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

April 1, 2004

A diagonal path from the northwest through the southeast basins of Colorado forms an area of the lowest water supply values for the month of March. Those basins are the Yampa-White (-3.3), Colorado (-2.6), and the Arkansas (-3.3). However, there is also great concern for the South Platte Basin because of the very low snowpack, 51% of average, which is the lowest in the state. The Natural Resources Conservation Service reports that snowpack readings are well below average across the entire state, and portions of northern Colorado exceed the dry conditions of 2002. The statewide average snowpack is 65% of average, a substantial reduction from that reported last month, which was 90% of average. Many of the basins report higher than average streamflows. However, high streamflows early in the year are not helpful to the water supply because they indicate an early meltout and lower streamflows later in the summer when the demand is greatest.

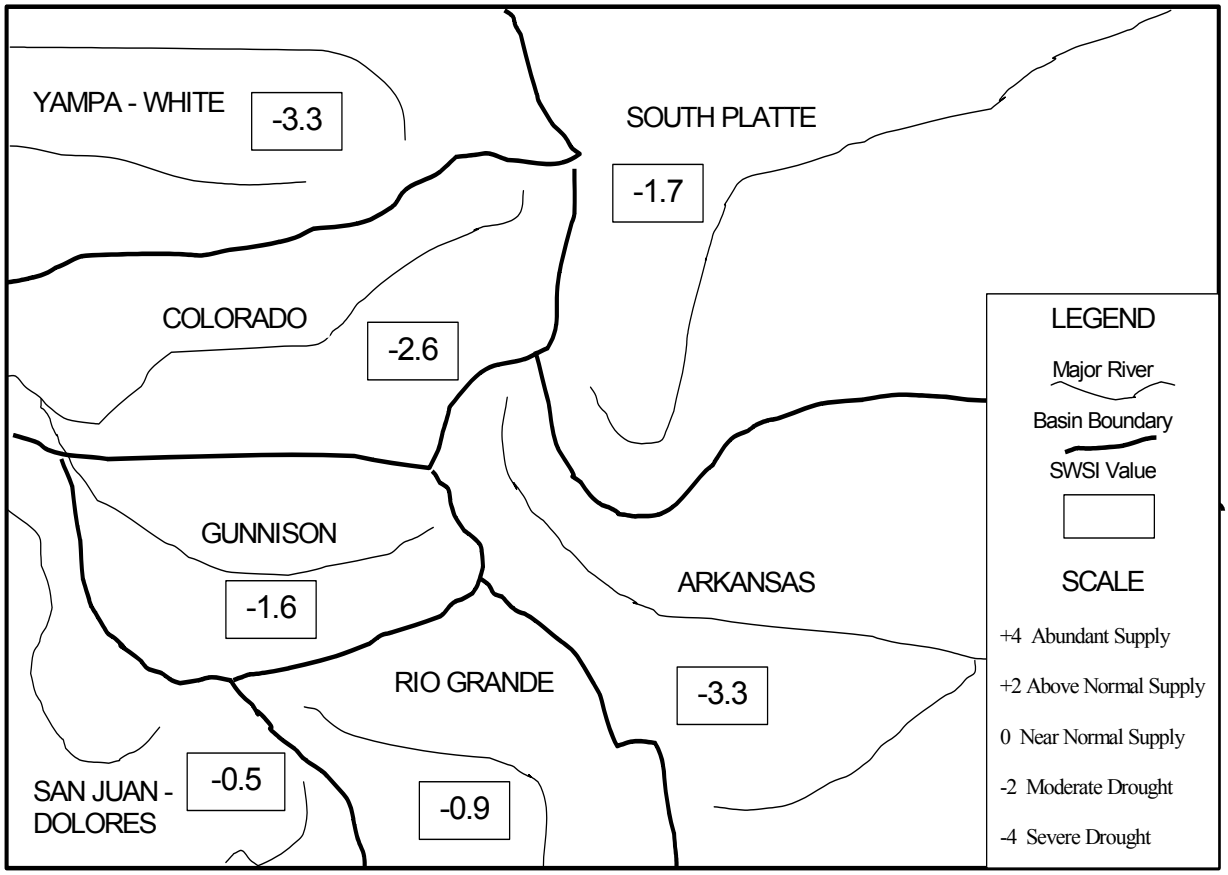
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter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

Basin	April 1, 2004 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	-1.7	-0.5	-0.3
Arkansas	-3.3	-1.3	-2.9
Rio Grande	-0.9	-1.9	+0.2
Gunnison	-1.6	-1.3	-1.1
Colorado	-2.6	-0.4	-3.3
Yampa/White	-3.3	-1.6	-1.8
San Juan/Dolores	-0.5	-1.6	+1.3

