

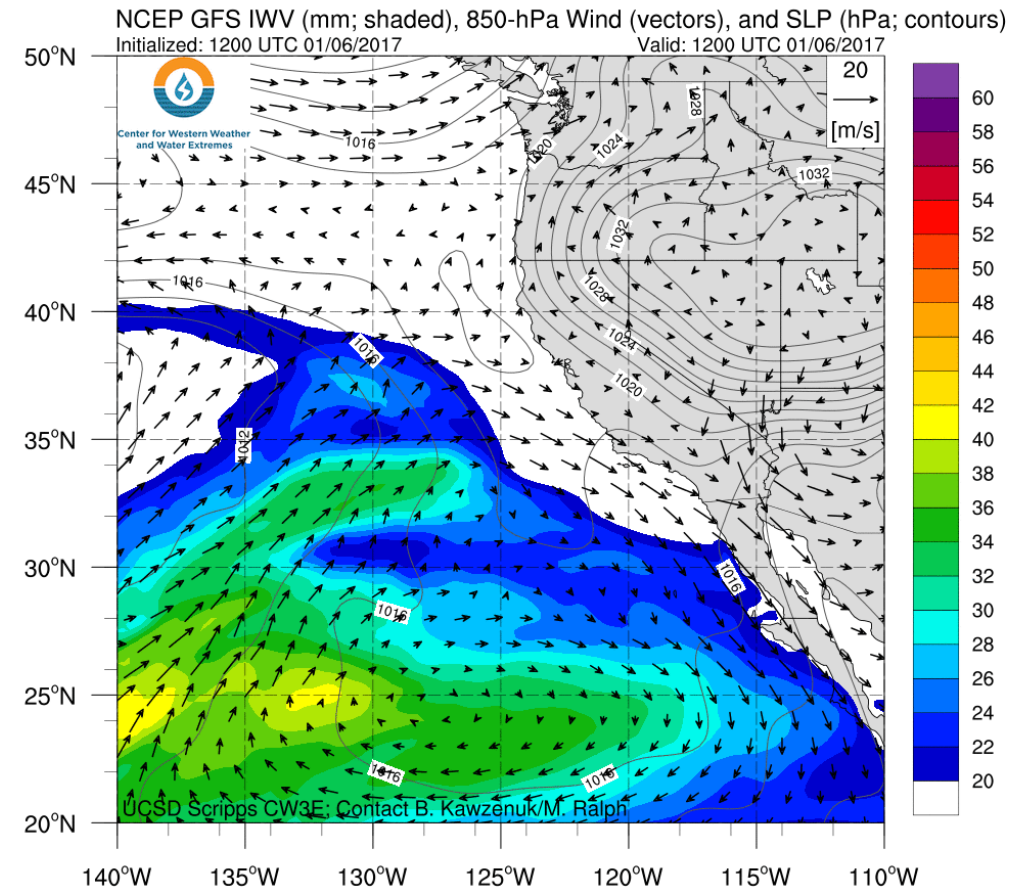
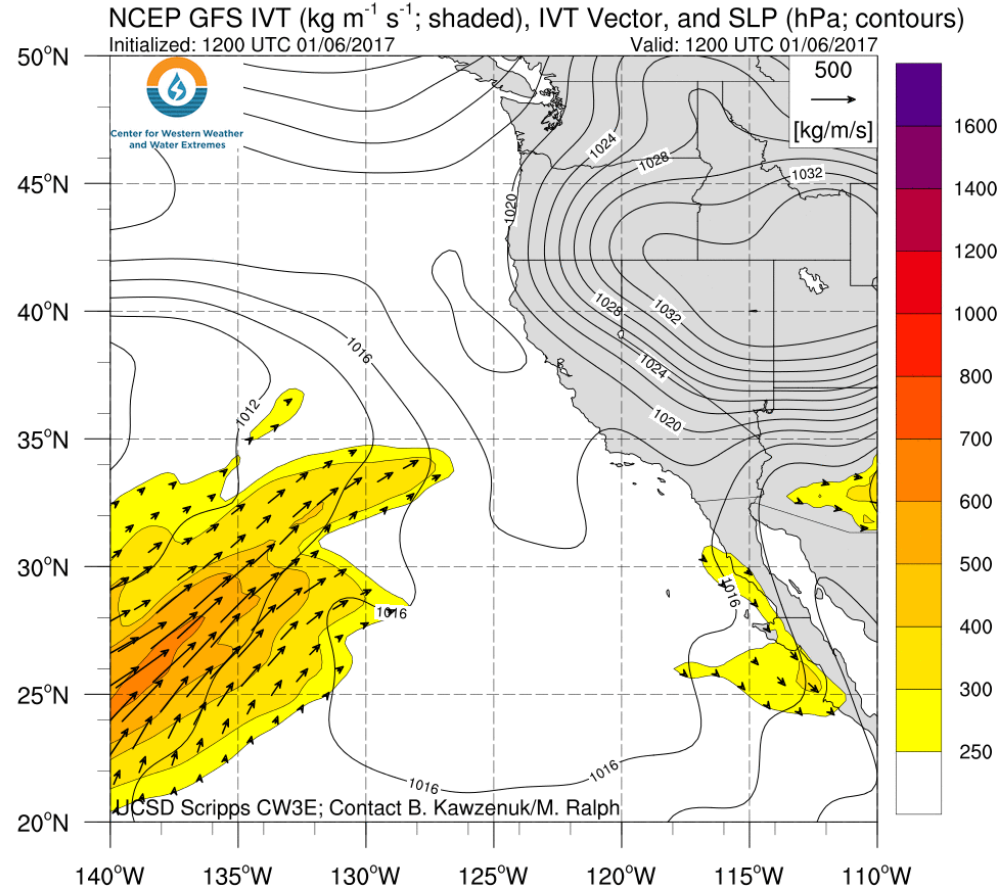
# CW3E Atmospheric River Update



