

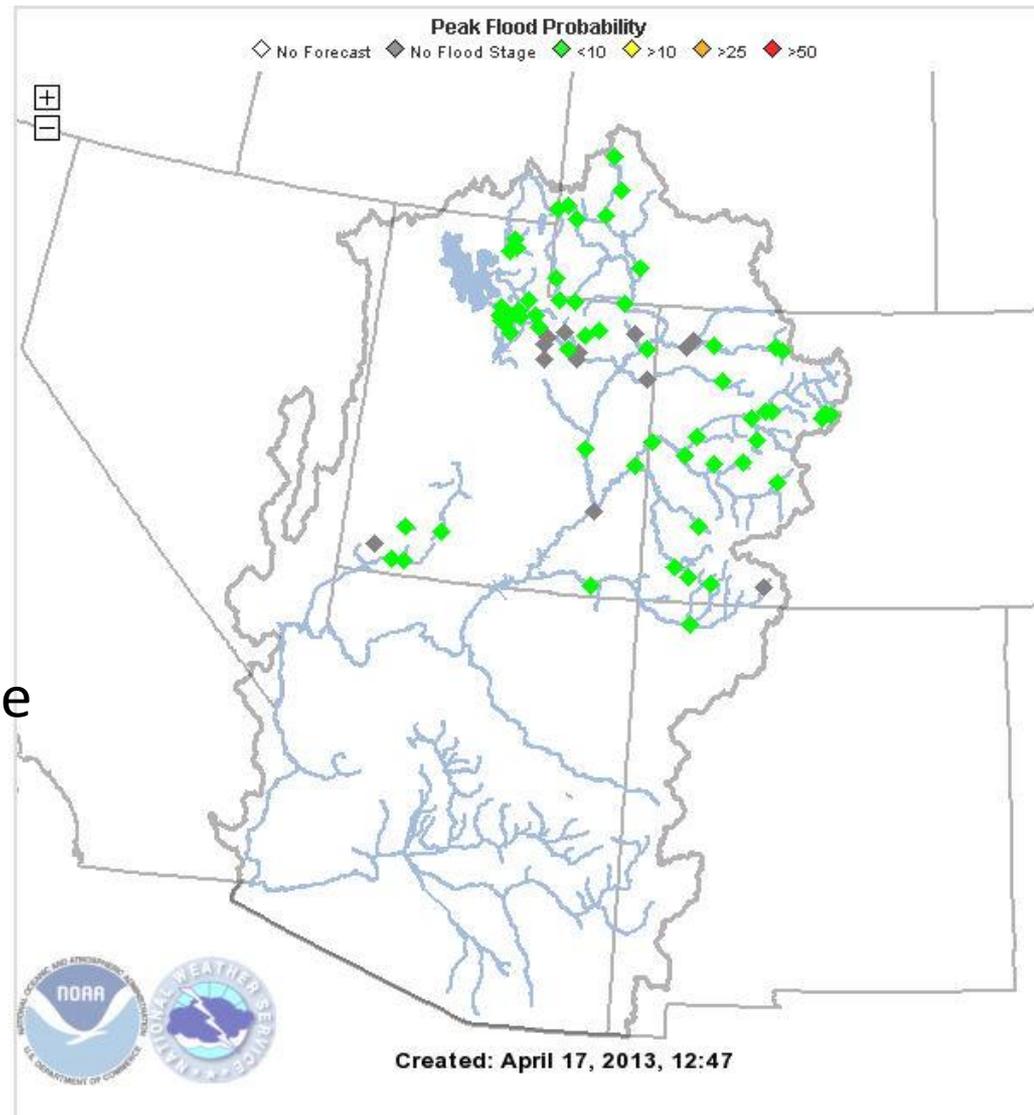
CBRFC
April 2013
Peak Flow Forecast Webinar

11 am, April 18, 2013

Greg Smith & Ashley Nielson

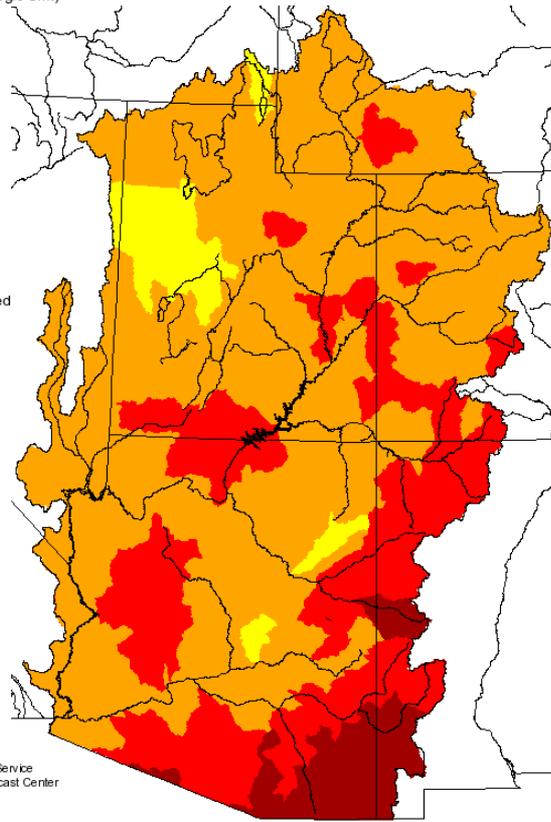
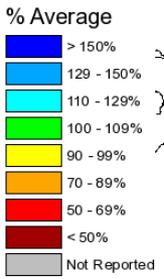
Today's Presentation

- Brief Precipitation Review
- Current Snow Situation
- Short term weather outlook
- Peak Flow Forecasts
- Mid April water supply update



Seasonal Precipitation, October 2012 - March 2013

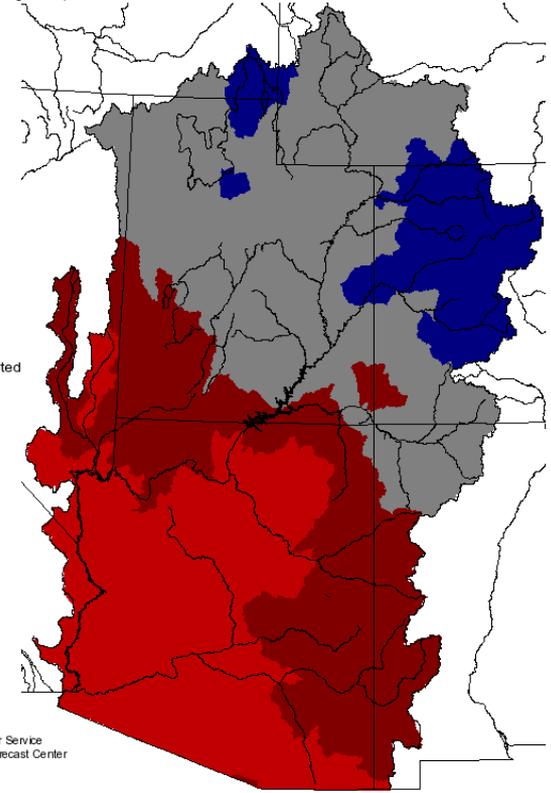
(Averaged by Hydrologic Unit)



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

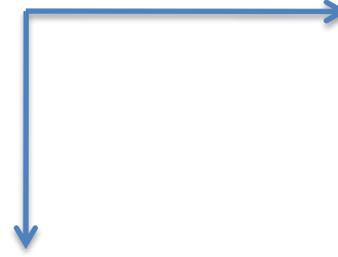
Monthly Max Temp Deviation for March 2013

(Averaged by Hydrologic Unit)

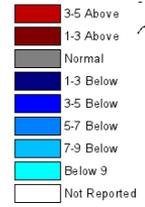
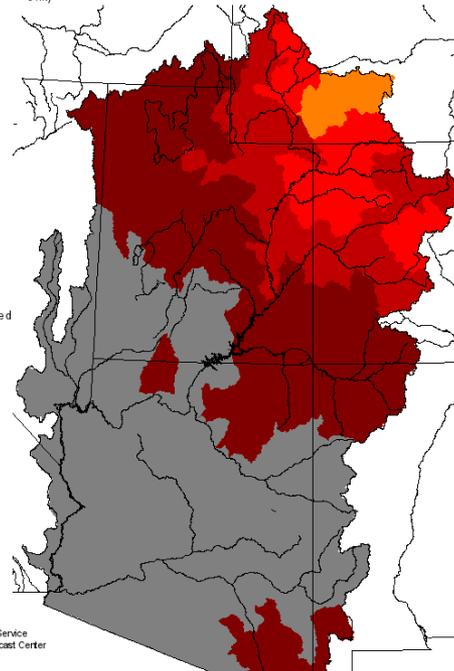


National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
www.cbrc.noaa.gov

Very Warm &
Very Dry
March

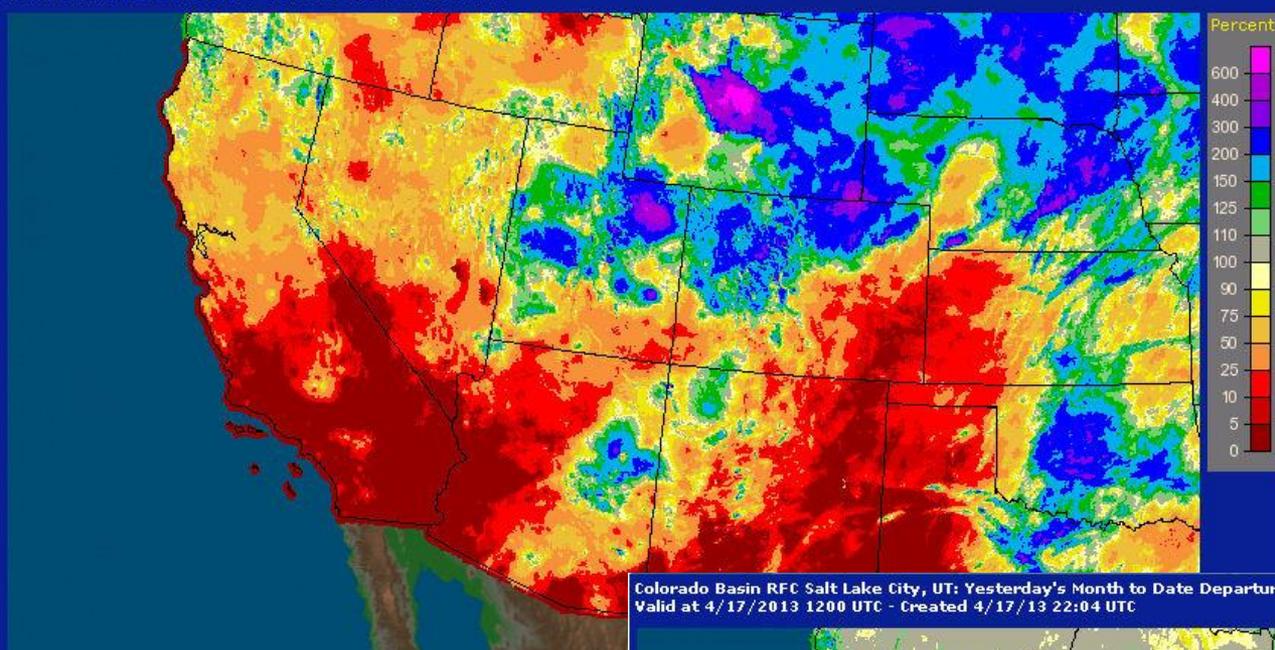


Monthly Max Temp Deviation for March 2012



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

Colorado Basin RFC Salt Lake City, UT: Yesterday's Month to Date Percent of Normal Precipitation
Valid at 4/17/2013 1200 UTC - Created 4/17/13 22:07 UTC



First Half of April Precipitation

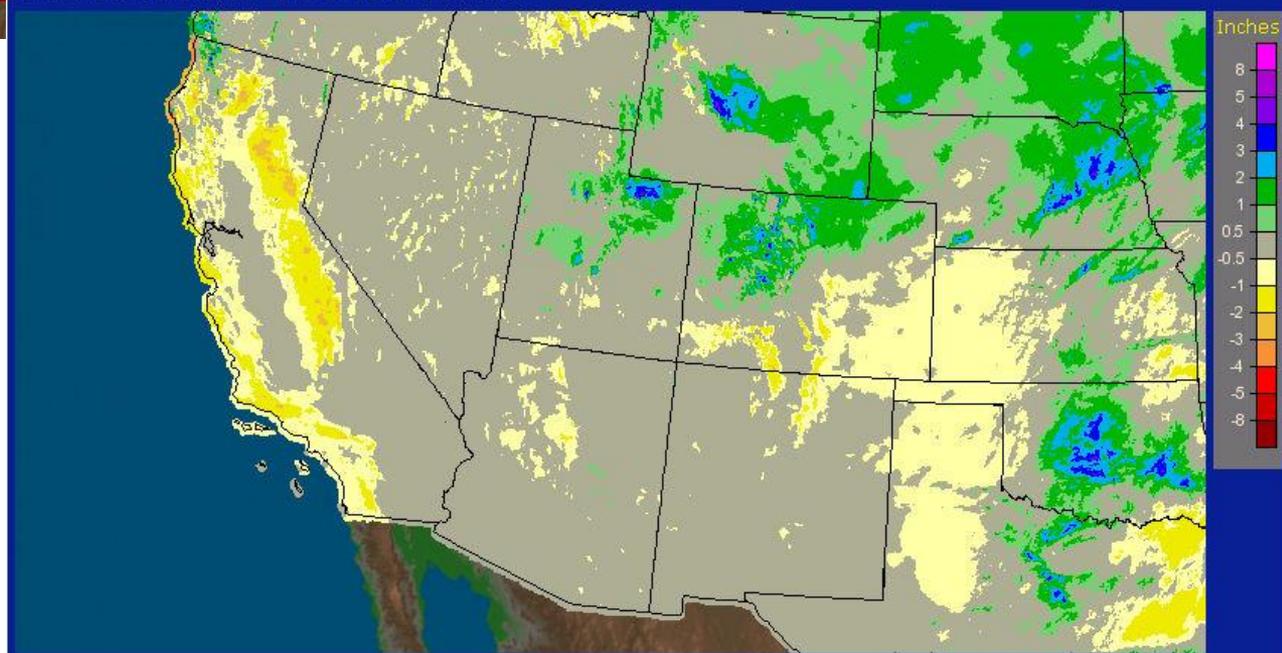
Percent of Average



Departure from Average



Colorado Basin RFC Salt Lake City, UT: Yesterday's Month to Date Departure from Normal Precipitation
Valid at 4/17/2013 1200 UTC - Created 4/17/13 22:04 UTC