Scale

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

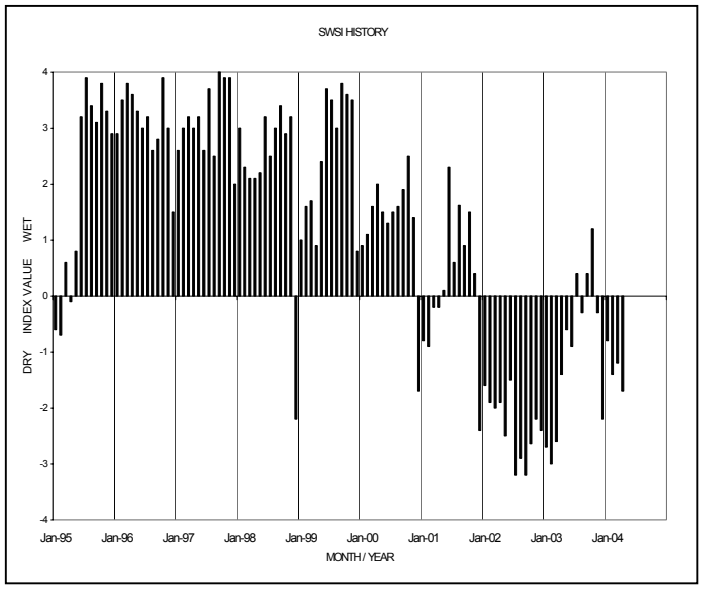
SURFACE WATER SUPPLY INDEX FOR COLORADO



April 1, 2004

Basinwide Conditions Assessment

The SWSI value of –1.7 indicates that for March the basin water supplies were below normal. Cumulative storage for the six reservoirs graphed on this page was 105% of normal as of the end of March. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 78% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 64% of capacity. The Natural Resources Conservation Service reports that April 1 snowpack is 51% of normal. Flow at the gaging station South Platte River near Kersey was 528 cfs, as compared to the long-term average of 823 cfs. Flow at the Colorado/Nebraska state line averaged 19 cfs.

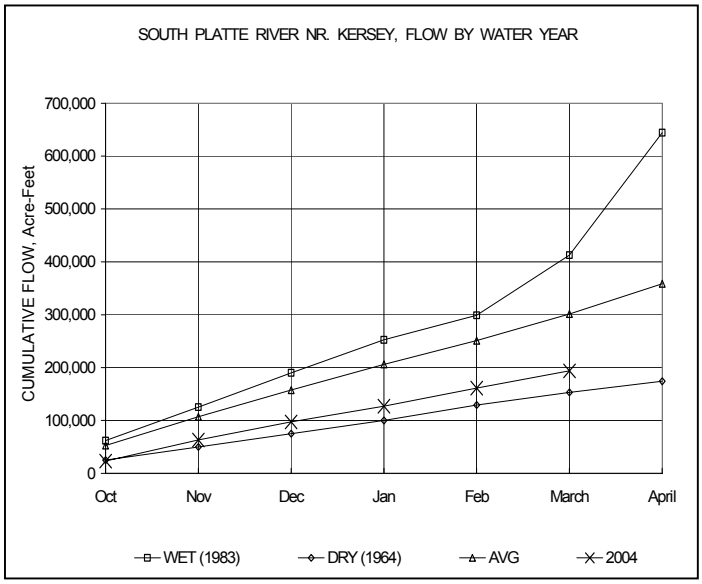


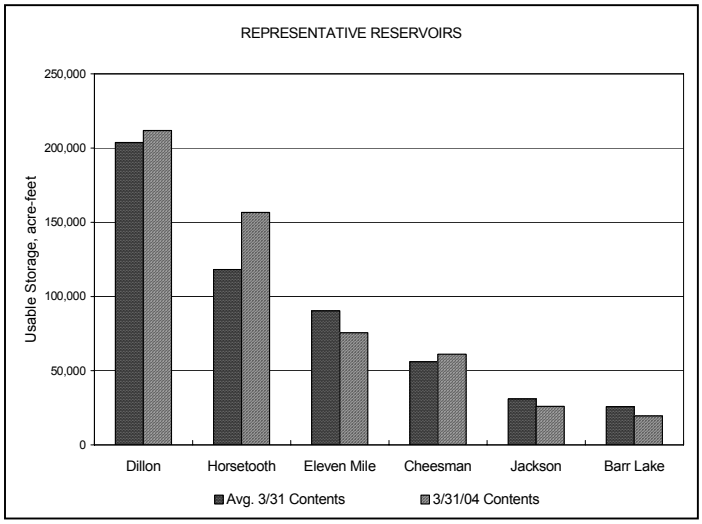
Outlook

Unlike 2003, there was no major snowstorm in March to help the very low snowpack. Just the opposite, March was extremely dry throughout the South Platte Basin causing snowpack to decrease significantly. Storage continued on the mainstem and tributaries through out the month with continued calls for storage water. With the extremely dry, warm conditions, we would expect a direct flow irrigation call the first week of April. A call the first week of April would be an even earlier call than in 2002, which turned out to be an extremely severe drought year.

The call would also stop storage in the basin, and several large reservoirs on the mainstem of the South Platte have not filled. Irrigation reservoirs that are far from filling include Prewitt, Empire, Milton, and Barr Lake. Without a significant wet period in April and May, these reservoirs will not fill this year, which may create supply issues for those served by the reservoirs. Most companies dependent in part upon reservoir storage have already warned their users concerning below average yield of their shares. The dry conditions may also require that users irrigate their crops with storage water, which would reduce supply for even those who have full reservoirs late in the season.

Municipal suppliers, in general, are in much better condition than they were going into the spring of 2003 and have higher storage. Most municipalities were able to maintain a safety factor for this year because of restrictions placed last year, additional supplies they acquired last year, and conditions that turned out to be not as dry as they forecasted in 2003. Even for these suppliers, continued extremely dry conditions would effect yield in 2005, if not before.





