

# CBRFC Forecast Update: Upper Green and Yampa

April 24, 2013

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NWS Colorado Basin River Forecast Center

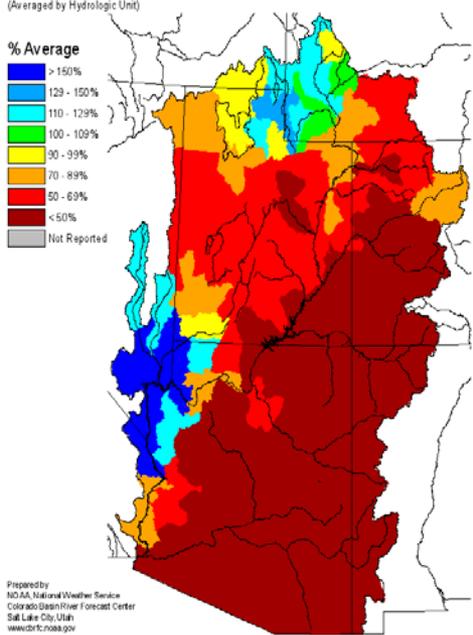


# Outline

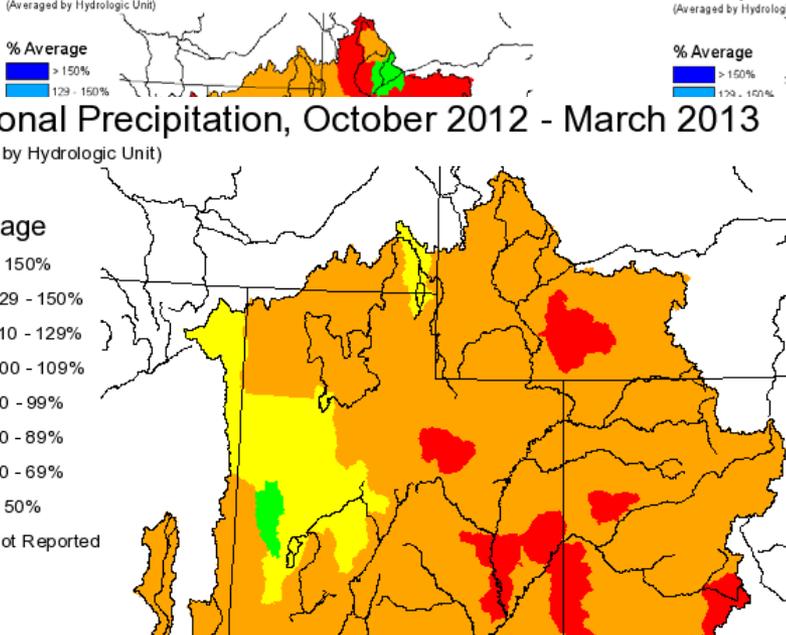
- Weather Review
- Current Snow States
- Water Supply Forecasts
- Yampa Peak
- Future Weather (Aldis)



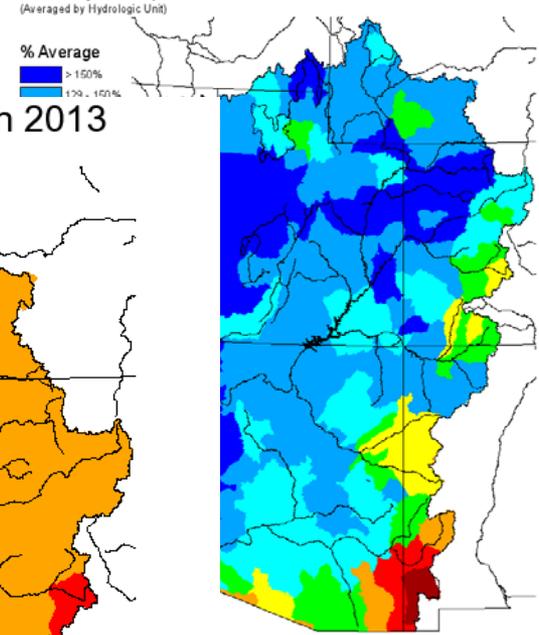
Monthly Precipitation for October 2012  
(Averaged by Hydrologic Unit)



Monthly Precipitation for November 2012  
(Averaged by Hydrologic Unit)



Monthly Precipitation for December 2012  
(Averaged by Hydrologic Unit)

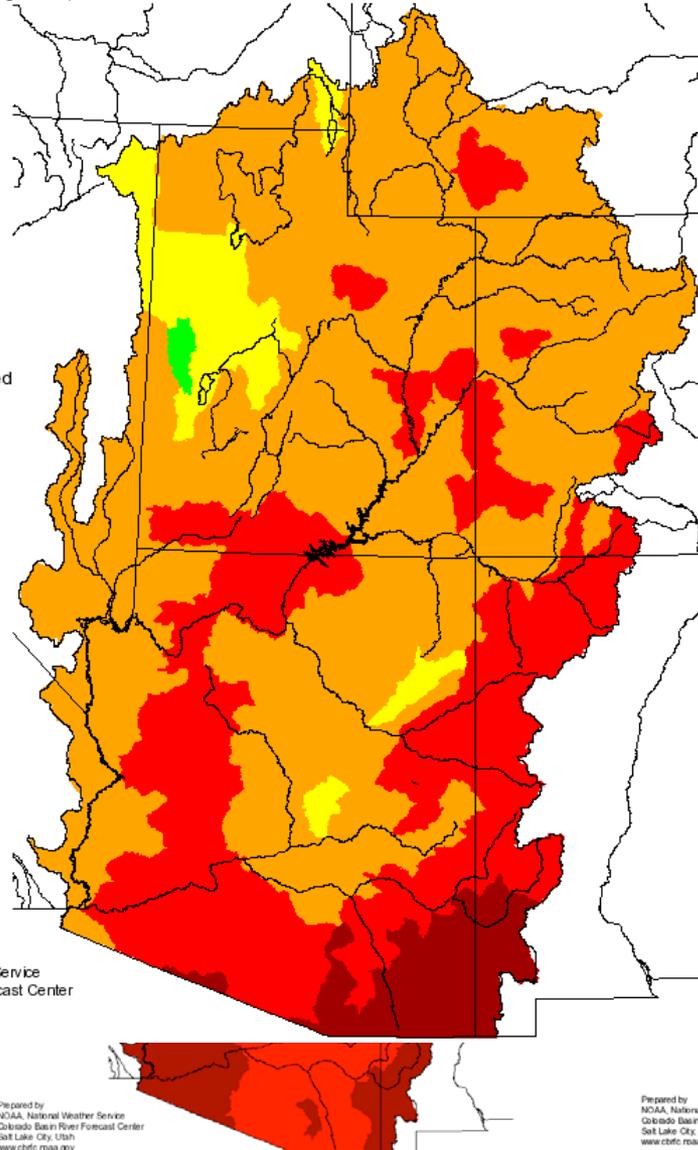


## Seasonal Precipitation, October 2012 - March 2013

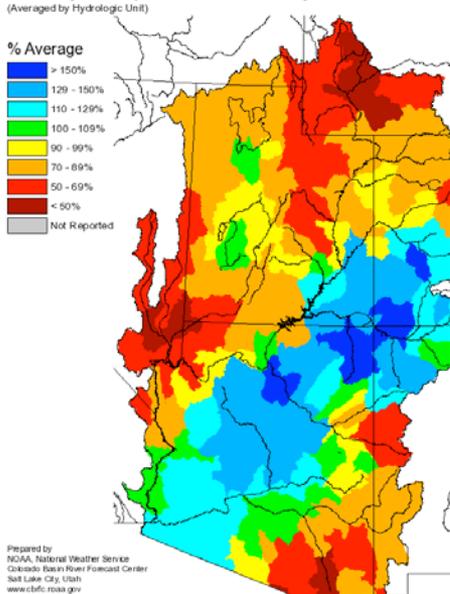
(Averaged by Hydrologic Unit)

