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Colorado Basin Outlook Report April 1, 2001



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, 2001

Summary

Near average precipitation prevailed across Colorado's mountains during March, bringing little significant change to the snowpack statistics for April 1. Below average snowpack accumulations are reported nearly statewide, making this the fourth consecutive year with a below average statewide snowpack on the critical April 1 date. Runoff forecasts for the 2001 irrigation season call for below average volumes for nearly the entire state. Summer precipitation now becomes a much more important component in providing adequate water supplies to many water users. Reservoir storage remains in good condition, yet is far from last year's abundant storage volumes. Colorado's water users will need to keep a close eye on precipitation patterns for the next two months as conditions can change quickly for better or worse.

Snowpack

Colorado's statewide snowpack increased only slightly during March and is now 87% of average. This year's statewide snowpack is 97% of that measured last year on this date. Snowfall during March brought insignificant changes to the snowpack percentages in the Gunnison, Colorado, North Platte, Yampa and White and Rio Grande basins. All of these basins only changed + or - 1% from the March 1 percentages. Basins where the snowpack improved more include the South Platte and Arkansas, with a 12% and 5% increase, respectively. Meanwhile, only the San Juan, Animas, Dolores, and San Miguel basins decreased in percentage during the month by -6%. This leaves the most of the state with below average snowpack accumulations. Basinwide percentages of 78% to 90% are the rule in all basins except the Rio Grande. The Rio Grande Basin continues to lead the state with an above average snowpack (102% of average) for the second consecutive month. A couple of smaller sub-basins are reporting snowpack totals that are well below average. Those include the Saint Vrain in the South Platte Basin, at only 56% of average, and the combined Cucharas and Huerfano in the Arkansas Basin, at 69% of average. This year's April 1 snowpack is below last year's in all basins, with the only exceptions being the Rio Grande and the San Juan, Animas, Dolores, and San Miguel. These basins are reporting more snow than last year, and in the San Juan Basin and the headwaters of the Rio Grande Basin, this year's snowpack is nearly two times that measured last year at this time. The April 1 date marks the maximum seasonal accumulation date for snowpack in Colorado. While additional accumulation of water in the snowpack is possible, in a typical year the water content begins to decrease after this date.

Precipitation

Precipitation totals for March, measured at NRCS SNOTEL sites, were generally below average across most of the state. Only the South Platte and Arkansas basins reported above average monthly totals, at 123% and 110% of average, respectively. The lowest percentages for the month were recorded in the San Juan, Animas, Dolores, and San Miguel basins, at only 71% of average. This was followed by the Rio Grande Basin, at 76% of average. For the month, the state reported 93% of average precipitation. Totals for the first six months of the 2001 water year remain below average in most basins. The lowest water year percentages are observed in the Gunnison, Colorado, South Platte, and Yampa and White basins, all reporting totals of 82% to 85% of average. As expected, water year totals improve to near average in the Rio Grande Basin (98% of average), and the San Juan, Animas, Dolores, and San Miguel basins (102% of average).

Reservoir Storage

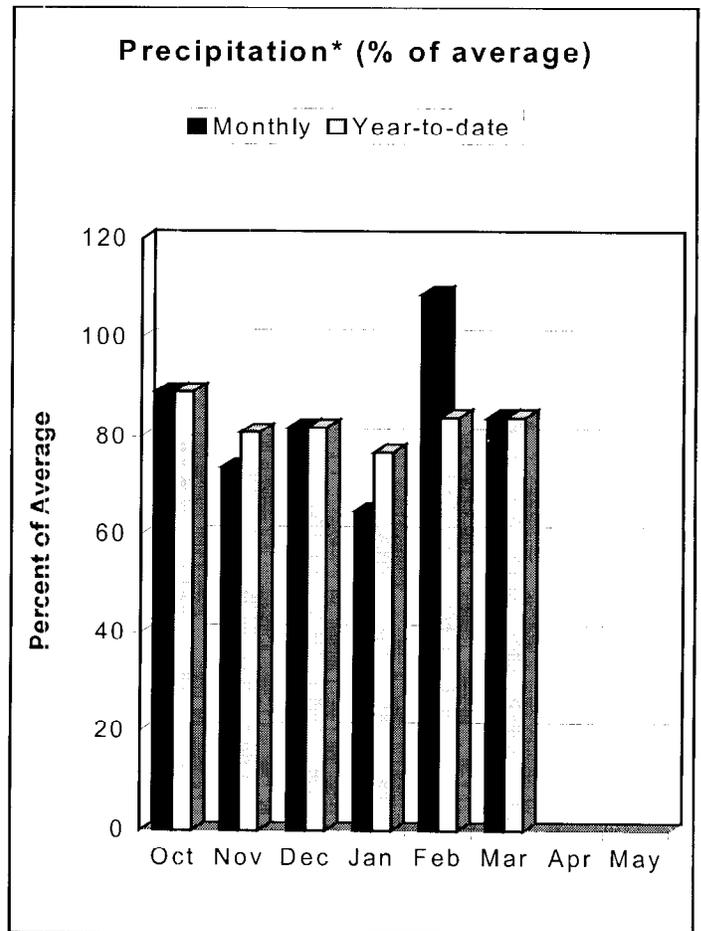
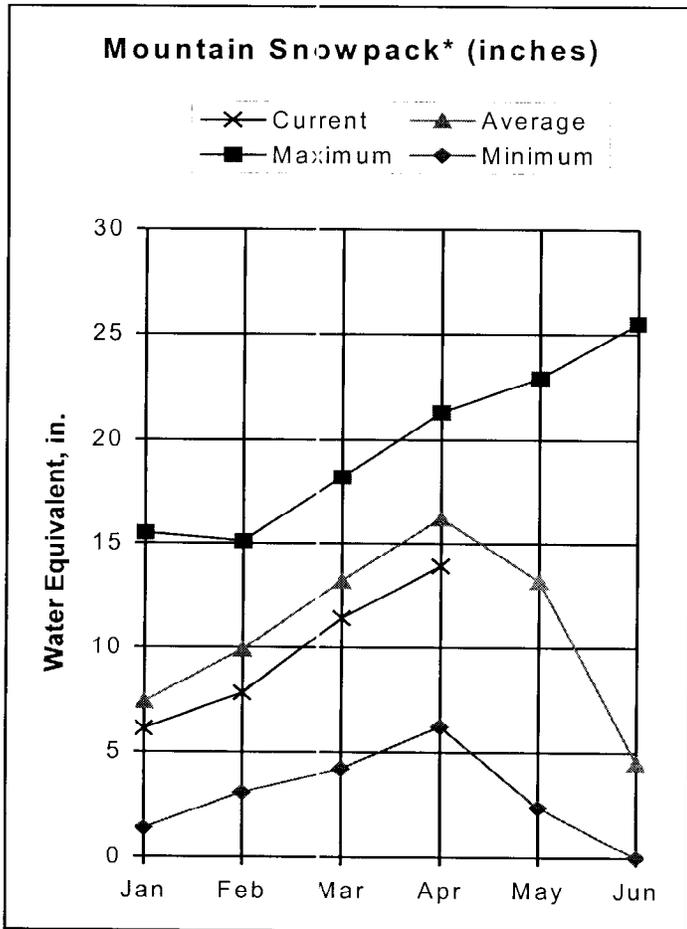
Reservoir storage remains in good condition across most of the state. Only two basins are reporting below average volumes for this date. Those include the South Platte, at 89% of average, and the combined San Juan, Animas, Dolores, and San Miguel basins, at 75% of average. Storage has slowly, but steadily increased in other basins and those basins now reporting well above average volumes include the Arkansas, at 151% of average, and the Gunnison, at 123% of average. Statewide, storage is 108% of average. Showing only a slight increase from last month's 107% of average. As a rule, this year's storage is well below that of last year's at this time. All basins are reporting volumes well below that of last year, with the single exception of the Yampa and White basins. Statewide, the current storage is only 76% of last year's storage.

