

Atmospheric River Event

Wednesday and Thursday

Presenter : Eric Boldt

Weather Forecast Office

Los Angeles, CA

Tuesday, January 3





Key Points

- **Dangerous flood situation Wednesday night through Thursday**
 - **Urban and small stream flash flooding**
 - **Higher risk of flash flooding compared to New Year's Eve event**
 - **All 1-2 year burn scars will be susceptible to mud and debris flows**
 - **Significant flows on mainstem rivers - potential flooding can not be ruled out**
- **Moderate to potentially damaging S-SW winds Wed & Wed night**
- **High surf and beach erosion - largest impacts of the winter**
- **High snow levels (mainly above 7000 ft) lowering to 5000 ft late Thursday**



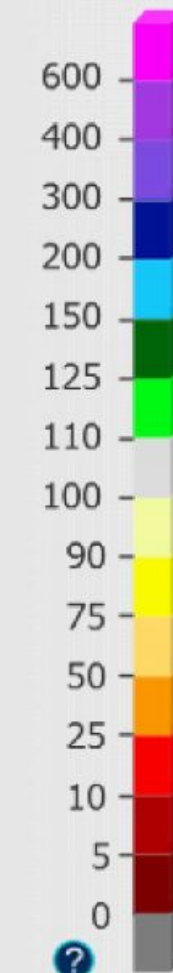
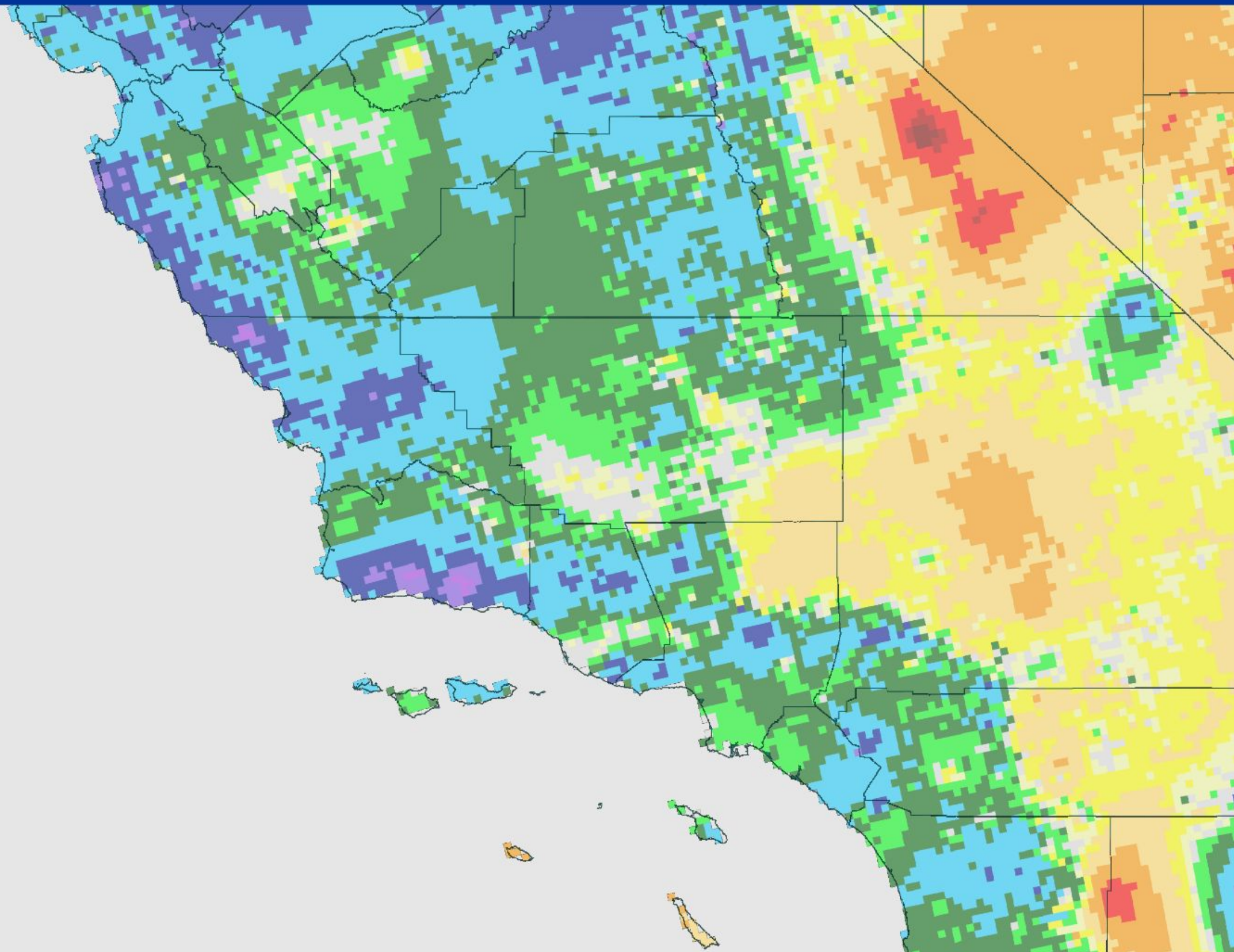
Precipitation Results - Water Year Since Oct 1

