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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MAY 2003

All seven major drainage basins have a higher SWSI value than they had at this time last year, but six out of the seven still have negative values and the drought is not over, especially for the southwest areas of the state. The near average to even slightly above snowpack in the northern mountains trends to below average snowpack as one looks south, with the Rio Grande basin and the southwest corner of the state still in very dry conditions. Statewide the May 1 snowpack averaged 87% of normal. April precipitation helped slow snow melt, reduce demand for early season irrigation water, and bolstered stream flows for reservoir filling in the north of the state, but not in the south. Concern is expressed about the loss of snowpack to dry soil moisture and sublimation in the southern mountains, without benefit to stream flow. Most all reservoirs in the state contain less water than they typically do at this time of year.

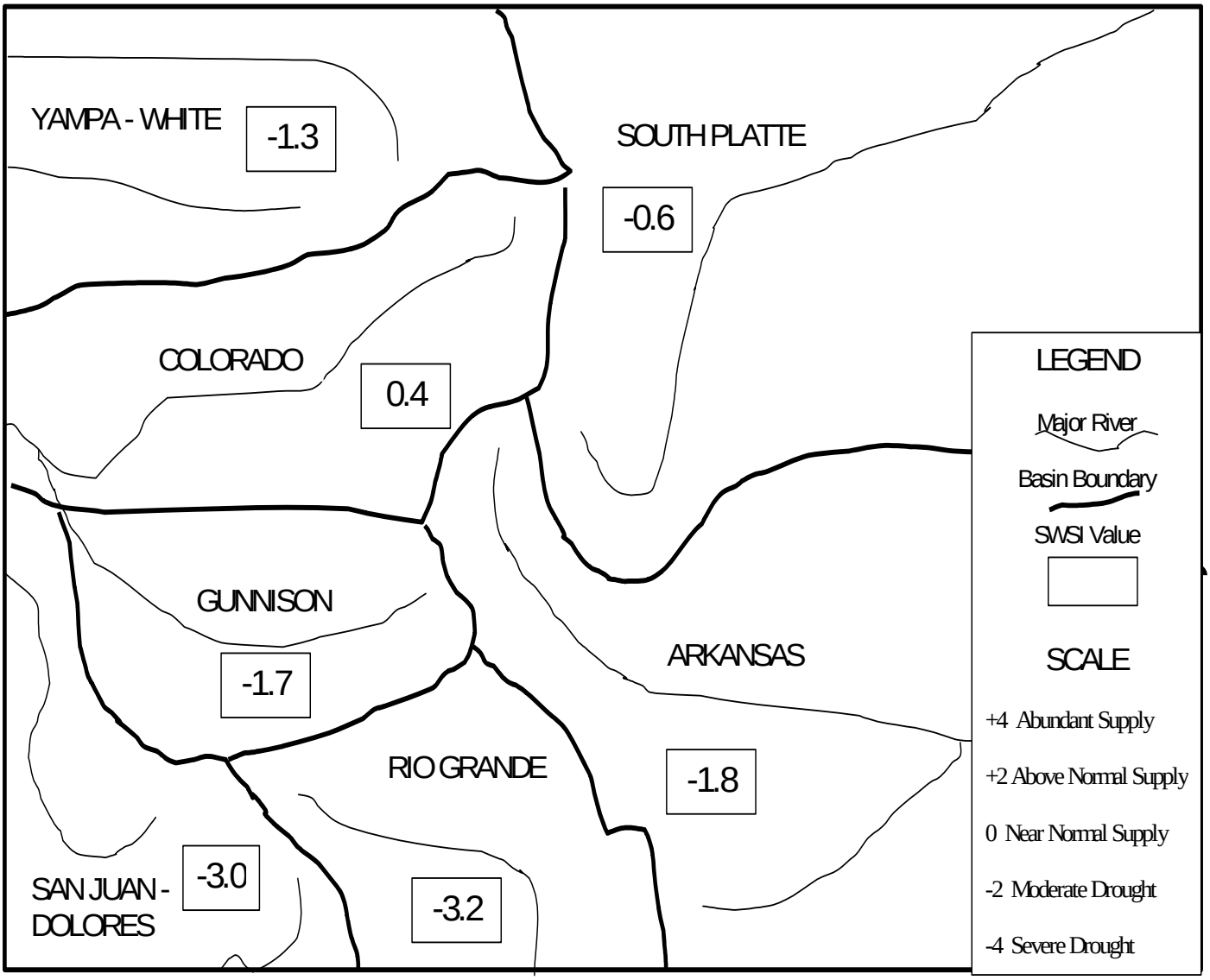
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter 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, 2003, and reflect the conditions during the month of April.

Basin	May 1, 2003 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	-0.6	+0.8	+1.9
Arkansas	-1.8	-1.4	+1.1
Rio Grande	-3.2	-2.1	+0.4
Gunnison	-1.7	-1.2	+1.4
Colorado	+0.4	-0.3	+3.4
Yampa/White	-1.3	+0.2	+2.6
San Juan/Dolores	-3.0	-1.2	+0.7

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, 2003

Basinwide Conditions Assessment

The SWSI value of –0.6 indicates that for April the basin water supplies were slightly below normal. Cumulative storage for the six reservoirs graphed on this page was 53% of normal as of the end of April. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 74% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 46% of capacity. The Natural Resources Conservation Service reports that May 1 snowpack is 109% of normal. Flow at the gaging station South Platte River near Kersey was 584 cfs, as compared to the long-term average of 1,096 cfs. Flow at the Colorado/Nebraska state line averaged 113 cfs.

