

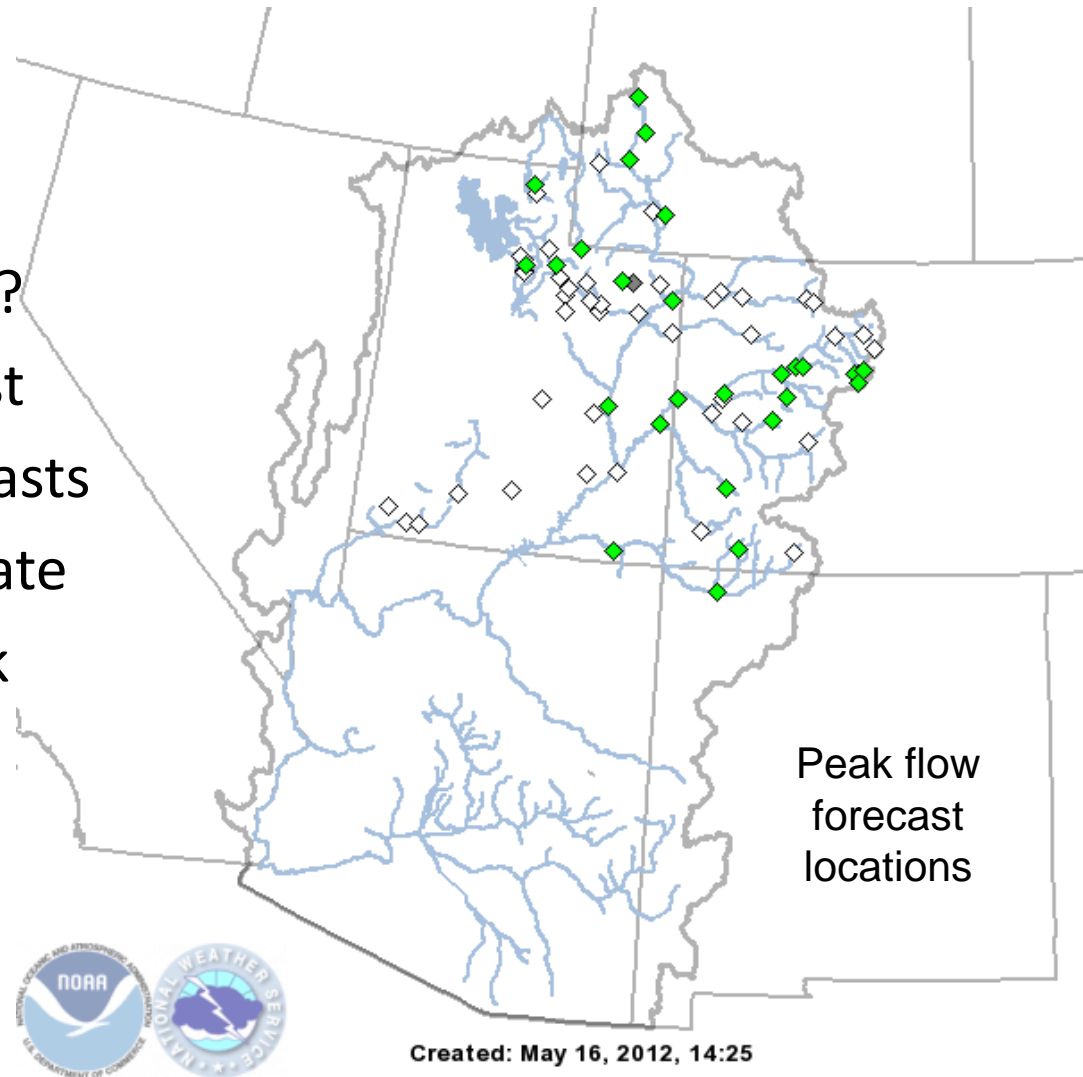
**CBRFC**  
**May 2012 mid-month**  
**Peak Flow Forecast Webinar**

**1 pm, May 17, 2012**

**Greg Smith**

# Today's Presentation

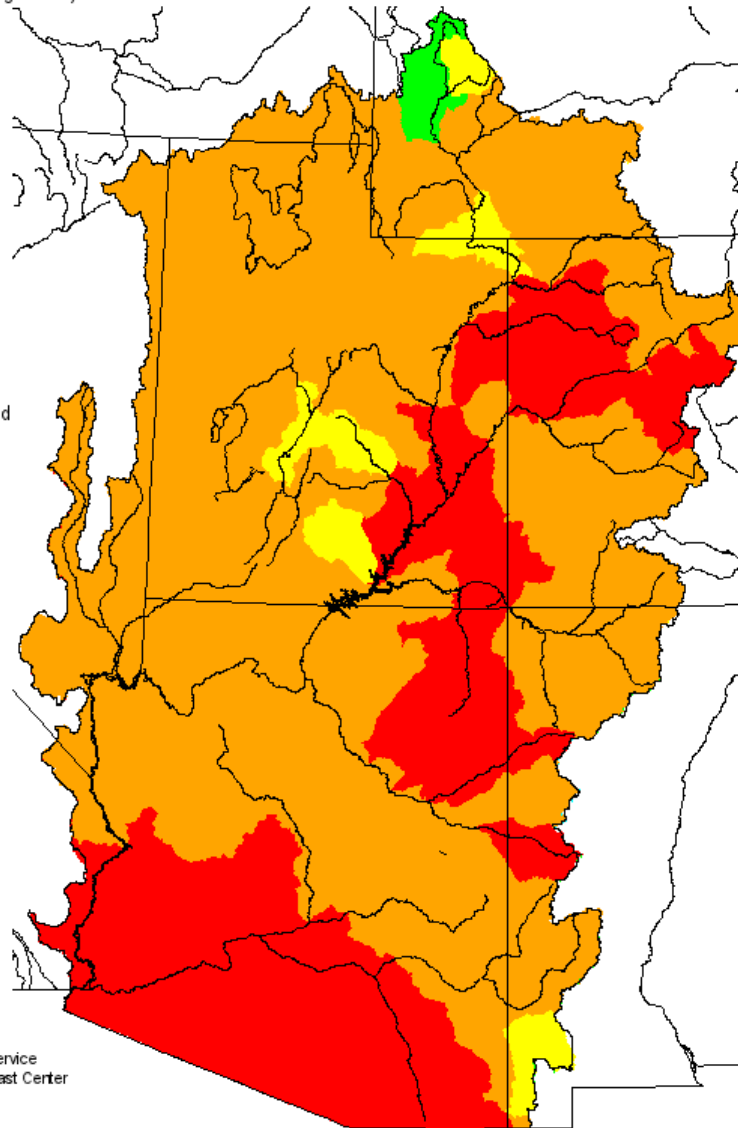
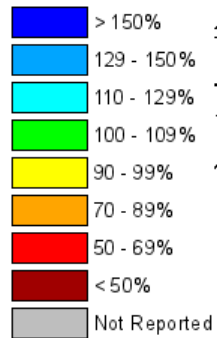
- Spring precipitation review
- Any snow Left ? Where is it?
- Short term weather forecast
- Peak Flows: Review / Forecasts
- Mid May water supply update
- Long term seasonal outlook



# Seasonal Precipitation, October 2011 - April 2012

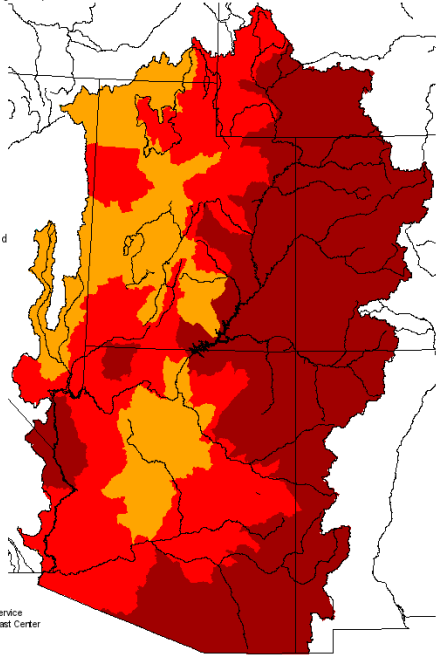
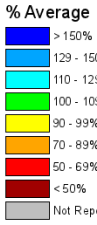
(Averaged by Hydrologic Unit)

## % Average



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 Precipitation for March 2012  
(Averaged by Hydrologic Unit)



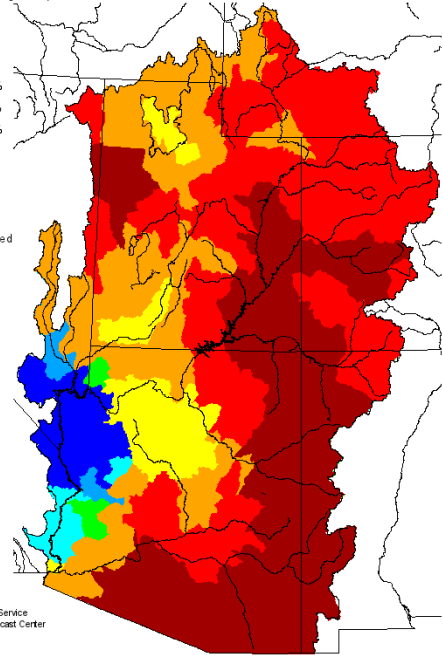
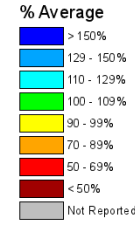
Prepared by  
NOAA National Weather Service  
Colorado Basin River Forecast Center  
Salt Lake City, Utah  
www.cbrfc.noaa.gov

Very Warm & Very Dry  
Spring



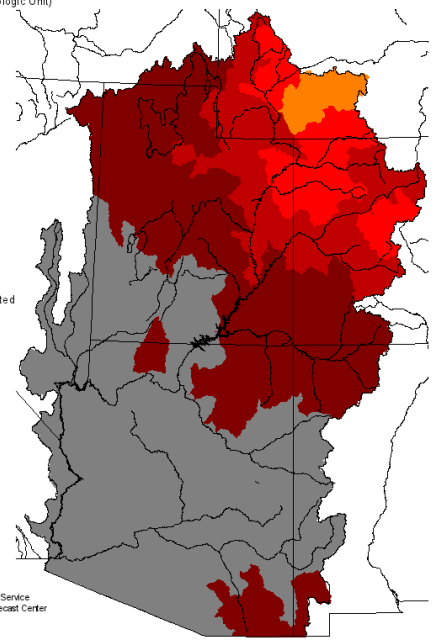
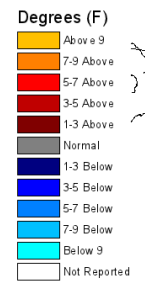
Precipitation

Monthly Precipitation for April 2012  
(Averaged by Hydrologic Unit)



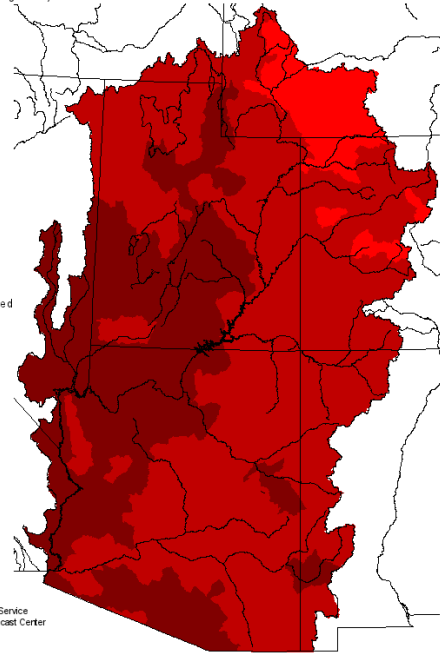
Prepared by  
NOAA National Weather Service  
Colorado Basin River Forecast Center  
Salt Lake City, Utah  
www.cbrfc.noaa.gov

Monthly Max Temp Deviation for March 2012  
(Averaged by Hydrologic Unit)



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

Monthly Max Temp Deviation for April 2012  
(Averaged by Hydrologic Unit)



