

CBRFC Forecast Update: Fontenelle Reservoir

April 23, 2014

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NWS Colorado Basin River Forecast Center

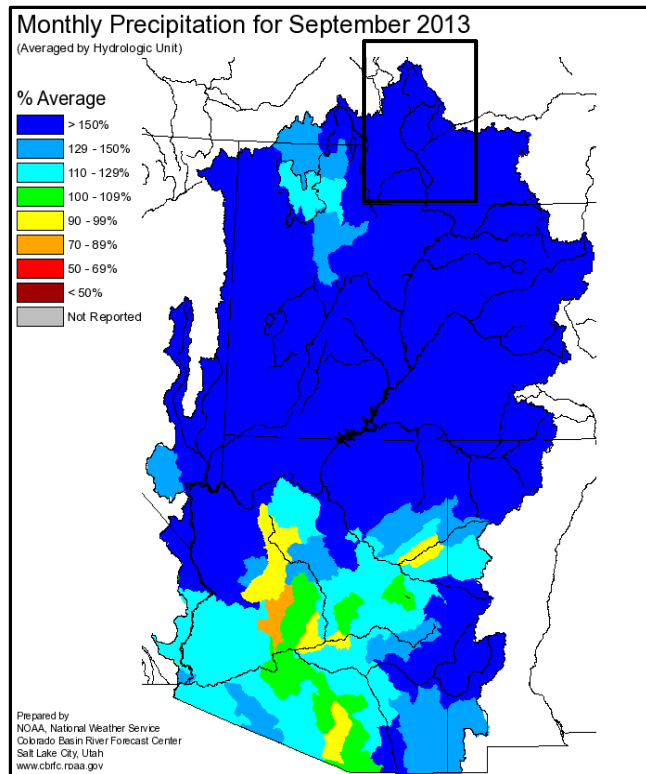




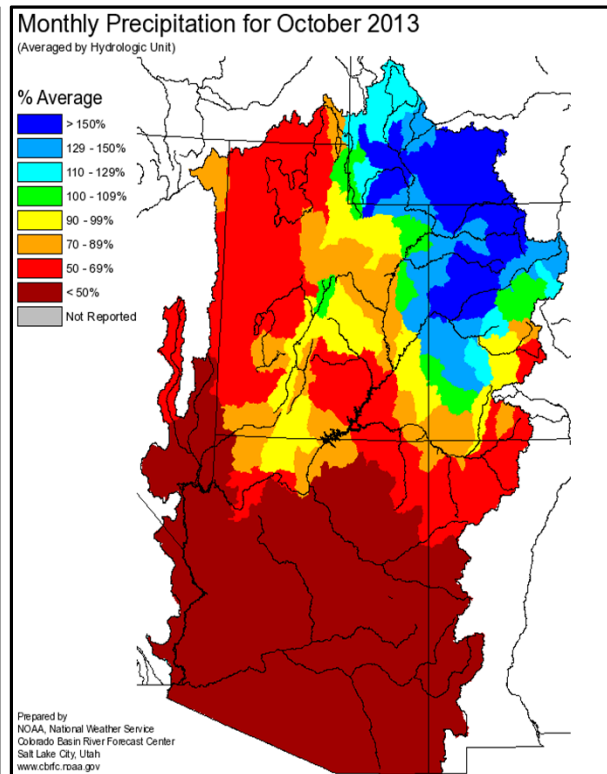
Outline

- Weather Review (Fall + Winter)
- Snow Conditions
- Forecasts
 - Water Supply Volumes
 - Peak Flow
- Future Weather
 - Short Term
 - Long Term