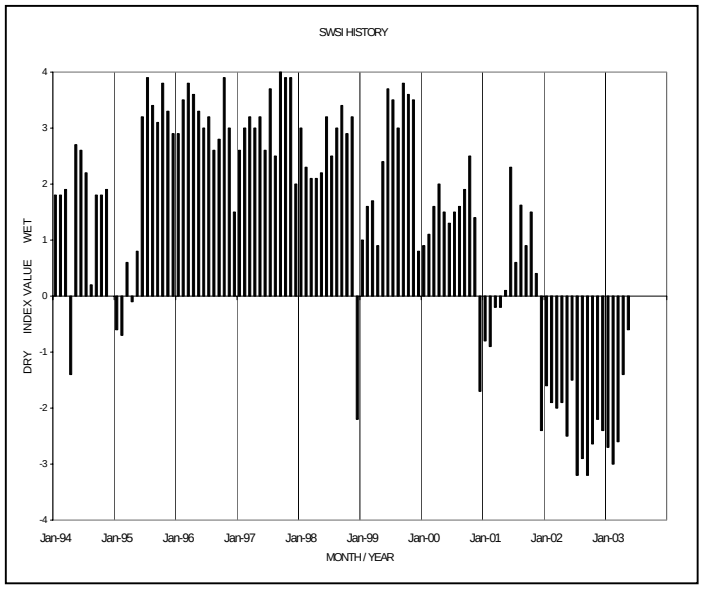
April continued to be wet throughout the basin allowing additional storage in reservoirs. Reservoir storage along the mainstem has dramatically improved, but a good runoff from the above average snow pack will still be needed to fill the mainstem reservoirs. Some reservoirs on tributaries may not fill even with a good runoff if they have limited filling capacities.

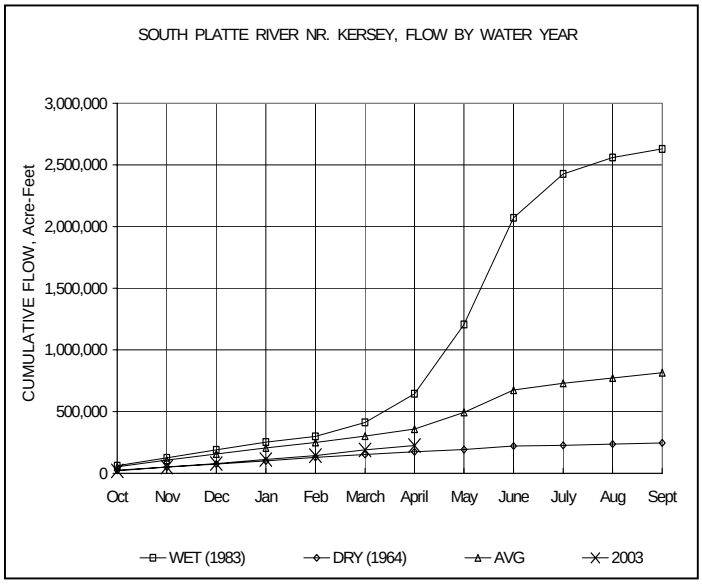
Outlook

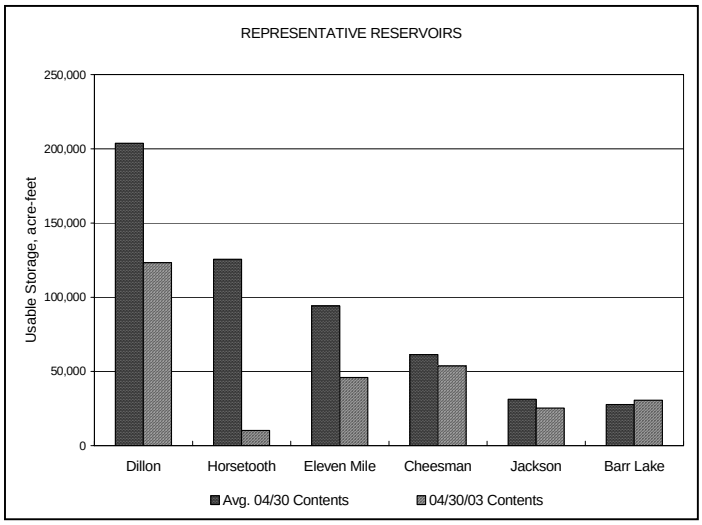
It is beginning to appear that many water providers will not have to worry about adequate water for this summer. Most suppliers still plan to have restrictions to assure that there are adequate supplies. Continued wet conditions obviously help both municipal and irrigation user supplies.

Administrative/Management Concerns

Because of the wet conditions, there was not a direct flow call on the South Platte downstream of Denver the whole month of April.







Basinwide Conditions Assessment

The SWSI value of –1.8 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 99% of normal. Flow at the gaging station Arkansas River near Portland was 247 cfs, as compared to the long-term average of 448 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 41% of normal as of the end of April.