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

## Update on Strong AR over the weekend

- Forecast confidence of AR conditions have improved since yesterday's update
- Moderate AR conditions could last over 24-hrs over some locations in Central CA
- 1–3 Day Precipitation forecasts by the Weather Prediction Center are as high as 15.5 inches over high elevations of Sierras
- 19 river gauges are currently forecast to rise above flood stage by the California Nevada River Forecast Center
- Extended forecasts show another AR making landfall next week, though the forecasts are more uncertain.

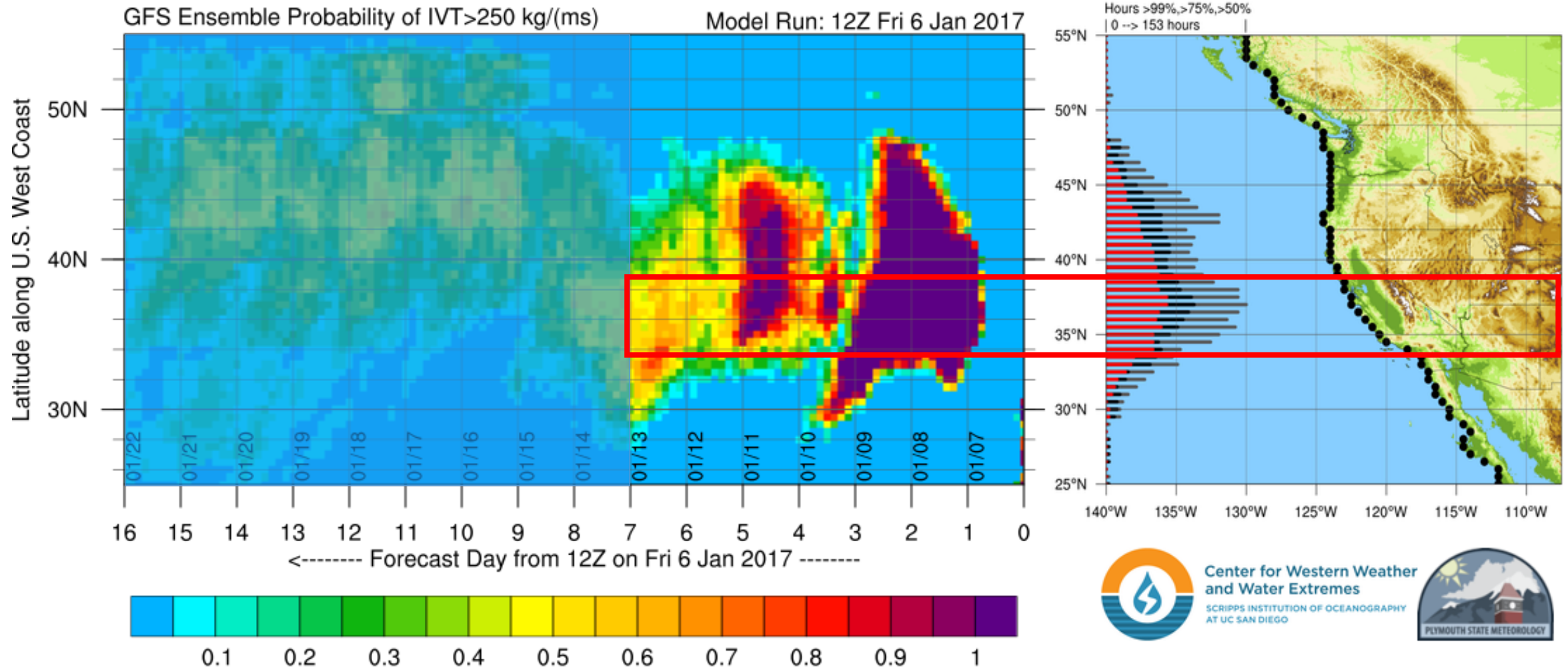


# AR Update: 6 January 2017

For California DWR's AR Program



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



- At least weak AR conditions ( $\text{IVT} > 250 \text{ kg m}^{-1} \text{ s}^{-1}$ ) could last up to 54 hours between 7 and 10 Jan. in Central CA
- IVT forecasts for the event on 11 and 12 Jan. are becoming more confident

