COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
ROOM 818, 1313 SHERMAN ST., DENVER, CO 80203
303-866-3581; www.water.state.co.us

March 2004

Statewide the snowpack is 90% of average. The southwest corner of the state has the highest snowpack values with both the Rio Grande and San Juan/Dolores basins at 108% of average. These numbers are reflected in those basins having the only positive SWSI values. The South Platte basin has the lowest snowpack at 70% of average. The reservoirs graphed in this report are storing a cumulative 81% of their normal amounts. Stream flows remain below normal throughout the state.

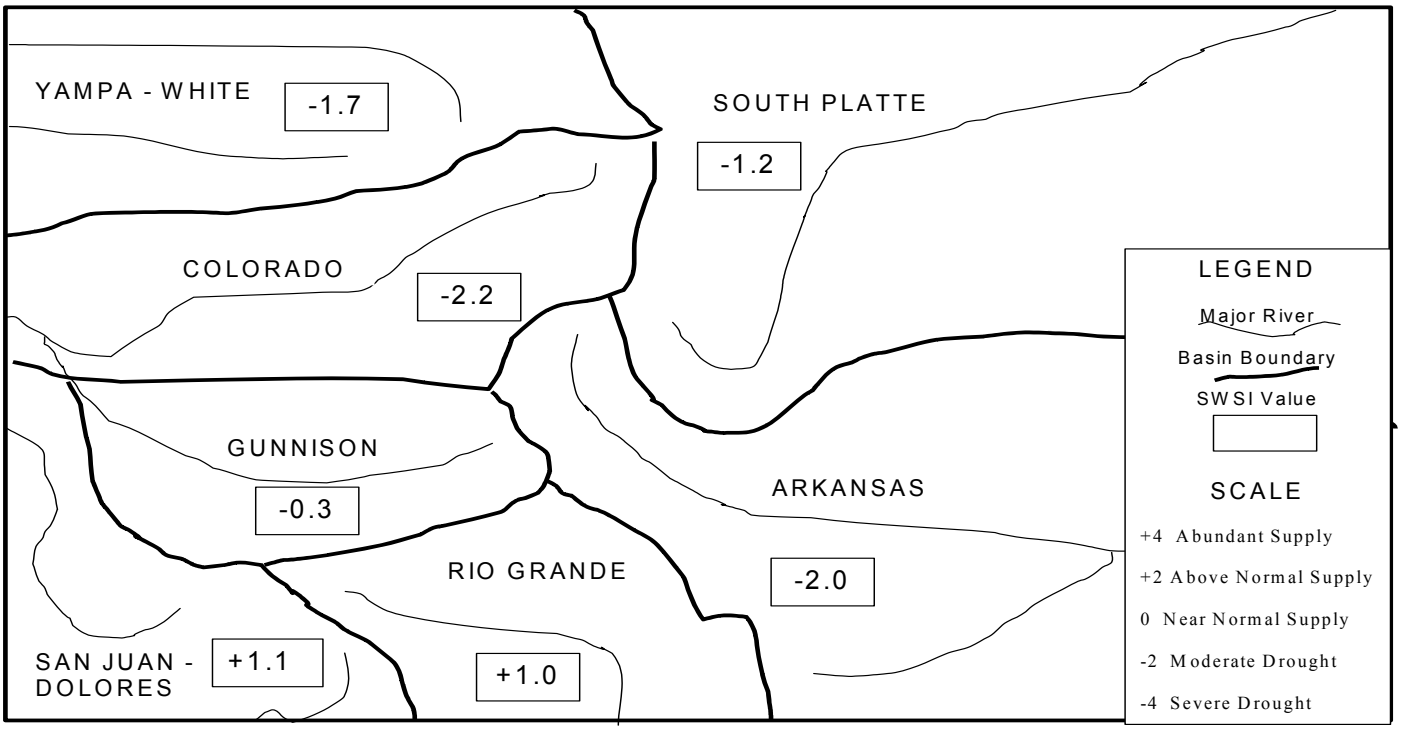
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter period (November through April). 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 following SWSI values were computed for each of the seven major basins for March 1, 2004, and reflect the conditions during the month of February.

Basin	March 1, 2004 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	-1.2	+0.2	+1.4
Arkansas	-2.0	-0.1	+0.3
Rio Grande	+1.0	+0.6	-2.0
Gunnison	-0.3	+0.5	+1.1
Colorado	-2.2	-0.1	-1.2
Yampa/White	-1.7	-0.4	+0.1
San Juan/Dolores	+1.1	+0.9	+2.5

