

USDA United States
Department of
Agriculture

**Natural
Resources
Conservation
Service**

Colorado Basin Outlook Report MARCH 1, 2002



Basin Outlook Reports and Federal - State - Private Cooperative Snow Surveys

For more water supply and resource management information, contact:

Michael A. Gillespie
Data Collection Office Supervisor
USDA, Natural Resources Conservation Service
655 Parfet St., Rm E200C
Lakewood, CO 80215-5517
Phone (720) 544-2852

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.

The United States Department of Agriculture (USDA) prohibits discrimination in its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audio tape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice or TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th & Independence Avenue, SW, Washington, DC, 20250-9410, or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

COLORADO

WATER SUPPLY OUTLOOK REPORT

MARCH 1, 2002

Summary

Colorado experienced another dry month during February. Statewide snowpack readings decreased slightly on March 1, and are now at the lowest percentage of this year. Low snowpack readings are widespread across the state, with no basins reporting a near average snowpack. Given these conditions, at this late date in the season, below average water supplies are all but certain for the state's water users. Unlike many previous dry winters, reservoir storage continues to track at below average volumes. Without the benefit of surplus reservoir storage, Colorado's water users are now dependent upon spring and summer precipitation to help minimize impacts.

Snowpack

Snowfall across Colorado was below average during February. This marks the third consecutive month with below normal snowfall and has resulted in a continued decrease in the state's snowpack, as a percent of average. The latest readings indicate the statewide snowpack has decreased to 56% of average, down slightly from last month's 58% of average. This is the lowest statewide snowpack for March 1 since 1981, which reached only 40% of average. With only a month remaining in the accumulation season, it is estimated that snowfall during the month of March would need to be nearly three times the average to recover from the current snowpack deficit. The probability of this occurring is negligible given the historical records available. Again this month, the lowest percentages (less than 50% of average), occur in the San Juan, Animas, and Rio Grande basins of southwestern Colorado, and the South Platte headwaters and Saint Vrain basins in northern Colorado. The highest snowpack percentages were measured in two Colorado River tributaries, the Williams Fork and the Blue River, both at 73% of average. Elsewhere across the state, snowpack readings ranged from 50% to 70% of average. Colorado is now in its fifth consecutive year with a below average snowpack on March 1, and this year's snowpack consistently lags behind that of last year across the state. Colorado's statewide snowpack is only 65% of last year's. The most striking contrast between this year and last year is seen across the southwest, where this year's snowpack dips to only 28% of last year in the San Juan Basin. An extended snowpack accumulation season, brought on by cold and very wet spring conditions, can still improve the current outlook. While many Coloradoans can remember years when this has occurred, the question remains whether or not we get lucky this year.

Precipitation

Mountain precipitation across Colorado was below average statewide during February. During the past 12 months, Colorado precipitation measured at SNOTEL sites has exceeded the average in only two months. Those months were April and August 2001. During that same year, statewide precipitation was less than 65% of average during six of those months. February's statewide precipitation was only 56% of average. As expected, totals for the 2002 water year (since October 1, 2001) are well below average, statewide. Basinwide water year percentages range from only 49% of average in the San Juan, Animas, Dolores, and San Miguel basins, to a high of only 70% of average in the Yampa and White basins. As of March 1, the statewide water year totals are only 63% of average.

Reservoir Storage

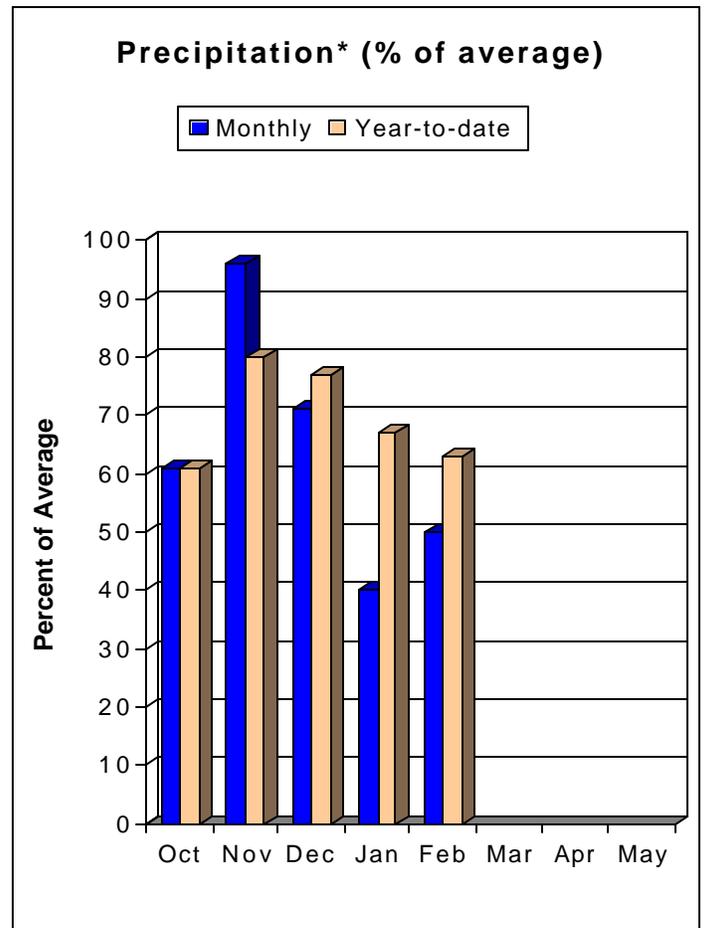
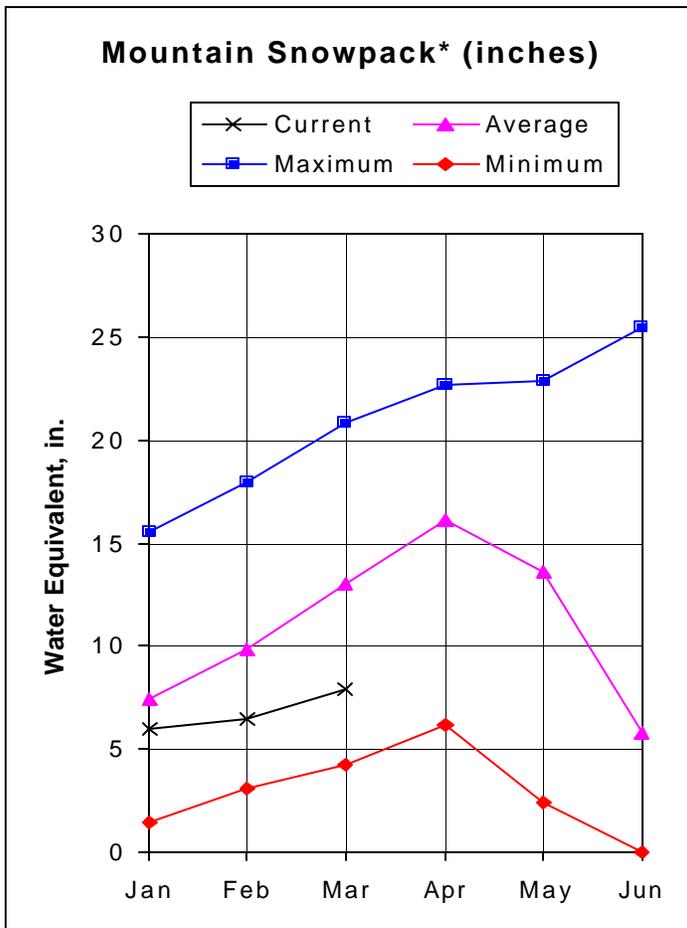
While reservoir storage volumes improved slightly from last month, they remain below average across most of the state. Only the Gunnison and Yampa basins can boast of a reservoir storage that slightly exceeds the average mark for this date. Statewide, reservoir storage is only 88% of average and is only 90% of last year's March 1 volumes. Not since 1982 has the March storage dipped to below average volumes. In the Arkansas Basin, which is currently reporting a storage volume of 78 % of average, this is the first winter since 1992 that storage has dropped below average. Since that year, volumes have been tracking at nearly 200% of average. On the brighter side, statewide volumes have been steadily improving since November 2001 when a deficit of 615,000 acre-feet was reported. As of this month, this deficit has been reduced to 410,000 acre-feet.