Streamflow

The lack of adequate snowfall this winter will translate into below average runoff for most of Colorado this spring and summer. Runoff volumes of 70% to 90% of average are forecast for most of the Yampa, White, Colorado, Gunnison, Arkansas, South Platte, San Miguel and Dolores basins. The lowest forecasts in the state occur across extreme northwestern Colorado, where the Little Snake, and North Platte rivers are forecast at less than 70% of average. Also forecast at less than 70% of average are the streams and tributaries to the North Fork of the Gunnison and the lower Gunnison River. Conditions improve markedly across southern Colorado, where near average streamflows are forecast throughout the Animas and southern tributaries of the Rio Grande River. The highest forecasts, all above average, occur throughout the San Juan River and the headwaters of the Rio Grande River.

GUNNISON RIVER BASIN

as of April 1, 2001



*Based on selected stations

April 1 snowpack accumulation in the Gunnison Basin is at nearly the same percent of average as last month. Enough snow fell during March to nudge the snowpack up to 85% of average, which is only 1% of average more than last month. The Surface Creek Watershed continues to have the lowest snowpack percent of average in the basin at only 74% of average, while the Upper Gunnison Watershed now has the highest percent of average in the basin at 86%. There is 9% less snow accumulation in the basin than last year on the same date. Precipitation in the higher elevations was only 84% of average during March. The water year total remains unchanged from last month at 84% of average. The combined storage for 8 major reservoirs in the basin is 23% above average for this time of year. There is 11% less storage than last year on April 1. Most of the streamflow forecasts are very nearly the same as last month's forecasts. They are highly variable ranging from only 56% of average on Surface Creek near Cedaredge, to 116% of average on Cochetopa Creek below Rock Creek.

GUNNISON RIVER BASIN
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<<==== Drier =====>>		=====> Wetter <====>				
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Taylor River blw Taylor Park Resv	APR-JUL	48	63	73	74	83	98	99
Slate River nr Crested Butte	APR-JUL	53	62	68	76	74	83	89
East River at Almont	APR-JUL	89	114	130	71	146	171	183
Gunnison River nr Gunnison	APR-JUL	165	216	250	67	284	335	375
Tomichi Creek at Sargents	APR-JUL	13.2	20	25	76	30	37	33
Cochetopa Creek blw Rock Creek	APR-JUL	12.2	16.9	20	116	23	28	17.3
Tomichi Creek at Gunnison	APR-JUL	35	49	60	78	72	92	77
Lake Fork at Gateview	APR-JUL	92	115	130	106	145	168	123
Blue Mesa Reservoir Inflow	APR-JUL	354	471	550	79	630	747	699
Paonia Reservoir Inflow	MAR-JUN	41	53	62	61	72	88	101
	APR-JUL	35	51	63	61	77	99	104
N.F. Gunnison River nr Somerset	APR-JUL	126	157	180	63	205	244	288
Surface Creek nr Cedaredge	APR-JUL	6.4	7.9	9.0	56	10.3	12.6	16.0
Ridgway Reservoir Inflow	APR-JUL	60	71	80	82	90	107	98
Uncompahgre River at Colona	APR-JUL	68	86	100	79	115	139	126
Gunnison River nr Grand Junction	APR-JUL	586	833	1000	69	1167	1414	1448

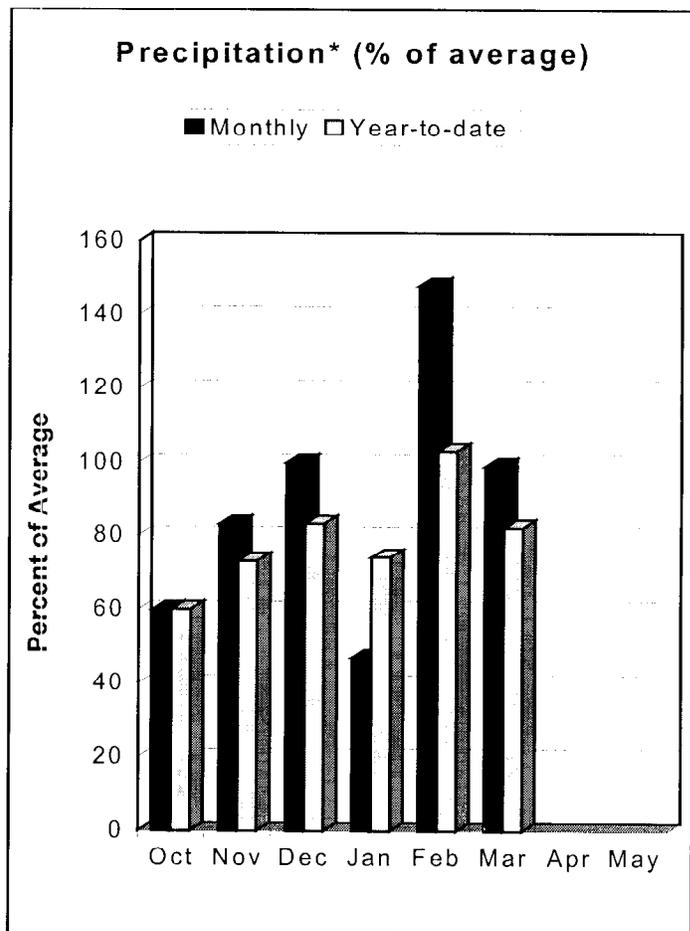
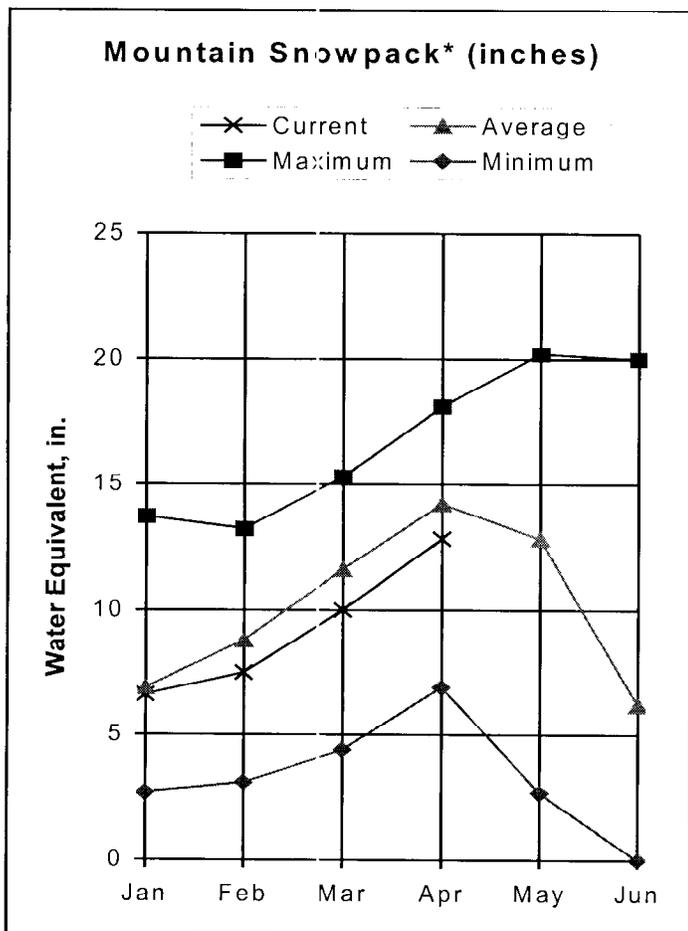
GUNNISON RIVER BASIN Reservoir Storage (1000 AF) - End of March					GUNNISON RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BLUE MESA	830.0	476.3	553.2	334.5	UPPER GUNNISON BASIN	11	94	86
CRAWFORD	14.3	5.2	7.8	10.8	SURFACE CREEK BASIN	2	85	74
FRUITGROWERS	4.3	3.5	4.4	3.9	UNCOMPAGRE BASIN	4	84	83
FRUITLAND	9.2	2.5	1.1	2.4	TOTAL GUNNISON RIVER BASIN	15	91	85
MORROW POINT	121.0	105.2	108.9	110.1				
PAONIA	18.0	5.3	5.6	4.5				
RIDGWAY	83.2	73.1	71.8	68.6				
TAYLOR PARK	106.0	62.4	70.4	61.3				

