CBRFC
February 2014
Water Supply Webinar

February 6, 2014

Greg Smith

These slides: www.cbrfc.noaa.gov/present/present.php

February Water Supply Webinar

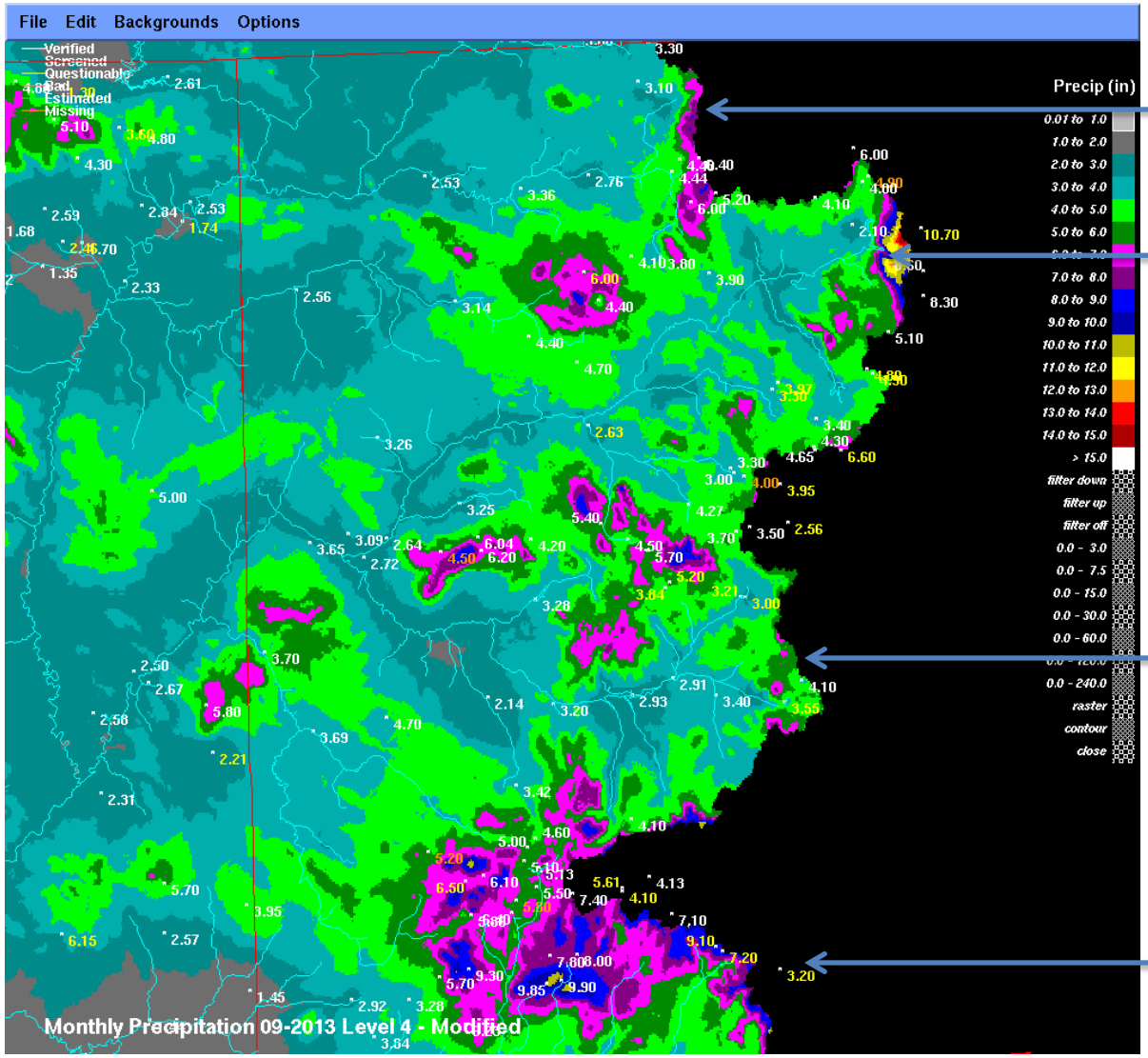
- Components of the water supply forecast
- January weather
- Current snow conditions
- Water supply forecasts
- Upcoming weather

Components of a Water Supply Forecast

- Current soil moisture
  - Baseflow
  - Water stored within the soil (Tension Water)
- Current snow
- Future precipitation / temperature
  - 5 day precipitation, 10 day temperature
  - Past day 5, use 30 years (1981-2010) of observed precipitation and temperature

September 2013 Precipitation

Widespread 200 percent of average with a few stations of 300-400 percent. (14 inches in the upper Granby). Resulted in a large increase in soil moisture.



Yampa

Colorado Headwaters

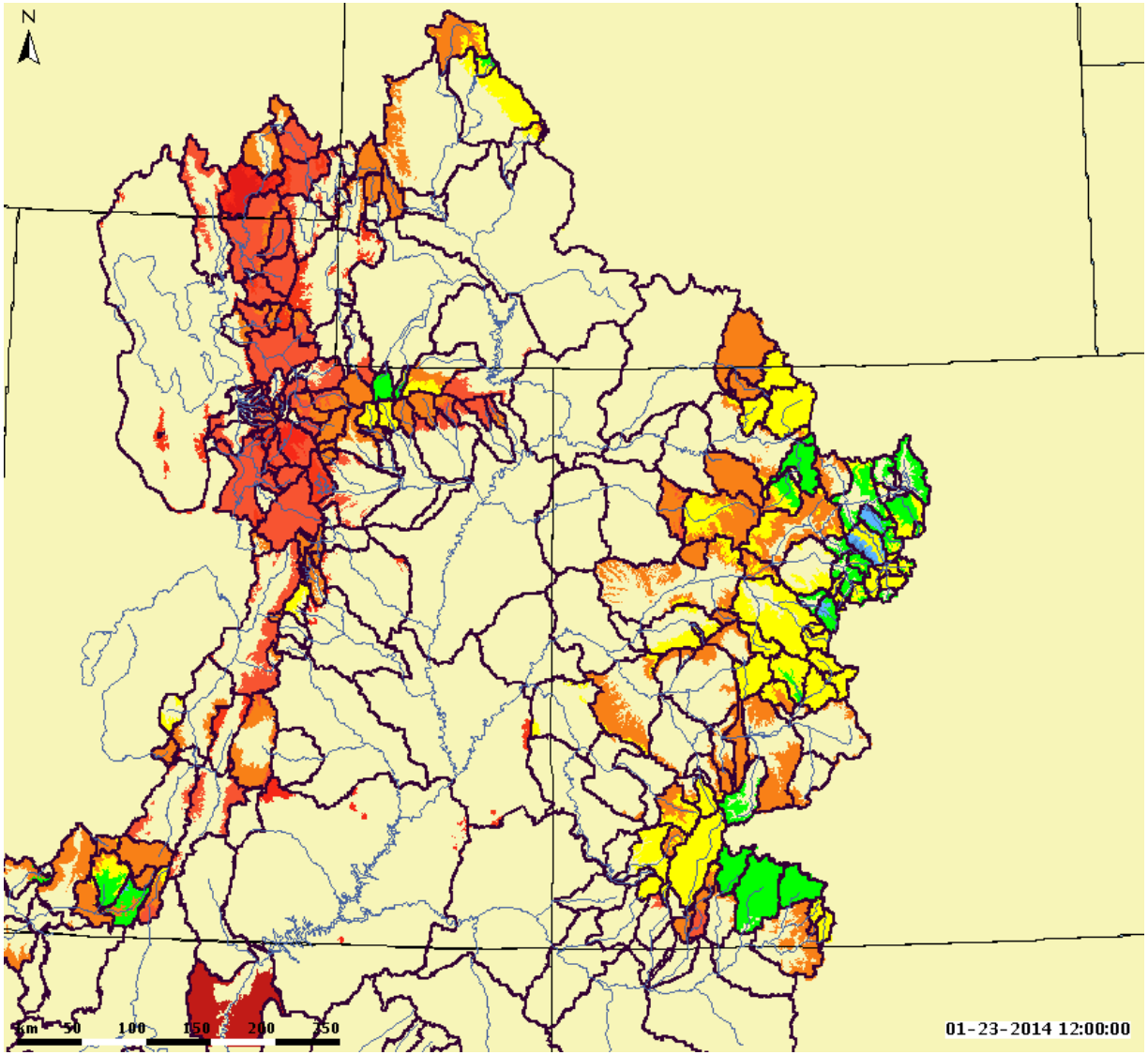
Gunnison

San Juan

Modeled Baseflow

Near normal Upper Colorado and well below Great Basin

This agrees fairly well with the USGS web site.



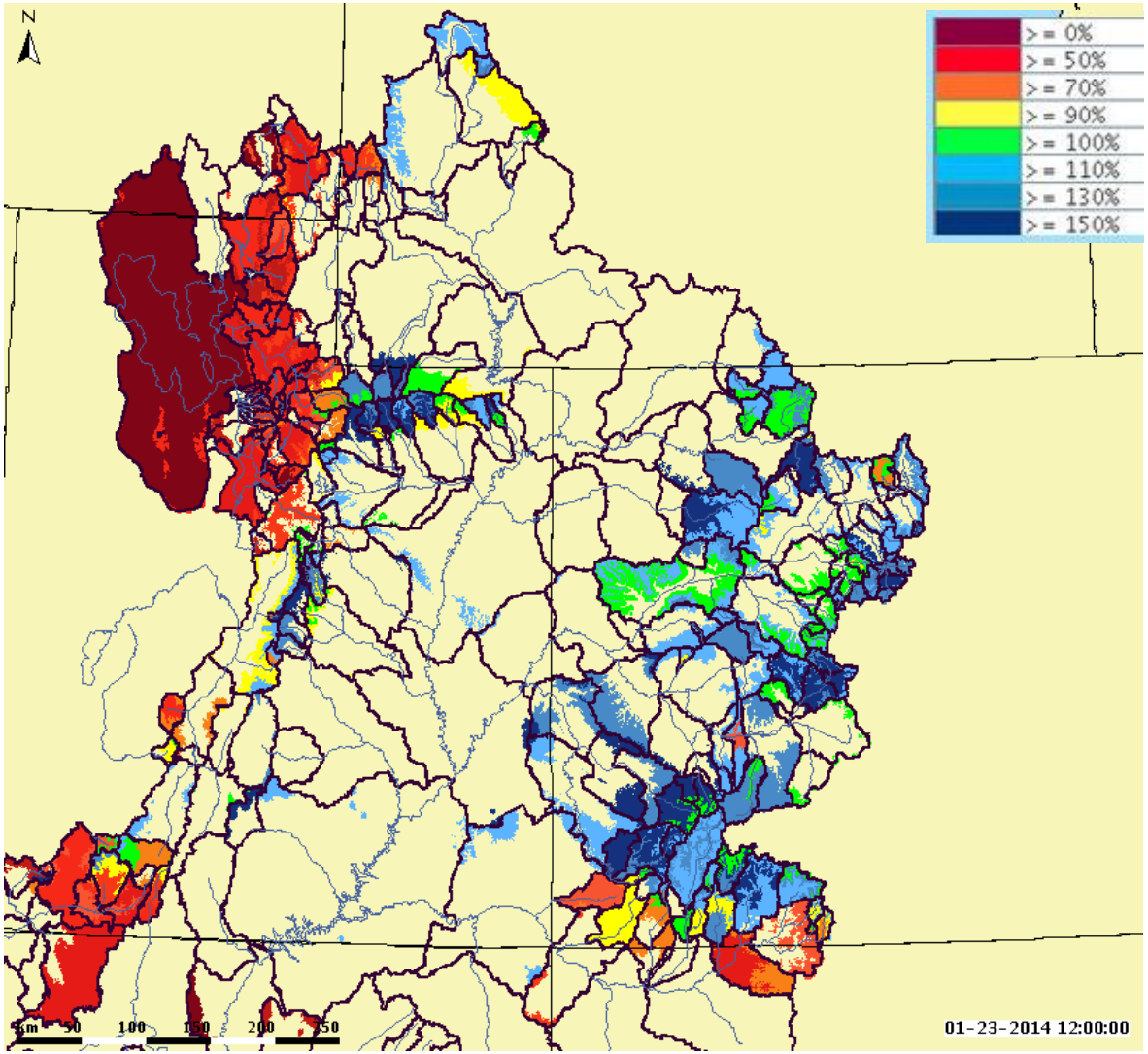
Modeled Soil Moisture

Well above Upper Colorado and well below Great Basin

How will this affect water supply forecasts?