% Average

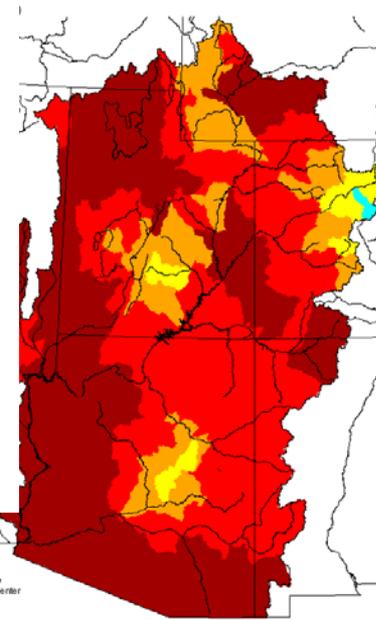
- > 150%
- 129 - 150%
- 110 - 129%
- 100 - 109%
- 90 - 99%
- 70 - 89%
- 50 - 69%
- < 50%
- Not Reported



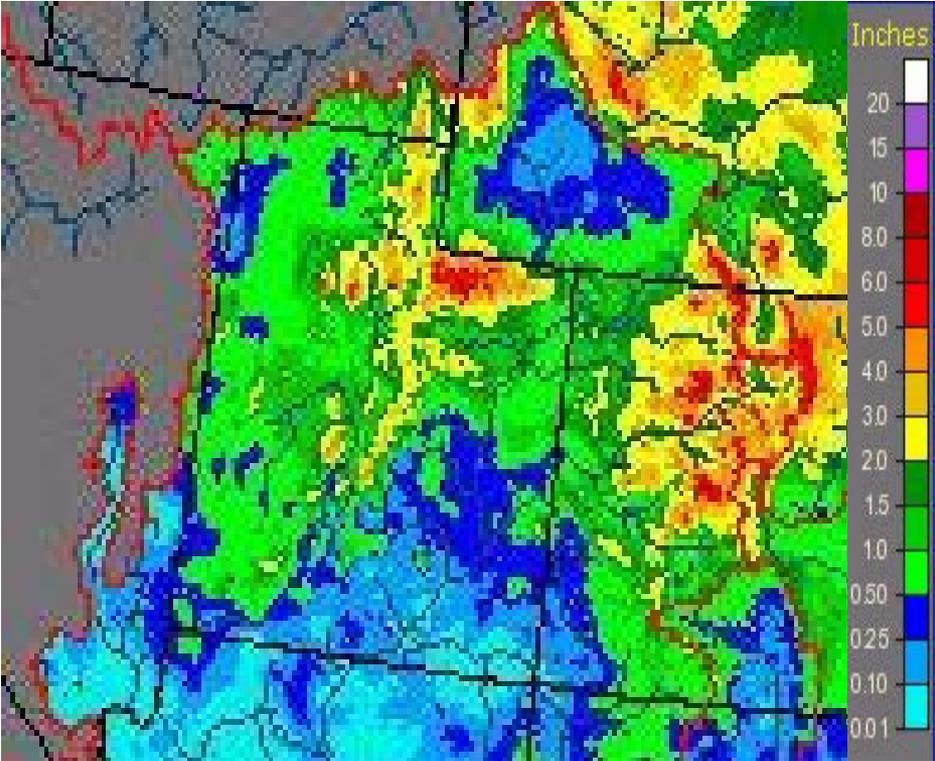
Monthly Precipitation for January 2013  
(Averaged by Hydrologic Unit)



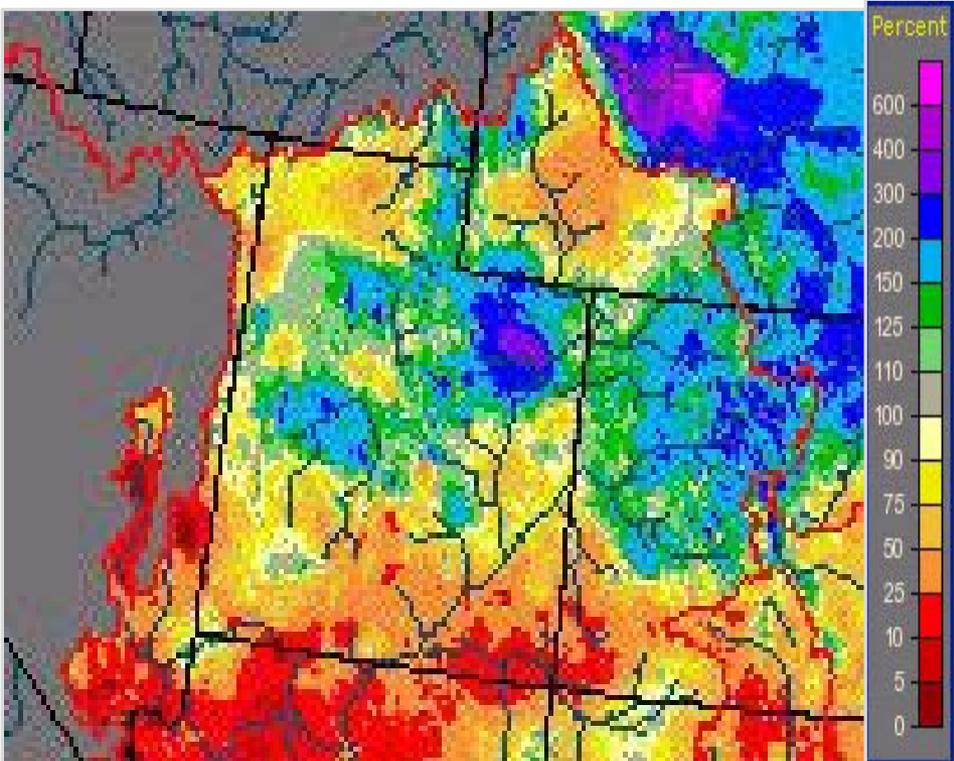
Monthly Precipitation for March 2013



# April Precipitation: Month to Date



OBSERVED



% OF NORMAL

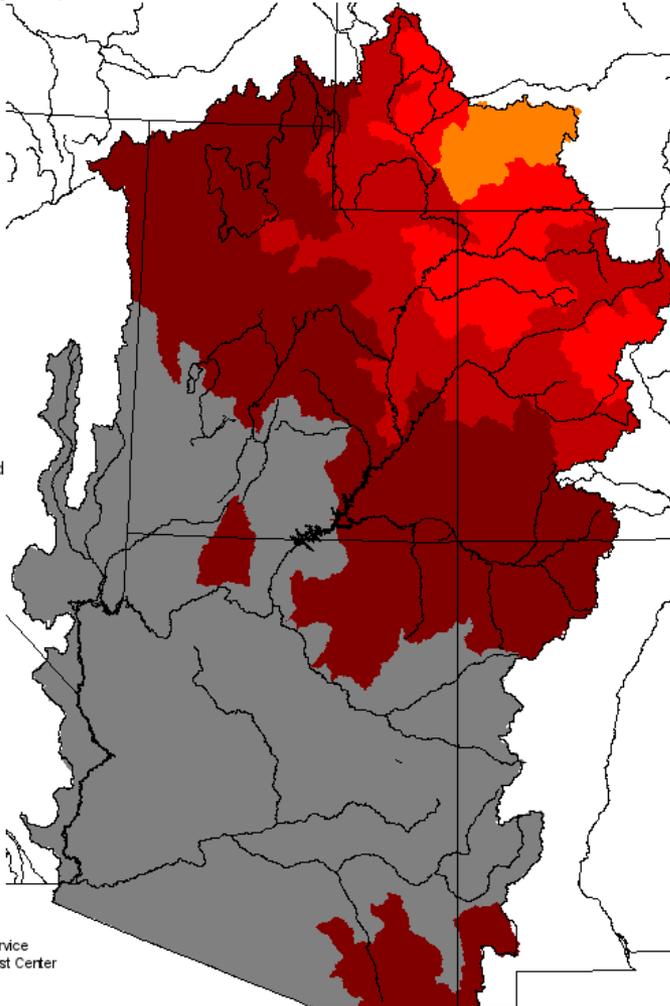
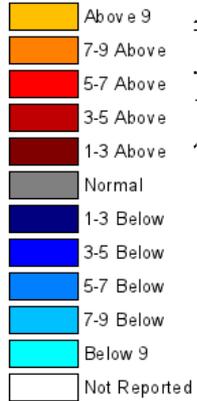
# Temperatures:

Significant difference between March/April 2012 and March/April 2013

## Monthly Max Temp Deviation for March 2012

(Averaged by Hydrologic Unit)