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Tuesday, January 3

January 03, 2023 Water Year to Date (Oct. 1) Percent Precipitation

Created on: January 03, 2023 - 17:28 UTC

Valid on: January 03, 2023 12:00 UTC





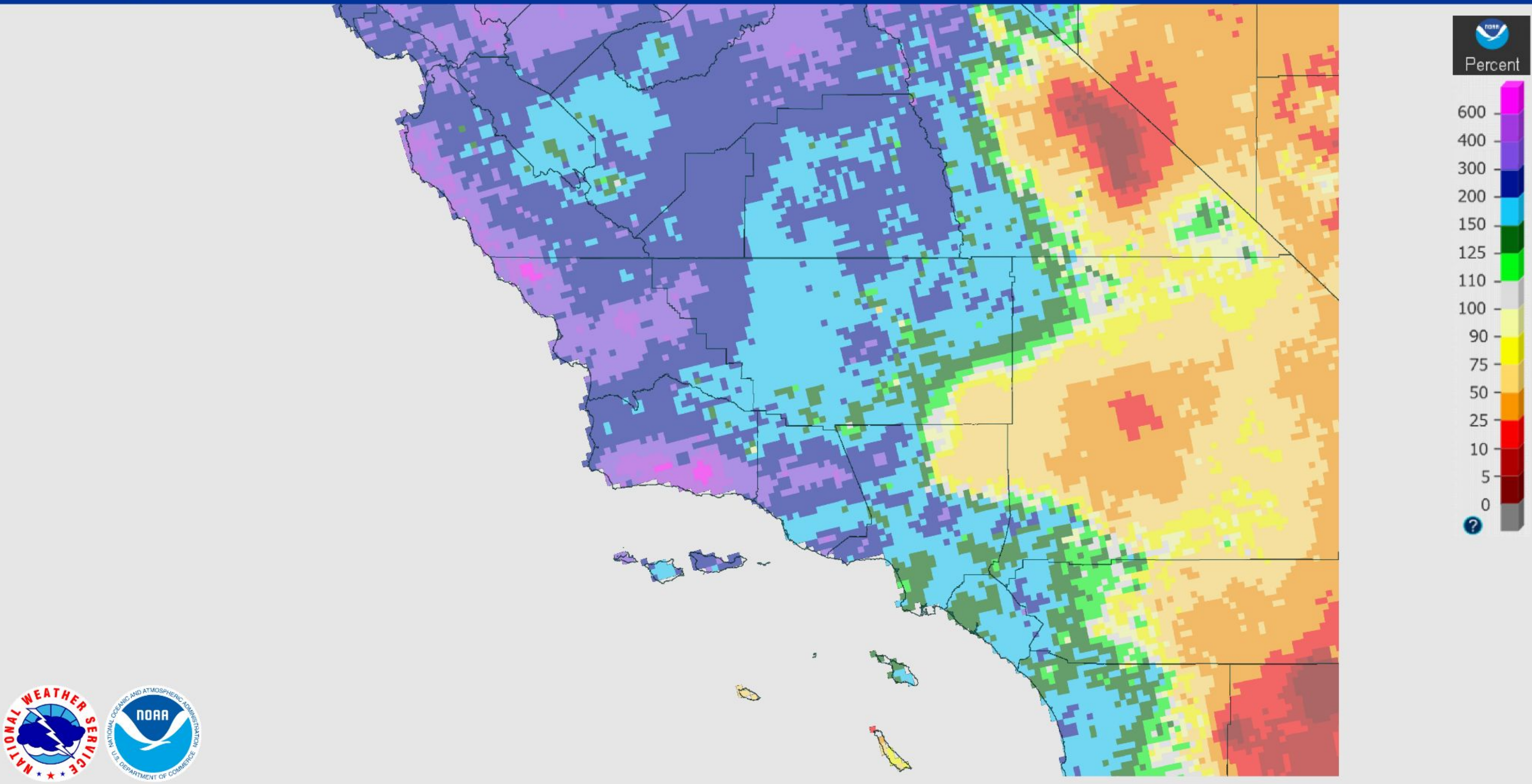
Precipitation Results - December

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December 01, 2022 Monthly Percent Precipitation

Created on: January 03, 2023 - 17:25 UTC

Valid on: January 01, 2023 12:00 UTC





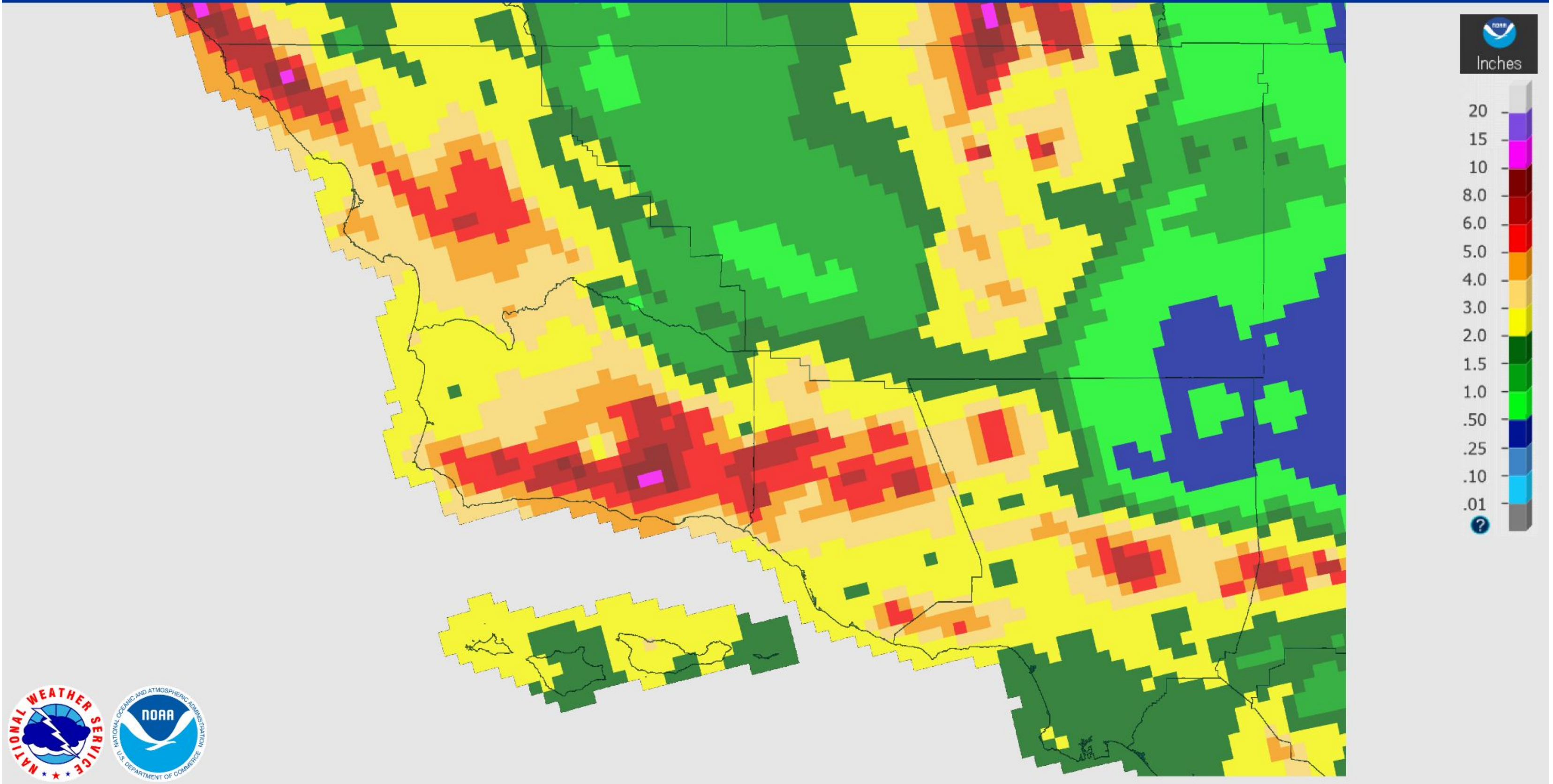
Precipitation Results - Last 7 Days

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January 03, 2023 7-Day Observed Precipitation

