USDA United States Department of Agriculture

Colorado
Water Supply Outlook Report
May 1, 2014

The Cascade #2 SNOTEL site with no measurable snow on the pillow as of May 8th, 2014. The site is located in the Animas River Basin in southwest Colorado. The site was snow free on March 30th this year, which is over two weeks earlier than normal. Southwest Colorado is experiencing its fourth consecutive year of below normal snow accumulation and is preparing for potential drought conditions this summer. The photo was taken during the annual maintenance visit to the site by Christine Shook.

REMINDER: We are soliciting field work photos from our snow surveyors again this year. Each month we will pick one to grace the cover of this report! The photographer will be given proper credit of course. Please include information on where, when and of who/what the photo was taken.

Basin Outlook Reports
and
Federal - State - Private
Cooperative Snow Surveys

For more water supply and resource management information, contact:

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Colorado
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Summary

When viewing current statewide totals for all water supply parameters, it would be difficult to find a more "normal" year. With statewide snowpack, water year-to-date precipitation and reservoir storage at 107, 102 and 93 percent normal respectively, conditions are favorable for good water supplies this season. Of course the story is more complex than just the statewide numbers. Although 2014 was not a La Nina year some of the snow accumulation patterns could be construed as such the Upper Rio Grande and the combined San Juan, Animas, Dolores and San Miguel basins in Colorado both have snowpack percentages below 70 percent of median, while significantly better snowpack's exist in the northern tier basins. All of the northern basins boast snowpack percentages that are greater than 120 percent of median. In general the statewide snowpack trended downward over the course of April falling 8 percentage as a result of below average precipitation in the form of snowfall throughout the month. Although monthly precipitation for the state was just 80 percent of average this April, year-to-date precipitation rounded out at 102 percent of average on May 1. With nearly all reservoirs currently at better standing than last year at this time, it is hard to frown upon the below average storage in the Upper Rio Grande and Arkansas River basins. In addition the vast majority of water supply forecasts for Colorado look to be better than last year based on current data.

Snowpack

Despite a slight decline in the snowpack percent of median during April, statewide snowpack was still 128 percent of last year according to SNOTEL and snow course observations on May 1. The Upper Rio Grande saw the greatest decline in snowpack with a 29 percent drop this month. All major basins saw a decrease this month, yet many remain near to above normal while some are well above normal. With nearly one third of all sub basin snowpack's at 125 percent of median or better and 19 of 34 sub basins above 100 percent of median, this season is just what was needed to replenish last year's ailing water supplies in the state's northern watersheds. In the other regions of the state, the Arkansas and Gunnison basins are fortunate to have snowpack's at 99 and 97 percent of median respectively, while the "have not" basins include the Upper Rio Grande and the combined San Juan watersheds at 50 and 68 percent of median respectively. The moral of this snow season is: snowpack varies greatly across the state, from 41 percent of median in the combined Conejos & Rio San Antonio watersheds to 169 percent of median in the Muddy Creek drainage in the Colorado River basin. Be sure to look at basins of interest and the sites within for the most concise data to prepare for the year to come.

Precipitation

For the first time since January, monthly precipitation was below average, not just statewide, but in every major basin. Quite similarly to January when monthly precipitation was at 81 percent of average, precipitation this month was 80 percent of average. Thanks to strong accumulations in October, January, February and March, year-to-date precipitation remains slightly above normal at this point. Thankfully the differences in year-to-date precipitation across the state are not as extreme as in the case of snowpack. The Upper Rio Grande basin has the lowest year-to-date total at 80 percent of average, with the only above average month this water year being November. Conversely, the South Platte basin is currently showing year-to-date precipitation at 119 percent of average. In general the precipitation map looks much the same as the snowpack map with better totals in the northern basins, and below average numbers in the south.

Reservoir Storage

With over one half of the states reservoirs currently at 100 percent of average storage or better, and nearly three quarters of the state's reservoirs at or above 80 percent of average at the end of April, statewide reservoir storage is in fairly good standing. The Arkansas River basin currently has the lowest storage as a percent of average at 59 percent but on a positive note Pueblo Reservoir is right at the 30 year average storage with volumes at 54 percent of capacity. The South Platte River basin has the best storage at 110 percent of average and 90 percent of capacity. With the snowpack in the basin this year it is likely the South Platte reservoirs will reach 100 percent capacity this spring. The vast majority of all reservoirs in the state currently have higher storage levels than at this time last year. For areas with well above normal snowpack's and projected streamflows, it is often necessary to draft reservoirs to make room for the above normal expected inflows. If reservoir storage is below average in a drainage basin with above to well above normal snowpack the project may be anticipating above average inflows.

Streamflow

Projected streamflows in Colorado are typically a reflection of current snowpack totals and monthly precipitation totals throughout the year, and this month is no exception. Similar to the snowpack reports current forecasts vary widely across the state from 148 percent of the May to July average for the Inflow to Wolford Mountain Reservoir to 16 percent of the May to September average at San Antonio River at Ortiz in the Upper Rio Grande. For the three major watersheds in the north, nearly all streamflow forecasts are calling for above normal runoff this season. Within that same region only three forecast points have forecasts below average; all other points look to have strong water supplies going into the beginning of summer. On the flip side of the state, in the four major southern basins, just over one quarter of the forecasted streamflows are projected to be 100 percent of normal or better. Brightening the scenario further in the south, 24 of the 55 forecast points are projected to be better than 80 percent of average. But with highly variable snowpack across the state forecasts differ greatly as well, be sure to consult the actual forecast information for the most accurate information.

