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

MAY 2001

Conditions varied across the state during April, with snowpack dropping in the northern mountains, maintaining in the central mountains, and increasing in the south central and southwest portions of the state. Statewide the snowpack averaged 84% of normal as of May 1. The Rio Grande basin was the only basin with above average snowpack, having 120% of average. Some irrigation demand began in April. Those reservoirs that could continued to fill during the month.

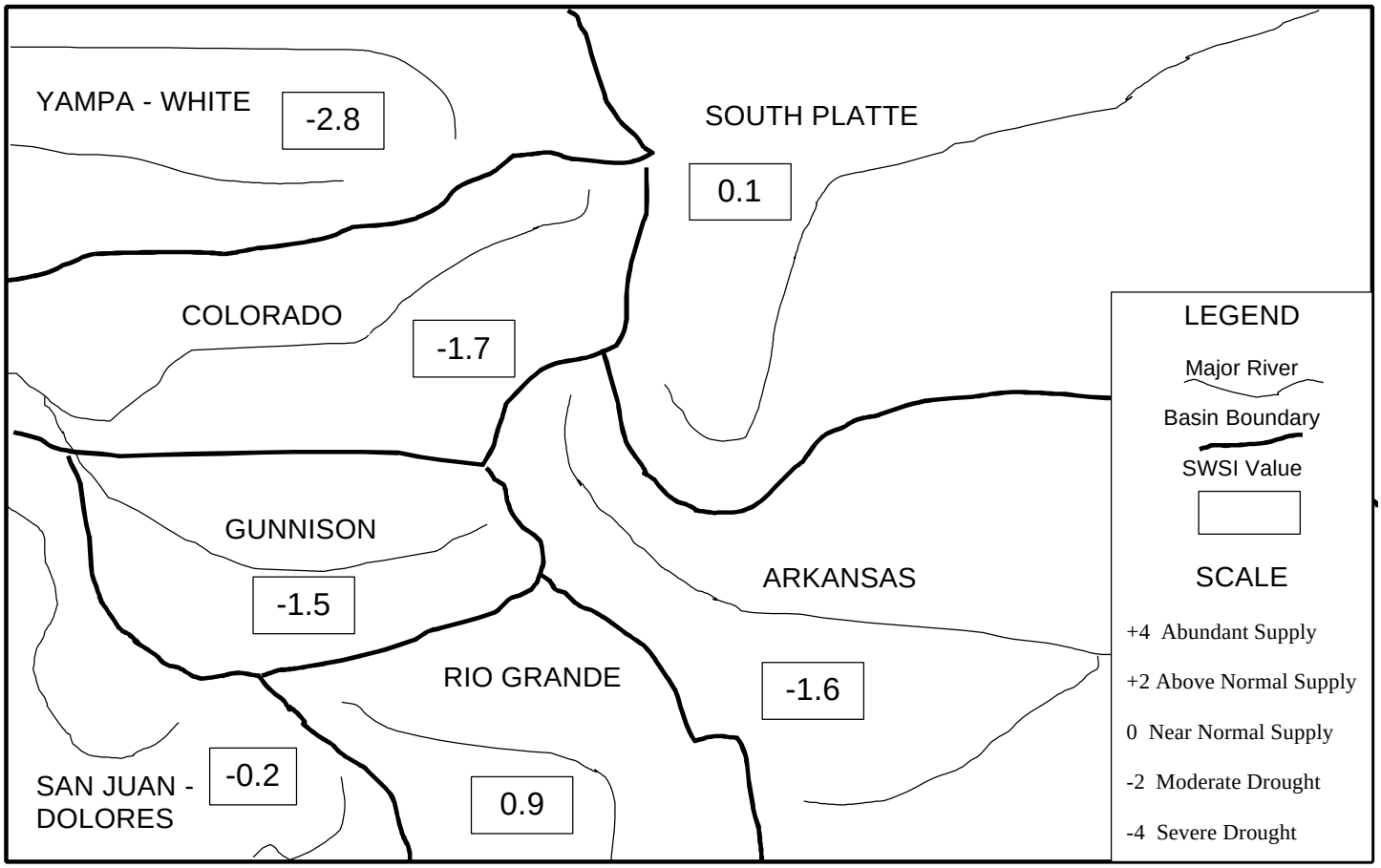
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter 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 May 1, 2001, and reflect the conditions during the month of April.

Basin	May 1, 2001 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	0.1	+0.3	-1.4
Arkansas	-1.6	+0.4	-0.7
Rio Grande	0.9	+2.4	+3.3
Gunnison	-1.5	+0.1	+0.6
Colorado	-1.7	+0.1	-1.2
Yampa/White	-2.8	+0.2	-0.6
San Juan/Dolores	-0.2	-0-	+1.9