Created on: January 03, 2023 - 17:30 UTC

Valid on: January 03, 2023 12:00 UTC

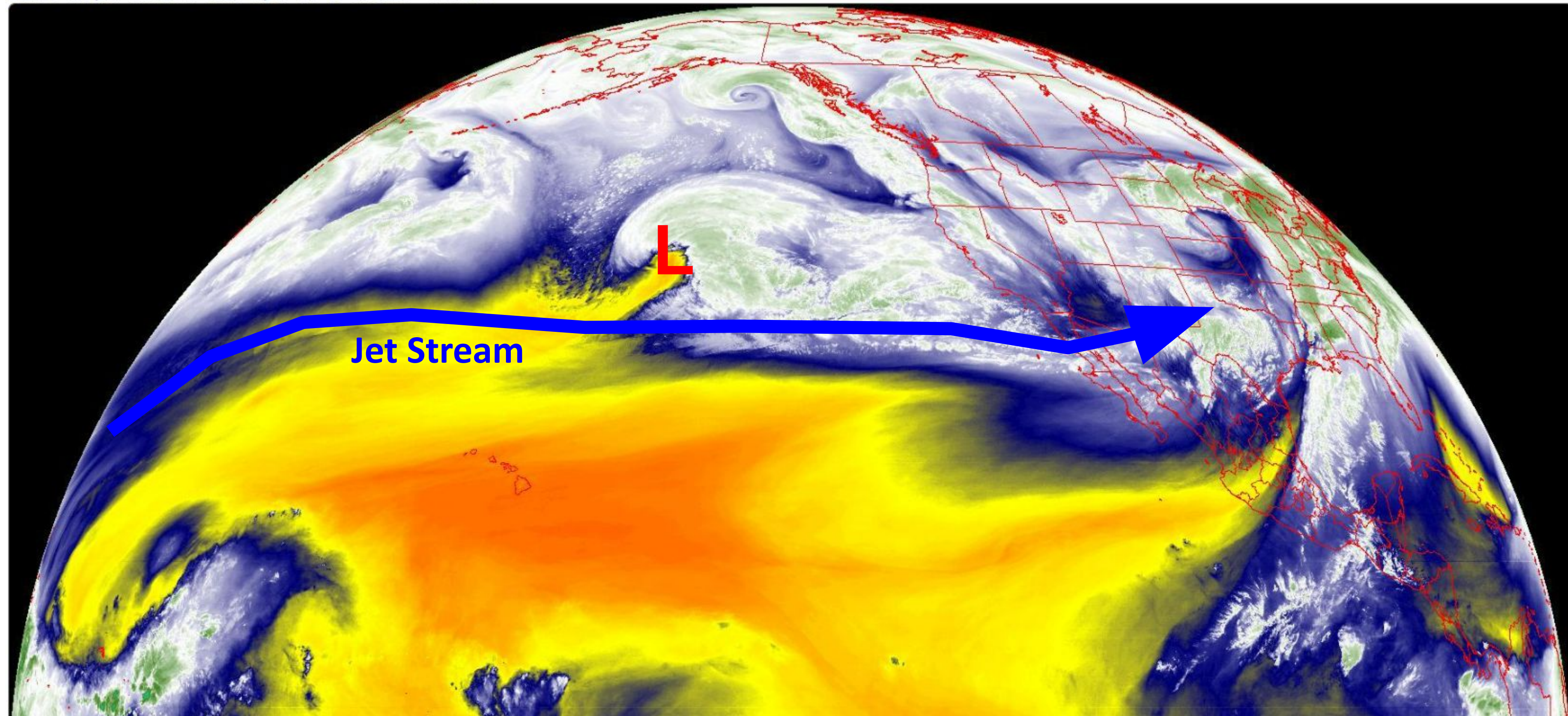




Water Vapor Satellite - Today

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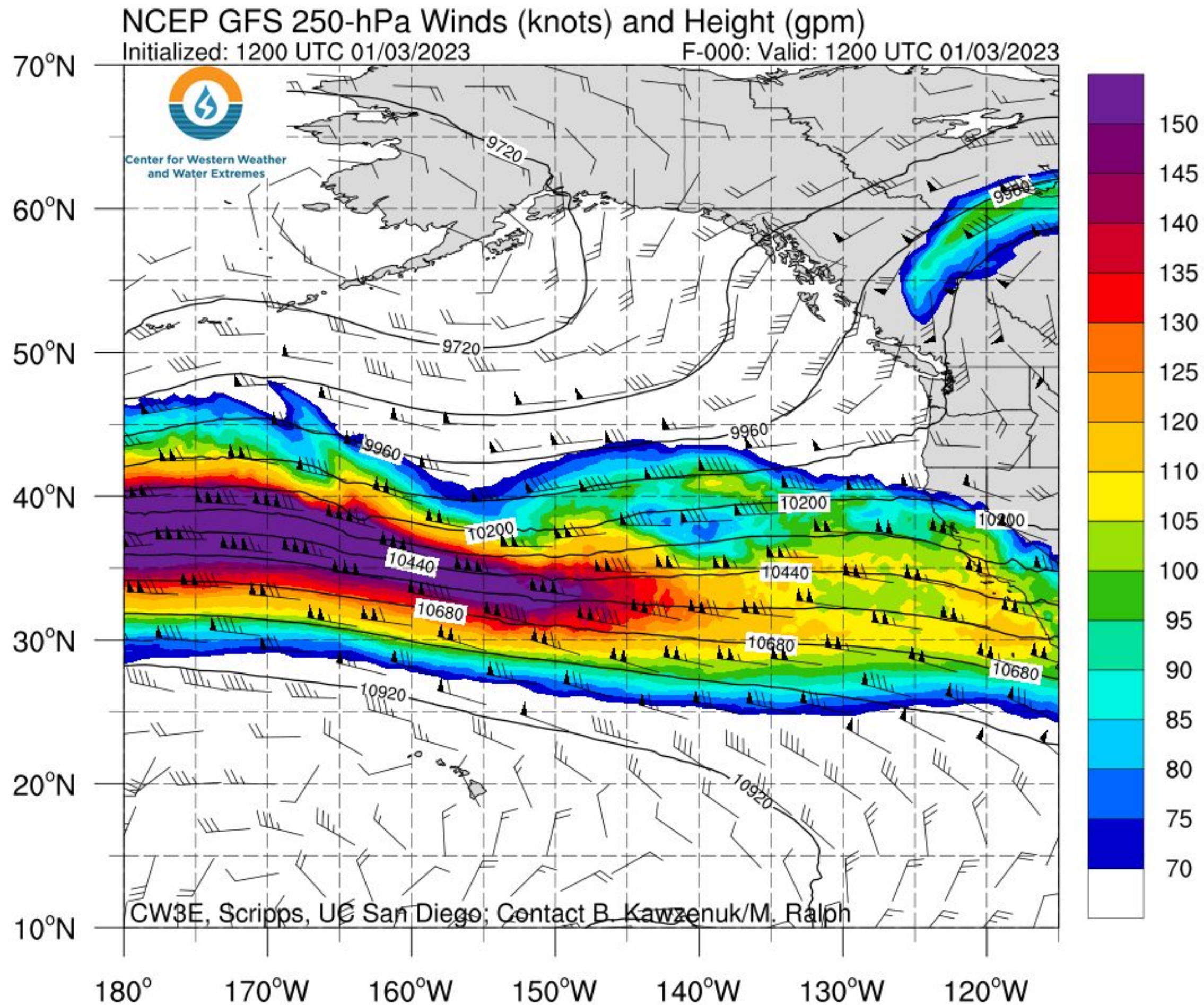
Band 9 - 6.9 μm - Mid-Level Water Vapor - IR - 03 Jan 2023 - 1710 UTC