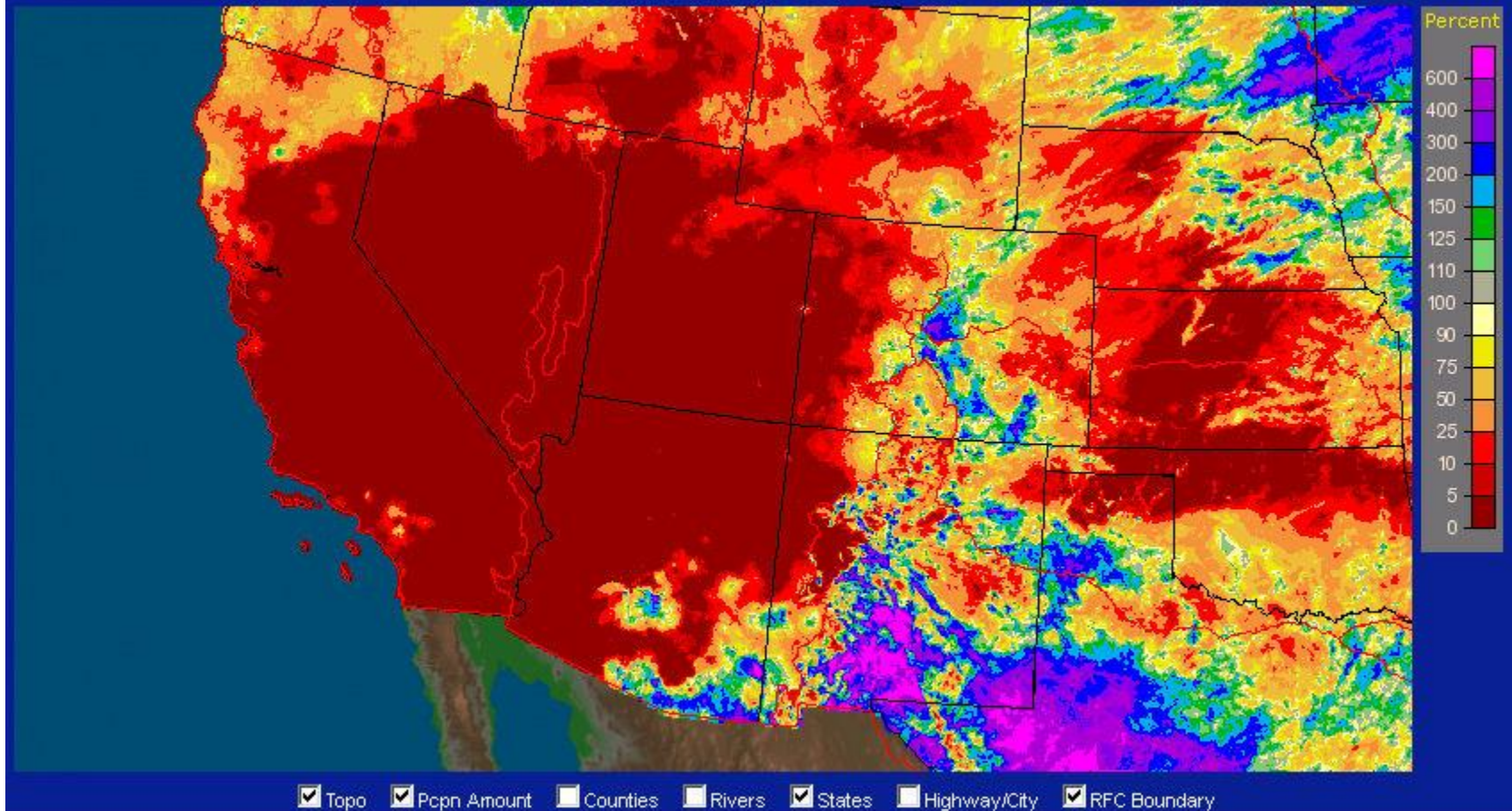
Prepared by  
NOAA National Weather Service  
Colorado Basin River Forecast Center  
Salt Lake City, Utah  
www.cbrfc.noaa.gov



Temperature

# First Half of May Precipitation

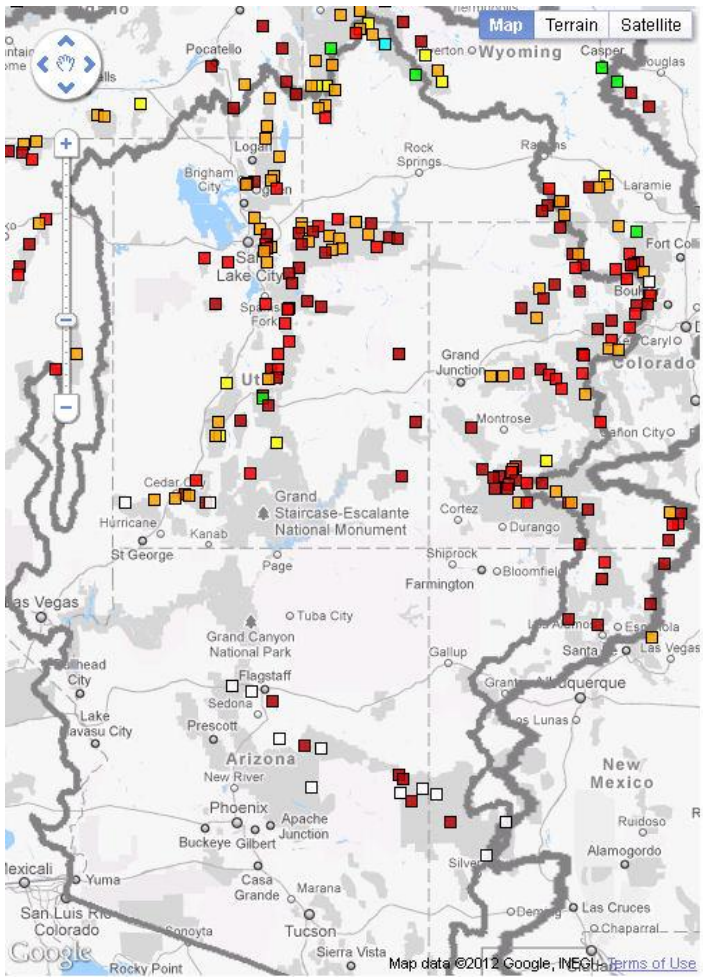
Colorado Basin RFC Salt Lake City, UT: Current 14-Day Percent of Normal Precipitation  
Valid at 5/15/2012 1200 UTC - Created 5/15/12 20:03 UTC



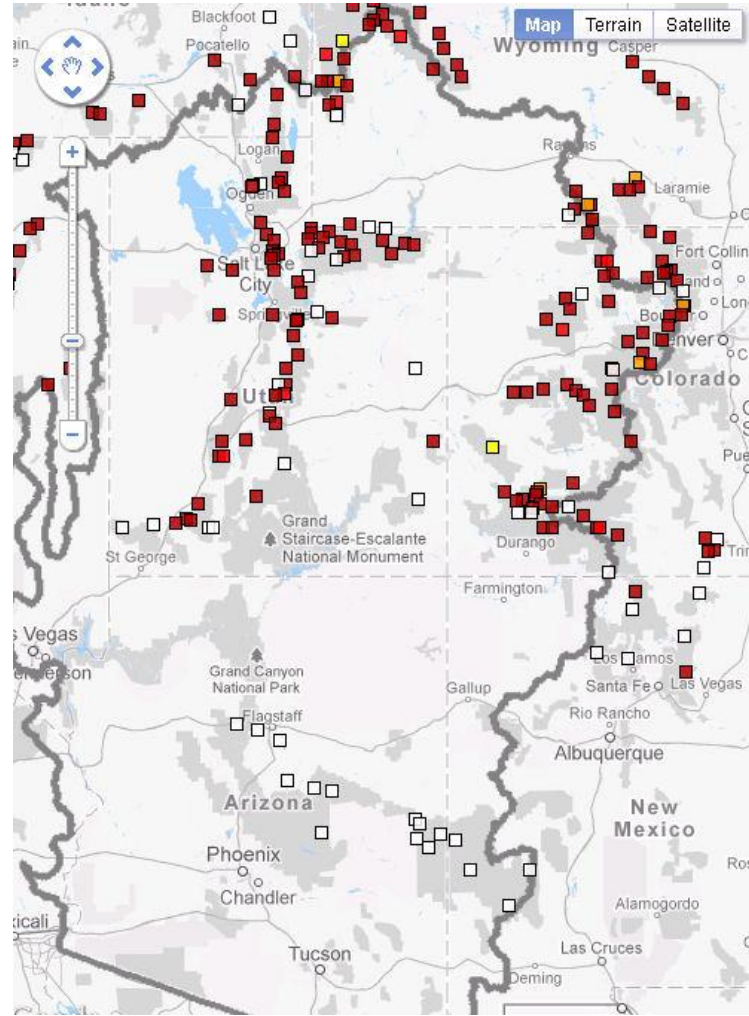
Web Reference: <http://water.weather.gov/precip>



# Snow

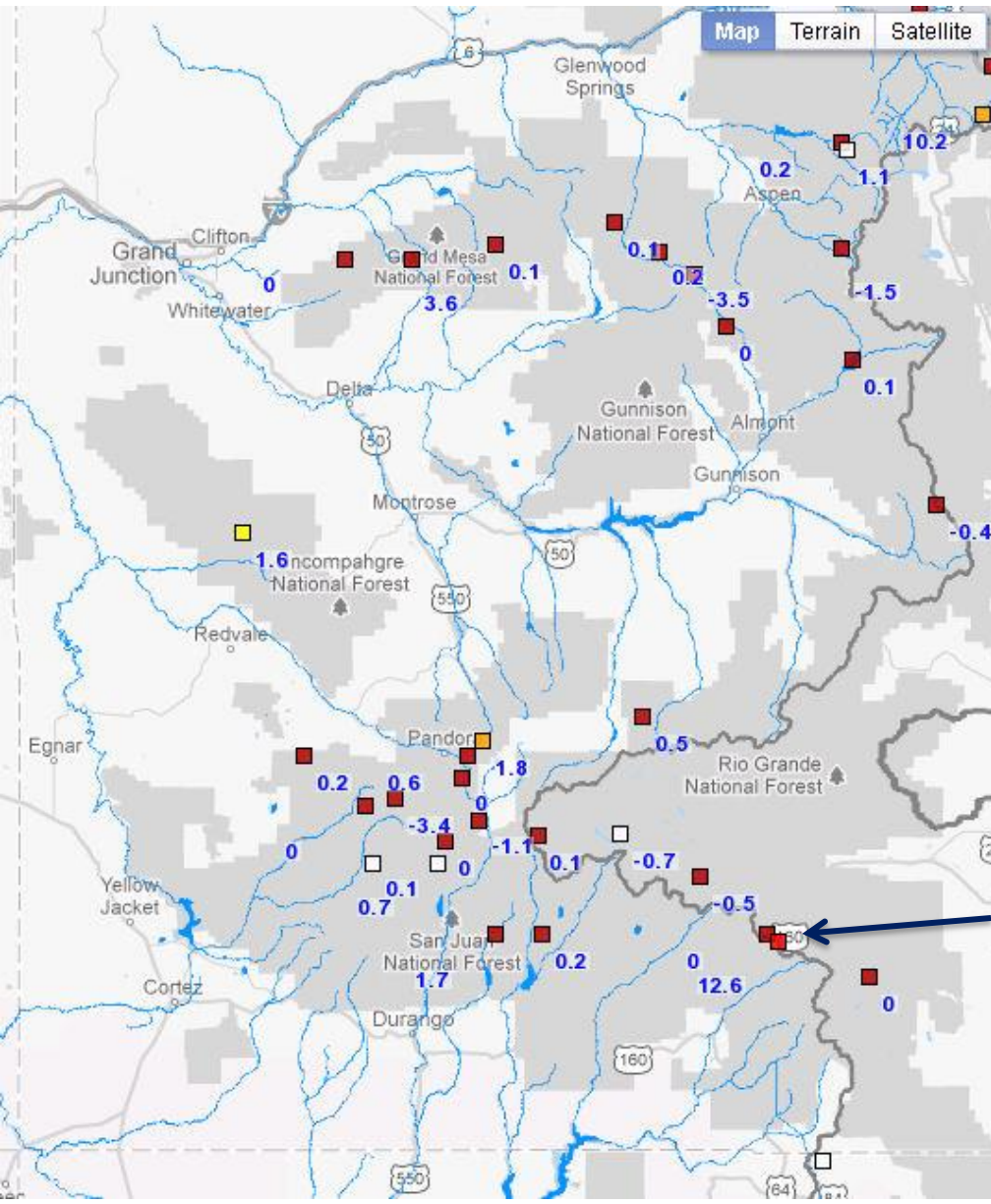


April 17 2012



May 16 2012

# SNOW: Gunnison – Dolores – San Juan



**Overlays (slows response)**

- Rivers
- RFC
- Basins
- Active Basins
- Grids (Precip etc.)

**Display Options**

- Show NWS ID
- Show Data

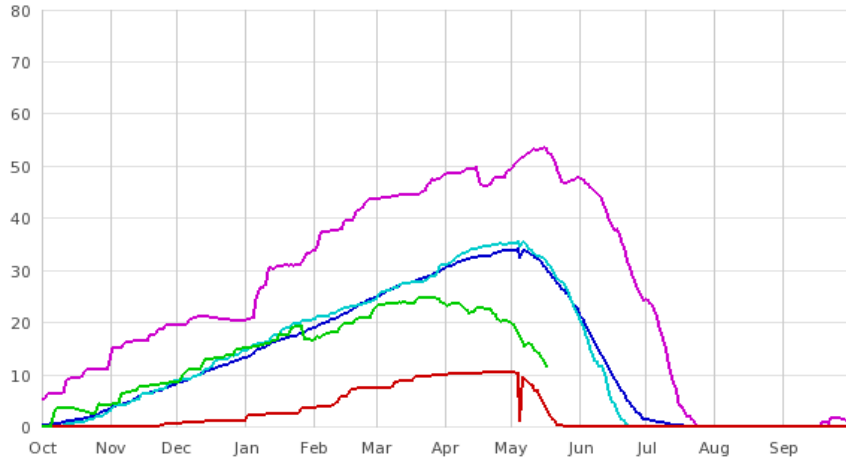
**Snow Point %Avg SWE**

- No Data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150

**WOLF CREEK SUMMIT (wcsc2)**

Inches of Snow Water Equivalent (SWE)

*Plot Created May 17, 10:13 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)*

