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Department of  
Agriculture

**Natural  
Resources  
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Service**

# Colorado Basin Outlook Report January 1, 2005



# 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

### JANUARY 1, 2005

#### Summary

Snowfall and precipitation during the first three months of the 2005 water year have gotten off to the best start in the last eight years. Although statewide snowpack totals have not quite exceeded the average mark, they are extremely close, and are the highest percent of average for January 1 recorded since 1997. With that, optimism for continued drought recovery should increase for most water users. The best outlook for improvement is anticipated across southern Colorado, where snowpack percentages are the highest. After the prolonged dry period most reservoirs wait in anticipation of the best chances to refill seen in many years. Of course, weather patterns over the next several months are critical in continuing this rather bright outlook for the state's water supplies.

#### Snowpack

Data collected from SNOTEL sites across Colorado show a good start to the state's snowpack. Statewide totals were recorded at 99% of average on January 1 and are 108% of last year's readings on that date. Thus far during the 2005 water year, southern Colorado has benefited the most from an active storm track and is reporting the highest snowpack percents of average. Above average totals were measured in the Gunnison, Rio Grande, Arkansas, and combined San Juan, Animas, Dolores, and San Miguel basins. Snowpack percentages in these basins range from 110% to 117% of average. Across the basins of northern Colorado, the storm track has been less productive, bringing slightly below average snowfall totals. The lowest snowpack readings, as a percent of average, were measured in the Yampa and White basins on January 1, at 87% of average. Only slightly higher percentages were recorded in the Colorado and North and South Platte basins. In a typical year, the state receives nearly 40% of its maximum snowpack accumulation by January 1. As the maximum totals are reached near April 1, this leaves only three months in which the state can reach a badly needed above average snowpack which would help to continue drought recovery. At this time, it appears that southern Colorado has the best chance to see above average snowpack totals by this spring.

#### Precipitation

The 2005 water year got off to an excellent start in October with above average precipitation measured in all basins except the Arkansas. Statewide, precipitation for October was totaled at 124% of average. While not all of this moisture was received as snow, the added rainfall helped to improve soil moisture levels which should improve runoff efficiency during the spring. November brought another good month for precipitation to many portions of the state. Near to above average precipitation was measured in all basins except the Yampa and White during November. Statewide, November's precipitation was recorded at 103% of average at SNOTEL sites. Unfortunately, December's weather patterns dried out considerably across the state, with a statewide total of only 74% of average. Below average monthly totals were reported in all basins during December, and dipped to a low of only 63% of average in the South Platte basin in December. As of January 1, water year totals remain slightly above average in the Gunnison, Rio Grande, and San Juan, Animas, Dolores, and San Miguel basins. The lowest water year percentages are measured in the Yampa and White basins at only 87% of average. Statewide, water year totals are at 99% of average on January 1.

## Reservoir Storage

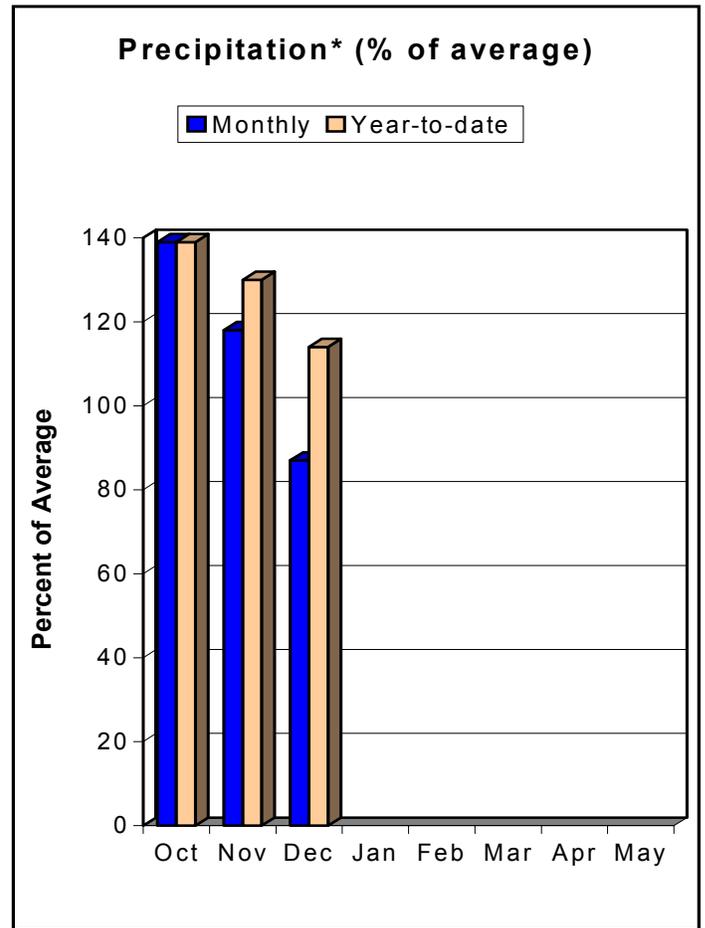
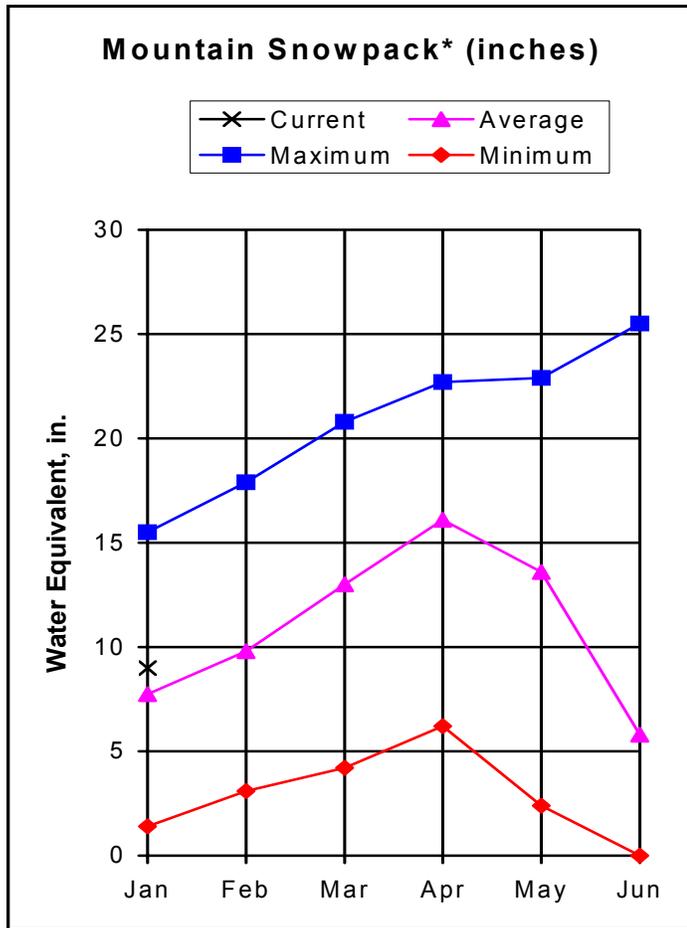
Reservoir storage continues to reflect the recent dry weather patterns from recent years across Colorado. Nearly all basins are reporting below average storage volumes as of January 1. Basinwide volumes range from a low of only 45% of average in the Rio Grande basin to a high of 100% of average in the Yampa basin. Statewide, reservoir storage is reported at 82% of average for the January 1 date. Although consistently below average, storage remains slightly above last year's volumes across most of the state, reflecting the gradual recovery from the low point reached in the fall of 2002. Those basins reporting 2005 volumes above those of 2004 include the Gunnison, South Platte, Arkansas, Rio Grande and San Juan, Animas, Dolores, and San Miguel. Statewide, reservoir storage is 111% of last year's volumes. Given the current outlook for runoff across Colorado, the Arkansas, Rio Grande, and the combined southwestern basins have an excellent chance to improve reservoir storage for late summer water needs this year.