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

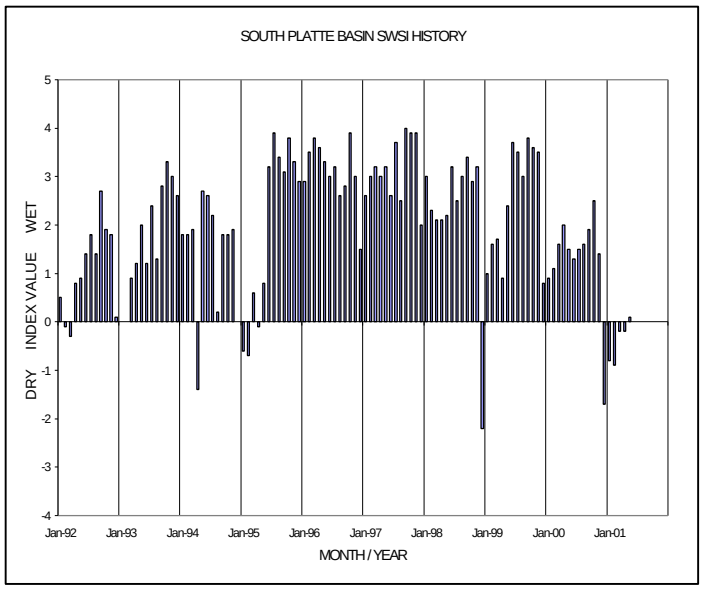


MAY 1, 2001

Basinwide Conditions Assessment

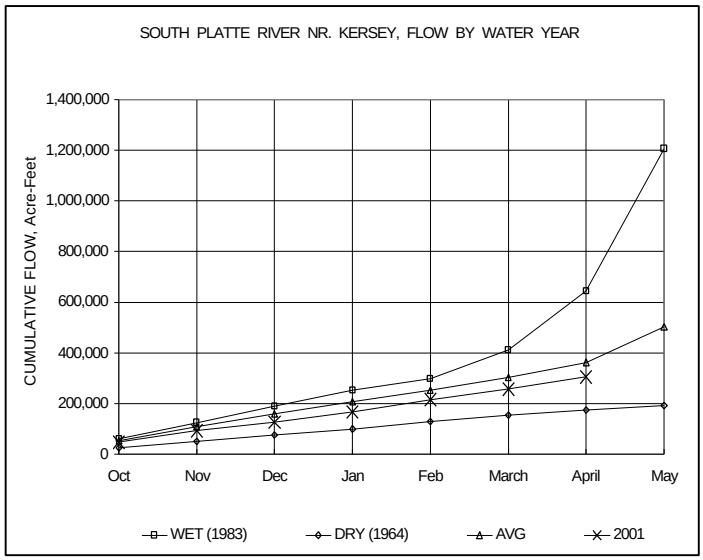
The SWSI value of 0.1 indicates that for April the basin water supplies were near normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 84% of normal as of the end of April. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 100% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 82% of capacity. The Natural Resources Conservation Service reports that May 1 snowpack is 80% of normal. Flow at the gaging station South Platte River near Kersey was 802 cfs, as compared to the long-term average of 1,135 cfs. Flow at the Colorado/Nebraska state line averaged 416 cfs.

The main use of water on the South Platte mainstem downstream of the metro area was recharge and maintenance flows to keep reservoirs full. Reservoir filling is also occurring on the tributaries, but is taking quite a bit of time due to the amount of storage space still not filled after the dry 2000 water year and the low flows in those streams.



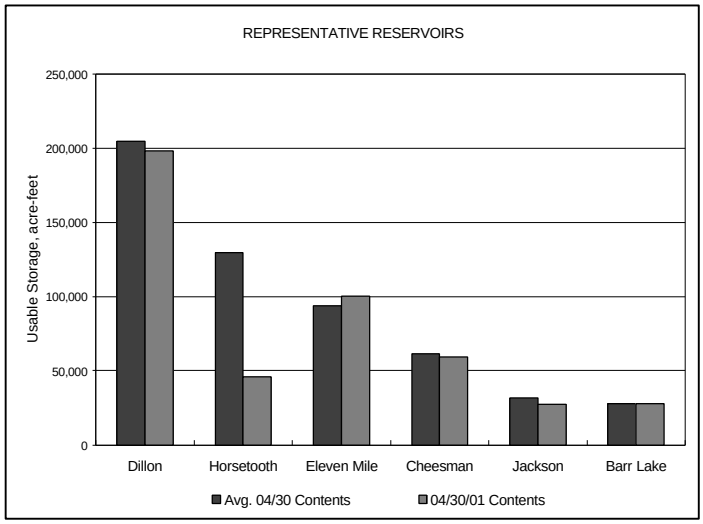
Outlook

Precipitation at the end of April significantly increased mountain snowpack in the basin, which will help the water supply conditions.



Administrative/Management Concerns

Spring rain in May will be critical to assuring that there are adequate supplies in 2001. Last year dry conditions in the spring created a call before the end of May that never came off. Average to above-average runoff is important so that there is not a call until late June, or if there is a call, that there is at least a window of no call in June to allow reservoirs to refill, which usually happens during runoff. If the call does not come off in June, not only are users not able to refill their reservoirs, they must draw heavily on reservoir water, reducing the supply available for use later in the summer.



Basinwide Conditions Assessment

The SWSI value of –1.6 indicates that for April the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 82% of normal. Flow at the gaging station Arkansas River near Portland was 282 cfs, as compared to the long-term average of 448 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 118% of normal as of the end of April.

