

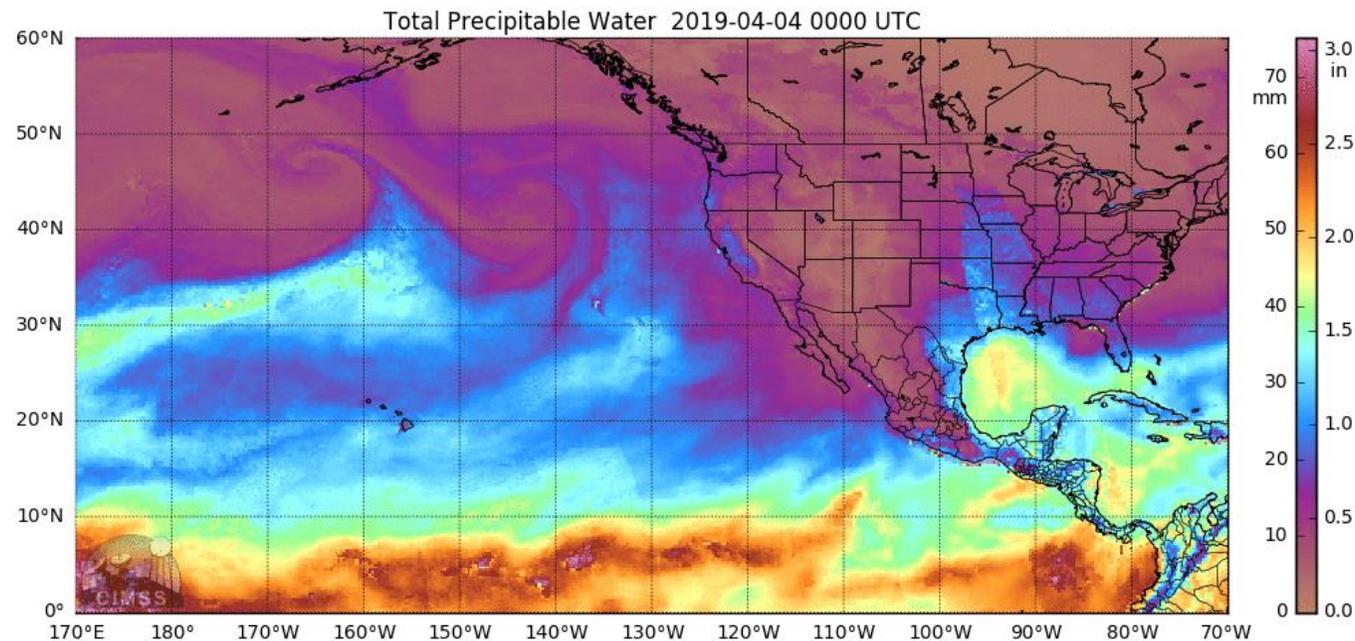
CW3E Post Event Summary: 6–9 April AR



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

Summary of the Atmospheric River that impacted Oregon and Northern California between 6 and 9 April 2019

- A strong and long duration AR made landfall over Oregon and Northern California on 6–9 April 2019
- Numerous locations across Northern California and Southern Oregon received >5 inches of precipitation over 72 hours with multiple gauges recording >10 inches
- The maximum three day total was 365 mm, or 14.58 inches. The max including a couple of days earlier reached over 17 inches.
- The AR resulted in AR Category 4 conditions over Southern Oregon, a lightly populated region
- Ten river gauges in OR and WA exceeded flood stage, and many others reached action level or bankfull.
- The landfall and limited southward propagation of the AR resulted in a large north-south gradient in precipitation accumulations between Del Norte and southern Humboldt Counties in Northern California