## Streamflow

After a few really dry years, even an average year looks pretty good, right? This year's runoff forecasts have produced the best water supply outlook for southern Colorado in many years, with forecasts at a few locations even exceeding 120% of average. As a rule, runoff forecasts are above average throughout the Gunnison, Rio Grande, San Juan, Animas, and San Miguel basins. In the Arkansas basin, forecasts range from slightly below to slightly above average. As expected, most of northern Colorado's major basins can continue to expect below average runoff this year. The lowest forecasts occur in the Yampa and White basins, where volumes of 80% to 90% of average are expected. While these are the lowest forecasts in the state, they may seem pretty good considering some of the low streamflows seen across the state in recent years. While northern Colorado can currently expect below average runoff this spring and summer, it is not outside the realm of possibility for these forecasts to improve. Given above average snowfall in the next few months, these forecasts could continue to improve.

# GUNNISON RIVER BASIN

## as of January 1, 2005



\*Based on selected stations

Above average snowfall during October and November in the Gunnison River Basin helped overcome the slightly below average snowfall accumulations in December. Overall, the January 1 snowpack measured at 116% of average and was 111% of the snowpack in the basin at this time last year. Despite December precipitation totaling only 87% of average, year-to-date precipitation (since October 1) was also above average at 114%. October and November precipitation totals were above average at 139% and 118%, respectively. Reservoir storage in the basin is slightly below average at 94%. However, storage this year is 119% of the storage available last year. Streamflow forecasts call for near to above average spring and summer runoff. Forecasts range from 93% of average at Tomichi Creek at Gunnison to 121% of average at Cochetopa Creek below Rock Creek.

GUNNISON RIVER BASIN  
Streamflow Forecasts - January 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		===== Wetter =====>>				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	
Taylor River blw Taylor Park Resv	APR-JUL	58	83	100	97	117	142	103
Slate River nr Crested Butte	APR-JUL	68	83	93	105	103	118	89
East River at Almont	APR-JUL	110	157	190	99	225	270	192
Gunnison River nr Gunnison	APR-JUL	215	315	380	97	445	545	390
Tomichi Creek at Sargents	APR-JUL	10.9	22	30	94	38	49	32
Cochetopa Creek blw Rock Creek	APR-JUL	11.9	17.3	21	121	25	31	17.3
Tomichi Creek at Gunnison	APR-JUL	27	53	75	93	101	147	81
Lake Fork at Gateview	APR-JUL	100	127	145	115	163	189	126
Blue Mesa Reservoir Inflow	APR-JUL	375	580	720	100	860	1070	720
Paonia Reservoir Inflow	MAR-JUN	55	88	115	115	145	196	100
	APR-JUL	48	84	115	113	150	211	102
N.F. Gunnison River nr Somerset	APR-JUL	210	283	340	112	402	502	305
Surface Creek at Cedaredge	APR-JUL	11.0	15.5	19.5	114	25	35	17.1
Ridgway Reservoir Inflow	APR-JUL	80	99	115	113	133	165	102
Uncompahgre River at Colona	APR-JUL	106	134	155	112	177	213	139
Gunnison River nr Grand Junction	APR-JUL	905	1320	1600	103	1880	2290	1560

GUNNISON RIVER BASIN Reservoir Storage (1000 AF) - End of December					GUNNISON RIVER BASIN Watershed Snowpack Analysis - January 1, 2005			
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	492.4	376.4	545.8	UPPER GUNNISON BASIN	9	115	120
CRAWFORD	14.3	2.5	2.5	7.5	SURFACE CREEK BASIN	2	119	137
FRUITGROWERS	4.3	4.3	1.1	2.8	UNCOMPAHGRE BASIN	3	99	104
FRUITLAND	9.2	0.0	0.0	1.3	TOTAL GUNNISON RIVER BASIN	12	111	116
MORROW POINT	121.0	109.5	111.7	113.4				
PAONIA	18.0	3.0	2.4	4.7				
RIDGWAY	83.2	75.8	70.0	60.1				
TAYLOR PARK	106.0	66.9	71.2	67.7				

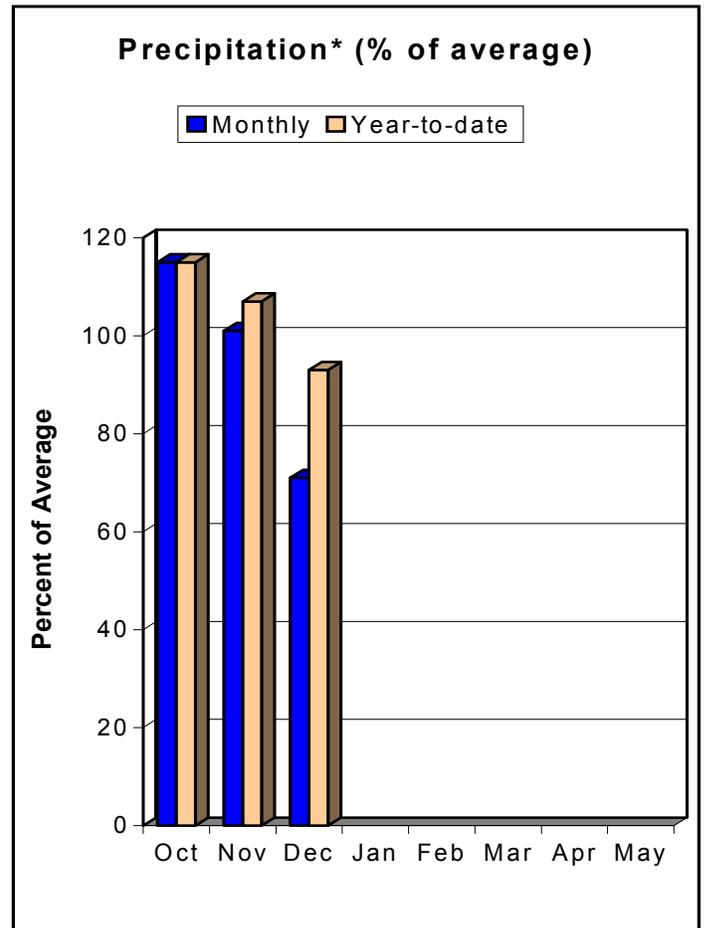
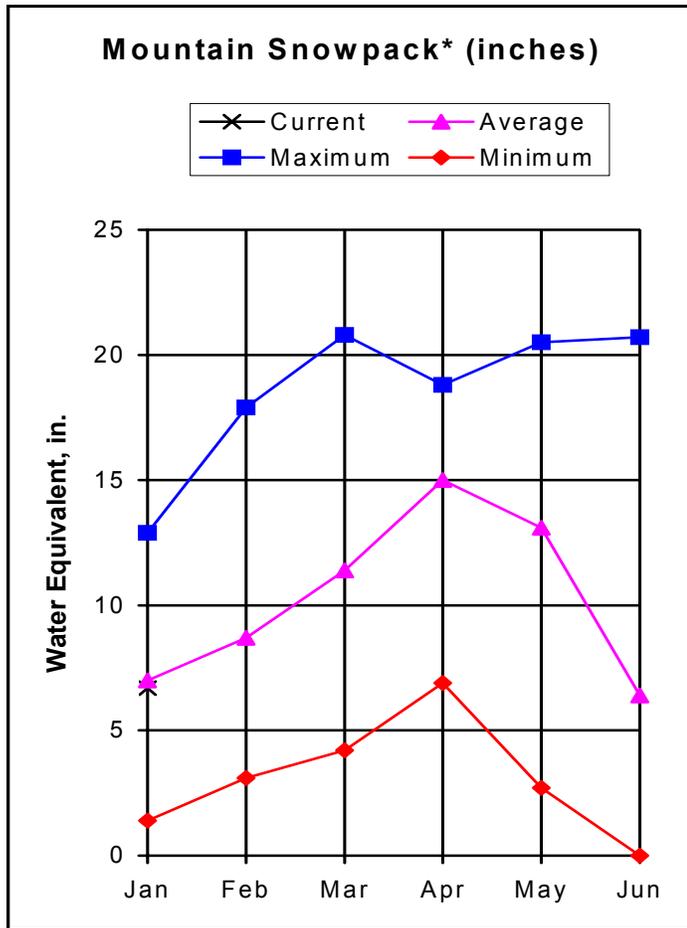
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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 January 1, 2005