Positive effect on the upper Colorado

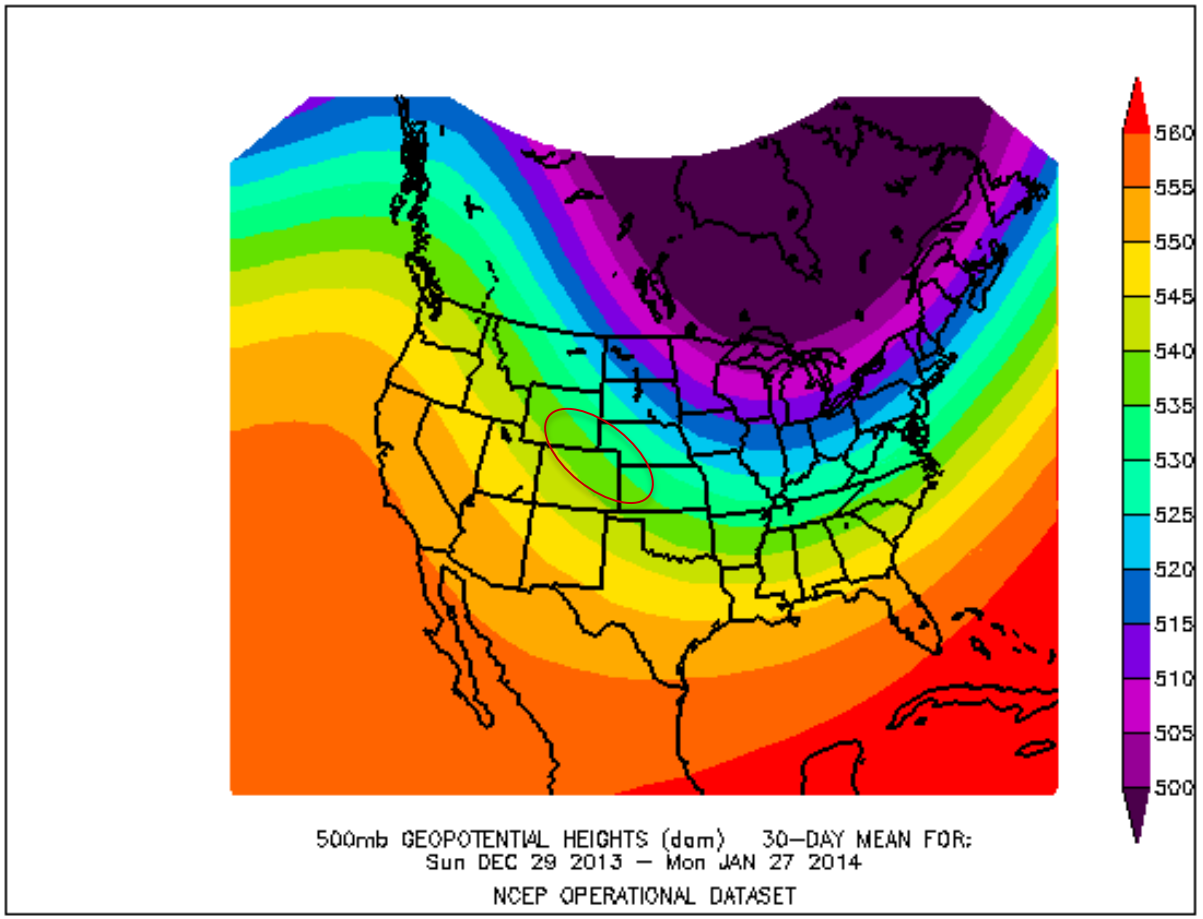
Negative affect on the Great Basin and Lower Colorado



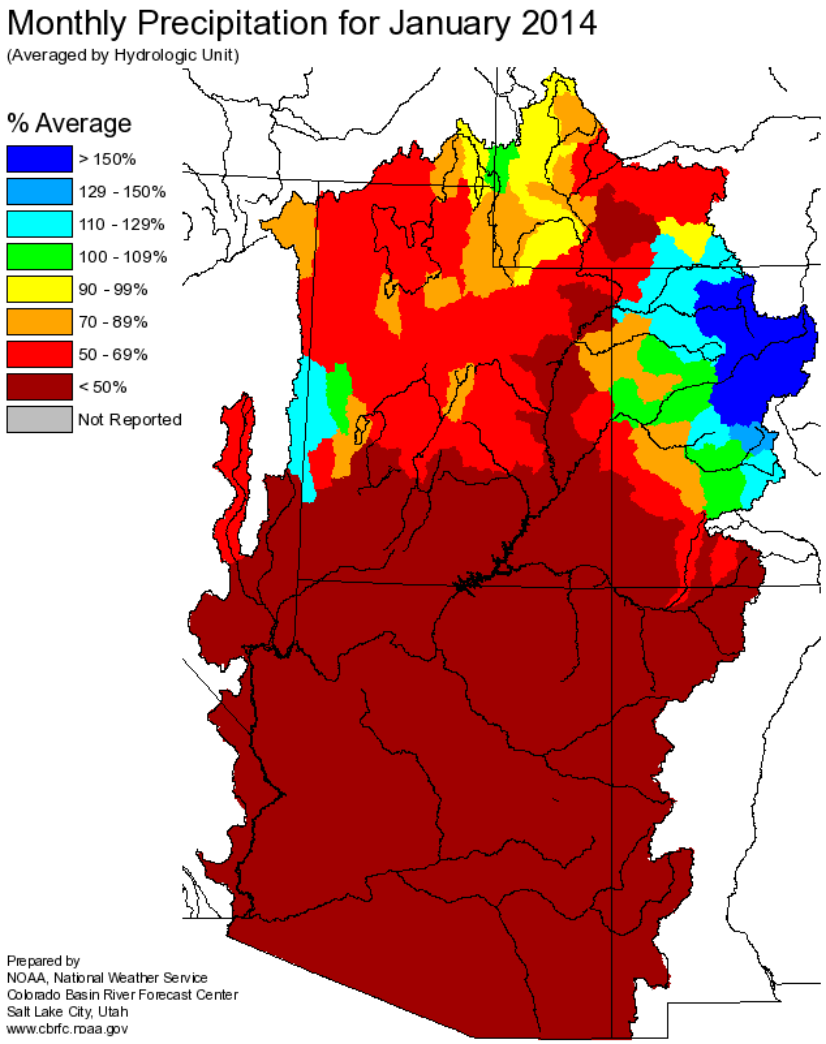
January 2014 Upper Air Pattern

Upper ridge over west coast with generally dry northwest flow over the intermountain west.

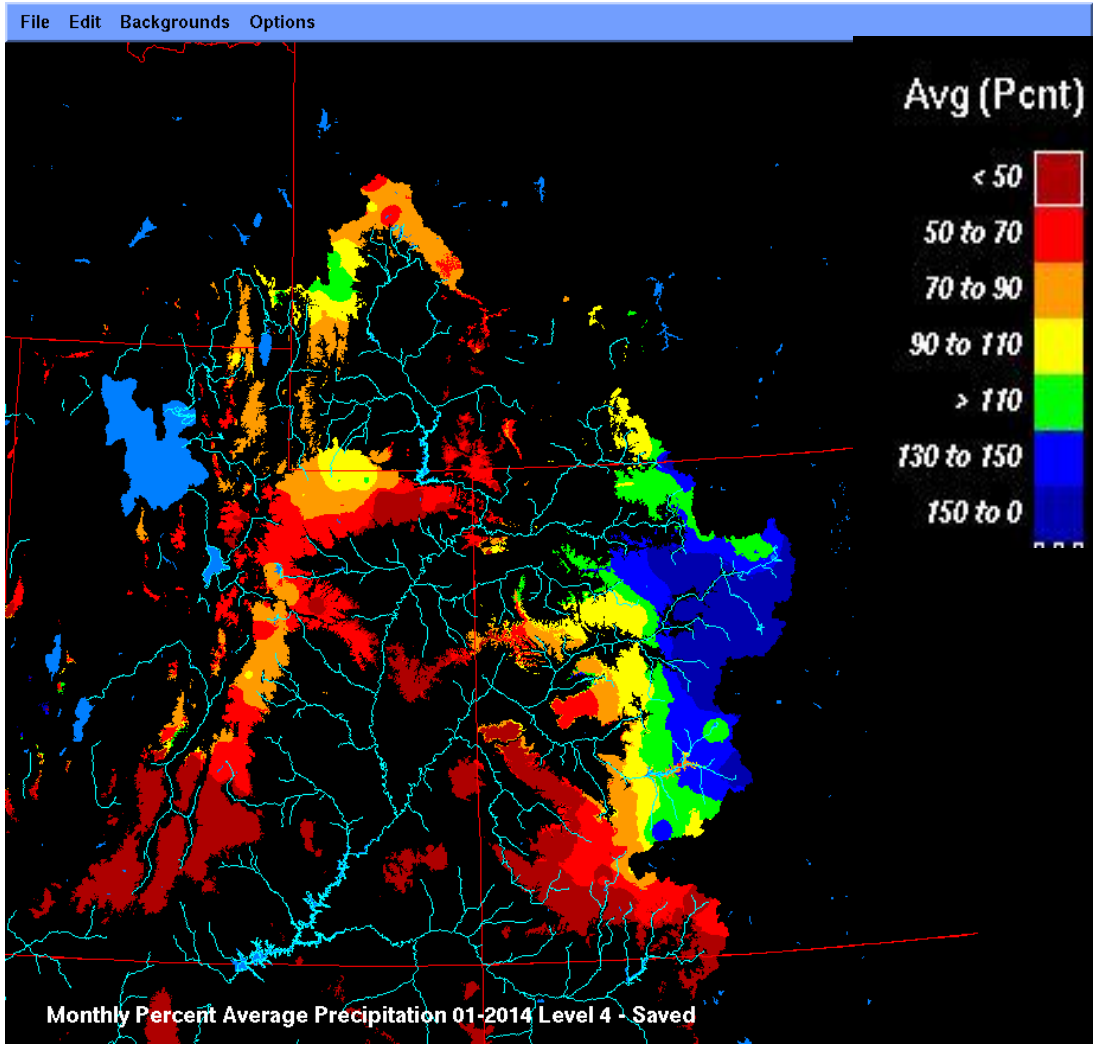
A few storms clipped the northeastern portions of the CBRFC area(upper Colorado and Little Snake headwaters)



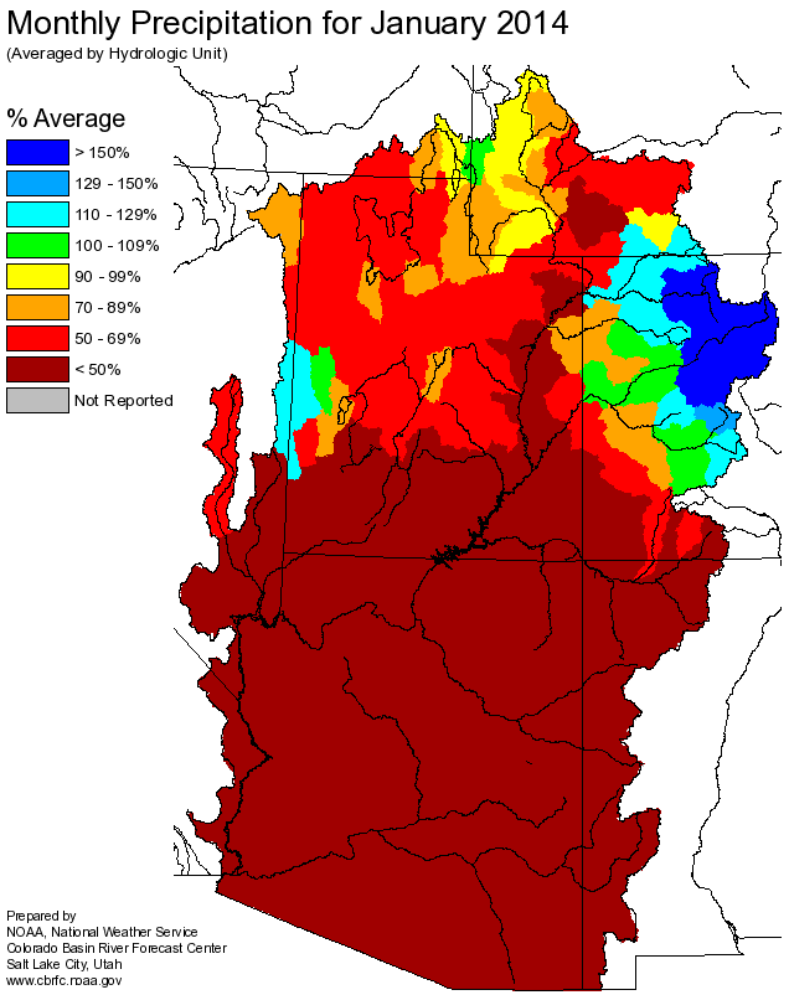
January Precipitation



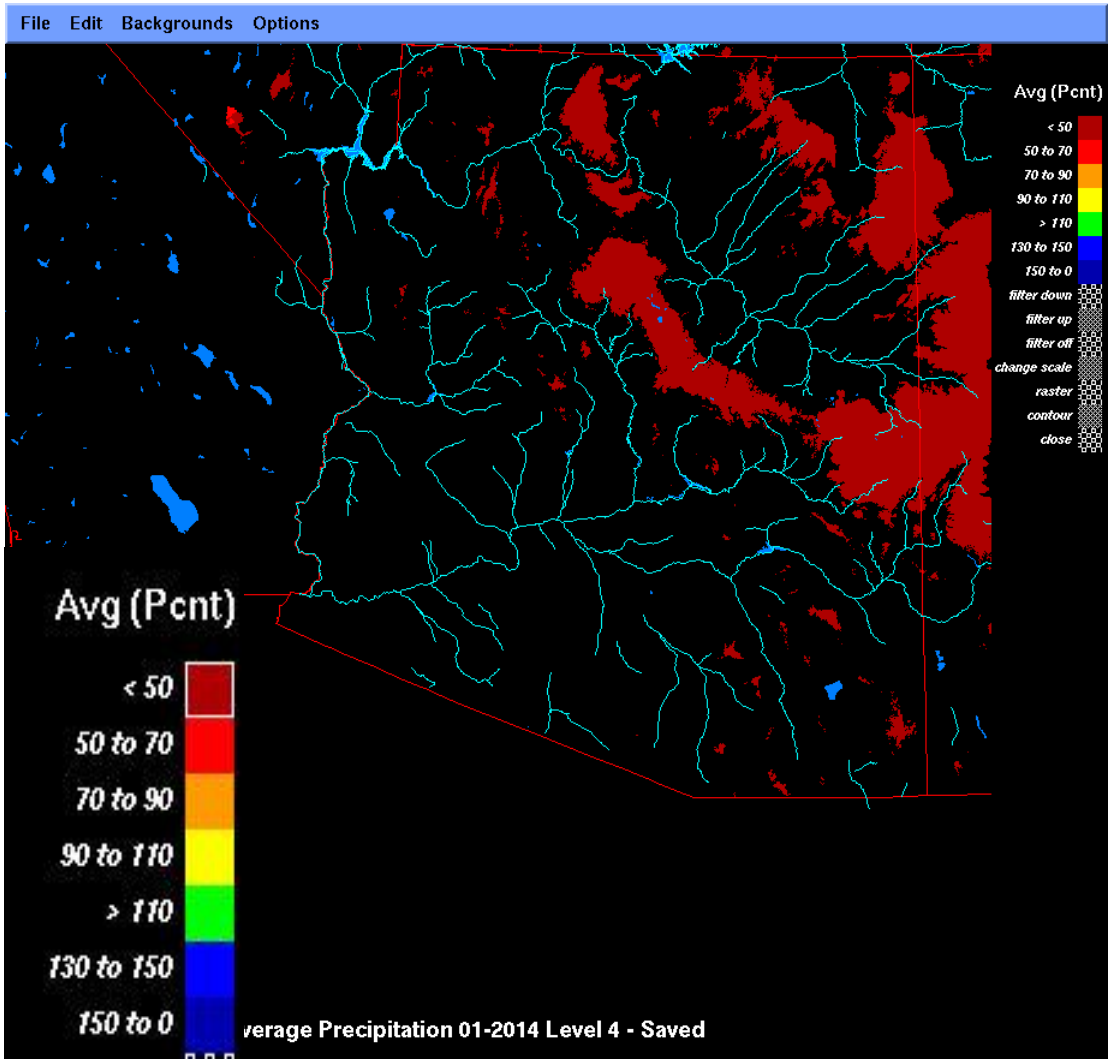
January Precipitation – contributing areas