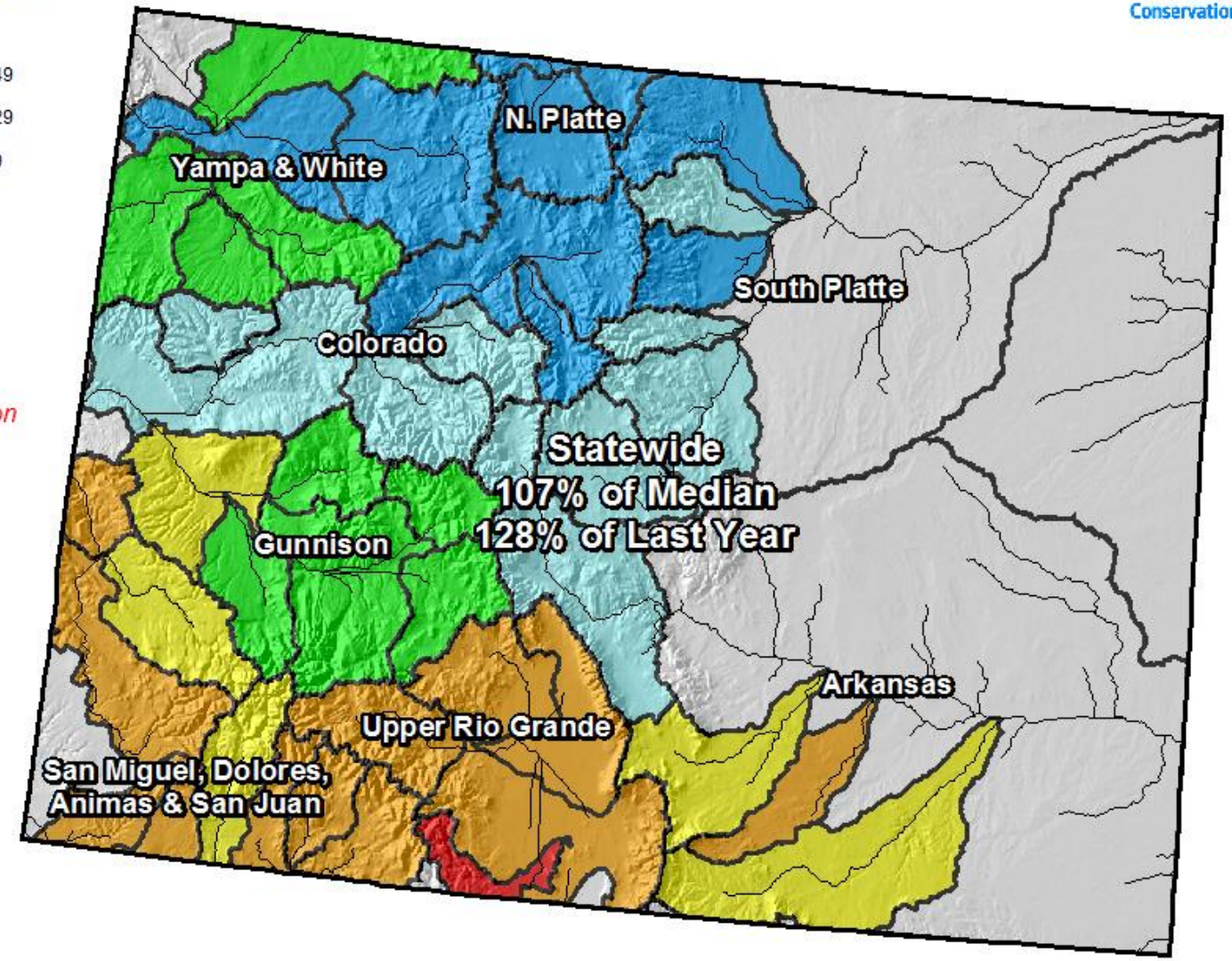
Colorado Snowpack Map

NRCS
Natural Resources
Conservation Service

Percent of Median

- >= 150
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- < 50

Provisional Data
Subject to Revision



Current as of May 1, 2014

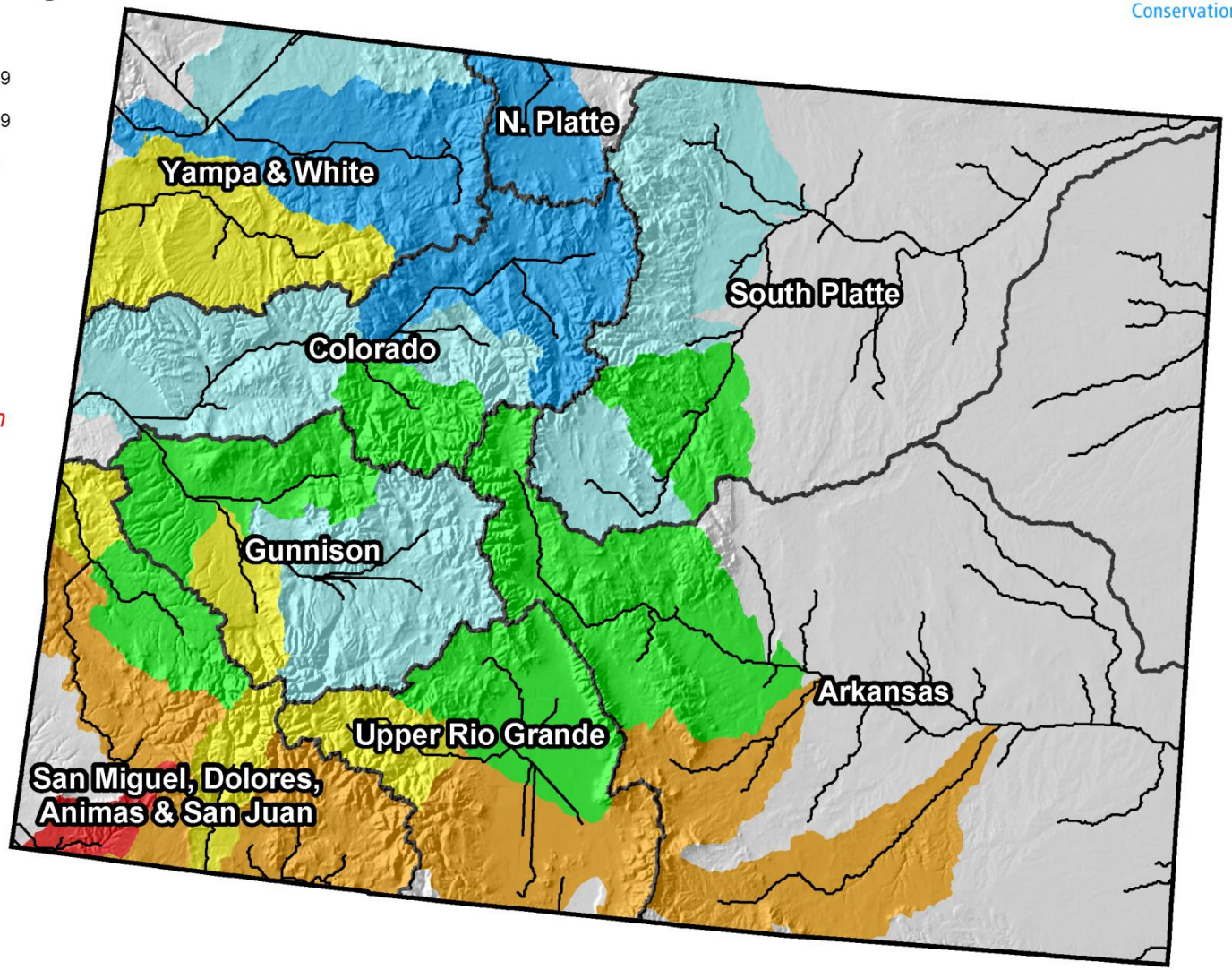
Colorado Streamflow Forecast Map

NRCS
Natural Resources
Conservation Service

Percent of Average

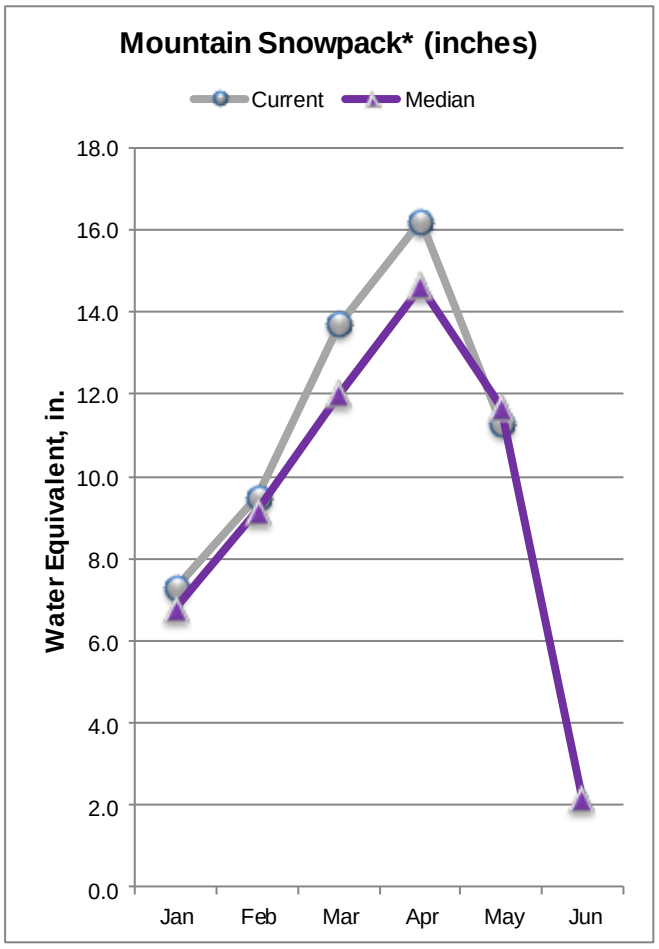
- >= 150
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- < 50

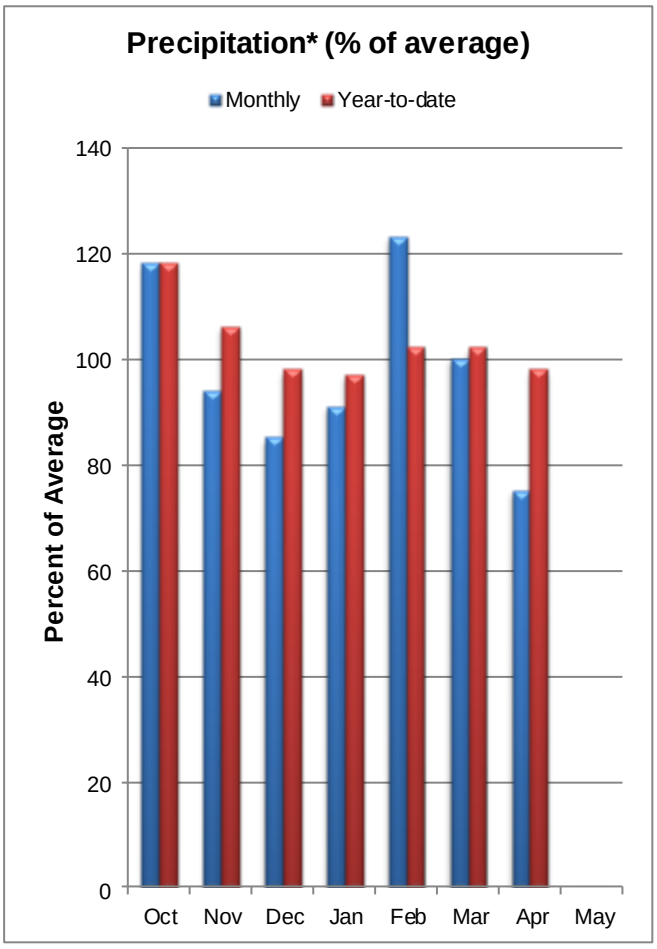
Provisional Data
Subject to Revision



Current as of May 1, 2014

GUNNISON RIVER BASIN
as of May 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

Overall the Gunnison basin had a very normal snow season with the snowpack reaching its peak in early April at 107 percent of the normal peak. The snow melt season was in full force for the rest of April and the snowpack was at 97 percent of median as of May 1.

PRECIPITATION

The basin recorded its lowest monthly precipitation totals so far this water year during April. April precipitation was just 75 percent of average which caused year-to-date precipitation to drop slightly to 98 percent of average.

RESERVOIR

With runoff season started the reservoirs in the basin have begun to fill. Storage at the end of April was 107 percent of average.

STREAMFLOW FORECASTS

Current predictions for this season's runoff have declined slightly this month. The May to July forecasts range from 114 percent of average for the Slate River near Crested Butte to 64 percent of average for both the Inflow to Paonia Reservoir and Surface Creek at Cedaredge.