Outlook

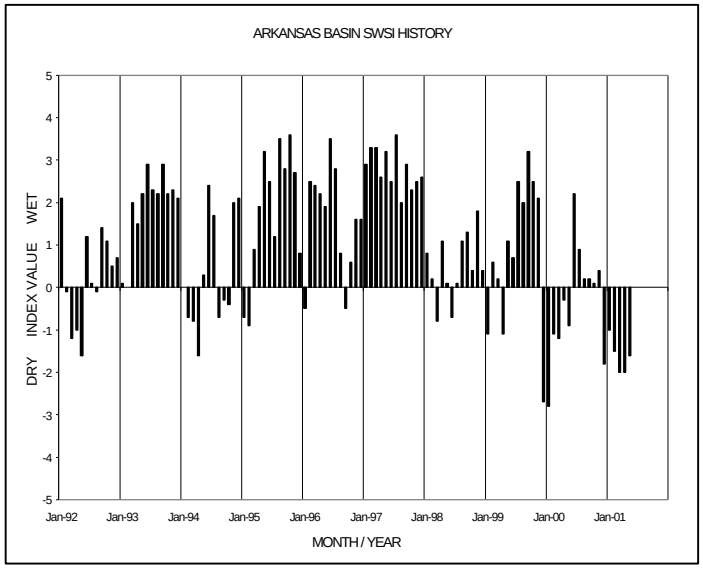
Heavy snows and widespread rainfall in portions of the basin in early May served to provide some improvement to potential surface supplies, but have had only a moderate impact on runoff. Peak runoff flows are anticipated to occur sometime between the last week of May and the early part of June.

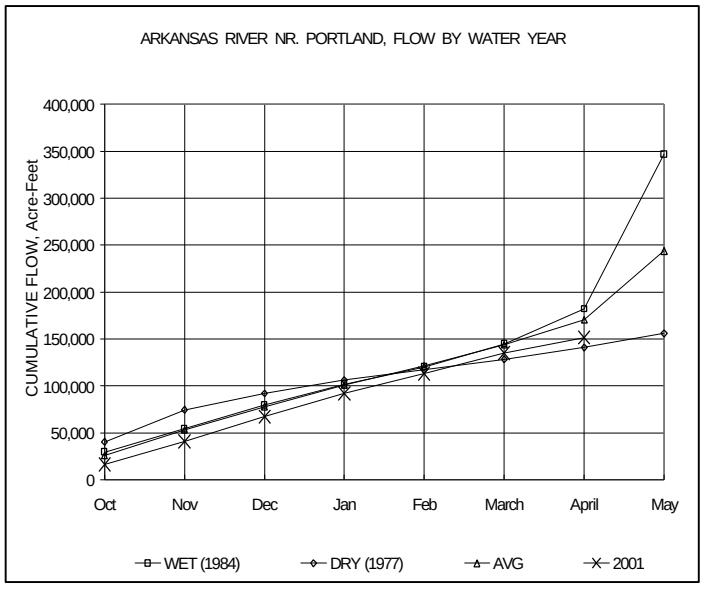
Administrative/Management Concerns

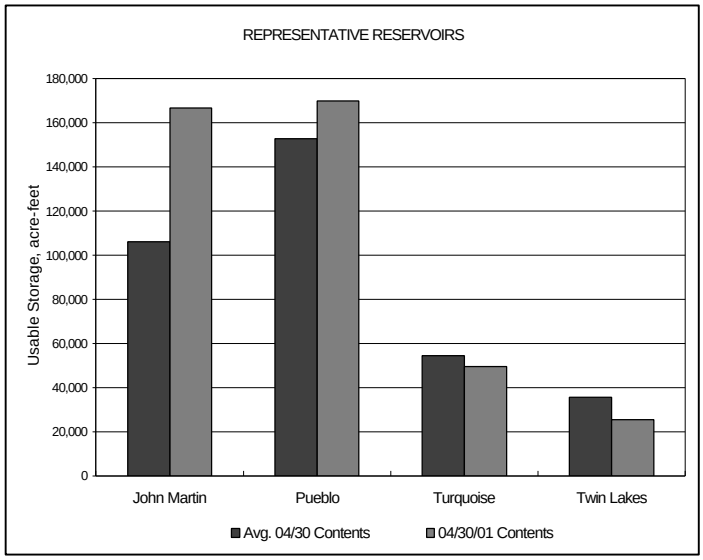
Irrigation demand has been high and the mainstem call has not been more junior than June 9, 1890 (the Colorado Canal first right) since the Winter Water Storage Program ended on March 15. Most ditches below both Pueblo and John Martin Reservoirs have had to rely on stored water deliveries to satisfy irrigation demand.

Public Use Impacts

House bill 1354, concerning the establishment of a water banking system in the Arkansas River Basin, was passed on May 9, 2001, and has gone to Governor Bill Owens for signature. Governor Owens is expected to sign the bill, because it was drafted by the Governor's Commission on Saving Open Spaces, Farms, and Ranches. The bill directs the State Engineer to promulgate rules to establish and administer a water banking pilot program by July 1, 2002. The pilot program is intended to simplify and improve the approval of water leases, loans, and exchanges of stored water within the Arkansas River Basin. It is also intended to reduce the costs associated with such transactions and increase the availability of water-related information. The State Engineer is also required to report on the effectiveness of the program on or before November 1, 2005.