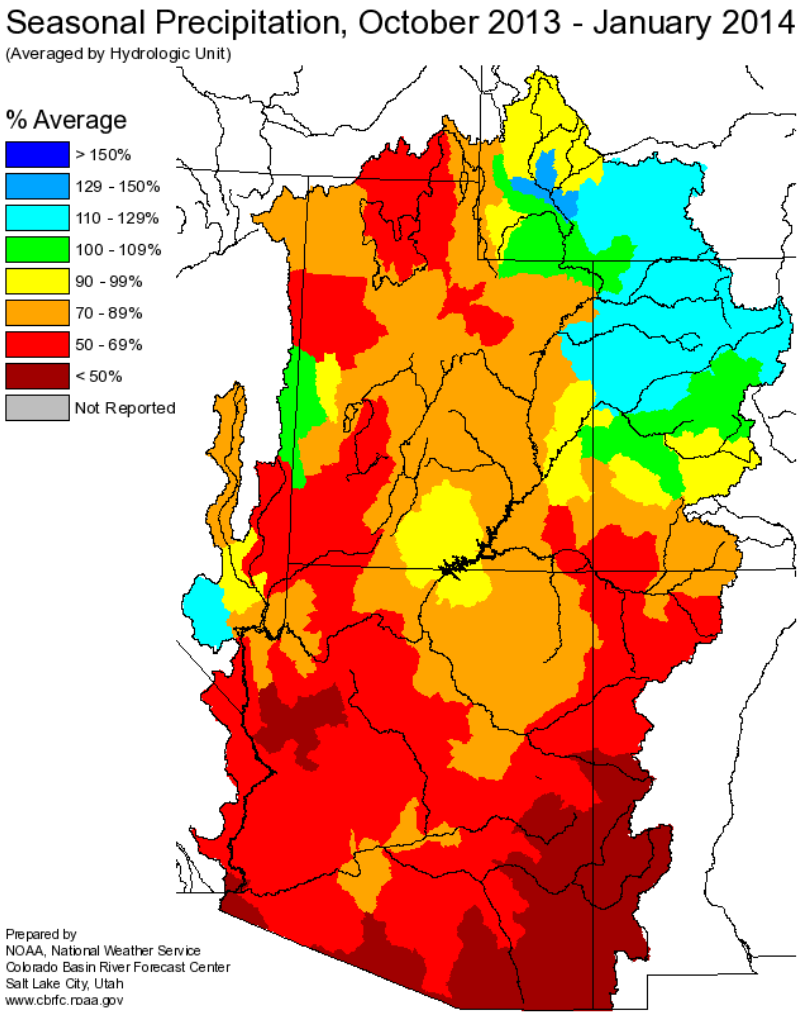
January Precipitation



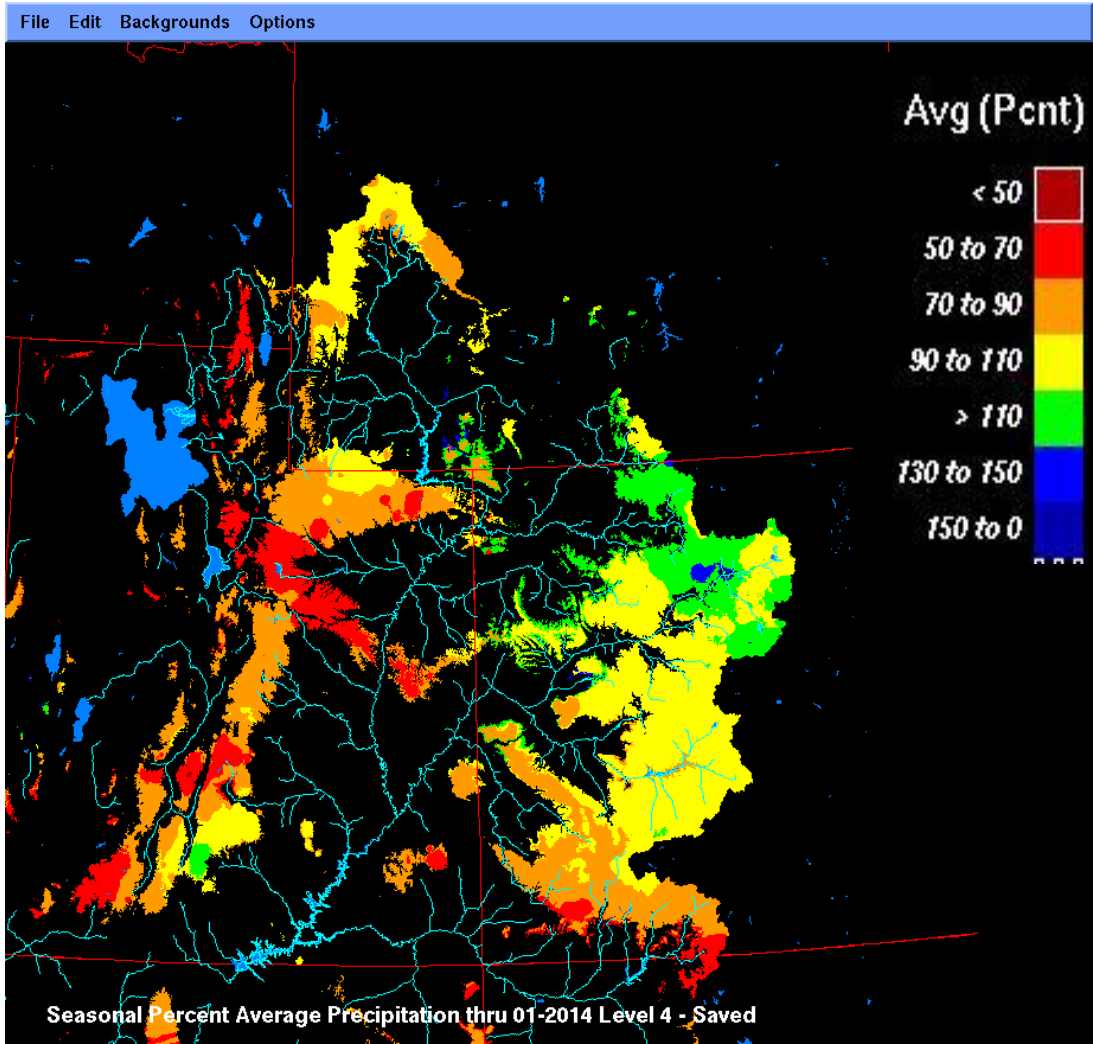
January Precipitation – above 6500 feet



Seasonal Precipitation
October - January

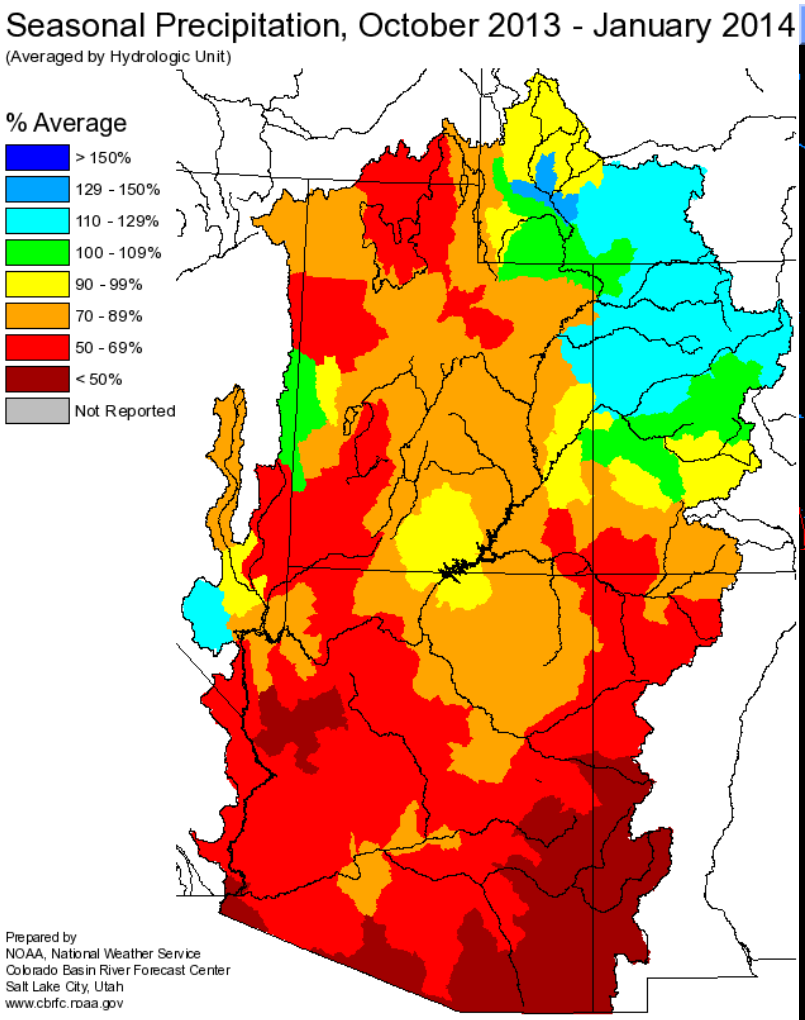


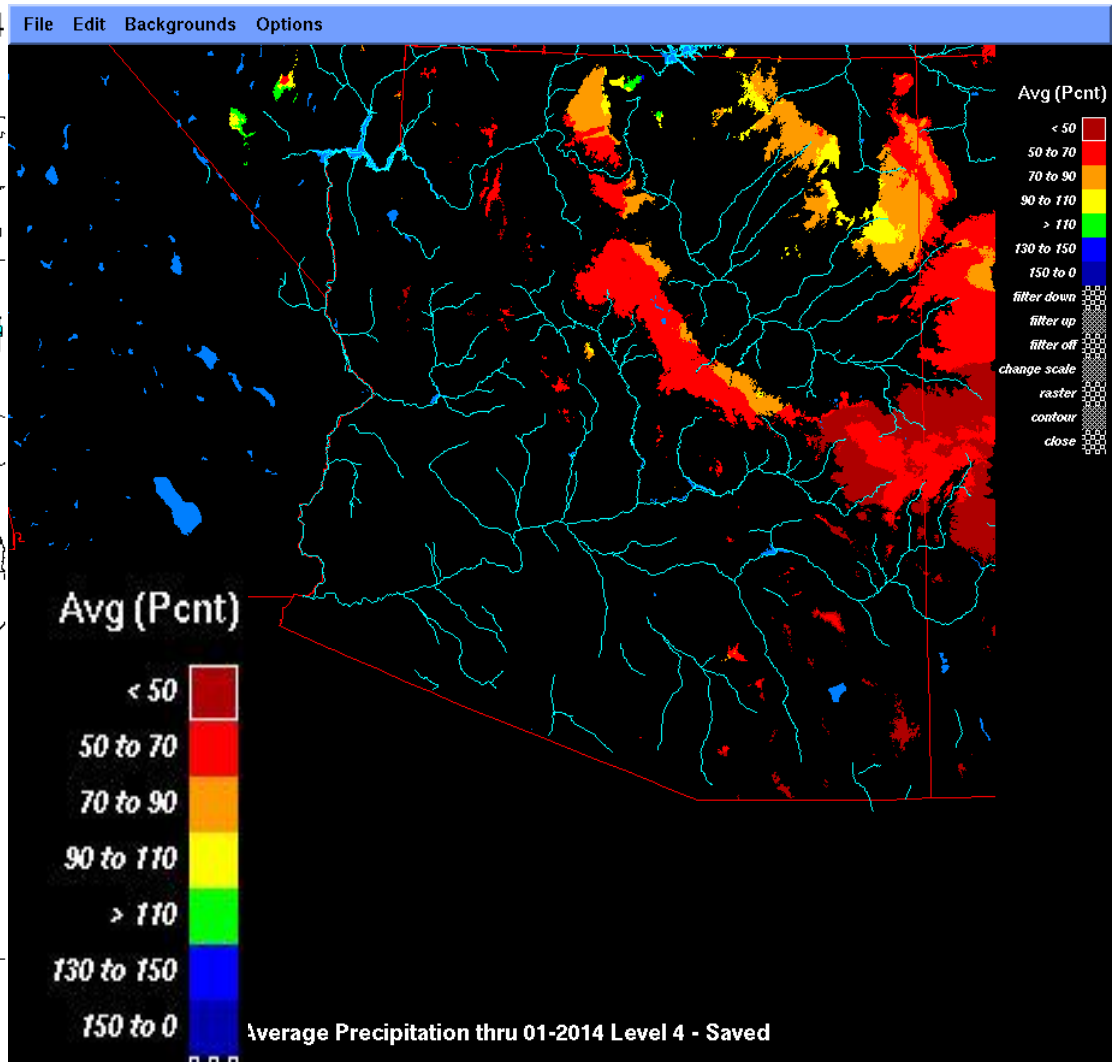
Seasonal Precipitation – contributing areas



