
COLORADO

WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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June 2004

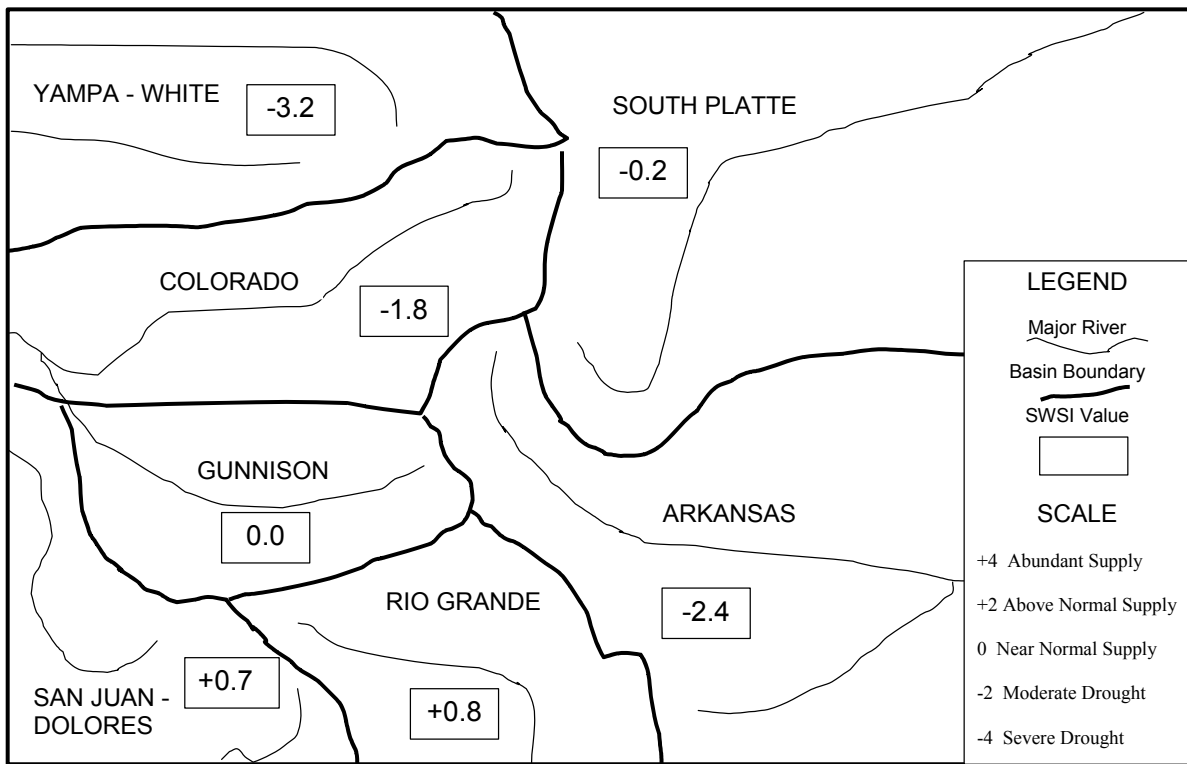
The lowest water supply index values were in the area from the northwest part of Colorado to the southeast and includes the Yampa-White Basin (-3.2), Colorado Basin (-1.8), and the Arkansas Basin (-2.4). Very low streamflows in these basins was the main factor for the low values. The other parts of the state show near normal index values for May. Reservoir storage is quite high in the Colorado Basin, San Juan – Dolores Basin, and Gunnison Basin, but storage is only a modest factor in the index calculation. Precipitation was very poor across all areas of the state in May.

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 stream flow, reservoir storage, and precipitation for the summer period (May through October). During the summer period, stream flow 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 June 1, 2004, and reflect the conditions during the month of May.

