

CW3E Atmospheric River Outlook

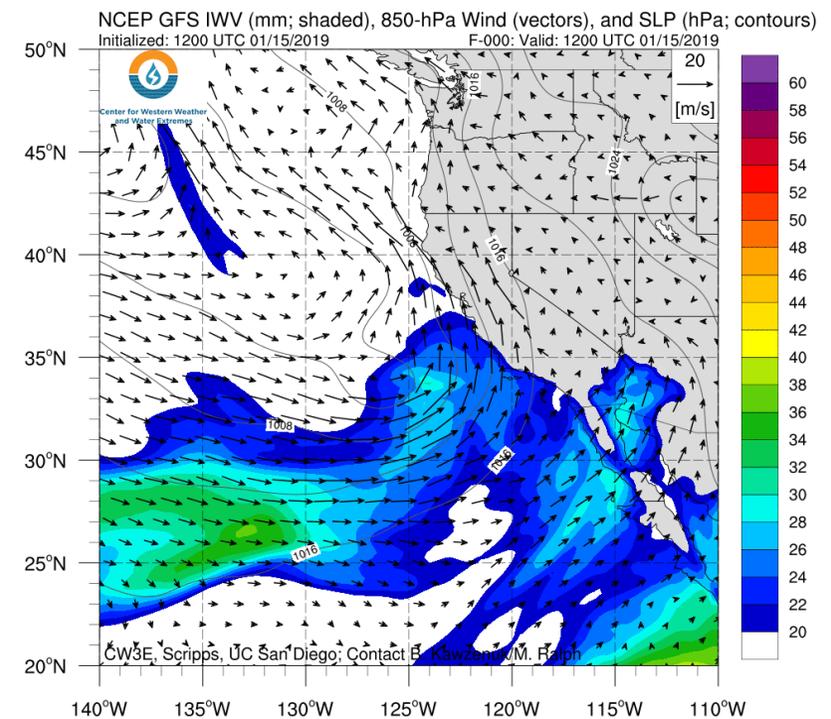
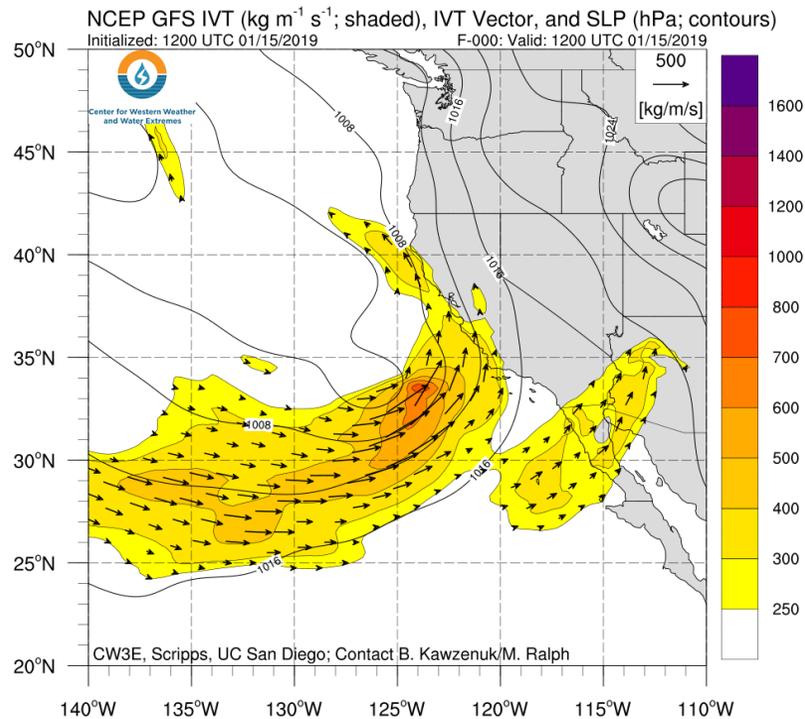
For California DWR's AR Program



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

Two ARs forecast impact the US West Coast over the next six days

- A moderate strength AR is expected to make landfall over the U.S. West Coast during 17-18 January.
- This AR is expected to produce up to 10 inches of precipitation over the Sierra Nevada in 72 hours.
- A second AR is expected to make landfall over the Pacific Northwest during 19-20 January.
- An additional 1-2 inches of precipitation over CA and 4-5 inches of precipitation in WA and OR could be produced from the second AR.
- Lake Mendocino storage levels are currently near the top of the Water Supply Pool and precipitation this week could push storage levels into the Flood Control Pool.