6–9 April Atmospheric River

For California DWR's AR Program

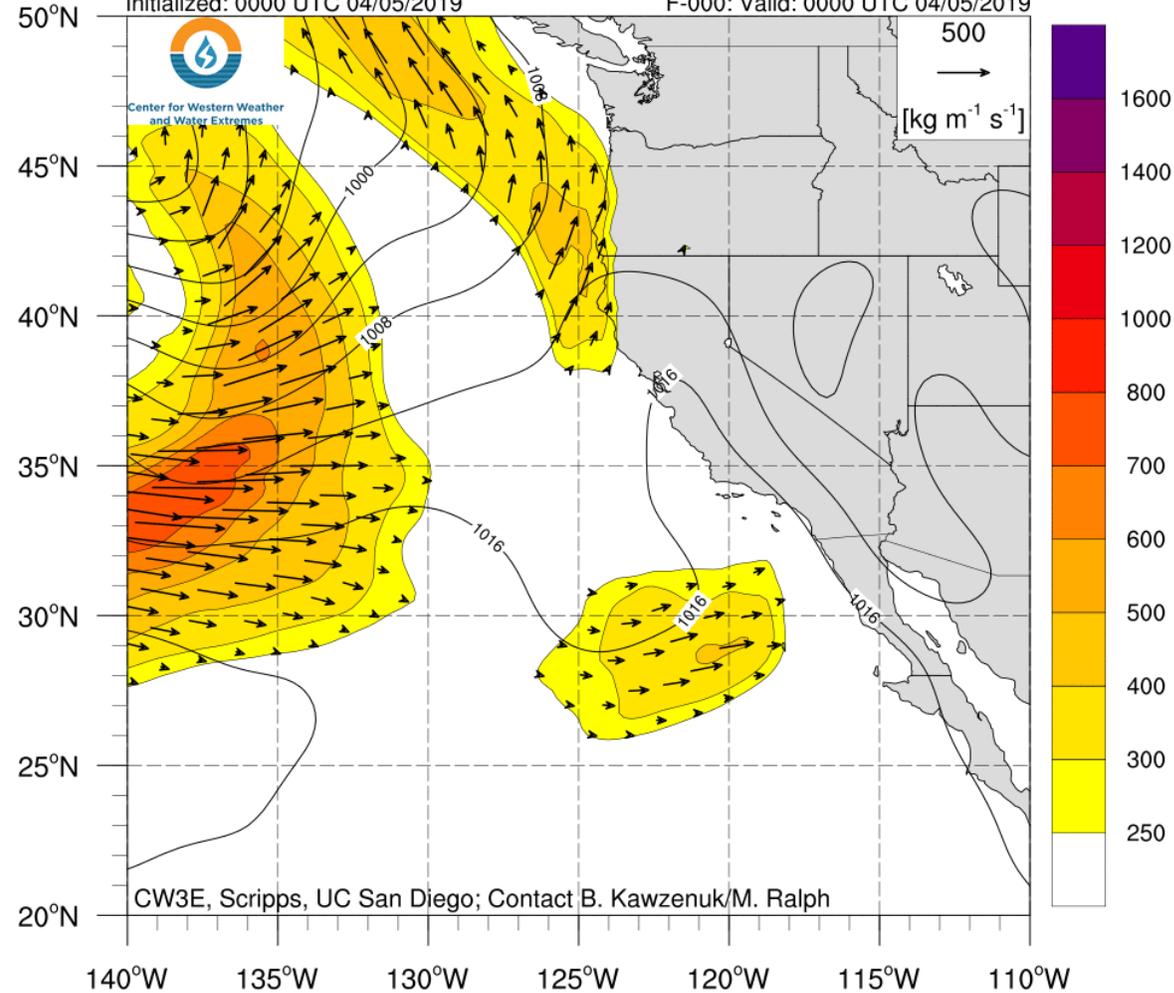


Center for Western Weather
and Water Extremes
SCRIPPS INSTITUTION OF OCEANOGRAPHY
AT UC SAN DIEGO

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

Initialized: 0000 UTC 04/05/2019

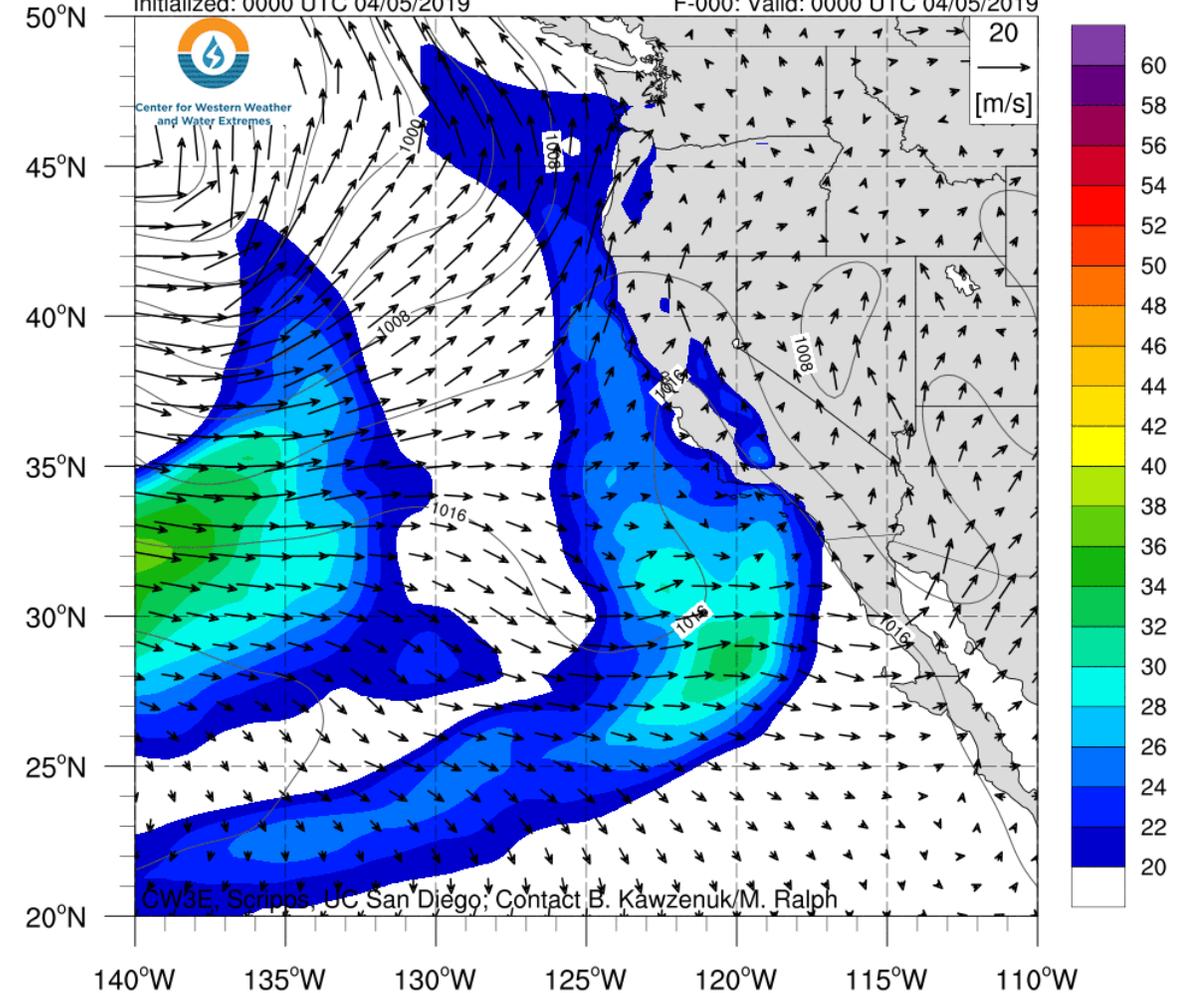
F-000: Valid: 0000 UTC 04/05/2019



NCEP GFS IWV (mm; shaded), 850-hPa Wind (vectors), and SLP (hPa; contours)

