

# CBRFC Forecast Update: Fontenelle Reservoir

April 19, 2017  
Fontenelle Working Group Meeting

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National Weather Service/NOAA



# Today's Presentation

## Weather Review: Impacts to water supply

- Precipitation
- Temperature

## Snowpack Conditions

## April 2017 Water Supply Forecasts Overview

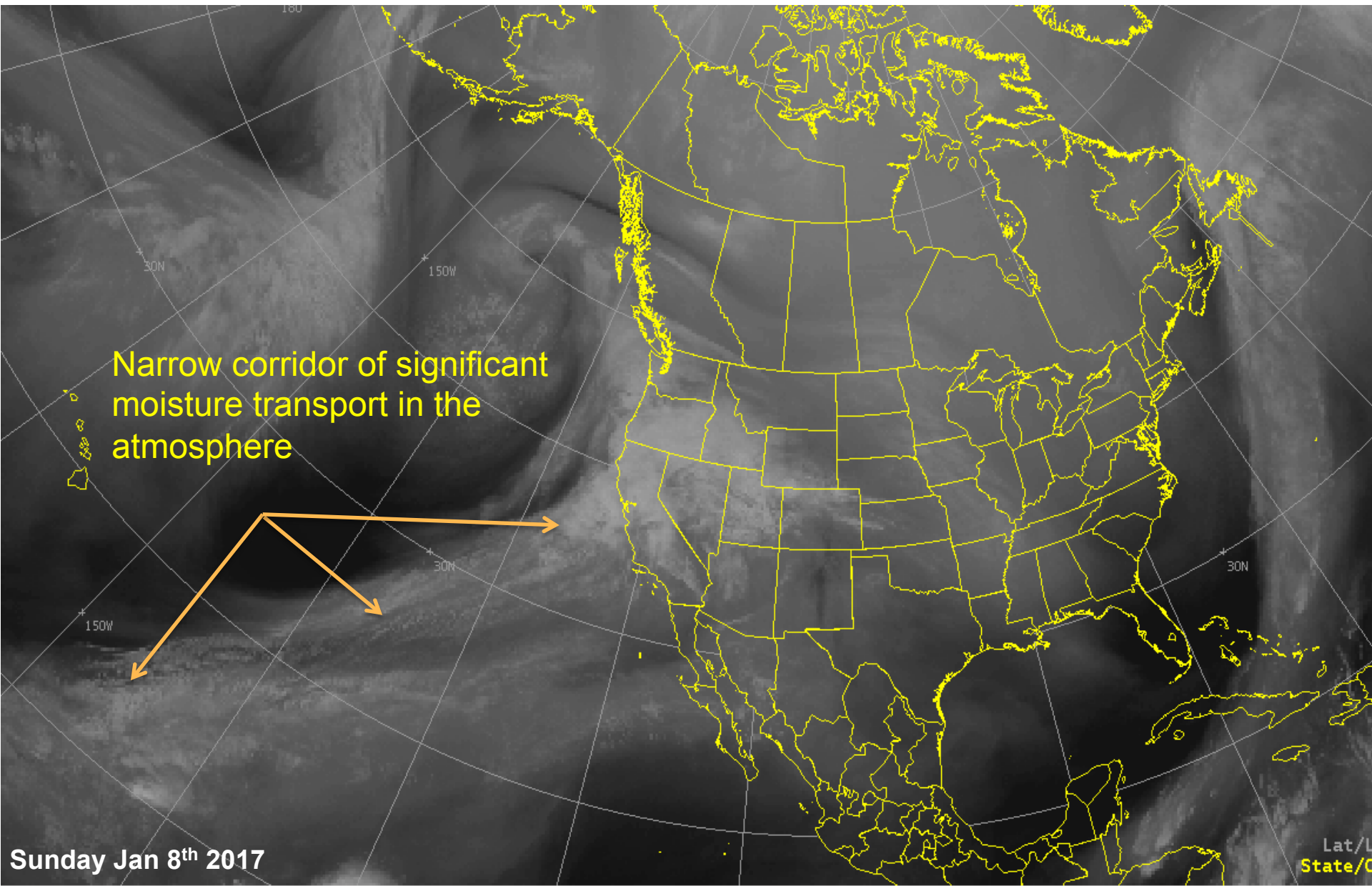
- April-July Water Supply Volumes