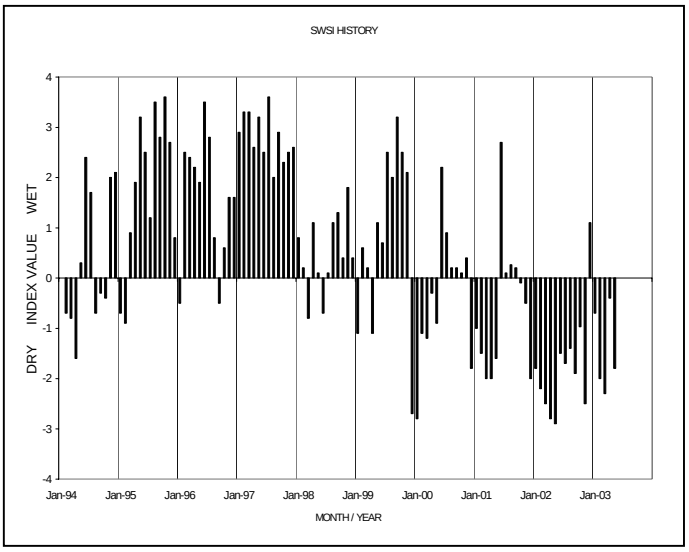
Stream flows in April continued to fall significantly below normal above Pueblo Reservoir. River calls continued to be set at rights more senior than typically seen at this time in the irrigation season. Flows on Fountain Creek from April precipitation have helped to improve the situation slightly below Pueblo Reservoir.

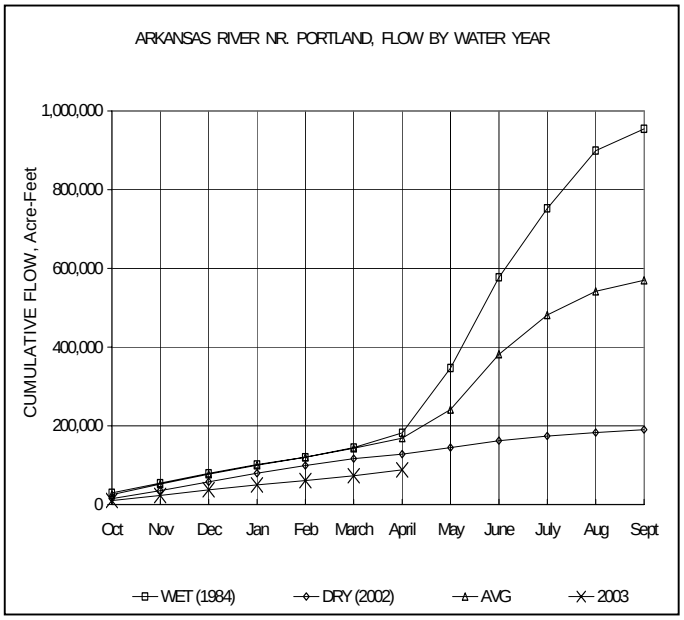
Ditches below John Martin Reservoir, and the State of Kansas, did not exert a call for water from the reservoir until after the April 7th date identified in the 1980 Operating Plan, so conservation storage continued until April 13, 2003. Total storage from November 1, 2002 through April 13, 2003 in John Martin Reservoir was approximately a net of 23,500 acre-feet, which doubled the reservoir content over that time period, but left it woefully short of the 345,000 acre-feet of capacity.

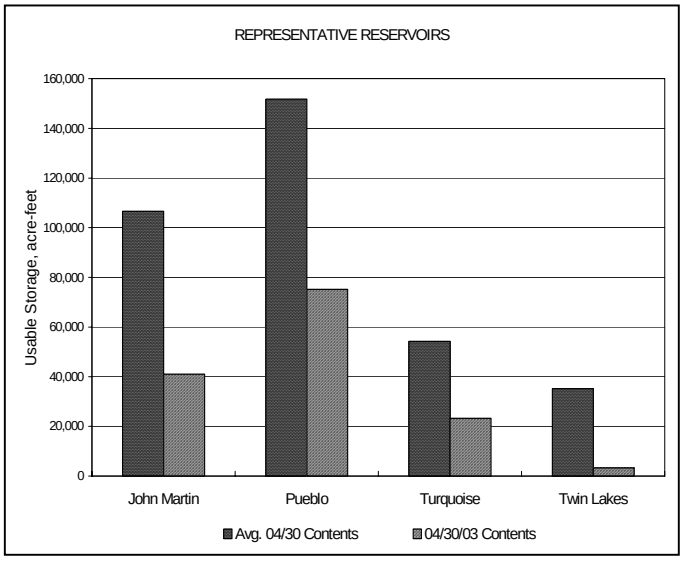
Administrative/Management Concerns

Diminished reservoir storage, limited amounts of transmountain deliveries from 2002, and prospects of small imports for 2003 left very little replacement water for well augmentation. Initial approval of annual well augmentation plans allowed only about 50,000 acre-feet of pumping as opposed to approved levels of 170,000 to 200,000 acre-feet in prior years.

To the extent that some reservoirs were able to fill or partially fill from abundant precipitation in late winter, there have been some problems with seepage through reservoir dams that will require close monitoring by reservoir owners and operators and Division 2 Dam Safety Engineers and Water Commissioners.



