USDA United States Department of Agriculture

Natural Resources Conservation Service

Colorado Basin Outlook Report January 1, 2014

Photo courtesy of Art Judson, Routt County, CO. It was taken on 1/7/2014 at the Tower SNOTEL site near Steamboat Springs, CO. The ground truth markers around the pillow are shown with the two snow depth stakes attached. The site reported SWE at 20.0" and snow depth at 72" this day.

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

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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
Water Supply Outlook Report
January 1, 2014

Summary

Compared to the last couple of years, the 2014 water year is off to a great start. The state saw above normal snow accumulation during October and November and into early December. The beneficial moisture dried up a bit in the latter part of December, especially in the south and southwest portion of the state, but the early season snow was enough to keep snowpack totals near to above normal across the state as of January 1. Statewide reservoir storage has also improved since the last water year, thanks mostly to the extreme precipitation events some areas of the state saw in September. It is still early in the season and anything can happen, but if weather patterns persist, this could be a good year for water supply and recreation in Colorado.

Snowpack

All major basins in Colorado are reporting snowpack totals to be at near to above normal levels as of January 1. The state benefited from multiple early season snow storms in October and November. Early December also boasted decent additions to the snowpack totals, while the last few weeks in December saw modified weather patterns. The northern basins continued to receive snow, but at more normal accumulation rates while in contrast, conditions in the southern part of the state were very dry. Statewide the snowpack is at 103 percent of median; January 1 snowpack readings in 2012 and 2013 were just 71 and 70 percent of median, respectively. There is currently not much variability in snowpack totals between the major basins in Colorado. This will likely change if we continue to see drier conditions in the south while the northern basins continue to accumulate snow. The highest snowpack readings in the state are in the combined Yampa, White and North Platte basins at 111 percent of median. The lowest reading statewide was 99 percent of median for both the South Platte and the Upper Rio Grande basins.

Precipitation

Precipitation received in the mountains during the first few months of this water year has really demonstrated how weather patterns affect the regions of our state differently. During October, precipitation was well above normal for the northern basins (Gunnison, Colorado, South Platte & Yampa, White, & North Platte), while the southern basins (Arkansas, Upper Rio Grande, and San Miguel, Dolores, Animas, & San Juan) all recorded below normal totals. The reverse was true for November, with the southern basins seeing well above normal totals and the northern basins coming in below normal. In December all basins received below normal precipitation amounts with the southern basins seeing totals much lower than the northern basins. Statewide monthly precipitation totals measured at SNOTEL sites were 112 percent of average for October, 98 percent of average for November, and 80 percent of average in December. Between basins, percentages for the month of December ranged from 54 percent of average in the Arkansas basin to 93 percent of average for the Yampa, White & North Platte basins. Year to date precipitation is holding at 96 percent of average statewide, as a result of the wet conditions observed during October and November. So far this water year the Arkansas basin has received the lowest amount of precipitation, as a percent of average; the basin is reporting 87 percent of average for the year as of January 1. The Yampa, White and North Platte basins came in with the highest totals, as a percent of average, on January 1, at 107 percent of average. All in all this is a much better start than last year. Statewide year to date totals are 141 percent of last year's totals at this same time.

Reservoir Storage

Thanks to some late spring snow storms in 2013 and plentiful fall precipitation in some areas of the state, we are beginning water year 2014 with reservoir storage totals well above where they were last year at this time. Statewide storage as of the end of December was 87 percent of average compared to 67 percent of average reported last year. Statewide storage deficits have improved every month since July 2013. The Arkansas basin currently has the lowest storage volumes statewide, as a percent of average, at just 61 percent of average. This is still an improvement over last year's report at this same time of 48 percent of average. Not surprisingly the South Platte boasts the highest storage volumes, as a percent of average, at 113 percent of average. This is a great improvement from last season when the basin reported storage at 82 percent of average. The Yampa, White and North Platte basins are also storing water at above average amounts; they reported storage at 109 percent of average at the end of December.

Streamflow

The first streamflow forecasts of the season are direct reflections of the beneficial moisture Colorado has experienced this fall. Across the state, streamflow volumes are generally expected to be in the 80 to 100 percent of normal range this spring and summer. The South Platte and the Yampa, White and North Platte basins have some of the higher forecasts in the state. The South Platte at South Platte is expected to flow at 104 percent of average from April to July, while Elkhead Creek above Long Gulch is forecast at 107 percent of average for the same time period. The Upper Rio Grande basin currently has some of the lowest forecasts in the state; San Antonio River at Ortiz is forecast to flow at 66 percent of average for the April to September period and the Los Pinos River near Ortiz is expected to run at 77 percent of average for the same period. This is not consistent across the basin however; the Rio Grande at Thirty Mile Bridge for example is expected run at 94 percent of average.