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

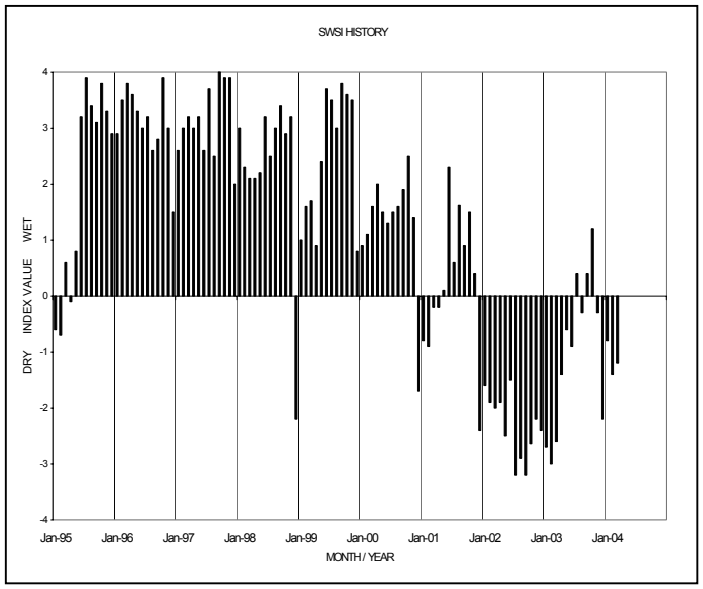


MARCH 1, 2004

Basinwide Conditions Assessment

The SWSI value of –1.2 indicates that for February the basin water supplies were slightly below normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 103% of normal as of the end of February. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 64% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 63% of capacity. The Natural Resources Conservation Service reports that March 1 snowpack is 70% of normal. Flow at the gaging station South Platte River near Kersey was 615 cfs, as compared to the long-term average of 849 cfs. Flow at the Colorado/Nebraska state line averaged 54 cfs.

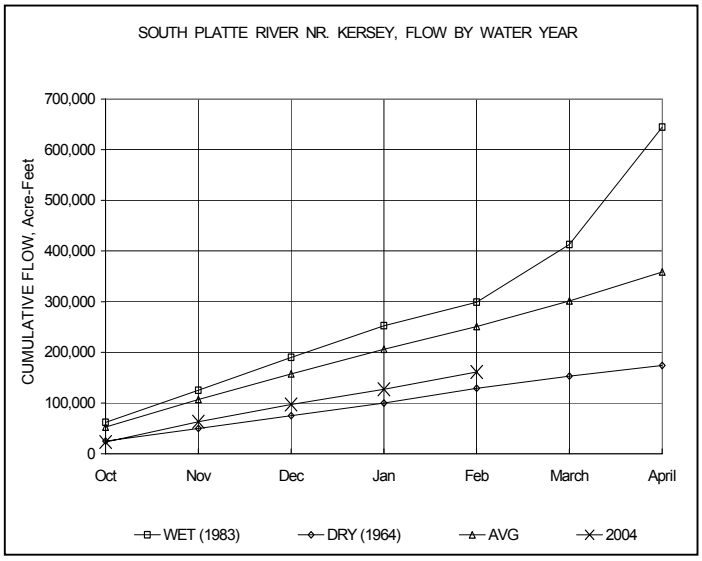
Reservoir storage continued in February for reservoirs along both the main stem and tributaries. Calls for storage continued throughout the basin except below the Prewitt inlet. Calls for storage also existed on tributaries in February, the normal situation for this time of year.

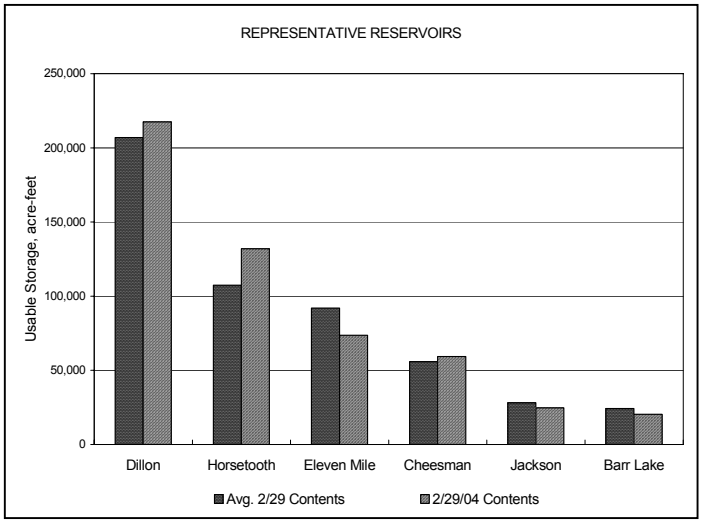


Outlook

With stream flow conditions remaining near historic lows, and continued below average snow pack through out the basin, administrators are very concerned that all of the irrigation reservoirs on the mainstem and tributaries will not fill this spring. As time goes on reservoir filling becomes more and more dependent upon above average late season snowfall and rain events. If reservoirs don't fill, many irrigation suppliers may run short unless there is adequate rainfall the remainder of the irrigation season. The situation at the end of February is significantly better than last year. However, we point out that supplies for last season were saved by a major snow event March and subsequent timely precipitation events.

Generally, municipal supply reservoirs are in much better shape due to higher carryover percentage from the previous year. Except in a few cases, we do not foresee major municipal supply issues unless we continue to have significantly below average precipitation the rest of the winter and this spring. Some municipal suppliers may be forced to lease agricultural supplies to assist this summer in meeting demand.