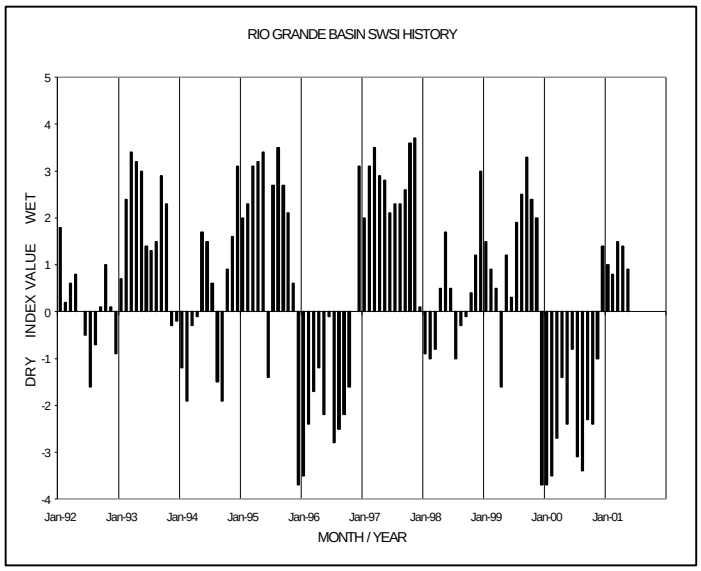




Basinwide Conditions Assessment

The SWSI value of 0.9 indicates that for April the basin water supplies were near normal. The Natural Resources Conservation Service reports that May 1 snowpack is 120% of normal. Flow at the gaging station Rio Grande near Del Norte was 876 cfs, as compared to the long-term average of 662 cfs. The Conejos River near Mogote had a mean flow of 265 cfs (82% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 90% of normal as of the end of April.

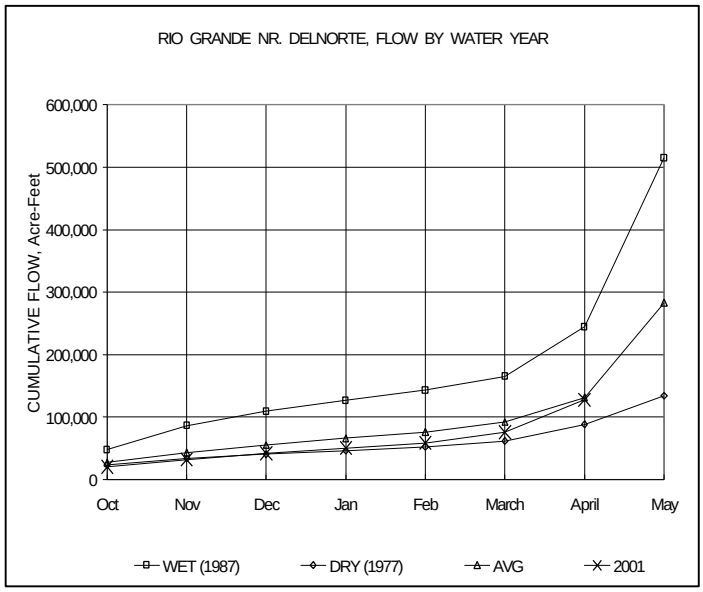
Alamosa received below average precipitation of 0.27 inches during April, and temperatures ranged from 14^{o} to 75^{o}.



Outlook

NRCS forecasts are now predicting runoff to be 130% of average on the Rio Grande Near Del Norte, and 110% for the Conejos River near Mogote. These forecasts represent significant increases from last month.

Snowstorms and cold temperatures brought the early snowmelt to a sudden halt. Many ditches had to be shut down or off after only a few days of diversion. However, water officials expect the runoff to be high and prolonged after this early respite.



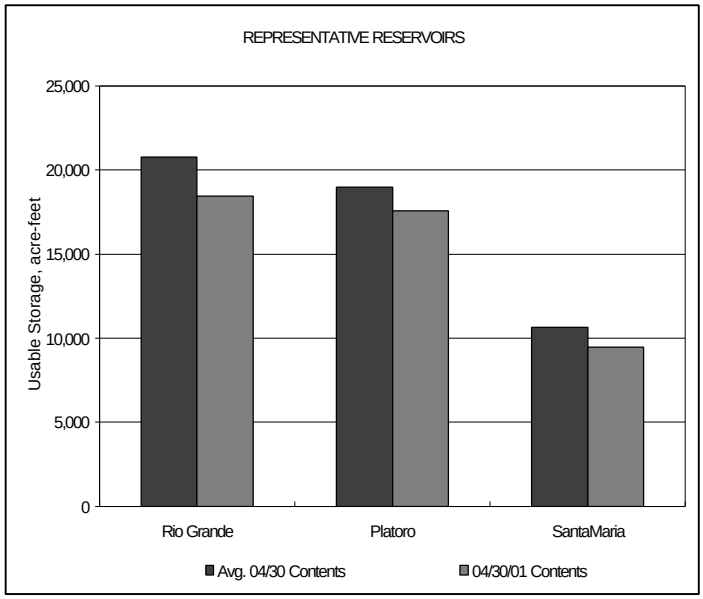
Administrative/Management Concerns

Presently, a portion of the native flow on the Rio Grande and the Conejos River is being curtailed from diversion by ditches in an effort to meet Colorado's Rio Grande Compact delivery requirement to the downstream states. This curtailment is passed directly to the state line. It is anticipated that water rights will continue to be curtailed the entire summer on both drainages.

