



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

Colorado

Basin Outlook Report

JUNE 1, 2003



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. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. 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.

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COLORADO

WATER SUPPLY OUTLOOK REPORT

June 1, 2003

Summary

May was a fairly warm and dry month for Colorado. As a result, the state's snowpack quickly began to melt as temperatures warmed during the later half of the month. With a lack of significant storm systems, there were only minor additions to the snowpack during the month, and those were confined to the northern basins. The early melt produced high flows and also resulted in improved reservoir storage as we enter the demand season. Runoff forecasts continue to call for below average seasonal volumes across most of the state. The early meltout will mean lower streamflows during the later summer months.

Snowpack

Colorado's snowpack experienced a nearly unimpeded melt throughout the month of May. By June 1, the statewide snowpack was reduced to only 32% of average, with only about 15% of the year's seasonal maximum accumulation remaining. Even the current below average snowpack far exceeds that of last year. With most of the state's snowpack completely melted out last year at this time, this year's snowpack is slightly more than 14 times that of last year. Snowpack by basin currently ranges from a high of 58% of average in the South Platte Basin, to only 10% of average in the San Juan, Animas, Dolores, and San Miguel basins. This is the fourth consecutive year with an earlier than normal melt. In each of those years snowpack percentages on June 1 have been less than this year's percentage. With this year's rapid melt the state is on track to completely meltout by mid-June, nearly one month earlier than average. At this time, only those sites that accumulate the deepest snowpacks have any remaining snow, and nearly all of those sites are located in the northern mountains. This year's snowpack accumulation and meltout is very similar to what the state experienced in both 2000 and 2001. In each of those years the state reached a slightly below average accumulation, followed by an early melt. Water users can probably expect late summer water supplies similar to that experienced in the two above years. Without the benefit of upstream reservoir storage, an early melt usually translates into less available late summer water supplies.

Precipitation

Precipitation across Colorado was generally below average during May. Only the Gunnison, Yampa and White River basins received near average monthly totals. For most of the remainder of the state, totals were well below average. Southern Colorado continued to receive some of the lowest amounts, as a percent of average. The Rio Grande and Arkansas basins received only 43% and 40% of average, respectively, while the Colorado Basin fared only slightly better at 62% of average for the month. Statewide, precipitation measured at SNOTEL sites was only 67% of average. Water year totals continue to lag below average across most of the state, with the lowest percentage for the eight months of the 2003 water year at 74% of average in the San Juan, Animas, Dolores, and San Miguel basins. Statewide, water year totals are 93% of average.

Reservoir Storage

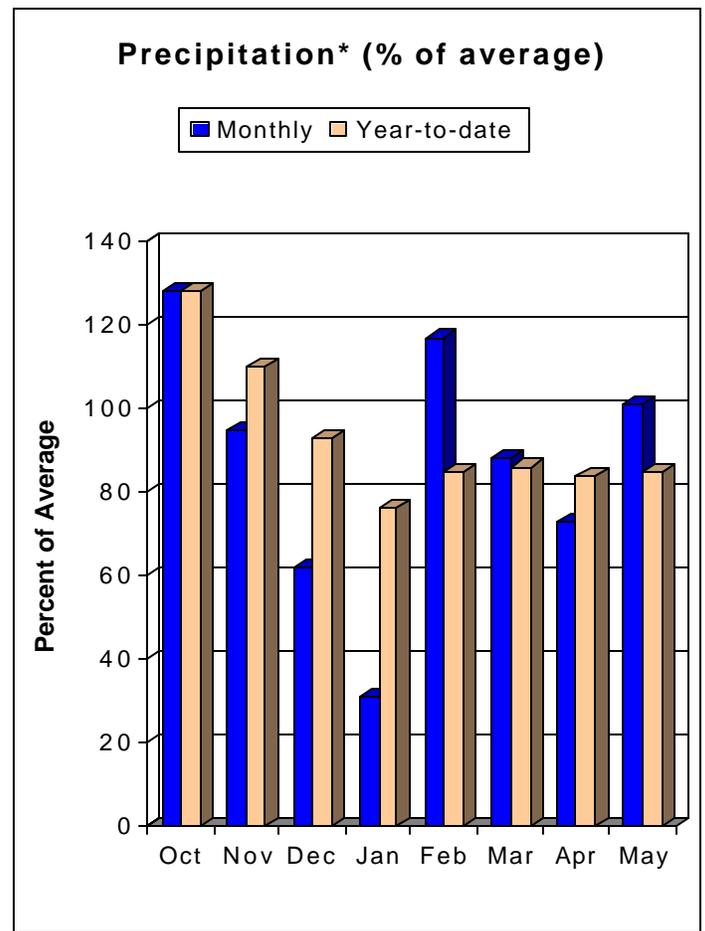
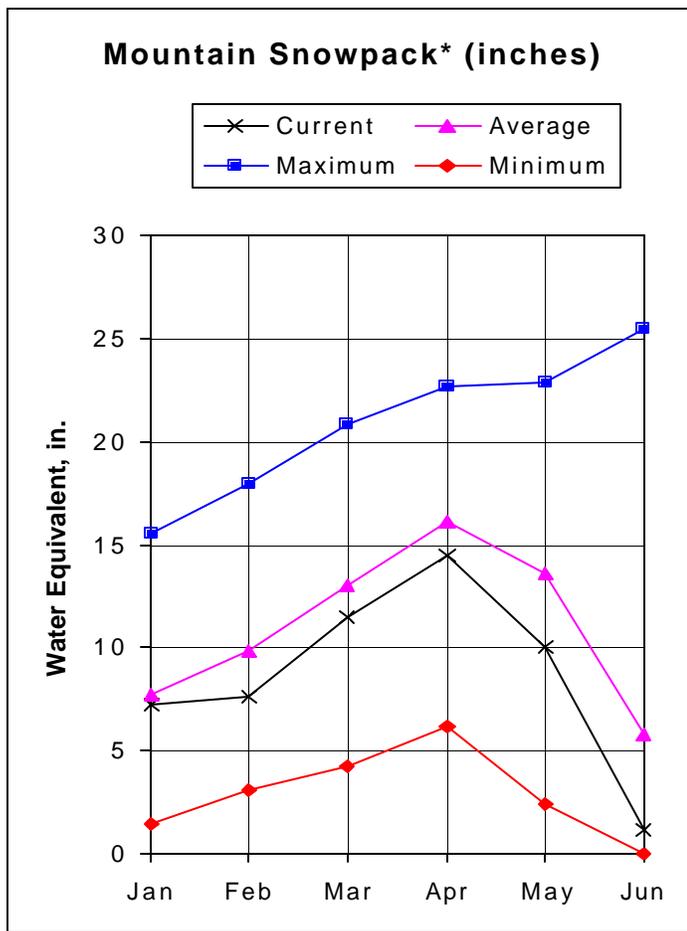
The state's reservoir storage improved slightly again in May. Slight, but steady improvements in reservoir storage have been made since July 2002 when storage volumes bottomed out at nearly 2 million acre-feet below average for that date. As of June 1, that deficit has been reduced to slightly more than 1.2 million acre-feet. As a percent of average, statewide storage now stands at 67%, and is 91% of last year's storage. Storage volumes increased in all basins except the Arkansas, Rio Grande and the combined San Juan, Animas, and Dolores basins this month. The Colorado Basin experienced the greatest improvement during May. Its storage volumes improved by more than 200,000 acre-feet, improving the storage as a percent of average from 42% on May 1 to 62% on June 1.