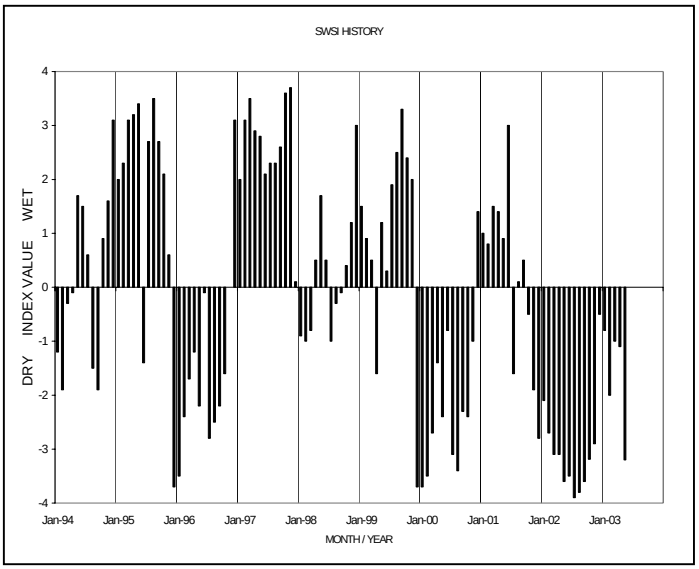




Basinwide Conditions Assessment

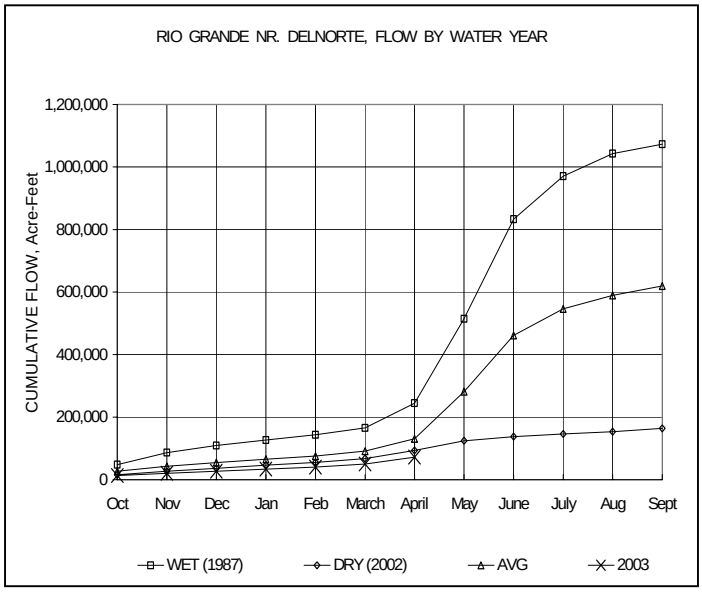
The SWSI value of –3.2 indicates that for April the basin water supplies were significantly below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 56% of normal. Flow at the gaging station Rio Grande near Del Norte was 371 cfs (48% of normal). The Conejos River near Mogote had a mean flow of 147 cfs (46% of normal). Flow to the state line was only 11% of normal as upstream diversions for irrigation needs continued. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 78% of normal as of the end of April.

Alamosa received precipitation totaling only 0.24 inches during April, 0.30 inches below normal. Temperatures in the San Luis Valley were above normal levels for the sixth month in a row.



Outlook

NRCS forecasts are now predicting runoff to be only 43% of average on the Rio Grande near Del Norte and 60% for the Conejos near Mogote. Other drainages of particular concern are the Alamosa River (46%) and La Jara Creek (46%) where runoff will be early and diminished. Based on these forecasts, water users in the basin who are reliant on stream flow for irrigation and stock watering needs should expect extremely limited availability.

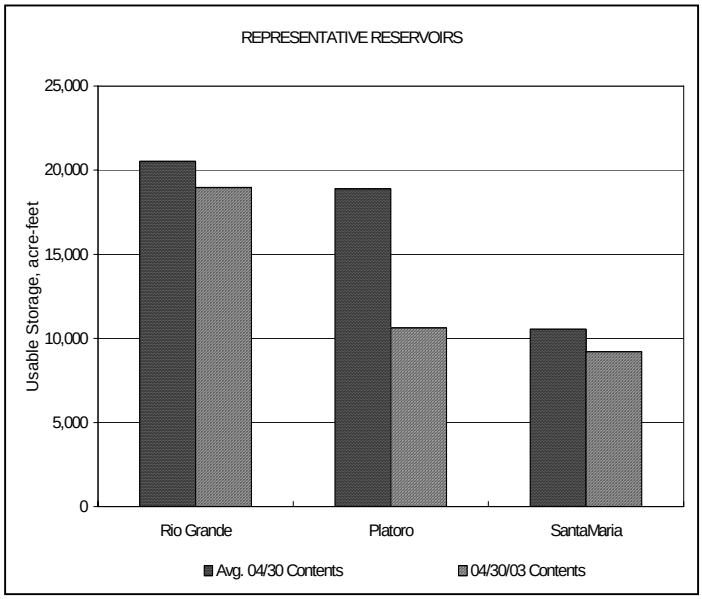


Administrative/Management Concerns

The usual spring winds picked up during April. Of particular concern to water users and administrators right now is the large drop in snowpack without a corresponding increase in stream flow. While conditions certainly appear to be better than 2002, in general, runoff in the Conejos, Rio Grande and their tributaries should be somewhere around one-half of normal. Many junior ditch priorities have not been able to divert water now since 1999.

