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Department of  
Agriculture

**Natural  
Resources  
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Service**

# Colorado Basin Outlook Report April 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

### APRIL 1, 2005

#### Summary

Statewide snowpack totals remain slightly above average as the state approaches the date of the maximum seasonal accumulation. In reality, this statistic is not representative of most of the state, as snowpack totals range from well above average to well below average. This year's runoff will also run the course of extremes as southern Colorado reaps the benefit of abundant snowfall for the winter of 2005. Although reservoir storage is in the best shape since 2002, drought-like conditions are expected to persist in many areas of northern Colorado this summer. A cool and wet spring could still improve conditions in the drier areas and a wet summer would certainly extend supplies into the later summer months.

#### Snowpack

For the first time since 1997, Colorado can record an above average snowpack on April 1. Statewide totals were measured at 107% of average this year and are 67% above those of last year on this date. Although March was quite dry during the first half of the month, winter returned as the month ended like a lion. For most of the state, snowpack percents of average only changed slightly from last month. Once again this month, the highest snowpack percentages were measured across southwestern Colorado. The Rio Grande leads the state at 140% of average, closely followed by the San Juan, Animas, Dolores, and San Miguel basins, at 138% of average. Above average totals were also measured in the Gunnison basin at 127% of average. Snowpack percentages decrease toward the northern basins with the Yampa, White and North Platte basins reporting only 86% of average accumulations. The state's lowest basinwide percent of average snowpack remains in the South Platte at only 84%. During March there were only minor changes in snowpack percentages. The largest changes were observed across the San Juan, Animas, Dolores, San Miguel, Rio Grande and Gunnison basins which decreased by 6% to 8% from the March 1 readings. Meanwhile, there were some minor improvements seen in the South Platte and Yampa and White basins. A welcome improvement of 10% was measured in the South Platte headwaters. This year's April 1 readings far exceed those of last year across most of the state. Last year's record breaking warm temperatures and dry conditions sent the snowpack percentages plummeting, but this year's conditions are much better by comparison. Many basins across southern Colorado are reporting nearly two times the amount of water equivalent measured last year on April 1.

#### Precipitation

March was a fairly dry month across Colorado. Statewide totals for SNOTEL sites during the month were only 83% of average. The only significant storms during the month occurred during the last two weeks, but those totals didn't erase the deficits which occurred during the first two weeks of the month. Monthly totals ranged from only 72% of average in the Yampa and White basins to 93% of average in the Rio Grande basin. For the water year, which began on October 1, 2004, only the South Platte, Yampa and White, and Colorado basins are reporting below average totals. Meanwhile, the Rio Grande has exceeded the water year average by 35%. Statewide, water year precipitation is now 104% of average, and this March was 70% greater than that measured during March of 2004.

## Reservoir Storage

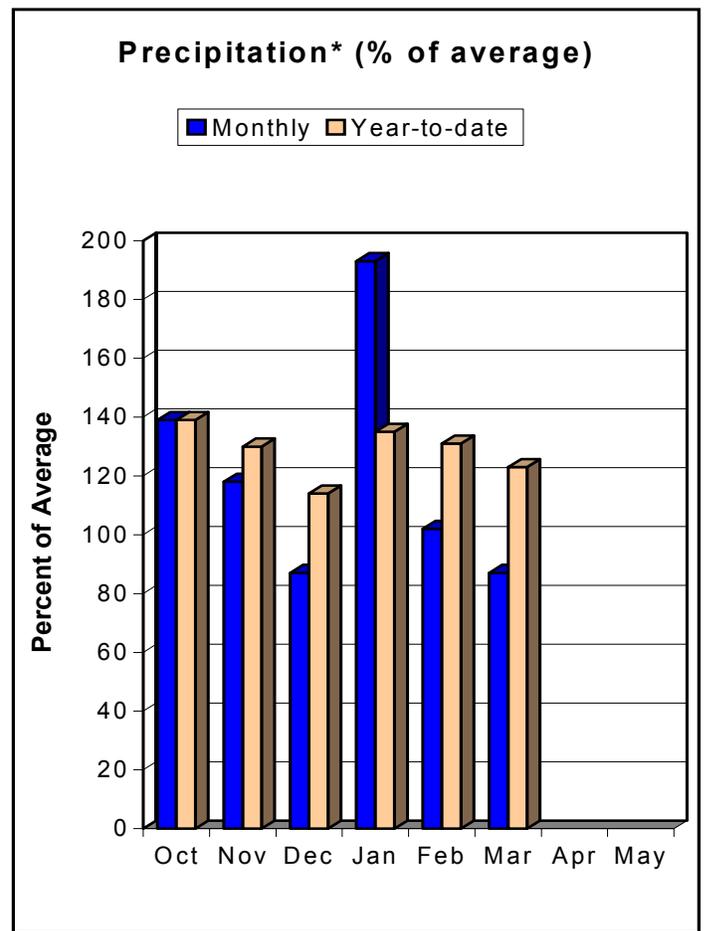
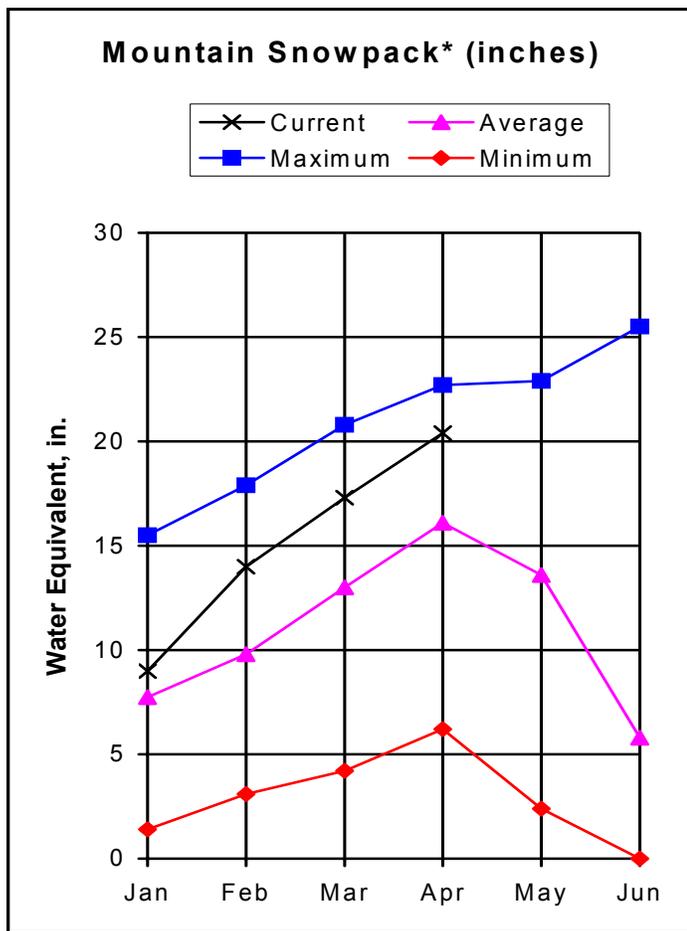
Reservoir storage across Colorado continued to improve again during March. This is the eighth consecutive month where statewide deficits decreased. Currently, the state's reservoirs are 449,000 acre feet below the average mark for April 1. This is a welcome improvement over the deficit of more than 850,000 acre feet recorded on August 1, 2004. Statewide reservoir storage is currently 87% of average and is 106% of last year's storage at this time. Those basins storing near average to slightly above average volumes include the Yampa and White at 99% of average, the South Platte at 100% of average and the Gunnison at 103% of average. The Arkansas basin continues to report the greatest deficit in storage at 191,000 acre-feet below average, which is only 67% of the average for April 1. Given this year's snowpack conditions, the Rio Grand, San Juan, Animas, Dolores and Gunnison basins have an outstanding chance to see significant recovery in reservoir storage as the runoff season progresses.