Streamflow

Although streamflows in many basins were at very high levels at the end of May, this shouldn't be interpreted as an end to water shortages for 2003. These high flows were simply the result of the quick melt of the snowpack, and runoff should begin to recede quickly back down to below average and remain there for the summer. Volume forecasts call for below average runoff nearly statewide. Only Colorado, Yampa, and a few Front Range tributaries to the South Platte River can expect near average spring and summer volumes. Streamflows at a few locations in the Colorado River headwaters are forecast to exceed 110% of average, which are the highest forecasts in the state. Elsewhere, volumes will range from only around 50% of average to about 90% of average. Those basins that can expect the lowest volumes include the San Juan and Upper Rio Grande. Most forecast points in these basins are calling for less than 50% of average volumes in the forecast period. Other basins that are expected to experience very low runoff volumes include the Gunnison, Dolores, Animas, San Miguel, and the upper reaches of the South Platte.

GUNNISON RIVER BASIN

as of June 1, 2003



*Based on selected stations

The snowpack in the Gunnison Basin has melted much more quickly than normal during May, and most of the measuring sites do not have any snow remaining at them. The measurable snow that does remain in the basin is only 21% of the average June 1 amount, and it will most likely be gone after the first week of June, which is about 1 month before the normal meltout date. The Upper Gunnison and Surface Creek watersheds are the only watersheds with any considerable snow left to measure. On a positive note, the precipitation during May was 101% of average. The water year total is now 85% of average, and there has been 47% more precipitation this water year compared to last water year by this time. Even with the rapid snowmelt, the reservoirs in the basin have not benefited greatly from the runoff. End of May storage is at 84% of average, which is about the same percent of average as last month. There is only 89% of the amount there was last year at this time. The streamflow forecasts remain very much below average at all of the forecast points. Forecasts range from only 41% of average on Cochatopa Creek below Rock Creek, to 73% of average on East River at Almont.

GUNNISON RIVER BASIN
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * (1000AF) (% AVG.)		
		30% (1000AF)	10% (1000AF)					
Taylor River blw Taylor Park Resv	APR-JUL	43	58	68	66	78	93	103
Slate River nr Crested Butte	APR-JUL	50	56	60	67	64	70	89
East River at Almont	APR-JUL	105	126	140	73	154	175	192
Gunnison River nr Gunnison	APR-JUL	180	220	250	64	280	320	390
Tomichi Creek at Sargents	APR-JUL	10.5	15.0	18.0	56	21	26	32
Cochetopa Creek blw Rock Creek	APR-JUL	3.5	5.0	7.0	41	9.0	11.9	17.3
Tomichi Creek at Gunnison	APR-JUL	21	31	40	49	50	66	81
Lake Fork at Gateview	APR-JUL	54	72	84	67	96	114	126
Blue Mesa Reservoir Inflow	APR-JUL	280	380	450	63	520	620	720
Paonia Reservoir Inflow	MAR-JUN	48	52	59	59	67	79	100
	APR-JUL	48	54	59	58	64	71	102
N.F. Gunnison River nr Somerset	APR-JUL	159	189	210	69	232	268	305
Surface Creek nr Cedaredge	APR-JUL	8.3	10.4	12.0	70	13.9	17.3	17.1
Ridgway Reservoir Inflow	APR-JUL	56	64	70	69	77	88	102
Uncompahgre River at Colona	APR-JUL	58	72	83	60	95	113	139
Gunnison River nr Grand Junction	APR-JUL	555	760	900	58	1040	1250	1560

GUNNISON RIVER BASIN Reservoir Storage (1000 AF) - End of May					GUNNISON RIVER BASIN Watershed Snowpack Analysis - June 1, 2003			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BLUE MESA	830.0	386.6	481.7	517.1	UPPER GUNNISON BASIN	9	0	27
CRAWFORD	14.3	9.0	5.5	12.6	SURFACE CREEK BASIN	2	0	30
FRUITGROWERS	4.3	4.4	2.0	4.0	UNCOMPAGRE BASIN	3	0	3
FRUITLAND	9.2	4.3	1.9	6.3	TOTAL GUNNISON RIVER BASIN	12	0	21
MORROW POINT	121.0	119.0	114.6	113.8				
PAONIA	18.0	16.4	16.5	15.7				
RIDGWAY	83.2	83.2	67.8	61.2				
TAYLOR PARK	106.0	52.5	69.2	71.8				

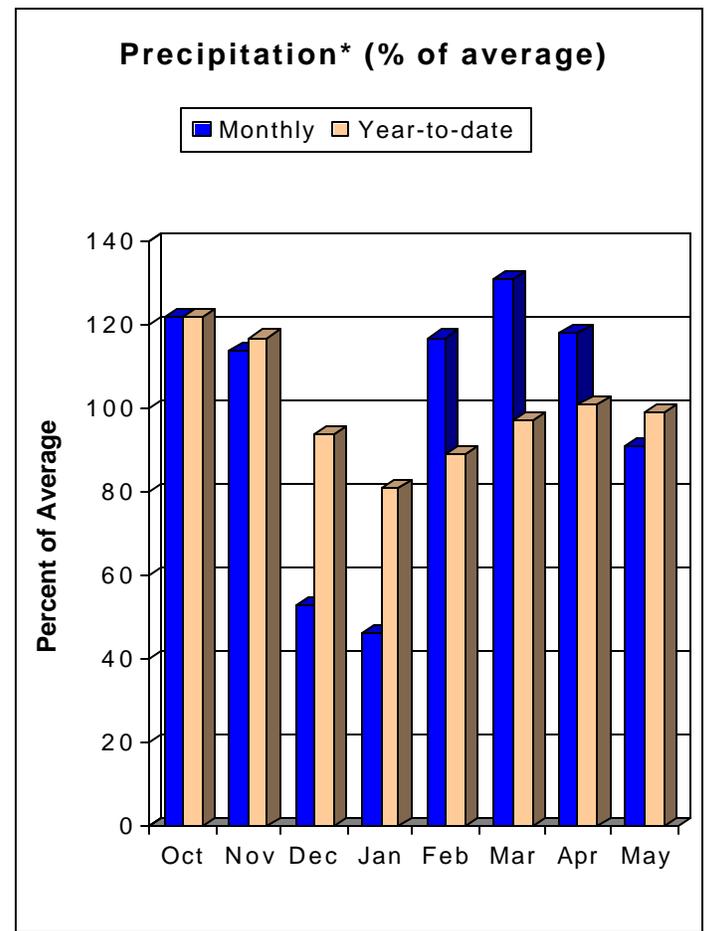
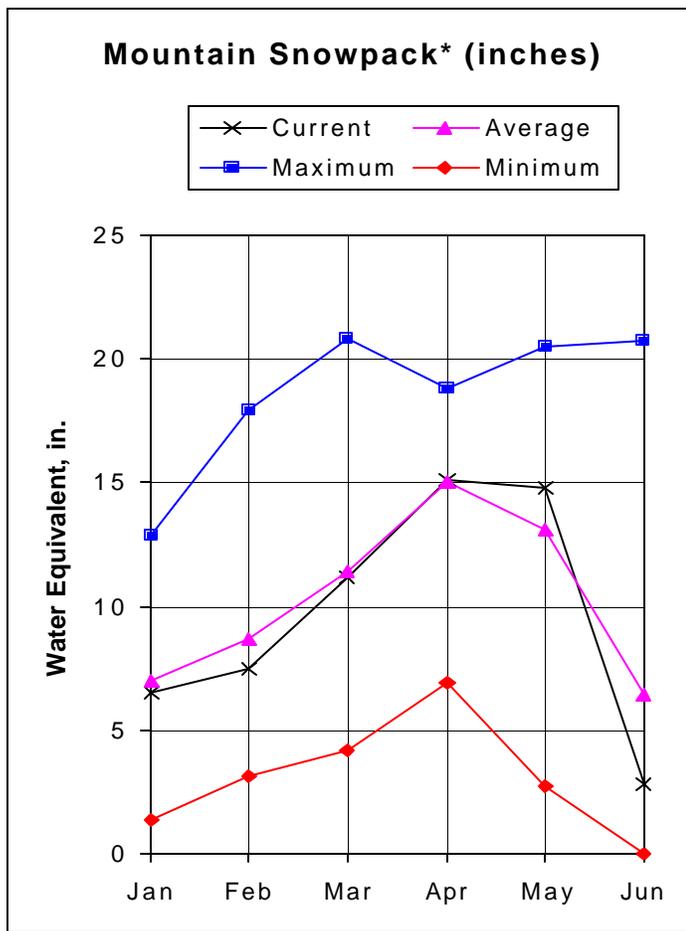
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER COLORADO RIVER BASIN

