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
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April 1, 2002

The outlook for Colorado's water supply has not shown any improvement during the month of March. The conditions at the end of March are very similar to those of the previous month, and the winter season in general. A low snowpack across the entire state indicates that spring and summer river flows are likely to be much lower than in an average year. The southern and western parts of Colorado have the poorest water supply outlooks with the Yampa/White and San Juan/Dolores basins showing a SWSI value of –3.5 for each. The South Platte basin is showing the highest index numbers, but the index value is a relatively poor –1.9.

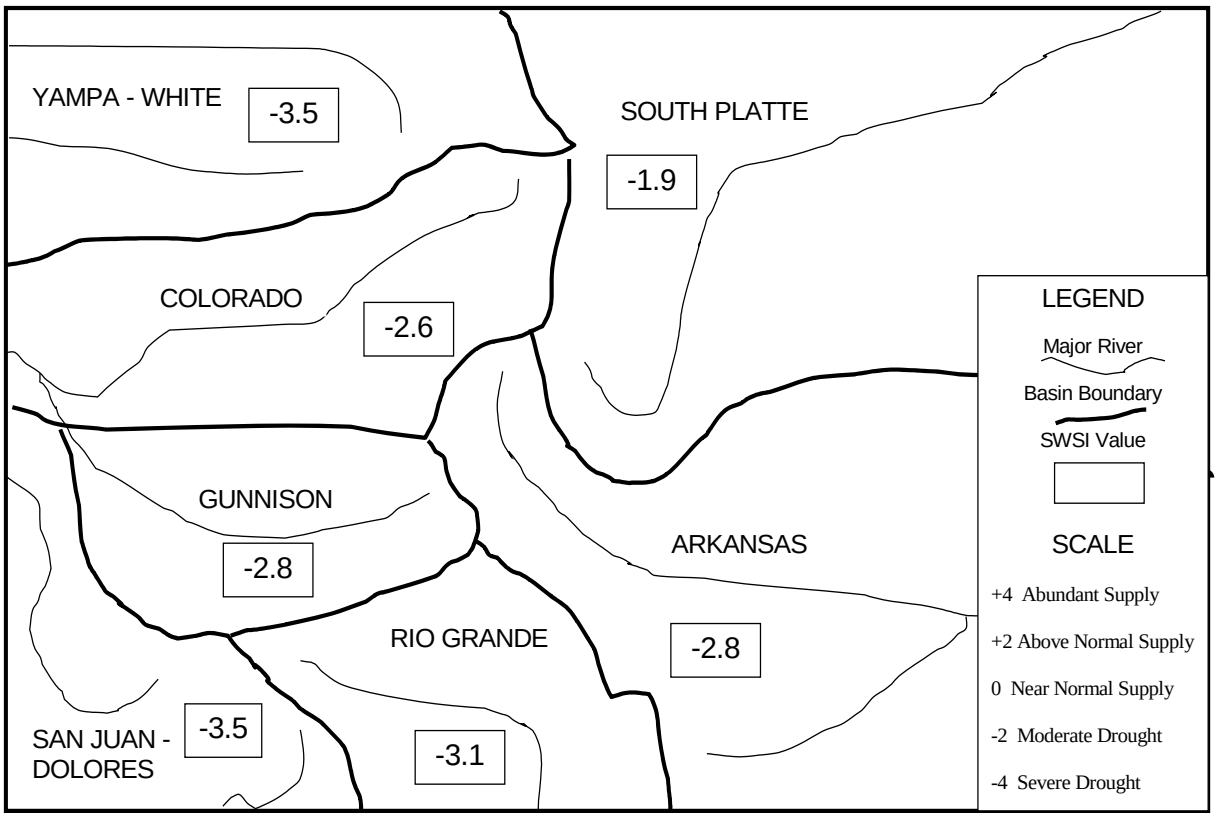
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter 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, 2002, and reflect the conditions during the month of March.

Basin	April 1, 2002 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	-1.9	+0.1	-1.7
Arkansas	-2.8	-0.3	-0.8
Rio Grande	-3.1	0.0	-4.5
Gunnison	-2.8	-0.1	-1.2
Colorado	-2.6	+0.2	-0.8
Yampa/White	-3.5	-0.3	-0.5
San Juan/Dolores	-3.5	-0.4	-3.3