## Streamflow

Colorado's outlook for spring and summer runoff continues to favor those southern basins where snowpacks are in the best shape. The highest forecasts are located along the tributaries to the San Juan River, where the Piedra, Pine, and Florida rivers are expected to exceed 150% of average this year. Elsewhere across southern Colorado volumes of 130% to 150% of average are common. Most locations in the Gunnison and Arkansas basins are also forecast at above average flows this year. Runoff prospects deteriorate to below average to well below average in basins within the South Platte, North Platte, Colorado, Yampa, and White. Some of the lowest volumes, which are only 60% to 70% of average, are forecast in the North Platte, upper South Platte headwaters, and in the White River basin. Within these basins, where little to no reservoir storage exists, late summer water supplies could be extremely poor.

# GUNNISON RIVER BASIN

## as of April 1, 2005



\*Based on selected stations

"In like a lamb and out like a lion" perfectly describes March snowpack conditions in the Gunnison River Basin. Minimal amounts of snowfall in the Gunnison River Basin during the first three weeks of March couldn't keep pace with the average and the basin saw a drop in the snowpack percent of average values. However, the last portion of the month saw some significant increases in snow water content bringing the total for the month back to near normal levels. April 1 snow survey measurements indicate the overall basin snowpack is 127% of average; the Surface Creek Basin snowpacks were measured at 156% of average. When compared to last year, this year's basin snowpack is 77% higher than those measured a year ago. Looking back, this is the highest April 1 snowpack percent of average for the Gunnison River Basin since 1993. Despite below average precipitation during March (measured at 87% of average), the total accumulated precipitation for the water year (beginning October 1) remains above average at 123% of average. Even though this year's reservoir storage is slightly less than it was at this time last year, storage levels in the basin are slightly above average making the Gunnison River Basin the only basin in the state with above average storage. Average to well above average streamflows are expected throughout the basin. Forecasts range from 100% of average at Tomichi Creek at Gunnison to 161% of average for the Paonia Reservoir Inflow.

GUNNISON RIVER BASIN  
Streamflow Forecasts - April 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Future Conditions		Wetter		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (% AVG.)		30% (1000AF)	10% (1000AF)	
Taylor River blw Taylor Park Resv	APR-JUL	80	95	105	102	115	130	103
Slate River nr Crested Butte	APR-JUL	88	97	103	116	109	118	89
East River at Almont	APR-JUL	164	189	205	107	220	245	192
Gunnison River nr Gunnison	APR-JUL	325	375	410	105	445	495	390
Tomichi Creek at Sargents	APR-JUL	21	28	33	103	38	45	32
Cochetopa Creek blw Rock Creek	APR-JUL	11.4	16.1	20	116	24	32	17.3
Tomichi Creek at Gunnison	APR-JUL	48	66	81	100	98	126	81
Lake Fork at Gateview	APR-JUL	107	130	145	115	160	185	126
Blue Mesa Reservoir Inflow	APR-JUL	575	690	770	107	850	965	720
Paonia Reservoir Inflow	MAR-JUN APR-JUL	125 117	145 144	160 164	160 161	176 186	200 220	100 102
N.F. Gunnison River nr Somerset	APR-JUL	361	413	450	148	489	549	305
Surface Creek at Cedaredge	APR-JUL	19.3	24	27	158	31	38	17.1
Ridgway Reservoir Inflow	APR-JUL	73	92	106	104	122	148	102
Uncompahgre River at Colona	APR-JUL	100	125	145	104	167	200	139
Gunnison River nr Grand Junction	APR-JUL	1390	1630	1800	115	1970	2210	1560

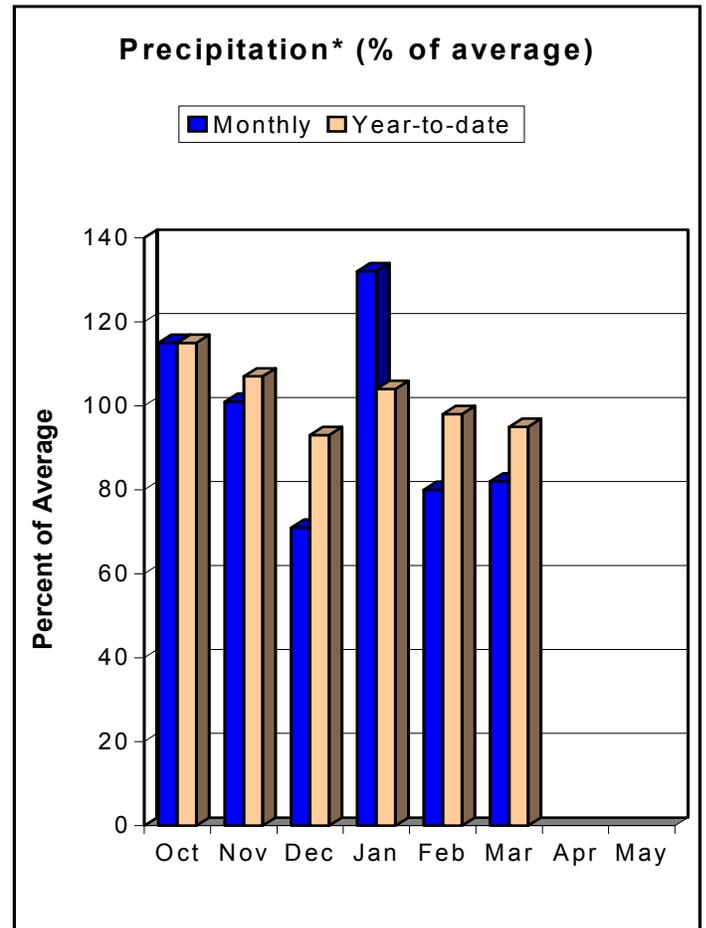
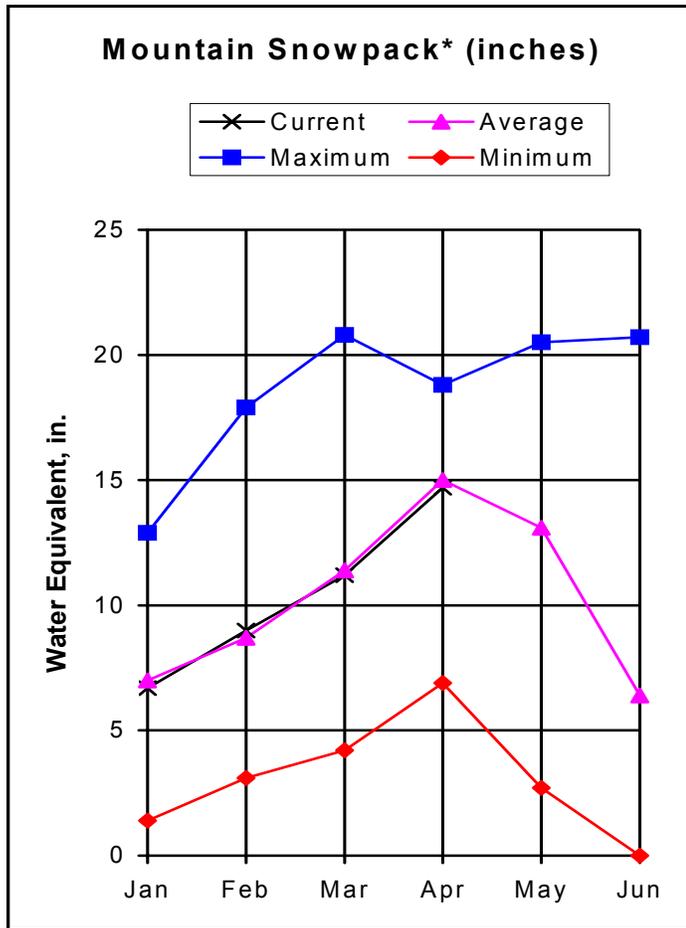
Reservoir	GUNNISON RIVER BASIN Reservoir Storage (1000 AF) - End of March				GUNNISON RIVER BASIN Watershed Snowpack Analysis - April 1, 2005			
	Usable Capacity	*** This Year	Usable Last Year	Storage *** Avg	Watershed	Number of Data Sites	This Year as % of Last Yr	% of Average
BLUE MESA	830.0	420.7	421.2	404.5	UPPER GUNNISON BASIN	15	179	129
CRAWFORD	14.3	4.9	6.2	10.8	SURFACE CREEK BASIN	3	190	156
FRUITGROWERS	4.3	4.4	3.1	4.0	UNCOMPAHGRE BASIN	4	169	121
FRUITLAND	9.2	1.0	2.0	2.5	TOTAL GUNNISON RIVER BASIN	19	177	127
MORROW POINT	121.0	110.7	110.0	113.6				
PAONIA	18.0	1.0	4.3	4.6				
RIDGWAY	83.2	74.4	75.5	60.9				
TAYLOR PARK	106.0	68.5	74.1	61.9				

