May 2017
Great Basin
Water Supply Briefing

May 5, 2017

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Colorado Basin River Forecast Center
National Weather Service
NOAA

Please mute your phone until ready to ask questions

CBRFC Forecast Areas

Today's Presentation

April weather impacts:
- Generally cooler than normal
- Snowmelt generally slowed

Snowpack conditions:
- Low elevation snowpack is gone, mid-elevation snowpack is mostly gone except in some northern areas
- Snow remains at higher elevations

May 2017 water supply forecasts overview
- Forecasts remain well above average in most areas

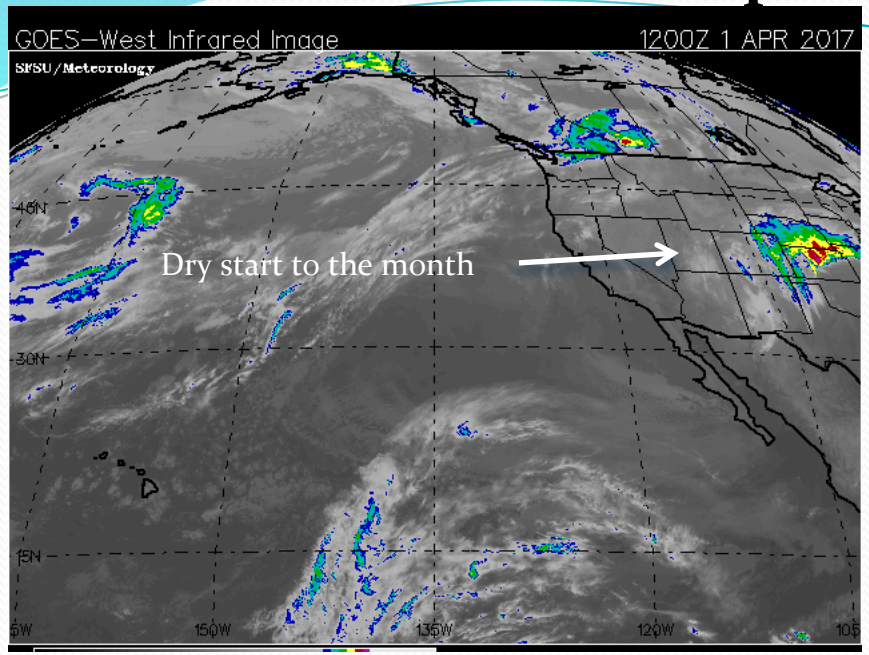
Potential flooding due to rising temperatures in the near future

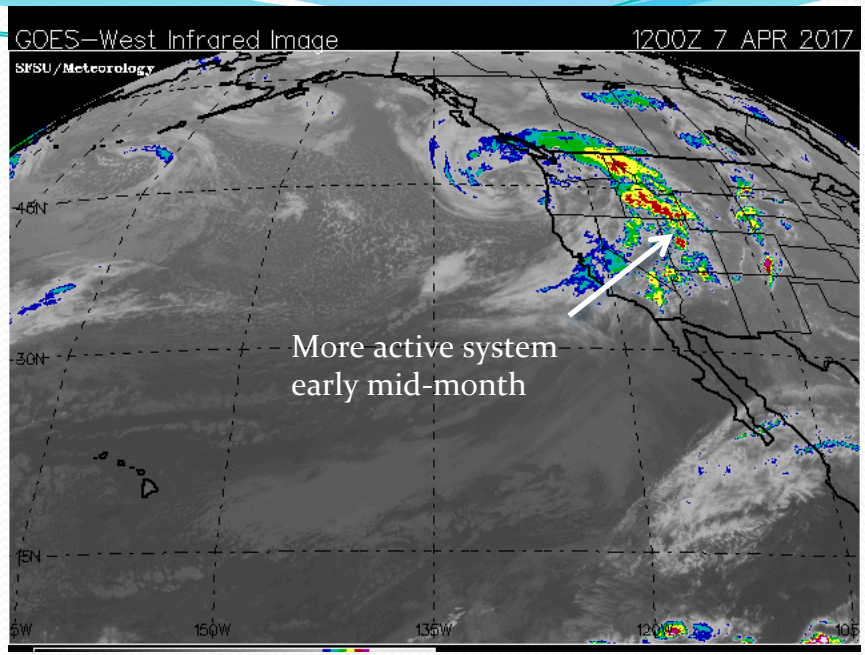
Upcoming weather – A difficult forecast!

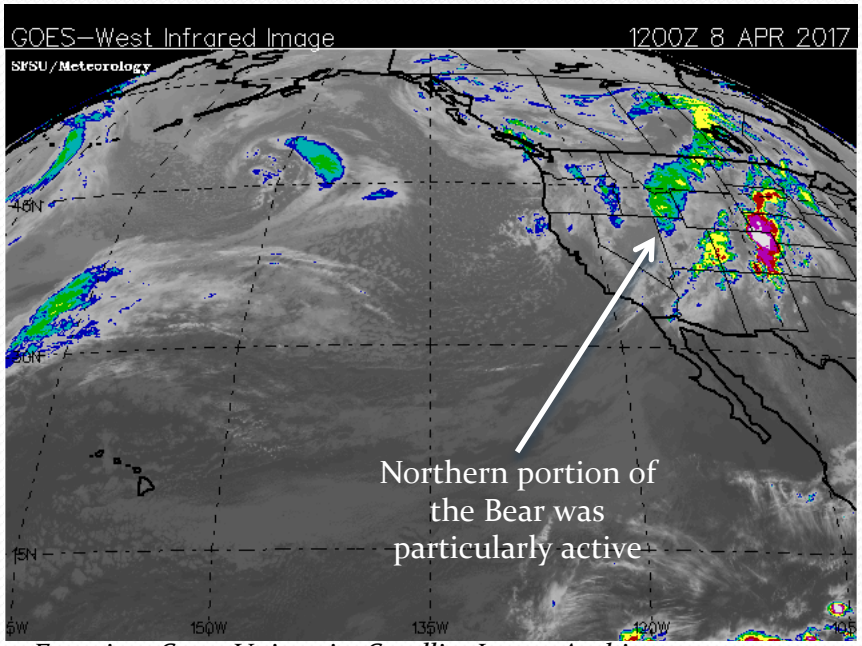
Contacts & Questions

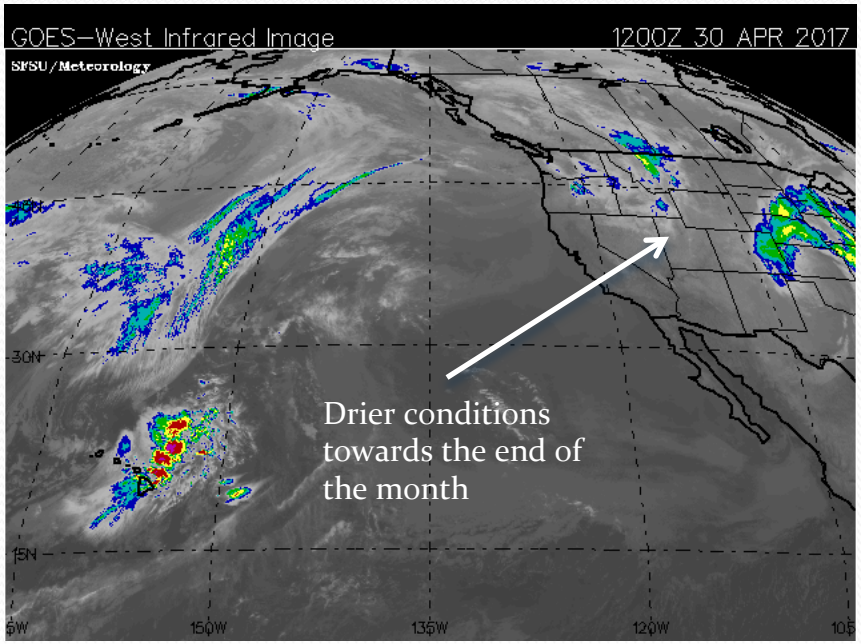
*** Please mute your phone until ready to ask questions ***

April Weather









San Francisco State University Satellite Image Archive

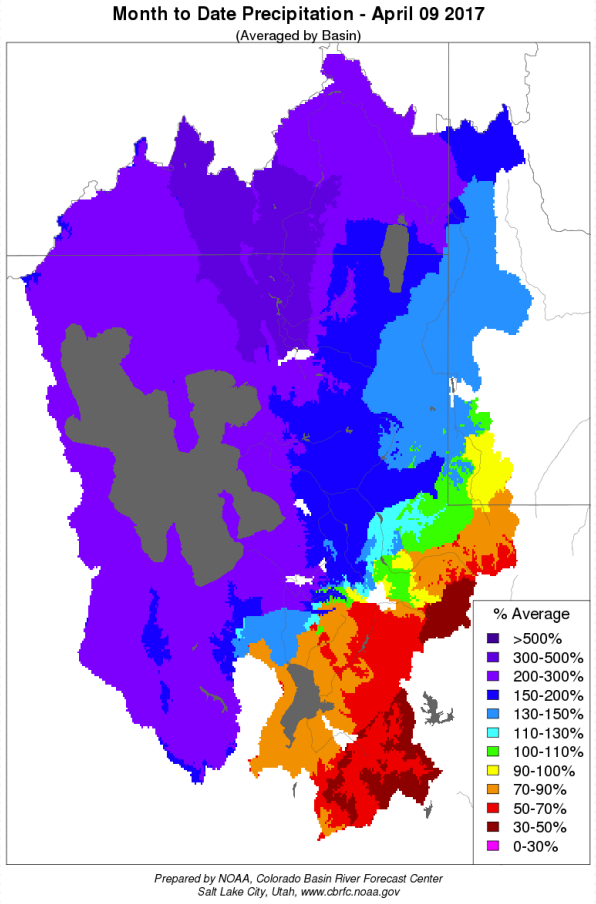
April Weather

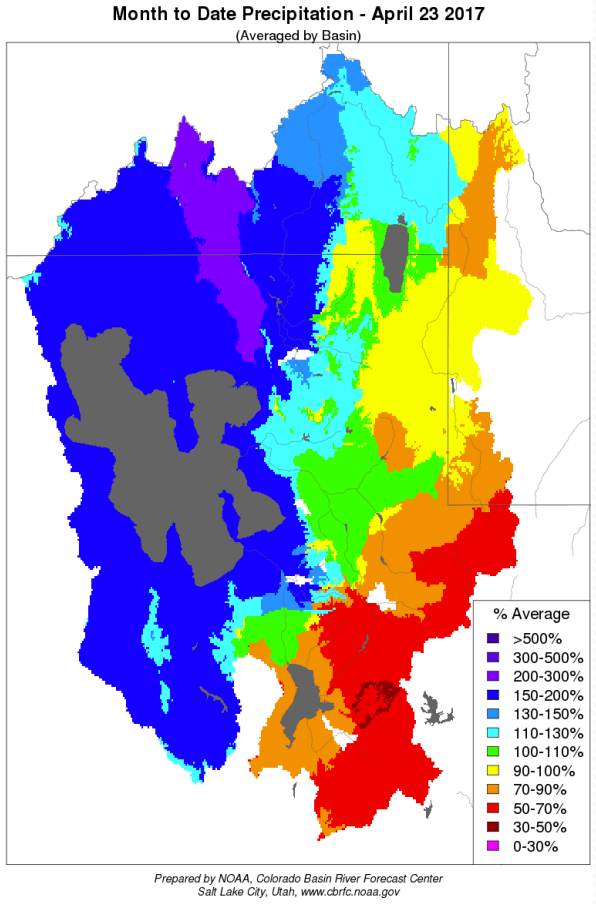
Precipitation distribution over the month of April

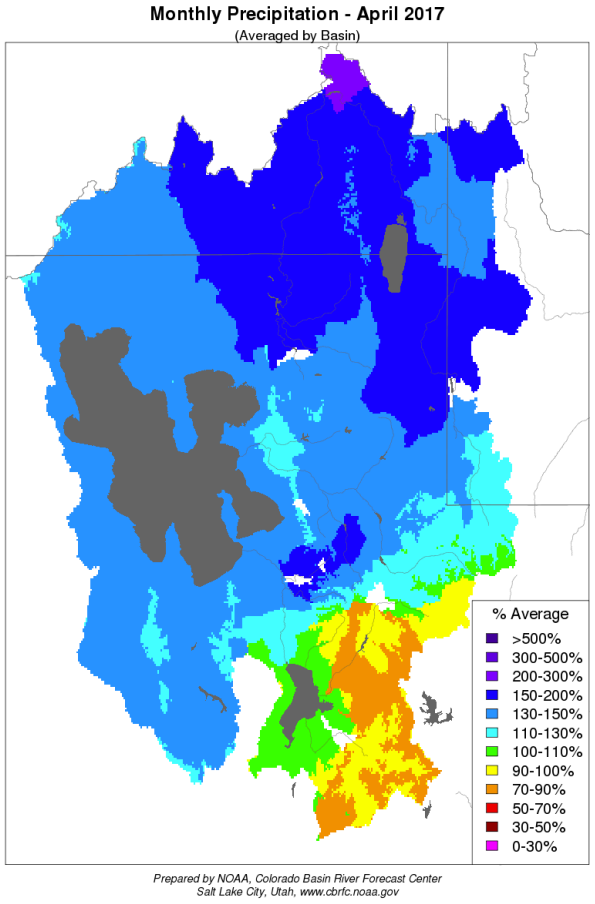
Wet and cool conditions were apparent over much of the Great Basin during the middle of April.

With the exception of the northern portion of the Bear River Basin, conditions became drier but temperatures remained below average.

Overall, near normal to above average precipitation conditions for the month of April, though drier in the South near the Provo River Basin

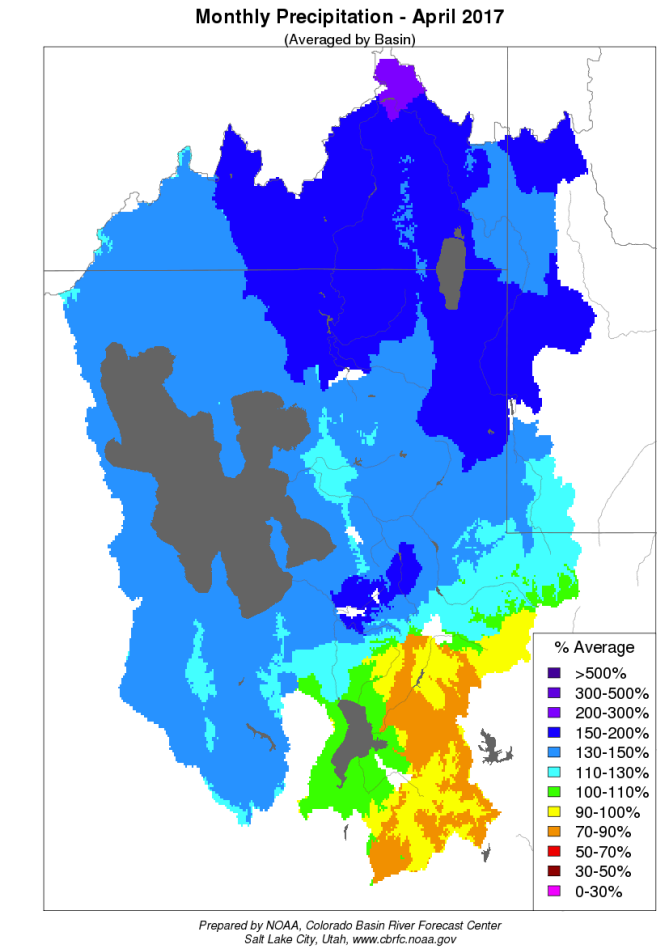


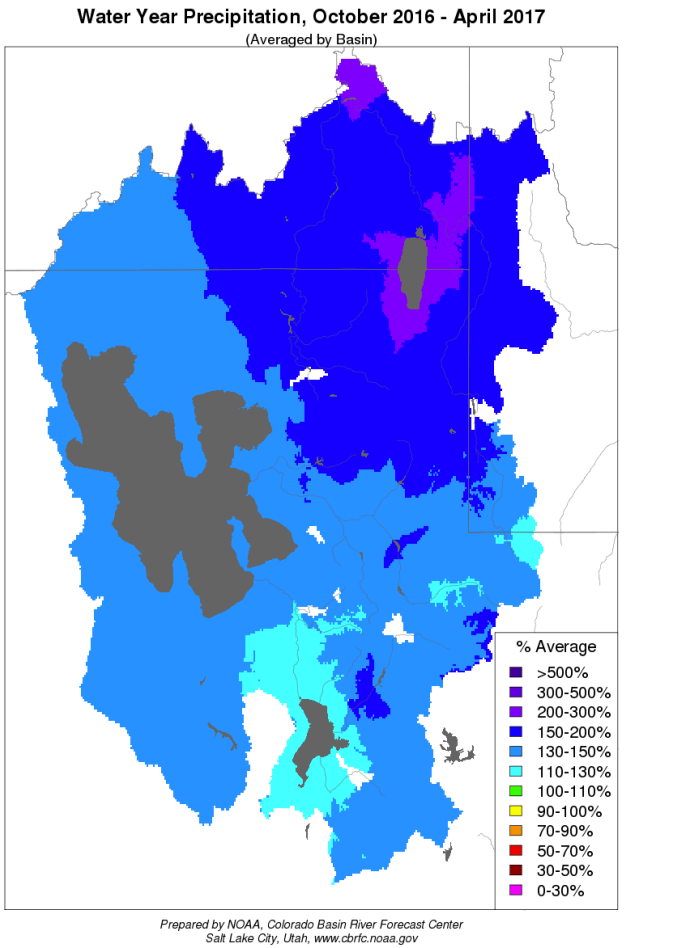




April Weather

Precipitation





April Precipitation (% average):