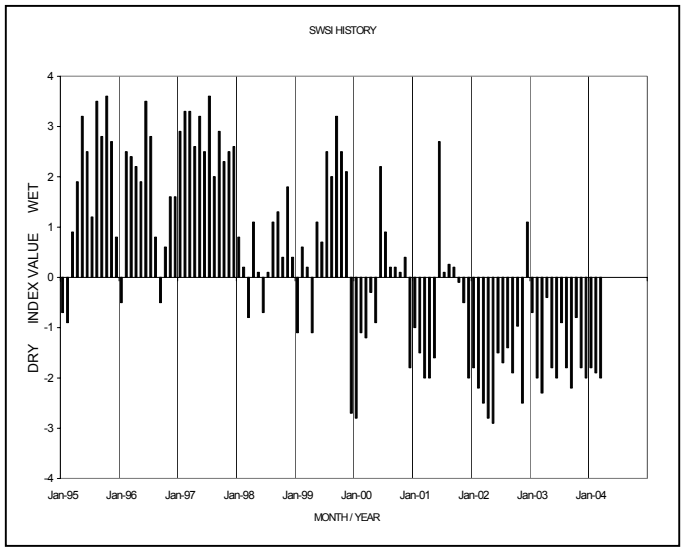




Basinwide Conditions Assessment

The SWSI value of –2.0 indicates that for February the basin water supplies were below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 89% of normal. Flow at the gaging station Arkansas River near Portland was 358 cfs, as compared to the long-term average of 361 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 54% of normal as of the end of February.

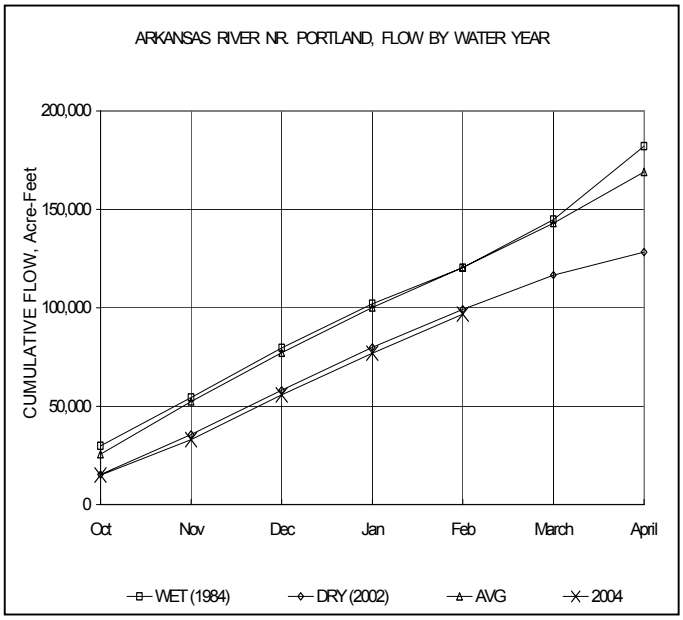
The Pueblo Winter Water Storage Program and storage in Trinidad Reservoir have experienced improved conditions compared to last year, but storage in John Martin Reservoir, which serves the lower part of the Arkansas River system in Colorado and also provides stored water for use in Kansas, is down slightly from last year.

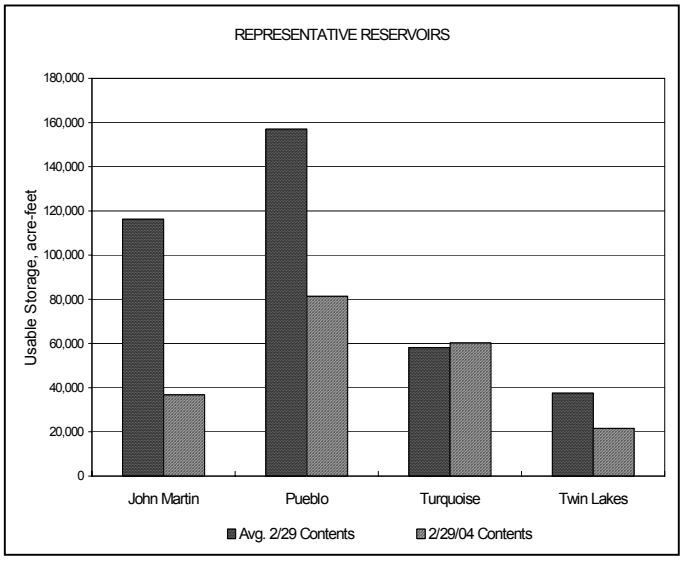


Outlook

Although snowpack numbers in the Arkansas River Basin provide some encouragement that the effects of the drought may be softening, it is difficult to determine how the slightly below average snowpack will translate into stream flows during the irrigation season.

The potential amounts of transmountain imports via the Fryingpan Arkansas Project and other transmountain diversions, which play an important role in providing supplemental water for the Arkansas River Basin, are also difficult to predict from snowpack numbers on the west slope.