### Degrees (F)

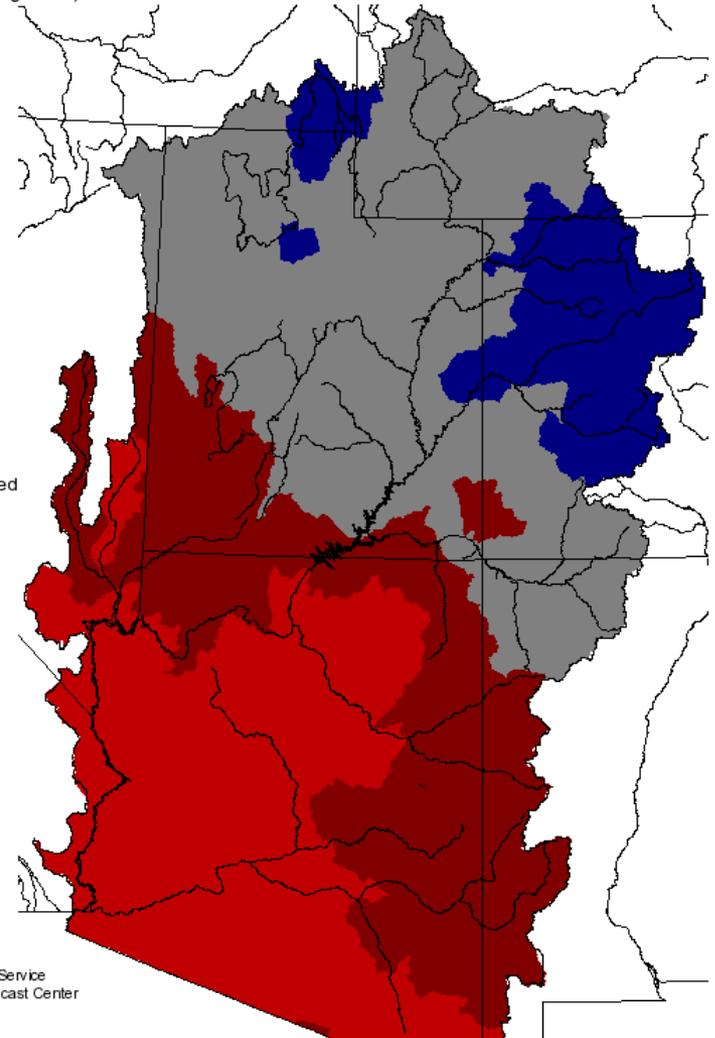


Prepared by  
NOAA, National Weather Service  
Colorado Basin River Forecast Center  
Salt Lake City, Utah  
[www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

## Monthly Max Temp Deviation for March 2013

(Averaged by Hydrologic Unit)

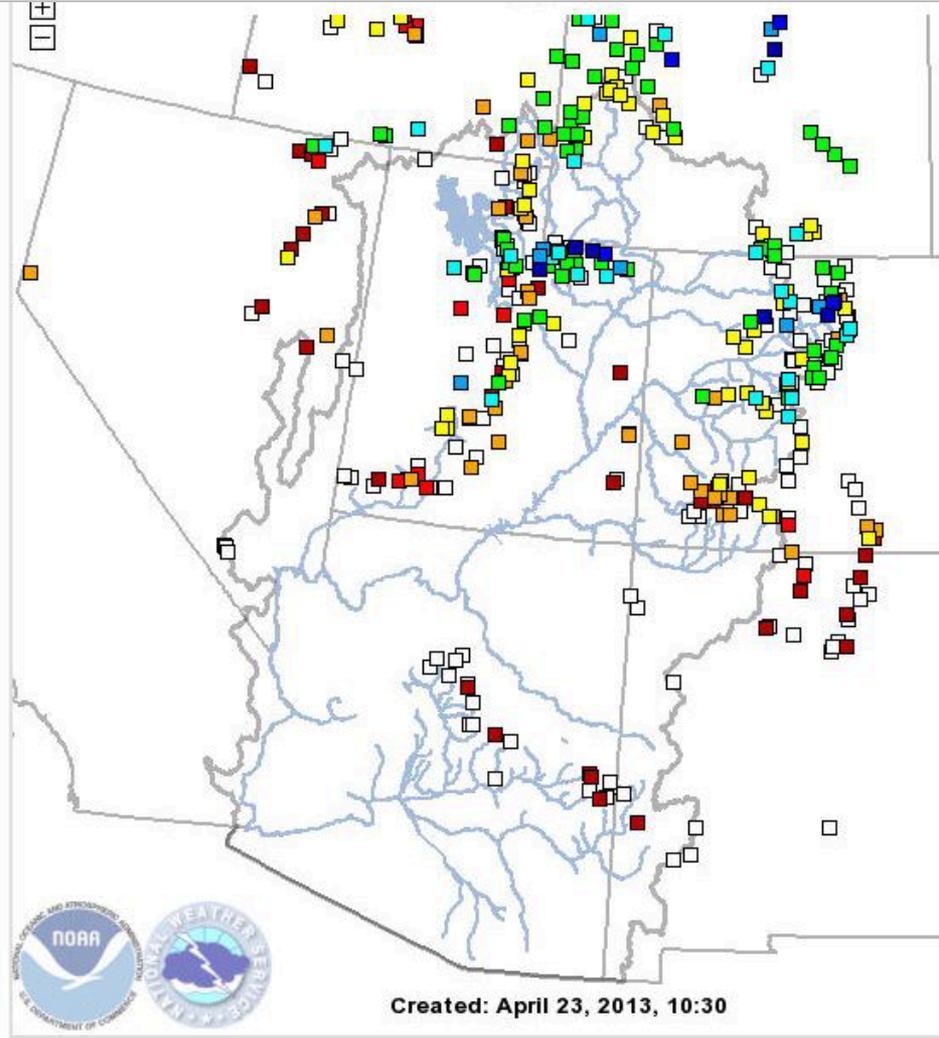
### Degrees (F)



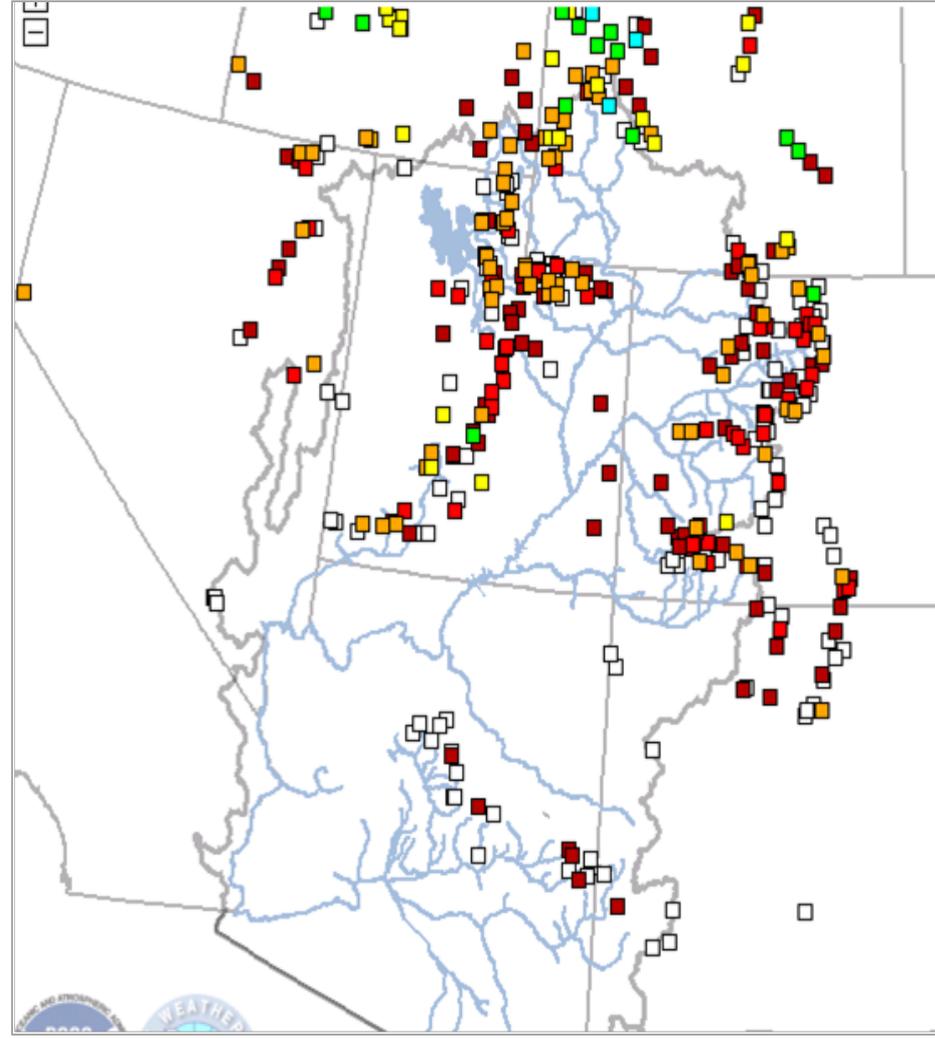
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# Snow