Bear:	150%
Weber:	130%
Six Creeks:	135%
Provo/UT Lake:	90%

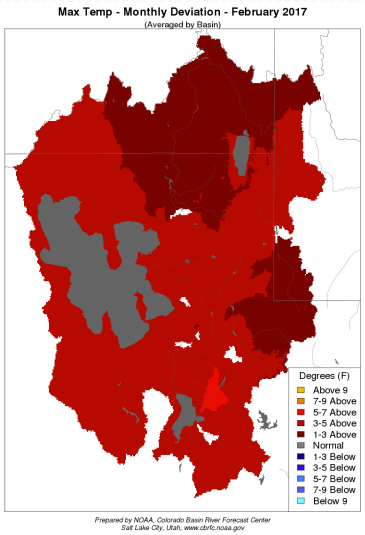
Seasonal Precipitation (% average):

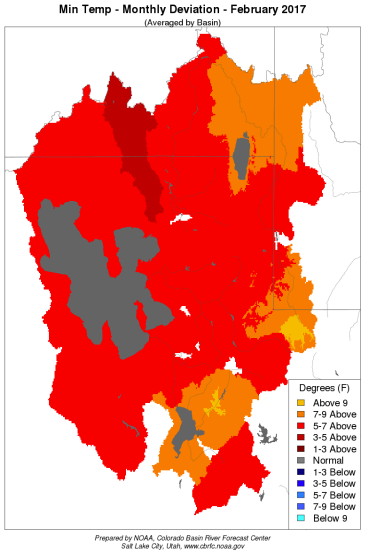
Bear:	170%
Weber:	145%
Six Creeks:	130%
Provo/UT Lake:	140%

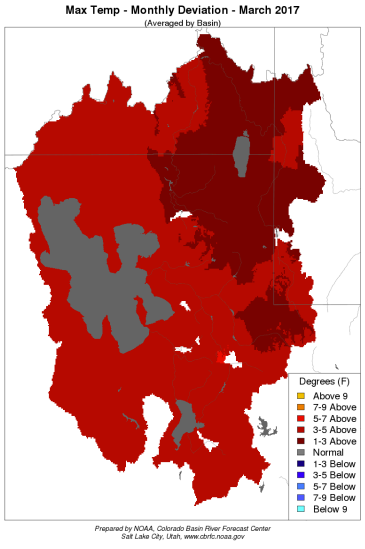
April Weather

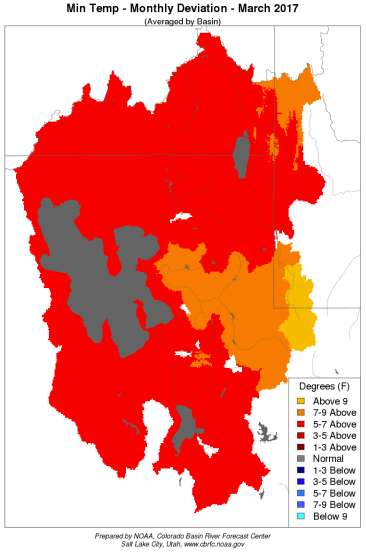
A break from the heat!

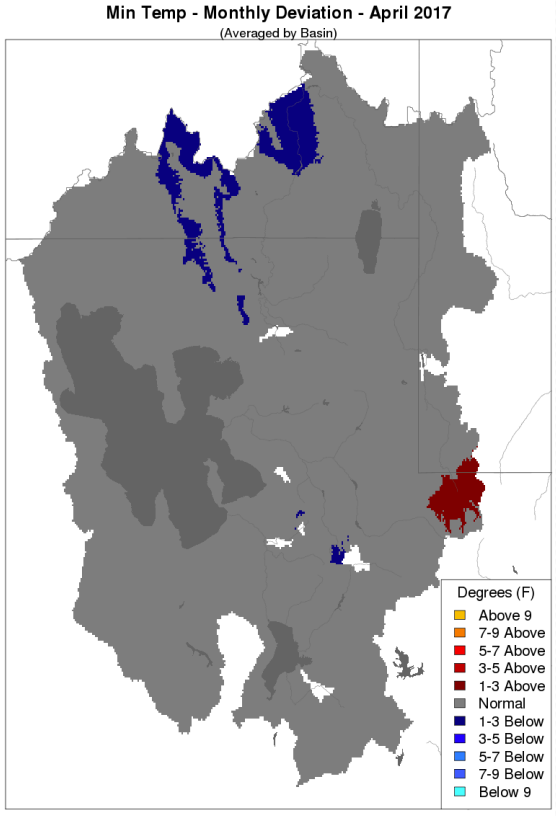
Most daily temperatures about 1 – 3 degrees below average

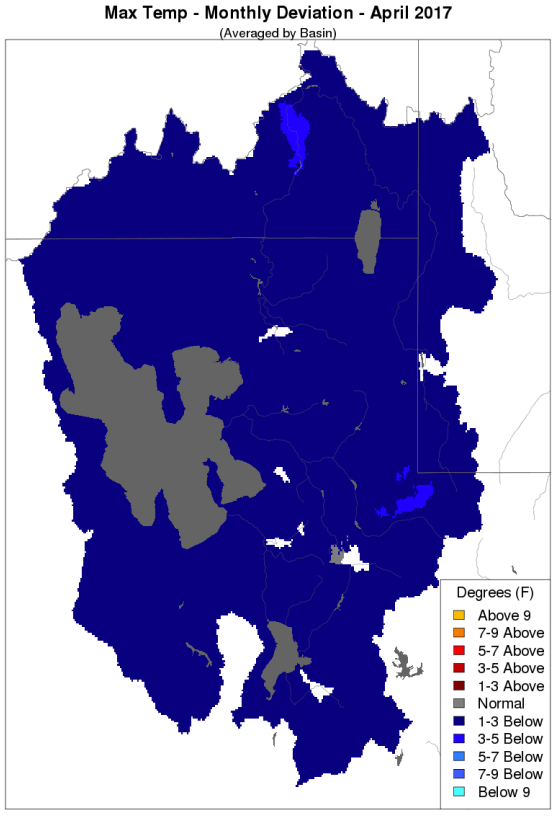






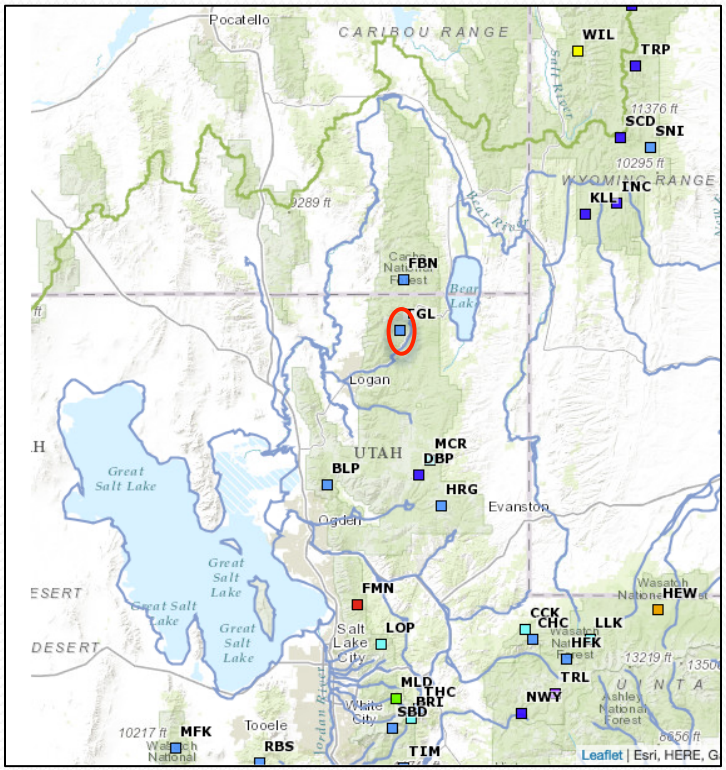


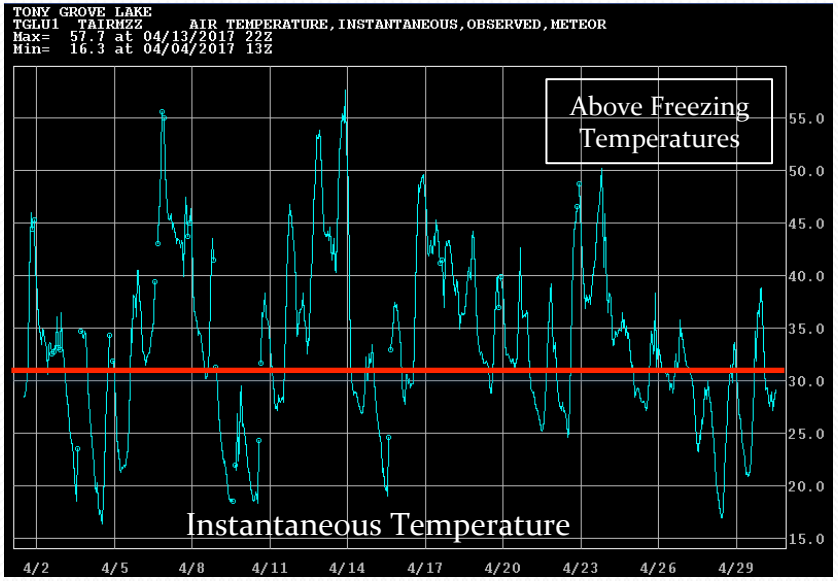


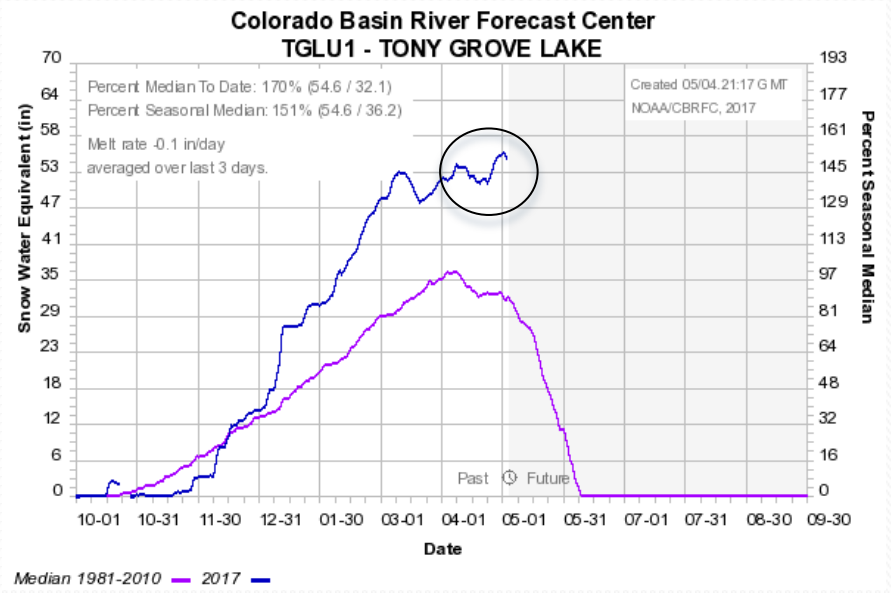


March Weather
Temperature

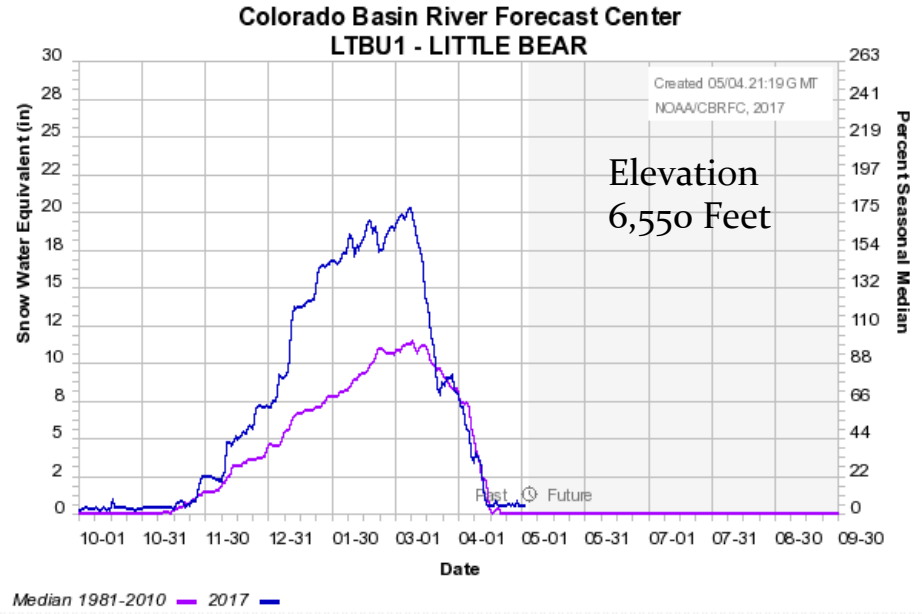
Tony Grove Lake SNOTEL
Elevation: 8,400 Feet
Logan River Basin