* 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 1961-1990 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, 2001



*Based on selected stations

The snowfall during March in the Colorado Basin was nearly an exact repeat of the February snowfall. Like February's, March's accumulation was just enough to hold the percent of average at nearly the same level as the previous month. The April 1 snowpack amount is at 86% of average, which is only 1% above the March 1 percent of average. The Plateau Creek Watershed continues to have the lowest percent of average in the basin at only 74% of average, while the Willow Creek Watershed and the Williams Fork Watershed each have 95% of average accumulation. Precipitation in the higher elevations of the basin was about average during the month of March, and the water year total is now 82% of average on April 1, which is 8% less than last year on the same date. The combined storage from 8 major reservoirs in the basin is about 11% above average on April 1, but this is only 82% of the storage amount last year at this time. The streamflow forecasts for the upcoming runoff season remain nearly the same as last month's forecasts for most of the forecast points. Forecasts range from only 75% of average at the Roaring Fork at Glenwood Springs, to 99% of average at the Inflow to Dillon Reservoir.

UPPER COLORADO RIVER BASIN
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Chance Of Exceeding *		Wetter		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Lake Granby Inflow	APR-JUL	134	157	175	82	195	229	214
Willow Creek Reservoir Inflow	APR-JUL	27	35	41	82	48	59	50
Williams Fork Reservoir inflow	APR-JUL	63	74	82	93	91	104	88
E.F. Troublesome Creek nr Troublesom	APR-JUL	8.4	12.2	14.7	80	17.2	21	18.5
Dillon Reservoir Inflow	APR-JUL	101	130	150	99	170	199	151
Green Mountain Reservoir inflow	APR-JUL	213	238	255	97	273	301	262
Muddy Creek blw Wolford Mtn. Resv.	APR-JUL	33	42	50	78	59	76	64
Eagle River blw Gypsum	APR-JUL	178	215	245	79	279	337	310
Colorado River nr Dotsero	APR-JUL	678	959	1150	84	1341	1622	1362
Ruedi Reservoir Inflow	APR-JUL	77	93	105	77	119	143	136
Roaring Fork at Glenwood Springs	APR-JUL	366	443	500	75	560	655	671
Colorado River nr Cameo	APR-JUL	1066	1503	1800	79	2097	2534	2287

UPPER COLORADO RIVER BASIN Reservoir Storage (1000 AF) - End of March					UPPER COLORADO RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
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	206.5	218.0	202.9	BLUE RIVER BASIN	8	96	96
LAKE GRANBY	465.6	267.0	364.4	226.2	UPPER COLORADO RIVER BASI	29	92	90
GREEN MOUNTAIN	139.0	43.1	64.6	56.0	MUDDY CREEK BASIN	3	76	86
HOMESTAKE	43.0	35.6	38.7	18.8	PLATEAU CREEK BASIN	2	85	74
RUEDI	102.0	67.3	66.4	61.7	ROARING FORK BASIN	7	86	76
VEGA	32.0	10.1	17.7	12.4	WILLIAMS FORK BASIN	4	104	95
WILLIAMS FORK	96.8	56.5	67.2	41.0	WILLOW CREEK BASIN	2	77	95
WILLOW CREEK	9.0	7.7	6.6	6.6	TOTAL COLORADO RIVER BASI	38	91	86

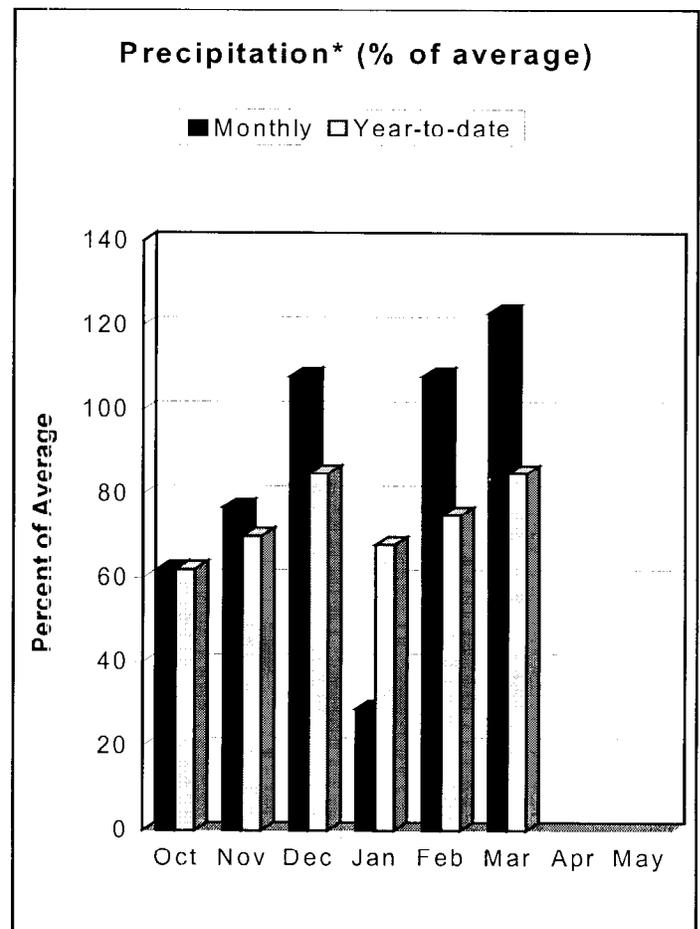
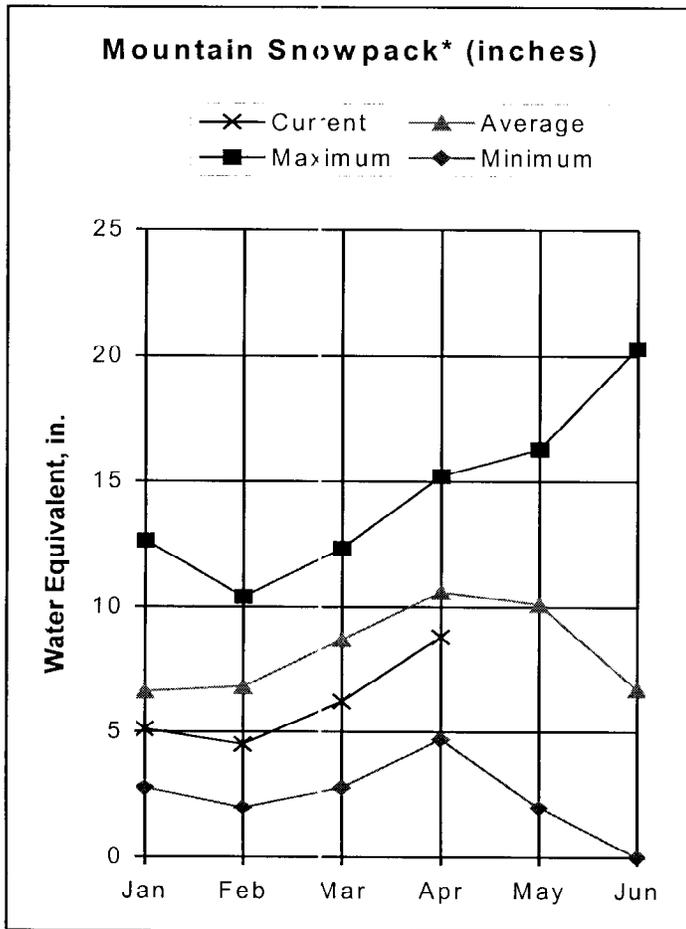
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 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, 2001