Basinwide Conditions Assessment

The SWSI value of –3.3 indicates that for March the basin water supplies were well below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 60% of normal. Flow at the gaging station Arkansas River near Portland was 326 cfs, as compared to the long-term average of 367 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 51% of normal as of the end of March.

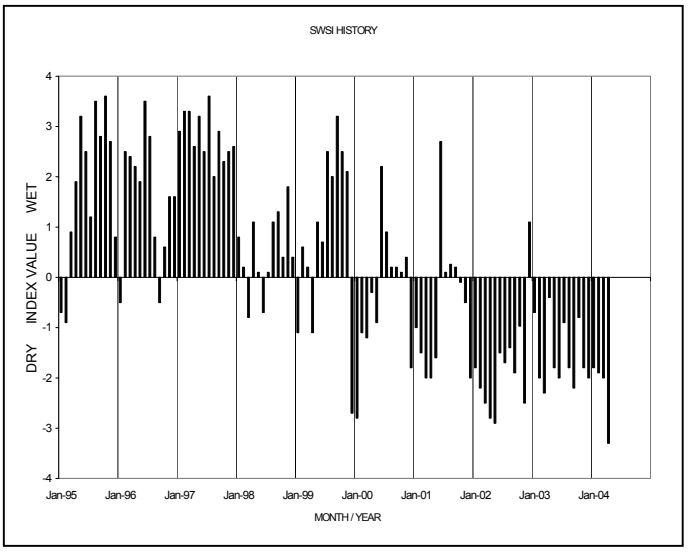
Outlook

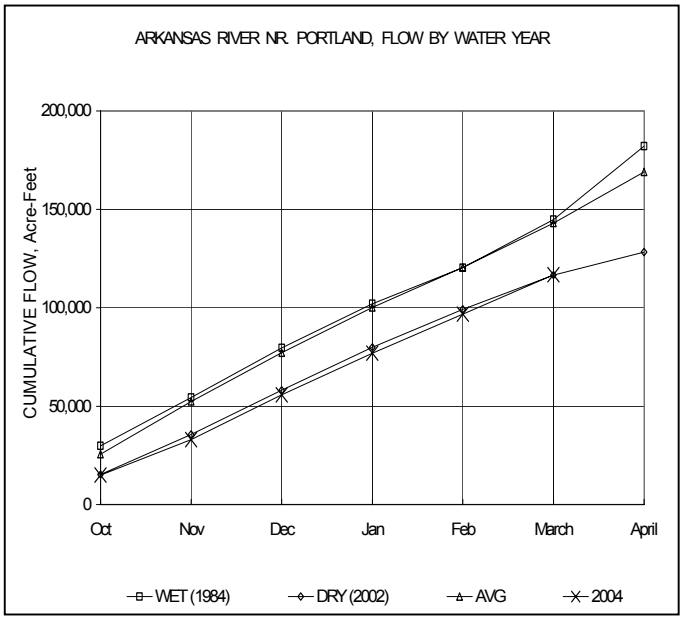
Total reservoir storage during the Pueblo Winter Water Program was 81,439 acre-feet, including 29,407 acre-feet in Pueblo Reservoir, 38,216 acre-feet in off-channel reservoirs, and 13,455 acre-feet in John Martin Reservoir (after distribution to accounts). Total Winter Compact Storage in John Martin Reservoir was 8,528 acre-feet for the period from November 1, 2003 through March 31, 2004. Distribution of Winter Compact Storage into accounts began at 00:00 hours on April 1, 2004. Snowpack conditions deteriorated sharply in March in both the Arkansas River Basin and in west slope basins from which water is imported to the Arkansas Basin.

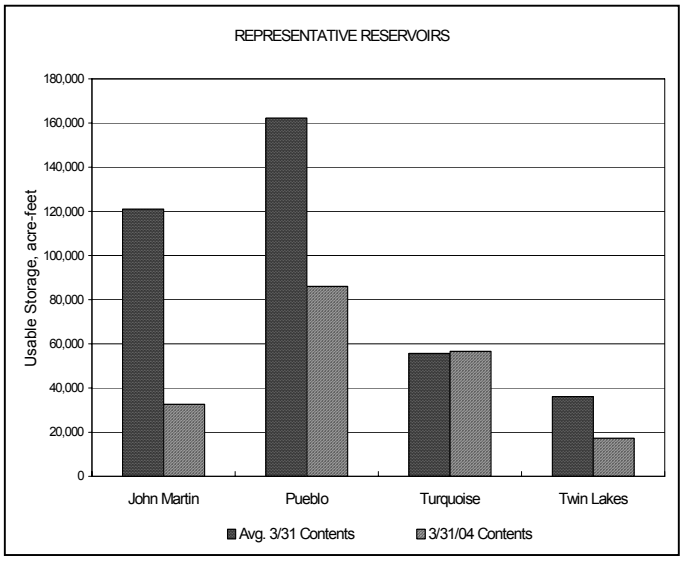
Administrative/Management Concerns

A delivery of water to Kansas from John Martin Reservoir was initiated in late March during a time of very low antecedent flows and unfavorable river conditions resulting in high transit losses.

Major well associations had augmentation plans approved only on a temporary basis until June 1, 2004 to attempt to ensure that adequate replacement supplies could be expected to allow agricultural well pumping.