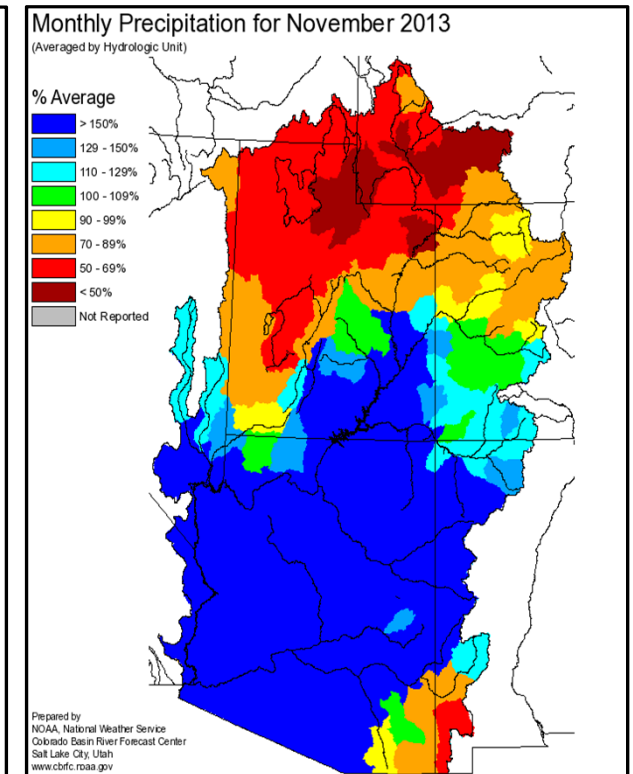
Fall Precipitation



220%

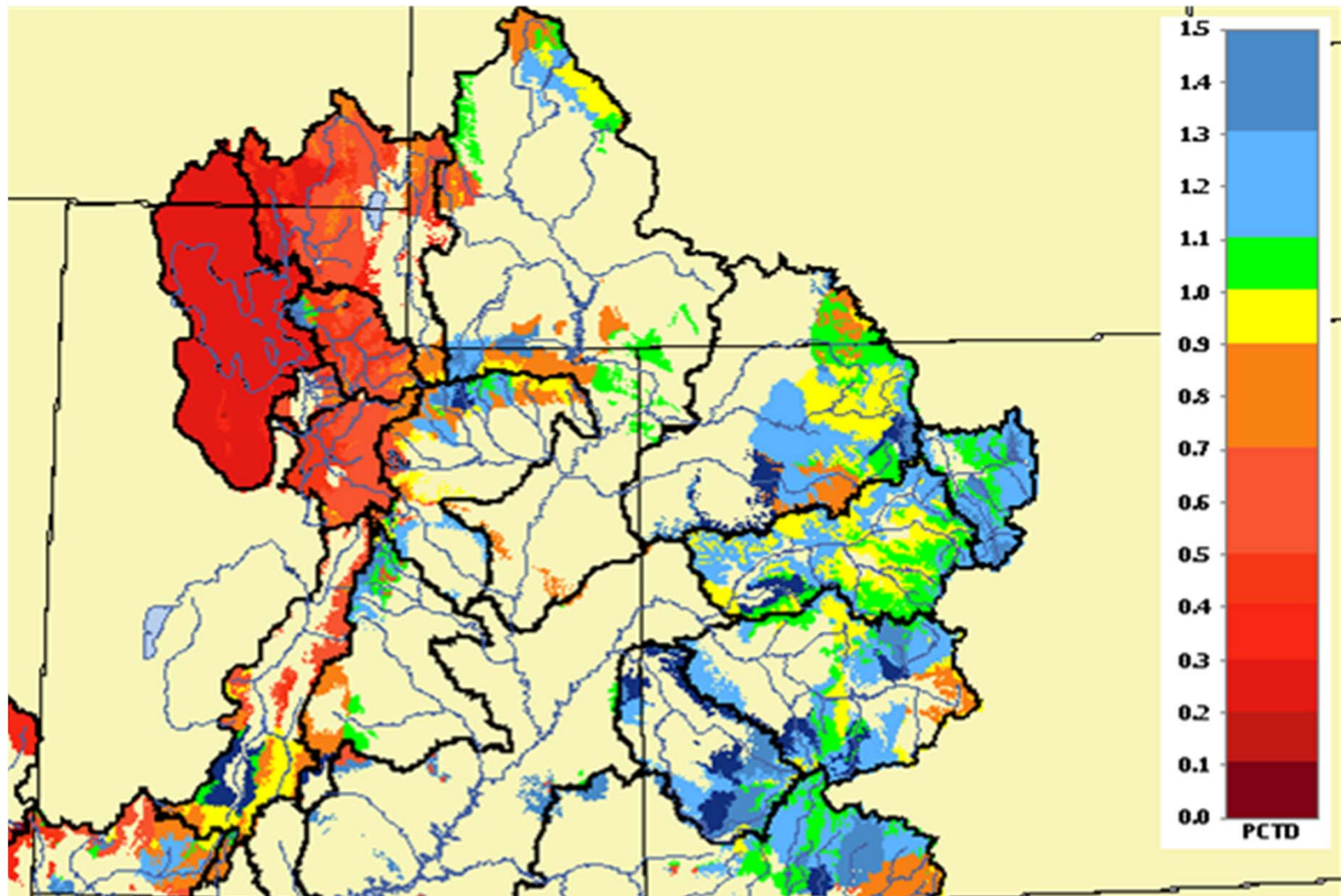


145%



55%

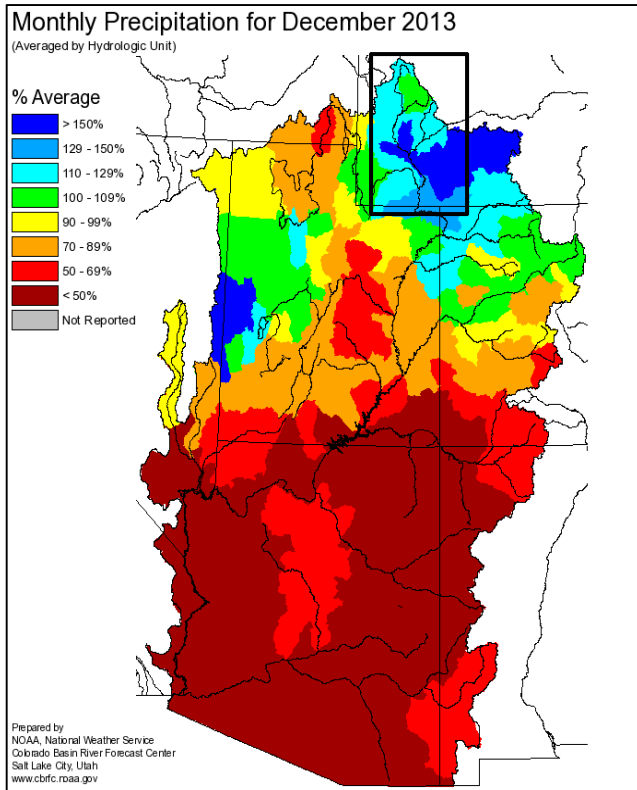
Modeled Soil Moisture entering the winter season



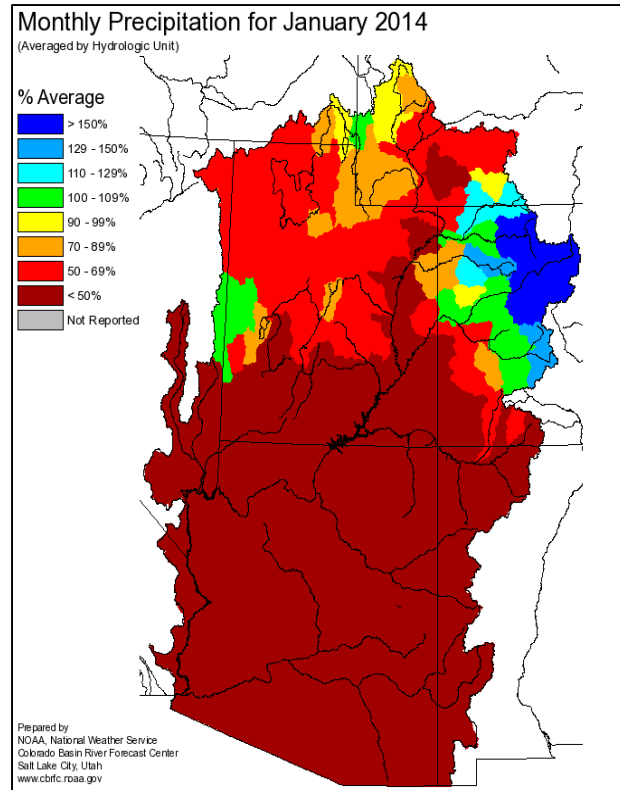
Blue/Green = above average/wet conditions