as of June 1, 2003



*Based on selected stations

The snowpack in the Colorado Basin has melted at a remarkable rate during May, and many of the measuring locations have melted out already. Measurable snow in the basin has gone from 105% of average last month, to only 47% of average on June 1. If this melt rate continues the remaining measurable snow in the basin will be gone by mid-June, which is nearly three weeks ahead of the normal meltout date. Measurements range from 26% of average in the Roaring Fork Watershed, to 163% of average in the Willow Creek Watershed. Precipitation during May was 91% of average. The water year total is now 99% of average. The runoff from the melting snowpack has been feeding the reservoirs, and storage amounts have come up significantly since last month. Overall, storage in the basin is at 62% of average, which is 89% of last year's storage amount. Many of the stream forecasts have improved from last month, and most are near or above average. They range from 78% of average on the Roaring Fork at Glenwood Springs, to 118% of average at the inflow to Willow Creek Reservoir.

UPPER COLORADO RIVER BASIN
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Lake Granby Inflow	APR-JUL	221	238	250	111	263	283	225
Willow Creek Reservoir Inflow	APR-JUL	45	54	60	118	67	77	51
Williams Fork Reservoir inflow	APR-JUL	84	93	100	105	107	118	95
Dillon Reservoir Inflow	APR-JUL	137	154	165	99	176	193	167
Green Mountain Reservoir inflow	APR-JUL	244	268	285	102	303	329	280
Muddy Creek blw Wolford Mtn. Resv.	APR-JUL	37	43	47	78	52	59	60
Eagle River blw Gypsum	APR-JUL	263	299	325	97	354	401	335
Colorado River nr Dotsero	APR-JUL	1110	1280	1400	97	1520	1690	1440
Ruedi Reservoir Inflow	APR-JUL	84	101	115	82	131	157	141
Roaring Fork at Glenwood Springs	APR-JUL	394	484	550	78	621	733	710
Colorado River nr Cameo	APR-JUL	1610	1930	2150	89	2370	2690	2420

UPPER COLORADO RIVER BASIN Reservoir Storage (1000 AF) - End of May					UPPER COLORADO RIVER BASIN Watershed Snowpack Analysis - June 1, 2003				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of		
		This Year	Last Year	Avg			Last Yr	Average	
DILLON	250.8	154.9	182.4	229.0	BLUE RIVER BASIN	5	0	38	
LAKE GRANBY	465.6	117.5	147.8	302.9	UPPER COLORADO RIVER BASIN	17	0	56	
GREEN MOUNTAIN	139.0	65.2	65.6	76.1	MUDDY CREEK BASIN	2	0	0	
HOMESTAKE	43.0	24.9	18.9	20.3	PLATEAU CREEK BASIN	2	0	30	
RUEDI	102.0	62.3	71.6	74.2	ROARING FORK BASIN	7	0	26	
VEGA	32.0	30.6	14.4	29.2	WILLIAMS FORK BASIN	2	0	74	
WILLIAMS FORK	96.8	33.1	49.4	63.6	WILLOW CREEK BASIN	2	0	162	
WILLOW CREEK	9.0	8.4	7.5	7.4	TOTAL COLORADO RIVER BASIN	26	0	47	

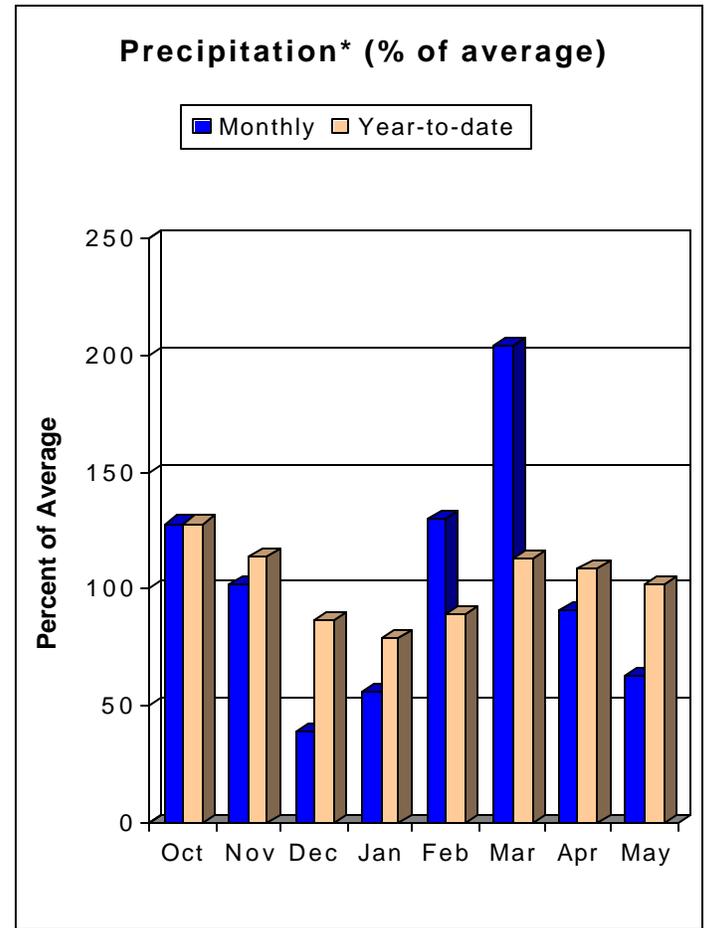
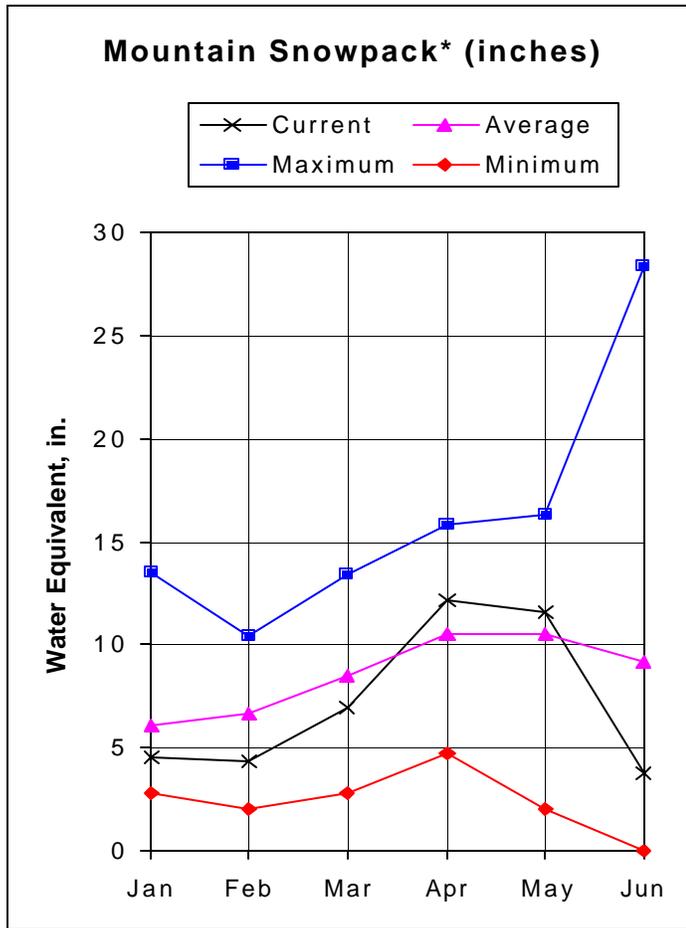
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTH PLATTE RIVER BASIN