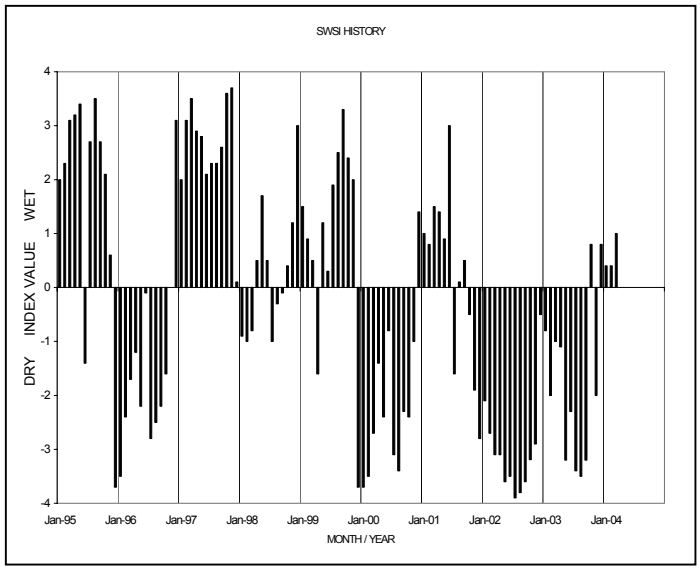


Basinwide Conditions Assessment

The SWSI value of +1.0 indicates that for February the basin water supplies were near normal. The Natural Resources Conservation Service reports that March 1 snowpack is 108% of normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 55% of normal as of the end of February.

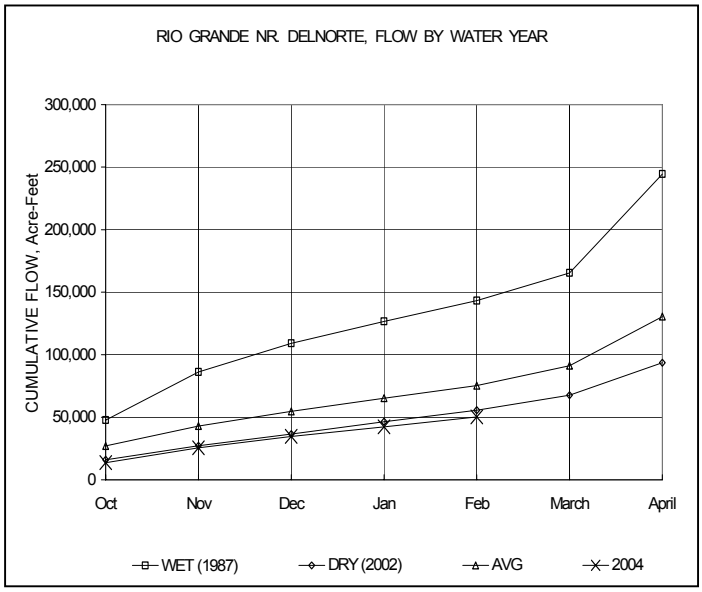
Flow at the gaging station Rio Grande near Del Norte averaged 147 cfs (74% of normal). The Conejos River near Mogote had a mean flow of 44 cfs (85% of normal). Flow to the state line was 68% of normal. The aftermath of the drought is still being felt as stream flow in the basin remains below normal.

Despite the warmer temperatures during the second half of the month, the San Luis Valley was much colder and wetter than normal during February. Alamosa received 1.02 inches of precipitation during the month, 0.81 inches above normal. This precipitation was gladly received as a benefit to winter wheat crops and soil moisture conditions.



Outlook

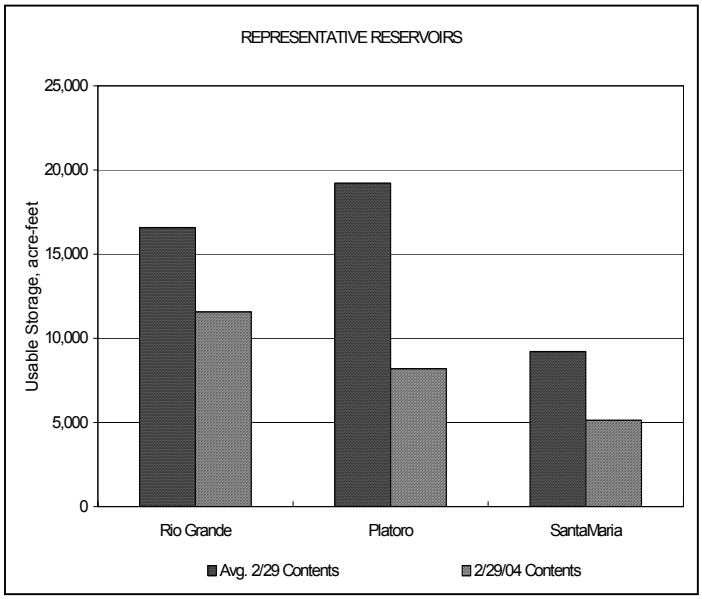
Snowpack conditions remained steady at about 105% of normal during February. Recent NRCS stream flow forecasts are calling for average to slightly below average conditions in the entire upper Rio Grande basin this year. Expected runoff in the Rio Grande near Del Norte is 93 percent of normal, and for the Conejos near Mogote 103% of average. Carryover storage in the basin reservoirs is extremely low and will provide little relief this irrigation season.



Administrative/Management Concerns

The annual meeting of the Rio Grande Compact Commission will be held at the Inn of the Rio Grande in Alamosa on March 25, 2004 at 9 a.m. The public is invited to attend. The Inn is located on US Highway 160 just east of State Highway 17.