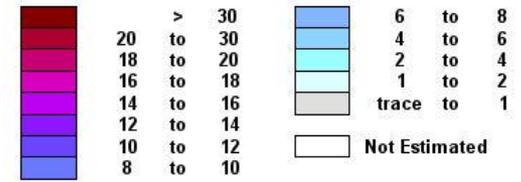


Web Reference: <http://water.weather.gov/precip>

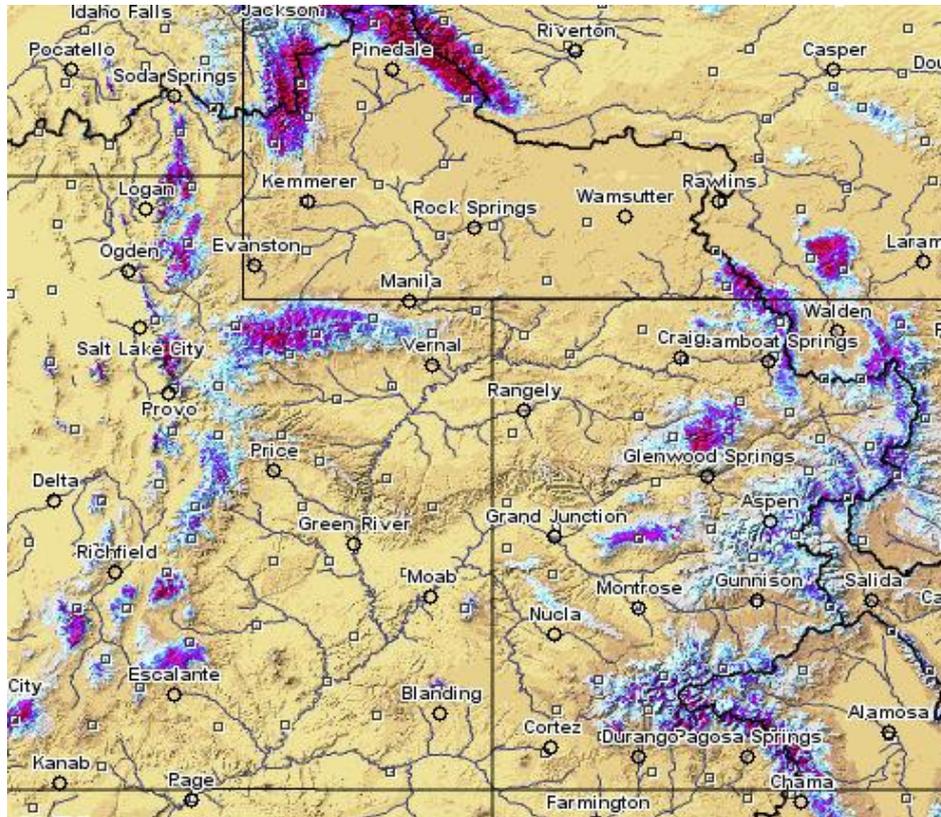
Snow: The impact of spring weather

Retained and added to the snowpack compared to 2012

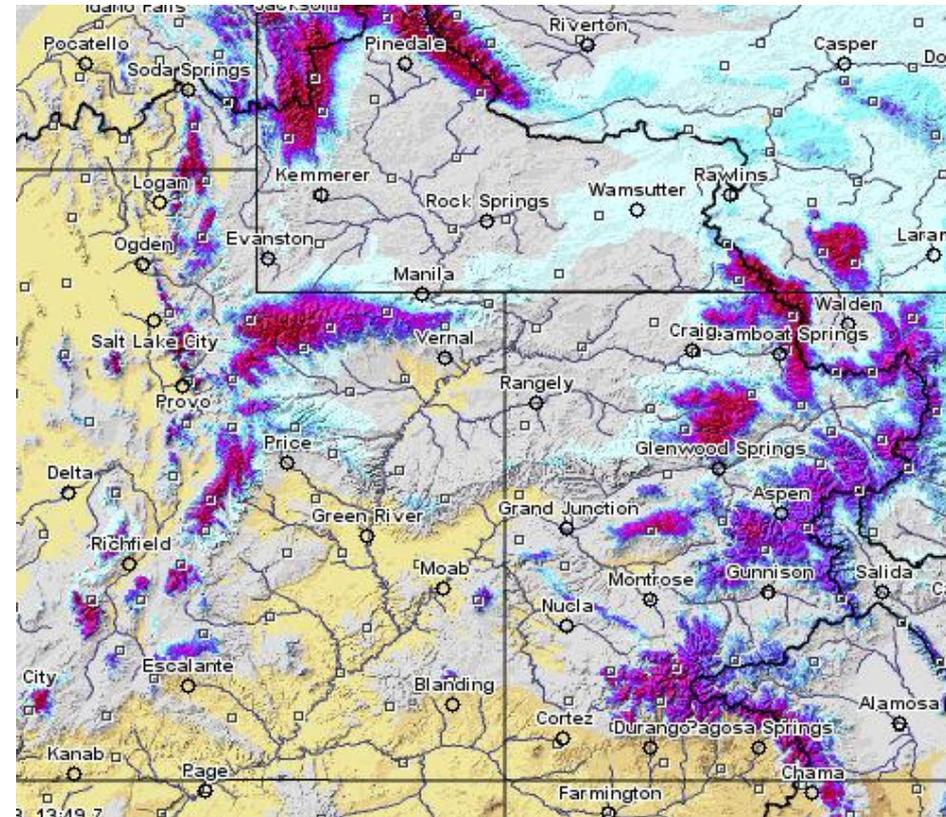
Inches of water equivalent



April 18 2012

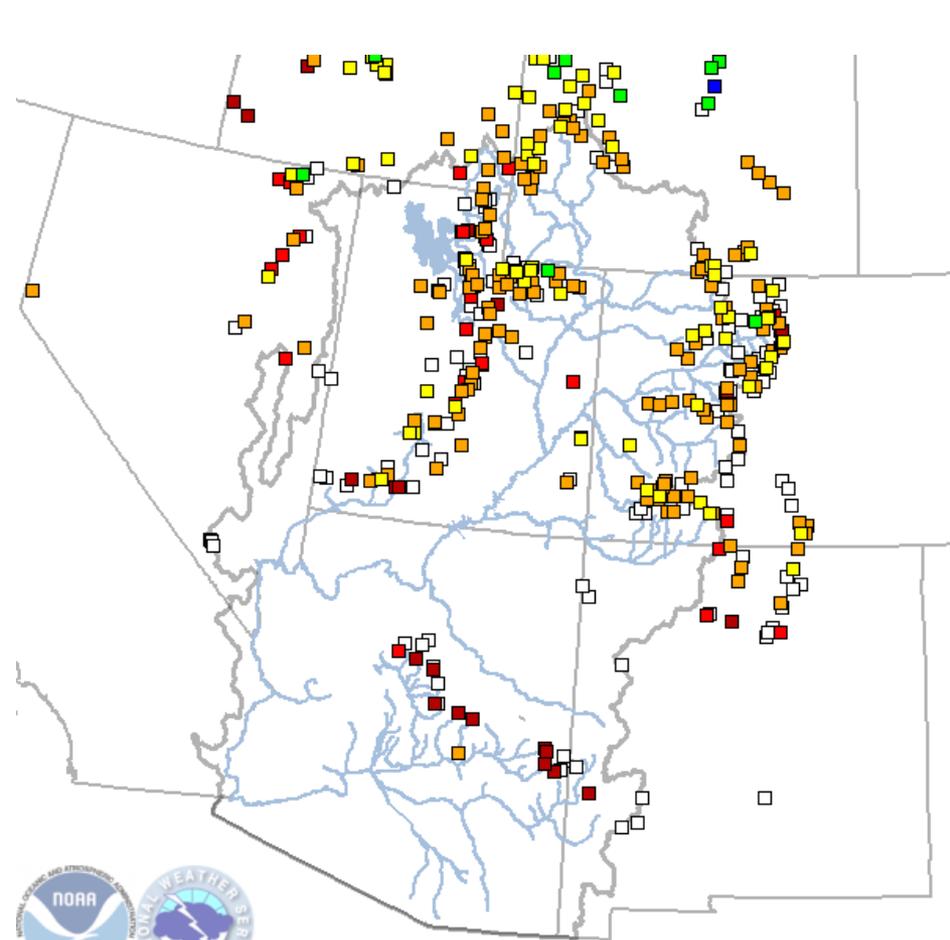


April 18 2013

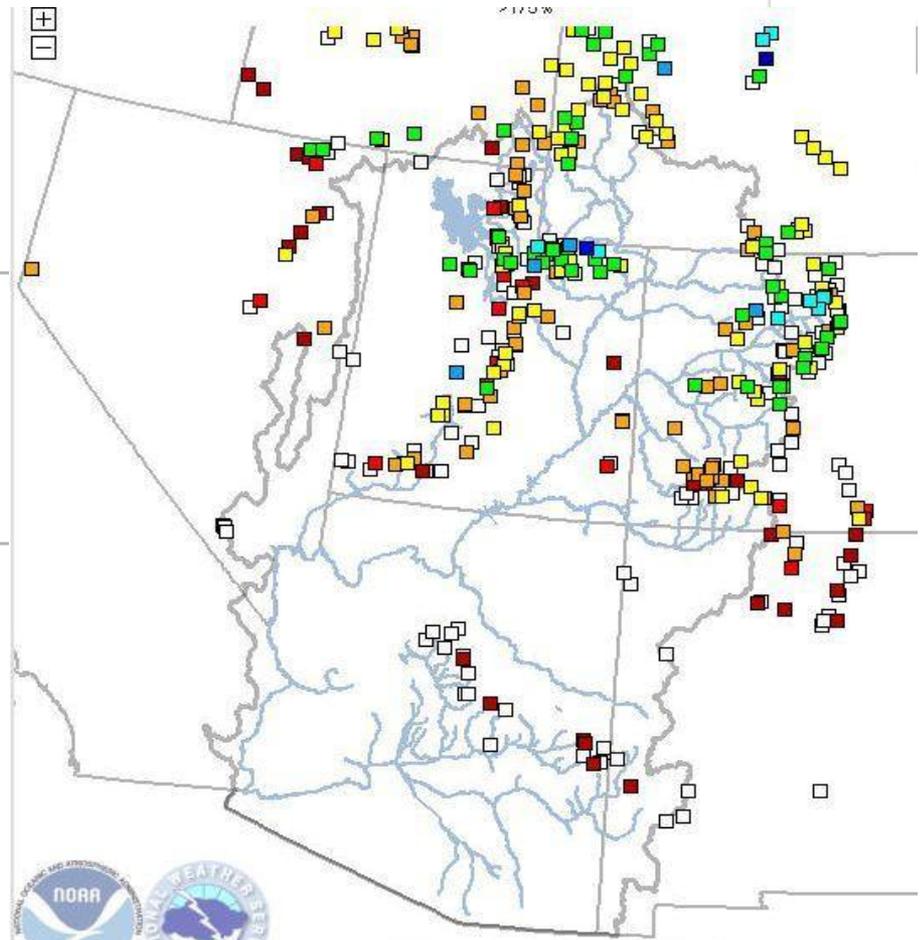


Snow: April Retention and Building of Snowpack

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%



Created: April 1, 2013, 14:30



Created: April 17, 2013, 11:00

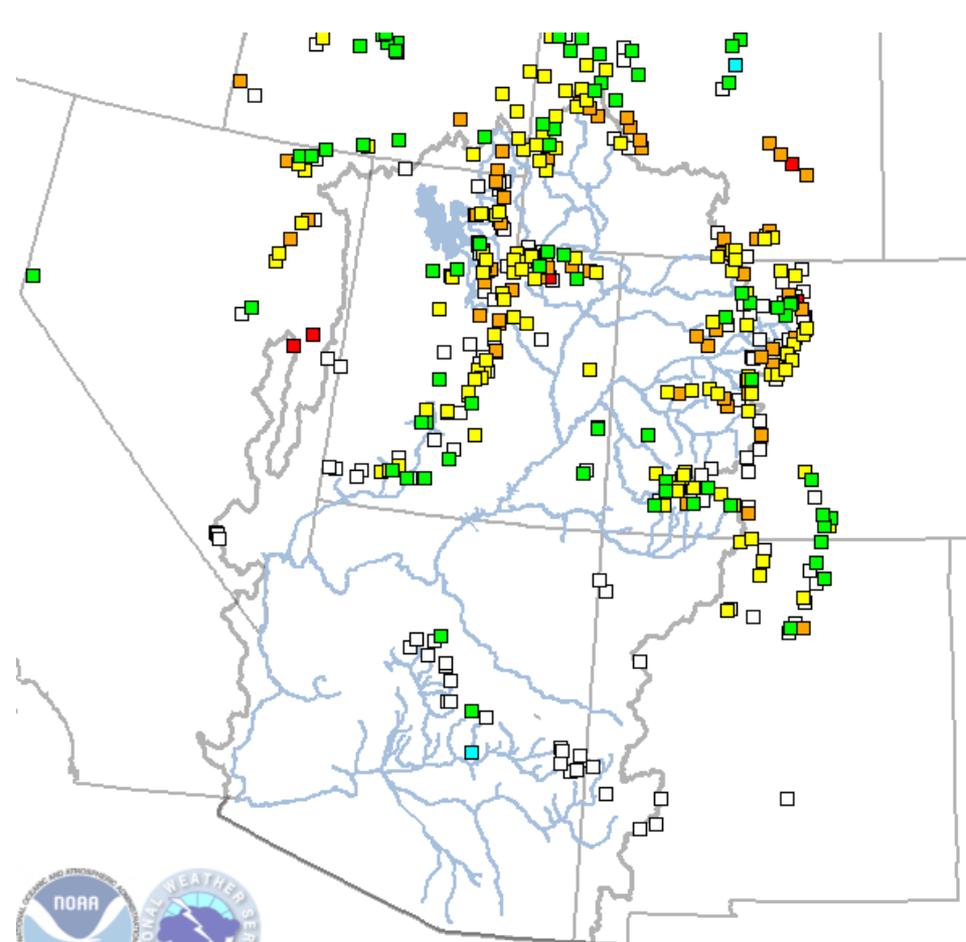
April 1st 2013

April 17th 2013

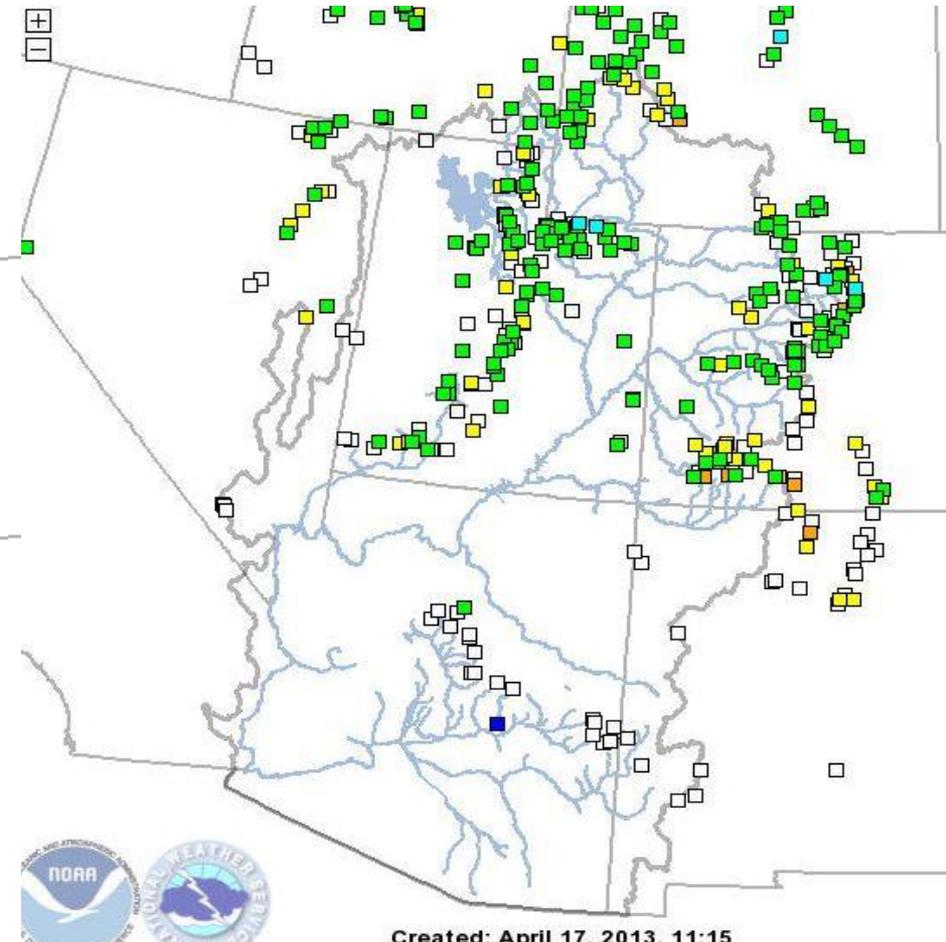


Snow: April Retention and Building of Snowpack

Snow Point Classification: ● Percentiles ○ Percent Average ○ Percent Median
□ Not Ranked ■ Low ■ <10 ■ 10-25 ■ 25-75 ■ 75-90 ■ >90 ■ High