*Based on selected stations

Of all the basins in Colorado, the South Platte Basin was able to benefit the most from the March snowfalls. Snowpack accumulation has gone up from only 69% of average on March 1, to 81% of average on April 1. Snowpack in the southern portion of the basin is well above 90% of average, while to the north the Saint Vrain Watershed has only 56% of average accumulation. There is only 83% of the snowpack there was last year at this time. To the delight of most water users, precipitation in the higher elevations of the basin during March was 23% above average, which has helped to boost the water year total up from only 75% of average on March 1, to 85% of average on April 1. The combined reservoir storage for 32 major reservoirs in the basin has increased from 88% of average last month, to 89% of average on April 1. There is 17% less storage than last year at this time. While the streamflow forecasts remain below average, many of them have improved significantly from last month. Forecasts range from 66% of average at the Inflow to Antero Reservoir, to 89% of average at South Boulder Creek near Eldorado Springs.

SOUTH PLATTE RIVER BASIN
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		Drier		Wetter				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	Chance Of Exceeding * (% AVG.)	
Antero Reservoir inflow	APR-JUL	4.0	5.9	7.7	66	10.0	14.7	11.7
Spinney Mountain Reservoir inflow	APR-JUL	18.9	25	30	79	36	48	38
Elevenmile Canyon Reservoir inflow	APR-JUL	18.1	25	30	79	35	42	38
Cheesman Lake inflow	APR-JUL	46	56	65	77	75	92	84
South Platte River at South Platte	APR-SEP	96	137	165	78	193	234	213
Bear Creek at Morrison	APR-SEP	15.2	21	25	83	29	35	30
Clear Creek at Golden	APR-SEP	69	94	111	87	128	153	128
St. Vrain Creek at Lyons	APR-SEP	41	53	61	78	69	81	78
Boulder Creek nr Orodell	APR-SEP	28	35	40	77	45	52	52
South Boulder Creek nr Eldorado Spri	APR-SEP	20	32	40	89	48	60	45
Big Thompson River at mouth nr Drake	APR-SEP	59	75	86	75	97	113	114
Cache La Poudre at Canyon Mouth	APR-SEP	114	170	219	81	268	340	272

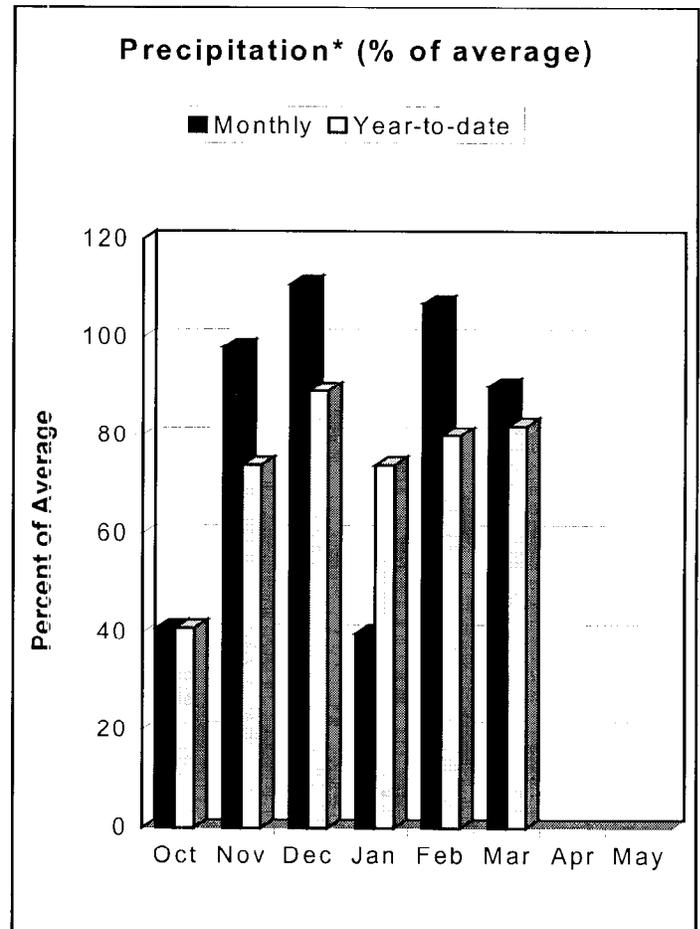
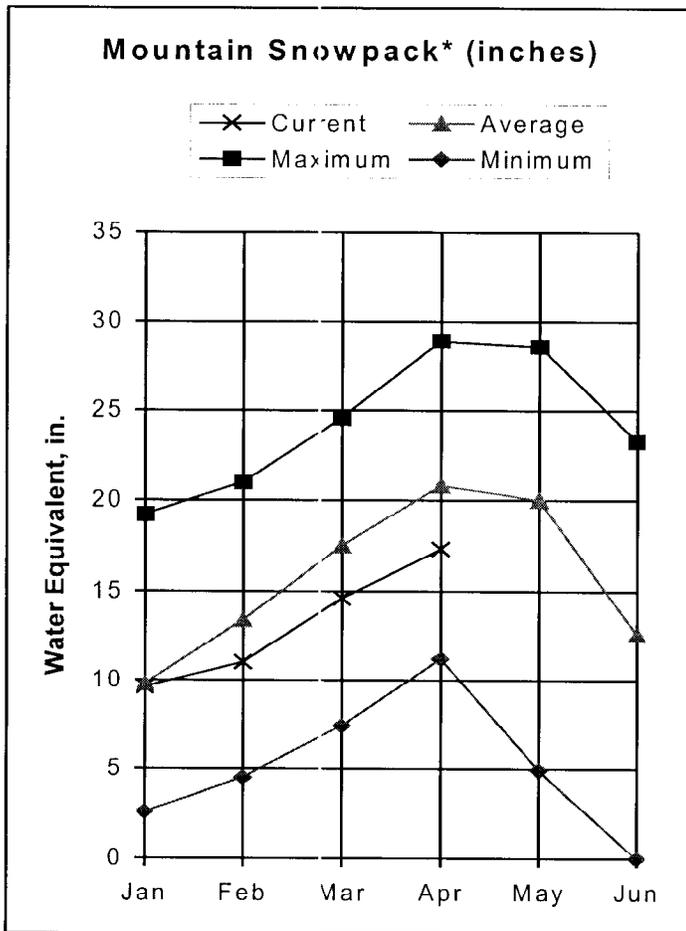
SOUTH PLATTE RIVER BASIN Reservoir Storage (1000 AF) - End of March					SOUTH PLATTE RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ANTERO	20.0	20.0	20.0	14.7	BIG THOMPSON BASIN	6	70	73
BARR LAKE	32.0	20.0	28.7	26.2	BOULDER CREEK BASIN	5	81	79
BLACK HOLLOW	8.0	2.5	3.5	4.1	CACHE LA POUDE BASIN	8	75	71
BOYD LAKE	49.0	22.6	42.7	34.2	CLEAR CREEK BASIN	4	94	95
CACHE LA POUDE	10.0	7.7	9.5	8.2	SAINT VRAIN BASIN	3	67	56
CARTER	108.9	105.0	103.5	98.9	UPPER SOUTH PLATTE BASIN	16	99	93
CHAMBERS LAKE	9.0	3.0	6.0	3.4	TOTAL SOUTH PLATTE BASIN	40	83	80
CHEESMAN	79.0	52.5	63.5	57.4				
COBB LAKE	34.0	8.9	17.5	13.9				
ELEVEN MILE	97.8	99.7	99.1	91.4				
EMPIRE	38.0	33.7	33.7	31.5				
FOSSIL CREEK	12.0	9.0	6.5	7.8				
GROSS	41.8	18.9	35.6	23.8				
HALLIGAN	6.4	4.0	6.0	4.9				
HORSECREEK	16.0	14.7	14.0	14.6				
HORSETOOTH	149.7	39.0	115.8	113.9				
JACKSON	35.0	26.1	18.9	32.8				
JULESBURG	28.0	18.2	14.7	22.3				
LAKE LOVELAND	14.0	9.3	10.7	9.1				
LONE TREE	9.0	8.8	8.7	6.5				
MARIANO	6.0	5.3	5.0	4.8				
MARSHALL	10.0	6.2	8.8	5.0				
MARSTON	13.0	12.1	7.9	7.5				
MILTON	24.0	20.8	20.8	16.2				
POINT OF ROCKS	70.0	70.9	67.9	67.4				
PREWITT	33.0	24.6	22.4	23.9				
RIVERSIDE	63.1	55.6	55.6	57.1				
SPINNEY MOUNTAIN	48.7	19.9	38.2	33.2				
STANDLEY	42.0	31.1	40.0	28.0				
TERRY LAKE	8.0	5.3	5.5	5.4				
UNION	13.0	11.3	11.4	10.6				
WINDSOR	19.0	9.6	13.0	12.1				

