

CBRFC Forecast Update: Upper Green and Yampa

April 18, 2012

Ashley Nielson

NWS Colorado Basin River Forecast Center



Outline

1. Current Conditions

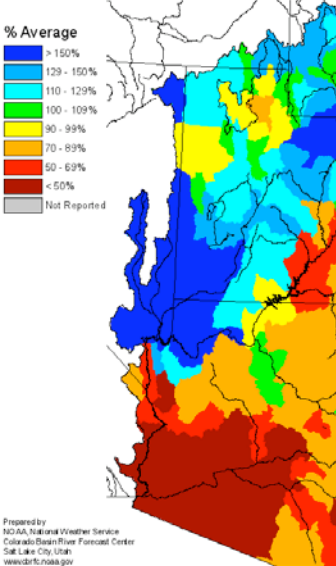
- Precipitation/Temperature/Snow
- Weather Forecasts

2. Water Supply

3. Yampa Peak

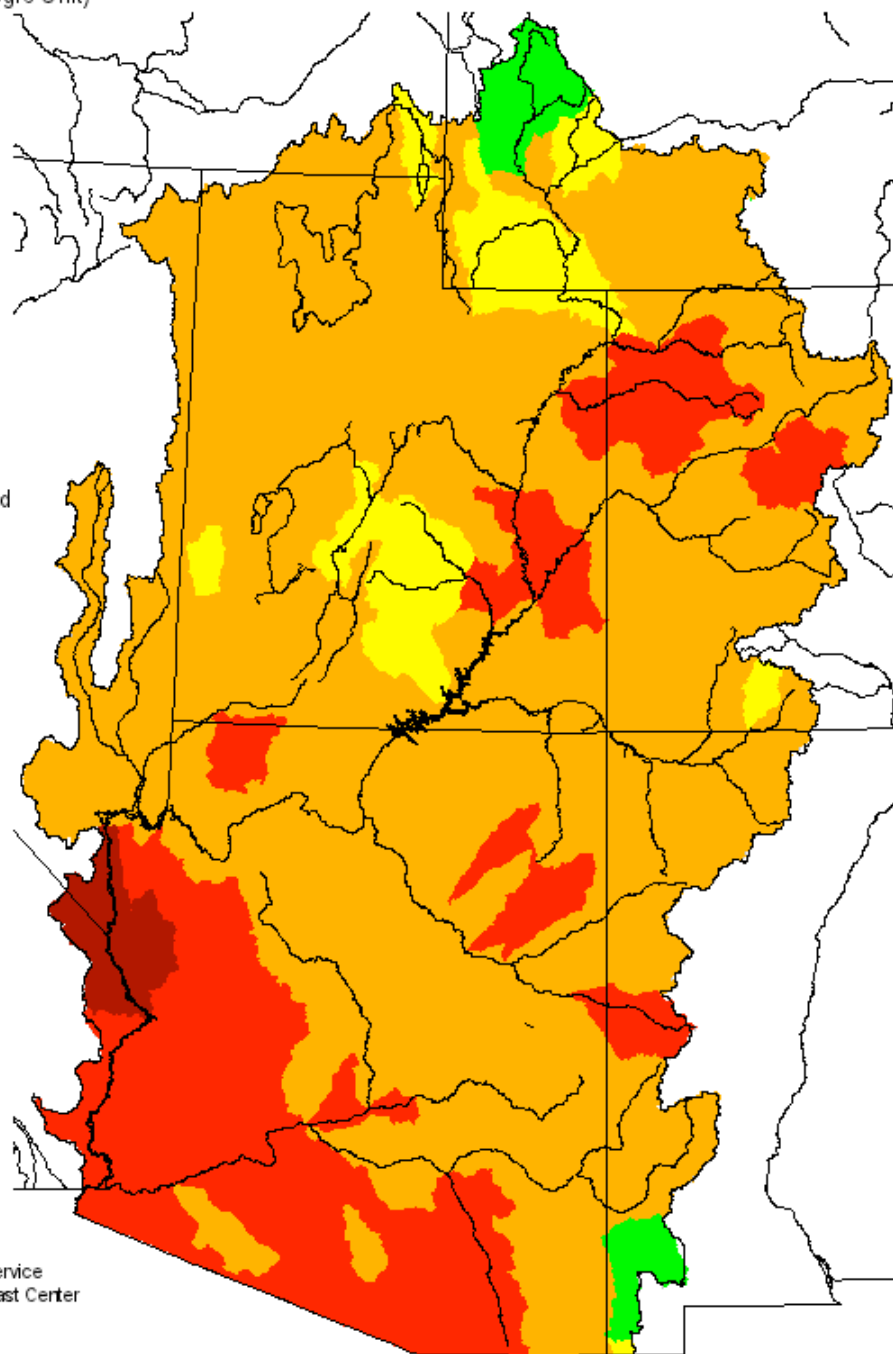
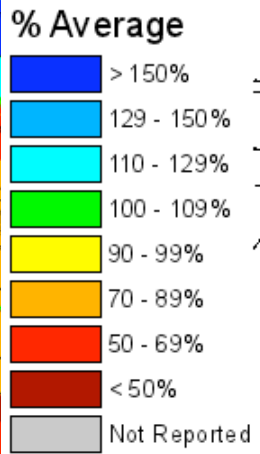


Monthly Precipitation for October 2011
(Averaged by Hydrologic Unit)



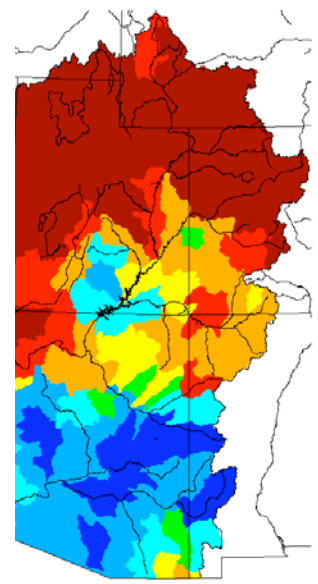
Seasonal Precipitation, October 2011 - March 2012

(Averaged by Hydrologic Unit)

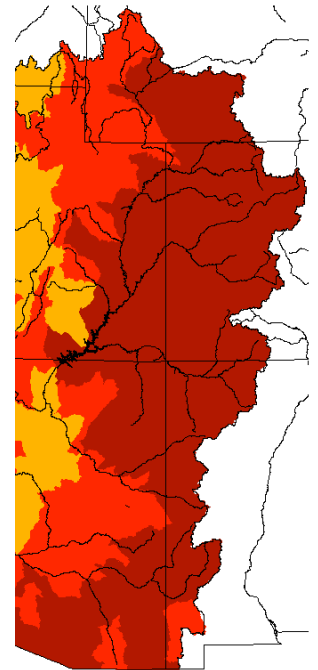


Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

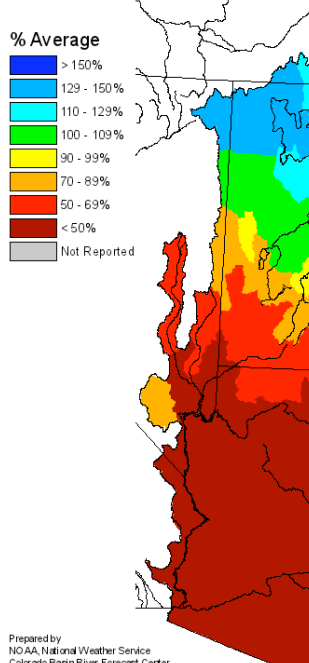
Monthly Precipitation for December 2011



March 2012



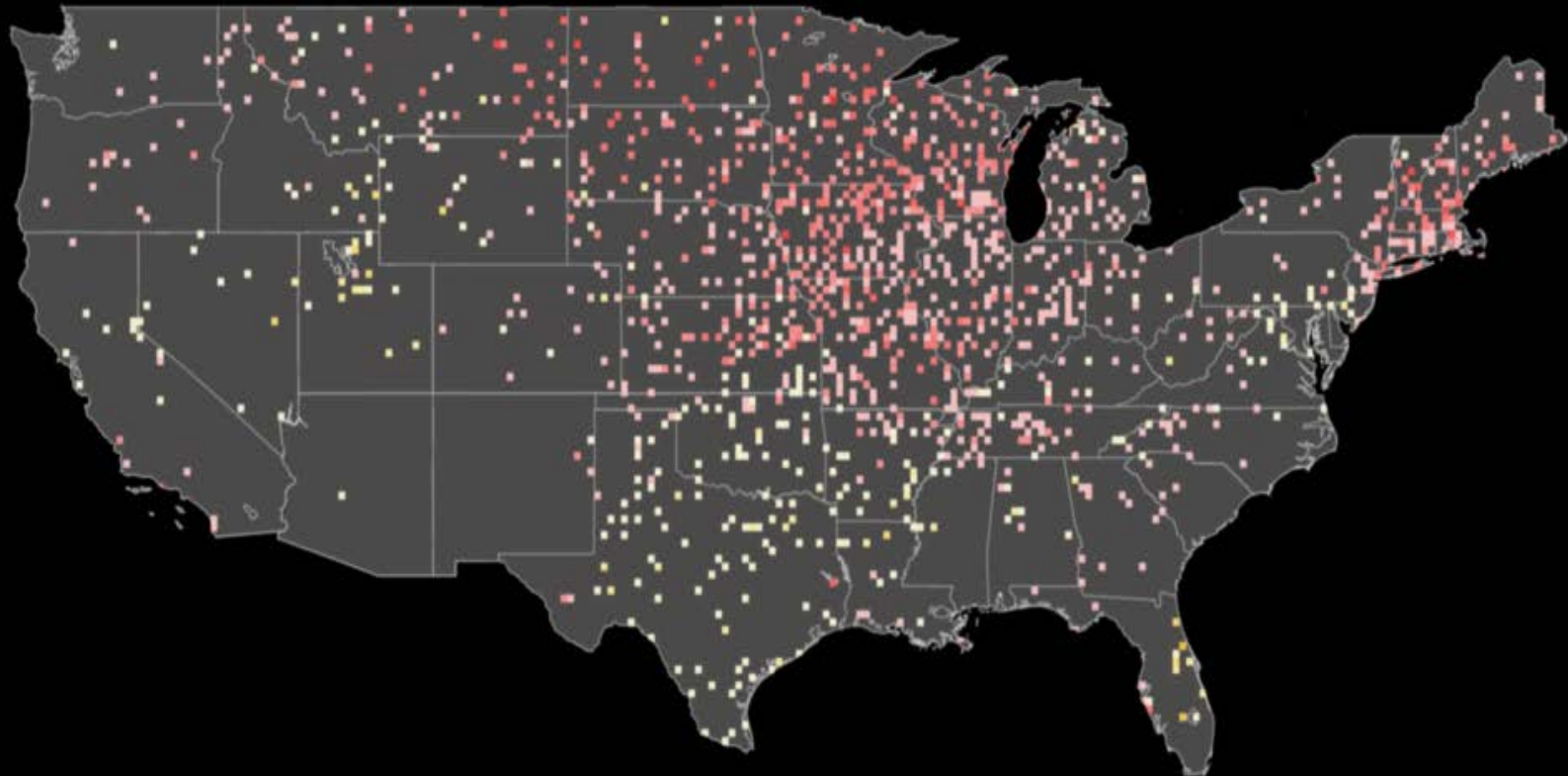
Monthly Precipitation for January 2012
(Averaged by Hydrologic Unit)



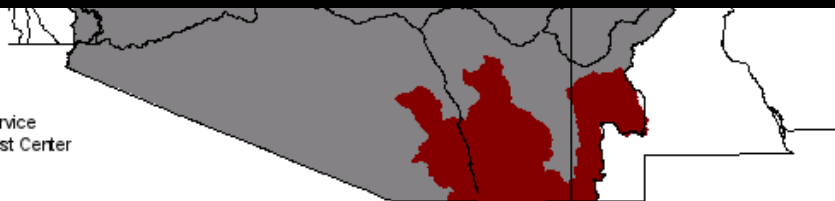
Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

Monthly Max Temp Deviation for March 2012

(Averaged by Hydrologic Unit)



15,000 Records Broken!