**Snow Point Classification:** ○ Percentiles ● Percent Average ○ Percent Median  
□ NA ■ < 25% ■ 25-50% ■ 50-75% ■ 75-90% ■ 90-110% ■ 110-125% ■ 125-150% ■ 150-175% ■ >175%



April 23, 2013



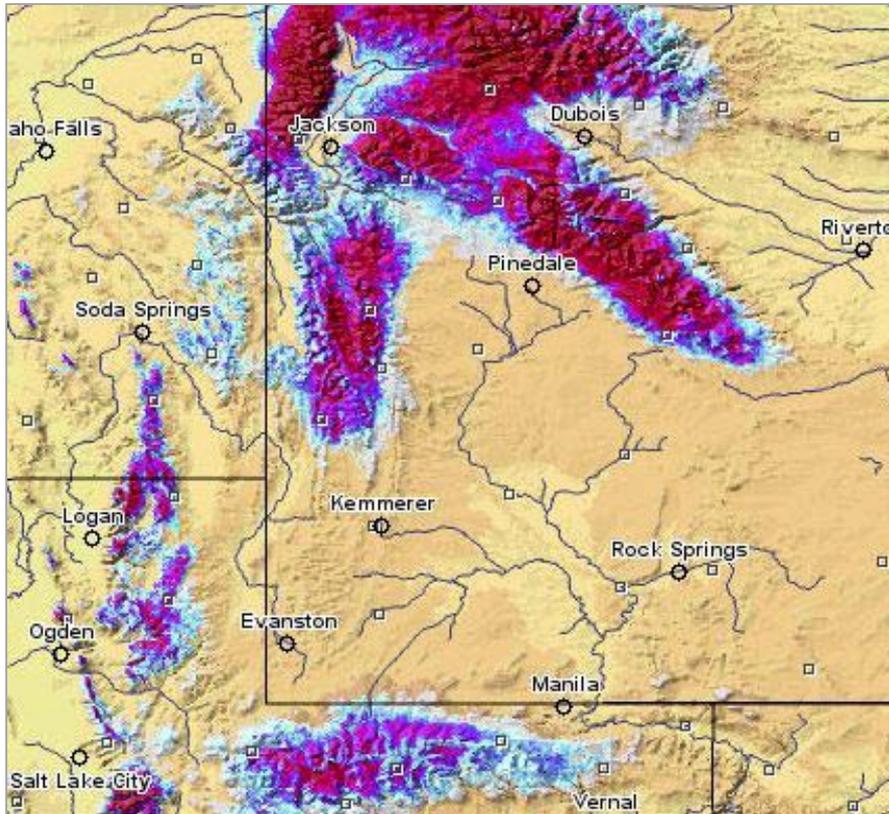
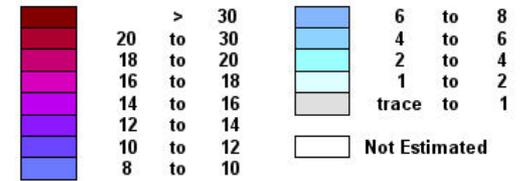
April 17, 2012