\*Based on selected stations

Snowpack accumulations during October and November in the Colorado River Basin were very close to average, but slightly below average snowfall during December resulted in January 1 snowpacks that measured at 96% of average. However, this year's snowpacks are slightly better than they were a year ago (105% of last year). Year-to-date precipitation for the basin was also slightly below average at 93%. Above average precipitation during October and November helped to boost December totals that were recorded at only 71% of average. Total precipitation since October 1 is 105% of the year-to-date precipitation reported last year. Reservoir storage is below average for this time of year at 78% of average. The current year's reservoir storage is also about 9% lower than the storage available last year at this time. Streamflow forecasts indicate below average runoff for most of the forecast points in the basin. Runoff percentages range from a low of 81% of average for the Inflow to Dillon Reservoir to a high of 108% of average for the Inflow to Willow Creek Reservoir.

UPPER COLORADO RIVER BASIN  
Streamflow Forecasts - January 1, 2005

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ==== Wetter =====>>						30-Yr Avg. (1000AF)
				Chance Of Exceeding *				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Lake Granby Inflow	APR-JUL	148	185	215	96	250	313	225
Willow Creek Reservoir Inflow	APR-JUL	33	46	55	108	65	82	51
Williams Fork Reservoir inflow	APR-JUL	59	74	85	90	97	116	95
Dillon Reservoir Inflow	APR-JUL	63	106	135	81	164	206	167
Green Mountain Reservoir inflow	APR-JUL	185	217	240	86	264	302	280
Muddy Creek blw Wolford Mtn. Resv.	APR-JUL	30	40	50	83	62	85	60
Eagle River blw Gypsum	APR-JUL	185	239	285	85	339	438	335
Colorado River nr Dotsero	APR-JUL	615	990	1250	87	1510	1890	1440
Ruedi Reservoir Inflow	APR-JUL	78	98	115	82	135	170	141
Roaring Fork at Glenwood Springs	APR-JUL	438	559	650	92	748	904	710
Colorado River nr Cameo	APR-JUL	1100	1700	2100	87	2500	3100	2420

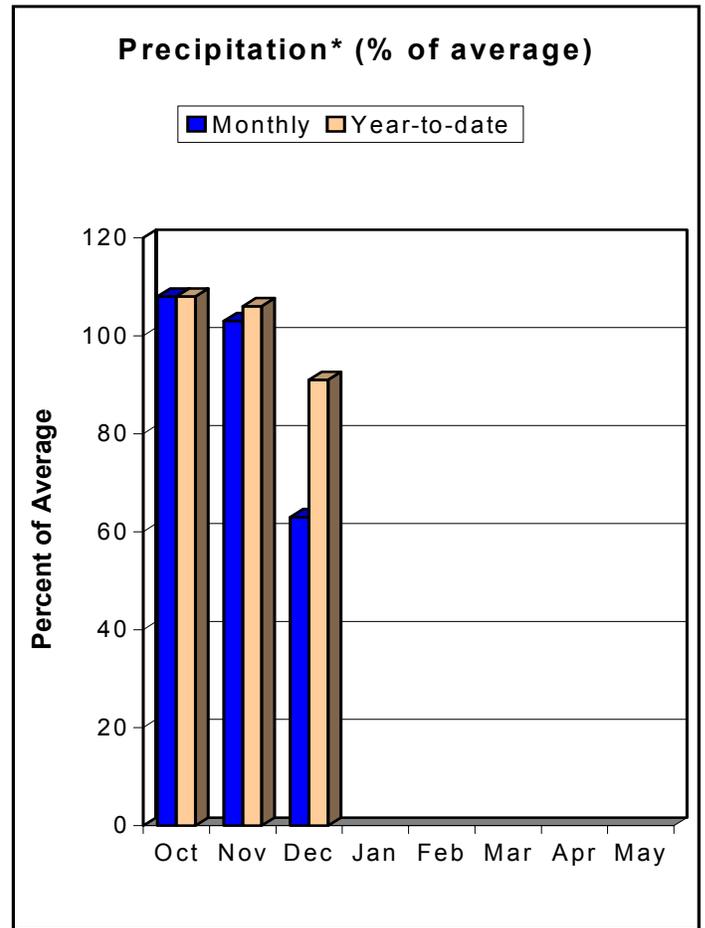
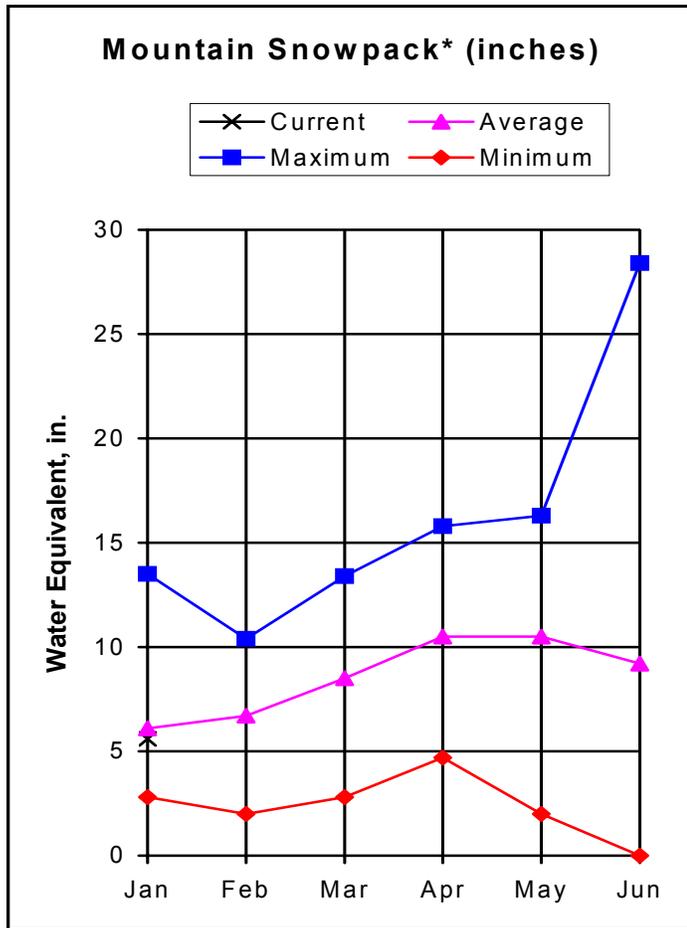
UPPER COLORADO RIVER BASIN Reservoir Storage (1000 AF) - End of December					UPPER COLORADO RIVER BASIN Watershed Snowpack Analysis - January 1, 2005				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of		
		This Year	Last Year	Avg			Last Yr	Average	
DILLON	250.8	209.2	223.9	224.8	BLUE RIVER BASIN	5	108	82	
LAKE GRANBY	465.6	182.8	250.0	322.1	UPPER COLORADO RIVER BASIN	19	107	89	
GREEN MOUNTAIN	139.0	71.9	65.0	90.3	MUDDY CREEK BASIN	2	95	99	
HOMESTAKE	43.0	34.9	21.8	28.4	PLATEAU CREEK BASIN	2	119	137	
RUEDI	102.0	71.6	70.1	79.7	ROARING FORK BASIN	7	96	96	
VEGA	32.0	14.6	9.1	11.0	WILLIAMS FORK BASIN	2	108	88	
WILLIAMS FORK	96.8	51.0	60.6	62.9	WILLOW CREEK BASIN	2	139	120	
WILLOW CREEK	9.0	7.2	6.5	6.1	TOTAL COLORADO RIVER BASIN	28	105	96	