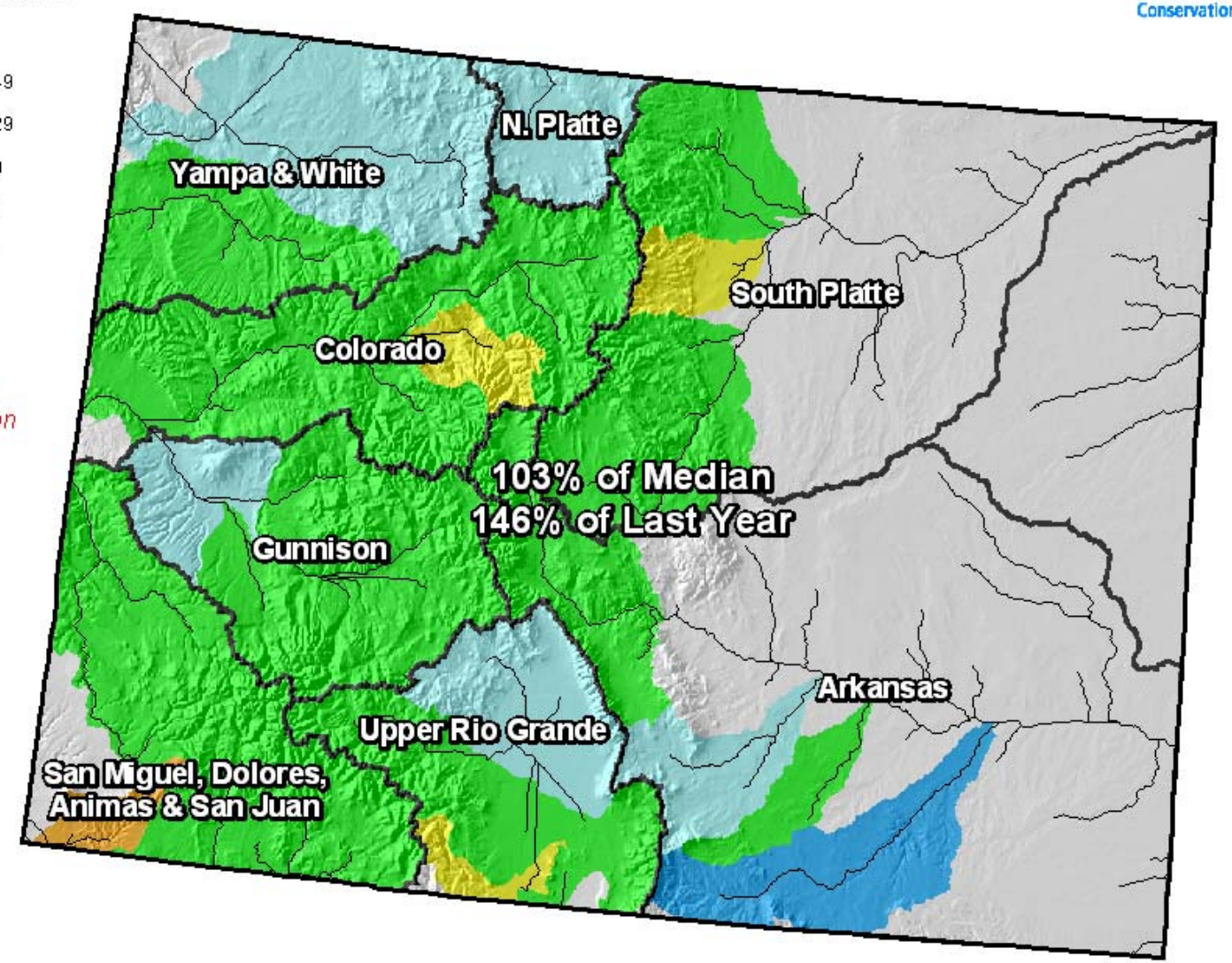
Colorado Snowpack Map

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 January 1, 2014

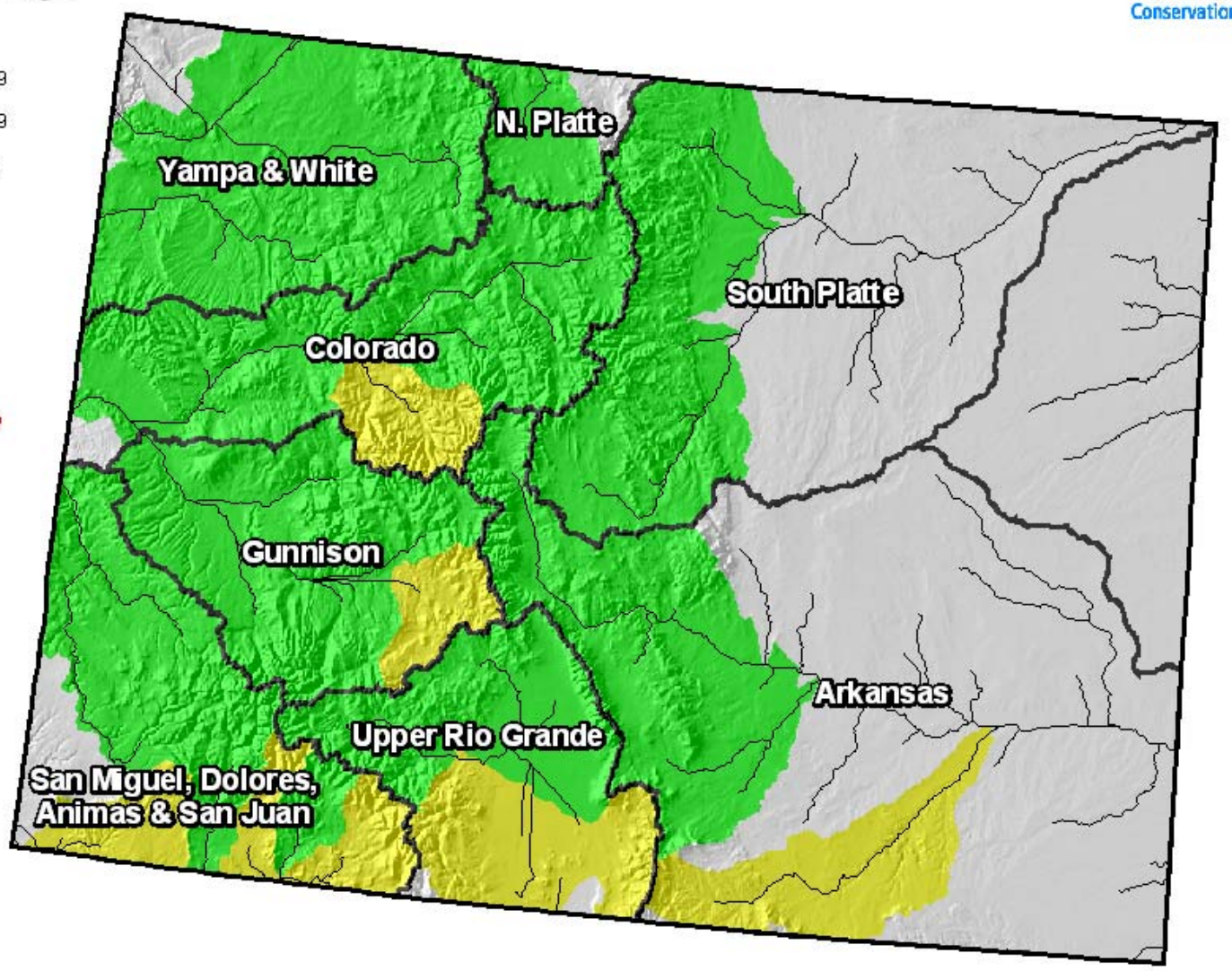
Colorado Streamflow Forecast Map

NRCS
Natural Resources Conservation Service

Percent of Average

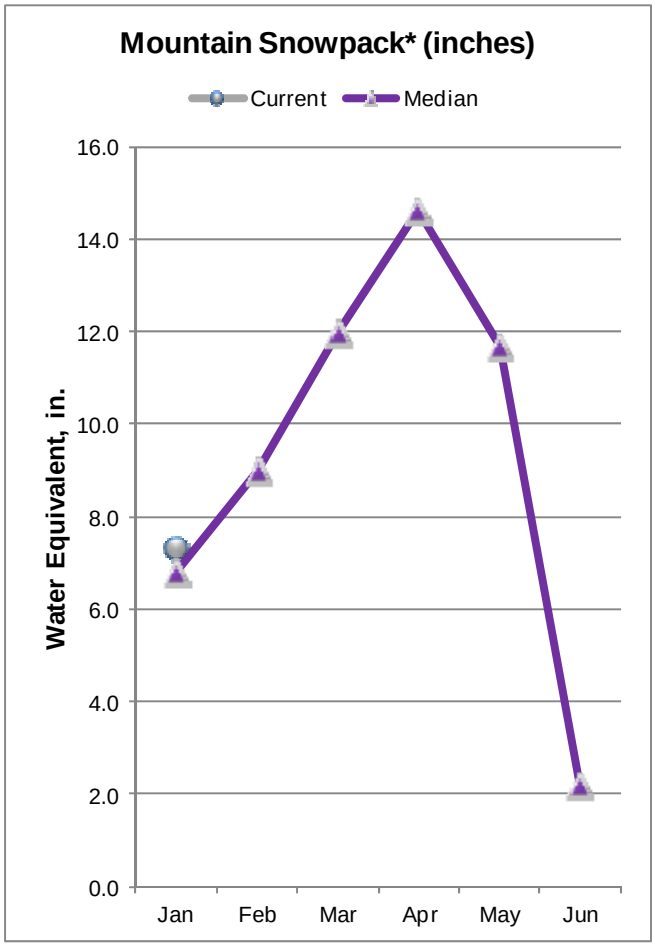
- >= 150
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- < 50

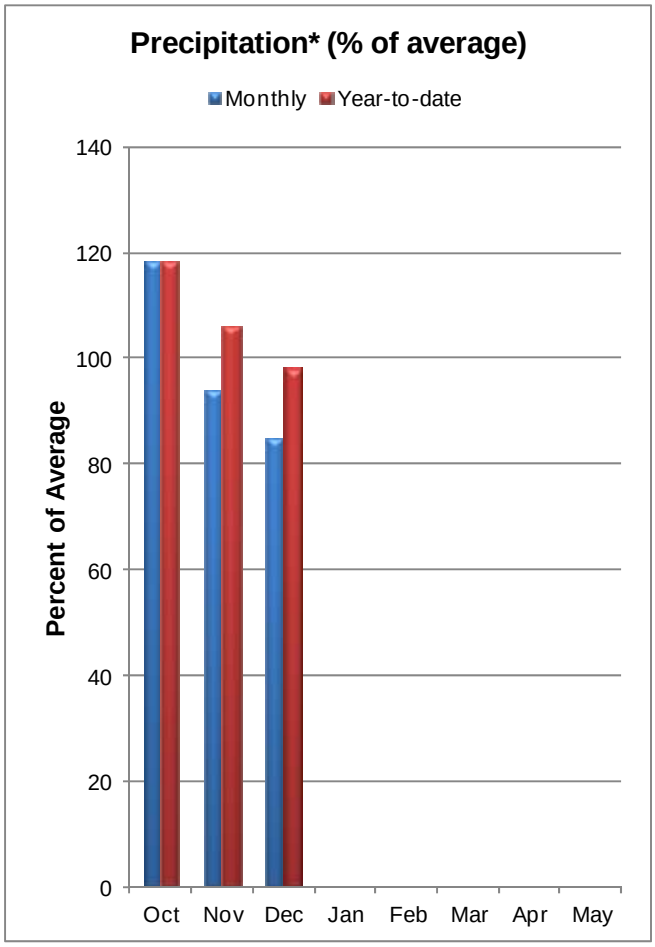
Provisional Data Subject to Revision



Current as of January 1, 2014

GUNNISON RIVER BASIN
as of January 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

January 1 snowpack reports for the Gunnison basin are 107% of the median. This is well above last year's snowpack at this time; current totals are 155% of last years.

PRECIPITATION

Precipitation during the month of December was 85% of average. Total water year to date precipitation in the basin is 98% of average.