Web Reference: <http://www.cbrfc.noaa.gov/gmap/gmapm.php?scon=checked>

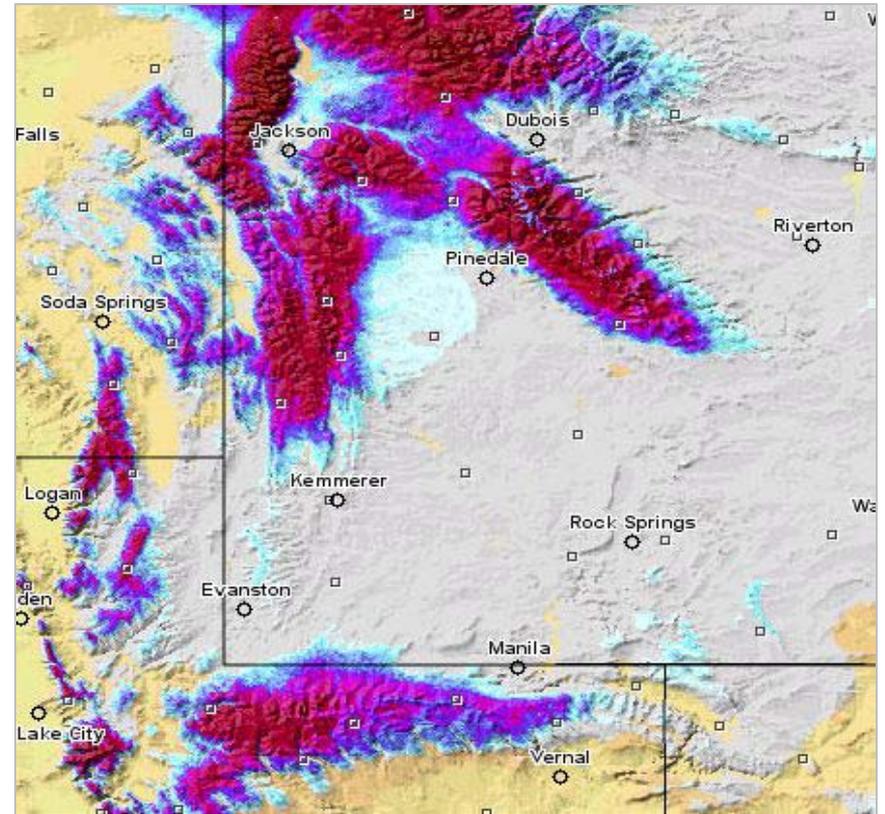
# Snow: Upper Green

Retained and accumulated the snowpack longer compared to 2012

Inches of water equivalent



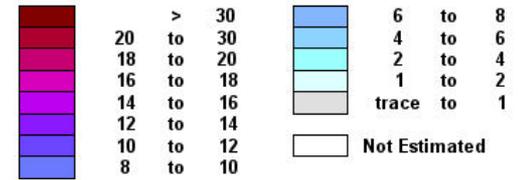
April 18 2012



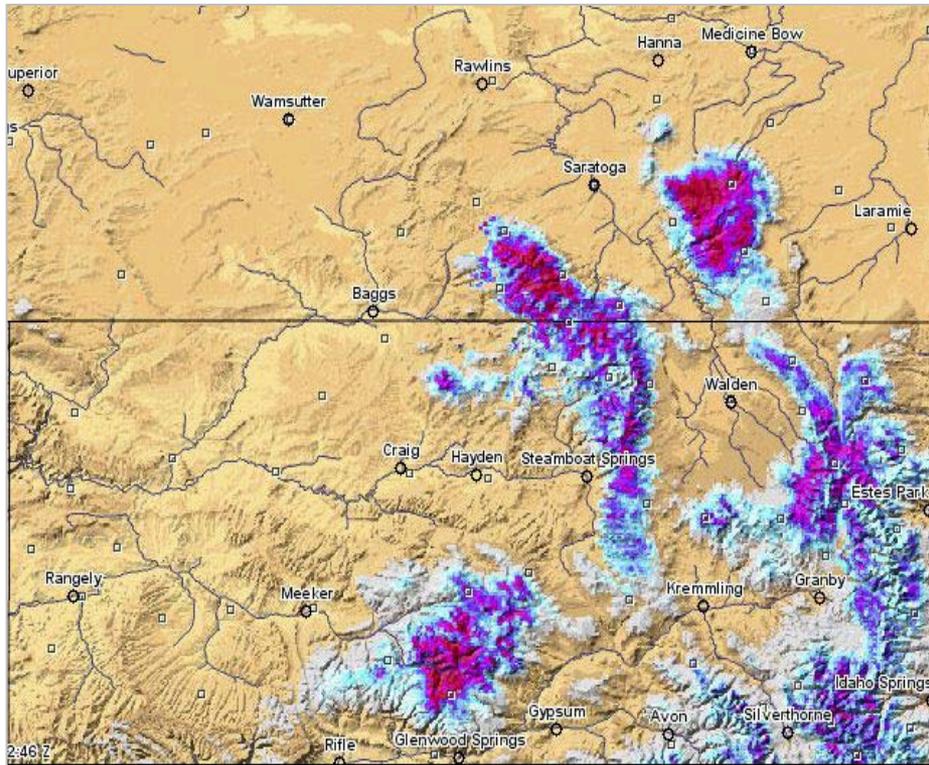
April 23 2013

# Snow: Yampa

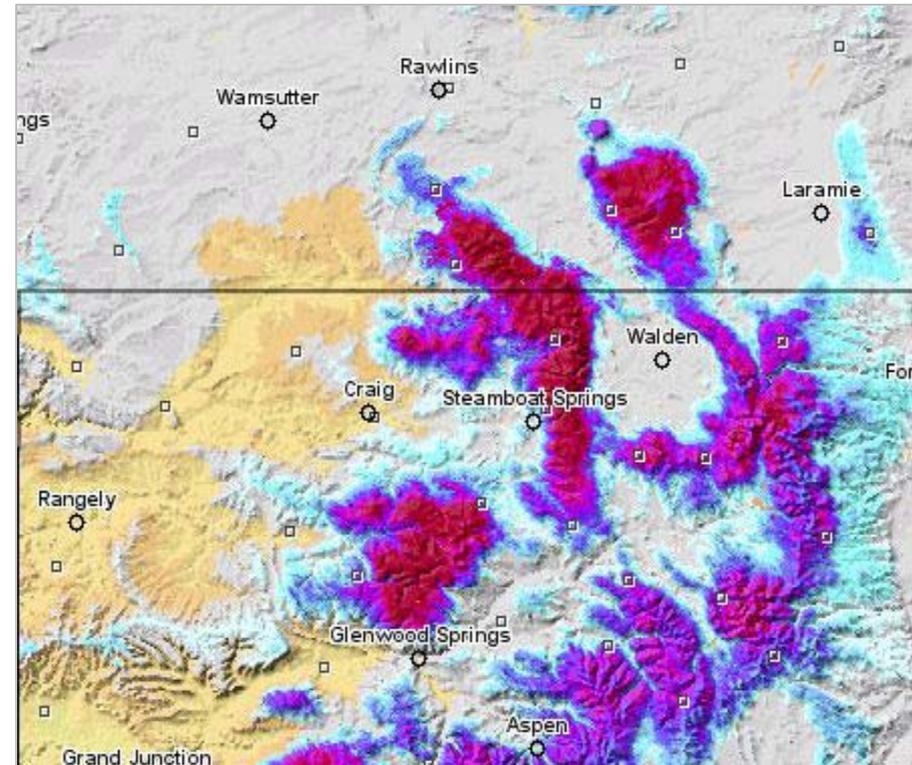
Inches of water equivalent



Retained and accumulated the snowpack longer compared to 2012

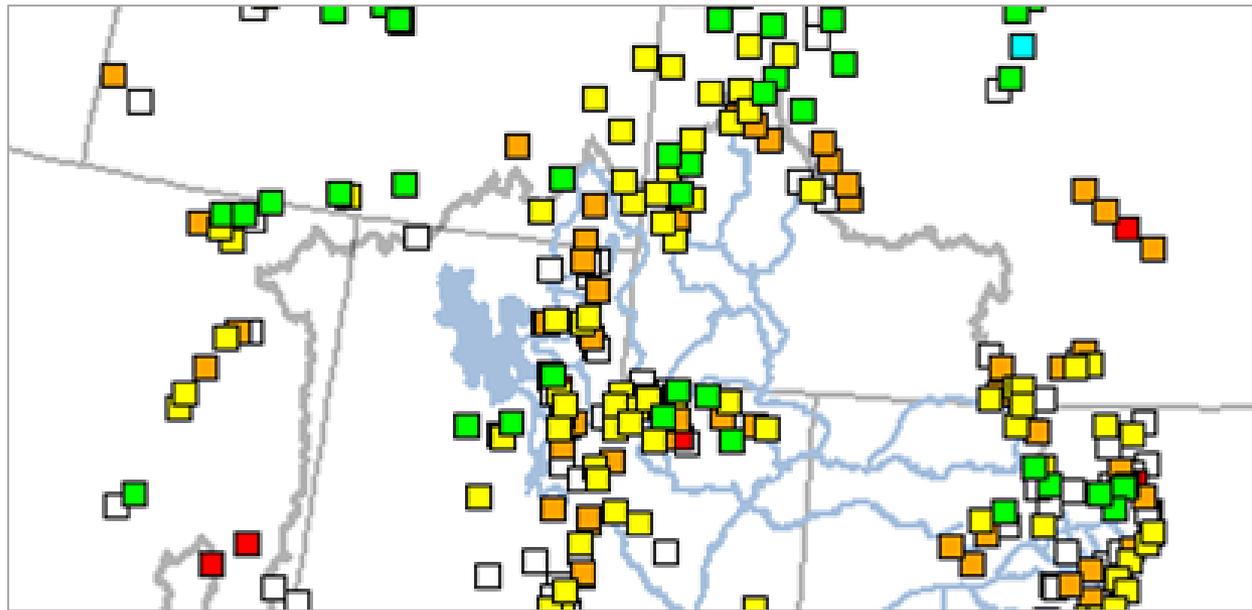


April 18 2012



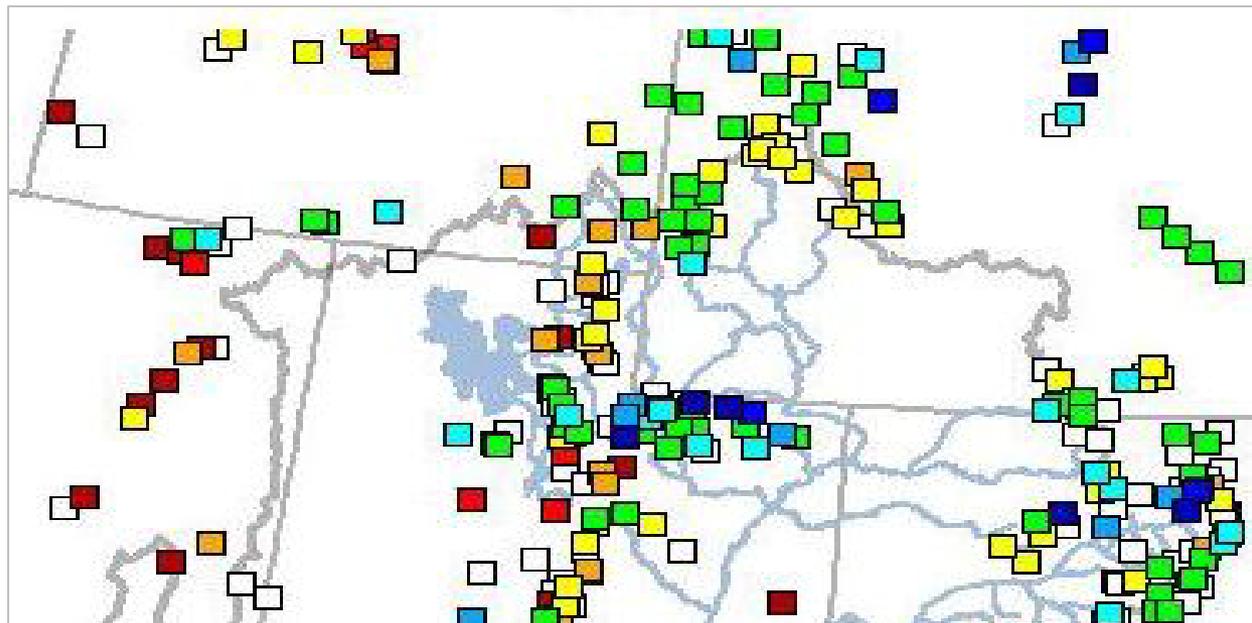
April 23 2013

# Snow: April Retention and Building of Snowpack



April 1, 2013:

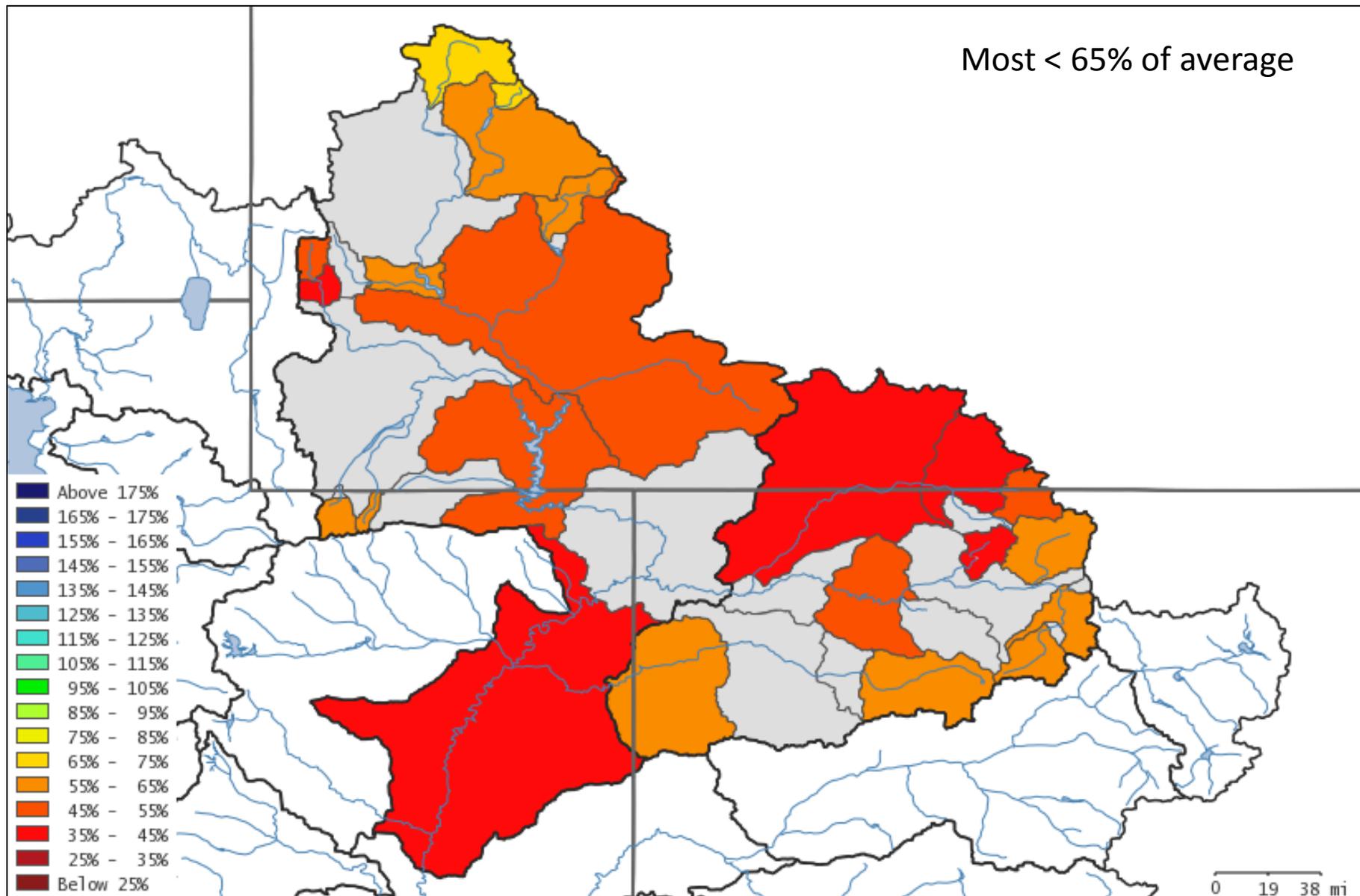
Upper Green = 75%  
Yampa = 72%



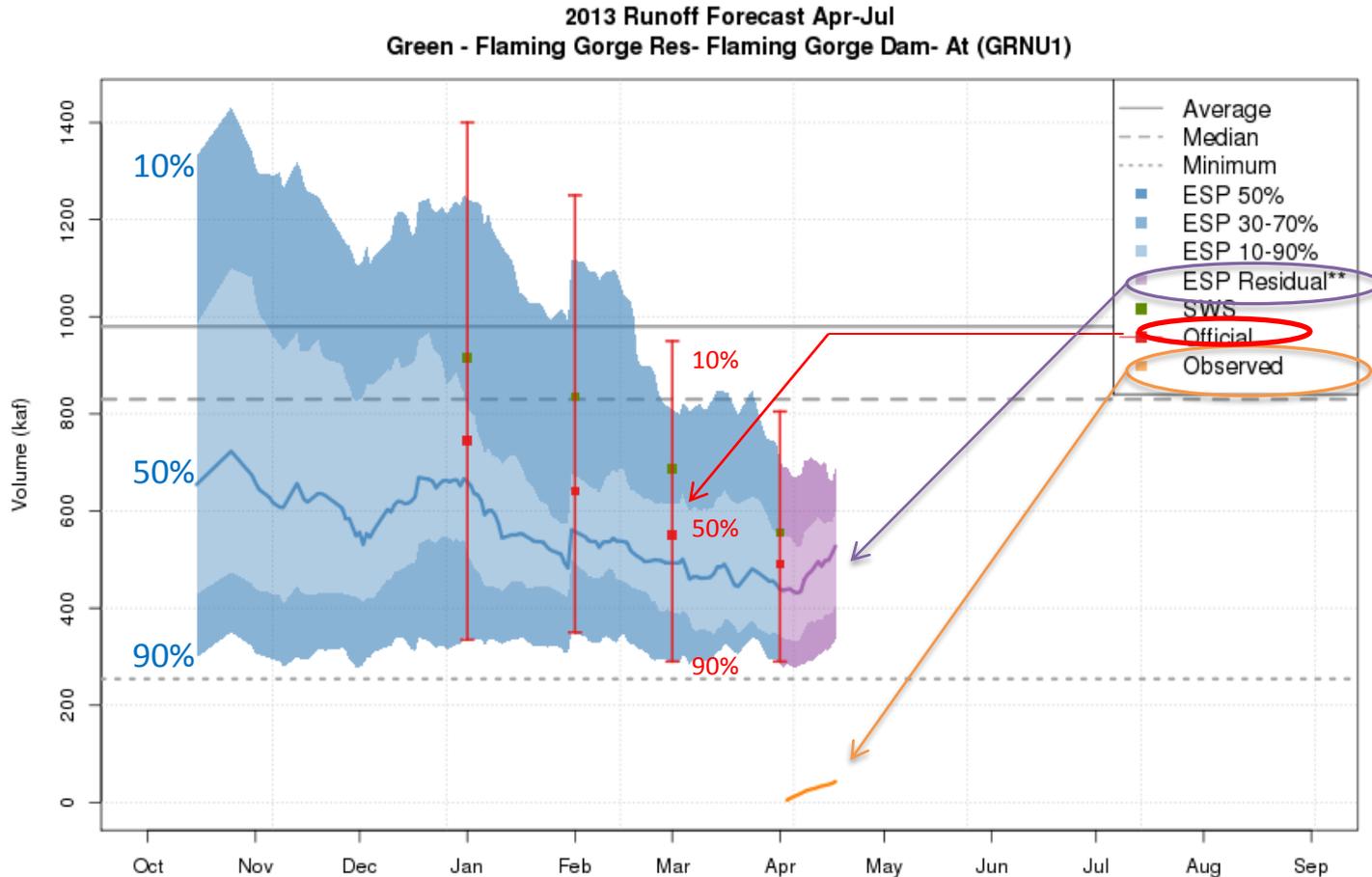
April 23, 2013

Upper Green = 100%  
Yampa = 99%

# April 1<sup>st</sup> Most Probable Water Supply Forecasts



# Daily Model Guidance (ESP) and Official Forecast Evolution Plot

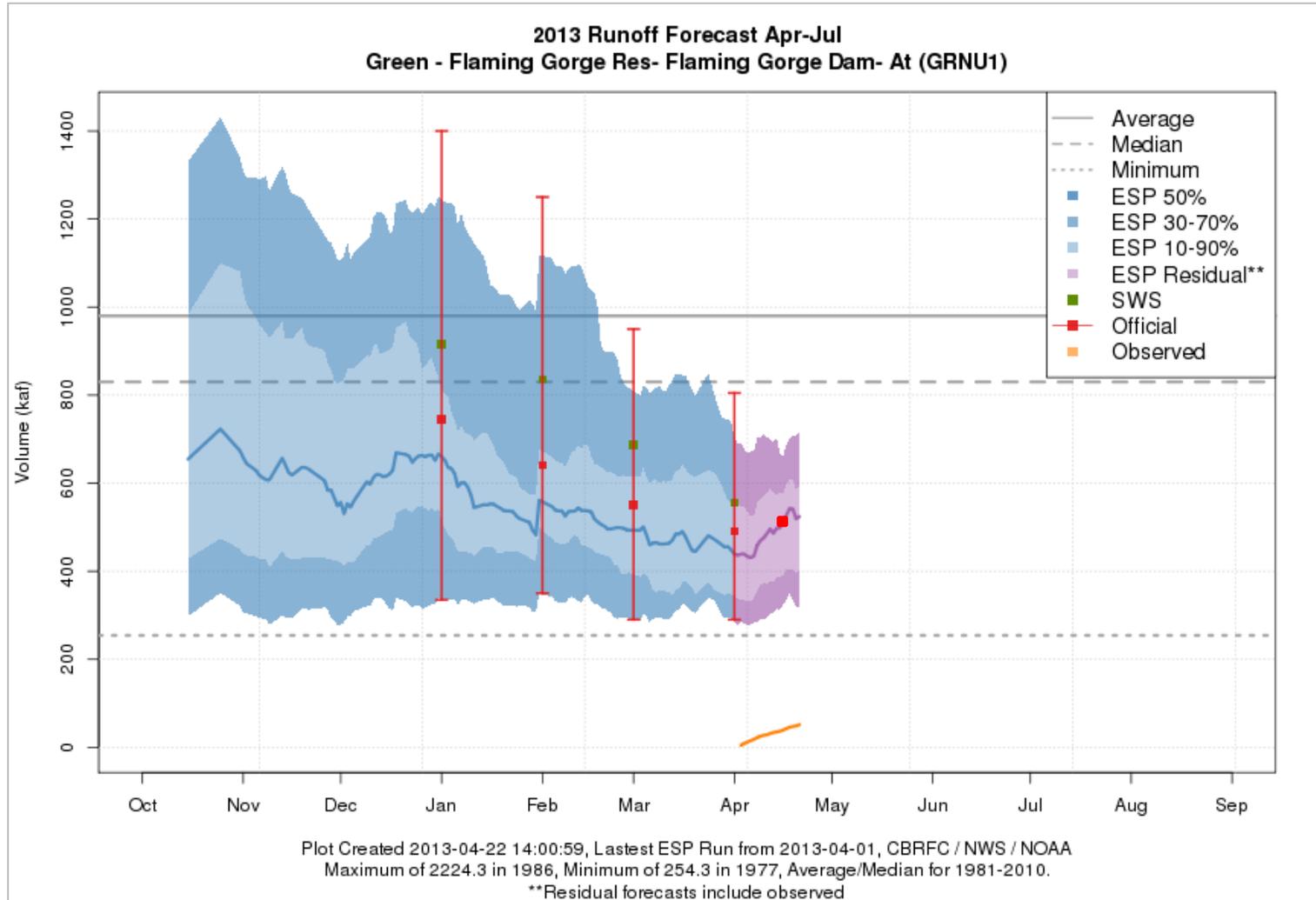


Plot Created 2013-04-17 14:40:39, Latest ESP Run from 2013-04-01, CBRFC / NWS / NOAA  
Maximum of 2224.3 in 1986, Minimum of 254.3 in 1977, Average/Median for 1981-2010.

\*\*Residual forecasts include observed

Residual= April observed volume + model guidance to July 31

# FORECASTS: Upper Green



## April 1<sup>st</sup>:

**MAX (10%): 805 kaf**

**MP (50% ): 490 kaf 50% avg**

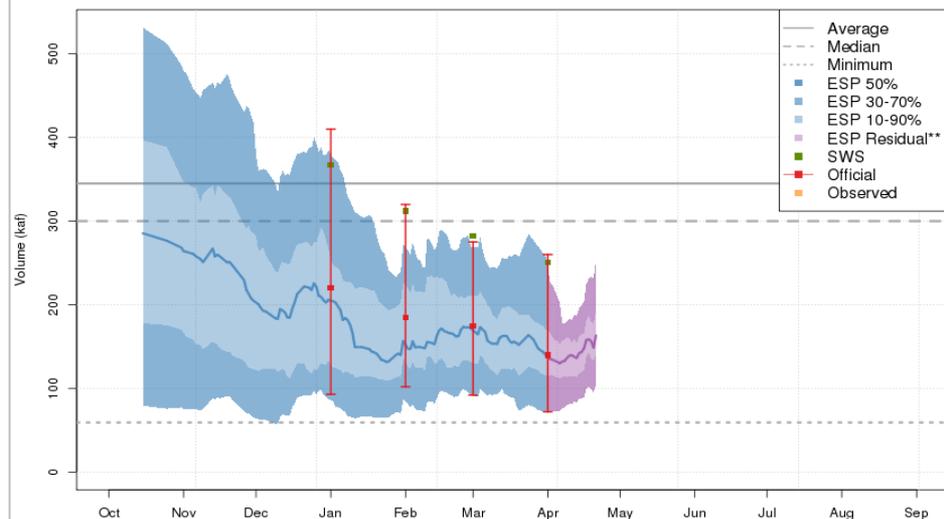
**MIN (90%): 290 kaf**

## April 16 Update:

**MP (50% ): 530 kaf 54% avg**

# FORECASTS: Yampa

2013 Runoff Forecast Apr-Jul  
