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 2004

The SWSI values rose in all basins compared to last month's values, a response to widespread above normal April precipitation. Snowpack, measured as a percent of average, increased during April in all basins except the Colorado and Yampa/White. In spite of that increase, the statewide May 1 snowpack is still only 68% of normal, and is below normal in all basins except the Rio Grande (which is 102% of normal). The low elevation snowpack is already gone in the Colorado and Yampa/White basins. In other areas of the state the April weather helped delay the spring snowmelt runoff. The runoff period is still expected to be earlier than normal statewide, and the spring through summer runoff forecasts are for flow below normal volumes of water.

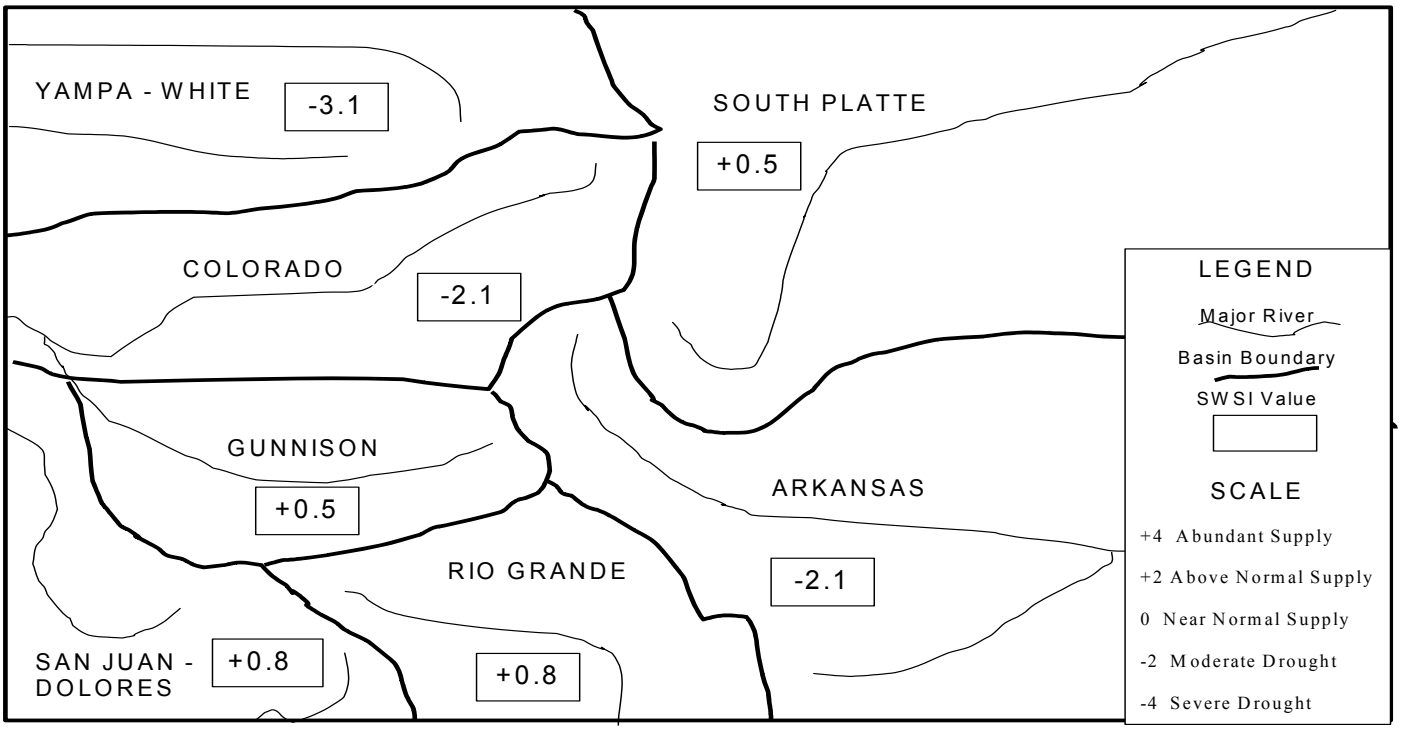
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter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

Basin	May 1, 2004 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+0.5	+2.2	+1.1
Arkansas	-2.1	+1.2	-0.3
Rio Grande	+0.8	+1.7	+4.0
Gunnison	+0.5	+2.1	+2.2
Colorado	-2.1	+0.5	-2.5
Yampa/White	-3.1	+0.2	-1.8
San Juan/Dolores	+0.8	+1.3	+3.8

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, 2004

Basinwide Conditions Assessment

The SWSI value of 0.5 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 103% of normal as of the end of April. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 76% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 66% of capacity. The Natural Resources Conservation Service reports that May 1 snowpack is 65% of normal. Flow at the gaging station South Platte River near Kersey was 432 cfs, as compared to the long-term average of 1,062 cfs. Flow at the Colorado/Nebraska state line averaged 27 cfs.