\* 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 April 1, 2005



\*Based on selected stations

As has been the case for most of the year, snowpack accumulation during March in the Colorado River Basin was about normal. SNOTEL data indicates the increase in snow water content during the first half of March was less than half of the average increase. However, things picked up a bit during the latter half of the month and made up the deficit. April 1 measurements show the Colorado River Basin snowpack is 98% of average. Although slightly below average, this year's overall basin snowpack is 57% higher than the snowpack measured last year. Snowpacks in the Blue River Basin, the Upper Colorado River Basin, Muddy Creek Basin and Williams Fork Basin were all below average at 85%, 87%, 83% and 84% of average, respectively. Above average snowpacks were reported in the Plateau Creek Basin and the Roaring Fork Basin. Total precipitation since October 1 is slightly below normal at 95% of average -- not too bad when you consider that precipitation in March was only 82% of average. Reservoir storage at the end of March was 77% of average and 89% of the storage available a year ago. Streamflow forecasts indicate below average runoff for all of the forecast points in the basin. Runoff percentages range from a low of 70% of average at Muddy Creek below Wolford Mountain Reservoir to a high of 99% of average at Roaring Fork at Glenwood Springs.

UPPER COLORADO RIVER BASIN  
Streamflow Forecasts - April 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		50%		Wetter		
		90% (1000AF)	70% (1000AF)	1000AF	(% AVG.)	30% (1000AF)	10% (1000AF)	
Lake Granby Inflow	APR-JUL	149	171	190	84	210	240	225
Willow Creek Reservoir Inflow	APR-JUL	34	43	50	98	58	70	51
Williams Fork Reservoir inflow	APR-JUL	51	65	75	79	86	105	95
Dillon Reservoir Inflow	APR-JUL	94	112	125	75	139	162	167
Green Mountain Reservoir inflow	APR-JUL	179	205	225	80	245	280	280
Muddy Creek blw Wolford Mtn. Resv.	APR-JUL	28	35	42	70	50	64	60
Eagle River blw Gypsum	APR-JUL	200	230	250	75	270	310	335
Colorado River nr Dotsero	APR-JUL	630	910	1100	76	1290	1570	1440
Ruedi Reservoir Inflow	APR-JUL	72	90	105	75	120	144	141
Roaring Fork at Glenwood Springs	APR-JUL	545	640	700	99	765	875	710
Colorado River nr Cameo	APR-JUL	1300	1730	2030	84	2330	2760	2420

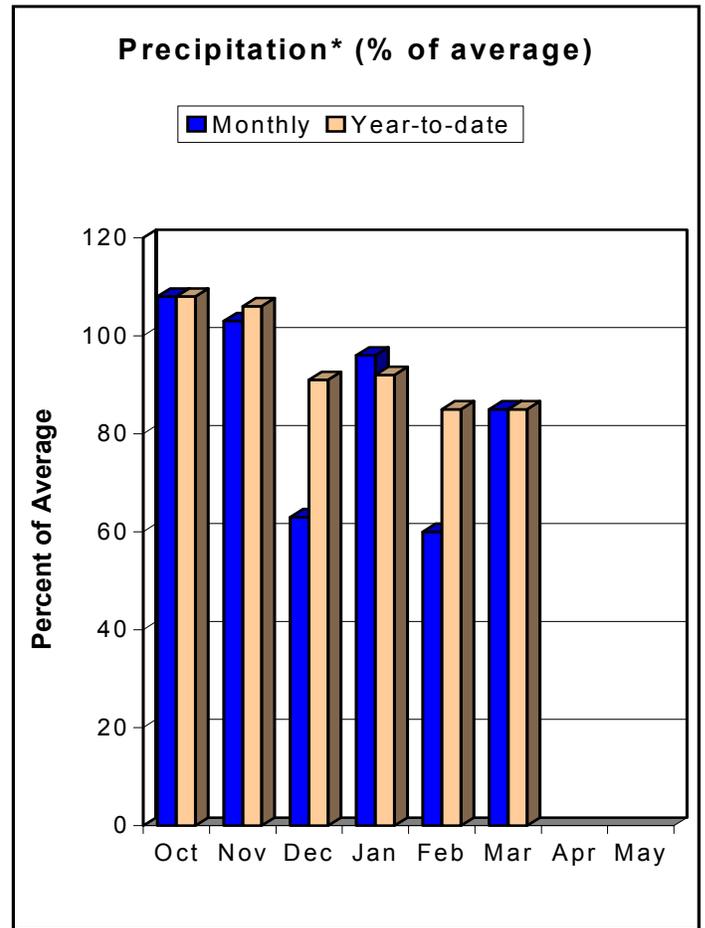
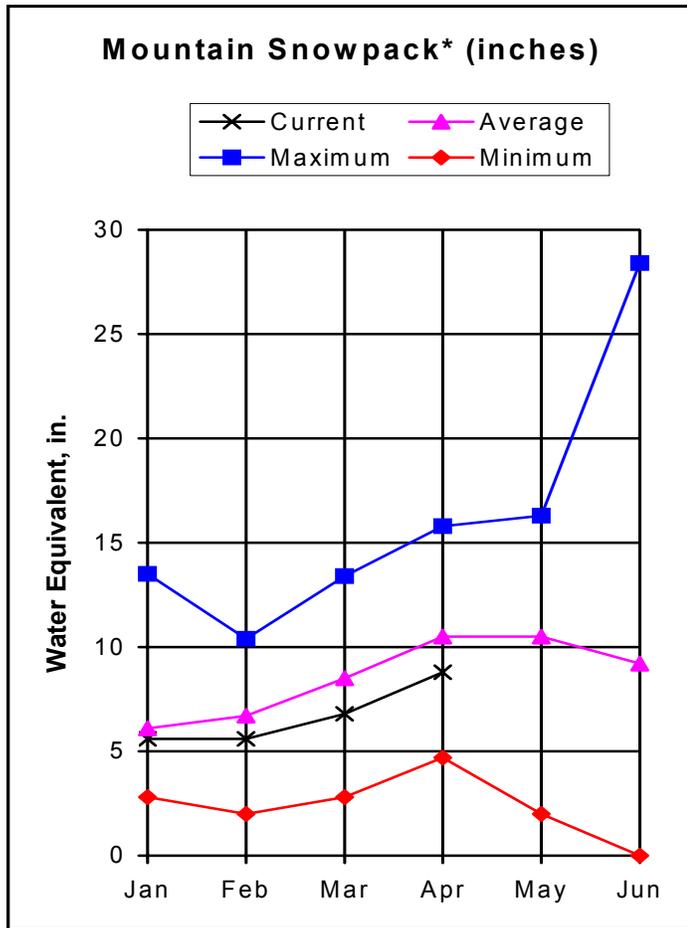
UPPER COLORADO RIVER BASIN Reservoir Storage (1000 AF) - End of March					UPPER COLORADO RIVER BASIN Watershed Snowpack Analysis - April 1, 2005			
Reservoir	Usable Capacity	*** This Year	Usable Storage ***		Watershed	Number of Data Sites	This Year as % of	
			Last Year	Avg			Last Yr	Average
DILLON	250.8	195.7	212.1	214.5	BLUE RIVER BASIN	9	129	85
LAKE GRANBY	465.6	111.6	174.0	263.7	UPPER COLORADO RIVER BASIN	37	146	87
GREEN MOUNTAIN	139.0	64.6	61.4	59.8	MUDDY CREEK BASIN	4	141	83
HOMESTAKE	43.0	27.3	21.9	22.5	PLATEAU CREEK BASIN	3	190	156
RUEDI	102.0	64.7	61.2	61.9	ROARING FORK BASIN	8	179	109
VEGA	32.0	17.1	12.1	13.1	WILLIAMS FORK BASIN	4	128	84
WILLIAMS FORK	96.8	50.8	58.2	54.8	WILLOW CREEK BASIN	4	211	99
WILLOW CREEK	9.0	6.5	6.6	6.8	TOTAL COLORADO RIVER BASIN	48	157	98