Scale

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

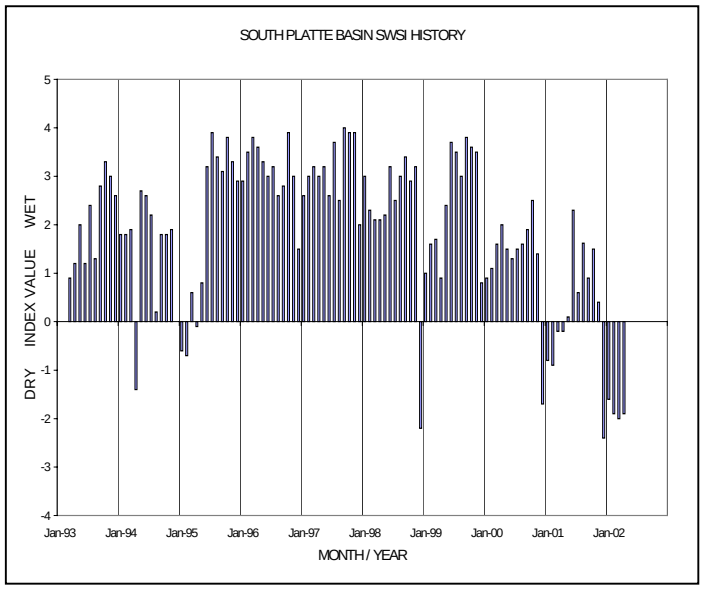
SURFACE WATER SUPPLY INDEX FOR COLORADO



April 1, 2002

Basinwide Conditions Assessment

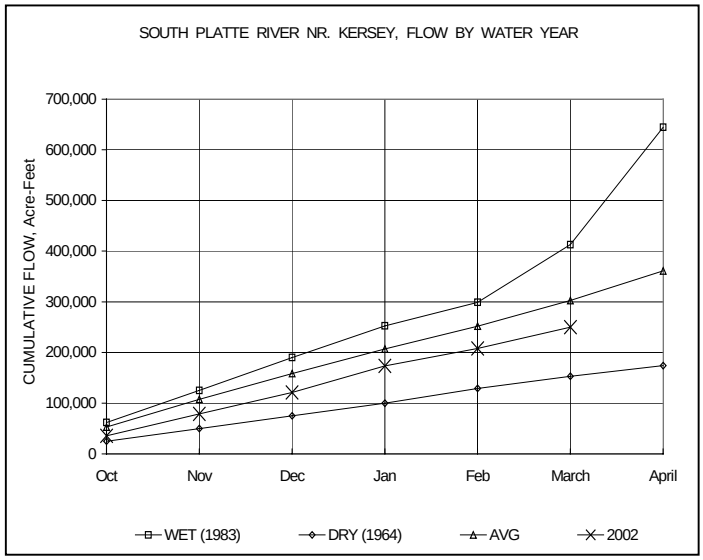
The SWSI value of –1.9 indicates that for March the basin water supplies were below normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 83% of normal as of the end of March. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 94% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 83% of capacity. The Natural Resources Conservation Service reports that April 1 snowpack is 54% of normal. Flow at the gaging station South Platte River near Kersey was 686 cfs, as compared to the long-term average of 826 cfs. Flow at the Colorado/Nebraska state line averaged 190 cfs.



Outlook

Reservoir storage continued as the main river use in March. By the end of the month, all of the major plains reservoirs along the South Platte mainstem had filled except for Prewitt Reservoir which is expected to fill the first few days of April. North Sterling Reservoir, the largest of the plains reservoirs and the reservoir that there was some concern would not fill, filled the last day in March.

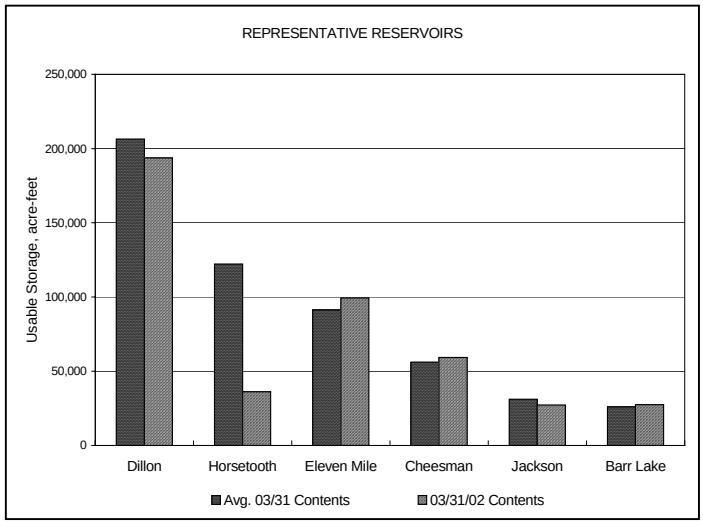
Because of the dry conditions and low snowpack, users may have difficulties filling some of the major reservoirs on tributaries under their priority this year unless conditions improve dramatically. Large reservoirs which may not fill under their priority include Halligan, Chambers, Big Windsor, and Timnath in the Poudre basin, Boyd Lake in the Big Thompson basin, and Union Reservoir in the Saint Vrain basin. In the Poudre basin, users who have stored out-of-priority in upstream reservoirs as they do each year to maintain water high in the system may have to make releases for senior downstream storage rights that don't fill. This will be the first time in many years, if ever, that users will have to make such releases.



Administrative/Management Concerns

Without significant rain, we are also concerned that users will not be able to replace reservoir supplies that must be used early in the year with water during runoff because it appears there many not be a significant runoff based on present snowpack. Without refilling or filling for the first time in some cases, supplies will be very short by the end of the year. In addition, continued dry conditions create concerns for organizations that augment wells. The concern is to assure that they have adequate supplies to replace all out-of-priority well depletions. This is even more important in a year when many irrigation users are very dependent upon their wells for an adequate supply.

Budget shortfalls in the state have required a hiring freeze and limited the amount of travel staff can make. With the dry conditions, this creates concerns that our office will not be able to respond timely to all required site investigations. In addition, we will not be able to monitor all of our gages at the frequency we would want to assure maximum beneficial use of water in the drainage. We may not be able to monitor some gages at all this year due to budget limitations.



Basinwide Conditions Assessment

The SWSI value of –2.8 indicates that for March the basin water supplies were below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 48% of normal. Flow at the gaging station Arkansas River near Portland was 292 cfs, as compared to the long-term average of 369 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 74% of normal as of the end of March.