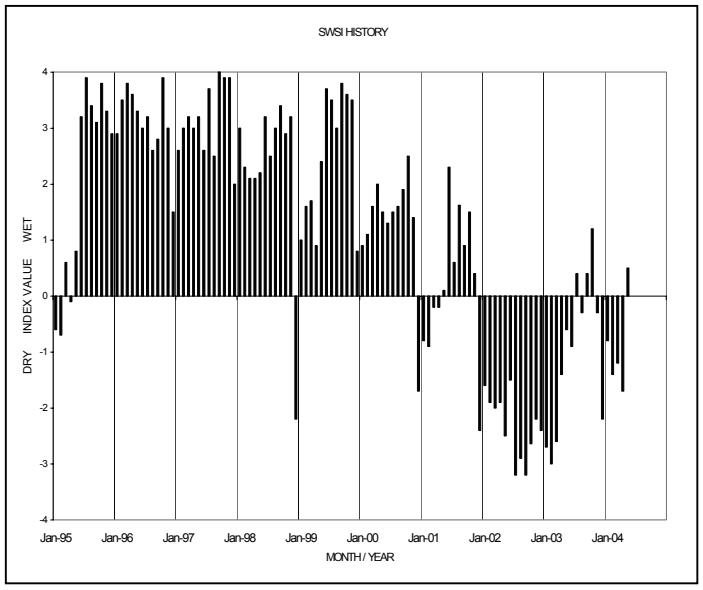
Precipitation events in April improved the snowpack from the beginning of the month, but snowpack still lagged significantly behind average at the end of the month. Even with the storms, there was a direct flow call during the whole month of April, except for a few days directly after storms. This is in contrast to last year when there was a storage call all during April. This year's situation was more similar to 2002 when there was also a direct flow call the whole month of April.

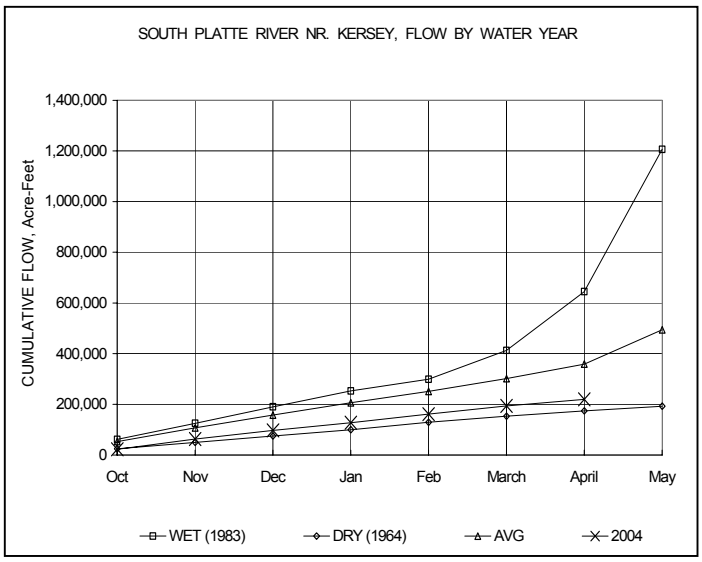
Outlook

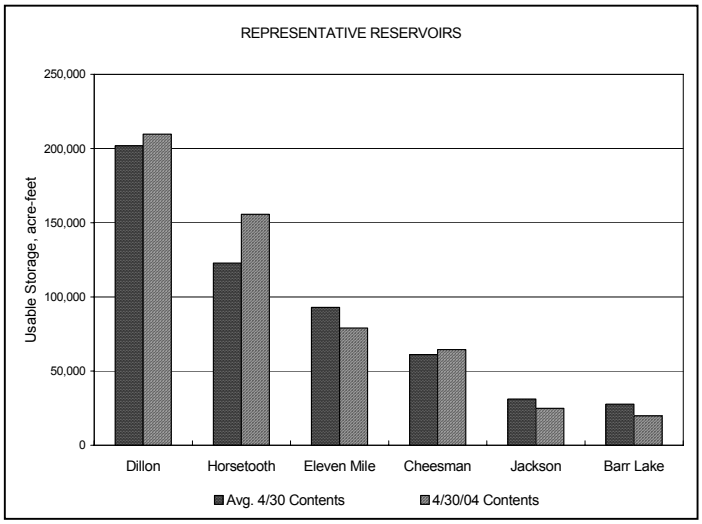
During short periods after storms, the river call moved to a more junior storage call. However, with many reservoirs not full, the number of days of storage was not near enough to fill the remaining capacity of these reservoirs, either on the main stem of the South Platte or on the tributaries. Without significant precipitation in May and June, these reservoirs will not fill this year. This will leave users, especially agricultural users, extremely vulnerable to having inadequate supplies late in the summer.

Public Use Impacts

Although municipal users have a greater safety factor than irrigation interests, municipal users are concerned about the adequacy of their water supplies. In response, most municipal suppliers have already implemented restrictions on use similar to those that have existed the last few years.