Water rights were not being curtailed on the Conejos during April for Rio Grande Compact delivery requirements. A combination of carryover credit, winter deliveries and Closed Basin Project production will easily meet their obligation. The Rio Grande should require only minimal curtailment to meet their obligation.

With only the most senior water rights able to divert throughout the summer, massive pumping from the valley's already stressed aquifers will be necessary to meet demand.



Public Use Impacts

The expected well below average stream flow will adversely affect the farming, ranching, and recreational industries in the basin.

Basinwide Conditions Assessment

The SWSI value of –1.7 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 66% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 112 cfs, as compared to the long-term average of 109 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 72% of normal as of the end of April.

Outlook

The cool weather in April has helped to keep the moisture in the high country and not run out in high volumes in a manner that irrigators could not utilize the water. The outlook for this irrigation is much better than last year, although some irrigators will still face shortages.

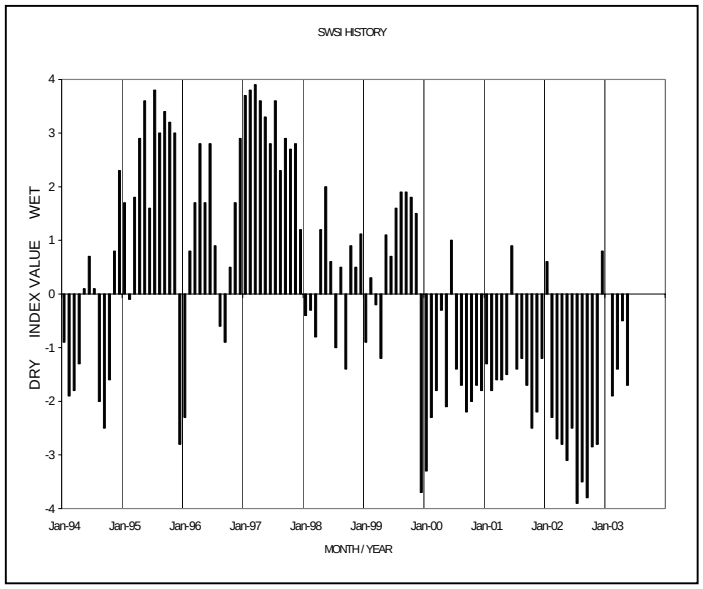
Administrative/Management Concerns

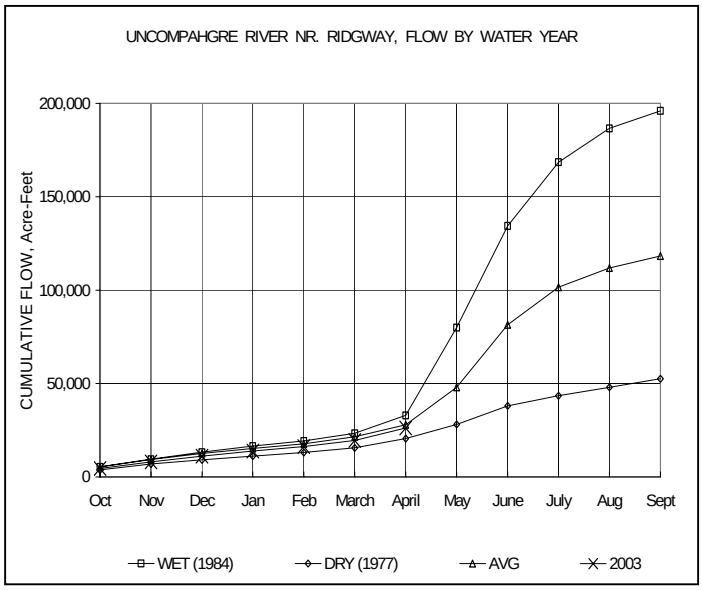
With the help of a contract with CRWCD, the Gunnison Basin avoided a call form the Redlands Power Canal. The first half of April, the flows were very low and the contract was necessary. In the last half, the weather warmed enough to cause some snowmelt and the flows were sufficient to satisfy the canal's demands.

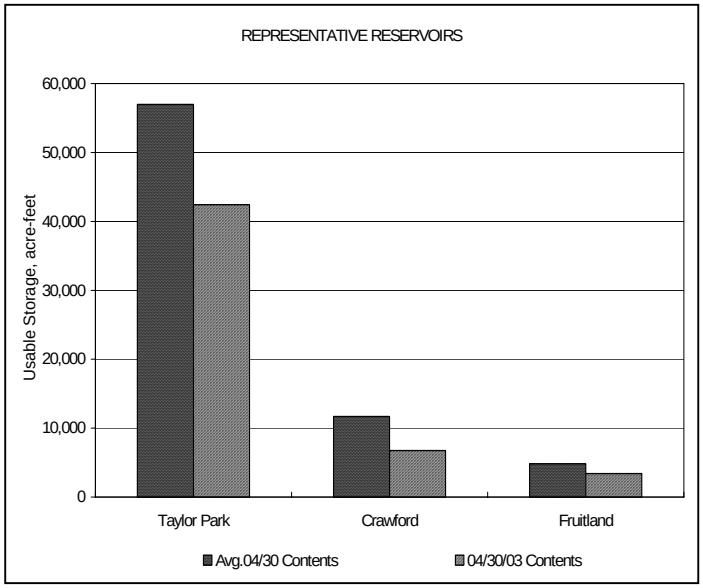
It still appears that the upper Gunnison Basin might experience a call from the Gunnison Tunnel in late June or early July this summer. If so, a large number of irrigation rights would be curtailed and the hay crop would be affected. Hopefully, the flows will remain high enough and stored water will be enough to supplement the need of the Gunnison Tunnel. The UVWUA could also place a call on the Uncompahgre River with their senior rights on the M & D Canal.