Outlook

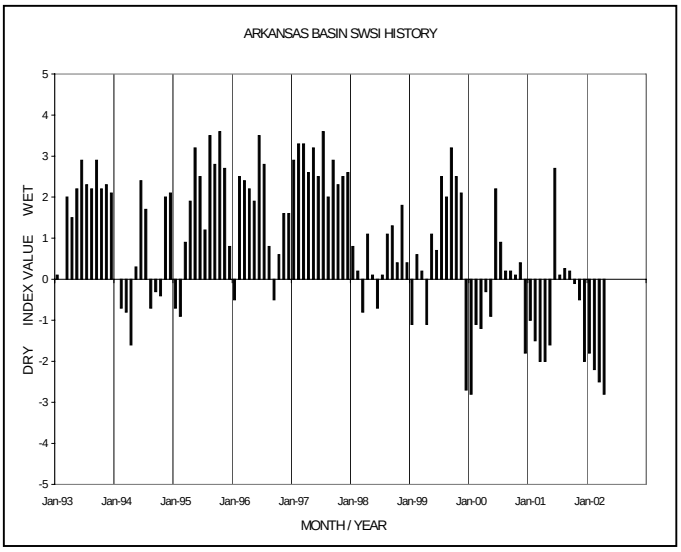
Total reservoir storage during the Pueblo Winter Water Program was 124,452 acre-feet, including 39,694 acre-feet in Pueblo Reservoir, 69,159 acre-feet in off-channel reservoirs and canal diversions, and 15,599 acre-feet in John Martin Reservoir (after distribution to accounts). Total Winter Compact Storage in John Martin Reservoir was 21,627 acre-feet for the period from November 1, 2001 through March 31, 2002. Distribution of Winter Compact Storage into accounts began at 00:00 hours on April 1, 2002.

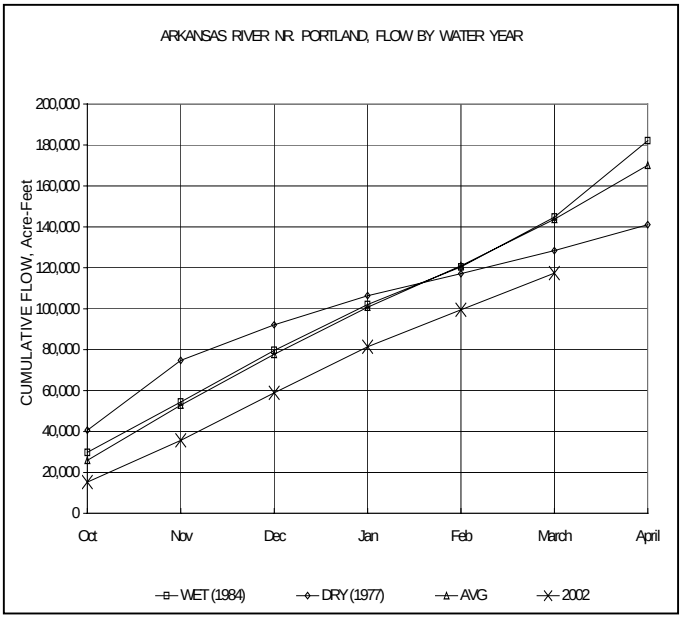
Administrative/Management Concerns

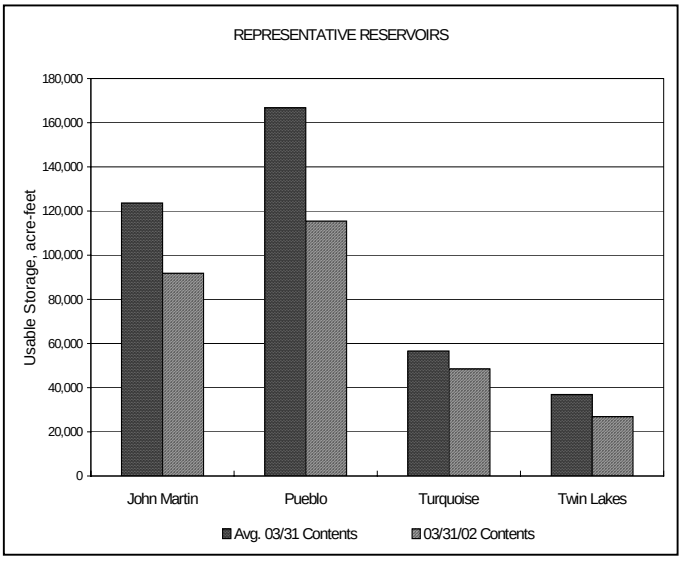
Drought planning workshops by the major well associations and DWR were conducted on March 1st and 2nd in La Junta and Pueblo and were reasonably attended. The Southeastern Colorado Water Conservancy District allocated just over 17,000 acre-feet in Project water return flow sales for 2002, with 15,200 for agricultural use, including replacement plans for augmentation of stream depletions caused by well pumping. This year represents the first year that the allocation was significantly less than the amount requested. The lower allocation was due to projected lower imports of transmountain Project water.

Public Use Impacts

The lower allocation of return flows caused several of the major well associations to implement reductions in projected pumping for their member wells for 2002.