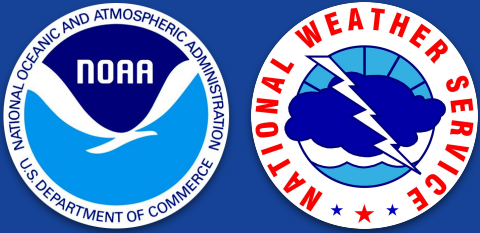




Jet Stream Position - Today

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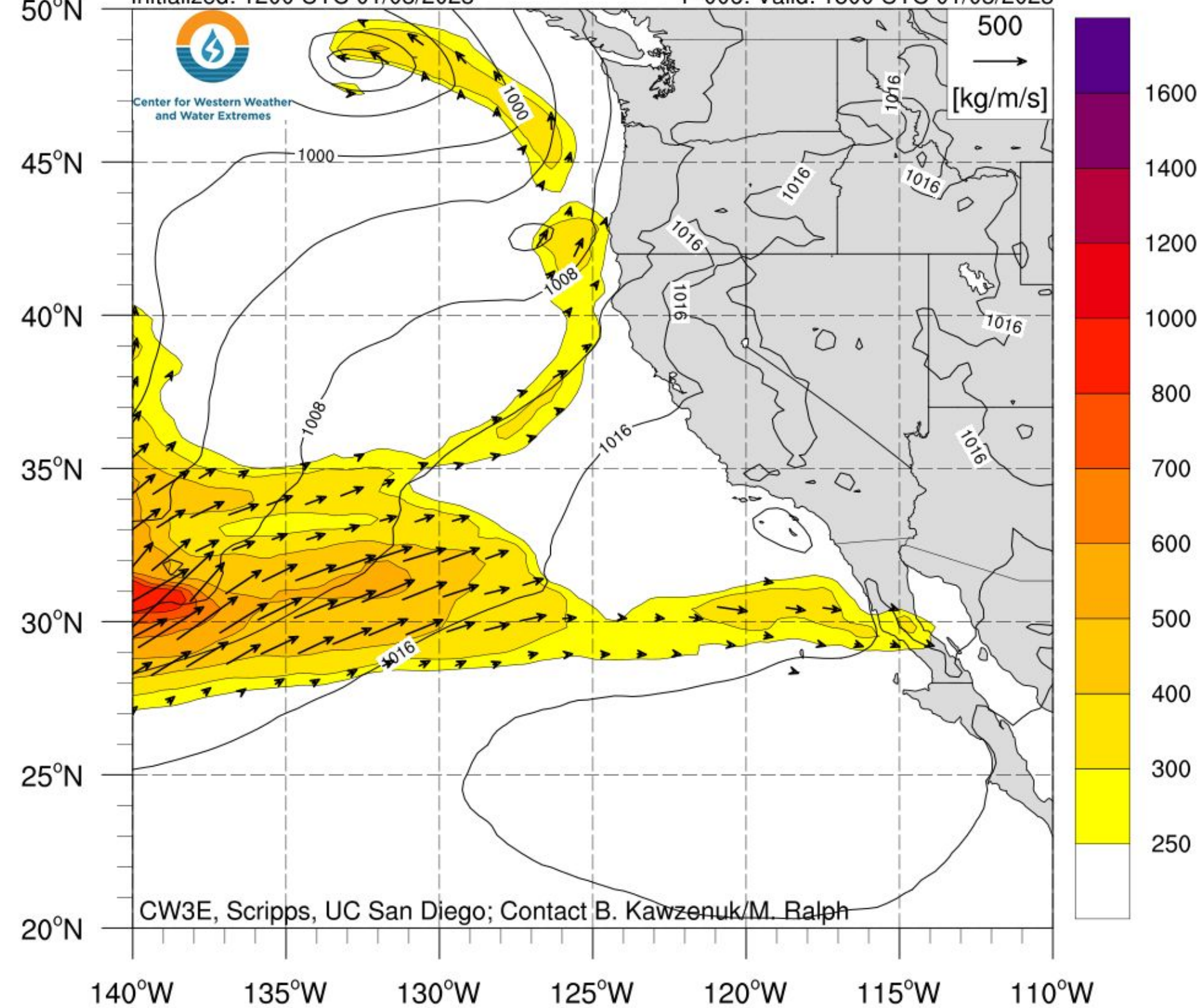
Integrated Water Vapor - AR Strength

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Tuesday, January 3

NCEP NAM IVT ($\text{kg m}^{-1} \text{s}^{-1}$; shaded), IVT Vector, and SLP (hPa; contours)

Initialized: 1200 UTC 01/03/2023

F-006: Valid: 1800 UTC 01/03/2023

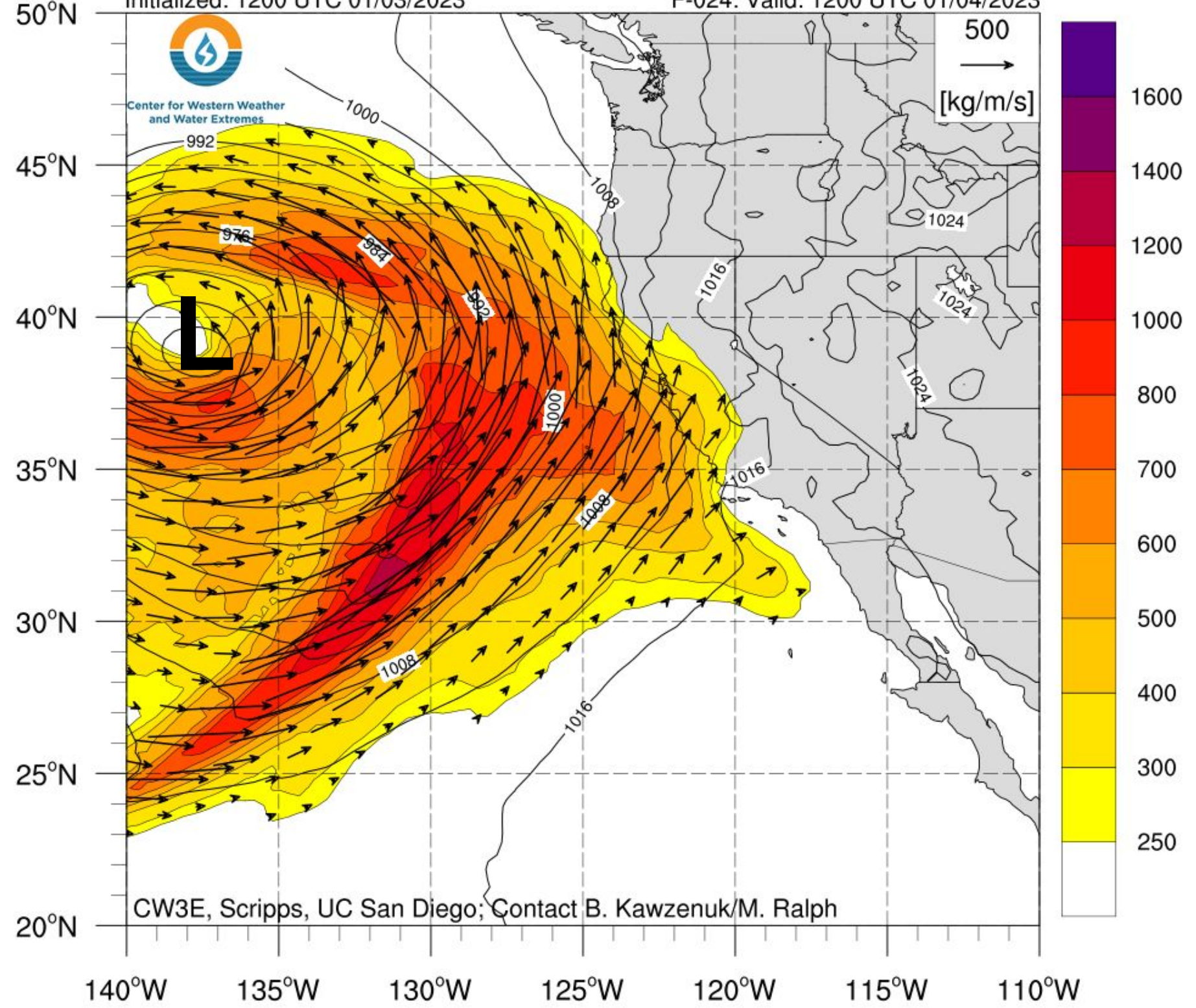


Today

NCEP NAM IVT ($\text{kg m}^{-1} \text{s}^{-1}$; shaded), IVT Vector, and SLP (hPa; contours)