as of June 1, 2003



*Based on selected stations

The snowmelt has been extremely rapid during May, and many of the snow measuring sites have melted out already in the South Platte Basin. Measurable snow remaining is only 58% of average on June 1, which is a little surprising considering the measurements were 109% of average on May 1. There is no measurable snow left in the Saint Vrain and Upper South Platte watersheds, while the remaining watersheds have measurements that range from 46% of average in the Boulder Creek Watershed, to 99% of average in the Cache La Poudre Watershed. Precipitation during May was only 63% of average, and the water year total is now 102% of average. Reservoir storage in the basin is rising, and the overall amount is now 71% of average, which is 98% of the amount there was last year at this time. As a result of a depleted snowpack and lack of precipitation during May, many of the streamflow forecasts have been reduced from last month's forecasts. Forecasts range from only 35% of average at the inflow to Antero Reservoir, to 104% of average on Boulder Creek near Orodell.

SOUTH PLATTE RIVER BASIN
Streamflow Forecasts - June 1, 2003

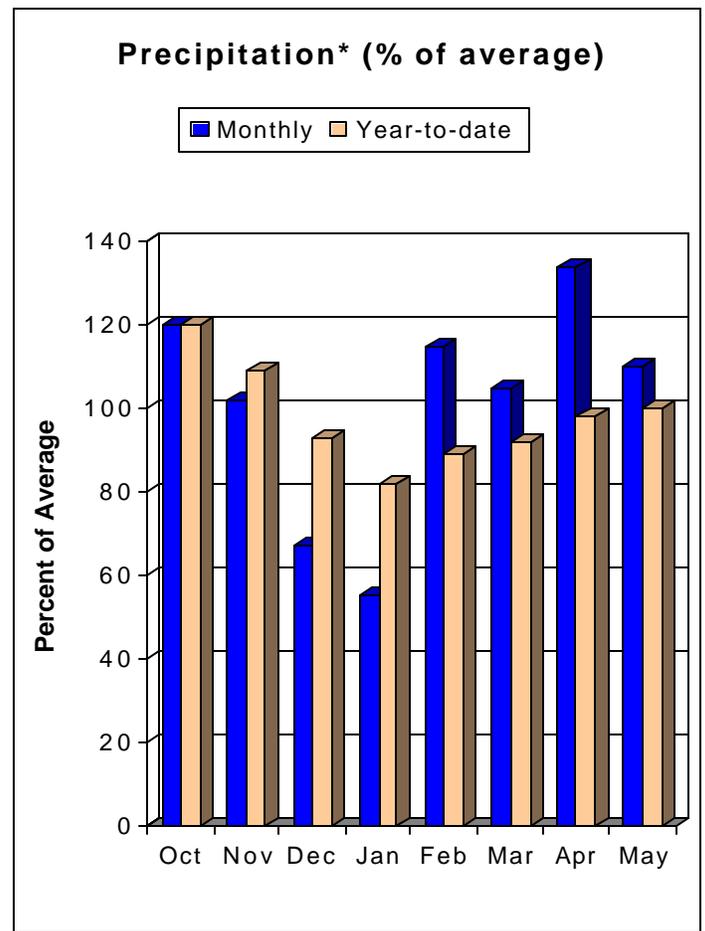
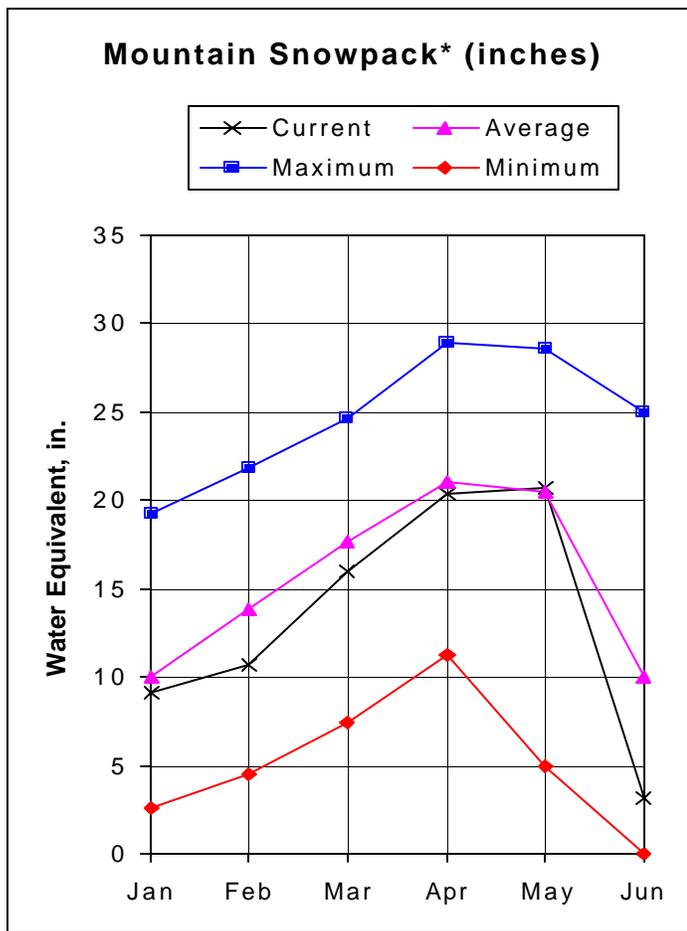
Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Antero Reservoir Inflow	APR-JUL	2.5	3.6	4.6	35	5.9	8.4	13.0
Spinney Mountain Reservoir Inflow	APR-JUL	15.5	20	24	60	29	37	40
Elevenmile Canyon Reservoir Inflow	APR-JUL	10.9	18.1	23	56	28	35	41
Cheesman Lake Inflow	APR-JUL	49	59	68	76	78	95	89
South Platte River at South Platte	APR-SEP	114	155	183	80	210	250	230
Bear Creek at Morrison	APR-SEP	17.5	23	26	84	29	35	31
Clear Creek at Golden	APR-SEP	108	121	130	97	139	152	134
St. Vrain Creek at Lyons	APR-SEP	50	62	70	83	78	90	84
Boulder Creek nr Orodell	APR-SEP	49	52	55	104	58	61	53
South Boulder nr Eldorado Spgs	APR-SEP	34	41	45	98	49	56	46
Big Thompson River at mouth nr Drake	APR-SEP	100	112	120	103	128	140	117
Cache La Poudre at Canyon Mouth	APR-SEP	171	210	235	86	260	300	275