* 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 1961-1990 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, 2001



*Based on selected stations

For the second month in a row these basins have received just enough snow to hold the snowpack percentage to nearly the same as the previous month. The North Platte Basin's snow accumulation is now 78% of average, 1% of average less than last month, and the Yampa and White basin's accumulation remains at 82% of average. Snowpack percentages are more variable this month than in previous months. Percents of average range from only 70% of average in the Laramie River Watershed, to 86% of average in the White River Watershed. There was 10% below average precipitation in the higher elevations of these basins during March, and the water year total is now 82% of average. The combined reservoir storage in these basins is at 102% of average, which is about 11% more than last year at this time. Many of the streamflow forecasts are lower than last month's forecasts. Forecasts are variable depending on location and snowpack conditions, ranging from only 54% of average on the North Platte River near Northgate, to 81% of average on the Yampa River at Steamboat Springs.

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	Future Conditions				Wetter		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
North Platte River nr Northgate	APR-SEP	48	106	146	54	186	244	271
Laramie River nr Woods	APR-SEP	26	63	89	66	115	152	135
Yampa R abv Stagecoach Res	APR-JUL	16.1	22	26	77	30	36	34
Yampa River at Steamboat Springs	APR-JUL	153	193	220	81	247	287	273
Elk River nr Milner	APR-JUL	127	174	210	70	250	314	300
Elkhead Creek nr Elkhead	APR-JUL	13.6	20	26	67	34	50	39
ELKHEAD CREEK blw Maynard Gulch	APR-JUL	24	36	44	75	52	64	59
Fortification Ck nr Fortification	MAR-JUN	2.72	3.82	5.50	65	7.18	9.65	8.50
Yampa River nr Maybell	APR-JUL	397	578	700	74	822	1003	947
Little Snake River nr Slater	APR-JUL	64	84	100	65	117	144	155
LITTLE SNAKE R nr Dixon	APR-JUL	100	166	210	64	254	320	329
LITTLE SNAKE R nr Lily	APR-JUL	106	174	220	62	266	334	358
White River nr Meeker	APR-JUL	138	169	195	70	225	276	279

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

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
STAGECOACH	33.3	26.0	21.8	25.8
YAMCOLO	9.1	7.0	7.8	6.6

YAMPA, WHITE, AND NORTH PLATTE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2001

Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
LARAMIE RIVER BASIN	4	79	70
NORTH PLATTE RIVER BASIN	5	76	82
TOTAL NORTH PLATTE BASIN	8	77	78
ELK RIVER BASIN	2	85	79
YAMPA RIVER BASIN	11	79	83
WHITE RIVER BASIN	4	94	86
TOTAL YAMPA AND WHITE RIV	14	82	82
LITTLE SNAKE RIVER BASIN	8	88	77

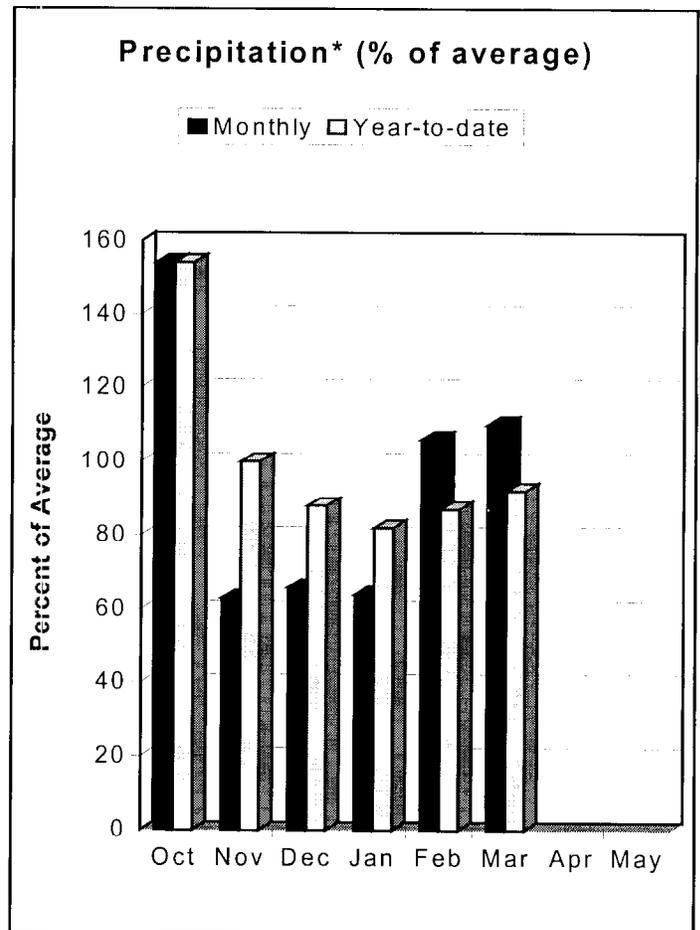
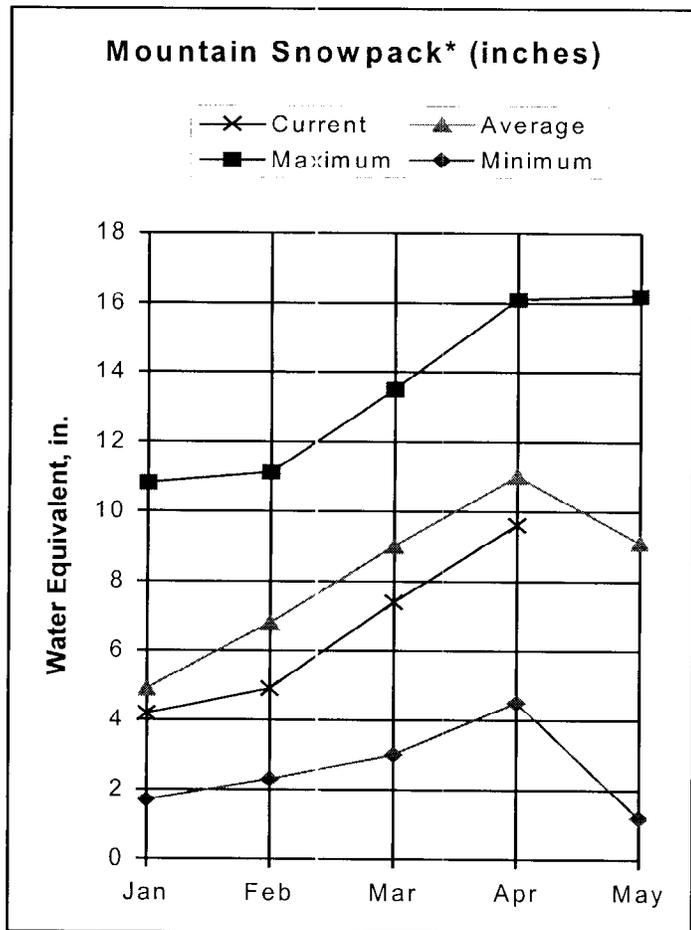
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 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 April 1, 2001