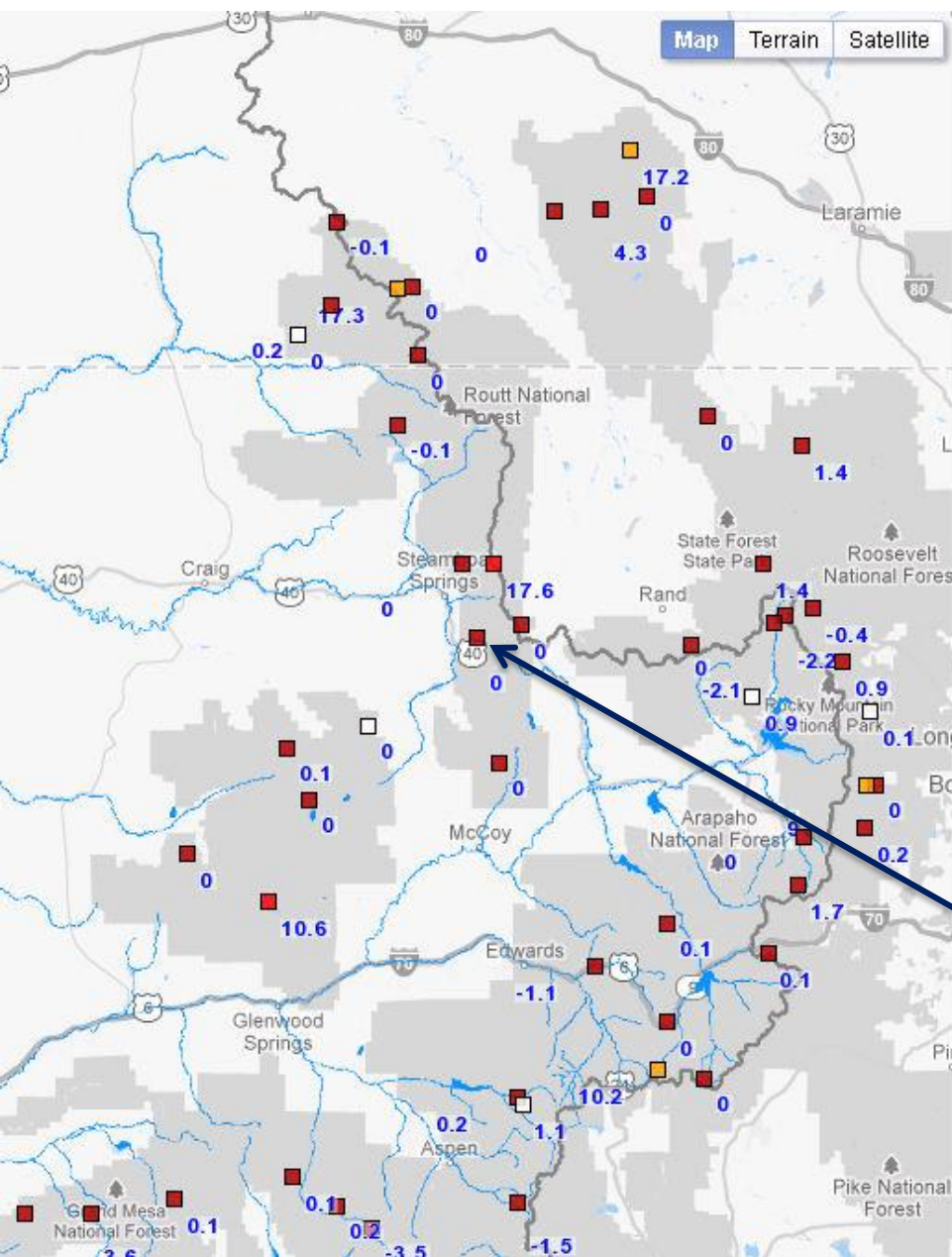


— Avg 81-10 — Med 81-10 — Max 81-10 — Min 81-10 — 2012

May 16 2012



# SNOW: Upper Colorado Mainstem – Yampa – White



**Overlays (slows response)**

- Rivers
- RFC
- Basins
- Active Basins
- Grids (Precip etc.)

**Display Options**

- Show NWS ID
- Show Data

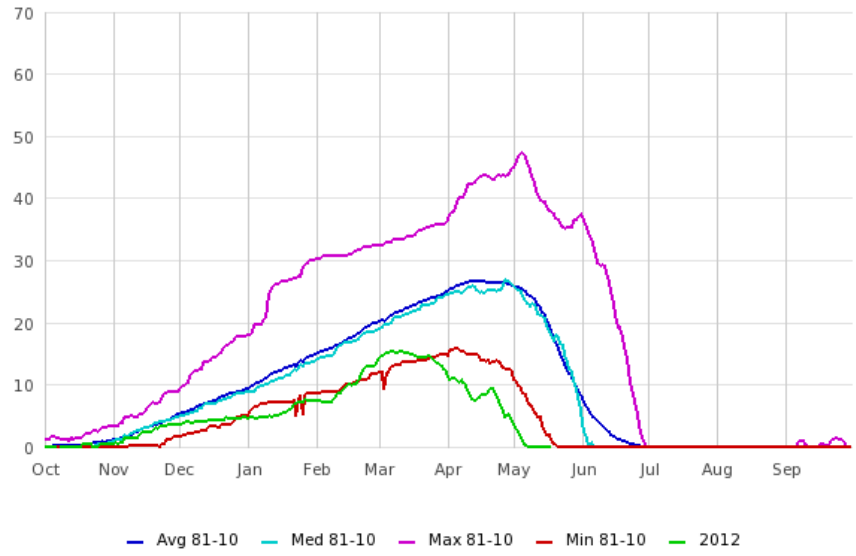
**Snow Point %Avg SWE**

- No Data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150

**RABBIT EARS (resc2)**

Inches of Snow Water Equivalent (SWE)

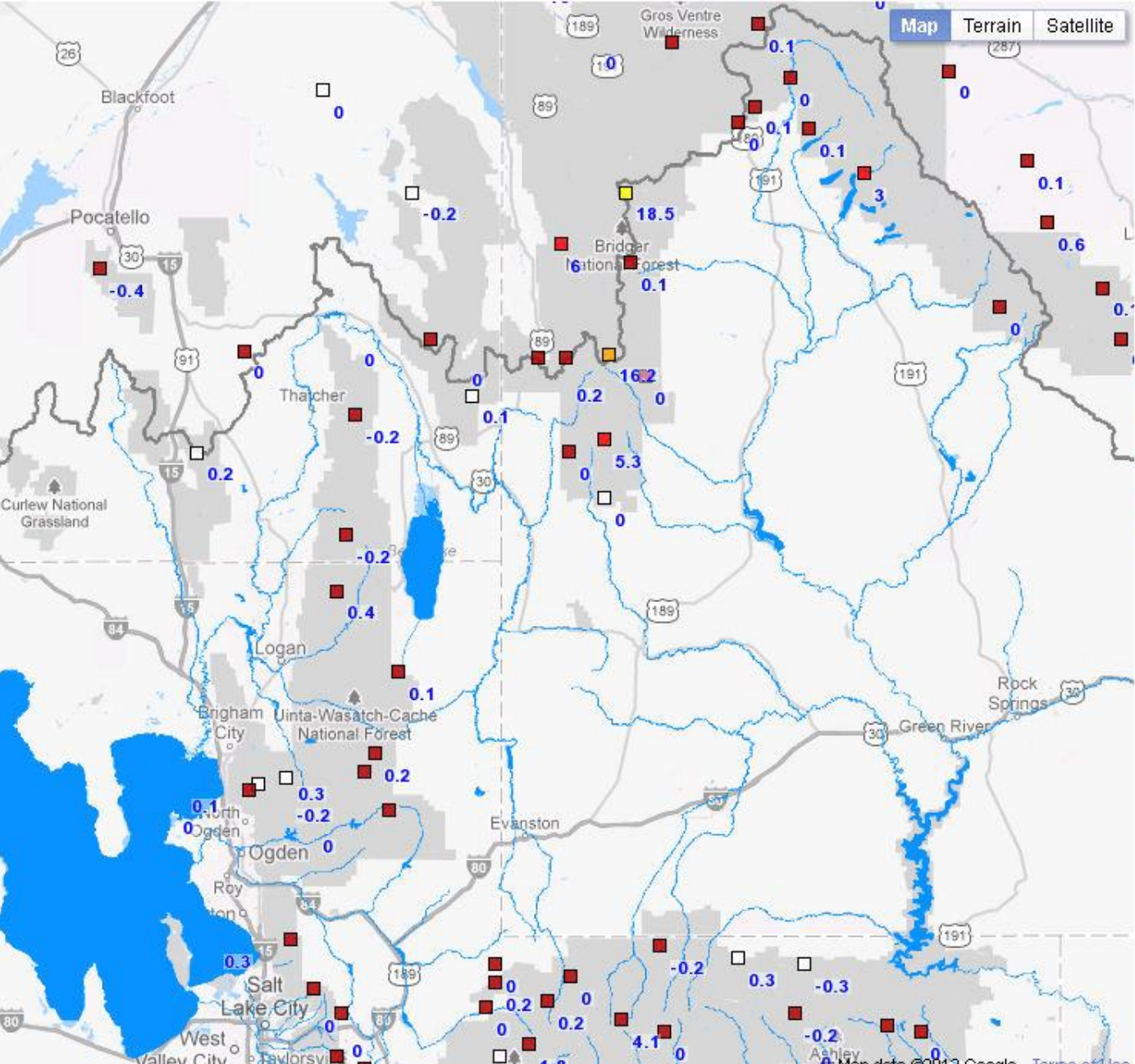
Plot Created May 17, 10:24 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



May 16 2012



# SNOW: Upper Green – Bear - Weber



**Overlays (slows response)**

- Rivers
- RFC
- Basins
- Active Basins
- Grids (Precip etc.)

**Display Options**

- Show NWS ID
- Show Data

**Snow Point %Avg SWE**

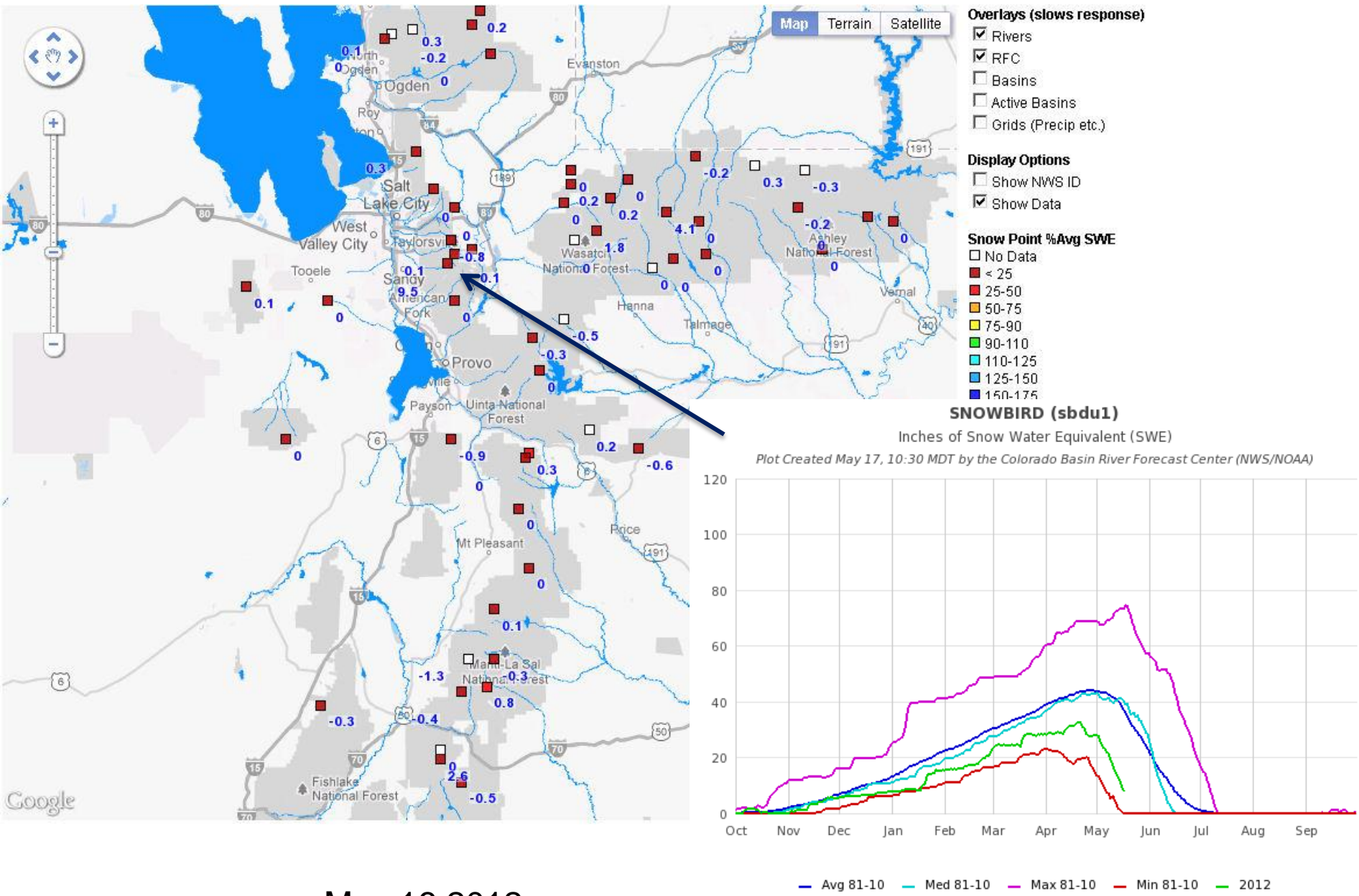
- No Data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150
- 150-175
- >175

**Snow Point Types**

- All
- No Data
- No Average
- < 7000
- 7000-8000
- 8000-9000
- 9000-10000
- > 10000

