CBRFC
2018 Early Outlook

December 7, 2017

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Senior Hydrologists

Today's Topics

Late summer / fall weather

Soil moisture conditions entering the winter season

Current snow conditions

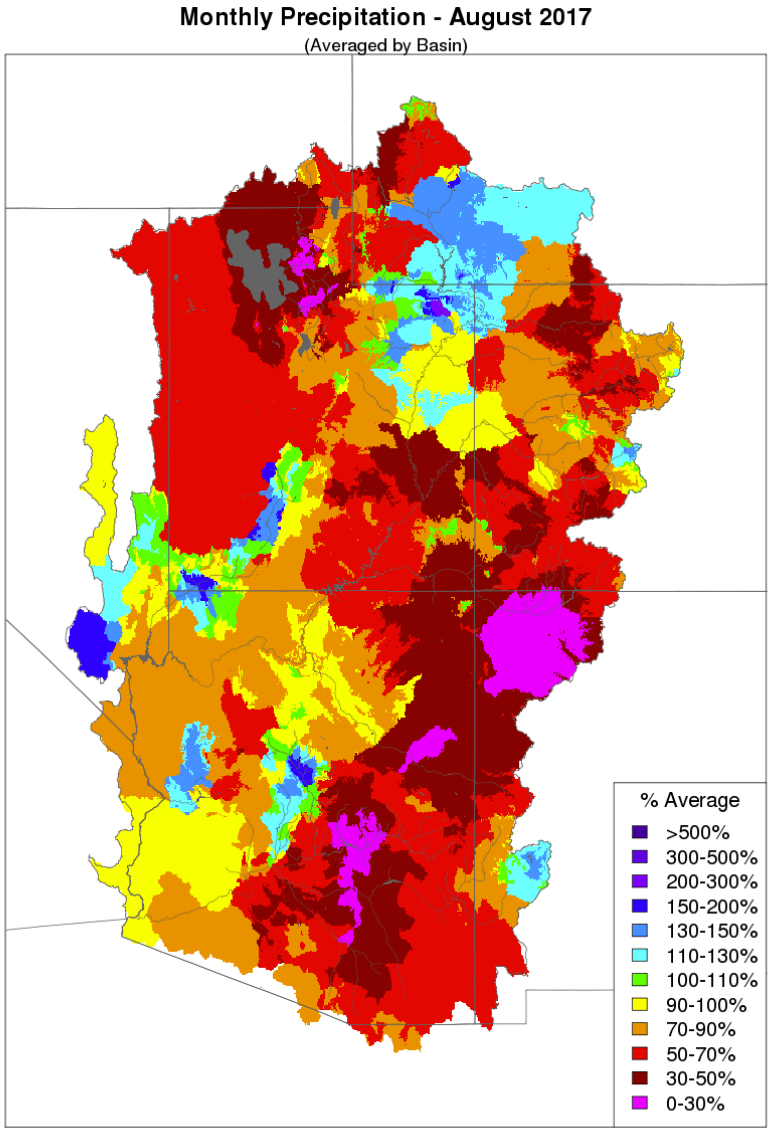
Early season water supply model guidance

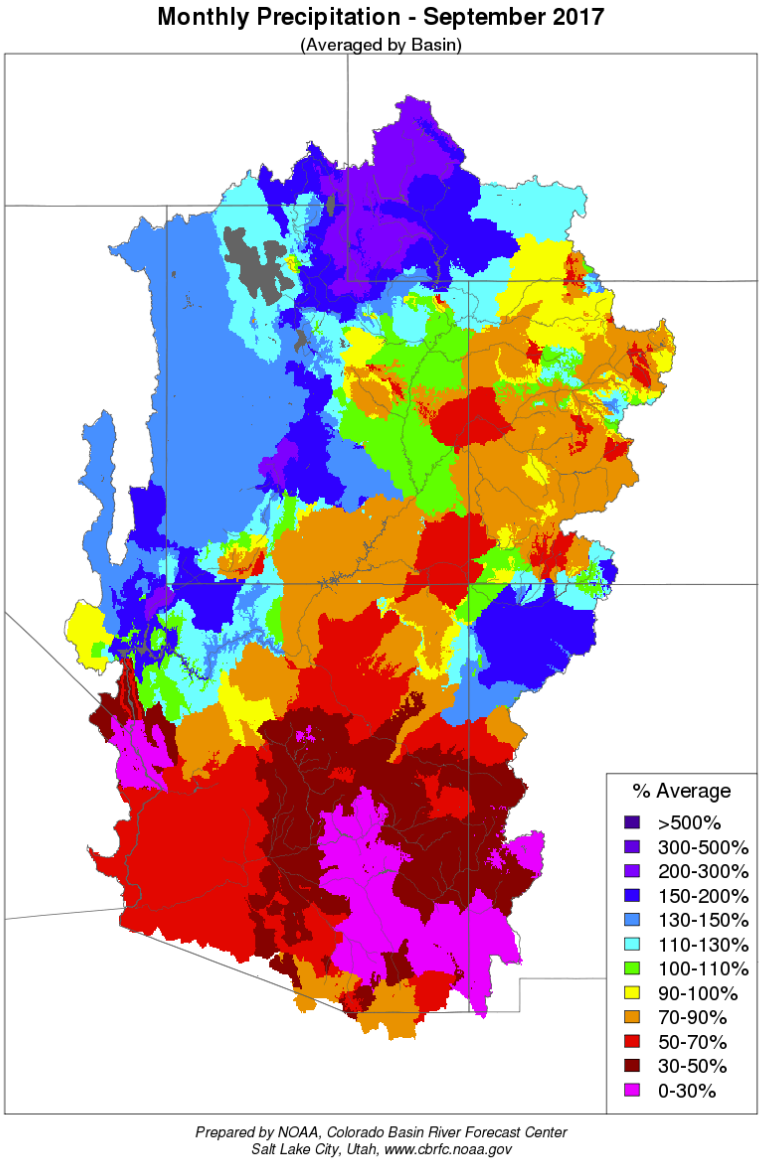
Weather outlook for the remainder of December

New forecast evolution plot features

Forecast timeline and upcoming water supply briefings

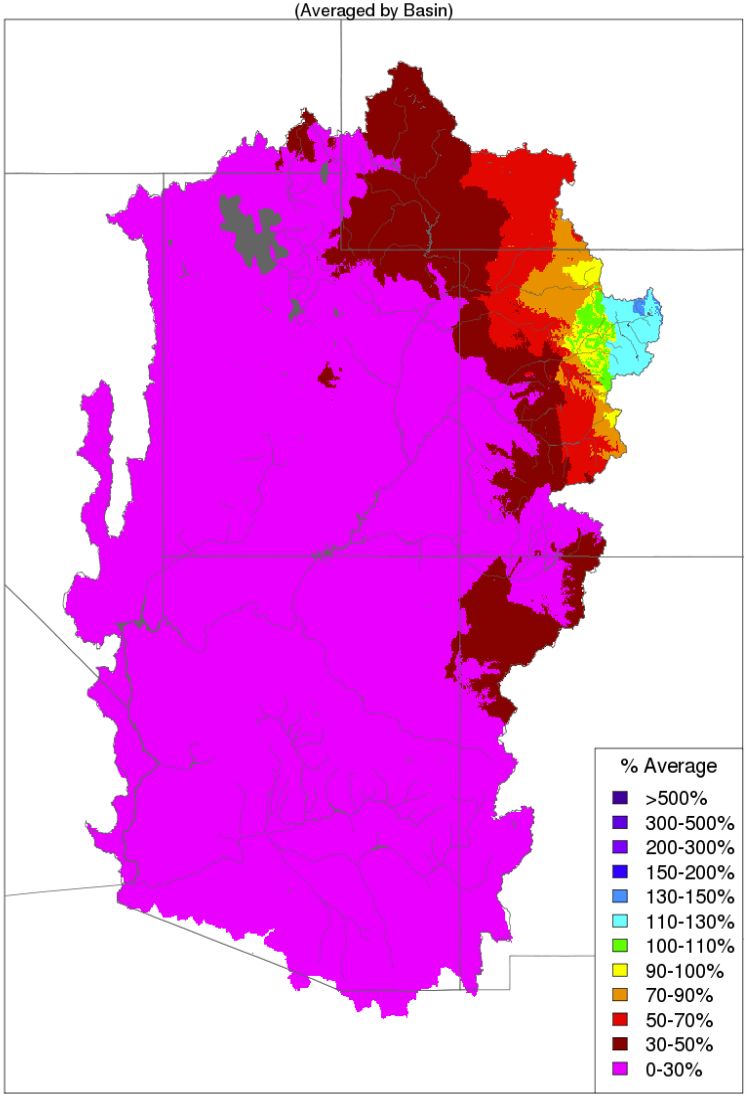
Late Summer/Fall Precipitation





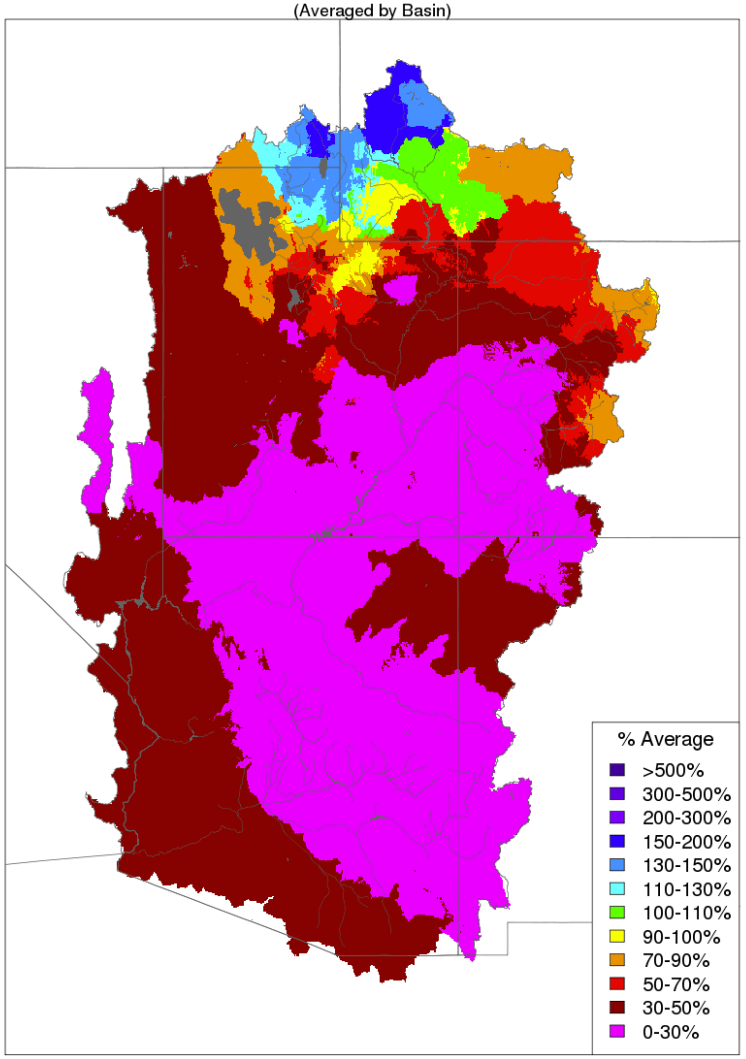
Fall 2017 Precipitation

Monthly Precipitation - October 2017
(Averaged by Basin)



Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Monthly Precipitation - November 2017
(Averaged by Basin)



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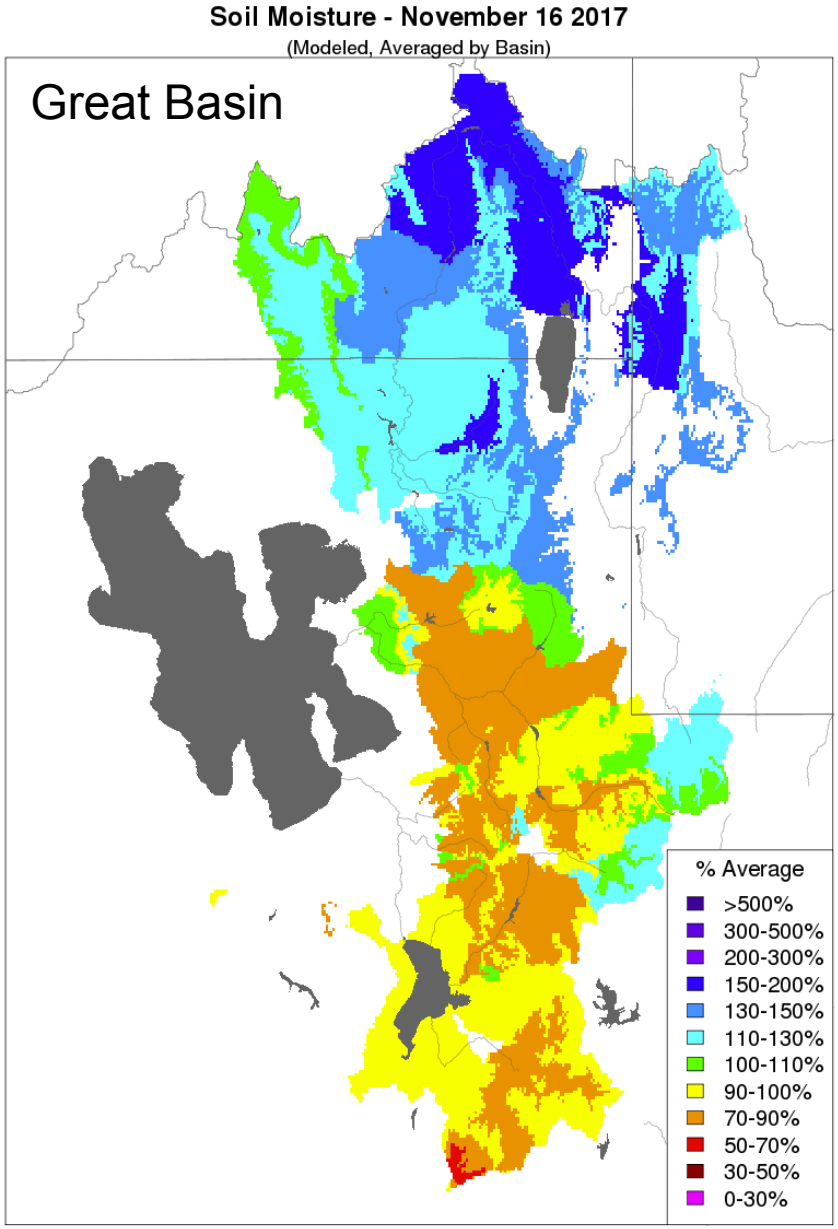
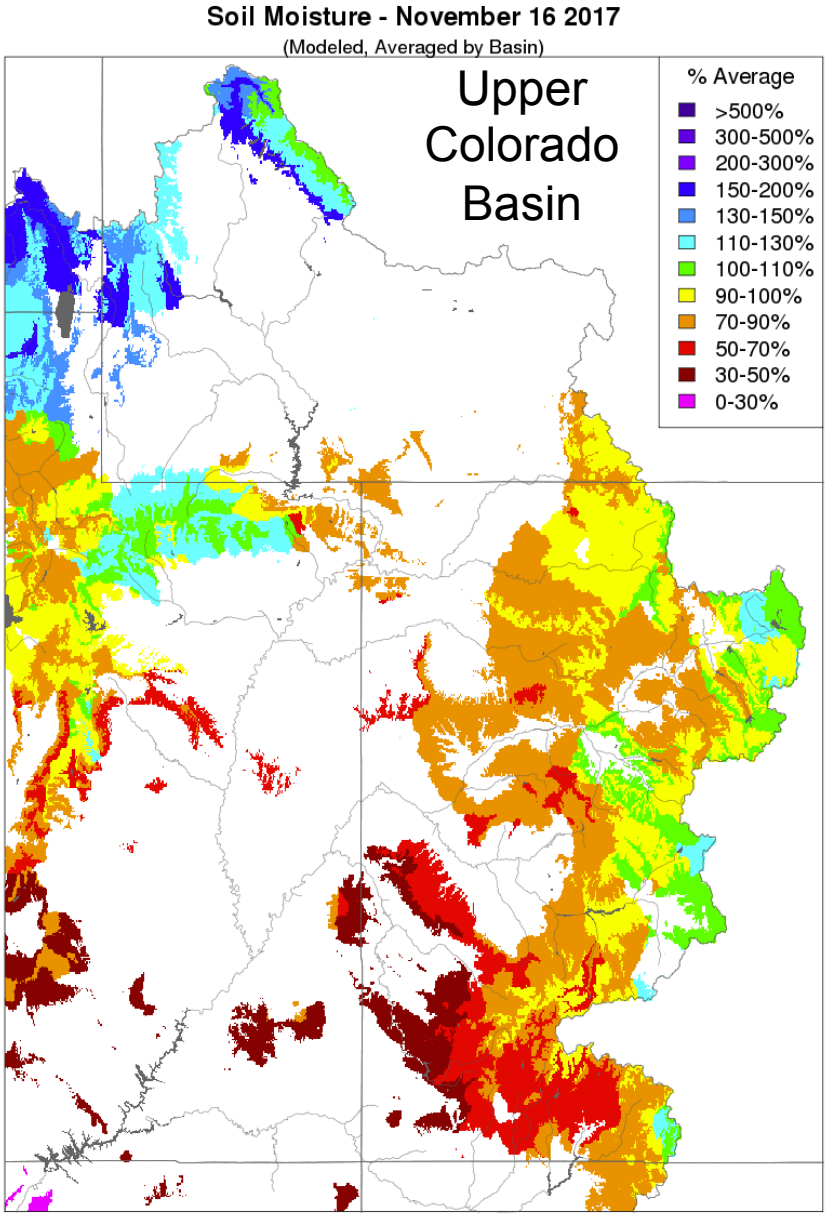
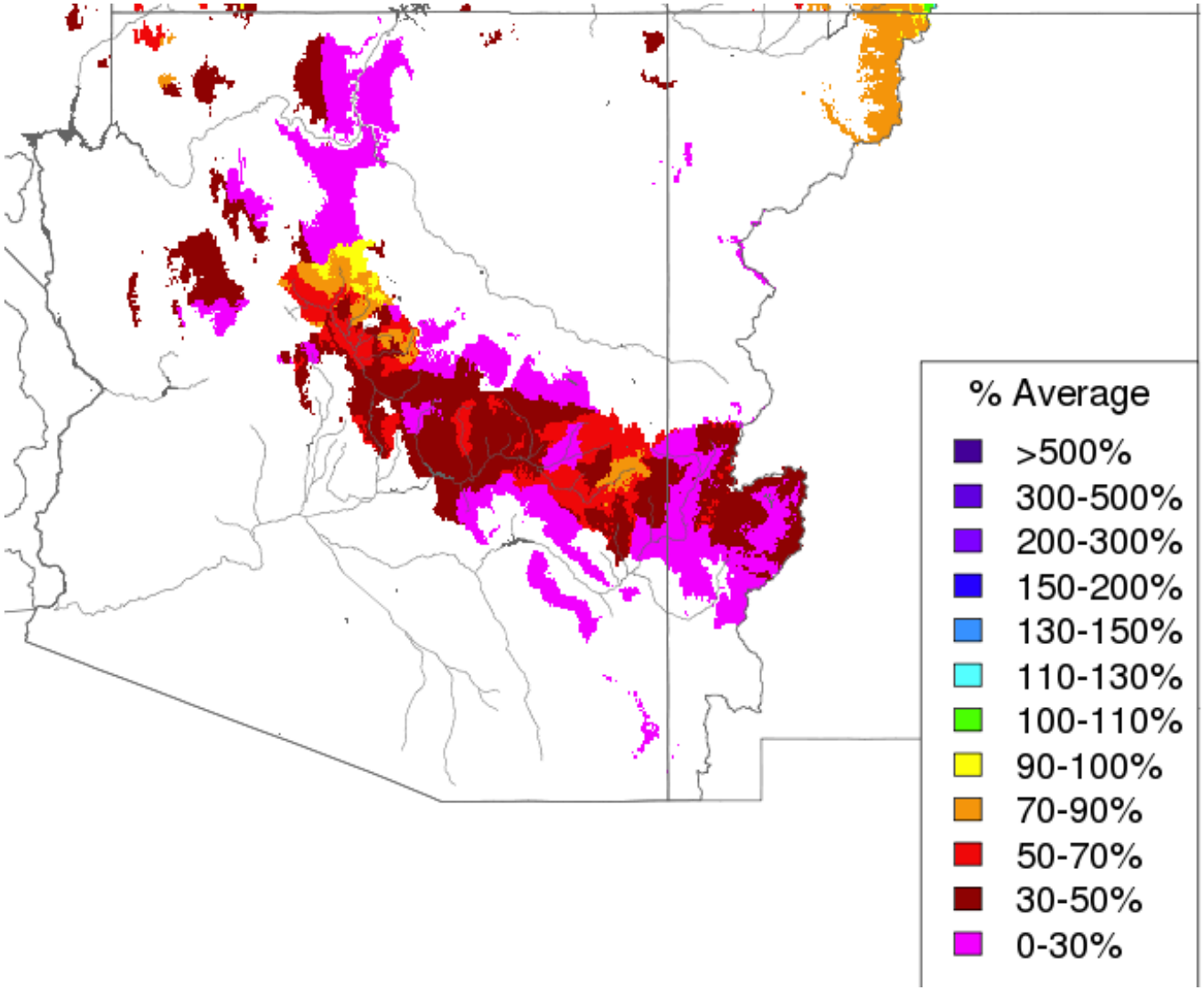
Fall Modeled Soil Moisture





