

# Colorado Basin Outlook Report January 1, 2008



# 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, 2008

#### Summary

Once again, this year's early season snowpack is dominated by large storms which have considerably skewed the early season snowpack statistics. This year, southern Colorado has benefited from the larger storms and well above average snowpack totals are prevalent across those basins. While the northern mountains have yet to reach an average snowpack, the statewide totals remain slightly above average and above last year's readings. Early-season runoff forecasts reflect the snowpack variability with the best prospects for above average runoff within the southern basins of the state. Even with below average runoff forecast across the northern basins, there remains adequate time for improvement in the season. Reservoir storage is in good shape across most of the state, with near average storage reported across most of the state. For southern Colorado, this is the best start to a water year since 1997.

#### Snowpack

The state's first significant snowfall of the season occurred in mid-October which brought good accumulations to all but the most southern portions of the state. However, the optimism for good snowpacks diminished during November when the entire state received well below average snowfall for the entire month. Not only were conditions extremely dry during the November, but they were also quite warm, which actually melted much of the lower elevation's October snow. Conditions across southern Colorado made a dramatic about-face on December 1 with a major storm that delivered several feet of snow to much of the high county. Within days of this storm, another storm, nearly as intense as the first, pounded the region again. As a result, snowpack totals across the San Juan, Animas, Dolores, San Miguel, and Rio Grande basins went from near record low snowpack totals to near record high, in a matter of only 12 days. These storms produced more snow water equivalent than was measured during the entire 2002 season in these basins. To the north, these storms were significantly less productive and these basins continue to track below average. The lowest percentages have been reported in the Yampa and White basins at 85% of average. On January 1, the statewide snowpack was 110% of average and was 113% of last year's snowpack on this same date.

#### Precipitation

As the 2008 water year began in October, most of the state received near average to above average precipitation. Only the southern basins missed the average mark for the month, with basinwide totals ranging from 59% of average in the Rio Grande, to 143% of average in the Colorado basin. November was bone-dry statewide with only a few basins even reaching 50% of average. Statewide, precipitation during November was only 45% of average. December's statistics are remarkable, with even the lowest monthly totals, in the Yampa and White basins, at 133% of average. At the upper end are the Arkansas and combined San Juan, Animas, Dolores and San Miguel basins. These basins received more than 200% of average precipitation for December. The highest percentage was measured in the Rio Grande at 296% of the monthly December average. For most of the state, December's precipitation more than made up for the November deficit, and water year totals for the October - December period range from 96% of average in the South Platte basin to 132% of average in the Rio Grande basin. Statewide, water year totals are 112% of average and are 99% of last year's water year totals on this date.

## Reservoir Storage

Colorado's reservoir storage finally returned to above average volumes during the summer of 2007, with levels not reached since 2001. While storage has declined from late summer demands since that time, storage remains near average across most of the state as of January 1. Volumes currently range from 83% of average in the South Platte basin to 110% of average in the San Juan, Animas, Dolores and San Miguel basins. For the state, volumes are now standing at 98% of the long-term average. These volumes are slightly ahead of last year's storage on this date, at 105% of those levels. Only two basins, the Gunnison and the combined San Juan, Animas, Dolores and San Miguel, have been consistently tracking at above average volumes thus far during the 2008 water year. Although improving slightly each month since October, the South Platte basin continues to report the lowest percent of average storage in the state.

## Streamflow

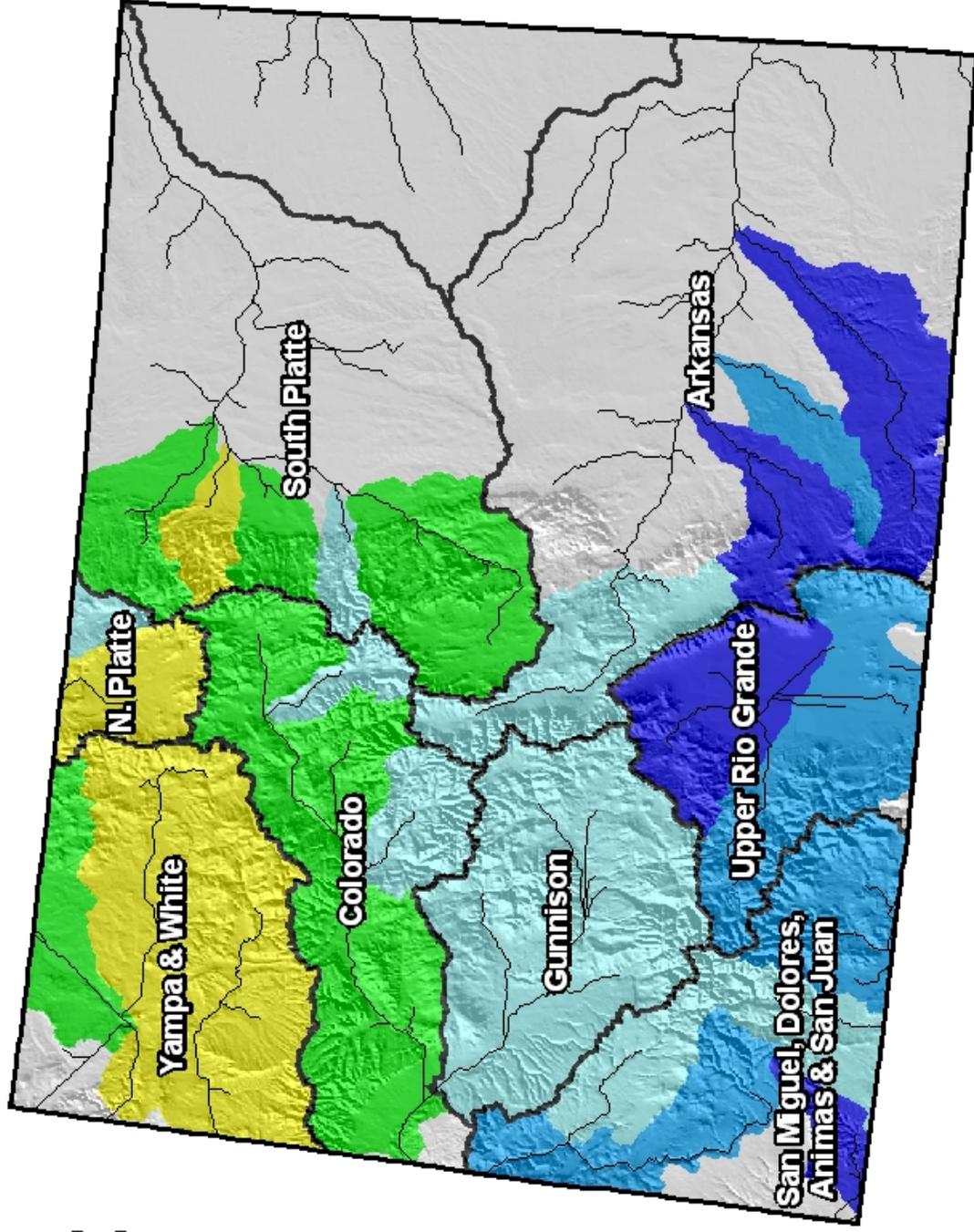
Runoff forecasts look promising for 2008 for most of the state. As expected, the best prospects for above average runoff volumes occur across the southern basins. The Rio Grande headwaters and the San Juan River can expect volumes above 130% of average. Above average volumes are also forecast throughout the Gunnison and Arkansas basins, along with the San Miguel, Dolores, Animas, and a few upper reaches of the Colorado River. The lowest forecasts, as a percent of average, occur throughout the South Platte and North Platte basins. While below average, most locations in these basins range from 85% to 90% of average. Slightly higher percentages are forecast in the lower reaches of the Colorado River, along with the Yampa and White basins, which range from 90% to 100% of average at most forecast points. There remains ample time in the 2008 winter season to improve upon the current conditions in these dryer areas of the state. Water managers will need to closely monitor weather patterns in these basins since they are the most vulnerable to future conditions.