Public Use Impacts

Although the snowpack is better than last year, people have felt the affect of a drought and are trying harder than ever to irrigate as much as possible this spring before the summer months come and the water runs out. This has already started causing squabbles between neighbors in trying to share the limited amount of water.



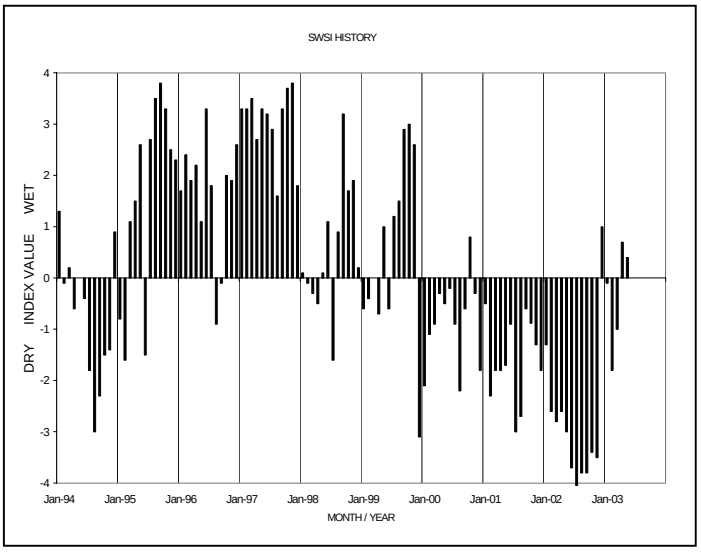




Basinwide Conditions Assessment

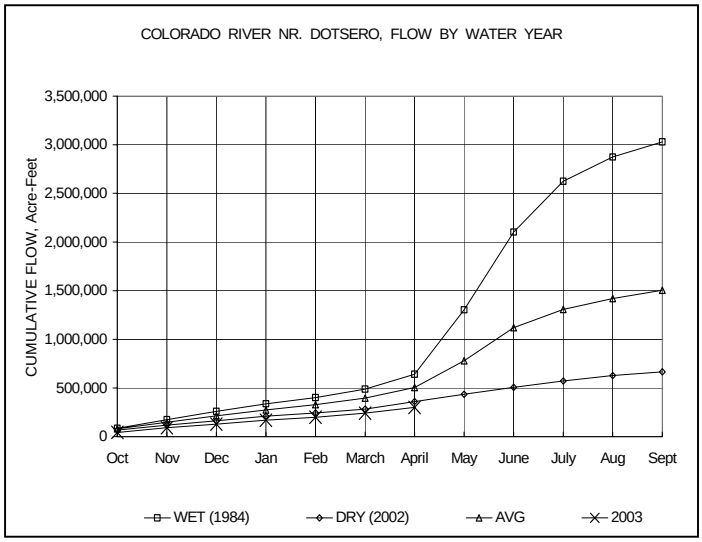
The SWSI value of 0.4 indicates that for April the basin water supplies were near normal, although the actual conditions may not be as good as indicated. The Natural Resources Conservation Service reports that May 1 snowpack is 105% of normal. Flow at the gaging station Colorado River near Dotsero was 983 cfs, as compared to the long-term average of 1,845 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 63% of normal as of the end of April.

April precipitation was well above average in headwater drainages but well below average downstream, particularly on Grand Mesa and the Flattops.



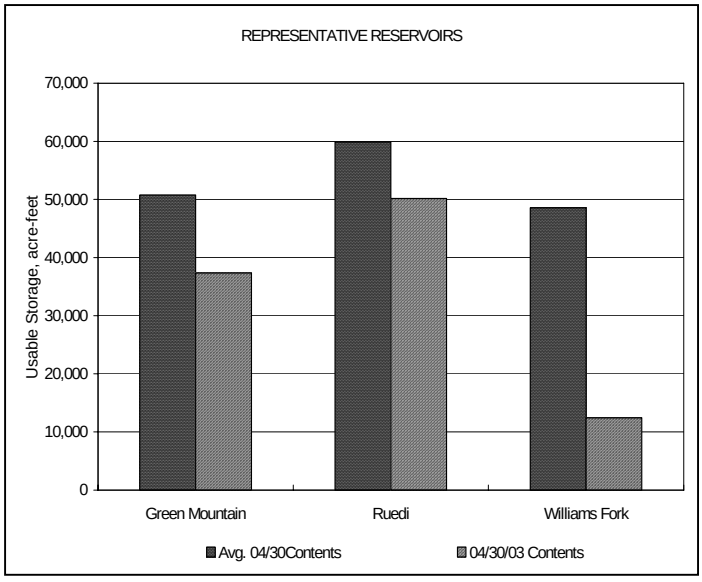
Outlook

Summer runoff forecasts are at or above average throughout the basin, with the significant exceptions of Plateau Creek (57% of April-July average) and the Roaring Fork River (77%.)