Fall Modeled Soil Moisture: Lower Colorado Basin

Modeled soil moisture, averaged by Basin – Nov 16th 2017



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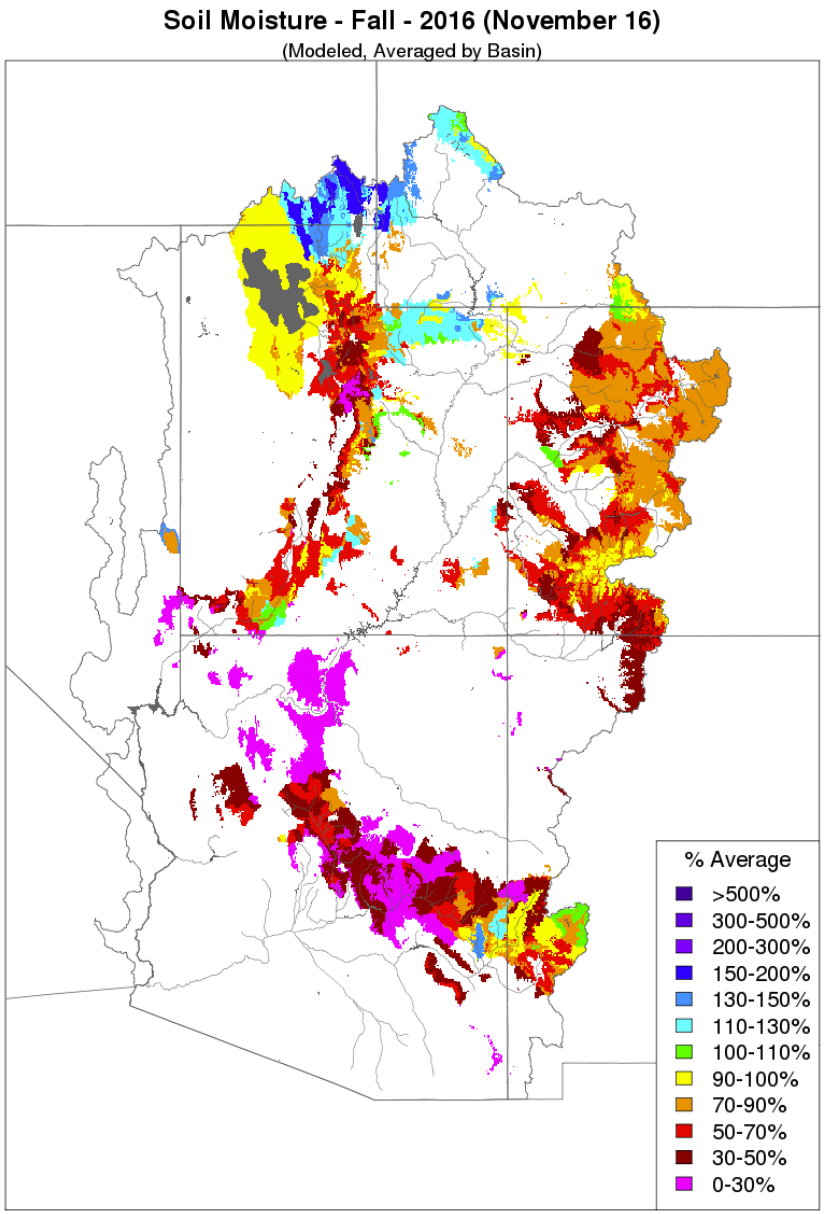
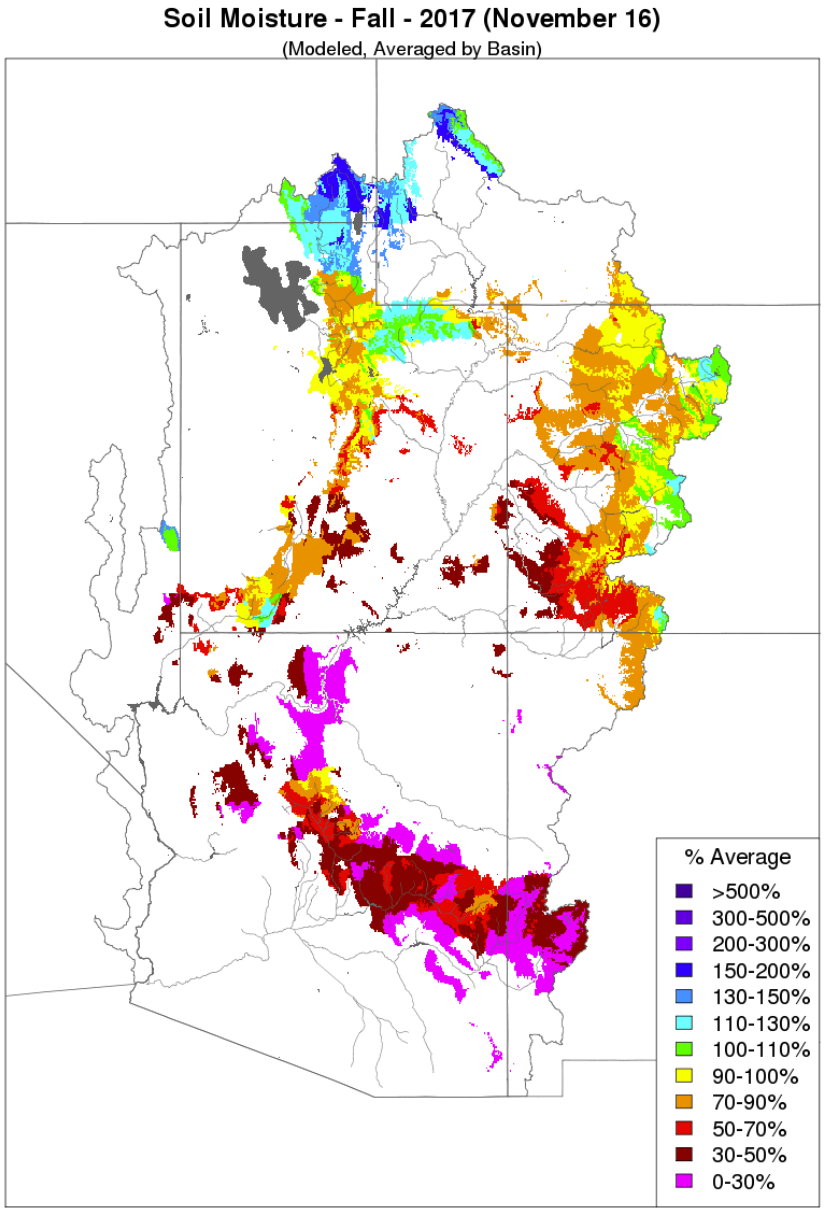
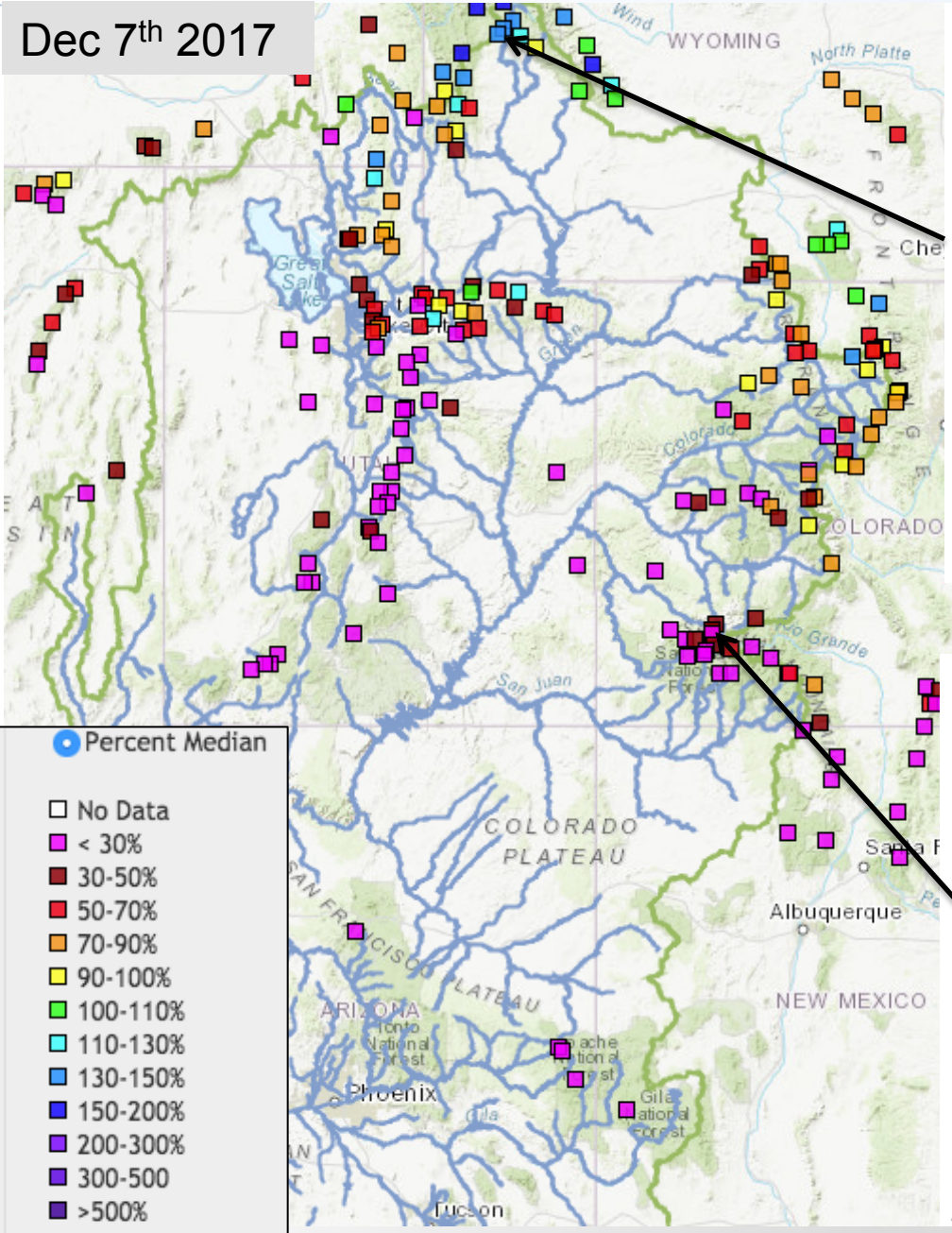
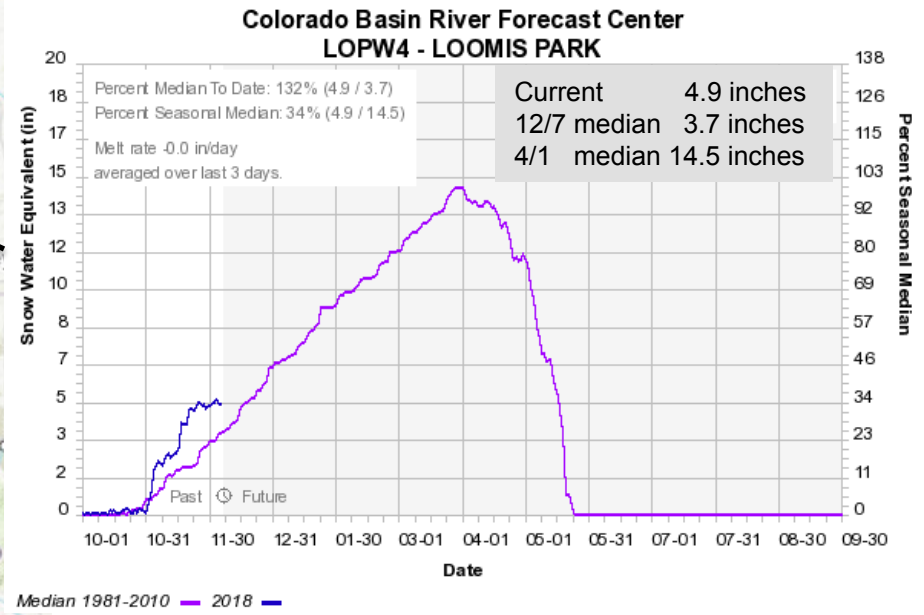


