COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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March 2012

The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter period of November through April (December 1 through May 1). During the winter period, snowpack is the primary component in all basins except the South Platte basin where reservoir storage is given the most weight.

The statewide SWSI values for February (March 1) range from a high value of +1.6 in the South Platte Basin to a low value of -2.9 in the Yampa/White Basin. Four of the basins (South Platte, Gunnison, Yampa/White, and San Juan/Dolores) experienced a gain from the previous month's value, two of the basins (Arkansas and Rio Grande) experienced a loss from the previous month's value, and one basin (Colorado) experienced no change from the previous month's value.

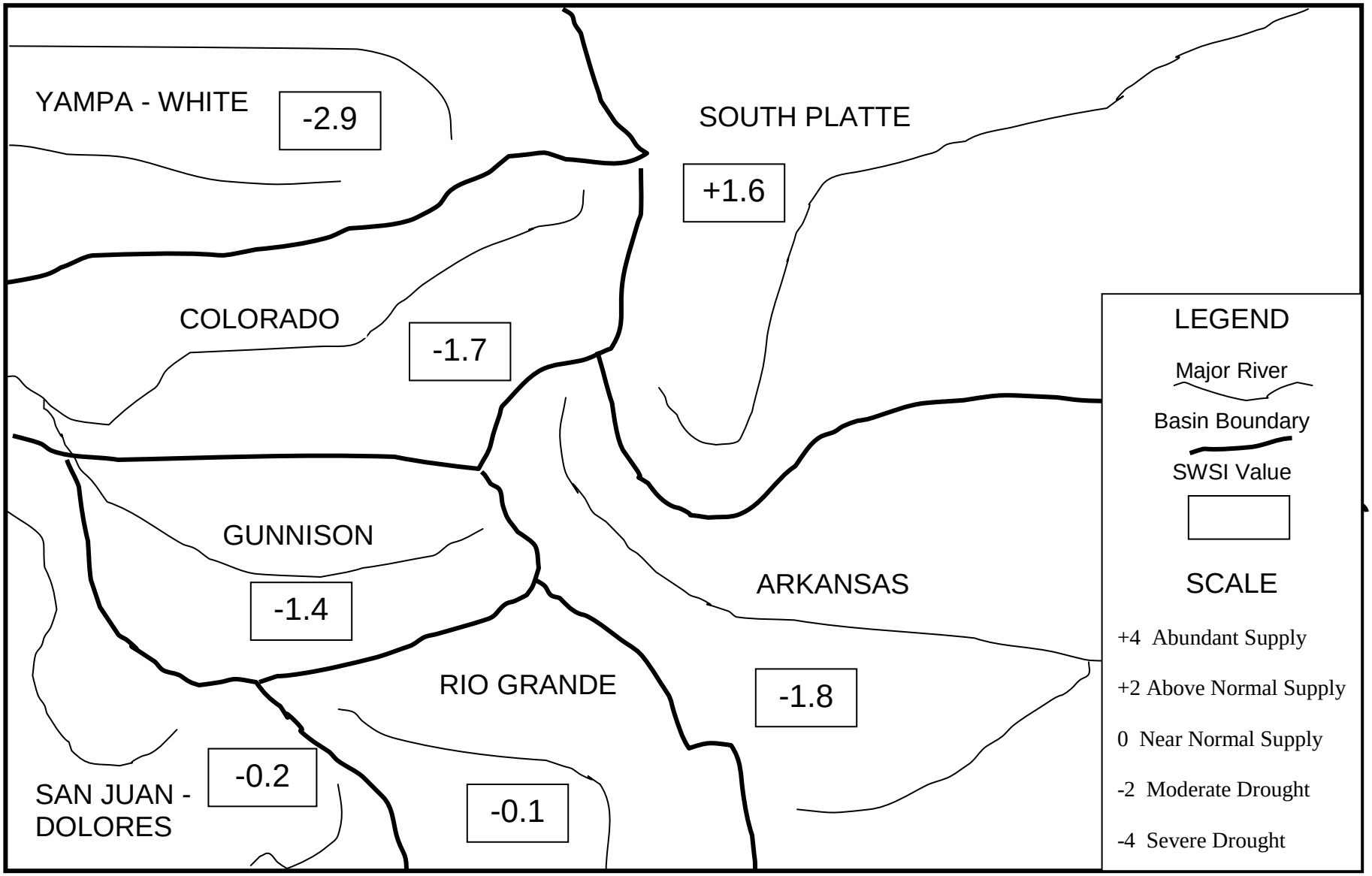
The following SWSI values were computed for each of the seven major basins for March 1, and reflect the conditions during the month of February.

Basin	March 1 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+1.6	+0.2	- 1.4
Arkansas	- 1.8	- 0.1	- 2.7
Rio Grande	- 0.1	- 2.1	- 0.5
Gunnison	- 1.4	+0.1	- 3.9
Colorado	- 1.7	0.0	- 4.3
Yampa/White	- 2.9	+0.3	- 5.5
San Juan/Dolores	- 0.2	+0.3	- 0.2

Scale

-4	-3	-2	-1	0	1	2	3	4
Severe Drought		Moderate Drought		Near Normal Supply		Above Normal Supply		Abundant Supply

SURFACE WATER SUPPLY INDEX FOR COLORADO



March 1, 2012

Basinwide Conditions Assessment

The SWSI value for the month was +1.6. The Natural Resources Conservation Service (NRCS) reports that March 1 snowpack is 88% of normal. Reservoir storage in Dillon, Horsetooth, Eleven Mile, Cheesman, Jackson, and Barr Lake, the major component in this basin in computing the SWSI value, was 117% of normal as of the end of February. Cumulative storage in the major plains reservoirs (Julesburg, North Sterling, and Prewitt) is at 91% of capacity. Cumulative storage in the major upper-basin reservoirs (Cheesman, Eleven Mile, Spinney, and Antero) is at 94% of capacity. Flow at the gaging station South Platte River near Kersey was 887 cfs, as compared to the long-term average of 673 cfs. Flow at the Colorado/Nebraska state line averaged 1066 cfs, as compared to the long-term average of 580 cfs.