Initialized: 0000 UTC 04/05/2019

F-000: Valid: 0000 UTC 04/05/2019

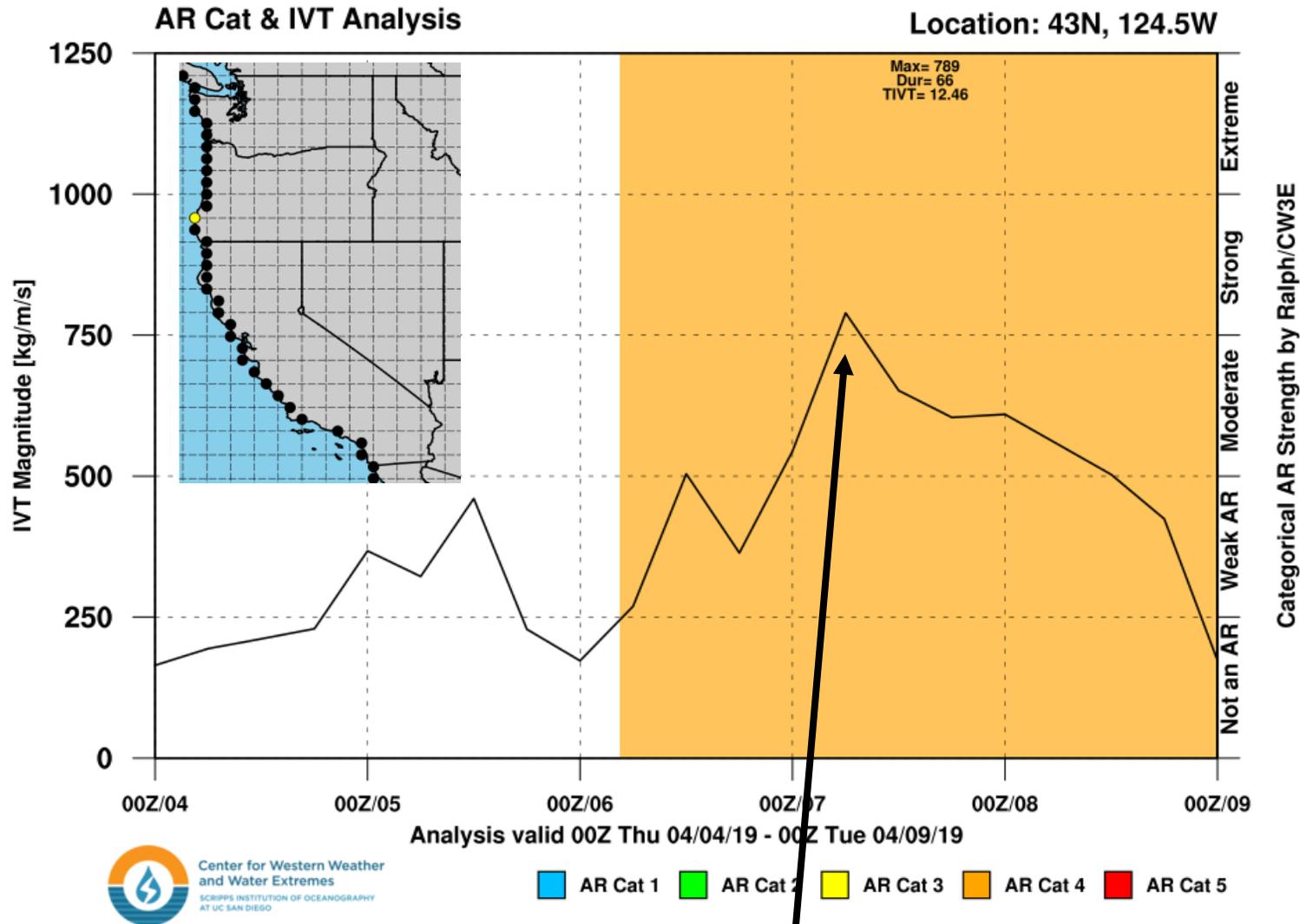


6–9 April Atmospheric River

For California DWR's AR Program

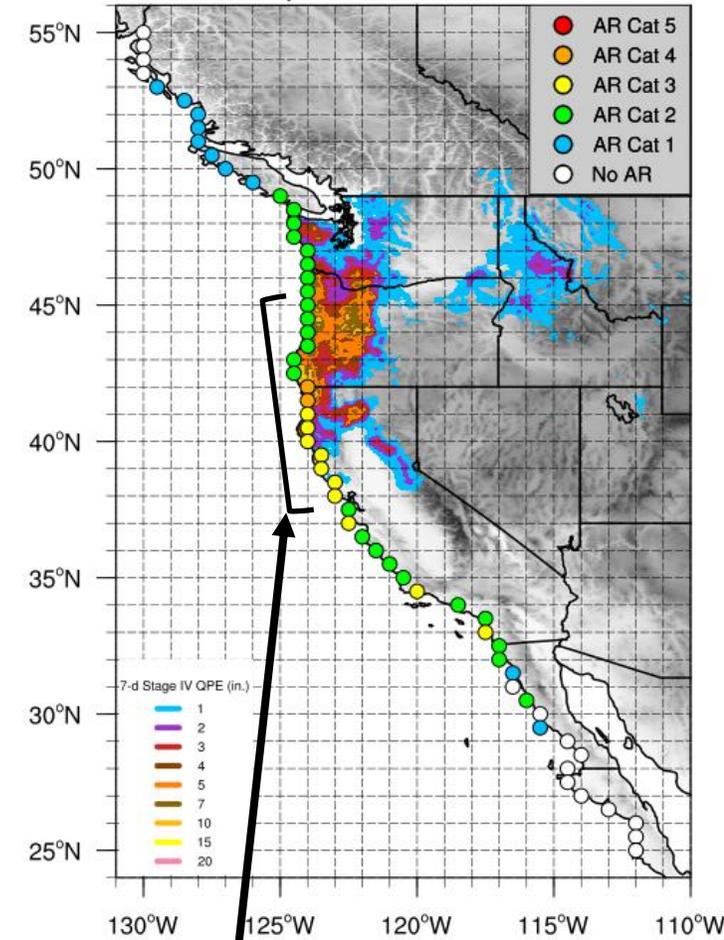


Center for Western Weather and Water Extremes
SCRIPPS INSTITUTION OF OCEANOGRAPHY
AT UC SAN DIEGO



Observed AR Category

Analysis valid: 12Z 04/01/2019 - 12Z 04/08/19

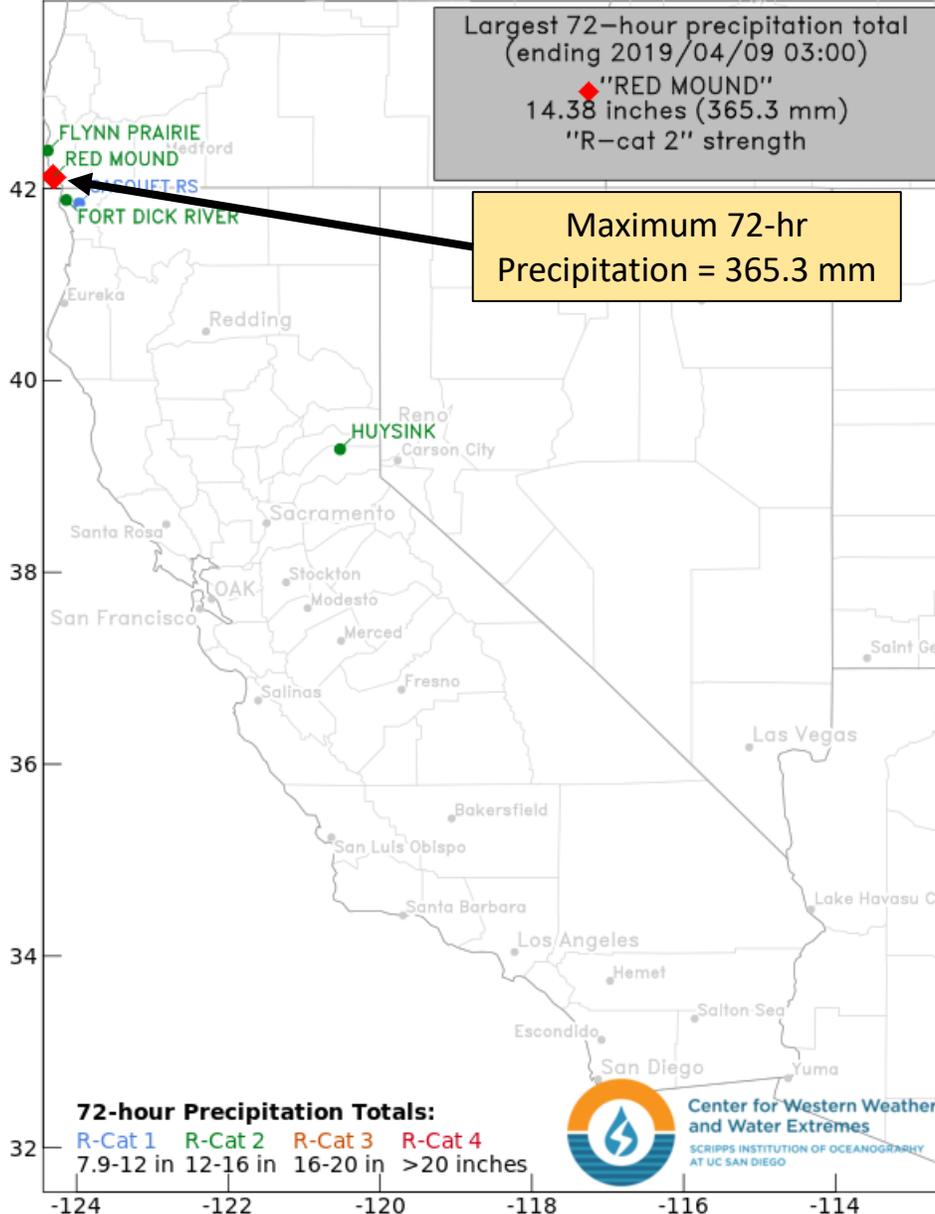


The landfalling AR produced a maximum IVT magnitude of $789 \text{ kg m}^{-1} \text{ s}^{-1}$ and a duration of AR conditions of 66 hours, which results in an AR Category 4 event based on the recently published AR Category Scale (Ralph et al. 2019)

Numerous other coastal locations across Oregon and Northern CA experienced AR Cat 1–3 conditions

6–9 April Atmospheric River

R-Cat report produced 2019/04/09 05:13



For California DWR's AR Program



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

Five rain gauges in northern California and southern Oregon experienced at least a Rainfall Category 1 event over the past 72 hours.