Administrative/Management Concerns

The relaxation of the Shoshone Power plant river call and early-May rain and snow storms have delayed the mainstem river call, allowing many reservoirs to gain badly-needed storage.



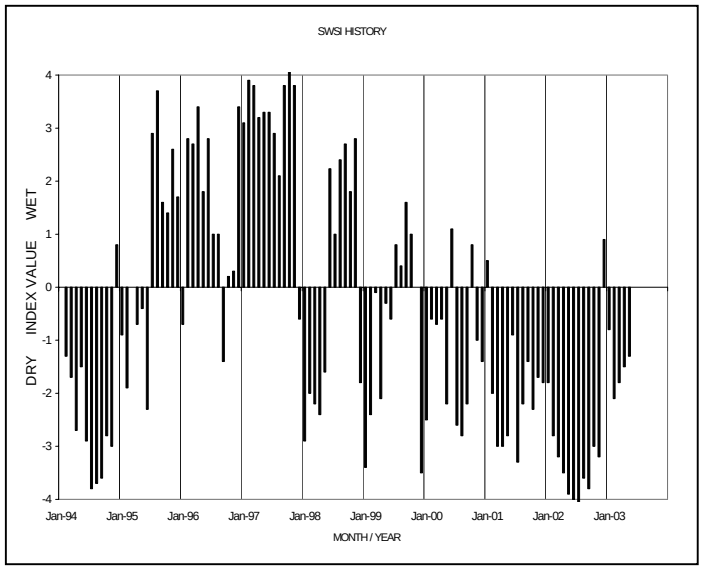
Basinwide Conditions Assessment

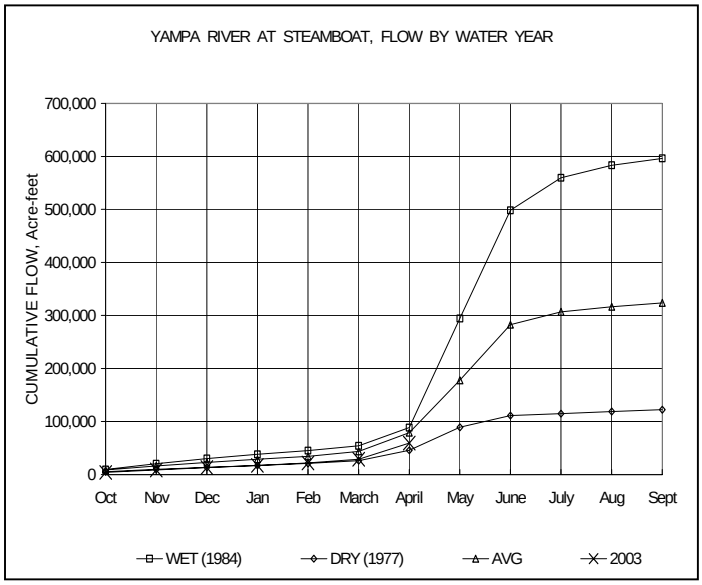
The SWSI value of –1.3 indicates that for April the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 91% of normal. Flow at the gaging station Yampa River at Steamboat was 510 cfs, as compared to the long-term average of 605 cfs.

At the end of April the snowpack for the North Platte River Basin was 100% of average; for the Yampa River Basin 96% of average; for the White River Basin 85% of average; and for the Little Snake River 93%. The snowpack percentages have remained essentially the same since the end of March, with only the North Platte basin showing a slight increase.

April continued to bring above average moisture to the basin. Basin-wide, precipitation was 134% of average as measured at the Snotel sites. For the water year to date, the basin is at 98 % of average precipitation, and 145 % of last year for the same timeframe.

Steam flows fluctuated greatly during the month as temperatures frequently changed from spring-like to winter conditions.





Outlook

Runoff forecast have held steady despite the fact that April precipitation was well above average. Flows in most rivers and streams should be much higher this spring then during the same period last year. The May 1 stream flow forecasts reported by the Natural Resources Conservation Service are 87% of average for the North Platte near Northgate, 83% of average for the Yampa River near Maybell, 79% of average on the Little Snake near Dixon, and 60% for the White River near Meeker. The forecast runoff predictions for this month as compared to last month are slightly higher for the North Platte River and slightly lower for the White River.

Administrative/Management Concerns

Storage in the North Platte basin may reach, or exceed, the limit of 17,000 acre-feet for irrigation use contained in the US Supreme Court decree in Nebraska v. Wyoming. This storage limit has never been exceeded. Excess storage may have to be released from junior reservoirs to stay within the limit.

Public Use Impacts

The ski hills in Steamboat Spring closed mid-April and water sports are beginning to dominate the scene. Reservoirs are opening up and fishing activity is increasing. Most streams and river are running high and dirty. Kayakers are being seen in increasing numbers on the Yampa River.