# Colorado Snowpack Map

Percent of Average



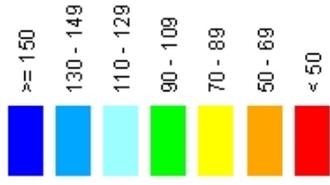
*Provisional Data  
Subject to Revision*



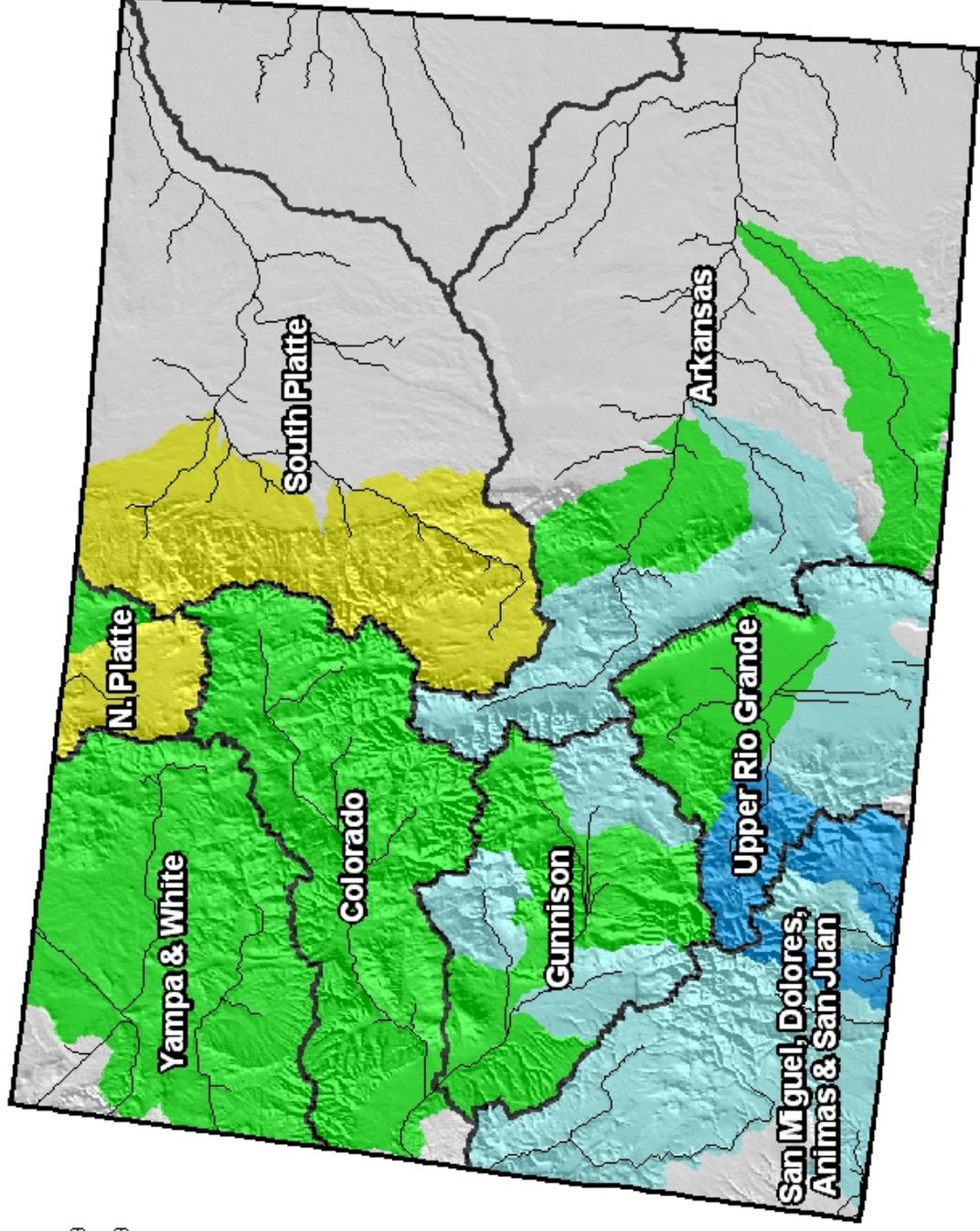
Current as of January 1, 2008

# Colorado Streamflow Forecast Map

Percent of Average



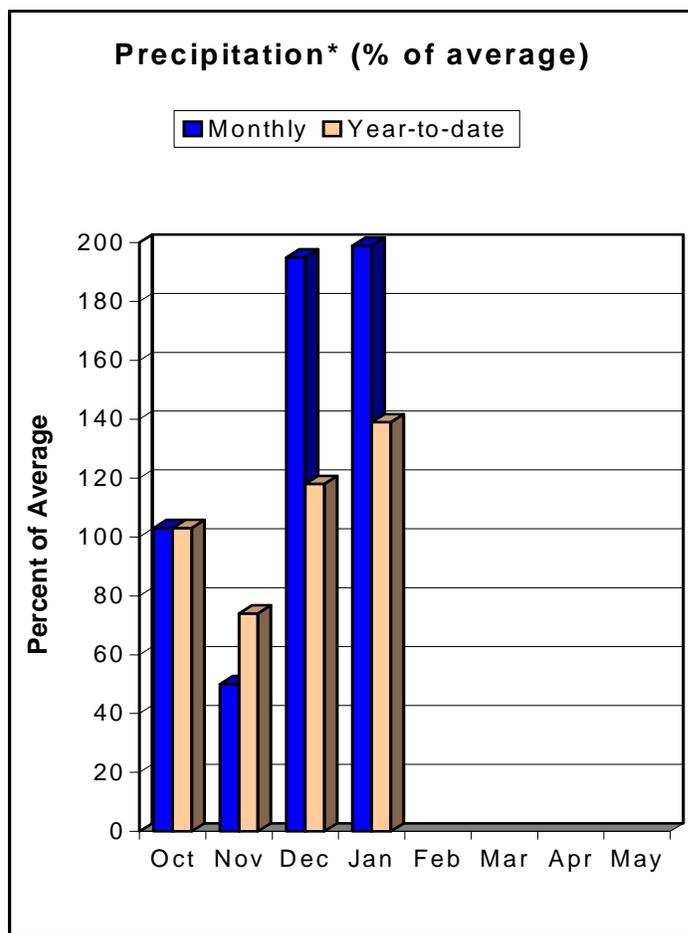
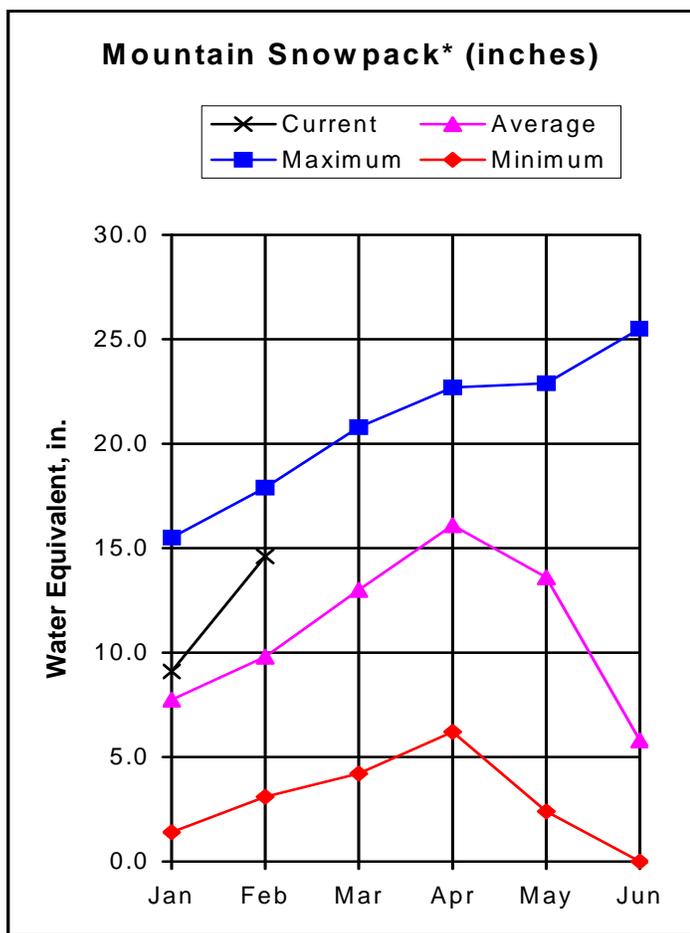
*Provisional Data  
Subject to Revision*



Current as of January 1, 2008

# GUNNISON RIVER BASIN

## as of January 1, 2008



\*Based on selected stations

Snowpacks in the Gunnison River Basin got off to a relatively slow start to begin the 2008 Water Year. By the end of October 2007, snowpacks were only 55 percent of average. An extremely dry November brought the snowpack figures down to 28 percent of average by November 30. Fortunately, things completely turned around during December. Snow accumulation during December, based on SNOTEL data, was 209 percent of average, bringing the January 1 snowpacks in the basin to 117 percent of average. Along with 2005, this is the highest January 1 figure since 1997. Watersheds within the basin ranged from 109 percent of average in the Surface Creek area to 121 percent of average in the Uncompahgre Drainage. Mountain precipitation was near normal during October (103 percent of average). During November, precipitation totals were only one half of the average. However, nearly twice normal precipitation during December brought year-to-date precipitation totals up from 74 percent of average at the end of November to 118 percent of average at the end of December. Reservoir storage is slightly below the levels reported last year but is still above normal at 106 percent of average. Spring and summer streamflows are expected to be near to above normal throughout the basin. Runoff volumes are forecast to range from 103 percent of average for the Slate River near Crested Butte to 117 percent of average for Tomichi Creek at Sargents.