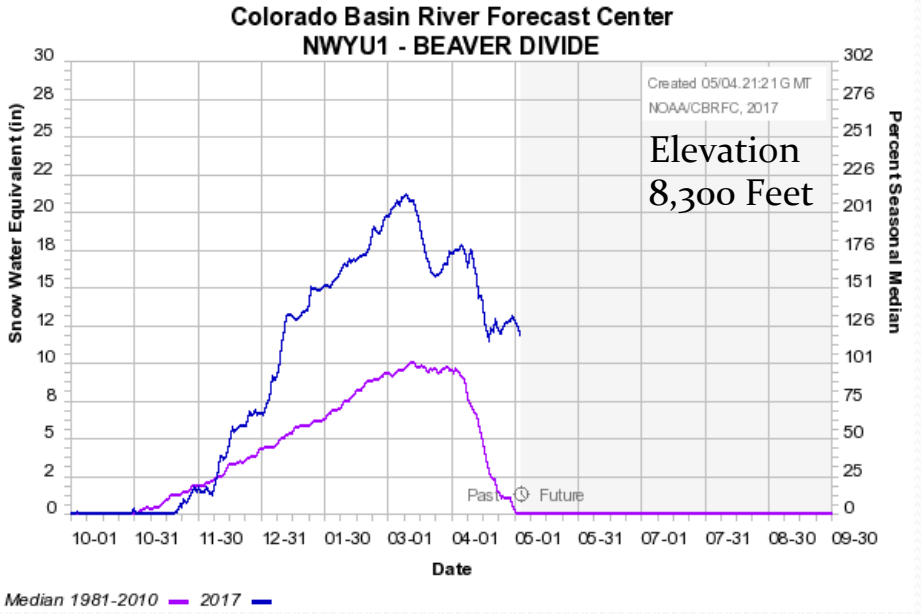


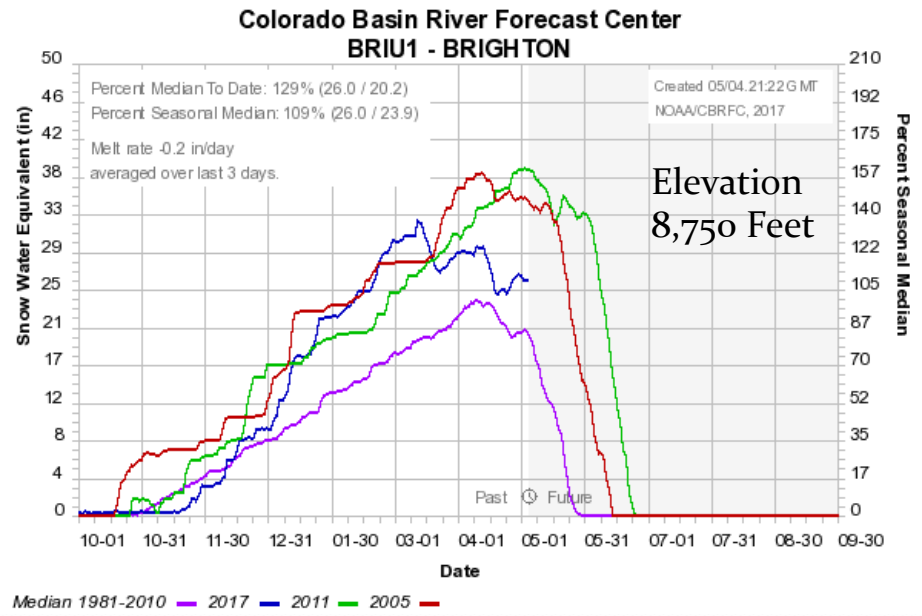


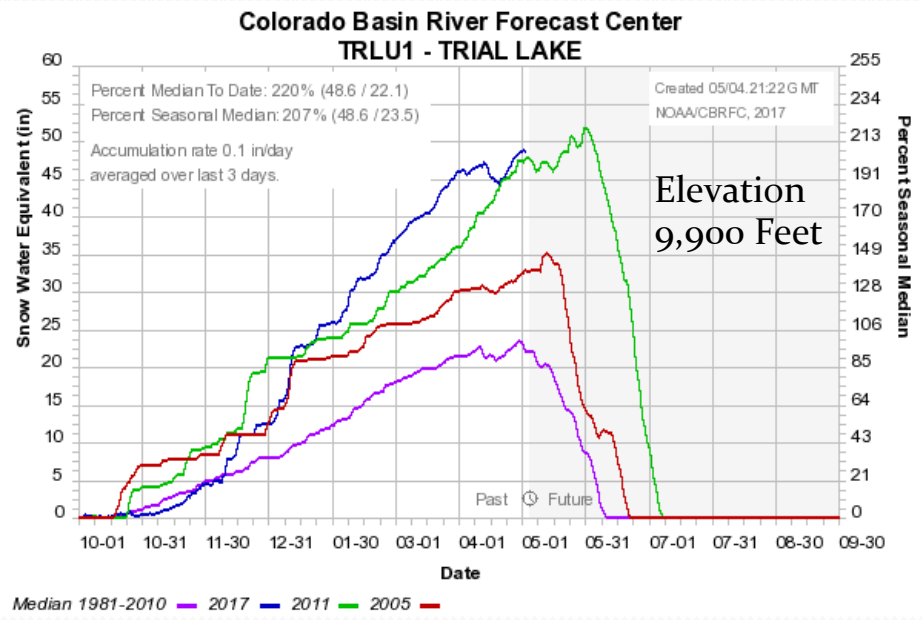


April Weather: Cooler Temperatures Slow Melt



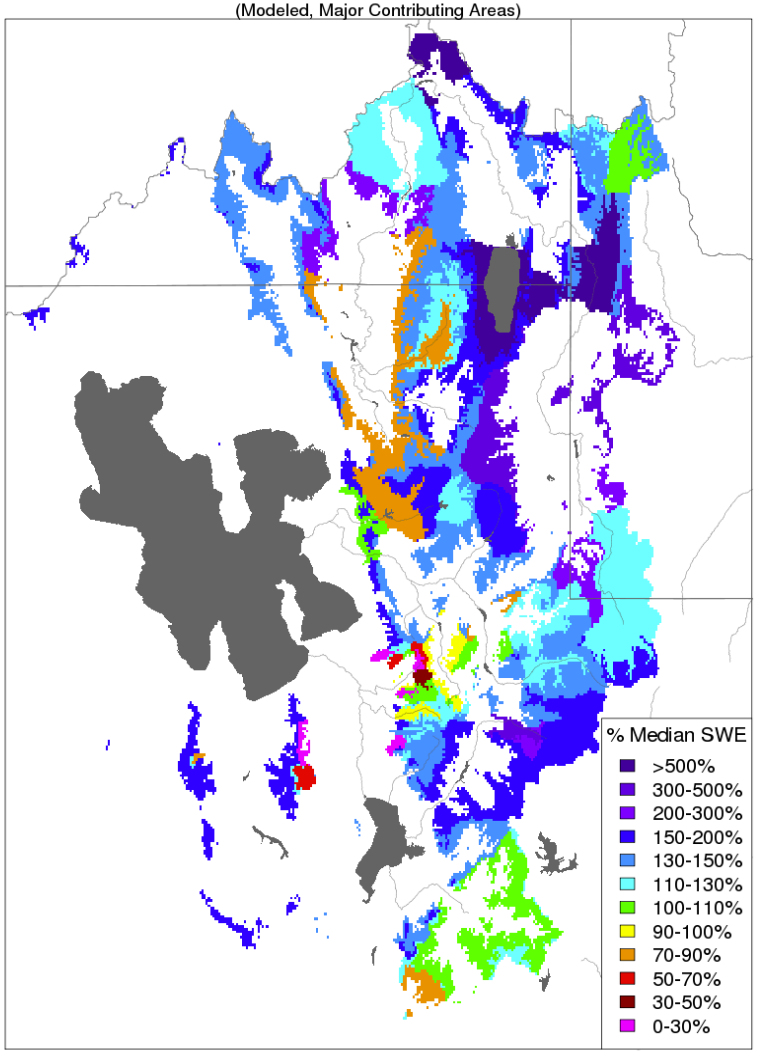




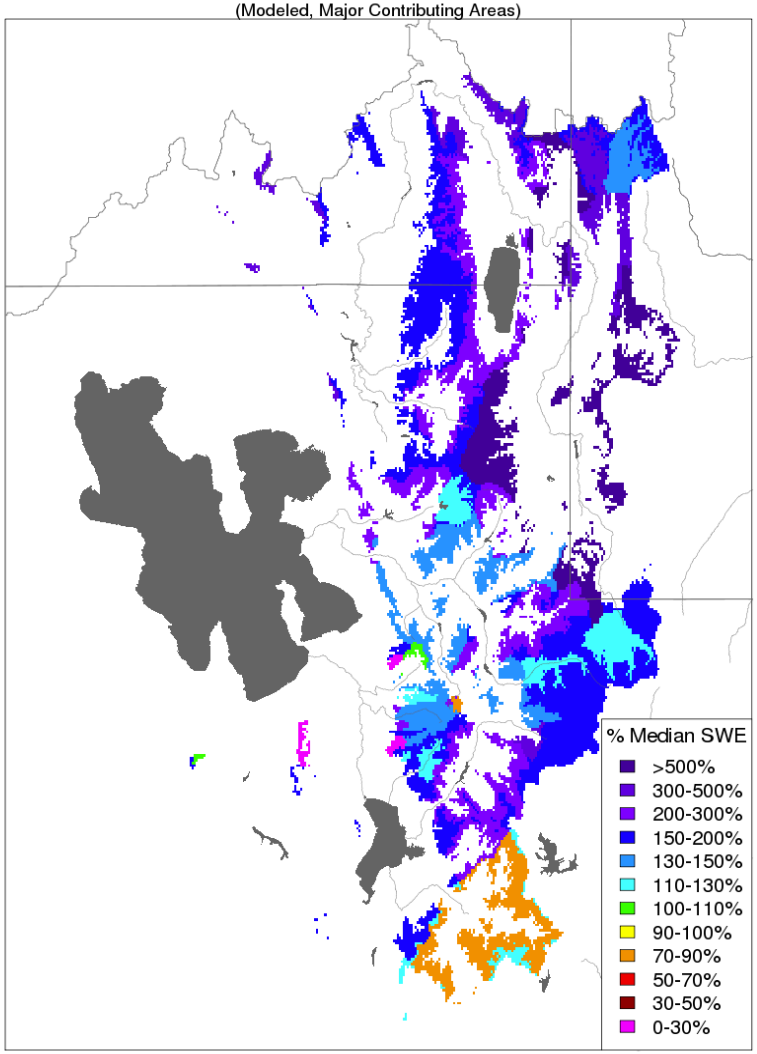


April Weather: Most low elevation snow has melted

CBRFC Model

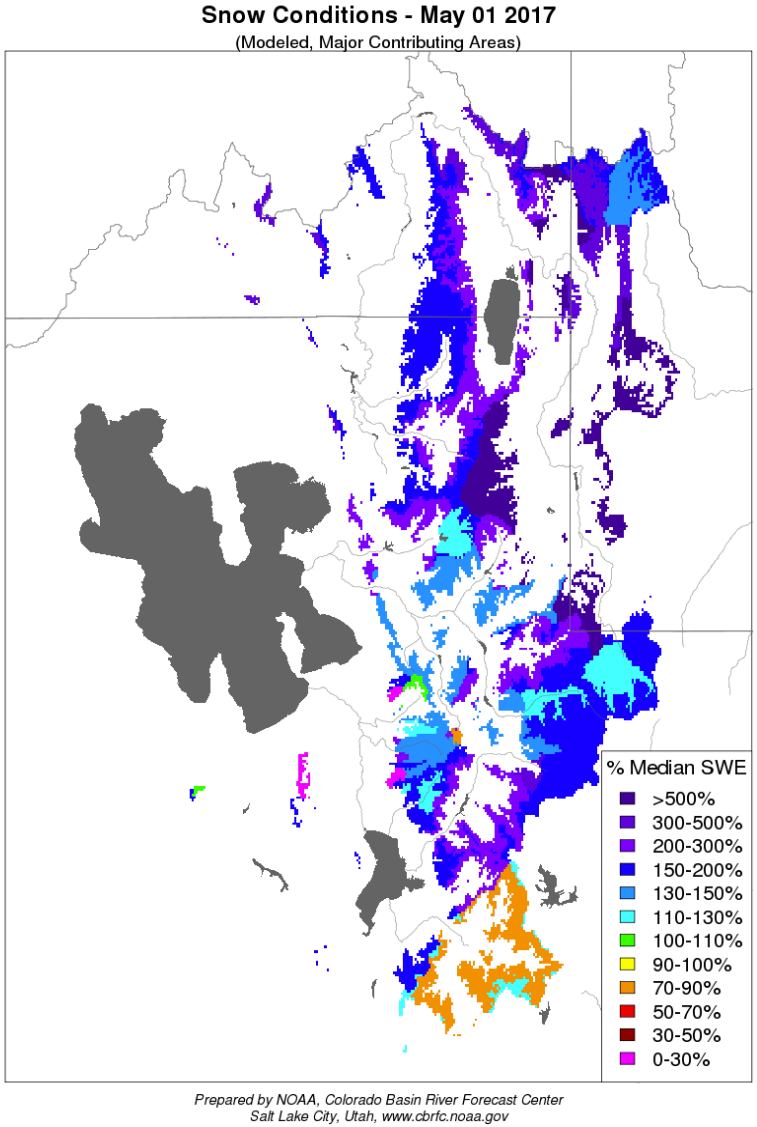


CBRFC Model



April Weather Impacts

Current snow conditions (CBRFC model)



Lower elevation snow has melted out in most areas, but cooler temperatures in April reduced the rate of snowmelt in the Great Basin

Lower elevation areas are saturated (model) and temperatures are expected to rise

- Could result in efficient runoff and possible flooding events in:
  - Bear River Basin
  - Weber/Ogden River Basin
  - Logan River Basin

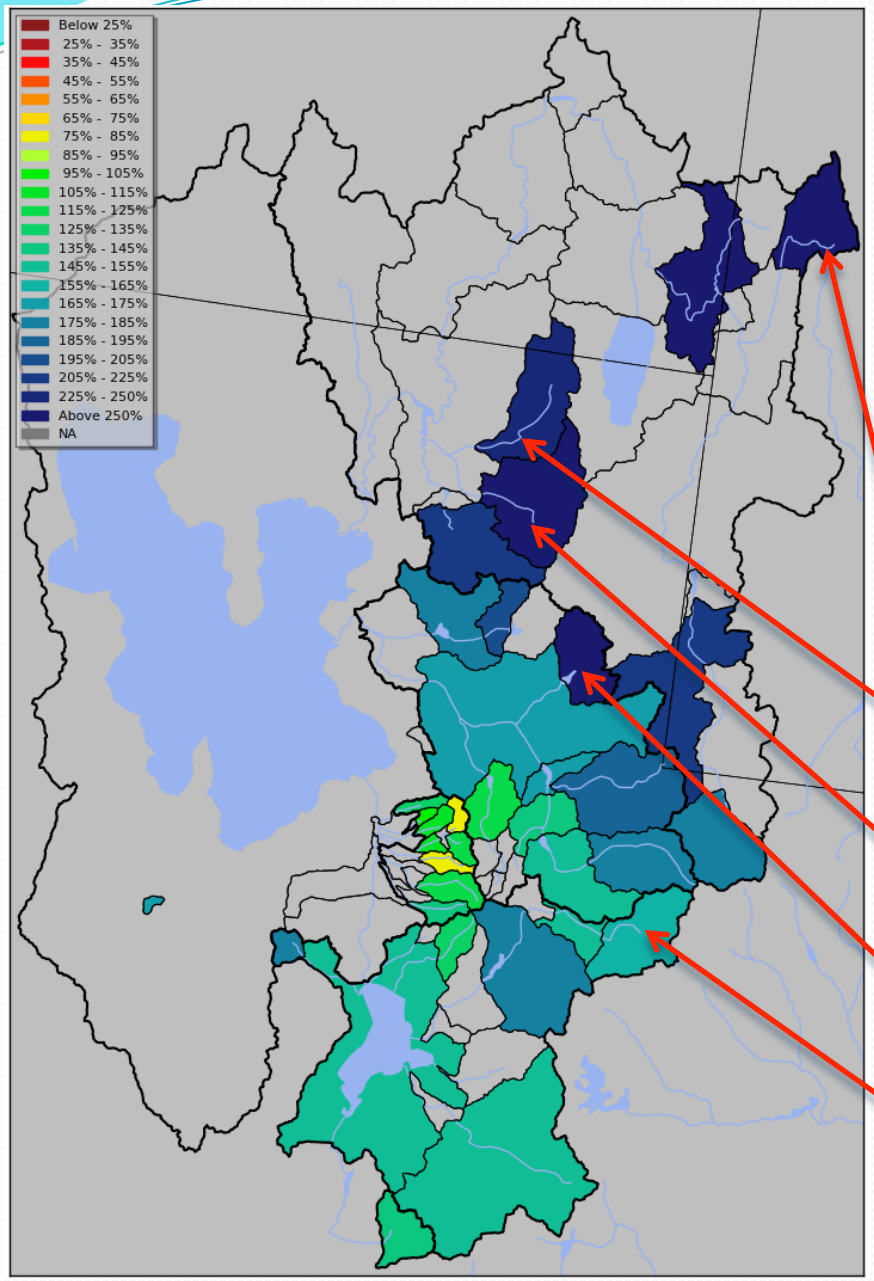
April-July forecast volumes

- Generally much above average conditions

- In the north, forecasts did not tend to change much

- Further south, forecasts trended slightly downward

April Streamflow Observations



April observed were above average, with some sites reporting record or near-record flows