Red/Orange = below average/dry conditions

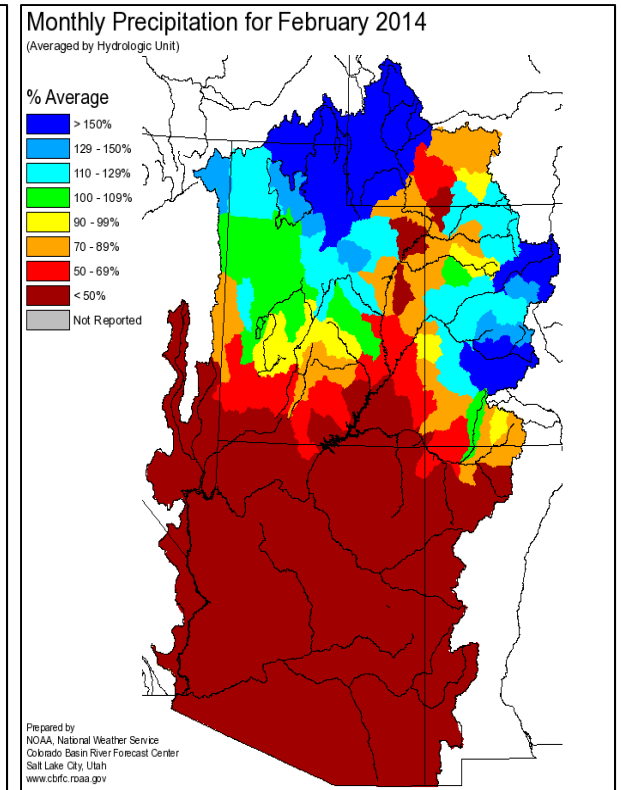
Winter Precipitation



130%



80%



220%

Many locations 300-400%

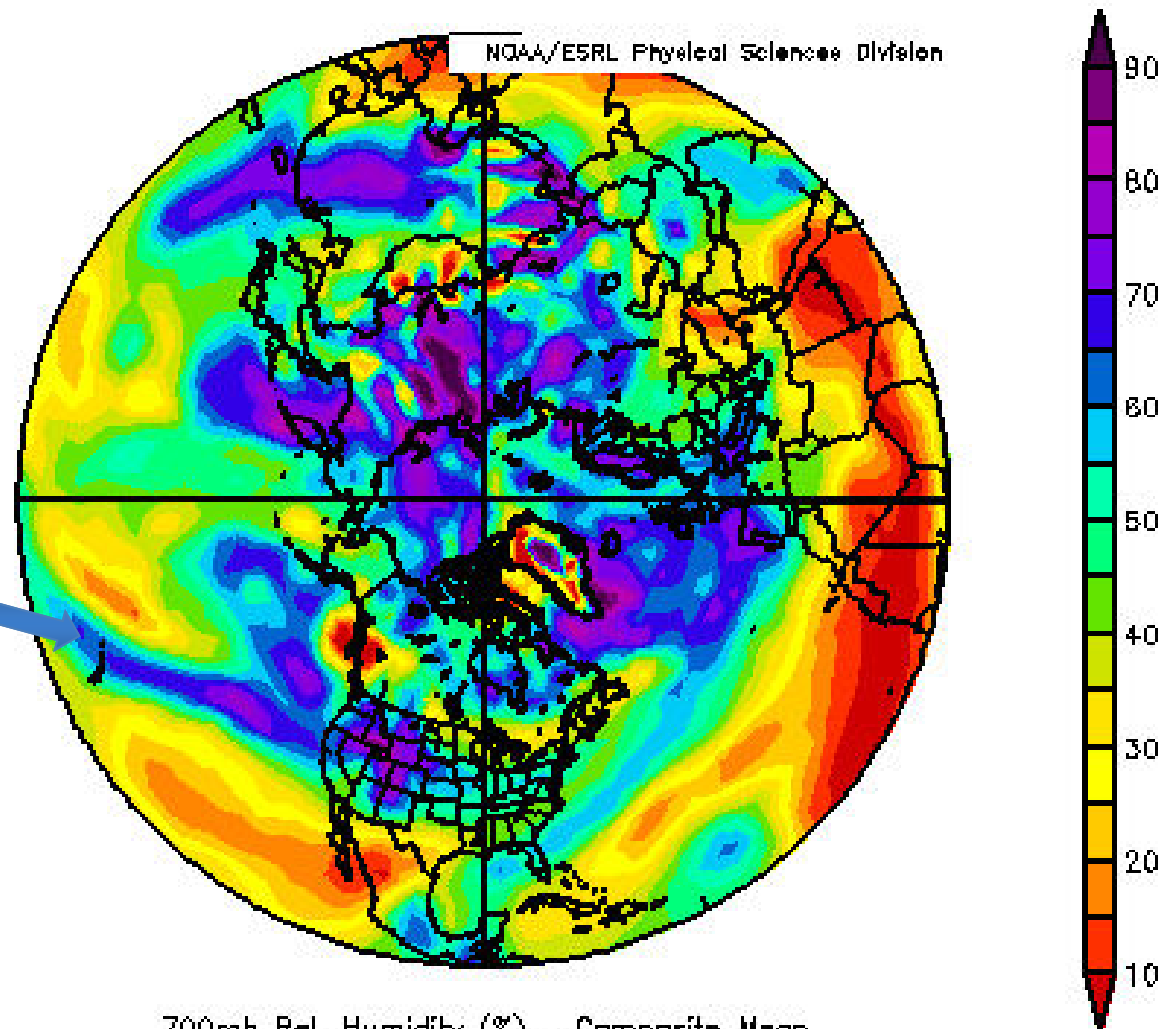
February Precipitation: 2nd Highest of many Snotel Records!

February 2014 Upper Air Pattern

Very moist and mild air transported into the Western U.S. – “**atmospheric river**”

Significant precipitation in the Green River Basin of Wyoming and northern Bear River Basin

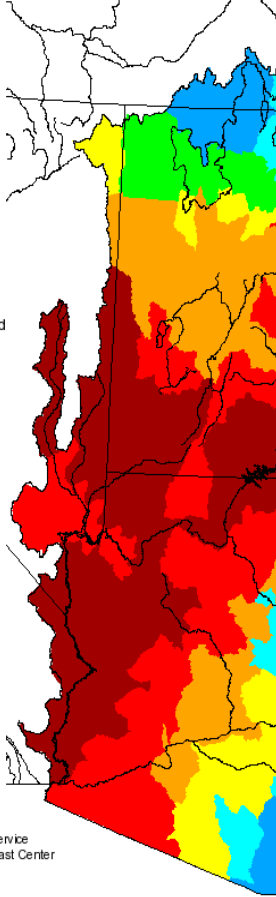
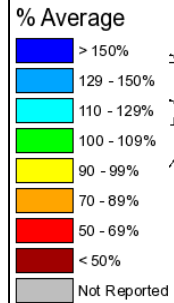
Above or much above average precipitation in the Yampa, Colorado Headwaters, upper Gunnison



700mb Rel. Humidity (%) Composite Mean
2/3/14 0z to 2/10/14 0z
NCEP/NCAR Reanalysis

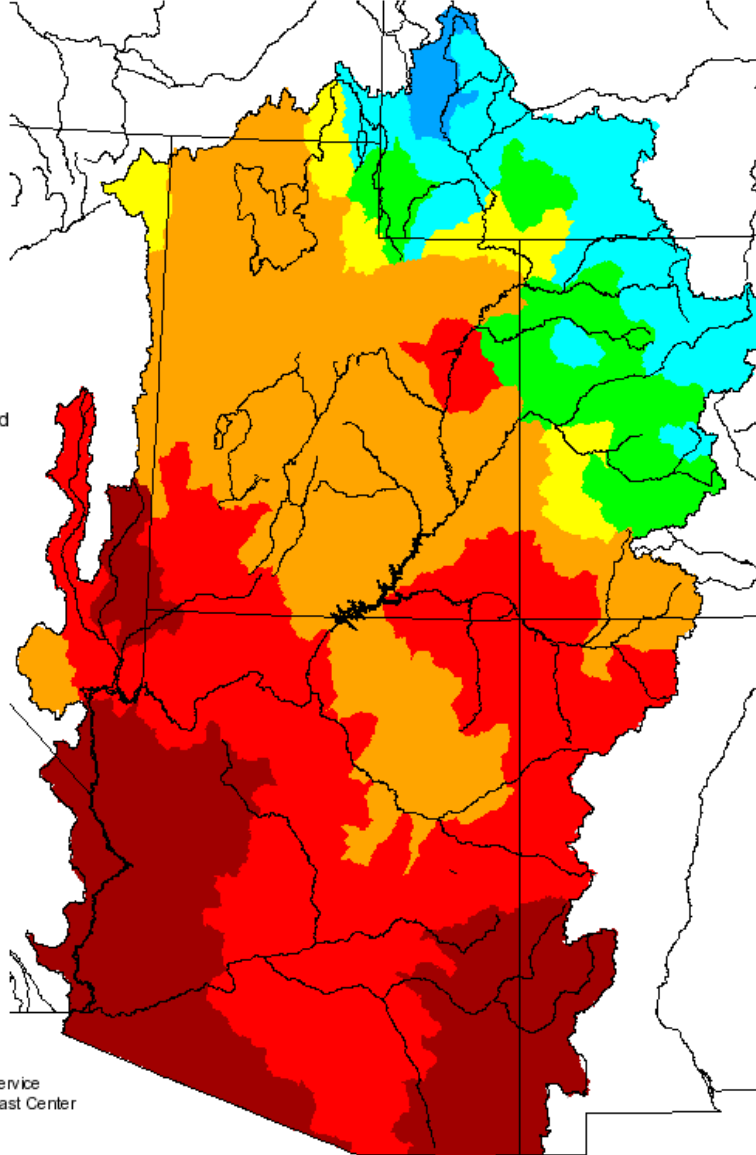
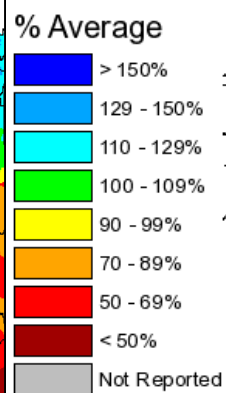
Spring Precipitation

Monthly Precipitation for March
(Averaged by Hydrologic Unit)



Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbifc.noaa.gov

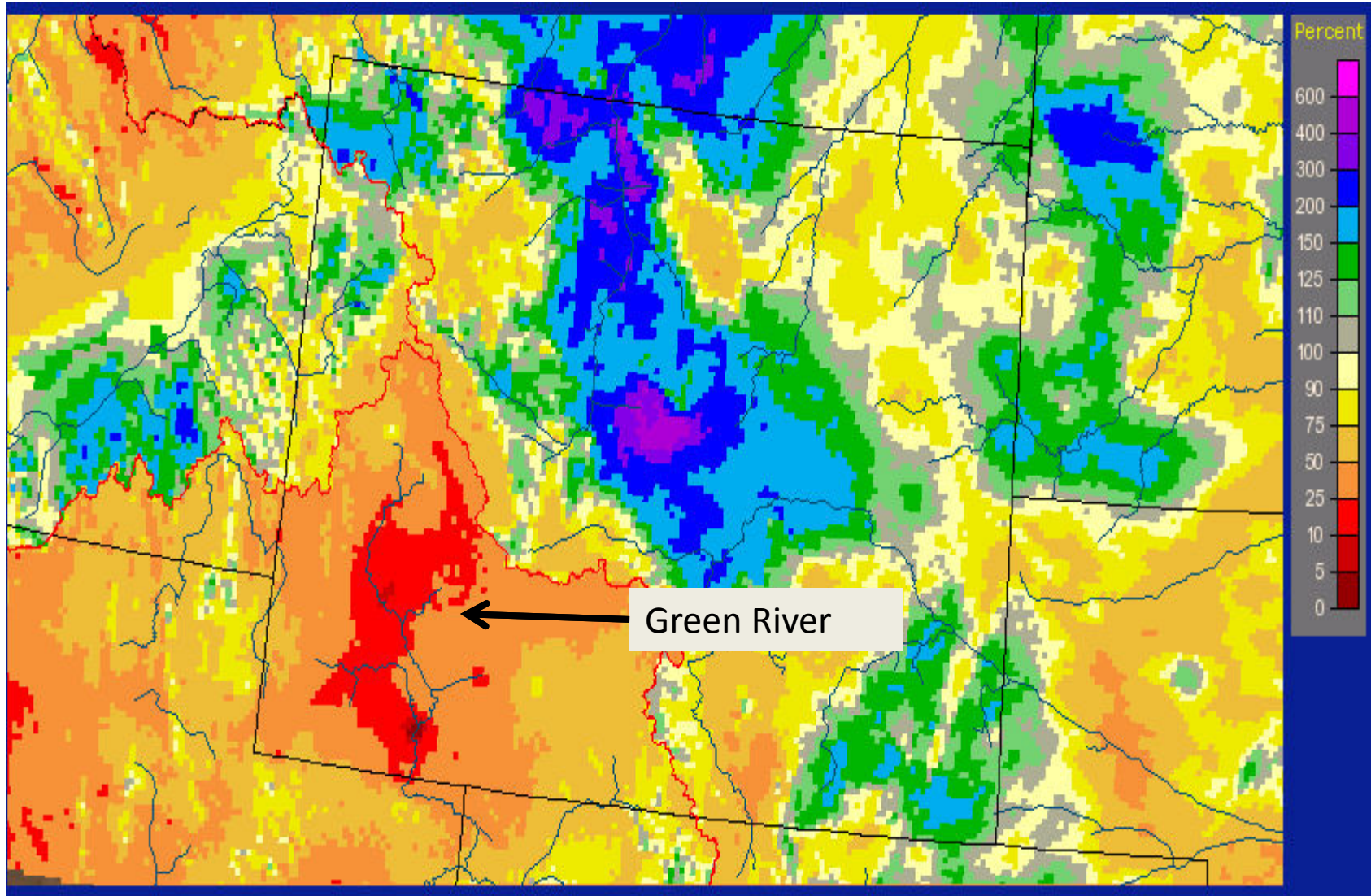
Seasonal Precipitation, October 2013 - March 2014
(Averaged by Hydrologic Unit)



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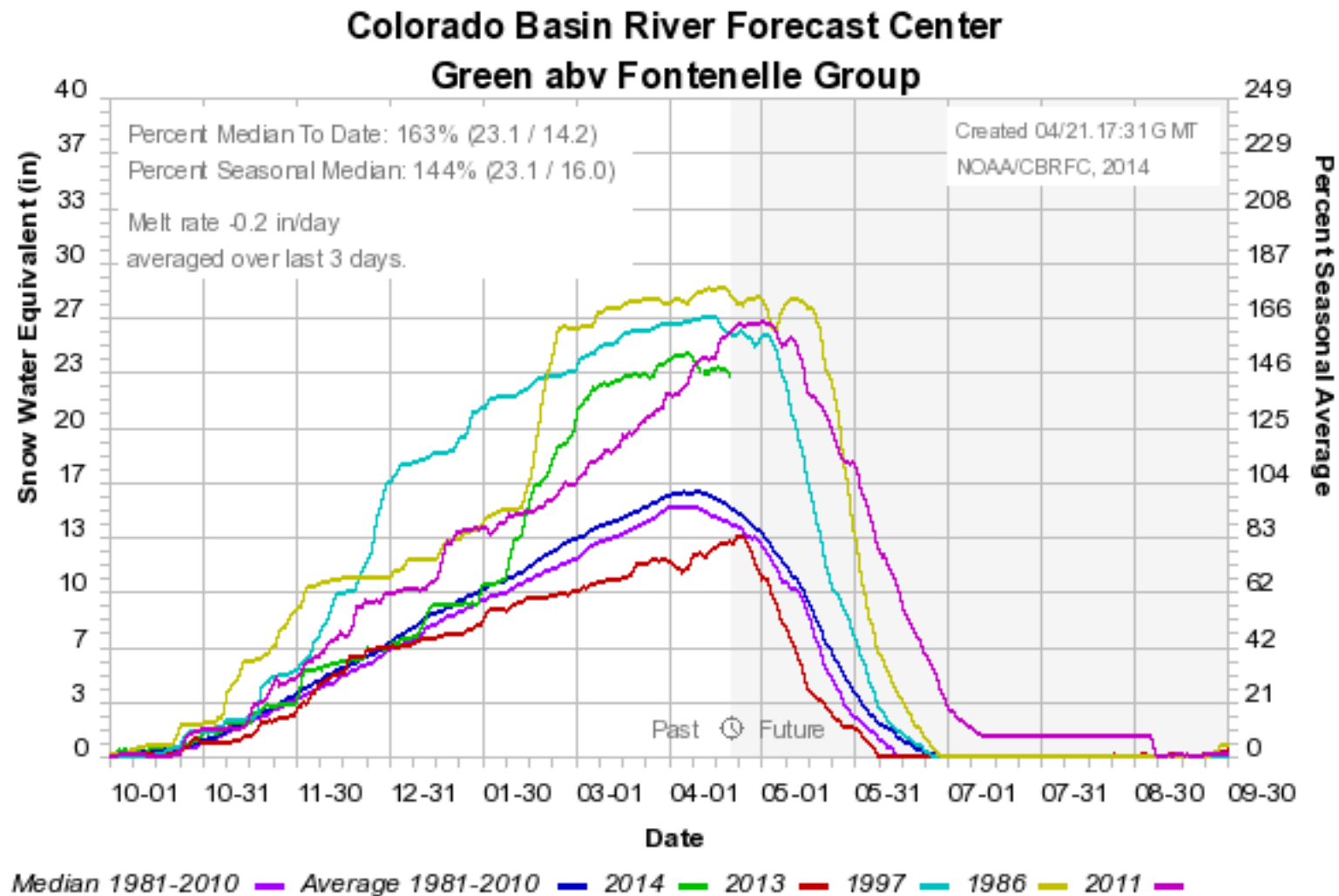
120%