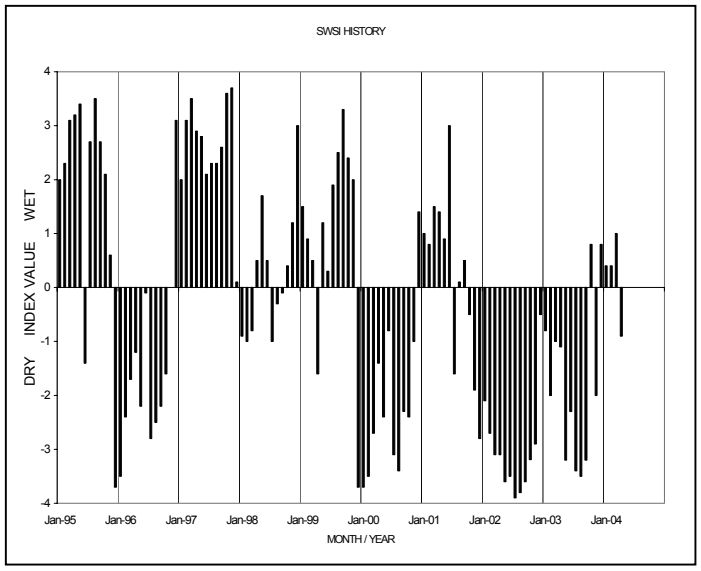


Basinwide Conditions Assessment

The SWSI value of –0.9 indicates that for March the basin water supplies were below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 77% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 362 cfs (134% of normal). The Conejos River near Mogote had a mean flow of 163 cfs (207% of normal). Flow at the state line was 162% of normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 61% of normal as of the end of March. Throughout the upper Rio Grande basin, streamflow during March was well above normal due to the abnormally high temperatures.

Weather conditions in the San Luis Valley were much warmer and drier than normal during March. For several days, the maximum daytime temperatures reached or exceeded the 70-degree mark. Snowfall on the Valley floor totaled only 1.0 inch, one of the worst snowfall months since 1970. Alamosa received a paltry 0.19 inches of precipitation during the month.

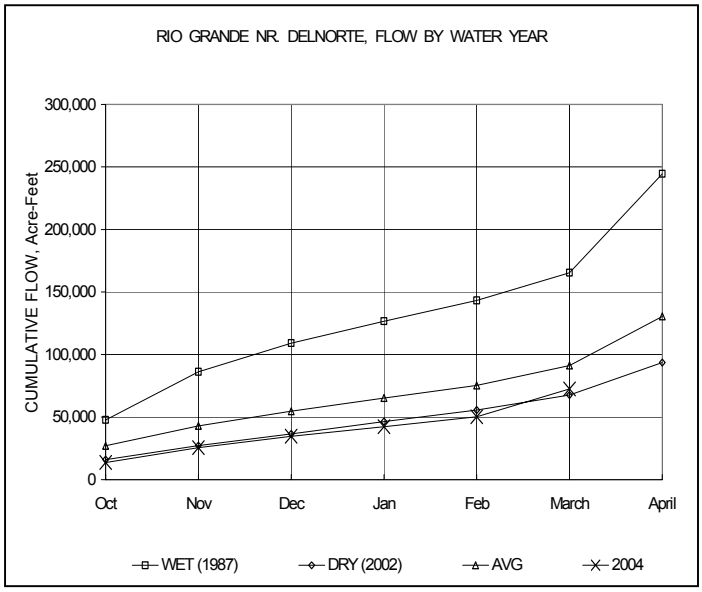
A recent study of 10 SNOTEL sites in the upper Rio Grande basin showed the existing snowpack began to decline about March 8, over a month before the normal peak of April 15.



Outlook

Current NRCS streamflow forecasts predict the April through September runoff to be 87% of average on the Rio Grande near Del Norte and 91% of average for the Conejos near Mogote. Other streams in the basin are forecast as low as 76% of normal for Saguache Creek, but most fall in the mid-70 to low-90 percent of normal range.

The below normal reservoir storage levels compound the water availability problem. Soil moisture conditions are good in most locations around the basin due to the early April precipitation.

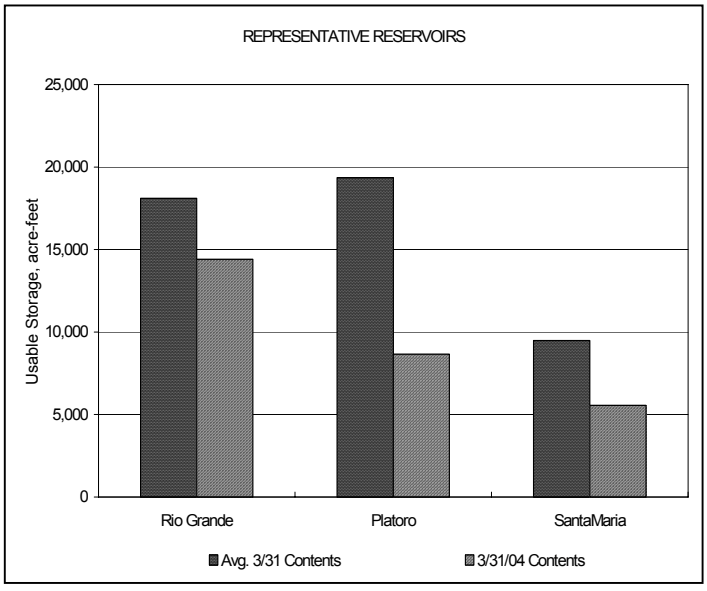


Administrative/Management Concerns

Based on the current forecast, there will be curtailments of water rights on the Rio Grande of approximately 15% and for the Conejos River system approximately 25% this irrigation season.