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Gunnison River Basin
Streamflow Forecasts - May 1, 2014

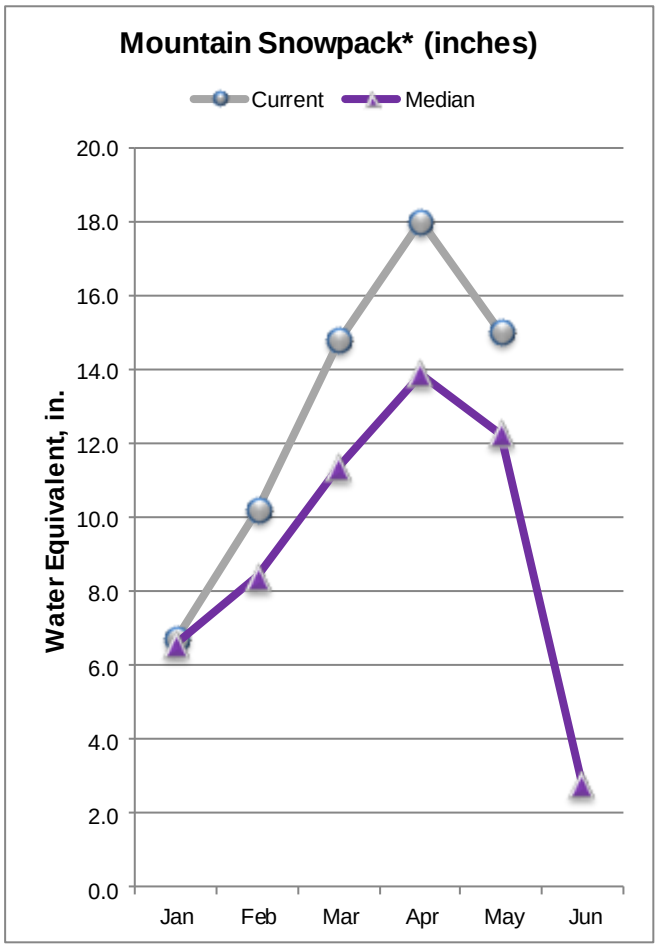
GUNNISON RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Taylor Park Reservoir Inflow								
	APR-JUL	91	104	112	113%	121	135	99
	MAY-JUL	79	92	100	111%	109	123	90
Slate R nr Crested Butte								
	APR-JUL	85	92	98	118%	103	111	83
	MAY-JUL	71	78	84	114%	89	97	74
East R at Almont								
	APR-JUL	186	200	210	115%	220	235	182
	MAY-JUL	156	170	180	108%	190	205	166
Gunnison R near Gunnison [2]								
	APR-JUL	360	400	425	115%	460	505	370
	MAY-JUL	295	335	360	107%	395	440	335
Tomichi Ck at Sargents								
	APR-JUL	23	28	33	110%	38	45	30
	MAY-JUL	15.8	21	26	100%	31	38	26
Cochetopa Ck bl Rock Ck nr Parlin								
	APR-JUL	10.4	13.7	16.3	109%	19.4	24	15
	MAY-JUL	5.2	8.5	11.1	93%	14.2	18.8	11.9
Tomichi Ck at Gunnison								
	APR-JUL	57	72	83	112%	96	118	74
	MAY-JUL	31	46	57	92%	70	92	62
Lake Fk at Gateview								
	APR-JUL	107	118	127	103%	136	149	123
	MAY-JUL	95	106	115	99%	124	137	116
Blue Mesa Reservoir Inflow [2]								
	APR-JUL	665	730	780	116%	830	910	675
	MAY-JUL	535	600	650	108%	700	780	600
Paonia Reservoir Inflow								
	MAR-JUN	56	64	70	73%	77	88	96
	APR-JUL	53	63	70	72%	78	91	97
	MAY-JUN	30	38	44	64%	51	62	69
	MAY-JUL	31	41	48	64%	56	69	75
NF Gunnison R nr Somerset[2]								
	APR-JUL	220	245	265	91%	285	315	290
	MAY-JUL	160	185	205	85%	225	255	240
Surface Ck at Cedaredge								
	APR-JUL	10.3	11.6	12.5	74%	13.5	15	16.8
	MAY-JUL	6.8	8.1	9	64%	10	11.5	14.1
Ridgway Reservoir Inflow								
	APR-JUL	77	87	94	93%	102	113	101
	MAY-JUL	64	74	81	89%	89	100	91
Uncompahgre R at Colona [2]								
	APR-JUL	87	104	116	85%	130	151	137
	MAY-JUL	74	91	103	86%	117	138	120
Gunnison R nr Grand Junction [2]								
	APR-JUL	1160	1320	1430	97%	1550	1730	1480
	MAY-JUL	880	1040	1150	93%	1270	1450	1240

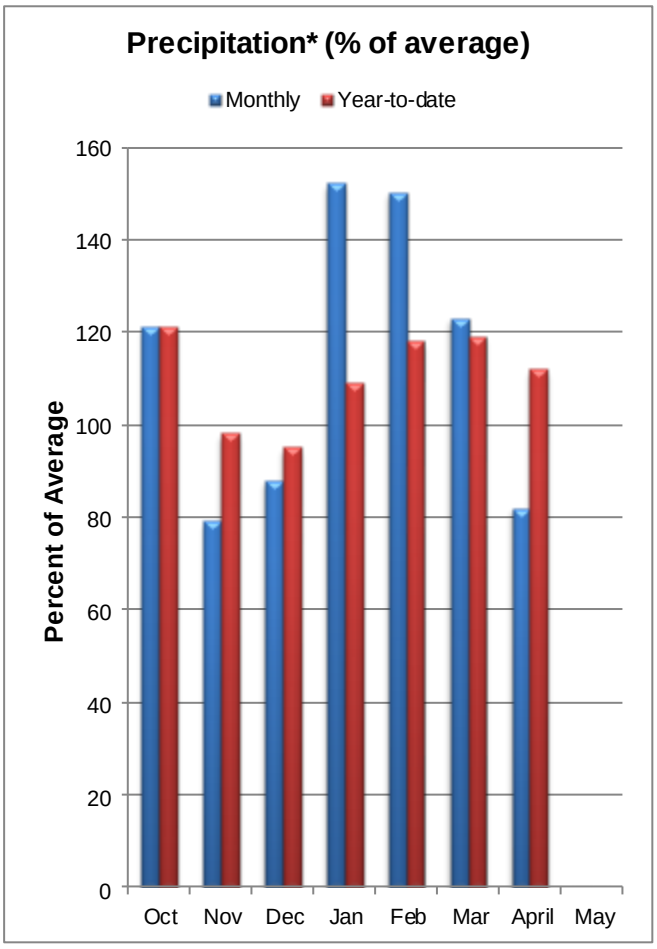
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BLUE MESA RESERVOIR	508.1	338.0	457.1	830.0
CRAWFORD RESERVOIR	12.1	5.8	11.8	14.0
CRYSTAL RESERVOIR	6.5	5.2	9.0	17.5
FRUITGROWERS RESERVOIR	3.5	3.5	4.0	3.6
FRUITLAND RESERVOIR	7.0	4.5	5.1	9.2
MORROW POINT RESERVOIR	106.1	106.5	111.8	121.0
PAONIA RESERVOIR	0.6	7.0	5.8	15.4
RIDGEWAY RESERVOIR	68.0	60.4	66.6	83.0
SILVERJACK RESERVOIR	10.4	3.7	7.8	12.8
TAYLOR PARK RESERVOIR	70.3	59.2	61.2	106.0
VOUGA RESERVOIR	0.3	0.8	0.9	0.0
Basin-wide Total	792.9	594.6	741.1	1212.5
# of reservoirs	11	11	11	11

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
UPPER GUNNISON BASIN	18	96%	80%
SURFACE CREEK BASIN	3	81%	85%
UNCOMPAHGRE BASIN	4	98%	55%
GUNNISON RIVER BASIN	22	97%	76%

UPPER COLORADO RIVER BASIN
as of May 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

Since February the Colorado basin has reported above normal snow accumulation. According to the SNOTEL data the snowpack peaked at 128 percent of the normal peak on April 8th and began to melt in earnest after that. As of May 1 the snowpack was at 122 percent of median.

PRECIPITATION

Total precipitation during April was just 82 percent of average while year-to-date precipitation remains above normal at 112 percent of average.

RESERVOIR

There was not much change in reservoir storage this month; end of April storage totals were 94 percent of average and 59 percent of capacity.

STREAMFLOW FORECASTS

May to July forecasts currently range from 148 percent of average for the Inflow to Wolford Mountain Reservoir to 98 percent of average for the Roaring Fork at Glenwood Springs.