Outlook provided by B. Kawzenuk, J. Kalansky, and F.M. Ralph; 3 PM PT 15 January 2019

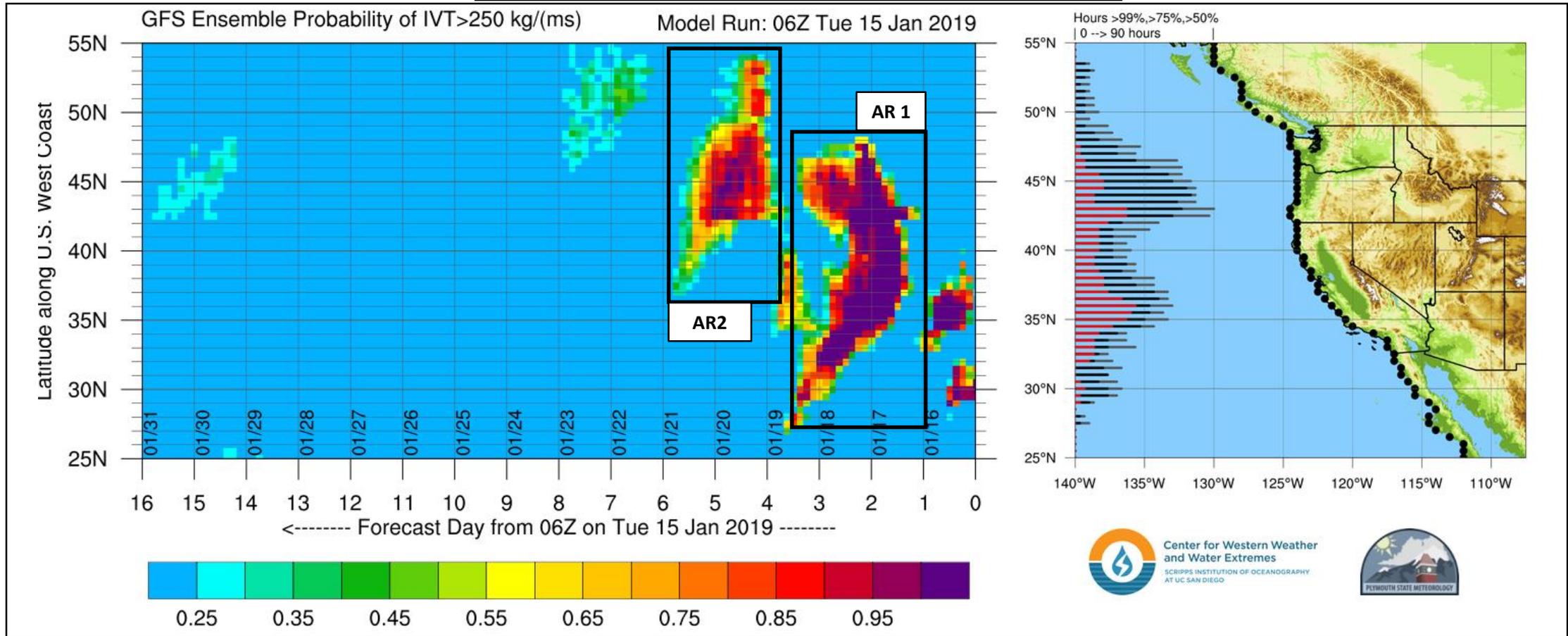
AR Outlook: 15 January 2019

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Odds of AR Conditions Along U.S. West Coast



The remnants of a previous AR are expected to continue to bring weak AR conditions to southern CA for the next 24 hours.

There is high probability (>95%) of another AR (AR 1) to make landfall over the U.S. West Coast during 17-18 January.

There is also high probability (85-100%) of a second AR (AR 2) to make landfall during 19-20 January, however this AR will impact the Pacific Northwest more than CA.

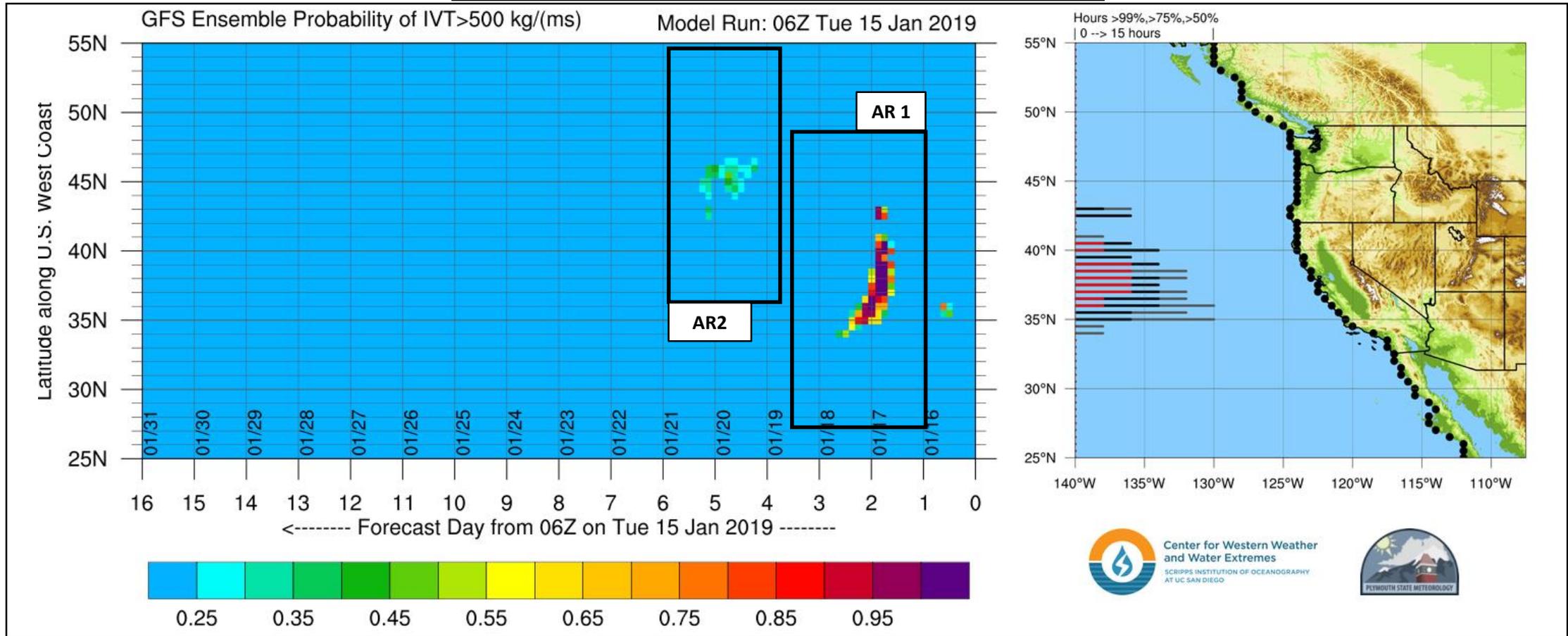
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Odds of Moderate AR Conditions Along Coast