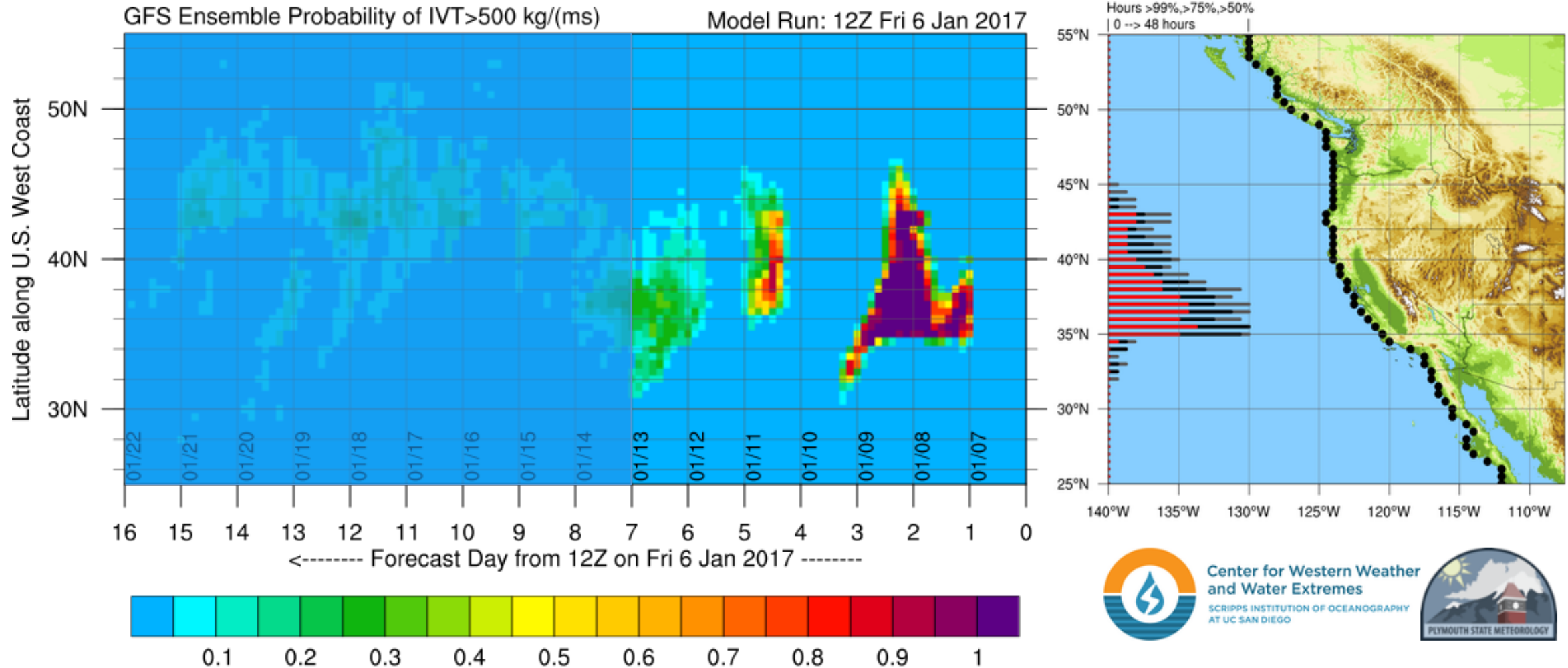
Summary by C. Hecht 4 PM PT Fri 6 Jan. 2017

# AR Update: 6 January 2017

For California DWR's AR Program



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



- Moderate AR conditions ( $\text{IVT} > 500 \text{ m}^{-1} \text{ s}^{-1}$ ) could potentially last over 24-hrs over some locations in Central CA