Return flows also play a vital role each year in helping Colorado meet its Rio Grande water delivery requirement. During last year's drought, as return flows and non-irrigation season deliveries met Colorado's obligation, no curtailment was necessary.

Public Use Impacts

Weather conditions prevented many farmers from working in the fields as early as they would have liked. Despite the above-average stream flow forecasts, no destructive flooding due to runoff is anticipated this spring.



Basinwide Conditions Assessment

The SWSI value of –1.5 indicates that for April the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 76% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 97 cfs, as compared to the long-term average of 109 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 102% of normal as of the end of April.

In the North Fork of the Gunnison drainage very little reservoir water is being carried over, and reservoir filling is slow. The Grand Mesa has well below average snowpack. In contrast, snowpack in the Lake Fork drainage has been sitting at 120% of average, so precluding extremely high temperatures and winds, stream flow in Lake Fork and Cebolla Creeks should be OK through the summer.

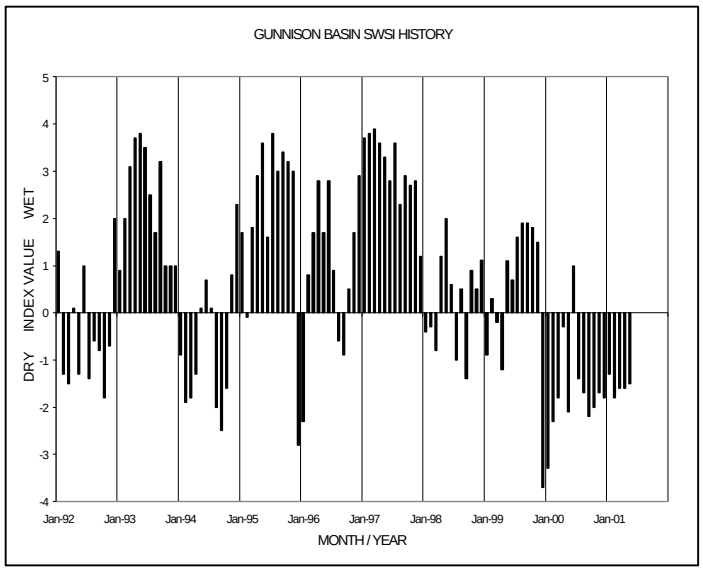
Administrative/Management Concerns

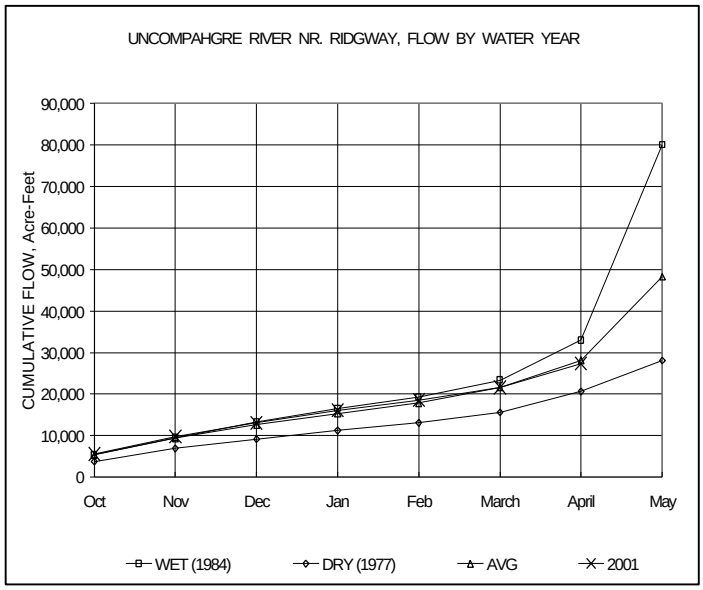
Basin administrators are reviewing situations where wells should have been shut down due to river calls and no adequate augmentation plans were in place. Some of the decrees for those wells are not augmentation plans, but merely decree the wells as alternate points of diversion to ditches. Administrators are in a continual process of isolating and correcting those situations. They are also discovering that many of the augmentation plans already in place are practically impossible to administer, and others are totally inoperable. More such problems come to the forefront in dry conditions as water demands continue.