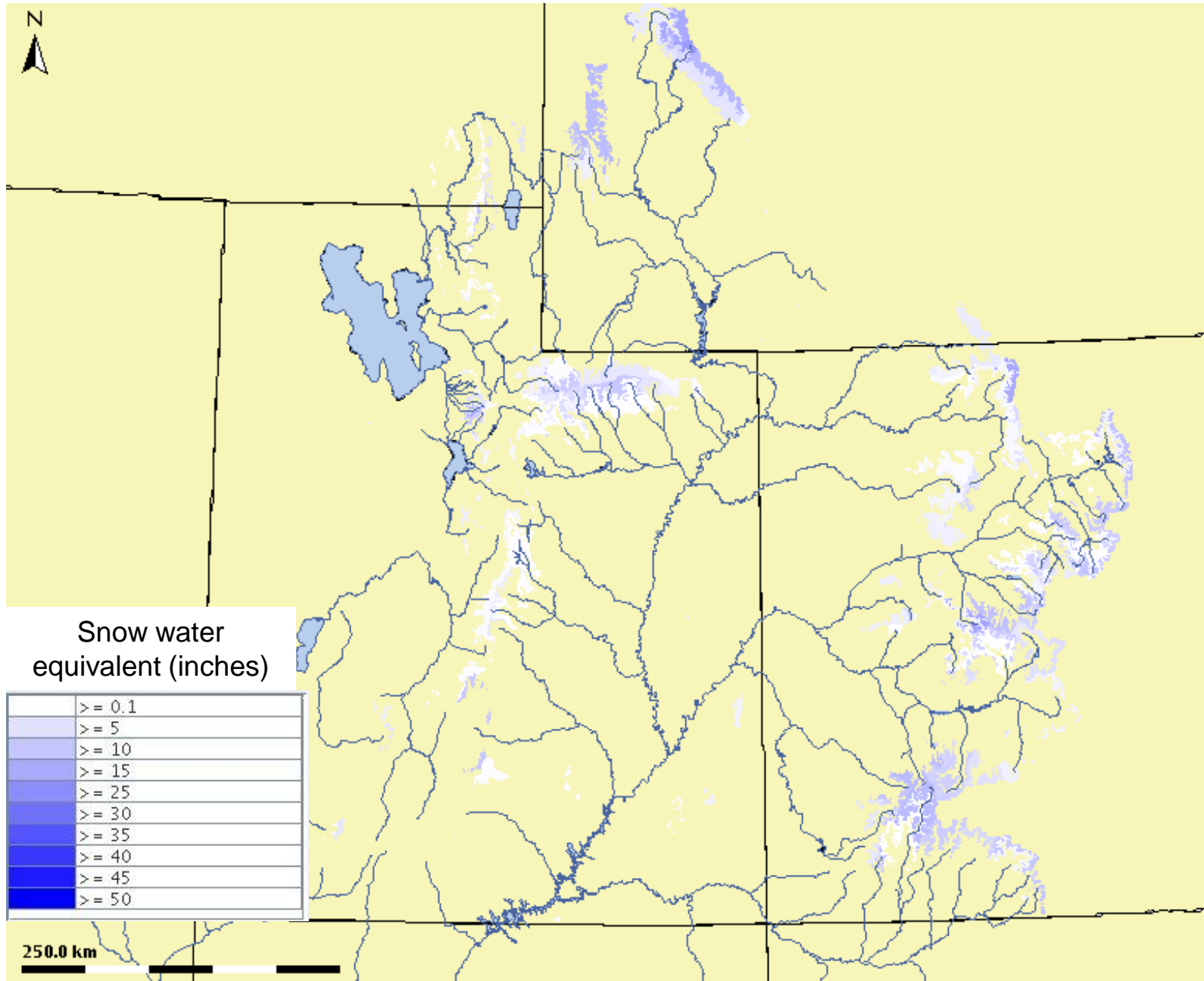
May 16 2012

# SNOW: Six Creeks – Provo - Duchesne – Sevier



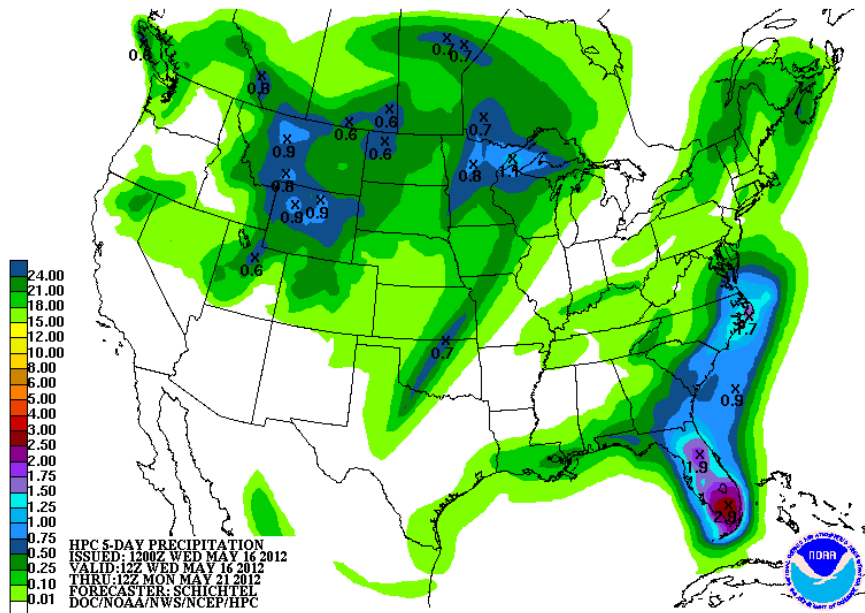
May 16 2012

# May 15<sup>th</sup> Modeled Snow – Snow 17 Model – Community Hydrologic Prediction System



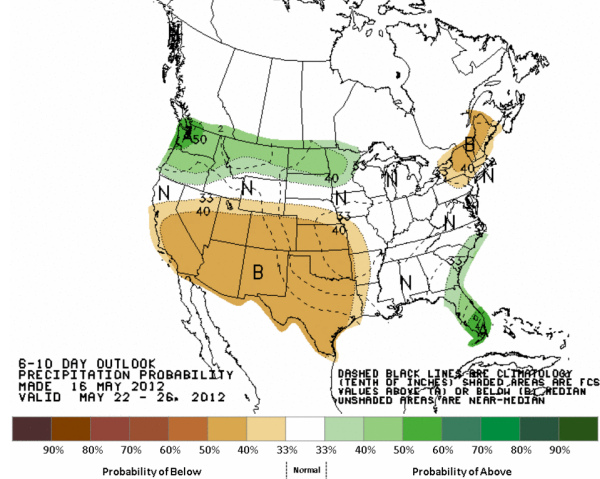


# Forecast Precipitation

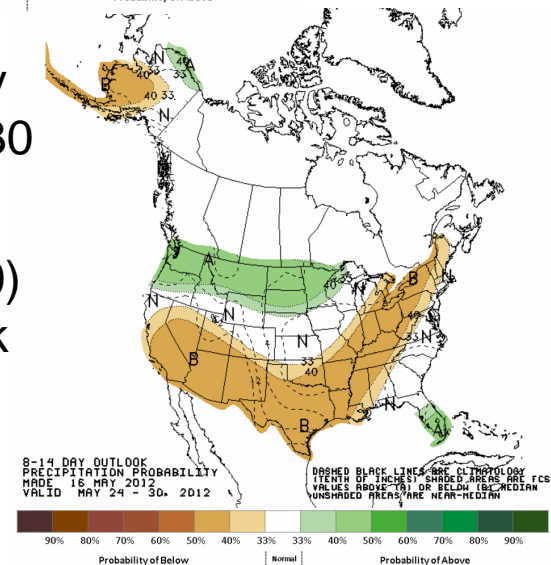


5 day total  
5/16 – 5/21

6-10 day  
5/22 – 5/28



8-14 day  
5/24 – 5/30



- Quick moving storm Friday & Saturday (precip north of I-70)
- Dry with seasonal temps or slightly warmer early next week
- Weak storm system possible mid or late next week



# What is a Peak Flow Forecast?

- Snowmelt Mean Daily Maximum Flow (April-July)
- Probabilistic Forecasts
  - Exceedence Probabilities -10%,25%,50%, 75%, 90%
- Issued (at least) monthly from March-June.
- ~60 forecast points – some unregulated, some regulated
- Updated as needed
- Forecast Users include:
  - Emergency Managers
  - USGS hydrologists
  - Water Managers
  - River Recreation

# Spring Weather Really Matters – What matters now?

## – Rain

- Rain has and will play a larger role in the magnitude of peaks this season. Some peaks during the April-July period this will be primarily due to rainfall.

## – Temperatures

- Prolonged period (~week or so) of above average temperatures tend to kick out a surge of higher elevation snow. This year just 2-3 days then a cooldown.

## – Reservoir Releases, Diversions, Irrigation.

## – Where peaks are still anticipated, how well does our model represent the remaining snow (high elevations areas)

# What streams have already peaked ?

## What is yet to peak ?

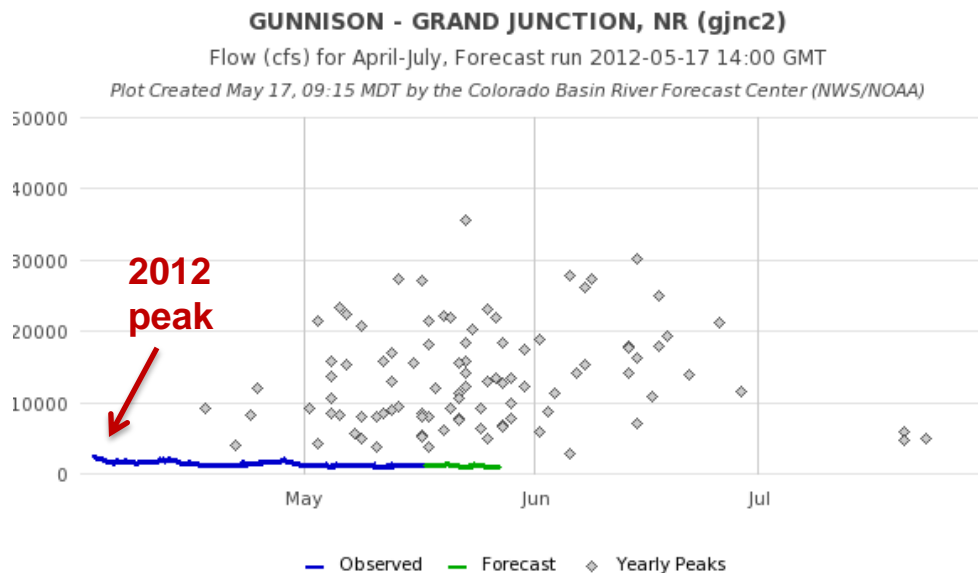
### **What may still peak ?**

- Upper Green River Basin
- Higher elevation streams where some snow remains
  - San Juan Basin (Animas)
  - Dolores Basin (San Miguel)
  - Duchesne Basin (Uinta)
  - Upper Colorado (Roaring Fork, Crystal, Eagle)
  - Weber Basin (Oakley)
- Streams affected by reservoir releases (i.e. below Navajo reservoir & Flaming Gorge)

### **What has peaked ?**

- Everything Else (incl. Yampa, Gunnison, upper San Juan)

Characteristics of 2012 peaks: Early, Low, & Flat. Multiple peaks of similar magnitude. Peaks significantly affected by rain.



Earliest:

2012 2480 4/2  
 2002: 1700 4/13  
 1971: 6260 4/16

Lowest:

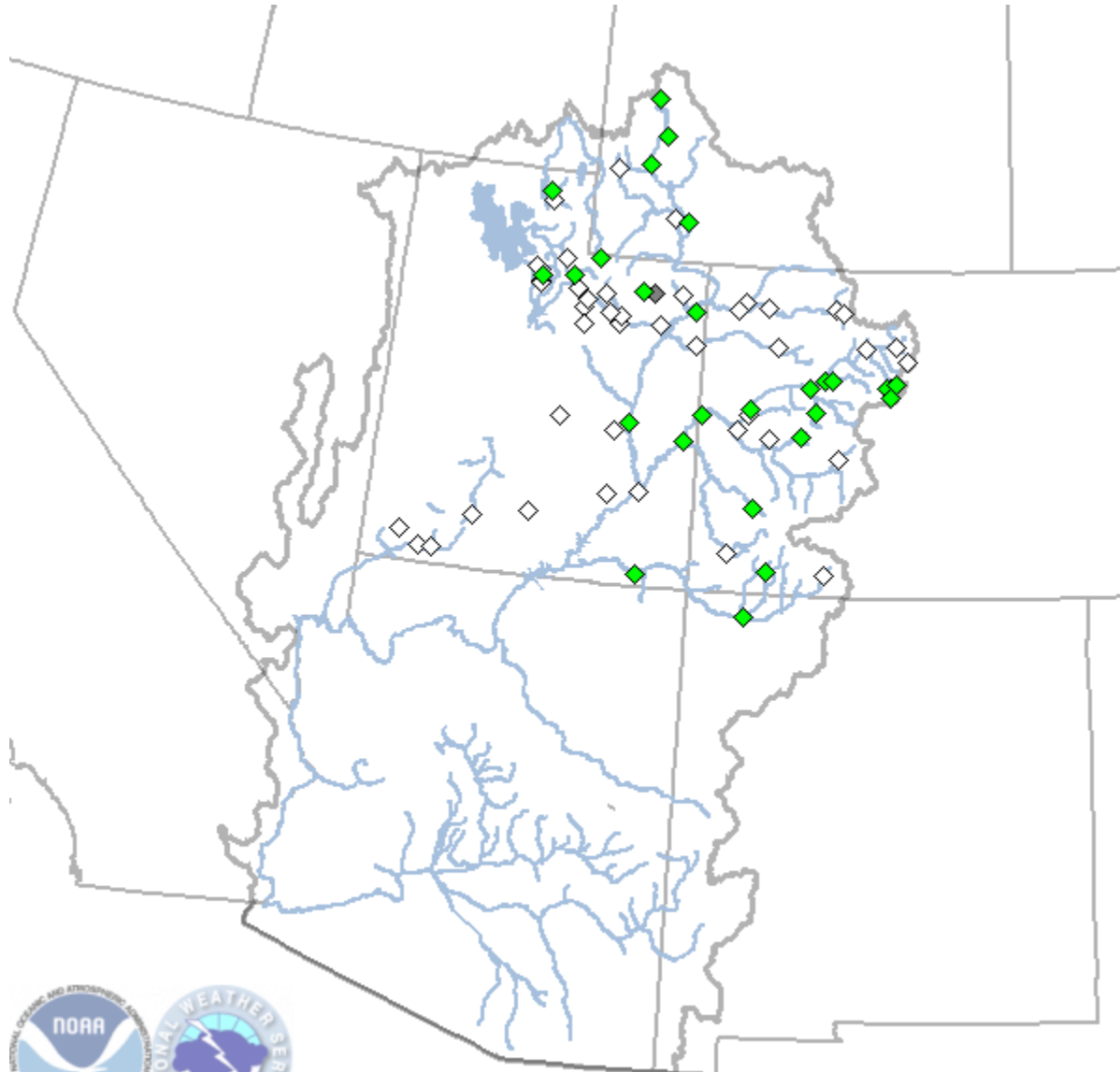
1977: 1380 7/25  
 2002: 1700 4/13  
 2012: 2480 4/2