<u>Basin</u>	<u>June 1, 2004 SWSI Value</u>	<u>Change From Previous Month</u>	<u>Change From Previous Year</u>
South Platte	-0.2	-0.7	+0.7
Arkansas	-2.4	-0.3	-0.4
Rio Grande	+0.8	0.0	+3.1
Gunnison	0.0	-0.5	+0.4
Colorado	-1.8	+0.3	-0.3
Yampa/White	-3.2	-0.1	-4.0
San Juan/Dolores	+0.7	-0.1	+2.0

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



June 1, 2004

Basinwide Conditions Assessment

The SWSI value of -0.2 indicates that for May the basin water supplies were about normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 100% of normal as of the end of May. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 64% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 70% of capacity. Flow at the gaging station South Platte River near Kersey was 399 cfs, as compared to the long-term average of 2,401 cfs. Flow at the Colorado/Nebraska state line averaged 34 cfs.

Stream flow continued to be very low as represented by the Kersey gage, a key measure of flow in the South Platte basin, through out most of May due to the continued dry conditions and the lack of snowmelt runoff. While not near as low as the flow in May 2002 when average flow averaged approximately 200 cfs, the average May 2004 flow of approximately 400 cfs is significantly below the average flow of 2400 cfs.

Because of the low flow conditions, direct flow calls continued through out the month of May. In contrast, the direct flow call last year and many years does not occur at all in May. Because of the direct flow call, there was no reservoir storage on the mainstem or tributaries and many reservoirs remain significantly below capacity.

Outlook

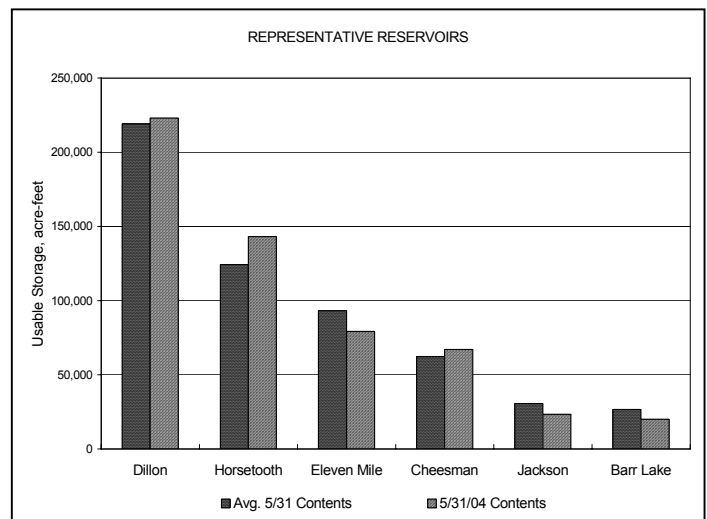
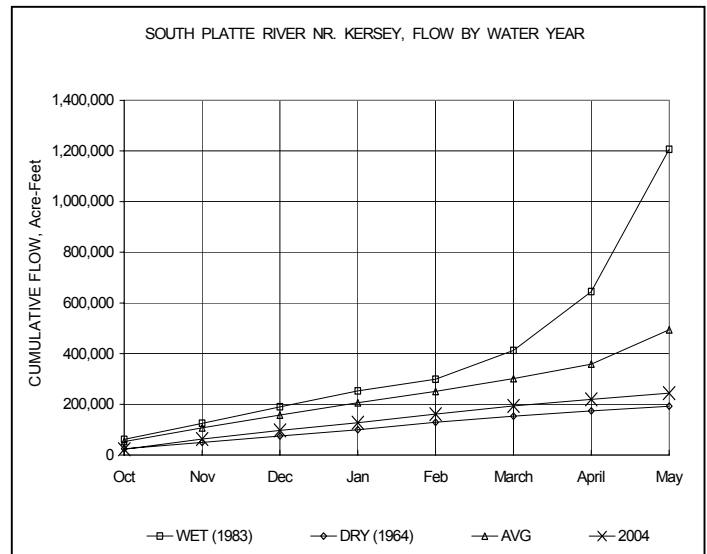
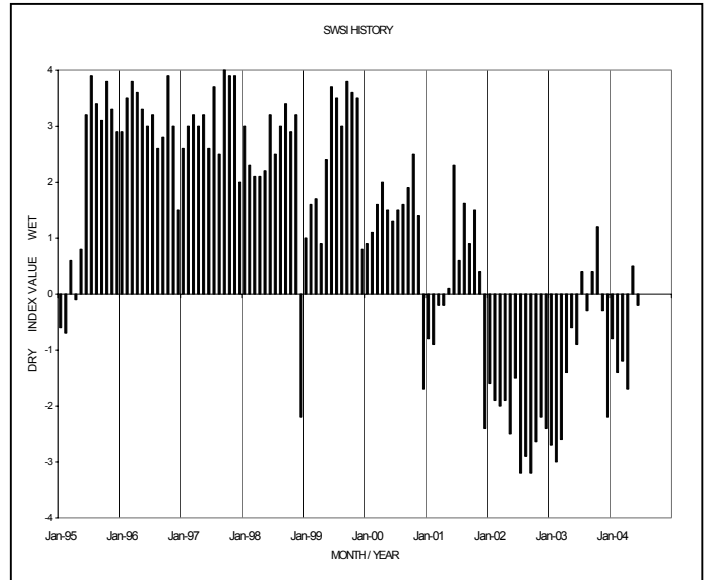
We do not expect much if any runoff to make it to the mainstem of the South Platte due to the low snowpack. In years with low snowpack, most or all the water ends up being used on the various tributaries to the South Platte as the senior rights are on the tributaries.