The Division Engineer has received word that the call for irrigation water may come much later this year than last. Rio Grande Compact delivery requirements and significant snowfall on the valley floor has cooled the desire of many farmers and ranchers to open their head gates early this year. Diversions from the Rio Grande and Conejos are expected to begin around the first week of April.



Public Use Impacts

Winter sports enthusiasts reliant on snow cover enjoyed the gift of a snowy month.

Basinwide Conditions Assessment

The SWSI value of –0.3 indicates that for February the basin water supplies were near normal. The Natural Resources Conservation Service reports that March 1 snowpack is 102% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 42 cfs, as compared to the long-term average of 45 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 104% of normal as of the end of February.

Outlook

The weather has warmed up somewhat, but has not yet caused any significant increase in river flows. The water user public is excited to see a snowpack that is close to normal, since that hasn't happened in a while.

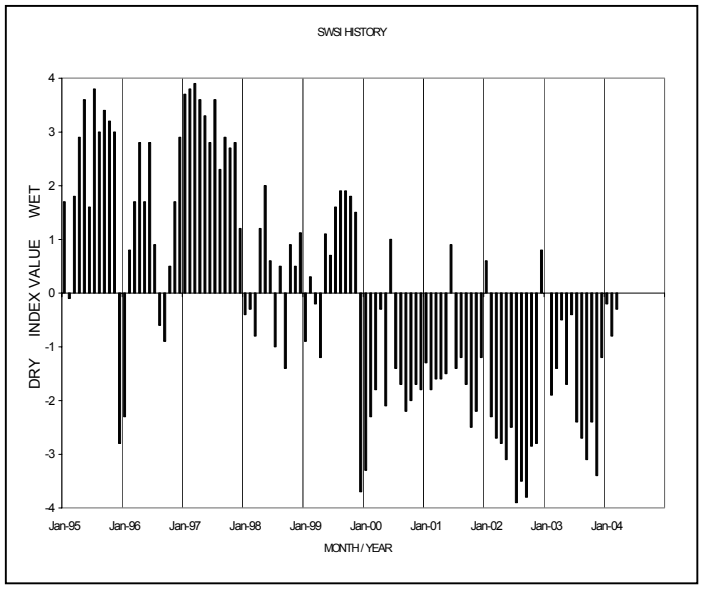
Because of the winter snows, the soil moisture profile is very wet, and this decreases the demand for early irrigation in March and April. Basin administrators do not anticipate the rush for irrigation water in April that they have seen in the last couple of years. The basin has also received good snow at the 6,000 to 9,000 ft elevation that isn't reflected in the snotel readings. Water users are hoping that this snow does not melt too fast and increase the river flows before it can be utilized for irrigation.

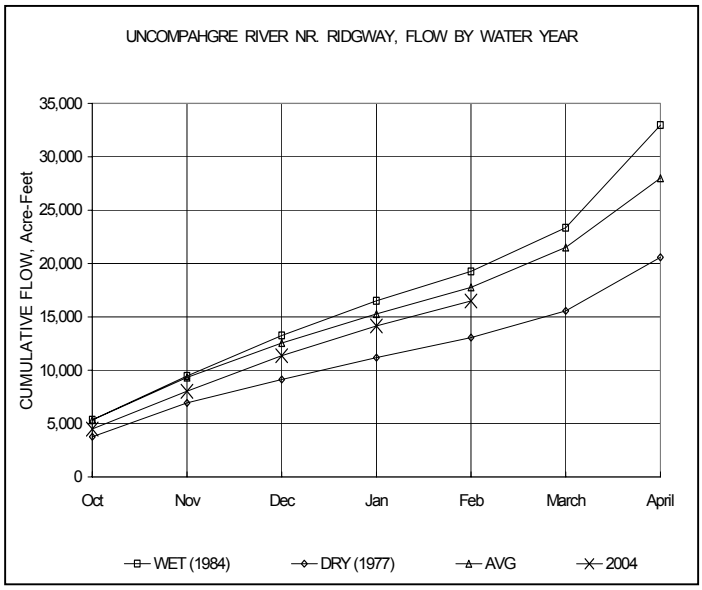
Administrative/Management Concerns

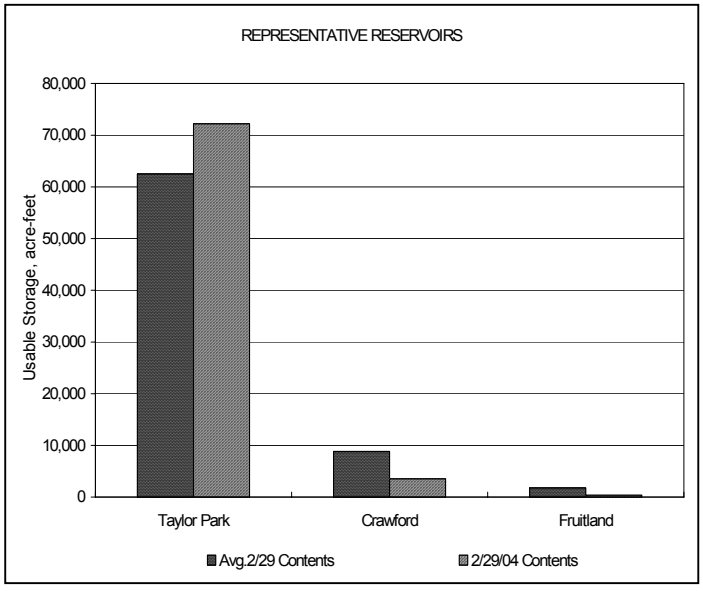
It does not appear like there will be a call on the Gunnison system from the Redlands Canal this spring. This could have occurred the last few years, threatening the ability of numerous reservoirs to store in the critical runoff period. At current snowpack levels, most reservoirs in the Gunnison Basin should fill, with the exception of Blue Mesa and Taylor Park Reservoirs, which will gain substantially. Some reservoirs have already received good amounts of storage this winter.