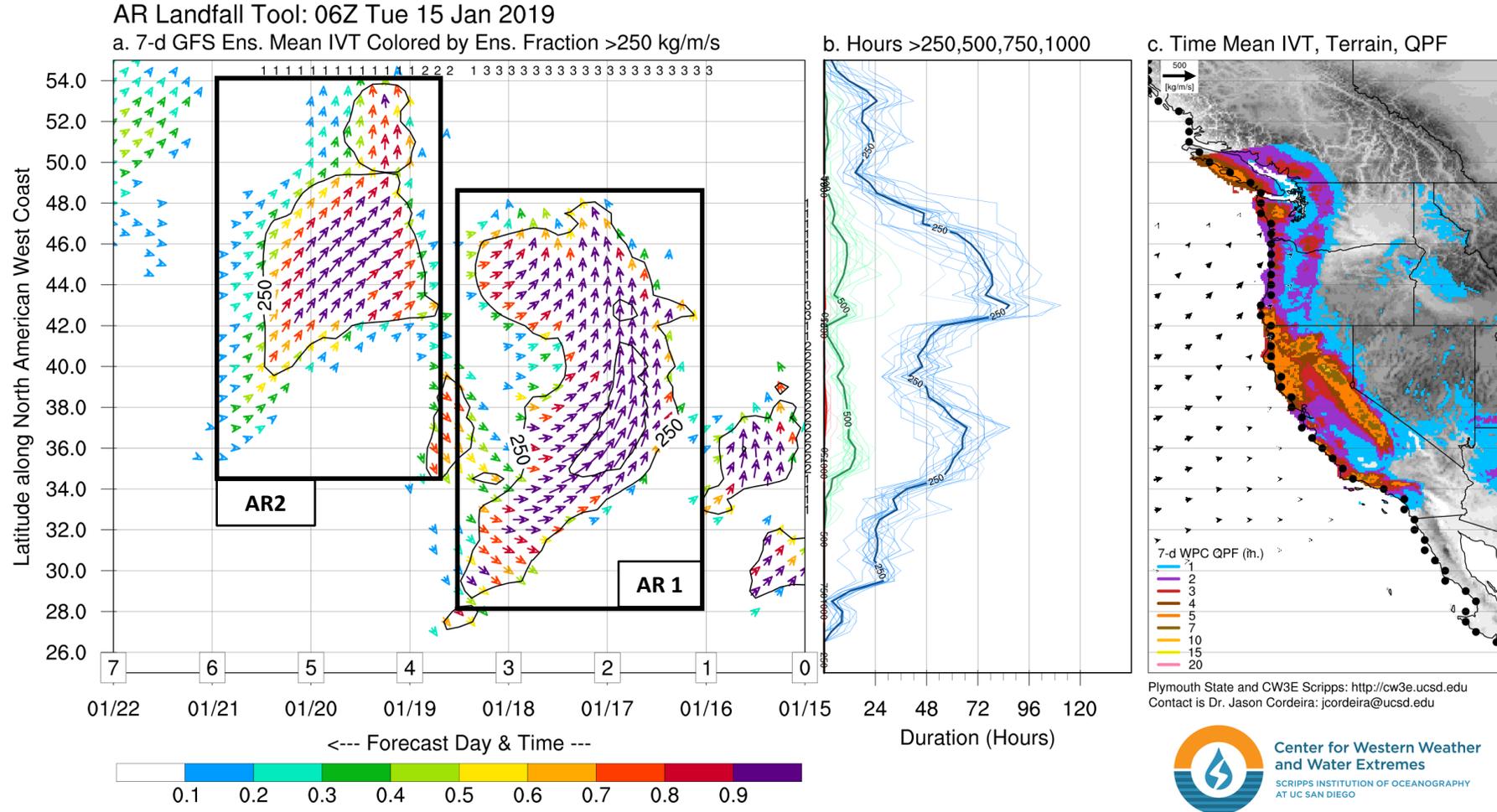


There is high probably (>95%) that AR 1 will produce moderate strength AR conditions over central and northern CA.