April Precipitation



Below average so far

Snow

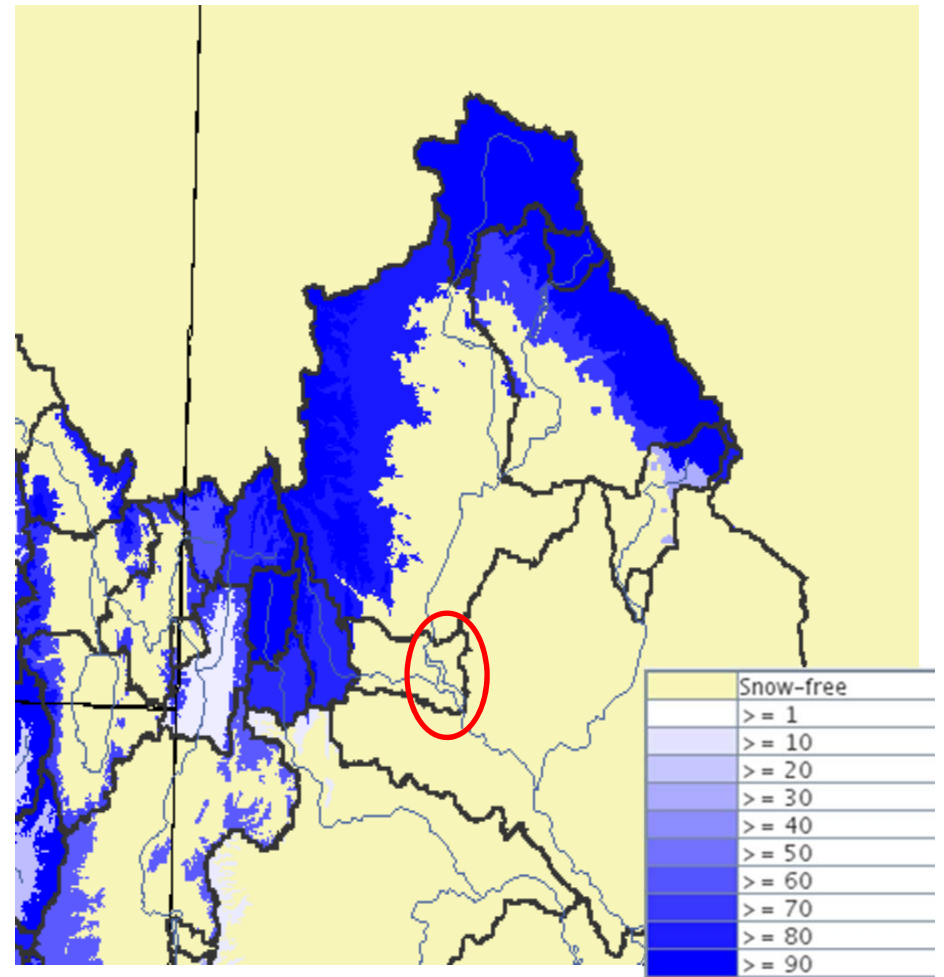
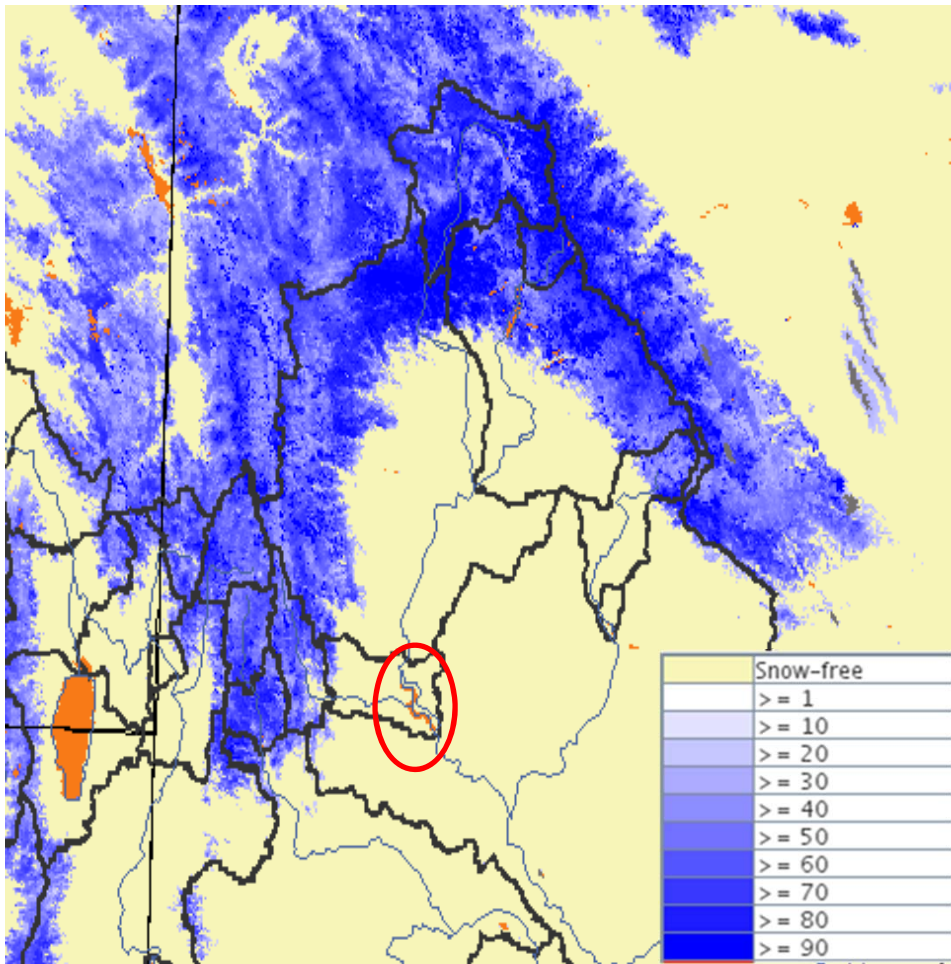


Snow: Limited Snotels > 9000'