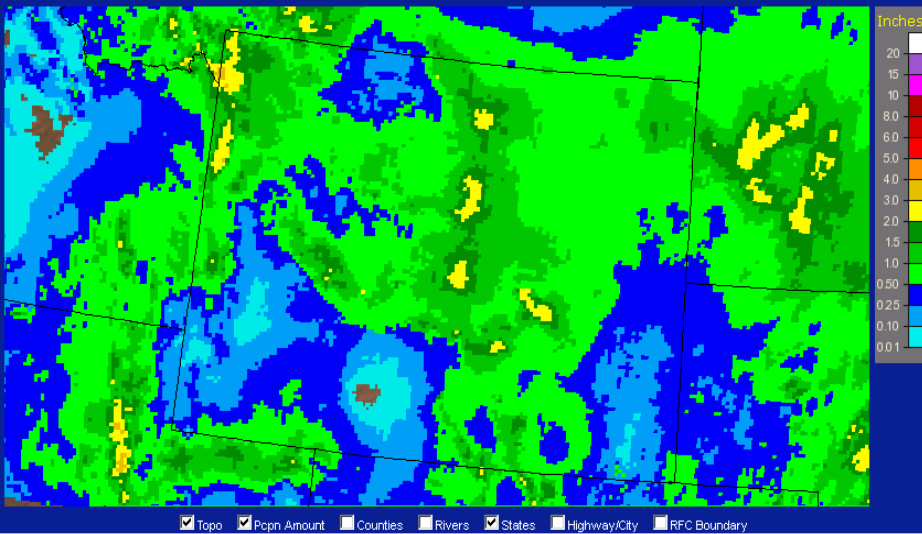


Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrfc.noaa.gov

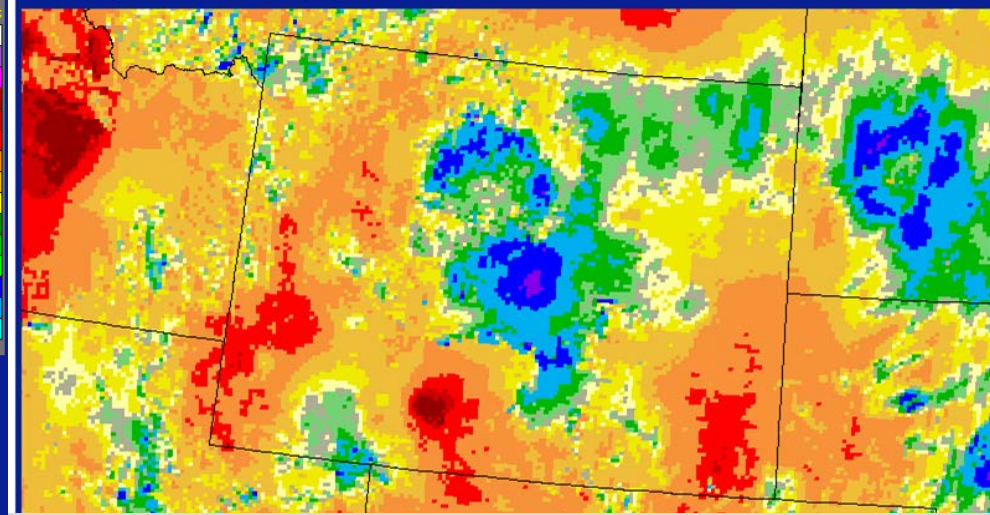
April Precipitation...so far

Wyoming

Wyoming: Current Month to Date Observed Precipitation
Valid at 4/17/2012 1200 UTC - Created 4/17/12 15:41 UTC

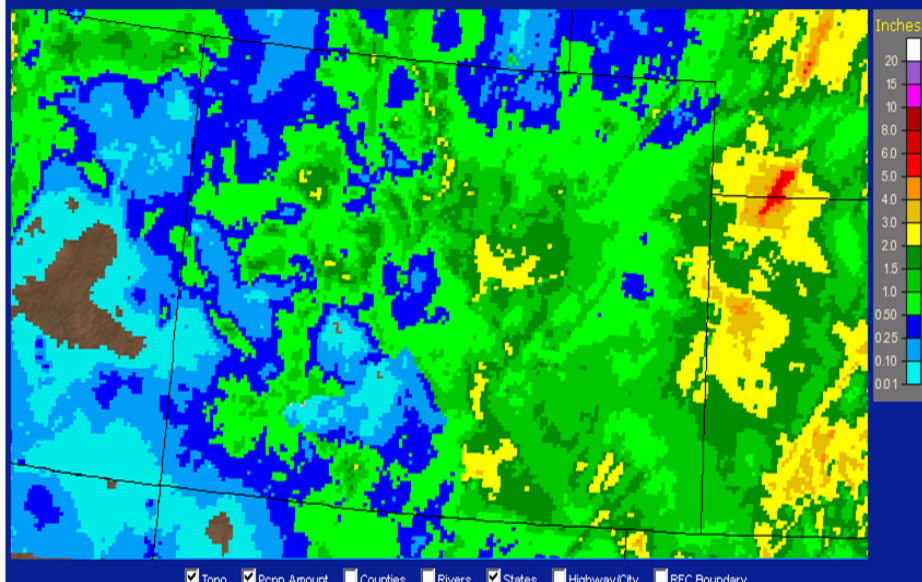


Wyoming: Current Month to Date Percent of Normal Precipitation
Valid at 4/17/2012 1200 UTC - Created 4/17/12 15:44 UTC

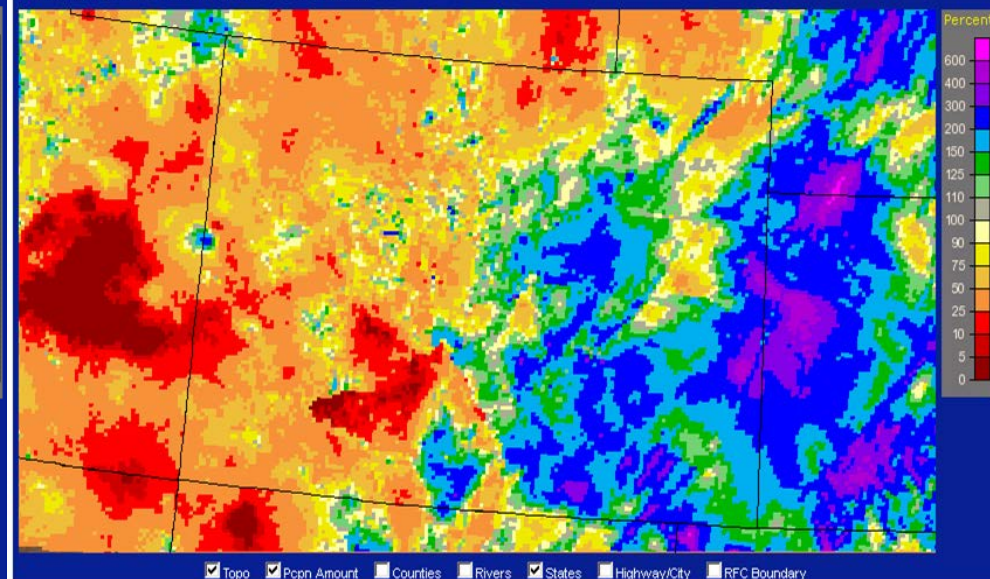


Colorado

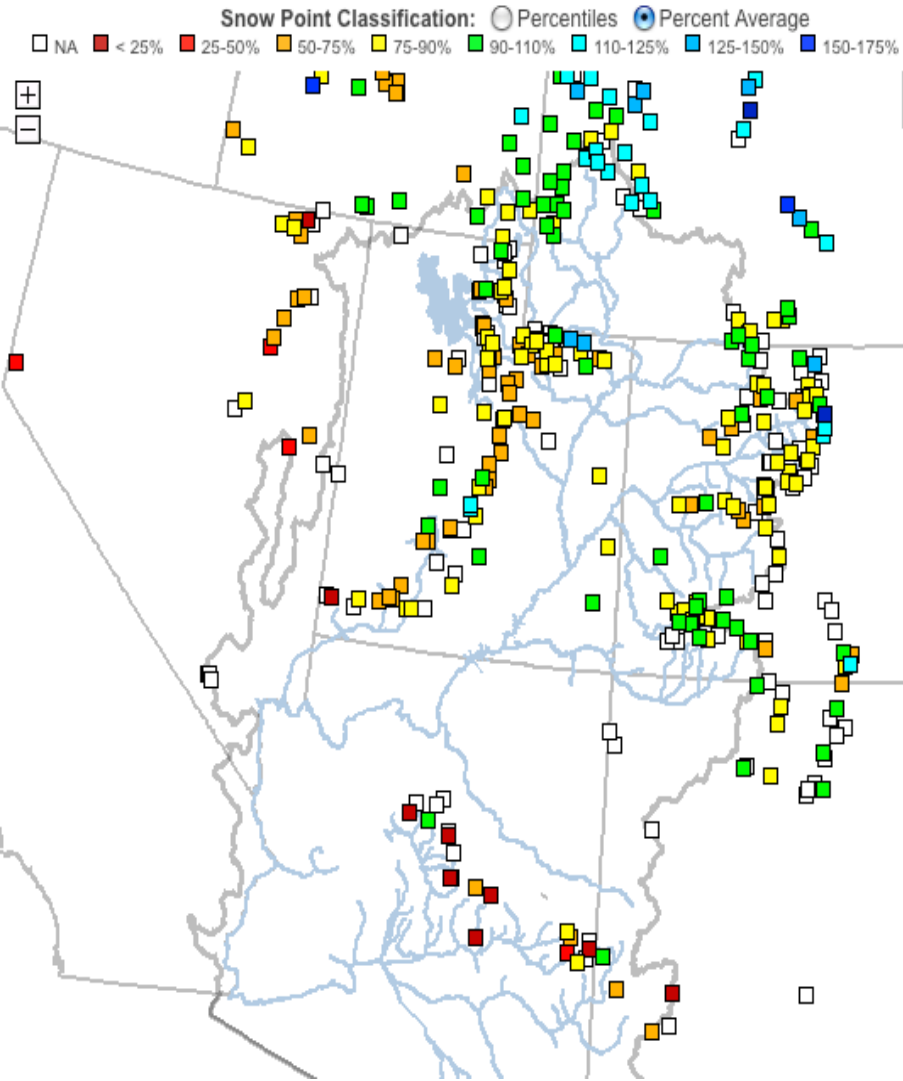
Colorado: Current Month to Date Observed Precipitation
Valid at 4/17/2012 1200 UTC - Created 4/17/12 15:41 UTC