Created: April 1, 2013, 14:30



Created: April 17, 2013, 11:15

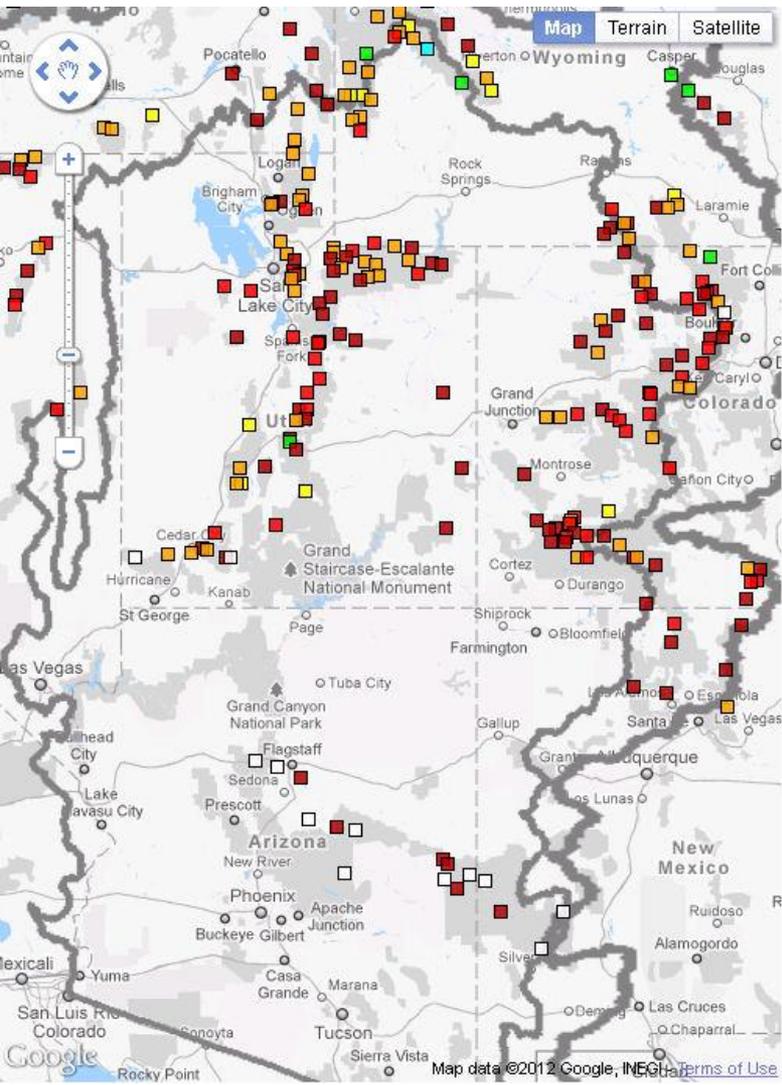
April 1st 2013

April 17th 2013



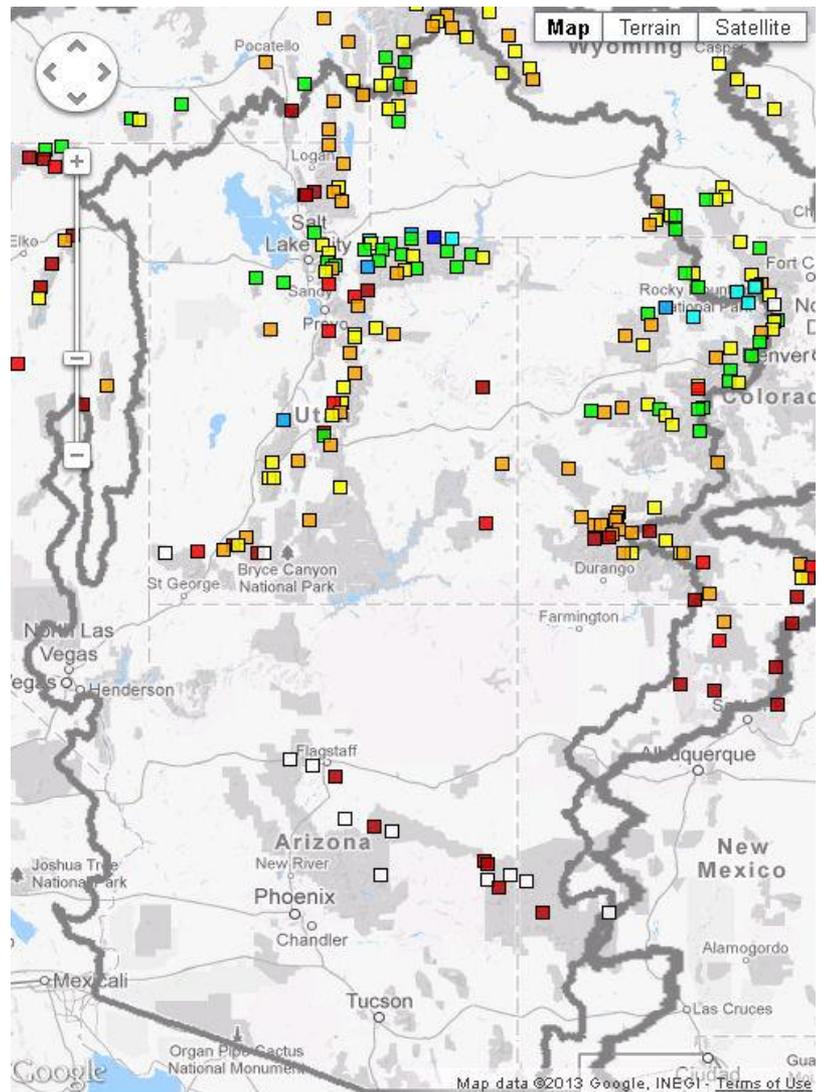
Snow

2012 Melt Underway / 2013 Building Snowpack



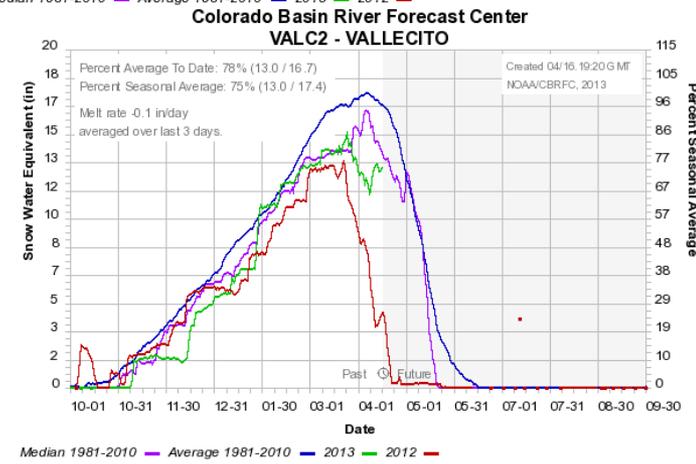
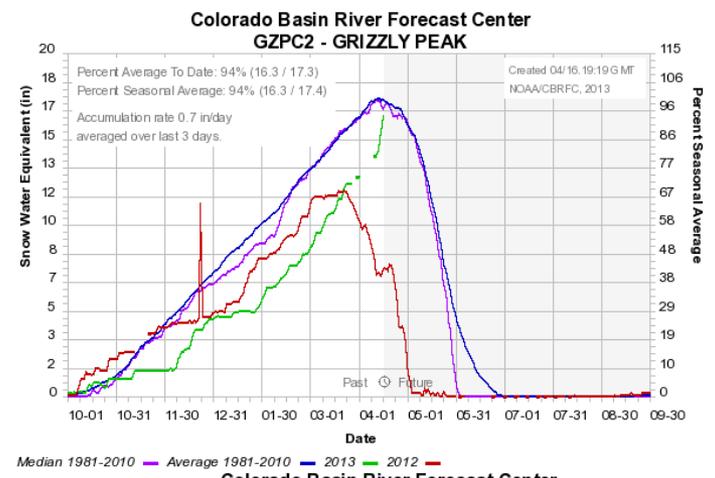
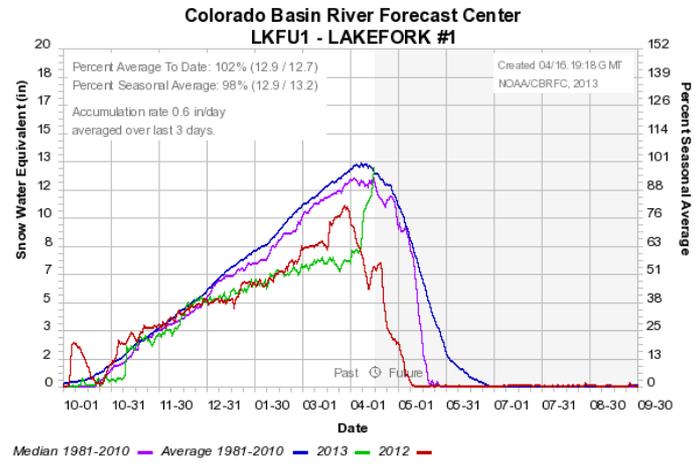
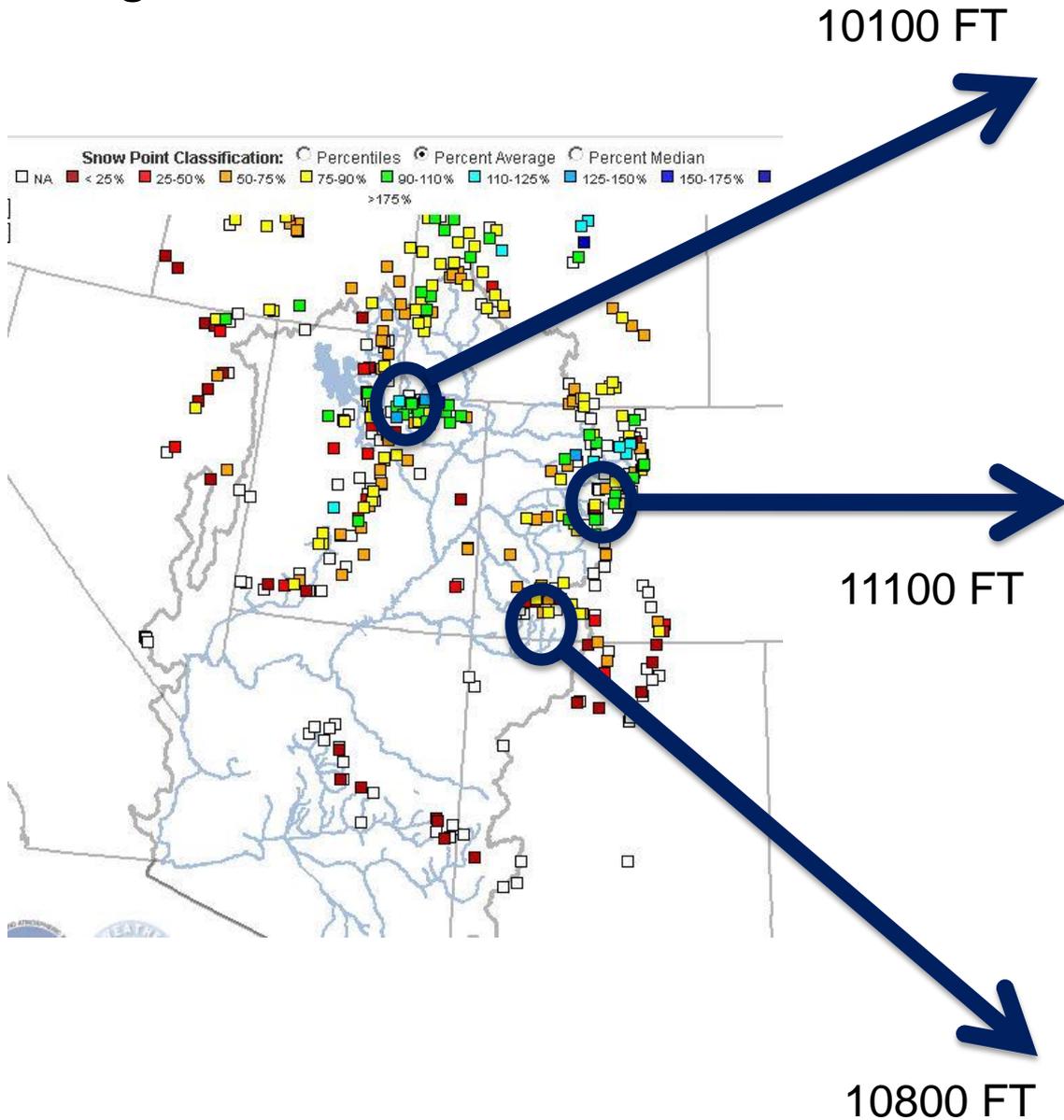
April 17 2012