Seasonal Precipitation
October - January

Seasonal Precipitation – above 6500 feet

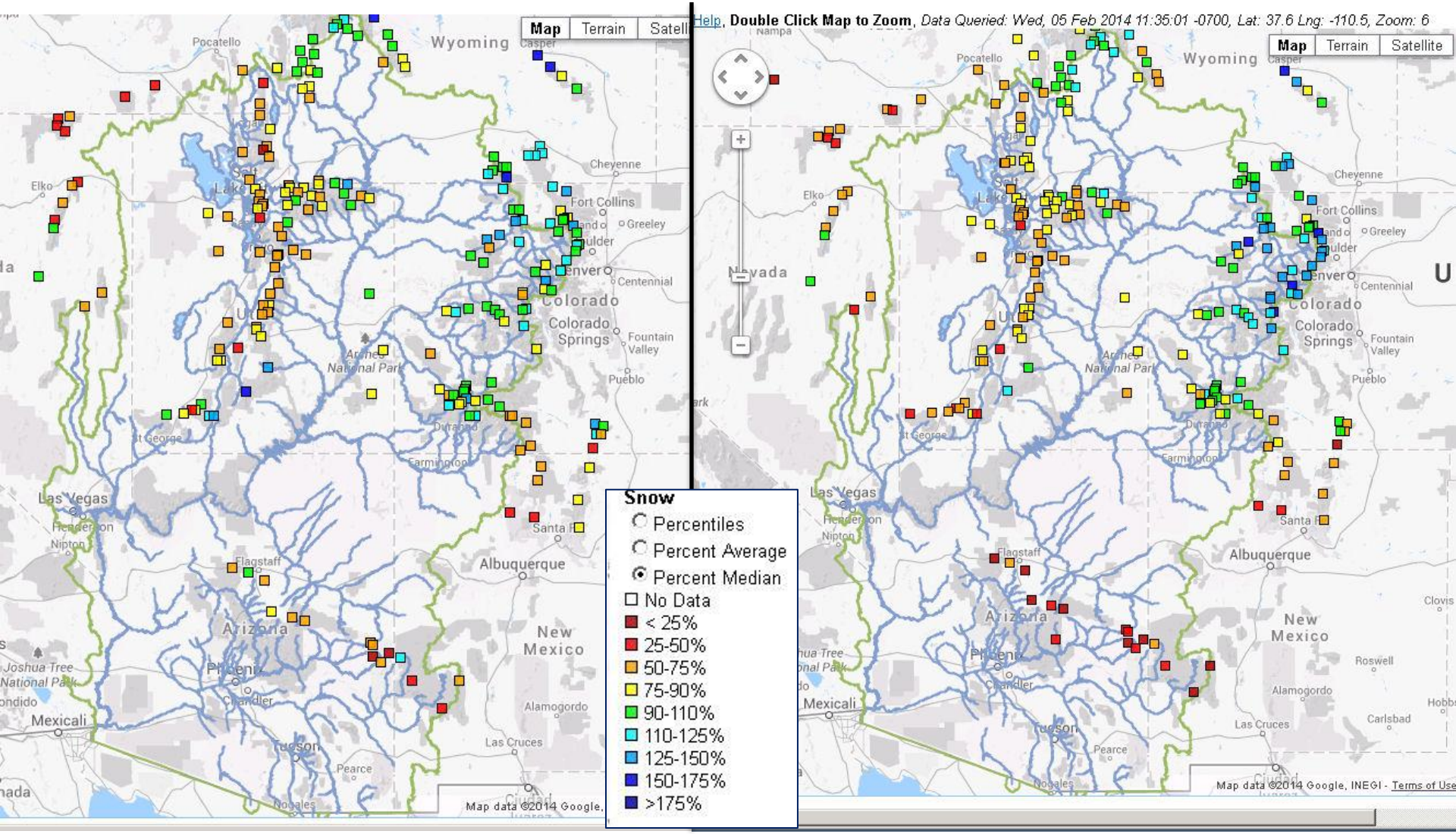




Snow

January 6th Snow

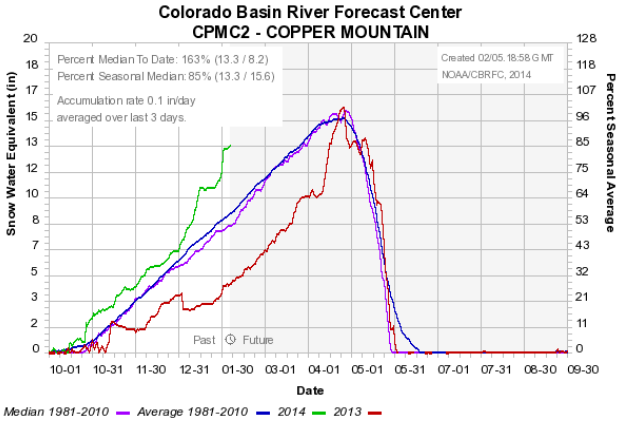
February 5th Snow

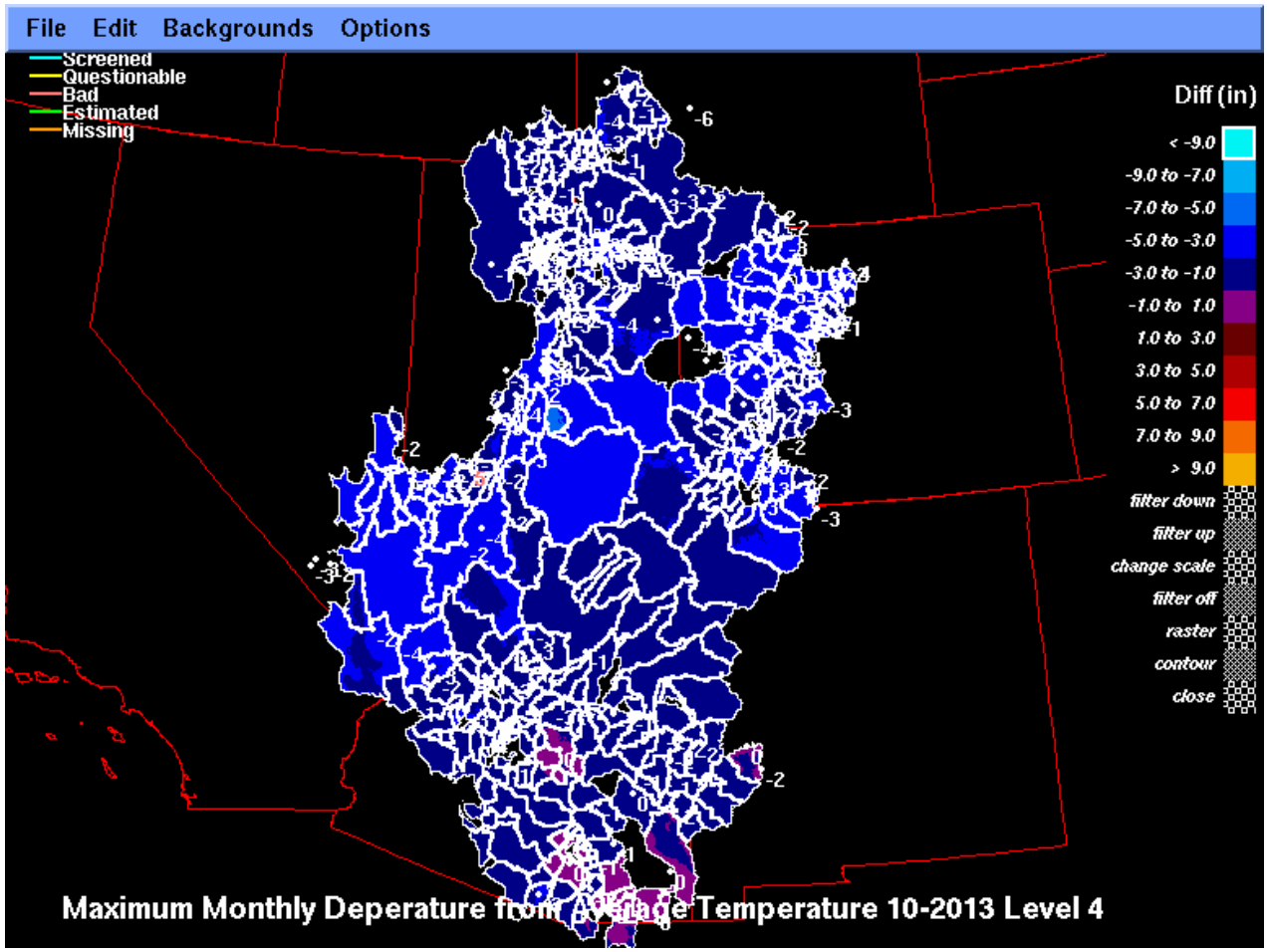


October Temperature

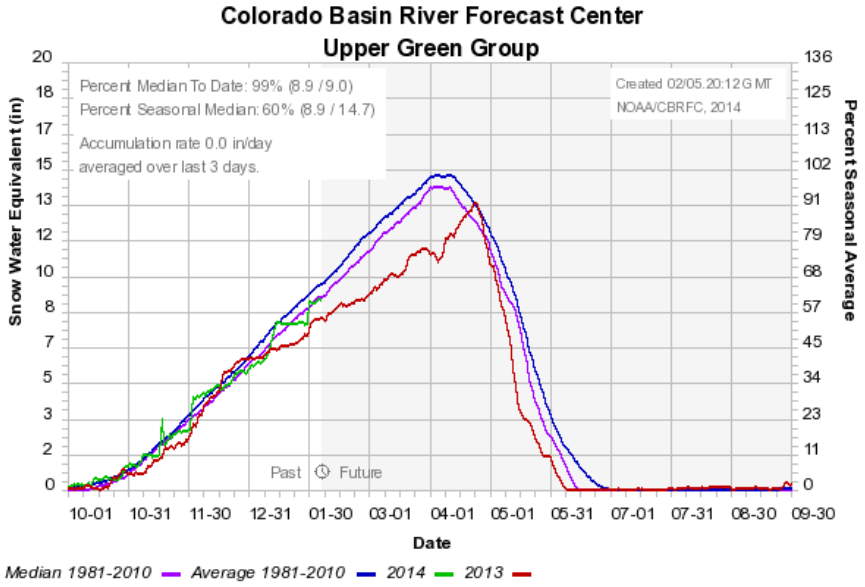
The reason is an early start of the accumulation season