Four locations (Red Mound, OR; Huysink, CA; Fort Dick River, CA; Flynn Prairie, OR) observed R-Cat 2 events (300–400 mm) and Gasquet RS observed a R-Cat 1 event (200-300 mm) over the past 72 hours.

The highest 72-hour accumulated precipitation, observed at Red Mound, OR, was 365.3 mm (14.38 inches). Daily accumulations over the past three days at this location were 107.4 mm (06 April), 148.1 mm (07 April) and 109.7 mm (08 April).

To subscribe to this automated CW3E R-Cat Extreme Precipitation Alert via email: just email a message with subject "subscribe" to rcatalert@cirrus.ucsd.edu.

6-9 April Atmospheric River

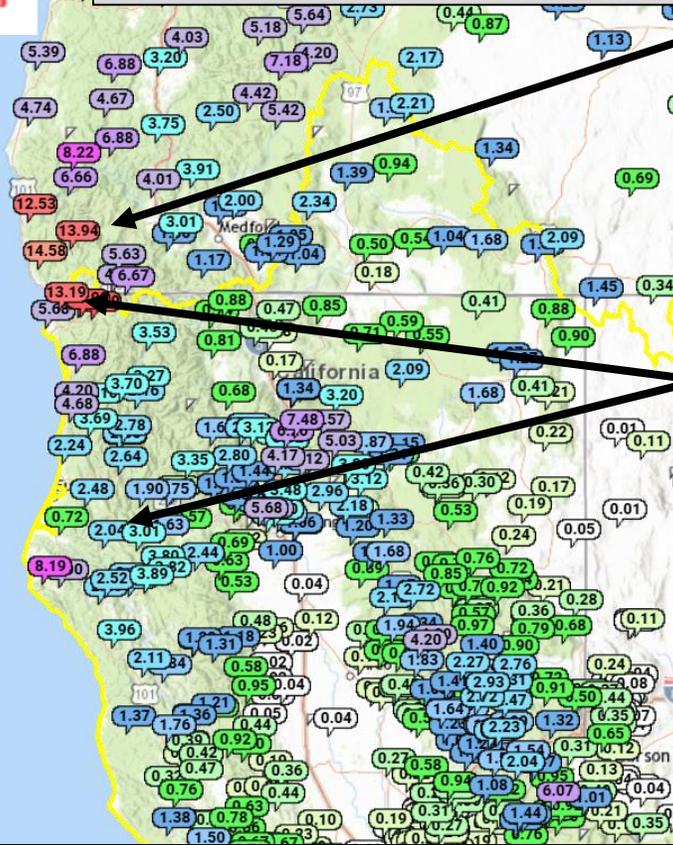
For California DWR's AR Program



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



96-Hour QPE
Valid ending 10 AM PDT 09 April



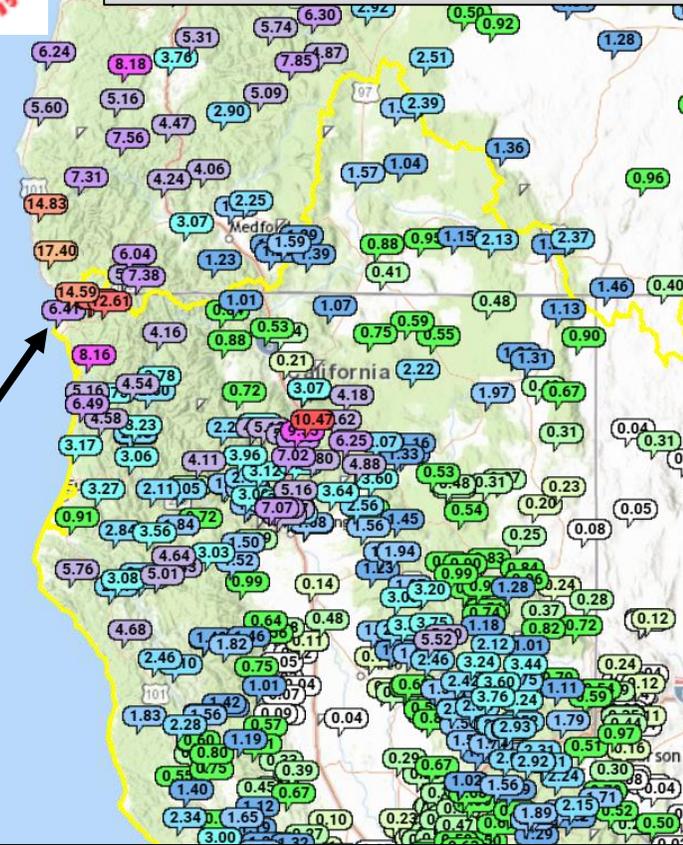
Numerous rain gauges across Northern California and Southern Oregon received >5 inches of precipitation in association with the AR

The landfall location and limited southward propagation resulted in a large North-South gradient in precipitation maxima (13.19 in. over Fort Dick and ~2 in. over Bridgeville; ~150 km)

A weaker AR that brought precipitation to Northern CA earlier in the week combined with the 6 - 9 April AR to result in 7-day precipitation accumulations of >12 inches in coastal OR and Northern CA