Initialized: 1200 UTC 01/03/2023

F-024: Valid: 1200 UTC 01/04/2023



Wednesday AM

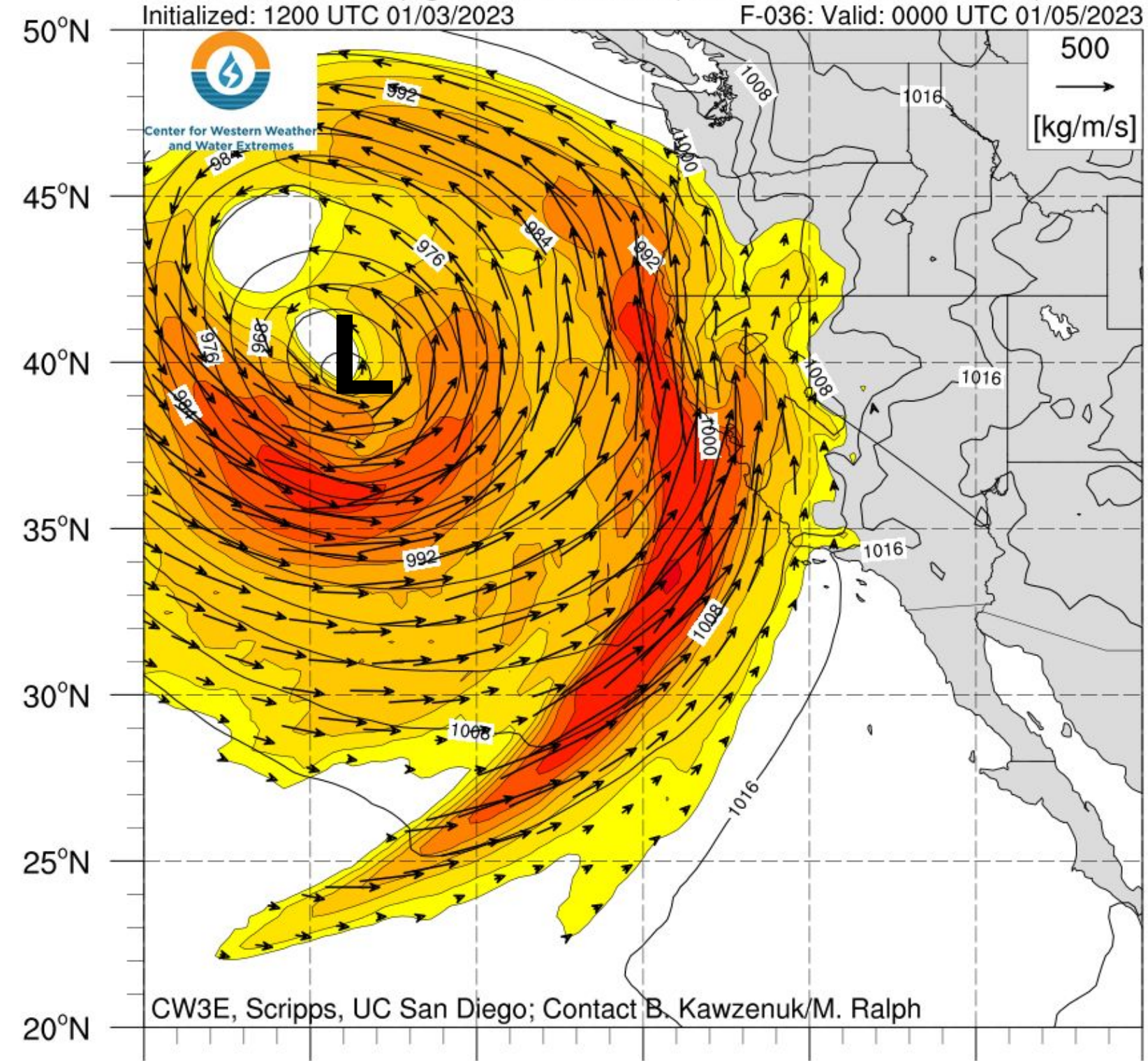


Integrated Water Vapor - AR Strength

Weather Forecast Office
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Tuesday, January 3

NCEP NAM IVT ($\text{kg m}^{-1} \text{s}^{-1}$; shaded), IVT Vector, and SLP (hPa; contours)
Initialized: 1200 UTC 01/03/2023 F-036: Valid: 0000 UTC 01/05/2023

500 [kg/m/s]