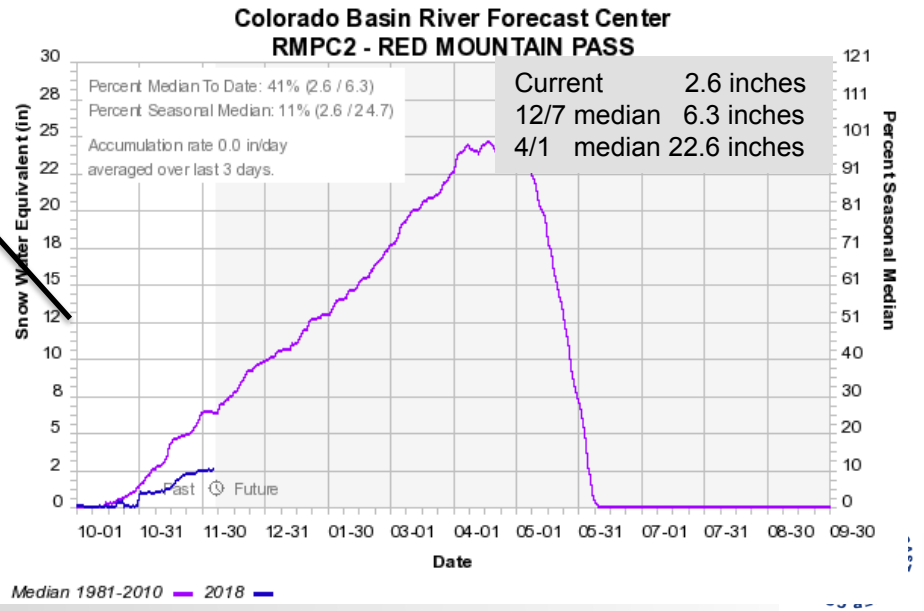


Current Snow Conditions - SNOTEL

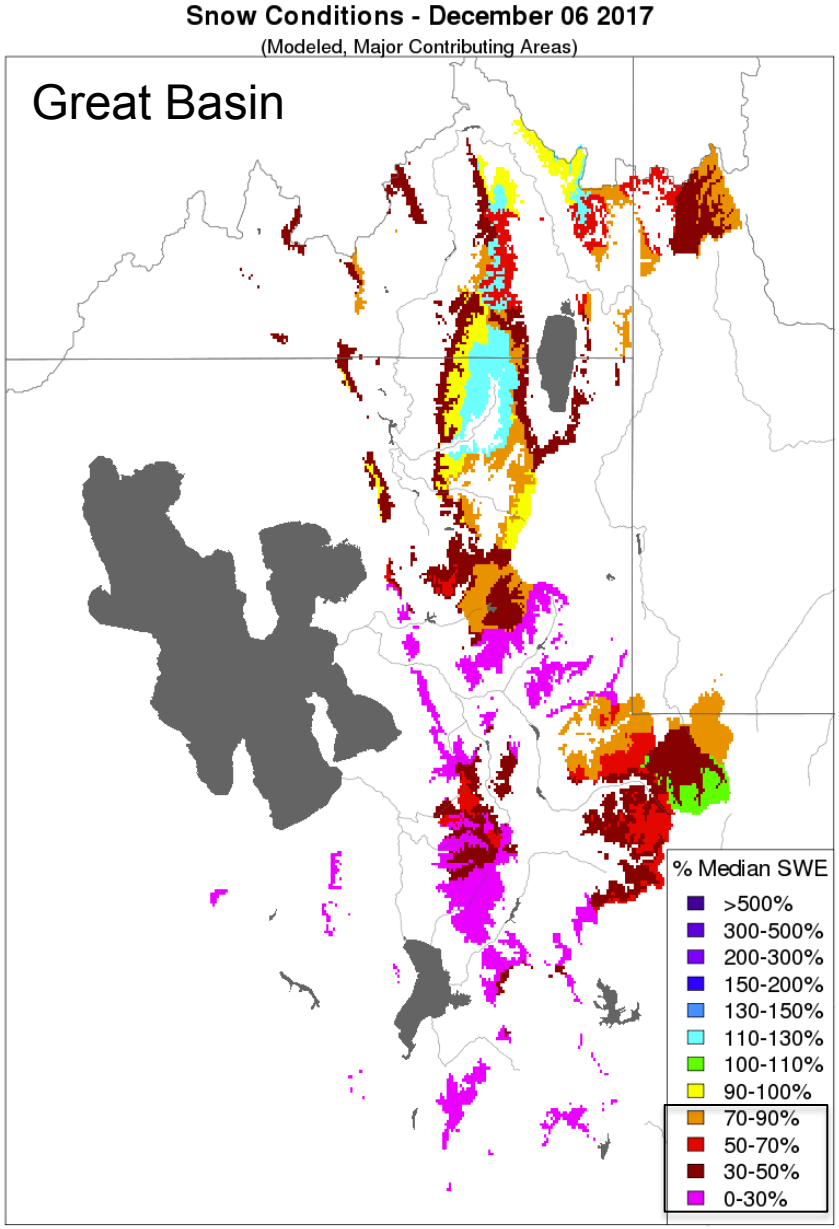
Dec 7th 2017

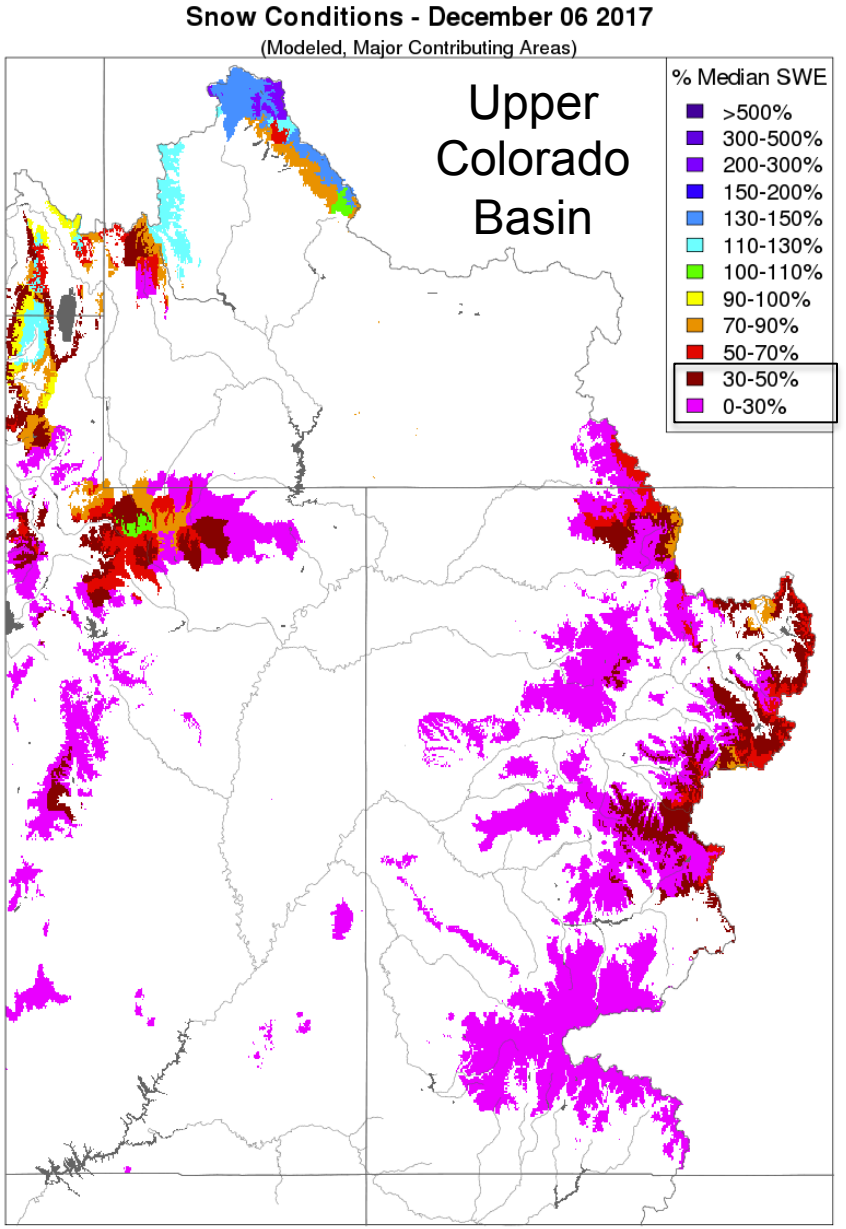






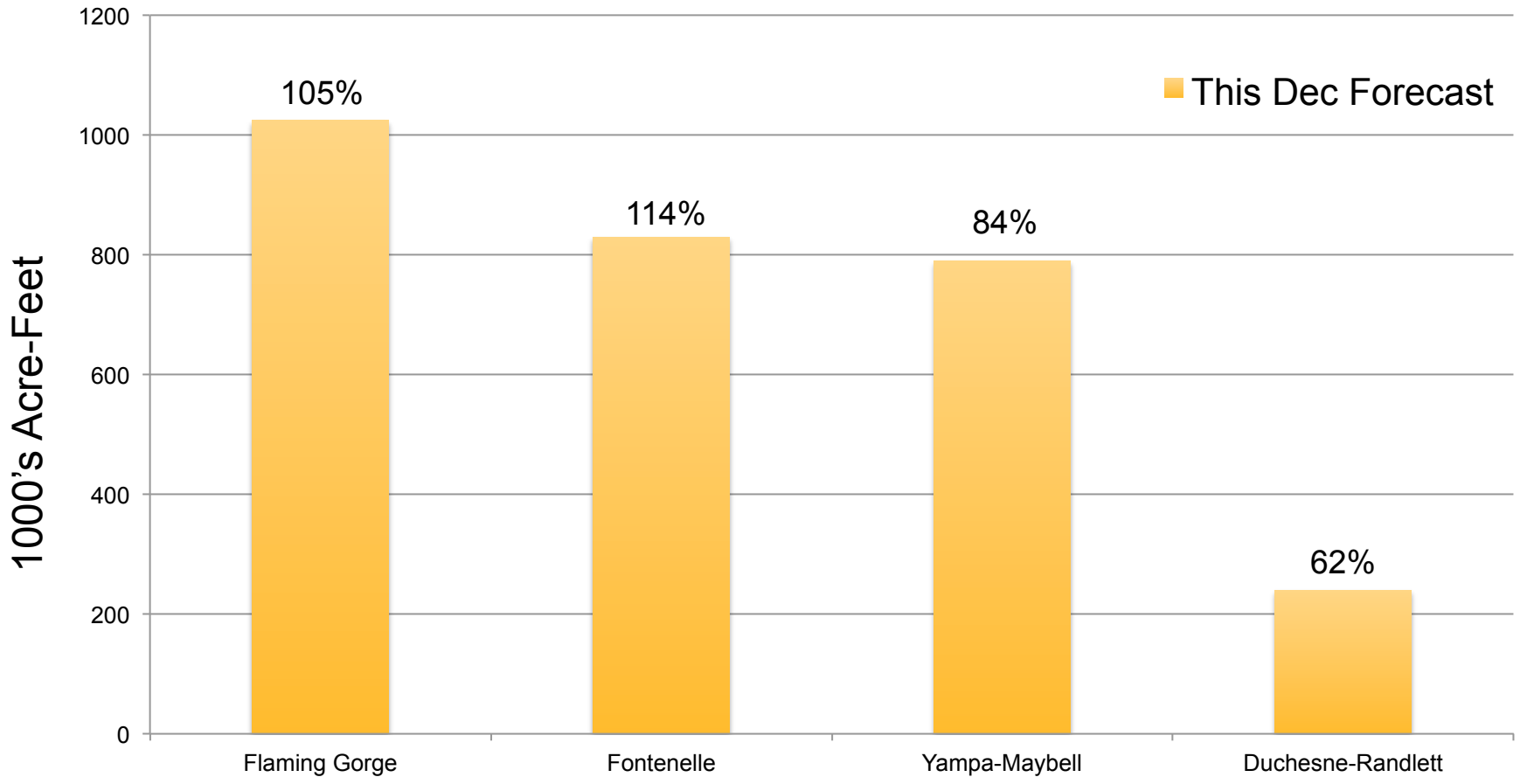
Current Snow Represented in the Hydrologic Model



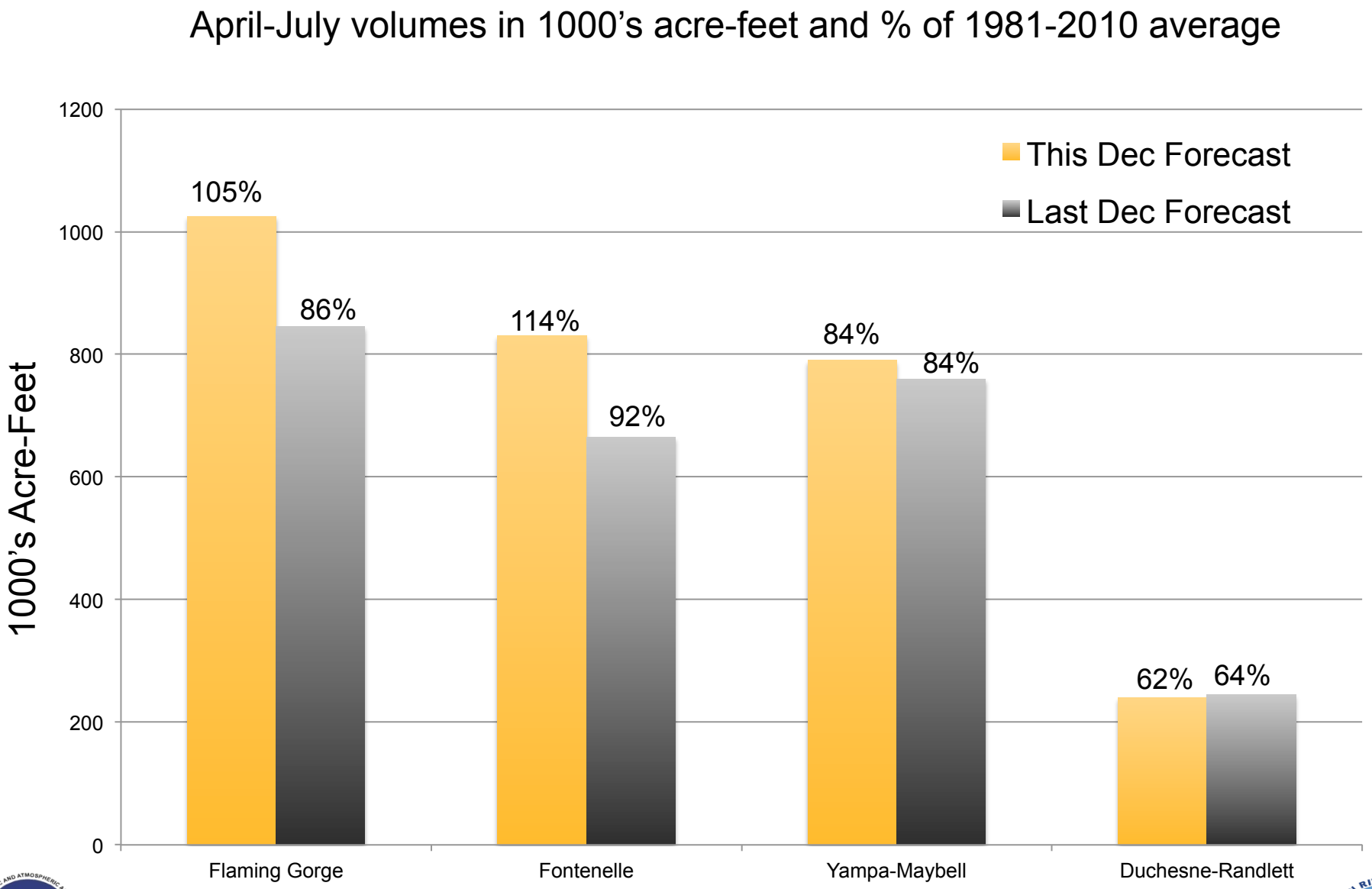


Early Outlook: 2018 April-July Model Guidance

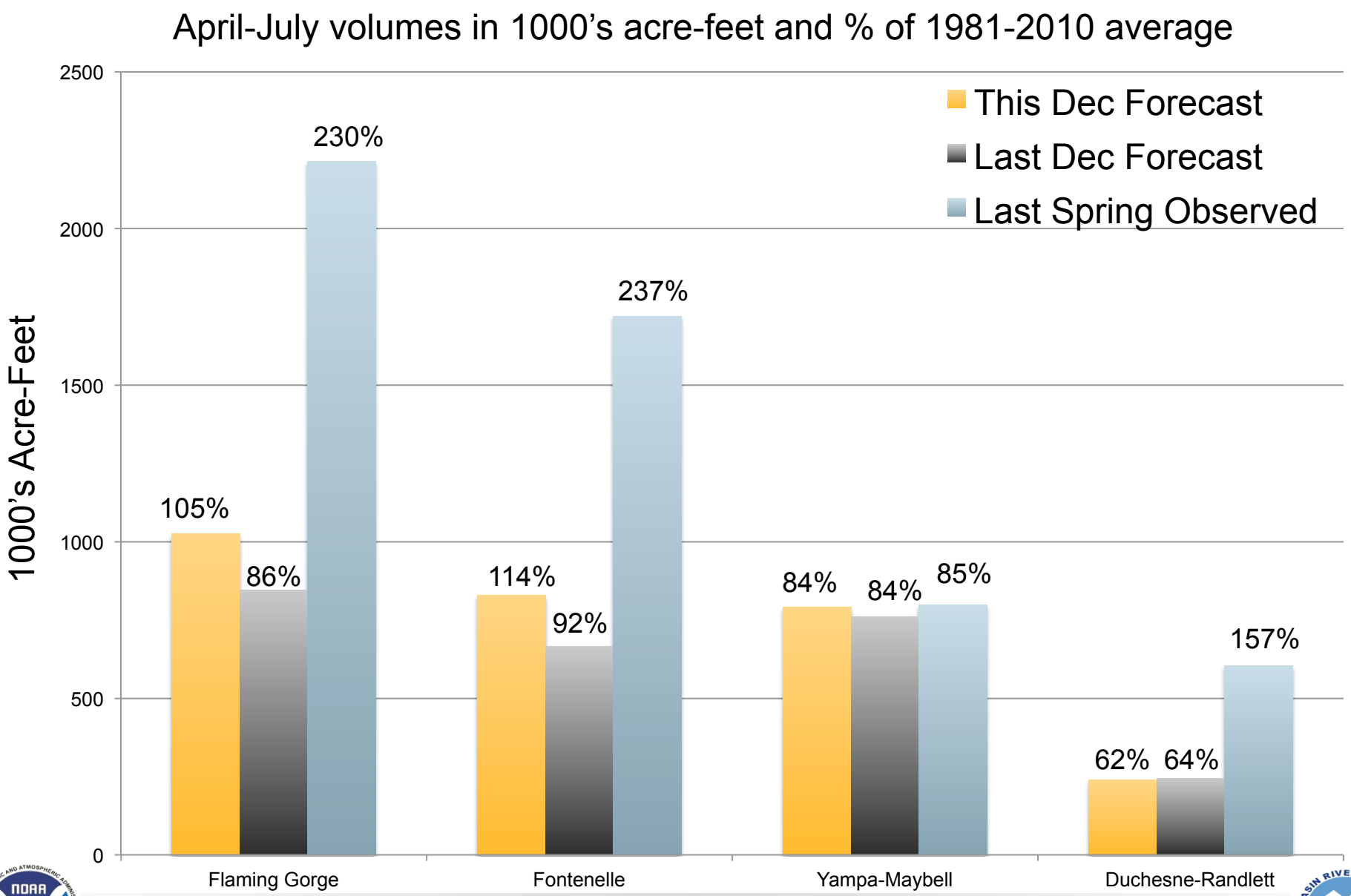
April-July volumes in 1000's acre-feet and % of 1981-2010 average