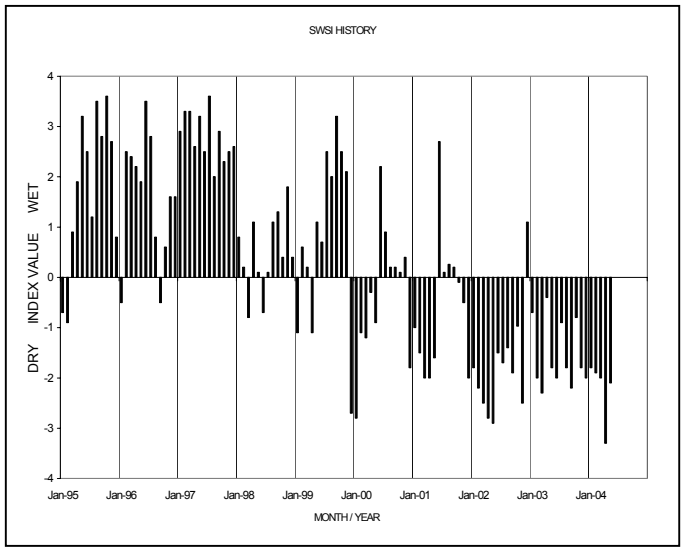




Basinwide Conditions Assessment

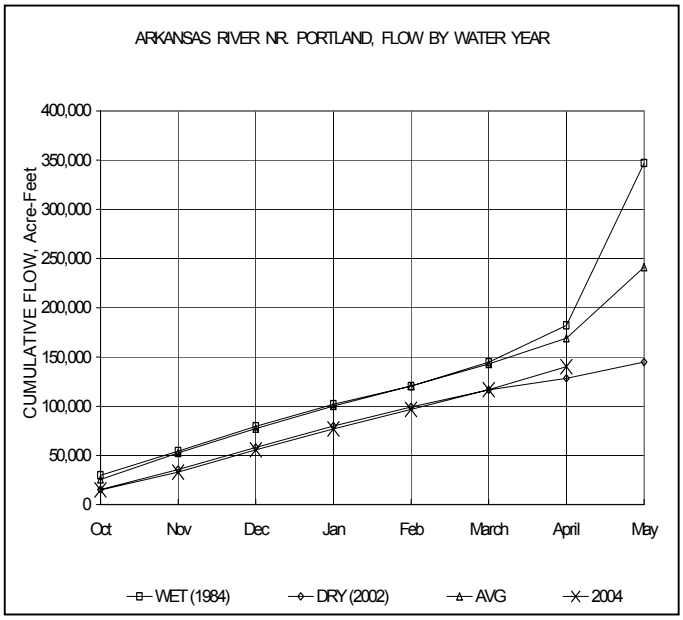
The SWSI value of –2.1 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 98% of normal. Flow at the gaging station Arkansas River near Portland was 391 cfs, as compared to the long-term average of 448 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 51% of normal as of the end of April.

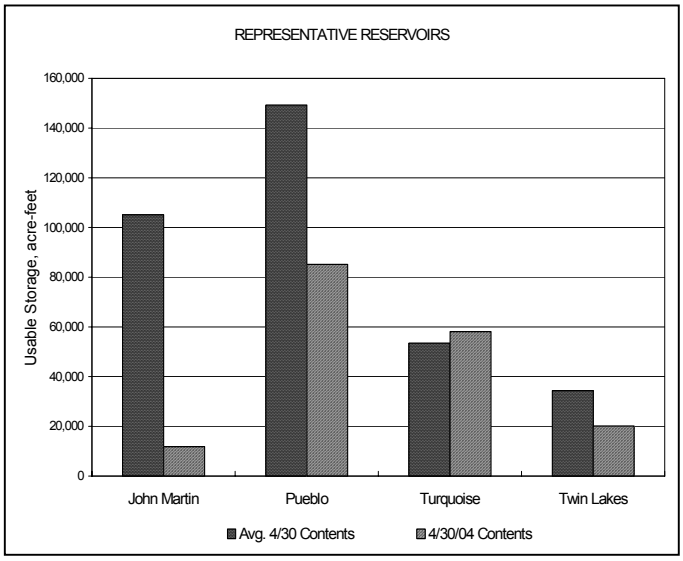
Due to heavy spring precipitation in April, both the snowpack and the surface water supply increased significantly throughout the Arkansas River Basin. River calls were changed to water rights more junior than have been seen at this time in the irrigation season for several years. April precipitation produced flows on Fountain Creek which contributed to improved Arkansas River conditions downstream from Pueblo Reservoir. Improvement in the storage level of Trinidad Reservoir occurred in April, due to the heavy spring snow and rains.



Administrative/Management Concerns

A delivery of water to Kansas from John Martin Reservoir that was initiated in late March ended on Sunday, April 11, 2004.



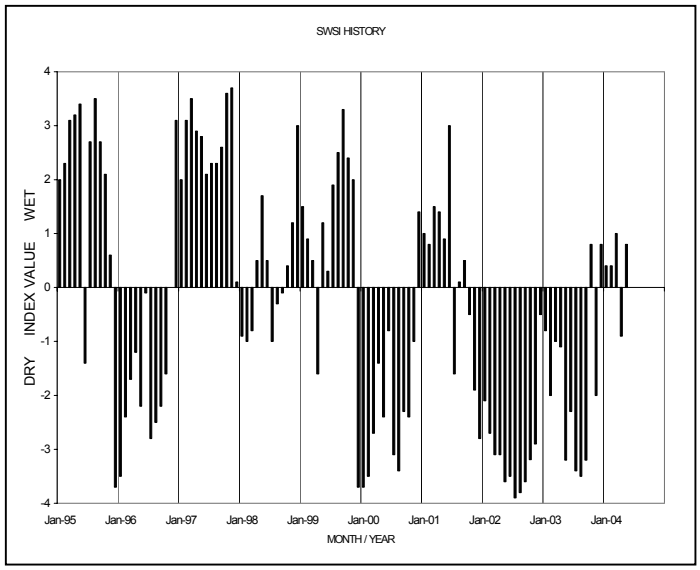


Basinwide Conditions Assessment

The SWSI value of 0.8 indicates that for April the basin water supplies were near normal. The Natural Resources Conservation Service reports that May 1 snowpack is 102% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 662 cfs (85% of normal). The Conejos River near Mogote had a mean flow of 271 cfs (84% of normal). Flow to the state line was 68% of normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 55% of normal as of the end of April.