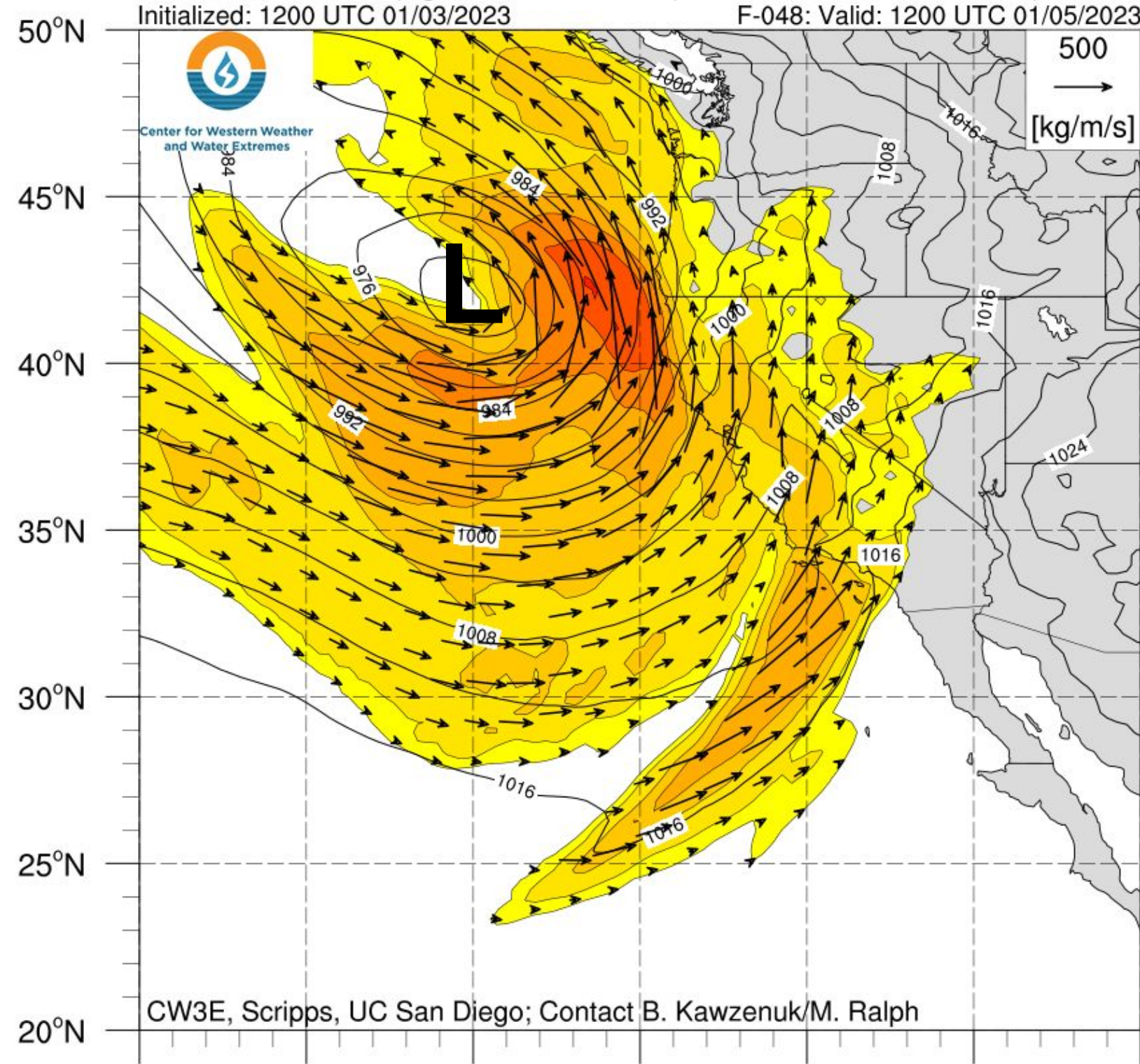


CW3E, Scripps, UC San Diego; Contact B. Kawzenuk/M. Ralph

Wednesday PM

NCEP NAM IVT ($\text{kg m}^{-1} \text{s}^{-1}$; shaded), IVT Vector, and SLP (hPa; contours)
Initialized: 1200 UTC 01/03/2023 F-048: Valid: 1200 UTC 01/05/2023

500 [kg/m/s]



CW3E, Scripps, UC San Diego; Contact B. Kawzenuk/M. Ralph

Thursday AM



Rainfall Amounts, Rates, and Timing

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Tuesday, January 3

- **Peak rain rates 0.50-1.0” per hour expected for most areas**
 - *Higher hourly rate potential on south-facing foothills/mountains and during the cold frontal passage early Thursday morning*
 - *Post-frontal chance of thunderstorms Thursday afternoon with brief heavy downpours, but will be fast-moving*
 - *Waterspouts over the ocean possible late Thursday*



Rainfall Amounts, Rates, and Timing

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Los Angeles, CA
Tuesday, January 3

Rain Timing & Intensity

Counties	Tue 6am to Wed 12am	Wed 12am to Wed 6am	Wed 6am to Wed 12pm	Wed 12pm to Wed 6pm	Wed 6pm to Thu 12am	Thu 12am to Thu 6am	Thu 6am to Thu 12pm	Thu 12pm to Thu 6pm	Thu 6pm to Fri 12am	Fri 12am to Fri 6am	Fri 6am to Fri 12pm
San Luis Obispo	Light	Light	Moderate	Light	Very Heavy	Heavy	Light	Light	Light	Light	None
Santa Barbara	Light	Light	Light	Moderate	Heavy	Very Heavy	Heavy	Light	Light	Light	None
Ventura	Light	Light	Light	Moderate	Heavy	Very Heavy	Very Heavy	Heavy	Light	Light	None
Los Angeles	Light	Light	Light	Moderate	Light	Heavy	Very Heavy	Heavy	Light	Light	None

Rain Intensity				
None	Light if any	Moderate	Heavy	Very Heavy

Total Rain Through Thursday:

Coasts & Valleys: 2 - 4 inches.
Mountains & Foothills: 4 - 8 inches.

Peak Rain Rates:

0.50-1.00 inches/hour.

Confidence:

Rain Happening: High. Amounts & Timing: Moderate.



NATIONAL WEATHER SERVICE
Los Angeles / Oxnard weather.gov/losangeles

Updated Jan 3, 2022 at 12pm

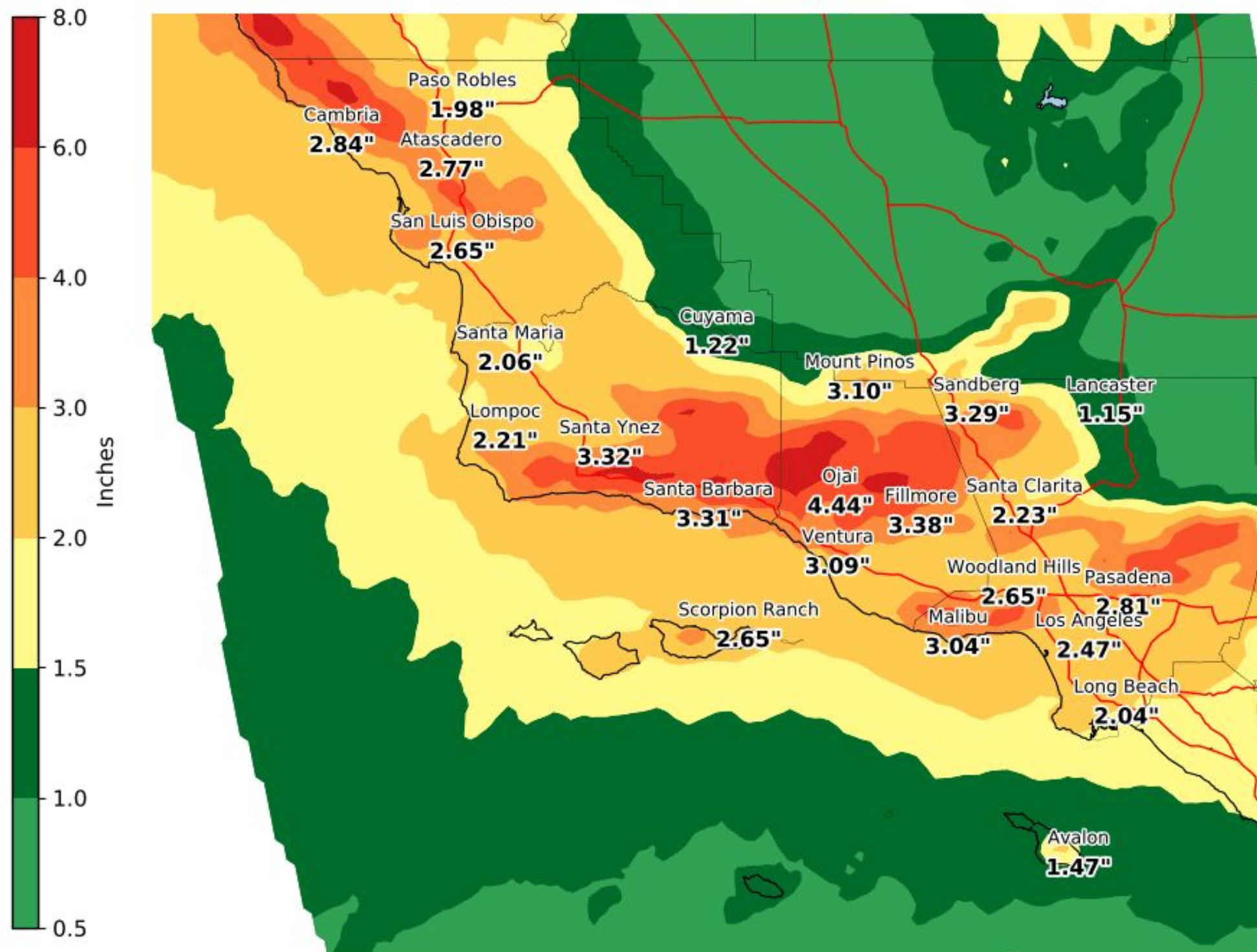
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Storm Total Wednesday to Thursday