\* 90%, 70%, 50%, 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 January 1, 2005



\*Based on selected stations

At 92% of average, measurements indicate a slightly below average January 1 snowpack in the South Platte River Basin. Below average snowfall during December reduced near average snowpack conditions recorded through the end of November. On the positive side, this year's snowpack is 137% of that measured a year ago. Similarly, slightly above average October and November precipitation could not quite make up for December precipitation that was well below average at 63%. Overall, the year-to-date precipitation was 91% of average and 128% of the total precipitation reported last year. Reservoir storage is slightly below average at 92% for the basin. However, reservoir storage is 19% above last year's storage figures. Spring and summer streamflows are forecast to be mostly below average. April-July volumes are expected to range from a low of 66% of average for Bear Creek at Morrison to a high of 94% of average for Clear Creek at Golden and Boulder Creek near Orodell.

SOUTH PLATTE RIVER BASIN  
Streamflow Forecasts - January 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	30% (1000AF)	10% (1000AF)		
		Chance Of Exceeding *						
				50% (% AVG.)				
Antero Reservoir inflow	APR-JUL	5.8	8.8	11.7	70	15.6	24	16.8
	APR-SEP	7.0	10.8	14.4	70	19.3	30	21
Spinney Mountain Reservoir inflow	APR-JUL	22	32	42	75	55	81	56
	APR-SEP	26	40	53	77	71	109	69
Elevenmile Canyon Reservoir inflow	APR-JUL	22	33	44	76	59	89	58
	APR-SEP	26	41	56	78	77	122	72
Cheesman Lake inflow	APR-JUL	46	69	91	79	120	179	115
	APR-SEP	58	87	116	82	154	234	142
South Platte River at South Platte	APR-JUL	78	120	161	79	216	334	205
	APR-SEP	98	152	205	80	276	428	255
Bear Creek abv Evergreen	APR-JUL	6.1	9.8	13.7	71	19.1	31	19.3
	APR-SEP	8.7	13.7	18.6	74	25	40	25
Bear Creek at Morrison	APR-JUL	6.2	11.1	16.5	66	25	44	25
	APR-SEP	8.8	15.2	22	71	32	55	31
Clear Creek at Golden	APR-JUL	69	89	103	94	117	137	110
	APR-SEP	86	109	125	93	141	164	134
St. Vrain Creek at Lyons	APR-JUL	41	53	61	85	69	81	72
	APR-SEP	50	63	72	86	81	94	84
Boulder Creek nr Orodell	APR-JUL	32	38	43	94	48	54	46
	APR-SEP	35	43	49	93	55	63	53
South Boulder nr Eldorado Spgs	APR-JUL	28	34	37	90	40	46	41
	APR-SEP	18.0	32	41	90	50	64	46
Big Thompson River at mouth nr Drake	APR-JUL	55	67	76	78	85	97	98
	APR-SEP	67	83	93	80	103	119	117
CACHE LAPOUDRE at Canyon Mouth	APR-JUL	134	179	210	86	240	285	245
	APR-SEP	150	200	235	86	270	320	275