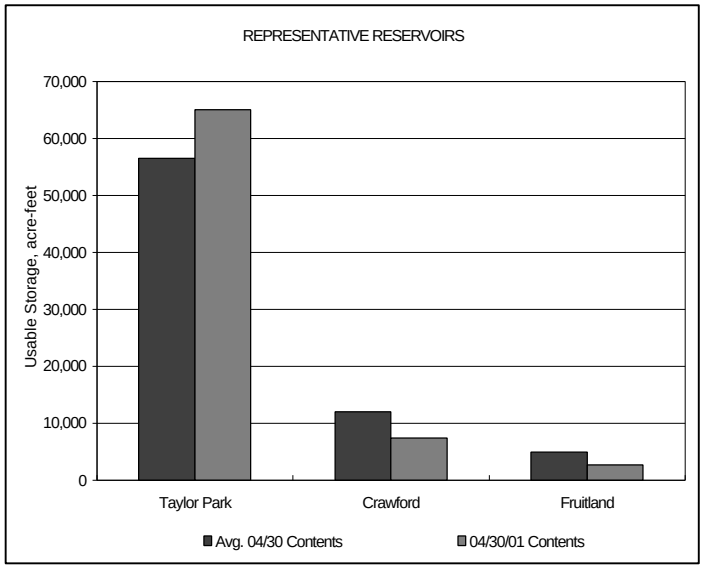
Public Use Impacts

The North Fork area is experiencing growth issues as water taps from existing companies are available only by lottery, or by other means that may take years to obtain. The companies' abilities are being taxed by the demand and inadequate pipes, a problem that promises to only increase as growth continues. Well permits applied for in areas served by water supply companies are being evaluated on a case by case basis.

More wells are going dry throughout the basin. Between new well and replacement wells, twice as many well permits were issued in April 2001 as in April 2000.







Basinwide Conditions Assessment

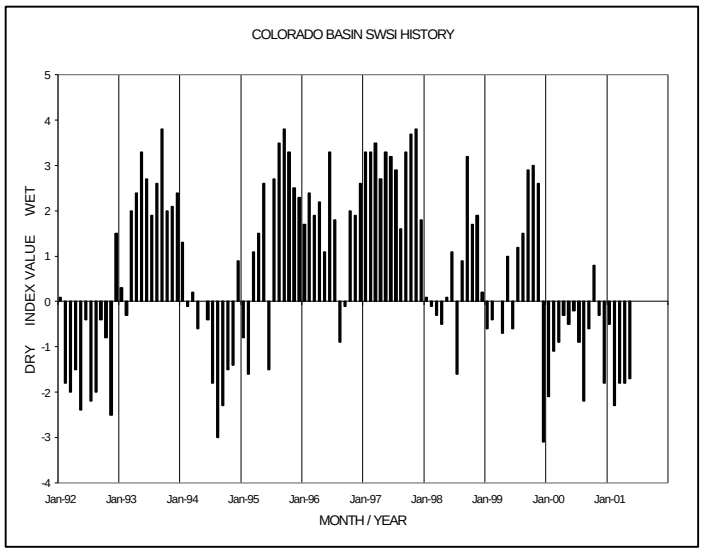
The SWSI value of –1.7 indicates that for April the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 79% of normal. Flow at the gaging station Colorado River near Dotsero was 1,266 cfs, as compared to the long-term average of 1,845 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 105% of normal as of the end of April.

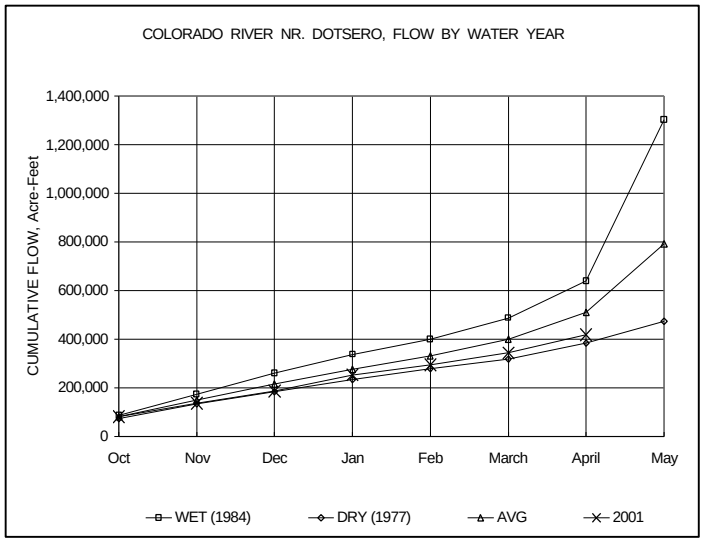
Outlook

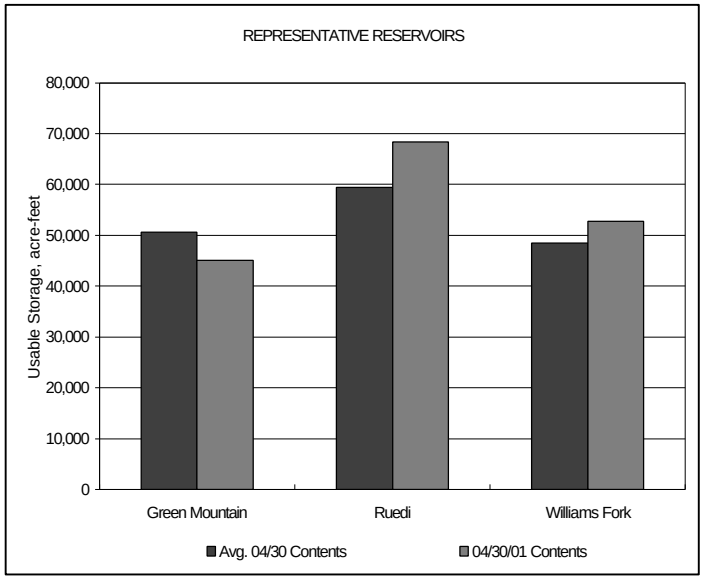
Snowpack dropped to about 80% of average through April, with the best snowpack in the Blue River basin and the worst in the Plateau Creek basin. April through July volumetric runoff forecasts rage from close to 100% of average on the Blue River to only 54% of average on Plateau Creek, with the entire upper Colorado River forecast at about 80% of average.