Summary by C. Hecht 4 PM PT Fri 6 Jan. 2017

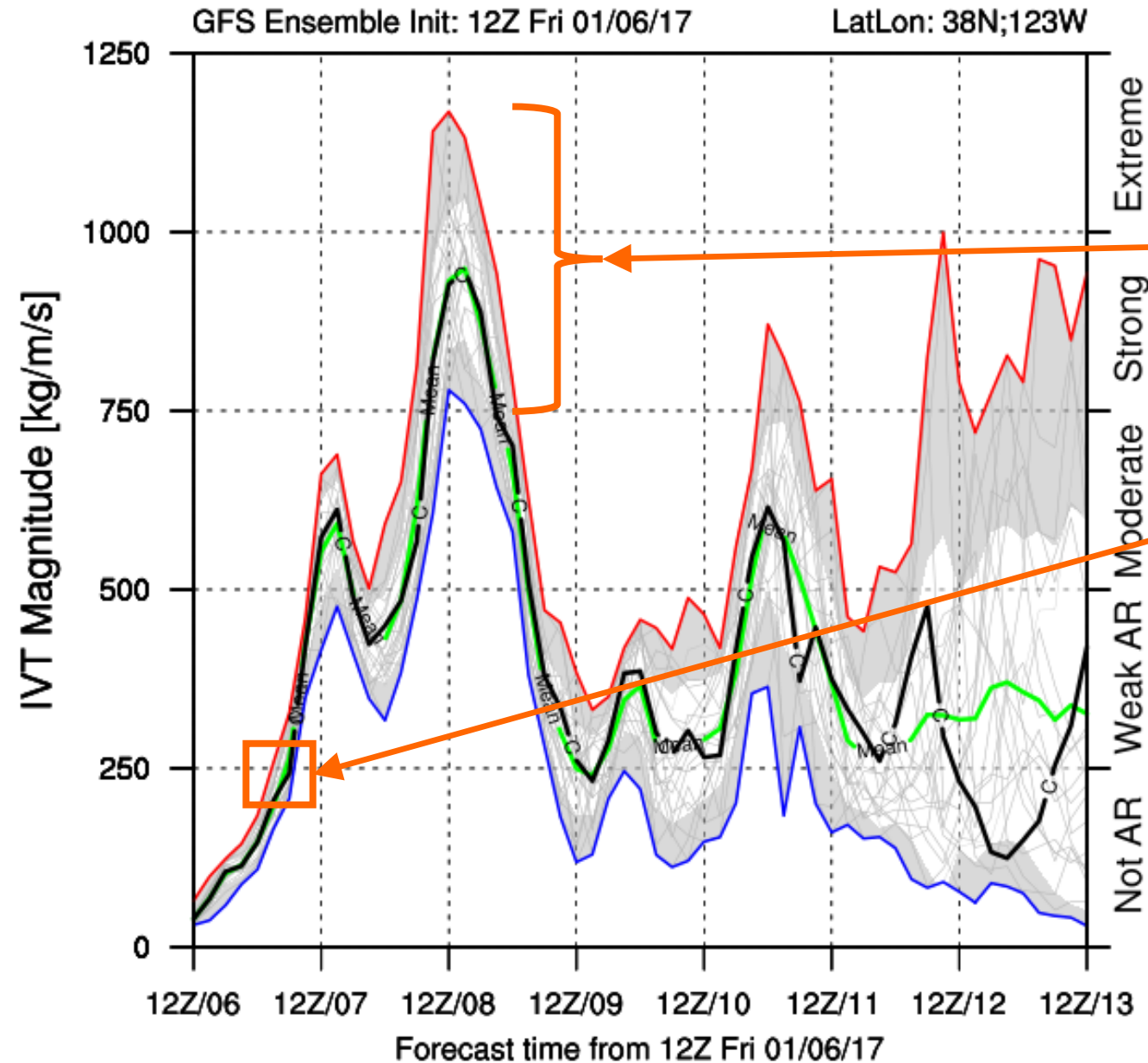


# AR Update: 6 January 2017

For California DWR's AR Program



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



## Magnitude of AR

- Maximum possible IVT  $\sim 1150 \text{ kg m}^{-1} \text{ s}^{-1}$
- Mean IVT  $\sim 940 \text{ kg m}^{-1} \text{ s}^{-1}$
- Minimum possible IVT  $\sim 800 \text{ kg m}^{-1} \text{ s}^{-1}$
- Uncertainty  $\sim \pm 20\%$

## Start Time of AR conditions

- Midnight Saturday 7 January
- High confidence  $\pm 3 \text{ h}$

## Duration of AR conditions

- Weak:  $\sim 56 \text{ hours (minimum)}$
- Moderate:  $\sim 41 \text{ hours } \pm 12 \text{ h}$
- Strong:  $\sim 18 \text{ hours } \pm 6 \text{ h}$