Forecast certainty of moderate AR conditions during AR 2 is currently low (< 45%).



Odds of AR Conditions Along U.S. West Coast



IVT orientation is expected to be southwesterly during most of the AR 1 and 2. This orientation is ideal for orographic enhancement of precipitation over much of the Coastal and Sierra Nevada Mountains in CA, which could result in high precipitation accumulations over the next six days.

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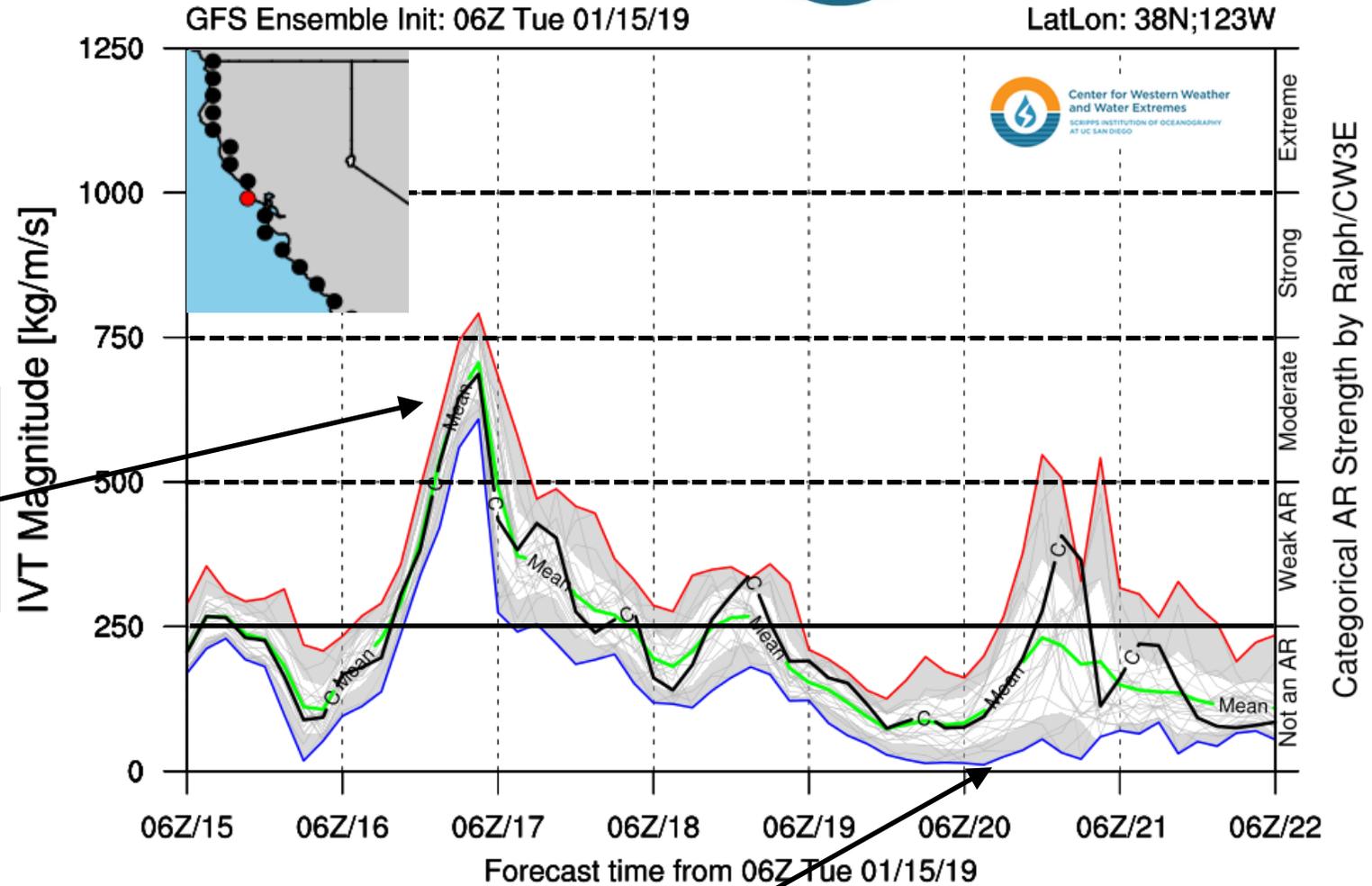
The GEFS is currently forecasting moderate AR conditions with a few ensemble members suggesting strong AR conditions over the Russian River watershed during 16-17 January.