Administrative/Management Concerns

The senior Shoshone Power Plant call remained on throughout much of April, but is off now that mainstem runoff has increased. The senior irrigation call at Cameo was also on for a few days in April. It is a call that does not typically occur in most years. Low snowpack and low reservoir levels in the Plateau Creek basin will increase irrigation curtailment in an area where water rights administration is already tight.



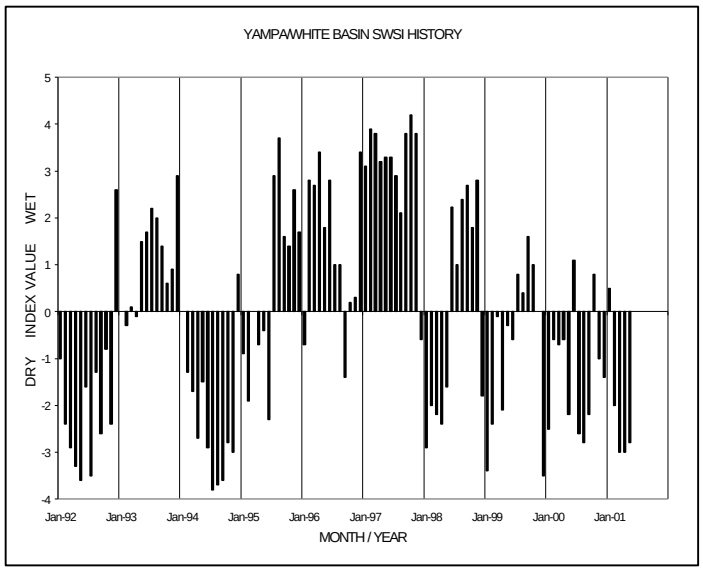




Basinwide Conditions Assessment

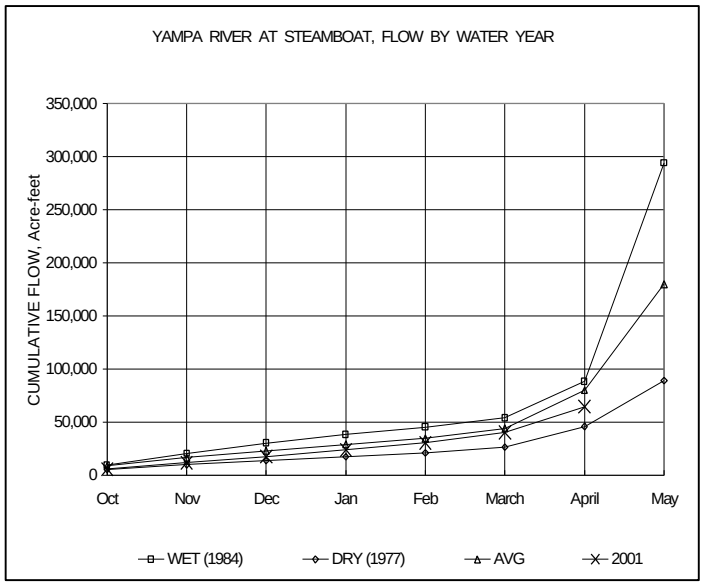
The SWSI value of –2.8 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 69% of normal. Flow at the gaging station Yampa River at Steamboat was 408 cfs, as compared to the long-term average of 605 cfs.

April was a month of below average precipitation combined with warm temperatures. Total precipitation over the basin was about 88% of the long-term average. Snowpack was generally down throughout the area, with the North Platte drainage at 73%, the Yampa drainage at 65%, and the Little Snake drainage at 71% of average. The one exception is the White drainage which experienced an increase to 80% of average. Late month storms that moved into the area after the snow course readings were taken may contribute to some slight improvement over the numbers reported here. Most of the reservoirs are close to being filled, with the exception of those in the Bear River drainage of the Yampa basin.



Outlook

The NRCS May 1 forecasts for the most probable runoff, as percents of average, are: 54% for the North Platte near Northgate, 68% for the White near Meeker, 62% for the Little Snake near Lily, and 71% for the Yampa near Maybell. These predictions are the same or slightly lower then those from the April 1st forecast.



Administrative/Management Concerns

The continuing decline in forecasted runoff is of concern. The warm weather in the middle of April caused stream flows to increase well above normal levels. This runoff came at a time when the flows could not be used for irrigation, although they helped many of the reservoirs to fill. It appears the runoff may be early and that the duration may be shorter than normal - a repeat of last year. Success for the irrigation season may depend on receiving normal precipitation throughout the summer.

Public Use Impacts

Rivers and streams are running at high levels. This can be expected to continue as the runoff increases.

Basinwide Conditions Assessment

The SWSI value of –0.2 indicates that for April the basin water supplies were near normal. The Natural Resources Conservation Service reports that May 1 snowpack is 91% of normal. Flow at the gaging station Animas River near Durango was 960 cfs, as compared to the long-term average of 779 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 79% of normal as of the end of April.