Streamflow

Given the climatic conditions of the past six months, it's not surprising that Colorado's outlook for spring and summer water supplies is pretty dismal. The entire state can expect below average runoff this season, with a number of locations where streamflow volumes will be less than 50% of average. Those areas of most concern include the San Juan, Animas, Dolores, and Rio Grande basins of southwestern Colorado. Across northern Colorado, the South Platte headwaters and the North Platte Basin can also expect less than 50% of average runoff this year. Most of the tributary streams of the Colorado River are forecast to produce the highest volumes as a percent of average. Those basins, which are all forecast at about 70% to 80% of average, include the Fryingpan, Eagle, Blue, Williams Fork and the inflow into Lake Granby. Across the remainder of the state, runoff volumes are projected to range from only 50% to 70% of average. Water users need to carefully consider their supply situation and plan accordingly for one of Colorado's dryer water years on record.

GUNNISON RIVER BASIN

as of March 1, 2002



*Based on selected stations

The snowpack measurements in the Gunnison Basin remain well below average on March 1, and are indicating severe runoff shortages in the upcoming months unless there is a significant change to the dry weather pattern that has plagued most of Colorado this snow season. Overall, the snowpack is only 58% of average, which is only 70% of the amount of snow there was last year at this time. The accumulation is relatively uniform throughout the basin, ranging from 53% of average in the Surface Creek Watershed, to 62% of average in the Uncompaghre Watershed. The monthly precipitation was only 50% of average during February, and the water year total has now been reduced to only 63% of average. One encouraging note is that the combined storage for 8 major reservoirs in the basin is about 10% above average for this time of year, but this will likely decrease rapidly during the runoff season without significant improvements in snowpack and precipitation. There is 4% more storage than last year on March 1. Streamflow forecasts remain well below average on March 1. They are highly variable, ranging from only 37% of average at the Inflow to Paonia Reservoir, to 81% of average on the Slate River near Gunnison.

GUNNISON RIVER BASIN
Streamflow Forecasts - March 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)		
		90% (1000AF)		70% (1000AF)		50% (Most Probable) (1000AF) (% AVG.)			30% (1000AF) 10% (1000AF)	
		Chance Of Exceeding *								
Taylor River blw Taylor Park Resv	APR-JUL	35	49	63	61	77	90	103		
Slate River nr Crested Butte	APR-JUL	51	64	72	81	81	93	89		
East River at Almont	APR-JUL	65	98	120	63	142	175	192		
Gunnison River nr Gunnison	APR-JUL	102	172	220	56	268	338	390		
Tomichi Creek at Sargents	APR-JUL	0.6	9.6	15.8	49	22	31	32		
Cochetopa Creek blw Rock Creek	APR-JUL	0.8	5.8	9.1	53	12.4	17.4	17.3		
Tomichi Creek at Gunnison	APR-JUL	15.4	24	35	43	49	75	81		
Lake Fork at Gateview	APR-JUL	45	61	82	65	103	120	126		
Blue Mesa Reservoir Inflow	APR-JUL	180	299	410	57	521	648	720		
Paonia Reservoir Inflow	MAR-JUN	16.0	29	39	37	51	71	105		
	APR-JUL	12.0	25	38	36	53	80	106		
N.F. Gunnison River nr Somerset	APR-JUL	88	127	157	52	190	245	305		
Surface Creek nr Cedaredge	APR-JUL	3.9	7.6	9.0	53	10.6	16.9	17.1		
Ridgway Reservoir Inflow	APR-JUL	43	54	63	62	74	92	102		
Uncompahgre River at Colona	APR-JUL	31	62	77	55	94	122	139		
Gunnison River nr Grand Junction	APR-JUL	281	510	735	47	960	1310	1560		

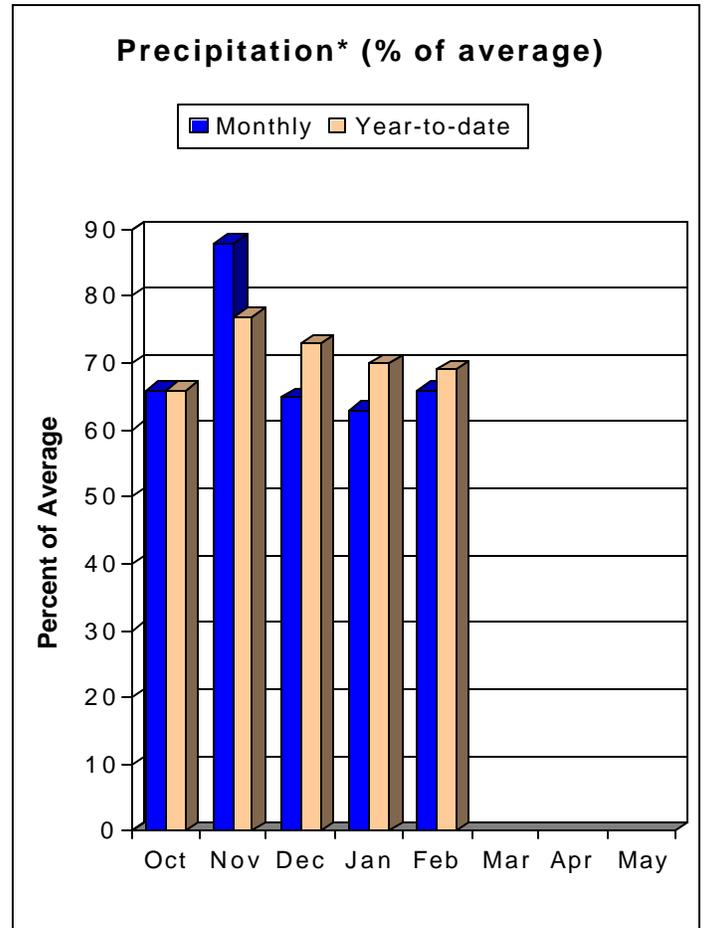
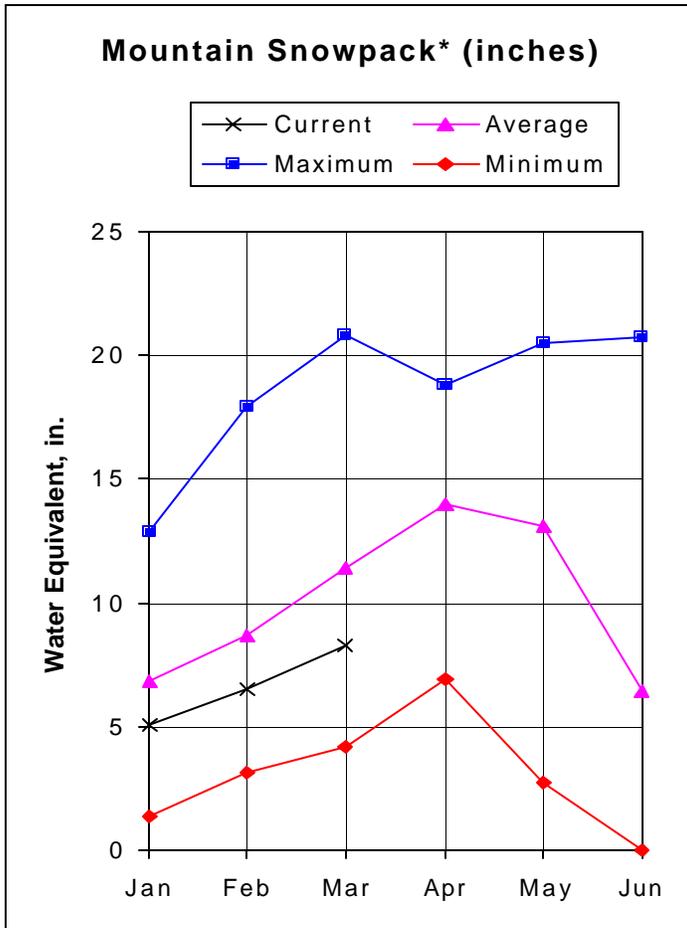
GUNNISON RIVER BASIN Reservoir Storage (1000 AF) - End of February					GUNNISON RIVER BASIN Watershed Snowpack Analysis - March 1, 2002			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BLUE MESA	830.0	522.4	489.0	446.5	UPPER GUNNISON BASIN	11	70	57
CRAWFORD	14.3	3.7	4.3	9.2	SURFACE CREEK BASIN	2	81	53
FRUITGROWERS	4.3	1.9	2.7	3.7	UNCOMPAGRE BASIN	4	74	62
FRUITLAND	9.2	1.3	0.0	2.1	TOTAL GUNNISON RIVER BASIN	15	71	58
MORROW POINT	121.0	111.4	106.8	113.4				
PAONIA	18.0	3.0	3.5	4.9				
RIDGWAY	83.2	67.3	72.0	60.5				
TAYLOR PARK	106.0	63.3	62.8	65.5				