6-Day QPE
Valid ending 10 AM PDT 09 April



QPE Products from California-Nevada River Forecast Center. Cnrfc.noaa.gov

6–9 April Atmospheric River

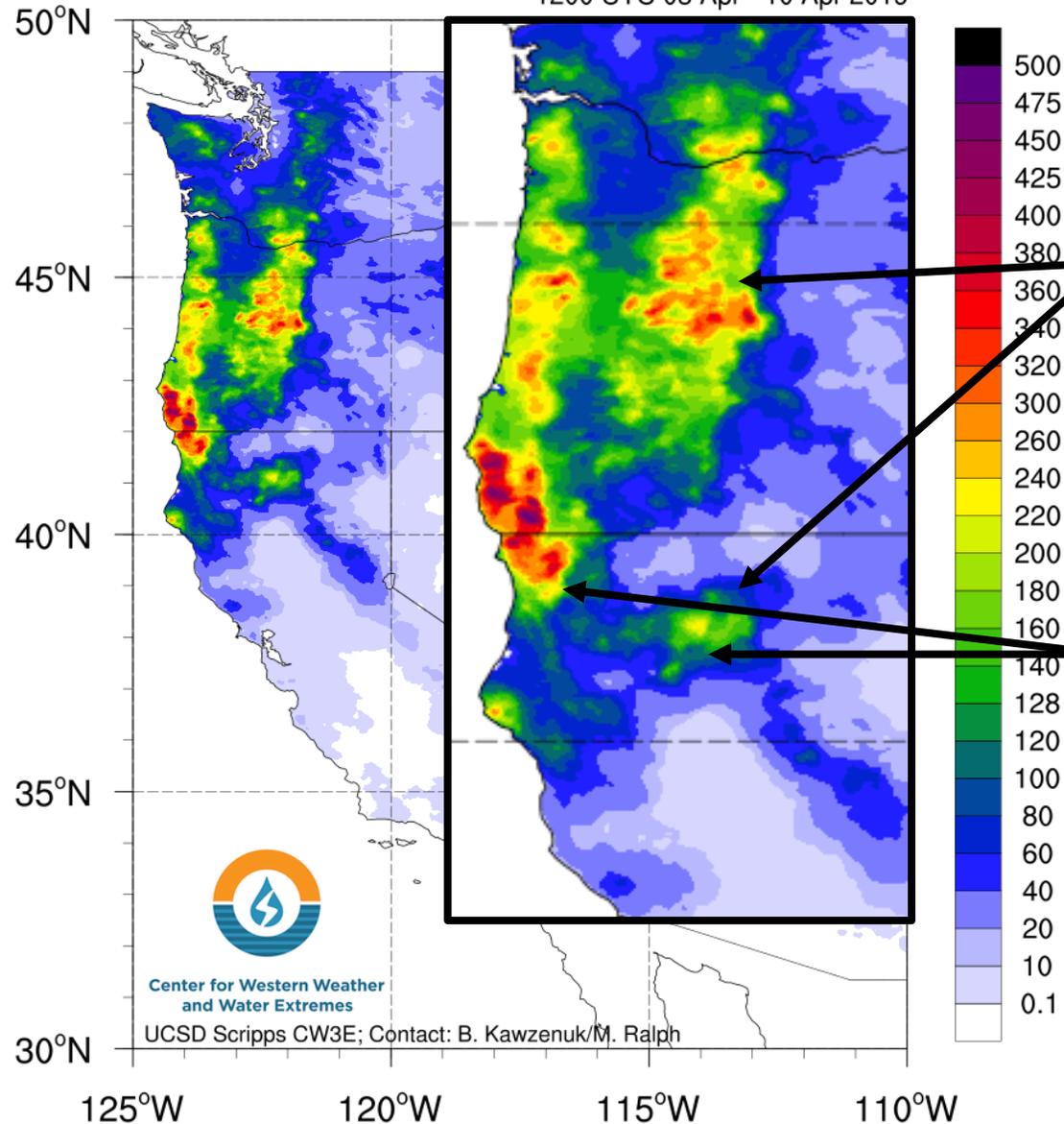
For California DWR's AR Program



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

7-day Accumulated Precipitation (mm)

1200 UTC 03 Apr - 10 Apr 2019



NCEP Stage IV QPE shows 7-day accumulated precipitation amounts greater than 450 mm over northwest CA and SW OR and greater than 200 mm over the Shasta Trinity National Forest and the Coastal and Cascade ranges of OR.

Due to the landfall location and lack of southward propagation of the AR that was a sharp southern edge in the accumulated precipitation.