Basinwide Conditions Assessment

The SWSI value of –3.0 indicates that for April the basin water supplies were significantly below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 51% of normal. Flow at the gaging station Animas River near Durango was 488 cfs, as compared to the long-term average of 779 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 65% of normal as of the end of April.

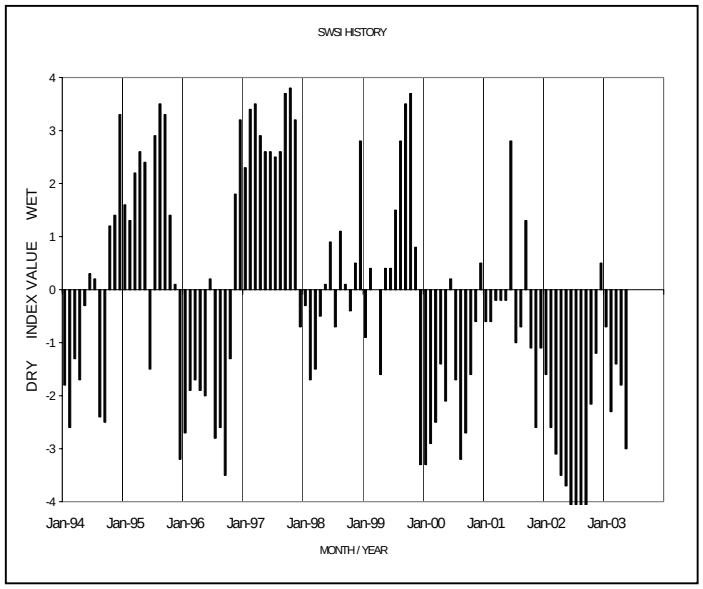
April weather in the Four Corners area did not bring needed improvements in the water supply. Instead it was a steady decline in snowpack and soil moisture accompanied by daily windstorms and breezes. Only 0.32 inches of precipitation was experienced in Durango, 23% of average. The year-to-date precipitation is now at 86% of normal. Temperatures were about normal, however. The largest storm which had an impact on the area came through during the period April 21-23. It left a small accumulation on the snowpack.

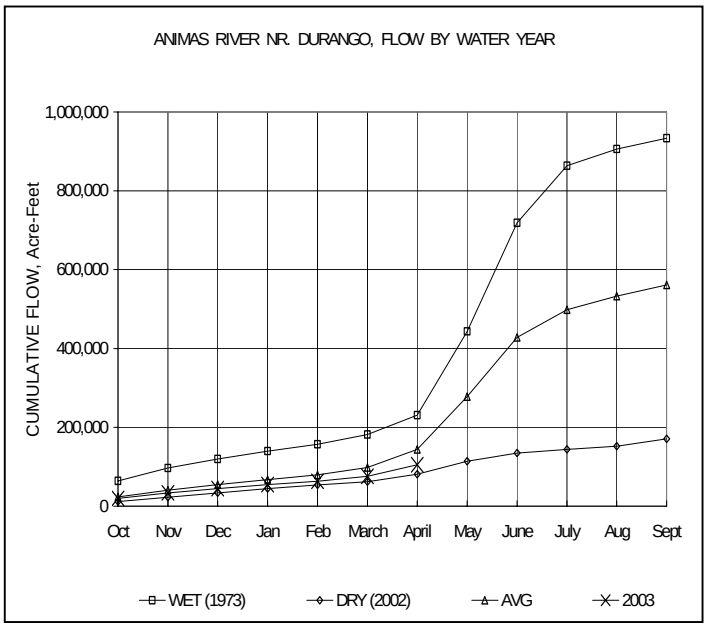
The cool weather allowed lower snow to melt but retained much of the supply in higher elevations. This runoff allowed some storage in project reservoirs since many of the irrigation ditches held back on the call for water. As a result, significant quantities were reserved in project areas but not nearly at the normal levels.

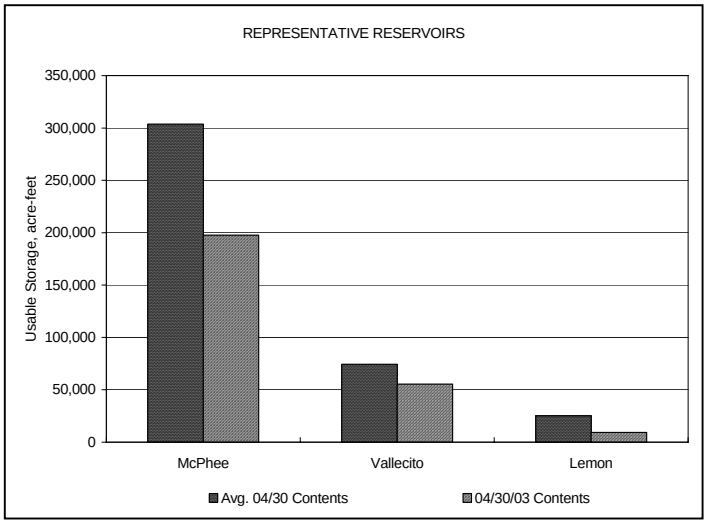
Most of the rivers exceeded peak flows from last year at some time during the month. They were at the highest on April 29 before a cool spell began.

Outlook

Prospects are not good for an adequate year. The carryover storage was so poor that without rain showers to supplement the stream flows later in the summer irrigators will be struggling to maintain their fields after the initial run of water.







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