Public Use Impacts

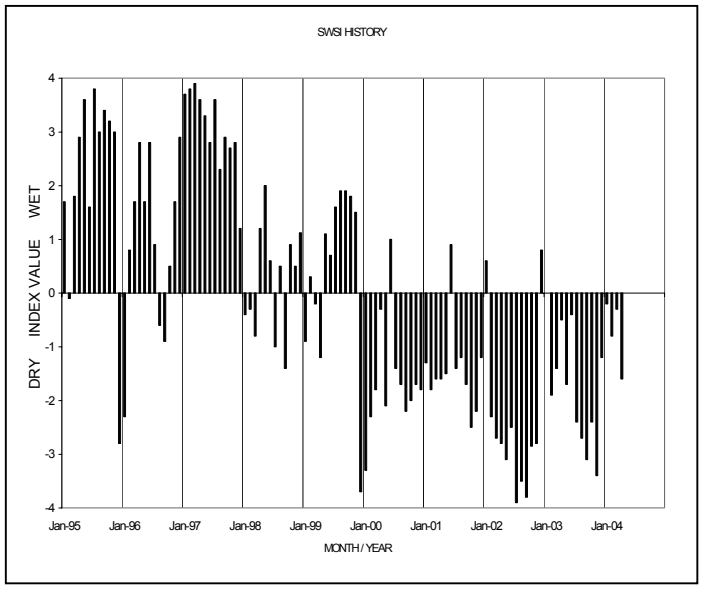
Diversions from local streams for irrigation purposes began the last week of March.



Basinwide Conditions Assessment

The SWSI value of –1.6 indicates that for March the basin water supplies were below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 74% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 102 cfs, as compared to the long-term average of 60.7 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 115% of normal as of the end of March.

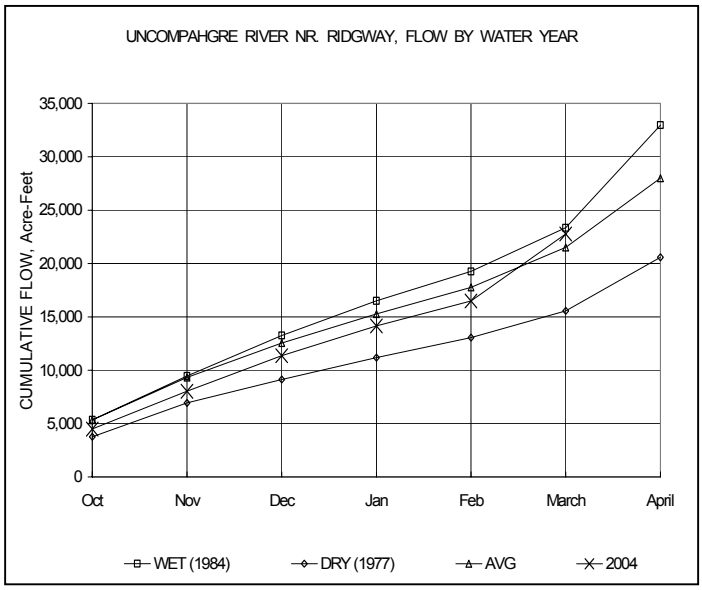
The overall snowpack for the Gunnison Basin on March 1, 2004 was 102 percent of normal. On March 31, the amount had fallen to 74 percent of normal. March was an extremely dry month, and the snowpack remained relatively unchanged during the first 2/3 of the month. But during the last third, the record warm weather actually started some of high snow to melt and the snowpack decreased.



Administrative/Management Concerns

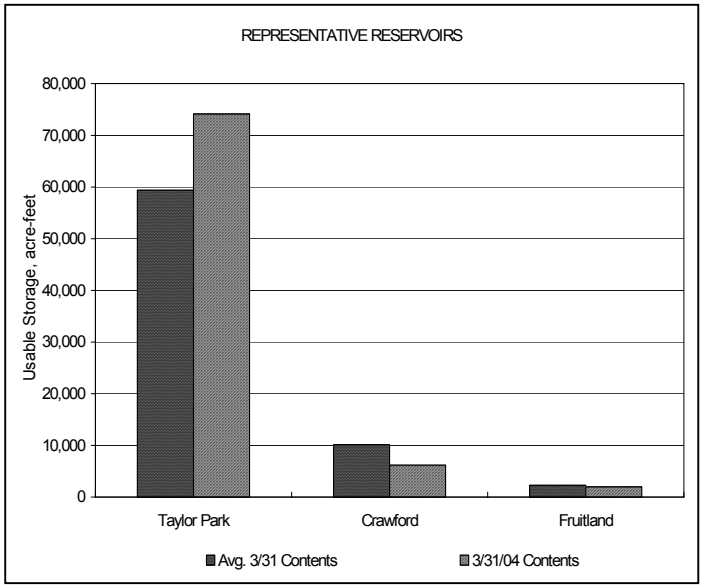
The record heat in the last part of the month was not helpful, and much of the snow at the elevations between 6000 and 9000 feet has already melted. When this happens, the water is not utilized by the irrigators and simply runs down stream. Some irrigators, however, saw the trend and started to irrigate early. Many water users are seeing the dry March/April trend that occurred in 2002 and are becoming concerned. Soil moisture is much higher than in 2002, and the crops are off to a good start.