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

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

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

UPPER COLORADO RIVER BASIN as of March 1, 2002



*Based on selected stations

While the snowpack measurements in the Upper Colorado Basin continue to be the highest percent of average in the state, they are only 68% of average. There is only 82% of the amount of snow there was last year at this time. All of the watersheds in the Colorado Basin are significantly below average and range from only 53% of average in the Plateau Creek Watershed, to 75% of average in the Williams Fork Watershed. Precipitation during February was only 66% of average which is the lowest since October. The water year total is now only 69% of average. The combined reservoir storage is about 85% of average on March 1, and there is only 85% of the storage there was last year at this time. As a result of the extremely dry weather pattern that has plagued the entire State for most of the snow season, streamflow forecasts remain well below average and are not likely to improve if significant snow accumulation and precipitation does not occur during the next month.. The forecasts range from 60% of average at Muddy Creek below Wolford Mtn. Reservoir, to 84% of average flow at the Inflow to Green Mountain Reservoir.

UPPER COLORADO RIVER BASIN
Streamflow Forecasts - March 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Lake Granby Inflow	APR-JUL	121	146	165	73	187	225	225
Willow Creek Reservoir Inflow	APR-JUL	19.6	27	33	65	39	50	51
Williams Fork Reservoir inflow	APR-JUL	50	60	68	72	76	89	95
Dillon Reservoir Inflow	APR-JUL	81	113	135	81	157	189	167
Green Mountain Reservoir inflow	APR-JUL	185	214	235	84	257	291	280
Muddy Creek blw Wolford Mtn. Resv.	APR-JUL	19.7	28	36	60	46	66	60
Eagle River blw Gypsum	APR-JUL	180	226	265	79	310	391	335
Colorado River nr Dotsero	APR-JUL	483	791	1000	69	1209	1517	1440
Ruedi Reservoir Inflow	APR-JUL	69	86	100	71	117	146	141
Roaring Fork at Glenwood Springs	APR-JUL	293	382	450	63	523	640	710
Colorado River nr Cameo	APR-JUL	768	1263	1600	66	1937	2432	2420

UPPER COLORADO RIVER BASIN
Reservoir Storage (1000 AF) - End of February

UPPER COLORADO RIVER BASIN
Watershed Snowpack Analysis - March 1, 2002

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	201.0	218.4	216.8	BLUE RIVER BASIN	8	87	73
LAKE GRANBY	465.6	192.2	285.1	281.1	UPPER COLORADO RIVER BASIN	31	81	71
GREEN MOUNTAIN	139.0	66.8	44.4	70.0	MUDDY CREEK BASIN	4	81	65
HOMESTAKE	43.0	28.4	42.1	26.6	PLATEAU CREEK BASIN	2	81	53
RUEDI	102.0	63.7	69.4	68.0	ROARING FORK BASIN	7	85	66
VEGA	32.0	9.6	9.6	12.2	WILLIAMS FORK BASIN	4	83	75
WILLIAMS FORK	96.8	55.2	57.5	57.3	WILLOW CREEK BASIN	4	75	65
WILLOW CREEK	9.0	8.3	7.2	6.7	TOTAL COLORADO RIVER BASIN	40	82	68

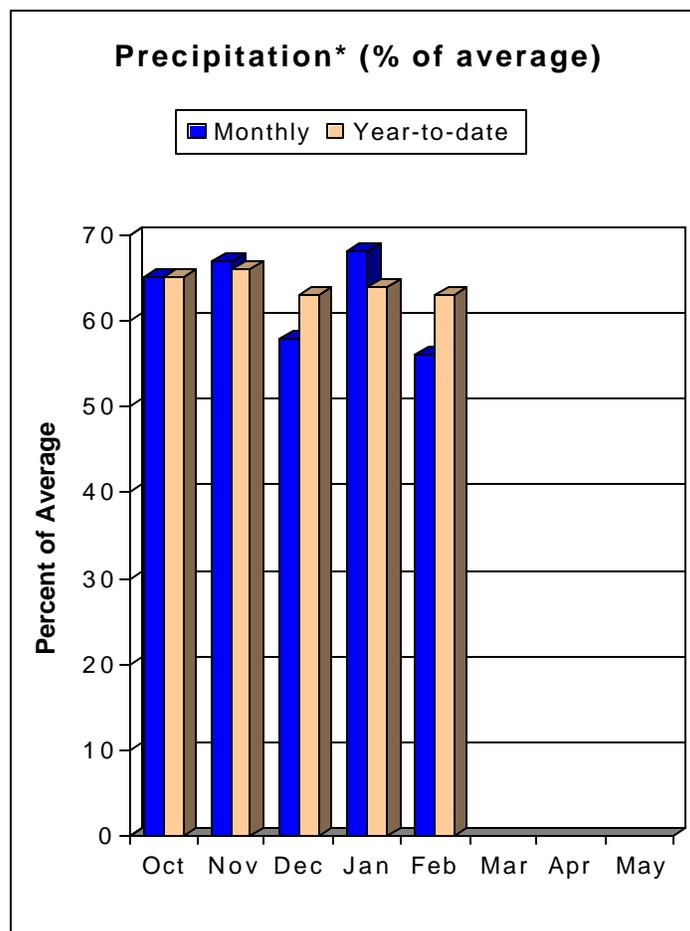
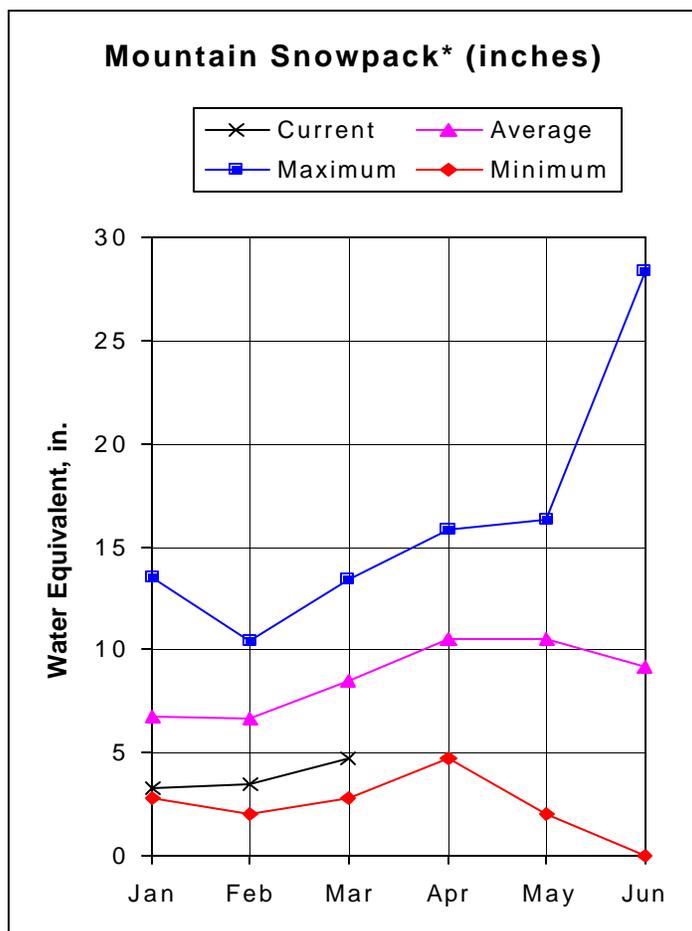
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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