RESERVOIR

Storage in the Gunnison basin was 80% of average at the end of December. Last year at this same time storage was only 68% of average.

STREAMFLOW FORECASTS

Current streamflow forecasts across the basin are calling for near normal runoff during the spring and summer season. Forecasts range from 96% of average for the Slate River near Crested Butte to 81% of average for both Cochetopa Creek below Rock Creek and Tomichi Creek at Gunnison.

Data Current as of: 1/9/2014 7:44:52 AM

Gunnison River Basin
Streamflow Forecasts - January 1, 2014

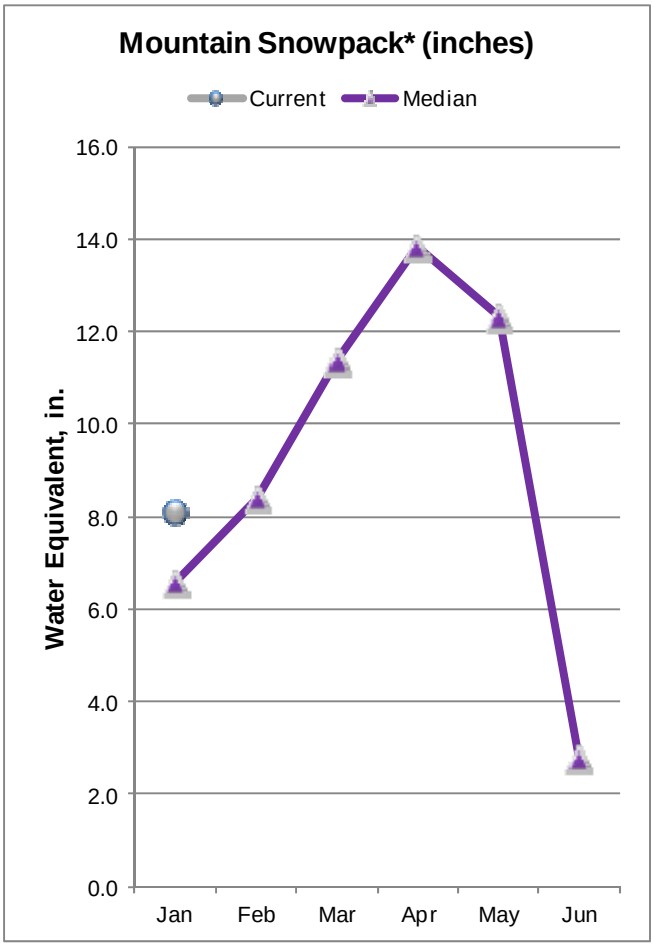
GUNNISON RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Taylor Park Reservoir Inflow	APR-JUL	59	78	93	94%	109	135	99
Slate R nr Crested Butte	APR-JUL	55	69	80	96%	91	109	83
East R at Almont	APR-JUL	104	142	172	95%	205	255	182
Gunnison R near Gunnison [2]	APR-JUL	195	280	345	93%	420	540	370
Tomichi Ck at Sargents	APR-JUL	12.1	20	27	90%	35	48	30
Cochetopa Ck bl Rock Ck nr Parlin	APR-JUL	4.6	8.6	12.1	81%	16.1	23	15
Tomichi Ck at Gunnison	APR-JUL	23	43	60	81%	80	115	74
Lake Fk at Gateview	APR-JUL	78	100	117	95%	135	164	123
Blue Mesa Reservoir Inflow [2]	APR-JUL	350	500	620	92%	750	965	675
Paonia Reservoir Inflow	MAR-JUN	45	70	90	94%	113	151	96
	APR-JUL	42	69	91	94%	116	159	97
NF Gunnison R nr Somerset[2]	APR-JUL	160	220	270	93%	325	410	290
Surface Ck at Cedaredge	APR-JUL	8.7	12.8	16	95%	19.6	25	16.8
Ridgway Reservoir Inflow	APR-JUL	62	81	96	95%	112	137	101
Uncompahgre R at Colona [2]	APR-JUL	73	105	130	95%	158	205	137
Gunnison R nr Grand Junction [2]	APR-JUL	735	1080	1350	91%	1650	2150	1480

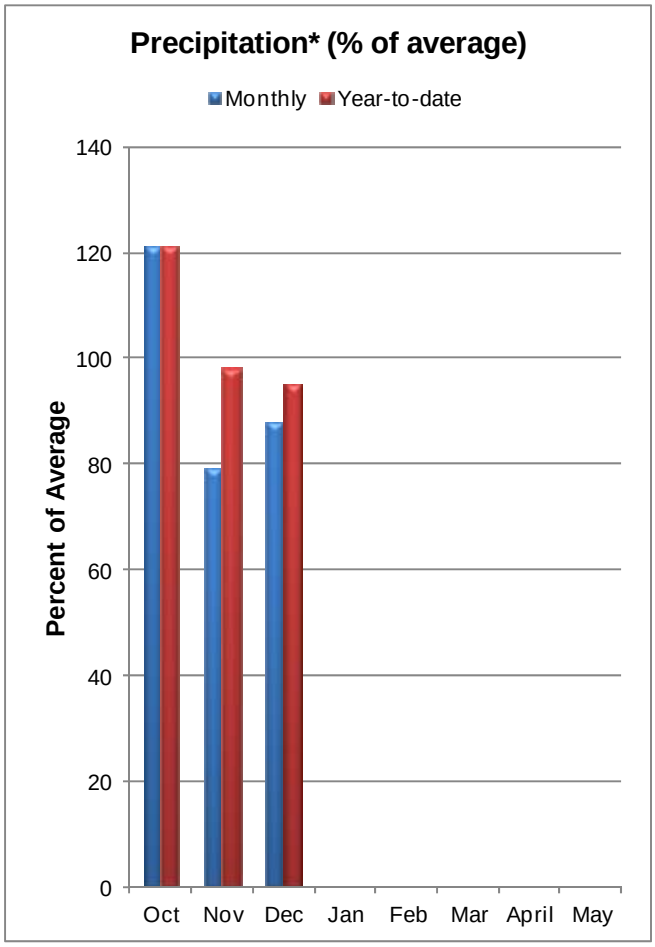
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BLUE MESA RESERVOIR	380.2	327.1	549.9	830.0
CRAWFORD RESERVOIR	4.0	1.3	7.1	14.0
CRYSTAL RESERVOIR	8.3	8.1	7.7	17.5
FRUITGROWERS RESERVOIR	2.0	0.9	2.8	3.6
FRUITLAND RESERVOIR	0.9	0.0	1.0	9.2
MORROW POINT RESERVOIR	107.3	106.4	111.6	121.0
PAONIA RESERVOIR	0.3	1.1	3.5	15.4
RIDGEWAY RESERVOIR	72.6	54.3	68.8	83.0
SILVERJACK RESERVOIR	9.9	2.6	5.0	12.8
TAYLOR PARK RESERVOIR	71.4	56.6	68.1	106.0
VOUGA RESERVOIR	0.5	0.3	0.7	
Basin-wide Total	657.3	558.7	826.2	1212.5
# of reservoirs	11	11	11	10

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
UPPER GUNNISON BASIN	10	108%	71%
SURFACE CREEK BASIN	2	117%	82%
UNCOMPAHGRE BASIN	3	102%	77%
GUNNISON RIVER BASIN	13	107%	73%

UPPER COLORADO RIVER BASIN
as of January 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

The snowpack as of January 1 was 102% of the median in the Colorado River basin. Percentages ranged from 86% of median in the Eagle River basin to 123% of median in the Willow Creek drainage.

PRECIPITATION

The total precipitation received in the mountains of the Colorado basin in December was 88% of average. Year to date precipitation was 95% of average as of January 1.

RESERVOIR

The reservoirs in the basin are storing water at 97% of average levels for this time of year. Current storage is at 71% of total capacity.

STREAMFLOW FORECASTS

April to July streamflow forecasts are generally near normal as of January 1. They range from 96% of average for both the Inflow to Wolford Mountain Reservoir and the Inflow to Willow Creek Reservoir to 88% of average for the Inflow to Ruedi Reservoir.