Smith's Fork near Border 1/75 26.8 KAF

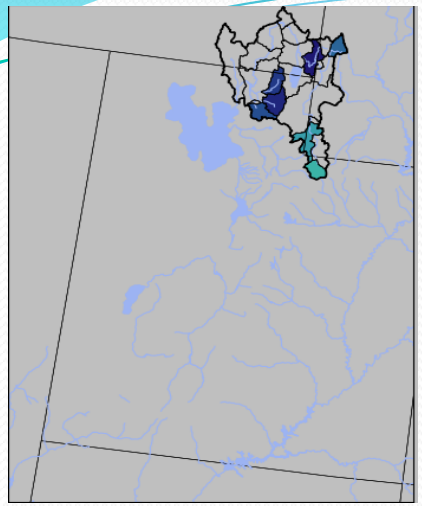
Logan near Logan 2/53 34.4 KAF

Blacksmith Fork near Hyrum 3/100 30.7 KAF

Lost Creek at Croyden 2/37 11.9 KAF

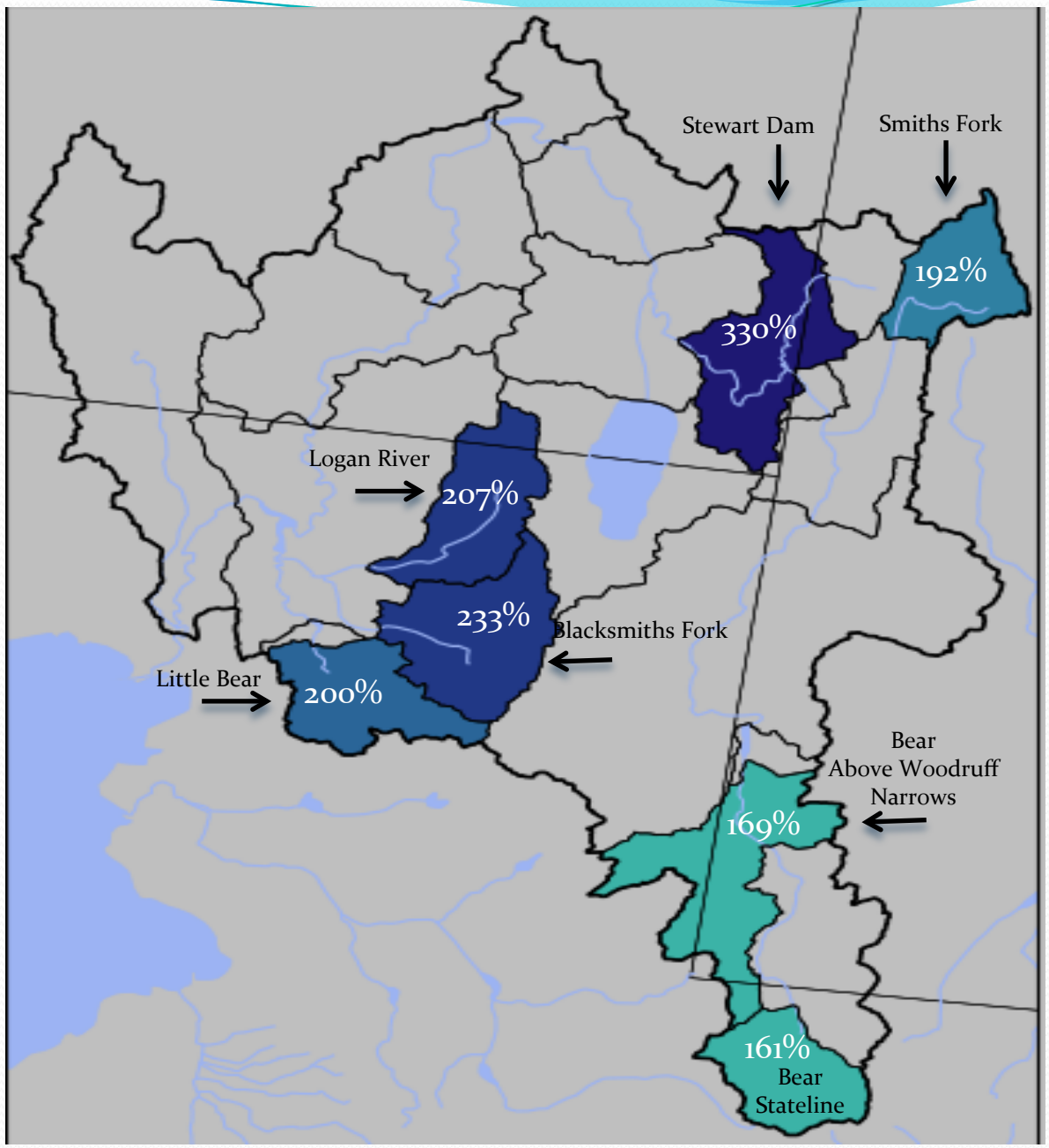
Provo near Woodland 3/53, 19 KAF

May 1st Water Supply Forecasts – Bear River Basin

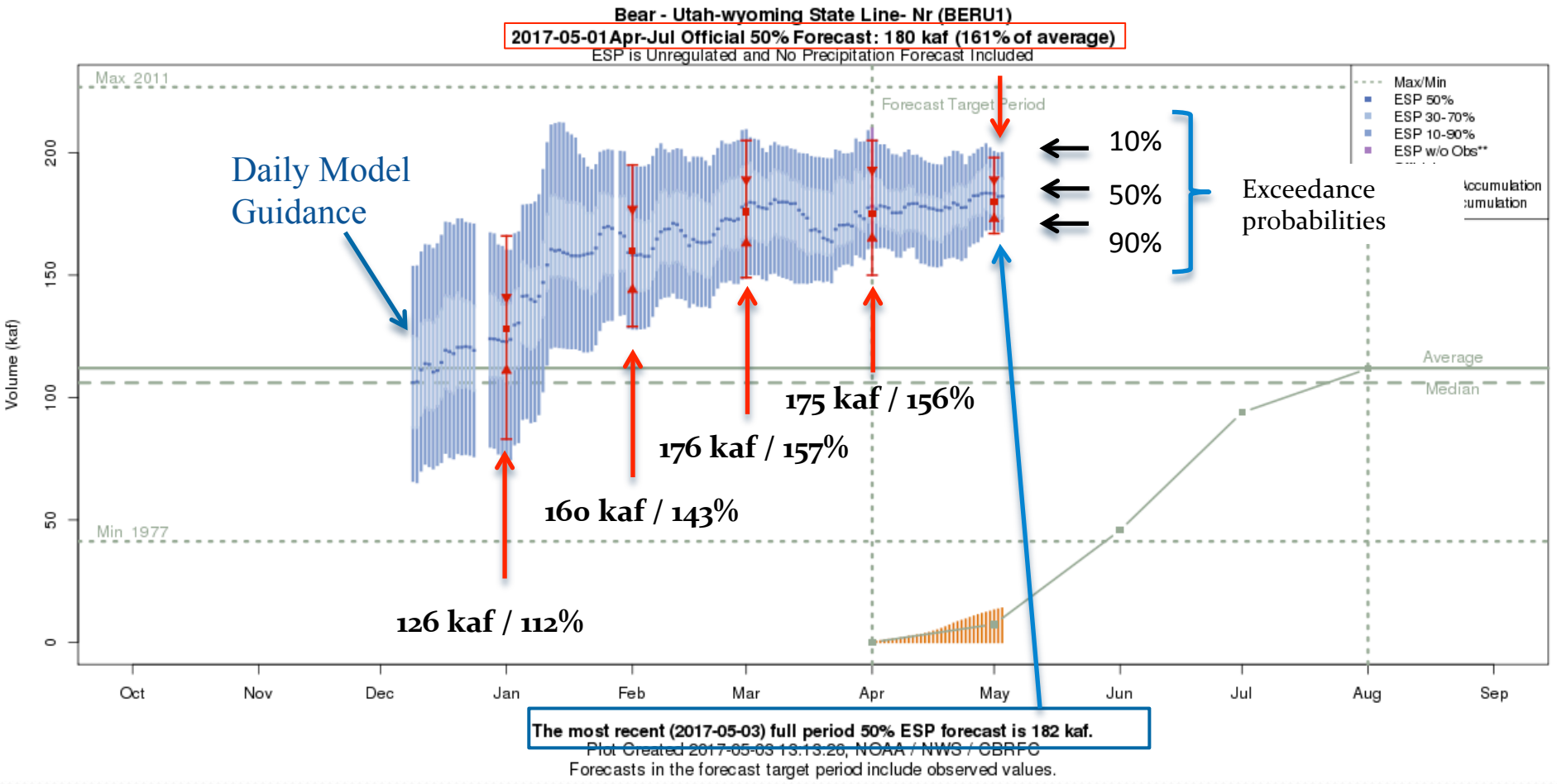


April-July
Forecast
Streamflow Volumes
(% of 1981-2010 average)

- 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

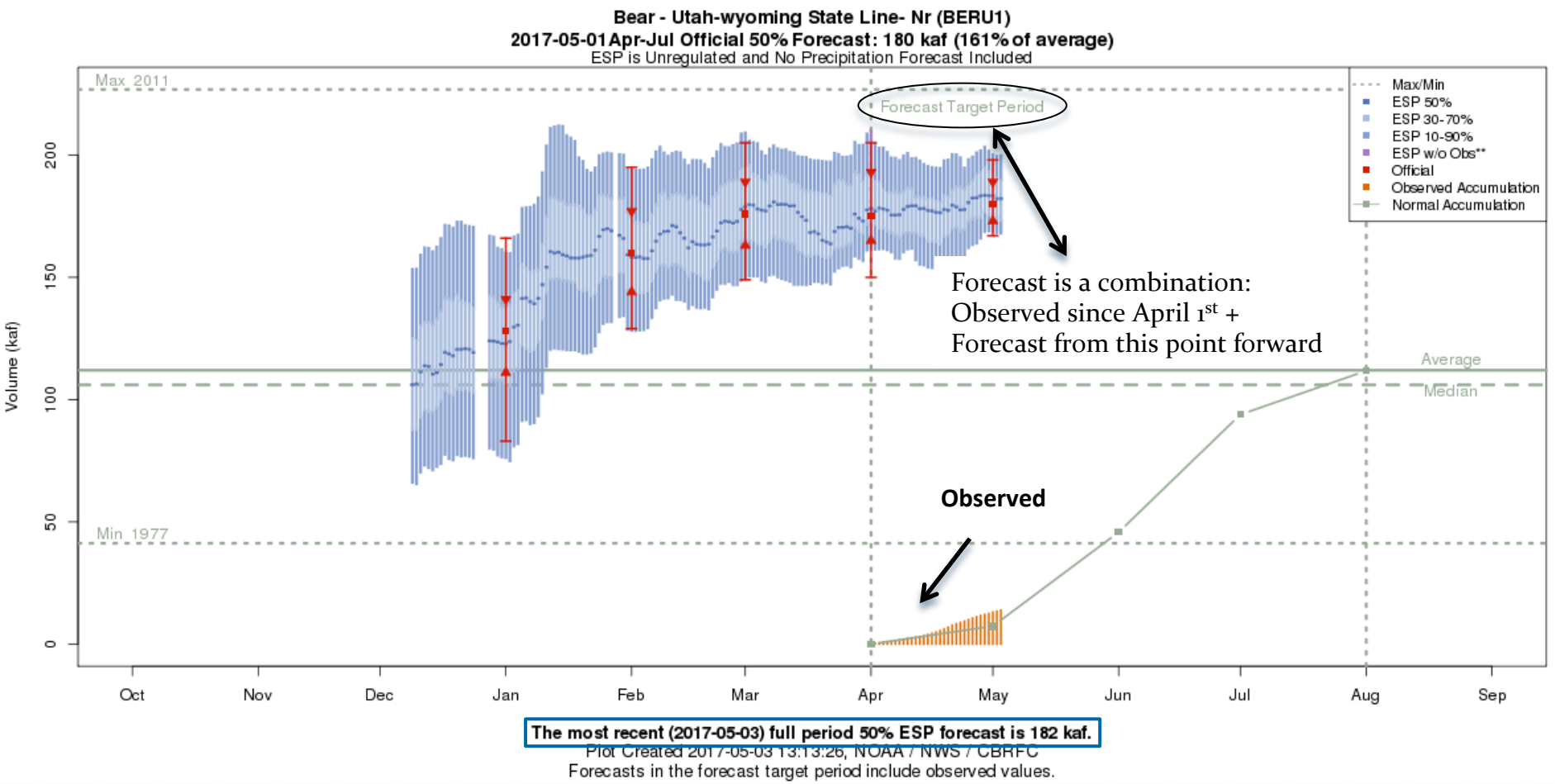


Forecast Evolution Plot – Bear River @ Utah/Wyoming Stateline

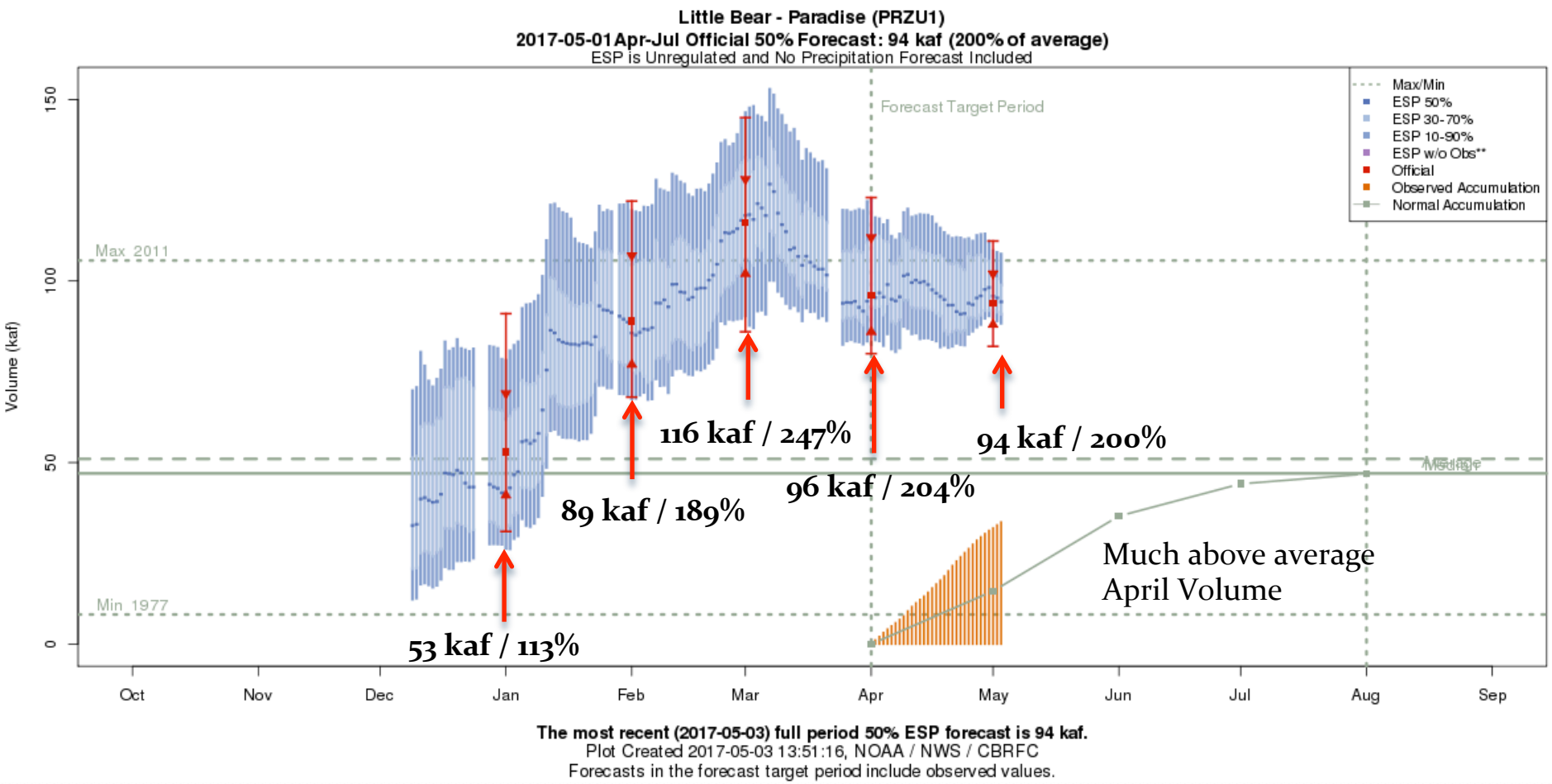


Plots are available at: https://www.cbrfc.noaa.gov
Select WATER SUPPLY from the top menu
Click on desired location for pop-up, click again for full screen

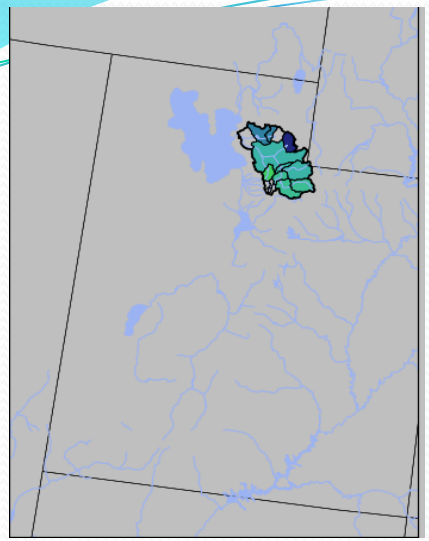
Forecast Evolution Plot – Bear River @ Utah/Wyoming Stateline



