditions will persist into 7 Dec as a second region of high IVT wrapped around the cyclone moves onshore
- High IVT values will penetrate inland via the San Francisco Bay and Sacramento Valley, bringing AR conditions to interior Northern CA
- The orientation of the IVT vectors will likely support significant upslope moisture flux and orographic enhancement of precipitation over the Klamath Mountains and Northern Sierra Nevada

# CW3E AR Outlook



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



- GEFS control member is currently predicting 48 hours of weak-to-moderate AR conditions (AR3 based on the *Ralph et al. (2019)* AR Scale) near Santa Cruz, CA, on 6-8 Dec
- 3-6 inches of precipitation are expected over the Northern CA Coast Ranges, Klamath Mountains, and Northern Sierra Nevada, with 1-3 inches over southwestern OR, the Bay Area, the Sacramento Valley, and the Southern Sierra Nevada
- Snowfall amounts  $> 12''$  are likely ( $> 70\%$  probability) by Sunday morning over the highest elevations in the Sierra Nevada

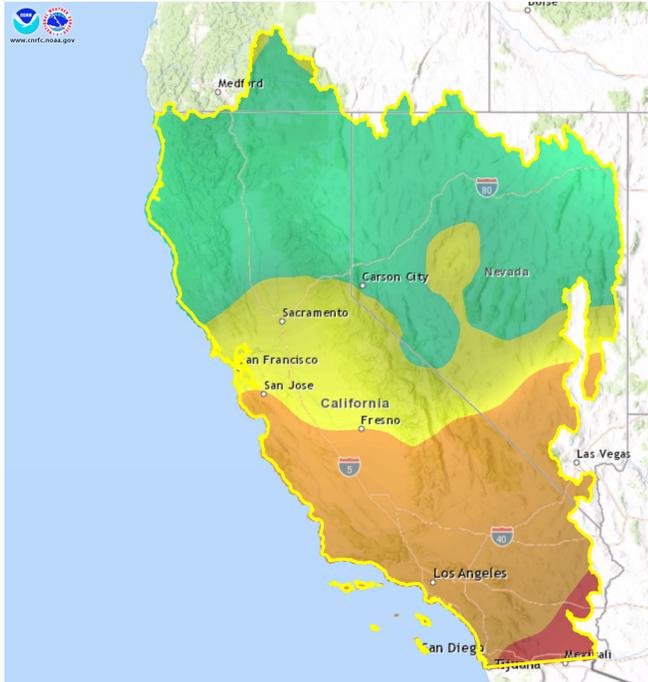
# CW3E AR Outlook



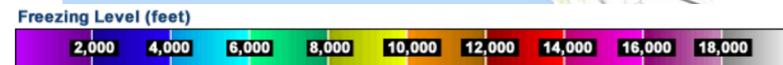
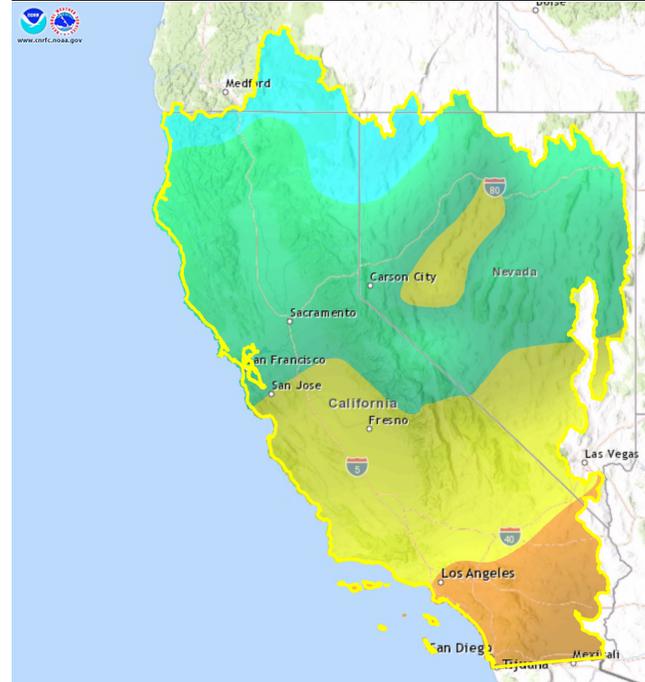
Center for Western Weather  
and Water Extremes