GUNNISON RIVER BASIN  
Streamflow Forecasts - January 1, 2008

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)	(1000AF)	(1000AF)
Taylor Park blw Taylor Park Res (2)	APR-JUL	73	94	110	107	127	154	103				
Slate River nr Crested Butte	APR-JUL	70	83	92	103	102	118	89				
East River at Almont	APR-JUL	134	174	205	107	238	291	192				
Gunnison River nr Gunnison (2)	APR-JUL	262	349	415	106	487	604	390				
Tomichi Creek at Sargents	APR-JUL	23	31	37	116	44	56	32				
Cochetopa Creek blw Rock Ck nr Parli	APR-JUL	10.1	14.4	18.0	104	22	29	17.3				
Tomichi Creek at Gunnison	APR-JUL	50	75	95	117	119	160	81				
Lake Fork at Gateview	APR-JUL	104	127	145	115	164	193	126				
Blue Mesa Reservoir Inflow (2)	APR-JUL	509	661	780	108	912	1133	720				
Paonia Reservoir Inflow	MAR-JUN	64	92	115	115	141	187	100				
	APR-JUL	61	90	115	113	144	194	102				
North Fork Gunnison R nr Somerset (2)	APR-JUL	214	284	340	112	403	508	305				
Surface Creek at Cedaredge	APR-JUL	11.4	15.6	19.0	111	23	29	17.1				
Ridgway Reservoir Inflow	APR-JUL	78	99	115	113	133	162	102				
Uncompahgre River at Colona (2)	APR-JUL	103	135	160	115	188	236	139				
Gunnison River nr Grand Junction (2)	APR-JUL	1045	1435	1700	109	1965	2355	1560				

GUNNISON RIVER BASIN Reservoir Storage (1000 AF) - End of December					GUNNISON RIVER BASIN Watershed Snowpack Analysis - January 1, 2008			
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	580.4	587.1	545.8	UPPER GUNNISON BASIN	9	122	115
CRAWFORD	14.0	6.6	9.2	7.5	SURFACE CREEK BASIN	2	132	109
FRUITGROWERS	4.4	2.2	4.5	2.8	UNCOMPAHGRE BASIN	3	138	121
FRUITLAND	9.2	1.2	2.0	1.3	TOTAL GUNNISON RIVER BASIN	12	125	117
MORROW POINT	121.0	111.0	104.9	113.4				
PAONIA	15.4	1.0	2.0	4.7				
RIDGWAY	83.0	72.8	79.5	60.1				
TAYLOR PARK	106.0	77.9	78.8	67.7				

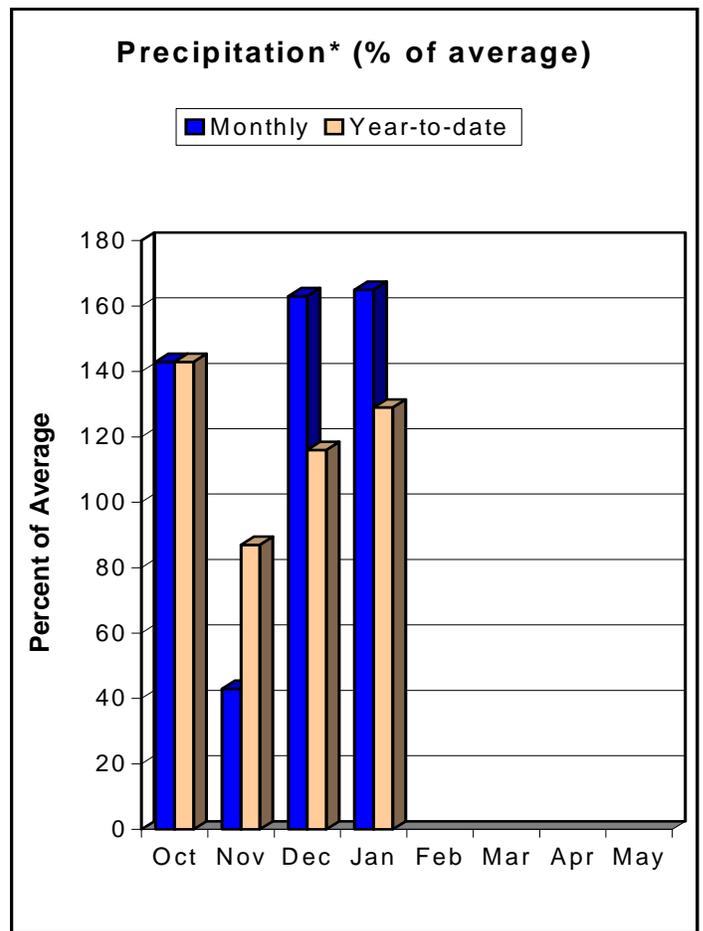
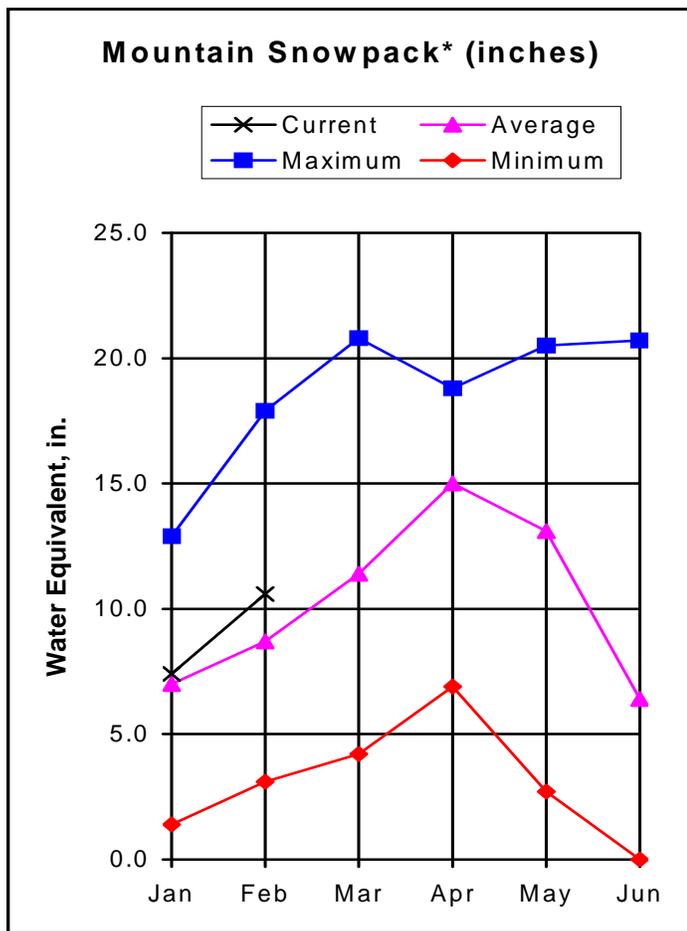
\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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, 2008



\*Based on selected stations

At the end of October, the Upper Colorado River Basin snowpacks were running about average. Unfortunately, things took a turn for the worse during November and snowpacks dropped to 47 percent of average by the end of the month. Better than average snowfall during December turned things back around, and by January 1, snowpacks were back above normal at 105 percent of average. That makes three consecutive years the basin has had an above average January 1 snowpack. Sub-basin snowpacks ranged from 84 percent of average in the Muddy Creek Watershed to 122 percent of average in the Willow Creek Drainage. Mountain precipitation was well above average during October (143 percent of average). However, a severely dry November of only 43 percent of average brought the annual precipitation totals since October 1 down to 87 percent of average at the end of November. The trend reversed itself again in December and well above average monthly precipitation (163 percent of average) brought the annual precipitation totals back up to a respectable 116 percent of average. The amount of stored water remains near normal at 99 percent of average, down slightly from the amounts reported last year at this time. Near normal streamflows are forecast for most forecast points in the basin. Expected runoff will range from 88 percent of average for Muddy Creek below Wolford Mountain Reservoir to 106 percent of average for the Inflow to Ruedi Reservoir and the Roaring Fork at Glenwood Springs.