Data Current as of: 5/7/2014 1:31:59 PM

Upper Colorado River Basin
Streamflow Forecasts - May 1, 2014

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

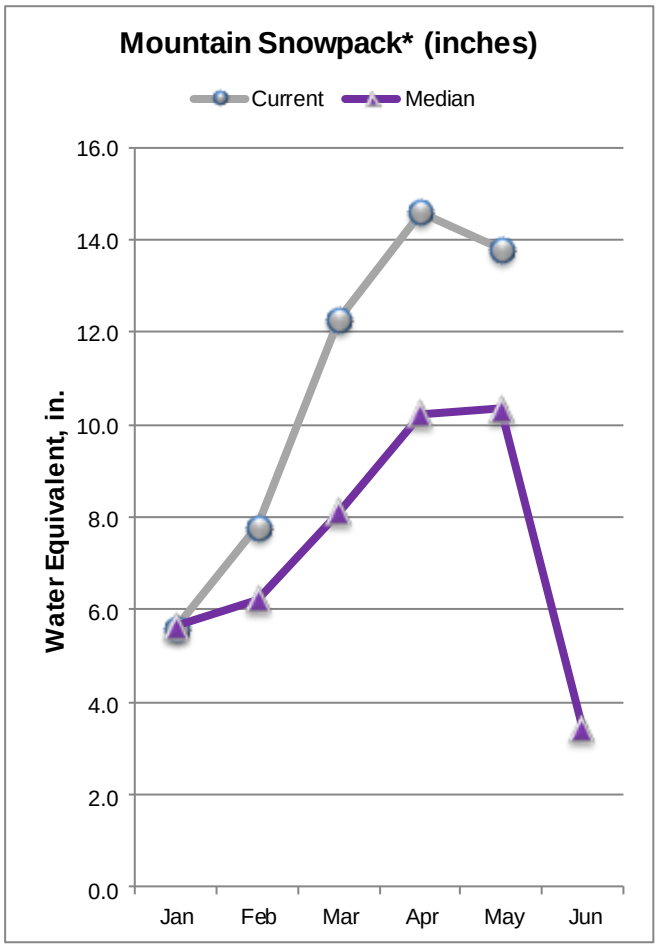
UPPER COLORADO RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Lake Granby Inflow [2]								
	APR-JUL	250	275	295	134%	310	340	220
	MAY-JUL	230	255	275	134%	290	320	205
Willow Ck Reservoir Inflow								
	APR-JUL	53	62	69	147%	76	88	47
	MAY-JUL	44	53	60	140%	67	79	43
Williams Fk bl Williams Fk Reservoir[2]								
	APR-JUL	107	121	131	135%	141	156	97
	MAY-JUL	96	110	120	133%	130	145	90
Wolford Mtn Reservoir Inflow								
	APR-JUL	67	75	82	152%	88	99	54
	MAY-JUL	53	61	68	148%	74	85	46
Dillon Reservoir Inflow[2]								
	APR-JUL	210	230	245	150%	260	285	163
	MAY-JUL	192	210	225	147%	240	265	153
Green Mountain Reservoir Inflow[2]								
	APR-JUL	340	380	405	147%	435	480	275
	MAY-JUL	305	345	370	145%	400	445	255
Eagle R bl Gypsum [2]								
	APR-JUL	320	365	395	118%	430	480	335
	MAY-JUL	285	330	360	116%	395	445	310
Colorado R nr Dotsero [2]								
	APR-JUL	1610	1810	1950	139%	2100	2330	1400
	MAY-JUL	1400	1600	1740	136%	1890	2120	1280
Ruedi Reservoir Inflow [2]								
	APR-JUL	131	146	156	112%	167	184	139
	MAY-JUL	118	133	143	110%	154	171	130
Roaring Fk at Glenwood Springs[2]								
	APR-JUL	595	655	700	101%	745	815	690
	MAY-JUL	525	585	630	98%	675	745	640
Colorado R nr Cameo [2]								
	APR-JUL	2470	2710	2880	123%	3060	3330	2350
	MAY-JUL	2130	2370	2540	118%	2720	2990	2150

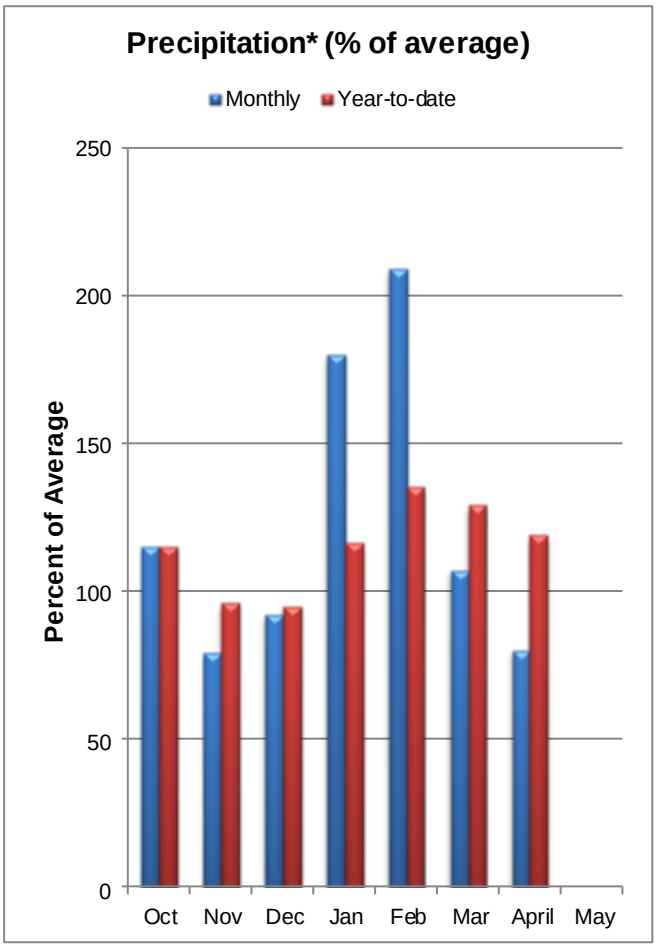
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
DILLON RESERVOIR	206.4	161.8	213.6	254.0
GREEN MOUNTAIN RESERVOIR	61.7	58.4	59.5	146.8
HOMESTAKE RESERVOIR	0.0	0.3	19.5	43.0
LAKE GRANBY	220.8	107.2	262.4	465.6
RUEDI RESERVOIR	64.8	62.5	62.6	102.0
SHADOW MOUNTAIN RESERVOIR	17.2	17.4	17.2	18.4
VEGA RESERVOIR	23.8	11.3	18.3	32.9
WILLIAMS FORK RESERVOIR	75.2	45.4	60.8	97.0
WILLOW CREEK RESERVOIR	6.9	6.4	6.6	9.1
WOLFORD MOUNTAIN RESERVOIR	46.4	26.9	47.7	65.9
Basin-wide Total	723.2	497.6	768.2	1234.7
# of reservoirs	10	10	10	10

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
BLUE RIVER BASIN	8	140%	105%
HEADWATERS COLORADO RIVER	35	131%	105%
MUDDY CREEK BASIN	4	169%	112%
EAGLE RIVER BASIN	5	114%	94%
PLATEAU CREEK BASIN	3	81%	85%
ROARING FORK BASIN	10	111%	92%
WILLIAMS FORK BASIN	5	116%	104%
WILLOW CREEK BASIN	4	124%	126%
UPPER COLORADO RIVER BASIN	48	122%	100%

SOUTH PLATTE RIVER BASIN
as of May 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

According to SNOTEL sites in the basin, the snowpack in the South Platte basin peaked at 131 percent of the normal peak this season. Despite melt beginning in late April the snowpack as of May 1 was 133 percent of the median for this time of year.

PRECIPITATION

For the first month since December, monthly precipitation totals were below normal. April precipitation was just 80 percent of average, and total precipitation for the water year dropped to 119 percent of average.

RESERVOIR

Reservoirs have begun to fill in the basin. Storage totals at the end of April were 110 percent of average; a slight increase from last month.

STREAMFLOW FORECASTS

The most recent forecasts for the basin are slightly lower than those issued last month. They currently range from 119 percent of average for the Cache la Poudre at Canyon Mouth to 90 percent of average at Bear Creek above Evergreen.

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South Platte River Basin
Streamflow Forecasts - May 1, 2014

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

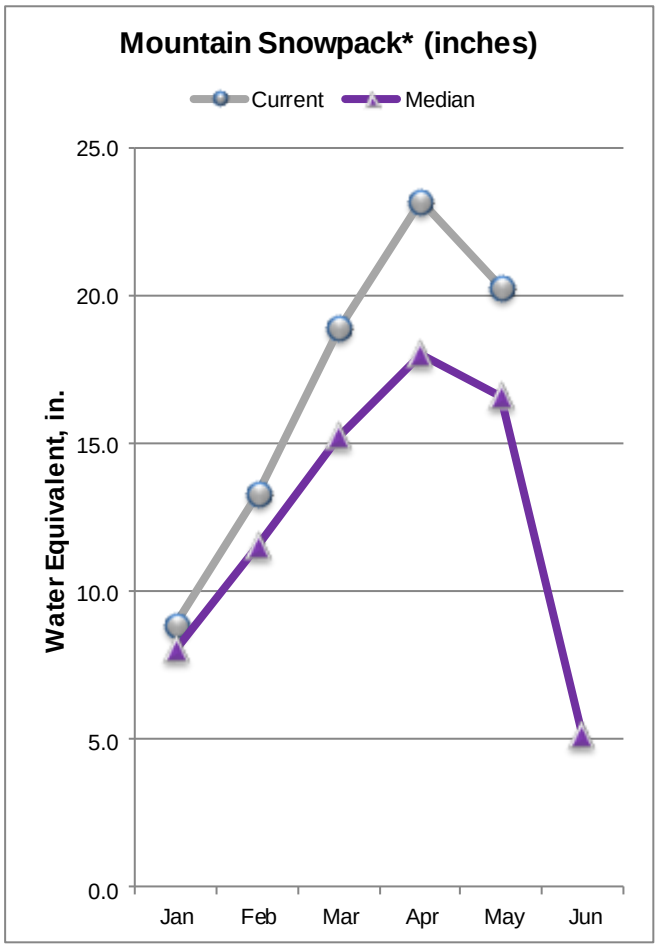
SOUTH PLATTE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Antero Reservoir Inflow[2]								
	APR-JUL	12.9	14.9	16.2	112%	17.5	19.5	14.5
	APR-SEP	15.8	18.2	19.9	112%	22	24	17.8
	MAY-JUL	11.2	13.2	14.5	111%	15.8	17.8	13.1
	MAY-SEP	14.1	16.5	18.2	111%	20	22	16.4
Spinney Mountain Reservoir Inflow[2]								
	APR-JUL	43	52	58	121%	65	76	48
	APR-SEP	51	63	72	118%	81	96	61
	MAY-JUL	36	45	51	116%	58	69	44
	MAY-SEP	44	56	65	116%	74	89	56
Elevenmile Canyon Reservoir Inflow[2]								
	APR-JUL	44	53	59	118%	66	78	50
	APR-SEP	53	66	75	117%	85	101	64
	MAY-JUL	37	46	52	116%	59	71	45
	MAY-SEP	46	59	68	117%	78	94	58
Cheesman Lake Inflow[2]								
	APR-JUL	76	95	109	109%	124	149	100
	APR-SEP	94	119	138	110%	159	192	126
	MAY-JUL	62	81	95	110%	110	135	86
	MAY-SEP	80	105	124	110%	145	178	113
South Platte R at South Platte[2]								
	APR-JUL	128	162	188	104%	215	260	180
	APR-SEP	165	205	235	104%	270	320	225
	MAY-JUL	107	141	167	107%	195	240	156
	MAY-SEP	144	184	215	105%	250	300	205
Bear Ck ab Evergreen								
	APR-JUL	9.4	12.4	14.8	90%	17.6	22	16.4
	APR-SEP	11.7	15.9	19.3	92%	23	30	21
	MAY-JUL	7.4	10.4	12.8	90%	15.6	20	14.2
	MAY-SEP	9.7	13.9	17.3	92%	21	28	18.9
Clear Ck at Golden								
	APR-JUL	108	118	126	120%	134	148	105
	APR-SEP	126	140	150	117%	160	176	128
	MAY-JUL	99	110	118	118%	126	139	100
	MAY-SEP	117	131	141	115%	151	168	123
St. Vrain Ck at Lyons[2]								
	APR-JUL	84	94	100	114%	106	116	88
	APR-SEP	94	106	114	111%	124	136	103
	MAY-JUL	72	81	87	109%	94	104	80
	MAY-SEP	82	94	102	107%	111	124	95
Boulder Ck nr Orodell[2]								
	APR-JUL	57	62	66	122%	70	76	54
	APR-SEP	64	71	76	121%	81	89	63
	MAY-JUL	51	56	60	118%	64	70	51
	MAY-SEP	58	65	70	119%	75	83	59
South Boulder Ck nr Eldorado Springs[2]								
	APR-JUL	38	43	47	121%	51	58	39
	APR-SEP	42	48	52	121%	57	64	43
	MAY-JUL	32	37	41	117%	45	52	35
	MAY-SEP	36	42	46	118%	51	58	39
Big Thompson R at Canyon Mouth[2]								
	APR-JUL	92	100	106	118%	112	122	90
	APR-SEP	108	120	128	120%	136	150	107
	MAY-JUL	83	92	98	115%	104	113	85
	MAY-SEP	99	111	120	118%	128	141	102
Cache La Poudre at Canyon Mouth[2]								
	APR-JUL	235	260	275	122%	290	315	225
	APR-SEP	255	285	305	122%	325	355	250
	MAY-JUL	210	235	250	119%	265	290	210
	MAY-SEP	230	260	280	119%	300	330	235