Public Use Impacts

Seeing a snowpack that is in triple digits in terms of percent of average is not something this basin has seen in several years, and the water users are relieved and excited at the news. For the non-agricultural users, this had been a good winter for snow-related sports such as skiing, ice fishing, ice climbing and snowmobiling.







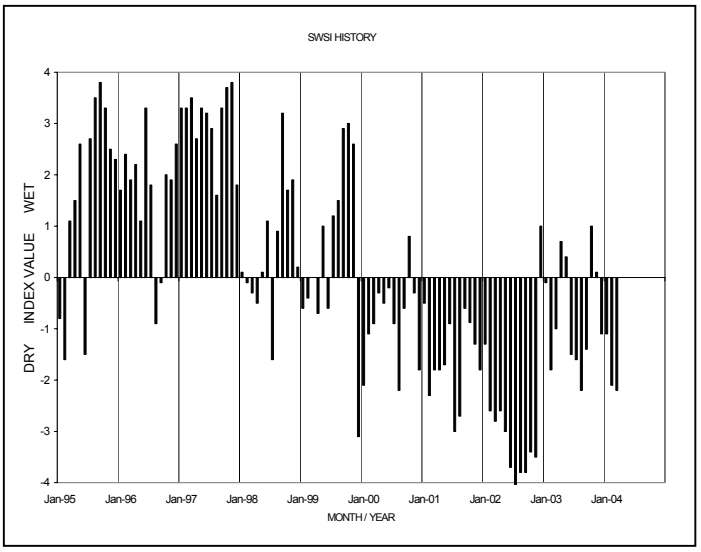
Basinwide Conditions Assessment

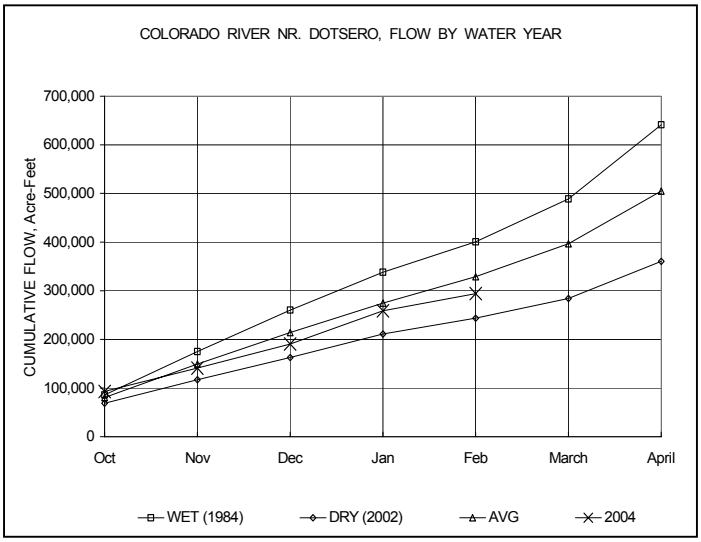
The SWSI value of –2.2 indicates that for February the basin water supplies were below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 85% of normal. Flow at the gaging station Colorado River near Dotsero was 637 cfs, as compared to the long-term average of 968 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 98% of normal as of the end of February.

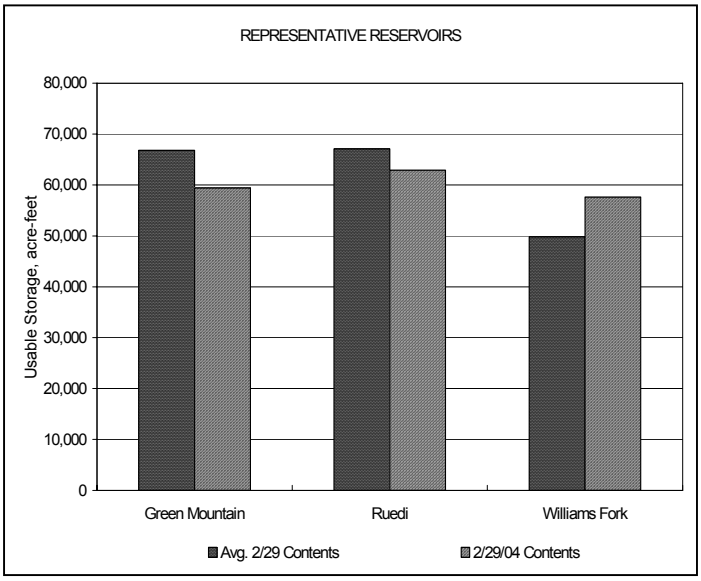
February precipitation was about average for the Colorado River basin which kept basin snowpack near 84% of average. However, the trend of low snowpack in eastern tributary basins and above average snowpack in the western basins continued. The Willow Creek and Blue River basins are below 80% of average, while the Plateau Creek basin is at 109% of average.