## How good are the forecasts?

- Forecast error and uncertainty

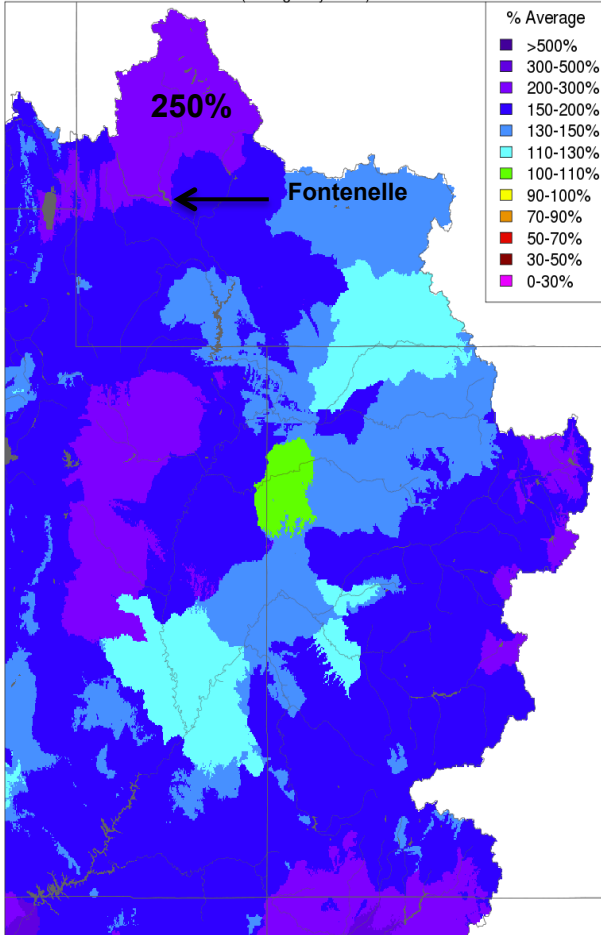
## Upcoming Weather

# Mid December through February: "Atmospheric Rivers"



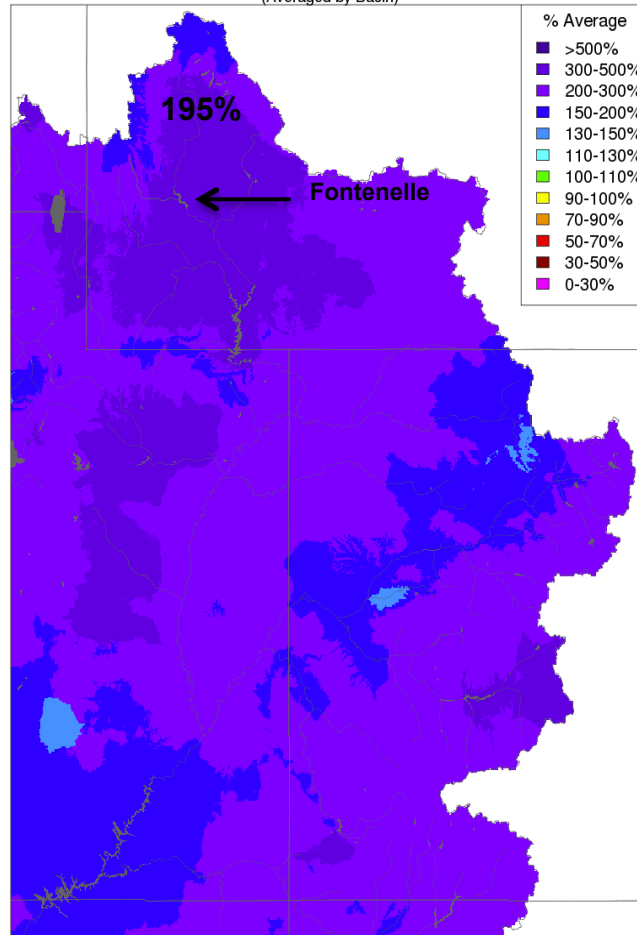
# Weather Review: Winter Precipitation (Dec-Feb)

Monthly Precipitation - December 2016  
(Averaged by Basin)



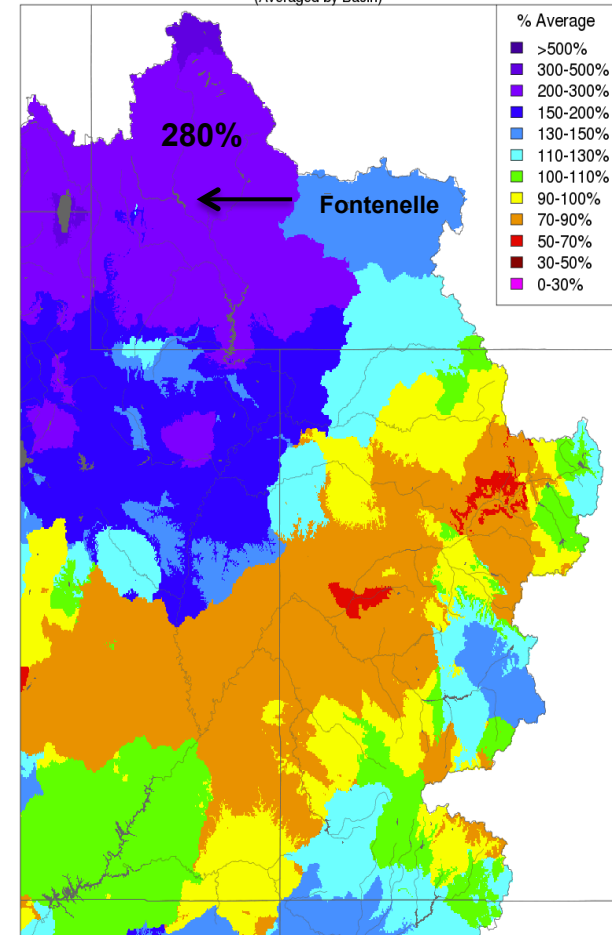
Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

Monthly Precipitation - January 2017  
(Averaged by Basin)