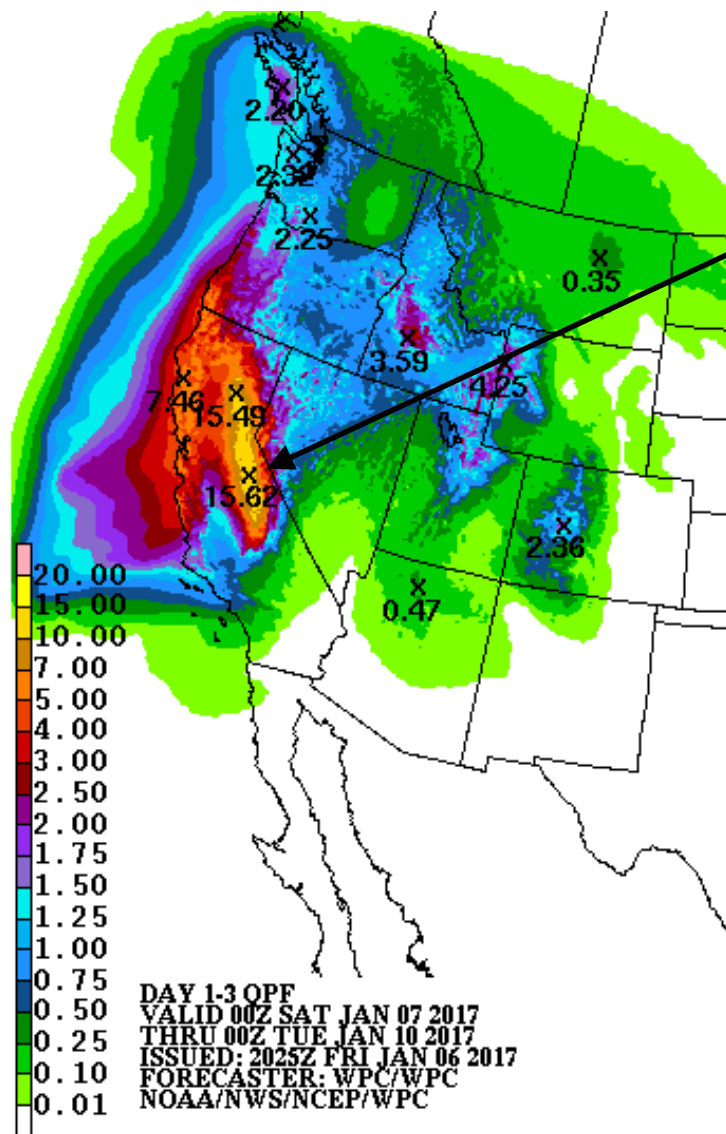
**Large amounts of uncertainty in AR forecast for 10 January**

# AR Update: 6 January 2017

For California DWR's AR Program



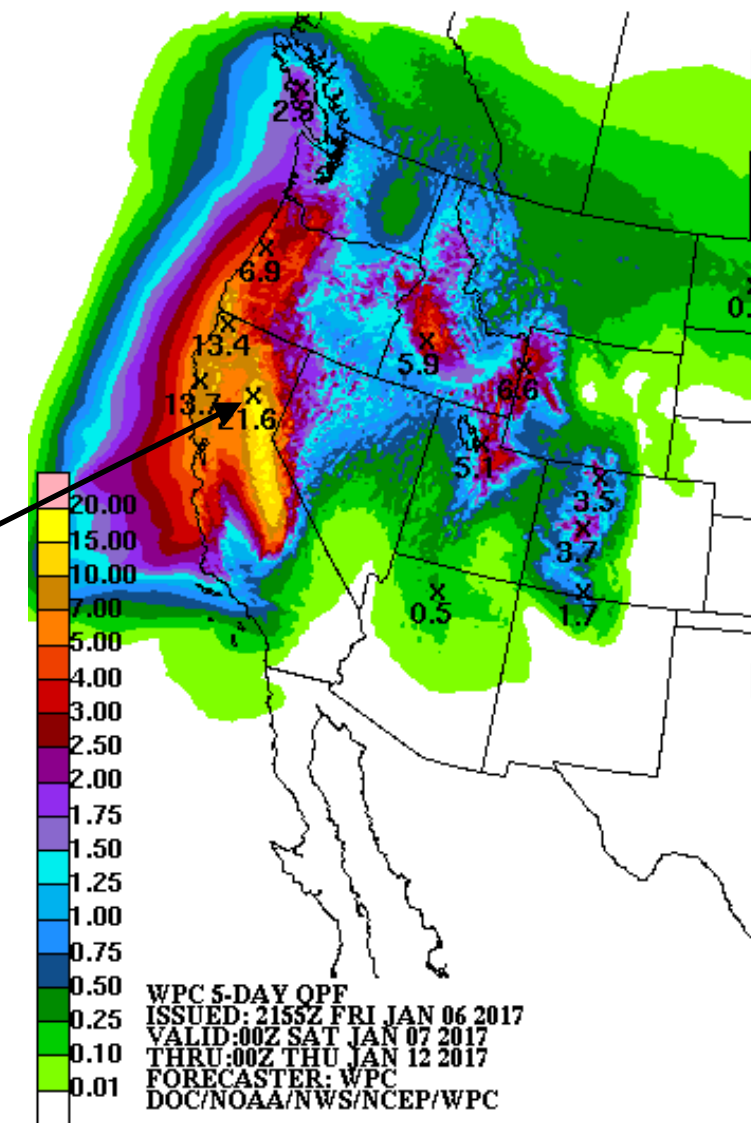
Center for Western Weather  
and Water Extremes  
SCRIPPS INSTITUTION OF OCEANOGRAPHY  
AT UC SAN DIEGO



Precipitation forecasts for the event this weekend have remained similar to forecasts made yesterday with maximum accumulations of ~16 inches in the Sierra Nevada Mts.