Satellite Derived Snow Cover



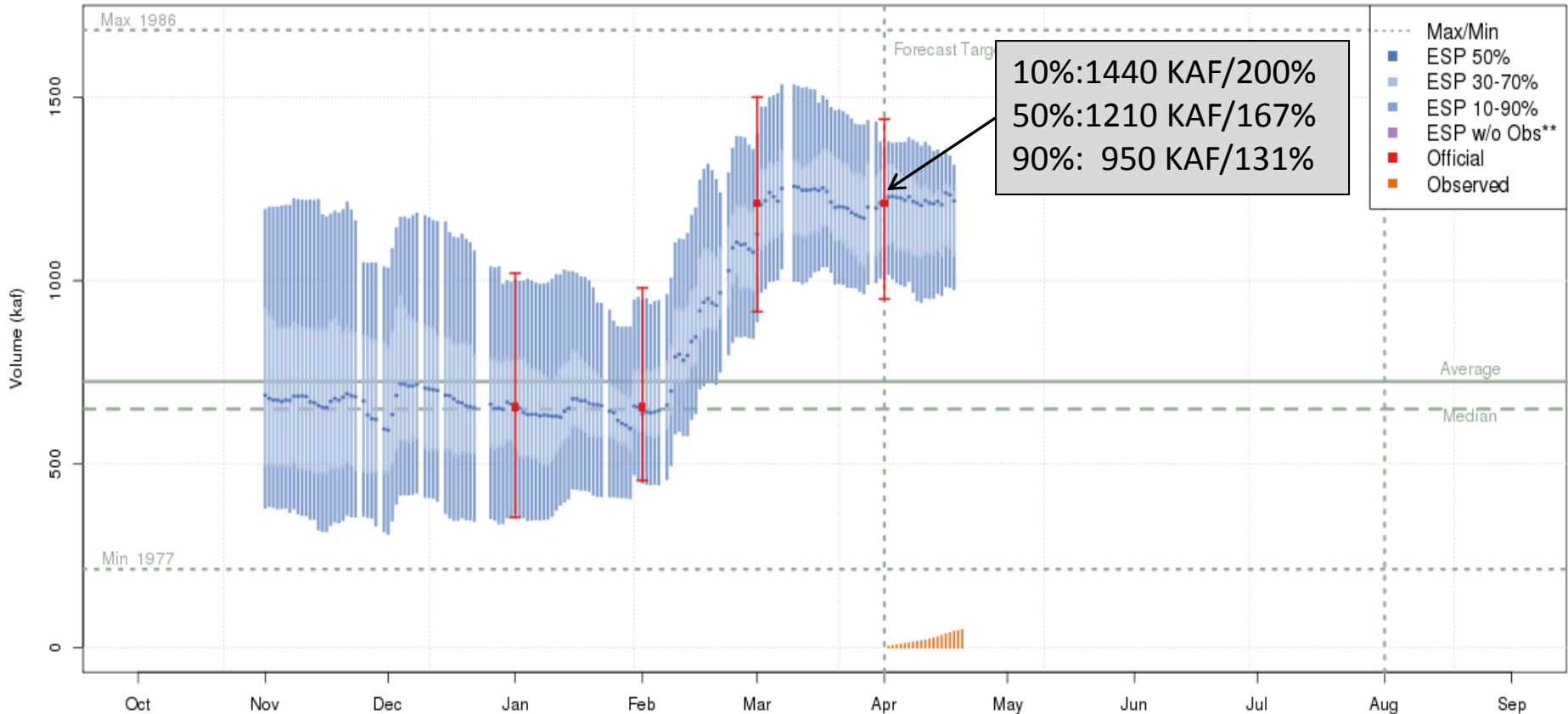
Modeled Snow Cover



Forecast: Fontenelle Inflow

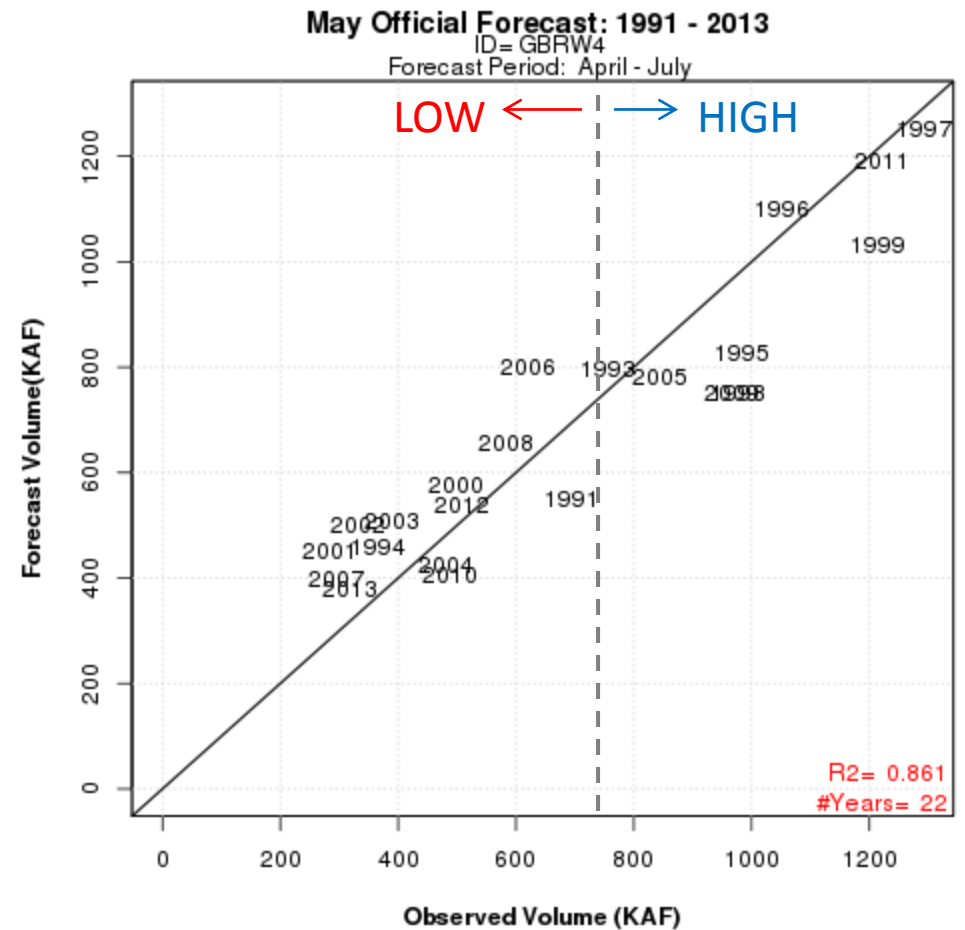
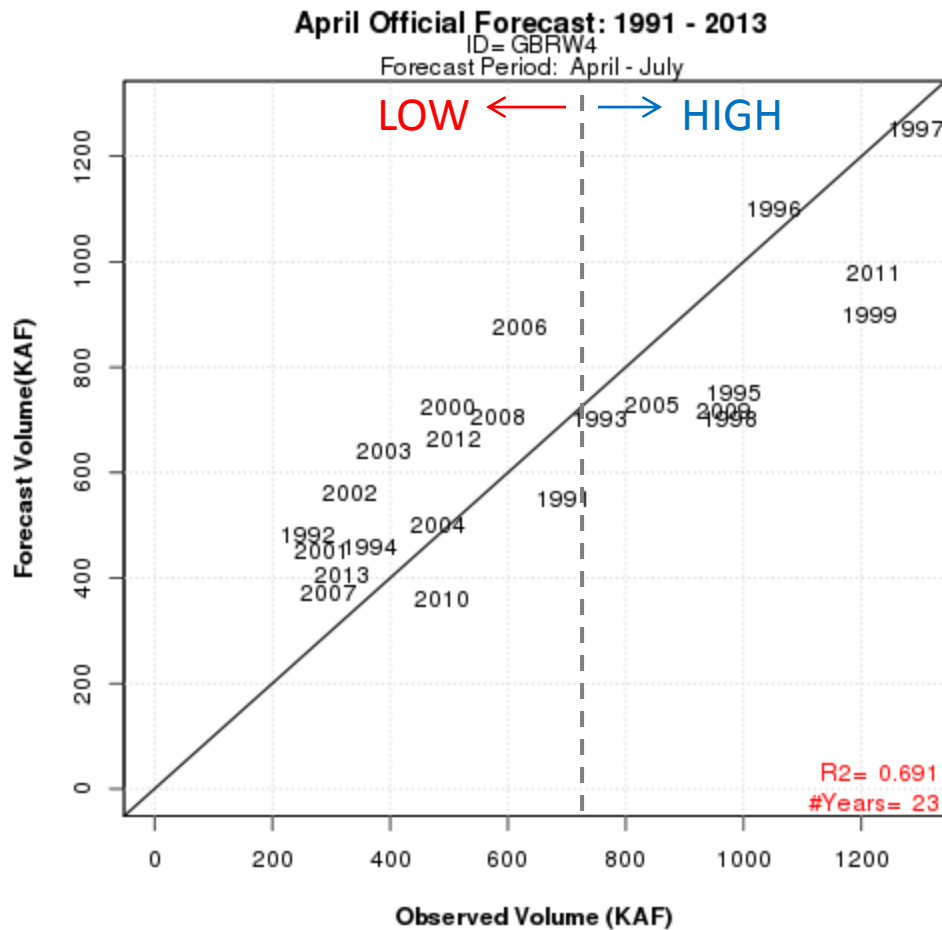
Seasonal Forecast Progression

Green - Fontenelle Res- Fontenelle Nr (GBRW4) Apr-Jul 2014 Runoff Forecast
2014-04-01 Official 50% Forecast: 1210kaf (167% of average)



Plot Created 2014-04-20 15:24:03, Lastest ESP Run from 2014-04-20, NOAA / NWS / CBRFC
Today's 50% ESP forecast changed -1.4 % from yesterday and -4.3 % from April 1
**These ESP forecasts do not include observed and are not total runoff.

How well do forecasts perform in high years?