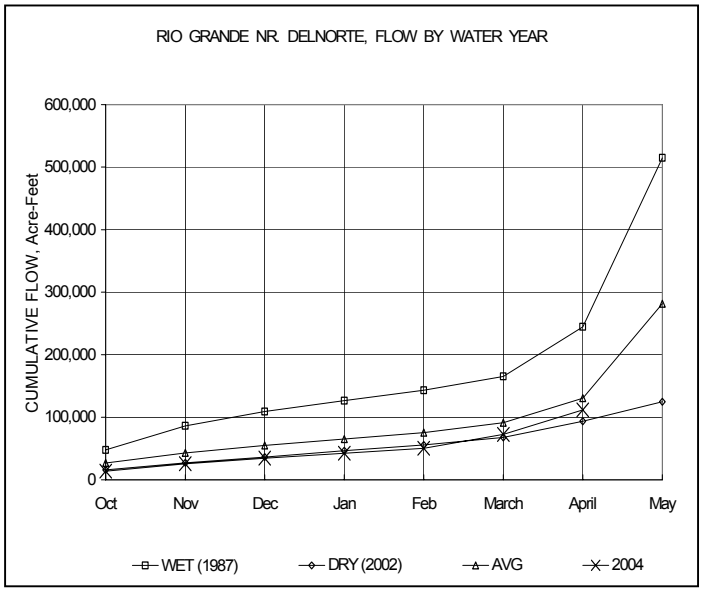
Alamosa received above average precipitation of 1.05 inches during April and temperatures ranged from 19 degrees to 73 degrees.

Snowstorms and cold temperatures brought the early snowmelt to a sudden halt at the beginning of April. Many ditches had to be restricted or shut off entirely after only a few days of diversion.



Outlook

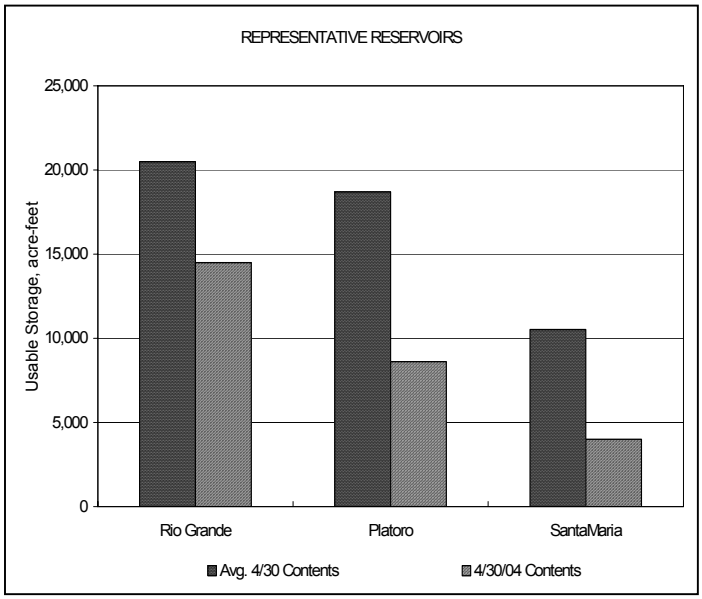
NRCS forecasts are now predicting runoff to be 87% of average on the Rio Grande near Del Norte and 91% for the Conejos near Mogote. Despite the abundant snowfall during April, these forecasts were not changed from last month's forecast. The best runoff in the basin is predicted for Costilla Creek, just south of San Luis (96%). The lowest runoff, compared to average, is expected on Saguache Creek (79%). Overall, the expected runoff in the upper Rio Grande basin is far above what was experienced the last two years.



Administrative/Management Concerns

Presently, a portion of the native flow on the Rio Grande is being curtailed from diversion by ditches in an effort to meet Colorado's 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 the Rio Grande and Conejos River drainages to meet Colorado's obligation.

Water users will have some water to work with this year. After two consecutive years of poor stream flow conditions, ditch riders and superintendents will have to relearn how to deal with a good runoff.