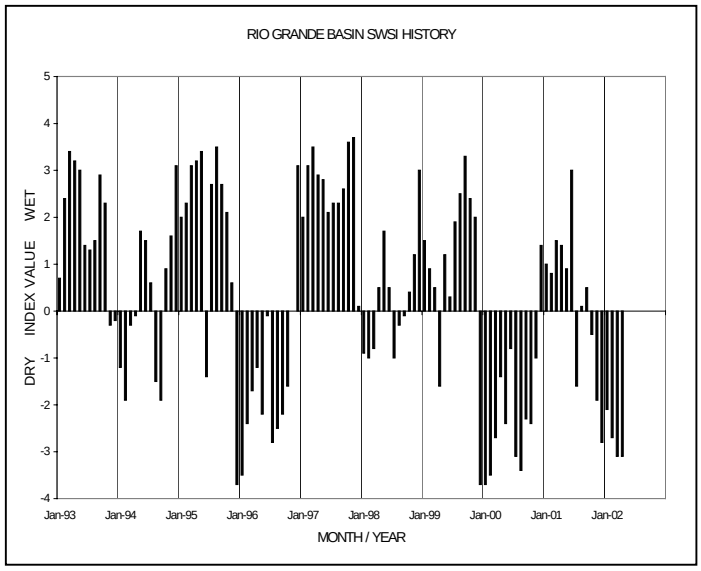


Basinwide Conditions Assessment

The SWSI value of –3.1 indicates that for March the basin water supplies were below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 38% of normal. Flow at the gaging station Rio Grande near Del Norte was 202 cfs, as compared to the long-term average of 260 cfs. The Conejos River near Mogote had a mean flow of 50 cfs (63% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 81% of normal as of the end of March.

Flow at the state line was 75% of normal. Weather conditions in the San Luis Valley were cooler and drier than normal. Snowfall on the Valley floor totaled only 0.9 inches, the lowest March snowfall amount since 1970. Alamosa received a paltry 0.07 inches of precipitation during the month.

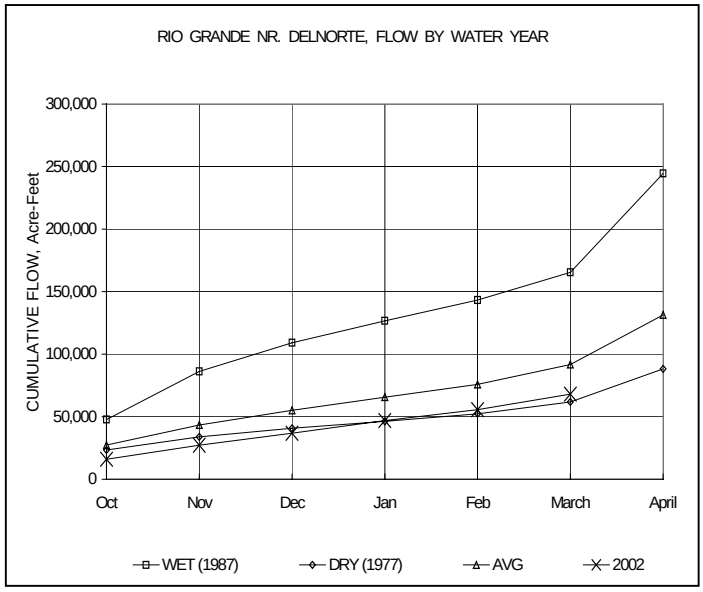
A recent study of 10 SNOTEL sites in the upper Rio Grande basin showed the existing snowpack began to decline about March 25. In a normal year, the snowpack would continue to build until April 15.



Outlook

The outlook is bleak. Current NRCS streamflow forecasts predict the April through September runoff to be only 33% of average on the Rio Grande near Del Norte and 38% of average for the Conejos near Mogote. Other streams in the basin are forecast as low as 16% of normal for the Rio San Antonio and as high as 42% of normal for Saguache Creek. Some area streams have already reached peak flow from snowmelt runoff. Without significant rainfall during the irrigation season, many of the sub-basins will experience conditions rivaling the landmark drought of 1977.

The below normal reservoir storage levels compound the water availability problem. Soil moisture conditions are poor in most locations around the basin.



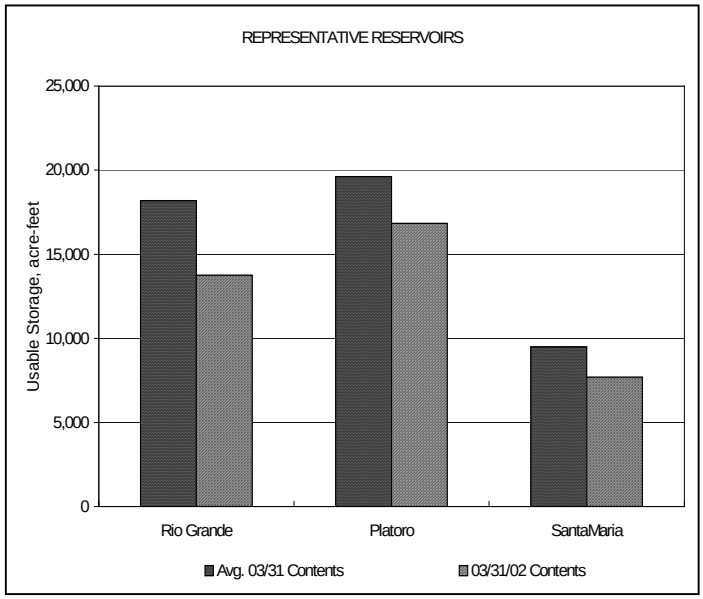
Administrative/Management Concerns

Rio Grande Compact accounting for the calendar year 2001 was approved at the Compact meeting held in Santa Fe, NM in late March. As of January 1, 2002 Colorado has an accrued credit of 10,100 acre-feet in Elephant Butte Reservoir.