Forecast Evolution Plot – Little Bear at Paradise



May 1st Water Supply Forecasts – Weber River Basin



April-July Forecast
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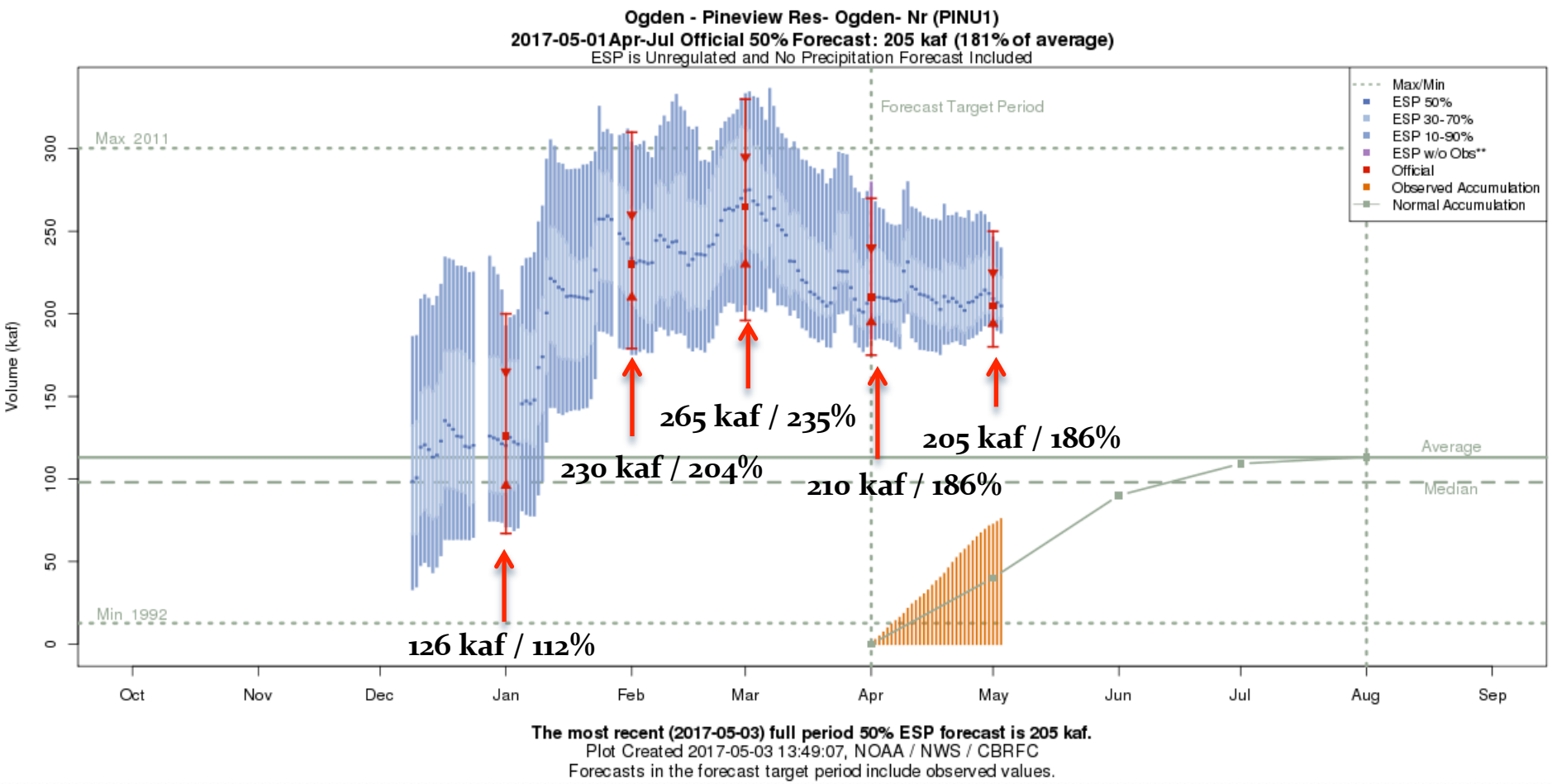
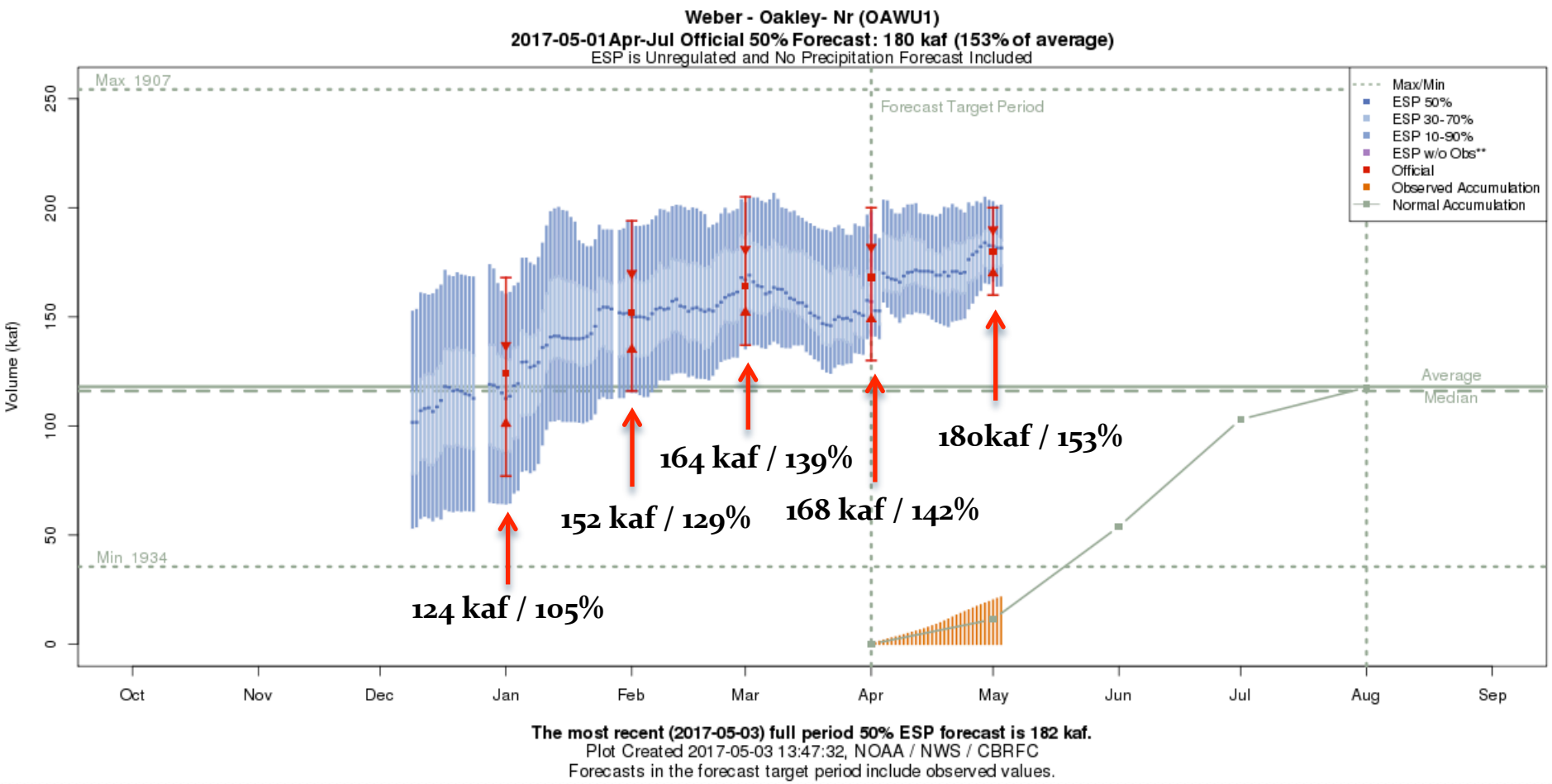
- 225% - 250%
- Above 250%
- NA

South Fork
Ogden
181%
Pineview
Inflow
182%
246%
Lost Creek
Inflow
163%
Weber-Gateway
Echo
158%
130%
East Canyon
Inflow
Weber
Coalville
153%
159%
Chalk Creek
153%
Weber-Oakley
Rockport
Inflow
152%

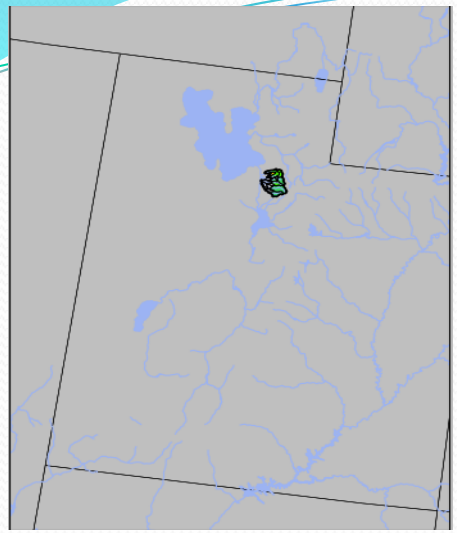
Forecast Evolution Plot – Ogden near Pineview Reservoir



Forecast Evolution Plot – Weber River near Oakley



May 1st Water Supply Forecasts – Six Creeks



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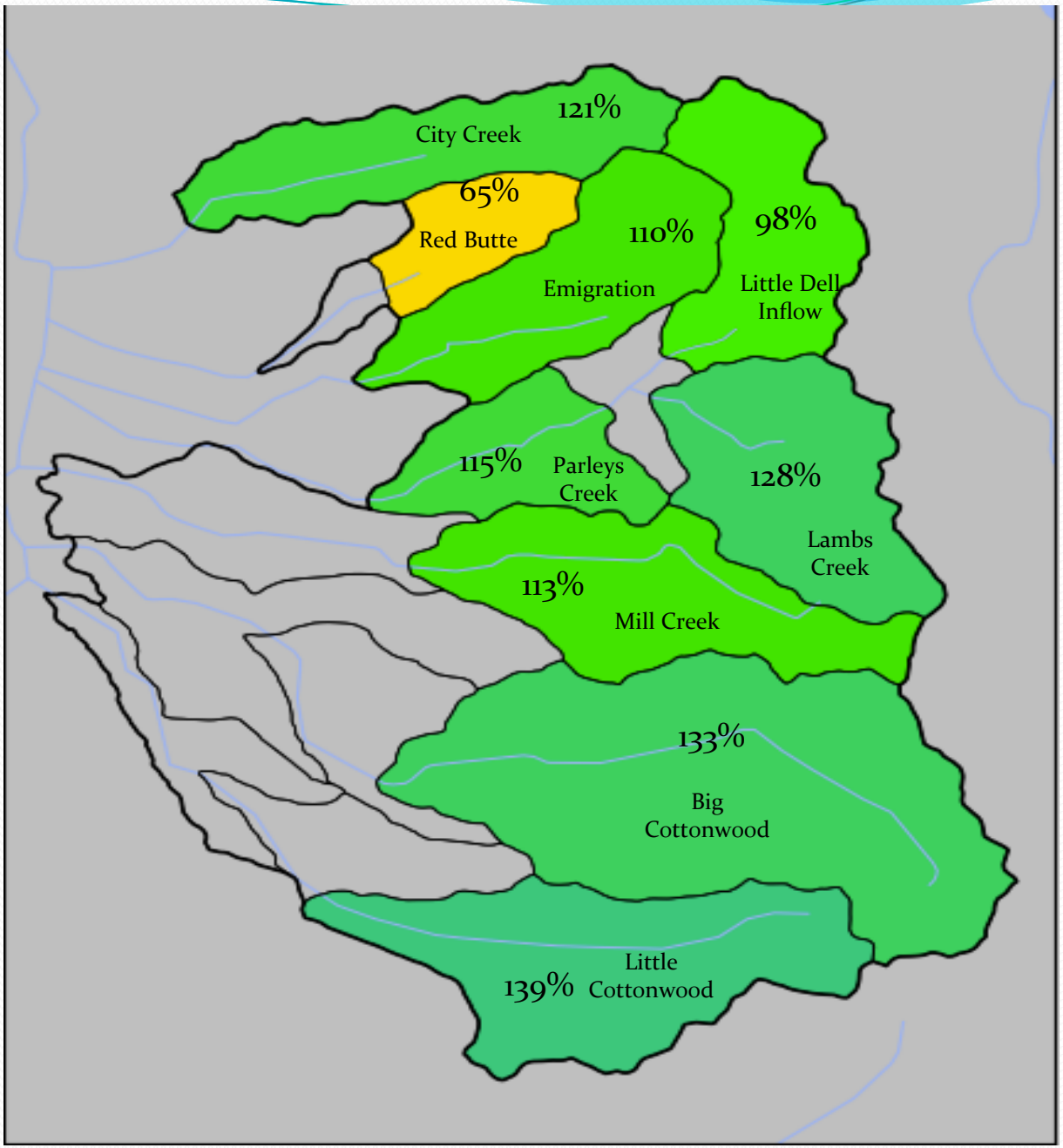
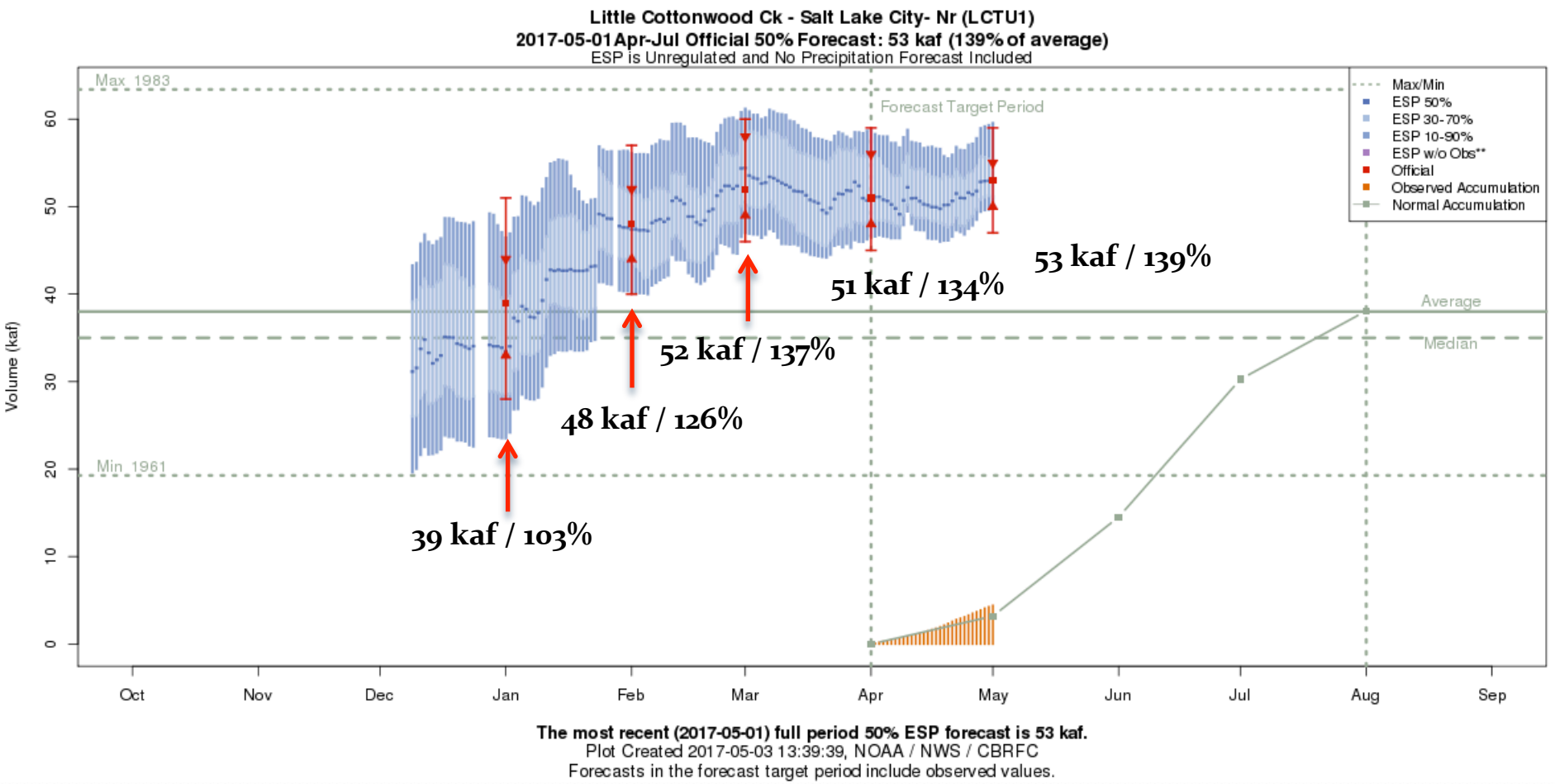
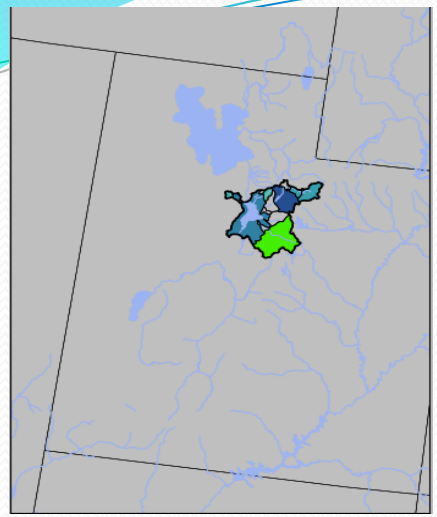