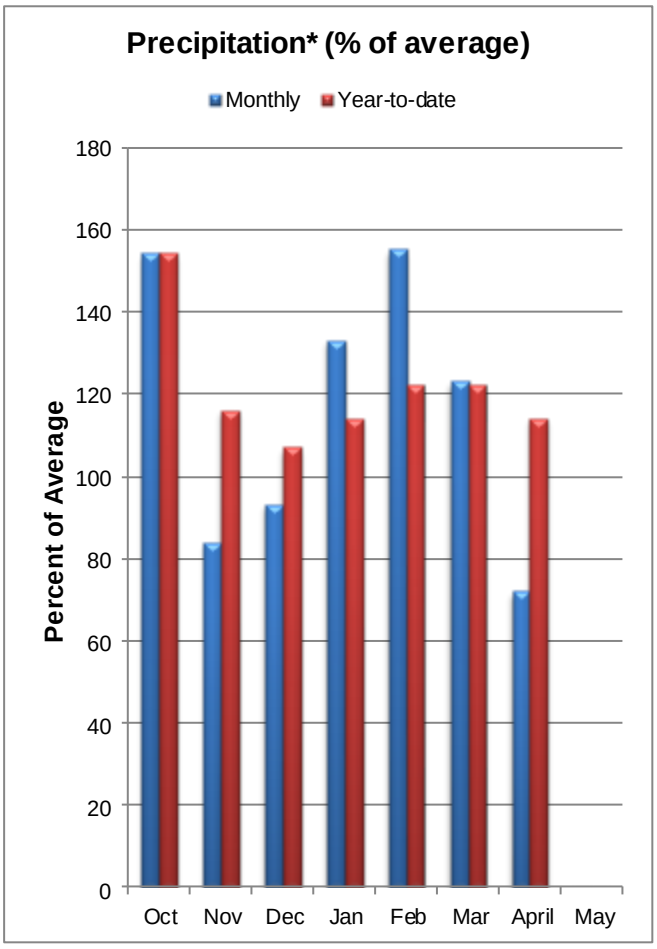
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
ANTERO RESERVOIR	15.7	16.1	14.7	19.9
BARR LAKE	29.3	25.9	28.8	30.1
BLACK HOLLOW RESERVOIR	3.3	2.3	2.9	6.5
BOYD LAKE	35.2	15.7	30.9	48.4
CACHE LA POUDRE	10.6	5.9	8.4	10.1
CARTER LAKE	106.4	101.3	97.5	108.9
CHAMBERS LAKE	6.6	1.0	3.7	8.8
CHEESMAN LAKE	78.5	50.3	69.0	79.0
COBB LAKE	20.9	11.7	11.9	22.3
ELEVENMILE CANYON RESERVOIR	99.7	96.5	96.6	98.0
EMPIRE RESERVOIR	35.8	35.3	31.7	36.5
FOSSIL CREEK RESERVOIR	8.8	10.7	8.2	11.1
GROSS RESERVOIR	28.6	25.8	20.5	41.8
HALLIGAN RESERVOIR	6.4	4.7	4.5	6.4
HORSECREEK RESERVOIR	11.6	3.6	13.3	14.7
HORSETOOTH RESERVOIR	130.5	106.7	116.6	149.7
JACKSON LAKE RESERVOIR	24.9	24.9	27.1	26.1
JULESBURG RESERVOIR	20.3	18.2	19.6	20.5
LAKE LOVELAND RESERVOIR	6.7	3.8	8.0	10.3
LONE TREE RESERVOIR	7.7	8.0	8.0	8.7
MARIANO RESERVOIR	4.4	3.1	4.4	5.4
MARSHALL RESERVOIR	9.5	7.5	8.1	10.0
MARSTON RESERVOIR	0.2	8.7	8.6	13.0
MILTON RESERVOIR	21.7	23.2	20.2	23.5
POINT OF ROCKS RESERVOIR	70.4	69.0	66.5	70.6
PREWITT RESERVOIR	24.6	23.8	22.0	28.2
RALPH PRICE RESERVOIR	12.9	12.7		16.2
RIVERSIDE RESERVOIR	53.7	47.1	52.0	55.8
SPINNEY MOUNTAIN RESERVOIR	35.5	20.2	28.7	49.0
STANDLEY RESERVOIR	41.2	29.0	36.6	42.0
TERRY RESERVOIR	6.7	6.3	4.9	8.0
UNION RESERVOIR	11.9	6.3	11.1	13.0
WINDSOR RESERVOIR	14.4	11.9	11.2	15.2
Basin-wide Total	994.6	837.2	896.2	1107.7
# of reservoirs	33	33	32	33

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
BIG THOMPSON BASIN	7	126%	97%
BOULDER CREEK BASIN	6	150%	98%
CACHE LA POUDRE BASIN	10	139%	101%
CLEAR CREEK BASIN	4	124%	95%
SAINT VRAIN BASIN	3	146%	107%
UPPER SOUTH PLATTE BASIN	16	125%	95%
SOUTH PLATTE RIVER BASIN	46	133%	98%

YAMPA, WHITE, NORTH PLATTE AND LARAMIE RIVER BASINS
as of May 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

These basins received ample snow accumulation this season; according to the SNOTEL data the snowpack reached its peak in early April at 128 percent of the normal peak. Snowmelt dominated the basin in April with no significant storms adding to the snowpack. As of May 1 the snowpack was at 122 percent of median.

PRECIPITATION

April reported the lowest monthly precipitation total so far this water year. Precipitation in the mountains was just 72 percent of average. Year-to-date precipitation remains above normal at 114 percent as of May 1.

RESERVOIR

Storage volumes increased a bit over the last month. Reservoir storage at the end of April was 106 percent of average and 95 percent of capacity.

STREAMFLOW FORECASTS

Forecasts across the sub-basins remain variable. Current predictions for May to July runoff range from 139 percent of average for the North Platte near Northgate to 82 percent of average for the White River near Meeker.