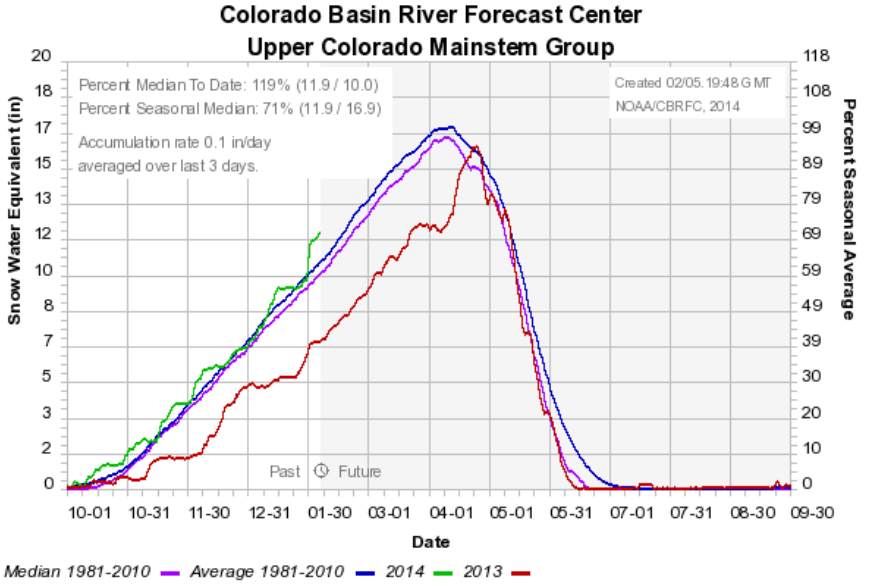
Colder than average October

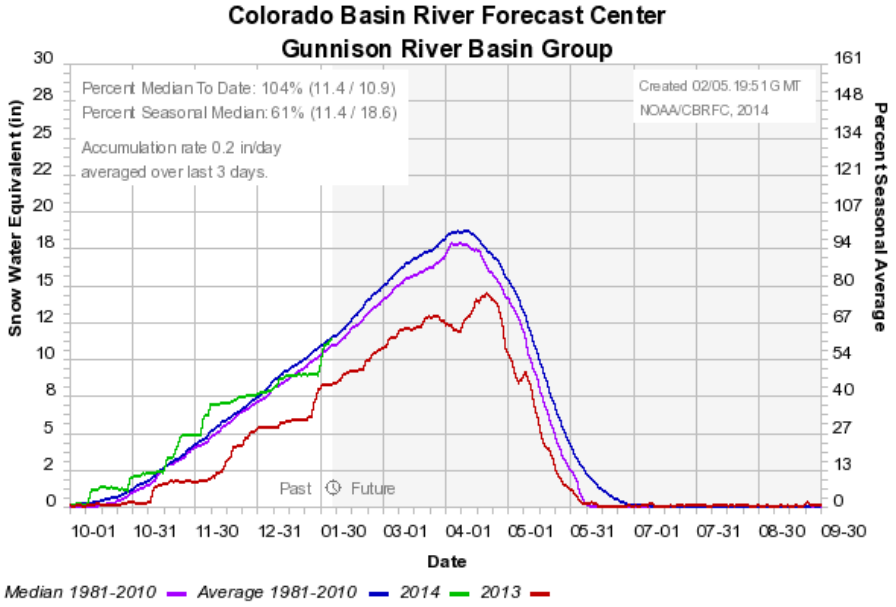


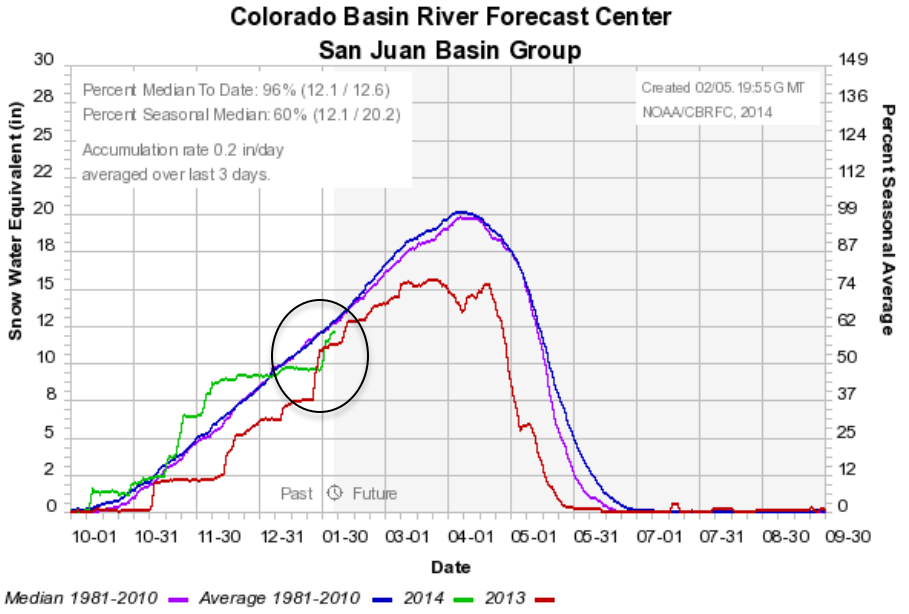


Basin Snow Groups: Better than 2013

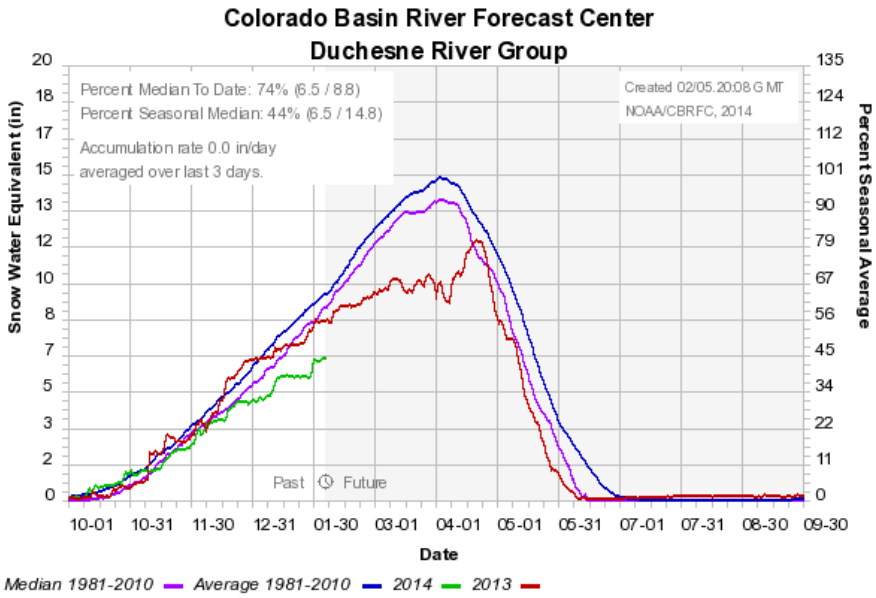


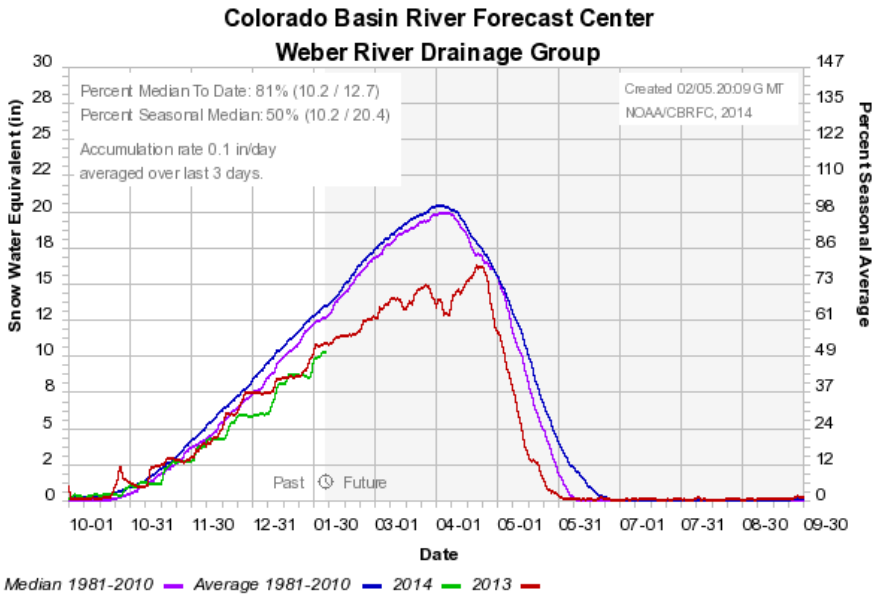


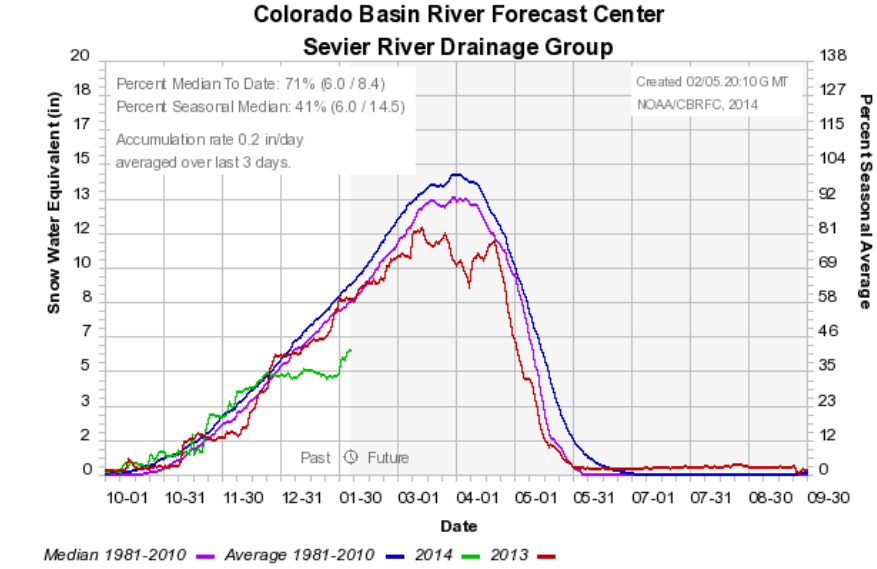


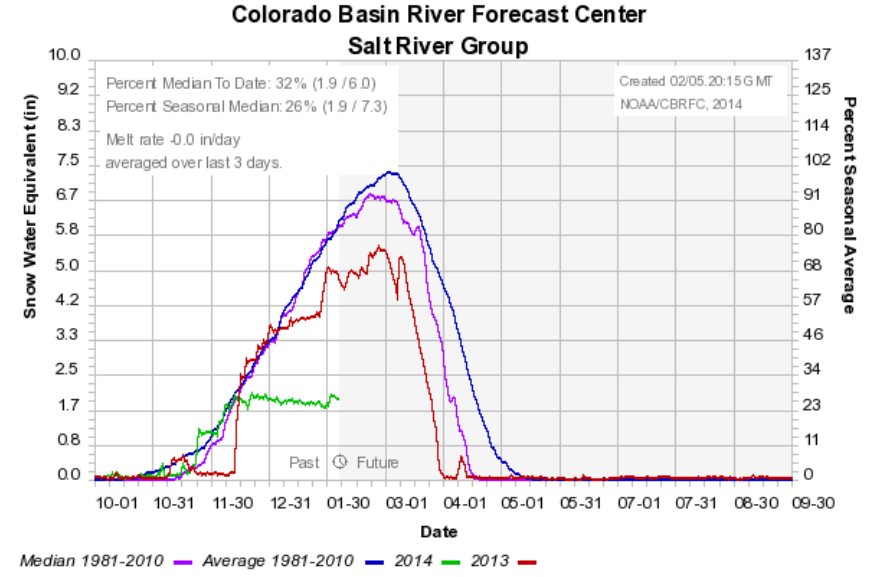


Basin Snow Groups: Worse than 2013

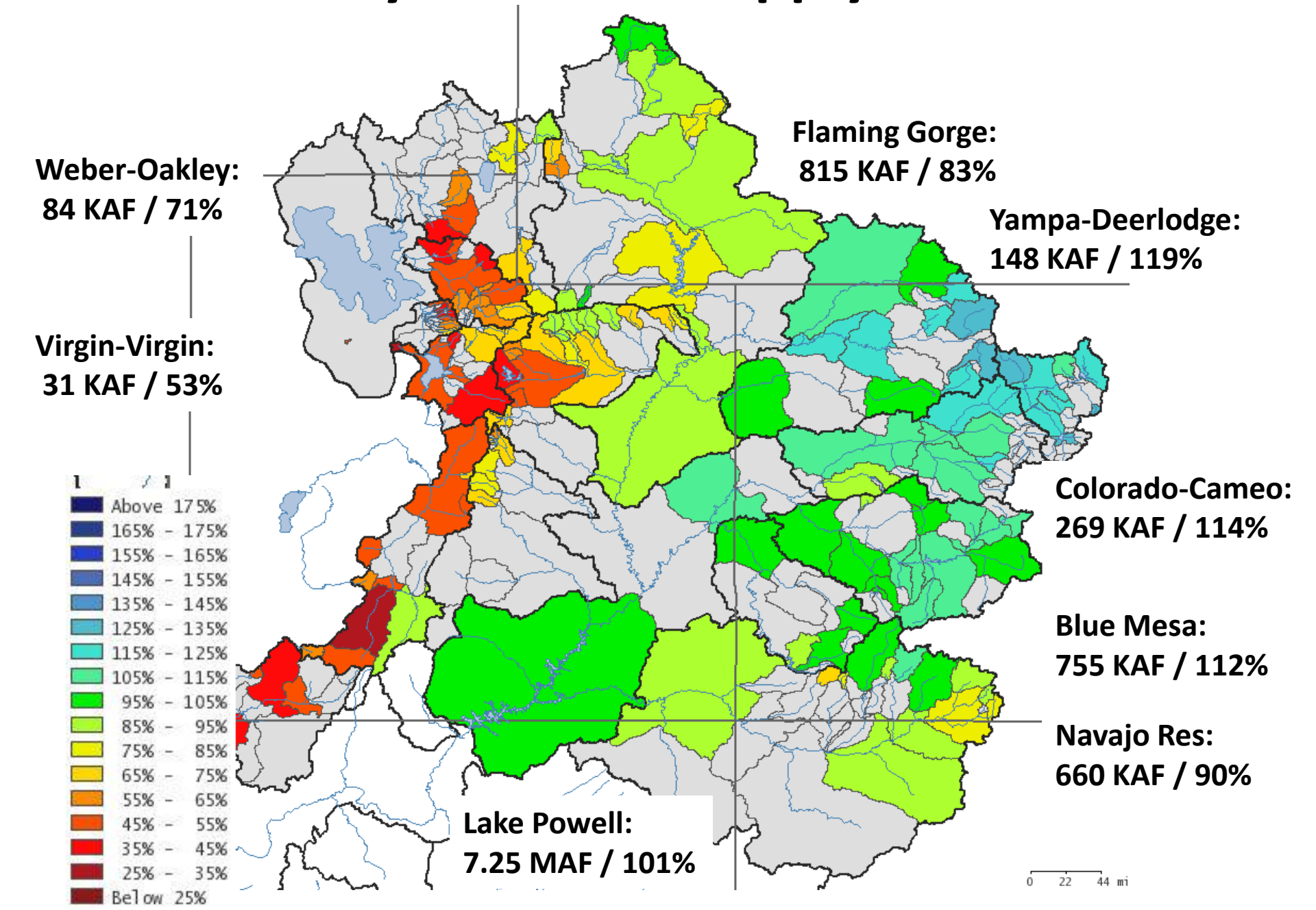






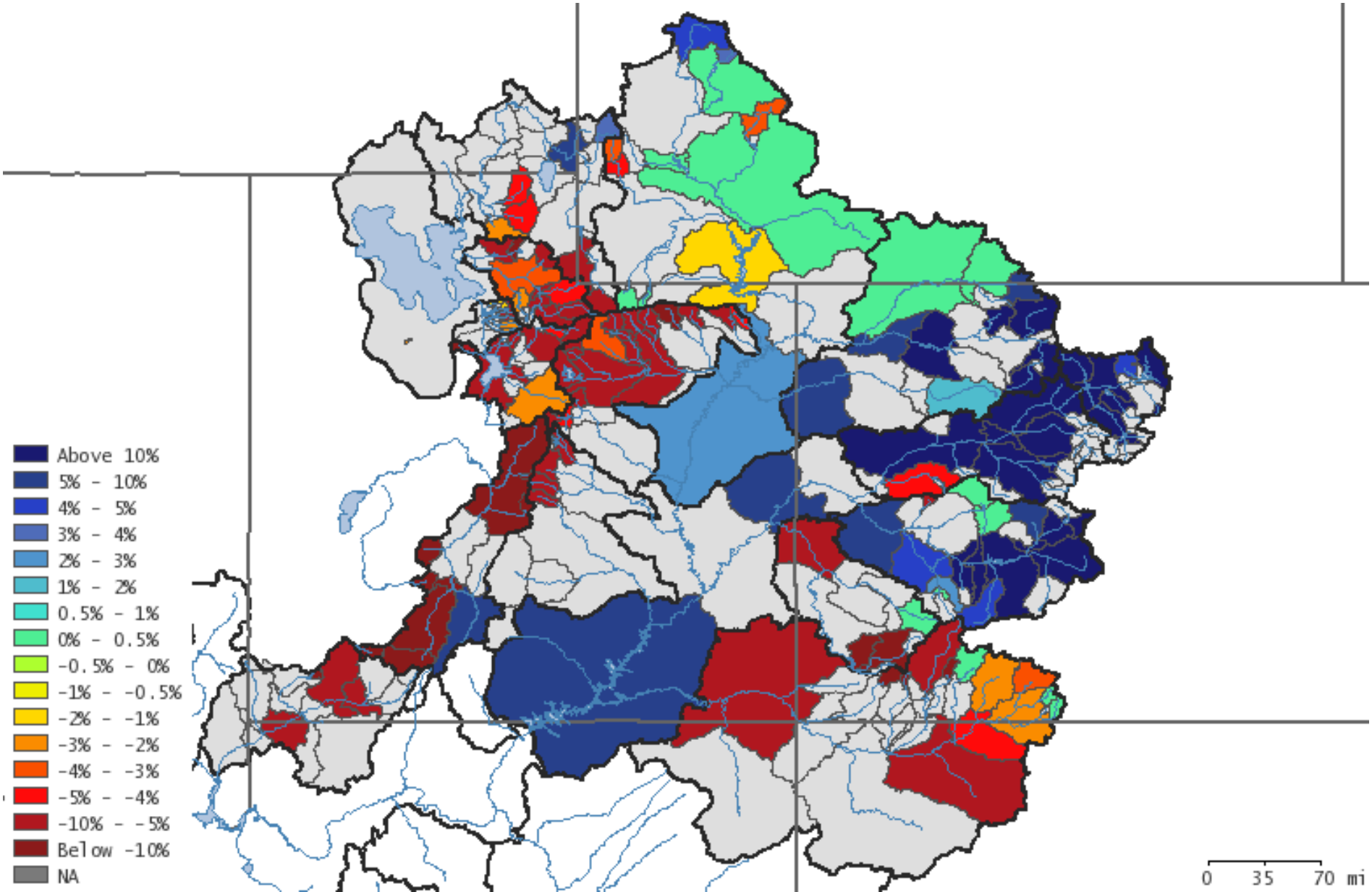


February 1st Water Supply Forecasts



Water Supply Forecast Trend

Change in the forecast % of average between Jan 1st and Feb 1st



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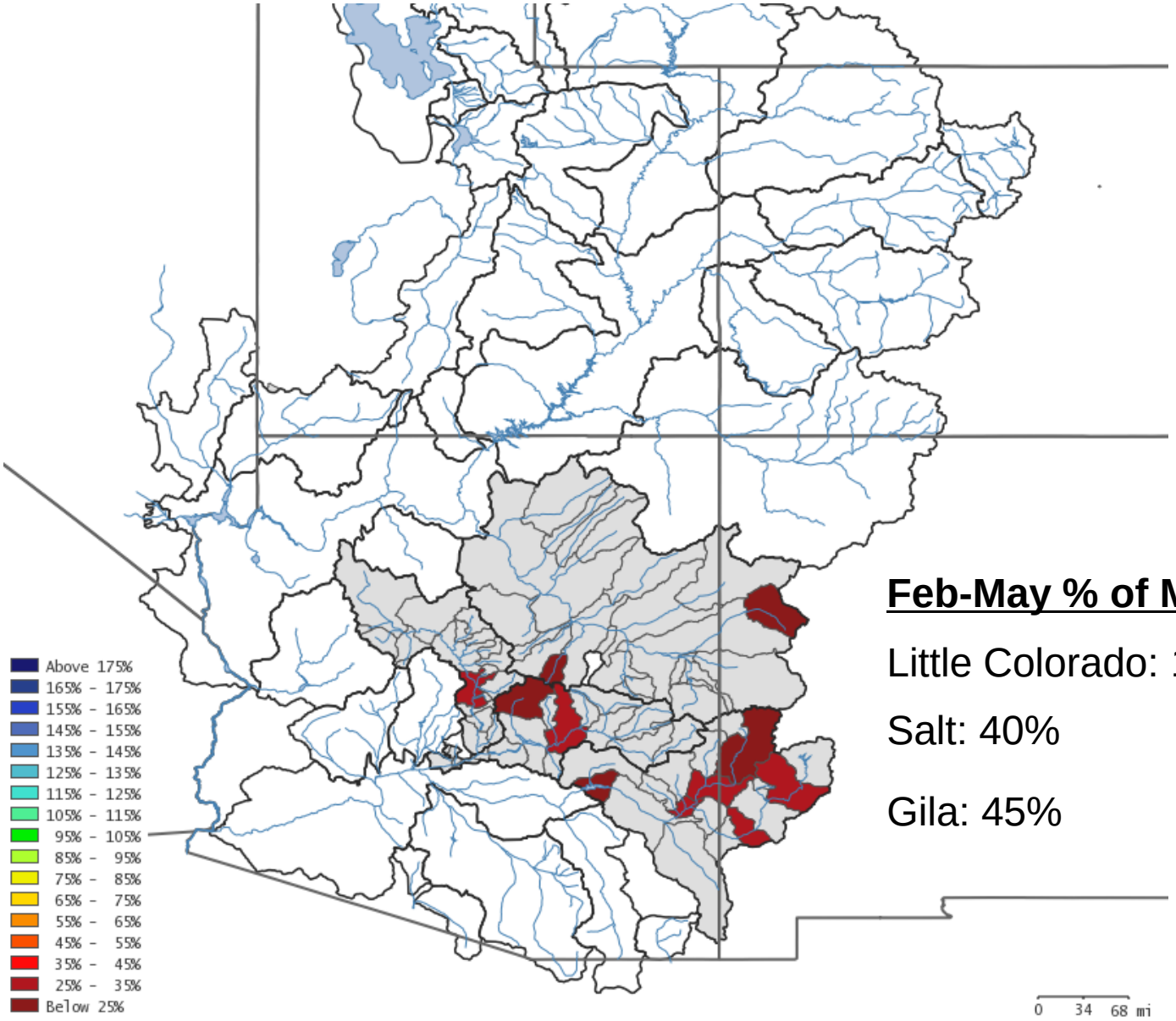


Feb-May % of Median

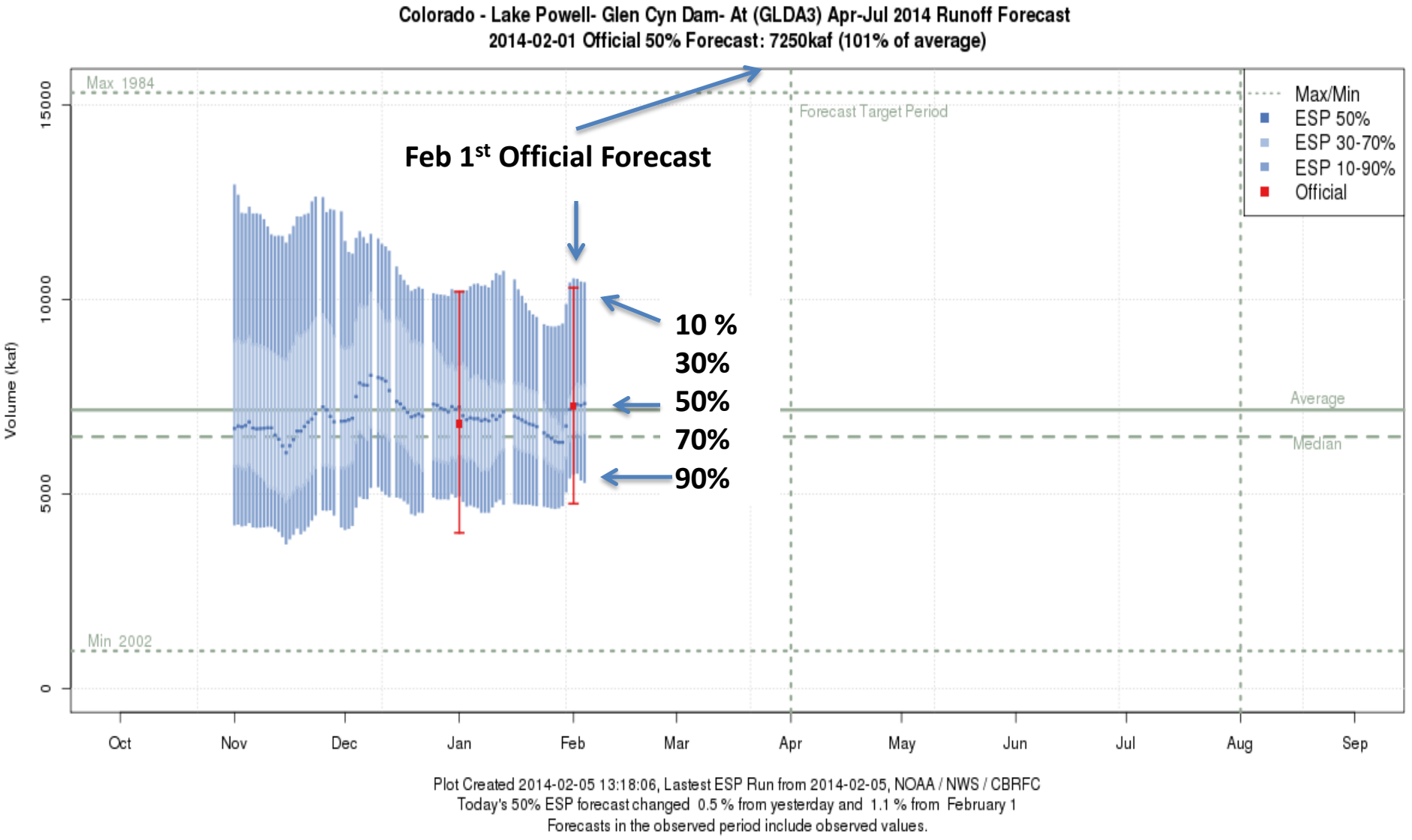
Little Colorado: 15%

Salt: 40%

Gila: 45%