Forecast Evolution Plot – Little Cottonwood Creek



May 1st Water Supply Forecasts – Provo River / Utah Lake



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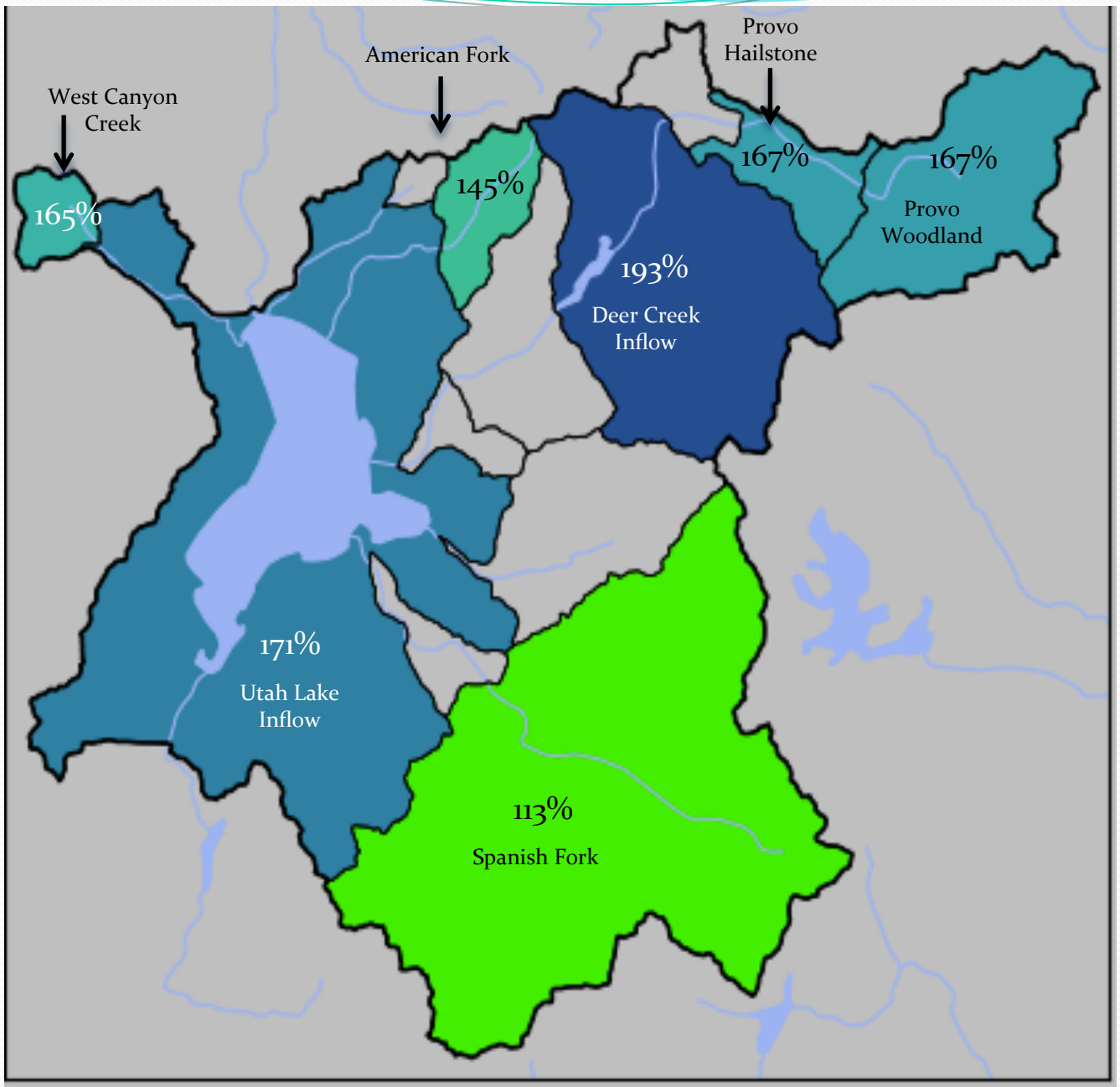
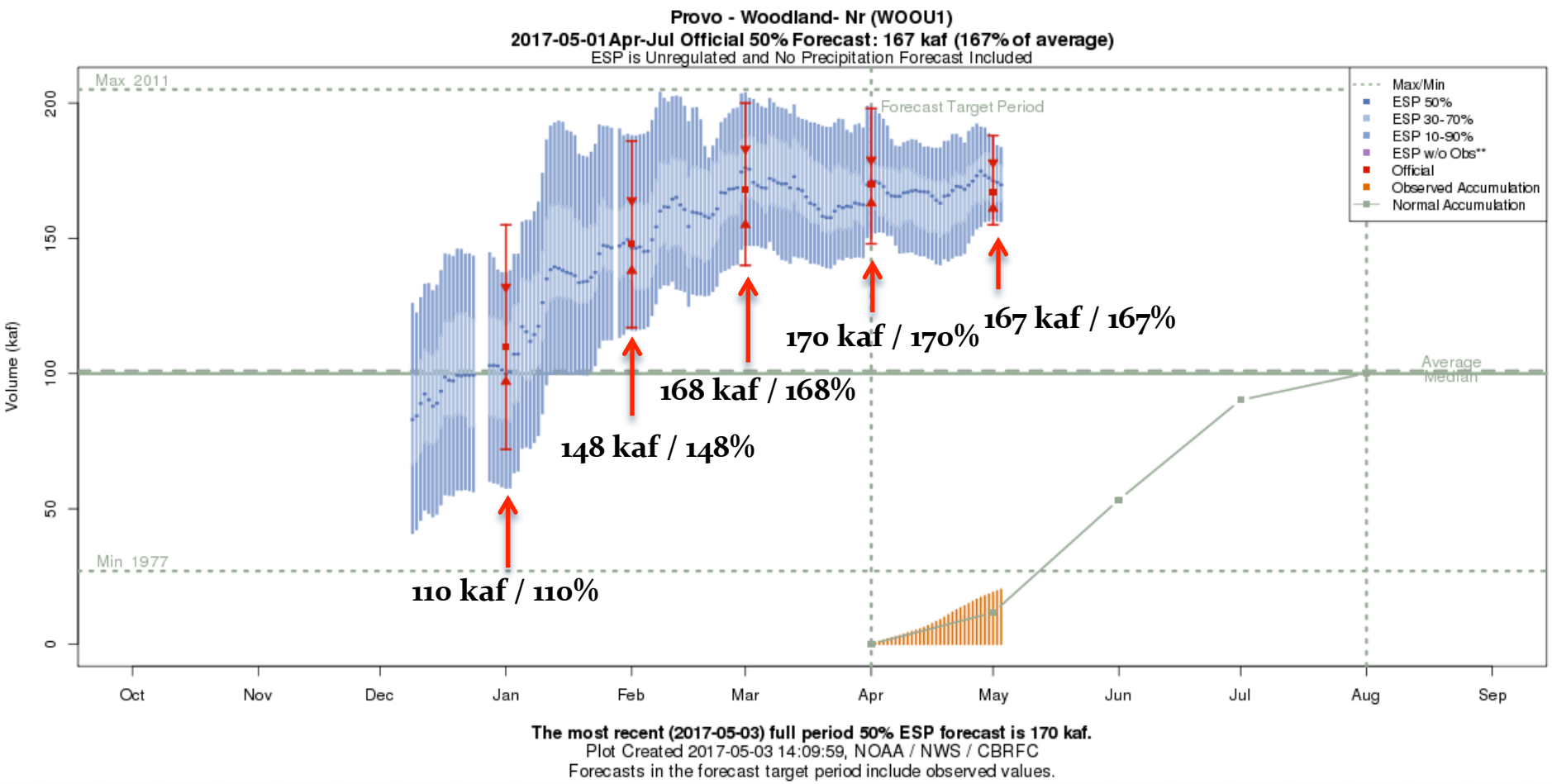
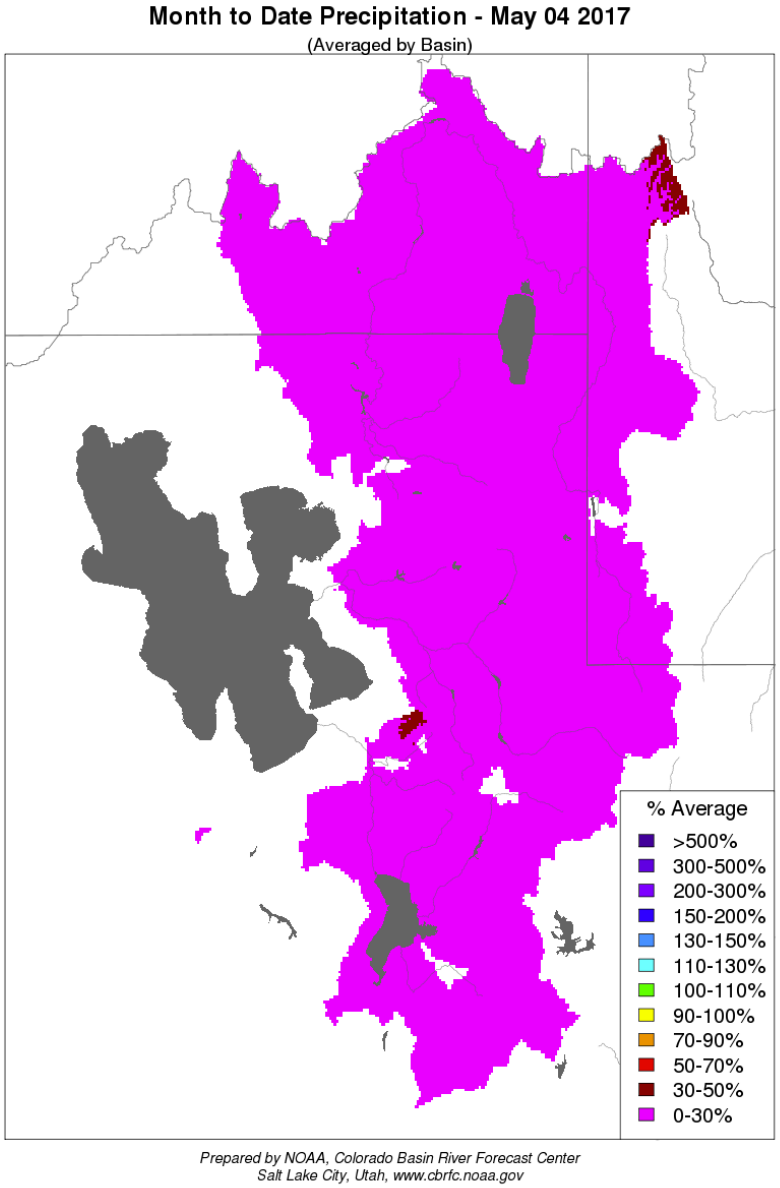
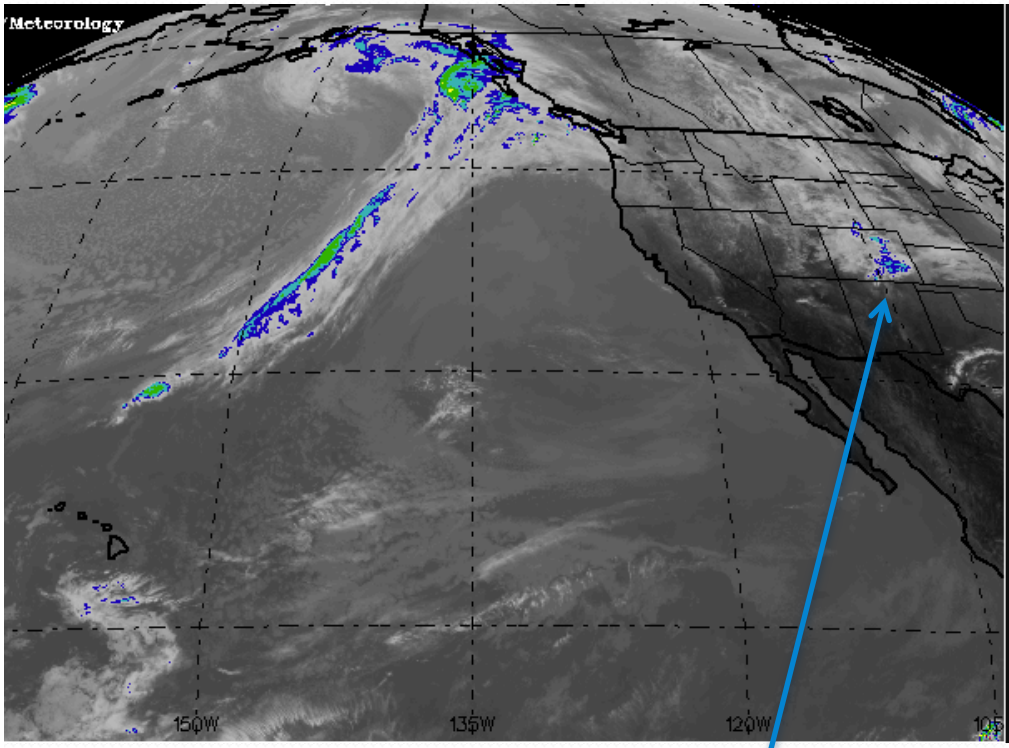


Forecast Evolution Plot – Provo River near Woodland



May 2017 Weather: Precipitation so far….