Data Current as of: 5/7/2014 1:32:02 PM

Yampa-White-North Platte River Basins
Streamflow Forecasts - May 1, 2014

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

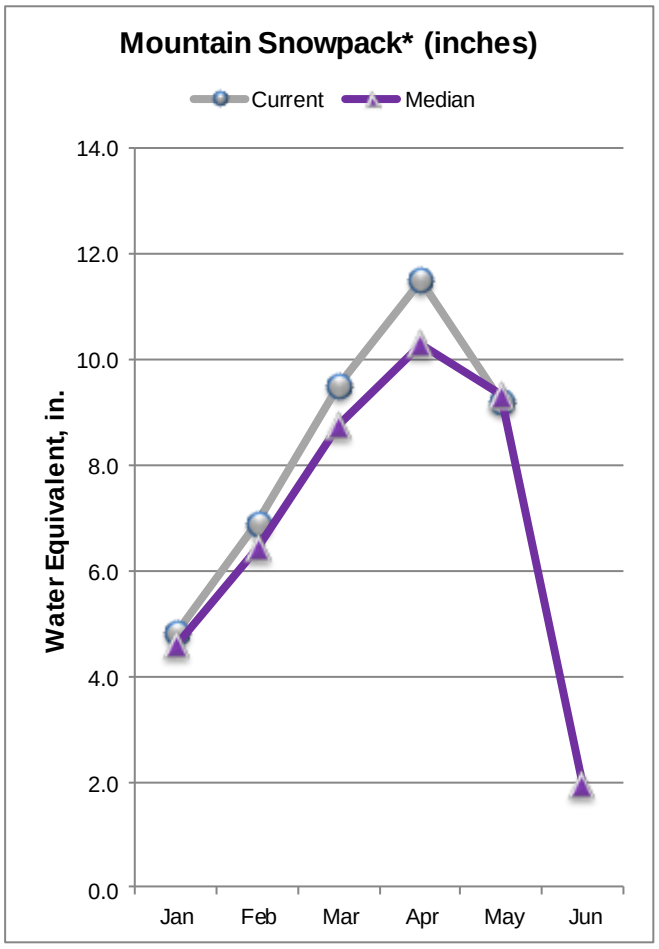
YAMPA-WHITE-NORTH PLATTE RIVER BASINS	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
North Platte R nr Northgate								
	MAY-JUL	179	225	260	139%	295	340	187
	MAY-SEP	195	250	290	138%	325	385	210
Laramie R nr Woods[2]								
	MAY-JUL	105	125	139	129%	153	173	108
	MAY-SEP	115	138	153	129%	168	191	119
Yampa R ab Stagecoach Reservoir [2]								
	APR-JUL	21	25	28	122%	32	37	23
	MAY-JUL	9.1	13	16	100%	19.3	25	16
Yampa R at Steamboat Springs[2]								
	APR-JUL	270	300	325	125%	350	385	260
	MAY-JUL	205	235	260	118%	285	320	220
Elk R nr Milner								
	APR-JUL	360	415	455	142%	500	570	320
	MAY-JUL	300	355	395	136%	440	510	290
Elkhead Ck ab Long Gulch								
	APR-JUL	64	77	87	119%	98	116	73
	MAY-JUL	37	50	60	120%	71	89	50
Yampa R nr Maybell[2]								
	APR-JUL	970	1110	1220	130%	1330	1500	935
	MAY-JUL	765	905	1020	132%	1130	1300	775
Little Snake R nr Slater[2]								
	APR-JUL	154	173	187	120%	200	225	156
	MAY-JUL	127	146	160	116%	173	198	138
Little Snake R nr Dixon[2]								
	APR-JUL	280	345	390	113%	440	520	345
	MAY-JUL	220	285	330	112%	380	460	295
Little Snake R nr Lily[2]								
	APR-JUL	280	345	400	116%	455	550	345
	MAY-JUL	225	290	345	119%	400	495	290
White R nr Meeker								
	APR-JUL	187	220	245	88%	270	315	280
	MAY-JUL	142	175	200	82%	225	270	245

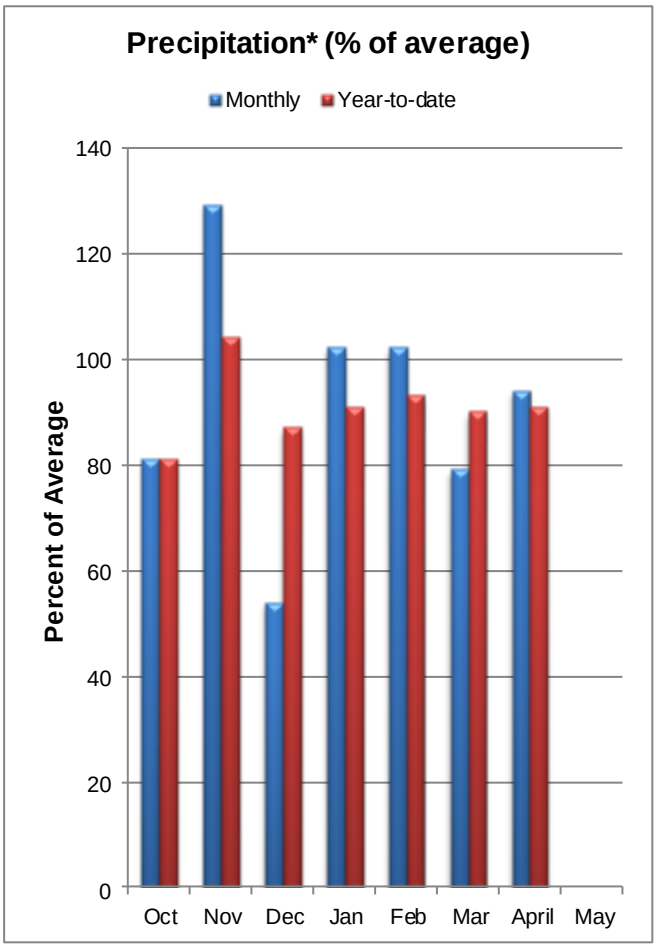
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
STAGECOACH RESERVOIR NR OAK CREEK	33.5	33.7	30.4	33.3
YAMCOLO RESERVOIR	6.2	4.2	7.0	8.7
Basin-wide Total	39.7	37.9	37.4	42.0
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
LARAMIE RIVER BASIN	5	145%	106%
NORTH PLATTE RIVER BASIN	38	122%	99%
LARAMIE & NORTH PLATTE RIVER BASINS	17	135%	102%
ELK RIVER BASIN	2	119%	95%
YAMPA RIVER BASIN	12	131%	99%
WHITE RIVER BASIN	5	98%	89%
YAMPA & WHITE RIVER BASINS	16	121%	95%
LITTLE SNAKE RIVER BASIN	9	108%	92%
YAMPA-WHITE-NORTH PLATTE RIVER BASINS	38	122%	99%

ARKANSAS RIVER BASIN
as of May 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

Overall the 2014 snow season has been a very normal year for the Arkansas basin. The snowpack reached its peak in mid-April at 108 percent of normal peak levels. As of May 1 the basin wide snowpack was 99 percent of median with the headwaters of the basin at 112 percent of median and the Cucharas and Huerfano tributaries at 75 percent of median.

PRECIPITATION

Precipitation in the basin during April was near normal with totals at 94 percent of average. Totals for the entire water year are also near normal at 91 percent of average.

RESERVOIR

Storage volumes actually declined slightly this month in the basin and totals at the end of April were just 59 percent of average.

STREAMFLOW FORECASTS

May to July forecasts follow the snowpack trends, ranging from 105 percent of average for Chalk Creek near Nathrop to 55 percent of average for the Cucharas River near La Veta.

Data Current as of: 5/7/2014 1:32:03 PM

Arkansas River Basin
Streamflow Forecasts - May 1, 2014

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

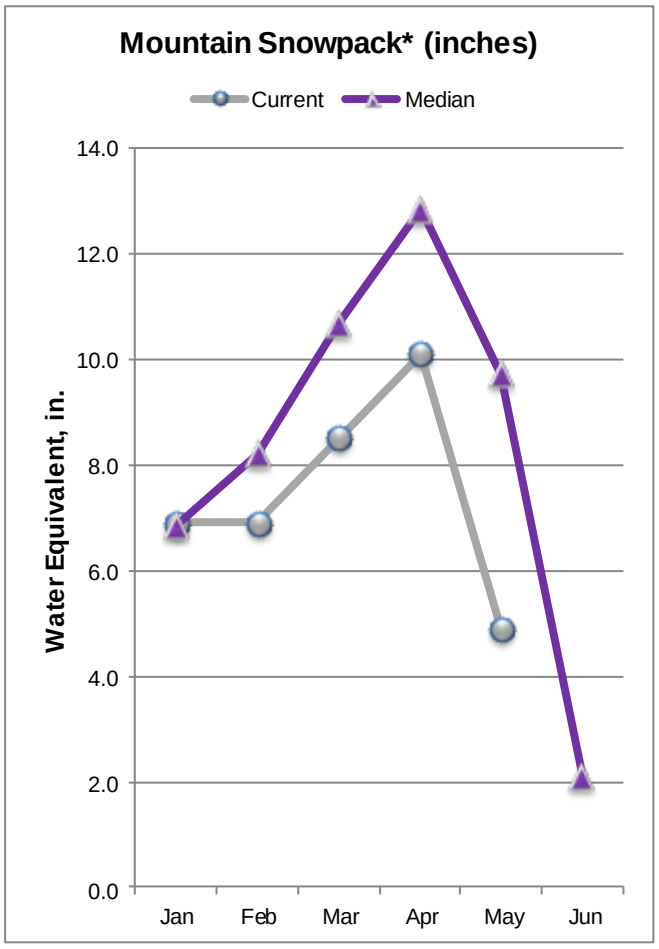
ARKANSAS RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Chalk Ck nr Nathrop								
	APR-JUL	13.8	18.9	23	110%	27	34	21
	APR-SEP	15.7	22	28	108%	33	43	26
	MAY-JUL	12.9	18	22	105%	26	33	21
	MAY-SEP	14.8	21	27	104%	32	42	26
Arkansas R at Salida[2]								
	APR-JUL	215	245	265	110%	290	330	240
	APR-SEP	235	280	315	107%	350	405	295
	MAY-JUL	187	220	240	104%	265	305	230
	MAY-SEP	210	255	290	104%	325	380	280
Grape Ck nr Westcliffe								
	APR-JUL	4.5	6.7	8.4	53%	10.4	13.8	15.9
	APR-SEP	5.8	8.5	10.6	54%	13	17.1	19.6
	MAY-JUL	3.2	5.4	7.1	56%	9.1	12.5	12.7
	MAY-SEP	4.5	7.2	9.3	57%	11.7	15.8	16.4
Pueblo Reservoir Inflow[2]								
	APR-JUL	210	275	325	90%	380	470	360
	APR-SEP	255	345	410	90%	485	605	455
	MAY-JUL	182	245	295	89%	350	440	330
	MAY-SEP	225	315	380	89%	455	575	425
Huerfano R nr Redwing								
	APR-JUL	5.4	7	8.2	69%	9.6	11.8	11.9
	APR-SEP	7	9	10.4	68%	12	14.6	15.2
	MAY-JUL	4.4	6	7.2	67%	8.6	10.8	10.7
	MAY-SEP	6	8	9.4	67%	11	13.6	14
Cucharas R nr La Veta								
	APR-JUL	5	6.1	6.9	57%	7.8	9.1	12.2
	APR-SEP	5.5	6.9	8	57%	9.1	11	14.1
	MAY-JUL	4	5.1	5.9	55%	6.8	8.1	10.8
	MAY-SEP	4.5	5.9	7	55%	8.1	10	12.7
Trinidad Lake Inflow[2]								
	MAR-JUL	13.3	17.6	21	57%	25	31	37
	APR-SEP	15.9	23	28	60%	34	44	47
	MAY-JUL	9.3	13.6	17	57%	21	27	30
	MAY-SEP	13.1	20	25	60%	31	41	42