*Based on selected stations

Storms streaming in from the south have continued to improve the snowpack conditions in the Arkansas Basin during March. The snowpack accumulation is now at 84% of average, which is 5% of average above what it was last month. The snowpack percents of average are highly variable ranging from only 69% of average in the Cucharas and Huerfano River watersheds, to 93% of average in the Upper Arkansas Watershed. There is 5% less snow accumulation in the basin this year than at the same time last year. Precipitation in the high country was 10% above average during March, which boosted the water year total to 92% of average. The combined storage among 12 major reservoirs is 151% of average for this time of year, but this is only 61% of last year's storage level. Most of the streamflow forecasts remain below average on April 1. Some have gone down from last month while others have improved. They are highly variable depending on location and snowpack conditions, ranging from only 72% of average on Chalk Creek near Nathrop, to 105% of average at the Inflow to Trinidad Lake.

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ARKANSAS RIVER BASIN
Streamflow Forecasts - April 1, 2001

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Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
Chalk Creek nr Nathrop	APR-SEP	8.1	15.8	21	72	26	34	29
Arkansas River at Salida	APR-SEP	186	239	275	93	311	364	297
Grape Creek nr Westcliffe	APR-SEP	2.4	8.2	15.0	75	22	32	20
Pueblo Reservoir Inflow	APR-SEP	202	281	335	85	389	466	394
Huerfano River nr Redwing	APR-SEP	6.3	9.0	12.0	80	15.0	19.4	15.0
Cucharas River nr La Veta	APR-SEP	6.0	7.7	10.5	81	13.3	17.5	13.0
Trinidad Lake Inflow	APR-SEP	15.0	33	45	105	57	75	43

ARKANSAS RIVER BASIN Reservoir Storage (1000 AF) - End of March					ARKANSAS RIVER BASIN Watershed Snowpack Analysis - April 1, 2001			
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	59.5	69.5	18.0	UPPER ARKANSAS BASIN	3	103	93
CLEAR CREEK	11.0	5.9	5.7	7.0	CUCHARAS & HUERFANO RIVER	4	82	69
GREAT PLAINS	150.0	66.8	153.8	41.6	PURGATOIRE RIVER BASIN	2	83	90
HOLBROOK	7.0	5.5	6.1	4.4	TOTAL ARKANSAS RIVER BASIN	8	95	84
HORSE CREEK	28.0	0.0	25.6	9.1				
JOHN MARTIN	335.7	171.9	341.8	95.4				
LAKE HENRY	8.0	7.7	8.7	5.3				
MEREDITH	42.0	27.7	40.5	13.2				
PUEBLO	236.7	222.0	274.2	147.0				
TRINIDAD	72.3	34.0	69.6	29.5				
TURQUOISE	126.6	50.3	95.2	51.5				
TWIN LAKES	86.0	41.6	49.8	35.7				

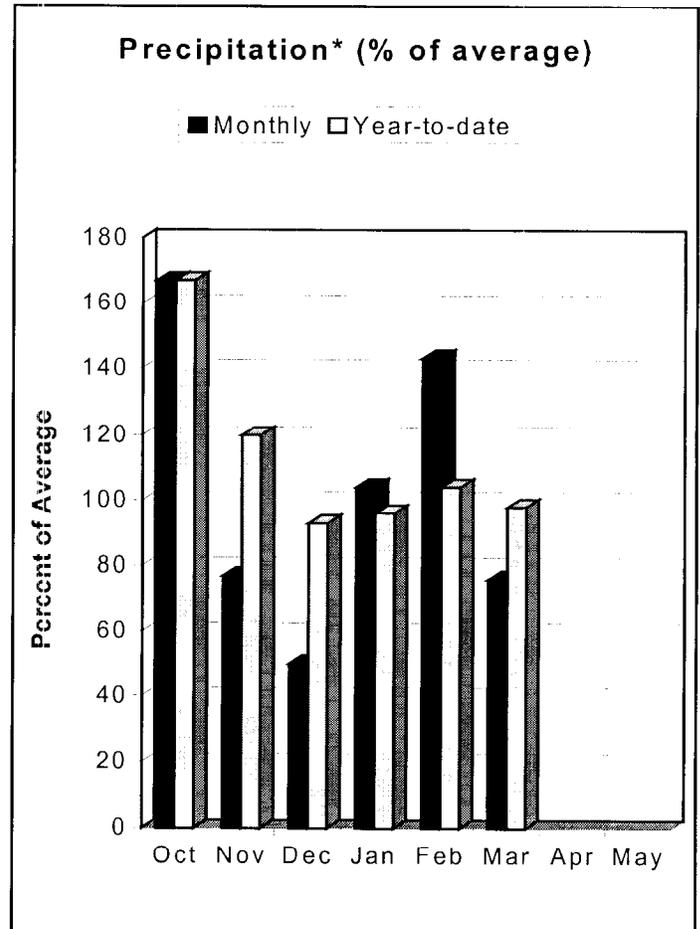
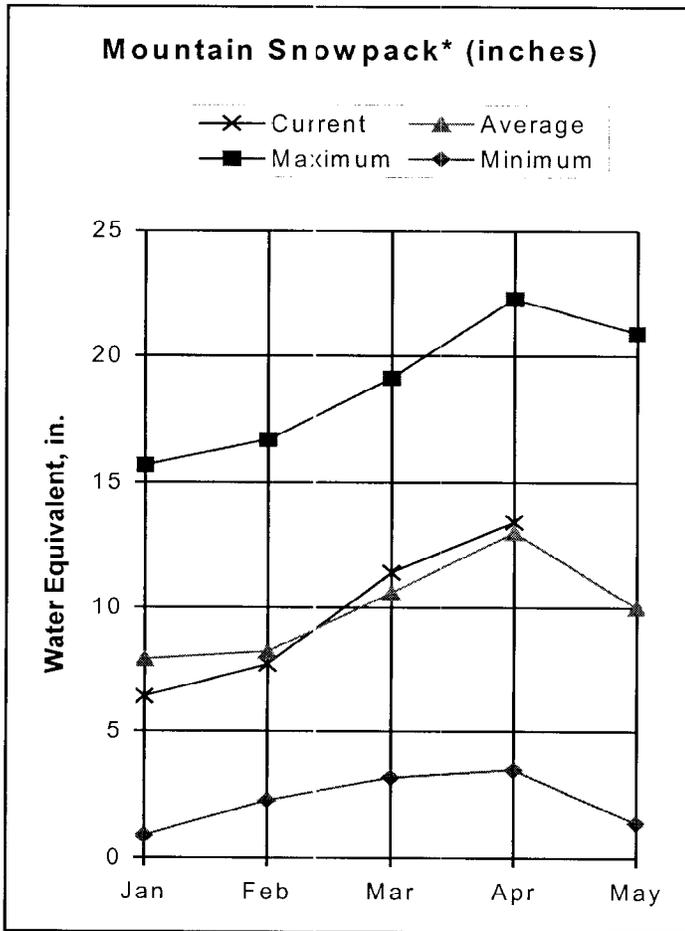
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* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1961-1990 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, 2001