Without high flows created by runoff, we do not expect there to be any additional storage within the basin. The unfilled storage could pose a significant water supply concern later this summer, especially for agricultural users if it remains dry.

Because of this, Division 1 has required that all upstream out-of-priority storage be released within the basin to satisfy senior users. In most years, there is no requirement to release out-of-priority storage on most of the tributaries as senior reservoirs fill.

Administrative/Management Concerns

Many cities have implemented their drought control plans to reduce demand because of the dry conditions. However, we do not anticipate major shortfalls for most municipal suppliers like 2002 unless there is a considerable period of drought as this is a better year than 2002 thus far and most suppliers have had time to make additional preparations for dry conditions since 2002.



Basinwide Conditions Assessment

The SWSI value of -2.4 indicates that for May the basin water supplies were below normal. Flow at the gaging station Arkansas River near Portland was 690 cfs, as compared to the long-term average of 1,176 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 56% of normal as of the end of May.

Outlook

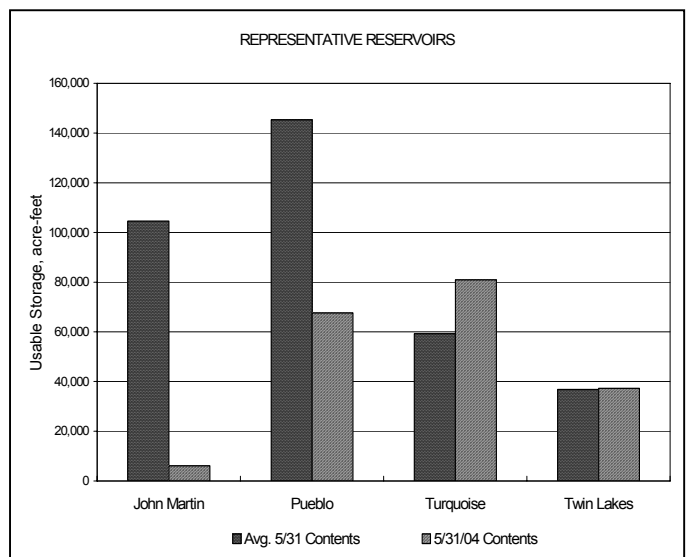
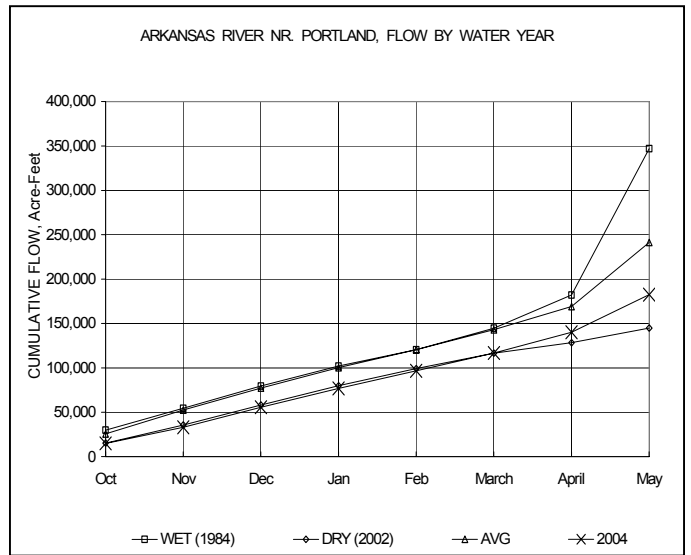
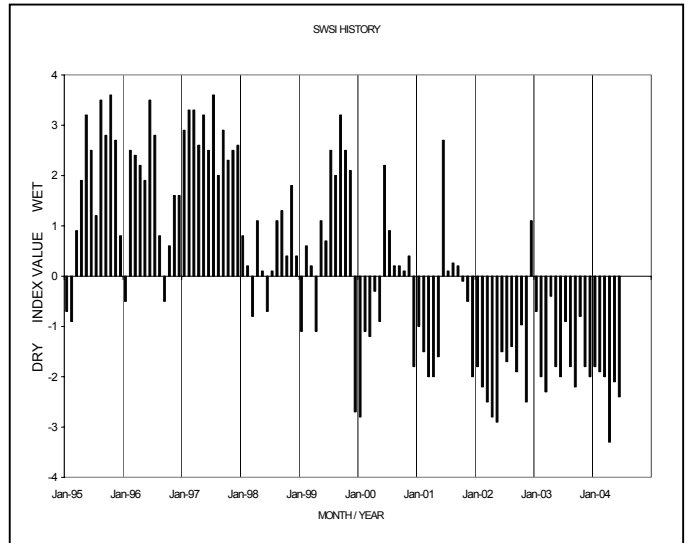
Snow pack runoff flow levels in the Arkansas Basin continue to be below normal with the natural flow on the Arkansas River near Wellsville through June 4th not yet exceeding 1,100 cfs. The river often peaks around the tenth of June near 3,000 cfs or more.

Main stem Arkansas River reservoir storage levels continue to decrease with John Martin Reservoir at 6,100 acre-feet.