- 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

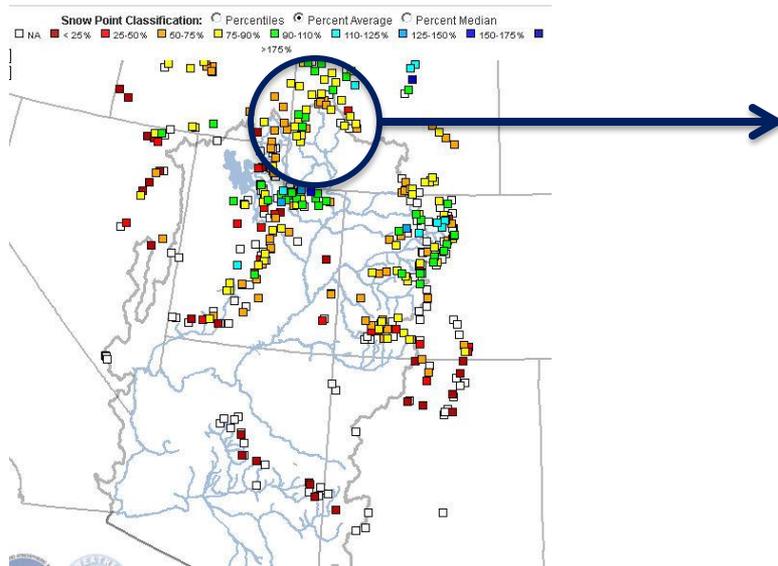


April 17 2013

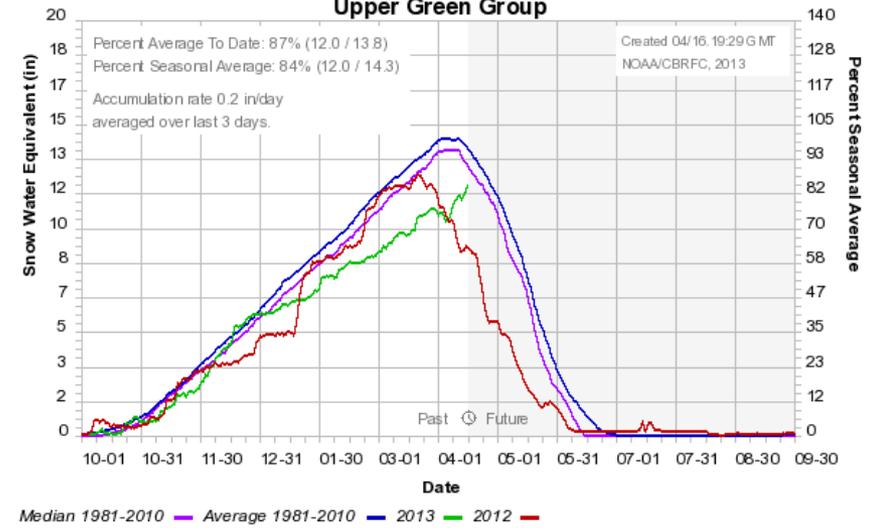
Big difference from 2012



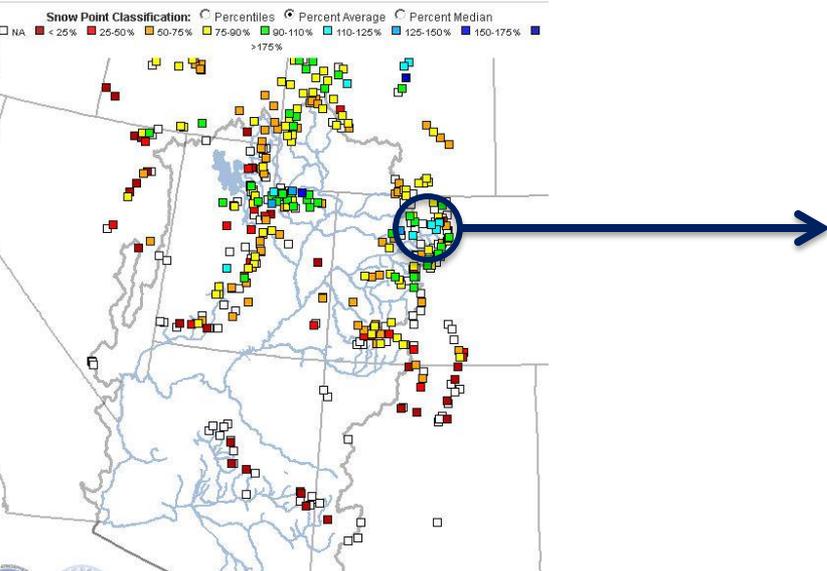
SNOW: Upper Green Basin (above Flaming Gorge)



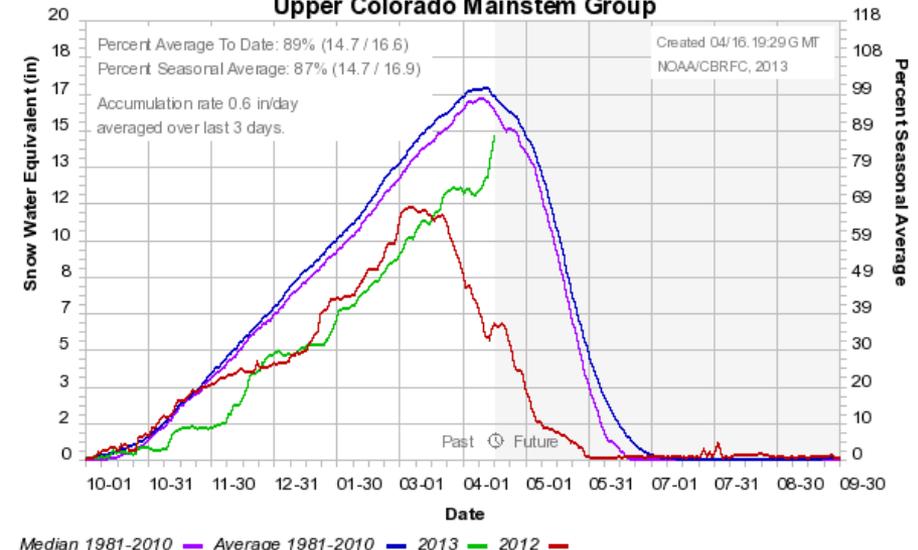
Colorado Basin River Forecast Center
Upper Green Group



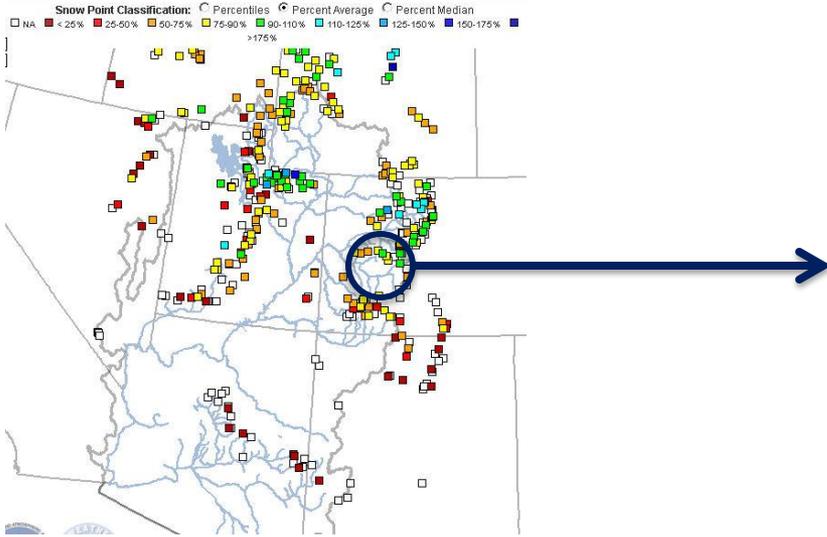
SNOW: Colorado Mainstem (above Cameo)



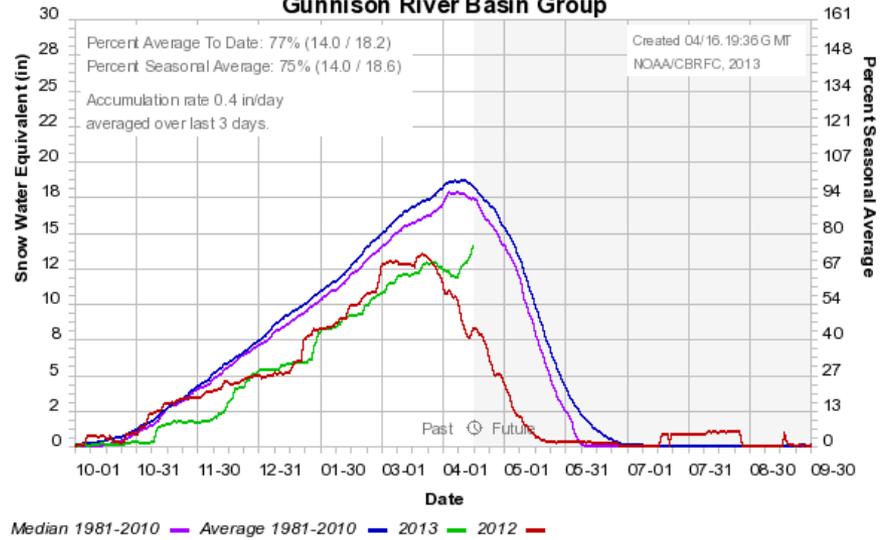
Colorado Basin River Forecast Center
Upper Colorado Mainstem Group



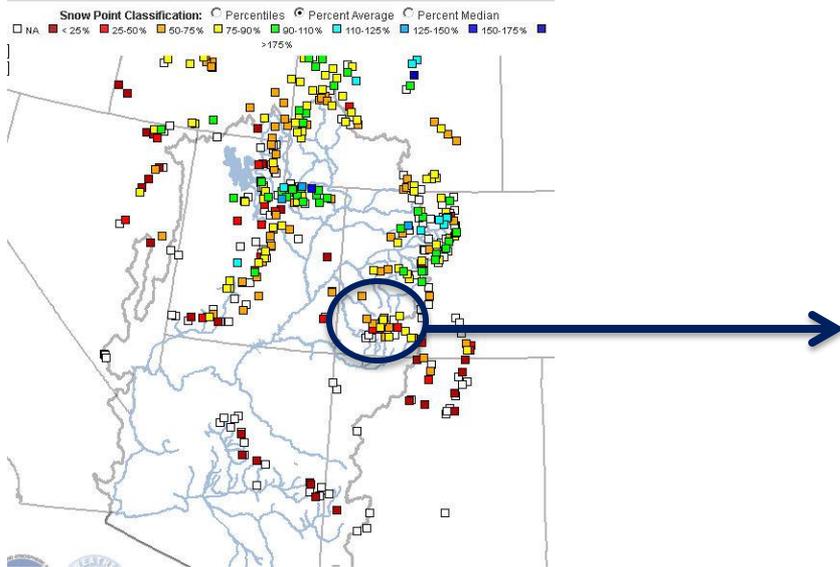
SNOW: Gunnison Basin



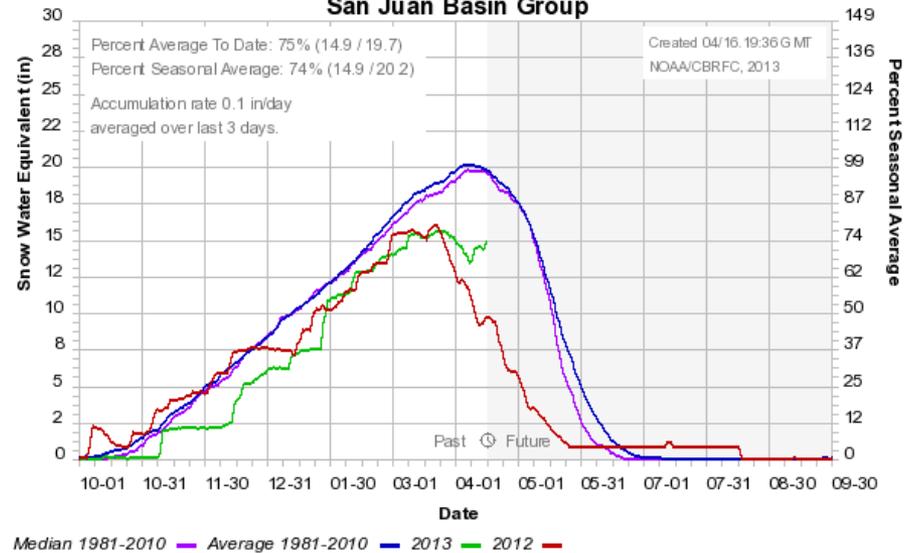
Colorado Basin River Forecast Center Gunnison River Basin Group



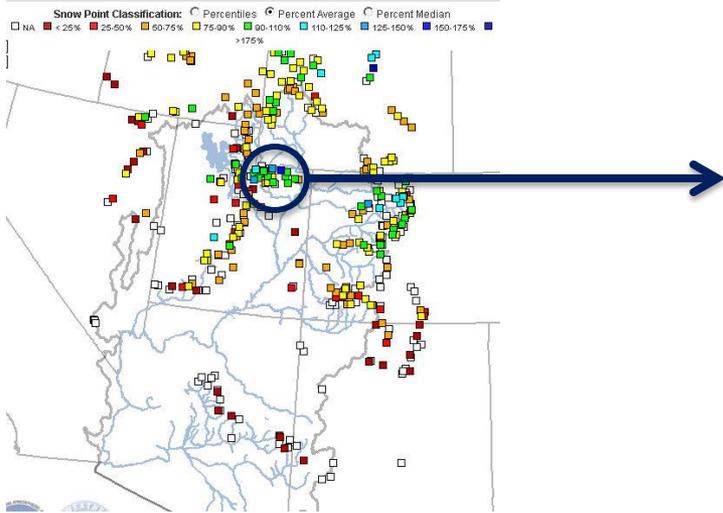
SNOW: San Juan Basin



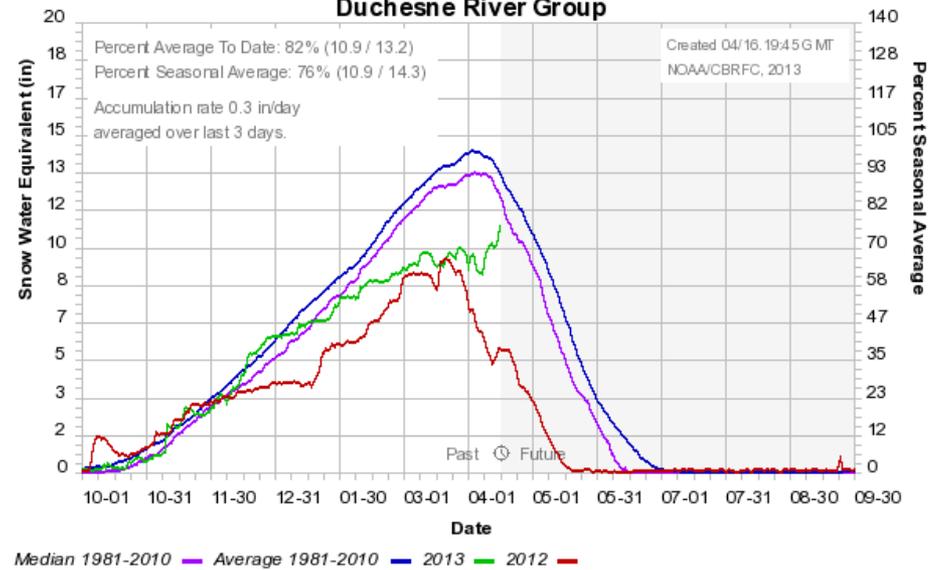
Colorado Basin River Forecast Center San Juan Basin Group



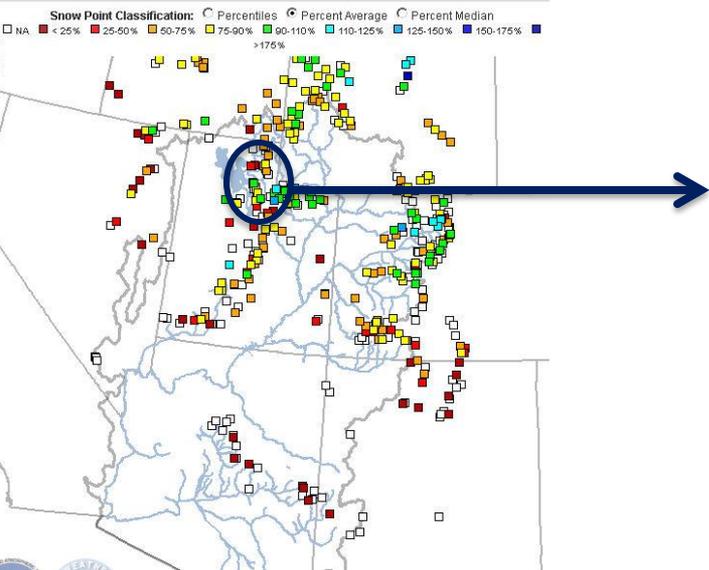
SNOW: Duchesne River Basin



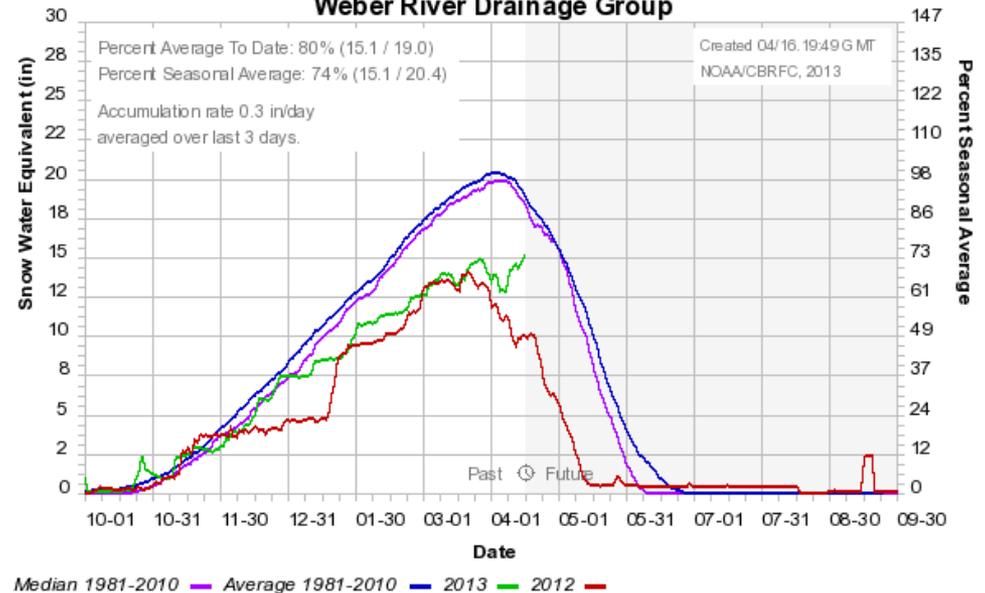
Colorado Basin River Forecast Center Duchesne River Group