Outlook

February stream flow in the major tributaries was 25% below historic average flows. Forecasts for spring and summer flows is below average in all sub-basins of the Colorado River, ranging from 96% of average for Plateau Creek to 73% of average for Lake Granby and Willow Creek Reservoir inflows. Eagle River and Blue River forecasted flows are also low at 75% of average.







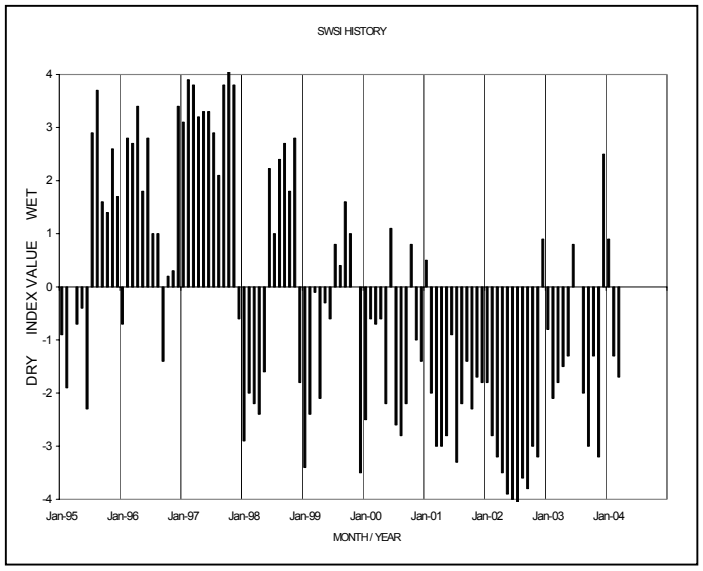
Basinwide Conditions Assessment

The SWSI value of –1.7 indicates that for February the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 89% of normal. Flow at the gaging station Yampa River at Steamboat was 99 cfs, as compared to the long-term average of 98 cfs.

Precipitation in northwest Colorado in February was the lowest in the state at 77% of average. This brought the water year total down to only 85% of average for the basin. With the below-average precipitation, snowpack measurements declined slightly in most areas. At the end of the month, the average snowpack for the major drainages in the basin were as follows: North Platte River = 81%, Yampa River = 88%, White River = 93%, Little Snake River = 97%.

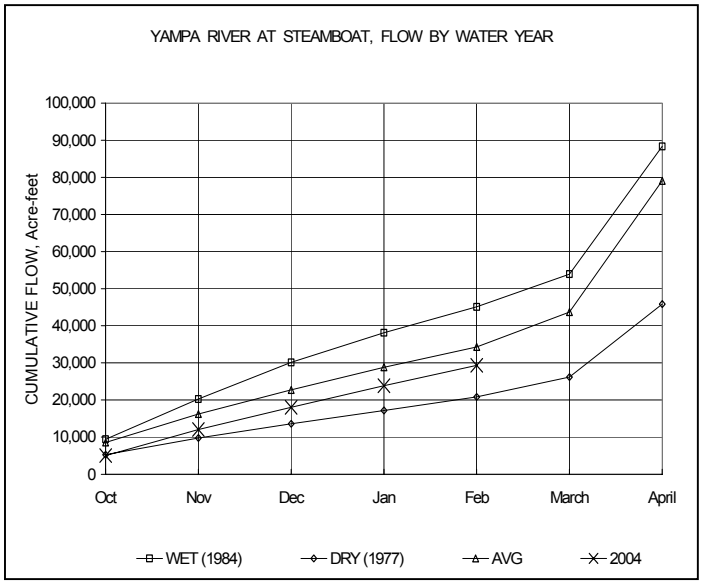
The major reservoirs in the basin are relatively full and have more water in storage then at the same time last year.

Stream flows at the gages that are not ice-affected appear to be at, or slightly below, average.



Outlook

The March 1st runoff forecast prepared by the Natural Resources Conservation Service is predicting below-normal spring runoff for much of the drainage. The percent of average runoff under the most probable forecast is 80% for the North Platte River near Northgate, 78% for the Yampa River near Maybell, and 78% for the White River near Meeker. These forecasts are all down from the February 1st numbers, and considerably down from the beginning of the calendar year. Only the Little Snake River is near average, with a forecast of 100%.