Data Current as of: 1/9/2014 7:45:12 AM

Upper Colorado River Basin
Streamflow Forecasts - January 1, 2014

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

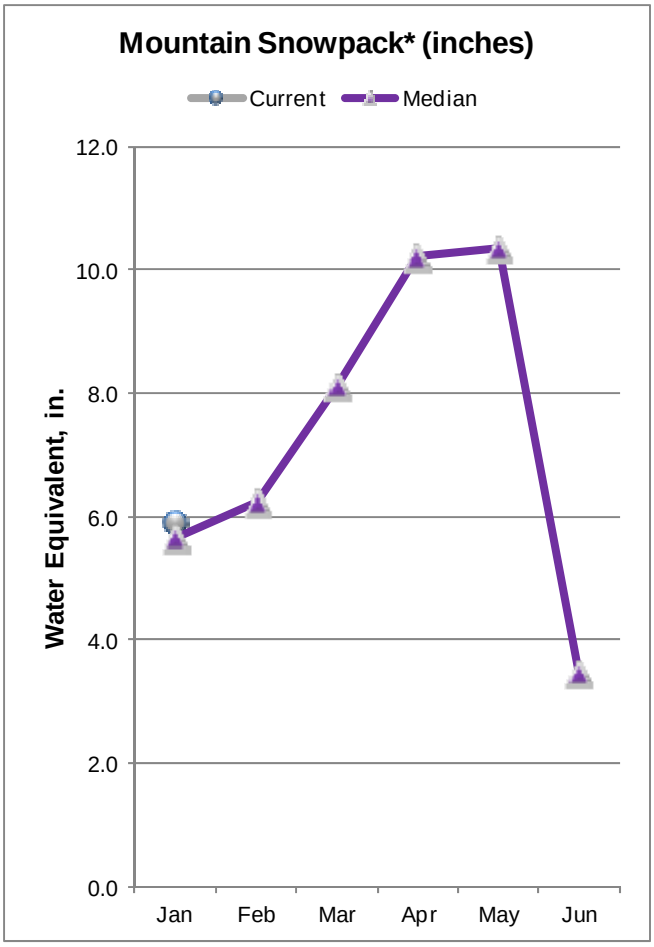
UPPER COLORADO RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Lake Granby Inflow [2]	APR-JUL	143	181	210	95%	240	290	220
Willow Ck Reservoir Inflow	APR-JUL	25	36	45	96%	55	70	47
Williams Fk bl Williams Fk Reservoir[2]	APR-JUL	60	78	92	95%	107	131	97
Wolford Mtn Reservoir Inflow	APR-JUL	28	41	52	96%	64	83	54
Dillon Reservoir Inflow[2]	APR-JUL	97	129	154	94%	181	225	163
Green Mountain Reservoir Inflow[2]	APR-JUL	167	220	260	95%	305	375	275
Eagle R bl Gypsum [2]	APR-JUL	188	250	300	90%	355	440	335
Colorado R nr Dotsero [2]	APR-JUL	815	1100	1310	94%	1540	1920	1400
Ruedi Reservoir Inflow [2]	APR-JUL	82	105	123	88%	142	172	139
Roaring Fk at Glenwood Springs[2]	APR-JUL	385	515	615	89%	720	895	690
Colorado R nr Cameo [2]	APR-JUL	1330	1790	2130	91%	2510	3110	2350

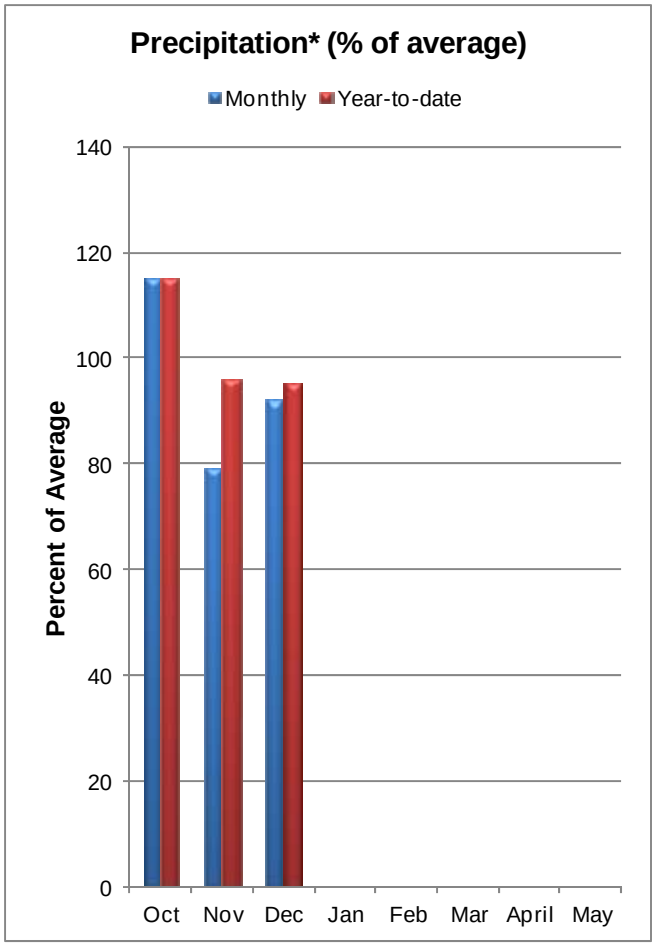
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
DILLON RESERVOIR	241.4	178.2	227.0	254.0
GREEN MOUNTAIN RESERVOIR	83.5	58.0	85.2	146.8
HOMESTAKE RESERVOIR	0.8	0.3	31.9	43.0
LAKE GRANBY	305.5	209.6	325.7	465.6
RUEDI RESERVOIR	83.0	63.7	76.8	102.0
SHADOW MOUNTAIN RESERVOIR	17.4	17.4	17.3	18.4
VEGA RESERVOIR		7.8	11.8	32.9
WILLIAMS FORK RESERVOIR	75.0	43.0	66.5	97.0
WILLOW CREEK RESERVOIR	6.7	6.3	6.6	9.1
WOLFORD MOUNTAIN RESERVOIR	43.9	24.8	44.0	65.9
Basin-wide Total	857.1	609.1	892.8	1234.7
# of reservoirs	9	10	10	10

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
BLUE RIVER BASIN	5	98%	61%
HEADWATERS COLORADO RIVER	18	103%	71%
MUDDY CREEK BASIN	3	116%	92%
EAGLE RIVER BASIN	3	86%	63%
PLATEAU CREEK BASIN	2	117%	82%
ROARING FORK BASIN	7	101%	68%
WILLIAMS FORK BASIN	3	99%	65%
WILLOW CREEK BASIN	2	123%	90%
UPPER COLORADO RIVER BASIN	27	102%	72%

SOUTH PLATTE RIVER BASIN
as of January 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

As of January 1 the snowpack in the South Platte basin was 99% of the median. This is well above the 69% of median reported last year at this same time.

PRECIPITATION

Precipitation for the month of December was 92% of average. Total water year to date precipitation was 95% of average as of January 1.

RESERVOIR

Storage in this basin is the highest in the state as a percent of average after the extreme precipitation received in September. End of December storage totals are 113% of average and 75% of capacity.

STREAMFLOW FORECASTS

The first forecasts this season for April to July flows in the South Platte basin look very promising. They range from 90% of average for South Boulder Creek near Eldorado Springs to 104% of average for the Inflow to Cheesman Lake, the South Platte River at South Platte, and Clear Creek near Golden.