Early Outlook: Comparing 2016 & 2017 Dec Guidance for Following Apr-Jul Period



Early Outlook: 2017 Observed Volumes – Significant Snow Accumulation Season Remains



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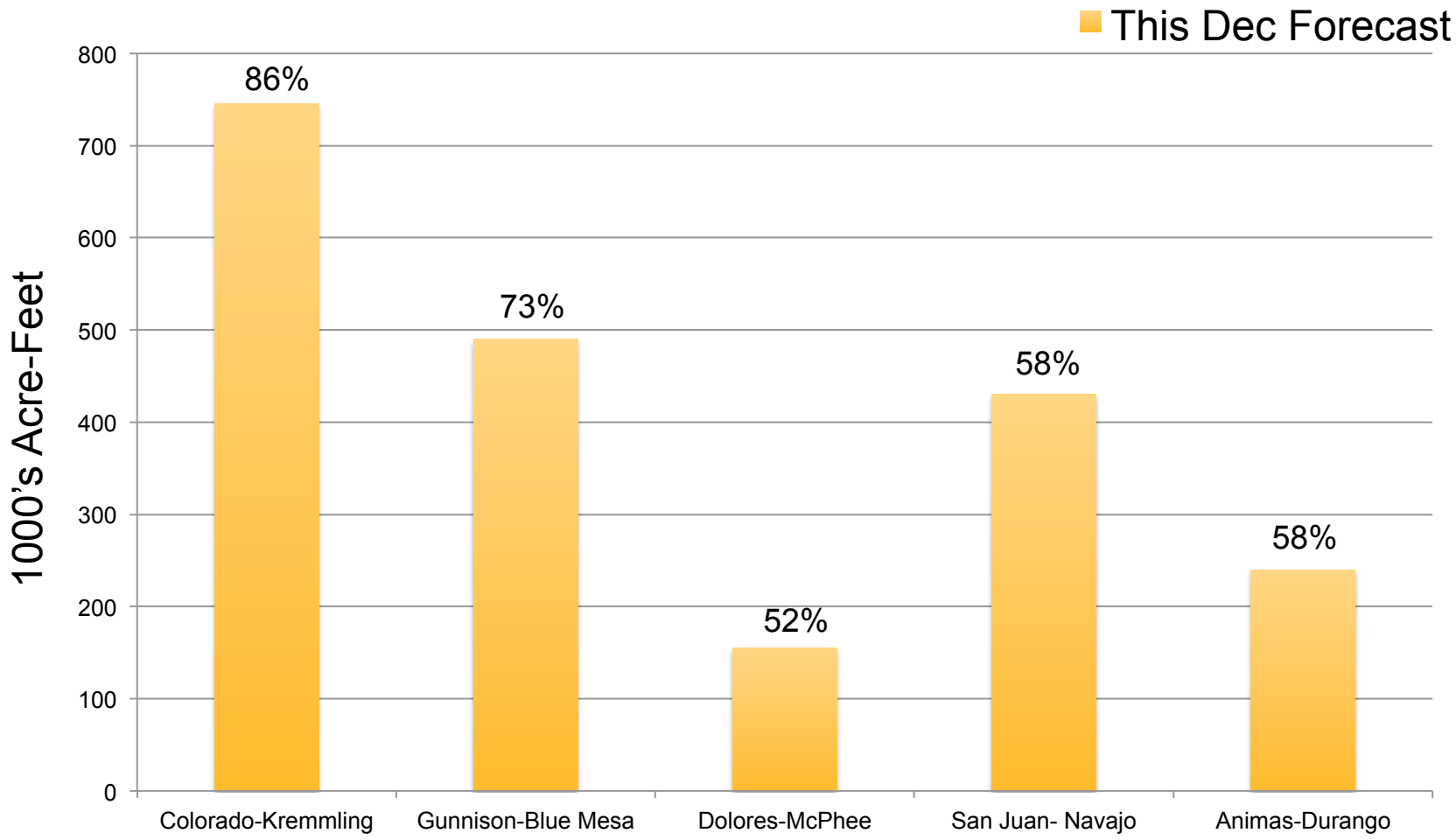

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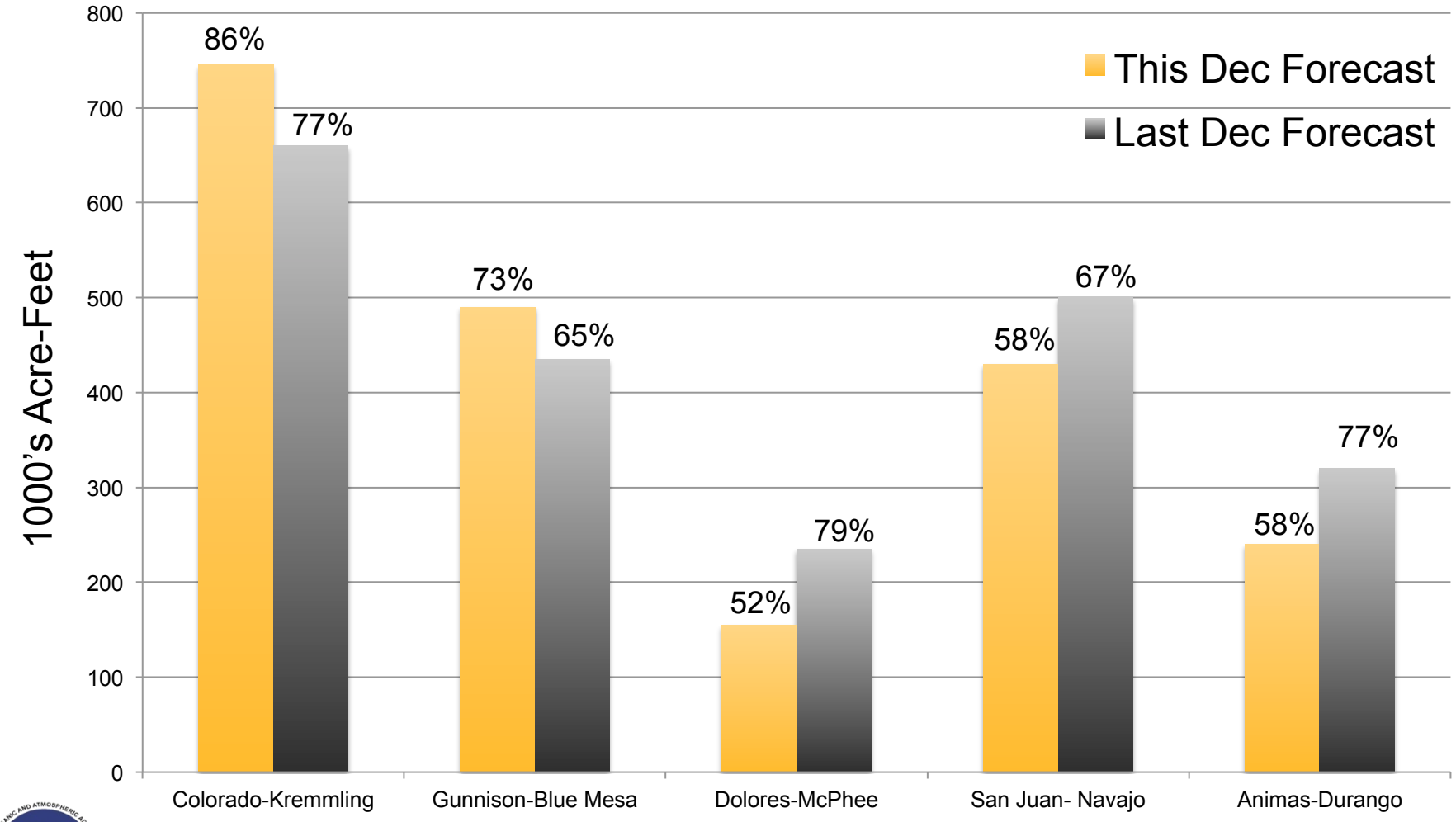

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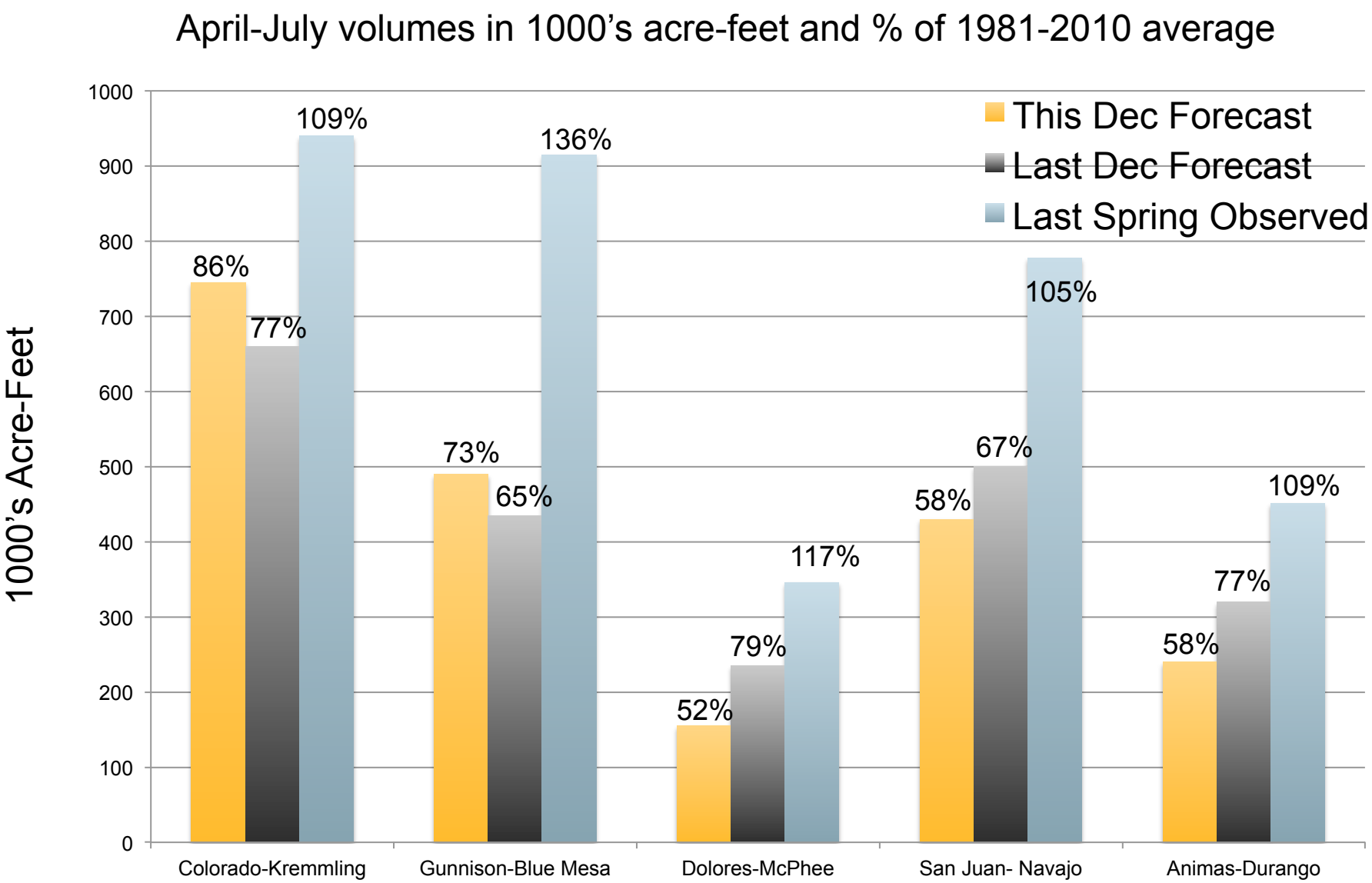
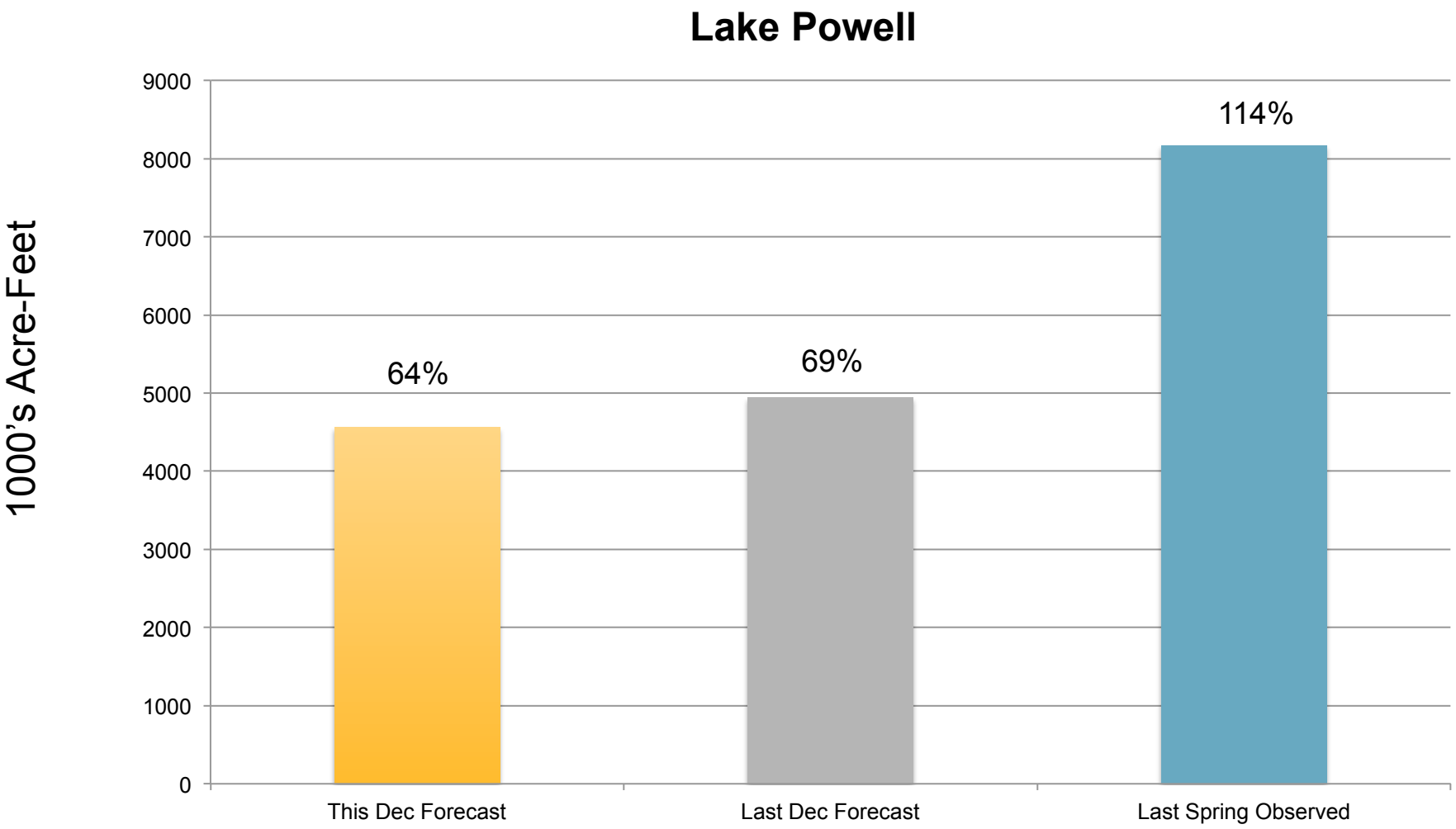