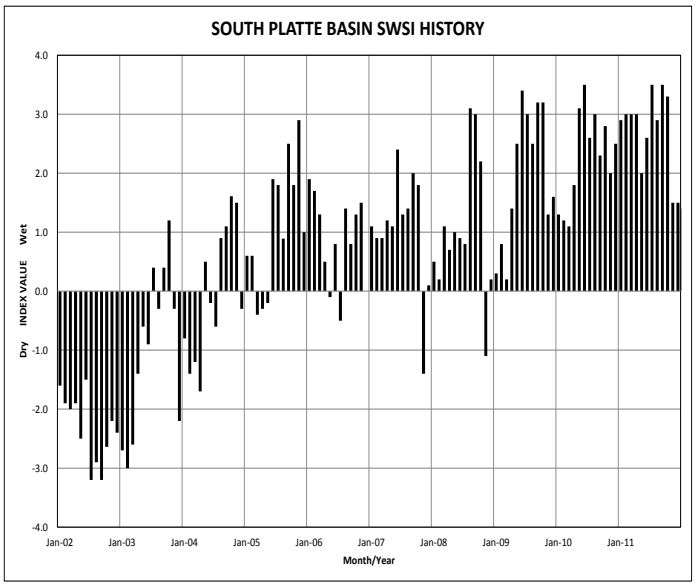
Outlook

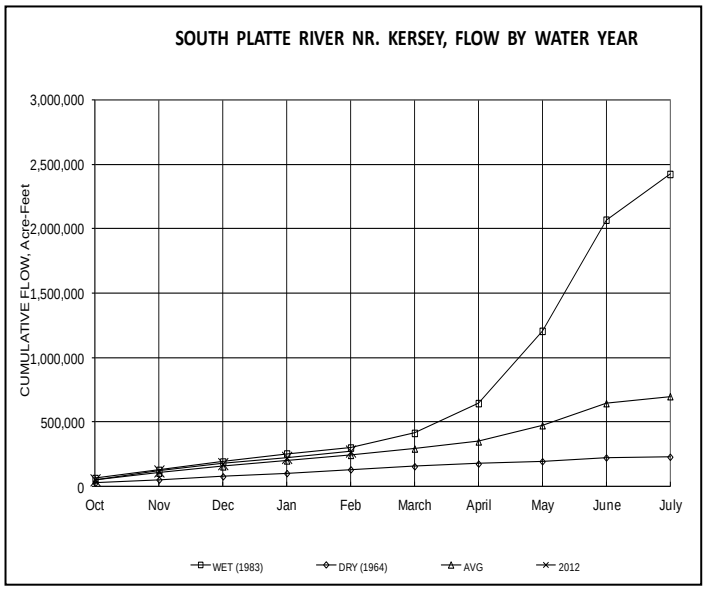
February provided very mixed weather within the South Platte basin. While February in Denver was the second snowiest on record, the area northeast of Denver was only moderately snowier than average. However, there was a marked improvement in the snowpack numbers as the end of February snow water equivalent (SWE) was 88% of average up from the 77% of average for the end of January SWE.

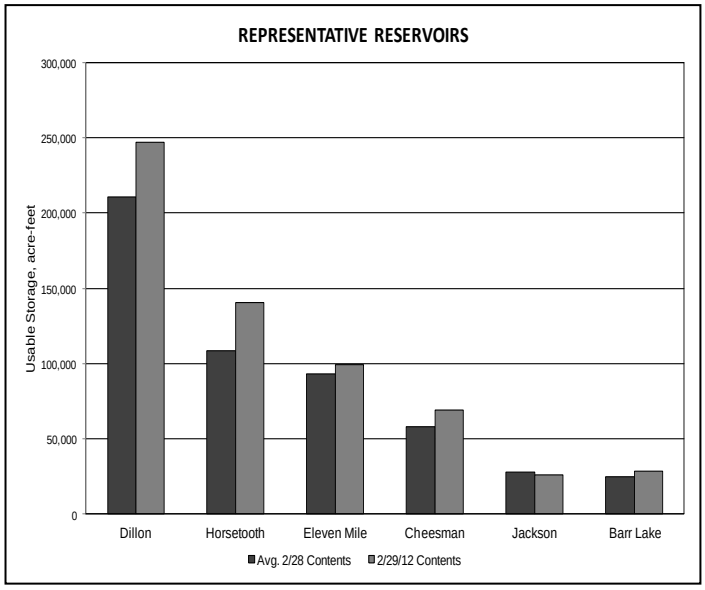
Stream flow and reservoir levels continued above average in February. The stream flows at the Kersey index gage were at 132% of its February average and the Julesburg index gage were at 183% of its February average. Storage in the basin also remained above, though closer to average, with end of February reservoir contents at 105% of average.

There was a call on the South Platte mainstem above the Burlington Ditch headgate (Commerce City) until February 10th and free river after that. A call came on the Big Thompson River on February 14th and, as since November 1st; calls remained on Clear and Boulder Creeks for the entire month

The March – May National Weather Service outlook for the South Platte basin is for below average precipitation and above average temperatures. On the brighter side, the longer term forecasts show the South Platte basin conditions shifting to equal chances of above or below average precipitation, but warmer than average temperatures, until late summer.