Based on the current forecast, there will be no curtailment of water rights on the Rio Grande and the Conejos River this irrigation season. However, due to the lack of available streamflow, many area ditches will not come into priority this season.

Public Use Impacts

Due to the dry conditions and anticipated low runoff, diversions from area streams for irrigation began very early this year.



Basinwide Conditions Assessment

The SWSI value of –2.8 indicates that for March the basin water supplies were below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 57% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 50.1 cfs, as compared to the long-term average of 61.0 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 94% of normal as of the end of March.

Outlook

Precipitation in March continued its long dry trend in the Gunnison and San Miguel Basins. The overall precipitation for March was only about 55 percent of normal. This mirrors the percentage of normal precipitation experienced during the October through March period.

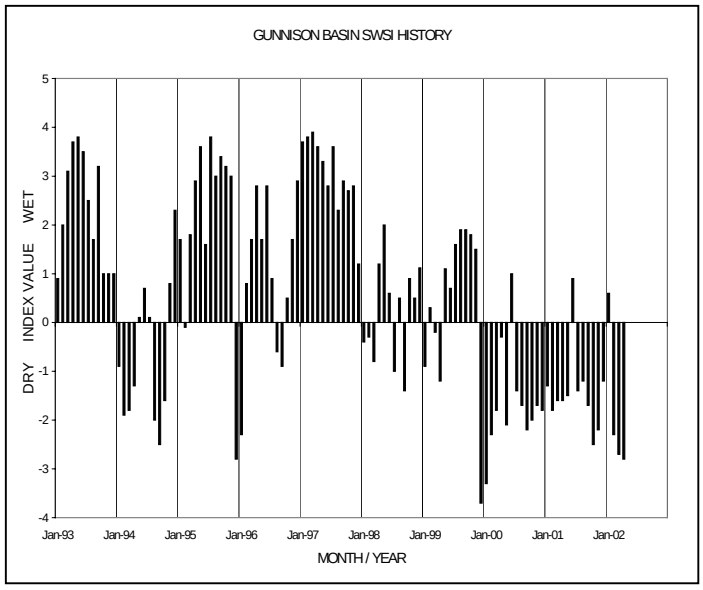
A storm on the 16th brought snow to the high country, with the Grand Mesa receiving up to 15 inches. Unfortunately, warm and windy conditions during the last week of March markedly reduced the amount of snowpack available for the spring runoff season.

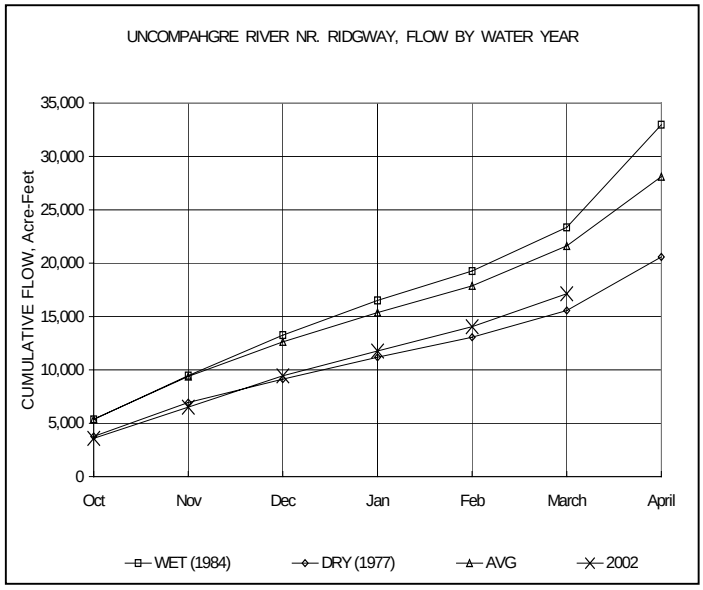
Administrative/Management Concerns

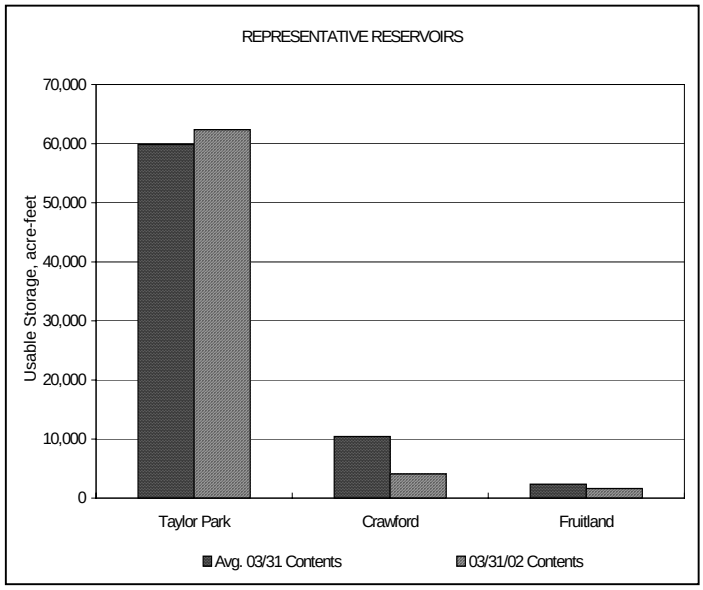
The warm and windy conditions at month's end caused irrigation demands to be above normal. Reservoir storage levels continued to be a concern. Fruitgrowers Reservoir at the base of the Grand Mesa near Cedaredge appeared unlikely to fill this season. This would force several junior reservoirs high on the Grand Mesa to release the water they stored during the winter in order to fill the senior Fruitgrowers Reservoir. The irrigators above Fruitgrowers would feel significant impacts from the limited high mountain storage.