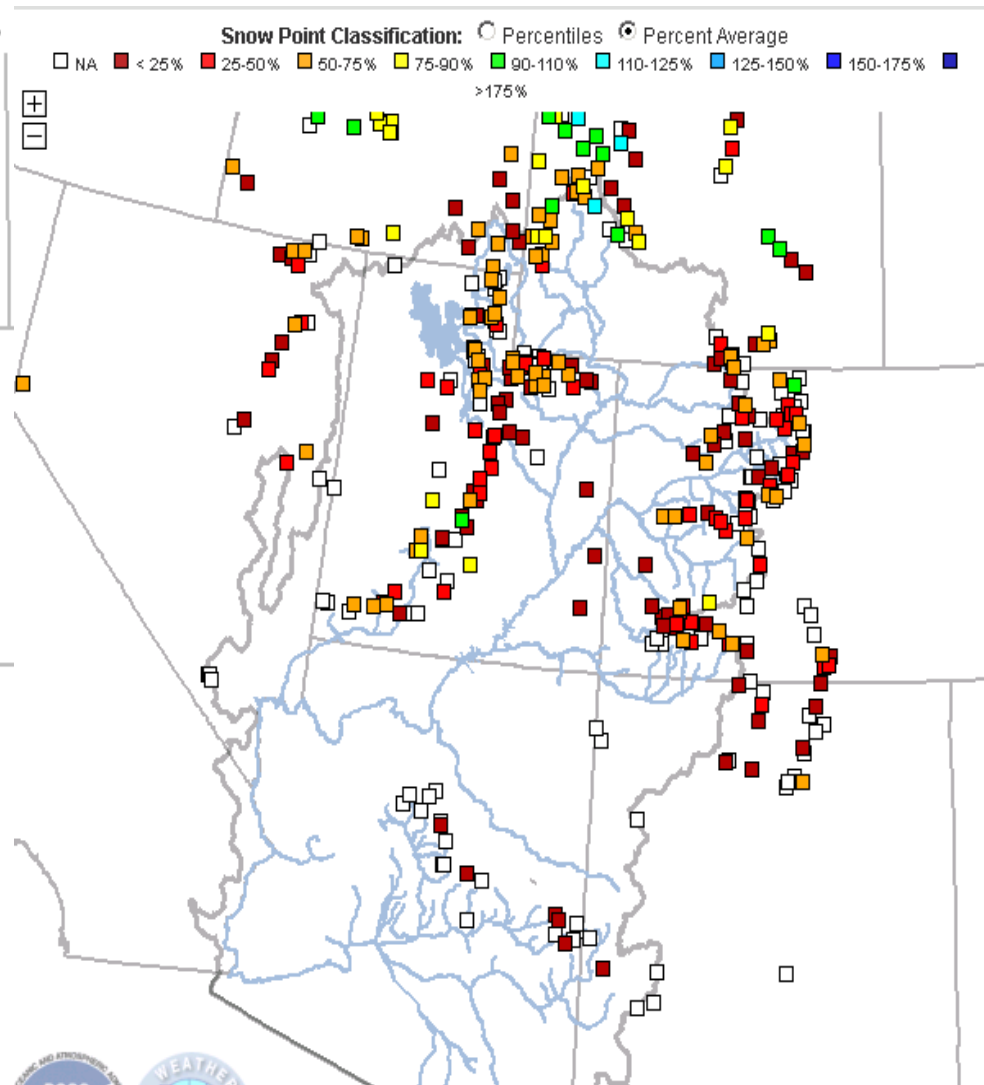
Colorado: Current Month to Date Percent of Normal Precipitation
Valid at 4/17/2012 1200 UTC - Created 4/17/12 15:45 UTC



Snow



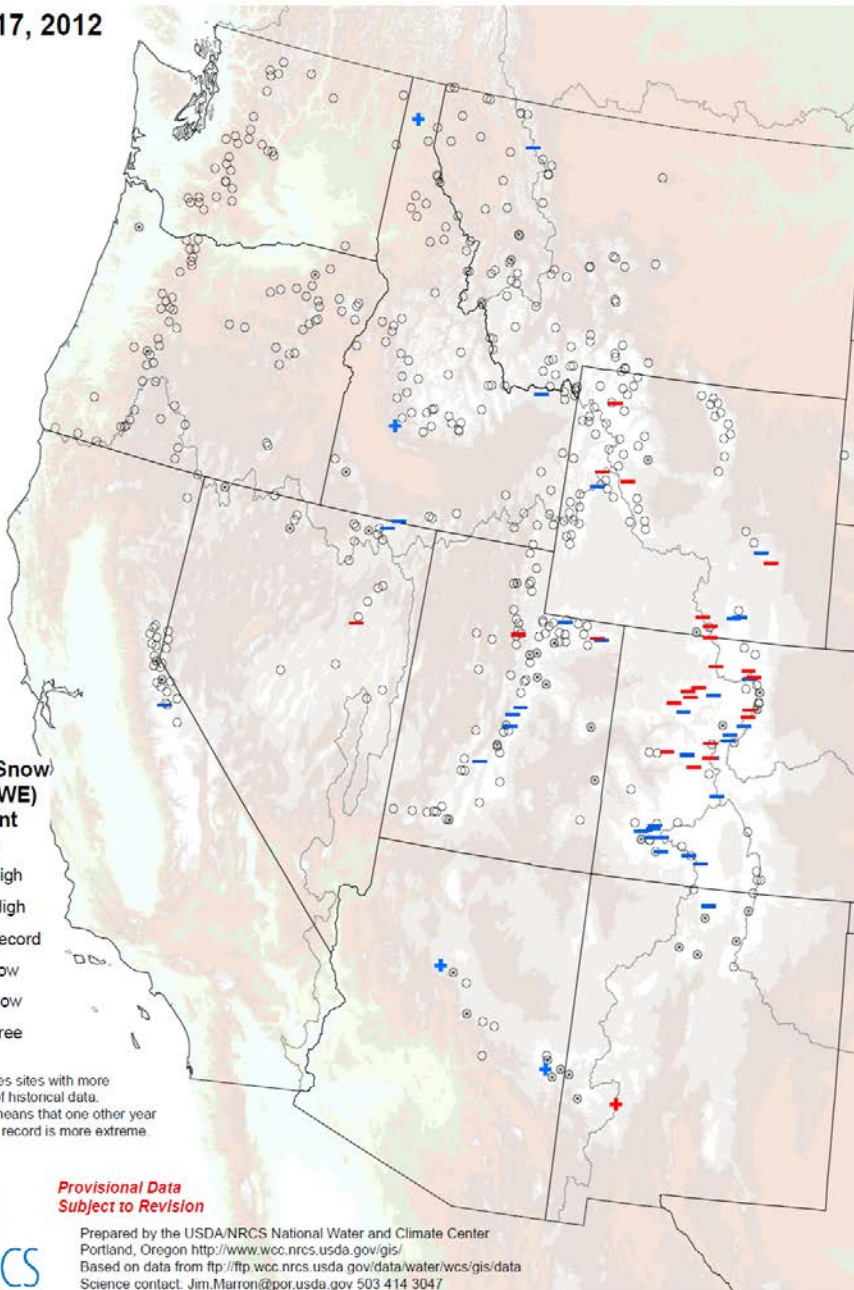
March 6, 2012



April 17, 2012

SNOTEL Current Snow Water Equivalent (SWE) Records

Apr 17, 2012



Current Snow Water (SWE) Equivalent Records

- + New High
- + Near High
- Non-Record
- New Low
- Near Low
- ⊙ snow free

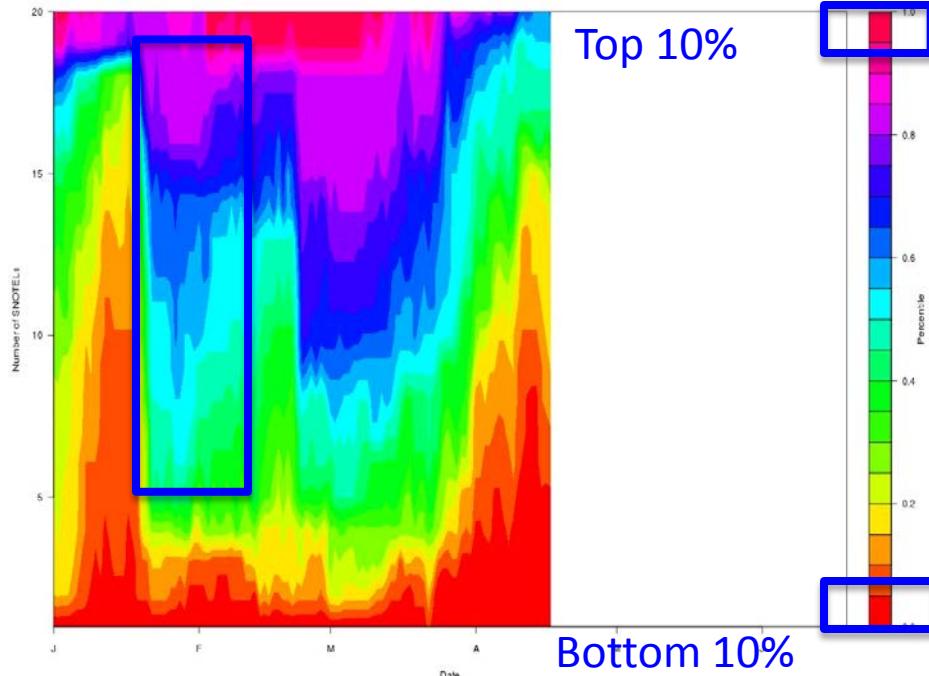
Analysis includes sites with more than 20 years of historical data. "Near" record means that one other year of the period of record is more extreme.

**Provisional Data
Subject to Revision**

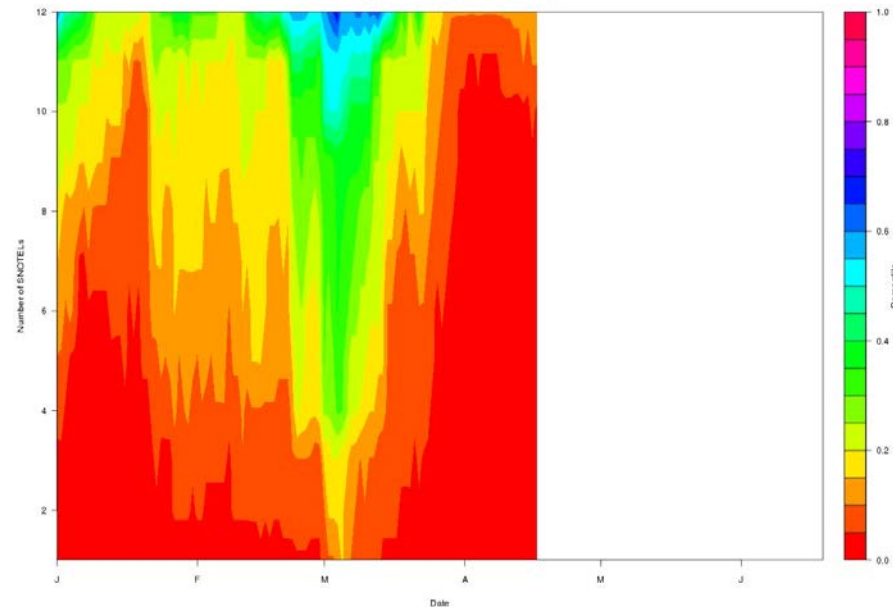
Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon <http://www.wcc.nrcs.usda.gov/gis/>
Based on data from <ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/data>
Science contact: Jim.Marron@por.usda.gov 503 414 3047