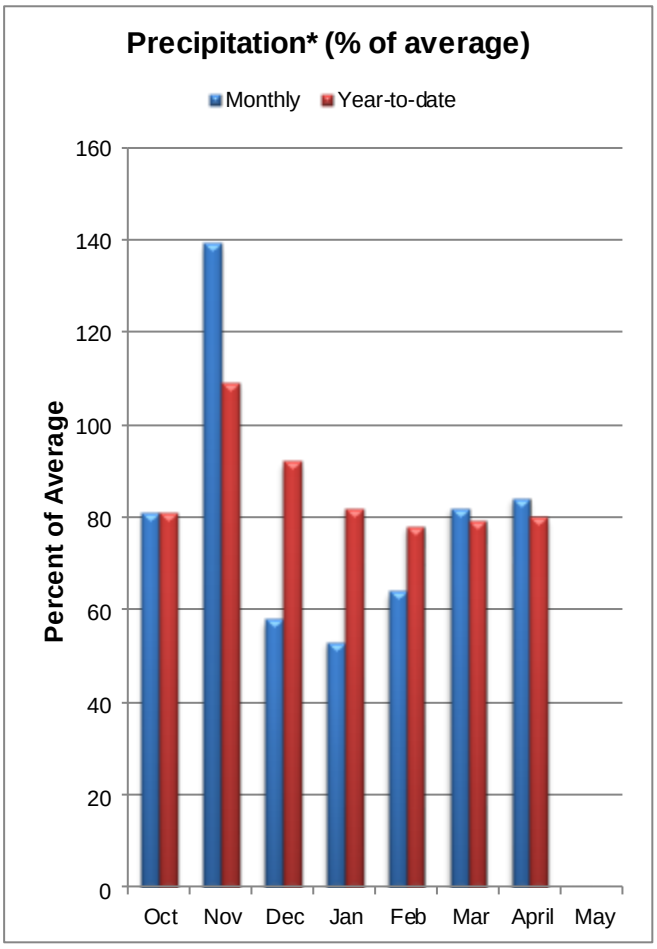
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
ADOBE CREEK RESERVOIR	19.4	6.8	45.2	62.0
CLEAR CREEK RESERVOIR	8.6	7.2	7.0	11.4
CUCHARAS RESERVOIR		0.1	6.5	40.0
GREAT PLAINS RESERVOIR	0.0	0.0	36.3	150.0
HOLBROOK LAKE	0.1	0.0	4.3	7.0
HORSE CREEK RESERVOIR	0.0	0.0	11.1	27.0
JOHN MARTIN RESERVOIR	42.6	28.8	143.9	616.0
LAKE HENRY	6.4	4.9	6.8	8.0
MEREDITH RESERVOIR	10.9	19.8	27.3	42.0
PUEBLO RESERVOIR	192.8	166.9	192.4	354.0
TRINIDAD LAKE	17.8	12.2	30.4	167.0
TURQUOISE LAKE	43.4	24.0	70.4	127.0
TWIN LAKES RESERVOIR	25.0	20.3	50.1	86.0
Basin-wide Total	367.0	291.0	631.7	1697.4
# of reservoirs	12	13	13	13

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
UPPER ARKANSAS BASIN	9	112%	91%
CUCHARAS & HUERFANO BASINS	5	75%	50%
PURGATOIRE RIVER BASIN	2	88%	17%
ARKANSAS RIVER BASIN	16	99%	77%

UPPER RIO GRANDE RIVER BASIN
as of May 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

The snowpack in the basin reached its peak nearly two weeks earlier than normal at just 83 percent of the normal peak level. For the fourth year in a row the basin ended up with below normal snowpack totals for the season. Rapid snowmelt ensued in early April and as of May 1 the snowpack was at just 50 percent of median.

PRECIPITATION

For the fifth consecutive month the basin reported below normal monthly precipitation. Mountain precipitation during April was 84 percent of average and total water year precipitation was 80 percent of average.

RESERVOIR

Reservoir storage volumes dropped to 67 percent of average as of the end of April. Current storage amounts are 23 percent of capacity.

STREAMFLOW FORECASTS

May to September streamflow forecasts range from 97 percent of average for Saguache Creek near Saguache to just 16 percent of average for the San Antonio River near Ortiz.

Data Current as of: 5/7/2014 1:32:04 PM

Upper Rio Grande Basin
Streamflow Forecasts - May 1, 2014

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

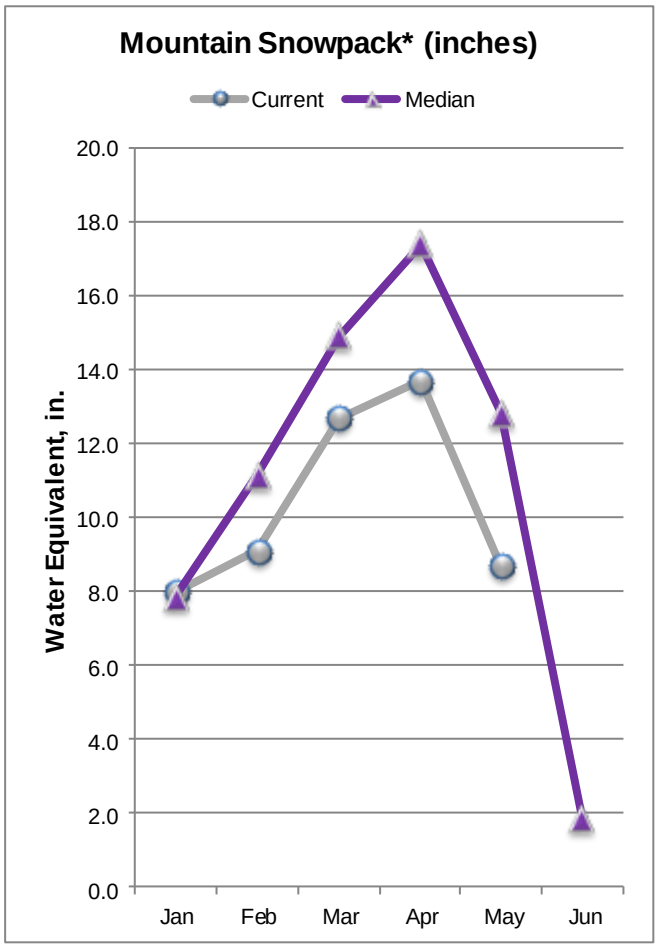
UPPER RIO GRANDE BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Grande at Thirty Mile Bridge[2]								
	APR-JUL	72	82	90	80%	98	111	113
	APR-SEP	78	92	102	79%	113	129	129
	MAY-JUL	60	70	78	74%	86	99	106
	MAY-SEP	66	80	90	74%	101	117	122
Rio Grande at Wagon Wheel Gap[2]								
	APR-SEP	230	260	285	84%	310	345	340
	MAY-SEP	181	210	235	75%	260	295	315
SF Rio Grande at South Fork[2]								
	APR-SEP	67	74	79	62%	84	93	127
	MAY-SEP	45	52	57	50%	62	71	113
Rio Grande nr Del Norte [2]								
	APR-SEP	310	350	380	74%	410	460	515
	MAY-SEP	235	275	305	65%	335	385	470
Saguache Ck nr Saguache								
	APR-SEP	22	28	32	100%	37	45	32
	MAY-SEP	17.8	24	28	97%	33	41	29
Alamosa Ck ab Terrace Reservoir								
	APR-SEP	31	36	40	59%	44	51	68
	MAY-SEP	23	28	32	52%	36	43	62
La Jara Ck nr Capulin								
	MAR-JUL	3.3	4.1	4.8	54%	5.5	6.8	8.9
	MAY-JUL	1.08	1.86	2.5	45%	3.2	4.5	5.6
Trinchera Ck ab Turners Ranch								
	APR-SEP	4.7	5.8	6.6	52%	7.5	8.9	12.6
	MAY-SEP	4	5.1	5.9	51%	6.8	8.2	11.6
Sangre de Cristo Ck [2]								
	APR-SEP	2.9	4.7	6.4	39%	8.5	12.2	16.3
	MAY-SEP	1.22	3	4.7	37%	6.8	10.5	12.7
Ute Ck nr Fort Garland								
	APR-SEP	3.9	5.7	7.1	55%	8.7	11.5	12.8
	MAY-SEP	2.9	4.7	6.1	53%	7.7	10.5	11.6
Platoro Reservoir Inflow								
	APR-JUL	28	32	35	63%	38	43	56
	APR-SEP	31	36	39	63%	43	48	62
	MAY-JUL	23	27	30	57%	33	38	53
	MAY-SEP	26	31	34	58%	38	43	59
Conejos R nr Mogote [2]								
	APR-SEP	92	106	116	60%	127	144	194
	MAY-SEP	71	85	95	54%	106	123	177
San Antonio R at Ortiz								
	APR-SEP	3.8	4.3	4.8	31%	5.3	6.2	15.6
	MAY-SEP	0.53	1.04	1.48	16%	2	2.9	9.4
Los Pinos R nr Ortiz								
	APR-SEP	30	34	37	51%	40	44	73
	MAY-SEP	15.8	19.4	22	36%	25	29	61
Culebra Ck at San Luis								
	APR-SEP	5.1	8	10.3	45%	13	17.6	23
	MAY-SEP	4.1	7	9.3	44%	12	16.6	21
Costilla Reservoir Inflow								
	MAR-JUL	4.3	5.5	6.5	59%	7.6	9.3	11.1
	MAY-JUL	3.2	4.4	5.4	61%	6.5	8.2	8.9
Costilla Ck nr Costilla [2]								
	MAR-JUL	7.7	10.3	12.5	48%	15	19.2	26
	MAY-JUL	4.2	6.8	9	46%	11.5	15.7	19.6