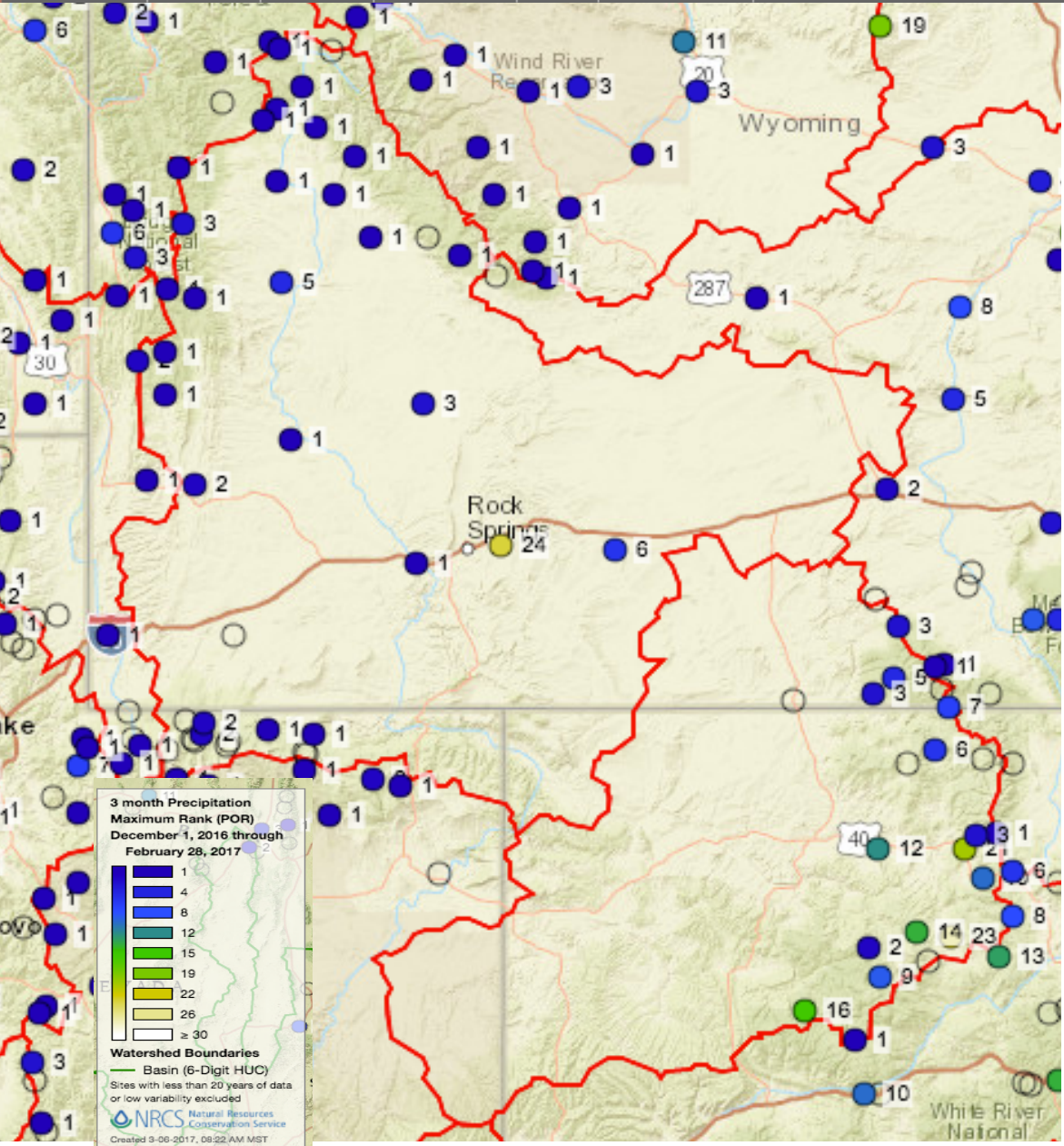


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Monthly Precipitation - February 2017  
(Averaged by Basin)



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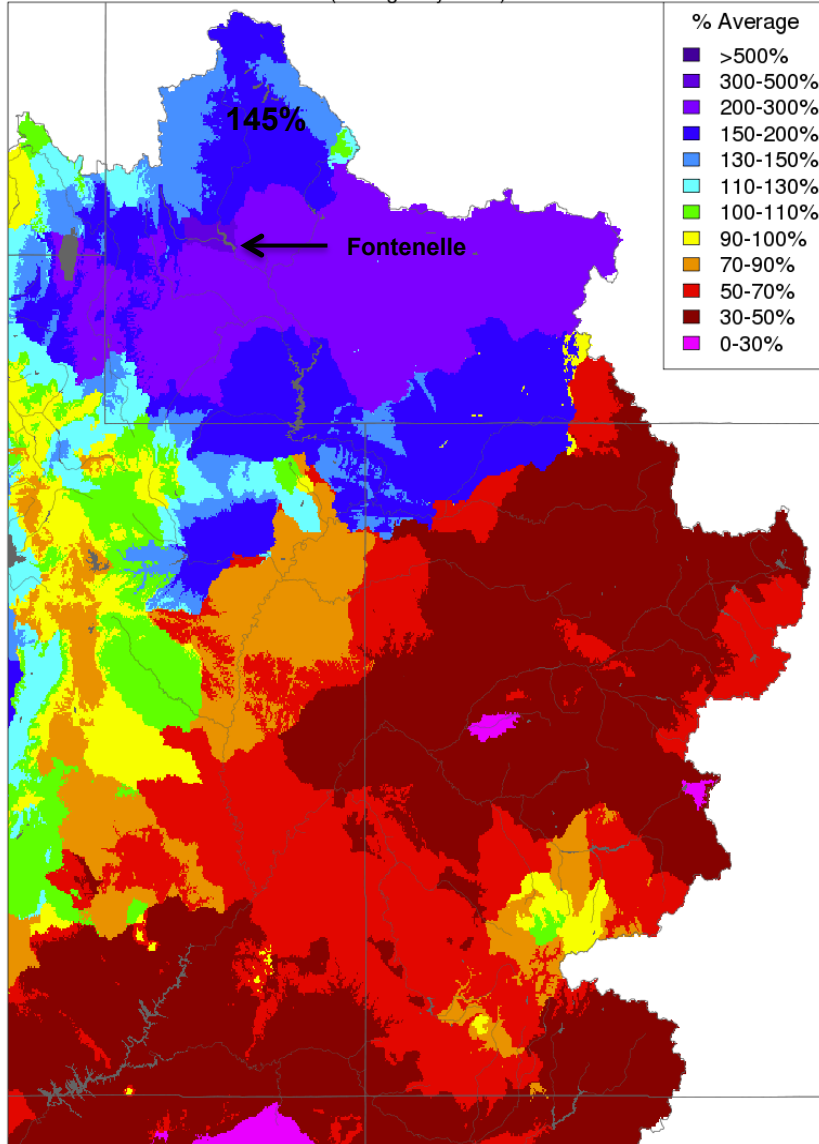