Storm

SNOTEL percentile rankings for 2012 for UpGreen

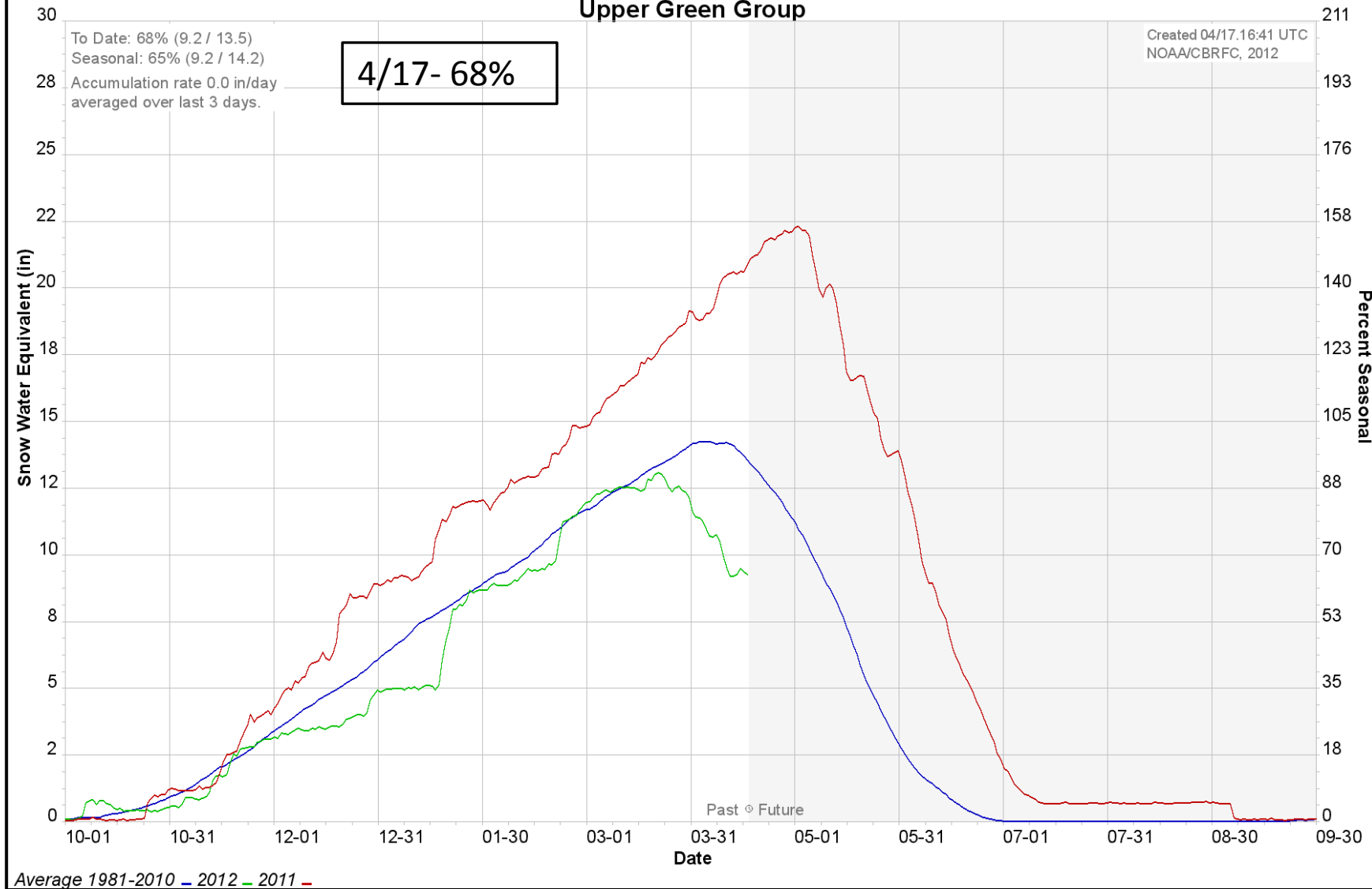


SNOTEL percentile rankings for 2012 for Yampa

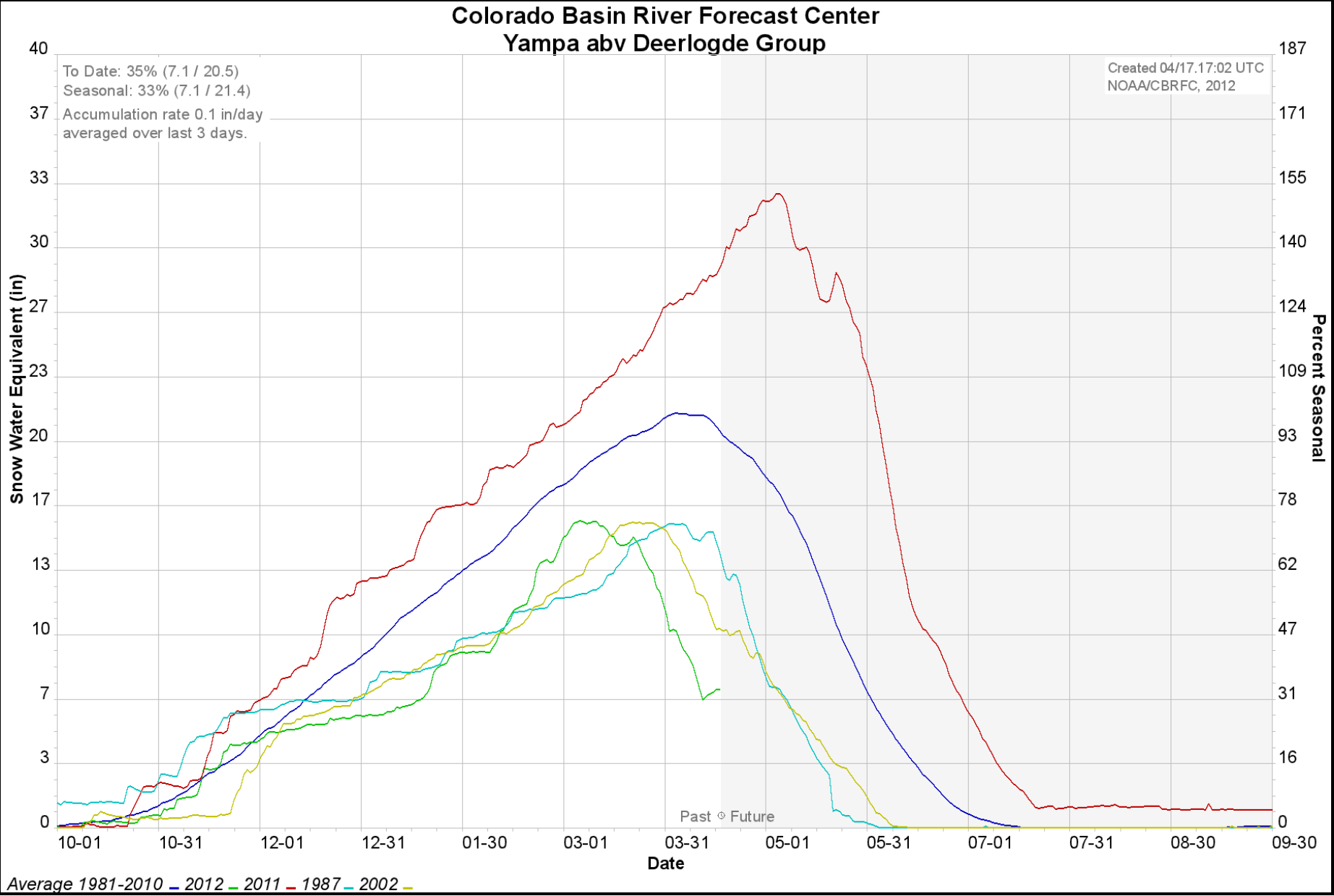


UPPER GREEN:SNOW

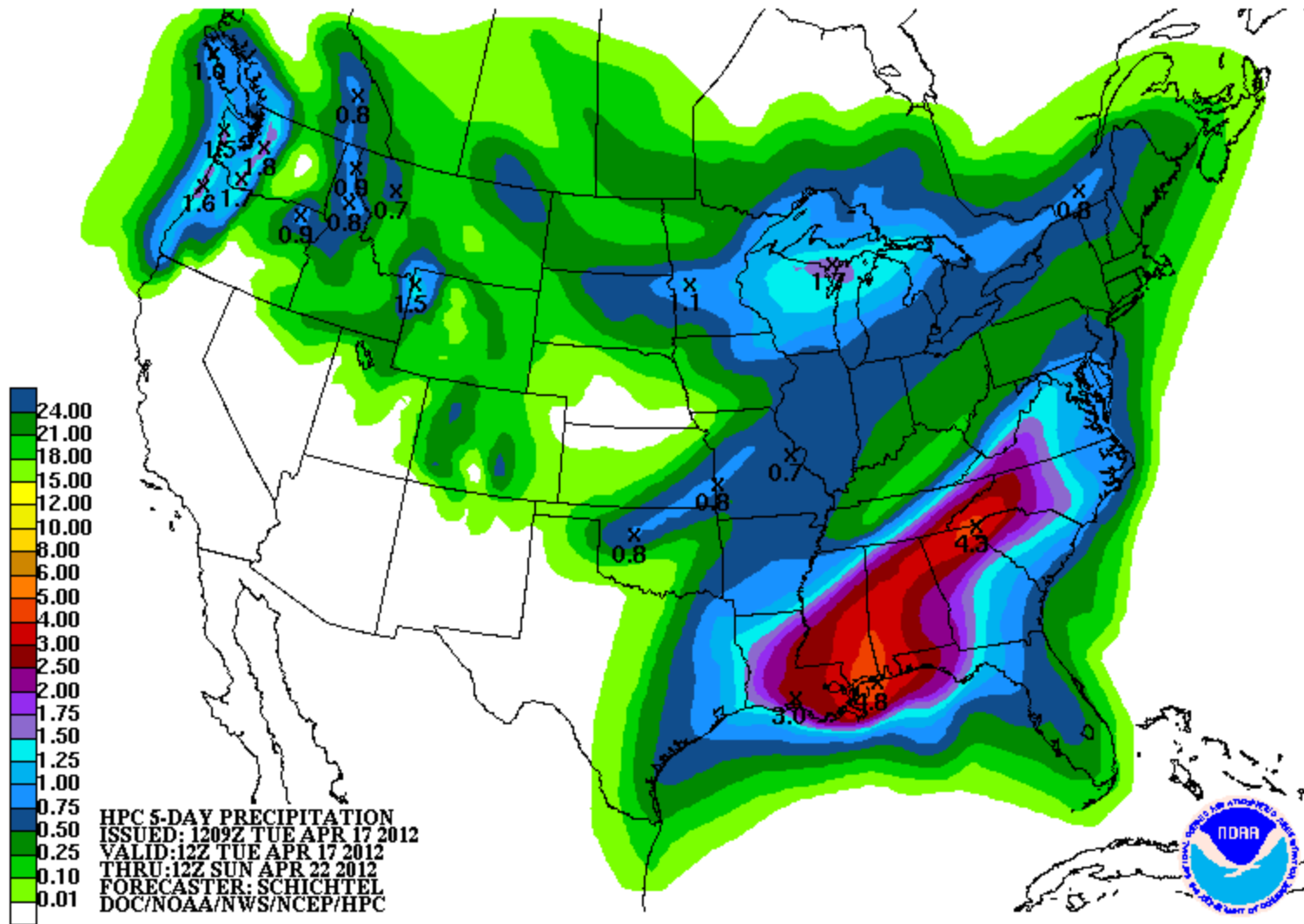
Colorado Basin River Forecast Center Upper Green Group