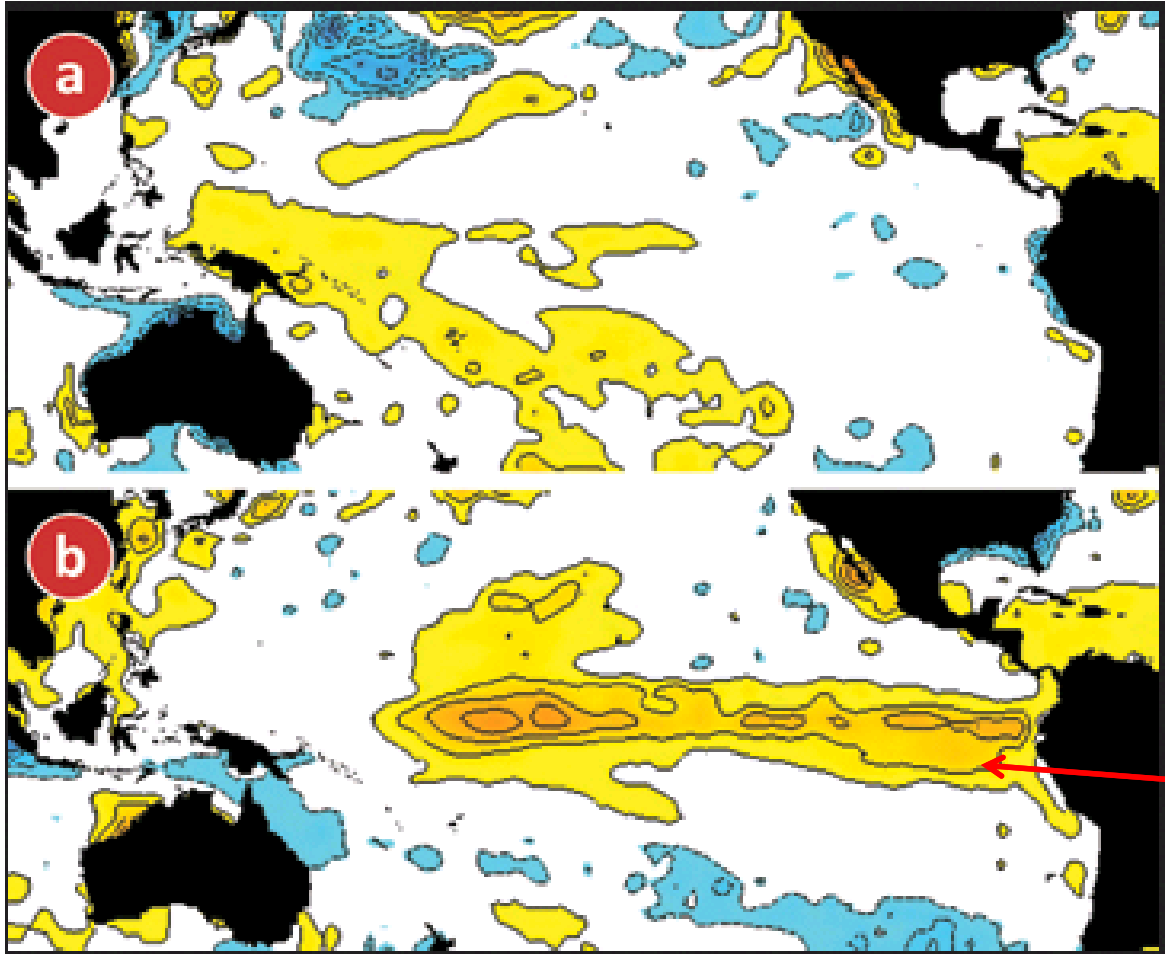


Weather:Short Term

-update tuesday

Weather: Long Term Outlook

El Nino Developing ??



a) Neutral Conditions

b) El Niño Conditions

Warm Water
Equatorial Pacific

Latest ENSO Projections

Mid-Apr IR/CPC Plume-Based Probabilistic ENSO Forecast

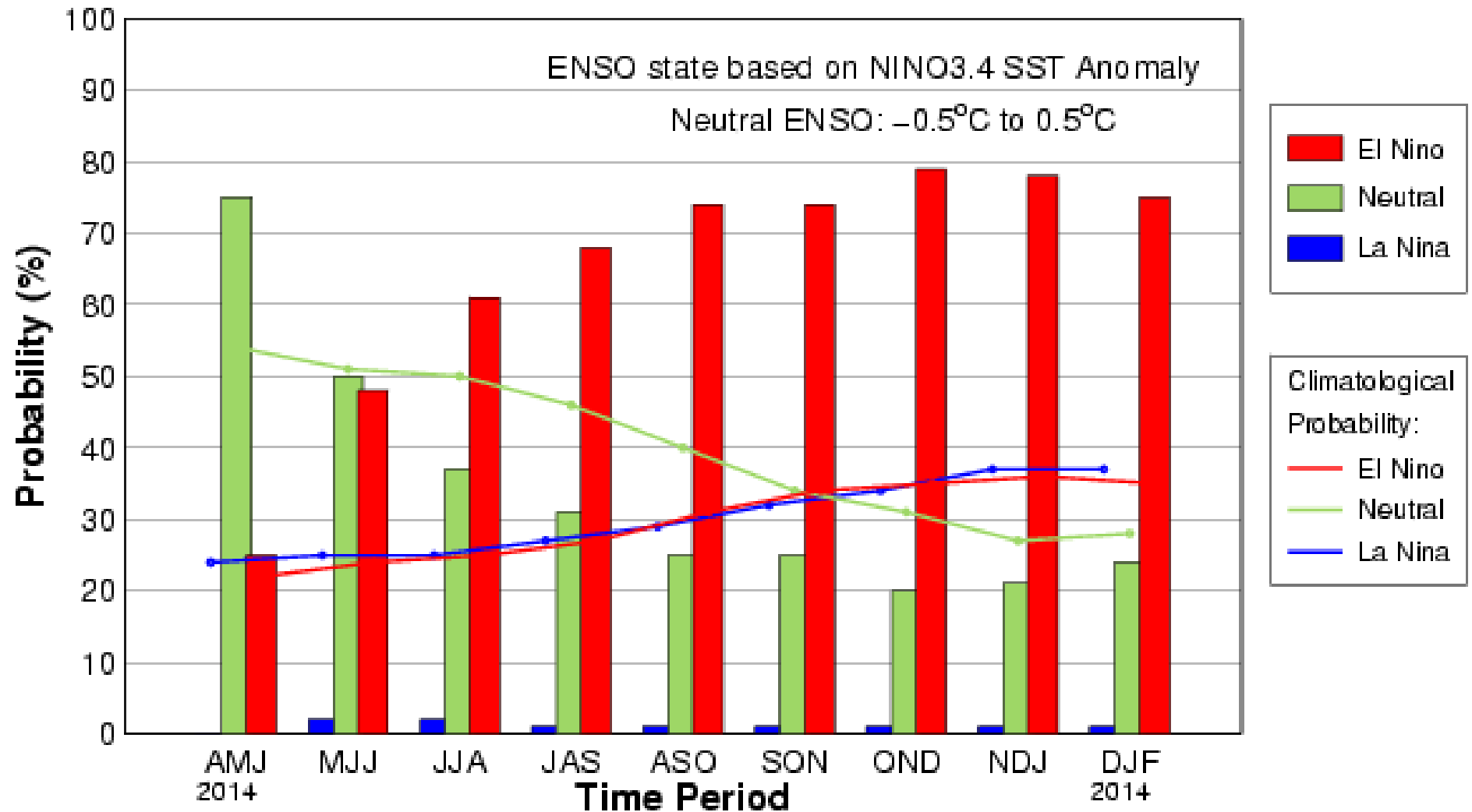
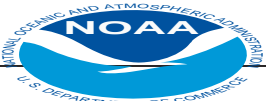
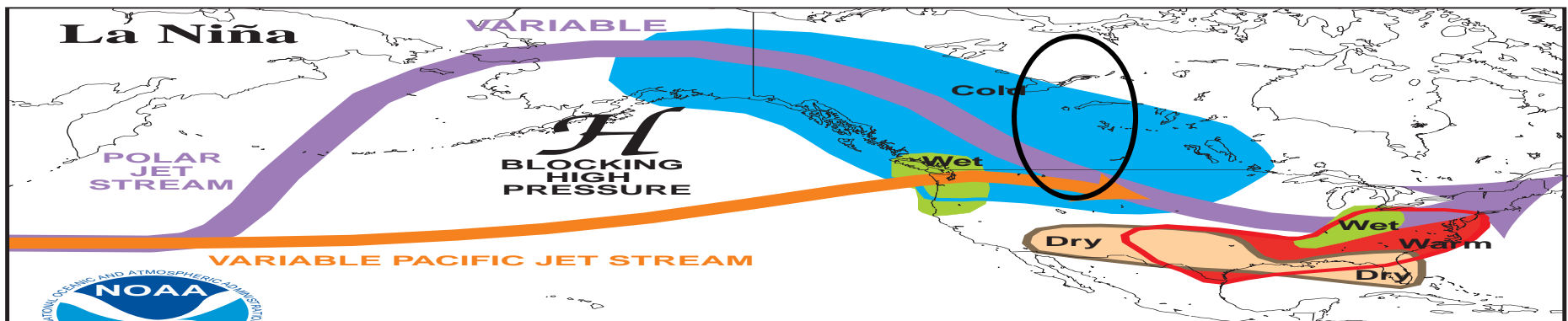
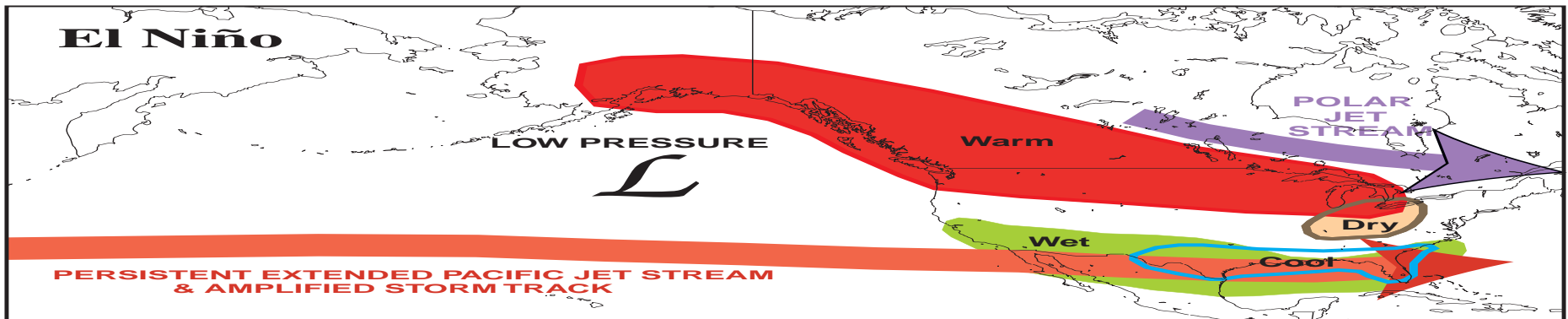