Basinwide Conditions Assessment

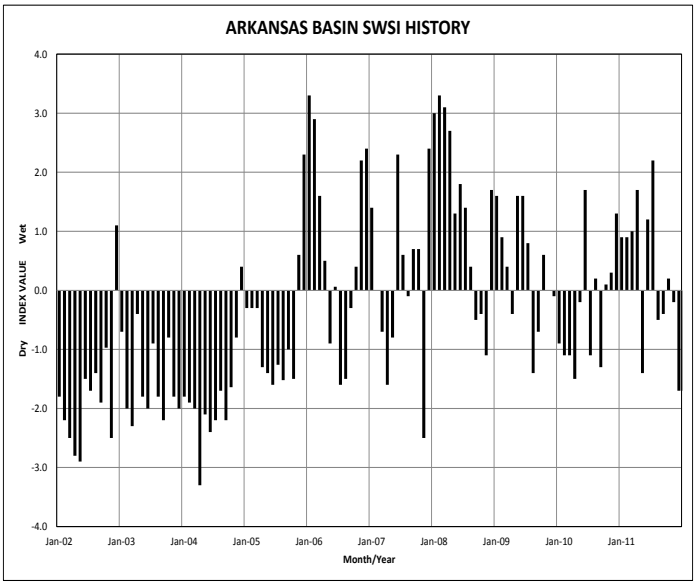
The SWSI value for the month was -1.8. The NRCS reports that March 1 snowpack is 89% of normal. Flow at the gaging station Arkansas River near Portland was 467 cfs, as compared to the long-term average of 372 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 97% of normal as of the end of February.

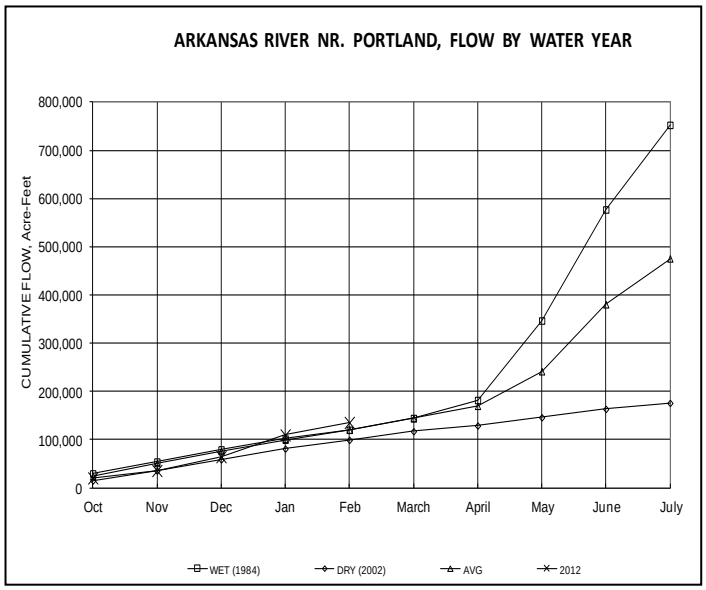
Outlook

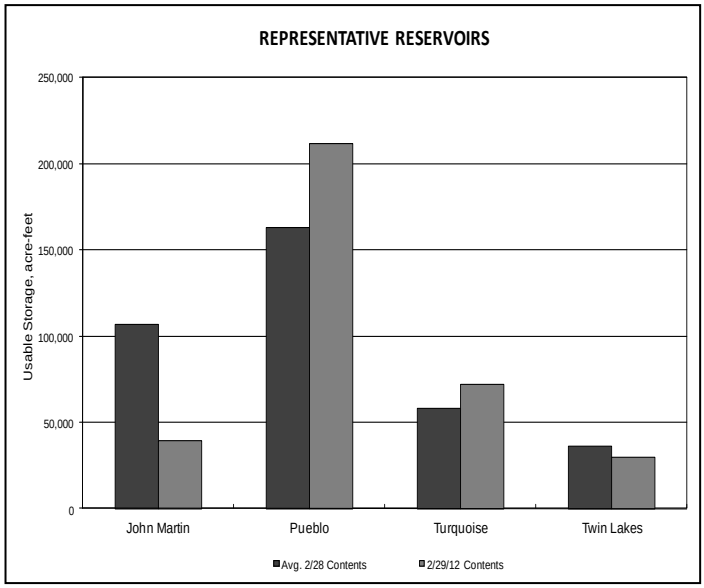
Reservoir storage in the Pueblo Winter Water Program totaled 114,107 acre-feet as of the end of February. This storage amount is higher than last year's storage to date and represents 89% of the past five-year average. Conservation storage in John Martin Reservoir has accumulated 15,070 acre-feet versus 14,916 acre-feet as of the end of February last year (101%).

Administrative/Management Concerns

The spot market price for leased water rose dramatically this year as evidenced by the sealed bids recently opened by Pueblo Board of Water Works for leased water. Approximately 14,000 acre-feet was leased to eight different entities with lease prices ranging from $67.55 per acre-foot to $150 per acre-foot. The price of short term leased water has gradually risen from around $20-$25 per acre-foot to the current prices. This source of water is relied upon by well augmentation groups and ditch companies as a supplemental source of water.







Basinwide Conditions Assessment

The SWSI value for the month was -0.1. The NRCS reports that March 1 snowpack is 86% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 166 cfs (93% of normal). The Conejos River near Mogote had a mean flow of 42 cfs (80% of normal). Flow to the state line was 92% of normal due to some melting of ice in and around the river channel. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 95% of normal as of the end of February.

Temperatures were slightly above normal in the San Luis Valley during February. Alamosa received 0.28 inches of precipitation during the month, very near the normal amount.

Outlook

Snowpack conditions throughout the upper Rio Grande basin tracked the normal gain seen during February. Unfortunately, the basin is tracking at roughly 20% below normal snowpack since mid-January.