Extended precipitation forecasts (1–5 days), which include the AR earlier next week, are predicting maximum accumulations of 21.6 inches in the Sierra Nevada Mts.

For Official NOAA-NWS Precipitation  
Forecasts see  
[www.wpc.ncep.noaa.gov/qpf/qpf2.shtml](http://www.wpc.ncep.noaa.gov/qpf/qpf2.shtml)



Summary by C. Hecht 4 PM PT Fri 6 Jan. 2017

# AR Update: 6 January 2017

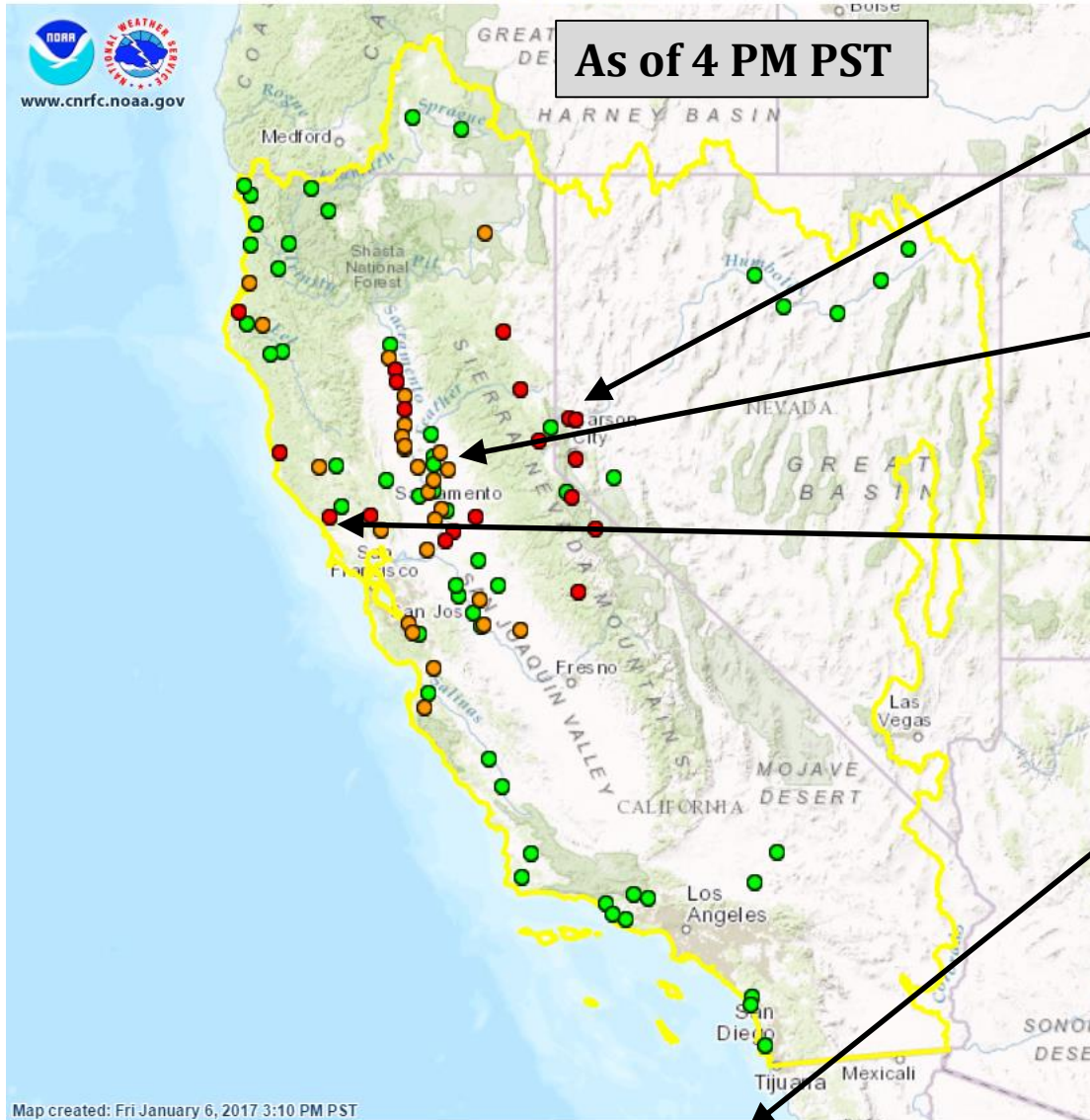
For California DWR's AR Program



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

## River Forecast

As of 4 PM PST



**Major flooding possible around Reno, NV**

**Majority of gauges on Sacramento River are predicted to reach above monitor stage with several above flood stage**

**Russian River:**

- Hopland – 20 ft. (monitor stage)
- Guerneville – 35.2 ft. (flood stage)

**19 rivers forecasted to reach above flood stage (some twice in <72 hours) and 26 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 number inside each circle above represents the number of gages with forecast conditions inside that category.