The USBR is forecasting that Taylor Park and Blue Mesa Reservoirs will not come close to filing this year. They are trying to provide flow scenarios that will minimize releases. They attempt to meet flow needs and obtain as much storage as possible. It still does not look as though a call from Redland will occur this spring, but a call from the Gunnison Tunnel still remains a possibility. Even though the irrigation storage accounts for the Uncompahgre Valley Water Users Association should still be full, if the flows drop to extreme low levels, they will need to place a river call to meet their system needs.



Public Use Impacts

It is discouraging for water users to have such a favorable snowpack drop so drastically. As one person asked one of the Water Commissioners the other day, “Are we going to have enough water this year?” He wisely replied “Yes, since it’s all we will get, it will have to be enough”. Hopefully, the basin (and entire state) sill receive more moisture in April.

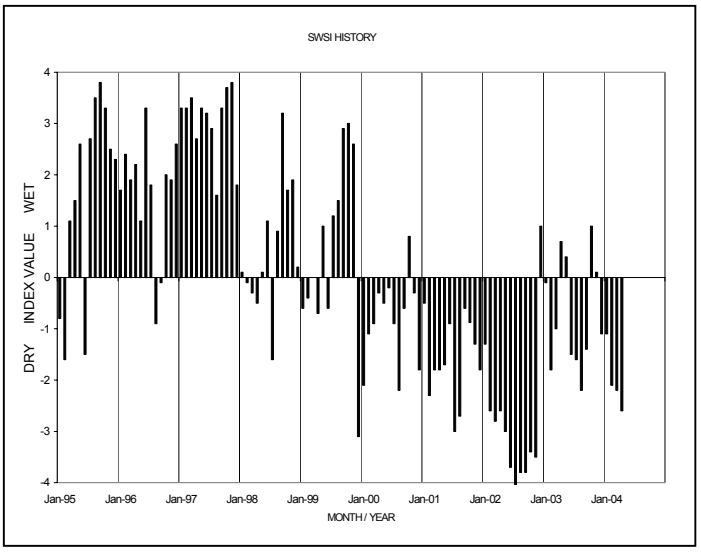


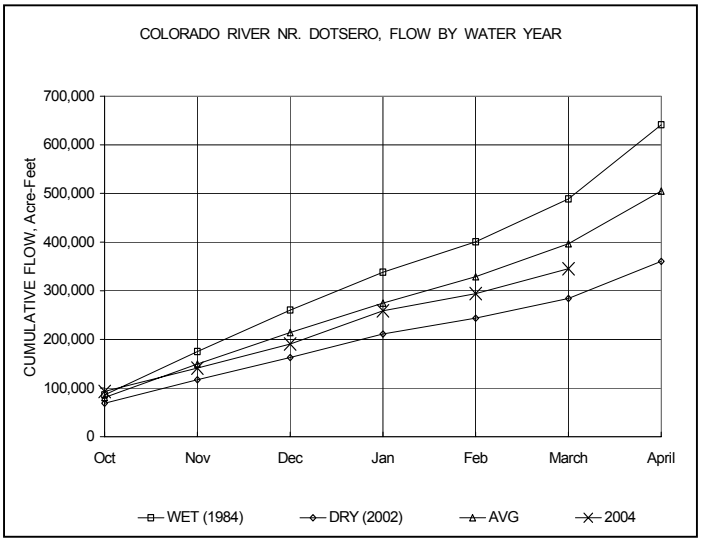
Basinwide Conditions Assessment

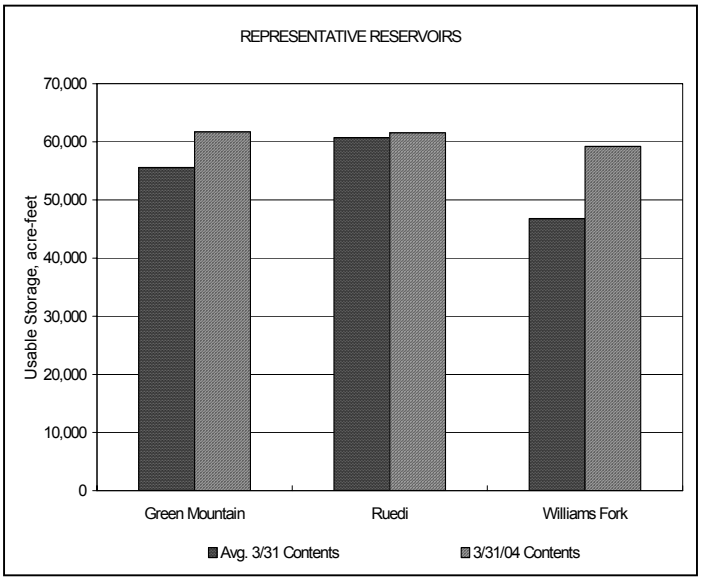
The SWSI value of –2.6 indicates that for March the basin water supplies were below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 64% of normal. Flow at the gaging station Colorado River near Dotsero was 831 cfs, as compared to the long-term average of 1,102 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 112% of normal as of the end of March.