Early Outlook: 2017 observed volumes – A lot of snow accumulation season remains

April-July volumes in 1000's acre-feet and % of 1981-2010 average



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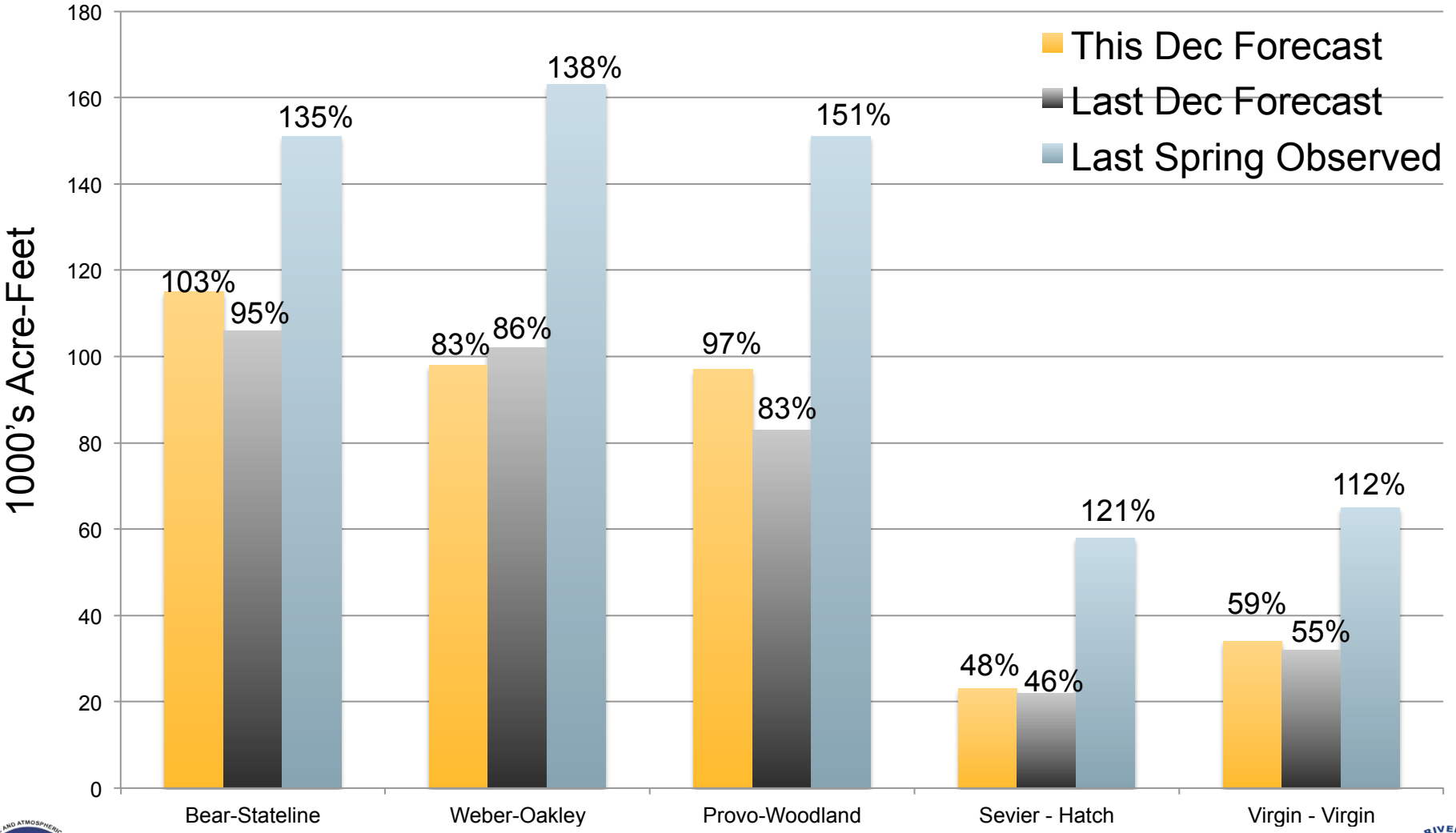
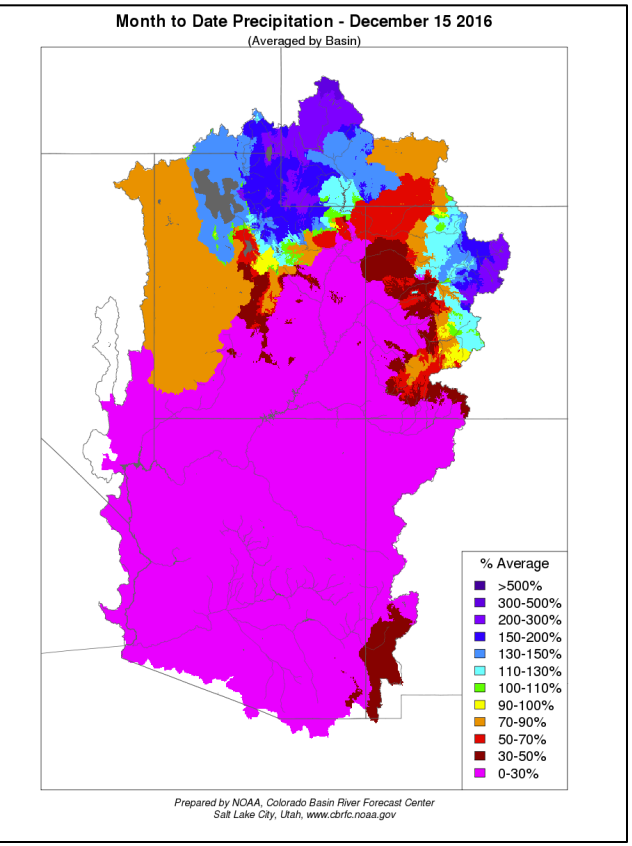


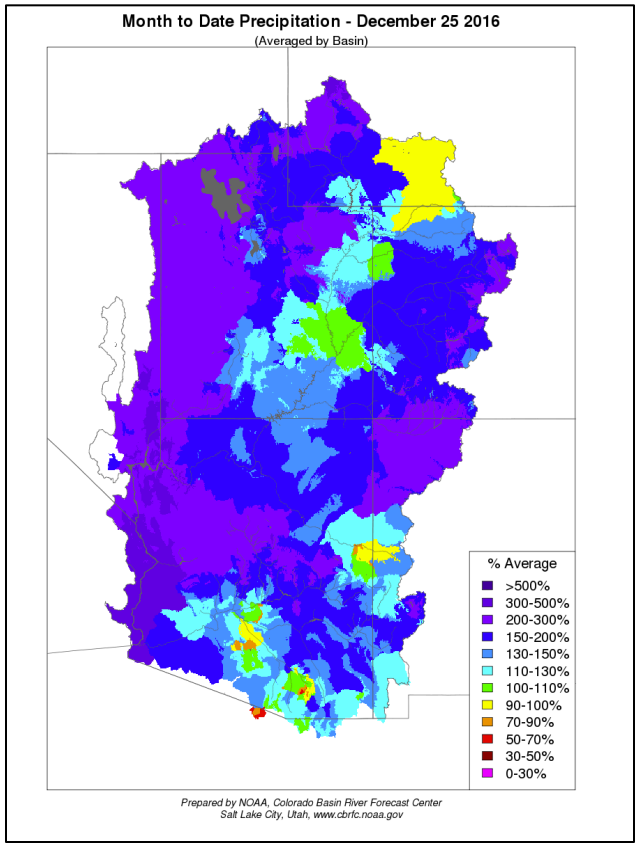
What Happened Last Season ?

A big pattern change around the 3rd week of December
Extreme wet conditions ensued into February

December 1-15 2016



December 1-25 2016



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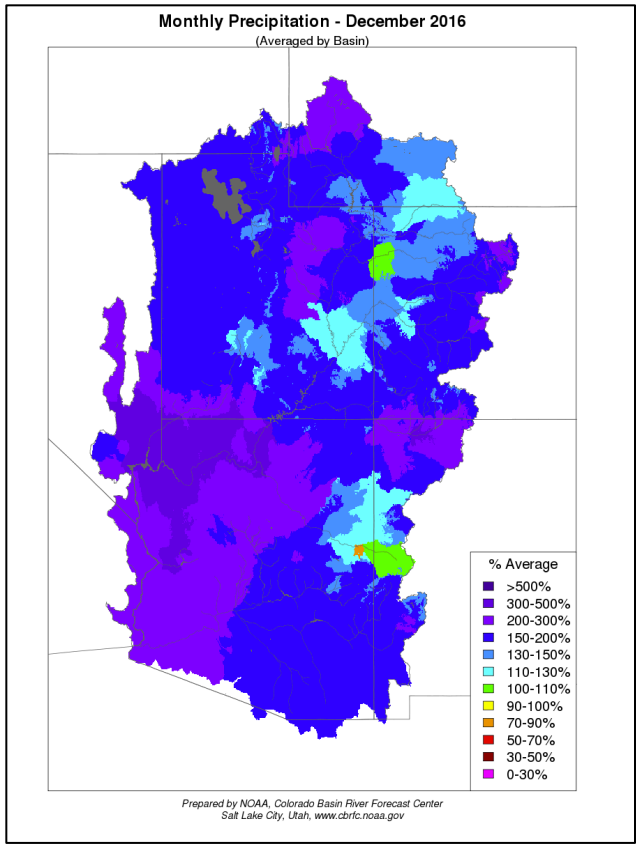
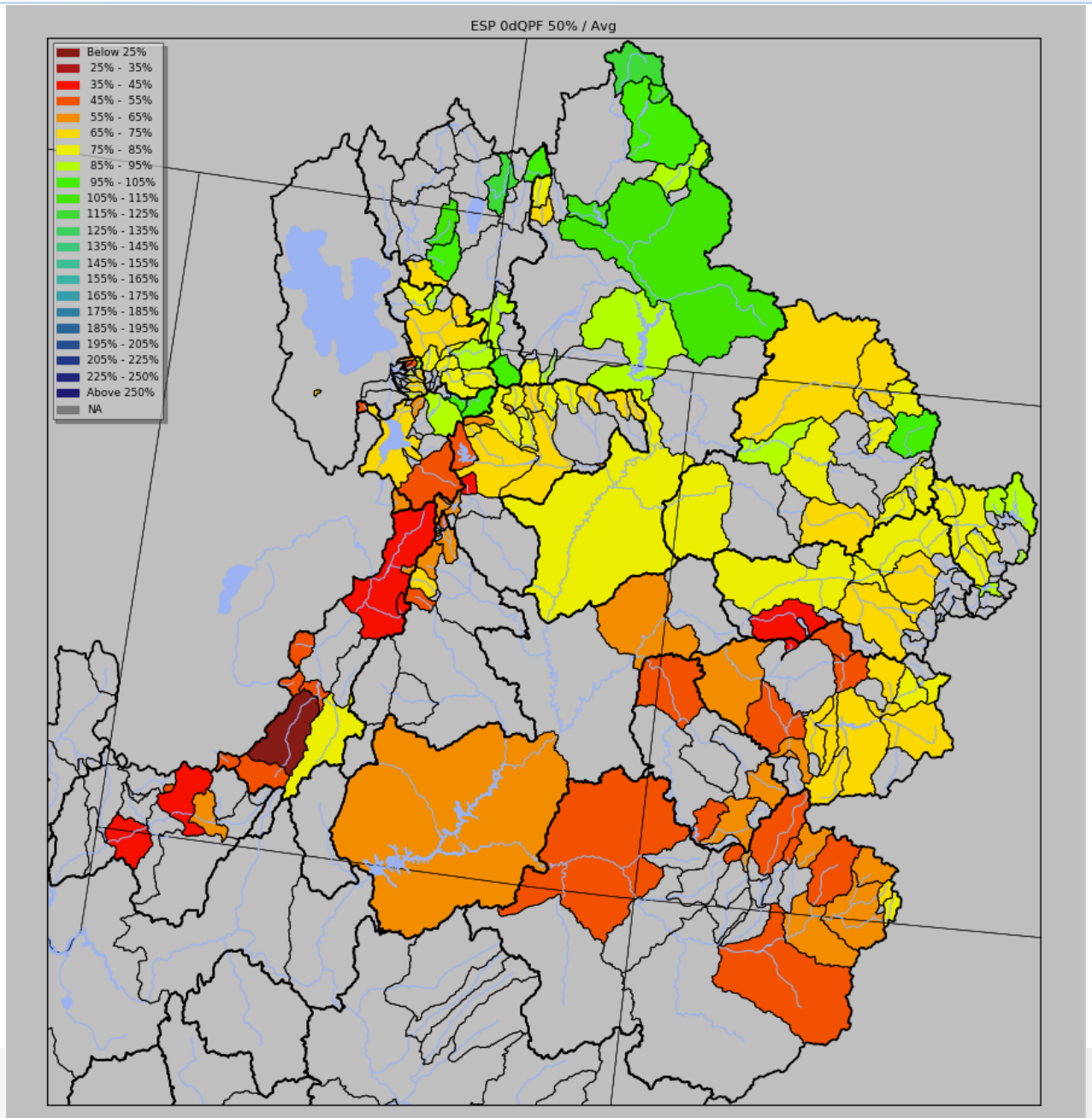


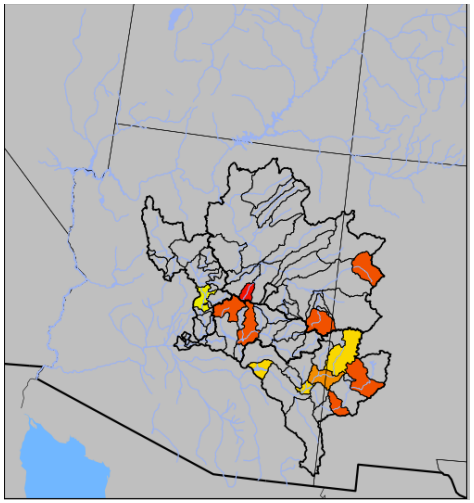
Early Outlook 2018 Model Guidance: **April-July volumes (percent of 1981-2010 average)**

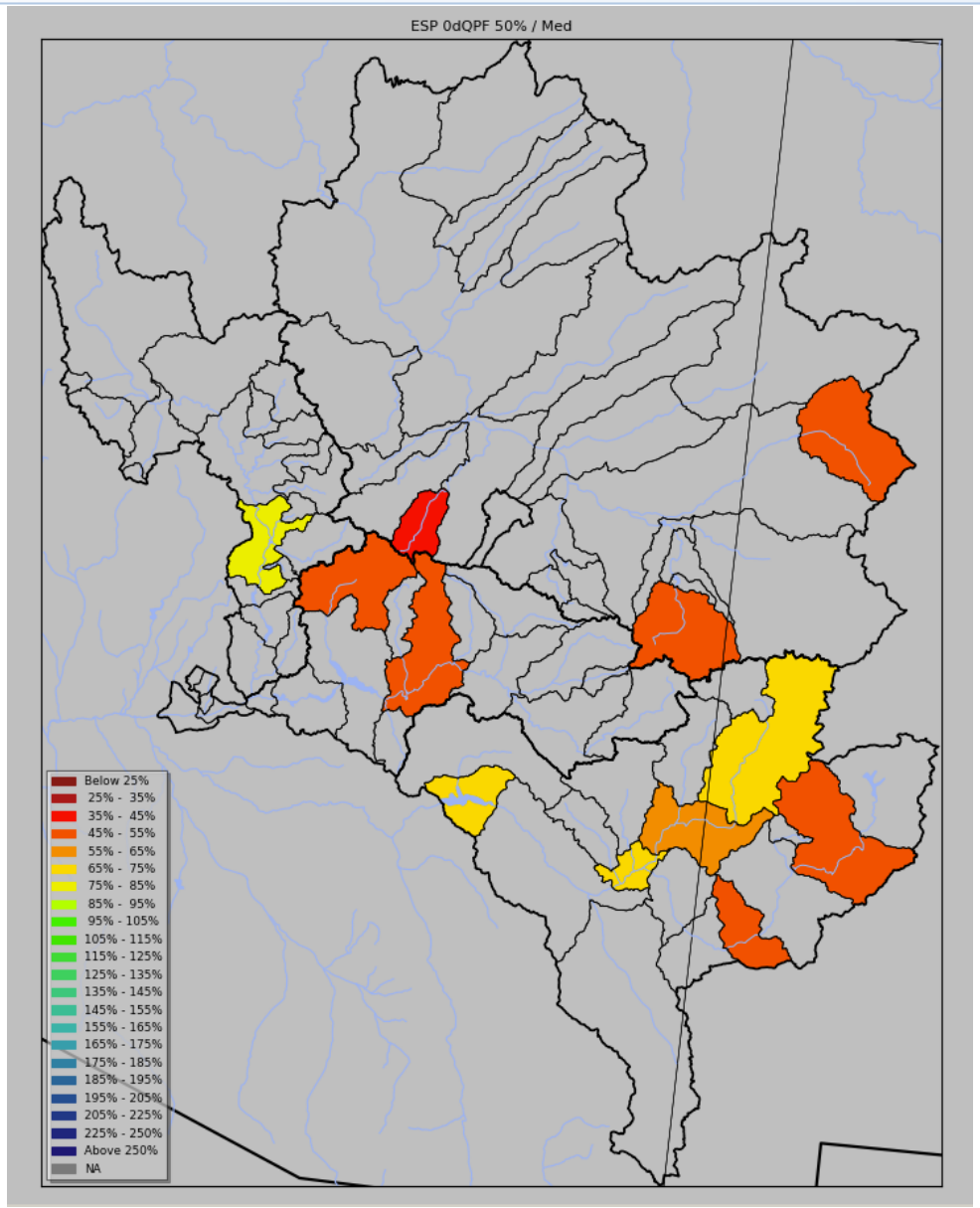


Percent of average

- Below 25%
- 25% - 35%
- 35% - 45%
- 45% - 55%
- 55% - 65%
- 65% - 75%
- 75% - 85%
- 85% - 95%
- 95% - 105%
- 105% - 115%
- 115% - 125%
- 125% - 135%
- 135% - 145%
- 145% - 155%
- 155% - 165%
- 165% - 175%
- 175% - 185%
- 185% - 195%
- 195% - 205%
- 205% - 225%
- 225% - 250%
- Above 250%
- NA

Early Outlook2018 Model Guidance: **Jan-May volumes (percent of 1981-2010 median)**