SOUTH PLATTE RIVER BASIN  
Reservoir Storage (1000 AF) - End of December

SOUTH PLATTE RIVER BASIN  
Watershed Snowpack Analysis - January 1, 2005

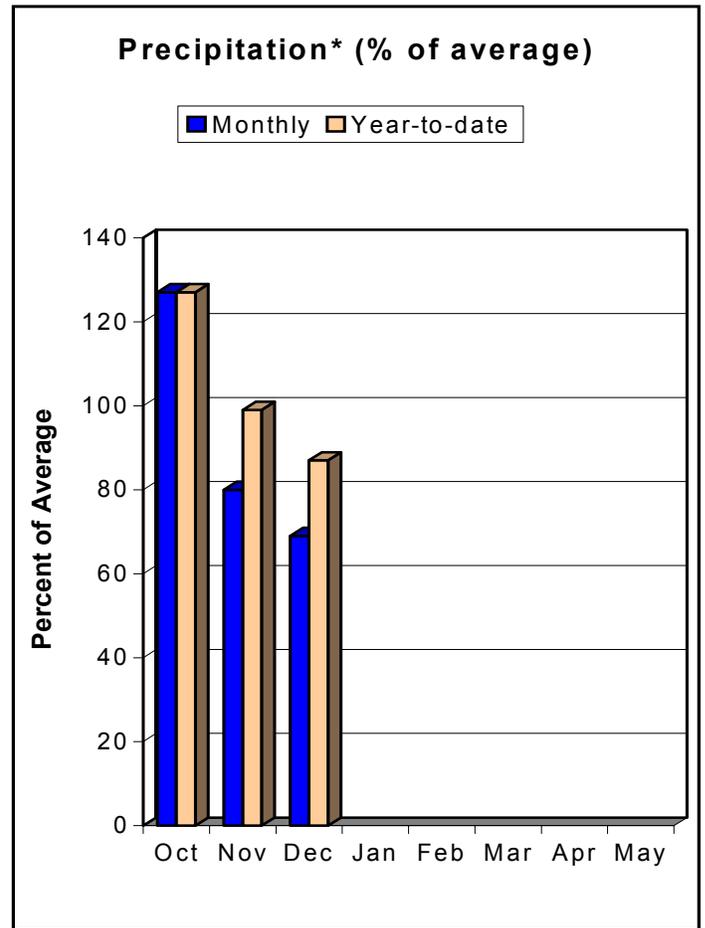
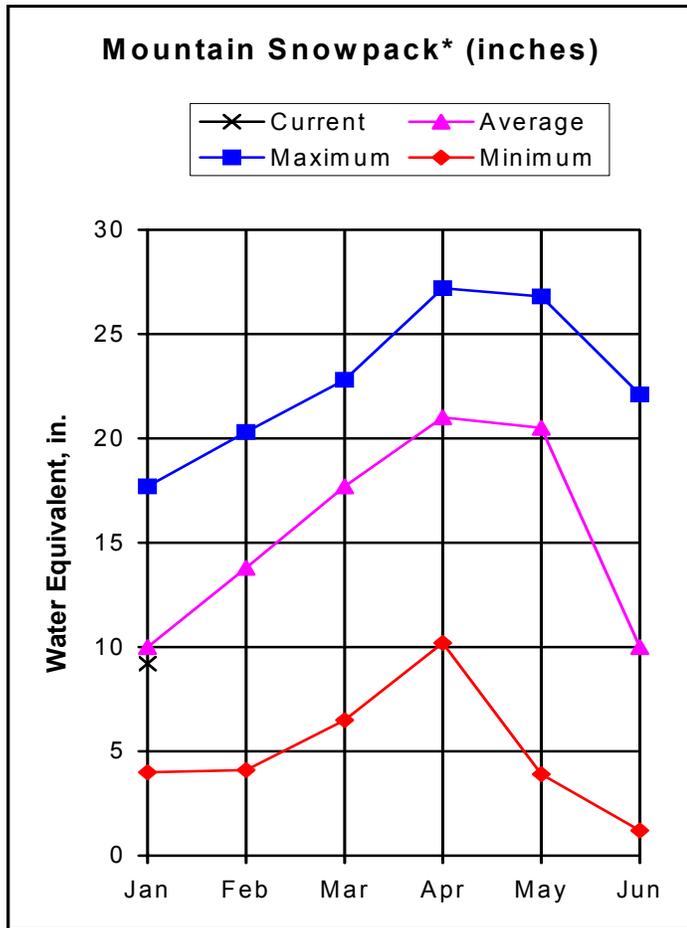
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ANTERO	20.0	0.4	0.0	16.5	BIG THOMPSON BASIN	3	104	82
BARR LAKE	32.0	21.7	21.1	22.4	BOULDER CREEK BASIN	3	158	94
BLACK HOLLOW	8.0	1.8	2.9	3.8	CACHE LA POUFRE BASIN	2	149	107
BOYD LAKE	49.0	42.3	30.4	31.7	CLEAR CREEK BASIN	2	125	112
CACHE LA POUFRE	10.0	9.1	0.8	6.3	SAINT VRAIN BASIN	1	108	137
CARTER	108.9	49.1	36.1	74.7	UPPER SOUTH PLATTE BASIN	6	170	78
CHAMBERS LAKE	9.0	6.4	6.4	2.8	TOTAL SOUTH PLATTE BASIN	17	137	92
CHEESMAN	79.0	68.0	59.9	60.9				
COBB LAKE	34.0	3.5	5.2	13.9				
ELEVEN MILE	97.8	98.5	70.5	95.9				
EMPIRE	38.0	11.0	10.2	22.2				
FOSSIL CREEK	12.0	10.0	2.4	6.3				
GROSS	41.8	32.8	32.4	26.2				
HALLIGAN	6.4	5.3	2.5	3.6				
HORSECREEK	16.0	6.9	3.3	10.9				
HORSETOOTH	149.7	101.8	86.7	87.8				
JACKSON	35.0	22.2	23.7	23.0				
JULESBURG	28.0	12.8	15.3	18.4				
LAKE LOVELAND	14.0	11.4	10.6	8.9				
LONE TREE	9.0	6.4	5.9	6.0				
MARIANO	6.0	4.1	1.0	4.1				
MARSHALL	10.0	9.0	5.7	4.7				
MARSTON	13.0	0.0	18.9	12.7				
MILTON	24.0	13.2	5.5	14.8				
POINT OF ROCKS	70.0	37.2	24.5	51.1				
PREWITT	33.0	15.5	3.5	18.0				
RIVERSIDE	63.1	36.4	24.4	38.1				
SPINNEY MOUNTAIN	48.7	13.8	26.6	35.4				
STANDLEY	42.0	38.8	38.8	32.5				
TERRY LAKE	8.0	2.9	5.6	5.2				
UNION	13.0	12.2	10.8	10.4				
WINDSOR	19.0	10.6	7.0	10.0				

\* 90%, 70%, 50%, 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 January 1, 2005



\*Based on selected stations

Snowpacks in the Yampa, White, North Platte and Laramie River basins got off to a big start in October but conditions worked their way back down to near average during November and by January 1 ended up at 92% of average. By comparison, this year's snowpack is only 85% of the snowpack measured a year ago. Below average precipitation in November (80%) followed by well below average precipitation in December (69%) offset October precipitation that was measured at 127% of average. The result was a below average water year precipitation total of 87% of average. Year-to-date precipitation is 14% lower than it was at this time last year. Reservoir storage is 95% of the storage reported last year; however, it is currently at 100% of average. The streamflow forecasts predict runoff will be mostly below average. April-July forecasts range from 75% of average for the North Platte River near Northgate to 92% for the Elk River near Milner and the Little Snake River near Dixon.

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS  
Streamflow Forecasts - January 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		=====> Wetter =====>>				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	
NORTH PLATTE RIVER nr Northgate	APR-SEP	59	146	205	76	265	350	270
LARAMIE RIVER nr Woods	APR-SEP	48	90	118	87	146	188	135
Yampa R abv Stagecoach Res	APR-JUL	8.1	16.4	22	76	27	35	29
Yampa River at Steamboat Springs	APR-JUL	137	192	230	82	270	325	280
Elk River nr Milner	APR-JUL	175	245	300	92	360	459	325
Elkhead Creek nr Elkhead	APR-JUL	17.5	25	31	80	39	55	39
ELKHEAD CREEK blw Maynard Gulch	APR-JUL	27	41	51	86	61	75	59
Fortification Ck nr Fortification	MAR-JUN	1.90	4.50	6.30	84	8.10	10.70	7.50
Yampa River nr Maybell	APR-JUL	430	665	825	83	985	1225	990
Little Snake River nr Slater	APR-JUL	78	116	145	91	178	232	159
LITTLE SNAKE R nr Dixon	APR-JUL	188	260	305	92	350	420	330
LITTLE SNAKE R nr Lily	APR-JUL	210	280	330	90	380	450	365
White River nr Meeker	APR-JUL	146	196	240	83	294	396	290

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

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS  
Watershed Snowpack Analysis - January 1, 2005

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	15.0	29.6	26.4	LARAMIE RIVER BASIN	2	108	96
YAMCOLO	9.1	4.0	4.0	5.5	NORTH PLATTE RIVER BASIN	6	93	92
					TOTAL NORTH PLATTE BASIN	8	95	92
					ELK RIVER BASIN	2	79	86
					YAMPA RIVER BASIN	9	78	87
					WHITE RIVER BASIN	4	84	92
					TOTAL YAMPA AND WHITE RIV	12	81	87
					LITTLE SNAKE RIVER BASIN	6	81	100