SCRIPPS INSTITUTION OF OCEANOGRAPHY  
AT UC SAN DIEGO

**CNRFC Forecast Freezing Level:  
Valid 1200 UTC 6 Dec**

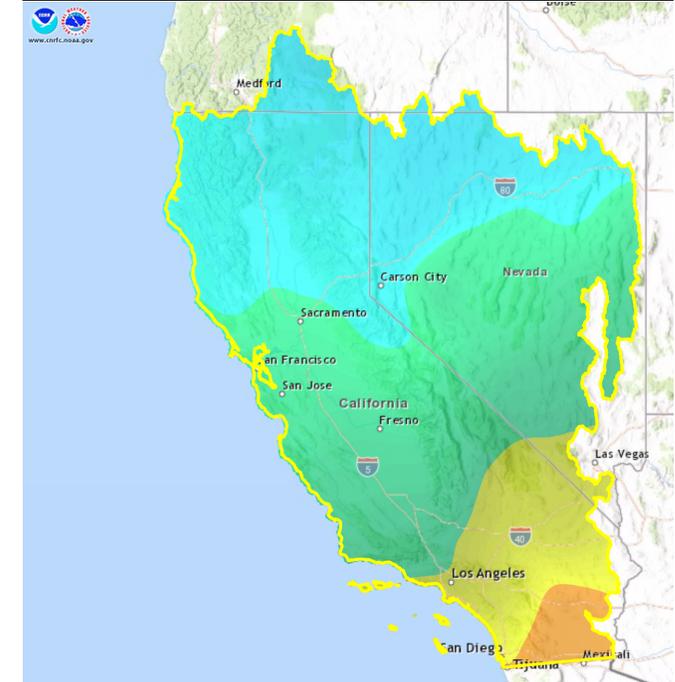


**CNRFC Forecast Freezing Level:  
Valid 1200 UTC 7 Dec**



Source: NOAA/NWS CNRFC, <https://www.cnrfc.noaa.gov/>

**CNRFC Forecast Freezing Level:  
Valid 1200 UTC 8 Dec**

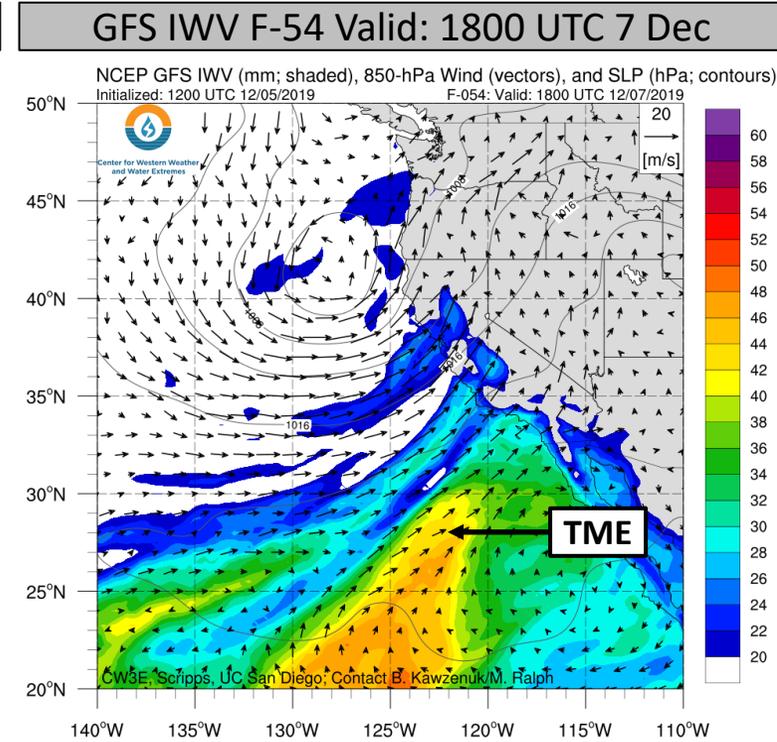
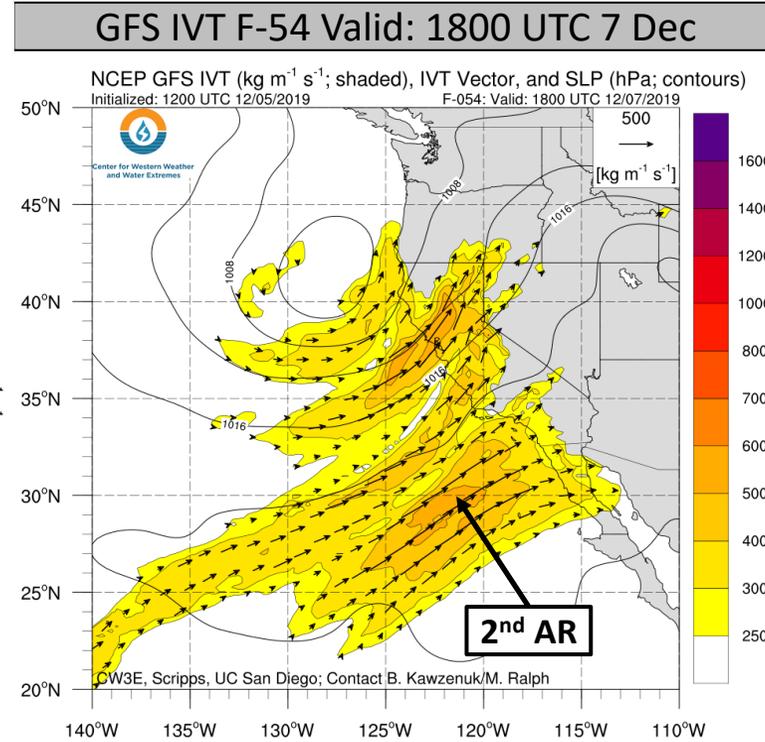
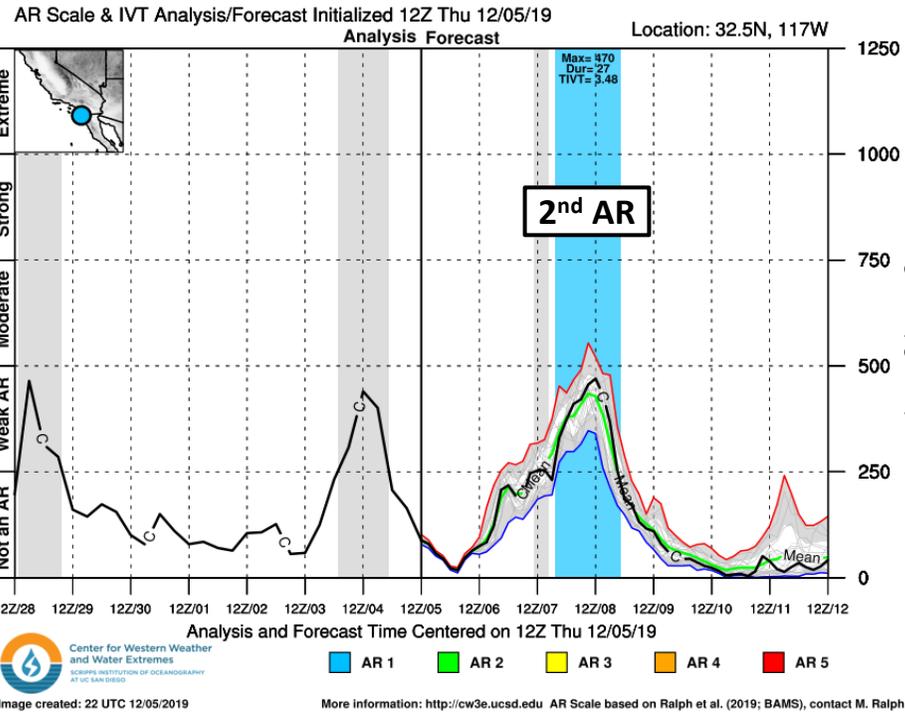


- Relatively high freezing levels will initially limit snowfall amounts over the Klamath Mountains and Northern Sierra Nevada
- Freezing levels are forecast to gradually drop between 1200 UTC 6 Dec and 1200 UTC 8 Dec
- The decrease in freezing level height will likely allow for some accumulating snowfall below 6,000 feet on 8 Dec

# CW3E AR Outlook



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



- GEFS control member and ensemble mean are currently predicting > 24 hours of weak AR conditions (AR1 based on the *Ralph et al. (2019)* AR Scale)
- This AR will be associated with a tropical moisture export (TME) from Eastern Pacific Ocean
- Heavy rainfall is not expected with this AR, with forecast precipitation amounts generally less than 0.5 inches over Southern CA