YAMPA:SNOW

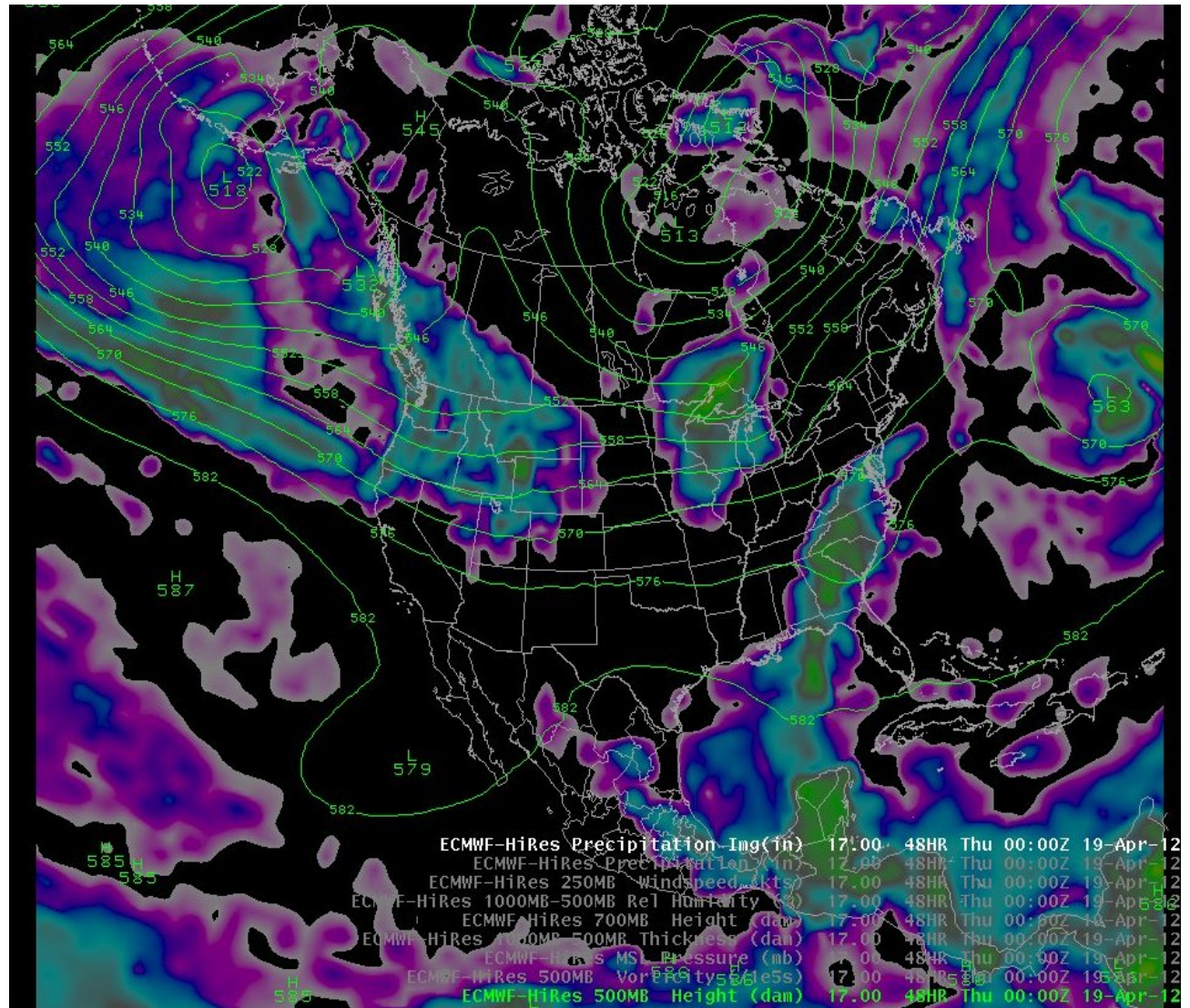


Forecast Precipitation



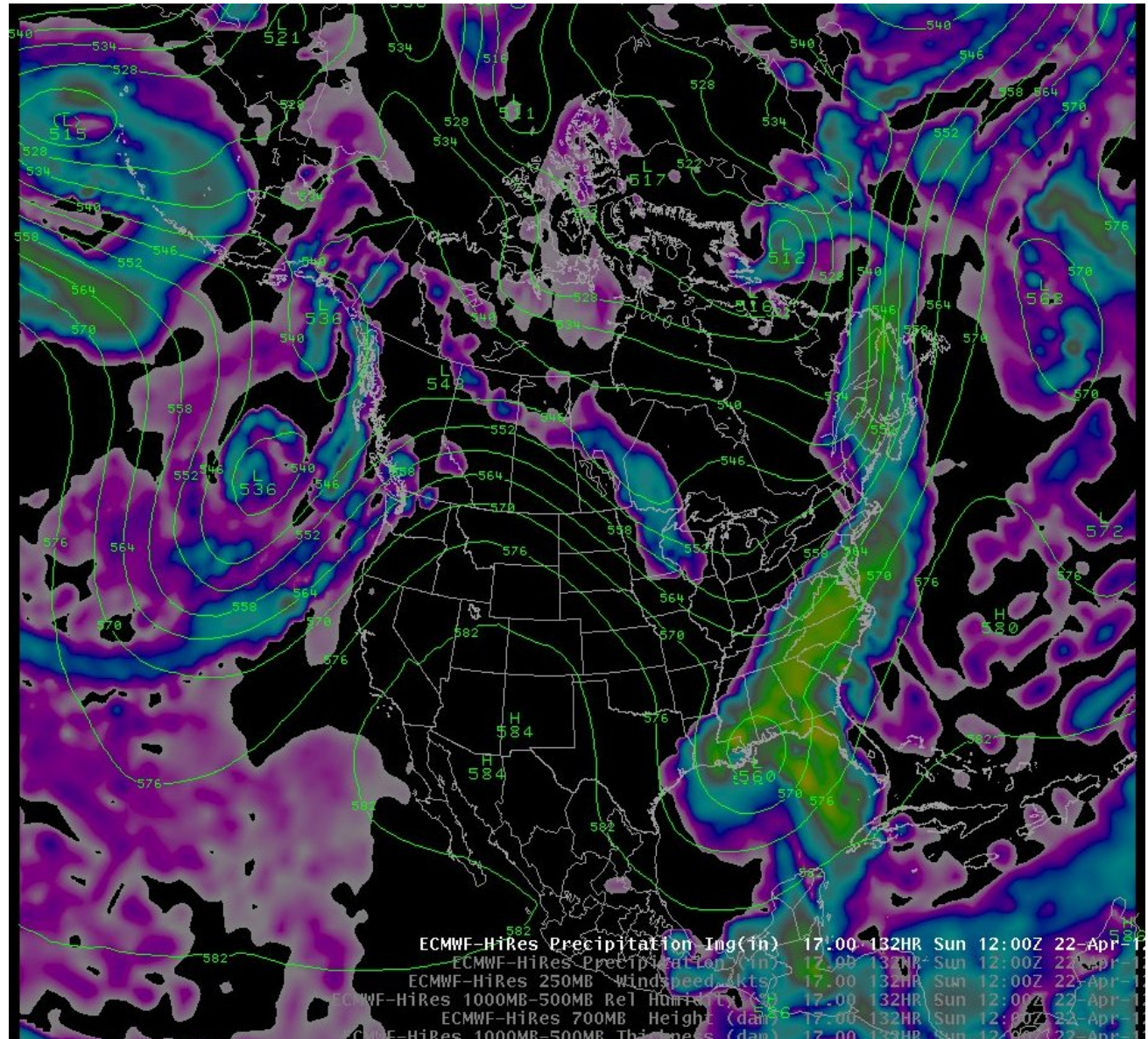
Weather Forecast

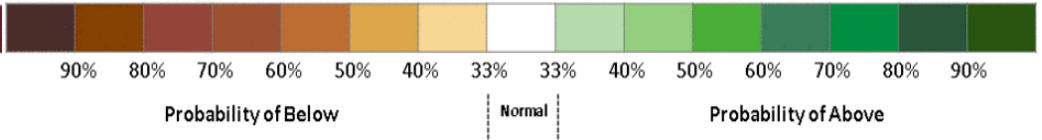
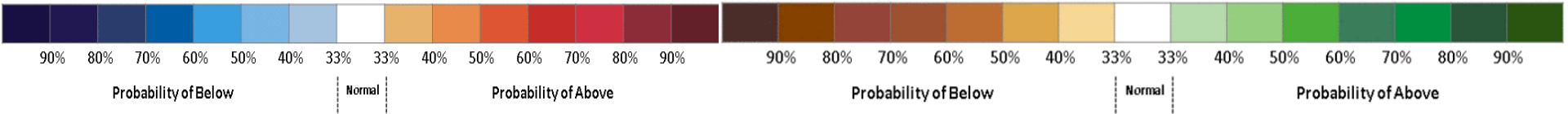
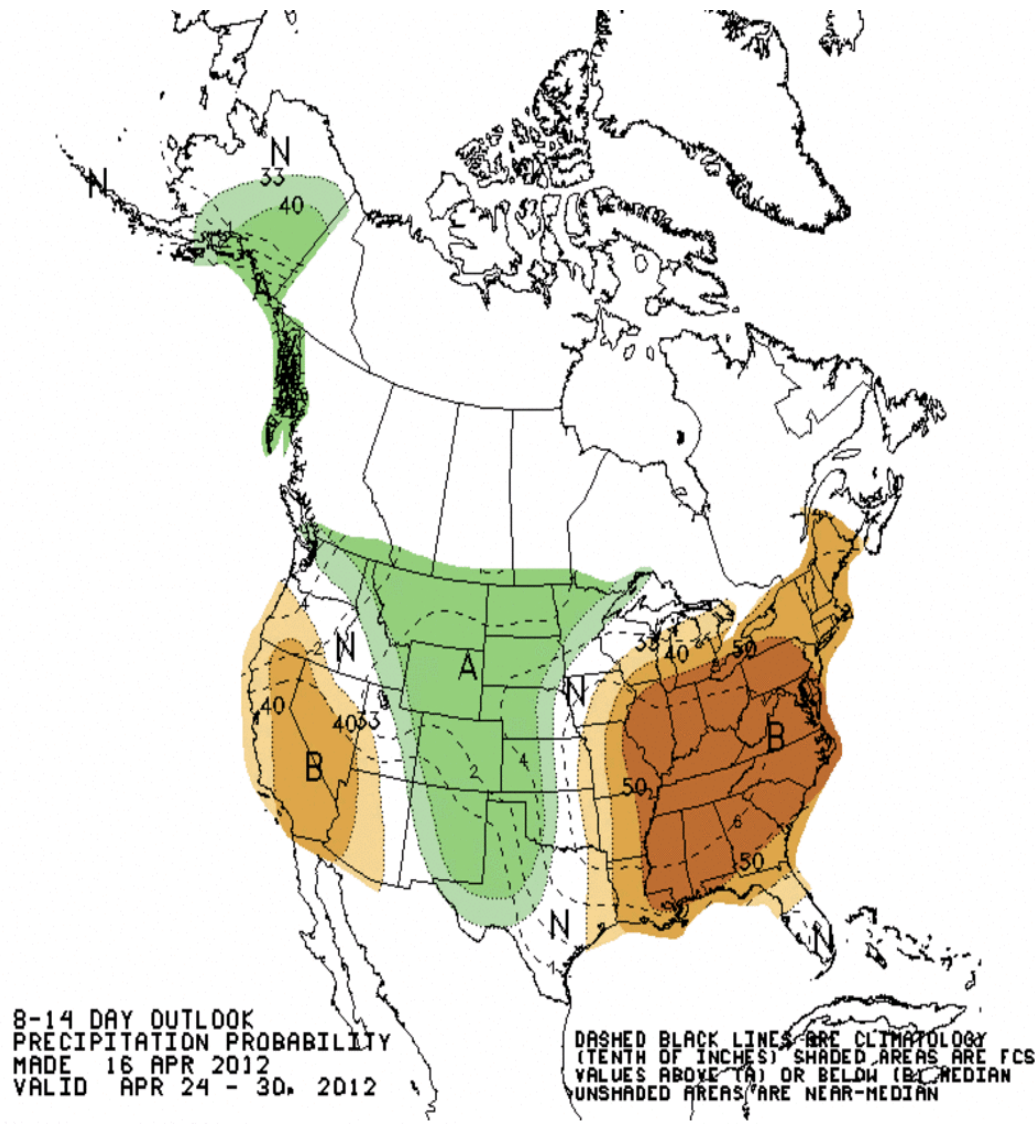
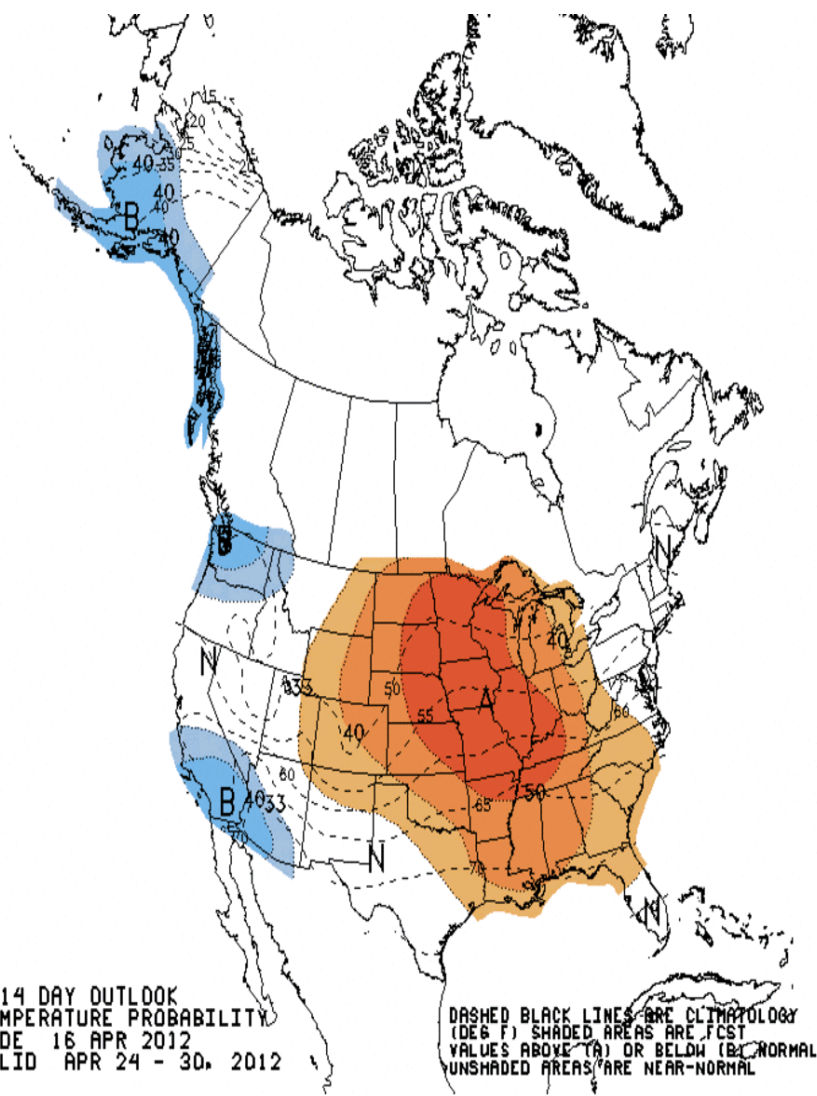
- Series of weak troughs and shortwaves.
- Showers and cooler temperatures through Friday.