Data Current as of: 1/9/2014 7:45:30 AM

South Platte River Basin
Streamflow Forecasts - January 1, 2014

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

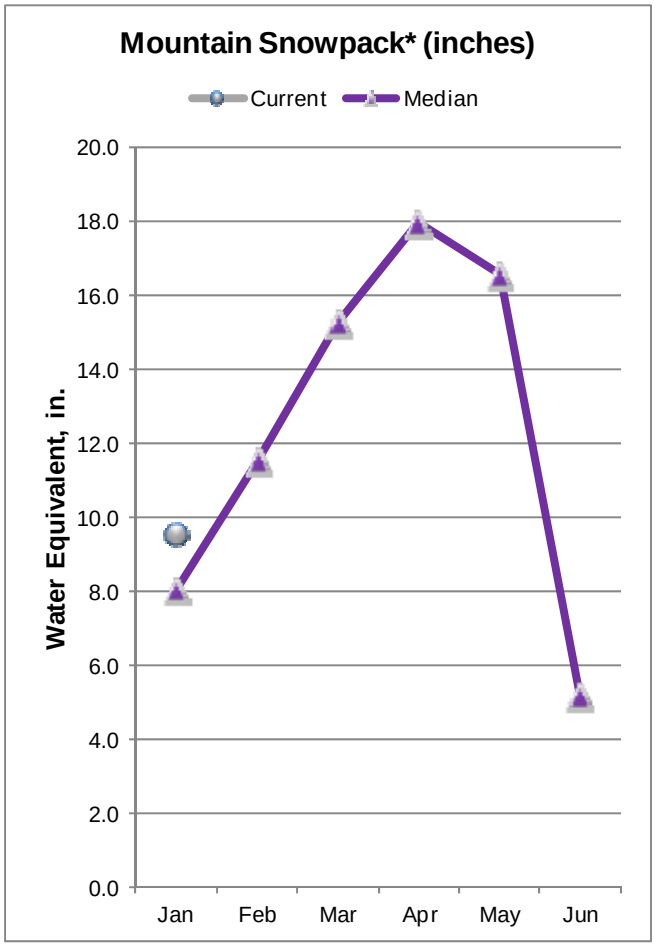
SOUTH PLATTE RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Antero Reservoir Inflow[2]								
	APR-JUL	6.5	10.8	13.8	95%	16.8	21	14.5
	APR-SEP	8.6	13.7	17.1	96%	21	26	17.8
Spinney Mountain Reservoir Inflow[2]								
	APR-JUL	24	36	47	98%	61	91	48
	APR-SEP	29	44	59	97%	79	121	61
Elevenmile Canyon Reservoir Inflow[2]								
	APR-JUL	25	38	50	100%	66	101	50
	APR-SEP	29	47	64	100%	88	140	64
Cheesman Lake Inflow[2]								
	APR-JUL	53	79	104	104%	137	205	100
	APR-SEP	66	99	132	105%	175	265	126
South Platte R at South Platte[2]								
	APR-JUL	91	140	188	104%	255	390	180
	APR-SEP	113	175	235	104%	315	490	225
Bear Ck ab Evergreen								
	APR-JUL	7.1	11.6	16.1	98%	22	36	16.4
	APR-SEP	10	15.7	21	100%	29	46	21
Bear Ck at Morrison								
	APR-JUL	7.9	14.2	21	95%	31	56	22
	APR-SEP	10.8	18.6	27	96%	39	68	28
Clear Ck at Golden								
	APR-JUL	75	95	109	104%	123	143	105
	APR-SEP	93	116	132	103%	148	171	128
St. Vrain Ck at Lyons[2]								
	APR-JUL	61	73	81	92%	89	101	88
	APR-SEP	72	85	94	91%	103	116	103
Boulder Ck nr Orodell[2]								
	APR-JUL	40	47	52	96%	56	63	54
	APR-SEP	46	55	60	95%	66	75	63
South Boulder Ck nr Eldorado Springs[2]								
	APR-JUL	26	32	35	90%	38	44	39
	APR-SEP	27	34	39	91%	44	51	43
Big Thompson R at Canyon Mouth[2]								
	APR-JUL	62	75	84	93%	92	105	90
	APR-SEP	76	91	102	95%	112	127	107
Cache La Poudre at Canyon Mouth[2]								
	APR-JUL	136	181	210	93%	245	290	225
	APR-SEP	150	200	235	94%	270	320	250

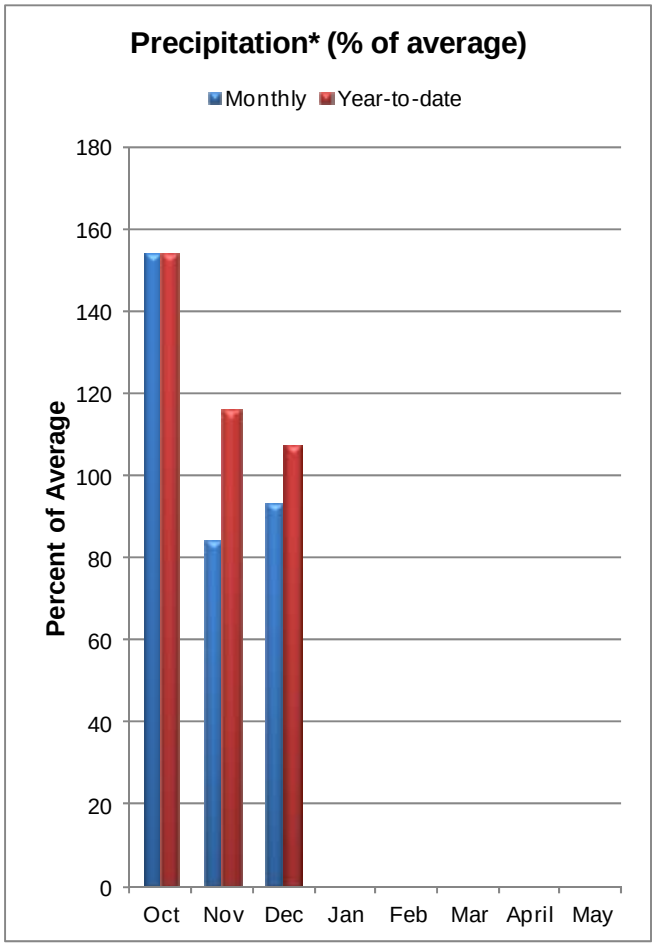
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
ANTERO RESERVOIR	18.3	15.2	15.5	19.9
BARR LAKE	25.1	10.4	22.3	30.1
BLACK HOLLOW RESERVOIR	3.6	2.3	2.8	6.5
BOYD LAKE	33.7		27.4	48.4
CACHE LA POUDRE	9.1	2.0	5.4	10.1
CARTER LAKE	38.9	49.9	67.5	108.9
CHAMBERS LAKE	7.2	1.8	3.1	8.8
CHEESMAN LAKE	74.9	48.6	64.3	79.0
COBB LAKE	19.7	11.8	11.7	22.3
ELEVENMILE CANYON RESERVOIR	99.7	99.5	95.9	98.0
EMPIRE RESERVOIR	28.5	21.0	20.6	36.5
FOSSIL CREEK RESERVOIR	8.6	8.2	6.3	11.1
GROSS RESERVOIR	36.4	30.9	27.4	41.8
HALLIGAN RESERVOIR	2.0	3.2	3.9	6.4
HORSECREEK RESERVOIR	11.6	0.0	8.5	14.7
HORSETOOTH RESERVOIR	88.2	65.0	83.5	149.7
JACKSON LAKE RESERVOIR	18.4	20.3	20.9	26.1
JULESBURG RESERVOIR	16.0	16.2	17.0	20.5
LAKE LOVELAND RESERVOIR	8.5		6.8	10.3
LONE TREE RESERVOIR	7.7		5.7	8.7
MARIANO RESERVOIR	4.3		2.9	5.4
MARSHALL RESERVOIR	8.9	5.4	5.4	10.0
MARSTON RESERVOIR	8.9	11.7	6.0	13.0
MILTON RESERVOIR	19.4	1.5	14.3	23.5
POINT OF ROCKS RESERVOIR	42.9	30.9	43.3	70.6
PREWITT RESERVOIR	20.3	3.4	13.9	28.2
RALPH PRICE RESERVOIR	13.9	15.3		16.2
RIVERSIDE RESERVOIR	47.6	20.6	32.1	55.8
SPINNEY MOUNTAIN RESERVOIR	44.0	29.2	30.5	49.0
STANDLEY RESERVOIR	40.0	28.0	35.8	42.0
TERRY RESERVOIR	5.9	4.7	5.1	8.0
UNION RESERVOIR	11.6	4.0	9.8	13.0
WINDSOR RESERVOIR	12.4	10.4	7.7	15.2
Basin-wide Total	836.2	571.4	723.3	1107.7
# of reservoirs	33	29	32	33

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
BIG THOMPSON BASIN	3	106%	79%
BOULDER CREEK BASIN	3	85%	71%
CACHE LA POUDRE BASIN	2	99%	70%
CLEAR CREEK BASIN	2	106%	72%
SAINT VRAIN BASIN	2	75%	79%
UPPER SOUTH PLATTE BASIN	6	104%	51%
SOUTH PLATTE RIVER BASIN	18	99%	69%

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





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

These basins have had an excellent start to this snow season. Snowpack totals as of January 1 were 111% of the median, the highest as a percentage in the state.

PRECIPITATION

Precipitation in the mountains during December was 93% of average, and year to date precipitation remains above average, at 107%.

RESERVOIR

Storage in the two reservoirs reported on in these basins remains in good condition at 109% of average and 90% of capacity.