Outlook

Snowpack in the Colorado River Basin is only marginally better than in 2002, with the exception of the Grand Mesa, which has above average snowpack this year. One expert is calling for a wet spring, which would be welcome relief. It is anticipated that several major reservoirs will not fill this year, including Wolford, Green Mountain, and Ruedi. The spring runoff is expected to have a flat peak this year, and the peak runoff at Cameo is expected to be only 9,500 cfs, versus the average of 17,500 cfs.



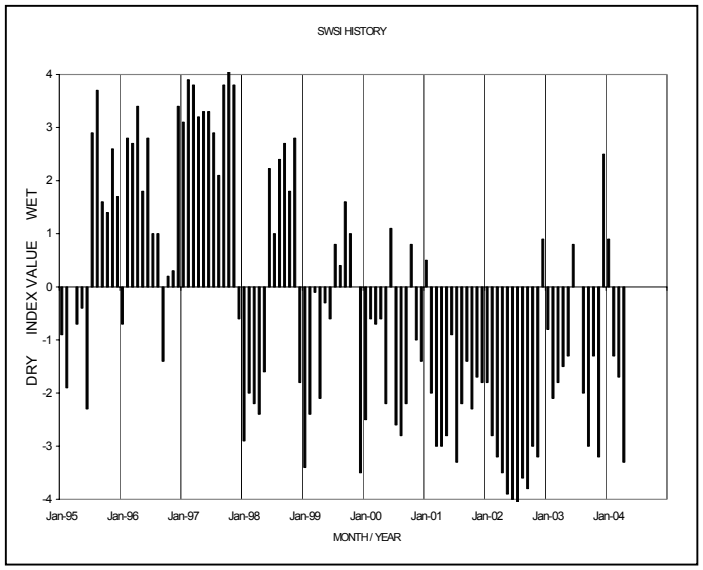




Basinwide Conditions Assessment

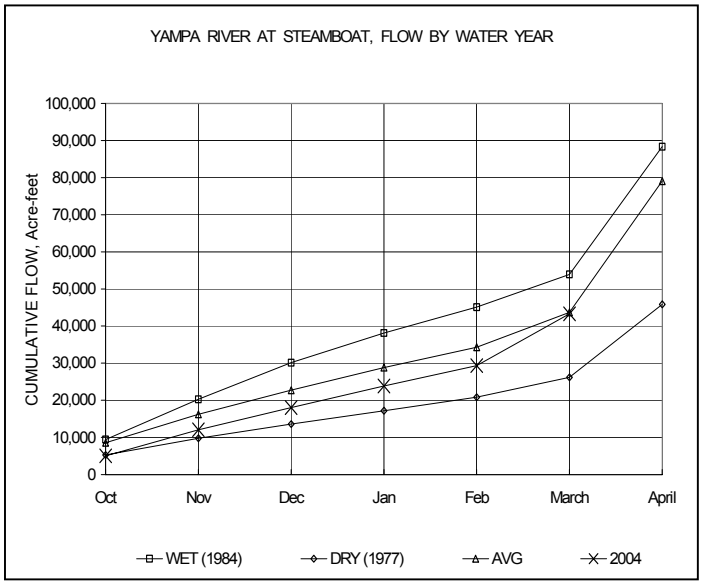
The SWSI value of –3.3 indicates that for March the basin water supplies were well below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 69% of normal. Flow at the gaging station Yampa River at Steamboat was 227 cfs, as compared to the long-term average of 153 cfs.

March was well above average in terms of temperatures, and well below average in terms of precipitation. The basin only received 58% of the average March precipitation. The drop in the snowpack from the previous month was up to 20% at some of the measurements sites.



Outlook

The April1st runoff forecasts prepared by the Natural Resources Conservation Service dropped significantly in the past month. The percent of average runoff under the most probable forecast is 40% for the North Platte River near Northgate (down from 80%) 54% for the Yampa River near Maybell (down from 78%), and 59% for the White River near Meeker (down from 78%). These forecasts are only a few percent above those for the same time period in 2002, except for the North Platte River, which is actually lower this year than 2002.