Upper Green had record precipitation for the 3 month period of Dec-Feb

# Weather Review: March Precipitation and Temperature

## Monthly Precipitation - March 2017

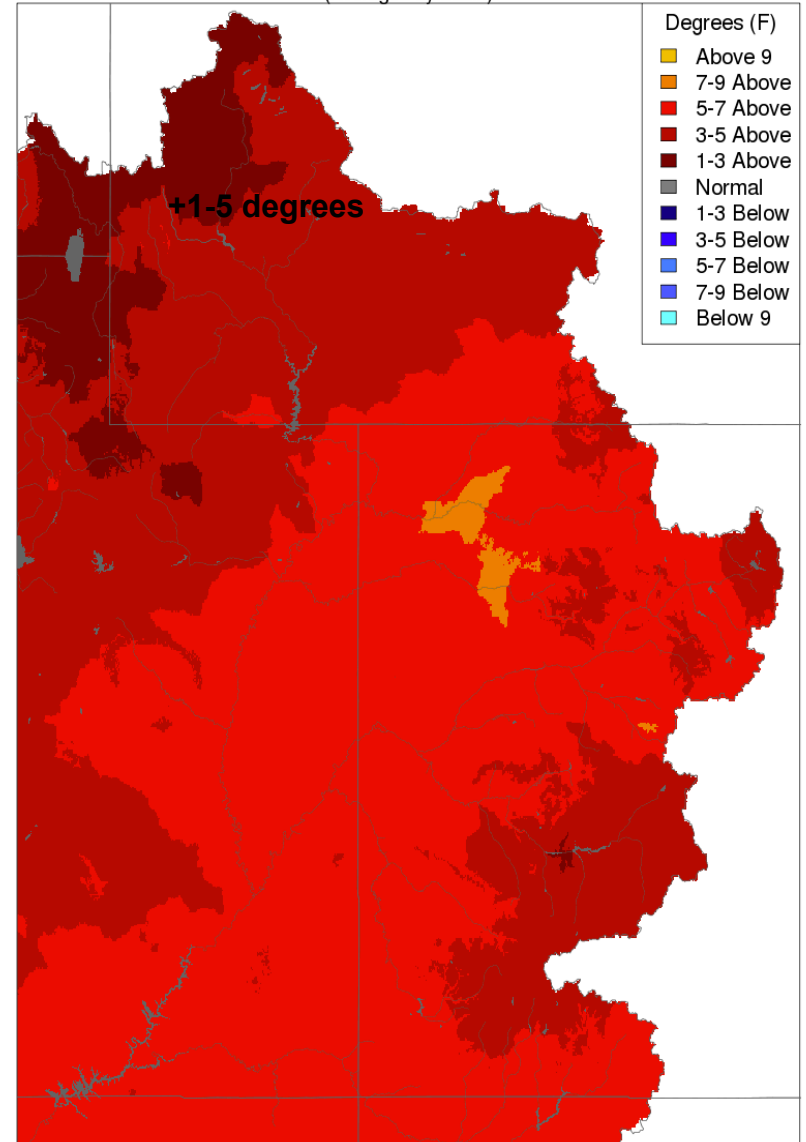
(Averaged by Basin)



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## Max Temp - Monthly Deviation - March 2017

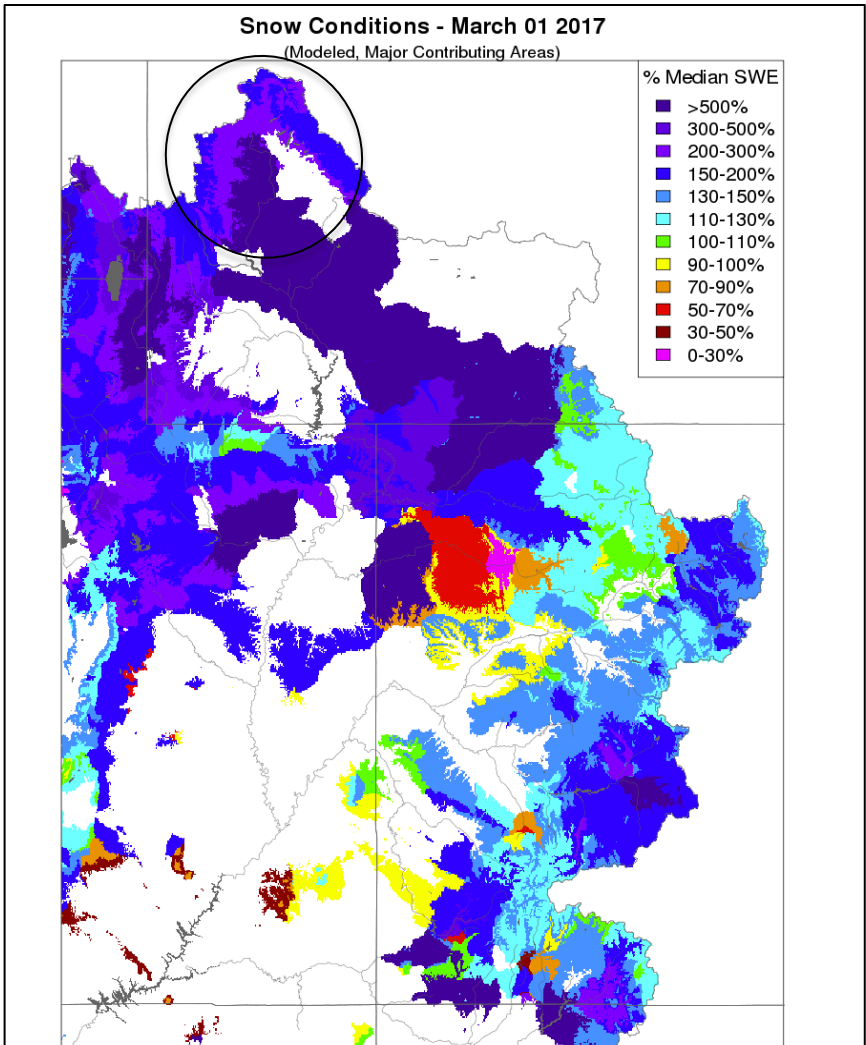
(Averaged by Basin)