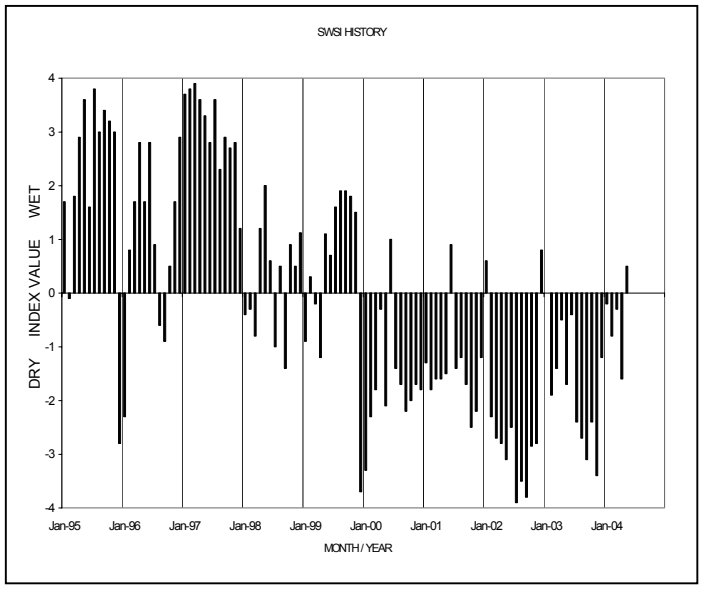
Public Use Impacts

Weather conditions during April prevented many farmers from working in the fields as early as they would like. Despite the good stream flow forecasts, no destructive flooding due to runoff is anticipated this spring.

Basinwide Conditions Assessment

The SWSI value of 0.5 indicates that for April the basin water supplies were near normal. The Natural Resources Conservation Service reports that May 1 snowpack is 77% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 141 cfs, as compared to the long-term average of 109 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 129% of normal as of the end of April.

After an extremely dry March with record high temperatures during which the snowpack percentages dwindled greatly, the month of April produced a lot of precipitation that bolstered the snowpack, and watered the entire basin with a slow rain that postponed the need to run irrigation water for many people.

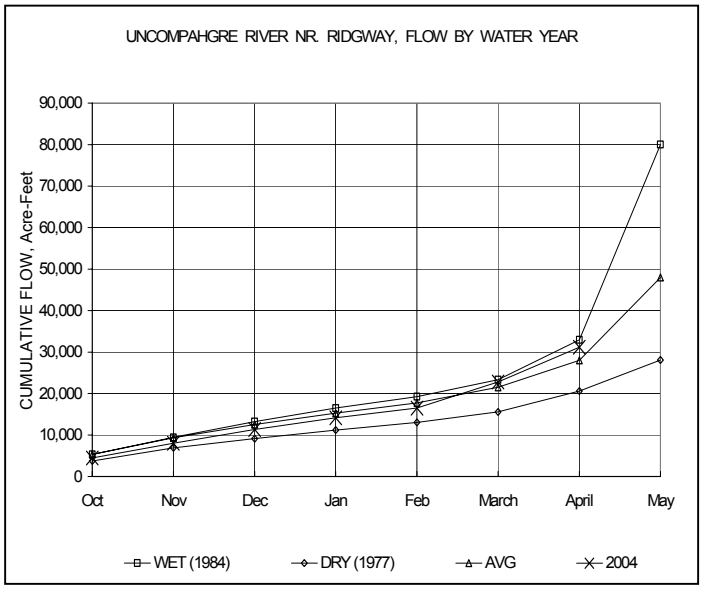


Outlook

Even with the increased the snowpack during April, the May 1 basin wide percentage of 77% of normal keeps us in the drought cycle and produces only a limited amount of water for the various uses.

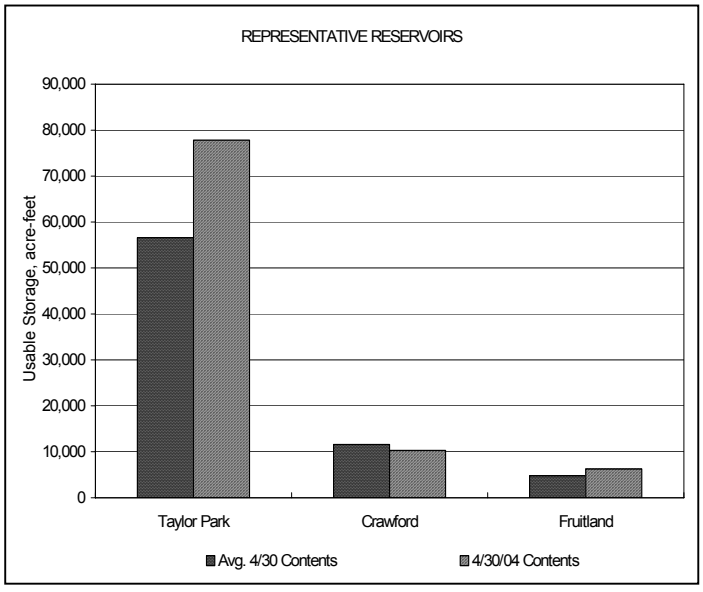
The major reservoirs, Blue Mesa and Taylor Park will not fill this year. Paonia Reservoir is already spilling, and it is expected that Ridgway Reservoir will fill soon. Although irrigators will again have a limited supply, many still remember 2002 and are grateful for more water than was available that year.

The south side of the Grand Mesa was one of the better areas for snow; most of those reservoirs will fill. The fruit growers should have enough reservoir storage to get them through the summer season, but they will need to use all of their stored water.