Imports of transmountain waters from the Colorado River Basin to the Arkansas Basin are also well below normal this runoff. The Southeastern Colorado Water Conservancy District recently allocated their predicted imports of Fryingpan-Arkansas Project water and allocated only 10,000 acre-feet of water, 5,100 to municipal entities and 4,900 to agricultural entities. Typical annual allocation and yield amounts from this transmountain diversion project are in the 50,000-60,000 acre-foot range.

Administrative/Management Concerns

Administrative concerns during this time of year continue to center around the assumed yields of augmentation and other replacement sources of water for decreed augmentation plans and the administratively approved well replacement plans. If actual yields which are often directly tied to snowpack runoff levels continue below average for the year further curtailment or partial curtailment of municipal and irrigation groundwater diversions will be necessary this irrigation season.



Basinwide Conditions Assessment

The SWSI value of 0.8 indicates that for May the basin water supplies were about normal. Flow at the gaging station Rio Grande near Del Norte averaged 2,862 cfs (114% of normal). The Conejos River near Mogote had a mean flow of 1026 cfs (93% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 43% of normal as of the end of May.

Precipitation in Alamosa during May was only 0.01 inches, 0.69 inches below normal. Temperatures ranged from 19 degrees to 81 degrees in Alamosa where the average monthly temperature was 52.5 degrees, 2.1 degrees above normal.

Stream flow in the basin was generally near average. Most streams in the division have already peaked. Flooding will not be a concern this season unless a major rainstorm occurs. The entire basin experienced a very dry month. Dry and dusty conditions already exist outside of irrigated areas.