*Based on selected stations

Additional snow accumulation during March in the Upper Rio Grande Basin has provided just enough snow to prop up the basin's snowpack to the only above average accumulation in the state. The April 1 measurements are at 102% of average, which is only 1% of average less than last month's measurements. Accumulations range from only 88% of average in the Conejos and Rio San Antonio Watershed, to 112% of average in the Culebra and Trinchera watersheds. There is 69% more snow than there was last year on the same date. Precipitation measurements in the higher elevations were only 76% above average during March causing the water year total to slip 6% of average from last month, to 98% of average on April 1. Reservoir storage is about 9% above average for this time of year, but is only 70% of the storage amount last year at this time. Stream forecasts for the runoff season have decreased slightly from last month for many of the forecast points, but most remain near to above average. Forecasts range from 71% of average on the San Antonio River near Ortiz, to 125% of average on Culebra Creek at San Luis.

UPPER RIO GRANDE BASIN
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<----- Drier ----->		----->		----->> Wetter ----->>		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Rio Grande at Thirty Mile Bridge	APR-SEP	115	140	160	120	183	222	133
Rio Grande Reservoir Inflow	APR-JUL	106	125	140	119	157	184	118
Rio Grande at Wagon Wheel Gap	APR-SEP	290	356	400	121	444	510	330
South Fork Rio Grande at South Fork	APR-SEP	114	135	150	114	165	186	132
Rio Grande nr Del Norte	APR-SEP	458	555	620	119	685	782	520
Saguache Creek nr Saguache	APR-SEP	24	33	39	115	45	54	34
Alamosa Creek abv Terrace Reservoir	APR-SEP	47	58	65	94	72	83	69
La Jara Creek nr Capulin	MAR-JUL	3.65	6.30	8.10	94	9.90	12.55	8.60
Trinchera Water Supply	APR-SEP	17.3	29	37	123	45	57	30
Platoro Reservoir Inflow	APR-JUL	45	53	58	98	63	71	59
	APR-SEP	50	58	64	99	70	78	65
Conejos River nr Mogote	APR-SEP	136	166	186	93	206	236	201
San Antonio River at Ortiz	APR-SEP	6.7	9.3	11.3	71	13.5	17.1	16.0
Los Pinos River nr Ortiz	APR-SEP	47	58	65	90	72	83	72
Culebra Creek at San Luis	APR-SEP	11.4	19.5	25	125	31	39	20
Costilla Reservoir inflow	MAR-JUL	6.41	8.84	10.50	115	12.16	14.59	9.10
Costilla Creek nr Costilla	MAR-JUL	16.1	22	26	118	30	36	22

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

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
CONTINENTAL	15.0	6.2	5.2	5.9
PLATORO	53.7	14.2	29.5	16.4
RIO GRANDE	51.0	15.9	5.1	18.0
SANCHEZ	103.0	27.4	44.2	17.3
SANTA MARIA	45.0	10.2	20.7	9.2
TERRACE	13.1	6.3	9.4	6.5

UPPER RIO GRANDE BASIN
Watershed Snowpack Analysis - April 1, 2001

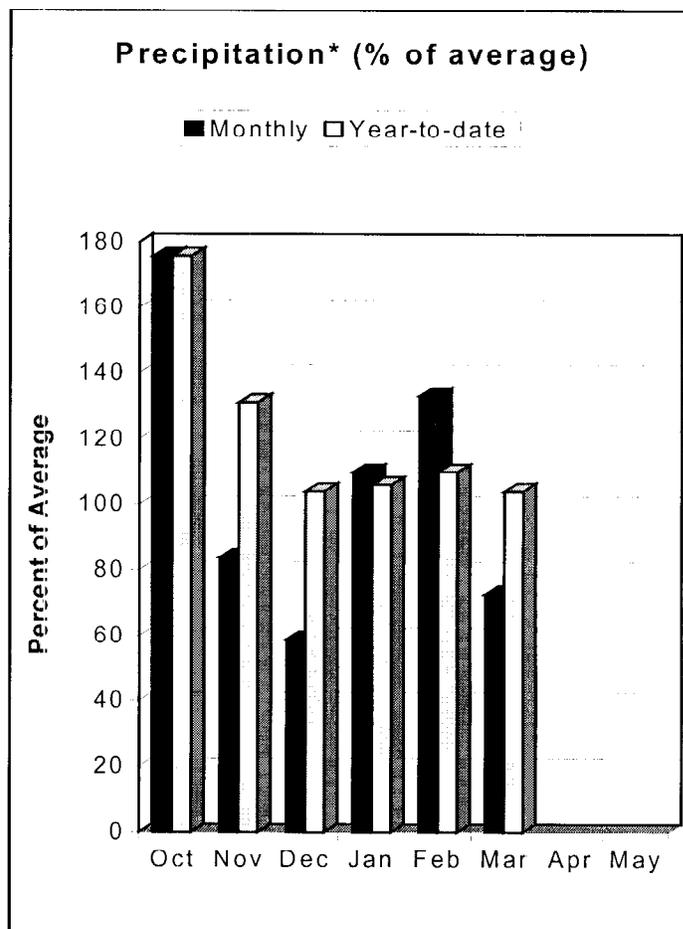
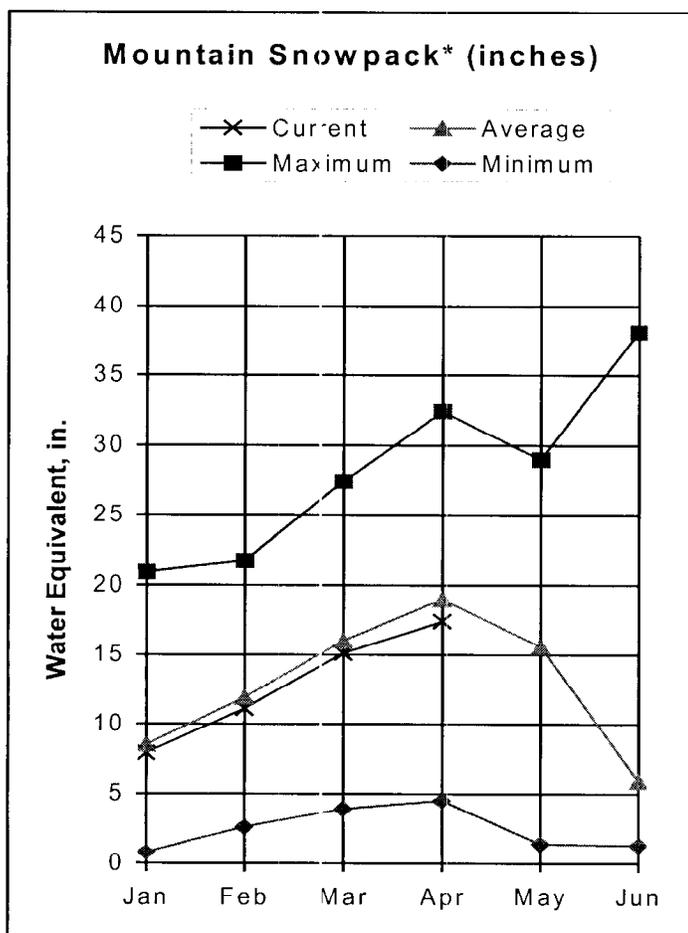
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
ALAMOSA CREEK BASIN	2	253	90
CONEJOS & RIO SAN ANTONIO	5	169	88
CULEBRA & TRINCHERA CREEK	5	118	124
UPPER RIO GRANDE BASIN	11	181	110
TOTAL UPPER RIO GRANDE BA	24	169	104