Weather Forecast Office
Los Angeles, CA
Tuesday, January 3

Storm Total Rain
Valid: Wed-Thu Jan 4-5, 2023



National Weather Service
Los Angeles/Oxnard California
01/03/2023 12:24 PM PST

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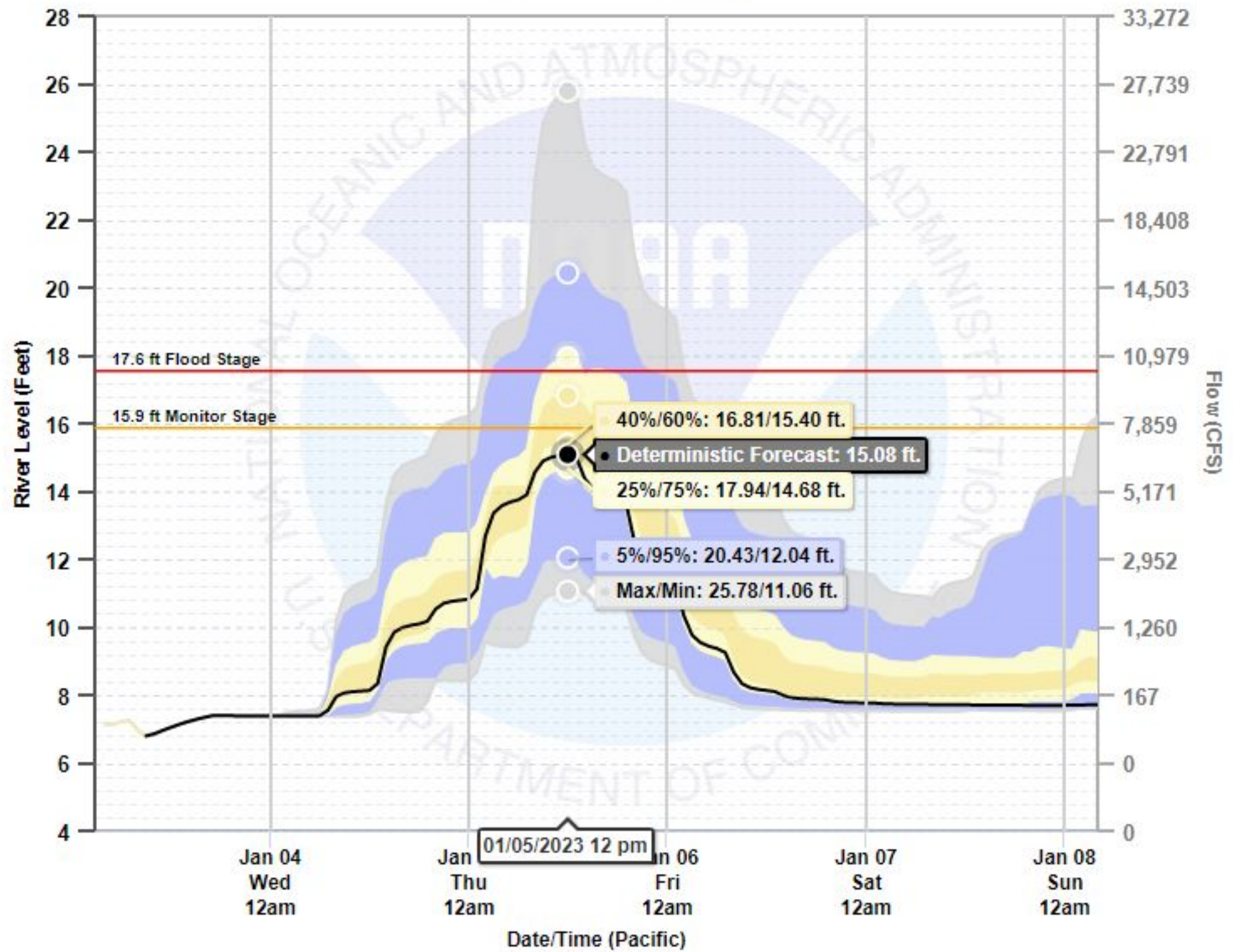


Ventura River Level Forecast

Short-Range Peak Exceedance Plot Product Information Plot Type: Ensemble Forecast CSV Ensemble File Download (Data in feet): VRVC1

Hourly River Level Probabilities VENTURA RIVER - FOSTER PARK (VRVC1)

Created: 01/03/2023 at 9:36 AM PST



Chance of River Level Exceedance (Feet)

Forecast Period:
01/03/2023 4 am - 01/08/2023 4 am

Max	25.78		
5%	22.02		
10%	20.27		
25%	18.23	Flood Stage	33%
50%	16.20	15.9 ft	57%
75%	14.72	Monitor Stage	
90%	13.26		
95%	11.87		
Min	11.23		

Custom Thresholds

Show: 5 Days 10 Days

- Official Forecast (Deterministic)
- Ensemble Mean
- Model Traces
- Hourly Probabilities
 - 0-5% chance
 - 5-25% chance
 - 25-40% chance
 - 40-60% chance

Ventura River @ Foster Park

- Noon on Thursday, 1/5
- 40% chance of exceeding Monitor Stage
- 25% chance of exceeding Flood Stage



Winds - Wednesday and Wednesday night

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- **Strongest S-SW wind gusts across San Luis Obispo and Santa Barbara Counties, and the Ventura County mountains**
 - *Gusts 60-70 mph high wind warning level*
- **Coastal and valley areas of Ventura and Los Angeles Counties**
 - *Gusts 30-50 mph wind advisory level*



Ocean and Beaches - Wednesday thru Friday

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- **Widespread Gale force winds over 34 kt over coastal waters Wednesday - Thursday**
 - Chance of storm force (gusts > 48 kt) outer waters
- **High surf warning, coastal flooding, and beach erosion potential Thursday - Friday**
 - Ventura County and Central Coast beaches (15-22 feet)
 - High tide near 8am PST Thu
- **High surf advisory Wednesday - Friday**
 - South Santa Barbara County and Los Angeles County beaches (8-13 feet)
- **Post-frontal thunderstorms with beach lightning potential and ocean waterspouts late Thursday**