Magnitude of AR 1 (16-17 January)

- Maximum predicted IVT $\sim 775 \text{ kg m}^{-1} \text{ s}^{-1}$
- Mean IVT $\sim 700 \text{ kg m}^{-1} \text{ s}^{-1}$
- Minimum IVT $\sim 625 \text{ kg m}^{-1} \text{ s}^{-1}$

Forecast Duration of AR Conditions during AR 1

- Weak 30 hours \pm 9
- Moderate 9 hours \pm 3



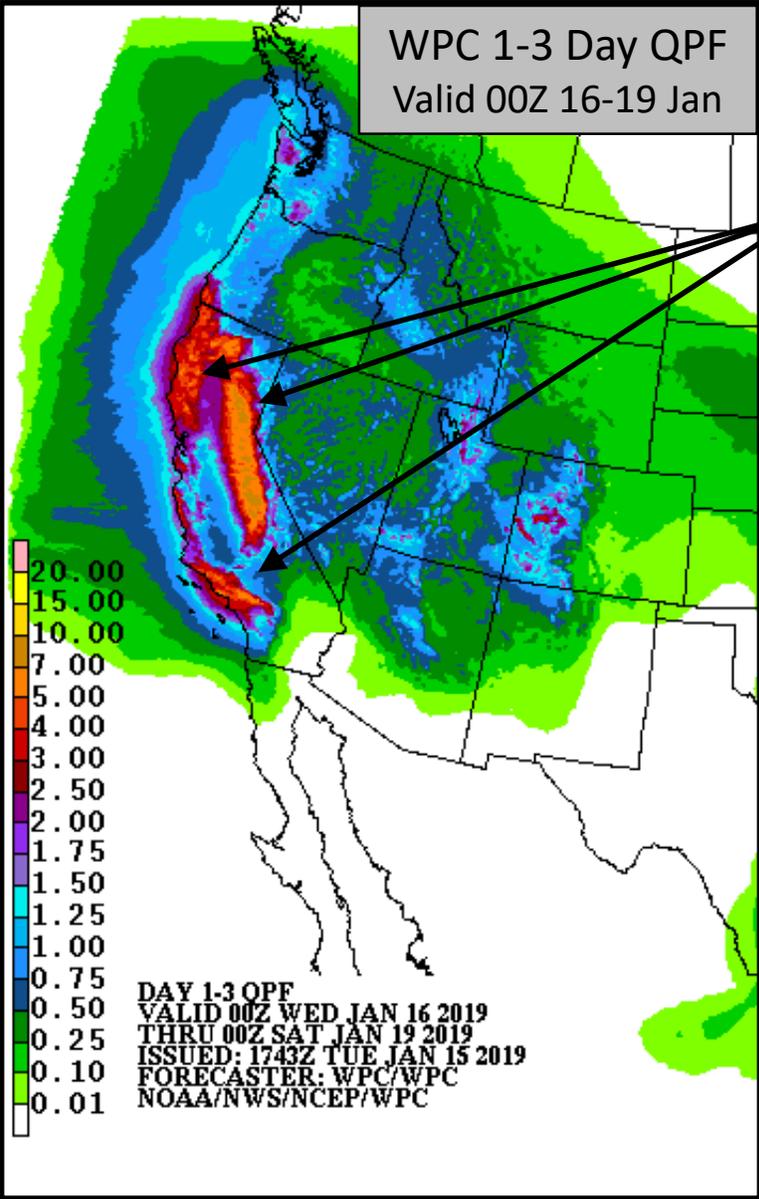
Forecast certainty of magnitude and timing of AR conditions from the southern edge of AR2 during 20-21 January are currently low.

AR Outlook: 15 January 2019



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WPC 1-3 Day QPF
Valid 00Z 16-19 Jan