Recent NRCS stream flow forecasts are calling for slightly below average runoff in the upper Rio Grande basin this year. The expected April through September runoff is 94 percent of normal for the Rio Grande near Del Norte and 85 percent for the Conejos River near Mogote. At the northern end of the San Luis Valley, the Saguache Creek runoff is predicted to be 82 percent of normal. The Sangre de Cristo Range is in much better shape than a year ago, forecasted runoff for 2012 is 68 to 85% of normal.

The NOAA three-month outlook suggests this basin and most of Colorado should expect above normal temperatures and below normal precipitation for the April through June period.

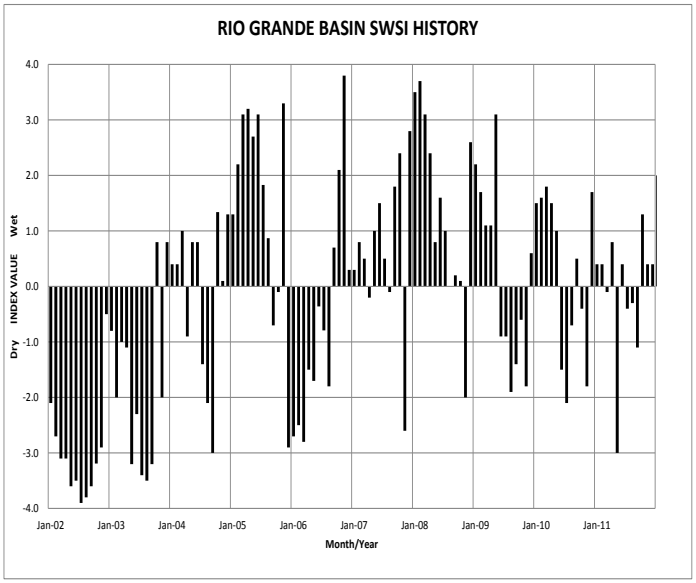
Administrative/Management Concerns

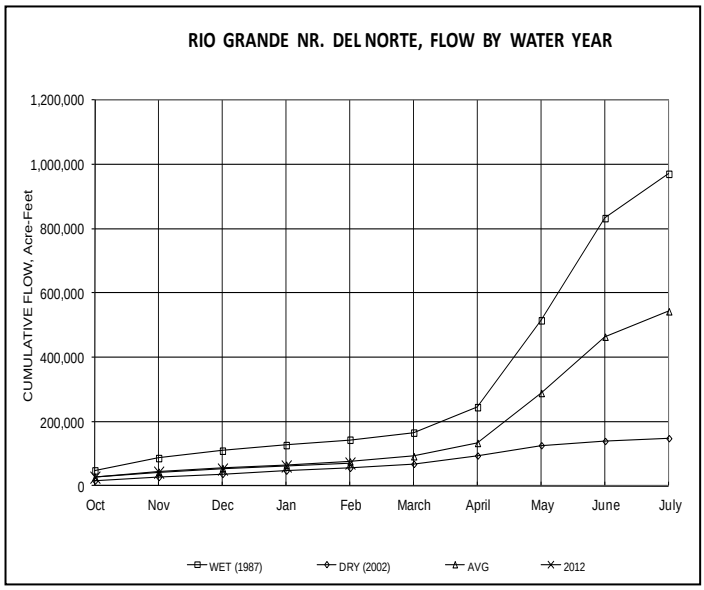
The 73rd annual meeting of the Rio Grande Compact Commission was held in Austin, Texas at the AT&T Executive Education and Conference Center on Wednesday, March 20, 2012.

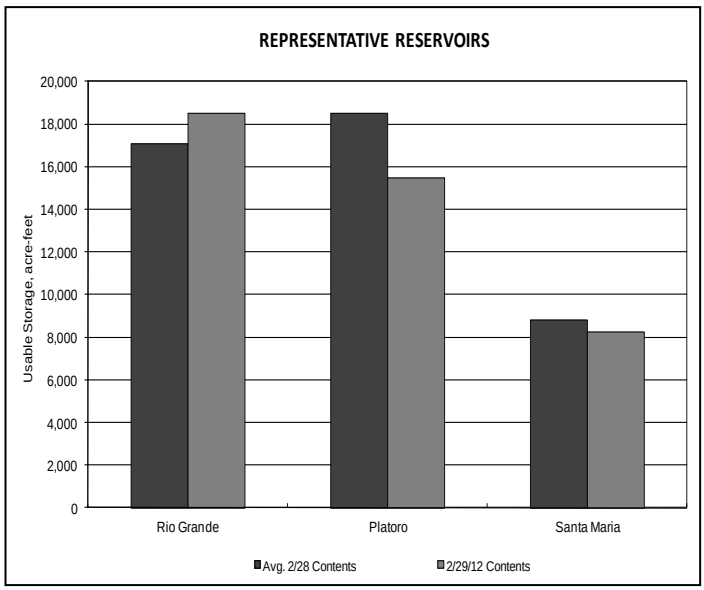
If the current trend of warm and dry conditions persists, the Division Engineer expects early calls for irrigation water this year. Diversions from the Rio Grande and Conejos will commence around the first of April.

Administrative/Management Concerns

The encouraging snowfall of November and December has been followed by mediocre accumulation during January and February. Farmers and ranchers should brace for a below average water supply year if the weather forecasts are accurate.