STREAMFLOW FORECASTS

Nearly all current forecasts for these basins are calling for above average flows from April to July. The exceptions are the forecasts for the White River near Meeker which is 93% of average and Laramie River near Woods Landing which is 98% of average. The highest forecast is 107% of average for Elkhead Creek above Long Gulch.

Data Current as of: 1/9/2014 7:45:48 AM

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

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

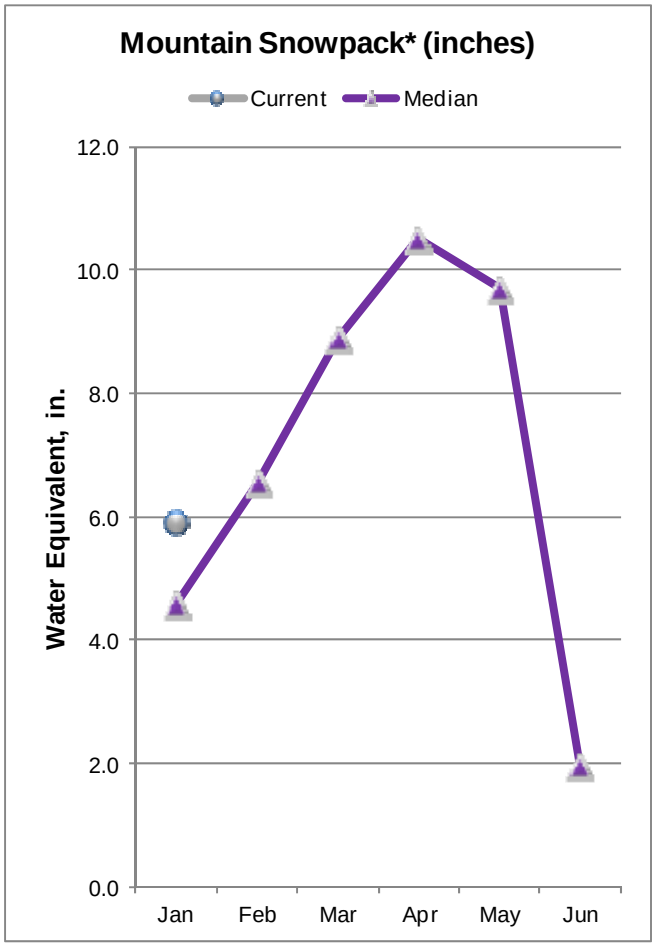
YAMPA-WHITE-NORTH PLATTE RIVER BASINS	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
North Platte R nr Northgate								
	APR-JUL	110	181	230	102%	280	350	225
	APR-SEP	123	200	255	102%	310	385	250
Laramie R nr Woods								
	APR-JUL	76	98	113	98%	128	150	115
	APR-SEP	84	108	125	99%	141	165	126
Yampa R ab Stagecoach Reservoir [2]								
	APR-JUL	9	16.6	23	100%	30	43	23
Yampa R at Steamboat Springs[2]								
	APR-JUL	160	215	260	100%	305	385	260
Elk R nr Milner								
	APR-JUL	225	300	360	113%	425	530	320
Elkhead Ck ab Long Gulch								
	APR-JUL	37	59	78	107%	99	135	73
Yampa R nr Maybell[2]								
	APR-JUL	575	795	965	103%	1150	1450	935
Little Snake R nr Slater[2]								
	APR-JUL	94	130	159	102%	190	240	156
Little Snake R nr Dixon[2]								
	APR-JUL	160	270	350	101%	470	655	345
Little Snake R nr Lily[2]								
	APR-JUL	180	275	350	101%	435	575	345
White R nr Meeker								
	APR-JUL	160	215	260	93%	305	385	280

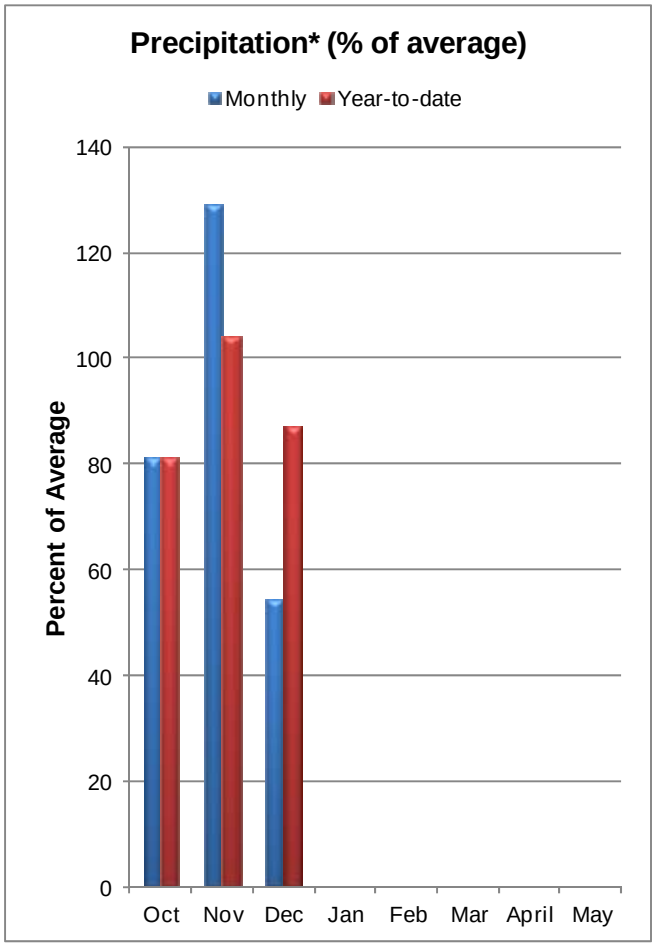
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
STAGECOACH RESERVOIR	33.7	28.9	29.3	33.3
YAMCOLO RESERVOIR	4.0	2.9	5.3	8.7
Basin-wide Total	37.7	31.8	34.6	42.0
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
LARAMIE RIVER BASIN	2	117%	82%
NORTH PLATTE RIVER BASIN	26	111%	84%
LARAMIE & NORTH PLATTE RIVER BASINS	10	113%	83%
ELK RIVER BASIN	2	106%	73%
YAMPA RIVER BASIN	9	111%	82%
WHITE RIVER BASIN	4	103%	82%
YAMPA & WHITE RIVER BASINS	12	106%	81%
LITTLE SNAKE RIVER BASIN	7	118%	90%
YAMPA-WHITE-NORTH PLATTE RIVER BASINS	26	111%	84%

ARKANSAS RIVER BASIN
as of January 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

The snowpack in the Arkansas basin is at 105% of the median for this time of year. Last year at this same time snowpack totals were only 58% of the median.

PRECIPITATION

During December the basin received precipitation that was 54% of average, which is down from 129% of average recorded in November. Year to date precipitation is still looking good at 87% of average.

RESERVOIR

Reservoir storage in the basin has still not recovered from recent drought years. It was just 59% of average as of the end of December.

STREAMFLOW FORECASTS

Forecasts for streamflow from April to July are encouraging for the basin. They currently range from 101% of average for the Huerfano River near Redwing to 88% of average for the Cucharas River near La Veta. The March to July forecast for the Purgatoire near Trinidad is 86% of average.