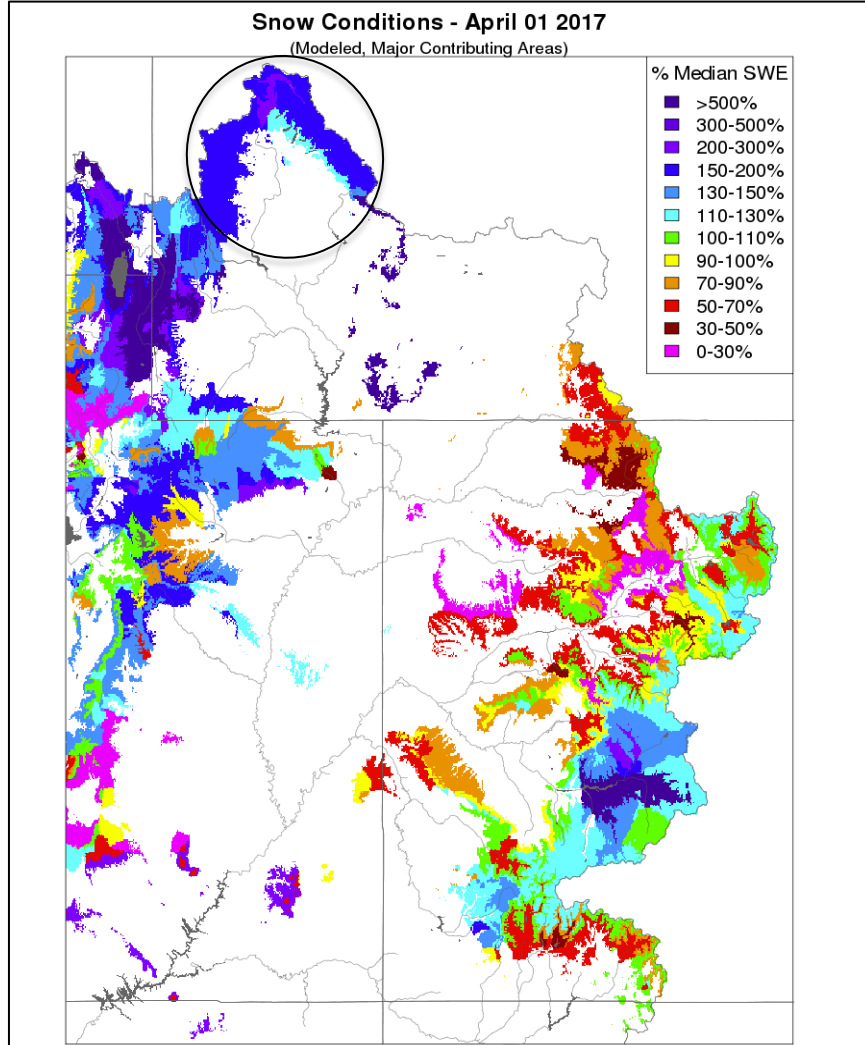
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# March Weather: Temperature Impacts to Snowpack

Reduced low elevation (<8000 ft) snow  
Significant snow remains at high elevations



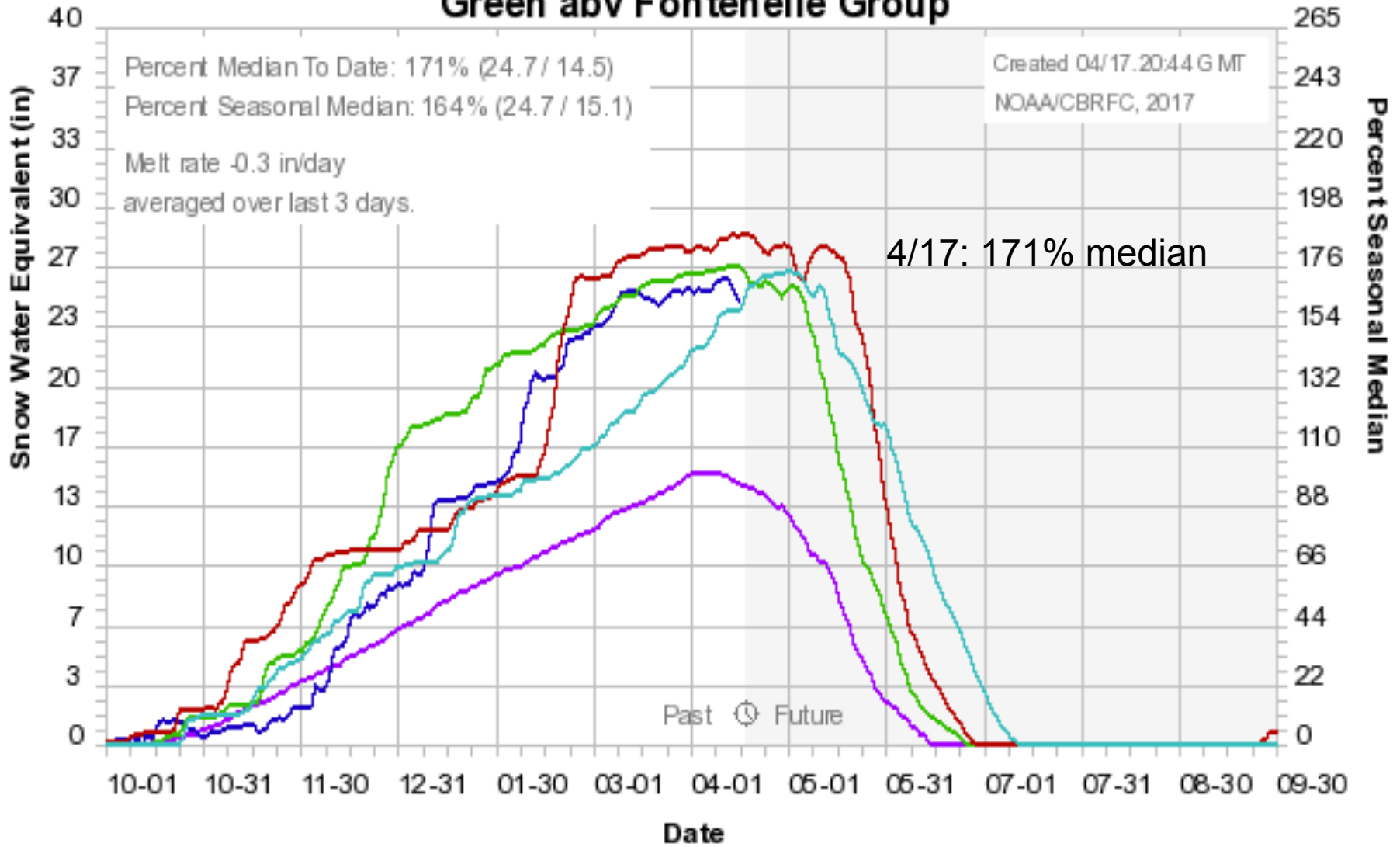
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# Snowpack Conditions