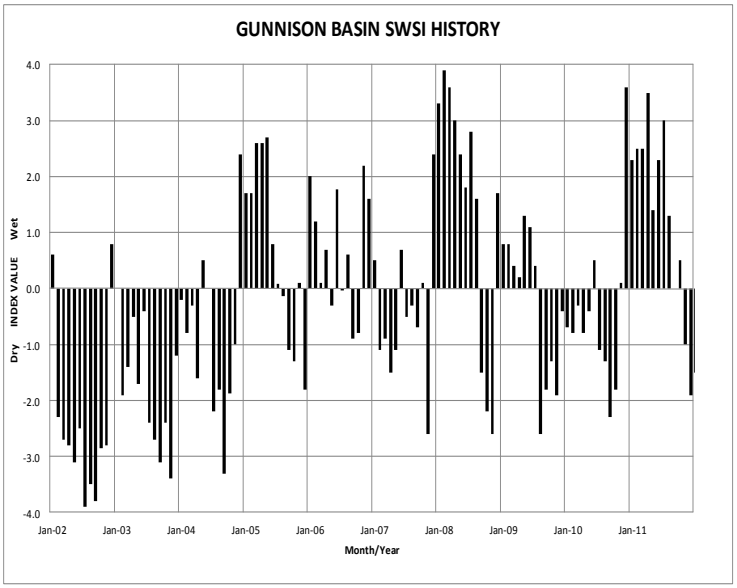




Basinwide Conditions Assessment

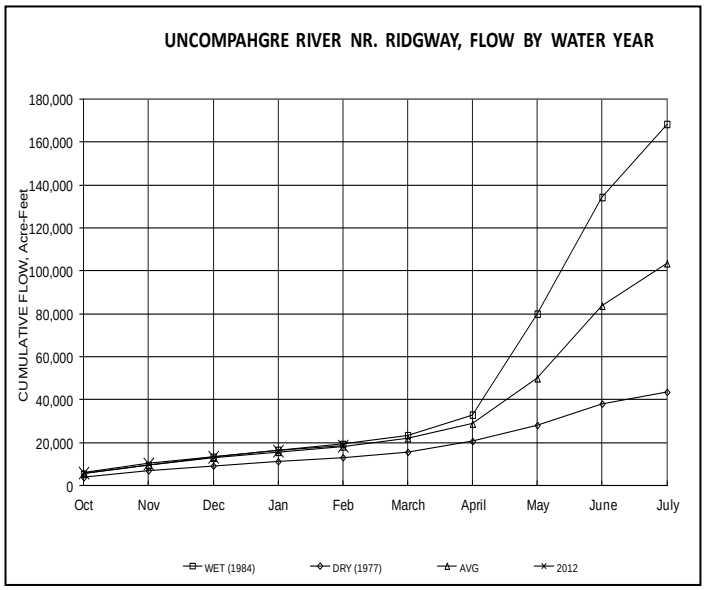
The SWSI value for the month was -1.4. The NRCS reports that March 1 snowpack is 81% of normal. Flow at the gaging station Uncompahgre River near Ridgeway was 41.9 cfs, as compared to the long-term average of 45.3 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 100% of normal as of the end of February.

Conditions continued to improve in February, with precipitation during the month at above average in all areas of the Gunnison basin except above Crested Butte. The above average snowfall improved the Gunnison basin's snowpack to 84 percent of the 30-year average (normal) on March 1st. Southern areas of the basin are in slightly better condition with areas above Ridgway Reservoir at 89 percent of normal, while northern areas such as above Paonia Reservoir at 85 percent of normal. Although conditions have improved in the East and Slate River basins above Crested Butte, they remain well below average with only 67 percent of average SWE. Temperatures during February were right at average for most of the basin. One observation of many residents is that very little low snow is present throughout the basin.



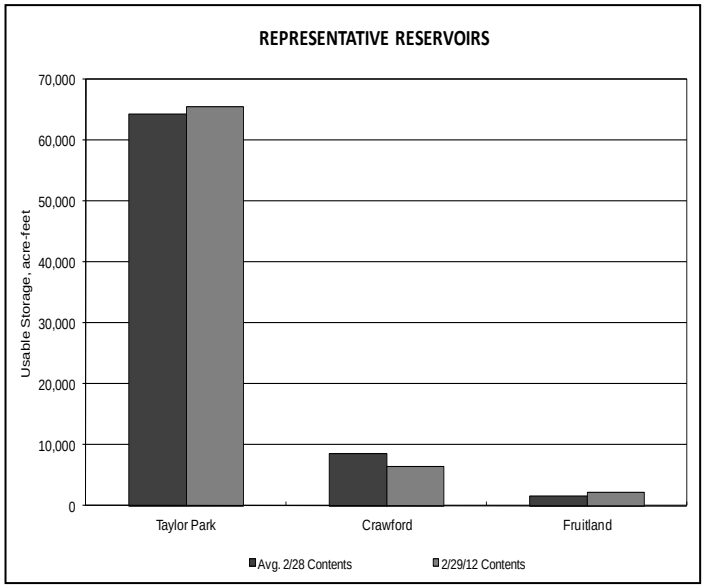
Outlook

NRCS snow water equivalent (SWE) projections didn't change and continue to predict that the Gunnison basin will end the year at 85 percent of peak snowpack with average snowfall for the rest of the spring. If we are to reach the 30-year average peak SWE, the Gunnison basin will need to receive 163 percent of average precipitation during the next two months. The National Weather Service (NWS) climate forecasts are not optimistic about those prospects as they are predicting a good chance of below normal precipitation and above average temperatures during the next 30 and 90-day periods. This has been confirmed during the first half of March because as of March 16th we had fallen to 78 percent of normal SWE.



Administrative/Management Concerns

As only two months of the accumulation season remain it looks more likely that we may have the driest water year in the Gunnison basin since 2002. Water users in areas without storage are accordingly concerned about the potential for early calls. Reservoir storage in the basin remains at or above average in most areas, therefore, water users with storage will be less affected by the poor snowpack conditions. Hopefully March and April will defy the Climate Center forecast and bring above average snowfall. The Gunnison Tunnel is planning to open by diverting 200 cfs on March 19th. This is a week or so earlier than normal and will mean the flows in the Black Canyon will drop to 400 cfs. The forecasted inflow to Blue Mesa Reservoir remains at 450,000 acre-feet, which is 67 percent of normal and is tied for the lowest forecast since the USBR began predicting inflows.