Data Current as of: 1/9/2014 7:46:13 AM

Arkansas River Basin
Streamflow Forecasts - January 1, 2014

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

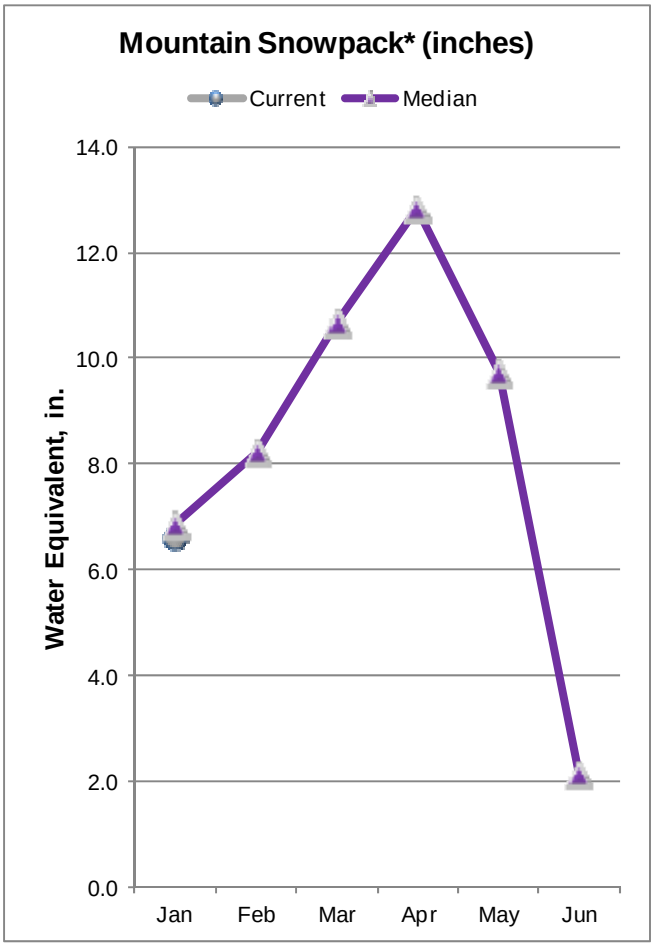
ARKANSAS RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Chalk Ck nr Nathrop								
	APR-JUL	9.9	15.5	20	95%	25	34	21
	APR-SEP	13	19.5	25	96%	31	40	26
Arkansas R at Salida[2]								
	APR-JUL	157	199	230	96%	265	320	240
	APR-SEP	197	250	285	97%	325	390	295
Grape Ck nr Westcliffe								
	APR-JUL	2.7	8.6	14.6	92%	22	36	15.9
	APR-SEP	6.1	12.1	17.3	88%	23	34	19.6
Pueblo Reservoir Inflow[2]								
	APR-JUL	190	270	335	93%	405	520	360
	APR-SEP	255	350	425	93%	505	635	455
Huerfano R nr Redwing								
	APR-JUL	7	9.8	12	101%	14.4	18.3	11.9
	APR-SEP	9.6	13	15.5	102%	18.3	23	15.2
Cucharas R nr La Veta								
	APR-JUL	3.5	7.3	10.7	88%	14.7	22	12.2
	APR-SEP	4.9	9.1	12.8	91%	17.1	24	14.1
Trinidad Lake Inflow[2]								
	MAR-JUL	10.5	22	32	86%	44	65	37
	APR-SEP	16.2	30	41	87%	54	77	47

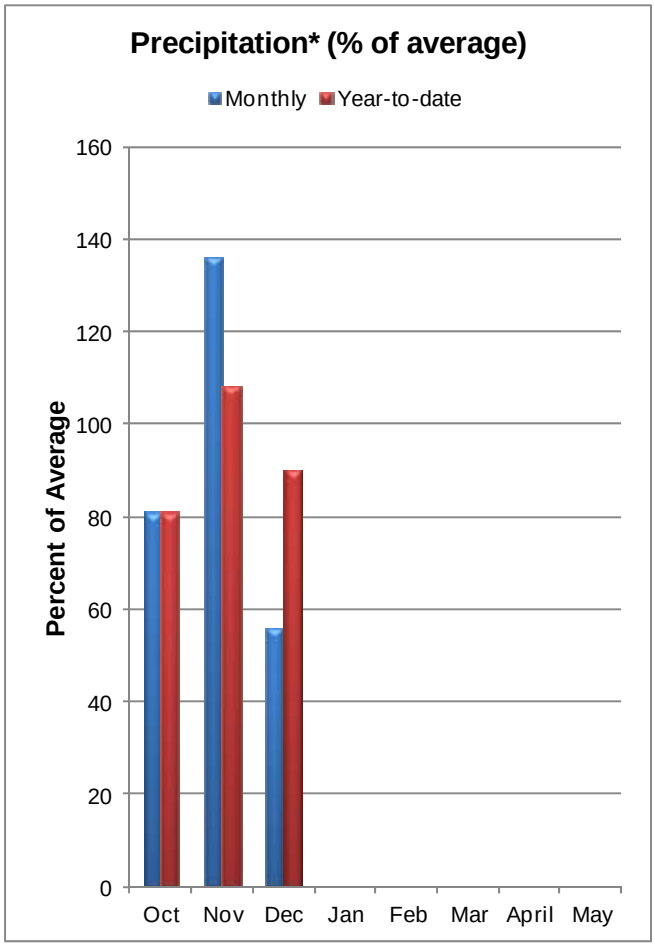
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
ADOBE CREEK RESERVOIR	21.3	6.8	32.7	62.0
CLEAR CREEK RESERVOIR	7.7	6.5	6.7	11.4
CUCHARAS RESERVOIR		0.1	5.3	40.0
GREAT PLAINS RESERVOIR	0.0	0.0	30.0	150.0
HOLBROOK LAKE	0.2	0.0	2.5	7.0
HORSE CREEK RESERVOIR	0.0	0.0	9.4	27.0
JOHN MARTIN RESERVOIR	26.1	22.1	122.8	616.0
LAKE HENRY	1.5	2.8	3.7	8.0
MEREDITH RESERVOIR	1.2	19.3	19.7	42.0
PUEBLO RESERVOIR	146.4	164.7	170.8	354.0
TRINIDAD LAKE	14.9	11.5	24.4	167.0
TURQUOISE LAKE	83.1	42.6	94.1	127.0
TWIN LAKES RESERVOIR	36.7	19.1	57.0	86.0
Basin-wide Total	339.1	295.5	579.1	1697.4
# of reservoirs	12	13	13	13

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
UPPER ARKANSAS BASIN	3	92%	54%
CUCHARAS & HUERFANO BASINS	3	111%	66%
PURGATOIRE RIVER BASIN	2	130%	73%
ARKANSAS RIVER BASIN	8	105%	58%

UPPER RIO GRANDE RIVER BASIN
as of January 1, 2014





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

Snowpack totals for January 1 for the Rio Grande basin came in right below normal at 99% of the median. This is quite an improvement over last year when the snowpack was just 67% of median on January 1.

PRECIPITATION

December precipitation in the basin was just 56% of average; this followed a wet November that recorded precipitation at 136% of average. Total water year to date precipitation is at 90% of average.

RESERVOIR

Water storage in the basin remains low at just 61% of average, but it is improved compared to last year when storage was at just 48% of average.

STREAMFLOW FORECASTS

The most recent streamflow forecasts for April to September are encouraging. They range from 99% of average for Ute Creek near Fort Garland to 66% of average for the San Antonio River at Ortiz.

Data Current as of: 1/9/2014 7:46:32 AM

Upper Rio Grande Basin
Streamflow Forecasts - January 1, 2014

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

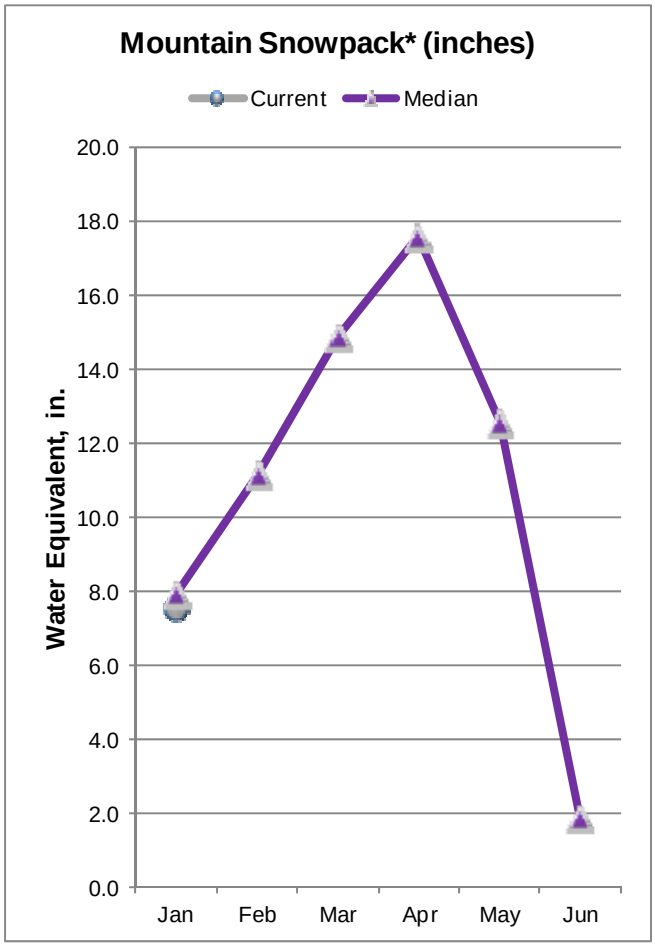
UPPER RIO GRANDE BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Grande at Thirty Mile Bridge[2]								
	APR-SEP	78	102	120	93%	140	171	129
	APR-JUL	69	90	106	94%	123	151	113
Rio Grande at Wagon Wheel Gap[2]								
	APR-SEP	193	260	310	91%	365	455	340
SF Rio Grande at South Fork[2]								
	APR-SEP	70	93	111	87%	130	162	127
Rio Grande nr Del Norte [2]								
	APR-SEP	310	410	485	94%	570	705	515
Saguache Ck nr Saguache								
	APR-SEP	15.6	23	29	91%	35	46	32
Alamosa Ck ab Terrace Reservoir								
	APR-SEP	37	48	57	84%	66	82	68
La Jara Ck nr Capulin								
	MAR-JUL	3.8	5.6	7	79%	8.6	11.3	8.9
Trinchera Ck ab Turners Ranch								
	APR-SEP	7.3	9.8	11.7	93%	13.8	17.2	12.6
Sangre de Cristo Ck [2]								
	APR-SEP	5.3	10.3	14.7	90%	19.8	29	16.3
Ute Ck nr Fort Garland								
	APR-SEP	6.3	9.8	12.7	99%	16	21	12.8
Platoro Reservoir Inflow								
	APR-SEP	36	46	54	87%	62	75	62
	APR-JUL	33	42	49	88%	56	68	56
Conejos R nr Mogote [2]								
	APR-SEP	103	136	161	83%	188	230	194
San Antonio R at Ortiz								
	APR-SEP	3.9	7.3	10.3	66%	13.7	19.7	15.6
Los Pinos R nr Ortiz								
	APR-SEP	31	45	56	77%	68	87	73
Culebra Ck at San Luis								
	APR-SEP	10.8	16.4	21	91%	26	34	23
Costilla Reservoir Inflow								
	MAR-JUL	6.6	9	10.8	97%	12.8	16.1	11.1
Costilla Ck nr Costilla [2]								
	MAR-JUL	13.9	20	25	96%	30	39	26