Public Use Impacts

The U.S. Bureau of Reclamation recently announced that due to low storage levels and below-normal projected inflows to the Aspinall Unit (Blue Mesa, Morrow Point and Crystal Reservoirs), releases would soon be reduced to 350 cfs. This flow rate may continue throughout the summer months, barring prolonged significant precipitation. Normal streamflows levels through the Black Canyon of the Gunnison National Park in early April are about 800 cfs, and are kept at a minimum of around 600-650 cfs throughout the summer to facilitate rafting interests in the Gunnison Gorge National Conservation Area. The local multi-million dollar rafting industry would feel a significant adverse impact unless weather patterns change and bring significant improvements to the Gunnison Basin water supply.

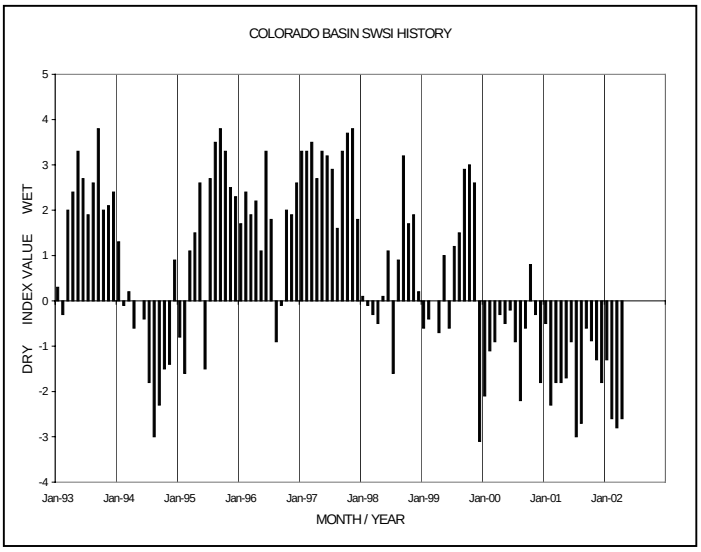


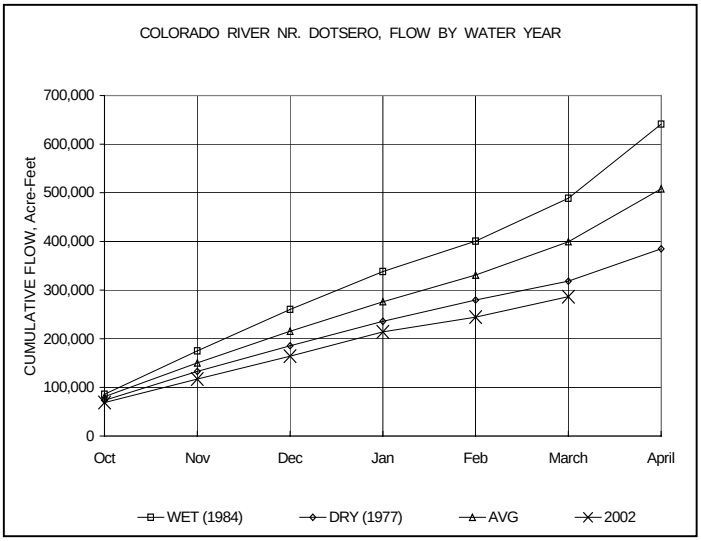


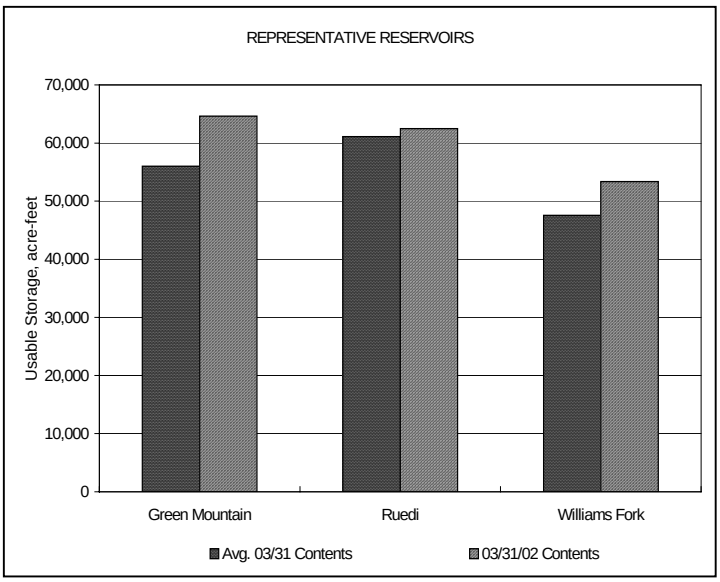


Basinwide Conditions Assessment

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 63% of normal. Flow at the gaging station Colorado River near Dotsero was 683 cfs, as compared to the long-term average of 1113 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 110% of normal as of the end of March.