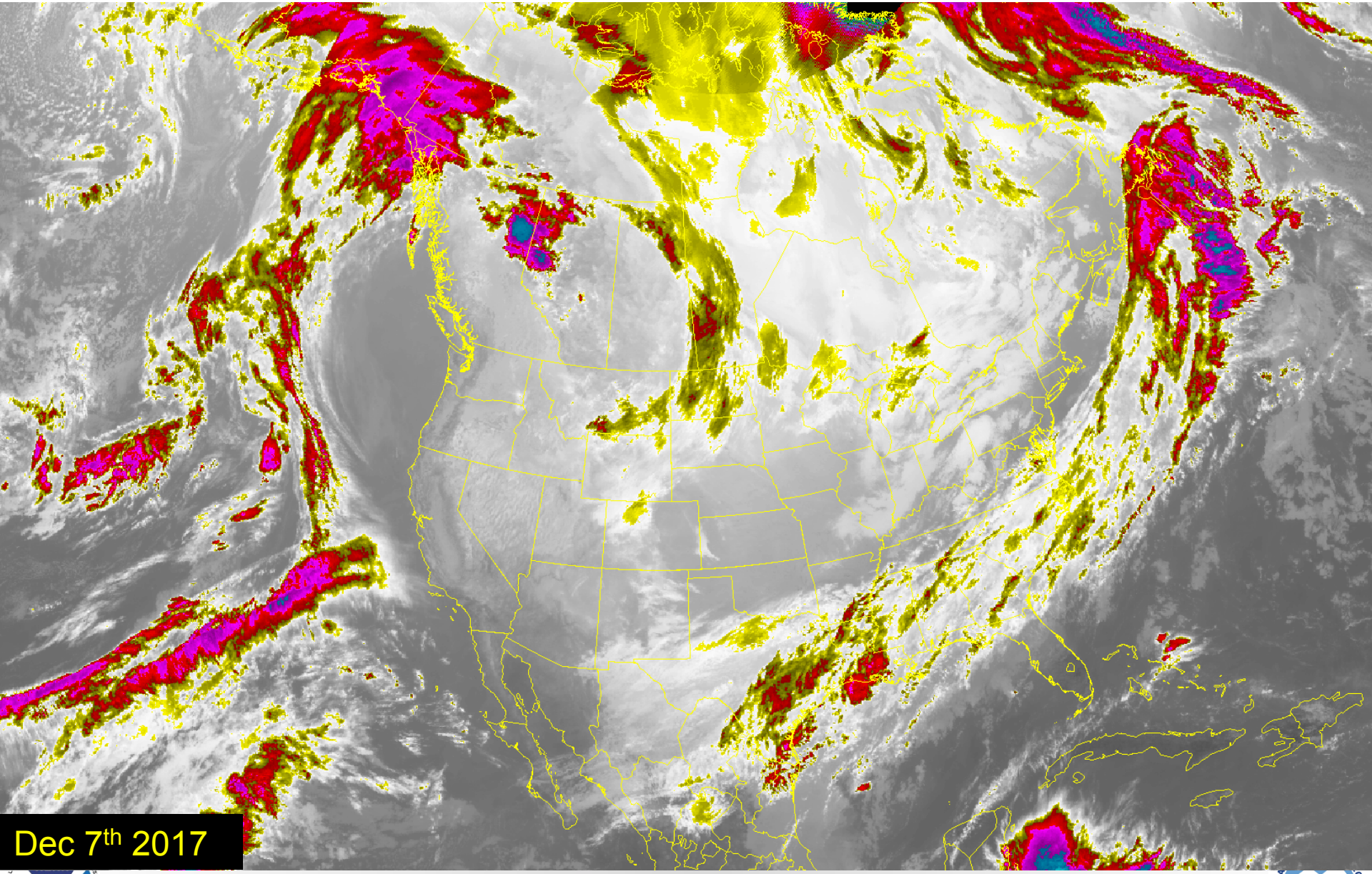




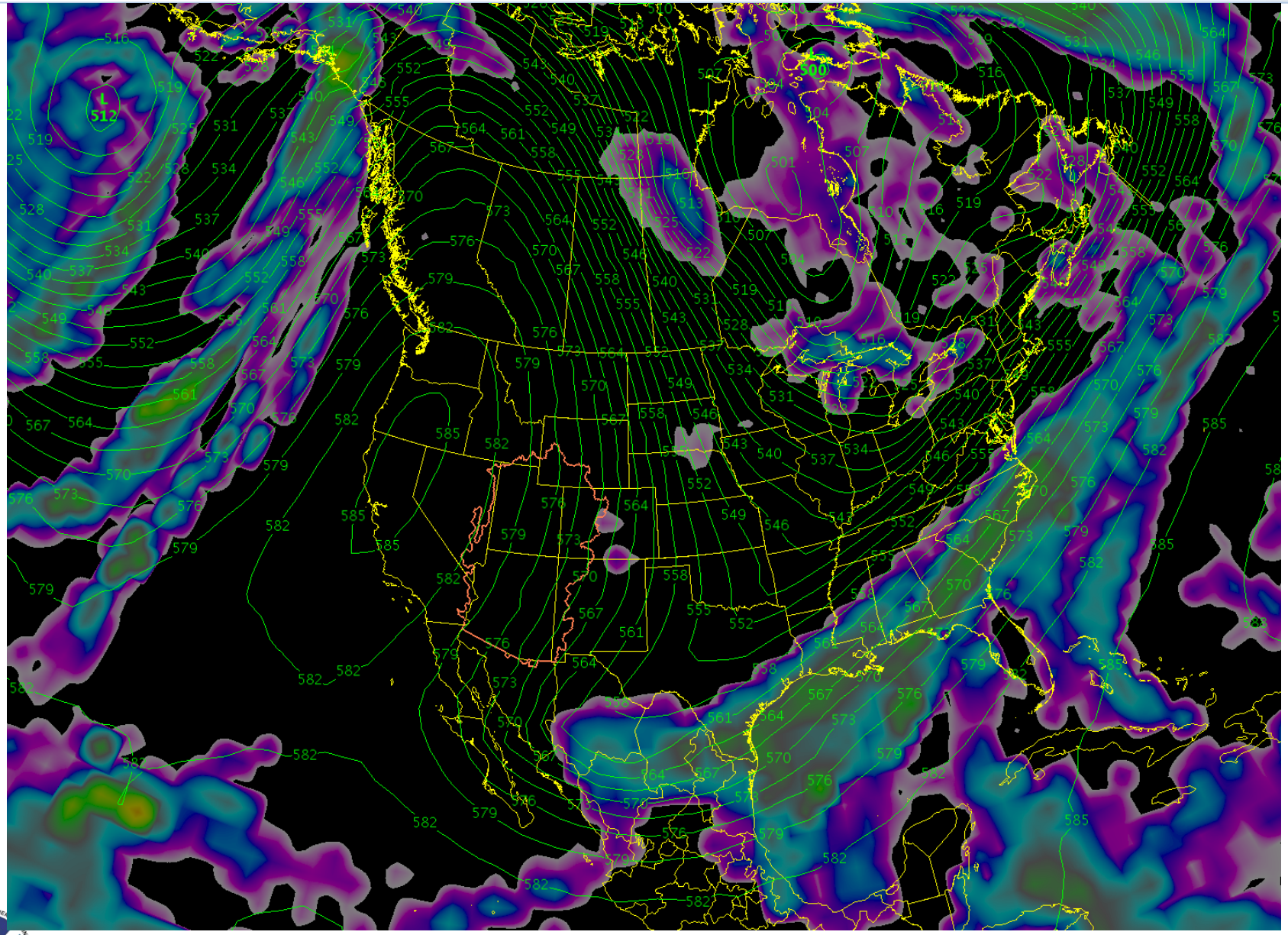
Percent of median

- Below 25%
- 25% - 35%
- 35% - 45%
- 45% - 55%
- 55% - 65%
- 65% - 75%
- 75% - 85%
- 85% - 95%
- 95% - 105%
- 105% - 115%
- 115% - 125%
- 125% - 135%
- 135% - 145%
- 145% - 155%
- 155% - 165%
- 165% - 175%
- 175% - 185%
- 185% - 195%
- 195% - 205%
- 205% - 225%
- 225% - 250%
- Above 250%
- NA

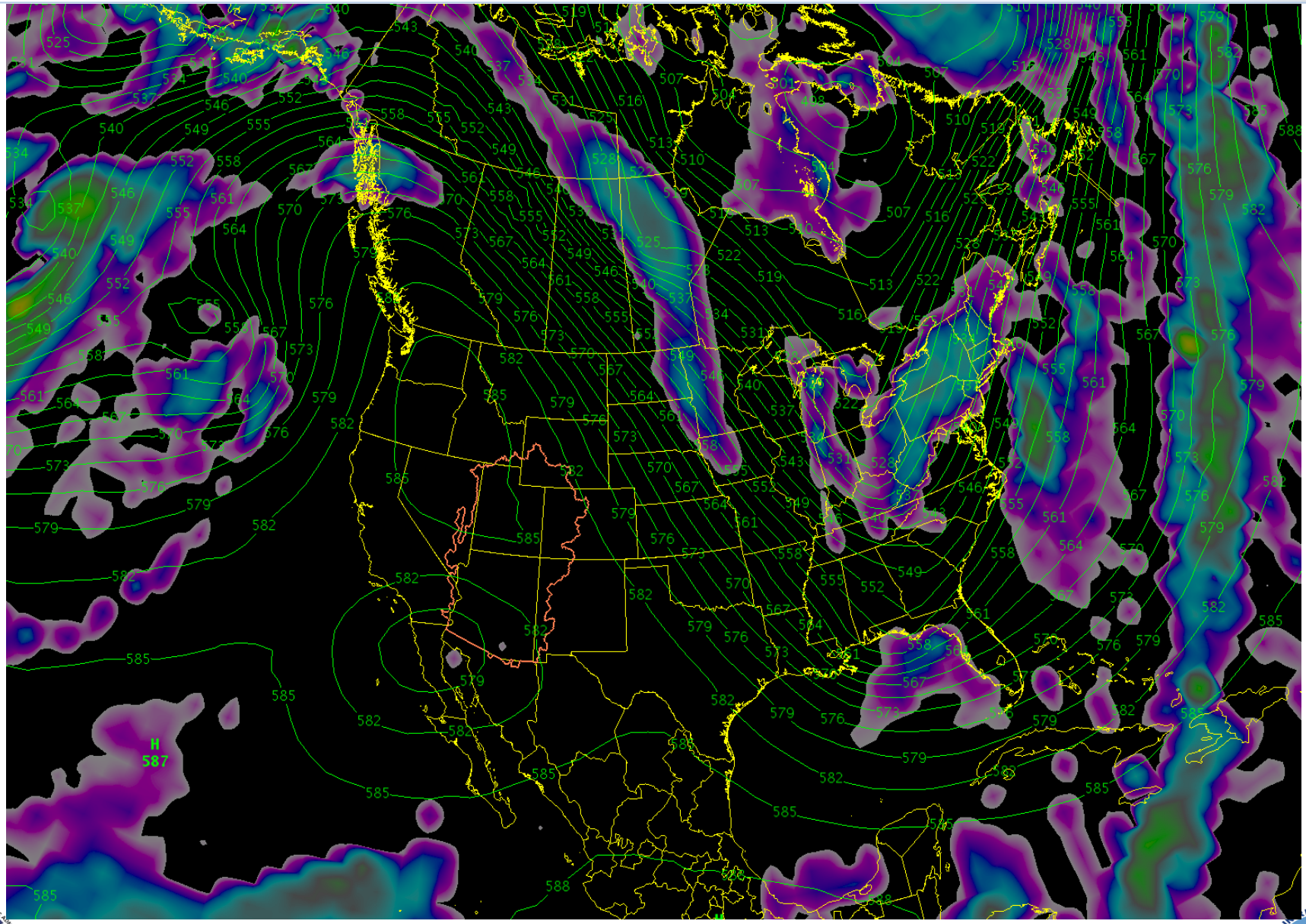
So what about this year ? The outlook for December



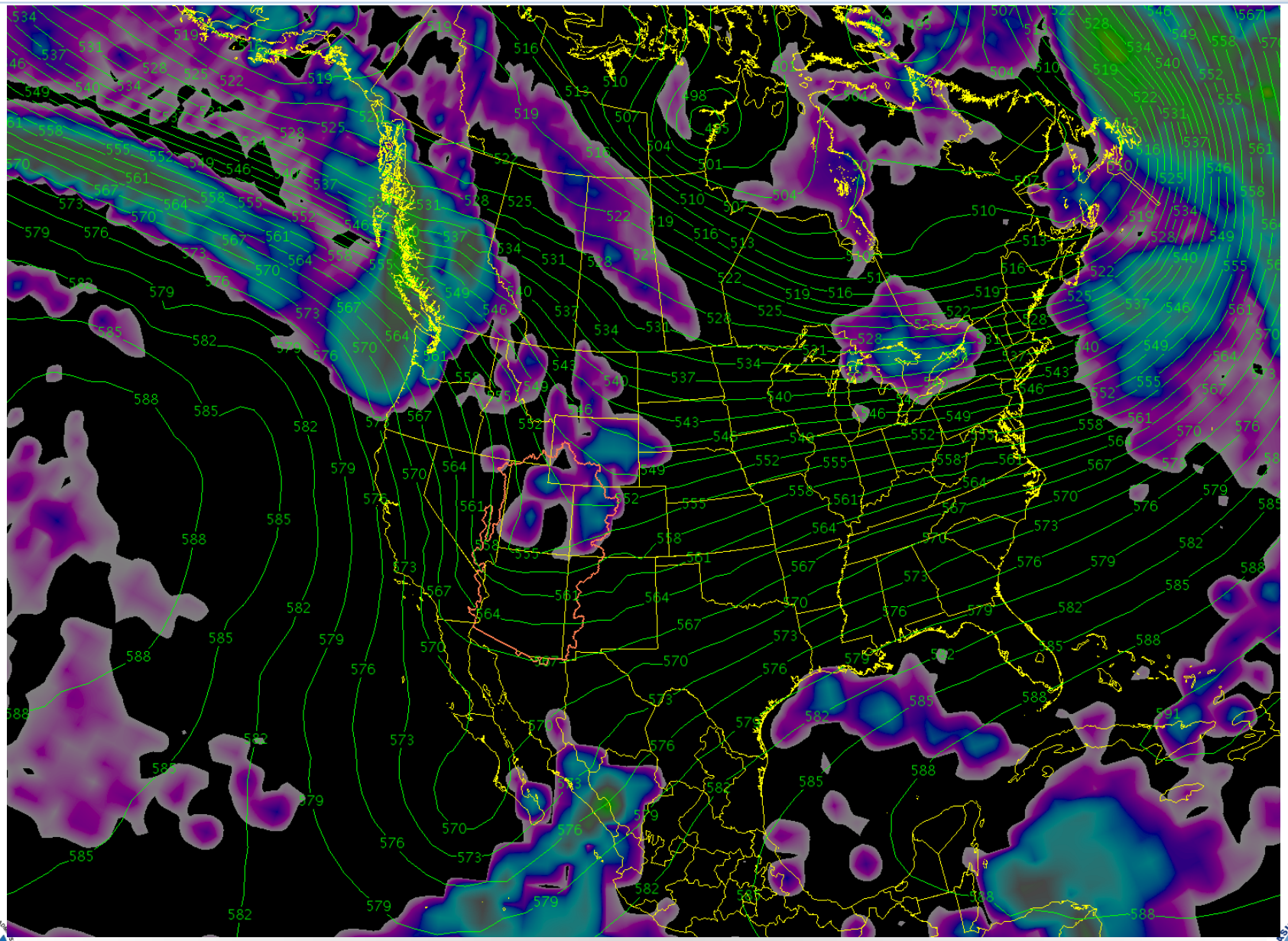
The Outlook for December – Meteorological Guidance for Fri Dec 8th