SOUTH PLATTE RIVER BASIN Reservoir Storage (1000 AF) - End of May					SOUTH PLATTE RIVER BASIN Watershed Snowpack Analysis - June 1, 2003			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ANTERO	20.0	0.0	19.3	16.0	BIG THOMPSON BASIN	3	0	69
BARR LAKE	32.0	31.0	22.0	27.7	BOULDER CREEK BASIN	3	479	46
BLACK HOLLOW	8.0	3.0	3.0	4.4	CACHE LA POUFRE BASIN	2	0	99
BOYD LAKE	49.0	18.9	18.2	40.0	CLEAR CREEK BASIN	2	0	48
CACHE LA POUFRE	10.0	9.0	4.3	9.1	SAINT VRAIN BASIN	0	0	0
CARTER	108.9	92.4	101.1	100.2	UPPER SOUTH PLATTE BASIN	6	0	0
CHAMBERS LAKE	9.0	6.0	5.4	5.8	TOTAL SOUTH PLATTE BASIN	15	4029	58
CHEESMAN	79.0	60.0	49.2	66.2				
COBB LAKE	34.0	4.0	5.3	14.7				
ELEVEN MILE	97.8	46.1	99.1	97.1				
EMPIRE	38.0	19.1	21.0	30.7				
FOSSIL CREEK	12.0	8.2	10.0	8.0				
GROSS	41.8	18.6	19.3	28.8				
HALLIGAN	6.4	6.4	5.1	6.0				
HORSECREEK	16.0	14.4	12.3	14.1				
HORSETOOTH	149.7	32.8	35.2	123.2				
JACKSON	35.0	24.2	16.3	30.6				
JULESBURG	28.0	18.6	14.1	21.5				
LAKE LOVELAND	14.0	12.1	8.9	11.0				
LONE TREE	9.0	8.7	8.5	8.6				
MARLANO	6.0	5.6	2.2	5.4				
MARSHALL	10.0	9.6	5.0	8.2				
MARSTON	13.0	19.3	9.9	15.3				
MILTON	24.0	21.7	17.6	19.3				
POINT OF ROCKS	70.0	55.8	52.1	66.3				
PREWITT	33.0	19.4	17.6	26.7				
RIVERSIDE	63.1	44.7	37.4	56.0				
SPINNEY MOUNTAIN	48.7	12.9	27.8	35.6				
STANDLEY	42.0	35.4	27.1	36.8				
TERRY LAKE	8.0	6.8	5.6	7.0				
UNION	13.0	9.6	9.3	12.2				
WINDSOR	19.0	8.3	7.0	15.0				

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

YAMPA, WHITE, NORTH PLATTE, AND LARAMIE RIVER BASINS as of June 1, 2003



*Based on selected stations

The snowpack is rapidly melting away in these basins and many of the measuring sites have already melted out. The measurements have gone from 85% of average on May 1 in the Yampa-White Basin, to only 28% of average on June 1, and from 107% of average on May 1 in the North Platte Basin, to only 25% of average on June 1. If the rapid melt rate continues, the measurable snow will be gone by mid-June, which is about 1 month before the normal meltout date. Precipitation during May was 110% of average, which is the fourth month in a row with above average precipitation. The water year total is now 100% of average. The storage amounts in the two major reservoirs in the basin is very good at 103% of average for the end of May, which is 12% higher than last year at this time, and is 92% of capacity. Good precipitation amounts during May have contributed to a higher streamflow forecast at many of the forecast points. They range from 67% of average on the Laramie River near Woods, to 103% of average on Fortification Creek near Fortification.

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
NORTH PLATTE RIVER nr Northgate	JUN-SEP	92	112	125	79	138	158	159
LARAMIE RIVER nr Woods	JUN-SEP	31	48	60	67	72	89	89
Yampa R abv Stagecoach Res	APR-JUL	14.5	21	26	90	31	38	29
Yampa River at Steamboat Springs	APR-JUL	225	245	260	93	275	295	280
Elk River nr Milner	APR-JUL	245	277	300	92	324	361	325
Elkhead Creek nr Elkhead	APR-JUL	25	30	35	90	41	50	39
ELKHEAD CREEK blw Maynard Gulch	APR-JUL	39	49	56	95	63	73	59
Fortification Ck nr Fortification	MAR-JUN	5.10	6.70	7.70	103	8.70	10.30	7.50
Yampa River nr Maybell	APR-JUL	720	815	880	89	945	1035	990
Little Snake River nr Slater	APR-JUL	87	109	126	79	144	173	159
LITTLE SNAKE R nr Dixon	APR-JUL	156	220	260	79	300	365	330
LITTLE SNAKE R nr Lily	APR-JUL	176	240	285	78	330	395	365
White River nr Meeker	APR-JUL	184	218	245	85	275	326	290

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS
Reservoir Storage (1000 AF) - End of May

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS
Watershed Snowpack Analysis - June 1, 2003

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
STAGECOACH	33.3	33.0	28.0	29.9	LARAMIE RIVER BASIN	2	0	65
YAMCOLO	9.1	5.9	6.8	7.7	NORTH PLATTE RIVER BASIN	7	53	35
					TOTAL NORTH PLATTE BASIN	9	166	40
					ELK RIVER BASIN	2	0	1
					YAMPA RIVER BASIN	9	212	20
					WHITE RIVER BASIN	4	0	69
					TOTAL YAMPA AND WHITE RIV	12	378	28
					LITTLE SNAKE RIVER BASIN	6	444	64