Public Use Impacts

If the current projected inflow does not change by April 1st, the USBR will plan to produce a one day peak flow of 2,200 cfs in the Black Canyon. This is significantly lower than the last few years (2011 peak flow equaled 7,000 cfs) where Crystal Dam has spilled to produce the amount specified by the Black Canyon Reserved Water right.

Basinwide Conditions Assessment

The SWSI value for the month was -1.7. The NRCS reports that March 1 snowpack is 77% of normal. Flow at the gaging station Colorado River near Dotsero was 853 cfs, as compared to the long-term average of 965 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 126% of normal as of the end of February.

Outlook

Roaring Fork, Eagle and Colorado River flows should run near average throughout March. Blue River flows have and will continue to run slightly above average. Although improving somewhat in late February, late-season snowfall continues to be significantly below average in the Upper Colorado Basin.

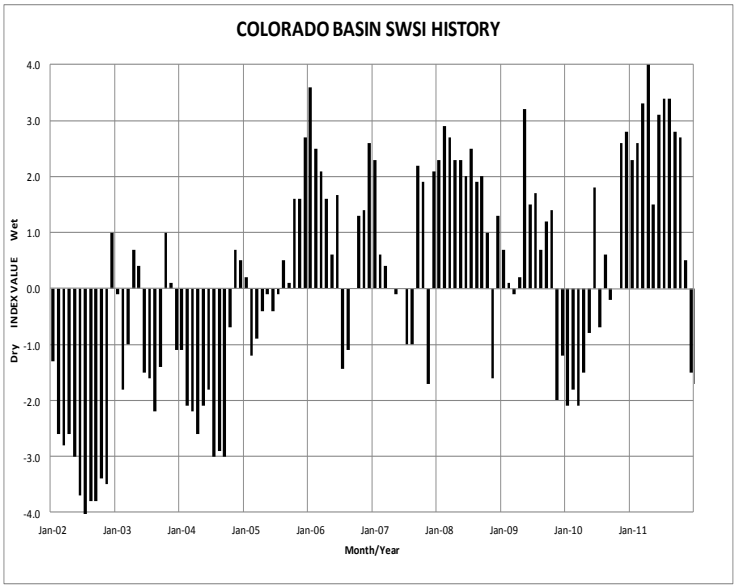
Administrative/Management Concerns

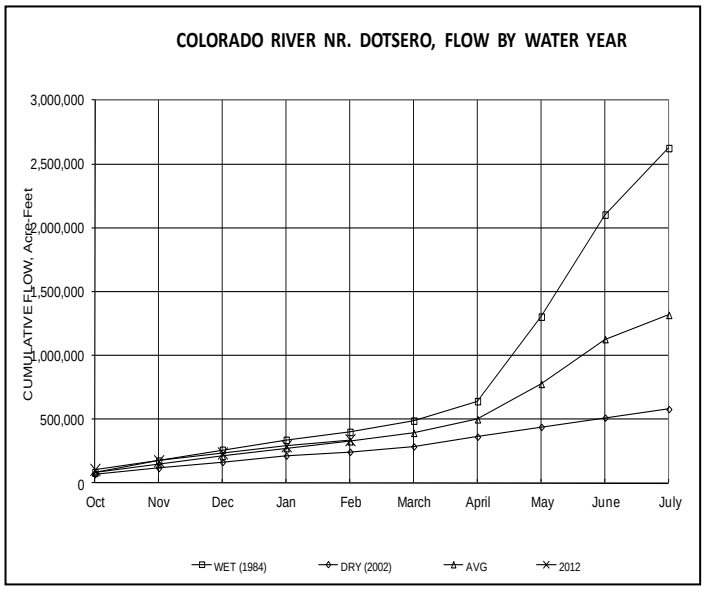
Green Mountain reservoir releases will increase slightly with a small improvement in Blue River Basin runoff. Ruedi Reservoir releases are likely to remain at current levels throughout March with current snowpack and resultant runoff forecast well below average for the Upper Fryingpan Basin.

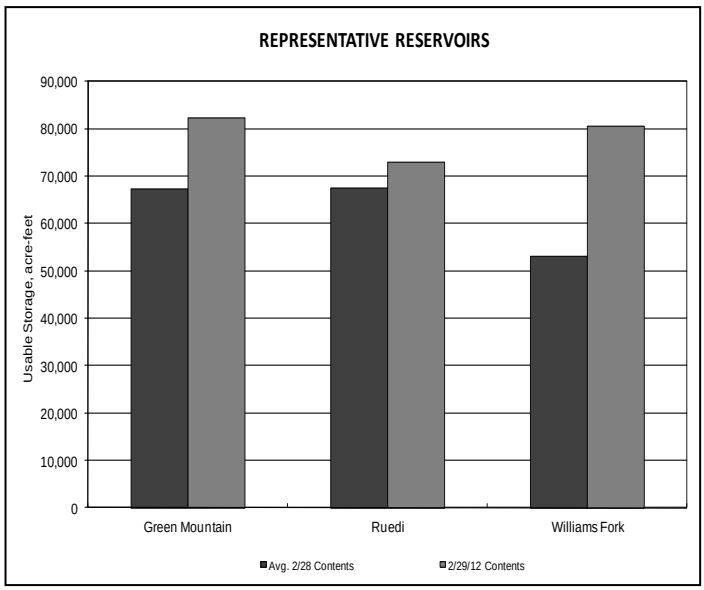
The Colorado River Cooperative Agreement is now in the signature process. Developed to prevent Denver Water from expanding future water diversion projects in the Eagle River Basin, improve environmental health in the Colorado River Basin, and promote recreational use; the agreement also includes a Shoshone outage protocol to ensure sufficient Colorado River flows when the Shoshone Power Plant is not operational. In exchange, Eagle County will forego opposition to a future interconnect between Clinton Reservoir and Eagle Park Reservoir. The Eagle River currently has approximately 20,000 acre feet diverted.