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

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

SOUTH PLATTE RIVER BASIN as of March 1, 2002



*Based on selected stations

The South Platte Basin received enough snow accumulation during February to boost the measurements from only 49% of average last month, to 52% of average on March 1, which is only 74% of what there was last year at this time. Most of the watersheds in the basin received enough snow to improve their measurements slightly over last month. Measurements range from only 43% of average in the Upper South Platte Watershed, to 62% of average in the Cache La Poudre Watershed. The precipitation during February was only 73% of average, and the water year total is now only 66% of average. The combined reservoir storage is about 84% of average on March 1, which is about equal to last year at this time. Storage measurements will likely decrease rapidly during the runoff season if snowpack and precipitation conditions don't improve significantly during the next month. All of the streamflow forecasts for the runoff season remain well below average at this time. They are highly variable ranging from only 25% of average at the Inflow to Antero Reservoir, to 69% of average on Cache La Poudre at Canyon Mouth.

SOUTH PLATTE RIVER BASIN
Streamflow Forecasts - March 1, 2002

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Antero Reservoir inflow	APR-JUL	1.8	2.6	3.3	25	4.2	6.1	13.0
Spinney Mountain Reservoir inflow	APR-JUL	11.5	15.5	19.0	48	23	31	40
Elevenmile Canyon Reservoir inflow	APR-JUL	4.9	13.3	19.0	46	25	33	41
Cheesman Lake inflow	APR-JUL	27	34	39	44	45	57	89
South Platte River at South Platte	APR-SEP	35	82	115	50	148	195	230
Bear Creek at Morrison	APR-SEP	5.9	12.7	17.4	56	22	29	31
Clear Creek at Golden	APR-SEP	46	71	88	66	105	130	134
St. Vrain Creek at Lyons	APR-SEP	34	48	58	69	68	83	84
Boulder Creek nr Orodell	APR-SEP	19.3	28	34	64	40	49	53
South Boulder Creek nr Eldorado Spri	APR-SEP	9.8	22	31	67	40	52	46
Big Thompson River at mouth nr Drake	APR-SEP	49	66	77	66	88	105	117
Cache La Poudre at Canyon Mouth	APR-SEP	54	135	190	69	245	326	275

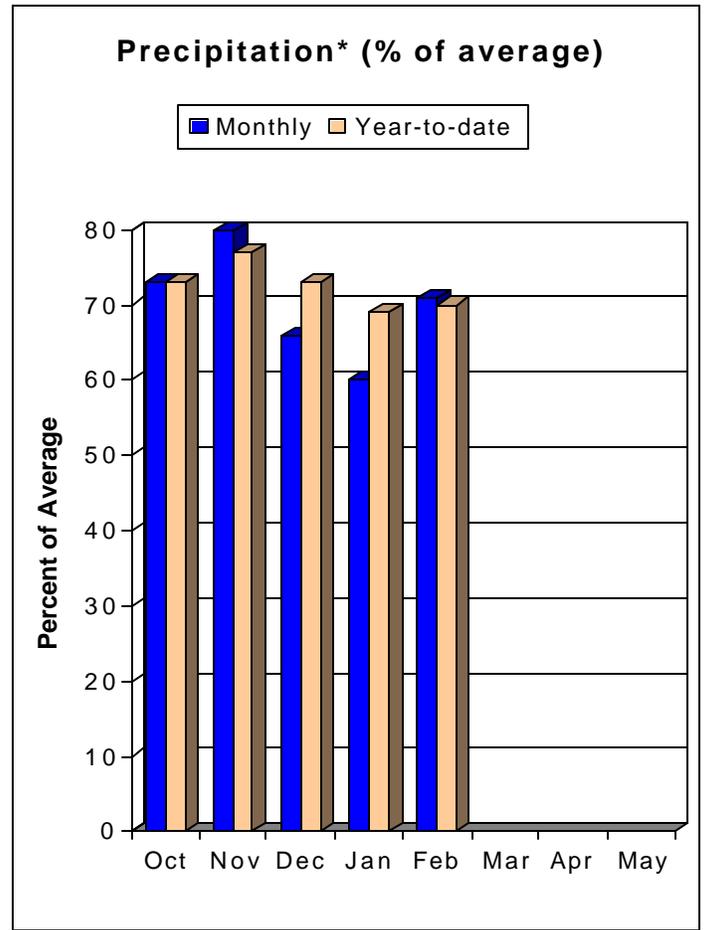
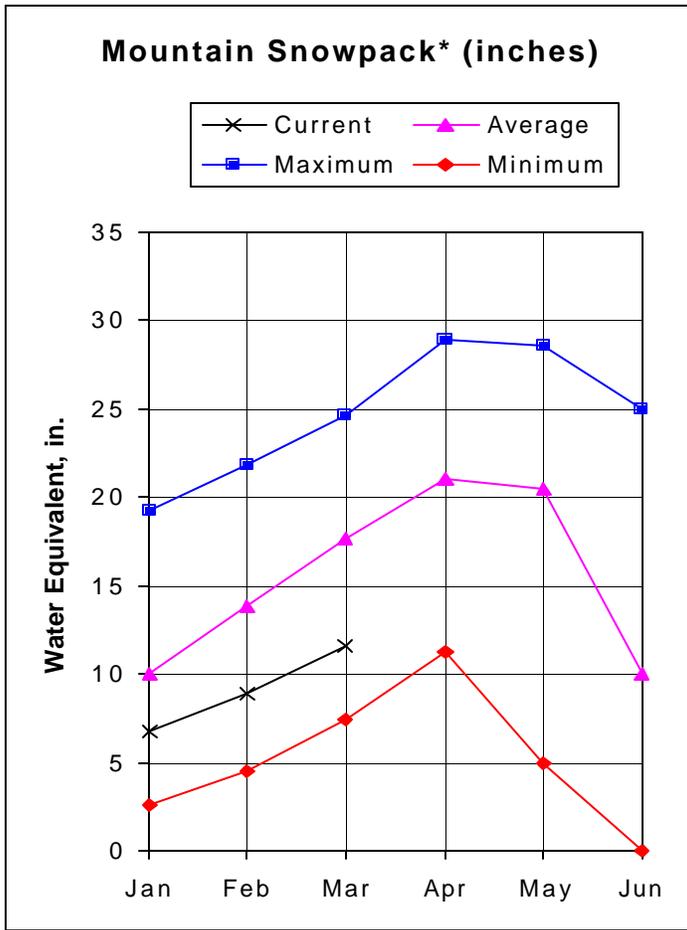
SOUTH PLATTE RIVER BASIN Reservoir Storage (1000 AF) - End of February					SOUTH PLATTE RIVER BASIN Watershed Snowpack Analysis - March 1, 2002			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ANTERO	20.0	20.0	20.0	16.3	BIG THOMPSON BASIN	6	83	57
BARR LAKE	32.0	25.0	26.7	26.0	BOULDER CREEK BASIN	5	74	50
BLACK HOLLOW	8.0	2.8	2.5	3.9	CACHE LA POUFRE BASIN	7	83	62
BOYD LAKE	49.0	20.4	22.3	32.4	CLEAR CREEK BASIN	4	73	61
CACHE LA POUFRE	10.0	3.6	6.8	7.8	SAINT VRAIN BASIN	3	86	46
CARTER	108.9	93.5	101.6	93.4	UPPER SOUTH PLATTE BASIN	16	61	43
CHAMBERS LAKE	9.0	3.8	3.1	3.1	TOTAL SOUTH PLATTE BASIN	39	74	52
CHEESMAN	79.0	58.0	48.1	59.0				
COBB LAKE	34.0	6.8	8.9	13.9				
ELEVEN MILE	97.8	99.4	99.5	95.8				
EMPIRE	38.0	30.1	24.9	25.6				
FOSSIL CREEK	12.0	8.6	9.1	7.4				
GROSS	41.8	22.9	20.1	25.3				
HALLIGAN	6.4	4.7	6.0	4.8				
HORSECREEK	16.0	12.5	13.2	12.5				
HORSETOOTH	149.7	19.3	25.9	109.2				
JACKSON	35.0	20.5	22.2	27.3				
JULESBURG	28.0	14.6	14.5	18.9				
LAKE LOVELAND	14.0	10.2	9.2	8.8				
LONE TREE	9.0	8.4	8.8	6.7				
MARIANO	6.0	2.3	4.1	4.3				
MARSHALL	10.0	4.8	6.0	5.4				
MARSTON	13.0	22.6	4.0	12.9				
MILTON	24.0	19.3	18.6	17.1				
POINT OF ROCKS	70.0	52.8	55.5	65.4				
PREWITT	33.0	20.2	22.5	21.0				
RIVERSIDE	63.1	47.1	50.4	48.9				
SPINNEY MOUNTAIN	48.7	22.1	18.4	32.2				
STANDLEY	42.0	32.1	32.1	33.6				
TERRY LAKE	8.0	5.1	5.3	5.3				
UNION	13.0	9.5	10.3	11.0				
WINDSOR	19.0	5.5	9.5	11.5				