Summary by C. Hecht 4 PM PT Fri 6 Jan. 2017

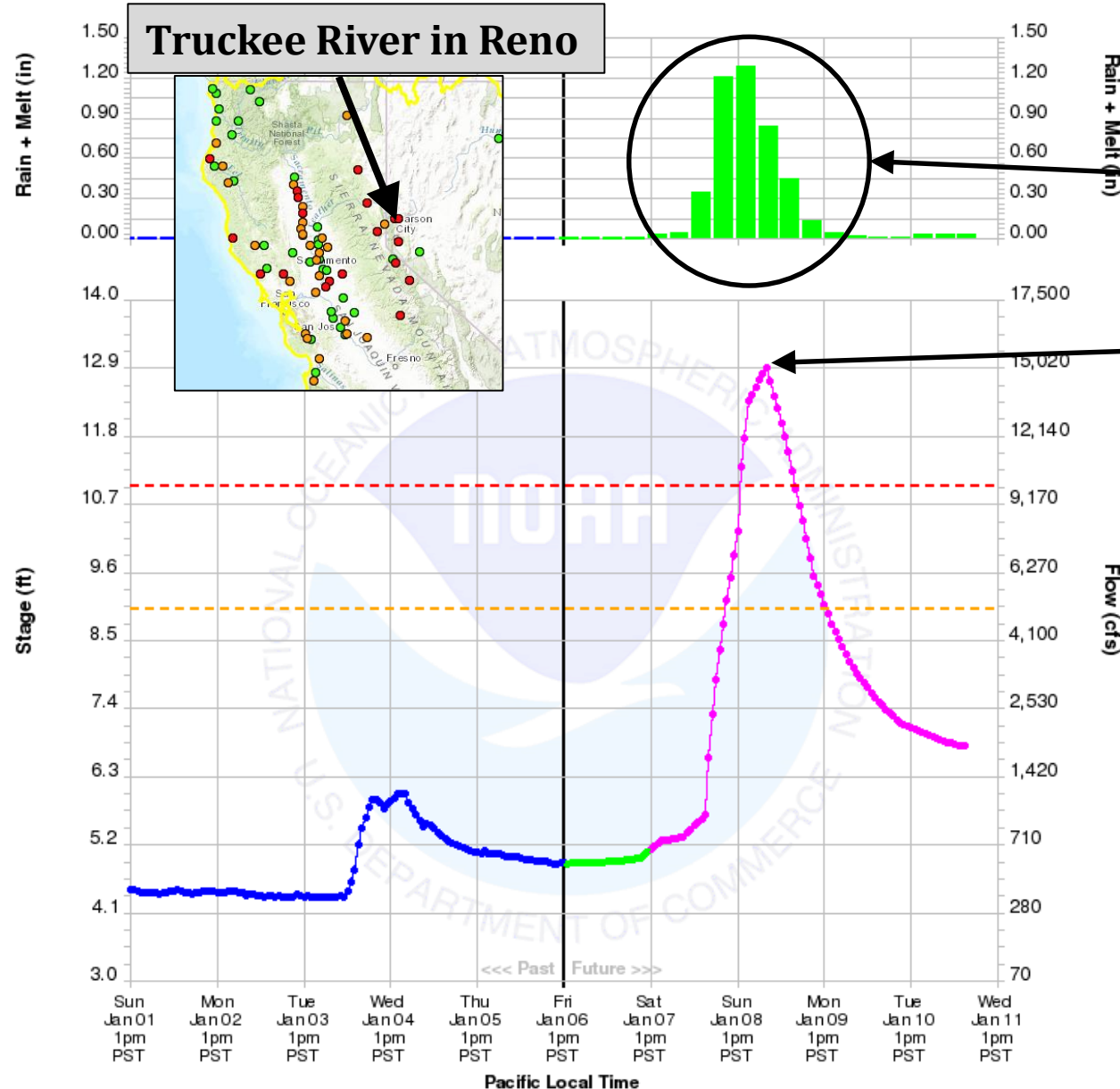


# AR Update: 6 January 2017

For California DWR's AR Program



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



## Rainfall

- ~5 inches of rain forecast over 48-hrs in Reno

## Forecast River Stage

- Gauge height forecast to rise to 13 ft.
- 2 ft. above flood stage

## Potential Impacts of 13 ft. stage height

- Major flooding with serious damage Mogul to US Highway 395
- Downtown Reno and Reno Airport begin serious flooding, 1 to 2 feet deep
- Transportation severely impacted, many roads and bridges near river flood
- USGS 50 year flood