Yampa – Deerlodge:	5360 cfs	4/29	2 <sup>nd</sup> lowest tied for earliest (4/29/89)
White – Meeker:	1070 cfs	4/27	3 <sup>rd</sup> lowest and earliest*
Elk – Milner:	1860 cfs	4/28	3 <sup>rd</sup> lowest and earliest*
San Juan-Pagosa Spgs:	1230 cfs	4/27	7 <sup>th</sup> lowest and 2 <sup>nd</sup> earliest (4/16/02)
Big Brush Creek-Vernal:	116 cfs	4/27	2 <sup>nd</sup> lowest and 2 <sup>nd</sup> earliest (4/23/89)
Provo – Woodland:	965 cfs	5/11	4 <sup>th</sup> lowest and 5 <sup>th</sup> earliest

Numerous others among the top 10 earliest and lowest



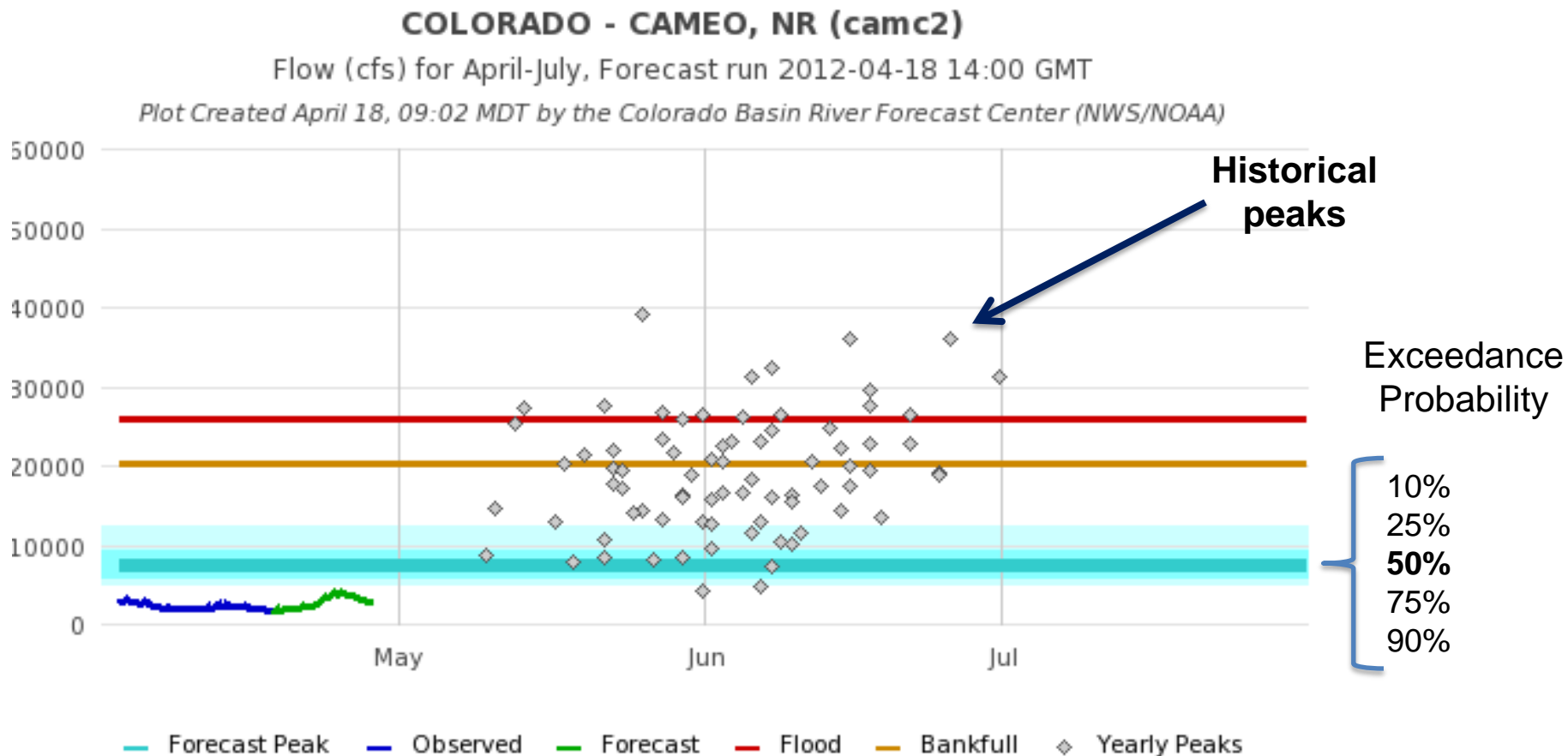
# May 16th Peak Flow Forecasts



Created: May 16, 2012, 14:25

# Peak Flow Forecast Graphic

Accessible from peak flow map, list, publication, and CBRFC main web page

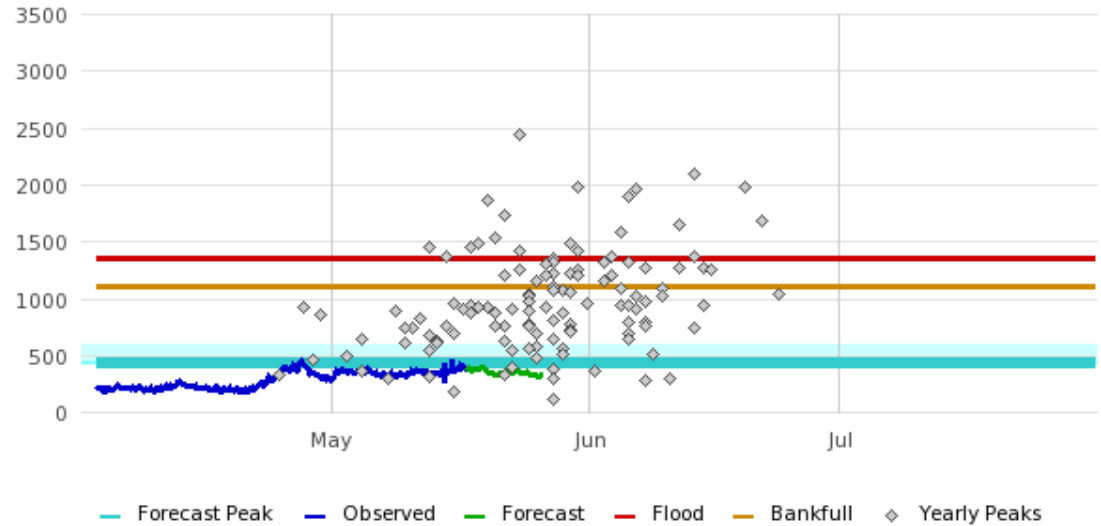


Historical yearly peaks are instantaneous , forecasts are mean daily peaks (CFS)

### LOGAN - LOGAN, NR, STATE DAM, ABV (lgnu1)

Flow (cfs) for April-July, Forecast run 2012-05-16 16:00 GMT

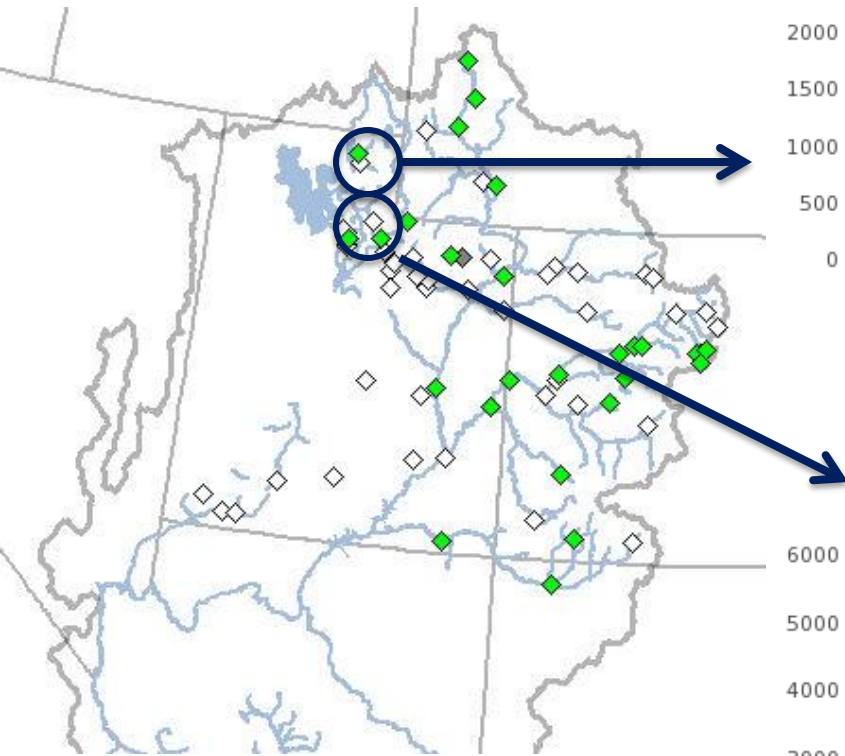
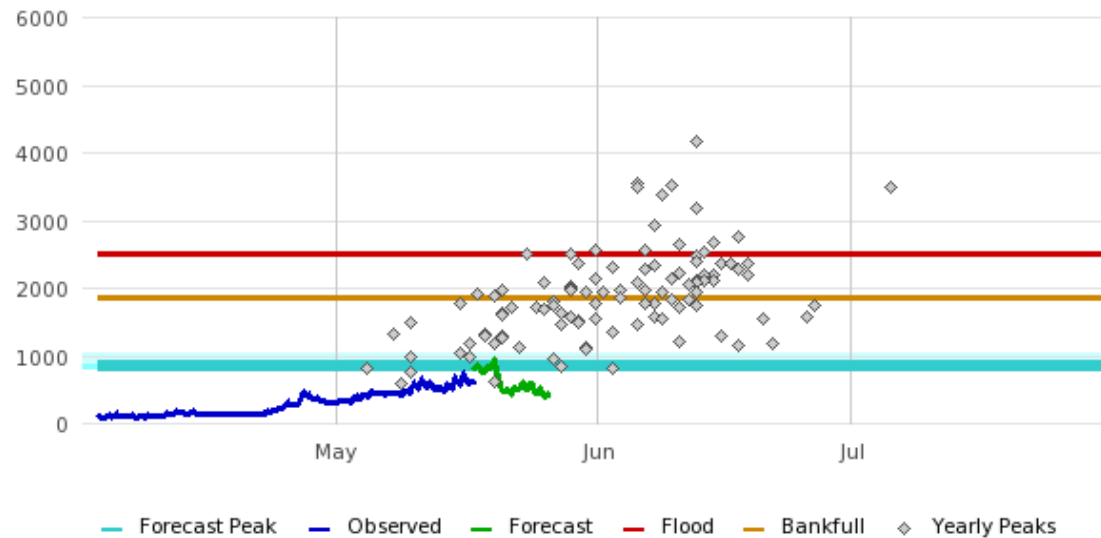
Plot Created May 17, 07:43 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)

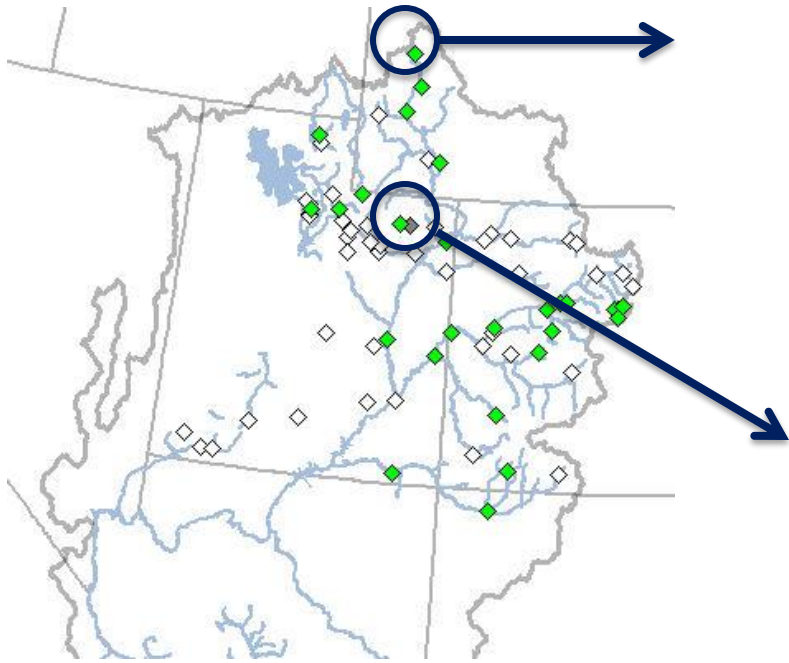


### WEBER - OAKLEY, NR (oawu1)

Flow (cfs) for April-July, Forecast run 2012-05-16 16:00 GMT

Plot Created May 17, 07:58 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)