## Colorado Basin River Forecast Center Green abv Fontenelle Group

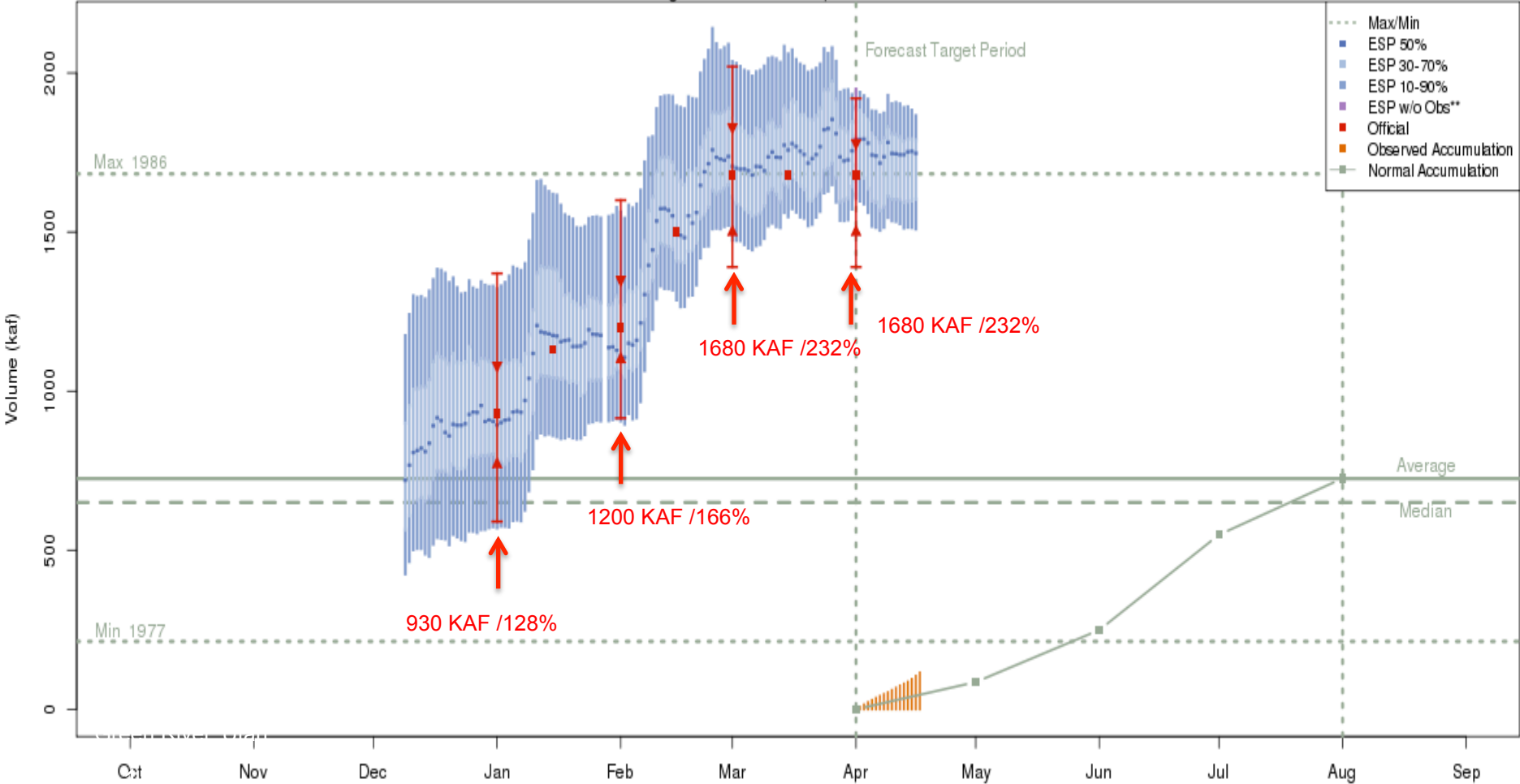


Median 1981-2010 2017 1997 1986 2011



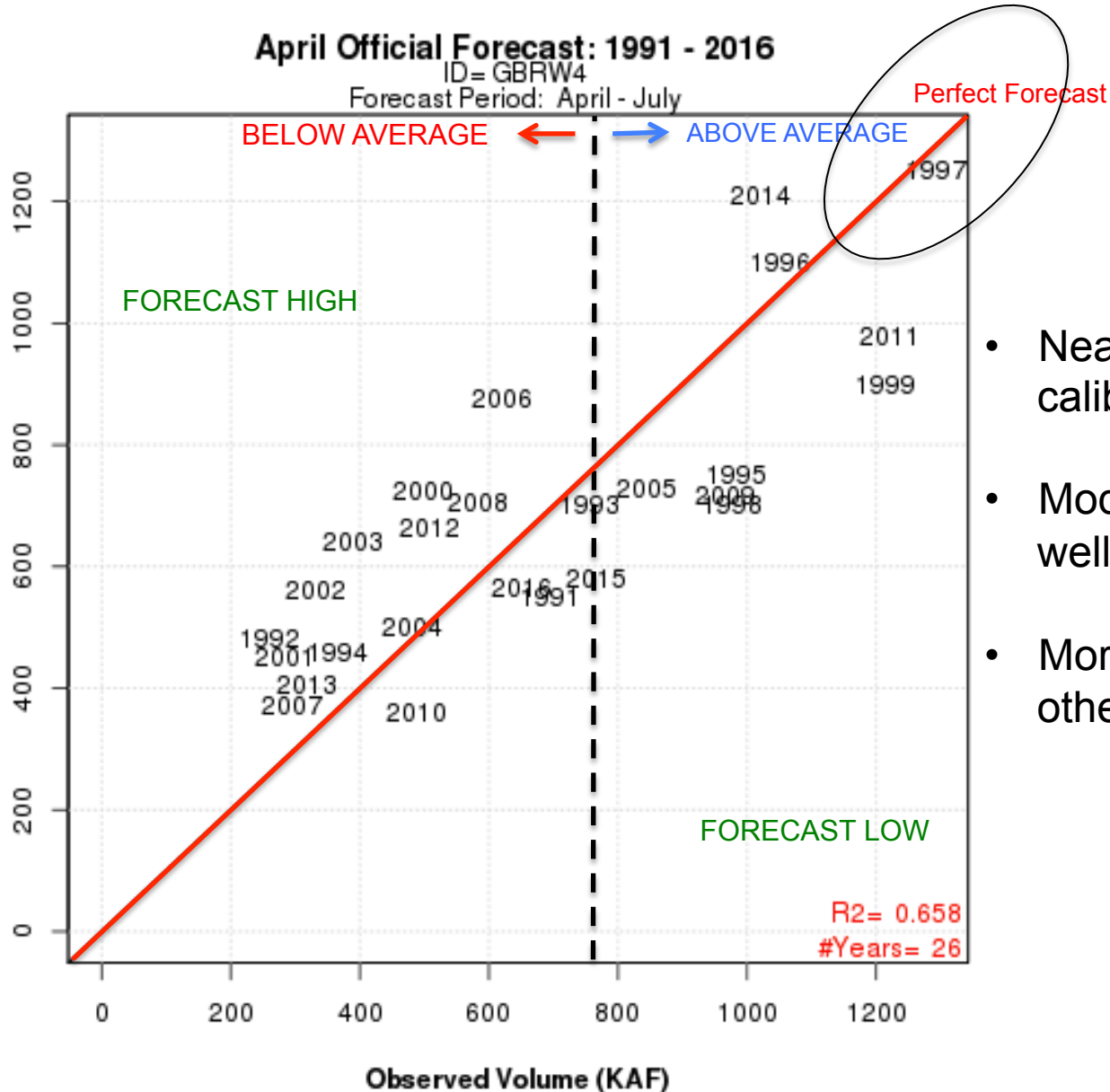
# Forecast Evolution Plot: Fontenelle Reservoir