\* 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 April 1, 2005



\*Based on selected stations

A slow but steady increase in overall basin snowpack resulted in a slight increase of snow water in the South Platte river basin over last month. Snowpack levels are 84% of average this month, up from 80% last month. This month's snowpack is 167% of the April 1 snowpack of last season, which only reached 51% of average. Those numbers are representative throughout the South Platte basin, with most sub-basins showing similar statistics. Precipitation for March was 85% of average, as was precipitation since October 1. Reservoir storage is 120% of the storage last year at this time and is equal to the average for this time of year. Seasonal streamflow volumes look to be well below average across the South Platte River basin. Expect streamflow to be about 65% of average in the Upper South Platte drainage. Moving to the north, the picture brightens slightly. Expect 83% of average seasonal streamflow volume on Clear Creek, 82% of average on the Cache la Poudre, and 87% of average on Boulder Creek.

SOUTH PLATTE RIVER BASIN  
Streamflow Forecasts - April 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<===== Drier =====>>		Chance Of Exceeding *		===== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	(1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	
Antero Reservoir inflow	APR-JUL	5.8	8.4	10.9	65	14.1	21	16.8
	APR-SEP	6.8	10.2	13.4	65	17.6	26	21
Spinney Mountain Reservoir inflow	APR-JUL	23	33	42	75	54	78	56
	APR-SEP	27	40	52	75	68	101	69
Elevenmile Canyon Reservoir inflow	APR-JUL	23	33	43	74	56	82	58
	APR-SEP	27	41	54	75	72	110	72
Cheesman Lake inflow	APR-JUL	44	65	86	75	113	170	115
	APR-SEP	54	81	108	76	143	218	142
South Platte River at South Platte	APR-JUL	71	112	152	74	207	325	205
	APR-SEP	88	140	191	75	261	414	255
Bear Creek abv Evergreen	APR-JUL	5.8	9.2	12.5	65	17.1	27	19.3
	APR-SEP	8.1	12.8	17.3	69	24	37	25
Bear Creek at Morrison	APR-JUL	6.0	10.5	15.2	61	22	38	25
	APR-SEP	8.1	13.8	20	65	29	50	31
Clear Creek at Golden	APR-JUL	61	79	92	84	105	123	110
	APR-SEP	69	94	111	83	128	153	134
St. Vrain Creek at Lyons	APR-JUL	57	67	74	80	81	91	92
	APR-SEP	66	78	86	80	94	106	107
Boulder Creek nr Orodell	APR-JUL	29	35	40	87	45	51	46
	APR-SEP	31	40	46	87	52	61	53
South Boulder nr Eldorado Spgs	APR-JUL	25	31	34	82	37	43	41
	APR-SEP	27	33	38	83	43	49	46
Big Thompson River at mouth nr Drake	APR-JUL	55	68	77	79	86	99	98
	APR-SEP	67	83	94	80	105	121	117
CACHE LAPOUDRE at Canyon Mouth	APR-JUL	122	169	200	82	230	280	245
	APR-SEP	137	190	225	82	260	315	275