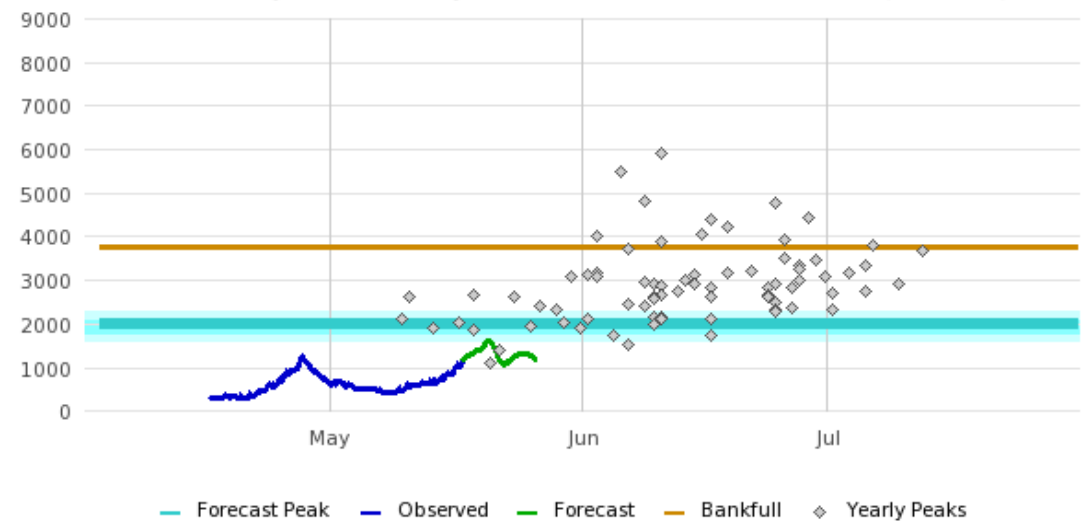




**GREEN - DANIEL, NR, WARREN BRIDGE, AT (wbrw4)**

Flow (cfs) for April-July, Forecast run 2012-05-16 16:00 GMT

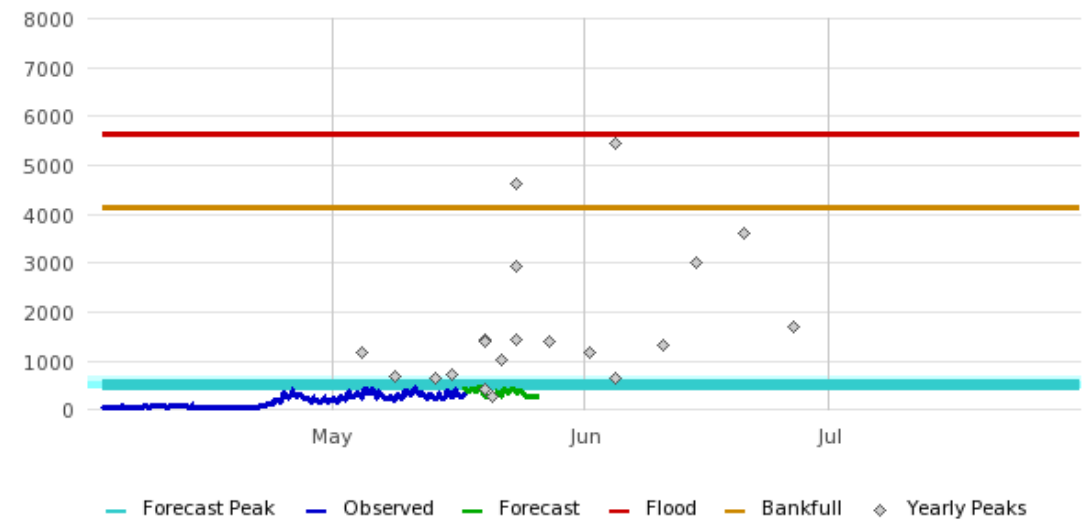
Plot Created May 17, 08:00 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



**UINTA - NEOLA, NR (neuu1)**

Flow (cfs) for April-July, Forecast run 2012-05-16 16:00 GMT

Plot Created May 17, 08:01 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)

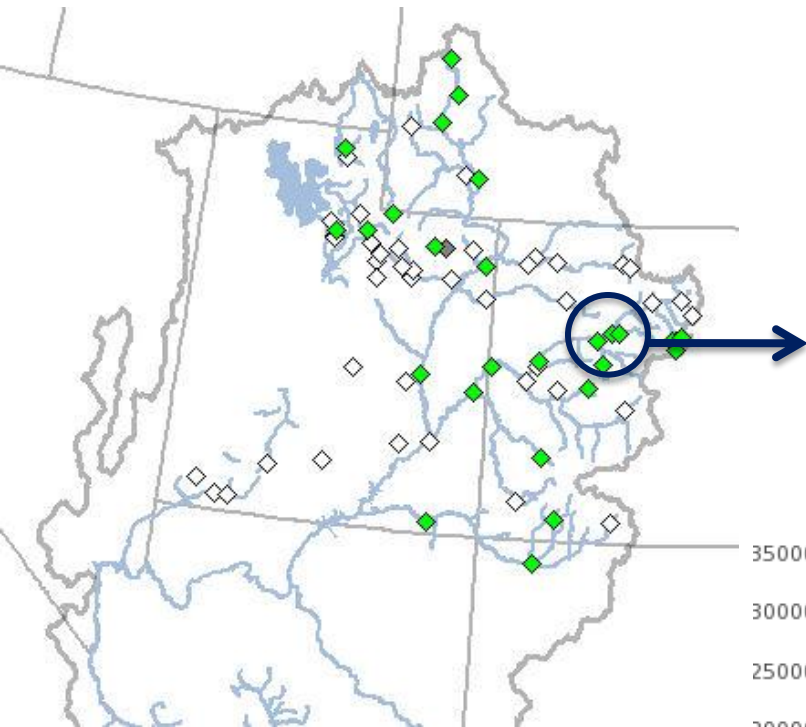
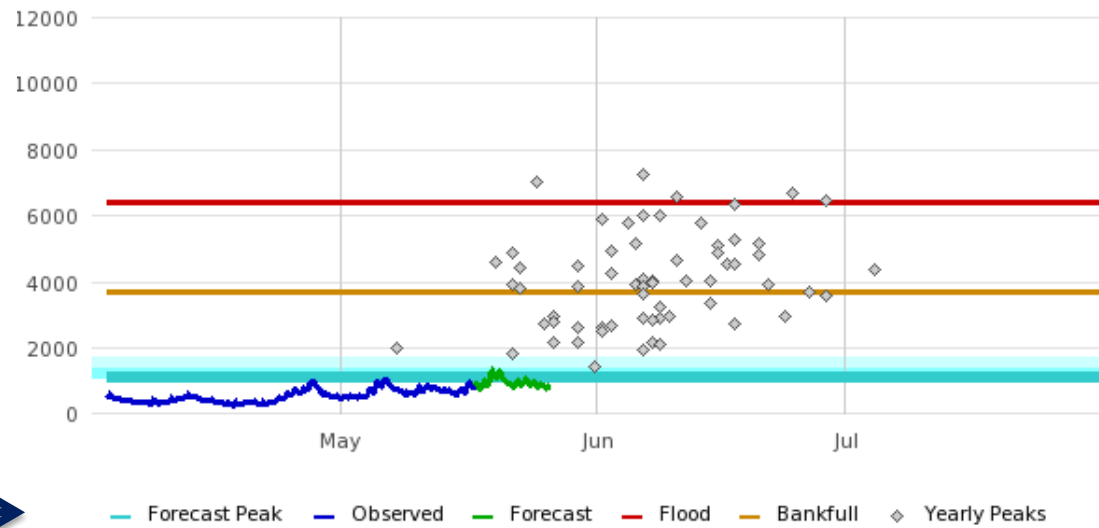




### EAGLE - GYPSUM, BLO (gpsc2)

Flow (cfs) for April-July, Forecast run 2012-05-16 14:00 GMT

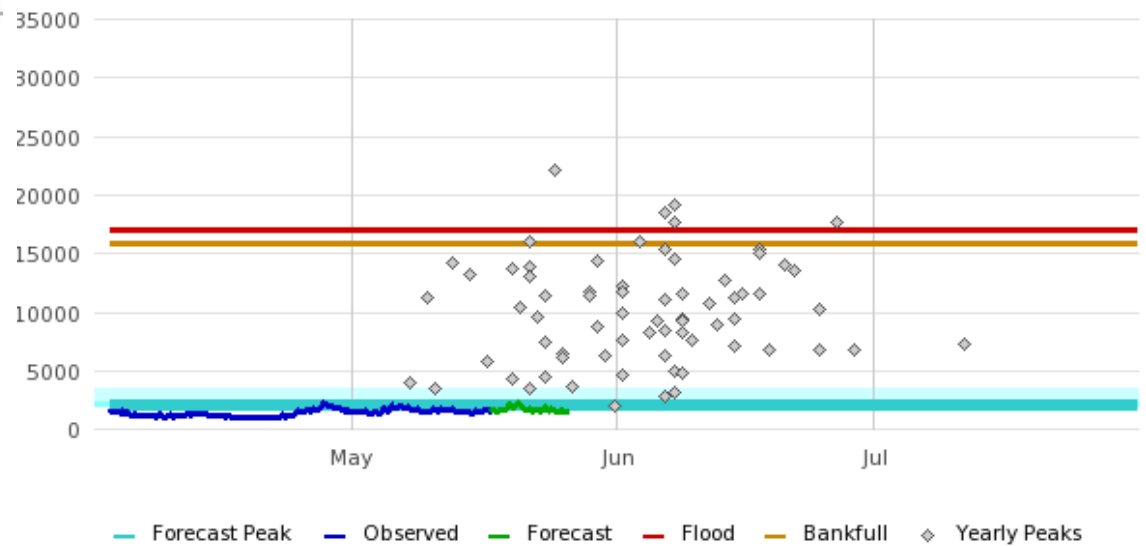
Plot Created May 17, 08:07 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



### COLORADO - DOTSERO, NR (eglc2)

Flow (cfs) for April-July, Forecast run 2012-05-16 14:00 GMT

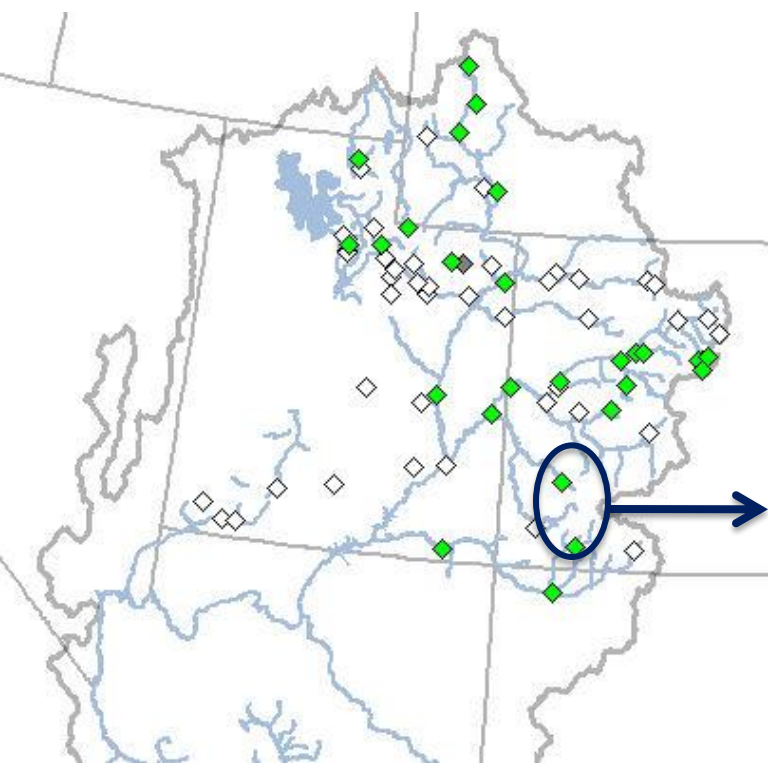
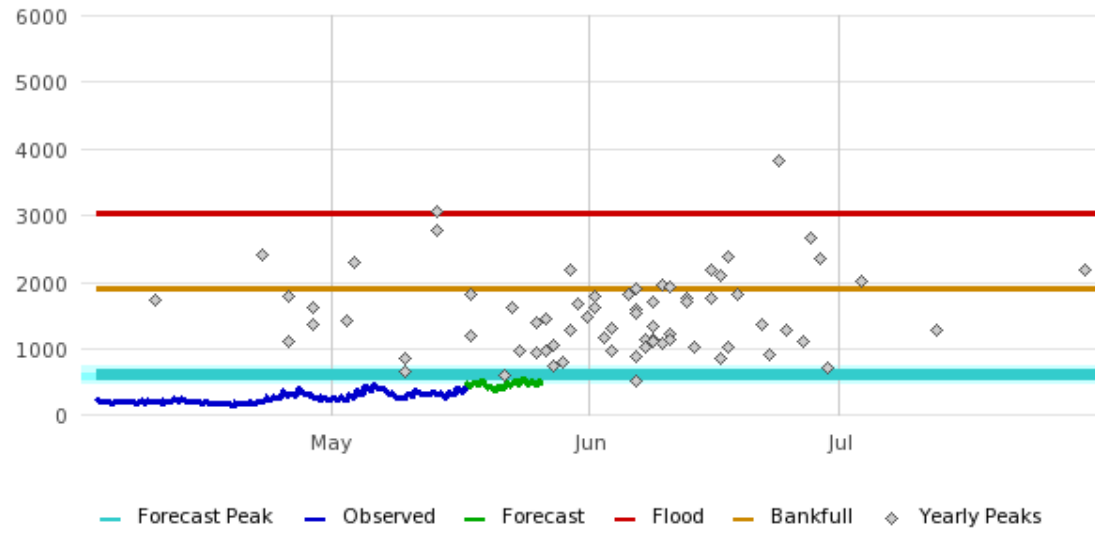
Plot Created May 17, 08:09 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