Little Snake - Lily- Nr (LILC2)



Plot Created 2013-04-22 14:01:46, Lastest ESP Run from 2013-04-01, CBRFC / NWS / NOAA  
 Maximum of 905.5 in 2011, Minimum of 59.2 in 1934, Average/Median for 1981-2010.  
 \*\*No residual observations available, ESP Residual is not total runoff.

## April 1<sup>st</sup>:

**MAX (10%): 260 kaf**

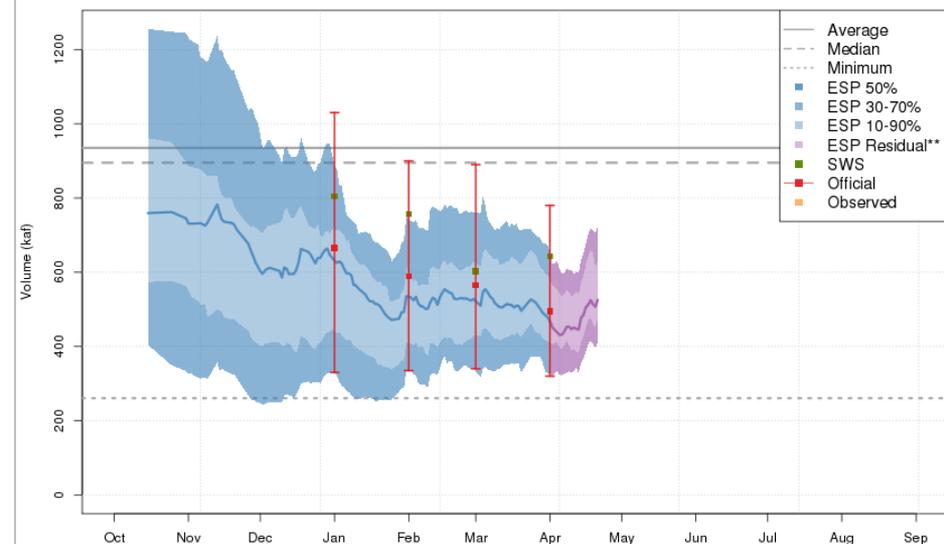
**MP (50% ): 140 kaf 41% avg**

**MIN (90%): 72 kaf**

## April 16 Update:

**MP (50% ): 166 kaf 48% avg**

2013 Runoff Forecast Apr-Jul  
Yampa - Maybell- Nr (MBLC2)



Plot Created 2013-04-22 14:01:56, Lastest ESP Run from 2013-04-01, CBRFC / NWS / NOAA  
 Maximum of 1987.9 in 2011, Minimum of 260.6 in 1977, Average/Median for 1981-2010.  
 \*\*No residual observations available, ESP Residual is not total runoff.