Weather Forecast

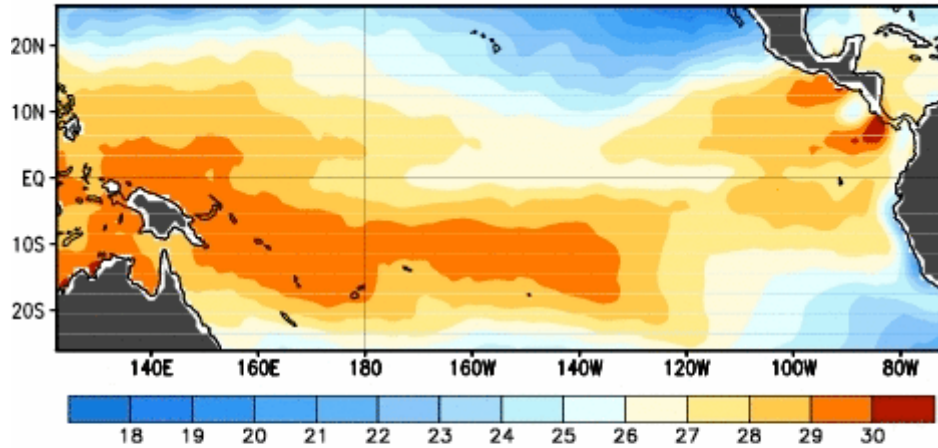
- Strong ridge of high pressure builds through the weekend into early next week.
- Above average temperatures through at least Tuesday...maybe longer



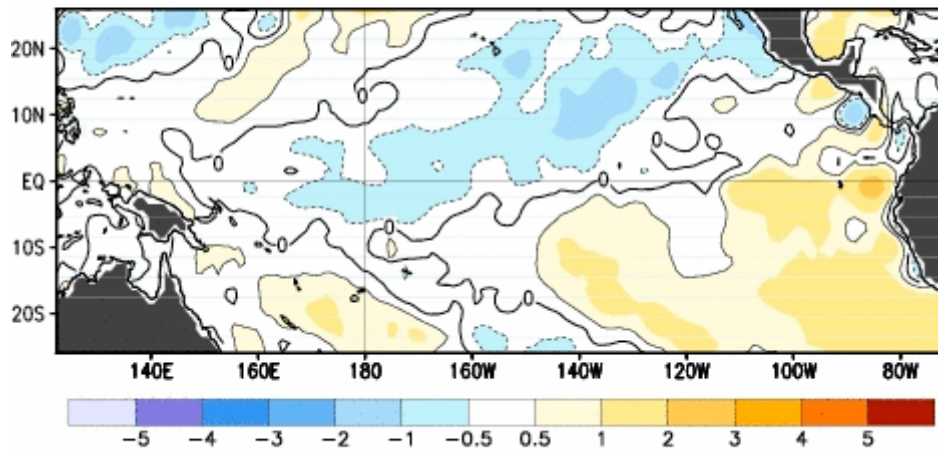


La Nina Update

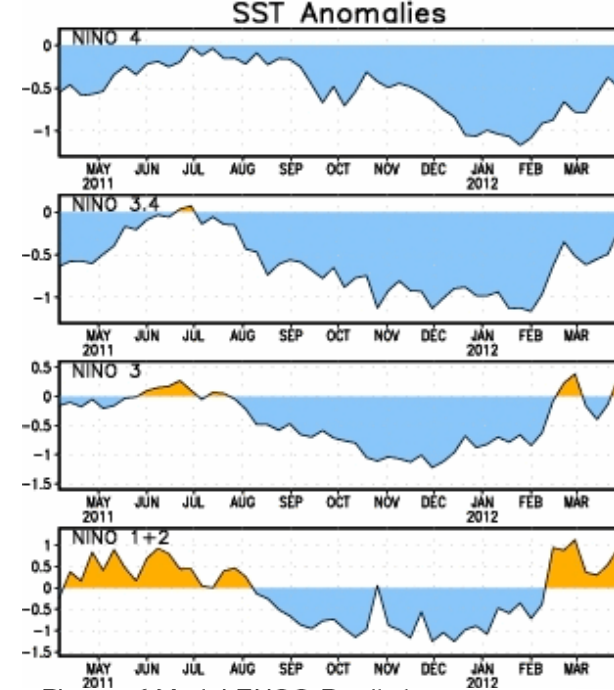
Observed Sea Surface Temperature (°C)



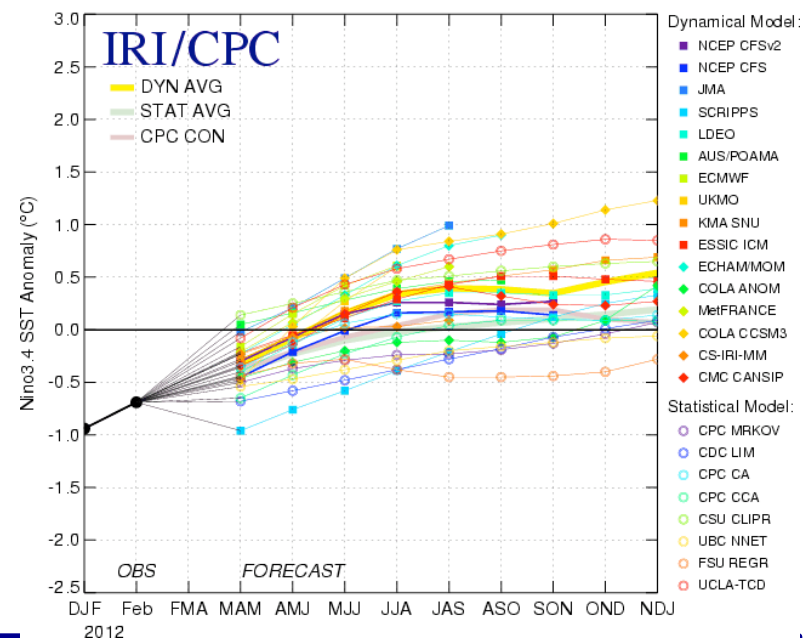
Observed Sea Surface Temperature Anomalies (°C)



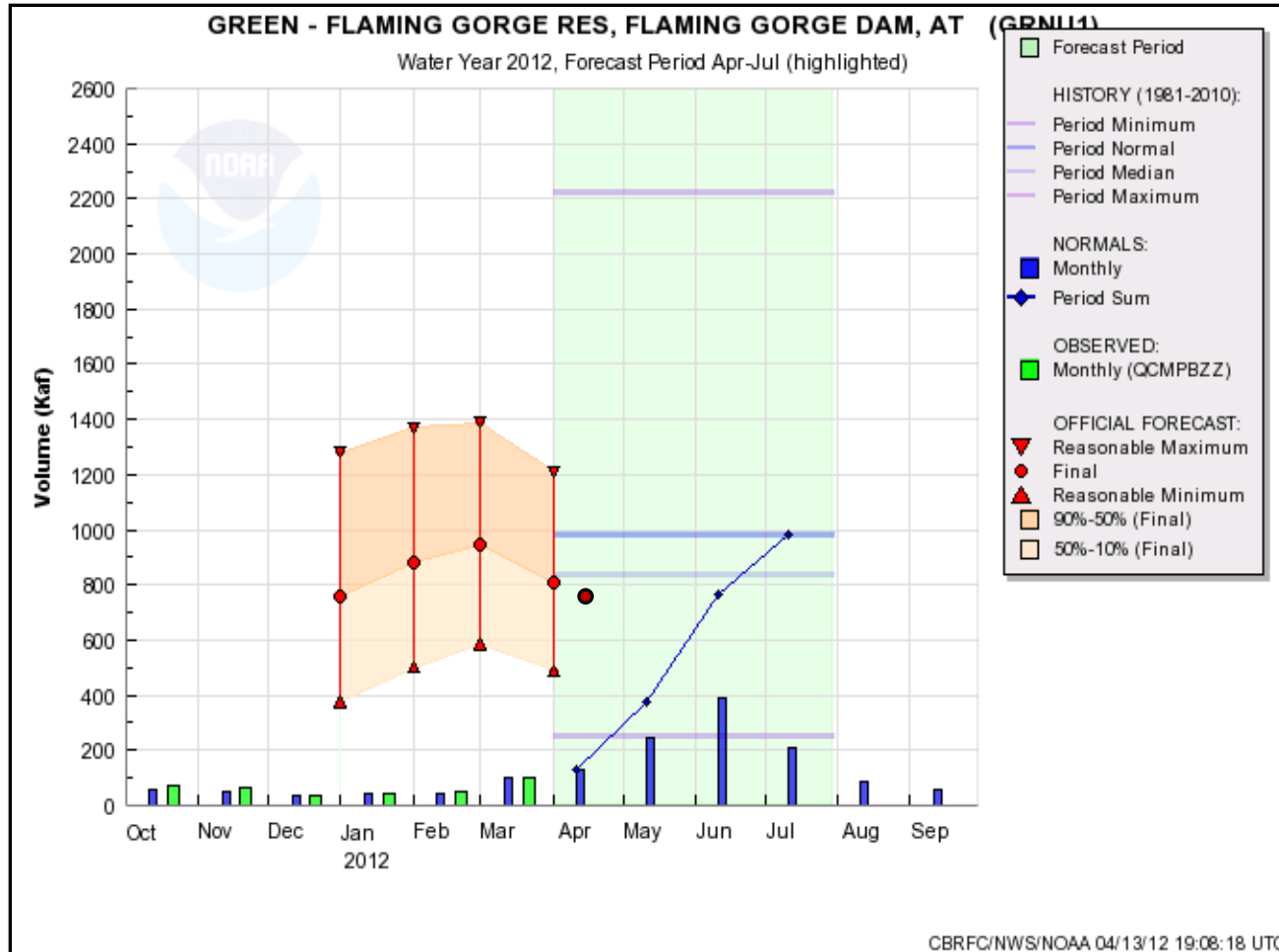
7-day Average Centered on 28 March 2012



Mid-Mar 2012 Plume of Model ENSO Predictions



FORECASTS: Upper Green



810 kaf

50% Exceedence (Official Forecast)

97%

of Historical Median

83%

of Historical Mean

490 kaf

90% Exceedence

1210 kaf

10% Exceedence

51st of 72

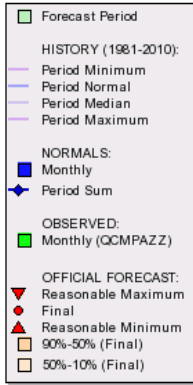
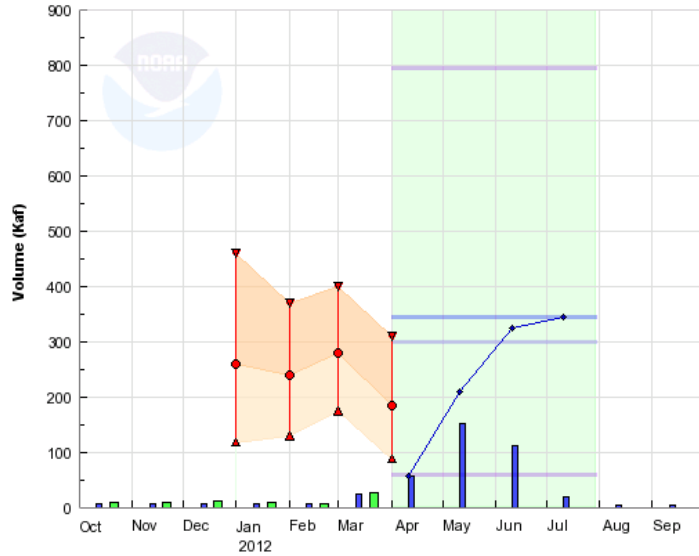
Official Historical Flows