**Green - Fontenelle Res- Fontenelle Nr (GBRW4)**  
**2017-04-01 Apr-Jul Official 50% Forecast: 1680 kaf (232% of average)**  
 ESP is Unregulated and No Precipitation Forecast Included



**The most recent (2017-04-16) full period 50% ESP forecast is 1748 kaf.**  
 Plot Created 2017-04-17 13:55:40, NOAA / NWS / CBRFC  
 Forecasts in the forecast target period include observed values.

# How good are the April forecasts?



- Near the upper end of the model calibration
- Model does not handle extremes well
- More uncertainty this year than other years

# What are the sources of uncertainty in the forecasts?

## 1. Future Weather

- Uncertainty in temperature and precipitation forecasts

## 2. Model Snow States

- Is the model's representation (amount and extent) of the snowpack correct?
- SNOTELS and satellite images used to verify model snow states

## 3. Model Soil Moisture States

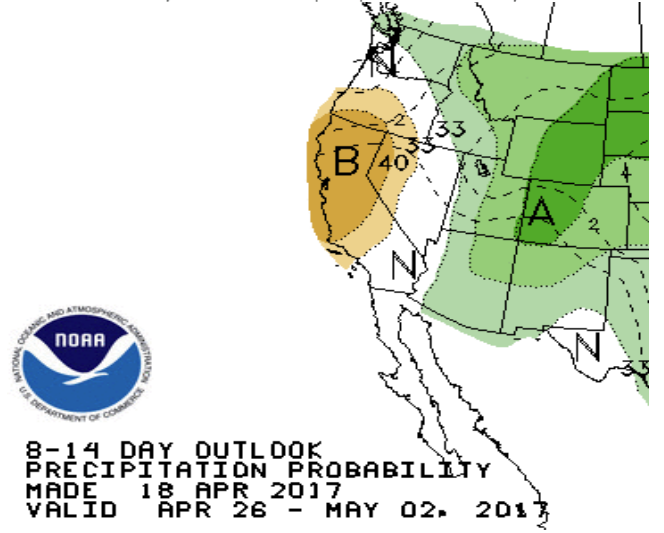
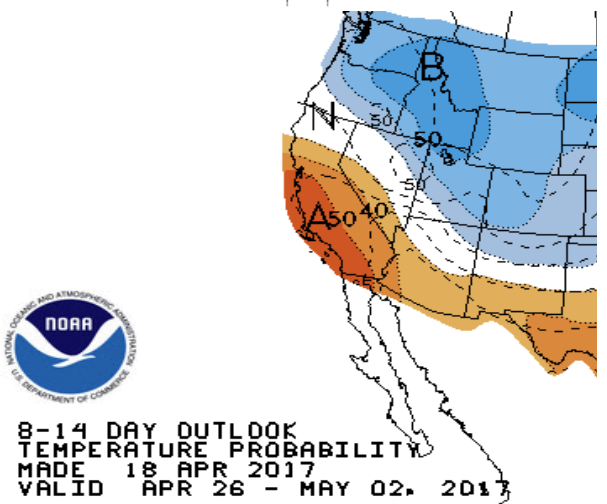
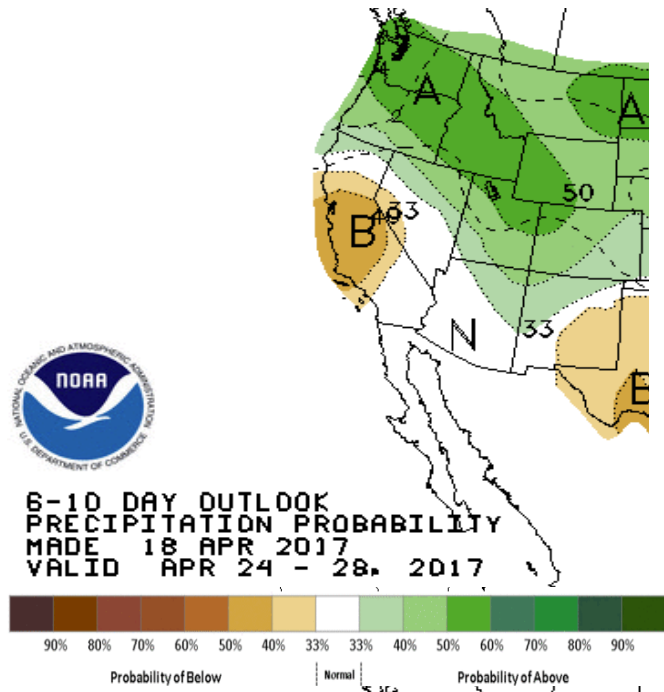
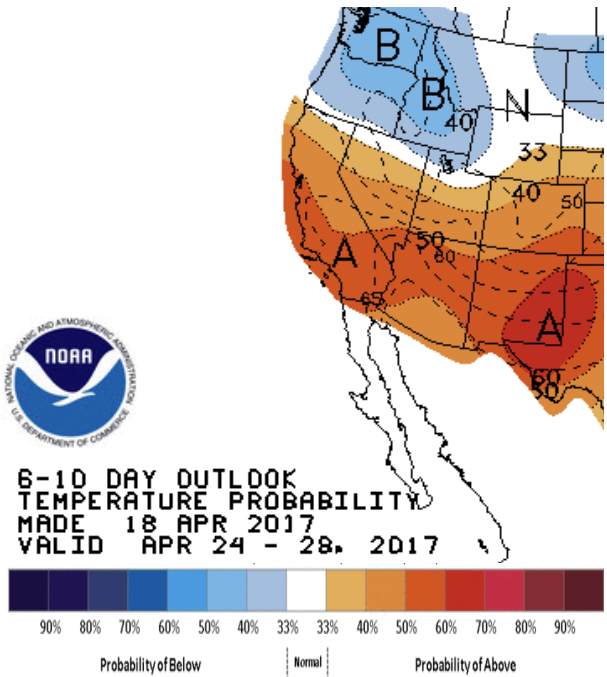
- Current conditions are near the model max
- Near the upper end of the model calibration; more uncertainty than an average year