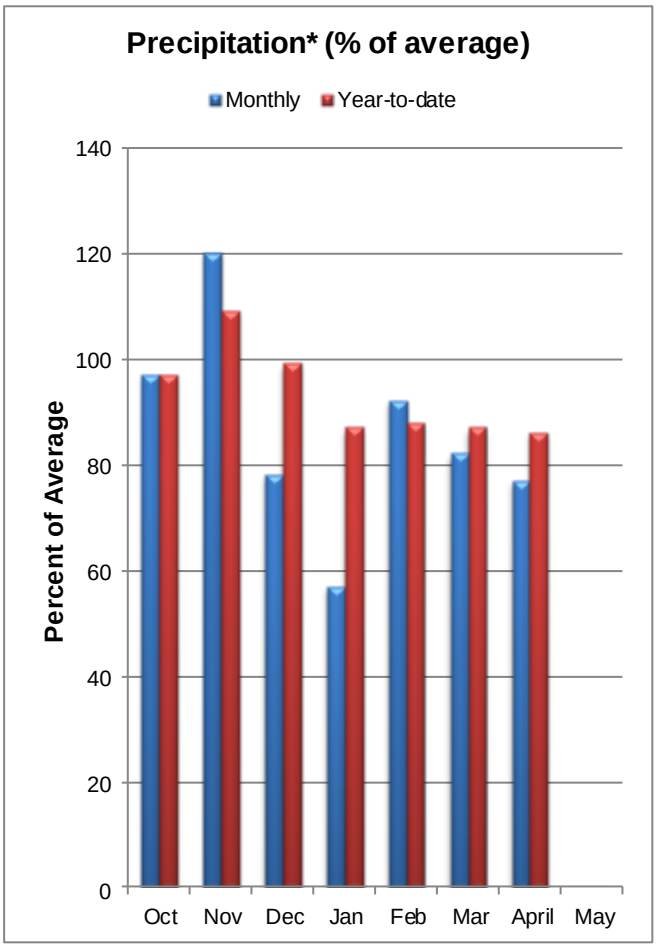
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BEAVER RESERVOIR	0.0	2.3	4.4	4.5
CONTINENTAL RESERVOIR	12.7	8.9	6.9	27.0
PLATORO RESERVOIR	10.1	8.9	23.5	60.0
RIO GRANDE RESERVOIR	26.0	14.7	20.8	51.0
SANCHEZ RESERVOIR	6.9	7.3	29.0	103.0
SANTA MARIA RESERVOIR	7.0	7.3	10.7	45.0
TERRACE RESERVOIR	6.8	4.4	8.7	18.0
Basin-wide Total	69.5	53.8	104.0	308.5
# of reservoirs	7	7	7	7

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
ALAMOSA CREEK BASIN	3	47%	22%
CONEJOS & RIO SAN ANTONIO BASINS	4	41%	31%
CULEBRA & TRINCHERA BASINS	6	57%	62%
HEADWATERS RIO GRANDE RIVER BASIN	13	54%	44%
UPPER RIO GRANDE BASIN	25	50%	42%

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS as of May 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

A storm at the end of March pushed these basins to reach their peak snowpack totals in early April at 87 percent of the typical peak totals. The snowpack began melting rapidly after that and as of May 1, snowpack totals were just 68 percent of median.

PRECIPITATION

These basins have recorded below normal precipitation for five consecutive months now. April precipitation was just 77 percent of average and year-to-date precipitation was just 86 percent of average on May 1.

RESERVOIR

With snowmelt in full swing the basins are storing as much water as possible. At the end of April storage totals were 85 percent of average.

STREAMFLOW FORECASTS

Most streamflow forecasts for these basins have declined again this month. Predictions for May to July volumes currently range from 102 percent of average for the Inlet to Lilylands Reservoir to 50 percent of average for the Mancos River near Mancos.

Data Current as of: 5/7/2014 1:32:06 PM

San Miguel-Dolores-Animas-San Juan River Basins
Streamflow Forecasts - May 1, 2014

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

SAN MIGUEL-DOLORES-ANIMAS-SAN JUAN RIVER BASINS	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Dolores R at Dolores								
	APR-JUL	149	171	188	77%	205	230	245
	MAY-JUL	111	133	150	75%	167	192	200
McPhee Reservoir Inflow								
	APR-JUL	160	183	200	68%	220	245	295
	MAY-JUL	117	140	157	71%	177	200	220
San Miguel R nr Placerville								
	APR-JUL	107	121	131	102%	142	159	128
	MAY-JUL	89	103	113	100%	124	141	113
Cone Reservoir Inlet								
	APR-JUL	1.16	2.1	3	100%	4.1	6.2	3
	MAY-JUL	1.05	1.86	2.6	96%	3.5	5.2	2.7
Gurley Reservoir Inlet								
	APR-JUL	11.6	14.3	16.3	99%	18.5	22	16.4
	MAY-JUL	9.4	12	14.1	99%	16.4	20	14.3
Lilylands Reservoir Inlet								
	APR-JUL	1.27	1.68	2	104%	2.4	3	1.92
	MAY-JUL	1.02	1.4	1.7	102%	2	2.6	1.67
Rio Blanco at Blanco Diversion [2]								
	APR-JUL	25	30	32	59%	35	40	54
	MAY-JUL	16.4	21	23	51%	26	31	45
Navajo R at Oso Diversion [2]								
	APR-JUL	28	33	36	55%	40	46	65
	MAY-JUL	20	25	28	52%	32	38	54
San Juan R nr Carracas [2]								
	APR-JUL	171	196	215	57%	235	265	380
	MAY-JUL	116	141	160	53%	180	210	300
Piedra R nr Arboles								
	APR-JUL	107	123	134	64%	147	167	210
	MAY-JUL	63	79	90	59%	103	123	153
Vallecito Reservoir Inflow								
	APR-JUL	122	134	143	74%	153	167	194
	MAY-JUL	94	106	115	67%	125	139	171
Navajo Reservoir Inflow [2]								
	APR-JUL	345	395	425	58%	465	520	735
	MAY-JUL	220	270	300	53%	340	395	565
Animas R at Durango								
	APR-JUL	290	320	345	83%	365	400	415
	MAY-JUL	240	270	295	81%	315	350	365
Lemon Reservoir Inflow								
	APR-JUL	33	38	42	76%	45	51	55
	MAY-JUL	26	31	35	71%	38	44	49
La Plata R at Hesperus								
	APR-JUL	10.8	12.1	13.1	57%	14.1	15.8	23
	MAY-JUL	7.2	8.5	9.5	52%	10.5	12.2	18.2
Mancos R nr Mancos [2]								
	APR-JUL	9.8	11.8	13.2	43%	14.7	17.1	31
	MAY-JUL	8.6	10.6	12	50%	13.5	15.9	24

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2014	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
GROUNDHOG RESERVOIR	11.4	7.6	14.8	22.0
JACKSON GULCH RESERVOIR	5.7	2.9	7.5	10.0
LEMON RESERVOIR	24.8	11.5	24.1	40.0
MCPHEE RESERVOIR	223.3	197.9	319.4	381.0
NARRAGUINNEP RESERVOIR	19.0	11.9	17.5	19.0
TROUT LAKE RESERVOIR	1.3	1.3	1.5	3.2
VALLECITO RESERVOIR	105.8	62.7	74.2	126.0
Basin-wide Total	391.3	295.8	459.0	601.2
# of reservoirs	7	7	7	7

Watershed Snowpack Analysis May 1, 2014	# of Sites	% Median	Last Year % Median
ANIMAS RIVER BASIN	11	78%	39%
DOLORES RIVER BASIN	6	67%	42%
SAN MIGUEL RIVER BASIN	6	71%	41%
SAN JUAN RIVER BASIN	25	68%	44%
SAN MIGUEL-DOLORES-ANIMAS-SAN JUAN RIVER BASINS	25	68%	44%

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In addition to the basin outlook reports, water supply forecast information for the Western United States is available from the Natural Resources Conservation Service and the National Weather Service monthly, January through May. The information may be obtained from the Natural Resources Conservation Service web page at http://www.wcc.nrcs.usda.gov/wsf/westwide.html

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