Daily Ensemble Streamflow Prediction (ESP) Model Run & Official Forecast

Available at: www.cbrfc.noaa.gov Select: Water Supply Click: Point of Interest



COLORADO BASIN RIVER FORECAST CENTER

NATIONAL WEATHER SERVICE / NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

News

Registration open for Stakeholder Forum Feb 25-26. Read More...
Next CBRFC Webinar February 6 Read More...

Water Supply Forecasts

Help, **Double Click Map to Zoom**, *Data Queried: February 05 2014, Lat: 37.45 Lng: -109.32, Zoom: 6*

Search Points

Forecast Group

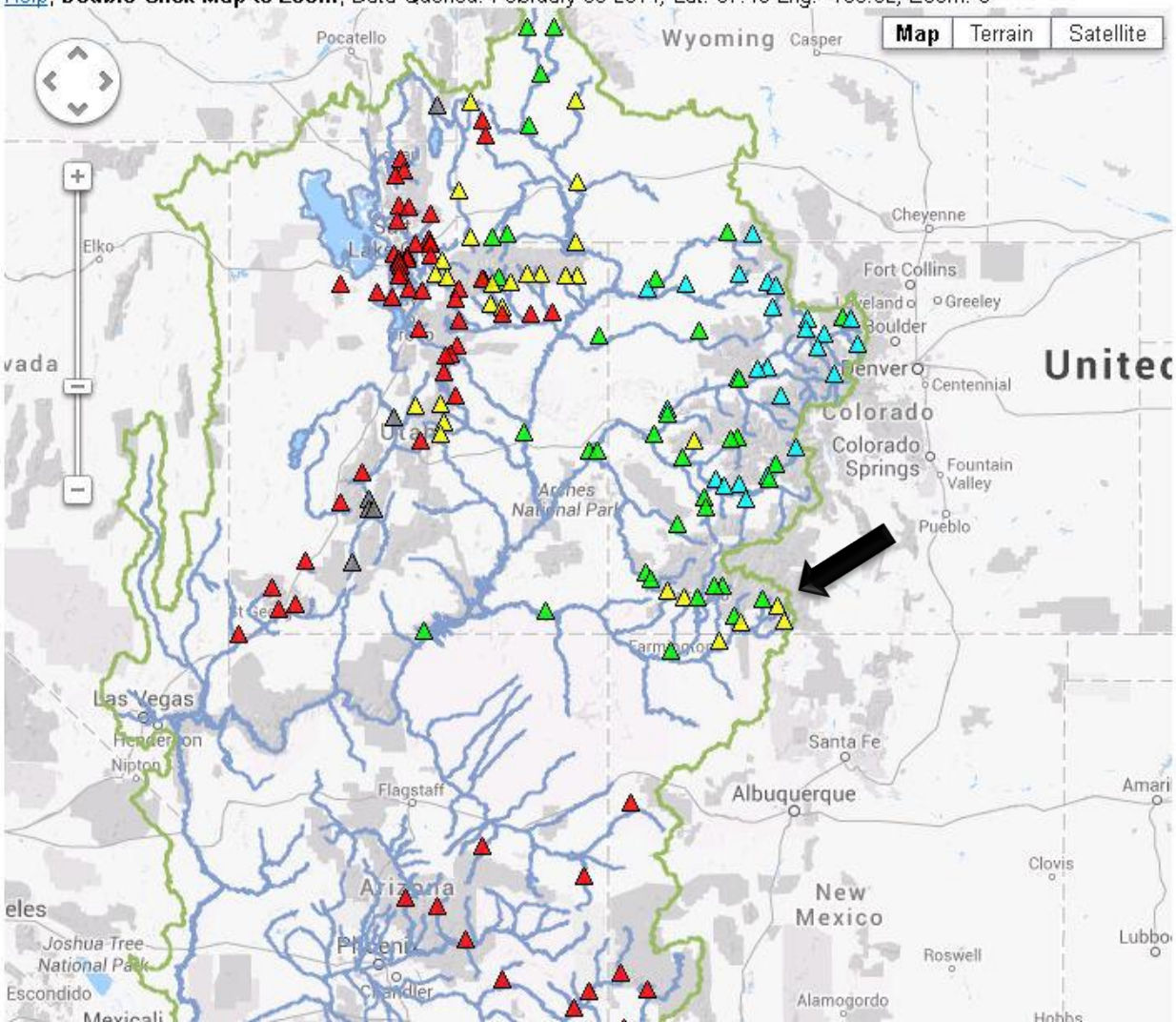
CBRFC

Overlays

- [x] Rivers
- [x] RFC Boundary
- [ ] Forecast Groups
- [ ] Basins

Snow Sites

- [ ] All
- [ ] No Data
- [ ] No Average
- [ ] < 7000 ft
- [ ] 7000-8000 ft
- [ ] 8000-9000 ft
- [ ] 9000-10000 ft
- [ ] > 10000 ft