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

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

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

YAMPA, WHITE, NORTH PLATTE AND LARAMIE RIVER BASINS as of March 1, 2002



*Based on selected stations

For the second month in a row, these basins have received more snow accumulation than any of the other basins in Colorado. But despite the promising snowfall, snowpack measurements remain significantly below average on March 1. The North Platte Basin is only at 62% of average, while the Yampa and White basins combined are only at 64% of average. Both basins have only 79% of the amount of snow accumulation there was last year at this time. Snow accumulation ranges from 54% of average in the Laramie Watershed, to 66% of average in the Elk River Watershed. Precipitation in these basins during February was the best monthly accumulation since November, at 71% of average. The water year total is only 70% of average. The combined storage in the two major reservoirs in these basins remain at 104% of average volume for this time of year, which about the same amount of storage volume there was last year at this time. Stream forecasts are similar to last month, ranging from only 49% of average on the North Platte River near Northgate, to 71% of average at Elkhead Creek near Maynard Gulch.

=====

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS
Streamflow Forecasts - March 1, 2002

=====

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		90% (1000AF)		70% (1000AF)		Chance Of Exceeding * (1000AF) (% AVG.)		
		30% (1000AF)	10% (1000AF)	30%	10%			
North Platte River nr Northgate	APR-SEP	16.0	85	132	49	179	248	270
Laramie River nr Woods	APR-SEP	16.0	55	82	61	109	148	135
Yampa R abv Stagecoach Res	APR-JUL	9.4	15.7	20	69	24	31	29
Yampa River at Steamboat Springs	APR-JUL	101	151	185	66	219	269	280
Elk River nr Milner	APR-JUL	131	179	215	66	255	319	325
Elkhead Creek nr Elkhead	APR-JUL	12.6	19.0	25	64	33	50	39
ELKHEAD CREEK blw Maynard Gulch	APR-JUL	13.3	30	42	71	54	71	59
Fortification Ck nr Fortification	MAR-JUN	0.60	3.34	5.20	69	7.06	9.80	7.50
Yampa River nr Maybell	APR-JUL	320	511	640	65	769	960	990
Little Snake River nr Slater	APR-JUL	53	75	93	59	112	144	159
LITTLE SNAKE R nr Dixon	APR-JUL	73	140	185	56	230	297	330
LITTLE SNAKE R nr Lily	APR-JUL	84	153	200	55	247	316	365
White River nr Meeker	APR-JUL	126	158	185	64	216	272	290

=====

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

=====

=====

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS
Watershed Snowpack Analysis - March 1, 2002

=====

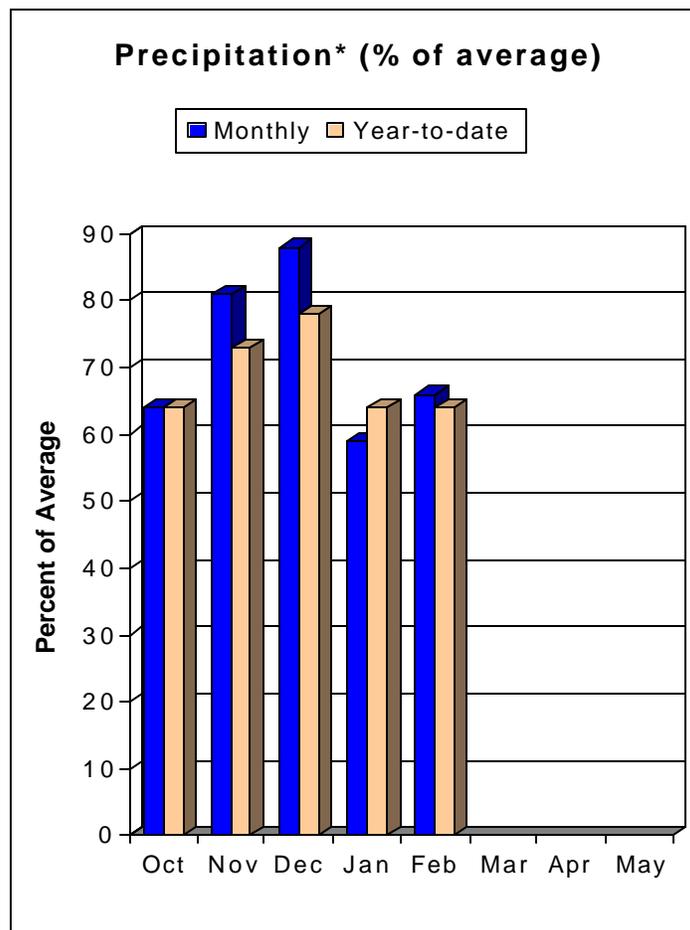
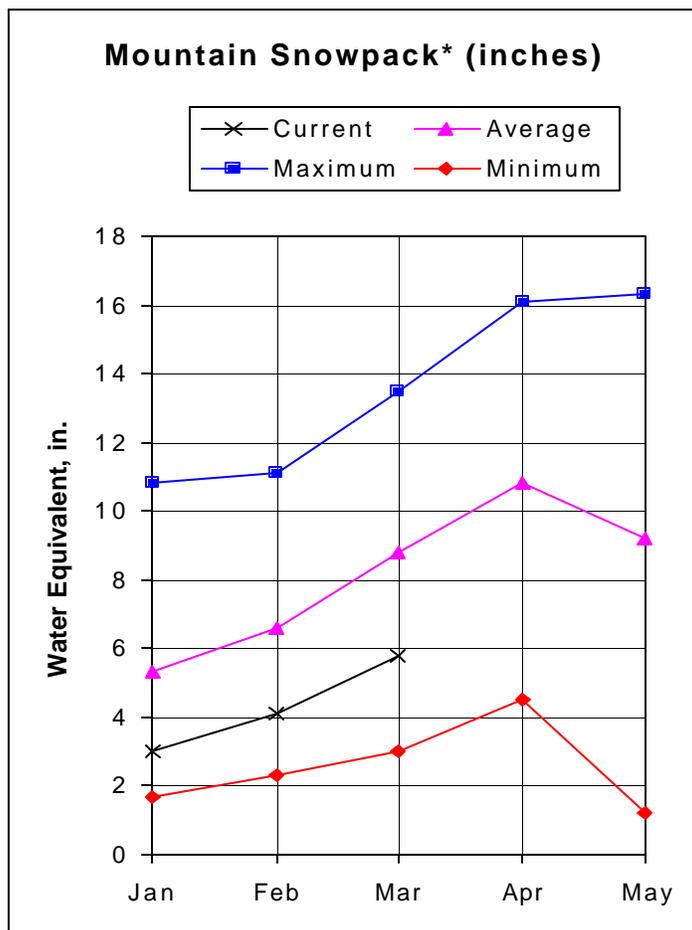
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
STAGECOACH	33.3	27.0	28.2	24.0	LARAMIE RIVER BASIN	3	85	54
YAMCOLO	9.1	4.6	3.0	6.5	NORTH PLATTE RIVER BASIN	5	78	65
					TOTAL NORTH PLATTE BASIN	7	79	62
					ELK RIVER BASIN	2	81	66
					YAMPA RIVER BASIN	11	78	64
					WHITE RIVER BASIN	4	66	53
					TOTAL YAMPA AND WHITE RIV	14	79	64
					LITTLE SNAKE RIVER BASIN	8	86	69