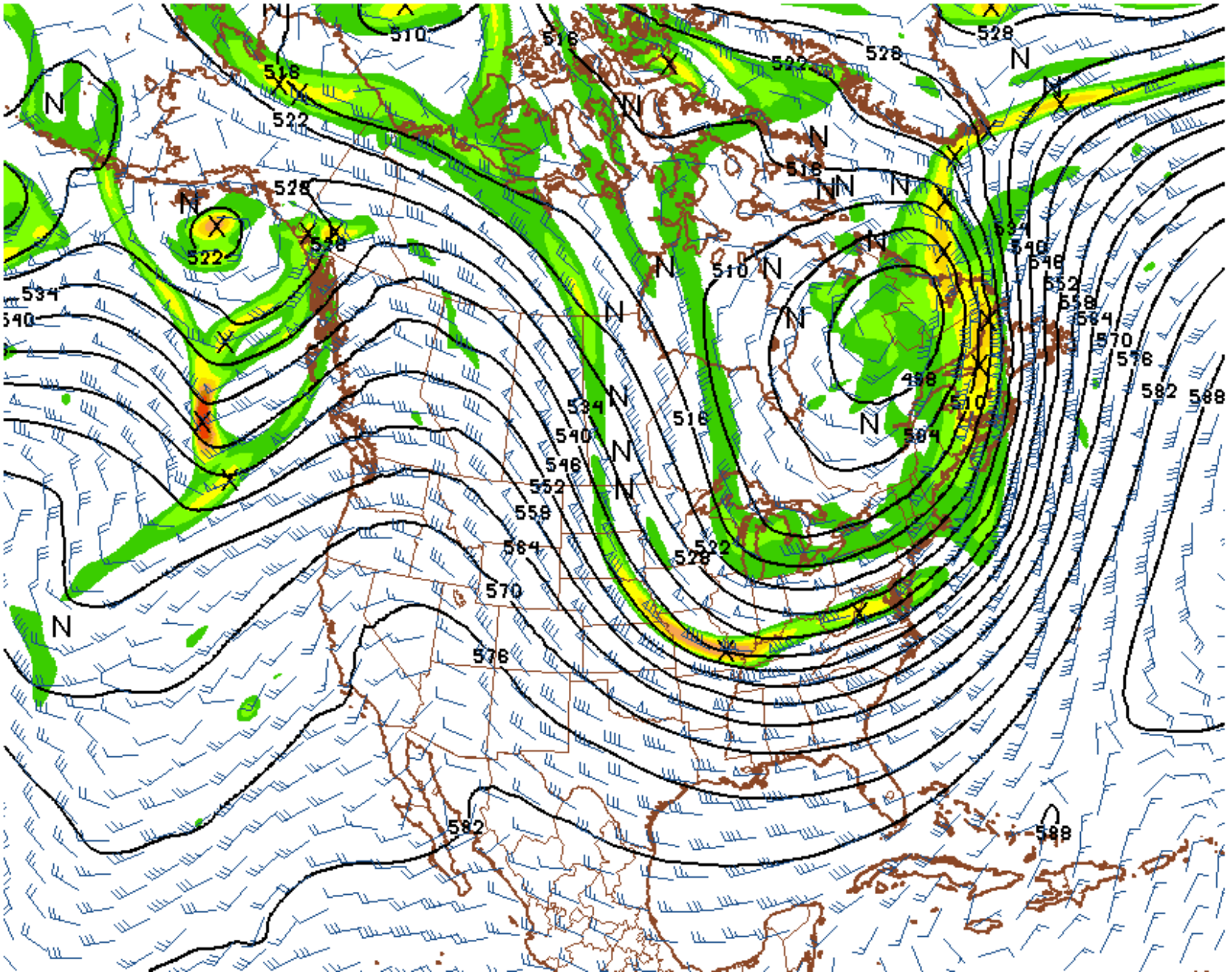
The Outlook for December – Meteorological Guidance for Tue Dec 12th



The Outlook for December – Meteorological Guidance for Sat Dec 16th

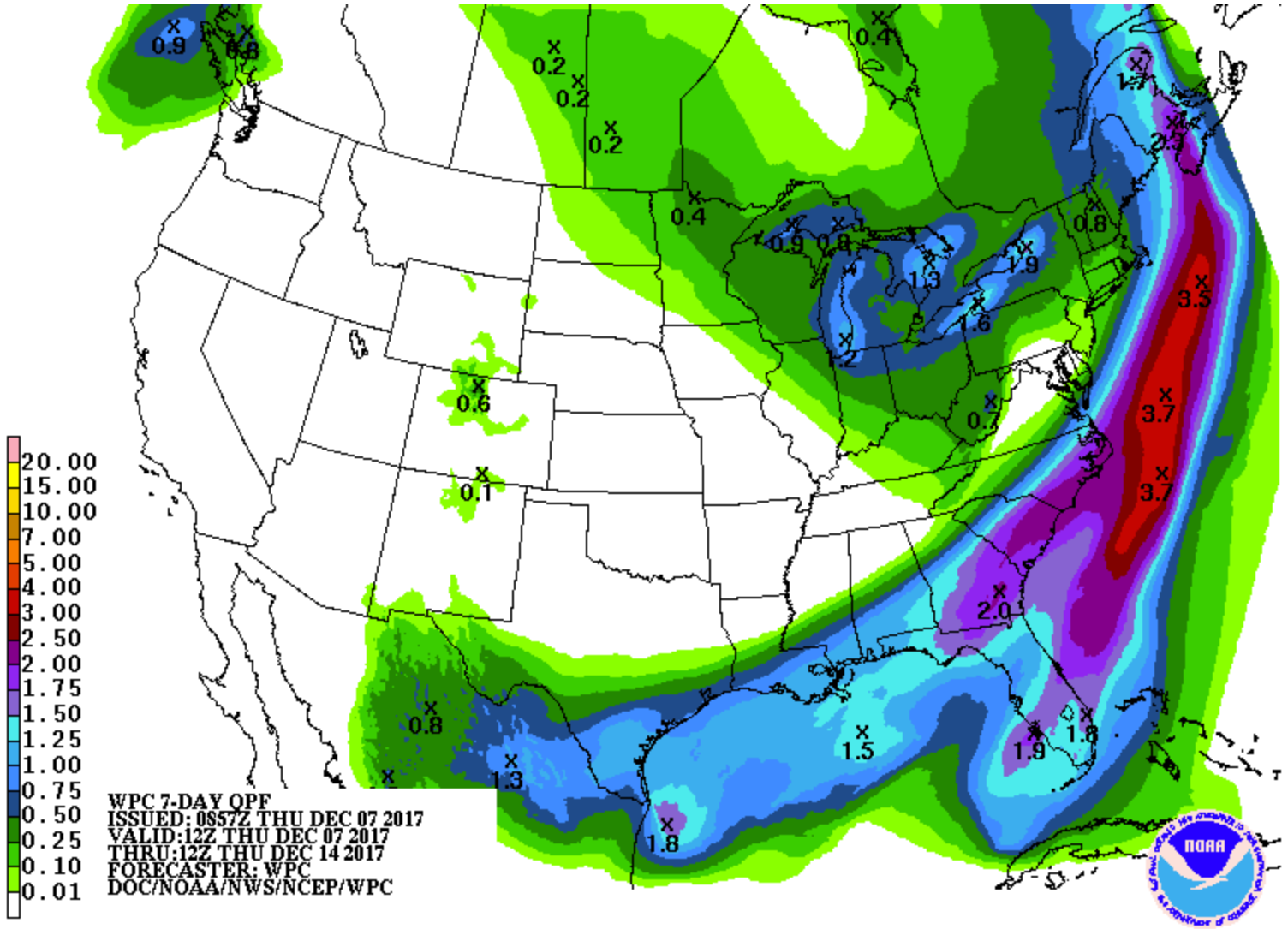


The Outlook for December – Long Range Guidance for Sat Dec 23rd



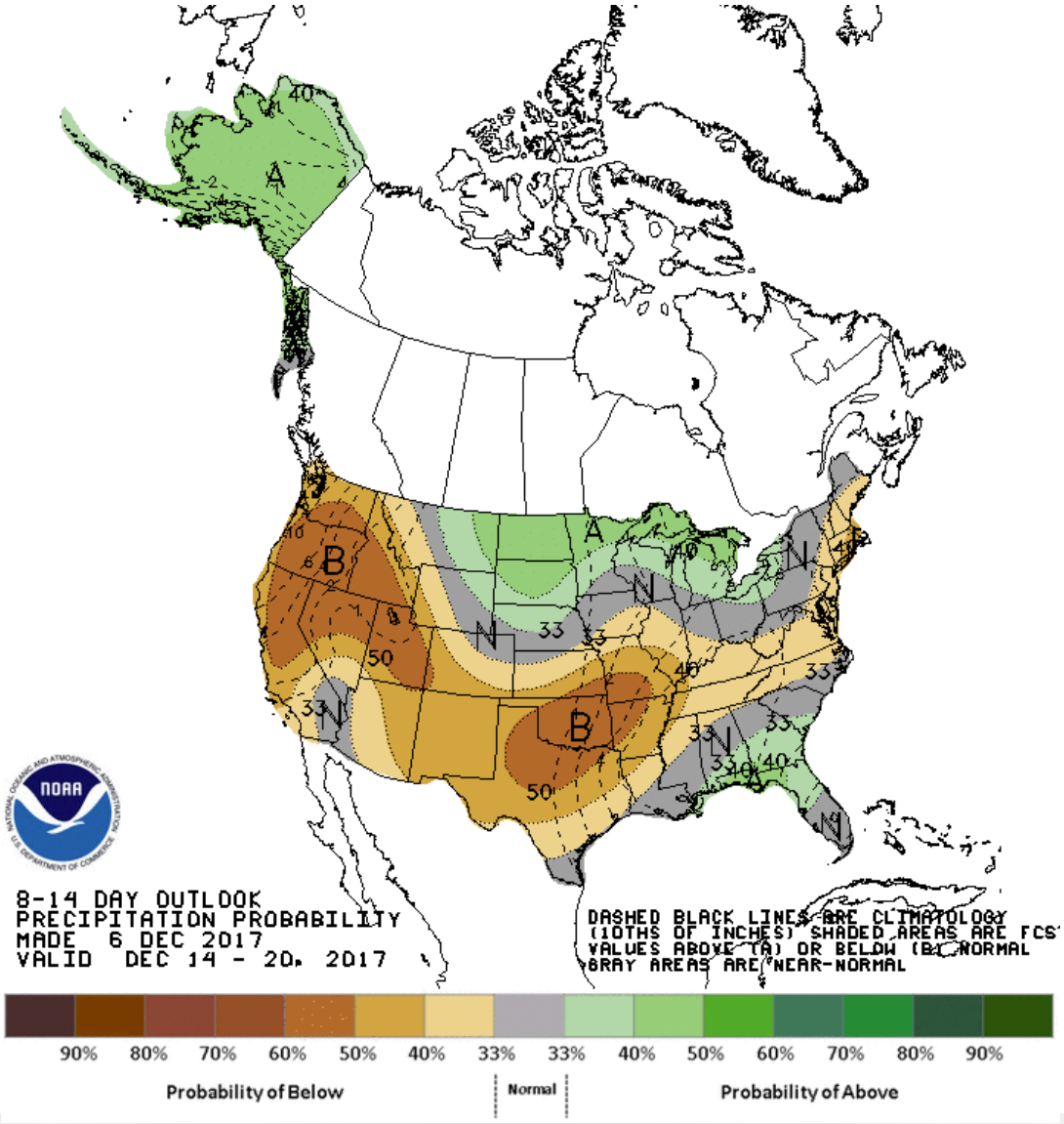
The Outlook for December – 7 day precipitation outlook (Dec 7th – Dec 14th)

NOAA Weather Prediction Center



The Outlook for December – Precipitation Probability (Dec 13th-19th)

NOAA Climate Prediction Center



Early Outlook Summary:

Soil moisture conditions:

Above average: Upper Green (WY), northern Great, and Duchesne Basins.
Near or above average: Headwaters Colorado, Yampa, Gunnison, eastern San Juan Basins.
Below average Lower Colorado, Dolores, southwest Utah, remainder of San Juan Basins.

Generally better than last year at this time most areas except Lower Colorado and parts of Dolores and San Juan Basins

Weather Outlook:

Dry conditions experienced this fall are likely to continue through most if not all of December. Northern areas, such as the upper Green may be more susceptible to storm systems rounding the ridge of high pressure.

Weather models continue to keep a mean ridge over the area into the last week of the month.

Snow:

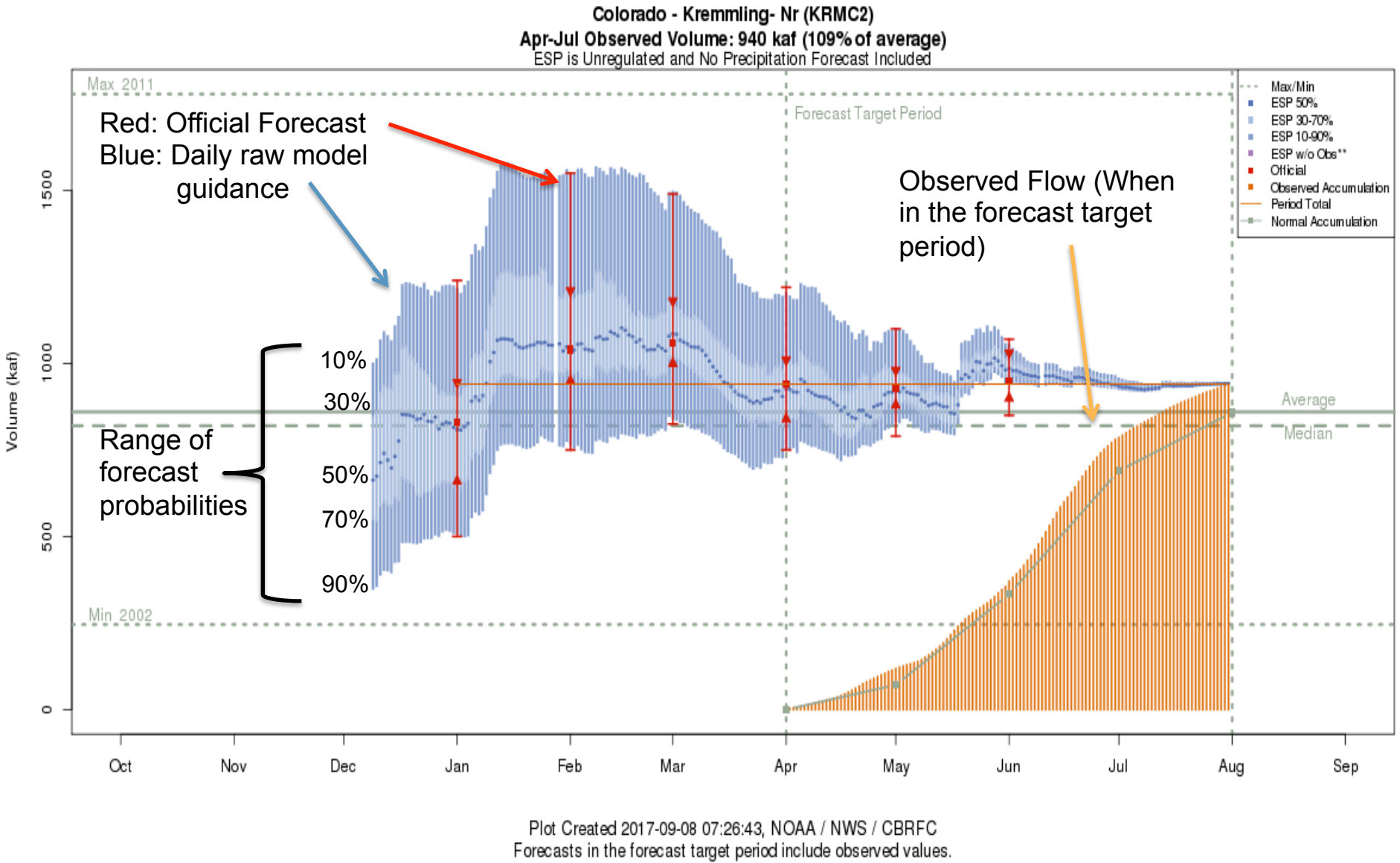
Snow conditions are likely to worsen over the next 2-3 weeks, particularly for areas farther south. However, sufficient snow accumulation season remains and there is time to make up ground if we get the right weather pattern change.

Water Supply:

Anticipate most areas with below average forecasts to start off the season.

Communicating Forecast Information

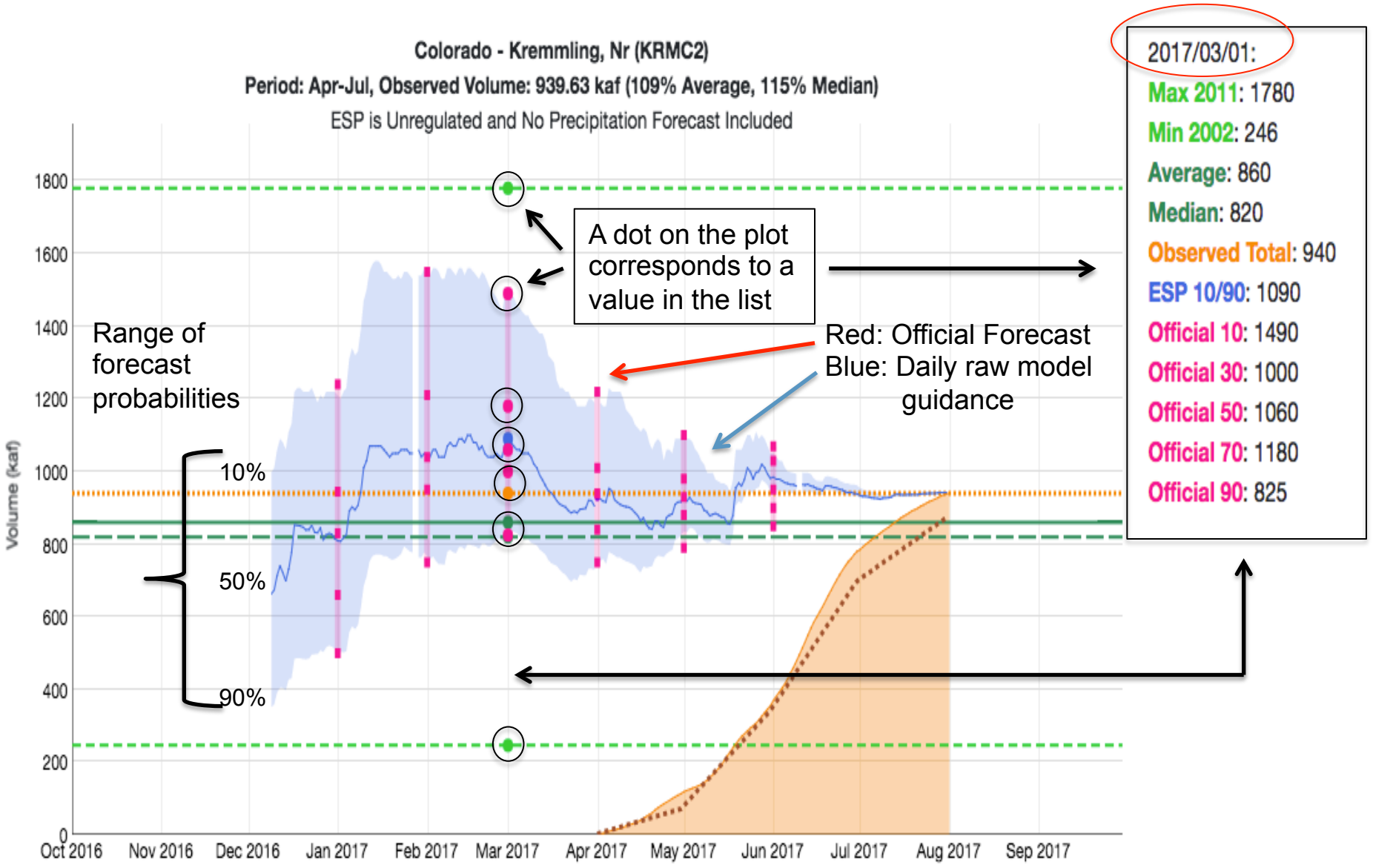
Existing Forecast Evolution Plot



Communicating Forecast Information

Evolution Plot: 10/90 bounds (the default)