UPPER COLORADO RIVER BASIN  
Streamflow Forecasts - January 1, 2008

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)		
Lake Granby Inflow (2)	APR-JUL	155	187	210	93	235	273	225				
Willow Creek Reservoir Inflow	APR-JUL	35	45	52	102	60	74	51				
Williams Fork Reservoir Inflow (2)	APR-JUL	72	85	95	100	105	121	95				
Dillon Reservoir Inflow (2)	APR-JUL	122	149	170	102	193	229	167				
Green Mountain Reservoir Inflow (2)	APR-JUL	208	255	290	104	328	391	280				
Muddy Creek blw Wolford Mtn Resv (2)	APR-JUL	34	45	53	88	62	78	60				
Eagle River blw Gypsum (2)	APR-JUL	212	270	315	94	365	447	335				
Colorado River nr Dotsero (2)	APR-JUL	982	1222	1400	97	1590	1892	1440				
Ruedi Reservoir Inflow (2)	APR-JUL	103	130	150	106	172	209	141				
Roaring Fork at Glenwood Springs (2)	APR-JUL	521	651	750	106	859	1038	710				
Colorado River nr Cameo (2)	APR-JUL	1548	2056	2400	99	2744	3252	2420				

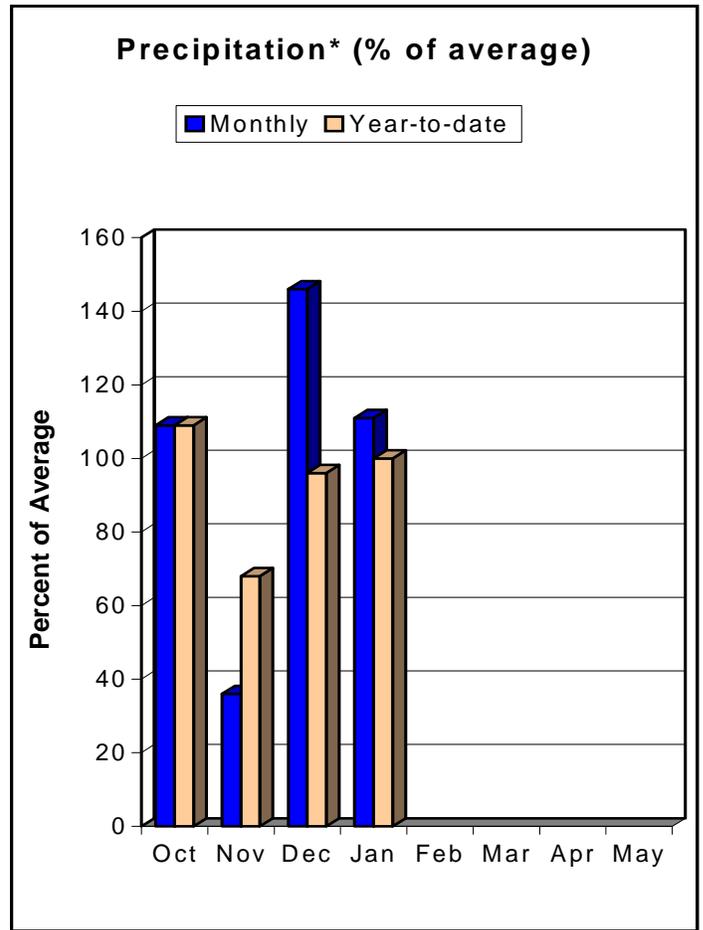
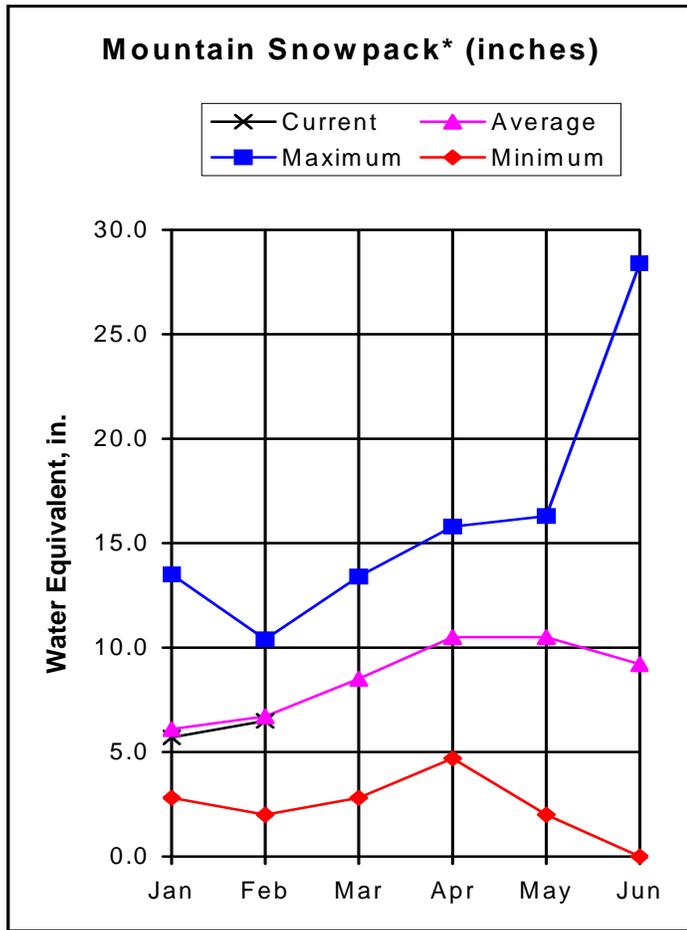
UPPER COLORADO RIVER BASIN Reservoir Storage (1000 AF) - End of December					UPPER COLORADO RIVER BASIN Watershed Snowpack Analysis - January 1, 2008				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of		
		This Year	Last Year	Avg			Last Yr	Average	
DILLON	250.7	238.9	236.9	224.8	BLUE RIVER BASIN	5	94	111	
LAKE GRANBY	465.6	263.7	288.5	322.1	UPPER COLORADO RIVER BASIN	19	94	100	
GREEN MOUNTAIN	146.8	83.0	89.7	90.3	MUDDY CREEK BASIN	2	102	84	
HOMESTAKE	43.0	41.9	41.0	28.4	PLATEAU CREEK BASIN	2	132	109	
RUEDI	102.0	80.8	79.6	79.7	ROARING FORK BASIN	7	117	115	
VEGA	32.9	15.3	15.9	11.0	WILLIAMS FORK BASIN	2	85	95	
WILLIAMS FORK	97.0	84.0	72.3	62.9	WILLOW CREEK BASIN	2	98	122	
WILLOW CREEK	9.1	6.7	6.5	6.1	TOTAL COLORADO RIVER BASIN	28	103	105	

\* 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, 2008



\*Based on selected stations

Water Year 2008 started out close to average in the South Platte River Basin, took a turn for the worse, and then rebounded nicely. According to data from 17 Snotel sites, precipitation in October was near normal at 109% of average. November, like in most basins, was very dry and only saw 36% of the average precipitation for that month. Snowy weather finally arrived in early December, took a little break during the middle of the month, and then returned again before the New Year. The wetter than average December has made the water picture a little brighter, as it saw 146% of its average precipitation and brought the year to date precipitation up to 96% for January 1 on the South Platte. Snow levels are slightly less than average, 93% of average to be exact. Based on data from six Snotel sites in the Upper South Platte, the snowpack is at 95% of its average in that sub-basin. Other sub-basins containing two or three Snotel sites have snowpacks ranging from 79 to 110 percent of average. Based on data from 33 reservoirs, reservoir storage in the South Platte River Basin is at 89% of average but 115% of storage at this time last year. Expect April through September streamflow volume in the South Platte Basin to vary from 77% of average on the St. Vrain and Big Thompson to 91% of average on the South Platte at the inlet to Cheesman Lake.

SOUTH PLATTE RIVER BASIN  
Streamflow Forecasts - January 1, 2008

Forecast Point	Forecast Period	<----- Drier ----- Future Conditions ----- Wetter ----->						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)		
ANTERO RESERVOIR Inflow (2)	APR-JUL	7.1	10.8	14.3	85	19.0	29	16.8				
	APR-SEP	8.6	13.2	17.7	81	24	36	22				
SPINNEY MOUNTAIN RESV Inflow (2)	APR-JUL	25	37	48	86	63	93	56				
	APR-SEP	30	46	61	88	82	125	69				
ELEVENMILE CANYON RESV Inflow (2)	APR-JUL	24	37	49	85	65	99	58				
	APR-SEP	28	45	62	86	85	136	72				
CHEESMAN LAKE Inflow (2)	APR-JUL	52	78	102	90	134	200	114				
	APR-SEP	64	96	128	91	170	260	140				
SOUTH PLATTE R at South Platte (2)	APR-JUL	88	136	183	89	245	380	205				
	APR-SEP	110	171	230	90	310	480	255				
BEAR CREEK abv Evergreen	APR-JUL	7.2	11.8	16.4	85	23	37	19.3				
	APR-SEP	9.8	15.4	21	84	29	45	25				
BEAR CREEK at Morrison	APR-JUL	7.9	14.2	21	84	31	56	25				
	APR-SEP	10.4	17.9	26	84	38	65	31				
CLEAR CREEK at Golden	APR-JUL	60	80	94	86	108	128	110				
	APR-SEP	75	98	114	85	130	153	134				
ST. VRAIN CREEK at Lyons (2)	APR-JUL	51	63	71	76	79	91	94				
	APR-SEP	62	75	84	77	93	106	109				
BOULDER CREEK nr Orodell (2)	APR-JUL	32	38	43	83	48	54	52				
	APR-SEP	36	44	50	83	56	64	60				
SOUTH BOULDER CK nr Eldorado Spgs (2)	APR-JUL	28	34	37	90	40	46	41				
	APR-SEP	29	36	41	89	46	53	46				
BIG THOMPSON R at Canyon Mouth (2)	APR-JUL	54	66	75	76	84	96	99				
	APR-SEP	66	82	92	77	102	118	119				
CACHE LAPOUDRE at Canyon Mouth (2)	APR-JUL	129	174	205	84	235	280	245				
	APR-SEP	145	196	230	84	265	315	275				