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

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

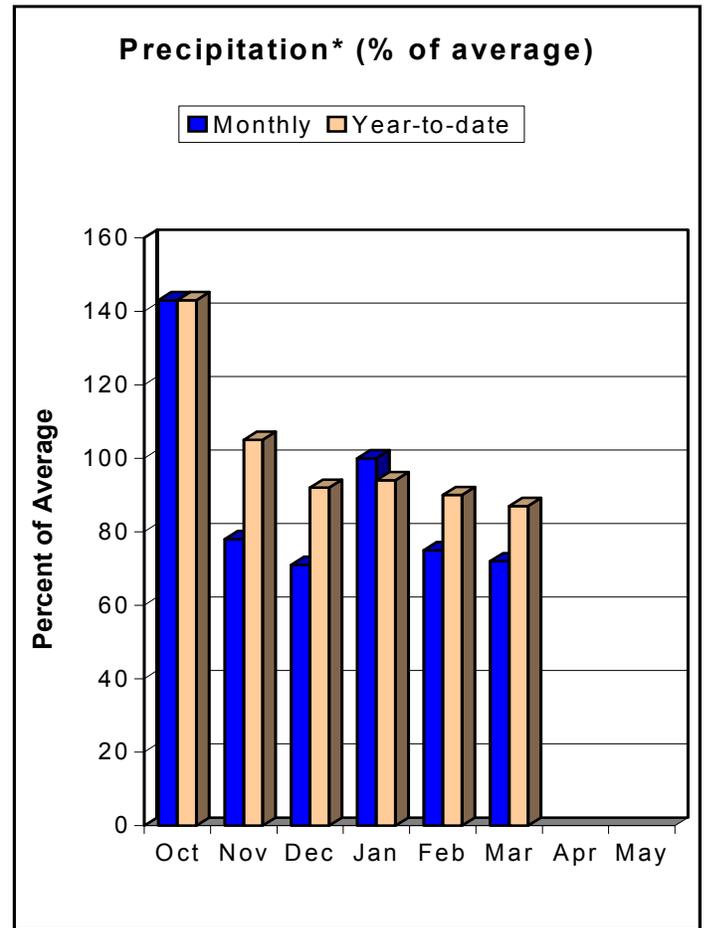
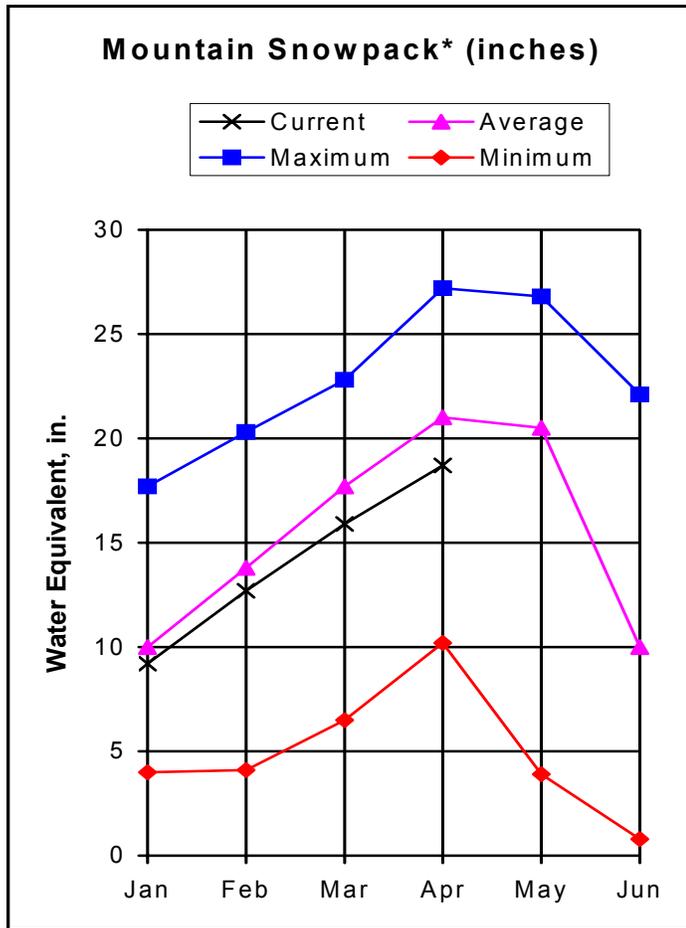
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ANTERO	20.0	1.2	0.0	15.9	BIG THOMPSON BASIN	7	149	83
BARR LAKE	32.0	30.5	19.5	27.9	BOULDER CREEK BASIN	5	181	87
BLACK HOLLOW	8.0	1.7	2.7	4.0	CACHE LA POUDRE BASIN	8	167	83
BOYD LAKE	49.0	43.4	30.9	33.0	CLEAR CREEK BASIN	4	144	89
CACHE LA POUDRE	10.0	9.5	4.0	8.6	SAINT VRAIN BASIN	4	214	77
CARTER	108.9	97.1	49.1	100.9	UPPER SOUTH PLATTE BASIN	15	178	82
CHAMBERS LAKE	9.0	5.1	5.3	3.3	TOTAL SOUTH PLATTE BASIN	43	166	83
CHEESMAN	79.0	68.5	60.3	60.8				
COBB LAKE	34.0	3.6	5.2	13.9				
ELEVEN MILE	97.8	99.7	75.0	96.4				
EMPIRE	38.0	31.5	23.8	31.8				
FOSSIL CREEK	12.0	9.7	7.0	7.9				
GROSS	41.8	22.1	22.0	23.9				
HALLIGAN	6.4	2.3	1.1	4.7				
HORSECREEK	16.0	14.4	12.0	13.9				
HORSETOOTH	149.7	122.8	149.7	119.1				
JACKSON	35.0	26.1	24.8	29.9				
JULESBURG	28.0	19.6	19.5	20.8				
LAKE LOVELAND	14.0	9.4	10.6	9.0				
LONE TREE	9.0	8.8	8.8	7.2				
MARIANO	6.0	5.3	1.3	4.5				
MARSHALL	10.0	9.4	6.7	6.0				
MARSTON	13.0	19.1	6.8	13.3				
MILTON	24.0	21.8	17.8	18.3				
POINT OF ROCKS	70.0	70.6	57.9	68.8				
PREWITT	33.0	24.6	8.9	25.0				
RIVERSIDE	63.1	55.4	51.5	58.2				
SPINNEY MOUNTAIN	48.7	17.8	19.5	32.1				
STANDLEY	42.0	40.0	38.8	34.6				
TERRY LAKE	8.0	4.4	5.7	5.4				
UNION	13.0	12.2	9.6	11.1				
WINDSOR	19.0	10.8	9.1	12.4				

\* 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 April 1, 2005



\*Based on selected stations

Despite a very slow start, snowpack accumulations during March in the Yampa, White, North Platte and Laramie River basins ended up just slightly below normal for the month. However, while the basin didn't lose much ground in terms of snowpack, March snowfall did nothing to help improve conditions in the basin. As a result, basin snowpacks remain below average and relatively unchanged from the percent of average value reported last month. April 1 snow surveys indicate the overall basin snowpack is 89% of average. On the bright side, when compared to last year, this year's snowpack shows a 28% improvement over those measured last April. The Little Snake River Basin and the Elk River Basin reported the best snow conditions with snowpacks measuring 98% and 102% of average, respectively. March precipitation was below average at 72% of average. Total precipitation since the beginning of the water year (October 1) is 87% of average and only slightly better than the totals recorded a year ago. Storage in Stagecoach is 112% of average; Yamcolo reports 55% of average. Combined, these reservoirs are 99% of average and 91% of the volume stored last year. Runoff is expected to be below average throughout the basin. Forecasts in the basin range from 63% of average for the North Platte River near Northgate to 91% for the Elk River near Milner, the Little Snake River near Slater and the Little Snake River near Dixon.

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

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
NORTH PLATTE RIVER nr Northgate	APR-JUL	89	126	154	63	185	236	245
	APR-SEP	75	133	173	64	213	273	270
LARAMIE RIVER nr Woods	APR-JUL	37	71	94	76	117	151	123
	APR-SEP	40	77	103	76	129	166	135
Yampa R abv Stagecoach Res	APR-JUL	11.1	17.0	21	72	25	31	29
Yampa River at Steamboat Springs	APR-JUL	133	175	200	71	225	265	280
Elk River nr Milner	APR-JUL	194	252	295	91	342	416	325
Elkhead Creek nr Elkhead	APR-JUL	16.8	25	32	82	42	61	39
ELKHEAD CREEK blw Maynard Gulch	APR-JUL	30	42	50	85	58	70	59
Fortification Ck nr Fortification	MAR-JUN	2.55	5.00	6.70	89	8.40	10.90	7.50
Yampa River nr Maybell	APR-JUL	435	620	740	75	860	1040	990
Little Snake River nr Slater	APR-JUL	101	126	145	91	165	197	159
LITTLE SNAKE R nr Dixon	APR-JUL	190	255	300	91	345	410	330
LITTLE SNAKE R nr Lily	APR-JUL	215	285	330	90	375	445	365
White River nr Meeker	APR-JUL	134	165	190	66	219	269	290

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

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS  
Watershed Snowpack Analysis - April 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	27.5	29.0	24.6	LARAMIE RIVER BASIN	4	139	83
YAMCOLO	9.1	3.8	5.5	6.9	NORTH PLATTE RIVER BASIN	12	125	87
					TOTAL NORTH PLATTE BASIN	15	126	87
					ELK RIVER BASIN	2	153	102
					YAMPA RIVER BASIN	12	125	85
					WHITE RIVER BASIN	6	126	87
					TOTAL YAMPA AND WHITE RIV	17	127	86
					LITTLE SNAKE RIVER BASIN	8	130	98
TOTAL YAMPA, WHITE AND NO	37	128	89					