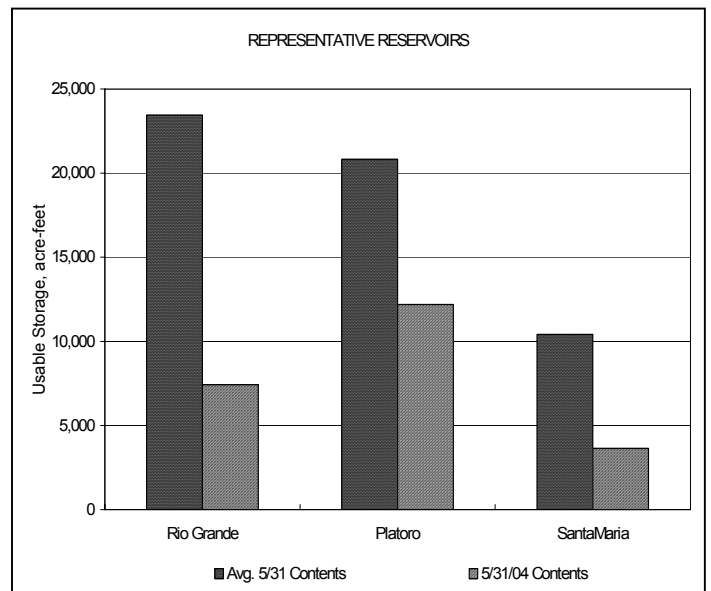
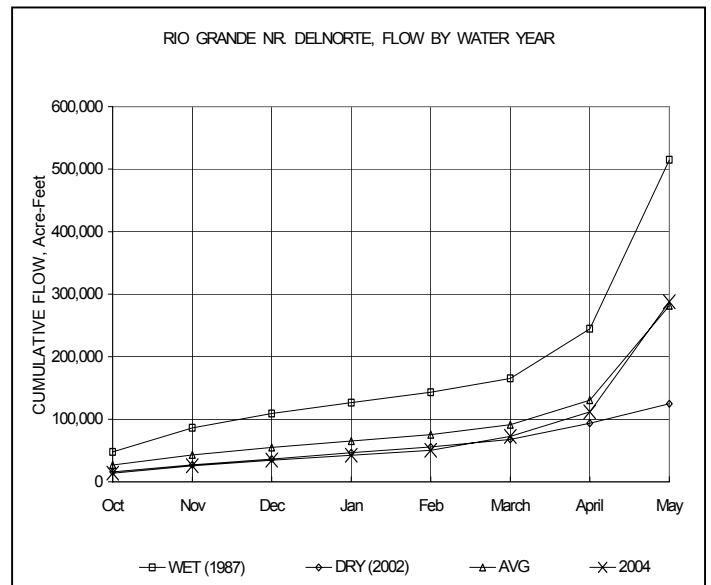
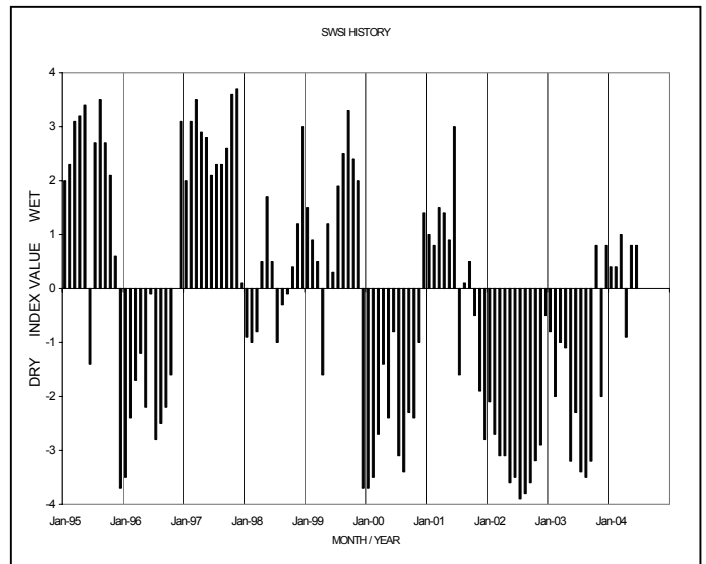
Outlook

NRCS stream flow forecasts are predicting runoff in area streams at the 80 to 90% of normal level. Although below normal, these forecasts are much better than the last two years and this basin is likely to be the best in Colorado. If precipitation remains low, stream flow will drop radically as the summer progresses.