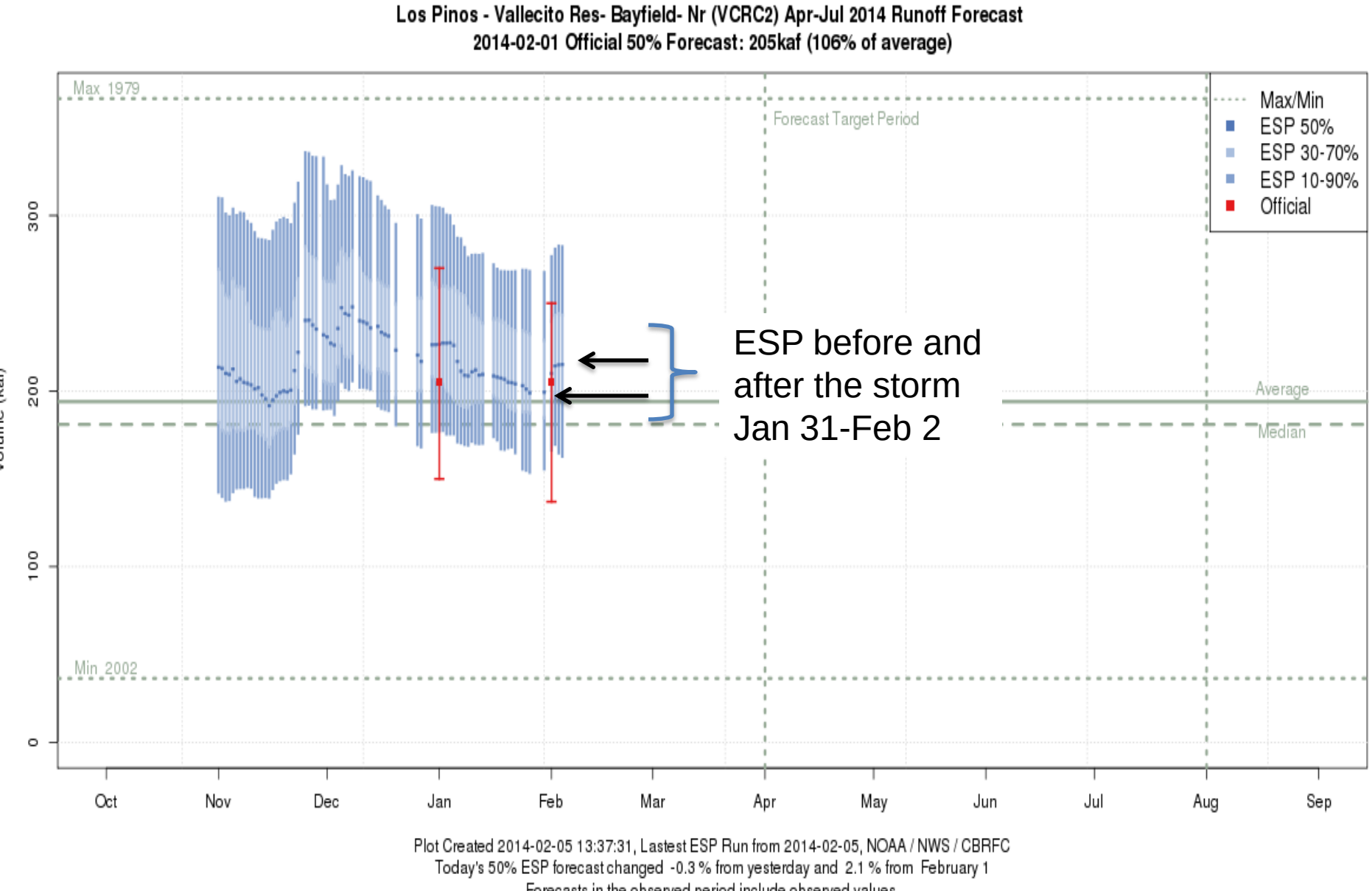
Water Supply Forecasts

- (•) Official Percent Average
- ( ) Official Percent Median
- ( ) ESP Percent Average
- ( ) ESP Percent Median
- ▲ < 70%
- △ 70-90%
- ▲ 90-110%
- △ 110-130%
- ▲ >130%
- ▲ Regulated
- △ No Forecast

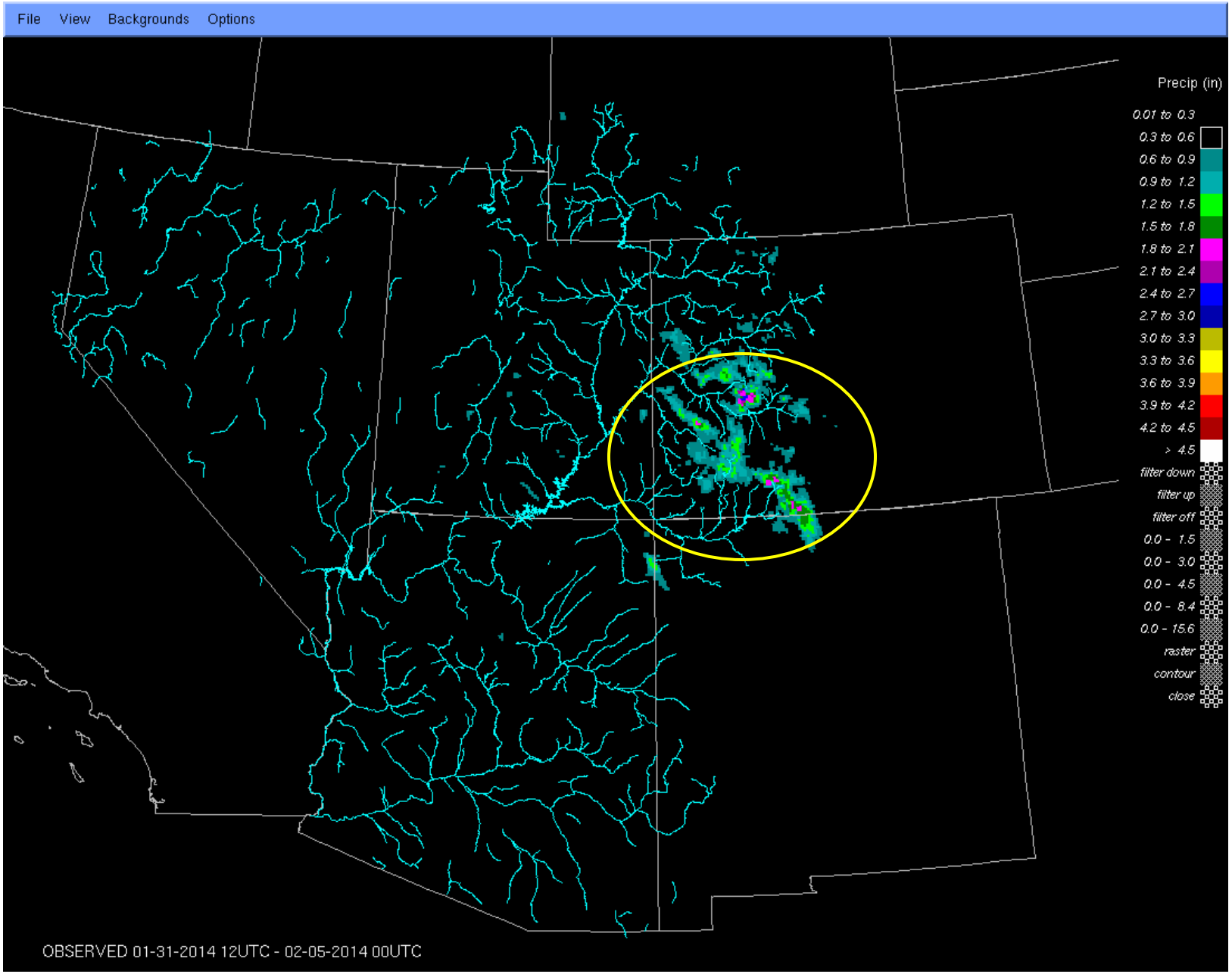
Snow

- ( ) Percentiles
- ( ) Percent Average
- (•) Percent Median
- □ No Data
- ■ < 25%
- ■ 25-50%
- ■ 50-75%
- ■ 75-90%
- ■ 90-110%
- ■ 110-125%
- ■ 125-150%
- ■ 150-175%
- ■ >175%