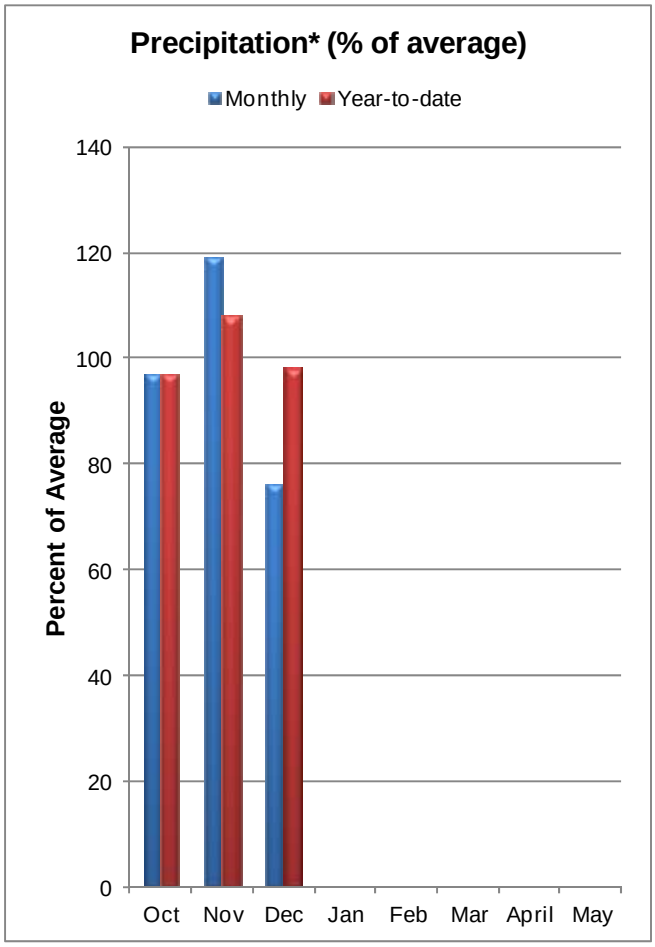
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BEAVER RESERVOIR	1.5	1.3	4.1	
CONTINENTAL RESERVOIR	9.0	6.9	3.8	27.0
PLATORO RESERVOIR	9.3	8.8	24.0	60.0
RIO GRANDE RESERVOIR	17.6	10.8	14.8	51.0
SANCHEZ RESERVOIR	5.6	5.9	27.5	103.0
SANTA MARIA RESERVOIR	8.0	7.1	10.4	45.0
TERRACE RESERVOIR	4.1	2.5	5.5	18.0
Basin-wide Total	55.0	43.3	90.1	304.0
# of reservoirs	7	7	7	6

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
ALAMOSA CREEK BASIN	1	83%	56%
CONEJOS & RIO SAN ANTONIO BASINS	2	86%	75%
CULEBRA & TRINCHERA BASINS	3	121%	87%
HEADWATERS RIO GRAND RIVER BASIN	6	96%	56%
UPPER RIO GRANDE BASIN	12	99%	67%

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





*Based on selected stations

SUMMARY OF WATER SUPPLY CONDITIONS

SNOWPACK

The basins in the southwest corner of the state reported snowpack totals right on track at 100% of median as of January 1. This is 146% of last year's snowpack at this same time.

PRECIPITATION

Precipitation received in the mountains during December was 76% of average. This puts year to date precipitation in the basin at 98% of average.

RESERVOIR

Reservoir storage in these basins was 70% of average at the end of December; this is 47% of capacity.

STREAMFLOW FORECASTS

Streamflow forecasts issued on January 1 range from 102% of average for both the San Miguel River near Placerville and the Piedra River near Arboles, to 84% of average for the San Juan River near Carracas and the Mancos River near Mancos.

Data Current as of: 1/9/2014 2:43:51 PM

San Miguel-Dolores-Animas-San Juan River Basins
Streamflow Forecasts - January 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	138	195	240	98%	290	370	245
McPhee Reservoir Inflow	APR-JUL	152	225	285	97%	350	460	295
San Miguel R nr Placerville	APR-JUL	85	111	130	102%	151	185	128
Cone Reservoir Inlet	APR-JUL	1.36	2.2	3	100%	3.9	5.6	3
Gurley Reservoir Inlet	APR-JUL	8.9	12.9	16	98%	19.4	25	16.4
Lilylands Reservoir Inlet	APR-JUL	1.12	1.6	2	104%	2.5	3.3	1.92
Rio Blanco at Blanco Diversion [2]	APR-JUL	28	38	46	85%	55	69	54
Navajo R at Oso Diversion [2]	APR-JUL	33	46	56	86%	67	85	65
San Juan R nr Carracas [2]	APR-JUL	182	260	320	84%	385	495	380
Piedra R nr Arboles	APR-JUL	124	175	215	102%	260	330	210
Vallecito Reservoir Inflow	APR-JUL	125	164	193	99%	225	275	194
Navajo Reservoir Inflow [2]	APR-JUL	430	580	700	95%	830	1040	735
Animas R at Durango	APR-JUL	265	355	420	101%	495	610	415
Lemon Reservoir Inflow	APR-JUL	34	46	55	100%	65	81	55
La Plata R at Hesperus	APR-JUL	9.9	15.5	20	87%	25	34	23
Mancos R nr Mancos [2]	APR-JUL	12	19.7	26	84%	33	45	31

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 December, 2013	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
GROUNDHOG RESERVOIR	6.8	3.4	12.3	22.0
JACKSON GULCH RESERVOIR	2.7	1.4	4.5	10.0
LEMON RESERVOIR	17.2	8.0	20.7	40.0
MCPHEE RESERVOIR	182.4	192.1	265.6	381.0
NARRAGUINNEP RESERVOIR	13.6	3.2	14.1	19.0
TROUT LAKE RESERVOIR	1.2	1.4	2.5	3.2
VALLECITO RESERVOIR		40.3	62.4	126.0
Basin-wide Total	223.9	249.8	382.1	601.2
# of reservoirs	6	7	7	7

Watershed Snowpack Analysis January 1, 2014	# of Sites	% Median	Last Year % Median
ANIMAS RIVER BASIN	9	107%	60%
DOLORES RIVER BASIN	5	91%	71%
SAN MIGUEL RIVER BASIN	3	99%	86%
SAN JUAN RIVER BASIN	19	100%	68%
SAN MIGUEL-DOLORES-ANIMAS-SAN JUAN RIVER BASINS	19	100%	68%

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Denver, CO 80225-0426

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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Colorado
Basin Outlook Report

Natural Resources Conservation Service
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