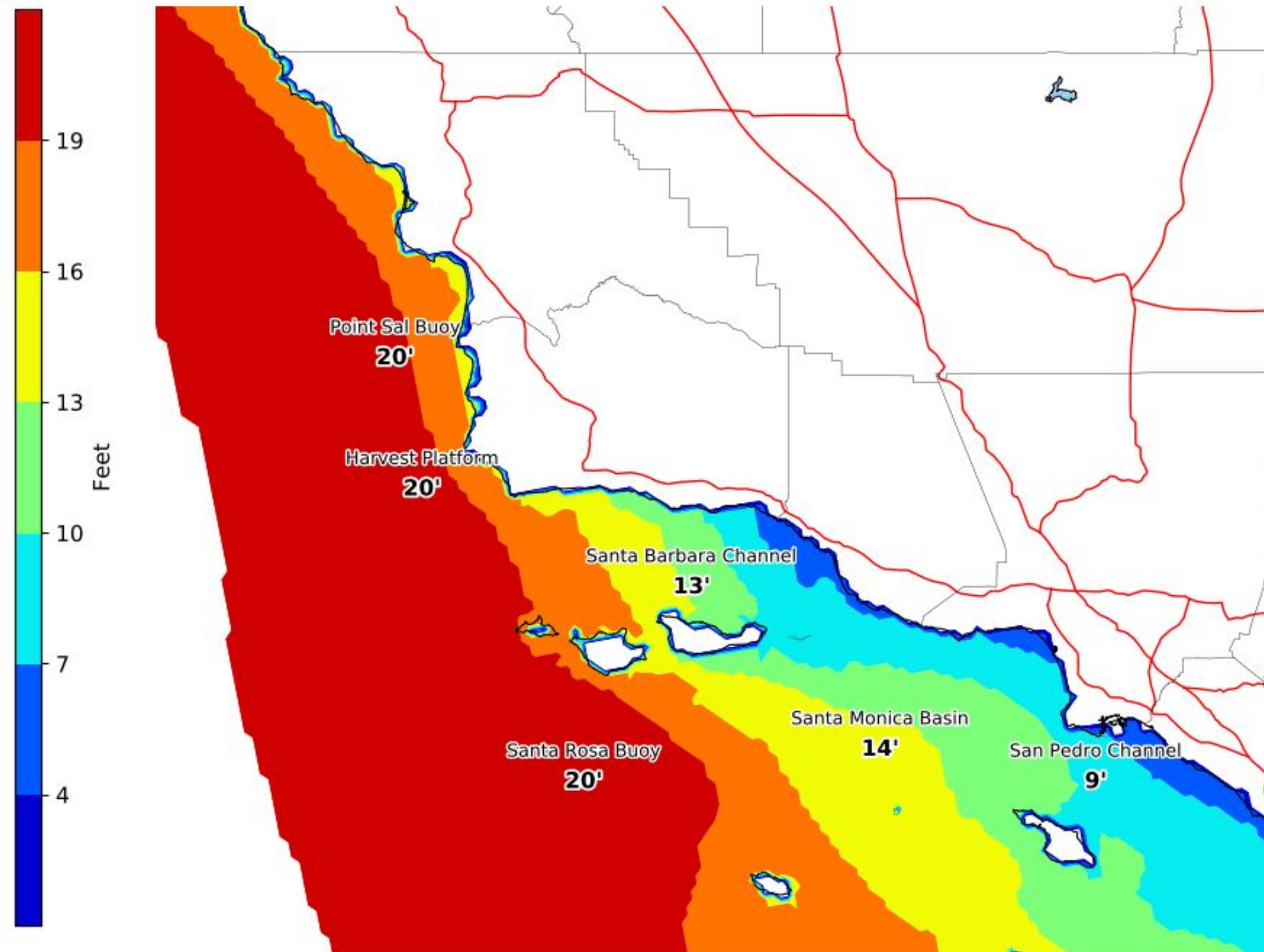


Peak Wave Heights contributing to High Surf

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Peak Total Wave Height

Valid: Thu Jan 5, 2023



National Weather Service
Los Angeles/Oxnard California
01/03/2023 12:25 PM PST

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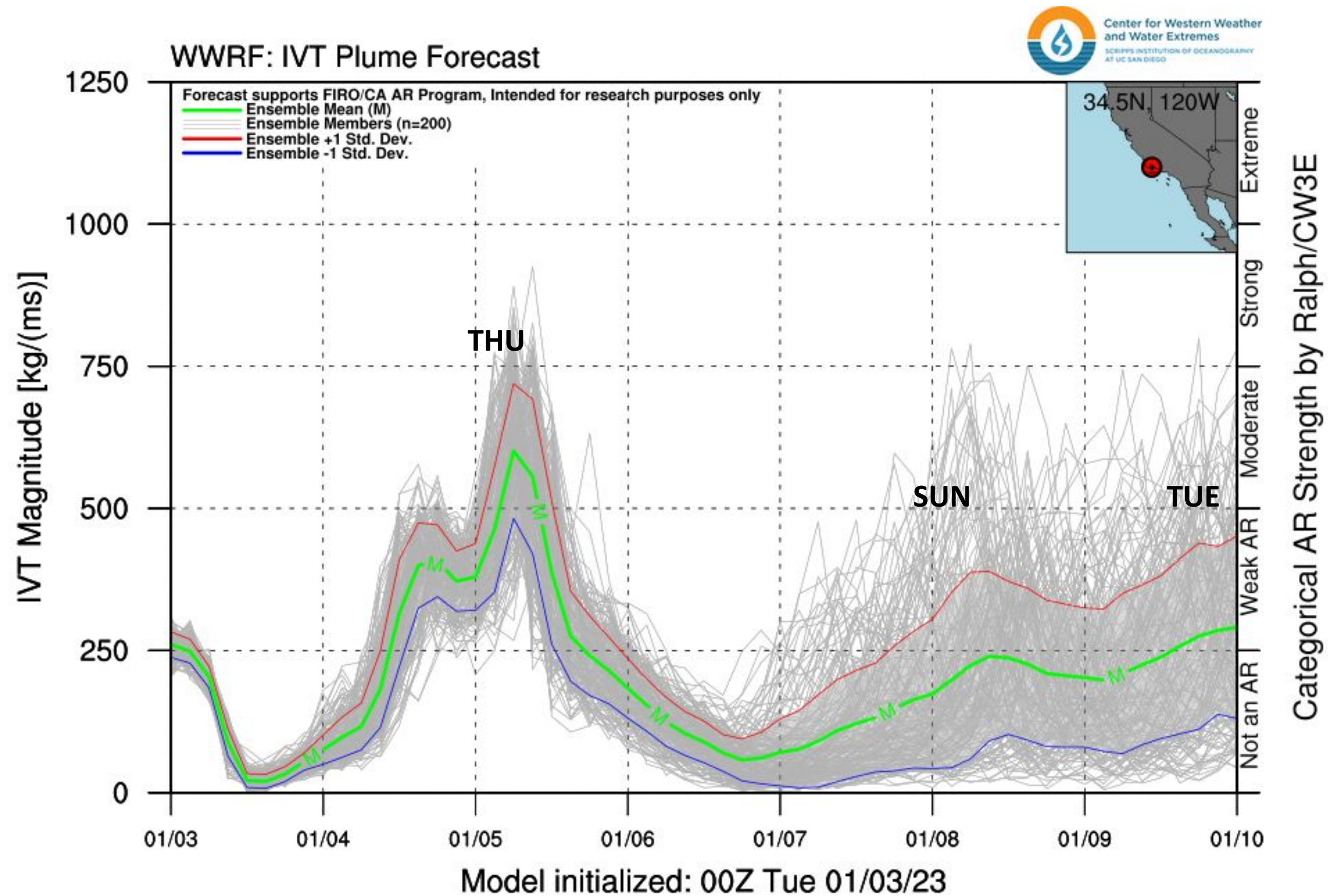


Outlook Into Next Week

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Additional rain events with atmospheric river connections possible this weekend and again next week (Sunday and possibly Tue-Wed).

Not as strong as this week's event.





Summary

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 - **All 1-2 year burn scars will be susceptible to mud and debris flows**
 - **Significant flows on mainstem rivers - potential flooding can not be ruled out**
- **Moderate to potentially damaging S-SW winds Wed & Wed night**
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