Daily ESP Guidance & Official Forecast

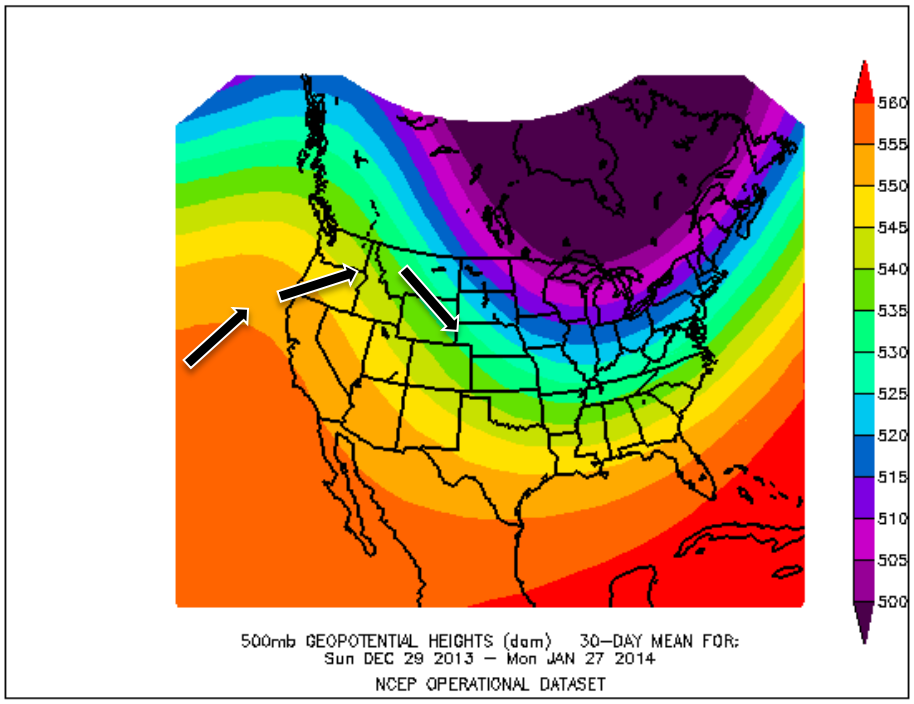


First of the Month Storm

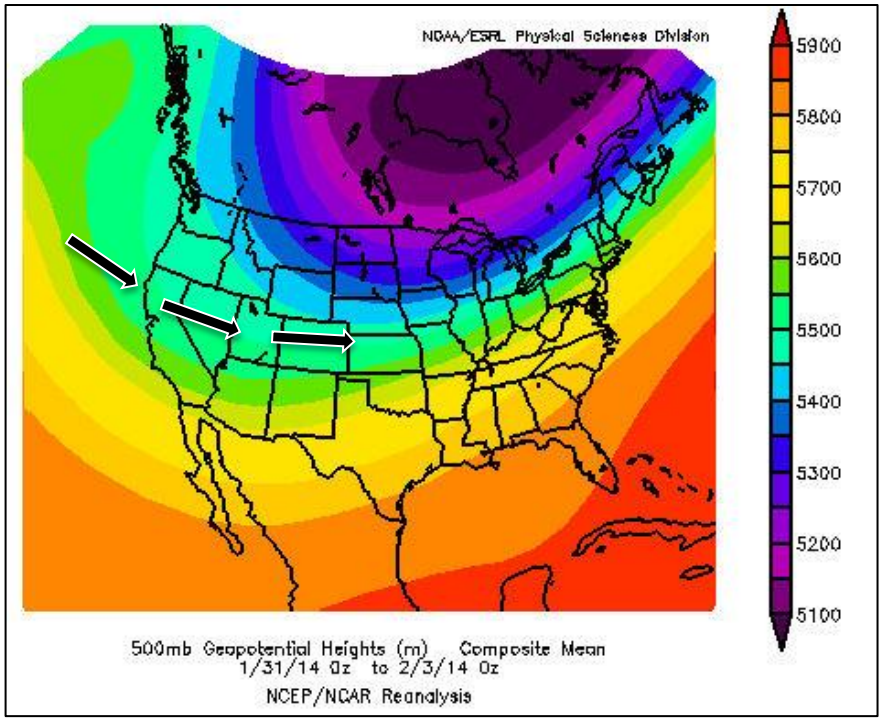


Future Weather: The weather pattern has changed

January 2014

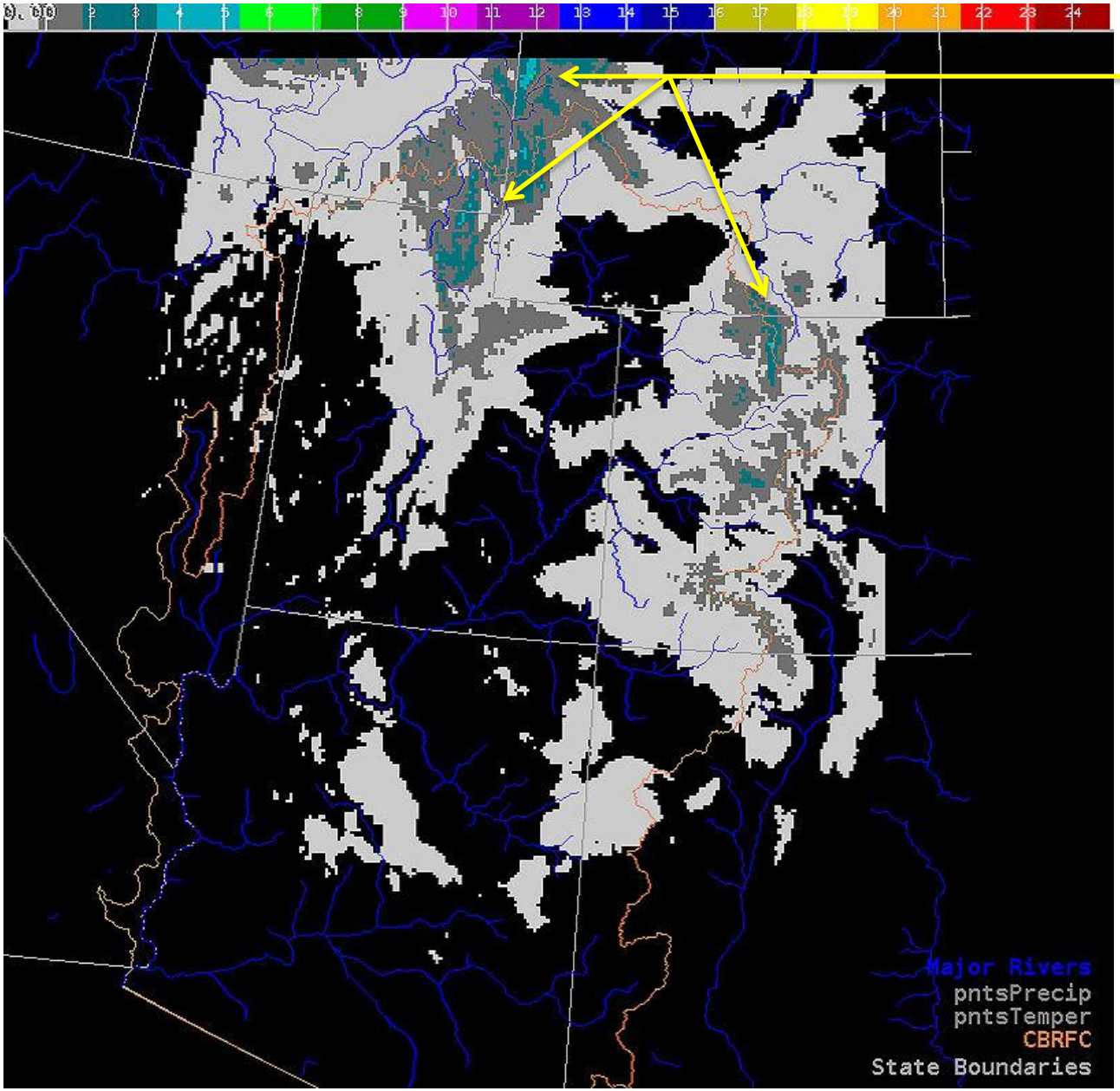


Early February 2014



High pressure ridge has been replaced by a more moist zonal flow

5-Day Precipitation Forecast – Input to our Model



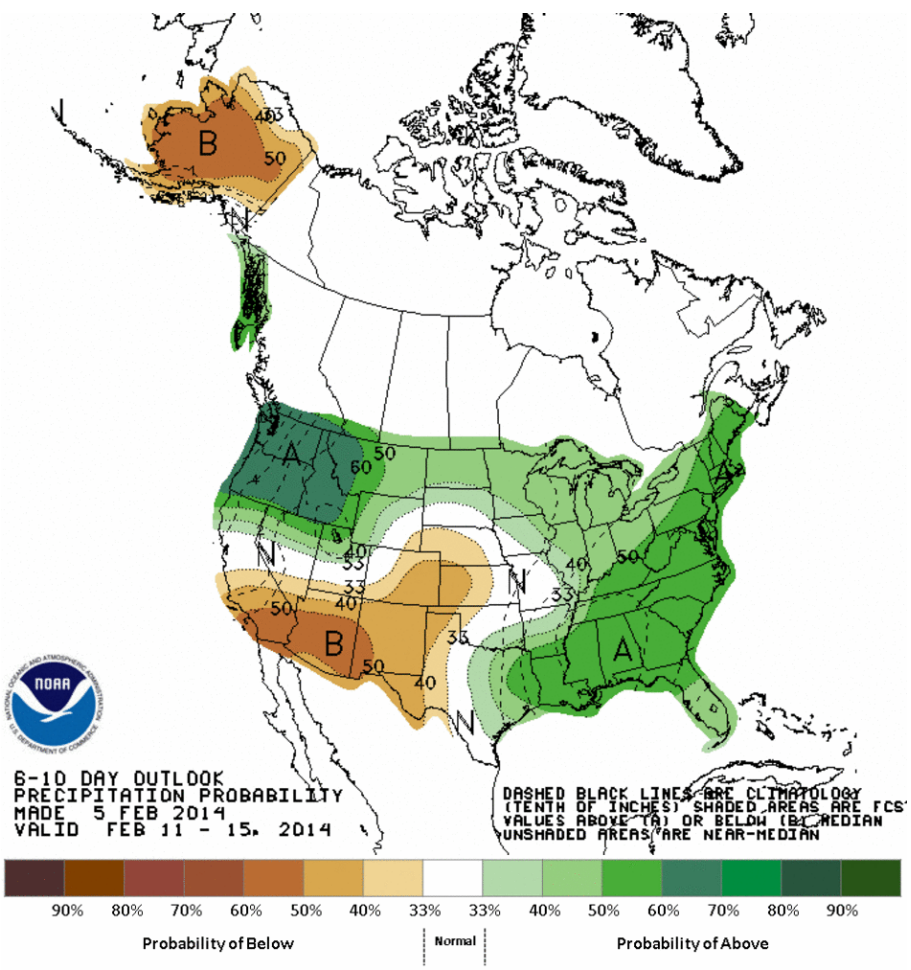
Maximum of 2.5-3.5 inches possible:

Upper Green
Upper Bear
Yampa/Little Snake

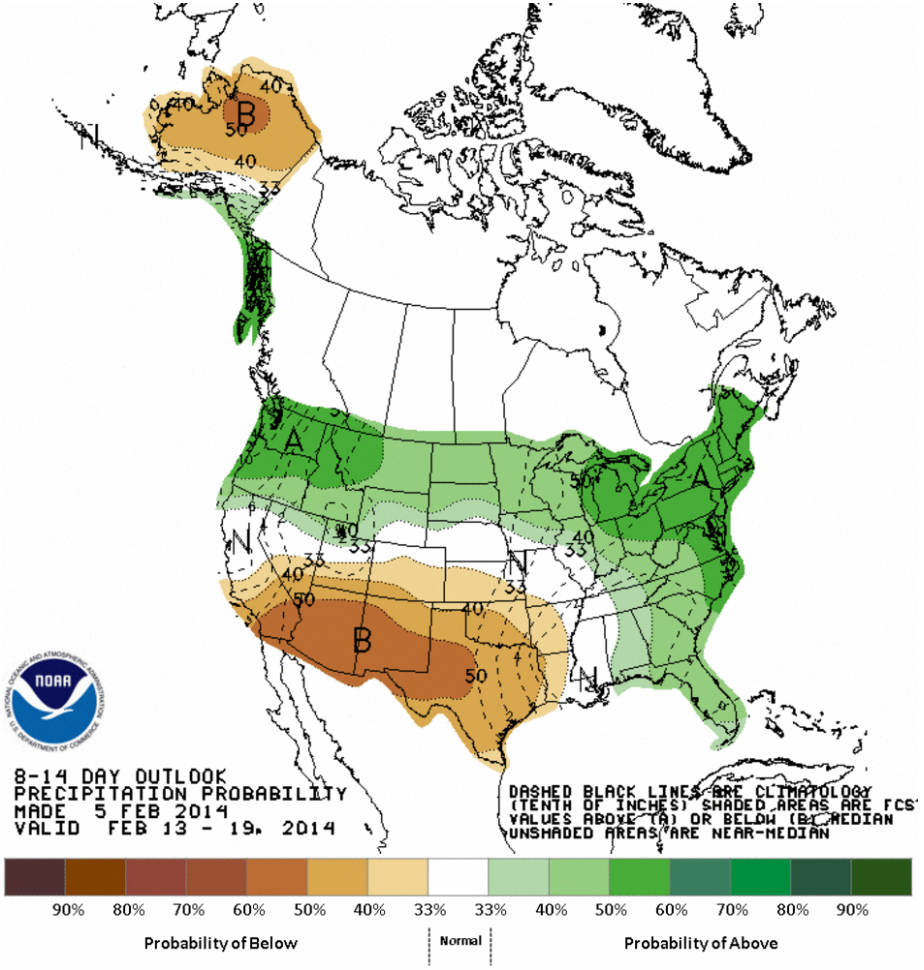
Precipitation Probabilities

Climate Prediction Center

February 11-15



February 13-19

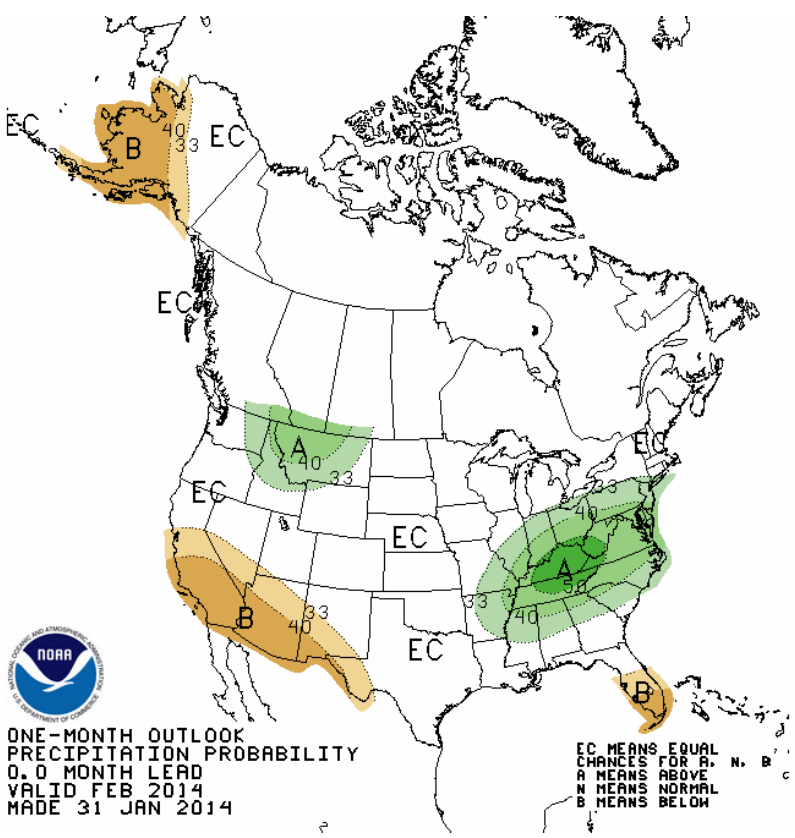


www.cpc.ncep.noaa.gov

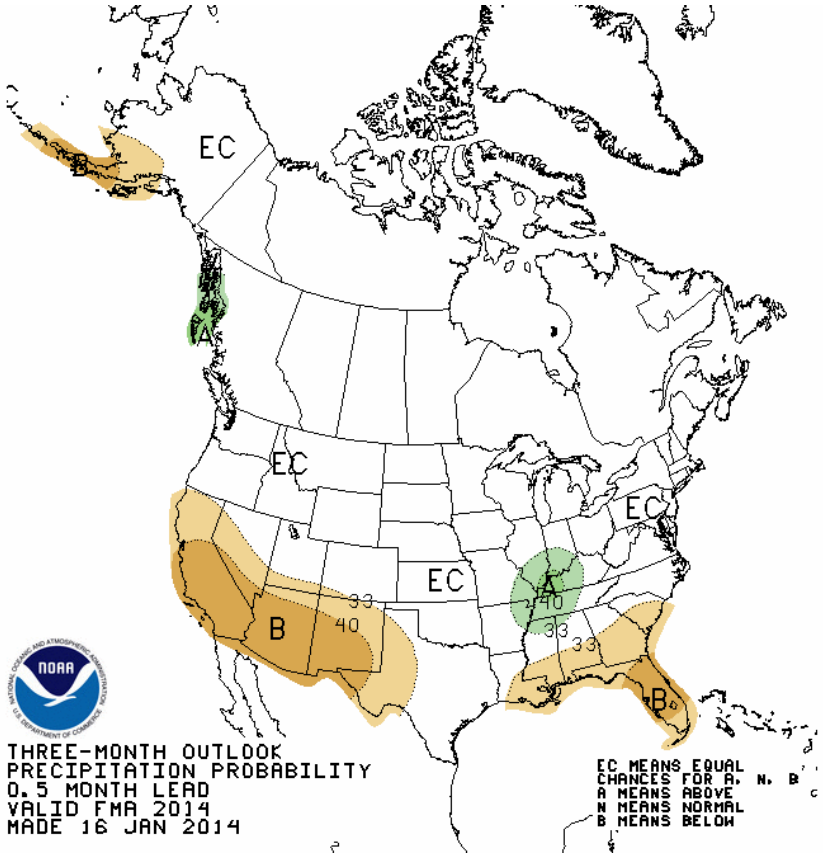
Long Term Precipitation Outlook

Climate Prediction Center

February 2014



February-March 2014



www.cpc.ncep.noaa.gov

Summary

- **Soil Moisture Impacts**
  - Positive in much of the Upper Colorado
  - Negative in the Great Basin / Lower Colorado
- **Snow – two vastly different situations**
- **Forecasts**
  - Above average Yampa, Colorado above Cameo, Gunnison
  - Near to slightly below San Juan
  - Below average Great Basin, Duchesne, Virgin, Lower Colorado
- **Weather: Pattern is more favorable**
  - Timing, amount, and location of precipitation will vary but favors far northern areas in the near future
  - No strong climate signal (ENSO neutral to continue into summer)

2014 Forecast Webinar Schedule

March 6 at 1pm MT
April 7 at 1pm MT
May 6 at 1pm MT
June 5 at 1pm MT

Registration available:
www.cbrfc.noaa.gov/news/wswebinar2014.html

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2014 Fourth Annual Colorado Basin River Forecast Center Stakeholder Forum

Dates: February 25-26 2014

Location: Colorado Basin River Forecast Center, 2242 West North Temple, Salt Lake City, UT 84116

Theme: Forecast Products, Delivery, Interpretation, and Application

Goals:

(1) Open discussion between CBRFC personnel and stakeholders regarding CBRFC products and services, with an emphasis on recently released products and their interpretation.

(2) Critical discussion on Colorado River and Great Basins products and their interpretation, practical application of these products, and delivery of these products through the CBRFC website and other methods.

(3) Opportunities for improvement of and collaboration over CBRFC products and services.

Registration:

Registration is free. To register, please contact Valerie Offutt at Valerie.Offutt@noaa.gov at 801.524.5130. You may also contact Greg Smith at Greg.Smith@noaa.gov or Paul Miller at Paul.Miller@noaa.gov with questions or comments.

Background:

CBRFC's annual stakeholder forum is important to the CBRFC and its stakeholders for determining forecast and development priorities. The forum emphasizes interaction between participants and CBRFC decision-makers such that participants develop an in-depth understanding of the CBRFC's forecast process and its development activities while also providing a forum for participants to share their experiences, priorities, and questions with CBRFC staff and management. Past forums have helped guide CBRFC projects and product development paths as well as other activities in the NWS and NOAA. Reports and presentations from the forum will be made available online.

Please feel free to pass along any additional comments or suggestions with your answers as well. Please send your responses to Greg Smith at Greg.Smith@noaa.gov.

Agenda:

Draft agenda now available here. Please check back periodically for updates!

Please contact us with any specific questions

- Basin focal points / forecasters:
  - Brenda Alcorn (Upper Colorado)
  - Ashley Nielson (Green + Yampa / White)
  - Greg Smith (San Juan + Gunnison + Dolores)
  - Paul Miller (Great Basin – Bear, Weber, Provo, Six-Creeks/Jordan)
  - Tracy Cox (Lower Colorado + Virgin + Sevier)

- Other key staff members:
  - Michelle Stokes (Hydrologist In Charge)
  - Kevin Werner (Service Coordination Hydrologist)
  - John Lhotak (Development and Operations Hydrologist)
  - Craig Peterson (Calibrations, Operations lead, etc)
  - Cass Goodman (IT Support, web development, etc)
  - Stacie Bender (Hydrologist)
  - Brent Bernard (Hydrologist)