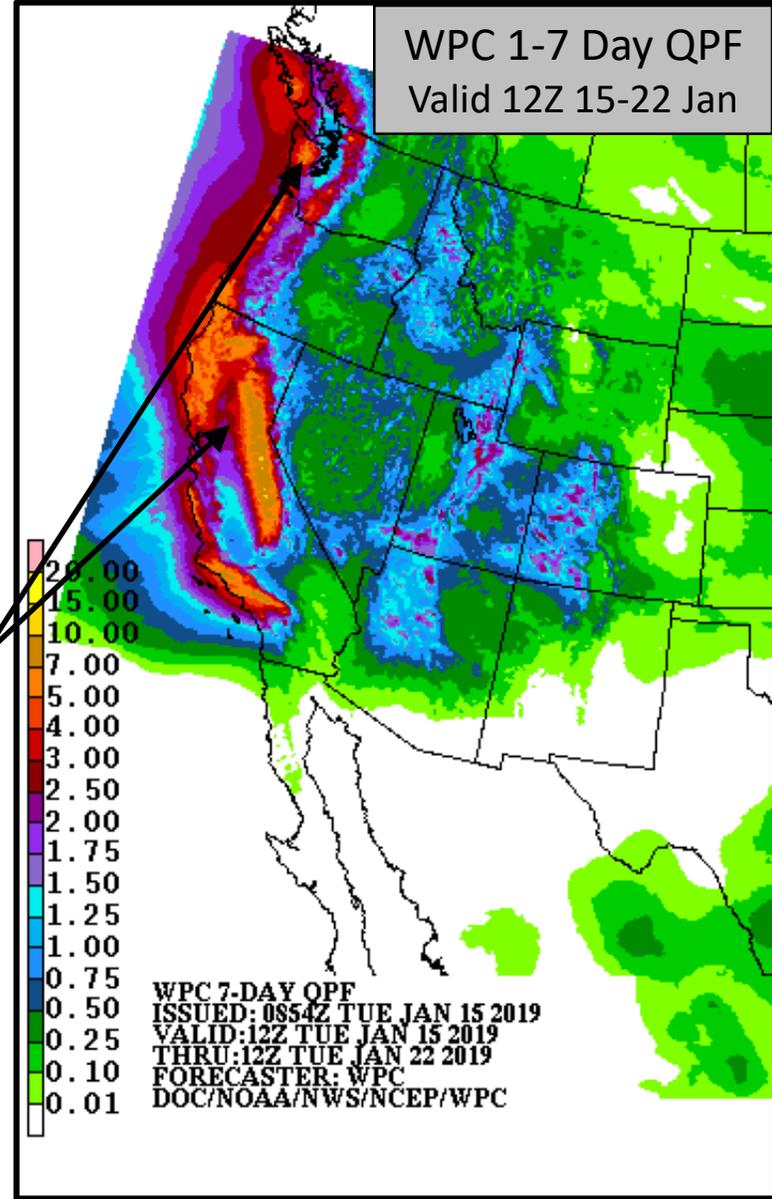
DAY 1-3 QPF
VALID 00Z WED JAN 16 2019
THRU 00Z SAT JAN 19 2019
ISSUED: 1743Z TUE JAN 15 2019
FORECASTER: WPC/WPC
NOAA/NWS/NCEP/WPC

The first AR to make landfall along the U.S. West Coast is predicted to produce up to 10 inches of precipitation over the Sierra Nevada and up to 7 inches of precipitation over the Coastal Mountains and Transverse Ranges in CA.

The second AR is expected to be further north than AR 1 and the heaviest precipitation will be over northern CA, OR and WA. The Olympic and Cascade Mountains are expected to receive an additional 4-5 inches of precipitation while higher elevations in CA could see an additional 1-2 inches of precipitation from AR2.

NOAA Weather Prediction Center forecast products are located at wpc.ncep.noaa.gov

WPC 1-7 Day QPF
Valid 12Z 15-22 Jan



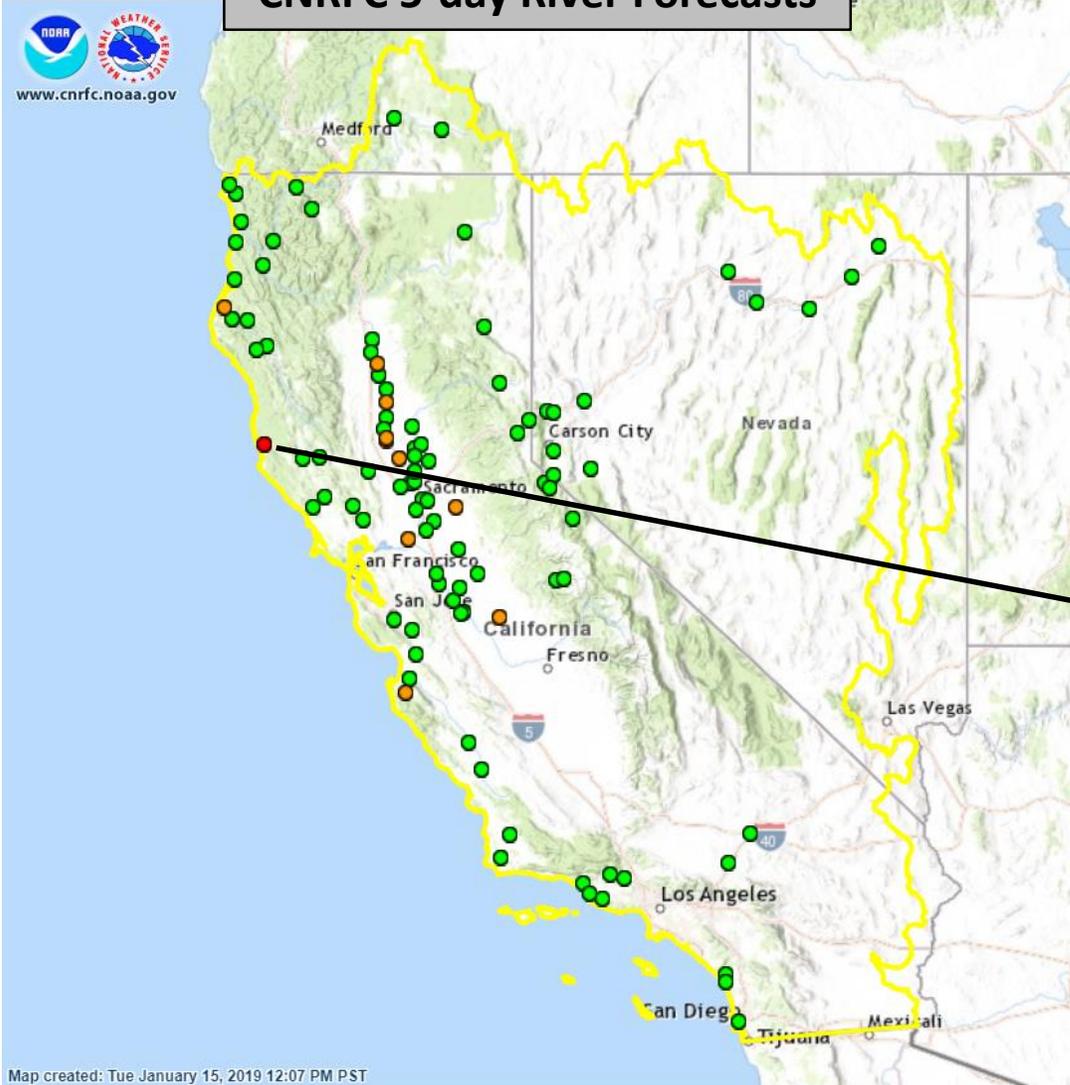
WPC 7-DAY QPF
ISSUED: 0854Z TUE JAN 15 2019
VALID: 12Z TUE JAN 15 2019
THRU: 12Z TUE JAN 22 2019
FORECASTER: WPC
DOC/NOAA/NWS/NCEP/WPC