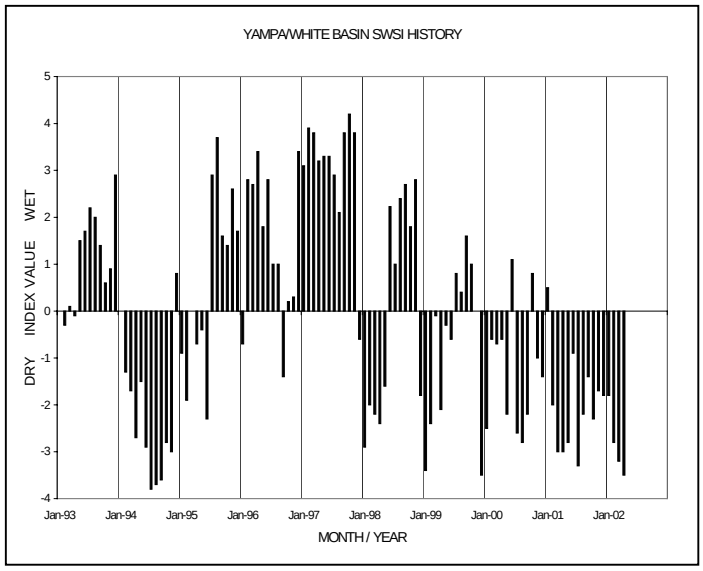




Basinwide Conditions Assessment

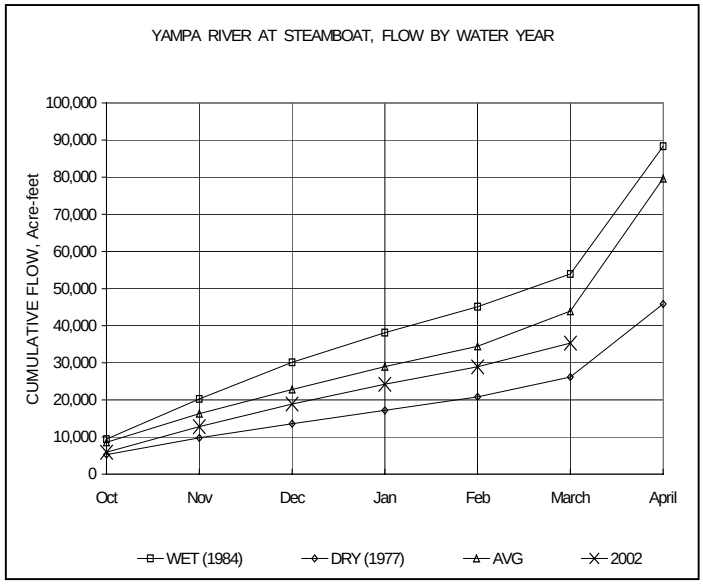
The SWSI value of –3.5 indicates that for March the basin water supplies were considerably below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 68% of normal. Flow at the gaging station Yampa River at Steamboat was 104 cfs, as compared to the long-term average of 154 cfs.

March was yet another dry month in the basin. At the end of the month, snowpack in the basin ranged from a high of 73% for the Little Snake River and Elk River basins to a low of 64% for the White River. The Yampa and White Rivers had a combined snowpack of 68% of average and the North Platte drainage was at 66% of average. These averages are slightly higher then reported for the previous month, but are still significantly below normal. The above normal temperatures have resulted in an early melt-off of the lower elevation snow. Much of this snowmelt soaked into the ground and never materialized as flow in the streams and river. While stream flows are now at near normal levels, it is unclear how long they will sustain these flows, especially once the spring runoff is over.



Outlook

The April 1 runoff forecast, provided by the Natural Resource Conservation Service, estimates the most probable springtime runoff on the various major drainages will range from 45% of average on the North Platte near Northgate to 55% of average on the White River near Meeker. The forecast for the Yampa River near Maybell is 47% of average, and the Little Snake near Dixon is forecasted to be 46% of average. These forecasts are considerably lower than the March 1 forecast.



Administrative/Management Concerns

The forecast numbers indicate the basin continues to be in a drought condition. Weather patterns have continued to be dry with above normal temperatures. Without substantial spring rains, water users will see lower peak flows during the runoff, coupled with shorter runoff duration. Budget cuts for the remainder of this fiscal year (ending on June 30) may affect the agency's ability to provide adequate levels of administration for the rest of this fiscal year. It is anticipated that many streams will see administration this year and that the runoff will be earlier than normal.

Basinwide Conditions Assessment

The SWSI value of –3.5 indicates that for March the basin water supplies were considerably below normal. The Natural Resources Conservation Service reports that April 1 snowpack is 34% of normal. Flow at the gaging station Animas River near Durango was 143 cfs, as compared to the long-term average of 308 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 74% of normal as of the end of March.