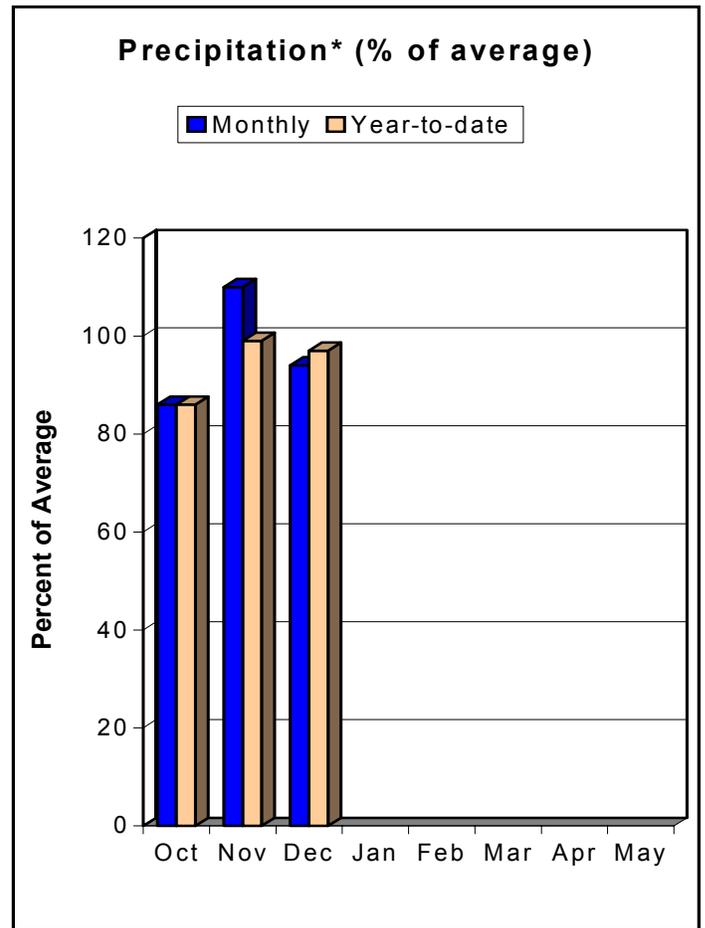
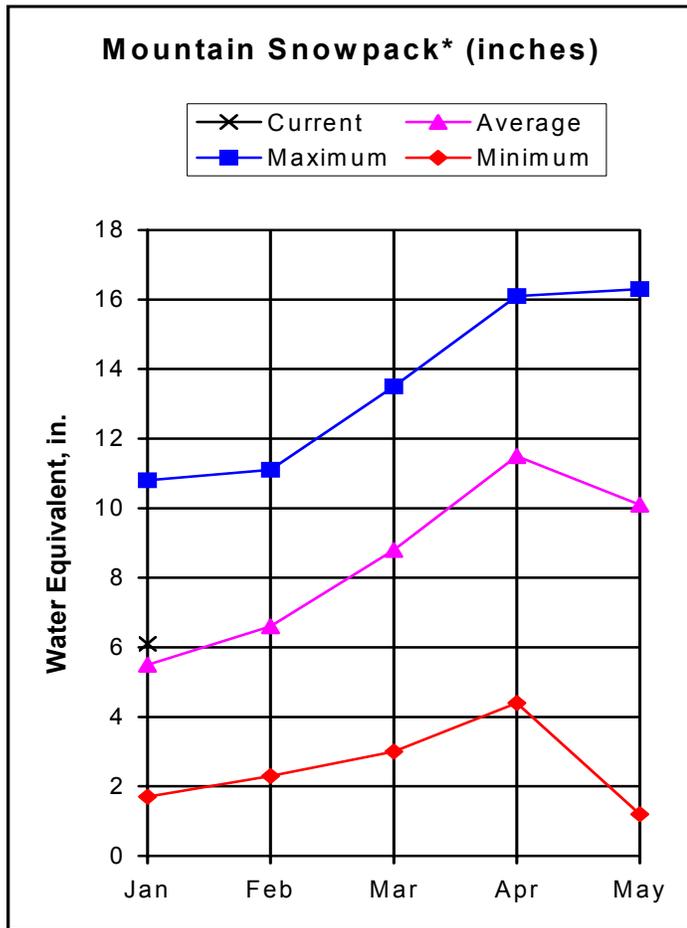
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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 January 1, 2005



\*Based on selected stations

Snowpacks in the Arkansas Basin were measured at 110% of average for January 1. Aside from being above average, this marks a significant increase over the snowpacks measured at this time last year at 159% of last year's snowpack. November precipitation totaling 110% of average helped to balance out below average precipitation that fell during October and December. Water year totals are slightly below normal at 97% of average; however, they are 26% higher than those reported last year at this time. Despite the fact that reservoir storage is 14% higher than it was last year at this time, reservoir storage remains well below average at only 62% of average. Spring and summer streamflows in the basin are forecast to be mostly near average. Forecast ranges from 93% of average for the Inflow to Pueblo Reservoir to 115% of average at the Cucharas River near La Veta.

ARKANSAS RIVER BASIN  
Streamflow Forecasts - January 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Chalk Creek nr Nathrop	APR-SEP	7.6	19.0	26	96	33	44	27
Arkansas River at Salida	APR-SEP	179	255	305	98	355	430	310
Grape Creek nr Westcliffe	APR-SEP	9.6	14.7	19.0	97	26	41	19.6
Pueblo Reservoir Inflow	APR-SEP	225	330	400	93	470	575	430
Huerfano River nr Redwing	APR-SEP	4.1	11.4	16.4	106	22	29	15.5
Cucharas River nr La Veta	APR-SEP	5.2	9.8	15.0	115	21	31	13.0
Trinidad Lake Inflow	APR-SEP	4.4	30	47	107	64	90	44