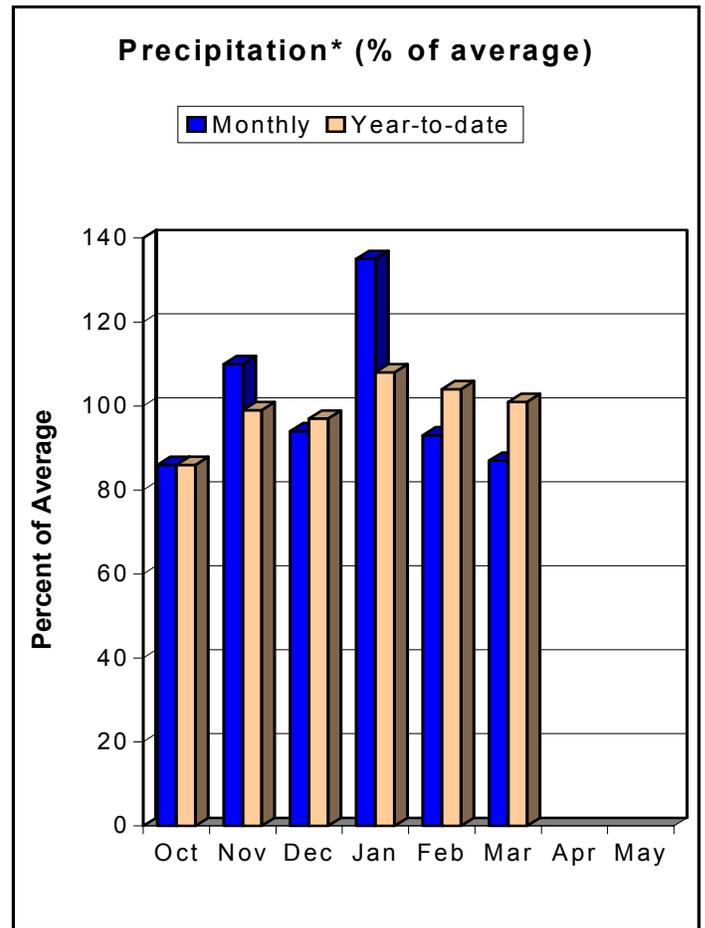
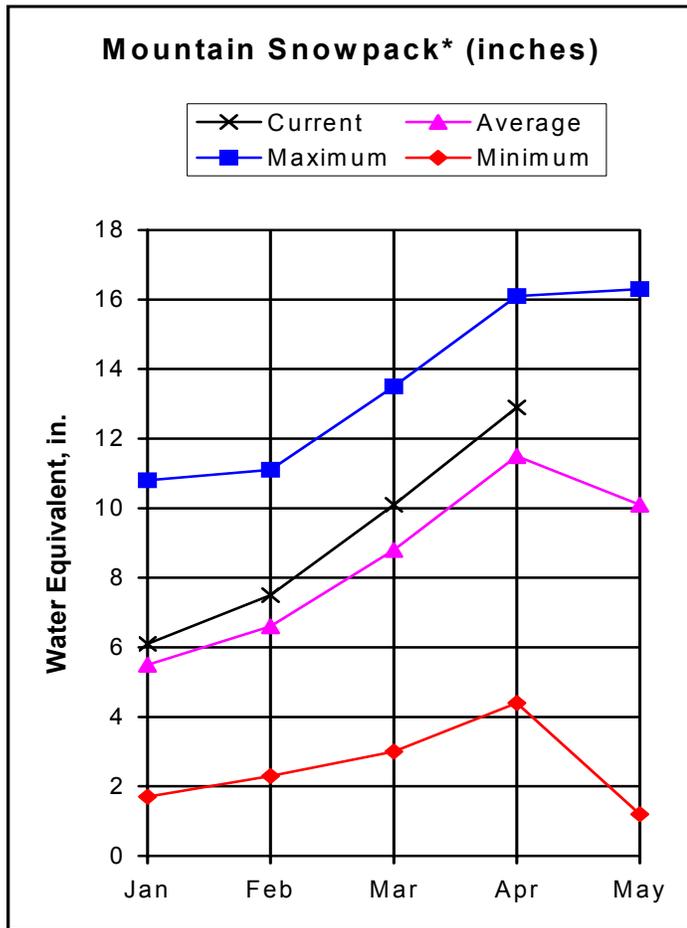
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

# ARKANSAS RIVER BASIN

## as of April 1, 2005



\*Based on selected stations

Snowpack in the Arkansas River basin is at 112% of average after a wet second half of the month. Although down from 115% of average last month, the snowpack is still 190% of last year's April 1 snowpack, which only reached 60% of average. The southern portions of the watershed are carrying most of the basin's snowpack as the Huerfano and Cucharas basins are at 152% of average and the Purgatoire basin is at 188% of average. Snowpack in the Upper Arkansas River basin remains at 94% of average. These figures favor water users in the southern and downstream ends of the watershed. Basin wide precipitation for the month of March was 87% of average while precipitation since October 1 is 135% of average as of April 1. Reservoir storage in the Arkansas basin is 67% of the average for this time of year and 127% of the storage at this time last year. Expected seasonal streamflow volumes in the Arkansas basin reflect the snowpack figures, looking to be considerably greater in the southern and downstream portions of the basin. Expect runoff volumes on the Huerfano and Cucharas Rivers to be 148% and 162% of average, respectively. Volumes are expected to hover around the average in the north, as Chalk Creek at Nathrop and the Arkansas at Salida are expected to run about 93% and 103% of average, respectively.

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ARKANSAS RIVER BASIN  
Streamflow Forecasts - April 1, 2005

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Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		===== Chance Of Exceeding *		===== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Chalk Creek nr Nathrop	APR-SEP	12.1	20	25	93	30	38	27
Arkansas River at Salida	APR-SEP	225	280	320	103	360	415	310
Grape Creek nr Westcliffe	APR-SEP	13.3	21	28	143	35	48	19.6
Pueblo Reservoir Inflow	APR-SEP	340	420	470	109	520	600	430
Huerfano River nr Redwing	APR-SEP	15.6	20	23	148	26	30	15.5
Cucharas River nr La Veta	APR-SEP	13.0	17.5	21	162	25	31	13.0
Trinidad Lake Inflow	APR-SEP	31	46	59	134	75	97	44