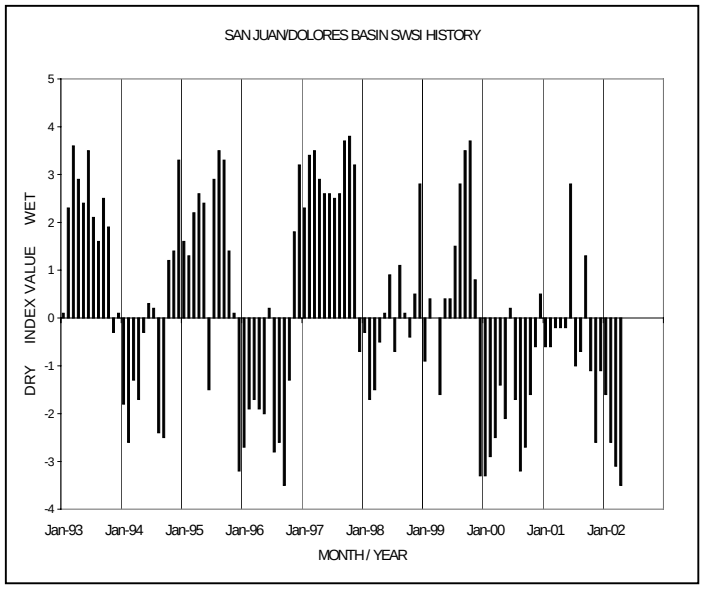
Outlook

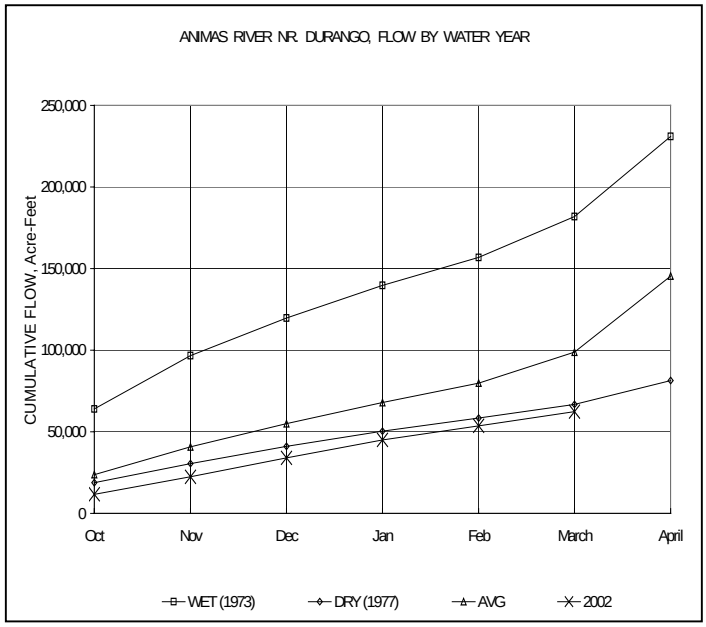
The monthly precipitation continued the experience of the past four months since early December 2001. This has led to a severe decline in the mountain snowpack. In some areas the snowpack had declined to 16-20% of normal water content. Average temperatures were near normal although very cold on the 3rd (zero in Durango) and near record warm temperatures at the end of the month. The precipitation totals amounted to 0.62 inches in Durango (34% of normal) leaving the water year average at 40% of normal.

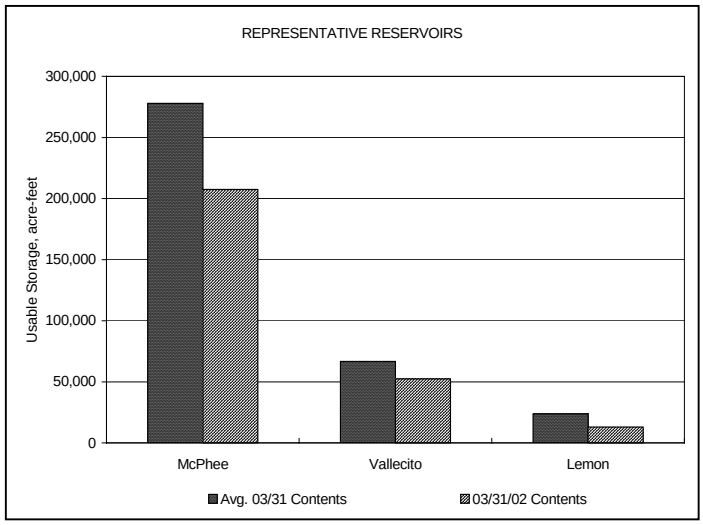
Rivers ran well below average. Many were at historical low levels. Some such as Junction Creek and Lightner Creek did not run the entire winter to the lower reaches. The Animas River dipped to 120 cfs a few times. Most rivers remained at their base levels as higher temperatures at the end of the month were just beginning to have an effect on runoff. Lower level stations did not experience a large gain since there was little of the lower elevations that had snow.

Reservoir storage actually showed most sites to be above last year at this time. Reservoirs have an entry holdover of 60% - 70%. Vallecito Reservoir is slightly above normal with 57,364 acre-feet.

The outlook is poor. This year now compares with the record low year of 1977, a year that ended with consistent and frequent rainstorms to improve the drought conditions. If this scenario develops, it would provide significant relief. Depending on the opening use date for the ditches there could be very little additional storage available to meet the late season demands otherwise. It is not known what effect to springs below the mesa top-lands would be seen if reservoirs are drained and the natural stream is the only remaining supply. River recreational boating will be shortened significantly but fishing recreation appears to be popular early in the season.







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