Public Use Impacts

Upper Colorado River Headwaters and Roaring Fork River Basin snowpack improved somewhat from last month. Snow water equivalent basin-wide percentages reported 77 percent of average as of March 1st; however, these are likely to fall significantly with low precipitation forecast throughout March.





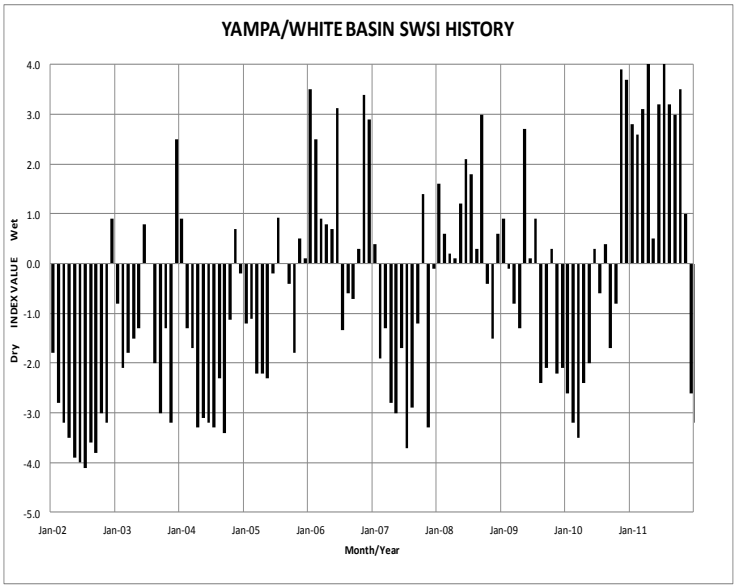


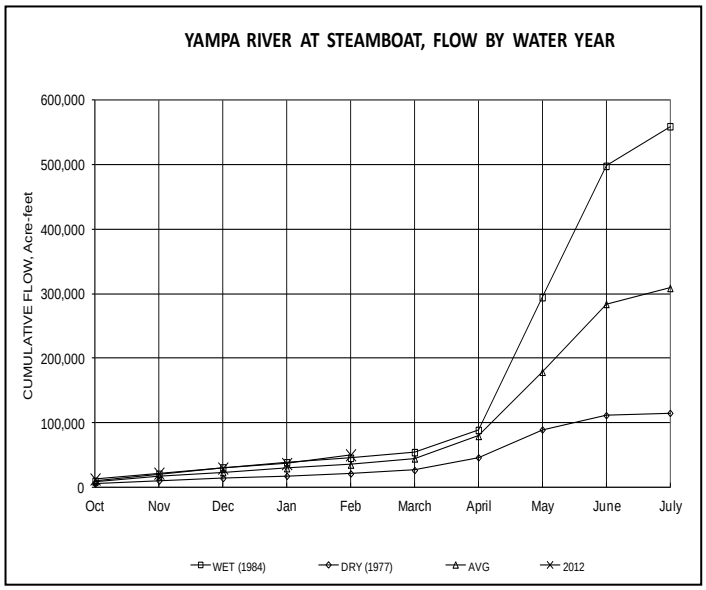
Basinwide Conditions Assessment

The SWSI value for the month was -2.9. The NRCS reports that March 1 snowpack is 80% of average for the North Platte River basin and 78% of average for the Yampa and White River basins. Flow at the gaging station Yampa River at Steamboat was 245 cfs, as compared to the long-term average of 100 cfs.

February precipitation was above the monthly average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at SNOTEL sites operated by NRCS, was reported at approximately 118% of average for the Yampa, White, and North Platte River basins. However total precipitation for the water year to date in the combined basins continued to be below average at 83%.

As of March 1, 2012, NRCS predicts well below average spring and summer streamflows in the Yampa, White, and North Platte River basins. The latest runoff forecasts from the NRCS for the April through July period are 65% of average for the North Platte River near Northgate, 72% of average for the Yampa River near Maybell, 77% of average for the Little Snake River near Lily, and 72% of average for the White River near Meeker.





Outlook

Reservoir storage continues to be well above average and also higher than last year at this same time. As of February 29th Fish Creek Reservoir was storing 3,011 AF which is 72.3% of capacity. Yamcolo Reservoir storage remained approximately 7,632 AF. That volume represents 80% of Yamcolo Reservoir's capacity. As of February 29th, Elkhead Creek Reservoir was storing 21,982 AF and was at 88% of capacity. At the end of February, Stagecoach Reservoir was storing approximately 31,200 AF. The enlarged capacity of Stagecoach Reservoir is 36,460 AF. Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Elkhead Creek Reservoir for municipal, industrial, recreational, and fish recovery releases. Stagecoach Reservoir is primarily used for recreation though a significant amount of stored water is allocated for municipal, industrial, irrigation and augmentation uses.

Public Use Impacts

Steamboat Ski Resort had received slightly over 200 inches of snow at mid-mountain as of February 29, 2012 including a 24 hour snowfall record of 27 inches. The above average snowfall in February produced greatly improved conditions at the resort. Stagecoach Reservoir ice conditions are changing rapidly and park staff request that anglers not attempt to access the ice at this time. Boating at Stagecoach is scheduled to open on May 1st, conditions permitting. At Steamboat Lake, the lake is iced over with 12 inches of solid ice confirmed in the coves near the Marina. However with recent high temperatures and clear skies, ice conditions are changing rapidly and caution is advised. The snow base at Steamboat Lake is 20 – 24 inches and, as with the lake ice, it is melting rapidly.