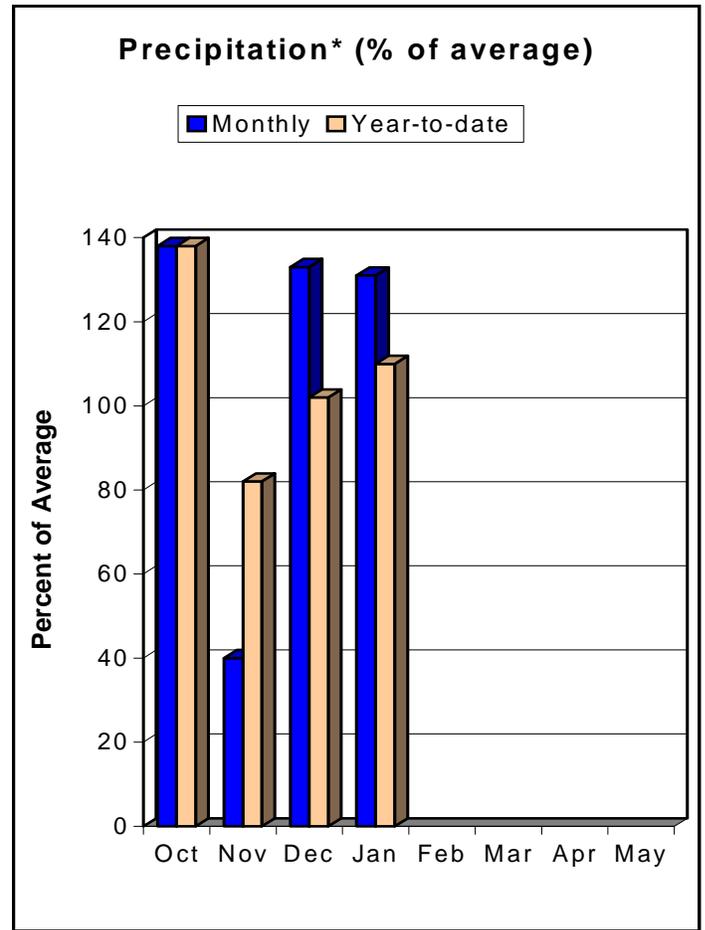
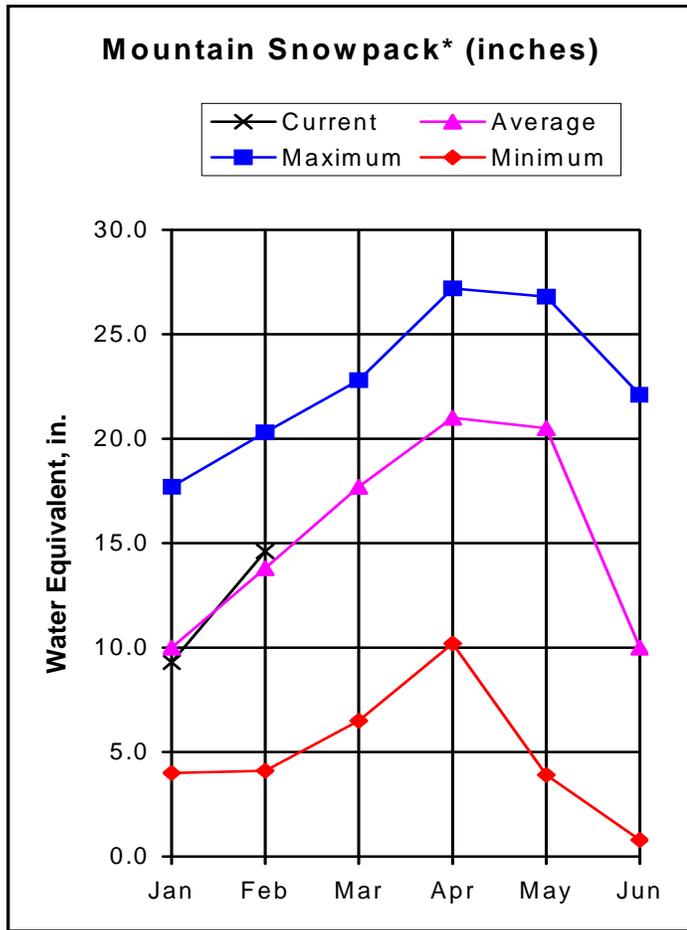
SOUTH PLATTE RIVER BASIN Reservoir Storage (1000 AF) - End of December					SOUTH PLATTE RIVER BASIN Watershed Snowpack Analysis - January 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ANTERO	19.9	20.2	16.6	16.5	BIG THOMPSON BASIN	3	61	79
BARR LAKE	30.1	22.8	22.8	22.4	BOULDER CREEK BASIN	3	59	82
BLACK HOLLOW	6.5	2.2	2.3	3.8	CACHE LA POUFRE BASIN	2	84	99
BOYD LAKE	44.0	20.7	12.6	31.7	CLEAR CREEK BASIN	2	83	110
BUTTON ROCK/RALPH PRICE	16.2	15.2	15.8	13.6	SAINT VRAIN BASIN	1	75	158
CACHE LA POUFRE	10.1	5.1	2.4	6.3	UPPER SOUTH PLATTE BASIN	6	80	95
CARTER	108.9	16.2	20.2	74.7	TOTAL SOUTH PLATTE BASIN	17	73	93
CHAMBERS LAKE	8.8	2.2	2.5	2.8				
CHEESMAN	79.0	64.8	68.5	60.9				
COBB LAKE	22.3	2.8	3.4	13.9				
ELEVEN MILE	98.0	99.2	100.5	95.9				
EMPIRE	36.5	7.2	12.7	22.2				
FOSSIL CREEK	11.1	2.8	6.6	6.3				
GROSS	42.0	29.4	25.0	26.2				
HALLIGAN	6.4	3.2	3.4	3.6				
HORSECREEK	14.7	9.6	0.3	10.9				
HORSETOOTH	149.7	86.9	81.3	87.8				
JACKSON	26.1	23.9	13.7	23.0				
JULESBURG	20.5	16.6	17.4	18.4				
LAKE LOVELAND	14.0	11.3	10.5	8.9				
LONE TREE	9.0	5.6	4.5	6.0				
MARIANO	6.0	1.5	3.9	4.1				
MARSHALL	10.0	4.7	3.7	4.7				
MARSTON	13.0	10.4	11.1	12.7				
MILTON	23.5	14.0	3.8	14.8				
POINT OF ROCKS	70.6	39.0	23.9	51.1				
PREWITT	28.2	20.8	0.7	18.0				
RIVERSIDE	55.8	44.1	35.2	38.1				
SPINNEY MOUNTAIN	49.0	36.3	34.7	35.4				
STANDLEY	42.0	37.7	38.8	32.5				
TERRY LAKE	8.0	5.7	4.7	5.2				
UNION	13.0	12.6	8.4	10.4				
WINDSOR	15.2	9.4	0.9	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, 2008



\*Based on selected stations

January 1 snowpack conditions in the combined Yampa, White, North Platte and Laramie River basins are slightly below normal at 93 percent of average. Early in the season, snowpacks in the Yampa and White River basins had been well below average. Fortunately, some pretty decent snowfall during December helped bring snowpacks up from 34 percent of average at the end of November to 85 percent of average on January 1. The North Platte and Laramie River basins saw similar conditions resulting in January 1 snowpacks that were 90 percent of average, up from around 56 percent of average at the end of November. The Laramie River Watershed reported the best January 1 conditions in the basin at 107 percent of average, while the White River Drainage posted the lowest figures at 85 percent of average. Mountain precipitation in the combined basins was 138 percent of average in October. This was followed by a dry November that only produced 40 percent of the average precipitation for that month. December precipitation was 133 percent of average and helped to bring the water year total precipitation (since October 1) up to 102 percent of average. End of December reservoir storage is 99 percent of average and 92 percent of last years figures. Near normal streamflows are expected in much of the basin. At the lower end of the spectrum, Fortification Creek near Fortification is expected to receive 80 percent of its average flows. Elhead Creek below Maynard Gulch should see the highest percentage of runoff at 115 percent of average.