Administrative/Management Concerns

It does not look like the Uncompahgre Valley Water Users Association will need to place a call on the main stem of the Gunnison River with the Gunnison Tunnel. If they would need to call, there is enough water in the second fill of Taylor Park Reservoir that can be released to keep the call off and enable irrigators to get through the irrigation season until haying. On the Uncompahgre, there should be enough storage in Ridgway reservoir to satisfy their summer demands.



Public Use Impacts

The low storage and release levels have affected the recreational users at Blue Mesa and Taylor Park reservoirs, and in the rivers below the dams. The fish population, both in the reservoirs and the streams, also suffer from the low levels. Irrigators could benefit from a better supply, but just have to make due with what is available. In years like this, summer rains would be a great help.

Basinwide Conditions Assessment

The SWSI value of –2.1 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 55% of normal. Flow at the gaging station Colorado River near Dotsero was 957 cfs, as compared to the long-term average of 1,845 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 127% of normal as of the end of April.

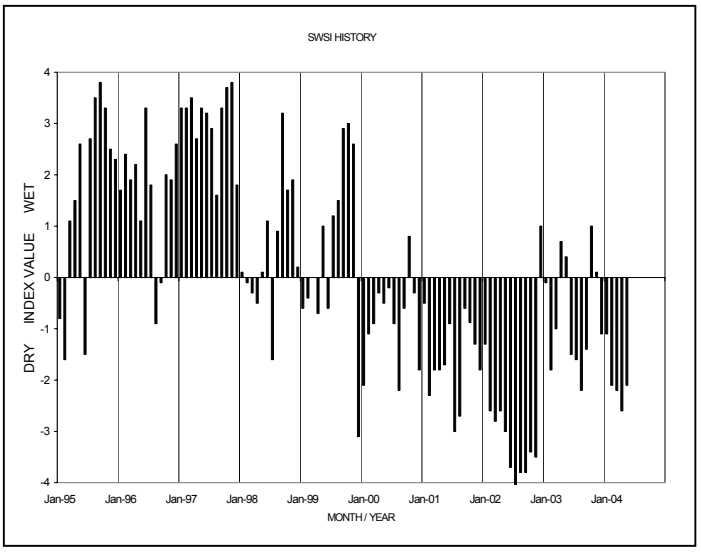
April precipitation was above normal downstream of Dotsero, but below normal above that site. Low elevation snowpack is mostly gone, several weeks before normal melt-off.

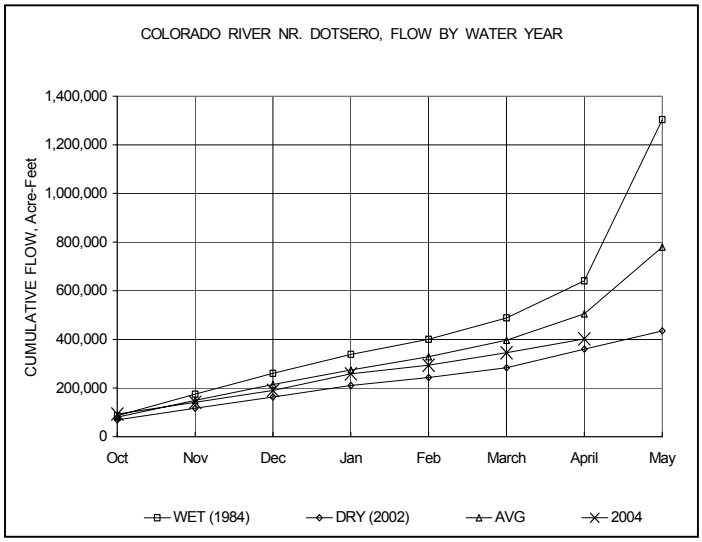
Outlook

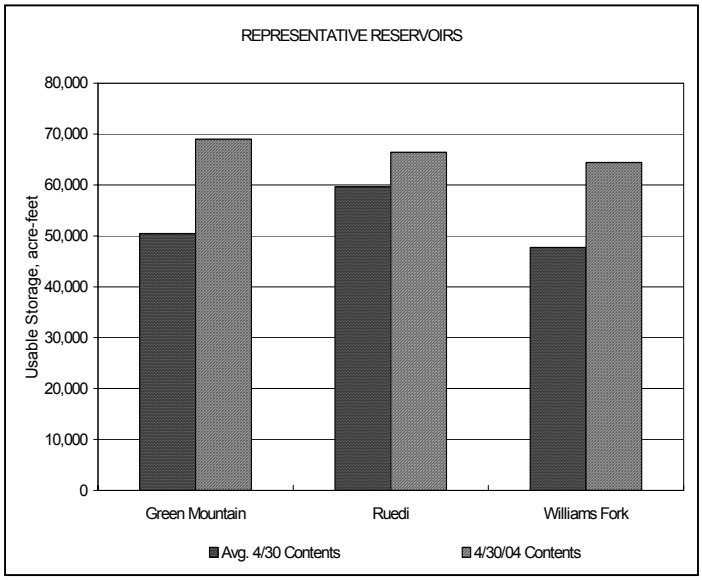
Mainstem runoff may peak by mid-May versus the average peak date in early June. The Colorado Basin River Forecast Center is forecasting April-July runoff to be 47-66% of average for various tributaries in the basin. Cameo runoff is projected to be 58% of average.