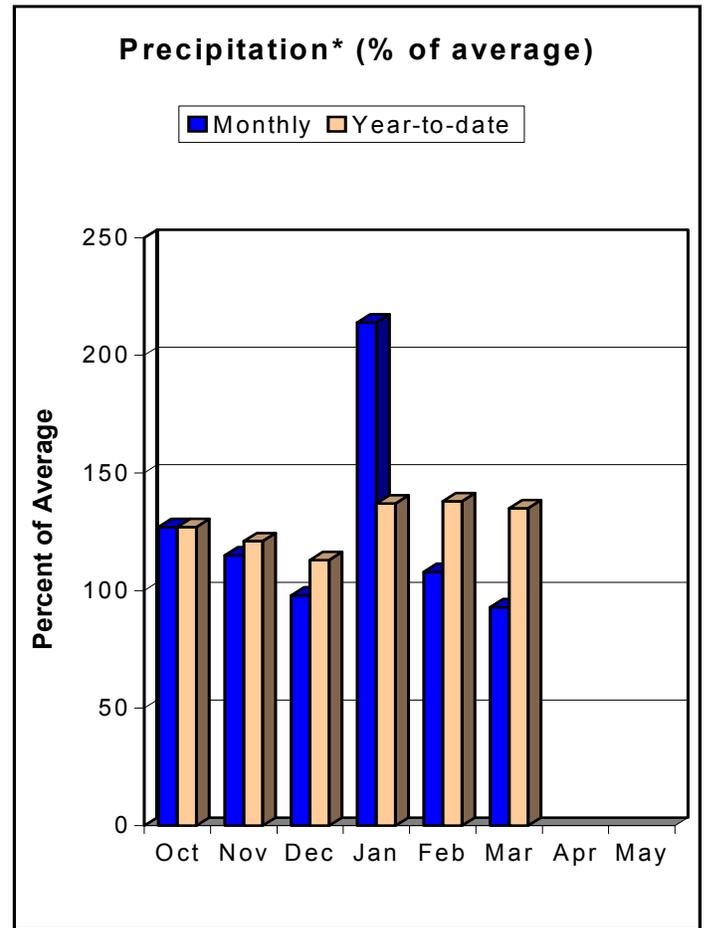
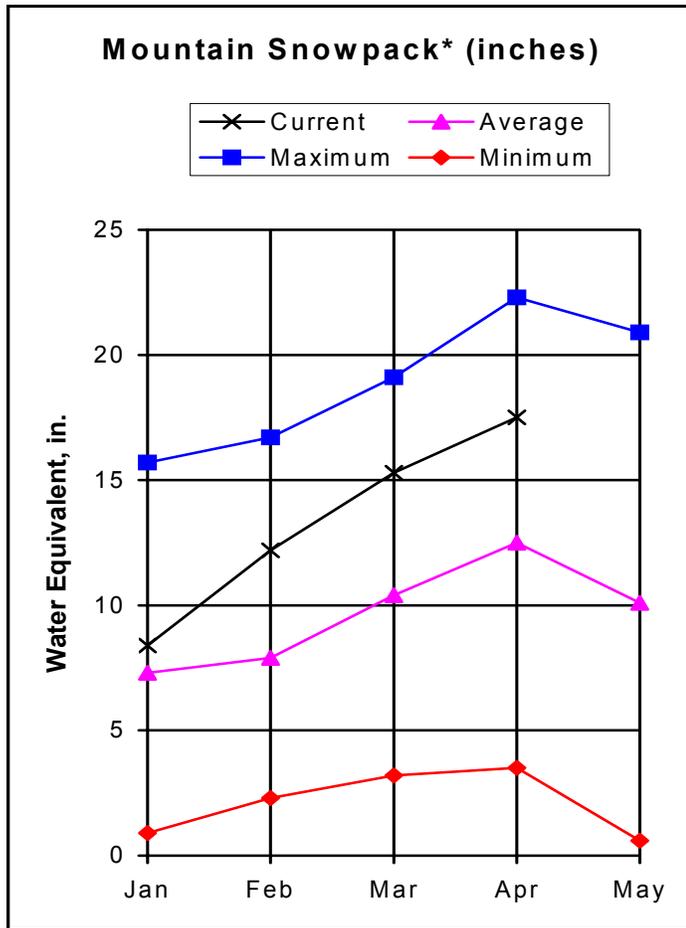
ARKANSAS RIVER BASIN Reservoir Storage (1000 AF) - End of March					ARKANSAS RIVER BASIN Watershed Snowpack Analysis - April 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ADOBE	70.0	0.0	0.0	37.0	UPPER ARKANSAS BASIN	9	153	94
CLEAR CREEK	11.0	9.0	8.4	6.7	CUCHARAS & HUERFANO RIVER	4	280	152
GREAT PLAINS	150.0	0.0	0.0	41.9	PURGATOIRE RIVER BASIN	2	672	188
HOLBROOK	7.0	0.8	0.0	4.9	TOTAL ARKANSAS RIVER BASIN	14	190	112
HORSE CREEK	28.0	0.0	0.0	12.6				
JOHN MARTIN	335.7	64.7	33.8	137.3				
LAKE HENRY	8.0	8.6	6.6	6.7				
MEREDITH	42.0	39.5	30.1	19.0				
PUEBLO	236.7	140.3	114.2	173.3				
TRINIDAD	72.3	28.9	19.2	27.5				
TURQUOISE	126.6	71.6	63.5	74.0				
TWIN LAKES	86.0	28.7	33.6	42.5				

\* 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 RIO GRANDE RIVER BASIN as of April 1, 2005



\*Based on selected stations

With the exception of 2001, this is the first year that snowpack levels in the Upper Rio Grande basin have exceeded the 30 year average since 1997. Down to 140% of average from 147% of average last month, the snowpack figures for the Upper Rio Grande are still very promising for water users in all parts of the basin. Precipitation in the Upper Rio Grande basin was slightly lower than normal at 93% of average for the month of March. This figure brought the year to date precipitation down to 135% of average from 138% of average last month. As a result of large snowpack numbers, streamflow in the Upper Rio Grande basin is expected to be well above the average. Seasonal streamflow volumes are forecasted to be 130% to 170% of average, with the exception of Saguache Creek which is only expected to reach 112% of its average streamflow volume. Such a positive water supply outlook for the Rio Grande basin will help augment reservoir storage this spring. Reservoirs in the basin are currently at 57% of average for this time of year and only up 10% from this time last year.

UPPER RIO GRANDE BASIN  
Streamflow Forecasts - April 1, 2005

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====		====		==== Wetter =====>>		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Rio Grande at Thirty Mile Bridge	APR-SEP	150	178	200	147	225	260	136
Rio Grande Reservoir Inflow	APR-JUL	133	156	175	148	196	231	118
Rio Grande at Wagon Wheel Gap	APR-SEP	360	435	490	142	550	650	345
South Fork Rio Grande at South Fork	APR-SEP	154	178	195	148	215	245	132
Rio Grande nr Del Norte	APR-SEP	585	690	770	145	855	995	531
Saguache Creek nr Saguache	APR-SEP	24	31	37	112	44	54	33
Alamosa Creek abv Terrace Reservoir	APR-SEP	71	83	91	130	100	115	70
La Jara Creek nr Capulin	MAR-JUL	7.50	9.70	11.50	132	13.50	16.80	8.70
Trinchera Creek	APR-SEP	11.8	15.2	18.0	150	21	26	12.0
Sangre de Cristo Creek	APR-SEP	6.40	10.50	14.00	159	18.30	26.00	8.80
Ute Creek	APR-SEP	12.2	15.7	18.0	148	20	24	12.2
Platoro Reservoir Inflow	APR-JUL	66	76	84	131	92	105	64
	APR-SEP	74	85	93	131	102	115	71
Conejos River nr Mogote	APR-SEP	210	245	270	135	300	340	200
San Antonio River at Ortiz	APR-SEP	13.1	17.9	22	134	26	33	16.4
Los Pinos River nr Ortiz	APR-SEP	73	87	98	132	110	128	74
Culebra Creek at San Luis	APR-SEP	22	30	37	161	45	58	23
Costilla Reservoir inflow	MAR-JUL	11.9	15.4	18.0	170	21	25	10.6
Costilla Creek nr Costilla	MAR-JUL	28	37	44	169	51	63	26