The water supply potential of a more typical snowpack was realized this April, as opposed to last year's dry conditions. Significant fluctuations occurred during April: first there was some early runoff, then storms that caused snow water content to increase, with warmer temperatures and snowmelt ending the month. During the month snowpack varied between 80% and 110% of normal.

River flows coincided with their up-drainage snow course measurements. The Animas River peaked at 2,320 cfs on April 30, which was also the date of high flows on the Dolores and La Plata Rivers.

Large quantities of diversions occurred off of the La Plata River, while also meeting New Mexico's demands, until the 26th. On April 28 Colorado diverters were restricted in order to make deliveries under the compact, with compact related restrictions being removed in early May.

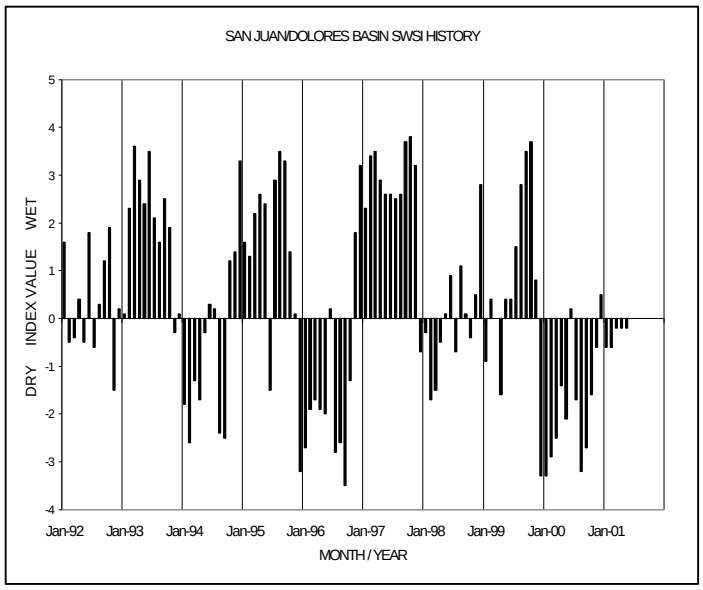
Reservoirs gained storage but remained well below average for this time of year. Most reservoirs, with the exception of McPhee reservoir on the Dolores River, are predicted to fill.

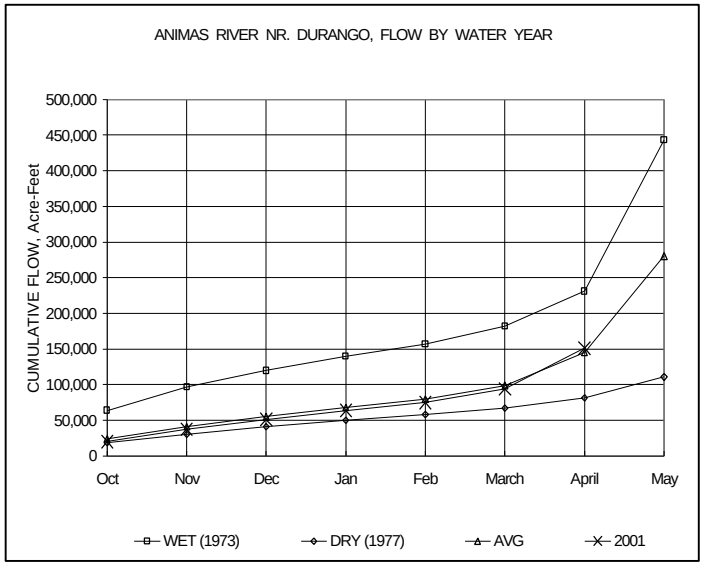
Outlook

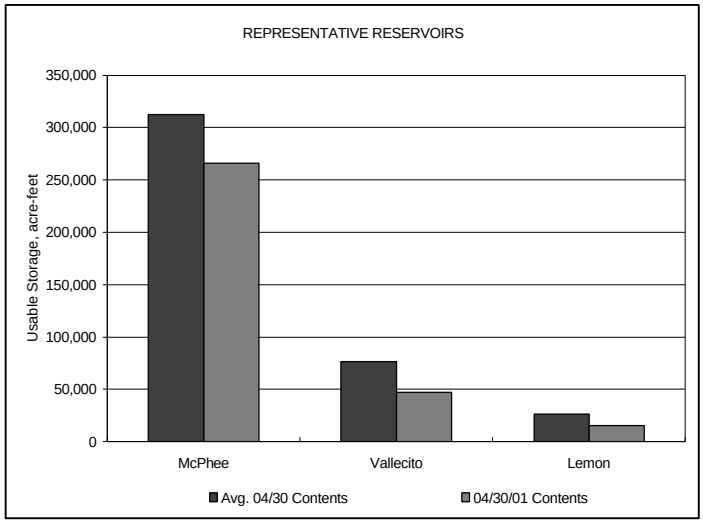
Prospects are good that an adequate water supply will be available to most water users during the early irrigation season.

Public Use Impacts

Soil moisture is sufficient to promote excellent growth of both early crops and the landscape. Raftable high water should be available on most rafting streams.







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