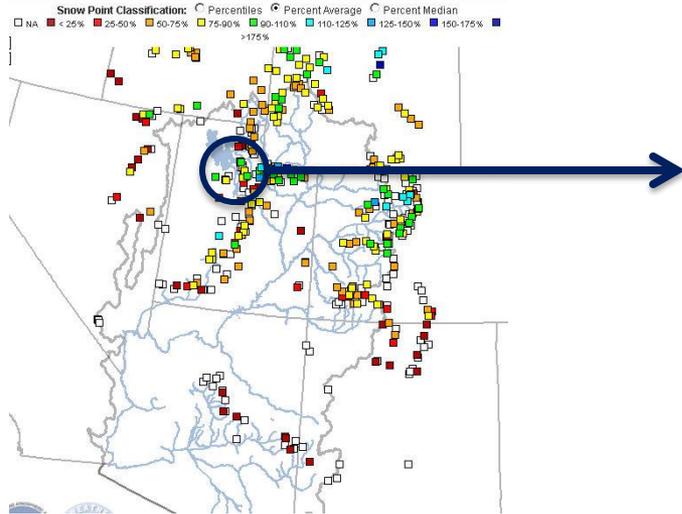
SNOW: Weber River



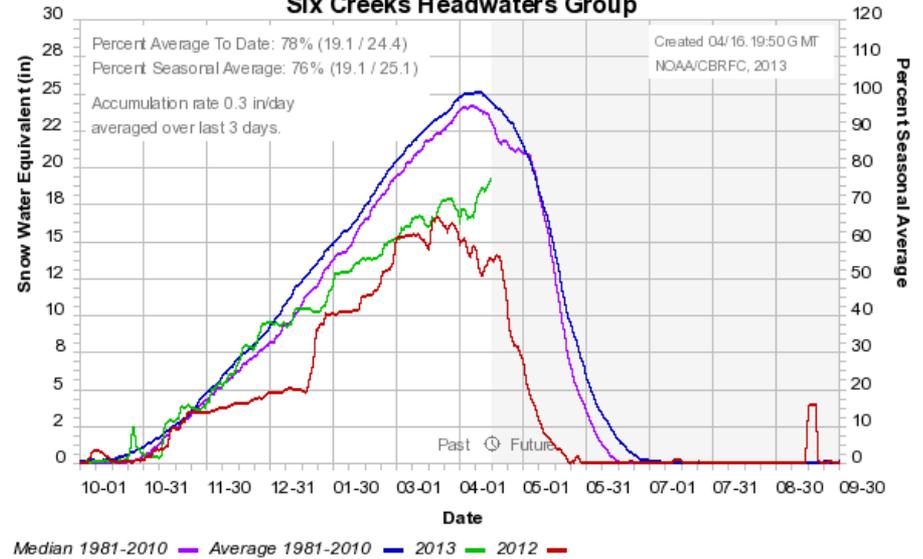
Colorado Basin River Forecast Center Weber River Drainage Group



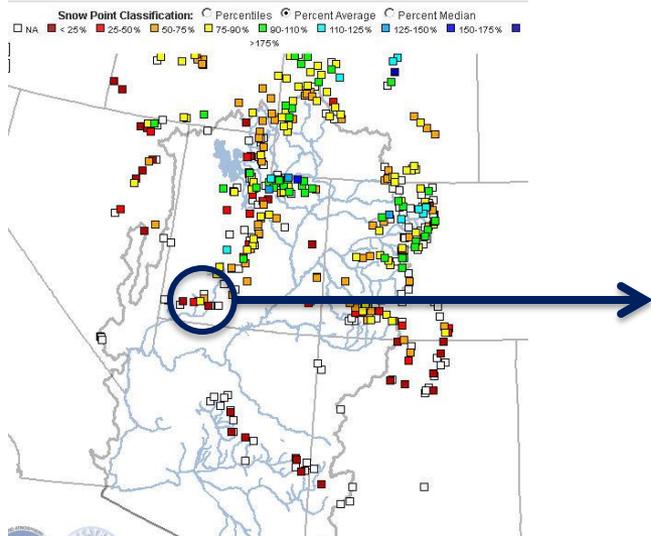
SNOW: Six Creeks (S.L. County)



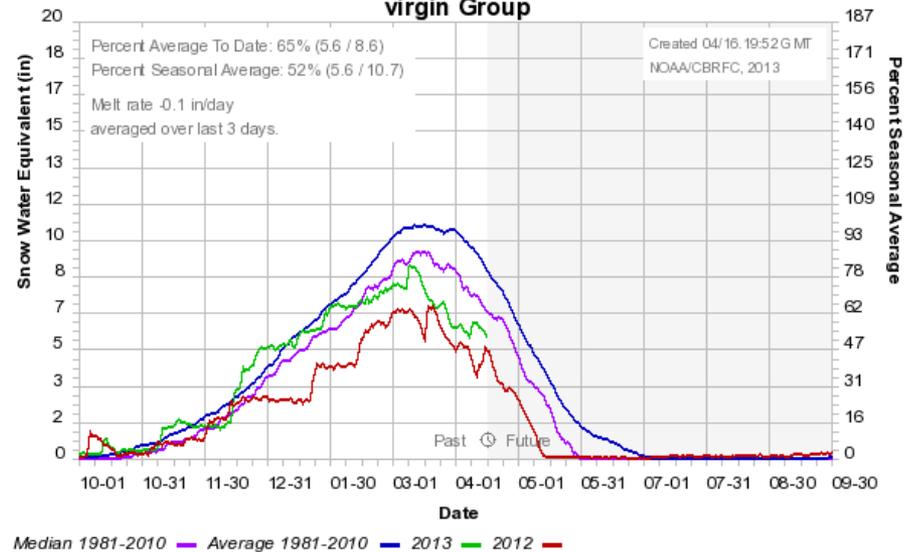
Colorado Basin River Forecast Center Six Creeks Headwaters Group



SNOW: Virgin River

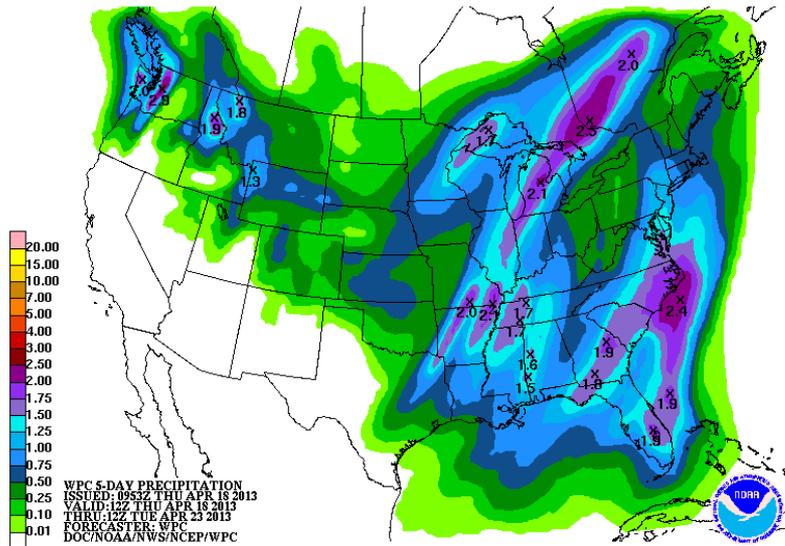


Colorado Basin River Forecast Center virgin Group

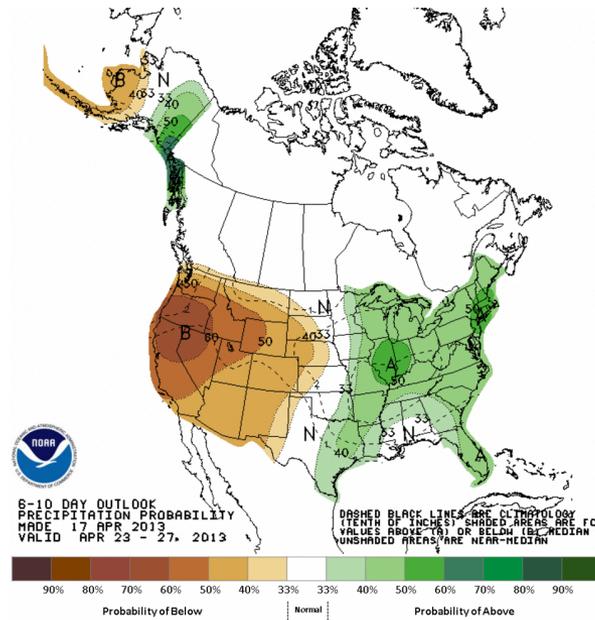


Web Reference: <http://www.cbrfc.noaa.gov/station/sweplot/sweplot.cgi???open>

Forecast Precipitation

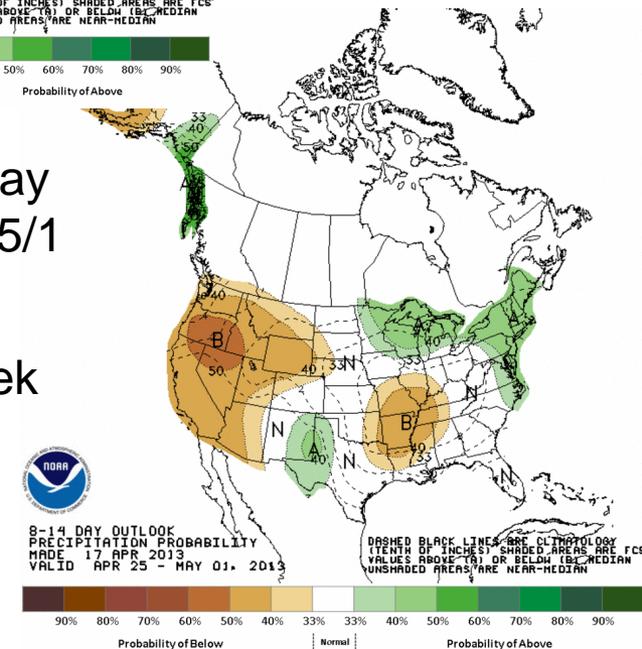


5 day total
4/18 – 4/23



6-10 day
4/23 – 4/27

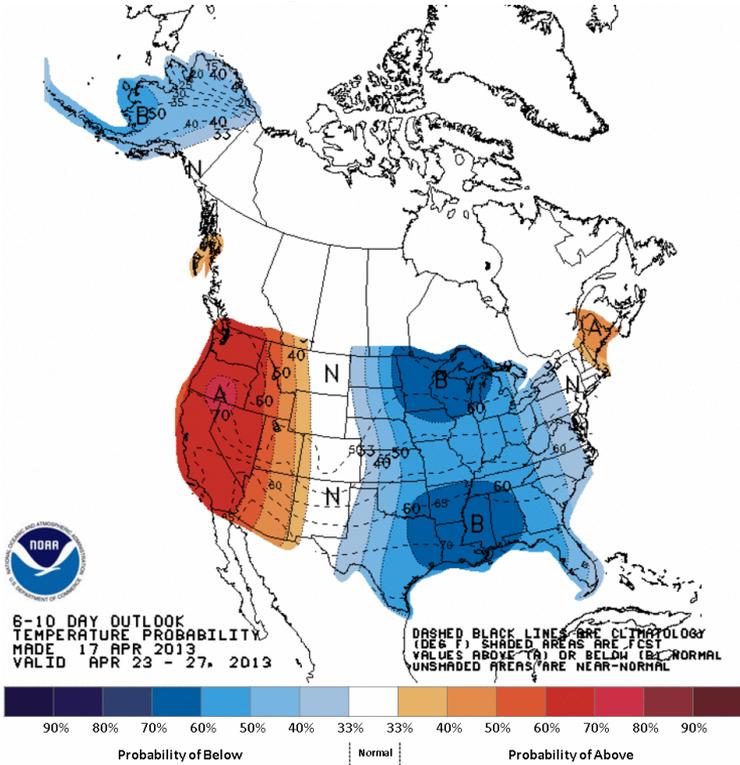
8-14 day
4/25 – 5/1



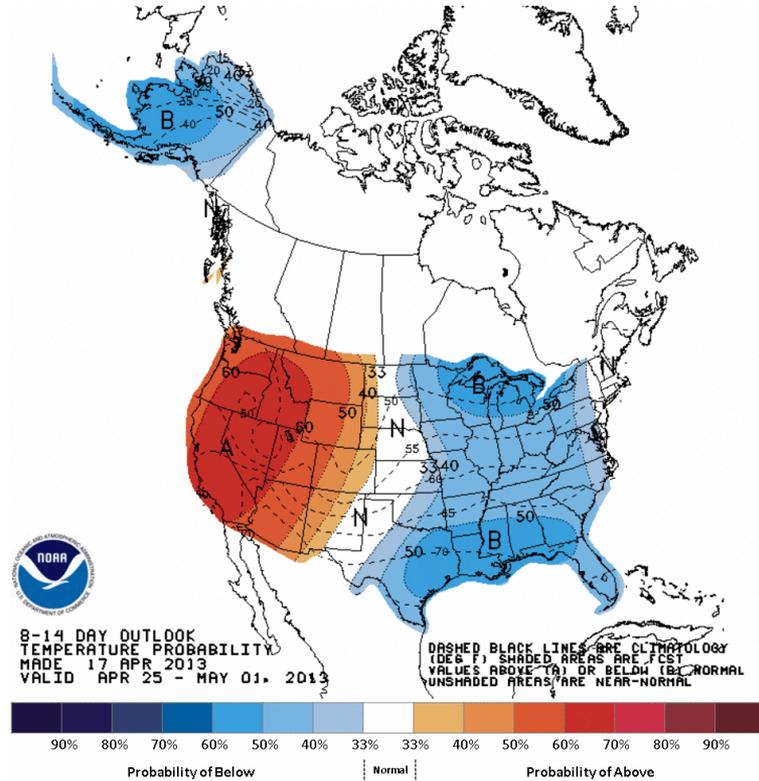
- Additional Storminess Sat through Tue/Wed
- High pressure / warmer temperatures follow later next week
- Less confidence beyond, but maybe trend toward normal

Forecast Temperature

6-10 day
4/23 – 4/27



8-14 day
4/25 – 5/1



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 (April 16th, May 1st, May 16th depending upon runoff scenario)
- ~60 forecast points – some unregulated, some regulated
- Updated as needed
- Forecast Users include:
 - Emergency Managers
 - USGS hydrologists
 - Water Managers
 - River Recreation