Administrative/Management Concerns

Lake Powell is expected to continue to drop after this season's low runoff, and a Colorado River compact call could happen if two or three more below-average runoff years follow this year.



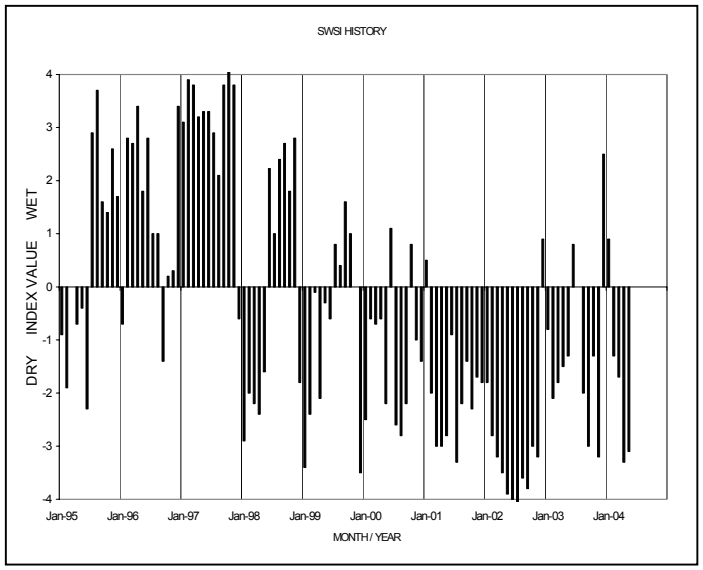




Basinwide Conditions Assessment

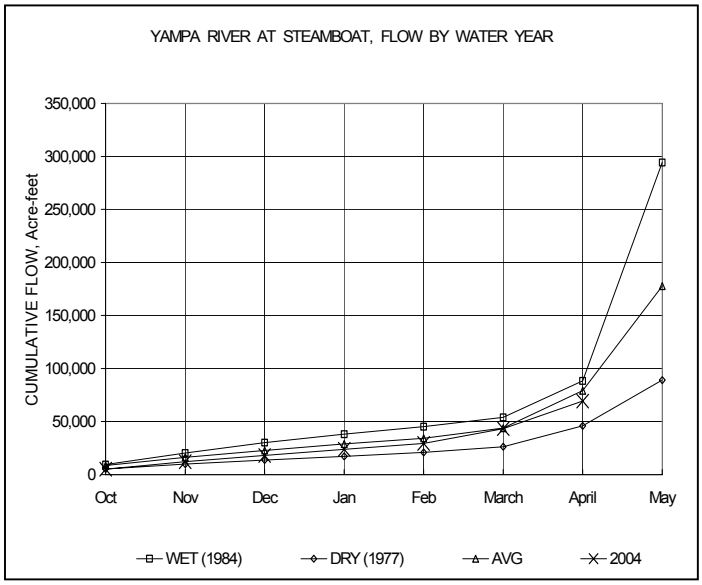
The SWSI value of –3.1 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 53% of normal. Flow at the gaging station Yampa River at Steamboat was 437 cfs, as compared to the long-term average of 605 cfs.

April brought near normal precipitation to the basin. However, warm temperatures and high winds caused the snowpack to continue its early melt. While the basin received 97% of average precipitation for the month, the snowpack dropped to 62% of average on the North Platte drainage, 48% of average on the Yampa, and 62% of average on the White River. Only the high elevation snow remains. The combined snowpack on the Yampa/White Rivers is the lowest in the State at 50% of average.



Outlook

The May 1st runoff forecasts, prepared by the Natural Resources Conservation Service, dropped slightly from the previous month. The percent of average runoff under the most probable forecast is 32% for the North Platte River near Northgate (down from 40%) 50% for the Yampa River near Maybell (down from 54%), and 55% for the White River near Meeker (down from 59%). These forecasts are down significantly from the same time last year, and only slightly better than those for 2002. The runoff period will be shorter than average this year, with the peak expected to occur two to three weeks early.



Administrative/Management Concerns

Calls for administration have begun to increase with several more streams going under administration this month. It is unlikely that Yamcolo and Stillwater Reservoirs on the Bear River in District 58 will fill. Reservoirs in North Park are near full and will be able to provide much needed supplemental supplies to their users. Absent significant summer rains, the basin will be faced with an extreme drought situation this summer.

Public Use Impacts

The rivers in the basin are flowing at high levels as the runoff strengthens. Extreme caution should be exercised when participating in water based recreation until flows begin to recede.

Basinwide Conditions Assessment

The SWSI value of 0.8 indicates that for April the basin water supplies were near normal. The Natural Resources Conservation Service reports that May 1 snowpack is 85% of normal. Flow at the gaging station Animas River near Durango was 1,002 cfs, as compared to the long-term average of 779 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 86% of normal as of the end of May.

April is typically dry in Southwestern Colorado as the three spring months do not normally experience much precipitation. This year was different. Moisture out of the southwest funneled into the area early in the month bringing record precipitation. Durango had 2.6 inches in one day, and a record 5.98 inches for the month. Other areas in the basin received over 200% of normal precipitation. This had a major effect on snow courses, especially in the La Plata and Florida River basins. The predicted early runoff was delayed. Temperatures moderated to return to near-normal highs and lows. A hard freeze was not experienced, but cold days were experienced on April 12 and April 21. The total precipitation left the water year accumulation (since October 1, 2003) at 134% in Durango.