## 4. Demands/Diversions Assumptions

- Model makes assumptions about future diversions/demands
- May be more or less than assumptions depending spring weather

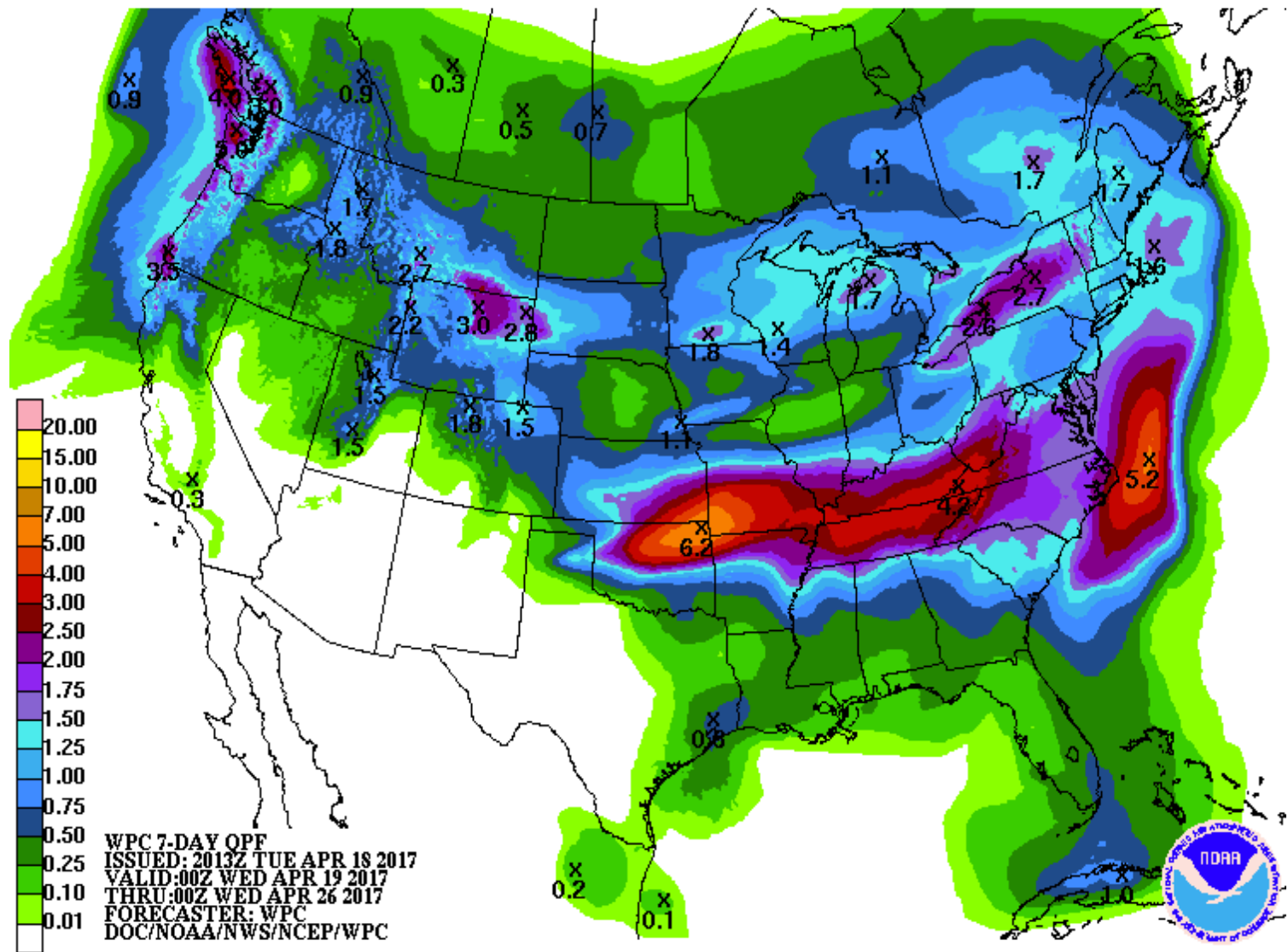
# Upcoming Weather

Active weather pattern with continue through the end of the month. There will be periods of warm and dry in between storm systems.



# Upcoming Weather

## Precipitation Forecast: 7 Day Total (April 19th - April 26th)



# Contact Us!

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**COLORADO BASIN RIVER FORECAST CENTER**  
NATIONAL WEATHER SERVICE / NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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Great Basin Basin Water Supply Briefing - April 7th 1 pm MDT - Register here: [Read More...](#)

Conditions Map [Help](#)

**River Conditions**  
Data Updated: 03/21/2022 [Help](#)

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Data

Forecast

Reservoir Inflow

Reservoir Outflow

Official Flood

Active

● Not Available  
● Normal  
● Significant Rise  
● Near Bankfull  
● Above Bankfull  
● Above Flood Stage  
● Outlook (> 3 days)

Pop-up Alerts

- Snow Conditions
- Water Supply Forecasts
- Peak Flood Probability
- Reservoir Conditions
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# Questions?