## April 1<sup>st</sup>:

**MAX (10%): 780 kaf**

**MP (50% ): 495 kaf 53% avg**

**MIN (90%): 320 kaf**

## April 16 Update:

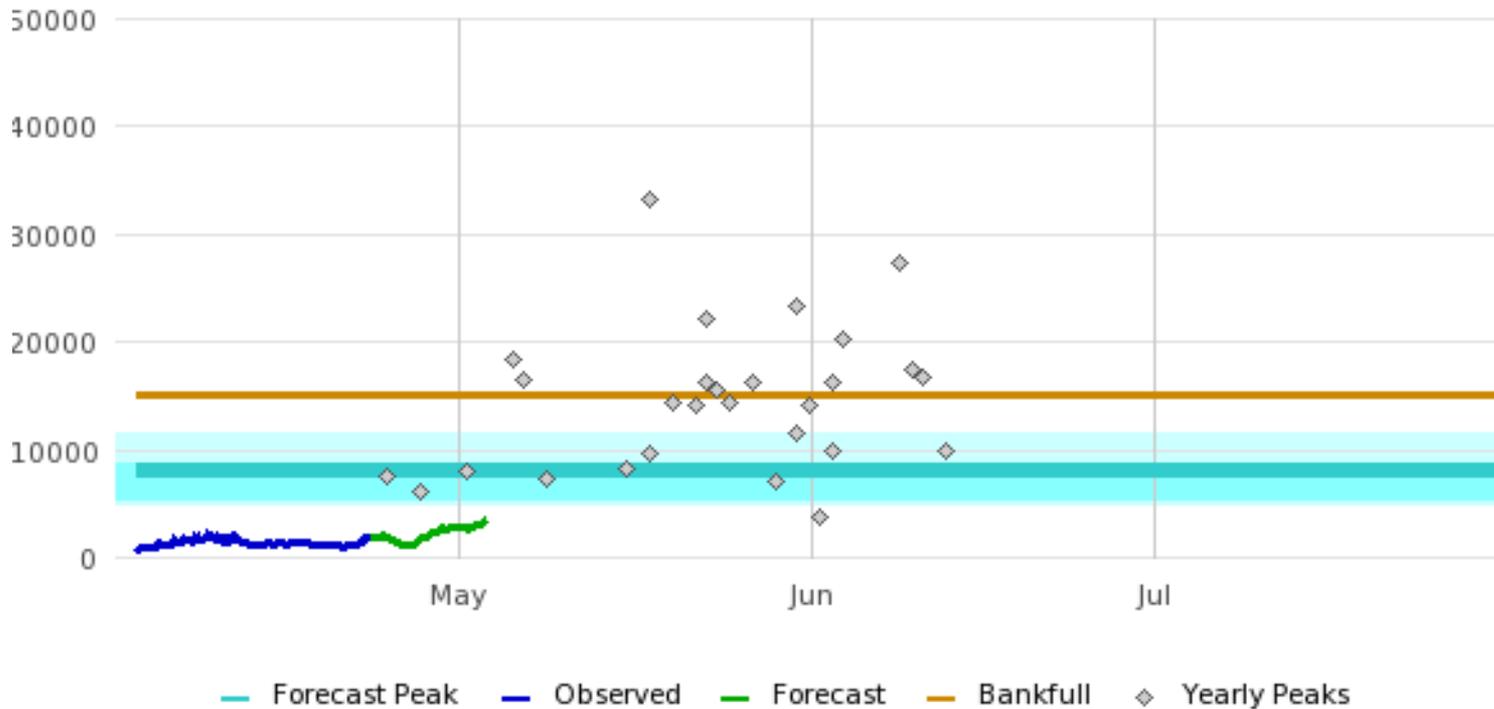
**MP (50% ): 565 kaf 60% avg**

# PEAKFLOW FORECASTS

## YAMPA - DEERLODGE PARK (ydlc2)

Flow (cfs) for April-July, Forecast run 2013-04-23 14:00 GMT

Plot Created April 23, 11:45 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



Exceedance  
Probability  
(cfs)

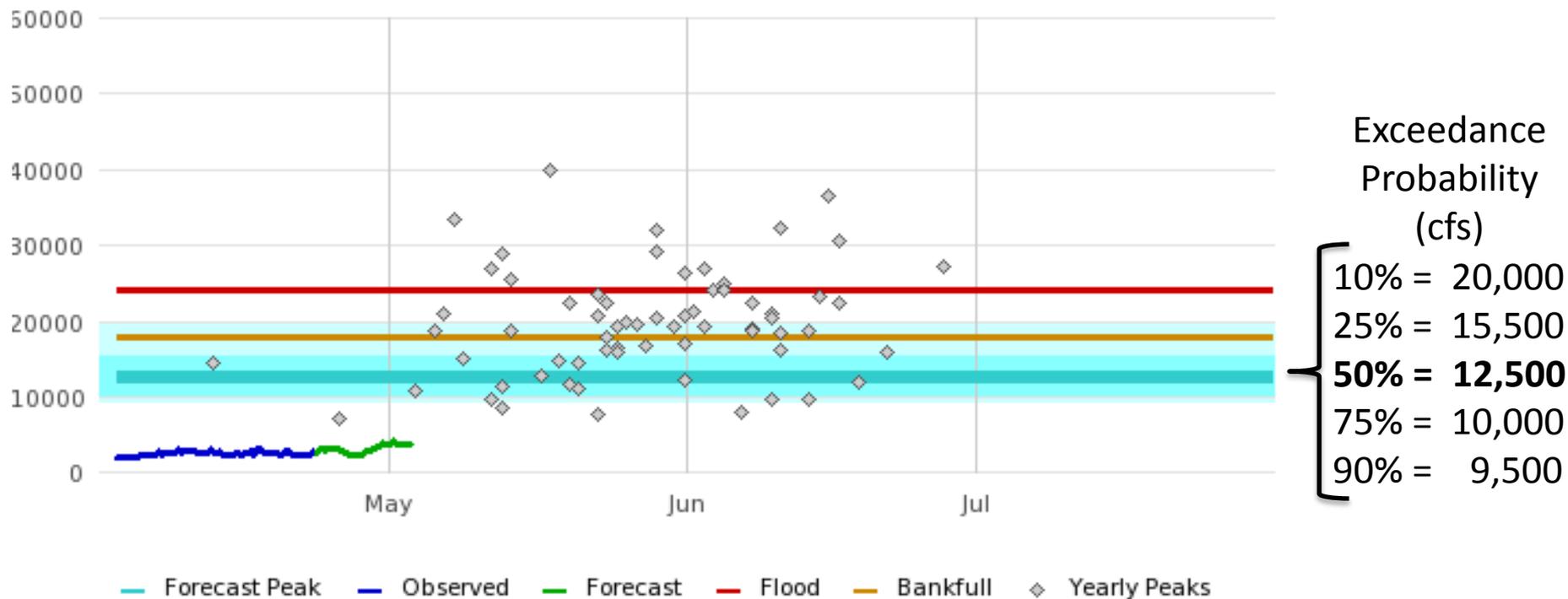
10% = 11,500  
25% = 9,000  
50% = **8,000**  
75% = 5,500  
90% = 5,000

# PEAKFLOW FORECASTS

## GREEN - JENSEN, NR (jesu1)

Flow (cfs) for April-July, Forecast run 2013-04-23 14:00 GMT

Plot Created April 23, 11:46 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



Web Reference: <http://www.cbrfc.noaa.gov/gmap/list/list.php?type=peak>

# Spring Weather Really Matters

- **Runoff characteristics are largely determined by the day-to-day spring weather.**
  - While large snow pack years increase chances for flooding, it is not an inevitability (dodged a bullet at many sites in 2011)
  - Small snow pack years can flood with the right sequence of spring temperatures and with flows enhanced by precipitation.
  - Rain events may play a larger role in the magnitude of the peak flow during very low snow years.
  - Keep an eye on our web page / daily forecasts  
(Daily Forecasts: <http://www.cbrfc.noaa.gov/gmap/cmap2.php>)

Feedback, Questions, Concerns always welcome....



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