### SAN MIGUEL - PLACERVILLE, NR (smpc2)

Flow (cfs) for April-July, Forecast run 2012-05-16 14:00 GMT

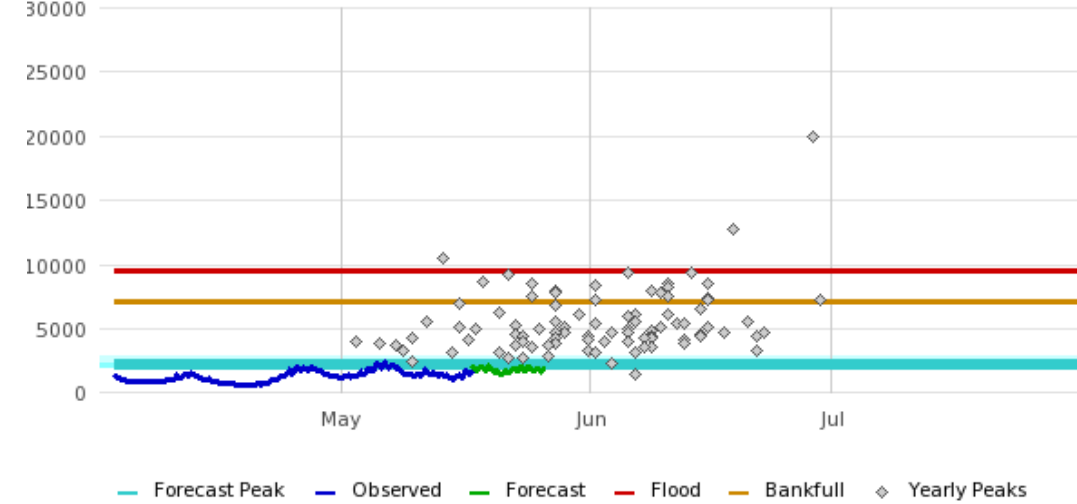
Plot Created May 17, 08:12 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



### ANIMAS - DURANGO (drgc2)

Flow (cfs) for April-July, Forecast run 2012-05-16 14:00 GMT

Plot Created May 17, 08:13 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



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[RIVERS](#) [SNOW](#) [WATER SUPPLY](#) [RESERVOIRS](#) [WEATHER](#)

[Conditions Map](#) [Active Points](#) [Peak Map](#) [Peak List](#) [Peak Pub](#) [Recreational Forecasts](#)

**Peak Flow List**

**New 1981-2010 Averages being used this year.**

Click point type or enter search to change points displayed. Click column heading to sort by that data. Click ID to show plot for point.  
 Download pipe-delimited file of displayed points.

**Help:** [Introduction](#) [Definitions](#) [River Permits](#) [Additional Information](#)

**Area:** [CBRFC](#) [Upper Colorado](#) [Green](#) [San Jaun](#) [Great Basin](#) [Sevier](#) [Virgin](#) [Lower Colorado](#)

SEARCH POINTS

Plots: [Auto](#) [Off](#) [On](#)

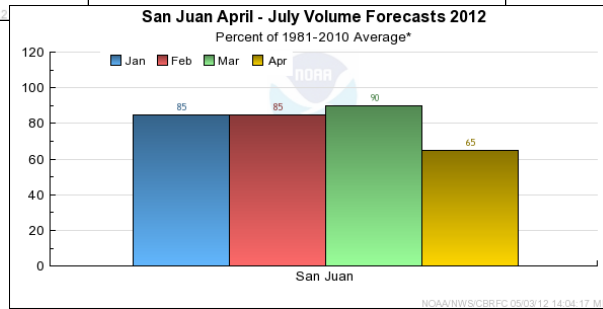
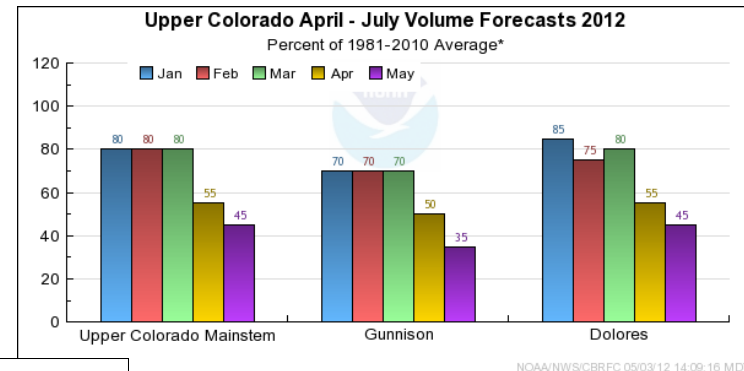
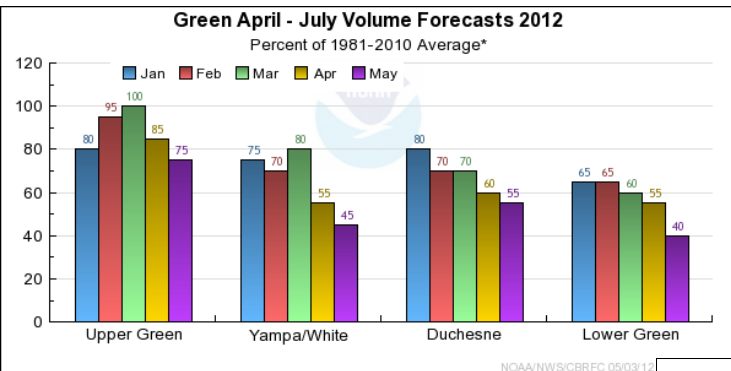
**Peak Flood Probability**  
 ◇ No Forecast   ◆ No Flood Stage   ◆ <10   ◆ >10   ◆ >25   ◆ >50

NWS ID	River	Location	Flood Probability	Mean Daily 90%	Instantaneous					Issue Date	Historic Peak	Average Peak	Flood	Last Year Peak	Last Year Date	Normal Earliest Date	Normal Latest Date	Observed Peak	Observed Date			
					75%	50%	25%	10%	90%											75%	50%	25%
1	ALEC2	East Almont	◆	560	630	750	900	1100	570	650	790	960	1200	04-16	5000	2000	2980	2580	06-08	05-21	06-11	-
2	ARFN5	Animas Farmington	◆	2100	2300	2700	3200	3700						04-16	11000	4710	8810	4860	06-08	05-20	06-09	-
3	BCTU1	Big Cottonwood Ck Salt Lake City Nr	◆	210	240	270	290	340						04-17	925	430	800	698	06-24	05-18	06-07	-
4	BERU1	Bear Utah	◆	800	920	1020	1120	1310	950	1100	1200	1400	1600	04-17	3030	1600	3670	3030	07-01	05-15	06-14	-
5	BFFU1	San Juan Bluff Nr	◆	6100	6600	6900	7200	7600	7100	7700	8000	8300	8700	04-16	15200	7340	33838	4300	06-01	05-15	06-28	-
6	BPNW4	New Fork Big Piney Nr	◆	3100	3400	4100	4800	5500	3200	3500	4200	4900	5700	04-16	9110	4730	8850	7750	07-03	05-26	06-23	-
7	BRUU1	Big Brush Ck Vernal Nr Red Fleet Res Abv	◆	80	100	120	150	210						04-01	414	235		245	06-22	05-04	06-01	-
8	BSWC2	Blue Dillon Nr	◆	140	160	200	260	340						04-16	1160	505	1770	955	07-20	05-27	06-25	-
9	BUEC2	Blue Blue River	◆	60	70	90	120	160						04-16	580	185	835	410	07-20	05-28	07-05	-
10	CAMC2	Colorado Cameo Nr	◆	5000	6000	7500	9500	12500	5500	6600	8100	10000	13000	04-16	38000	17000	26000	29200	06-09	05-24	06-12	-
11	CCSU1	City Ck Salt Lake City Nr	◆	35	40	50	60	75						04-17	262	80	210	167	06-16	05-13	06-01	-
12	CCUC2	Colorado Co	◆	4500	6500	9000	12000	15000	5100	7100	9700	13000	16000	04-16	68300	25500	46200	46800	06-10	05-19	06-11	-

**Peak Flow List & Publication at [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)**

# WATER SUPPLY: May 15<sup>th</sup> Forecast Update (Major Reservoirs)

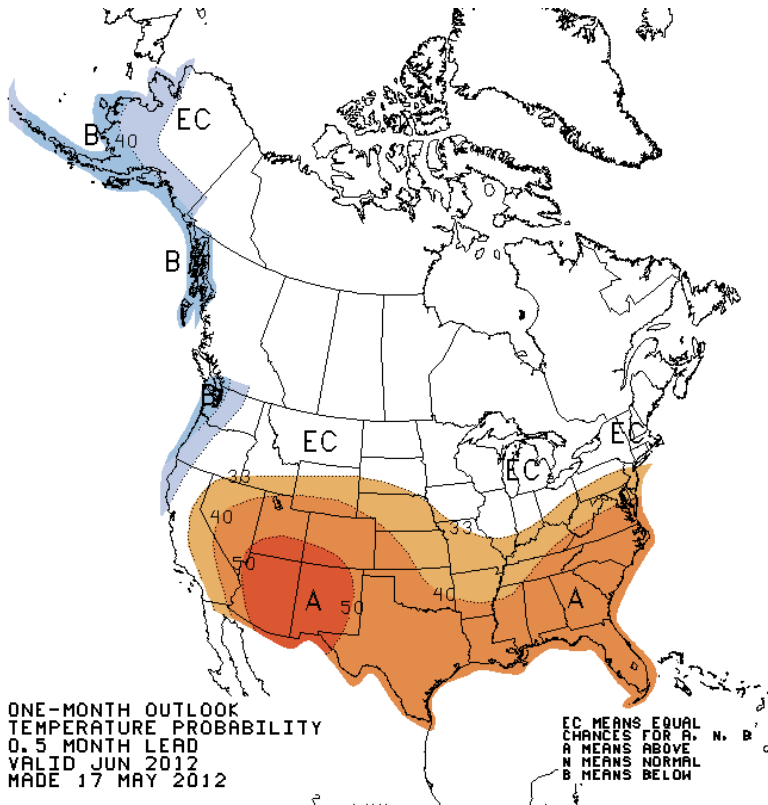
Fontenelle:	500 KAF	69% of average	(decrease of 40,000 acre-feet from 5/1)
Flaming Gorge:	585 KAF	60% of average	(decrease of 45,000 acre-feet from 5/1)
Lake Powell:	2.26 MAF	32% of average	(decrease of 100,000 acre-feet from 5/1)
Taylor Park:	46 KAF	46 % of average	(no change from 5/1)
Blue Mesa:	230 KAF	34 % of average	(no change from 5/1)
Paonia: (mar-jun)	31 KAF	32 % of average	(decrease of 7 KAF from 5/1)
Ridgway:	48 KAF	48 % of average	(decrease of 4 KAF from 5/1)
Vallecito:	111 KAF	58 % of average	(no change from 5/1)
Navajo:	345 KAF	47 % of average	(no change from 5/1)
Lemon:	37 KAF	67 % of average	(no change from 5/1)



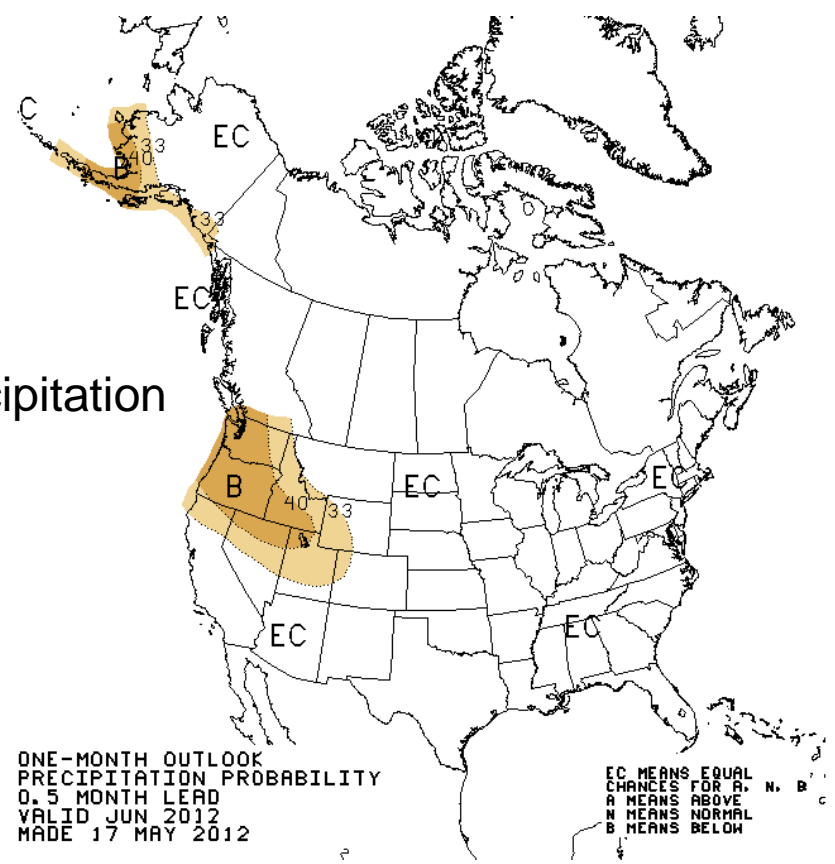
# June Outlook

(Climate Prediction Center)