* 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 1961-1990 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 April 1, 2001



*Based on selected stations

These basins did manage to receive some additional snow accumulation during March, but not enough to improve the snowpack percent of average. In fact, these basins experience the largest drop in snowpack percent of average in the state. The combined snow accumulation for these basins is at 90% of average on April 1, which is 6% of average less than last month. There is 109% of the amount of snow in the basins that there was last year at this time. Precipitation during March was only 75% of average, and the water year total has slipped from 110% of average on March 1, to 102% of average on April 1. The combined reservoir storage level for 6 major reservoirs in these basins is only 75% of average for this time of year, which is nearly the same as last month. There is only 66% of the storage there was last year at this time. Streamflow forecasts have been reduced slightly from last month for many of the forecast points. They remain highly variable depending on location and snowpack conditions, ranging from only 82% of average at the Inlet to Cone Reservoir, to 115% of average at the Inflow to Vallecito Reservoir.

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS
Streamflow Forecasts - April 1, 2001

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<----- Drier ----->		----->		----->		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding * 50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
Dolores River at Dolores	APR-JUL	122	180	220	89	260	318	246
McPhee Reservoir inflow	APR-JUL	146	211	255	90	299	364	283
San Miguel River nr Placerville	APR-JUL	55	85	105	86	125	155	122
Gurley Reservoir Inlet	APR-JUL	9.7	12.2	14.0	85	15.8	18.3	16.5
	APRIL			2.00	121			1.66
	MAY			8.00	91			8.83
	JUNE			3.50	75			4.67
	JULY			0.50	38			1.32
Cone Reservoir Inlet	APR-JUL	2.04	2.55	2.90	82	3.25	3.76	3.53
	APRIL			0.55	120			0.46
	MAY			1.45	88			1.64
	JUNE			0.75	72			1.04
	JULY			0.15	40			0.38
Lilylands Reservoir Inlet	APR-JUL	1.35	1.95	2.35	82	2.75	3.35	2.86
	APRIL			0.50	125			0.40
	MAY			1.15	87			1.32
	JUNE			0.60	69			0.87
	JULY			0.10	37			0.27
Rio Blanco at Blanco Diversion	APR-JUL	35	44	51	94	58	68	54
Navajo River at Oso Diversion	APR-JUL	41	54	63	97	72	85	65
San Juan River nr Carracus	APR-JUL	252	330	390	102	454	558	382
Piedra River nr Arboles	APR-JUL	184	220	245	112	270	306	219
Vallecito Reservoir Inflow	APR-JUL	165	201	225	115	249	285	196
Navajo Reservoir Inflow	APR-JUL	555	719	830	108	941	1105	772
Animas River at Durango	APR-JUL	269	335	380	91	425	491	418
Lemon Reservoir Inflow	APR-JUL	42	54	62	109	70	82	57
La Plata River at Hesperus	APR-JUL	18.3	22	25	104	28	32	24
Mancos River nr Mancos	APR-JUL	22	33	40	100	47	58	40
	APRIL			7.00	121			5.80
	MAY			16.0	101			15.9
	JUNE			13.0	95			13.7
	JULY			4.00	87			4.60

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

SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS
Watershed Snowpack Analysis - April 1, 2001

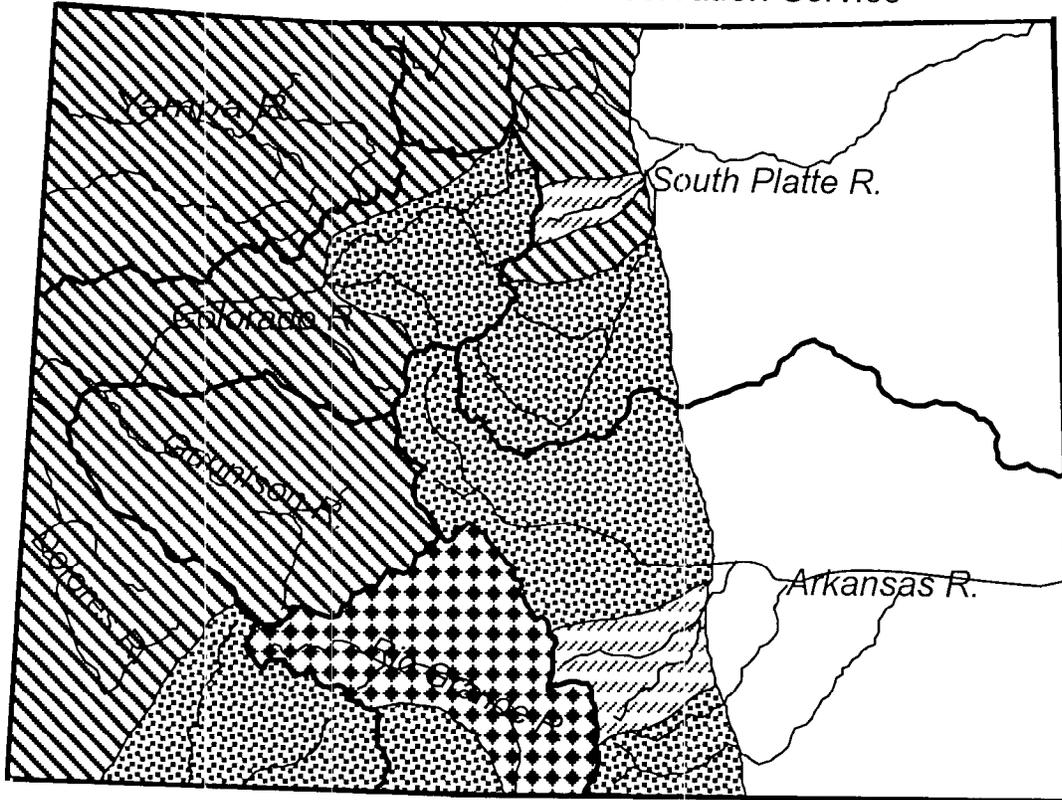
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
GROUNDHOG	21.7	11.3	16.3	11.7	ANIMAS RIVER BASIN	9	113	93
JACKSON GULCH	10.0	2.9	7.0	5.0	DOLORES RIVER BASIN	6	85	80
LEMON	40.0	10.6	30.6	20.5	SAN MIGUEL RIVER BASIN	5	84	84
MCPHEE	381.2	225.7	326.3	309.0	SAN JUAN RIVER BASIN	3	177	100
NARRAGUINNEP	19.0	17.0	18.6	15.0	TOTAL SAN MIGUEL, DOLORES	22	109	90
VALLECITO	126.0	45.5	75.0	57.6	AND SAN 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 1961-1990 base period.

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Natural Resources Conservation Service



Snowpack **April 1, 2001**

Statewide: 87% of Average
97% 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%



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

Issued by

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Colorado
Basin Outlook Report
Natural Resources Conservation Service
Lakewood, CO