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

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

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

ARKANSAS RIVER BASIN as of March 1, 2002



*Based on selected stations

Although the Arkansas Basin has received enough additional snow accumulation to gradually improve the snowpack measurements over the past two months, the amount of snow in the basin remains well below average on March 1, at only 62%. This is 21% less snow than there was last year at this time. Snowpack percentages are relatively uniform throughout the basin, ranging from only 59% of average in the Cucharas and Huerfano watersheds, to 68% of average in the Purgatoire River Watershed. The precipitation during February was only 66% of average, and the water year total is now only 64% of average. The combined reservoir storage remains at 78% of average, which is the same as last month, but can be expected to fall if snowpack and precipitation conditions do not improve over the next month. There is 34% less water stored than there was last year at this time. All of the streamflow forecasts remain well below average at this time. They range from only 51% of average on the Cucharas River near La Veta, to 70% of average on the Arkansas River at Salida.

=====

ARKANSAS RIVER BASIN
Streamflow Forecasts - March 1, 2002

=====

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Chalk Creek nr Nathrop	APR-SEP	5.7	10.9	14.5	54	21	31	27
Arkansas River at Salida	APR-SEP	113	176	218	70	260	323	310
Grape Creek nr Westcliffe	APR-SEP	2.0	6.2	10.8	55	19.1	31	19.6
Pueblo Reservoir Inflow	APR-SEP	116	203	262	61	321	408	430
Huerfano River nr Redwing	APR-SEP	3.5	7.1	9.5	61	13.5	19.4	15.5
Cucharas River nr La Veta	APR-SEP	0.5	4.1	6.6	51	11.3	18.3	13.0
Trinidad Lake Inflow	APR-SEP	4.5	19.7	30	68	45	68	44

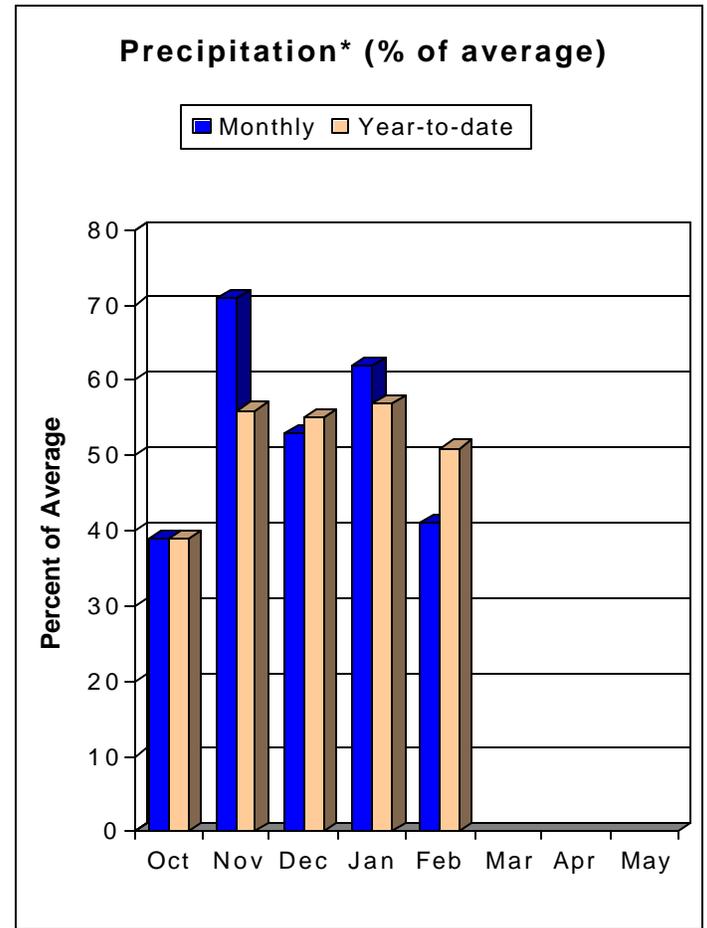
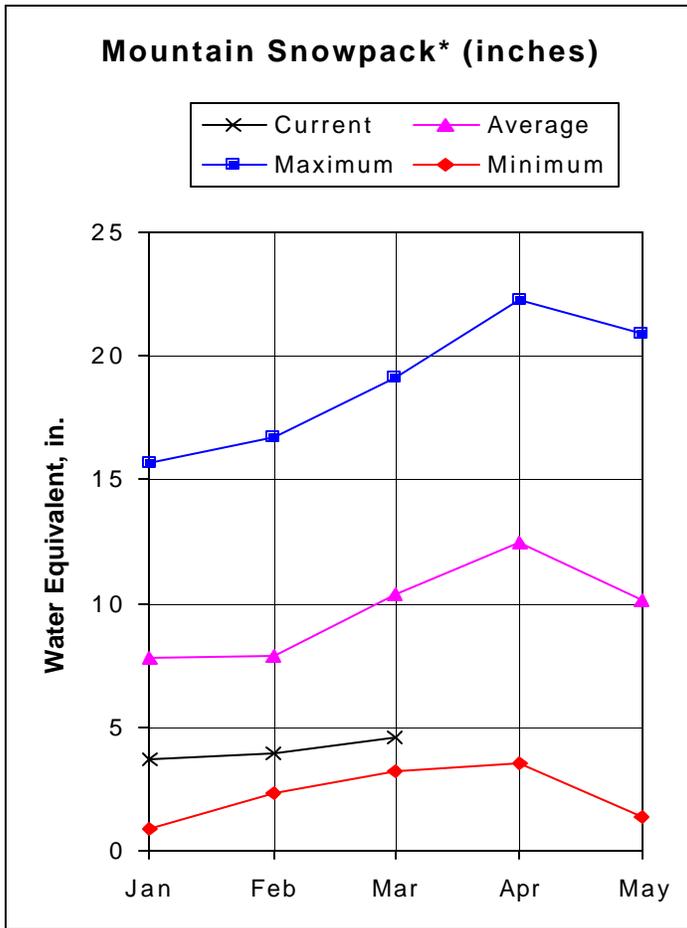
ARKANSAS RIVER BASIN Reservoir Storage (1000 AF) - End of February					ARKANSAS RIVER BASIN Watershed Snowpack Analysis - March 1, 2002			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ADOBE	70.0	27.1	58.1	36.0	UPPER ARKANSAS BASIN	3	80	67
CLEAR CREEK	11.0	6.3	5.6	6.8	CUCHARAS & HUERFANO RIVER	4	84	59
GREAT PLAINS	150.0	23.8	66.8	38.9	PURGATOIRE RIVER BASIN	2	88	68
HOLBROOK	7.0	5.8	5.5	4.8	TOTAL ARKANSAS RIVER BASIN	8	79	62
HORSE CREEK	28.0	0.0	0.0	12.7				
JOHN MARTIN	335.7	86.5	161.2	132.2				
LAKE HENRY	8.0	6.7	6.2	5.6				
MEREDITH	42.0	26.1	26.1	18.1				
PUEBLO	236.7	139.3	217.4	168.7				
TRINIDAD	72.3	17.6	32.4	26.2				
TURQUOISE	126.6	62.8	55.0	77.3				
TWIN LAKES	86.0	43.5	40.7	44.0				

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

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

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

UPPER RIO GRANDE BASIN as of March 1, 2002



*Based on selected stations

Snowpack measurements in the Rio Grande Basin are down from 48% of average last month, to only 43% of average on March 1, which is the lowest percent of average in the state. The amount of snow is only 42% of the amount there was last year. All of the watersheds in the basin have snowpacks that measure much below average, ranging from only 35% of average in the Upper Rio Grande Watershed, to 65% of average in the Culebra and Trinchera Creek watersheds. Much like January, the precipitation during February was nearly negligible, as only 41% of the average monthly amount fell during the month. The water year total precipitation is now only 51% of average. Reservoirs in the basin have a storage level of only 75% of average on March 1, which is likely to decrease rapidly during the runoff season if the amount of snowpack and precipitation does not increase significantly in the next month. Streamflow forecasts for the runoff season are below 50% of average at most of the forecast points. They range from only 37% of average at La Jara Creek Near Capulin, to 57% of average on Culebra Creek at San Luis.