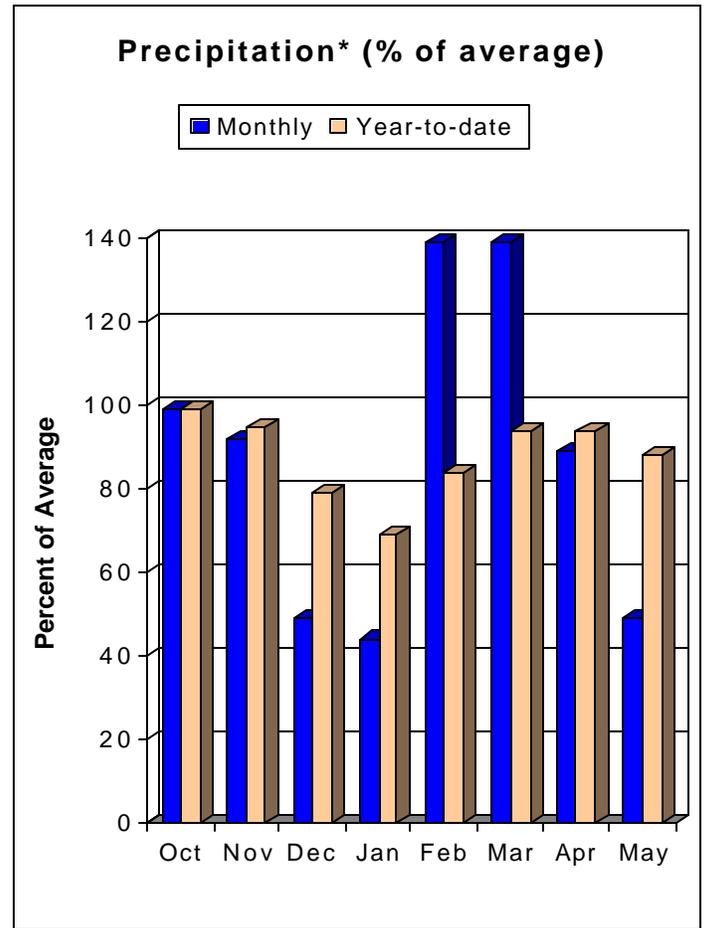
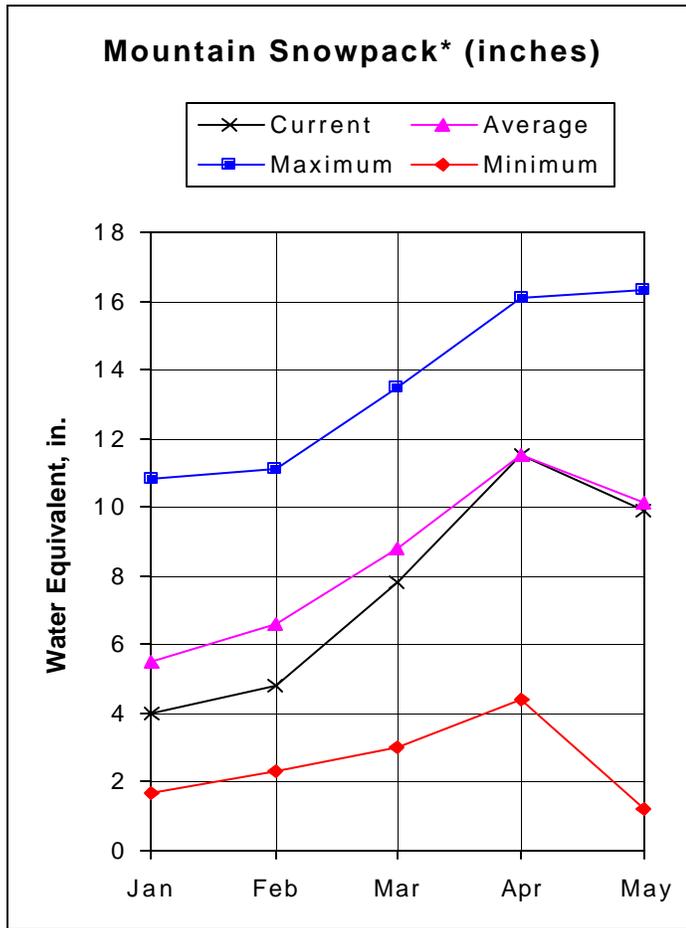
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

ARKANSAS RIVER BASIN

as of June 1, 2003



*Based on selected stations

Snowpack in the Arkansas Basin has rapidly melted during May, leaving measurable snow at only one of the snow measuring sites, which is Fremont Pass in the Upper Arkansas Watershed above Salida. The measurement is at 54% of average for that one watershed, and calculates to 42% of average for the entire basin. Once Fremont Pass melts out, the basin will have lost all of its measurable snow about 1 month ahead of the normal date. Precipitation measurements for the month of April were only 49% of average, and the water year total is only 88% of average. There has been about 163% of the precipitation there was last water year by this time. While most of the snow in the basin has already melted, the reservoir storage has not improved. At only 40% of average, they are 4% of average less than last month. Overall, the streamflow forecasts are nearly the same as last month's forecasts at about 15% below average flow. They range from 80% of average on the Cucharas River near La Veta, to 89% of average on the Arkansas River near Salida.

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ARKANSAS RIVER BASIN
Streamflow Forecasts - June 1, 2003

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Chalk Creek nr Nathrop	APR-SEP	11.8	18.5	23	85	28	34	27
Arkansas River at Salida	APR-SEP	210	250	275	89	300	340	310
Grape Creek nr Westcliffe	APR-SEP	7.9	12.7	16.0	82	19.3	24	19.6
Pueblo Reservoir Inflow	APR-SEP	275	330	365	85	400	455	430
Huerfano River nr Redwing	APR-SEP	11.0	12.7	13.9	90	15.1	16.8	15.5
Cucharas River nr La Veta	APR-SEP	5.3	8.5	10.7	82	12.9	16.1	13.0
Trinidad Lake Inflow	APR-SEP	15.0	26	34	77	42	53	44

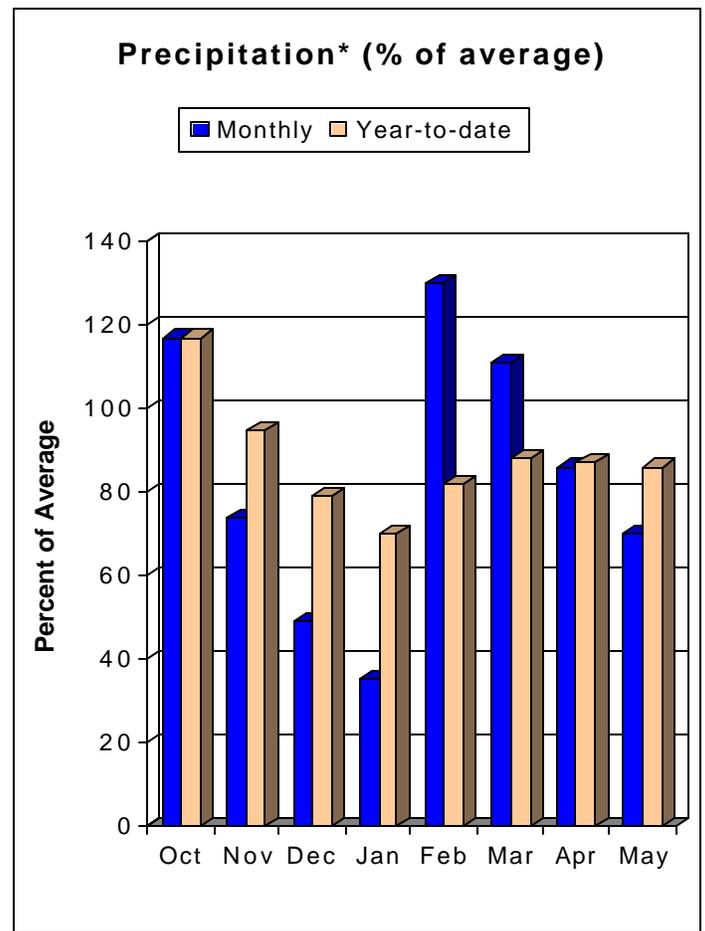
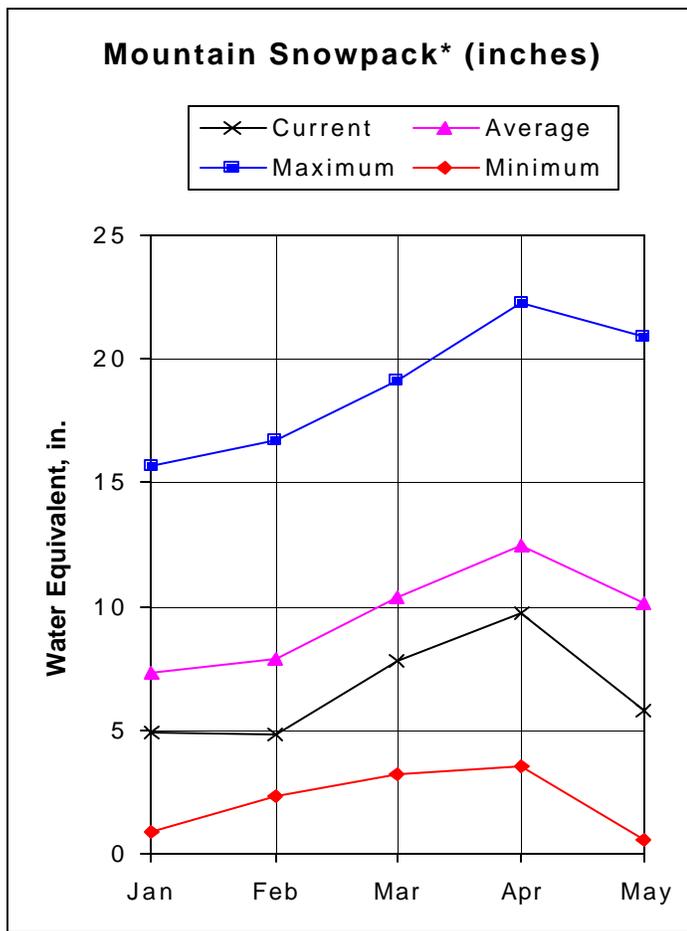
ARKANSAS RIVER BASIN Reservoir Storage (1000 AF) - End of May					ARKANSAS RIVER BASIN Watershed Snowpack Analysis - June 1, 2003			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ADOBE	70.0	0.0	12.8	33.0	UPPER ARKANSAS BASIN	2	0	54
CLEAR CREEK	11.0	8.6	6.3	6.3	CUCHARAS & HUERFANO RIVER	2	0	0
GREAT PLAINS	150.0	0.0	19.8	39.3	PURGATOIRE RIVER BASIN	2	0	0
HOLBROOK	7.0	0.6	3.0	4.1	TOTAL ARKANSAS RIVER BASIN	5	0	42
HORSE CREEK	28.0	0.0	0.0	10.0				
JOHN MARTIN	335.7	29.6	61.6	128.1				
LAKE HENRY	8.0	3.1	4.7	5.7				
MEREDITH	42.0	3.8	9.3	18.5				
PUEBLO	236.7	89.4	118.2	160.1				
TRINIDAD	72.3	16.1	16.1	29.7				
TURQUOISE	126.6	35.6	66.8	77.6				
TWIN LAKES	86.0	36.6	45.5	42.6				