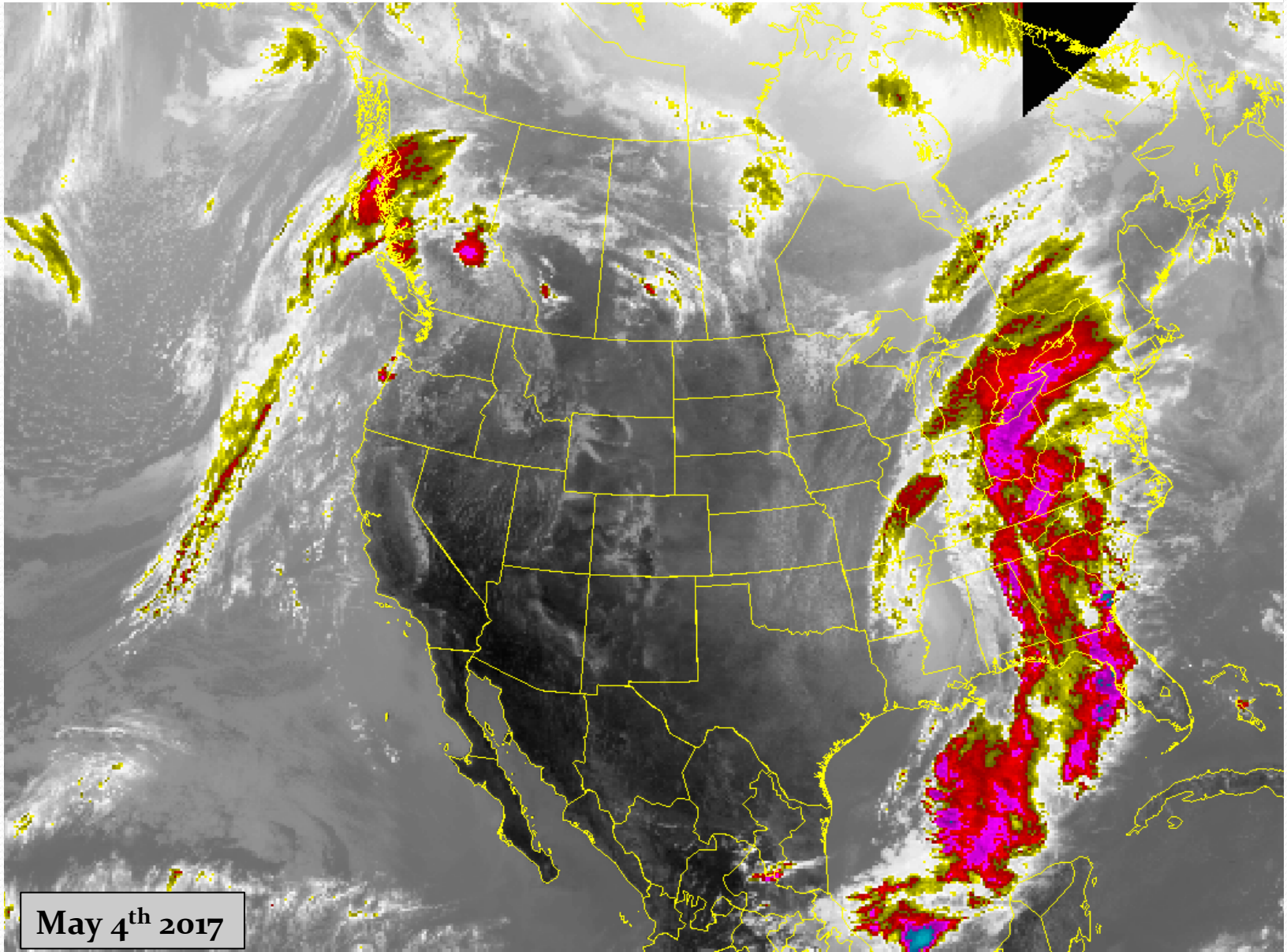


Francisco State University

Storm system exiting Colorado on May 2nd but dry conditions over the Great Basin

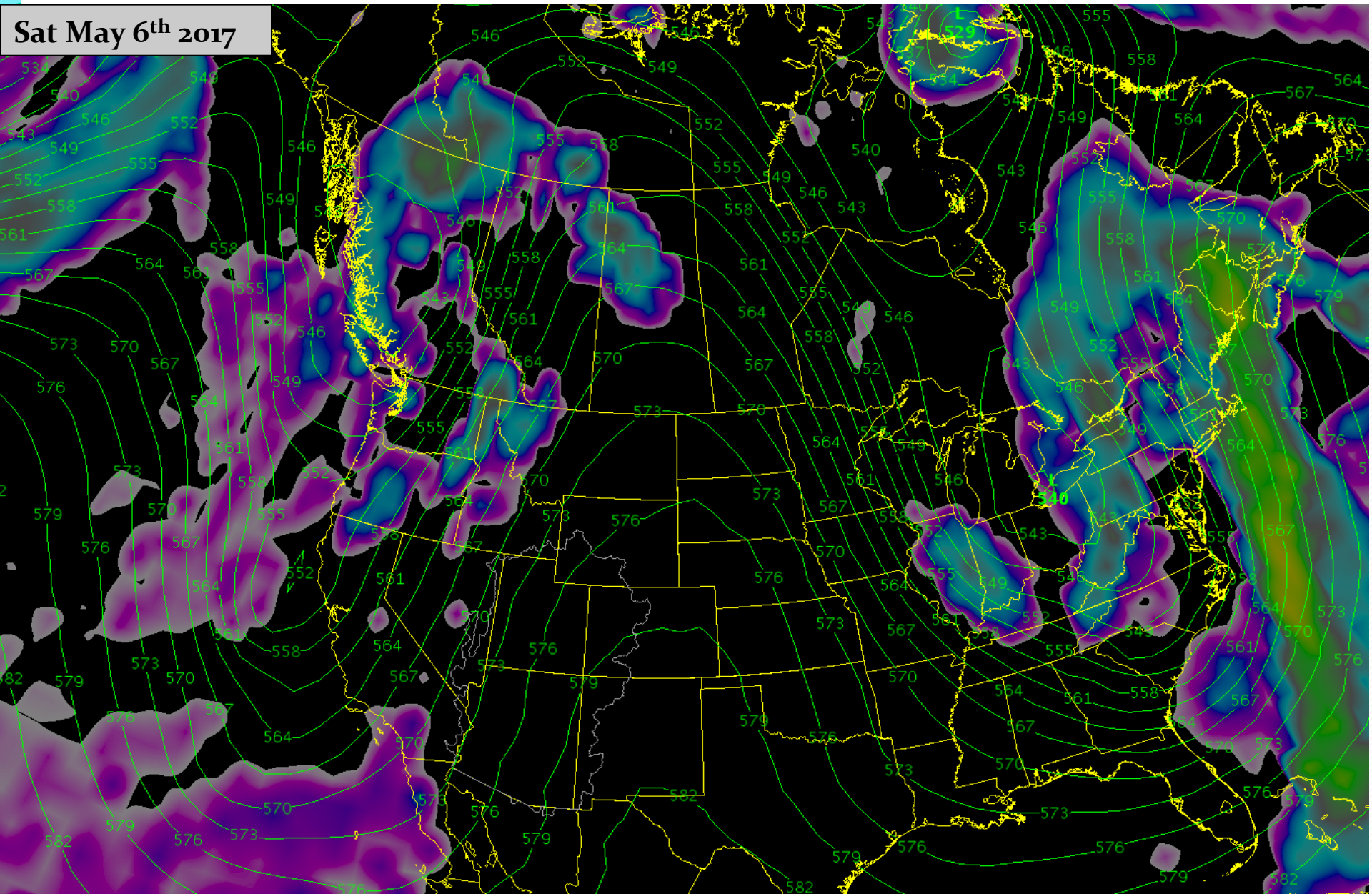
Upcoming Weather and Impacts to Water Supply Forecasts

Satellite Image – Here comes the heat! Ridge of high pressure currently over the area. But a big forecast challenge lies ahead.



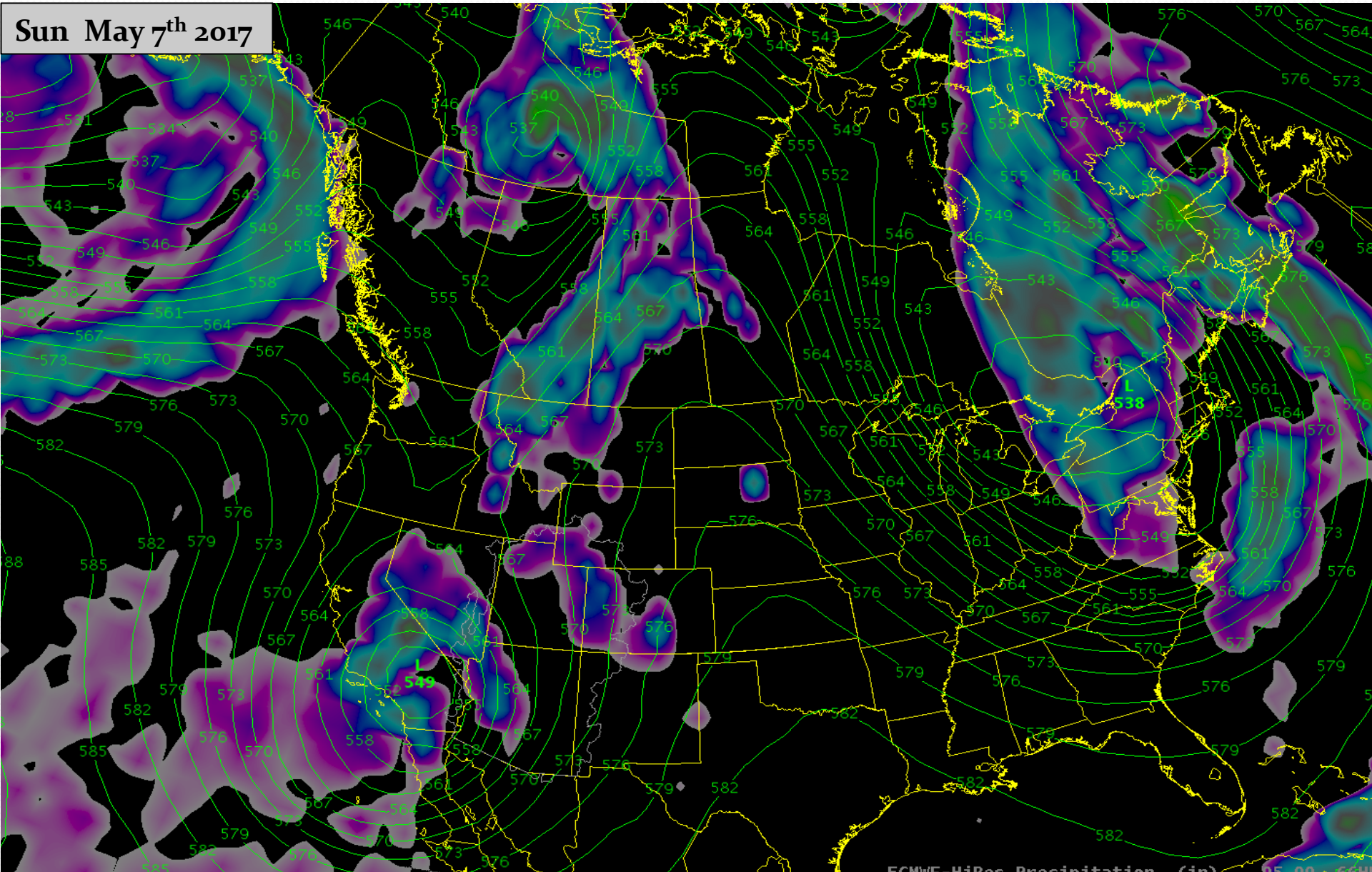
Upcoming Weather and Impacts to Water Supply Forecasts

Closed/ Cutoff low pressure system developing off west coast. Ridge axis over eastern Colorado. Increasing southwest winds over Great Basin Max temperatures 10-15 degrees above average Fri-Sat. Rivers on the rise!



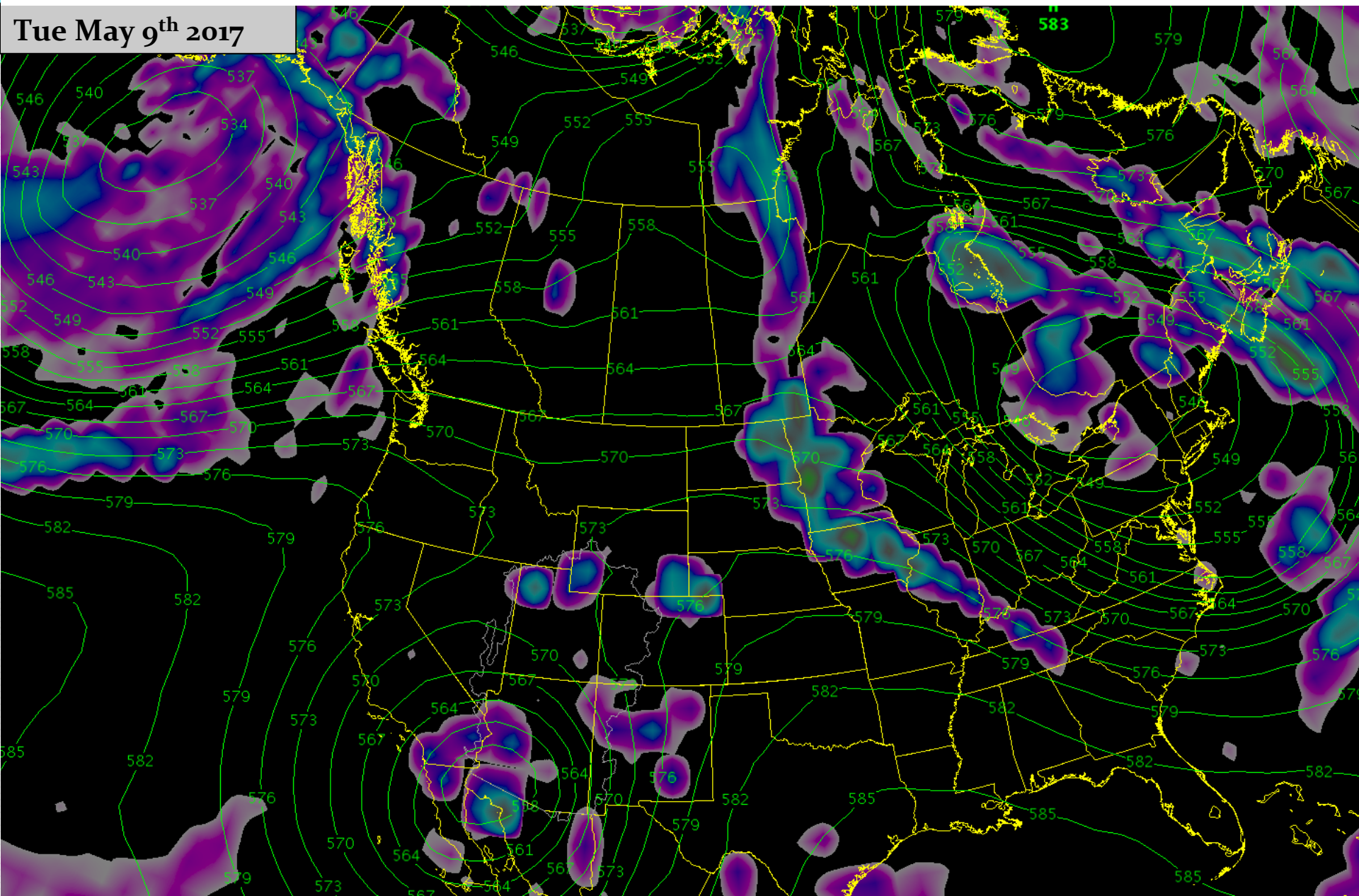
Upcoming Weather and Impacts to Water Supply Forecasts

Cutoff low along the southern California Coast. Mild southwest flow over the area. Temperatures above average but increasing cloud cover if moisture is drawn northward. Increase in showers / thunderstorms possible.



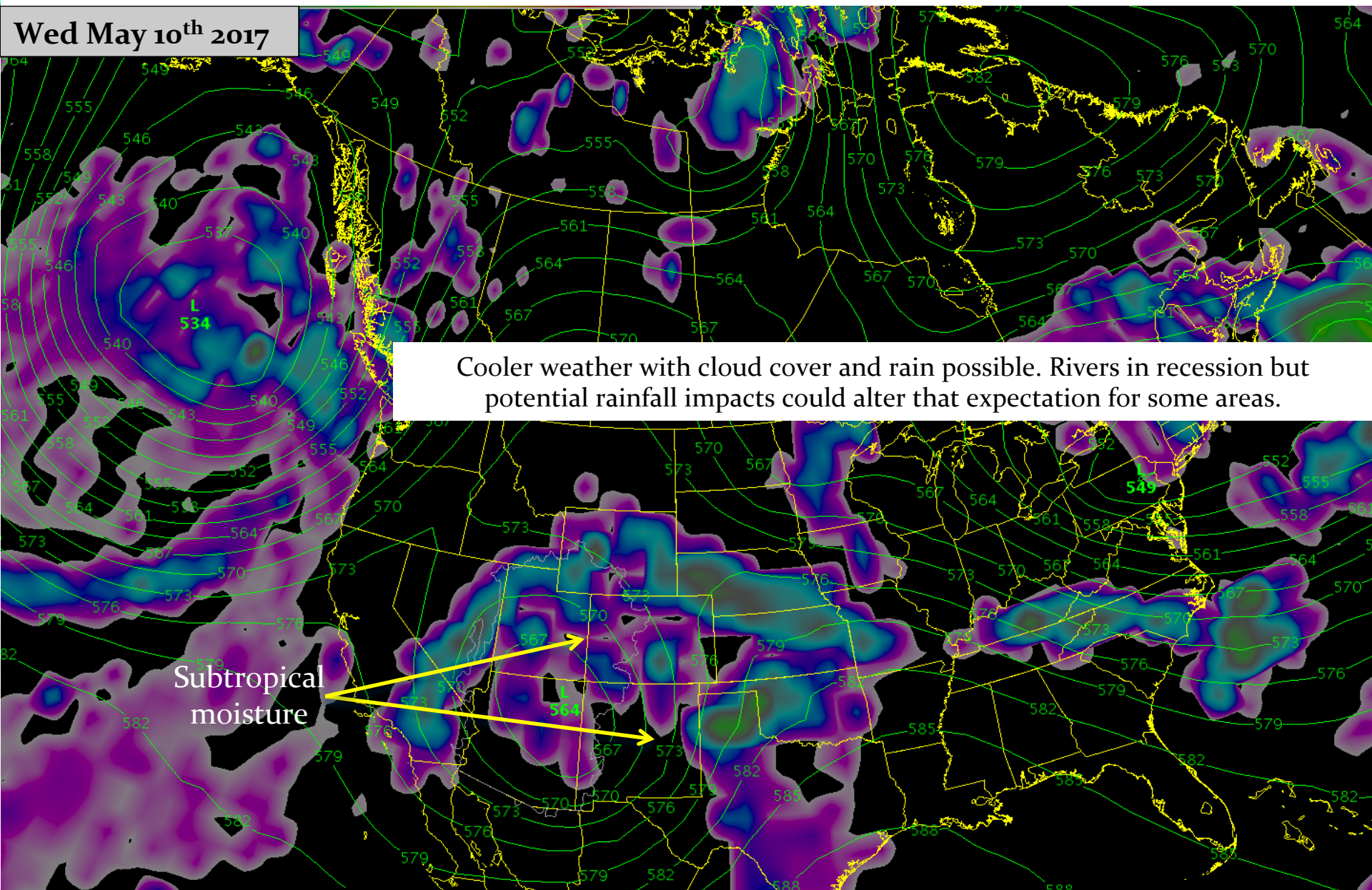
Upcoming Weather and Impacts to Water Supply Forecasts

Cutoff low is still to the southwest but models suggest it begins moving. Huge forecast challenge as the track of the low pressure will have significant implications particularly farther south and east.



Upcoming Weather and Impacts to Water Supply Forecasts

In this forecast scenario the low pressure lifts north. Sub-tropical moisture is tapped and drawn northward but remains south of the Great Basin. Showers and thunderstorms possible.



Cooler weather with cloud cover and rain possible. Rivers in recession but potential rainfall impacts could alter that expectation for some areas.