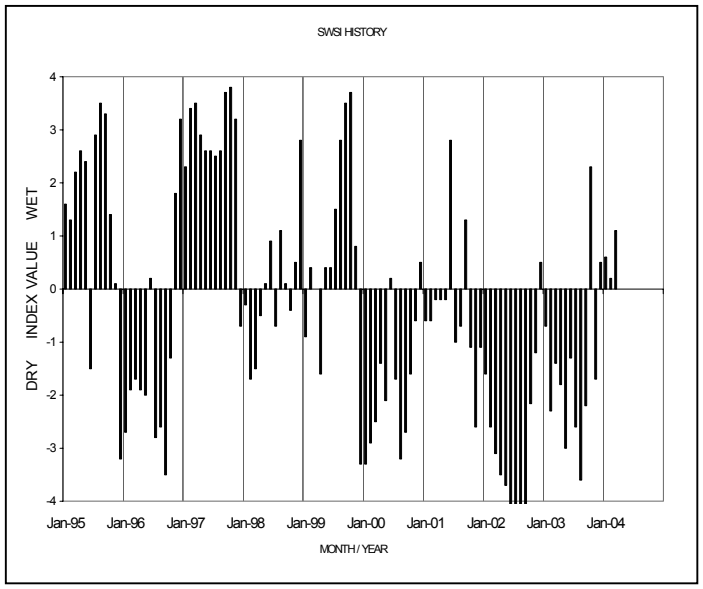
Basinwide Conditions Assessment

The SWSI value of +1.1 indicates that for February the basin water supplies were slightly above normal. The Natural Resources Conservation Service reports that March 1 snowpack is 108% of normal. Flow at the gaging station Animas River near Durango was 171 cfs, as compared to the long-term average of 210 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 68% of normal as of the end of February.

With 2.69 inches of precipitation in Durango during February, its yearly total rose to 108% of average. While the upper elevation snow courses reduced to about 90% of normal, the lower elevations and mesa areas held even with their accumulations of snow. Since the temperatures remained cool, little of this moisture was lost. Snow cover remained on the ground throughout the month.

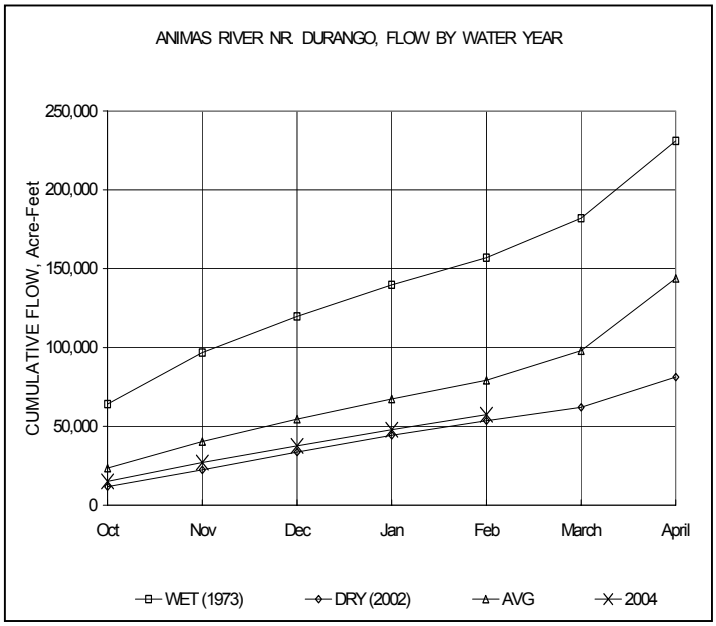
Durango experienced six days with low temperatures under 5°F during February. Both the highs and the lows were below normal most of the month.

Reservoir storage and current river flow remained well below normal in reporting areas.



Outlook

The water supply outlooks improved considerably during February. Snowstorms which occurred toward the end of February pushed accumulations back to the normal range across the entire basin, although the Dolores drainage receiving slightly less water. Basin totals already showed more than the maximum accumulation of snow water last year. This was encouraging for water managers in early planning stages with a significant portion of the snow season remaining.

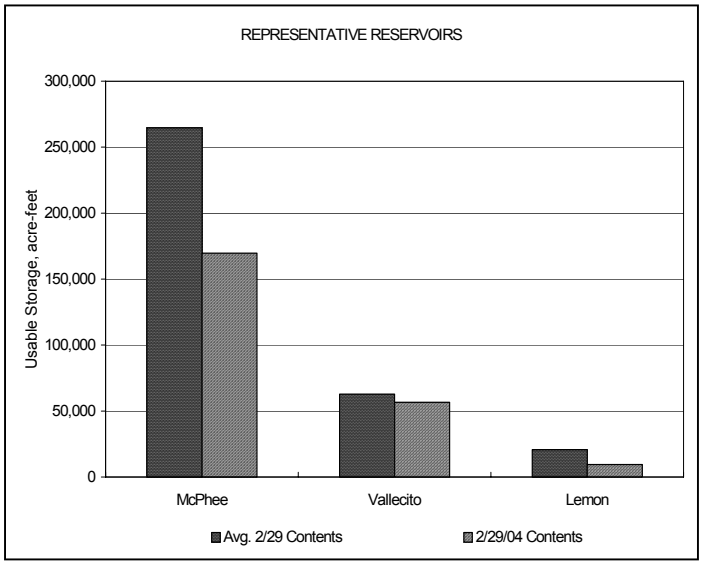


Administrative/Management Concerns

No call for water exists except for reservoir storage in the Dolores River.

Public Use Impacts

The quality of skiing remained good all month, although spring weather was beginning to develop with the mud season approaching.



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