UPPER RIO GRANDE BASIN  
Reservoir Storage (1000 AF) - End of March

UPPER RIO GRANDE BASIN  
Watershed Snowpack Analysis - April 1, 2005

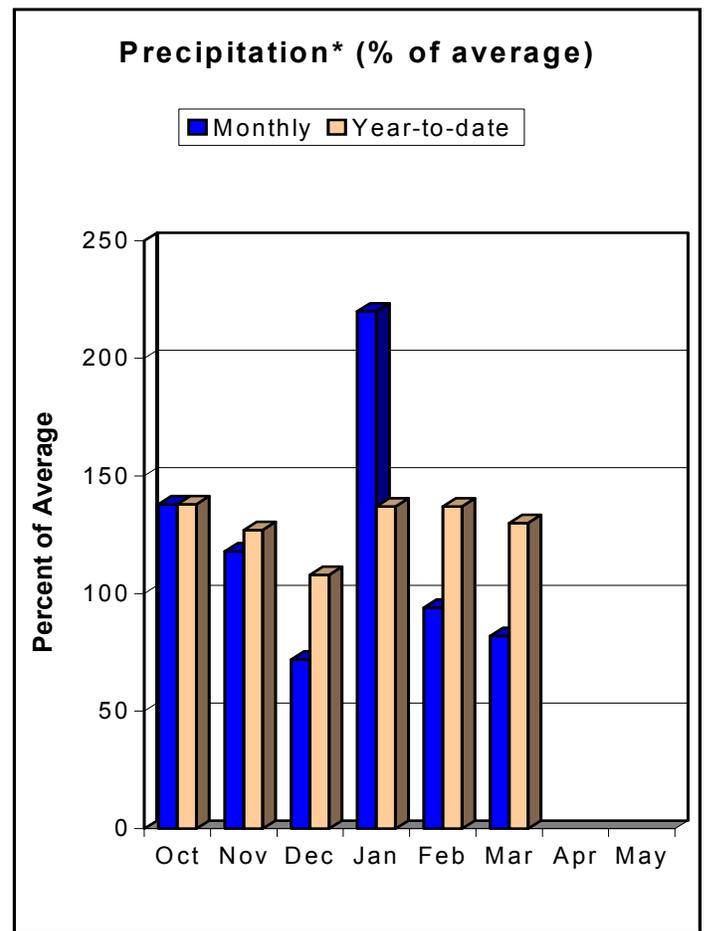
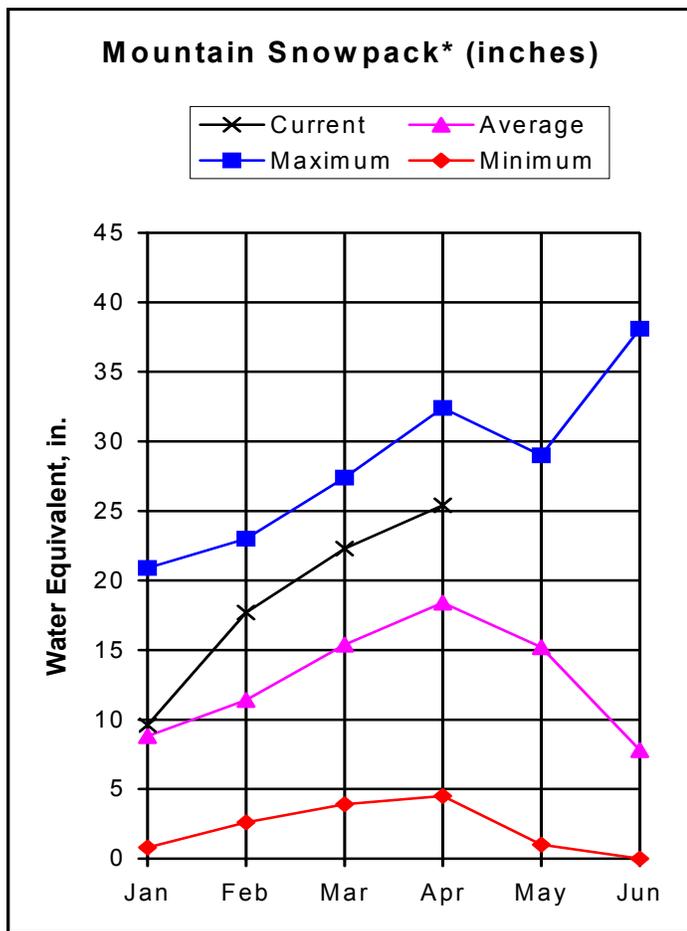
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CONTINENTAL	15.0	4.4	4.2	5.9	ALAMOSA CREEK BASIN	2	258	135
PLATORO	53.7	7.1	5.6	24.5	CONEJOS & RIO SAN ANTONIO	4	158	134
RIO GRANDE	51.0	19.4	14.4	19.3	CULEBRA & TRINCHERA CREEK	5	238	148
SANCHEZ	103.0	9.9	14.6	24.9	UPPER RIO GRANDE BASIN	12	166	137
SANTA MARIA	45.0	6.4	5.6	10.8	TOTAL UPPER RIO GRANDE BA	23	182	140
TERRACE	13.1	5.6	3.5	7.6				

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



\*Based on selected stations

SNOTEL readings in the San Miguel, Dolores, Animas and San Juan River basins indicate that snow water content remained relatively unchanged for the first three weeks of the month. As a result, snowpack percentages dropped significantly although they continued to stay above average. Then, storms passing through the area during the latter part of the month provided enough snow to make up the difference, closing out the month with slightly above average monthly accumulation. April 1 surveys show the overall basin snowpack at 138% of average and nearly twice (192%) the snow water content measured last April. In terms of percent of average, this is the best April 1 snowpack the combined basins have seen since 1993. Individually, snowpacks for the Animas, Dolores, San Miguel and San Juan River basins were reported at 142%, 127%, 124% and 151% of average, respectively. Precipitation during March totaled only 82% of average; however, the water year precipitation (since October 1) remains well above average at 130% of average. Reservoir storage remains below average at 80% of average; however storage is 4% higher than storage totals reported last year at this time. Streamflow forecasts indicate April-July volumes should be average to well above average this year. April-July forecasts range from 100% of average for the Gurley Reservoir Inlet to 165% of average for the Piedra River near Arboles and the Navajo Reservoir Inflow.

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

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Future Conditions		Wetter		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Dolores River at Dolores	APR-JUL	205	265	305	115	345	405	265
McPhee Reservoir inflow	APR-JUL	255	320	370	116	425	515	320
San Miguel River nr Placerville	APR-JUL	99	123	140	106	160	190	132
Gurley Reservoir Inlet	APR-JUL	12.2	14.7	16.5	100	18.0	21	16.5
	APRIL			1.75	105			1.66
	MAY			9.20	104			8.83
	JUNE			4.70	101			4.67
	JULY			1.20	91			1.32
Cone Reservoir Inlet	APR-JUL	2.70	3.30	3.60	102	3.90	4.50	3.53
	APRIL			0.51	111			0.46
	MAY			1.75	107			1.64
	JUNE			1.04	100			1.04
	JULY			0.30	79			0.38
Lilylands Reservoir Inlet	APR-JUL	1.90	2.50	2.90	101	3.30	3.90	2.86
	APRIL			0.44	110			0.40
	MAY			1.40	106			1.32
	JUNE			0.82	94			0.87
	JULY			0.24	89			0.27
Rio Blanco at Blanco Diversion	APR-JUL	55	66	75	142	84	99	53
Navajo River at Oso Diversion	APR-JUL	60	74	85	123	97	117	69
San Juan River nr Carracus	APR-JUL	440	535	600	148	670	790	405
Piedra River nr Arboles	APR-JUL	310	350	380	165	410	460	230
Vallecito Reservoir Inflow	APR-JUL	260	290	310	151	330	360	205
Navajo Reservoir Inflow	APR-JUL	960	1170	1320	165	1490	1750	800
Animas River at Durango	APR-JUL	495	570	620	141	680	765	440
Lemon Reservoir Inflow	APR-JUL	68	81	90	155	100	117	58
La Plata River at Hesperus	APR-JUL	28	33	37	148	41	48	25
Mancos River nr Mancos	APR-JUL	31	46	59	148	74	100	40
	APRIL			8.70	150			5.80
	MAY			23	145			15.9
	JUNE			21	153			13.7
	JULY			6.00	130			4.60

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

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	0.1	7.3	12.2	ANIMAS RIVER BASIN	9	194	142
JACKSON GULCH	10.0	4.8	3.6	5.1	DOLORES RIVER BASIN	7	226	127
LEMON	40.0	21.0	12.0	21.2	SAN MIGUEL RIVER BASIN	5	188	124
MCPHEE	381.2	232.3	188.8	273.6	SAN JUAN RIVER BASIN	4	166	151
NARRAGUINNEP	19.0	19.0	18.3	15.5	TOTAL SAN MIGUEL, DOLORES	24	192	138
VALLECITO	126.0	35.3	70.4	62.0	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/wsf/westwide.html>.

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*Issued by*

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**Basin Outlook Report**  
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