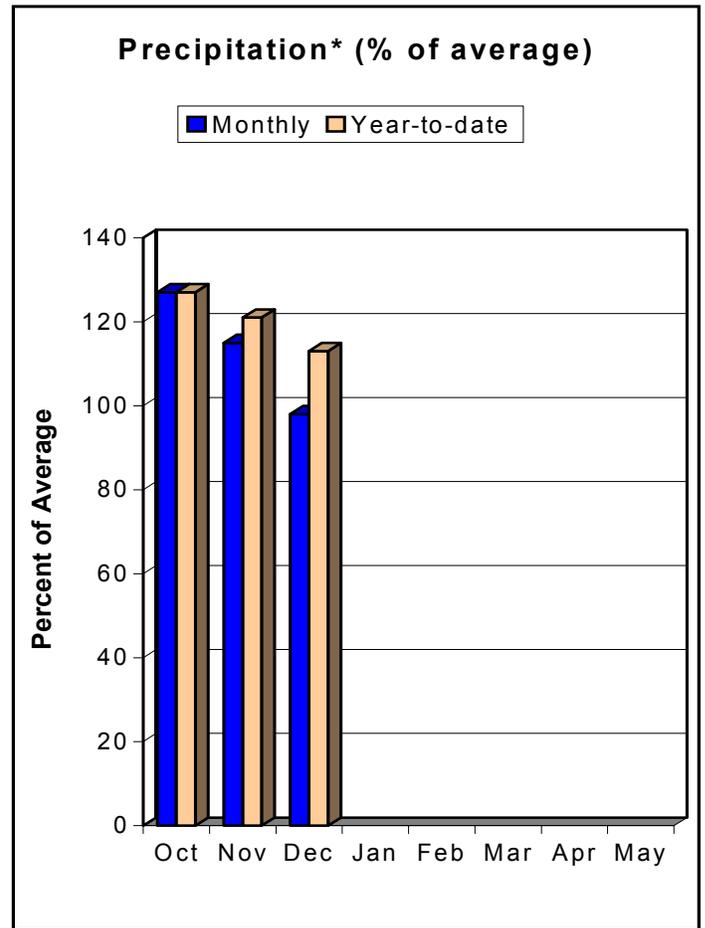
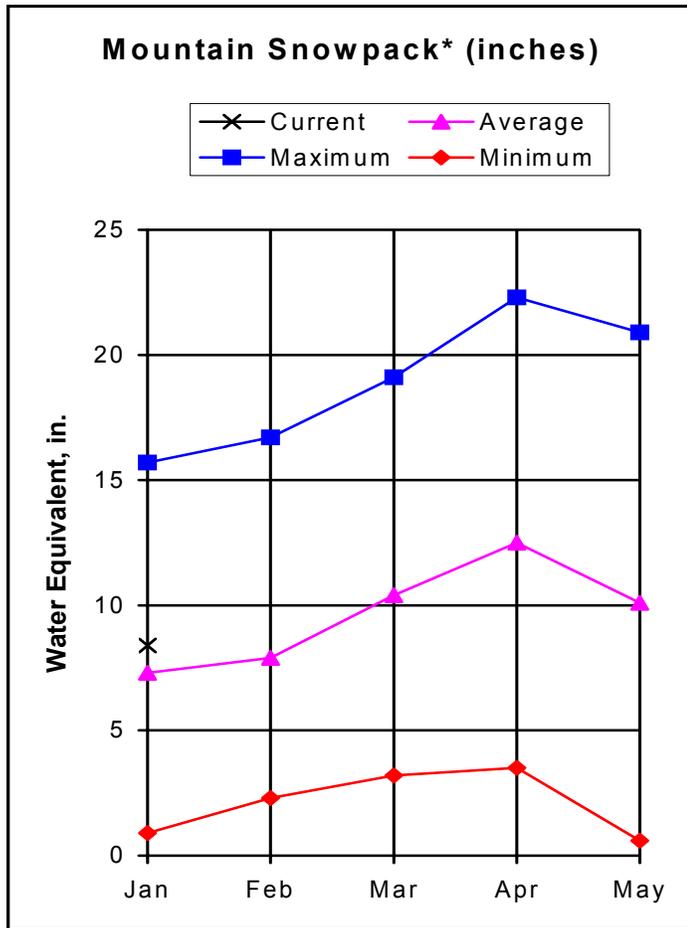
ARKANSAS RIVER BASIN Reservoir Storage (1000 AF) - End of December					ARKANSAS RIVER BASIN Watershed Snowpack Analysis - January 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ADOBE	70.0	0.0	0.0	23.4	UPPER ARKANSAS BASIN	3	124	94
CLEAR CREEK	11.0	8.1	7.6	5.9	CUCHARAS & HUERFANO RIVER	2	190	128
GREAT PLAINS	150.0	0.0	0.0	32.2	PURGATOIRE RIVER BASIN	2	268	136
HOLBROOK	7.0	0.0	0.0	3.0	TOTAL ARKANSAS RIVER BASIN	6	159	110
HORSE CREEK	28.0	0.0	0.0	8.4				
JOHN MARTIN	335.7	34.7	26.8	108.7				
LAKE HENRY	8.0	2.8	4.2	3.7				
MEREDITH	42.0	9.3	3.7	13.6				
PUEBLO	236.7	112.7	84.9	144.0				
TRINIDAD	72.3	21.6	15.4	24.2				
TURQUOISE	126.6	69.1	68.0	87.9				
TWIN LAKES	86.0	50.6	59.2	46.3				

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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# UPPER RIO GRANDE RIVER BASIN as of January 1, 2005



\*Based on selected stations

A relatively quiet December had all but erased the gains resulting from above average snowpacks that had accumulated during October and November in the Upper Rio Grande Basin. However, late December storms helped to propel the January 1 snowpack numbers back up to 115% of average and 136% of last year's snowpack measurements. At 98% of average, December had the lowest monthly precipitation totals since the water year began in October. Monthly precipitation totals for October and November were reported at 127% of average and 115% of average, respectively. Water year precipitation totals are 113% of average and 122% of last year's readings. Although 18% higher when compared to last year's values, reservoir storage in the basin is still well below average at 45% of average. With a few exceptions, above average runoff is expected throughout the basin. The forecasts range from a low of 85% of average for the San Antonio River at Ortiz to a high of 121% of average for the Rio Grande near Del Norte.

UPPER RIO GRANDE BASIN  
Streamflow Forecasts - January 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		===== 50% (1000AF) (% AVG.)		===== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	
Rio Grande at Thirty Mile Bridge	APR-SEP	107	138	163	120	193	248	136
Rio Grande Reservoir Inflow	APR-JUL	95	119	140	119	164	207	118
Rio Grande at Wagon Wheel Gap	APR-SEP	255	350	415	120	480	575	345
South Fork Rio Grande at South Fork	APR-SEP	96	128	150	114	172	204	132
Rio Grande nr Del Norte	APR-SEP	370	530	640	121	750	910	531
Saguache Creek nr Saguache	APR-SEP	22	31	38	115	45	54	33
Alamosa Creek abv Terrace Reservoir	APR-SEP	50	67	78	111	89	106	70
La Jara Creek nr Capulin	MAR-JUL	2.70	6.10	8.50	98	10.90	14.30	8.70
Trinchera Creek	APR-SEP	5.7	9.6	12.2	102	14.8	18.7	12.0
Sangre de Cristo Creek	APR-SEP	1.45	6.20	9.40	107	12.60	17.30	8.80
Ute Creek	APR-SEP	5.4	9.6	12.5	103	15.4	19.6	12.2
Platoro Reservoir Inflow	APR-JUL	48	61	69	108	77	90	64
	APR-SEP	54	68	77	109	86	100	71
Conejos River nr Mogote	APR-SEP	123	172	205	103	240	285	200
San Antonio River at Ortiz	APR-SEP	4.4	9.5	14.0	85	19.4	29	16.4
Los Pinos River nr Ortiz	APR-SEP	32	55	70	95	85	108	74
Culebra Creek at San Luis	APR-SEP	10.8	19.0	25	109	31	39	23
Costilla Reservoir inflow	MAR-JUL	6.4	9.8	12.0	113	14.2	17.6	10.6
Costilla Creek nr Costilla	MAR-JUL	16.6	25	30	115	35	43	26