Upcoming Weather and Impacts to Water Supply Forecasts

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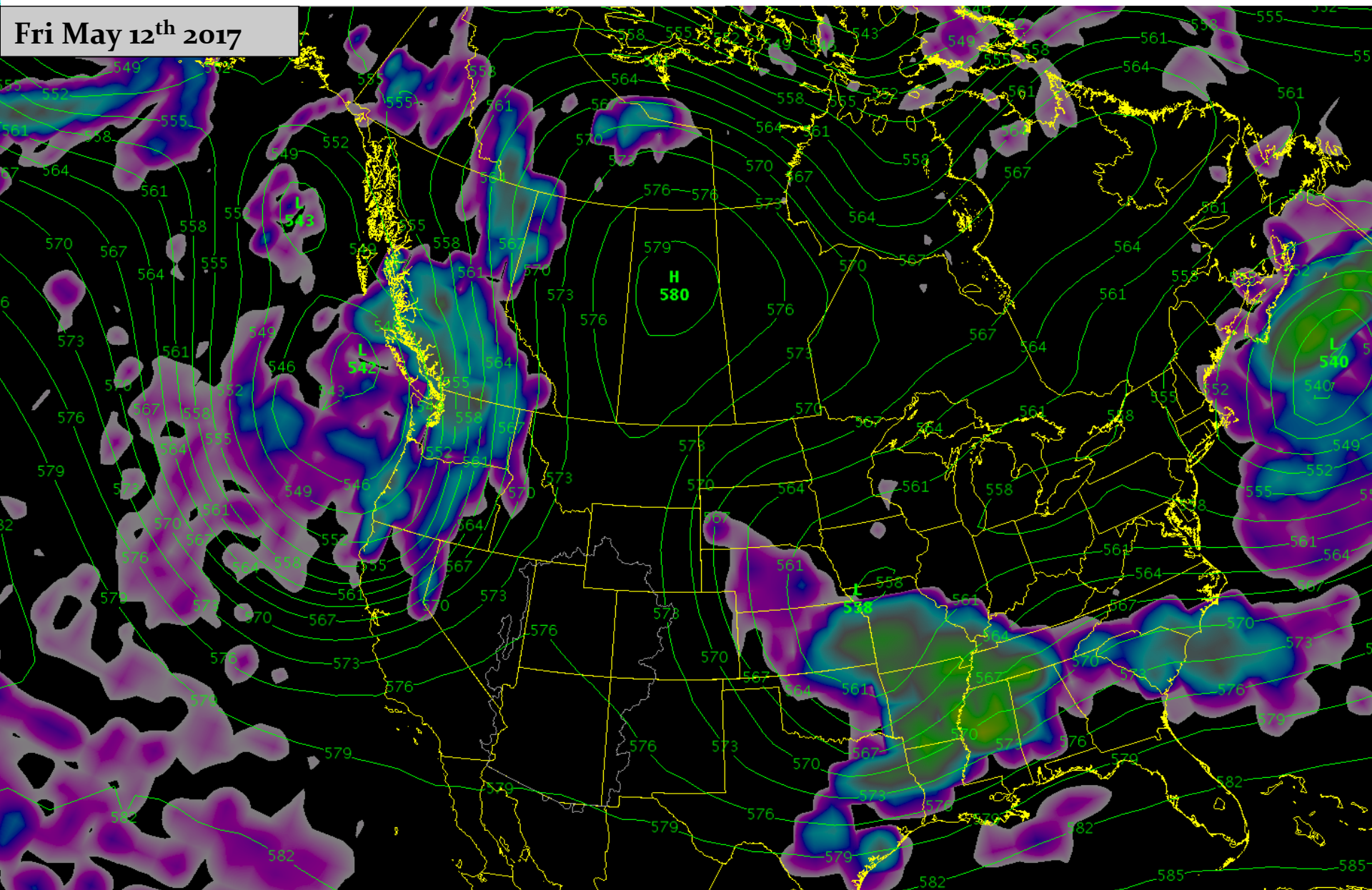
Fri May 12th 2017



Upcoming Weather and Impacts to Water Supply Forecasts

"The Cutoff Low – Weatherman's Woe"

Implications of the closed / cutoff low

Computer models do not handle the position or track of these well.
Computer models struggle with the amount of moisture they contain.
The longer it stays off the coast the more moisture it picks up.

Latest forecast model:

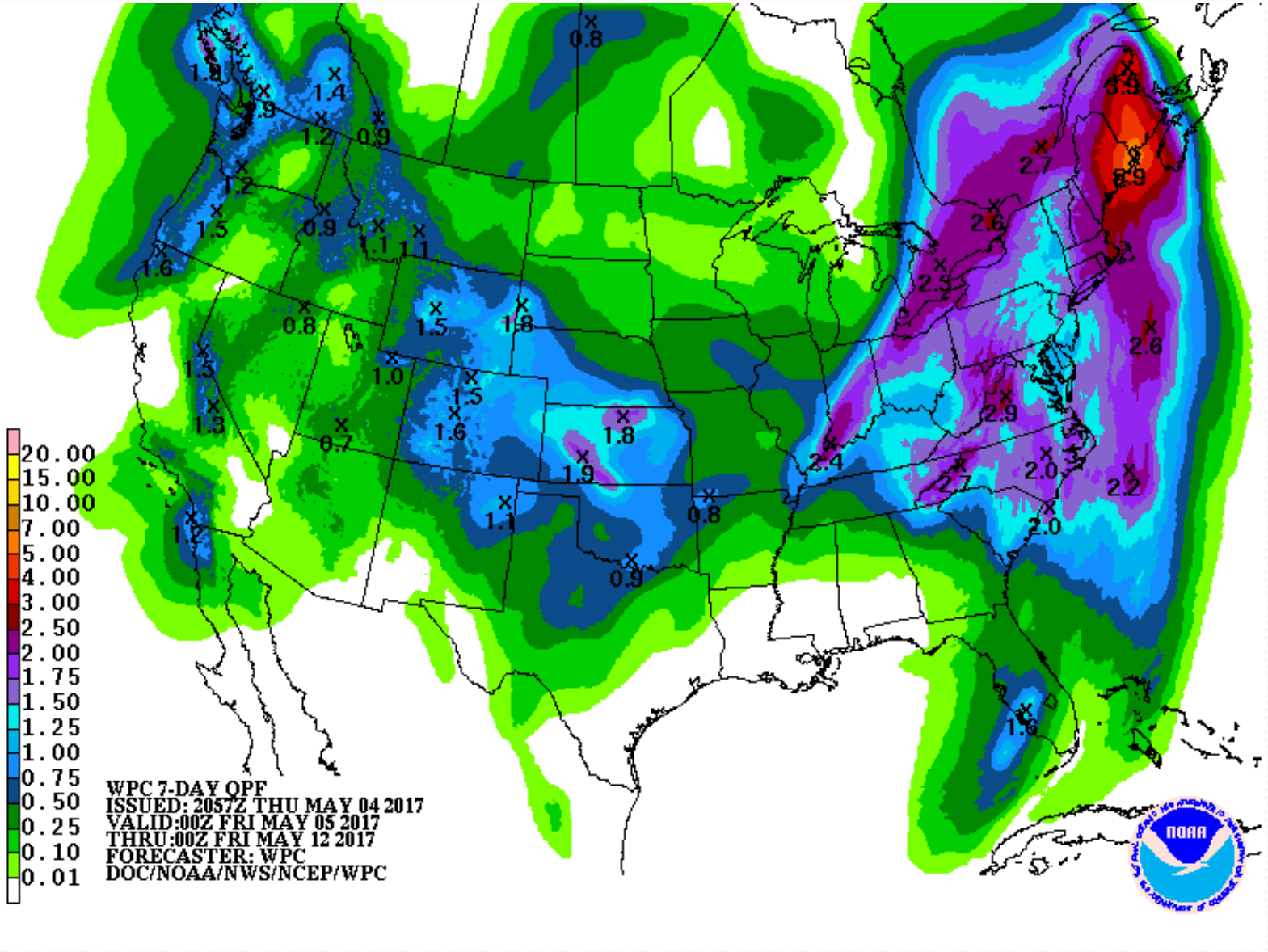
Expected to be over southwest Colorado Tue into Thursday
Heavier rain threat should be to the south and east of the Great Basin

The "Mights" associated with this type of low pressure:

If the low stays put longer than advertised: Mild temperatures & extended snowmelt
If the low drops farther south: less chance of precipitation.
If the low tracks farther north: A bigger precipitation threat for the Great Basin.

Upcoming Weather and Impacts to Water Supply Forecasts

Precipitation Forecast: 7 day total (May 5 – May 12th), most associated storms expected mid next week



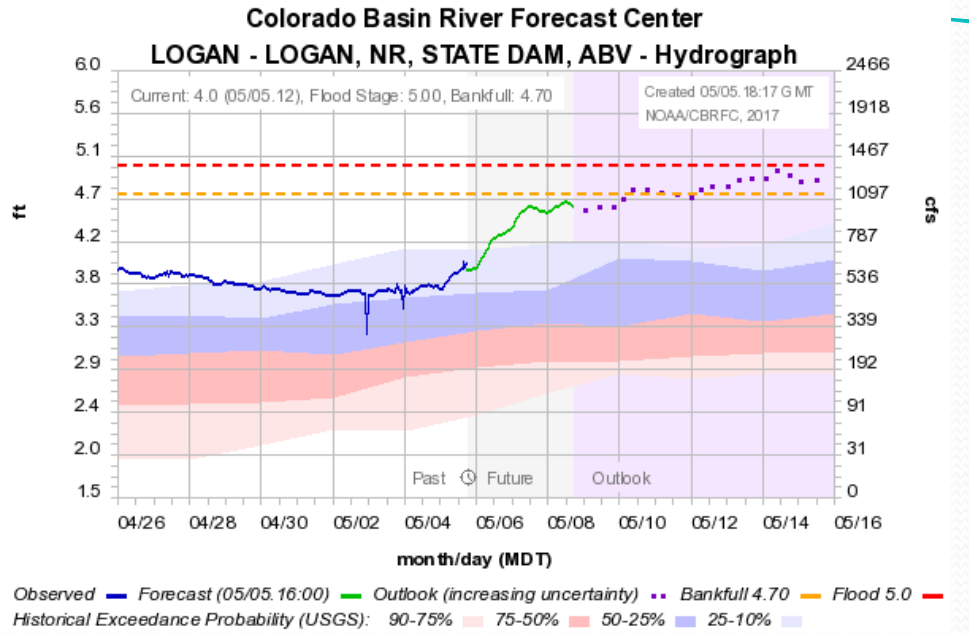
Key Points

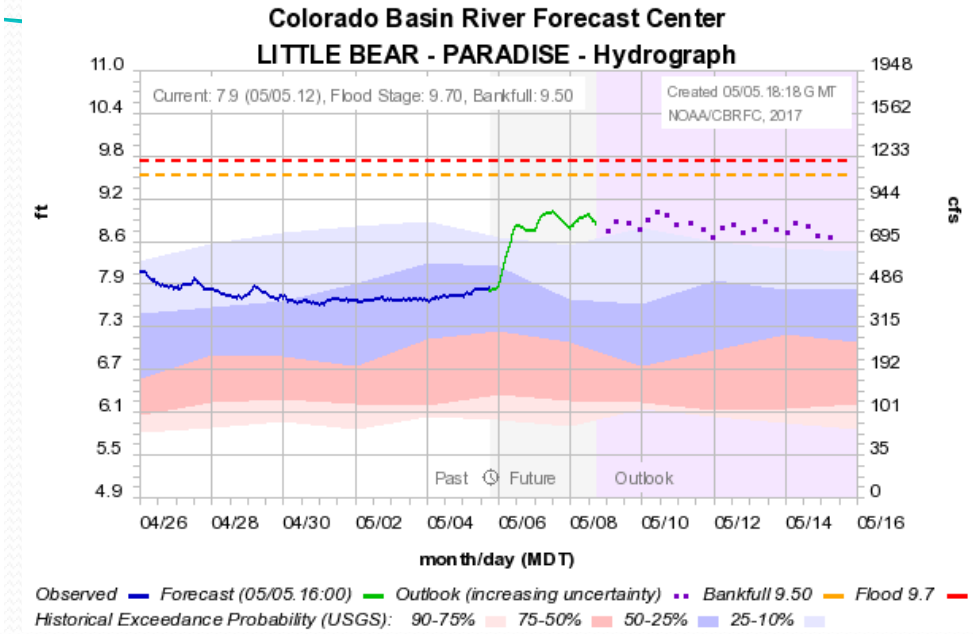
April brought cooler weather to the Great Basin, slowing snowmelt rates. Mid-month storm events allowed for some slight gains to high elevation snowpack

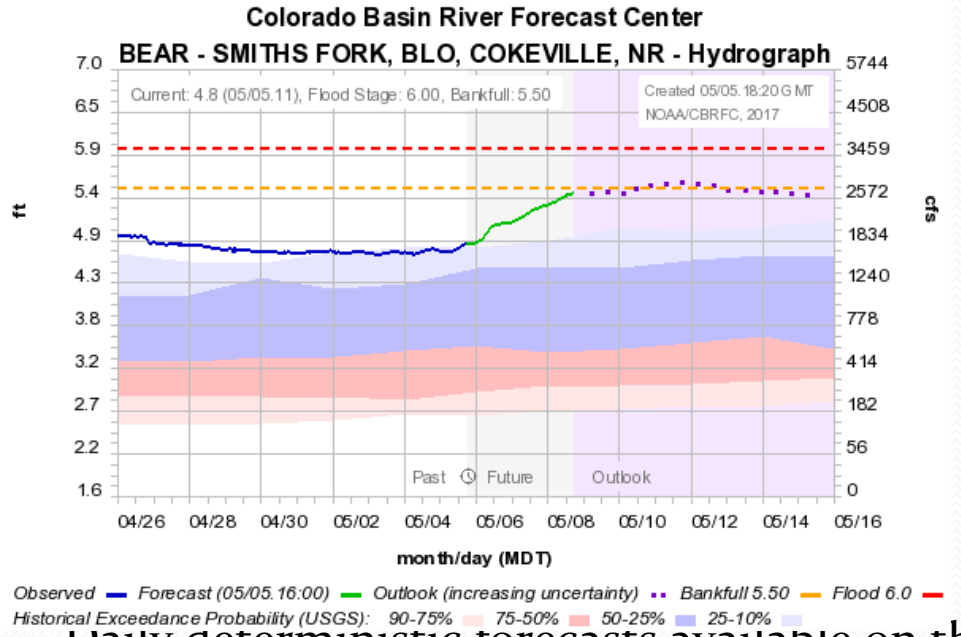
Saturated soil conditions exist in many areas which has and will most likely continue to result in efficient runoff response to rain and additional snowmelt

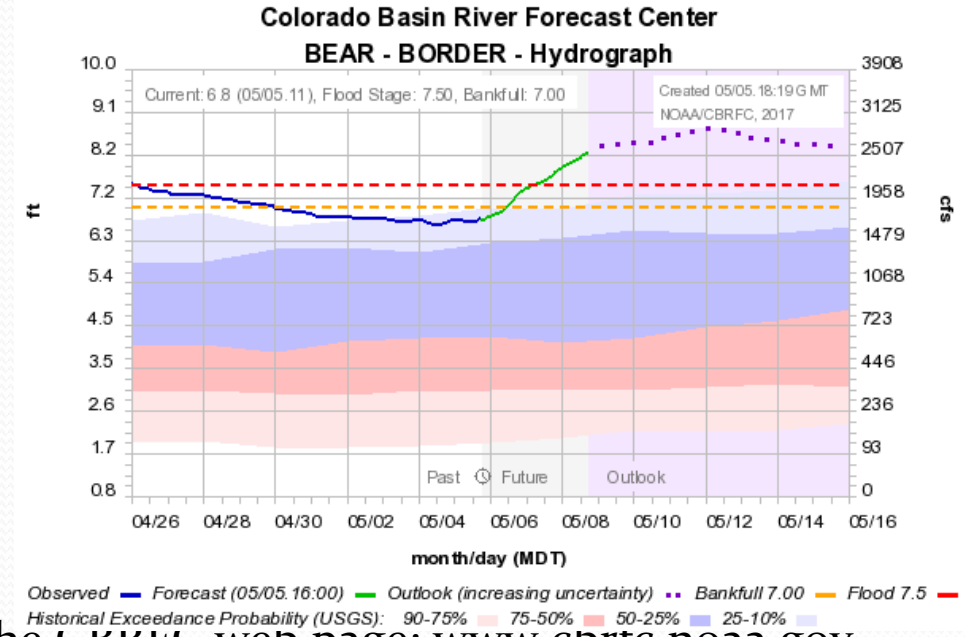
Significant snow still exists at the higher elevations in the Bear, Weber and Provo River basins. Significant runoff volumes are anticipated in these areas, with flooding possible as temperatures begin to rise

Possible minor flooding at a few locations this weekend…









Daily deterministic forecasts available on the CBRFC web page: www.cbrfc.noaa.gov

2017 Water Supply Briefing Schedule

- This was the last scheduled briefing of the year!
  - We can schedule more if there's a want/need for additional briefings
  - If something really unusual happens, we can initiate additional briefings

- Please contact us directly if you have any concerns or need for information

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Please contact us with any questions

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