CBRFC Forecast Update: Fontenelle Reservoir

April 19, 2017
Fontenelle Working Group Meeting

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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”

Narrow corridor of significant moisture transport in the atmosphere
Weather Review: Winter Precipitation (Dec-Feb)

Monthly Precipitation - December 2016
(Averaged by Basin)

% Average
- 250%
- Fontenelle

Monthly Precipitation - January 2017
(Averaged by Basin)

% Average
- 195%
- Fontenelle

Monthly Precipitation - February 2017
(Averaged by Basin)

% Average
- 280%
- Fontenelle
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)

- Fontenelle: 145%

**Max Temp - Monthly Deviation - March 2017**
(Averaged by Basin)

- +1-5 degrees
March Weather: Temperature Impacts to Snowpack

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

Colorado Basin River Forecast Center
Green abv Fontenelle Group

Percent Median To Date: 171% (24.7 / 14.5)
Percent Seasonal Median: 164% (24.7 / 15.1)
Melt rate -0.3 in/day
averaged over last 3 days.

4/17: 171% median
Forecast Evolution Plot: Fontenelle Reservoir

Green - Fontenelle Res- Fontenelle Nr (GBRW4)
2017-04-01 Apr-Jul Official 50% Forecast: 1680 kaf (232% of average)

ESR 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 / CERFC
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 on 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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Questions?