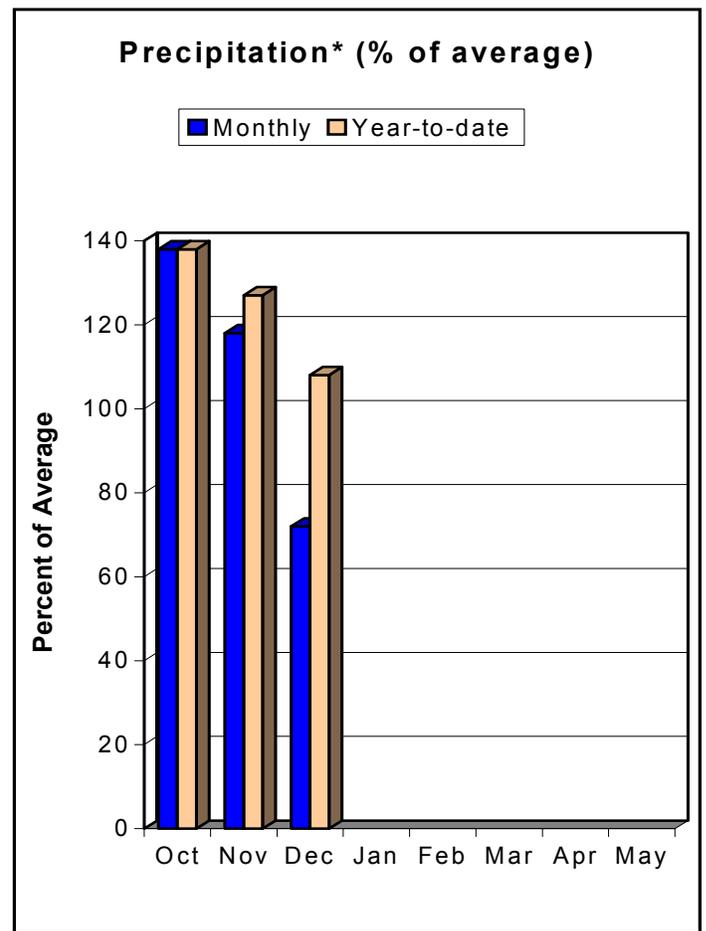
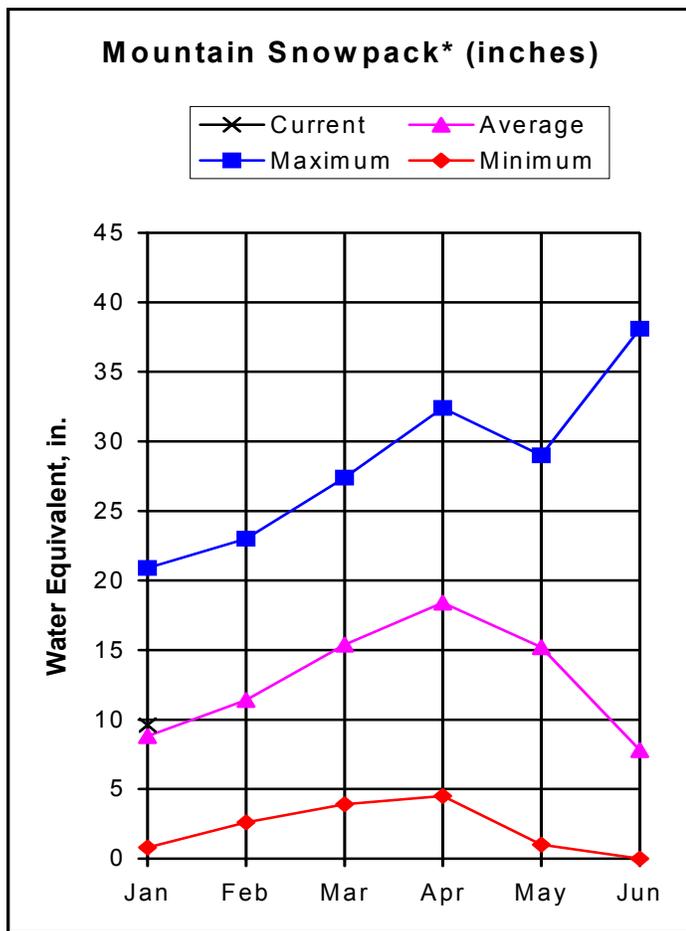
Reservoir	UPPER RIO GRANDE BASIN Reservoir Storage (1000 AF) - End of December				UPPER RIO GRANDE BASIN Watershed Snowpack Analysis - January 1, 2005			
	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	===== of Average
CONTINENTAL	15.0	2.4	2.1	4.9	ALAMOSA CREEK BASIN	1	95	118
PLATORO	53.7	6.1	4.9	24.3	CONEJOS & RIO SAN ANTONIO	2	100	98
RIO GRANDE	51.0	13.0	7.6	15.1	CULEBRA & TRINCHERA CREEK	3	148	102
SANCHEZ	103.0	7.6	12.6	23.9	UPPER RIO GRANDE BASIN	4	146	131
SANTA MARIA	45.0	5.5	4.6	10.1	TOTAL UPPER RIO GRANDE BA	10	136	115
TERRACE	13.1	2.8	0.0	5.6				

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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# SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS as of January 1, 2005



\*Based on selected stations

Overall, snowpacks in the San Miguel, Dolores, Animas and San Juan River basins had been above average for most of the water year. However, less than average December snowfall accumulations had actually brought basin snowpack numbers down below the average mark. Fortunately, the last few days of December provided sufficient snow to bring conditions back above average. January 1 snowpacks were reported at 109% of average, with individual basin snowpacks measuring at 115% of average in the Animas, 88% of average in the Dolores, 97% of average in the San Miguel and 117% of average in the San Juan. This situation was also reflected in the monthly precipitation totals. October and November precipitation were above average to well above average at 138% of average and 118% of average, respectively. December precipitation totaled only 72% of average, however, the water year precipitation totals managed to stay above average at 108%. Reservoir storage remains below average at 83% of average, however storage is significantly improved (28% higher) over storage totals reported last year at this time. Streamflow forecasts indicate April-July volumes should be near to above average this year. Forecasts range from 91% of average for the Navajo River at the Oso Diversion to 121% of average for the Animas River at Durango and the Inflow to Lemon Reservoir.

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS  
Streamflow Forecasts - January 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Future Conditions		Wetter		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding *		30% (1000AF)	10% (1000AF)	
				50% (% AVG.)				
Dolores River at Dolores	APR-JUL	150	210	250	94	290	350	265
McPhee Reservoir inflow	APR-JUL	185	255	300	94	345	415	320
San Miguel River nr Placerville	APR-JUL	93	121	140	106	159	188	132
Gurley Reservoir Inlet	APR-JUL	6.7	12.5	16.5	100	21	27	16.5
	APRIL			1.75	105			1.66
	MAY			9.00	102			8.83
	JUNE			4.80	103			4.67
	JULY			0.95	72			1.32
Cone Reservoir Inlet	APR-JUL	1.42	2.70	3.60	102	4.50	5.80	3.53
	APRIL			0.50	109			0.46
	MAY			1.70	104			1.64
	JUNE			1.10	106			1.04
	JULY			0.30	79			0.38
Lilylands Reservoir Inlet	APR-JUL	0.48	1.86	2.80	98	3.70	5.10	2.86
	APRIL			0.42	105			0.40
	MAY			1.38	105			1.32
	JUNE			0.80	92			0.87
	JULY			0.20	74			0.27
Rio Blanco at Blanco Diversion	APR-JUL	34	48	57	108	66	80	53
Navajo River at Oso Diversion	APR-JUL	29	49	63	91	77	97	69
San Juan River nr Carracus	APR-JUL	286	374	440	109	512	627	405
Piedra River nr Arboles	APR-JUL	164	225	270	117	315	375	230
Vallecito Reservoir Inflow	APR-JUL	146	200	240	117	280	335	205
Navajo Reservoir Inflow	APR-JUL	580	785	925	116	1065	1275	800
Animas River at Durango	APR-JUL	325	445	530	121	615	735	440
Lemon Reservoir Inflow	APR-JUL	42	59	70	121	81	98	58
La Plata River at Hesperus	APR-JUL	15.6	23	28	112	33	40	25
Mancos River nr Mancos	APR-JUL	12.0	29	40	100	51	68	40
	APRIL			6.00	103			5.80
	MAY			16.0	101			15.9
	JUNE			14.0	102			13.7
	JULY			4.00	87			4.60

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

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS  
Watershed Snowpack Analysis - January 1, 2005

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	0.0	7.0	12.0	ANIMAS RIVER BASIN	7	123	115
JACKSON GULCH	10.0	3.6	2.9	4.6	DOLORES RIVER BASIN	4	100	88
LEMON	40.0	17.7	9.2	20.1	SAN MIGUEL RIVER BASIN	3	107	97
MCPHEE	381.2	205.1	172.0	271.1	SAN JUAN RIVER BASIN	3	97	117
NARRAGUINNEP	19.0	13.5	8.1	12.7	TOTAL SAN MIGUEL, DOLORES	16	109	109
VALLECITO	126.0	76.6	47.8	58.6	AN JUAN RIVER BASINS			

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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>.

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**Colorado**  
**Basin Outlook Report**  
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