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

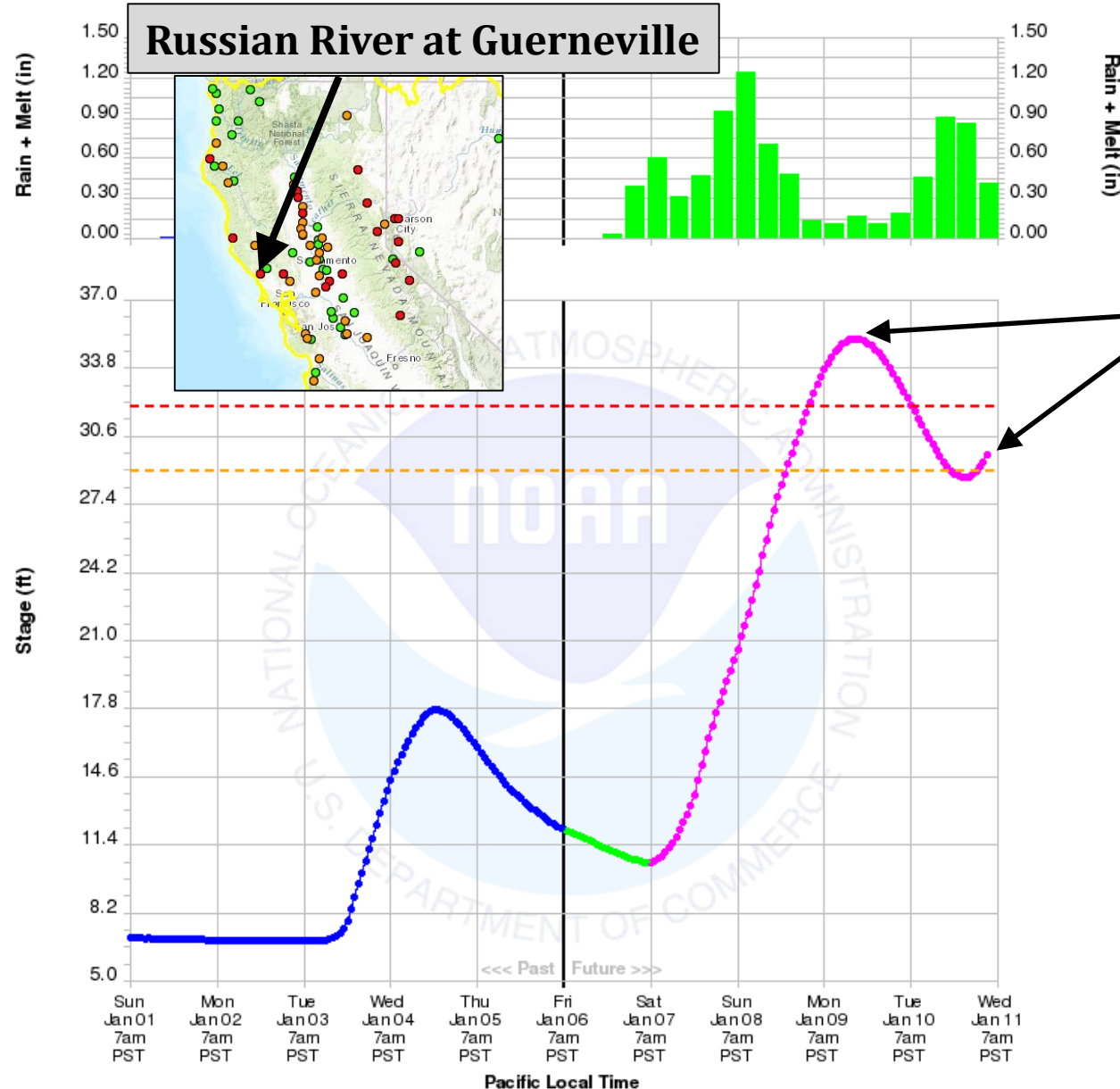
Summary by C. Hecht 4 PM PT Fri 6 Jan. 2017

# AR Update: 6 January 2017

For California DWR's AR Program



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



## Forecast River Stage

- Gauge height forecast to rise to 36 ft.
- ~4 ft. above flood stage
- Stage height forecast to rise again on Tuesday 10 January before height recedes below monitor

## Potential Impacts of 35 ft. stage height

- Moderate flooding along lower Russian River
- Numerous businesses and residences in the lowest sections of towns within the reach are expected to flood

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