**APRIL 16th Forecast:
785 KAF/80%**

FORECASTS: YAMPA

LITTLE SNAKE - LILY, NR (LILC2)

Water Year 2012, Forecast Period Apr-Jul (highlighted)



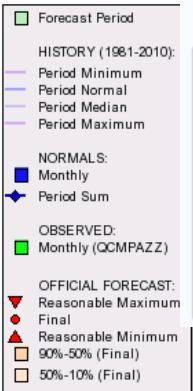
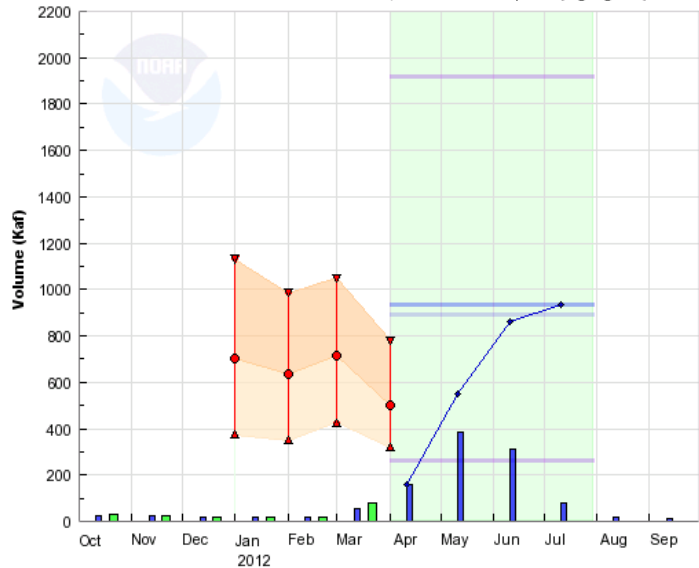
Seasonal Water Supply Forecast

Forecast Period: Apr-Jul

500 kaf 50% Exceedence (Official Forecast)		56% of Historical Median	54% of Historical Mean
320 kaf 90% Exceedence	780 kaf 10% Exceedence	46th of 53 Official Historical Flows	
Forecast Issued: Apr 1 2012		View Water Supply Forecast Plot	

YAMPA - MAYBELL, NR (MBLC2)

Water Year 2012, Forecast Period Apr-Jul (highlighted)

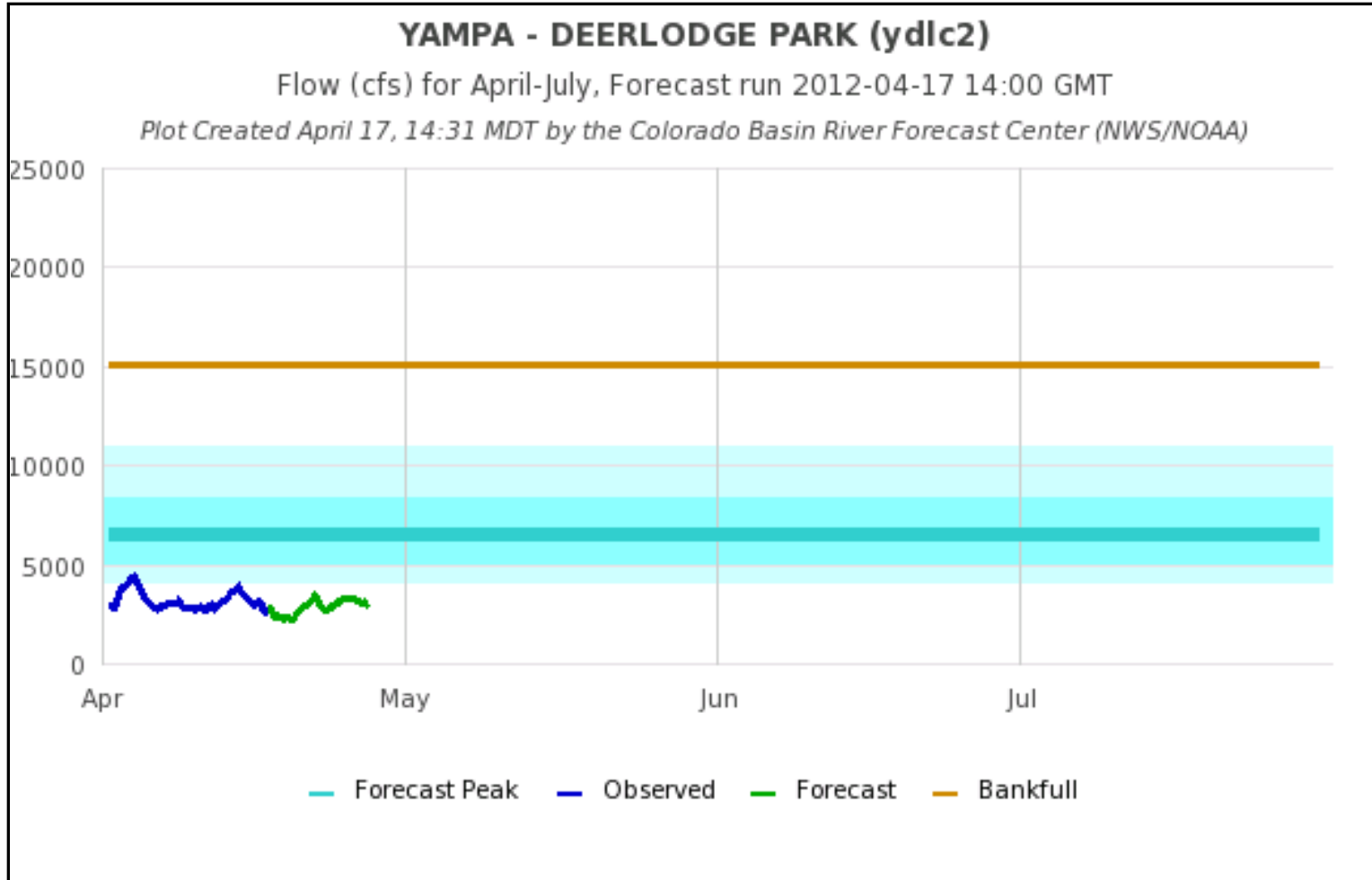


Seasonal Water Supply Forecast

Forecast Period: Apr-Jul

185 kaf 50% Exceedence (Official Forecast)		62% of Historical Median	54% of Historical Mean
88 kaf 90% Exceedence	310 kaf 10% Exceedence	76th of 90 Official Historical Flows	
Forecast Issued: Apr 1 2012		View Water Supply Forecast Plot	