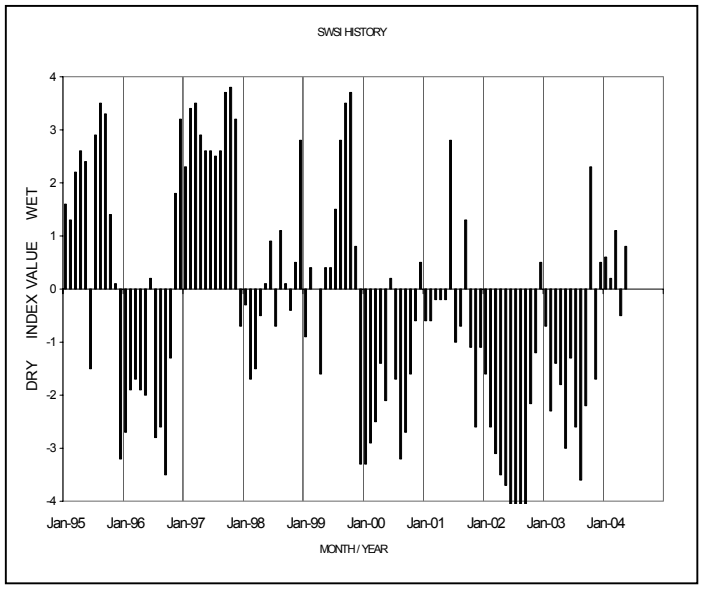
Reservoir storage remained below normal at Lemon (73% of normal) and McPhee (79% of normal). However, Vallecito Reservoir was storing 62,347 acre-feet (144% of normal) with likely prospects of filling. Reservoirs were storing for longer periods of time so that there is some speculation that favorable runoff would allow Lemon Reservoir and Lake Durango to fill. McPhee and Navajo Reservoirs should gain substantial amounts but will probably not fill.

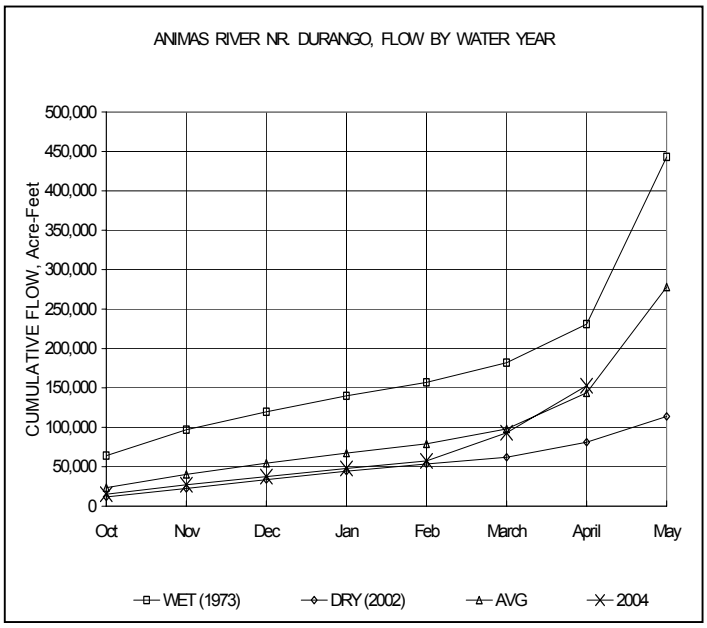
River flows increased to total better than 90% of normal. The Animas River exceeded the average during the month with a peak of 1,210 cfs on April 8.

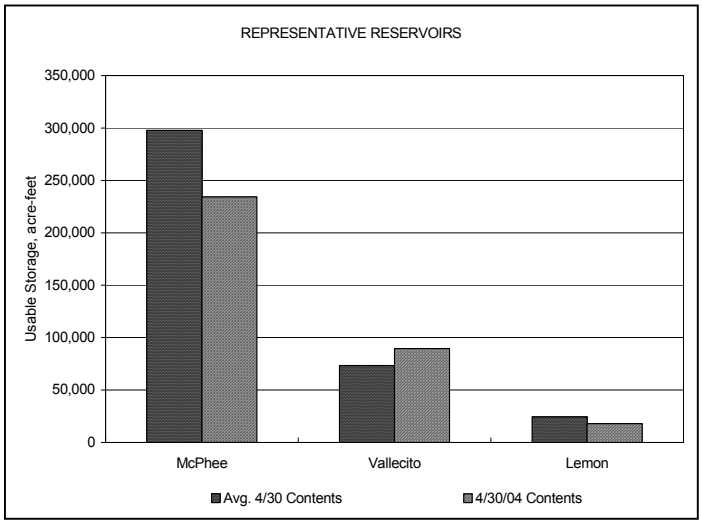
Meadow and grass growth has been excellent across the basin and spring flows have rebounded in many areas.

Outlook

The month of April may have broken the worst impacts of the drought over the past four years. However, it remains to be seen whether a continued pattern of precipitation will keep feeding the impacted land and vegetation.







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