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS  
Streamflow Forecasts - January 1, 2008

Forecast Point	Forecast Period	<<==== Drier ==== Future Conditions ==== Wetter =====>>						30-Yr Avg. (1000AF)				
		90%		70%		50%			30%		10%	
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)		(1000AF)	(1000AF)		
NORTH PLATTE RIVER nr Northgate	APR-JUL	107	167	215	88	270	360	245				
	APR-SEP	116	182	235	87	295	395	270				
LARAMIE RIVER nr Woods	APR-JUL	77	111	133	108	155	189	123				
	APR-SEP	85	121	146	108	171	205	135				
Yampa R ab Stagecoach Reservoir (2)	APR-JUL	18.5	25	31	107	37	48	29				
Yampa River at Steamboat Springs (2)	APR-JUL	184	233	270	96	309	372	280				
Elk River nr Milner	APR-JUL	235	290	330	102	373	441	325				
Elkhead Creek nr Elkhead	APR-JUL	23	31	38	97	45	57	39				
Elkhead Creek blw Maynard Gulch (2)	APR-JUL	42	57	68	115	80	100	59				
Fortification Ck nr Fortification	MAR-JUN	2.8	4.5	6.0	80	7.8	11.0	7.5				
Yampa River nr Maybell (2)	APR-JUL	590	789	940	95	1105	1371	990				
Little Snake River nr Slater	APR-JUL	100	134	159	100	187	231	159				
Little Snake River nr Dixon	APR-JUL	213	282	335	102	392	484	330				
Little Snake River nr Lily	APR-JUL	200	290	360	99	438	566	365				
White River nr Meeker	APR-JUL	163	221	265	91	313	392	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, 2008

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	29.6	30.4	26.4	LARAMIE RIVER BASIN	2	90	110
YAMCOLO	8.7	2.1	3.9	5.5	NORTH PLATTE RIVER BASIN	7	101	86
					TOTAL NORTH PLATTE BASIN	9	99	90
					ELK RIVER BASIN	2	110	87
					YAMPA RIVER BASIN	9	105	86
					WHITE RIVER BASIN	4	107	85
					TOTAL YAMPA AND WHITE RIV	12	107	85
					LITTLE SNAKE RIVER BASIN	6	127	107
TOTAL YAMPA, WHITE AND NO	24	108	93					

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

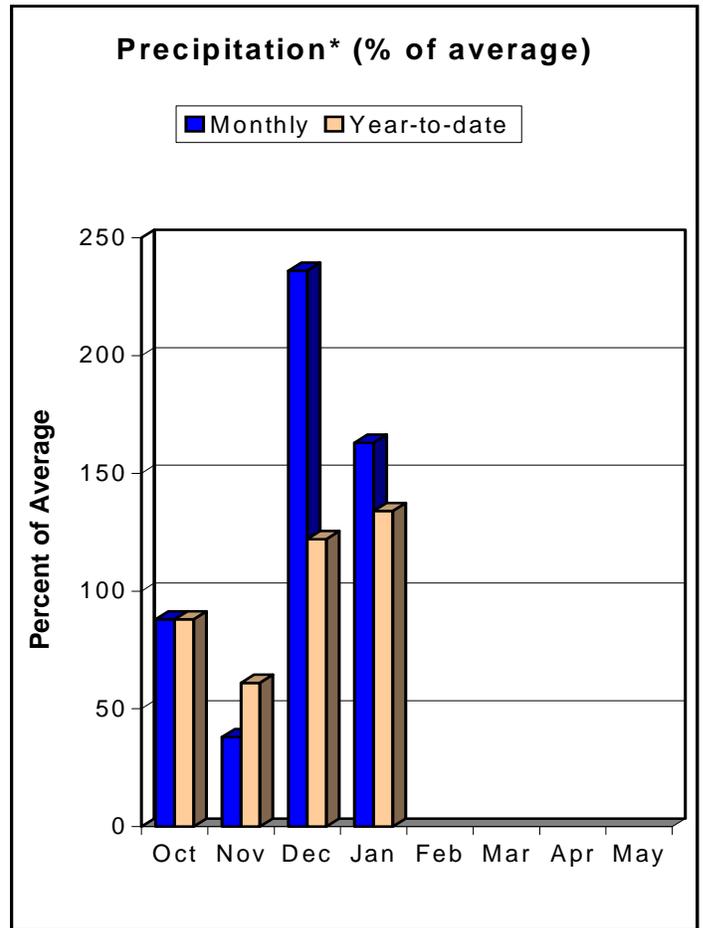
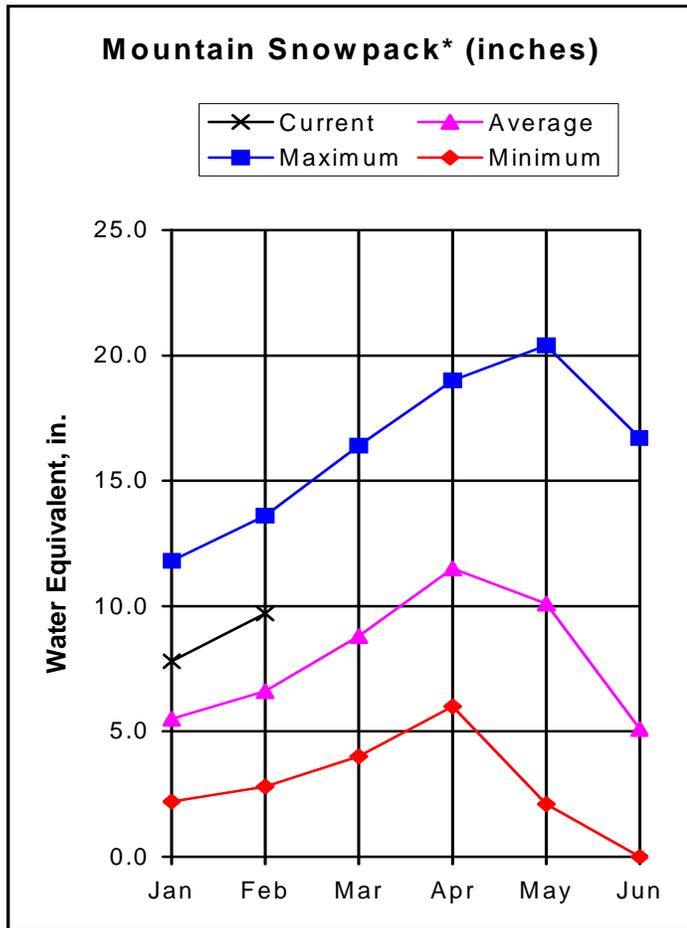
The average is computed for the 1971-2000 base period.

(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, 2008



\*Based on selected stations

The 2008 water year started out with a dry October in the Arkansas River Basin, and remained very dry into November based on data from six Snotel sites. A very wet December, however, has left year to date precipitation in the Arkansas at an impressive 121% of average as of January 1. After starting out with 88% of its average precipitation in October, then a dismal 38% of average precipitation in November, the snow started flying early in December. December saw an incredible 232% of its average precipitation. Snow water equivalent numbers have followed suit, as the Arkansas basin as a whole has 141% of its average snowpack as of January 1, the highest January 1 snowpack since 1997. Snow levels are slightly higher in the southern sub-basins, as the Cucharas and Huerfano basins are at 164% of average (based on two Snotel sites), and the Purgatoire basin is at 156% of average (also based on two Snotel sites), while the Upper Arkansas has 118% of its average snowpack based on data from three Snotel sites. Based on data from 13 reservoirs, reservoir storage in the Arkansas Basin is slightly below average at 92% of average. At this time, expected streamflow volume for April through September is above average throughout the Arkansas Basin. Streamflow volumes are forecasted to range from 109% of average on the inflows to both Pueblo Reservoir and Trinidad Lake to 143% of average on Grape Creek near Westcliffe.