=====

UPPER RIO GRANDE BASIN
Streamflow Forecasts - March 1, 2002

=====

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Rio Grande at Thirty Mile Bridge	APR-SEP	42	52	60	44	70	87	136
Rio Grande Reservoir Inflow	APR-JUL	38	47	54	46	62	77	118
Rio Grande at Wagon Wheel Gap	APR-SEP	25	103	155	45	207	285	345
South Fork Rio Grande at South Fork	APR-SEP	6.0	32	50	38	68	94	132
Rio Grande nr Del Norte	APR-SEP	121	174	210	40	300	433	531
Saguache Creek nr Saguache	APR-SEP	7.5	12.2	15.4	47	22	32	33
Alamosa Creek abv Terrace Reservoir	APR-SEP	4.6	19.7	30	43	40	55	70
La Jara Creek nr Capulin	MAR-JUL	1.17	2.38	3.20	37	5.42	8.68	8.70
Trinchera Water Supply	APR-SEP	6.8	14.7	20	50	31	46	40
Platoro Reservoir Inflow	APR-JUL	10.3	21	28	44	35	46	64
	APR-SEP	12.5	24	32	45	40	52	71
Conejos River nr Mogote	APR-SEP	8.0	51	80	40	109	152	200
San Antonio River at Ortiz	APR-SEP	1.6	4.1	6.5	40	9.4	14.6	16.4
Los Pinos River nr Ortiz	APR-SEP	0.6	19.3	32	43	45	63	74
Culebra Creek at San Luis	APR-SEP	3.1	9.0	13.0	57	20	30	23
Costilla Reservoir inflow	MAR-JUL	1.3	4.0	5.8	55	7.6	10.3	10.6
Costilla Creek nr Costilla	MAR-JUL	2.1	8.6	13.0	50	17.4	24	26

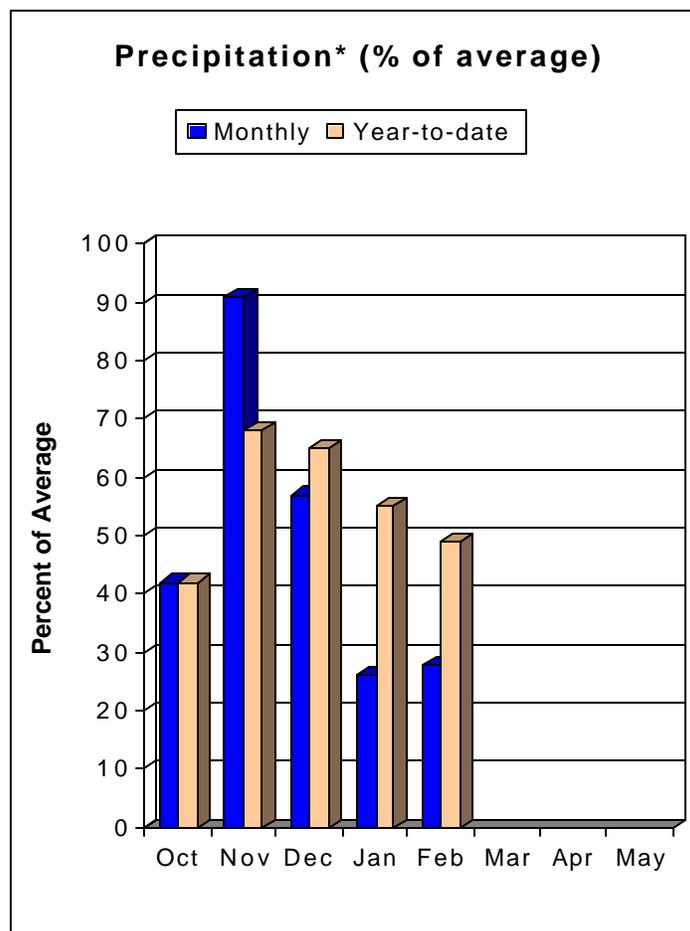
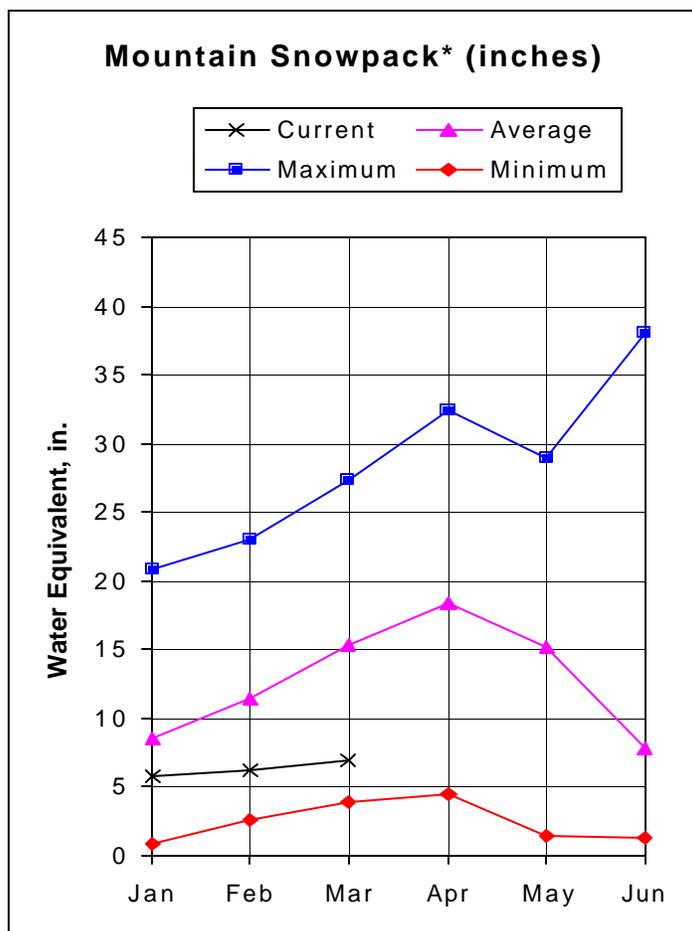
UPPER RIO GRANDE BASIN Reservoir Storage (1000 AF) - End of February					UPPER RIO GRANDE BASIN Watershed Snowpack Analysis - March 1, 2002			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CONTINENTAL	15.0	3.3	5.4	5.3	ALAMOSA CREEK BASIN	2	51	45
PLATORO	53.7	16.8	14.0	24.3	CONEJOS & RIO SAN ANTONIO	5	47	43
RIO GRANDE	51.0	11.8	13.8	17.6	CULEBRA & TRINCHERA CREEK	4	63	65
SANCHEZ	103.0	23.6	26.0	24.1	UPPER RIO GRANDE BASIN	11	31	35
SANTA MARIA	45.0	7.5	10.0	10.6	TOTAL UPPER RIO GRANDE BA	23	41	43
TERRACE	13.1	3.5	5.4	6.7				

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

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

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

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS as of March 1, 2002



*Based on selected stations

February was another dismal month for snow accumulation in these basins. March 1 snowpack measurements are at only 45% of average, which is 6% of average less than last month. There is only 46% of the amount of snow there was last year at this time. The snowpack is highly variable from basin to basin, ranging from only 30% of average in the San Juan River Basin, to 53% of average in the San Miguel Basin. Precipitation during February was nearly negligible, at only 28% of the average for the month. The water year total is now only 49% of average. Reservoirs in the basins have a combined storage level of 79% of average, which is likely to decrease rapidly unless there is a significant change in the dry weather pattern that has plagued the entire state this snow season. All of the streamflow forecasts for the runoff season remain well below average and are not likely to improve without a significant increase in snowpack and precipitation during the next month. The forecasts range from only 38% of average at the Inflow to Vallecito Reservoir, to 61% of average on the San Miguel River near Placerville.