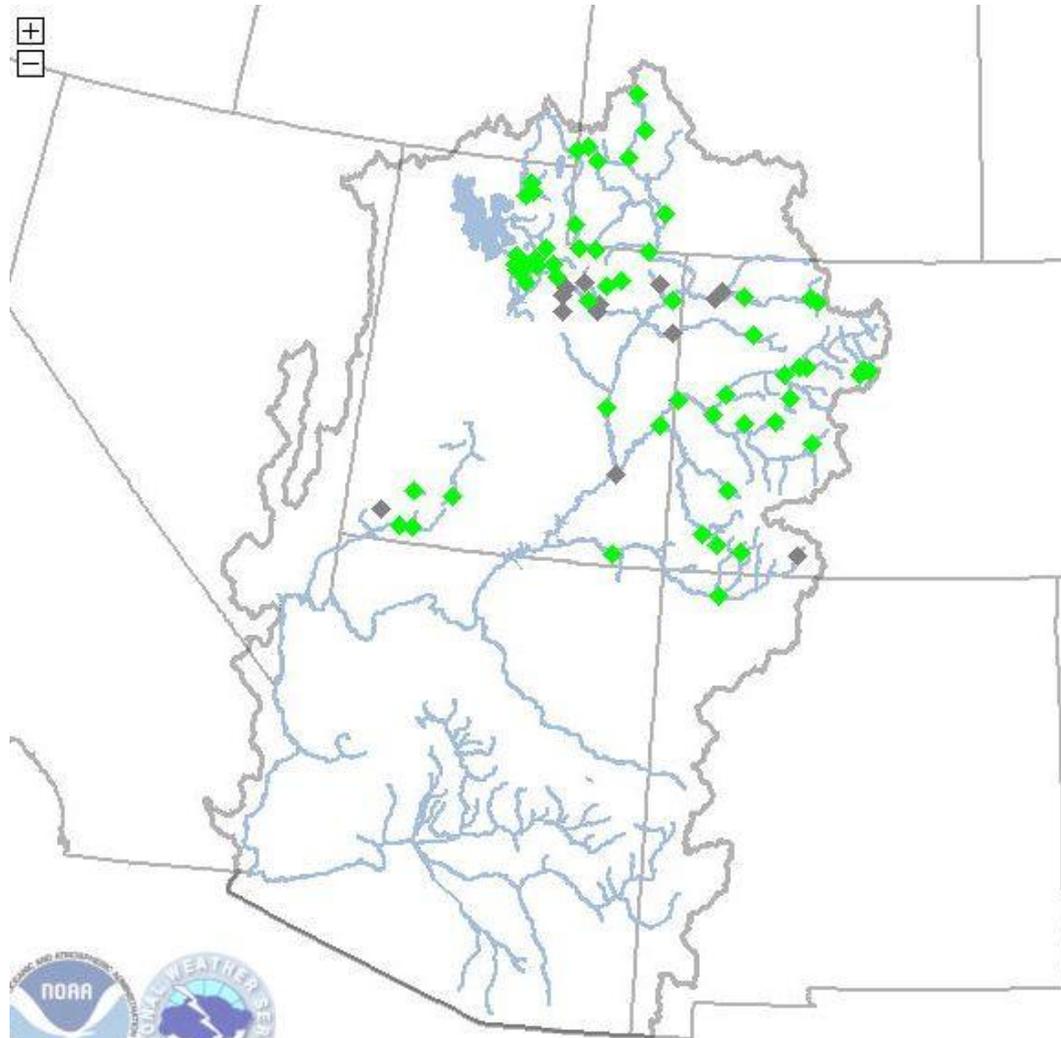
Spring Weather Really Matters

- **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

April 17 Peak Flow Forecasts

Peak Point Flood Probability

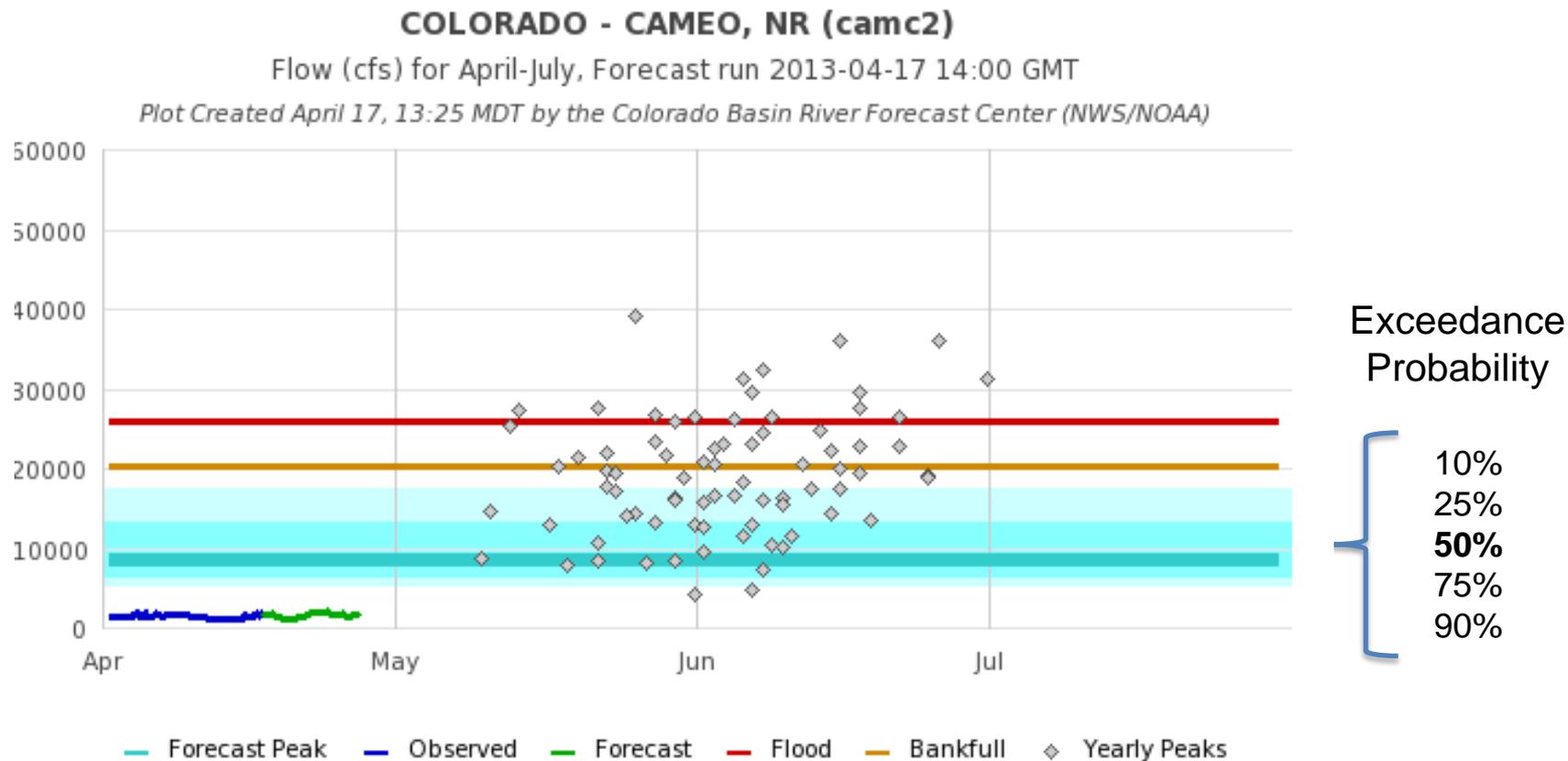
◇ No Forecast ◆ No Flood Stage ◆ <10 ◆ >10 ◆ >25 ◆ >50



Created: April 17, 2013, 12:47

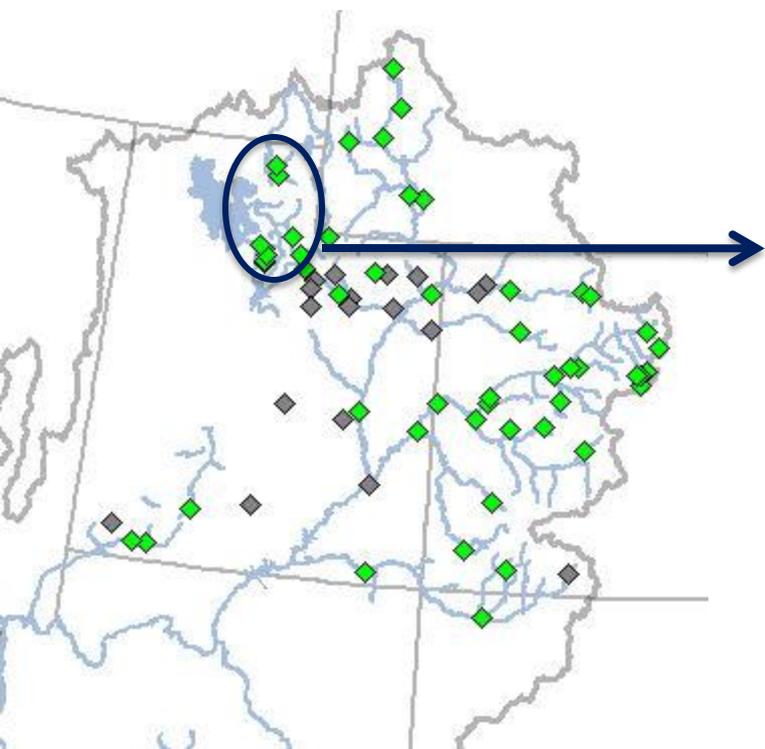
Peak Flow Forecast Graphic

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



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

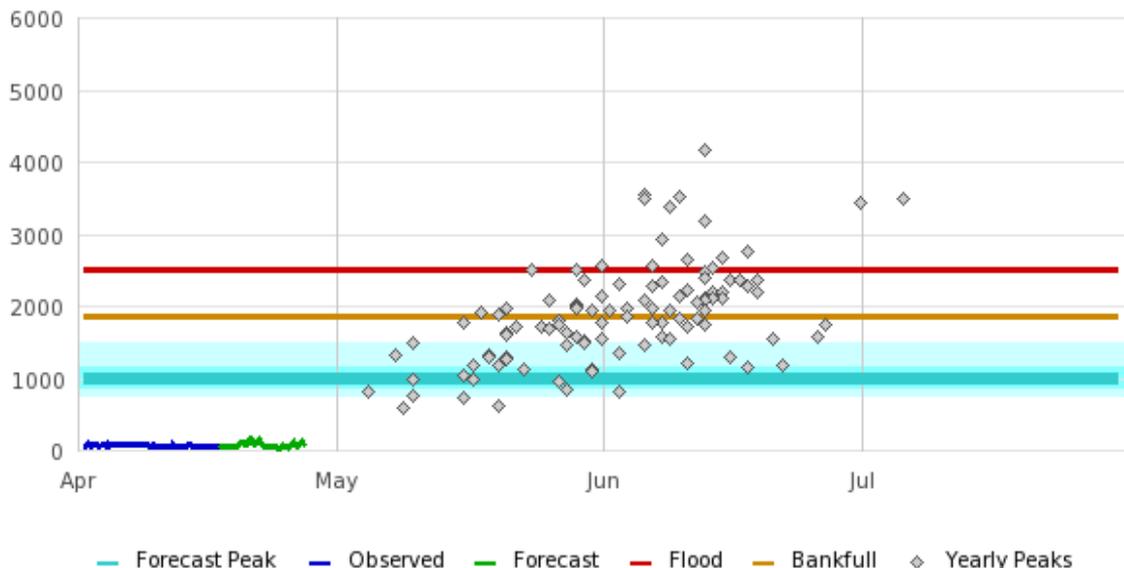
Great Basin



WEBER - OAKLEY, NR (oawu1)

Flow (cfs) for April-July, Forecast run 2013-04-17 16:00 GMT

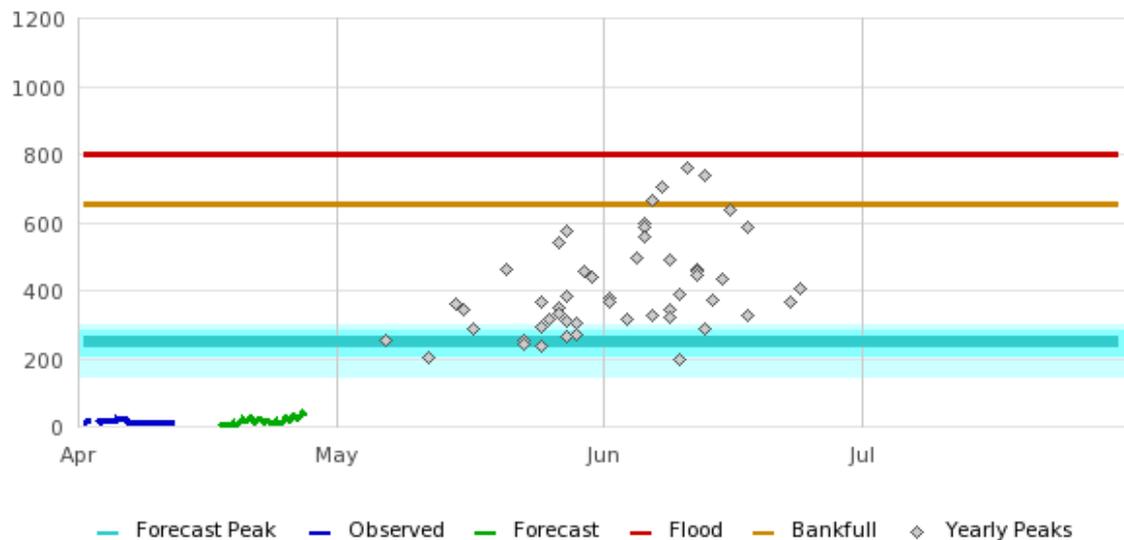
Plot Created April 17, 13:27 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



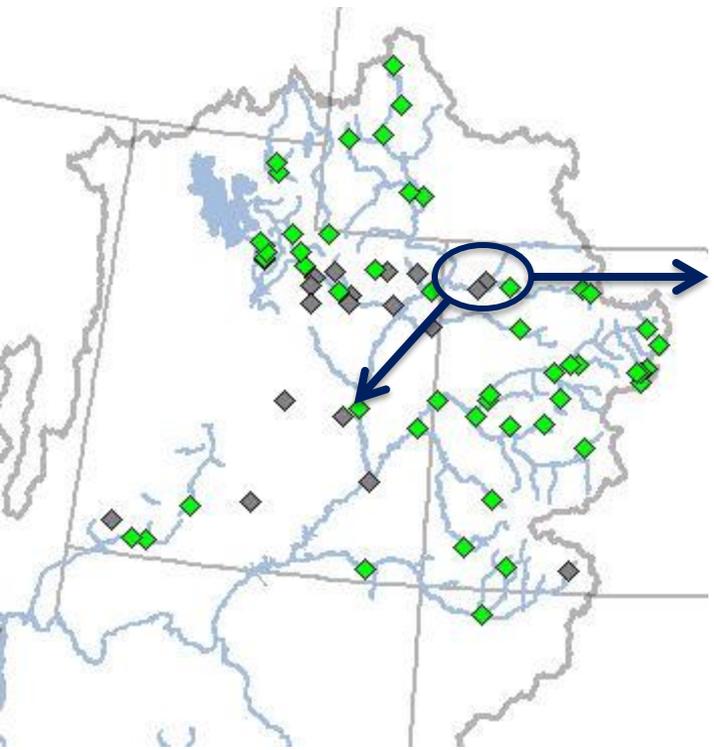
LITTLE COTTONWOOD CK - SALT LAKE CITY, NR (lctu1)