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ARKANSAS RIVER BASIN  
Streamflow Forecasts - January 1, 2008

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
CHALK CK at Nathrop	APR-JUL	14.2	21	26	113	32	41	23
	APR-SEP	16.9	24	30	111	36	47	27
ARKANSAS RIVER at Salida (2)	APR-JUL	198	245	280	110	315	375	255
	APR-SEP	245	300	340	110	385	455	310
GRAPE CK nr Westcliffe	APR-JUL	6.8	15.3	23	143	32	49	16.1
	APR-SEP	13.0	21	28	143	36	49	19.6
PUEBLO RESERVOIR Inflow (2)	APR-JUL	255	350	420	109	500	625	385
	APR-SEP	340	450	530	109	620	765	485
HUERFANO RIVER nr Redwing	APR-JUL	8.4	11.5	13.8	112	16.4	21	12.3
	APR-SEP	11.0	14.6	17.3	112	20	25	15.5
CUCHARAS RIVER nr La Veta	APR-JUL	4.7	9.0	12.7	112	17.0	25	11.3
	APR-SEP	6.0	10.7	14.6	112	19.2	27	13.0
TRINIDAD LAKE Inflow (2)	MAR-JUL	14.0	27	38	112	51	74	34
	APR-SEP	21	36	48	109	62	87	44

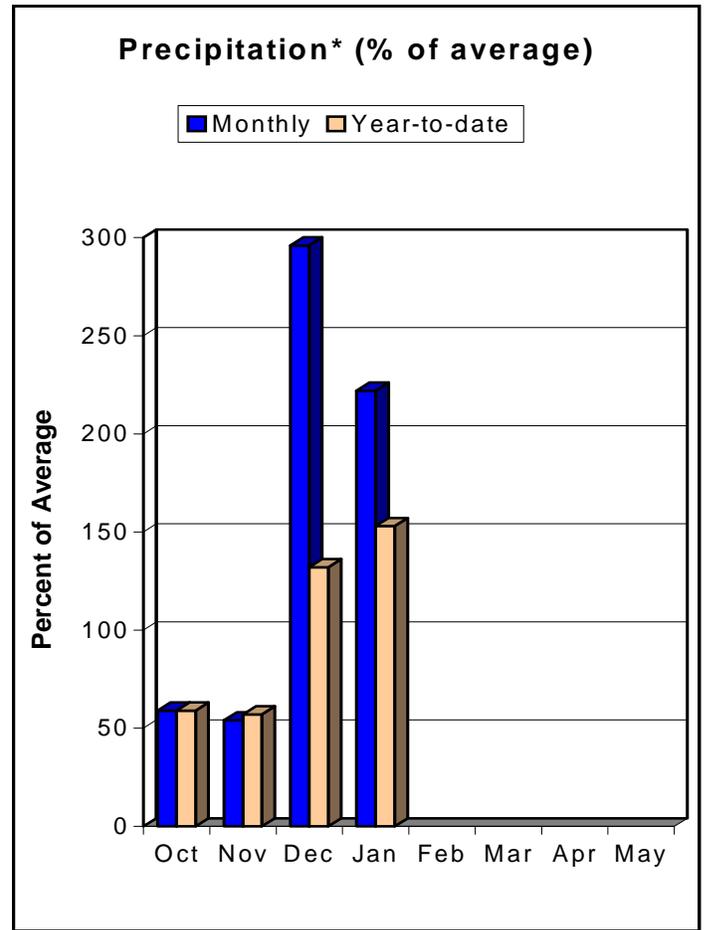
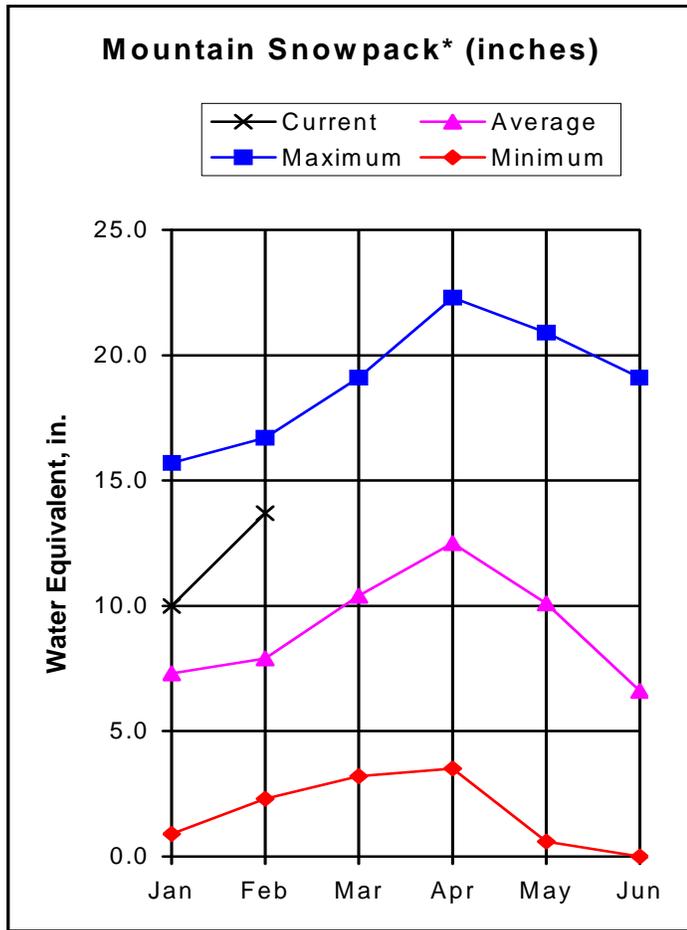
ARKANSAS RIVER BASIN Reservoir Storage (1000 AF) - End of December					ARKANSAS RIVER BASIN Watershed Snowpack Analysis - January 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ADOBE	62.0	31.0	15.8	23.4	UPPER ARKANSAS BASIN	3	98	118
CLEAR CREEK	11.4	2.3	7.7	5.9	CUCHARAS & HUERFANO RIVER	2	118	164
CUCHARAS RESERVOIR	40.0	0.0	0.0	4.8	PURGATOIRE RIVER BASIN	2	108	156
GREAT PLAINS	150.0	0.0	0.0	32.2	TOTAL ARKANSAS RIVER BASIN	6	112	141
HOLBROOK	7.0	0.9	2.1	3.0				
HORSE CREEK	27.0	0.0	0.0	8.4				
JOHN MARTIN	616.0	41.1	30.6	108.7				
LAKE HENRY	8.0	5.1	5.4	3.7				
MEREDITH	42.0	25.5	11.6	13.6				
PUEBLO	354.0	191.8	138.9	144.0				
TRINIDAD	167.0	21.6	20.3	24.2				
TURQUOISE	127.0	83.6	98.5	87.9				
TWIN LAKES	86.0	63.5	56.2	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.

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.

# UPPER RIO GRANDE RIVER BASIN as of January 1, 2008



\*Based on selected stations

Although being early in the water year, there was reason for concern in the Upper Rio Grande River Basin as precipitation levels were creeping below those not seen since 2002. According to data from 10 Snotel sites, the basin as a whole only received 59% of its average October precipitation, and when November received merely 54% of its November precipitation, all rain and snow producing processes seemed to be on vacation. Enter December, providing 296% of average precipitation and rescuing the basin from a potentially disastrous situation. Very heavy snows early in December brought precipitation in the Rio Grande from near record lows to near record highs and landed the year to date precipitation at 132% of average as of January 1. Snowpack in the basin has followed a similar pattern, tracking right below the meager snow levels of 2002 until December, when it jumped right up to the near record highs of 1997, and landed at 137% of average as of January 1. This January saw the highest snow levels since 1997, when the snowpack was at 138% of average on January 1. Based on reports from six reservoirs, reservoir storage in the Rio Grande River Basin is at 95% of average. Not surprisingly, all streams in the Rio Grande Basin are expected to produce above average April through September streamflows. Volume should range between 109% of average on Saguache Creek near Saguache to 133% of average on the South Fork of the Rio Grande at South Fork.

UPPER RIO GRANDE BASIN  
Streamflow Forecasts - January 1, 2008

Forecast Point	Forecast Period	<<==== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90%		50%		10%		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
Rio Grande at Thirty Mile Bridge (2)	APR-SEP	115	143	163	120	185	220	136
	APR-JUL	106	127	142	120	158	185	118
Rio Grande at Wagon Wheel Gap (2)	APR-SEP	300	375	430	125	490	585	345
South Fork Rio Grande at South Fork	APR-SEP	120	151	175	133	200	245	132
Rio Grande nr Del Norte (2)	APR-SEP	470	595	690	130	795	965	531
Saguache Creek nr Saguache (2)	APR-SEP	22	30	36	109	43	54	33
Alamosa Creek abv Terrace Reservoir	APR-SEP	59	75	88	126	102	125	70
La Jara Creek nr Capulin	MAR-JUL	6.1	8.6	10.7	123	13.1	17.2	8.7
Trinchera Creek abv Turners Ranch	APR-SEP	7.6	11.4	14.0	117	16.6	20	12.0
Sangre de Cristo Creek (2)	APR-SEP	3.0	7.8	11.0	125	14.2	19.0	8.8
Ute Ck nr Fort Garland	APR-SEP	8.9	12.6	15.6	128	19.1	25	12.2
Platoro Reservoir Inflow	APR-JUL	53	67	77	120	88	107	64
	APR-SEP	58	72	83	117	95	114	71
Conejos River nr Mogote (2)	APR-SEP	165	215	250	125	290	360	200
San Antonio River at Ortiz	APR-SEP	10.6	16.2	21	128	27	37	16.4
Los Pinos River nr Ortiz	APR-SEP	61	81	97	131	115	145	74
Culebra Creek at San Luis (2)	APR-SEP	13.8	20	26	113	32	44	23
Costilla Reservoir Inflow	MAR-JUL	7.6	10.4	12.6	119	15.2	19.5	10.6
Costilla Creek nr Costilla (2)	MAR-JUL	15.7	23	30	115	38	51	26