New Forecast Evolution Plot (many more interactive features)



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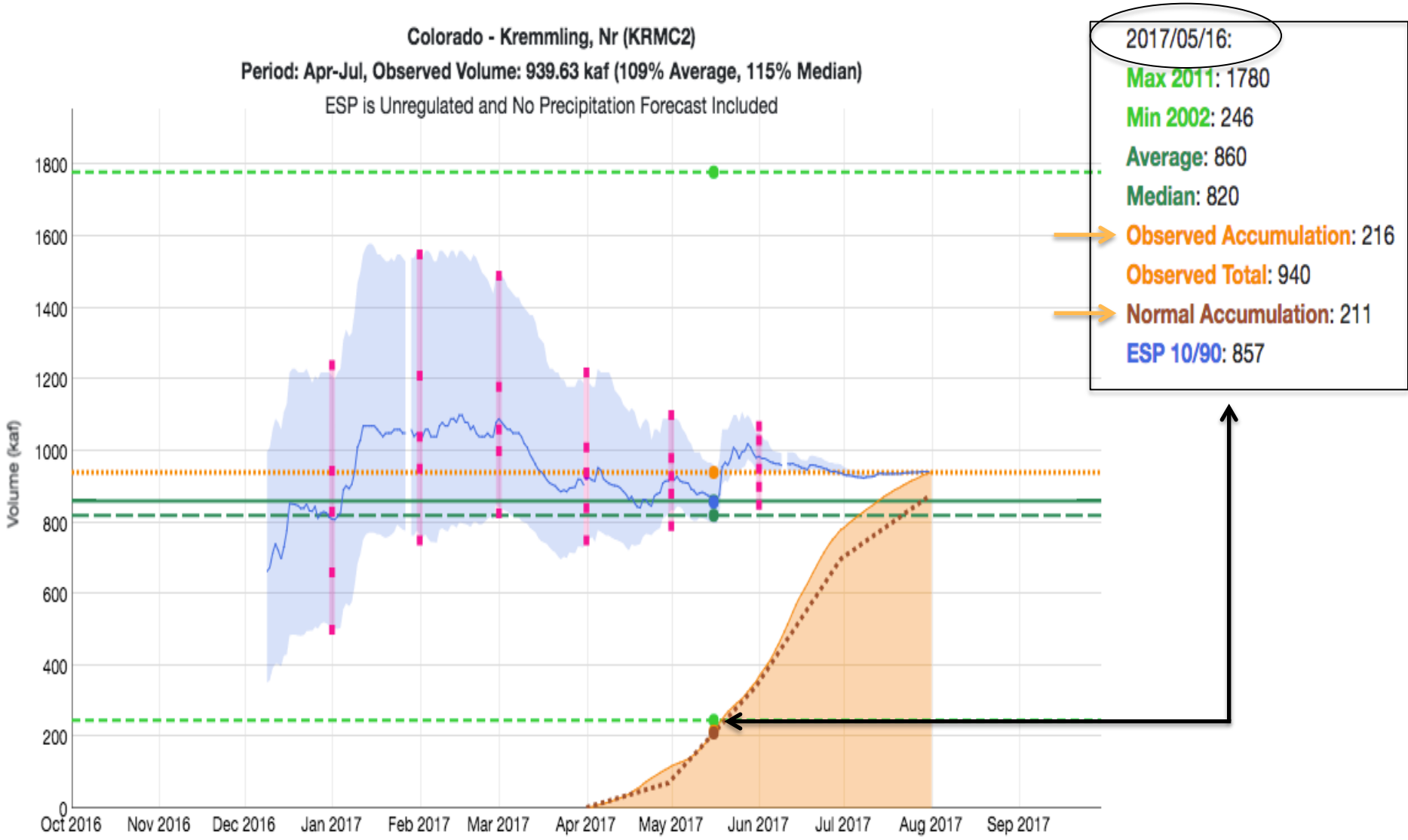

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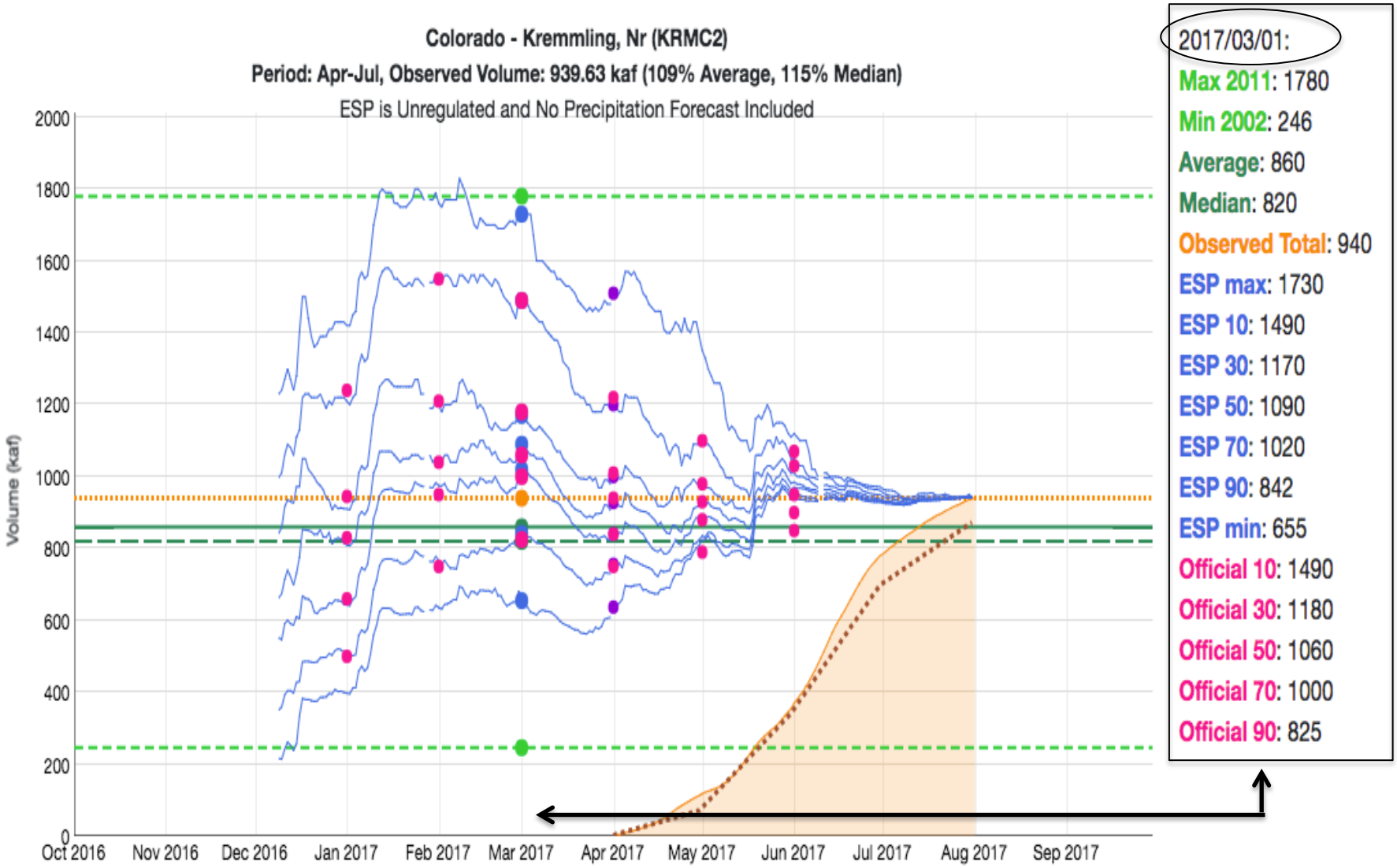
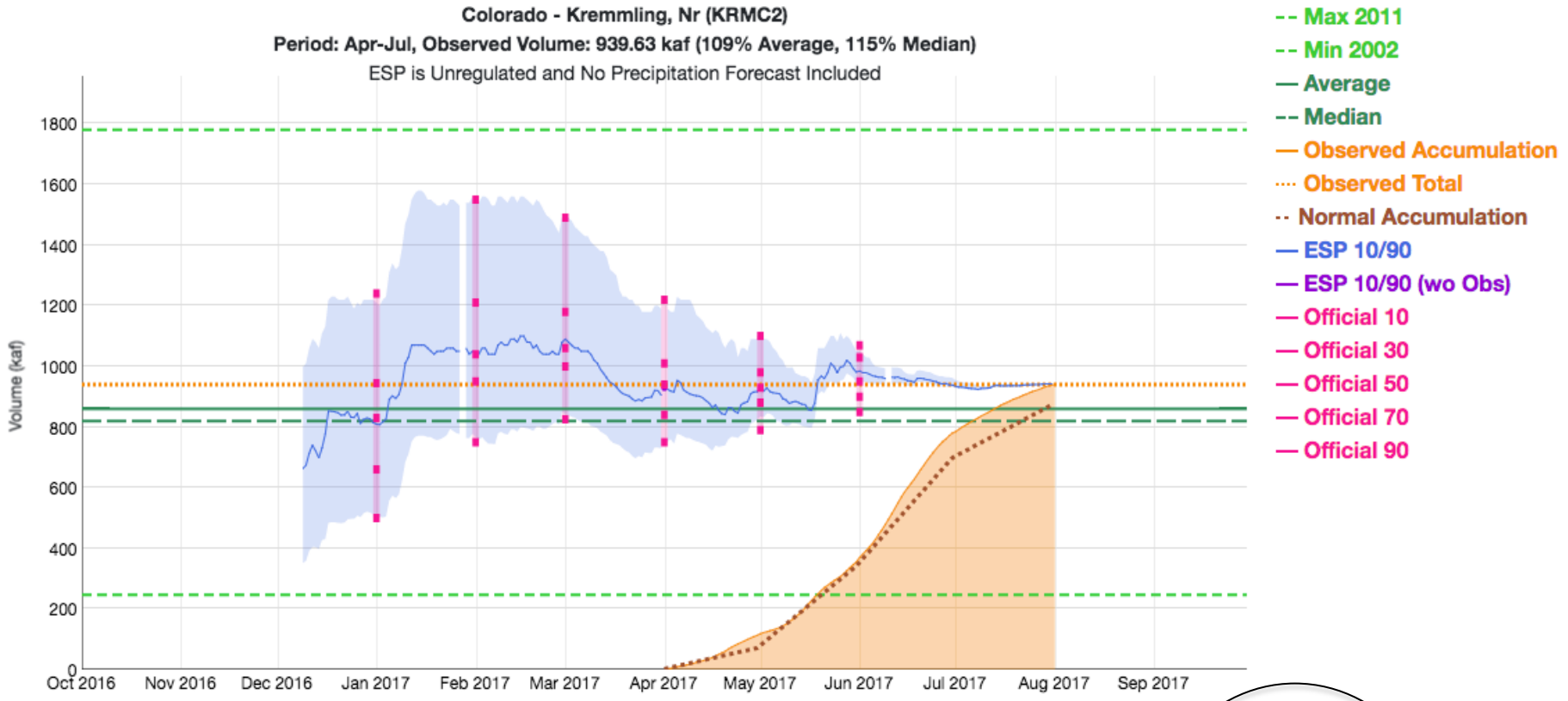


Communicating Forecast Information: Forecast Evolution Plot Options



Water Year

2018
2017
2016
2015
2014
2013
2012
2011
2010
2009
2008
2007

Plot Options

- [ ] QPF
- [x] ESP
- [x] Official Forecasts
- [x] Average
- [x] Median
- [x] Observations
- [ ] Unapproved
- [x] Max/Min

ESP Display Mode

- [ ] 30/70 Probability Bounds
- [x] 10/90 Probability Bounds
- [ ] Max/Min Trace Bounds
- [ ] Probability Traces

Plot Help

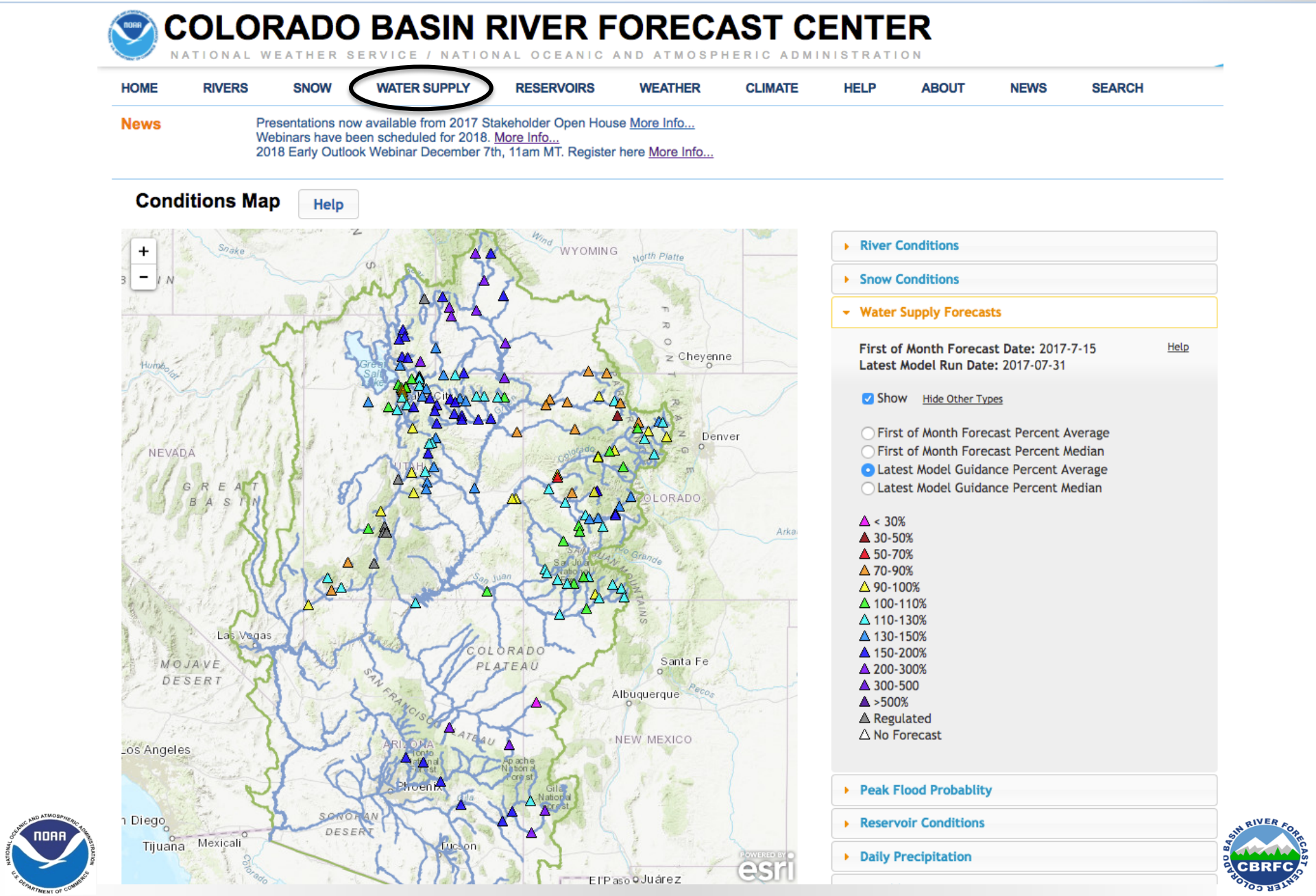
Hover for values.
Click and drag to zoom.
Double click to zoom out.
Shift-click and drag to pan.

Product Description
ESP Model Description

Download Data

Tabular data will still be available

Forecast Evolution Plots: www.cbrfc.noaa.gov select: Water Supply Click: Forecast Point



Concluding…

Forecast evolution plots for the 2018 season on CBRFC web site mid December

Official forecasts are usually ready by the 4th working day of the month (Jan-Jun)

Notifications of new forecast / forecast discussion distributed to email distribution list

Water supply briefings (webinars) will be held early each month (Jan-May, etc.)

Monday Jan 8th @ 11 am MT – Colorado River Basin Briefing
Monday Jan 8th @ 1:30 pm MT Great Basin Breifing

Register for the briefings and see the full schedule by going to the CBRFC web page:
www.cbrfc.noaa.gov

Feel free to contact us with any questions or concerns.

Thank You