AR Outlook: 15 January 2019



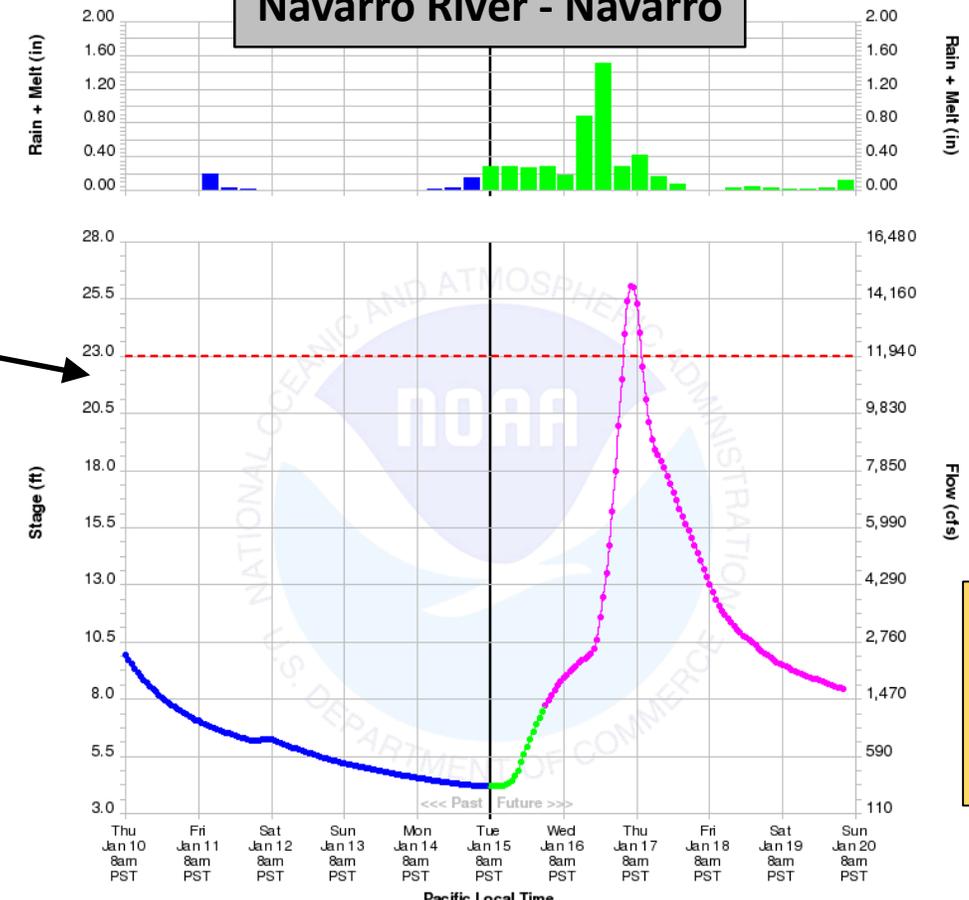
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CNRFC 5-day River Forecasts



Currently 1 river in the CNRFC forecast region is predicted to rise above flood stage and 10 above monitor stage over the next 5 days. The Navarro River is currently predicted to rise to 26.1 feet, 3.1 feet above flood stage. This flooding would likely result in the closure of Highway 128.