Figure from: http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/?enso_tab=enso-quicklook

El Niño Impacts

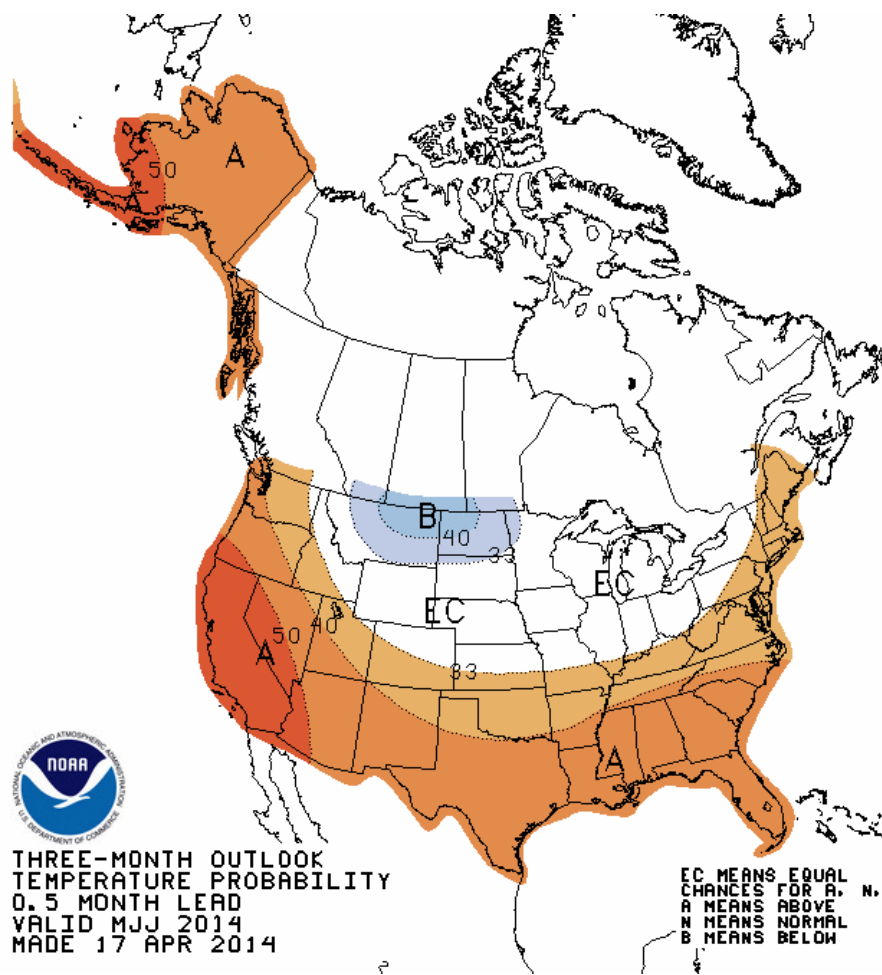
TYPICAL JANUARY-MARCH WEATHER ANOMALIES AND ATMOSPHERIC CIRCULATION DURING MODERATE TO STRONG EL NIÑO & LA NIÑA



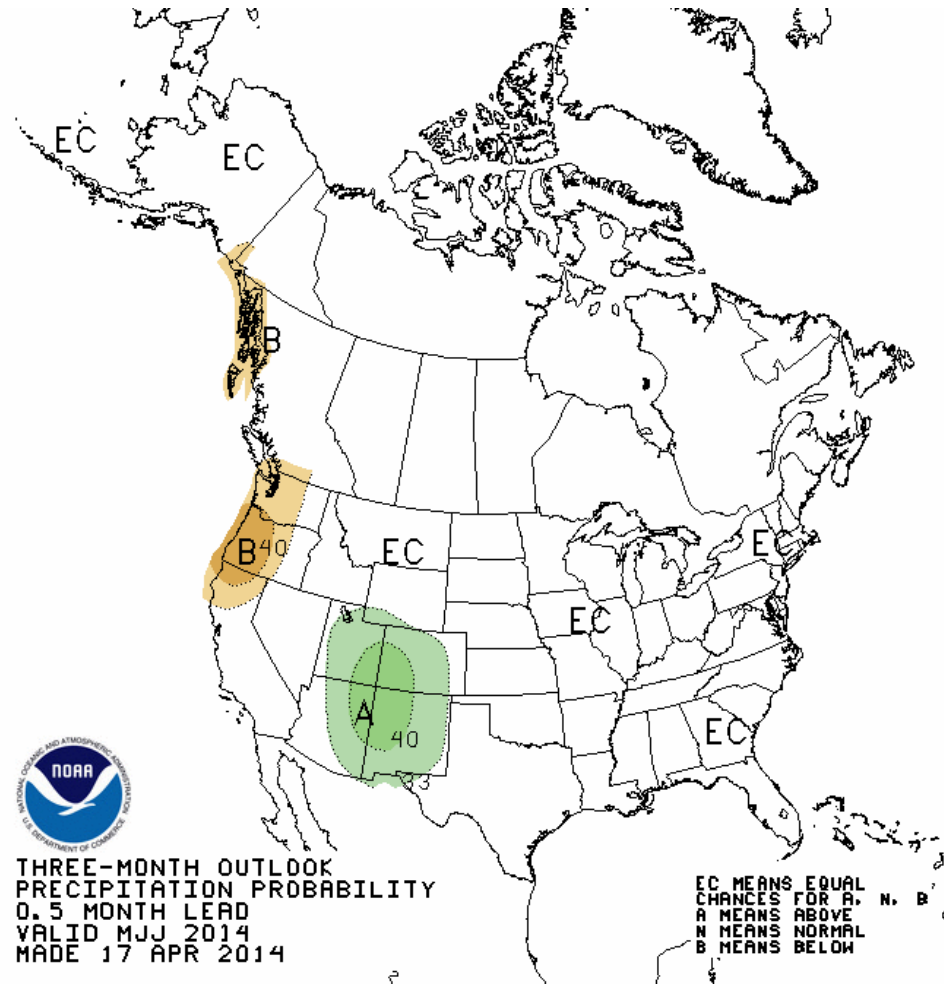
Climate Prediction Center/NCEP/NWS

- Cooler and wetter conditions over south
- Dryer and warmer conditions over north

3-Month Outlooks



Temperature



Precipitation

Feedback, Questions, Concerns always welcome....



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