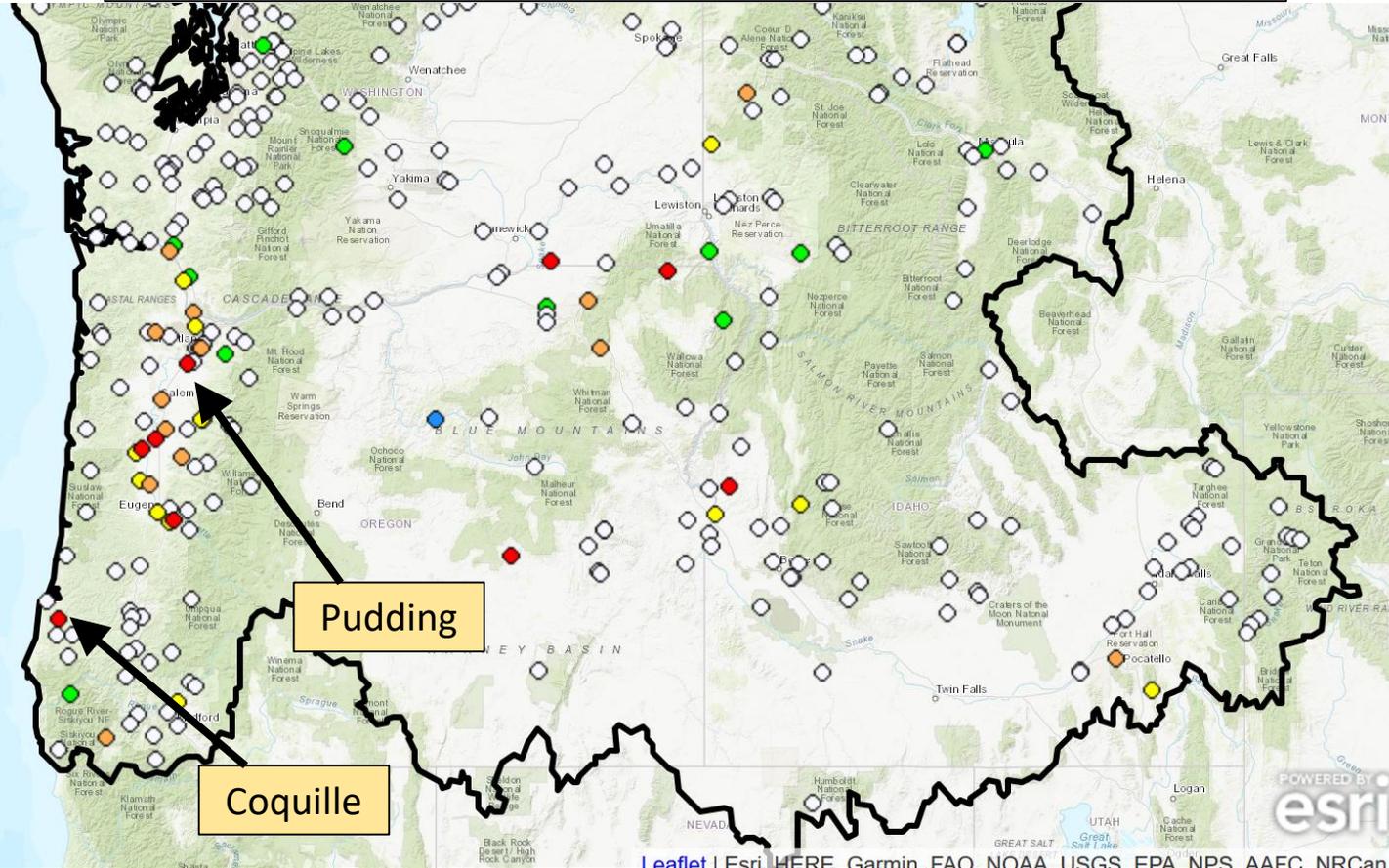
6–9 April Atmospheric River

For California DWR's AR Program

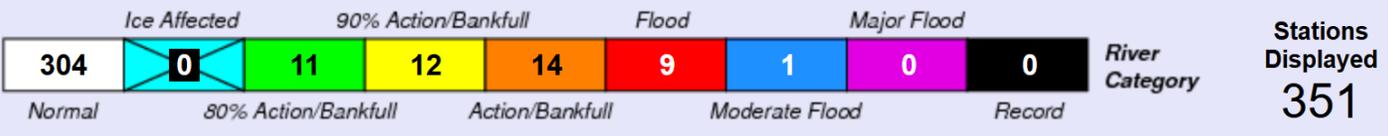


Center for Western Weather and Water Extremes
SCRIPPS INSTITUTION OF OCEANOGRAPHY
AT UC SAN DIEGO

Observed Streamflow – Northwest River Forecast Center



Ten river gauges throughout OR and WA reached flood stage (1 over moderate flood) and an additional 14 reached Action/Bankfull