UPPER RIO GRANDE BASIN Reservoir Storage (1000 AF) - End of December					UPPER RIO GRANDE BASIN Watershed Snowpack Analysis - January 1, 2008			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CONTINENTAL	27.0	2.9	3.1	4.9	ALAMOSA CREEK BASIN	1	145	137
PLATORO	60.0	12.6	9.3	24.3	CONEJOS & RIO SAN ANTONIO	2	172	146
RIO GRANDE	51.0	24.0	19.2	15.1	CULEBRA & TRINCHERA CREEK	3	128	133
SANCHEZ	103.0	30.0	13.3	23.9	UPPER RIO GRANDE BASIN	4	143	132
SANTA MARIA	45.0	6.1	6.4	10.1	TOTAL UPPER RIO GRANDE BA	10	145	137
TERRACE	18.0	3.7	4.6	5.6				

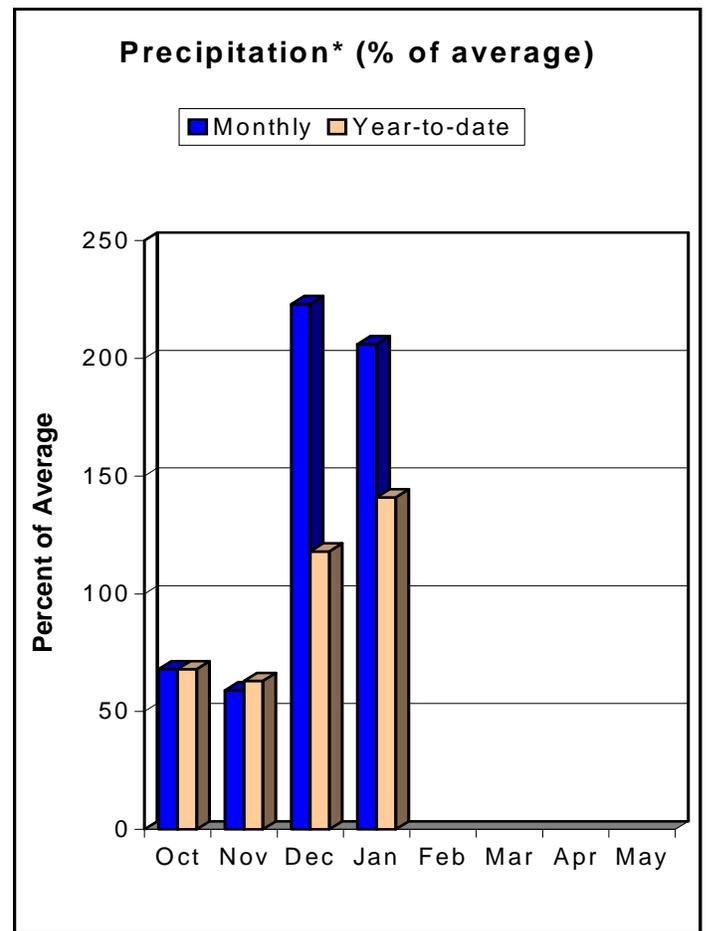
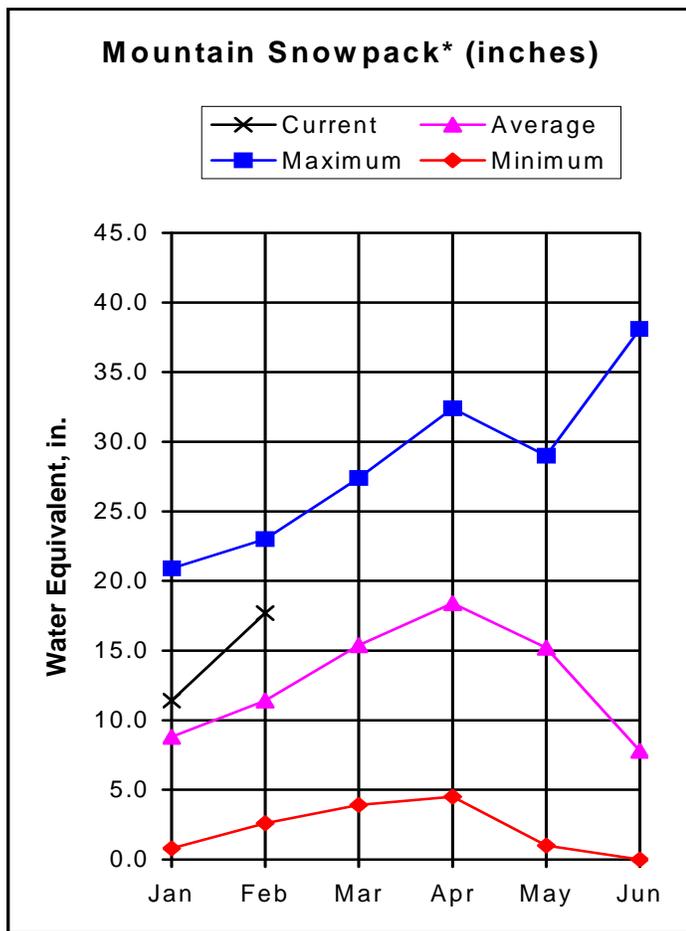
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(2) - The value is natural volume - actual volume may be affected by upstream water management.

# SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS as of January 1, 2008



\*Based on selected stations

Snowpacks in the San Miguel, Dolores, Animas and San Juan basins were almost non-existent through most of November. Then, during the last week of November and the first two weeks of December, snowpacks went from near-record lows to near-record highs. SNOTEL data indicates that from November 23 to December 12 the basin accumulated 430 percent of the average snow water equivalent for that time period. Even though snow accumulation since then has been below average, January 1 snowpacks are 129 percent of average. This is the highest January 1 snowpack percentage since 1997 and the second highest figure since 1988. Sub-basin snowpacks range from 115 percent of average in the San Miguel Watershed to 145 percent of average in the San Juan. Mountain precipitation was well below average during October and November at 68 percent of average and 59 percent of average, respectively. Oddly enough, the November precipitation percentage in the combined basins was the highest in the state. December precipitation was 223 percent of average and helped to bring the total precipitation for the water year up to 118 percent of average. Reservoir storage was 110 percent of average at the end of December. Near average runoff is forecast for the Dolores and San Miguel basins while the Animas and San Juan basins can expect above to well above streamflows. Volumes are forecast to range from 102 percent of average for the Lilylands Reservoir Inlet to 138 percent of average for the Rio Blanco at Blanco Diversion.

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS  
Streamflow Forecasts - January 1, 2008

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Dolores River at Dolores	APR-JUL	172	242	300	113	366	480	265
McPhee Reservoir Inflow	APR-JUL	197	286	360	113	445	594	320
San Miguel River nr Placerville	APR-JUL	94	123	145	110	170	212	132
Gurley Reservoir Inlet	APR-JUL	12.6	16.2	19.0	104	22	27	18.3
Cone Reservoir Inlet	APR-JUL	1.6	2.6	3.4	104	4.4	6.2	3.3
Lilylands Reservoir Inlet	APR-JUL	1.8	2.5	3.0	102	3.6	4.6	2.9
Rio Blanco at Blanco Diversion (2)	APR-JUL	53	64	73	138	82	97	53
Navajo River at Oso Diversion (2)	APR-JUL	61	78	90	130	104	126	69
San Juan River nr Carracas (2)	APR-JUL	317	435	530	131	638	821	405
Piedra River nr Arboles	APR-JUL	146	218	280	122	348	472	230
Vallecito Reservoir Inflow	APR-JUL	154	200	235	115	274	340	205
Navajo Reservoir Inflow (2)	APR-JUL	634	854	1030	131	1228	1564	785
Animas River at Durango	APR-JUL	319	420	500	114	590	740	440
Lemon Reservoir Inflow	APR-JUL	41	55	65	112	77	96	58
La Plata River at Hesperus	APR-JUL	17.2	24	29	116	35	45	25
Mancos River nr Mancos (2)	APR-JUL	12.0	29	40	121	51	68	33
	APRIL			6.0	136			4.4
	MAY			15.0	122			12.3
	JUNE			13.5	120			11.3
	JULY			5.5	110			5.0

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, 2008

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GROUNDHOG	22.0	14.8	16.2	12.0	ANIMAS RIVER BASIN	7	158	123
JACKSON GULCH	10.0	5.8	6.3	4.6	DOLORES RIVER BASIN	4	181	134
LEMON	40.0	22.5	33.1	20.1	SAN MIGUEL RIVER BASIN	3	136	115
MCPHEE	381.0	286.4	272.2	271.1	SAN JUAN RIVER BASIN	3	188	145
NARRAGUINNEP	19.0	12.4	17.8	12.7	TOTAL SAN MIGUEL, DOLORES	16	167	129
VALLECITO	126.0	74.1	76.3	58.6	AN JUAN RIVER BASINS			

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

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