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER RIO GRANDE RIVER BASIN as of June 1, 2003



*Based on selected stations

Wolf Creek Summit is the only SNOTEL site for the Rio Grande Basin with snow remaining on June 1. The measurements at that site are indicating that the snowpack for the entire basin is at 22% of average. Chances are good that the remaining measurable snow will be melted by the end of the first week of June, and the basin will have melted out over a month early. Precipitation was only 70% of average during May, and the water year total is now only 86% of average. While most of the snow has melted in the basin, the reservoirs have not benefited much from the runoff. Storage amounts are only 43% of average, which is down from 59% of average last month. Streamflow forecasts are similar to last month with many near or below 50% of average. Culebra and Costilla Creeks remain the exception with forecasts only slightly below average. The remaining forecasts range from only 44% of average at Alamosa Creek above Terrace Reservoir, to 78% of average at the Trinchera Water Supply.

UPPER RIO GRANDE BASIN
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * (1000AF) (% AVG.)		
		30%	10%	30%	10%	30%	10%	
Rio Grande at Thirty Mile Bridge	APR-SEP	65	69	72	53	75	79	136
Rio Grande Reservoir Inflow	APR-JUL	56	60	63	53	66	71	118
Rio Grande at Wagon Wheel Gap	APR-SEP	131	156	173	50	192	217	345
South Fork Rio Grande at South Fork	APR-SEP	54	62	68	52	74	82	132
Rio Grande nr Del Norte	APR-SEP	196	230	255	48	280	315	531
Saguache Creek nr Saguache	APR-SEP	7.6	11.4	16.0	49	21	27	33
Alamosa Creek abv Terrace Reservoir	APR-SEP	20	25	31	44	37	45	70
La Jara Creek nr Capulin	MAR-JUL	1.80	2.20	3.80	44	5.40	7.70	8.70
Trinchera Water Supply	APR-SEP	19.0	26	31	78	36	43	40
Platoro Reservoir Inflow	APR-JUL	28	33	37	58	41	46	64
	APR-SEP	32	38	42	59	46	52	71
Conejos River nr Mogote	APR-SEP	85	103	115	58	127	145	200
San Antonio River at Ortiz	APR-SEP	8.0	8.7	10.5	64	12.4	15.5	16.4
Los Pinos River nr Ortiz	APR-SEP	35	38	43	58	48	54	74
Culebra Creek at San Luis	APR-SEP	13.1	18.4	22	96	26	31	23
Costilla Reservoir inflow	MAR-JUL	7.1	8.5	9.5	90	10.5	11.9	10.6
Costilla Creek nr Costilla	MAR-JUL	17.0	21	23	89	25	29	26

UPPER RIO GRANDE BASIN Reservoir Storage (1000 AF) - End of May					UPPER RIO GRANDE BASIN Watershed Snowpack Analysis - June 1, 2003			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CONTINENTAL	15.0	1.2	4.1	8.2	ALAMOSA CREEK BASIN	1	0	0
PLATORO	53.7	8.2	14.9	24.5	CONEJOS & RIO SAN ANTONIO	2	0	0
RIO GRANDE	51.0	14.4	13.8	24.2	CULEBRA & TRINCHERA CREEK	3	0	0
SANCHEZ	103.0	12.0	21.5	26.9	UPPER RIO GRANDE BASIN	4	0	19
SANTA MARIA	45.0	4.2	7.8	11.4	TOTAL UPPER RIO GRANDE BA	10	0	17
TERRACE	13.1	4.2	4.1	8.0				