River gauge data from Northwest River Forecast Center. nwrfc.noaa.gov

6-9 April Atmospheric River

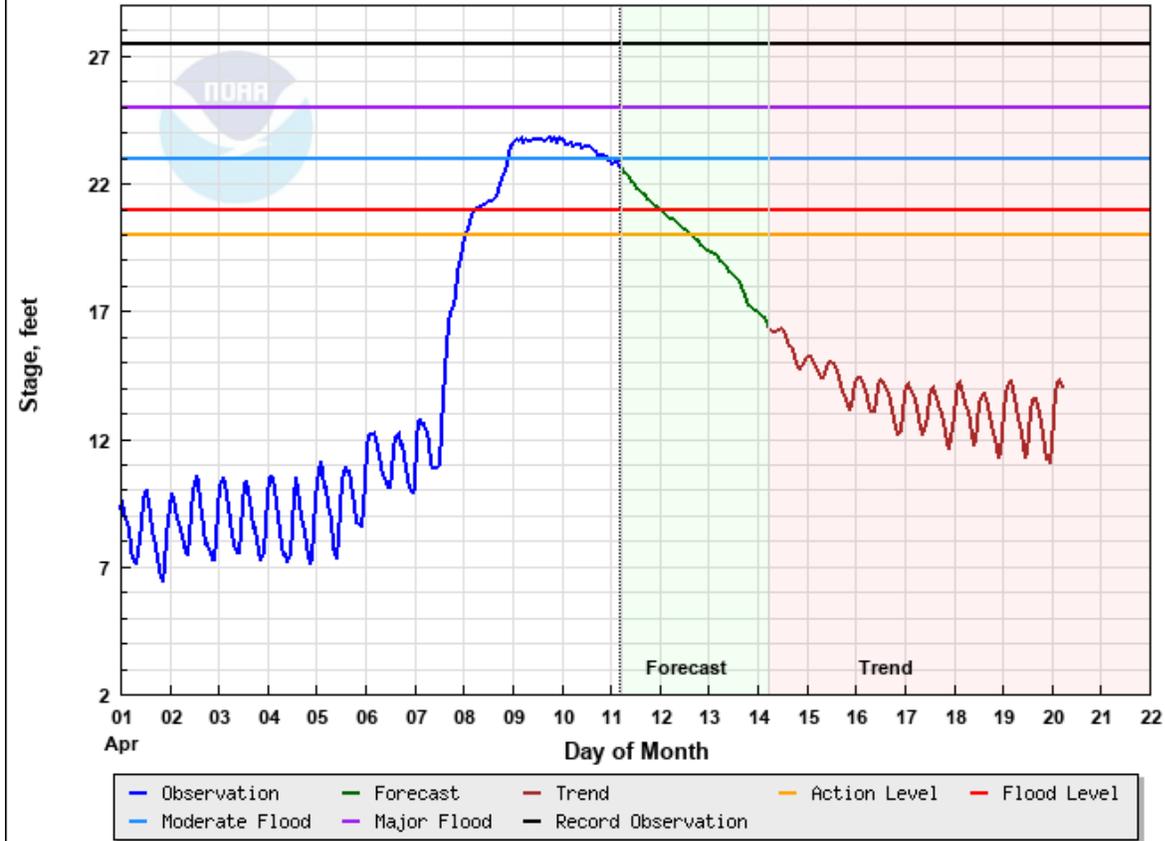
For California DWR's AR Program



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

COQUILLE - AT COQUILLE (COQO3)

Latest Observation: 22.73 ft 04/11/2019 04:30 PDT

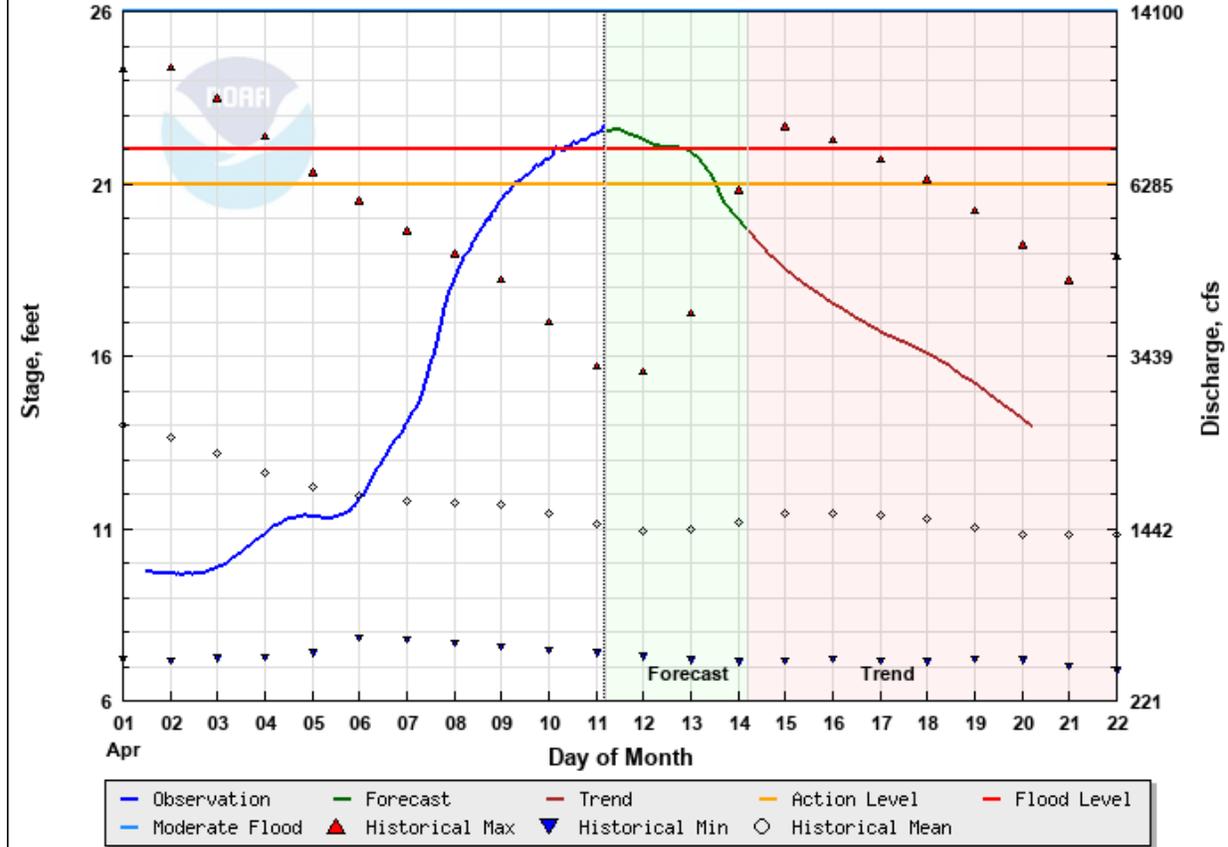


Forecast Created: 04/11/2019 01:53 PDT
Plot Created: 04/11/2019 05:36 PDT

The Coquille River reached ~23.9 feet, ~0.9 foot above moderate flood stage and the Pudding River reached ~22.8 feet, ~0.8 feet above flood stage (22 feet).

PUDDING - AT AURORA (AURO3)

Latest Observation: 22.68 ft 04/11/2019 05:00 PDT



Forecast Created: 04/11/2019 04:54 PDT
Plot Created: 04/11/2019 05:47 PDT

River gauge data from Northwest River Forecast Center. nwrffc.noaa.gov