Basinwide Conditions Assessment

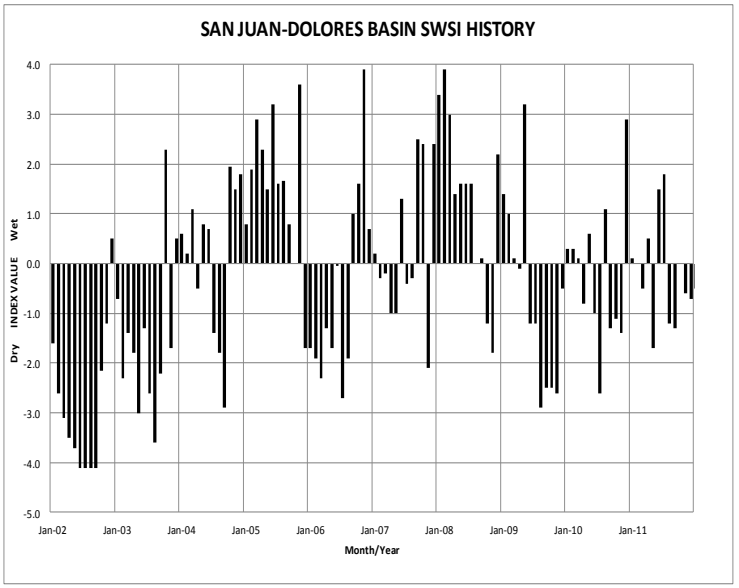
The SWSI value for the month was -0.2. The NRCS reports that March 1 snowpack is 85% of normal. Flow at the Animas River at Durango was estimated to average 161 cfs (78% of average). The flow at the Dolores River at Dolores was estimated to average 44 cfs (79% of average). The La Plata River at Hesperus averaged 6.4 cfs (88% of average).

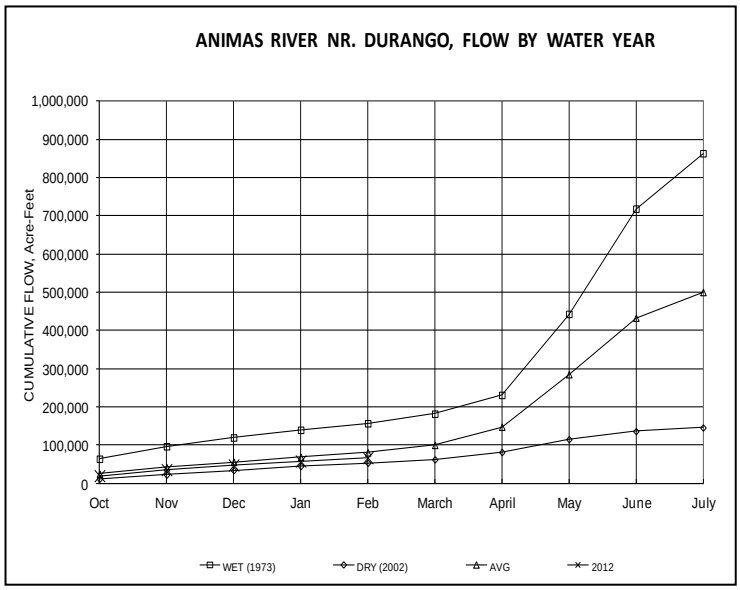
Precipitation in Durango was 2.47 inches for the month, 154% of the 30-year average of 1.60 inches. Precipitation to date in Durango, for the water year, is 9.12 inches, 109% of the 30-year average of 8.34 inches. The average high and low temperatures for the month of February in Durango were 45^{o} and 14^{o}. In comparison, the 30-year average high and low for the month is 45^{o} and 19^{o}.

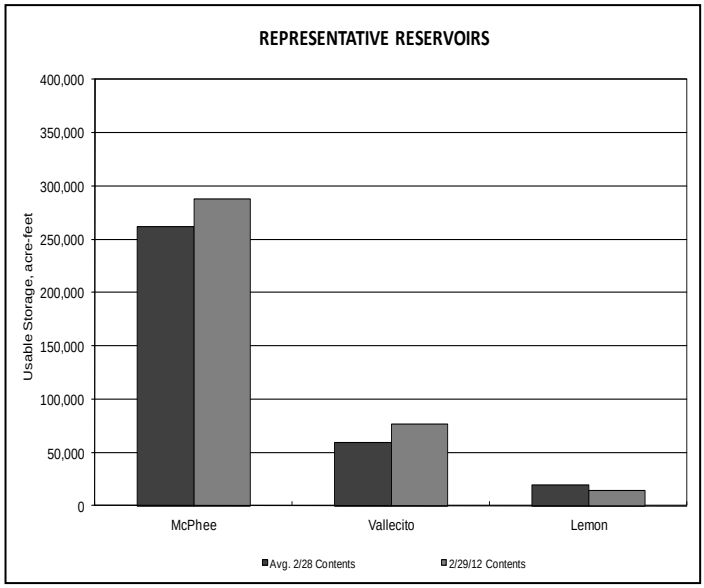
At the end of the month Vallecito Reservoir contained 76,600 acre-feet compared to its average content of 54,675 acre-feet (140% of average). McPhee Reservoir was up to 287,695 acre-feet compared to its average content of 259,687 (111% of average), while Lemon Reservoir was up to 14,300 acre-feet as compared to its average content of 19,558 acre-feet (73% of average).

Outlook

Precipitation (2.47-inches) was above average for the month of February in Durango. There are 22 years out of 118 years of record where there was more precipitation than this year. On February 29 the NRCS SNOTEL sites reported an average snow-water equivalent within the basin at 86%. Last month the snow-water-equivalent was 74%. The snow survey in the La Plata River Basin was completed on February 28, 2012. The water content averaged 13.6 inches.







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