Flow (cfs) for April-July, Forecast run 2013-04-17 16:00 GMT

Plot Created April 17, 13:30 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



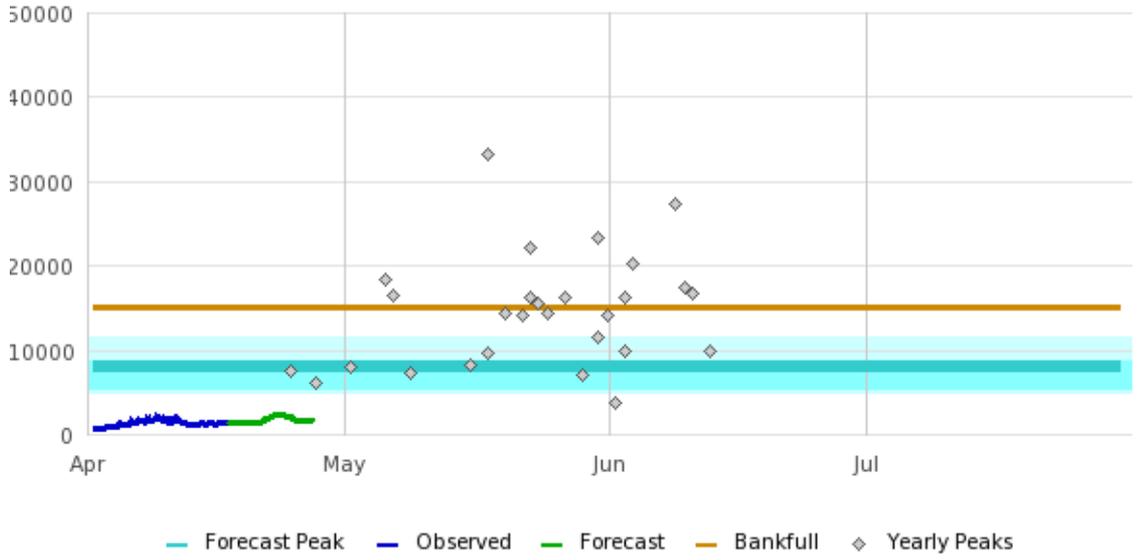
Green River



YAMPA - DEERLODGE PARK (ydlc2)

Flow (cfs) for April-July, Forecast run 2013-04-17 14:00 GMT

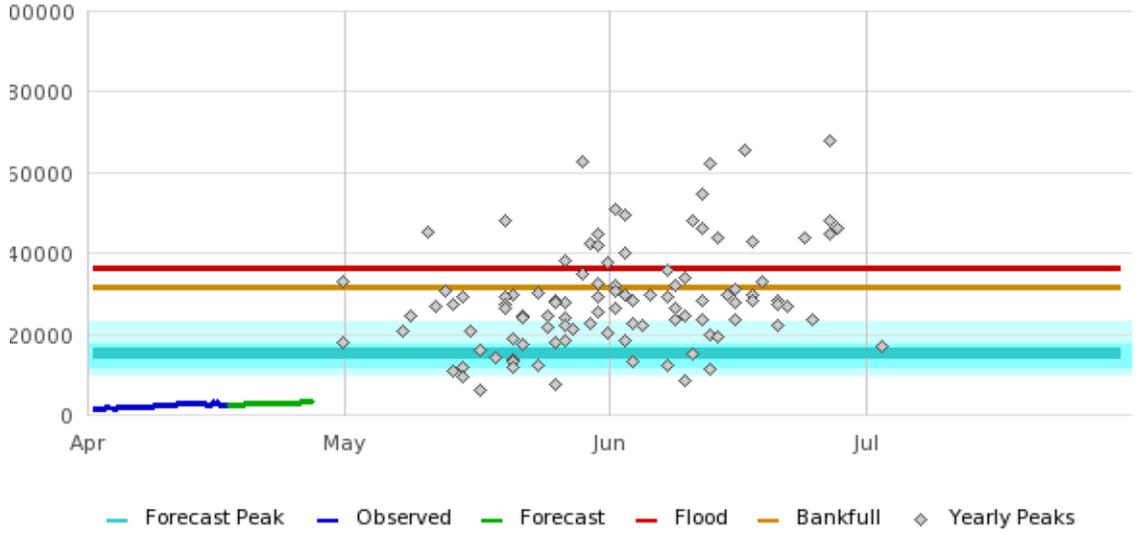
Plot Created April 17, 13:48 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



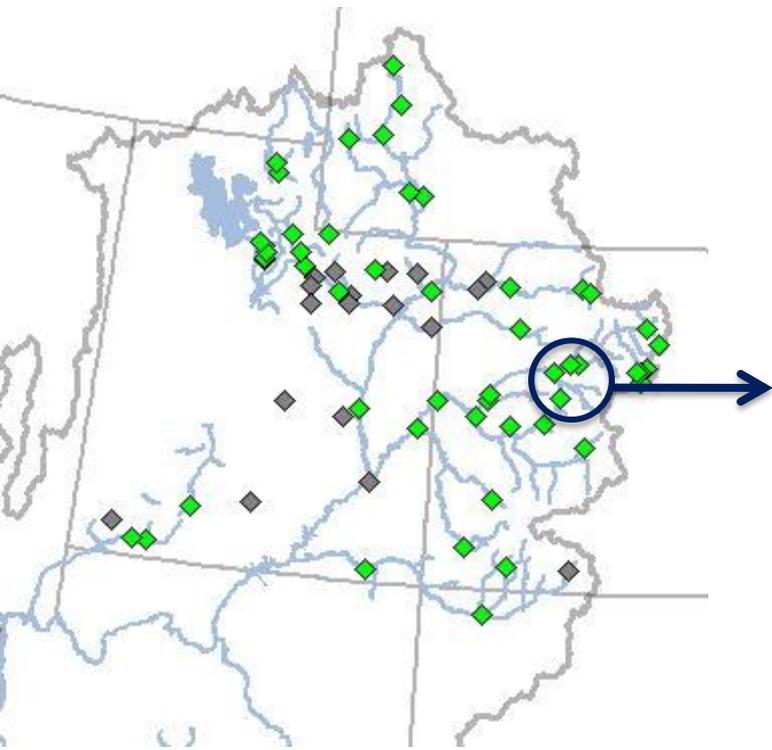
GREEN - GREEN RIVER, UT (grvu1)

Flow (cfs) for April-July, Forecast run 2013-04-17 16:00 GMT

Plot Created April 17, 13:49 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



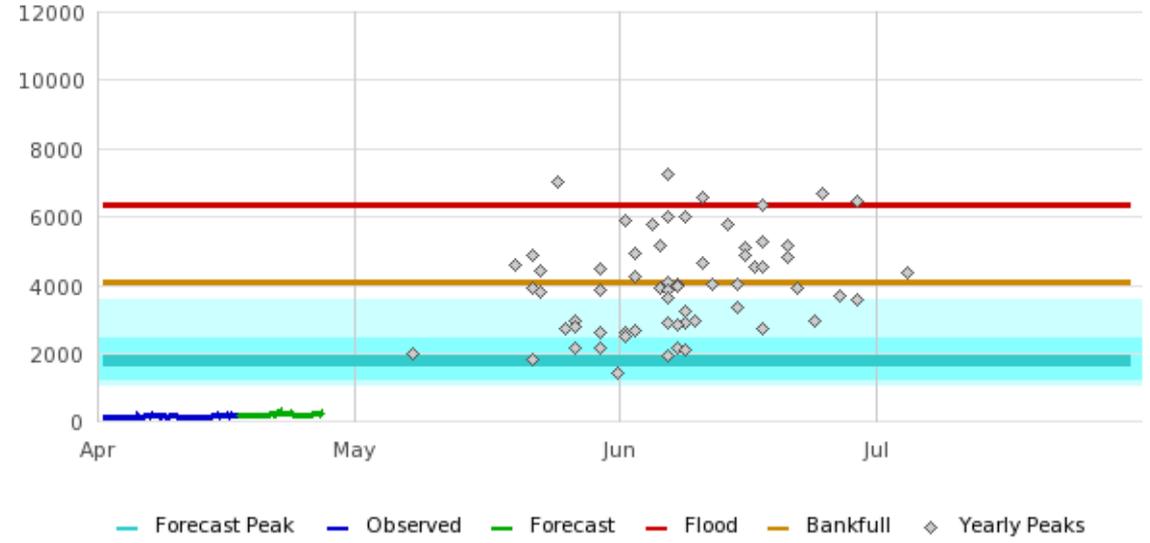
Upper Colorado



EAGLE - GYPSUM, BLO (gpsc2)

Flow (cfs) for April-July, Forecast run 2013-04-17 14:00 GMT

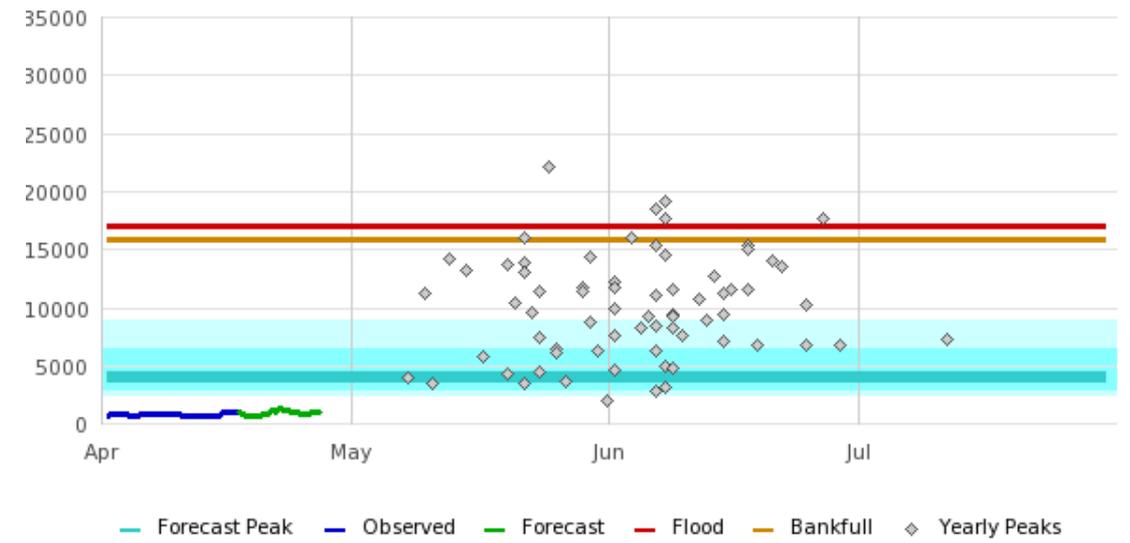
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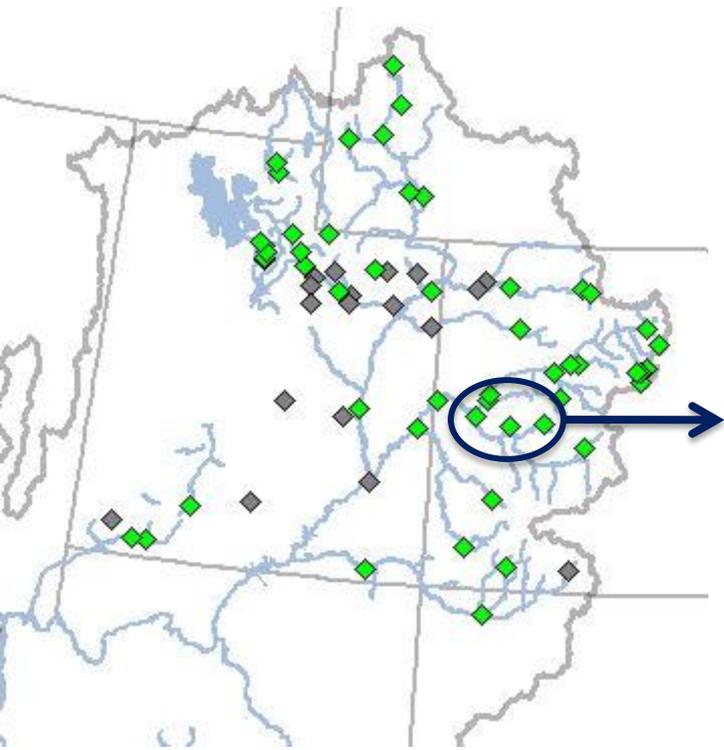
COLORADO - DOTSERO, NR (eglc2)

Flow (cfs) for April-July, Forecast run 2013-04-17 14:00 GMT

Plot Created April 17, 13:35 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



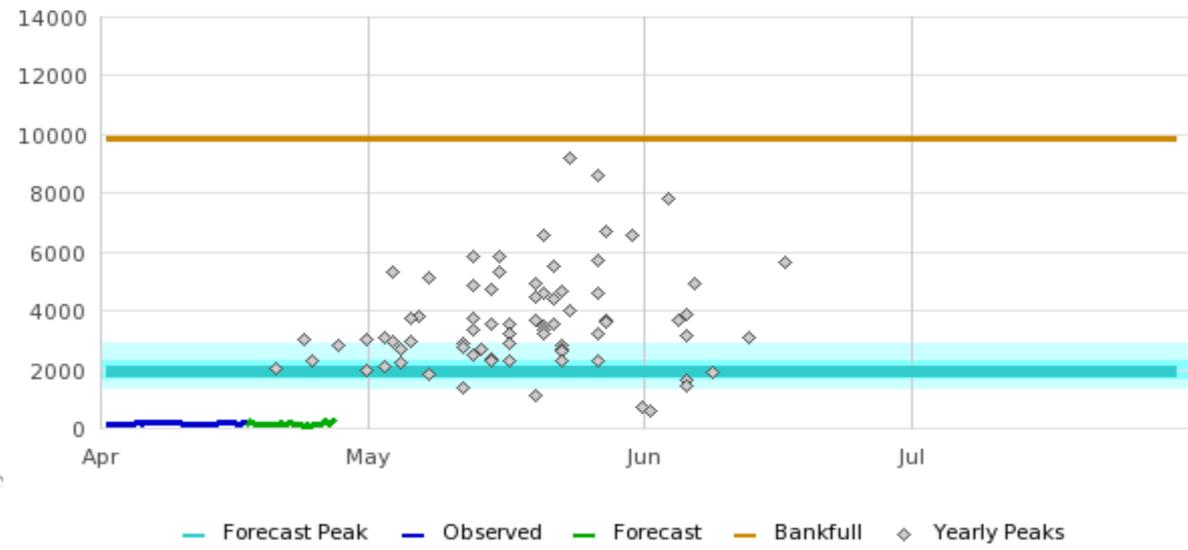
Gunnison



NF GUNNISON - SOMERSET, NR (somc2)