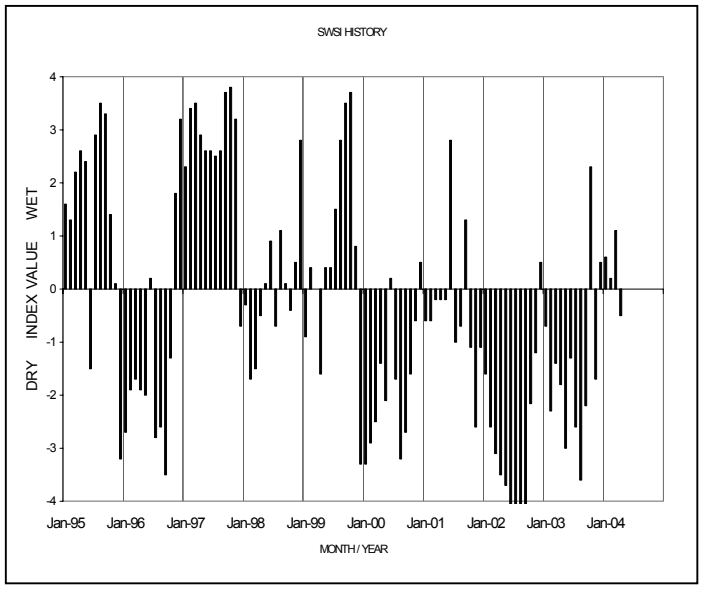


Administrative/Management Concerns

Calls for administration were placed on the Illinois River in North Park, and Piceance Creek in the White River Basin, during March. With much of the snowpack at the lower and mid-elevation gone, administration is likely to occur on several tributaries until the high snowpack begins to melt. Absent significant precipitation for the rest of the spring, water supply conditions may be as severe as in 2002.

Basinwide Conditions Assessment

The SWSI value of –0.5 indicates that for March the basin water supplies were below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 70% of normal. Flow at the gaging station Animas River near Durango was 582 cfs, as compared to the long-term average of 304 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 78% of normal as of the end of March.



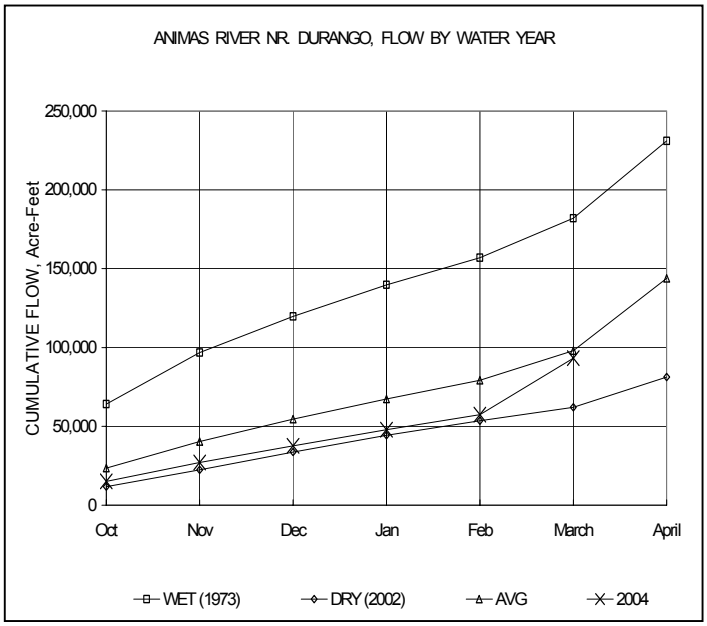
Outlook

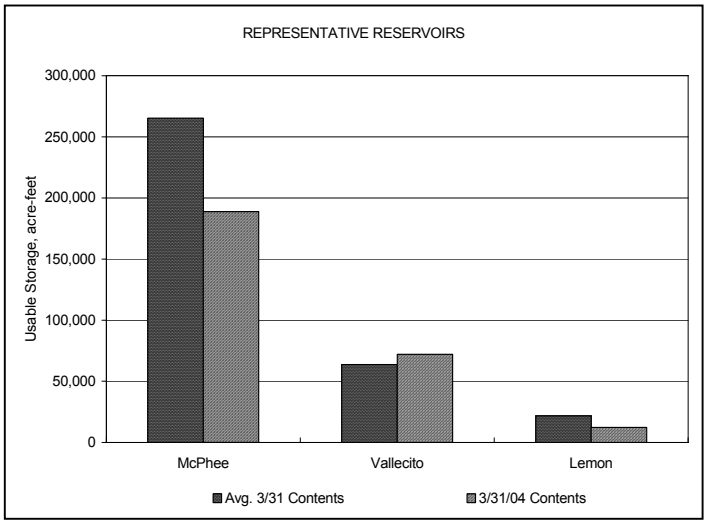
March was an uncharacteristically warm and dry month in Southwestern Colorado. With only 0.26 inch of precipitation in Durango (14% of normal) and temperatures 7-10 degrees above normal, the snow in the lower elevations melted out and ran off early. Many lower elevations were drying out rapidly as spring breezes came through the area.

Stream runoff reflected these flows. Inflow to Navajo Reservoir exceeded 1,000 cfs on both the San Juan and Piedra Rivers for significant time periods. The Animas River in Durango ran 195% of average total flows during he month with a high flow of 1,190 cfs on March 26th. That same day the Dolores River at Dolores ran 731 cfs and the La Plata River averaged 119 cfs. Both of these stream gage sites flowed well above 200% of average for March. The excessive runoff reflected some significant melt in the high country as well with many open areas appearing on the south slopes of the mountains.

The snow pack was noticeably diminished, falling from near average to 70% of normal at the end of the month. Because of the early runoff, area reservoirs gained significant quantities. Red Mesa Ward Reservoir filled and Vallecito was 130% of normal storage capacity at the end of March. An early run into Johnson Reservoir could be made while demand is low on the La Plata River. This supplied greatly needed domestic supplies for the Lake Durango area. The San Juan-Chama diversion began running very early this year.

With the early April storms and the early March runoff, it appeared that prospects are good to expect a good runoff and a full supply of water for use in some areas of the Division.





OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 SHERMAN STREET ROOM 818
DENVER CO 80203