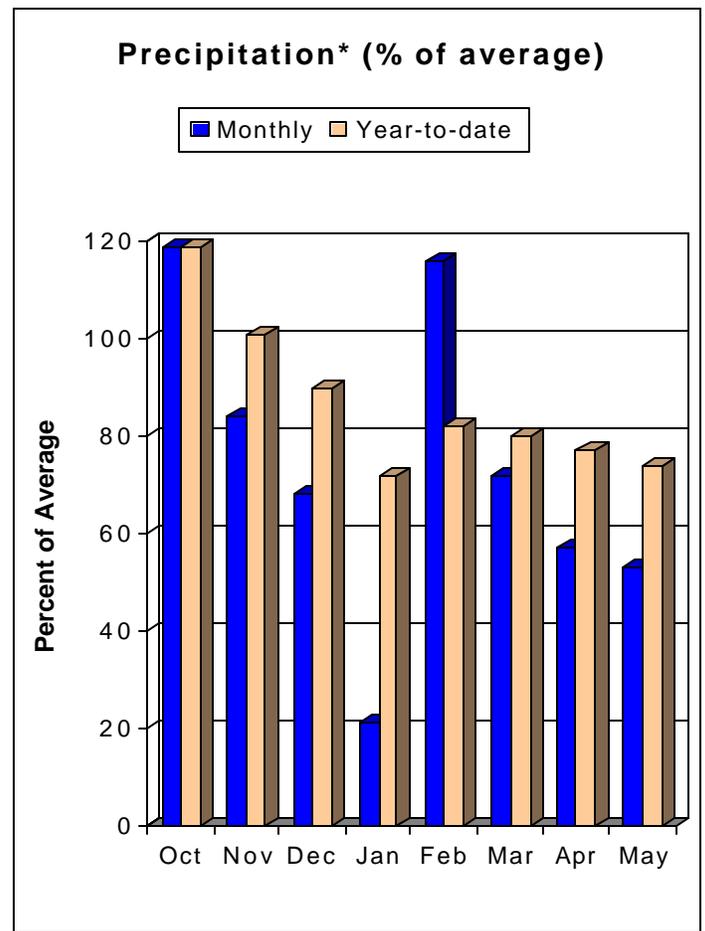
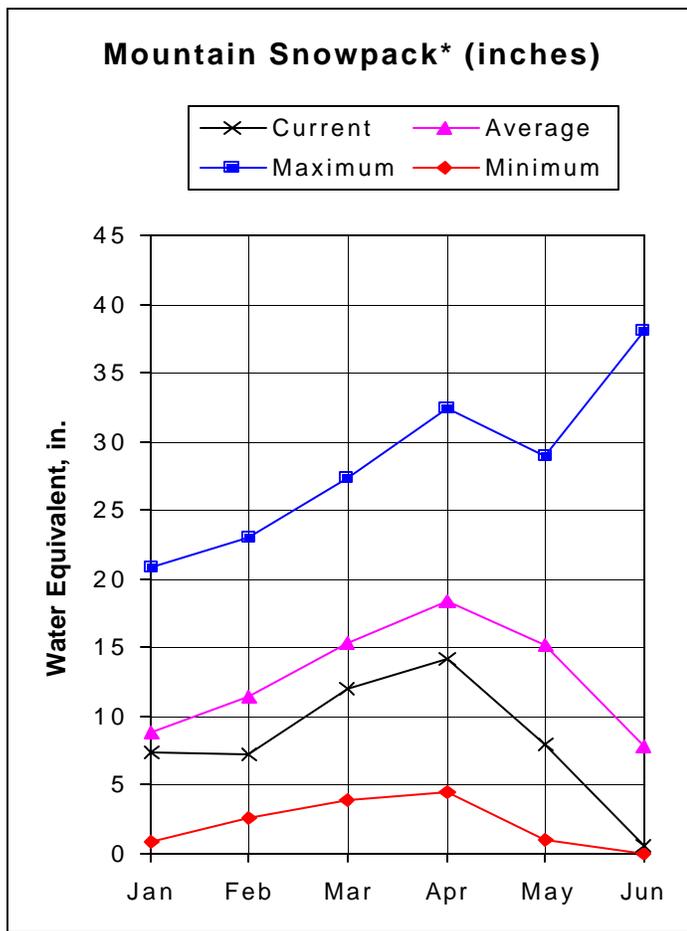
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The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural volume - actual volume may be affected by upstream water management.

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS as of June 1, 2003



*Based on selected stations

Nearly all of the measurable snow has melted in these basins. Wolf Creek Summit in the San Juan River Basin and Columbus Basin in the Animas Basin are the only sites with measurable snow. The measurements at these SNOTEL sites indicate that the combined snowpack percent of average is about 10%. Snowpack in the San Juan Basin is about 23% of average, while in the Animas it is only 1% of average. Precipitation during April was only 53% of average, and the water year total is only 74% of average. There has been 170% of the amount of precipitation there was last water year by this time. Reservoirs in the basin have benefited from the runoff from the snowmelt, and storage is up from only 65% of average last month to 73% of average on June 1. There is 28% more storage than last year at this time. Most of the streamflow forecasts are near or below average. They range from only 43% of average at the inflow to Navajo Reservoir, to 67% of average on the San Miguel River near Placerville.

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS
Streamflow Forecasts - June 1, 2003

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Dolores River at Dolores	APR-JUL	108	127	140	53	153	172	265
McPhee Reservoir inflow	APR-JUL	117	140	155	48	170	195	320
San Miguel River nr Placerville	APR-JUL	68	80	88	67	96	108	132
Gurley Reservoir Inlet	JUN-JUL	1.08	2.16	2.90	48	3.60	4.70	6.00
	JUNE			2.50	54			4.67
	JULY			0.40	30			1.32
Cone Reservoir Inlet	JUN-JUL	0.17	0.34	0.66	46	0.98	1.44	1.43
	JUNE			0.56	54			1.04
	JULY			0.10	26			0.38
Lilylands Reservoir Inlet	JUN-JUL	0.14	0.38	0.54	47	0.70	0.94	1.14
	JUNE			0.45	52			0.87
	JULY			0.09	33			0.27
Rio Blanco at Blanco Diversion	APR-JUL	16.0	24	29	55	34	42	53
Navajo River at Oso Diversion	APR-JUL	18.0	28	35	51	42	52	69
San Juan River nr Carracus	APR-JUL	125	167	200	49	236	293	405
Piedra River nr Arboles	APR-JUL	79	94	105	46	116	131	230
Vallecito Reservoir Inflow	APR-JUL	95	104	110	54	116	125	205
Navajo Reservoir Inflow	APR-JUL	277	305	340	43	400	490	800
Animas River at Durango	APR-JUL	139	195	230	52	265	320	440
Lemon Reservoir Inflow	APR-JUL	17.2	25	30	52	35	43	58
La Plata River at Hesperus	APR-JUL	8.1	11.6	14.0	56	16.4	19.9	25
Mancos River nr Mancos	APR-JUL	5.7	14.0	20	50	26	34	40
	JUNE			4.5	33			13.7
	JULY			1.20	26			4.60

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS
Reservoir Storage (1000 AF) - End of May

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS
Watershed Snowpack Analysis - June 1, 2003

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GROUNDHOG	21.7	8.7	11.2	18.9	ANIMAS RIVER BASIN	7	0	1
JACKSON GULCH	10.0	9.4	2.8	9.3	DOLORES RIVER BASIN	4	0	0
LEMON	40.0	19.5	8.2	29.2	SAN MIGUEL RIVER BASIN	3	0	0
MCPHEE	381.2	230.5	204.2	328.0	SAN JUAN RIVER BASIN	3	0	23
NARRAGUINNEP	19.0	18.8	12.4	17.4	TOTAL SAN MIGUEL, DOLORES	16	0	10
VALLECITO	126.0	76.9	44.5	93.9	AN JUAN RIVER BASINS			

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1971-2000 base period.

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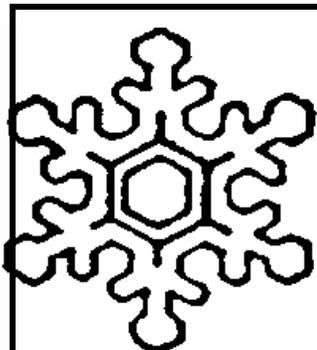
In addition to the basin outlook reports, water supply forecast information for the Western United States is available from the Natural Resources Conservation Service and the National Weather Service monthly, January through May. The information may be obtained from the National Resources Conservation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

Issued by

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Colorado
Basin Outlook Report
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