Navarro River - Navarro



CNRFC forecast products are located at cnrfc.noaa.gov

Map created: Tue January 15, 2019 12:07 PM PST

 No Monitor or Flood Stage Available
 Normal Conditions
 Above Monitor Stage
 Above Flood Stage
 Above Danger Stage

The number inside each circle above represents the number of gages with forecast conditions inside that category.

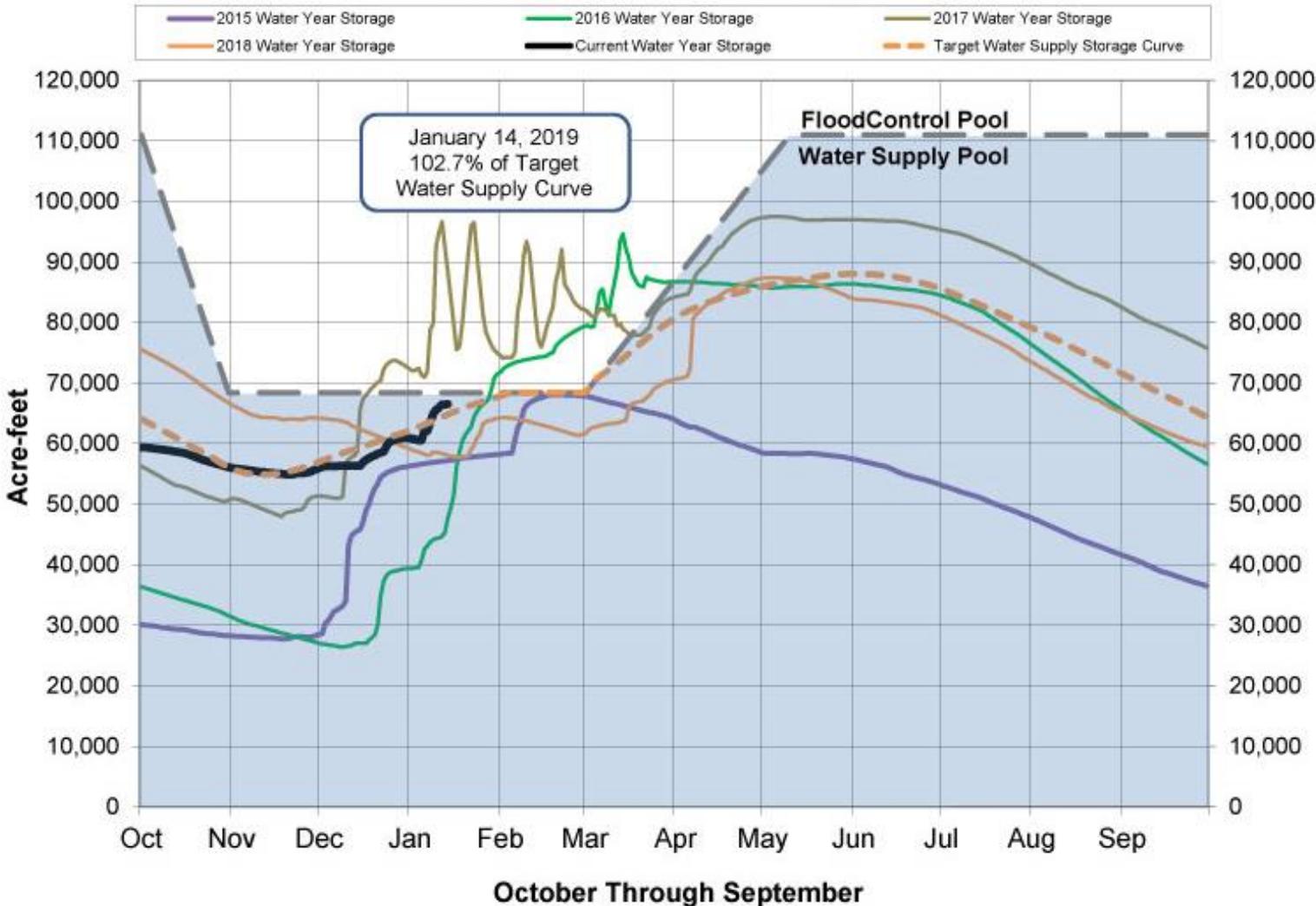
Observed: ● Forecast: ● Guidance: ● Flood: -
 Created: 01/15/2019 at 8:05 AM PST (NVRFC1 Forecast Run Time = 1558Z)
 California Department of Water Resources
 NOAA / NWS / California Nevada River Forecast Center

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Lake Mendocino Storage



Lake Mendocino storage is currently 66,666 AF (12 UTC 15 Jan) nearly filling the water supply pool.

The catchment area of Lake Mendocino is expected to receive 4-5 inches of precipitation over the next six days. This precipitation could cause the reservoir to encroach into the existing Flood Control Pool and put FIRO into action as part of the recently approved deviation request. This deviation allows for an additional 11650 AF of additional water to be retained depending on current and forecasted conditions.

For more information on FIRO visit <http://cw3e.ucsd.edu/firo/>.