Flow (cfs) for April-July, Forecast run 2013-04-17 16:00 GMT

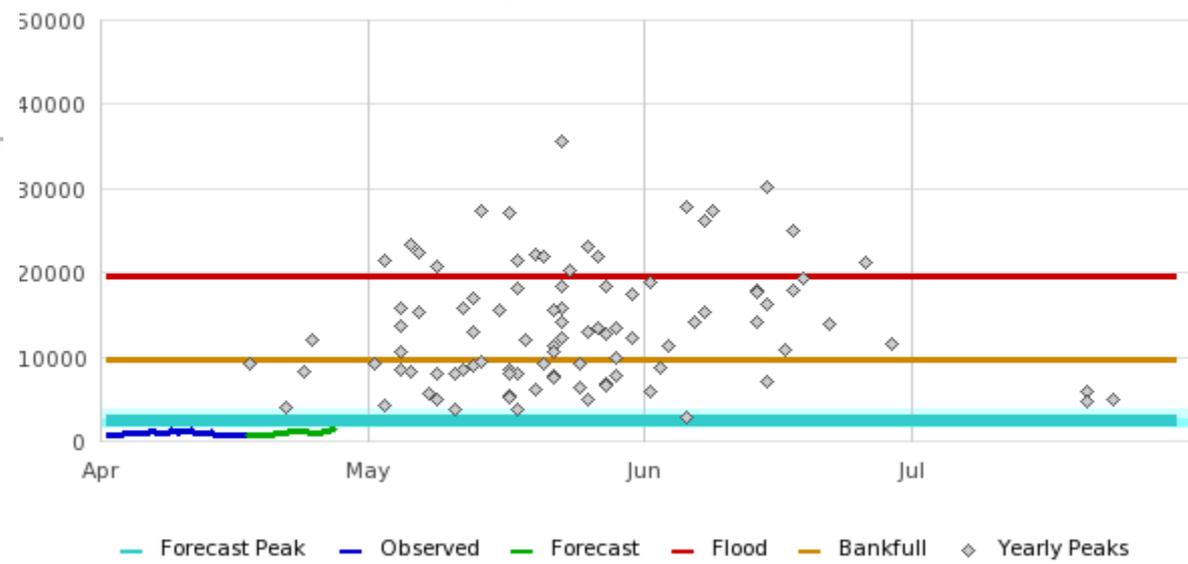
Plot Created April 17, 13:37 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



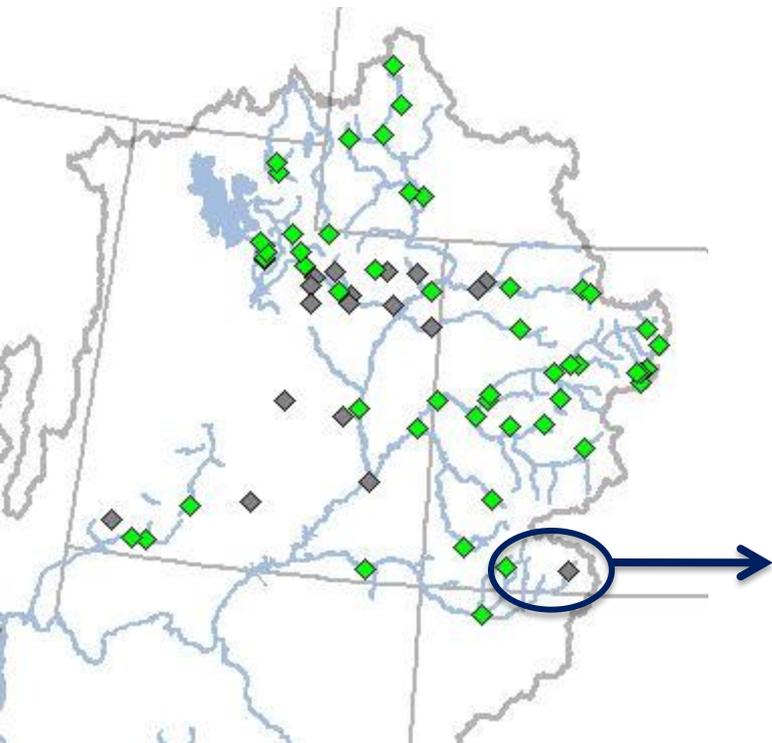
GUNNISON - GRAND JUNCTION, NR (gjnc2)

Flow (cfs) for April-July, Forecast run 2013-04-17 16:00 GMT

Plot Created April 17, 13:38 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



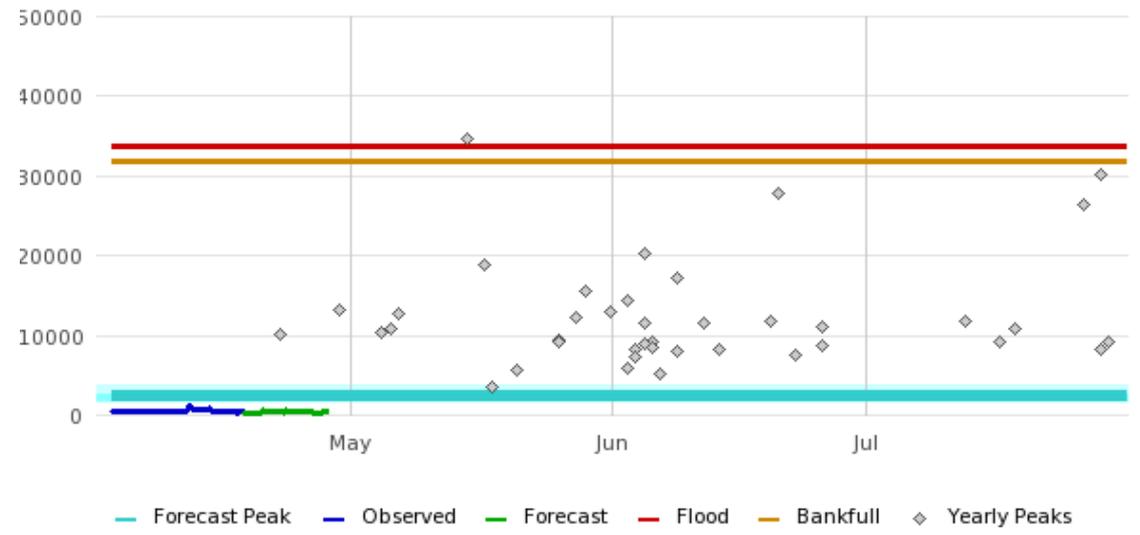
San Juan



SAN JUAN - BLUFF, NR (bffu1)

Flow (cfs) for April-July, Forecast run 2013-04-18 14:00 GMT

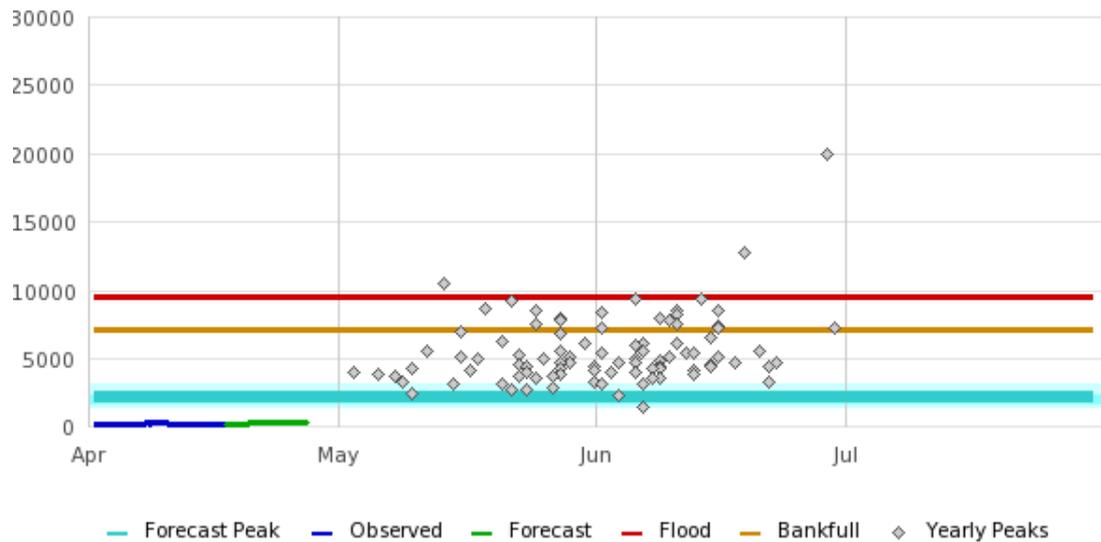
Plot Created April 18, 09:35 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



ANIMAS - DURANGO (drgc2)

Flow (cfs) for April-July, Forecast run 2013-04-17 16:00 GMT

Plot Created April 17, 13:45 MDT by the Colorado Basin River Forecast Center (NWS/NOAA)



News: Recording: [How to use this web page webinar](#)

[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](#)

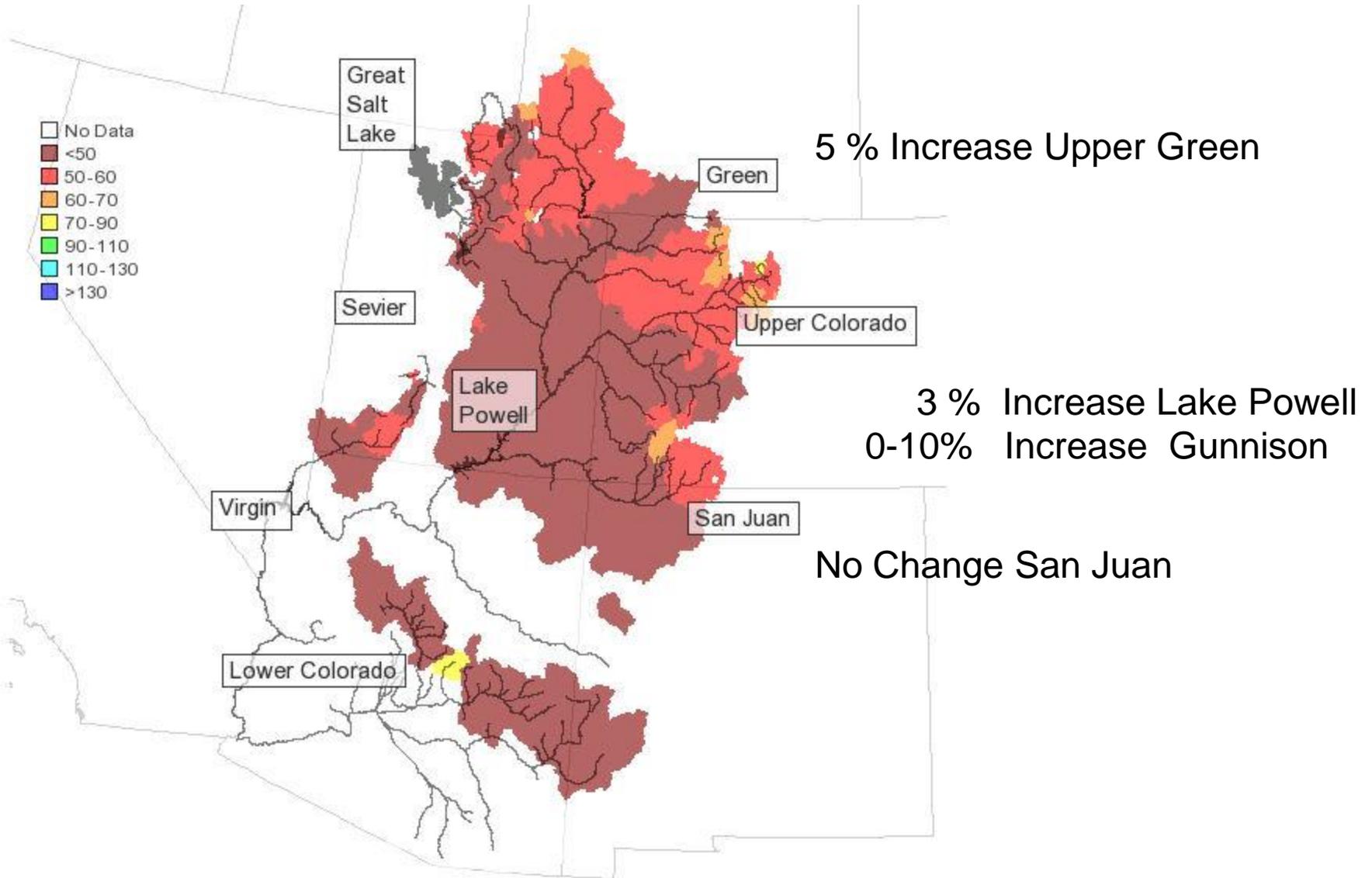
Peak Flood Probability
 ◇ No Forecast ◆ No Flood Stage ◆ <10 ◆ >10 ◆ >25 ◆ >50

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 at www.cbrfc.noaa.gov

April 16th Water Supply Forecast Update (Major Reservoirs)

Change in April-July forecast volumes as a percent of average



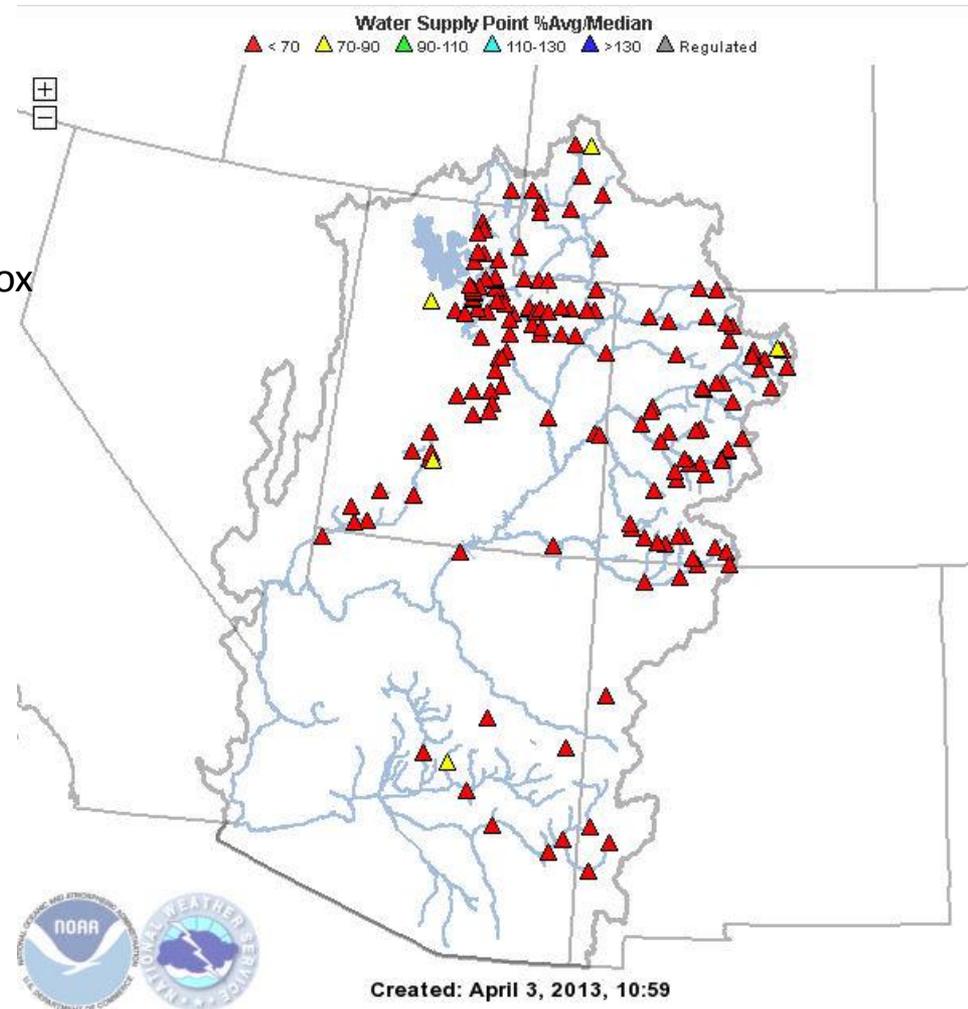
Peak Flow Forecasts

- Forecast updates planned for:
 - 5/1, 5/17, 6/1? (depending on evolution of the runoff)
- Webinars: 5/6, 6/6 – all at 11 am
 - water supply volumes
 - Peak flow ~ 5/18 if needed

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



Feedback, Questions, Concerns always welcome....



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