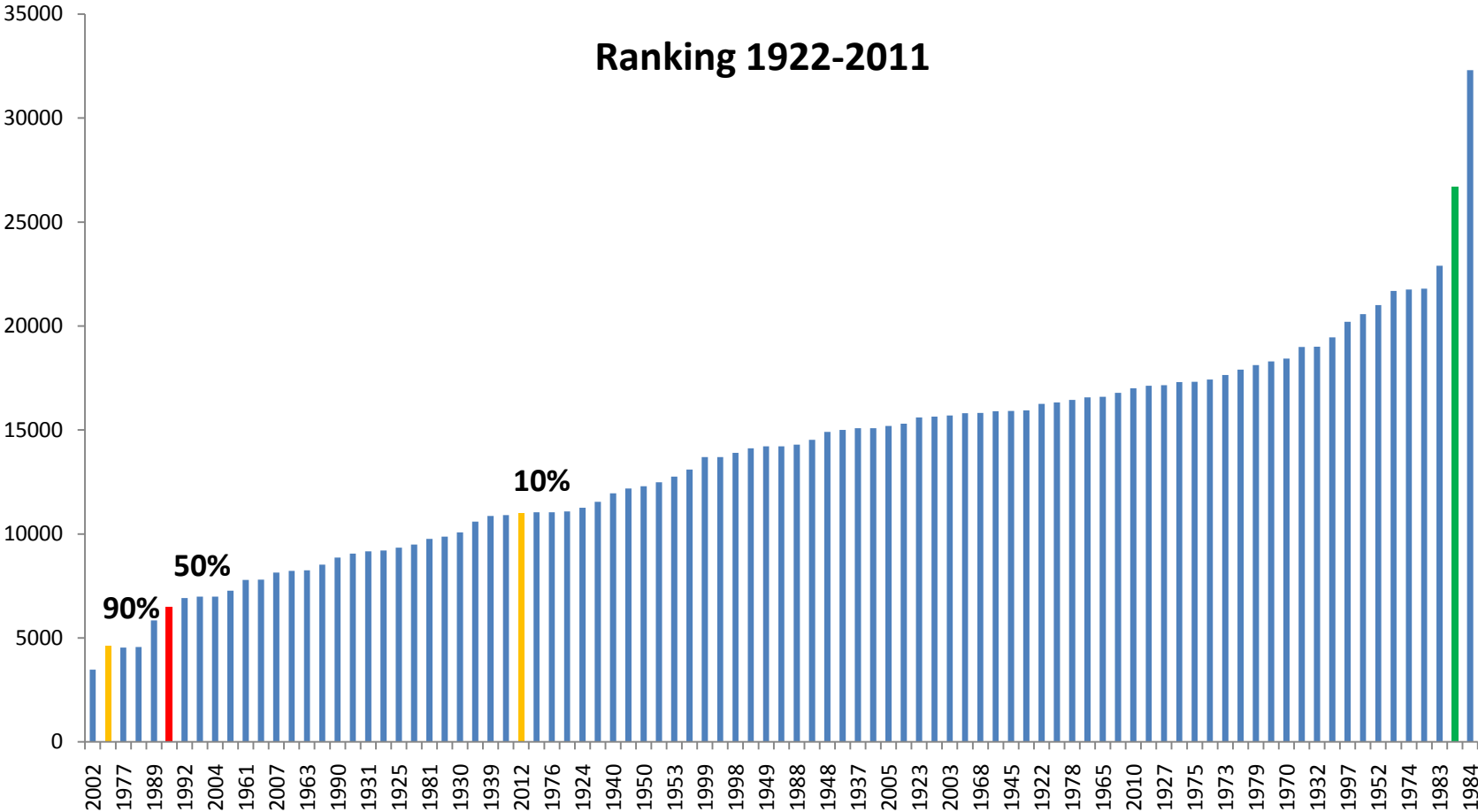
Peakflow Forecasts



90%	75%	50%	25%	10%
4,200	5,000	6,500	8,500	11,000

Ranking 1922-2011

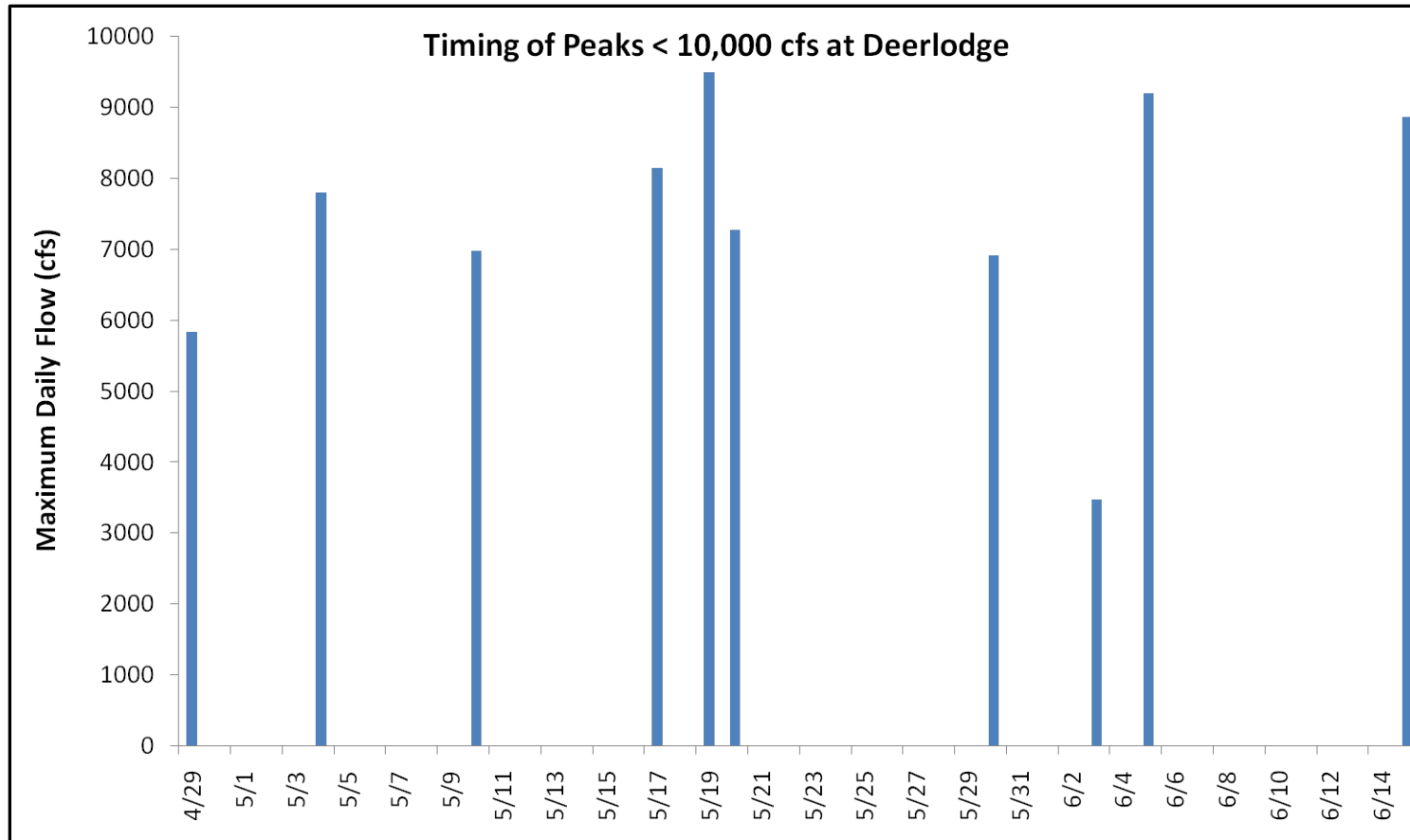
Maximum Daily Flow



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
 - Small snow pack years (like 2010) can flood with the right sequence of spring temperatures

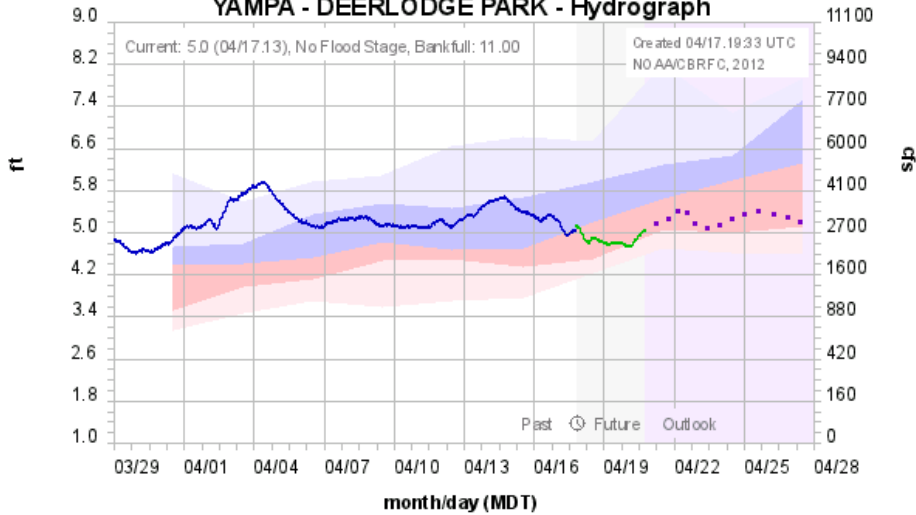
Uncertainty in Deerlodge Peak.....



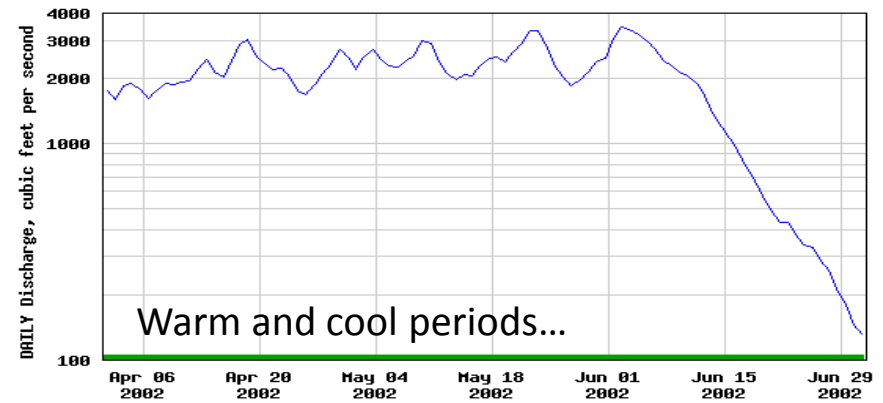
Historical timing ranges from late April to June for observed peaks similar to forecasted peak.

Possible Deerlodge Peak Scenarios

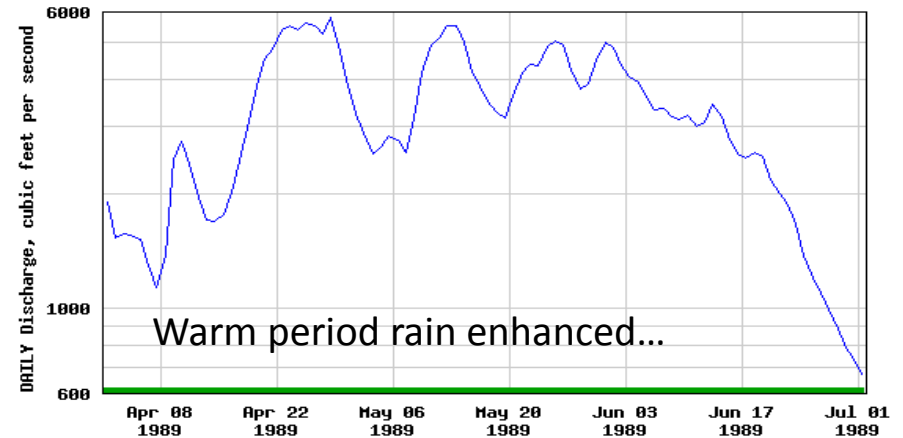
Colorado Basin River Forecast Center
YAMPA - DEERLODGE PARK - Hydrograph



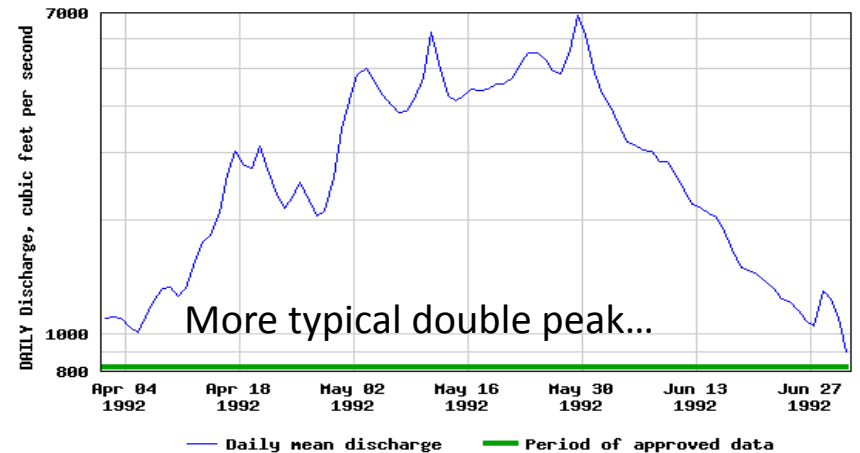
USGS 09260050 YAMPA RIVER AT DEERLODGE PARK, CO



USGS 09260050 YAMPA RIVER AT DEERLODGE PARK, CO



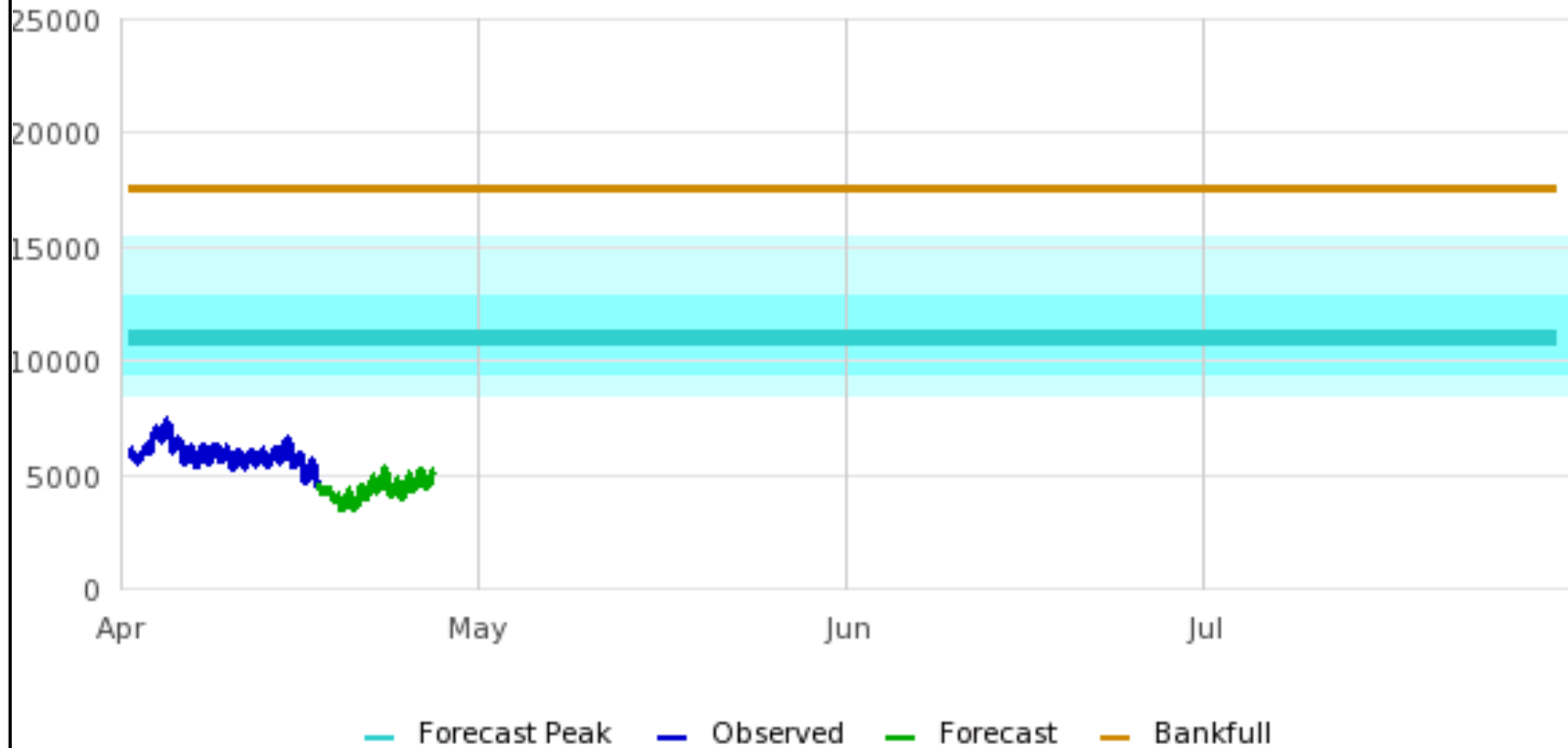
USGS 09260050 YAMPA RIVER AT DEERLODGE PARK, CO



GREEN - JENSEN, NR (jesu1)

Flow (cfs) for April-July, Forecast run 2012-04-17 14:00 GMT

Plot Created April 17, 14:30 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



90%	75%	50%	25%	10%
8,500	9,500	11,000	13,000	15,500

Assuming 4,600 cfs release from Flaming Gorge

Questions/Comments?



Ashley Nielson

CBRFC Hydrologist

Phone: 801.524.5130

Email: ashley.nielson@noaa.gov