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS
Streamflow Forecasts - March 1, 2002

Forecast Point	Forecast Period	Future Conditions					Wetter		30-Yr Avg. (1000AF)
		Chance Of Exceeding *					30%	10%	
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)		
Dolores River at Dolores	APR-JUL	50	92	130	49	168	215	265	
McPhee Reservoir inflow	APR-JUL	51	105	150	47	195	256	320	
San Miguel River nr Placerville	APR-JUL	36	60	80	61	100	129	132	
Gurley Reservoir Inlet	APR-JUL	3.2	7.0	9.5	58	12.0	15.8	16.5	
	APRIL			0.80	48			1.66	
	MAY			5.80	66			8.83	
	JUNE			2.50	54			4.67	
	JULY			0.40	30			1.32	
Cone Reservoir Inlet	APR-JUL	0.68	1.35	1.80	51	2.69	4.01	3.53	
	APRIL			0.15	33			0.46	
	MAY			1.00	61			1.64	
	JUNE			0.50	48			1.04	
	JULY			0.15	40			0.38	
Lilylands Reservoir Inlet	APR-JUL	0.62	1.26	1.70	59	2.14	2.78	2.86	
	APRIL			0.15	38			0.40	
	MAY			1.00	76			1.32	
	JUNE			0.40	46			0.87	
	JULY			0.15	56			0.27	
Rio Blanco at Blanco Diversion	APR-JUL	13.2	19.6	24	45	34	48	53	
Navajo River at Oso Diversion	APR-JUL	0.6	18.7	31	45	43	61	69	
San Juan River nr Carracus	APR-JUL	73	133	185	46	245	349	405	
Piedra River nr Arboles	APR-JUL	7.0	60	95	41	130	183	230	
Vallecito Reservoir Inflow	APR-JUL	9.0	49	77	38	105	145	205	
Navajo Reservoir Inflow	APR-JUL	199	271	320	40	453	648	800	
Animas River at Durango	APR-JUL	53	141	200	46	259	347	440	
Lemon Reservoir Inflow	APR-JUL	1.4	15.5	25	43	35	49	58	
La Plata River at Hesperus	APR-JUL	1.0	7.3	11.5	46	15.7	22	25	
Mancos River nr Mancos	APR-JUL	8.5	15.3	20	50	29	43	40	
	APRIL			3.60	62			5.80	
	MAY			10.1	64			15.9	
	JUNE			5.4	39			13.7	
	JULY			0.90	20			4.60	

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

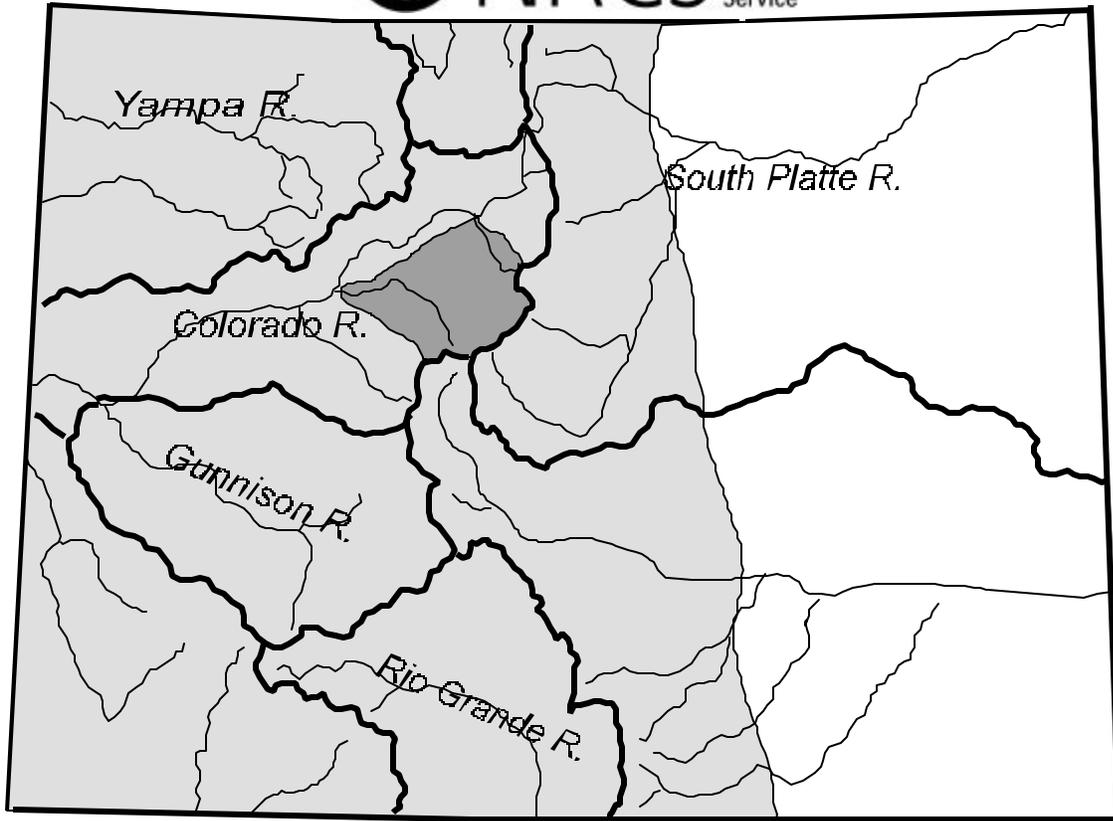
SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS
Watershed Snowpack Analysis - March 1, 2002

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	11.1	11.3	12.0	ANIMAS RIVER BASIN	9	44	43
JACKSON GULCH	10.0	2.3	2.8	4.6	DOLORES RIVER BASIN	7	54	52
LEMON	40.0	12.9	10.1	20.4	SAN MIGUEL RIVER BASIN	5	65	53
MCPHEE	381.2	206.3	220.0	276.3	SAN JUAN RIVER BASIN	3	28	30
NARRAGUINNEP	19.0	18.0	17.2	13.5	TOTAL SAN MIGUEL, DOLORES	23	46	45
VALLECITO	126.0	56.9	48.2	60.8	AN JUAN RIVER BASINS			

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

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

- (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.



Snowpack
March 1, 2002

Statewide: 56% of Average
65% of Last Year

-  ***Much Above Average > 130%***
-  ***Above Average 110% to 130%***
-  ***Near Average 90% to 110%***
-  ***Below Average 70% to 90%***
-  ***Much Below Average < 70%***
-  ***Not Measured***



655 Parfet Street, Room E200C
Lakewood, CO 80215-5517

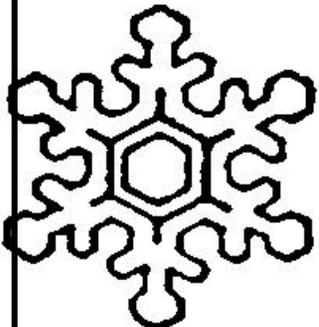
In addition to the basin outlook reports, water supply forecast information for the Western United States is available from the Natural Resources Conservation Service and the National Weather Service monthly, January through May. The information may be obtained from the National Resources Conservation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

Issued by

Pearlie S. Reed
Chief
Natural Resources Conservation Service
U.S. Department of Agriculture

Released by

Allen Green
State Conservationist
Natural Resources Conservation Service
Lakewood, Colorado



Colorado
Basin Outlook Report
Natural Resources Conservation Service
Lakewood, CO