## Temperature



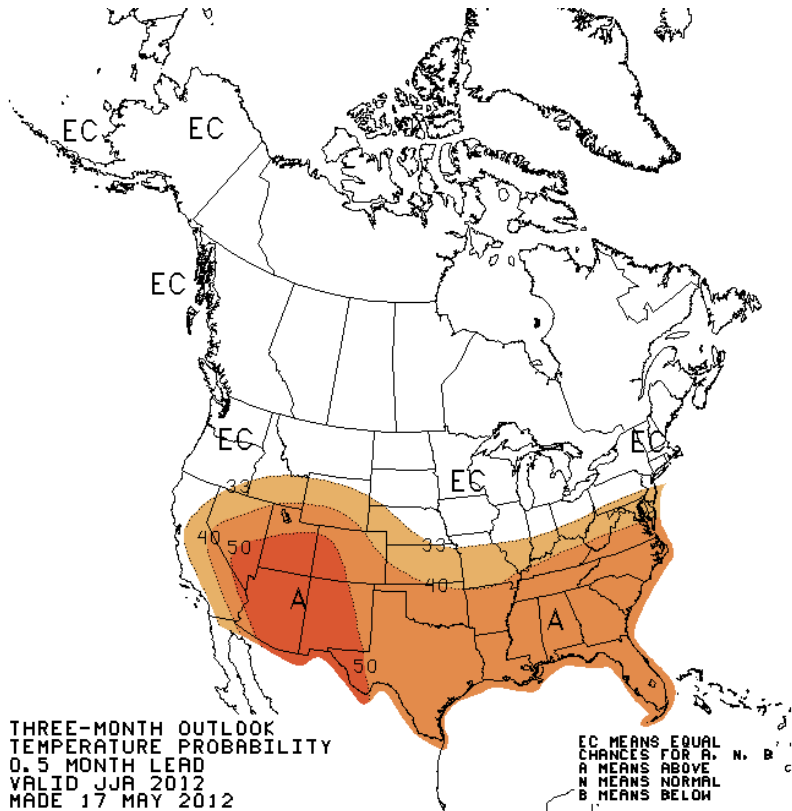
## Precipitation



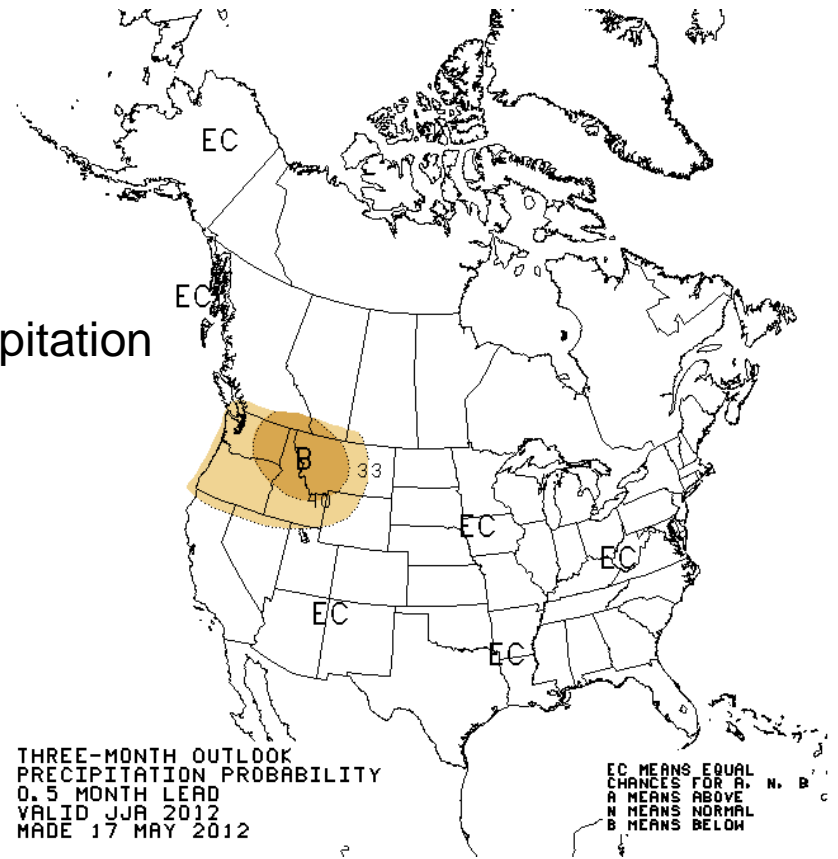


# June-August Outlook (Climate Prediction Center)

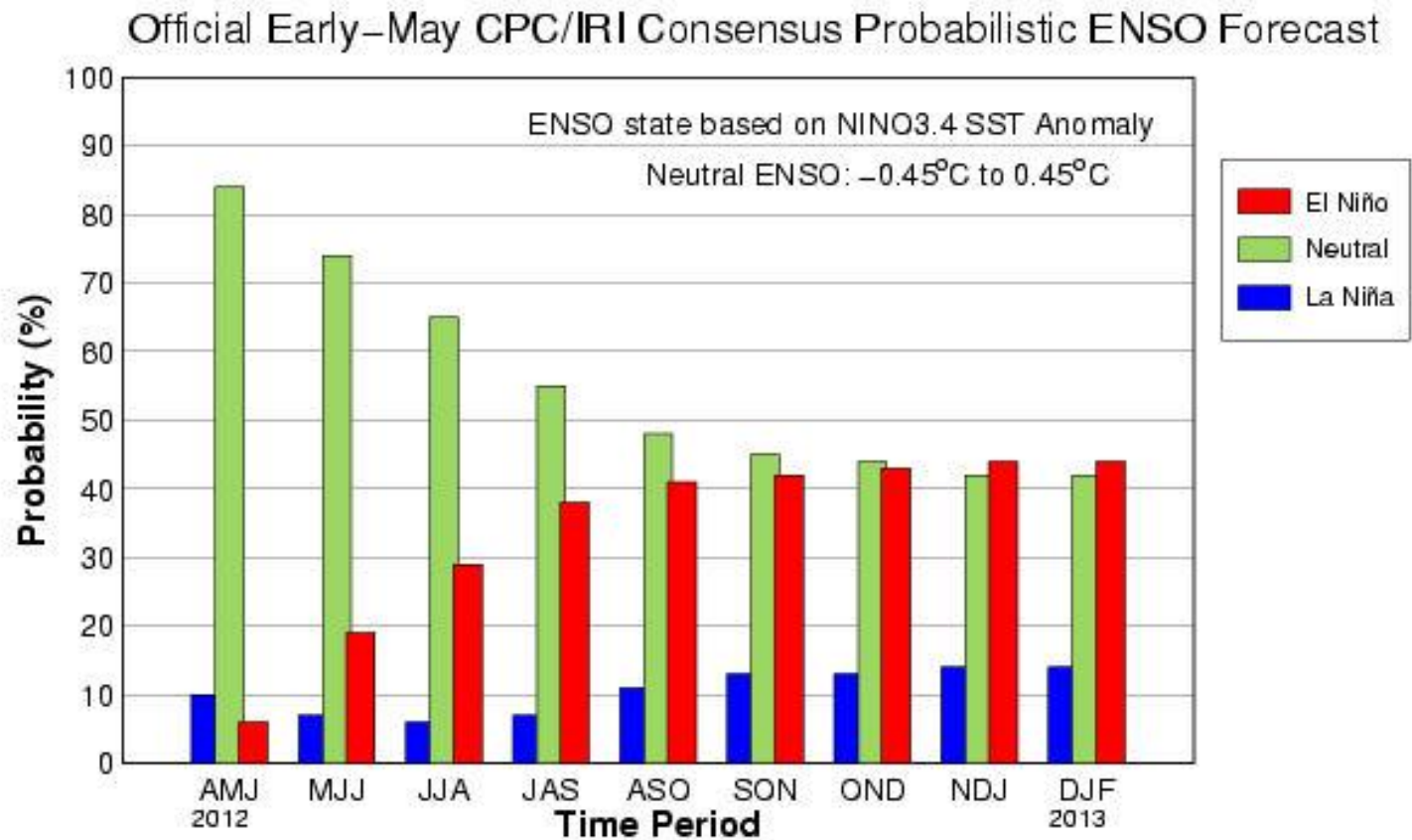
## Temperature



## Precipitation



## El Niño / La Niña Outlook:



Provided by:

Climate Prediction Center & International Research Institute for Climate and Society

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/enso\\_advisory/ensodisc.html](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.html)

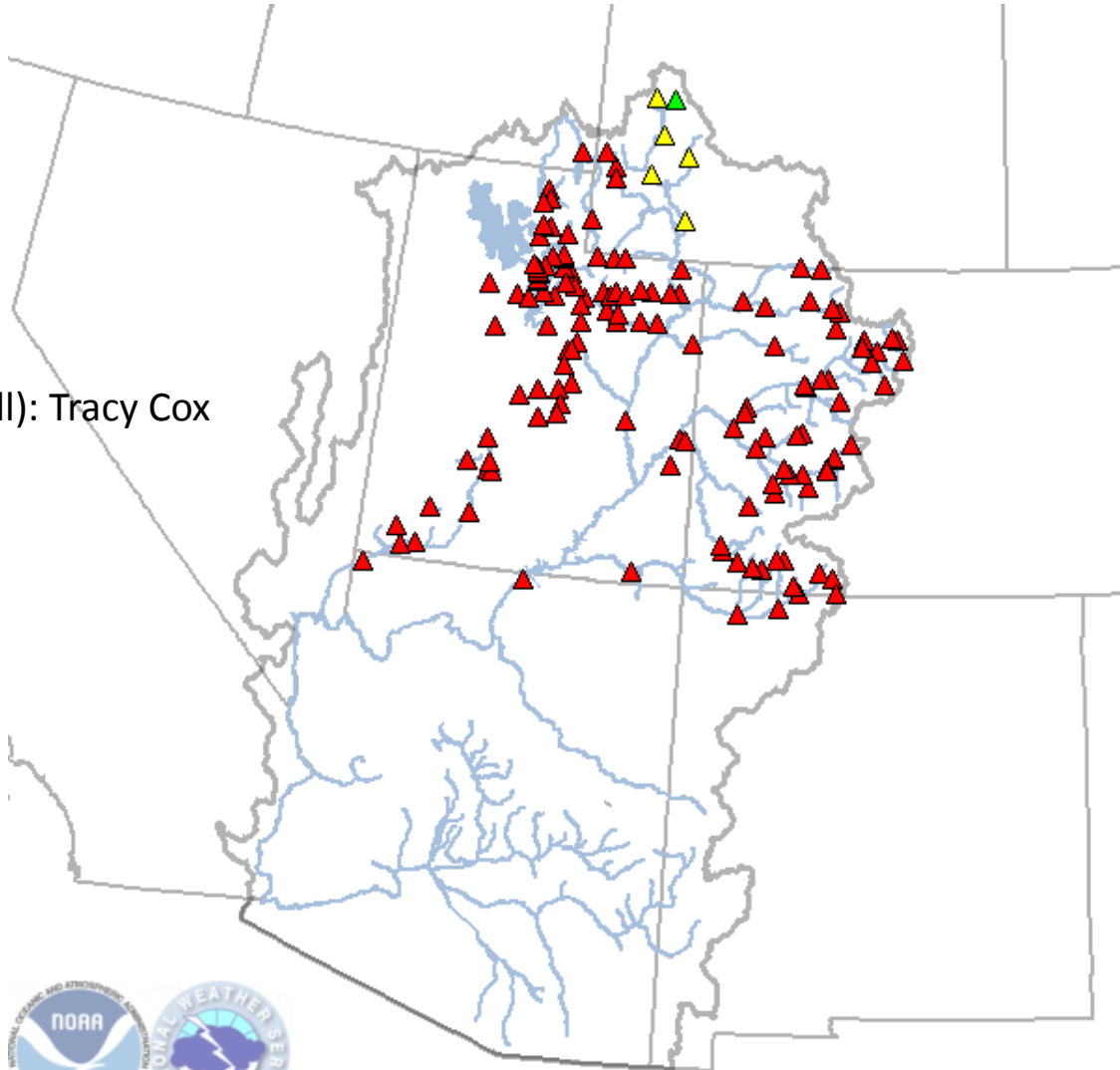
# CBRFC NEWS: What is coming up?

- Water Supply & Peak Flow Forecast updates planned for:
  - 6/1 (Forecasts issued 6/4-6/5)
- Webinars: June 6th –1 pm
  - water supply volumes and peak flow
- CBRFC Stakeholder Forums: Observing Systems for River Forecasting
  - July 31<sup>st</sup> 2012
  - Two way discussion on CBRFC products / Services
  - Observing system use for forecasting/analysis and the strengths/weaknesses
  - Discussion on the evolution of CBRFC waters supply forecasts slated for WY 2013
  - Register: [valerie.offutt@noaa.gov](mailto:valerie.offutt@noaa.gov) or [kevin.werner@noaa.gov](mailto:kevin.werner@noaa.gov) or call one of them at 801-524-5130
  - Details at: <http://www.cbrfc.noaa.gov/present/2012/forum/2012forum.htm>

# CBRFC Contacts

- Basin Focal Points (Available to discuss forecasts: 801.524.5130)

- Upper Colorado: Brenda Alcorn
- Green: Ashley Nielson
- San Juan / Gunnison: Greg Smith
- Great Basin: Brent Bernard
- Virgin / Sevier – Stacie Bender
- Lower Colorado (below Lake Powell): Tracy Cox



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Feedback, Questions, Concerns always welcome....



**Kevin Werner**

CBRFC Service Coordination Hydrologist

Phone: 801.524.5130 ext 329

Email: [kevin.werner@noaa.gov](mailto:kevin.werner@noaa.gov)



**Greg Smith**

CBRFC Senior Hydrologist

Phone: 801.524.5130 ext 332

Email: [greg.smith@noaa.gov](mailto:greg.smith@noaa.gov)