Administrative/Management Concerns

The unusual weather patterns during May and early June caused many area streams to experience a “roller-coaster” hydrograph. Every time things would start to warm up and the creeks would rise, a cold front dropped temperatures and stream flow. This effectively chopped off the normal peak flows and has moderated the runoff. Perhaps the end result will be a more sustained runoff benefiting those with moderately senior water rights, but leaving out the most junior water rights.

Reservoir storage throughout the Rio Grande basin is in poor condition. Storage releases are expected to begin early to offset the dry conditions, but the run won't last long as storage in those reservoirs is already low.



Basinwide Conditions Assessment

The SWSI value of 0.0 indicates that for May the basin water supplies were normal. Flow at the gaging station Uncompahgre River near Ridgway was 360 cfs, as compared to the long-term average of 325 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 121% of normal as of the end of May.

Outlook

After a dry March, a wet April, and a cool month of May, the snowpack is still below normal, although it appears to better than most other basins in the state. The cooler weather in May allowed the snow to melt at a slower rate, saving it for June when it can be more beneficially used.

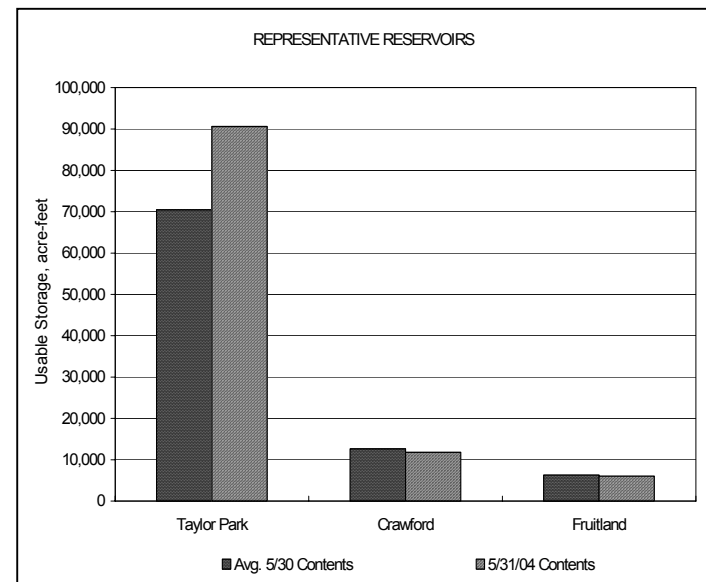
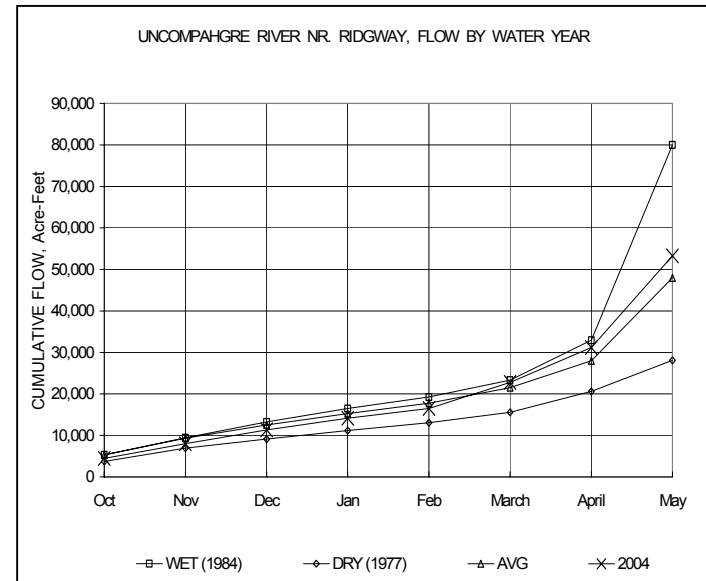
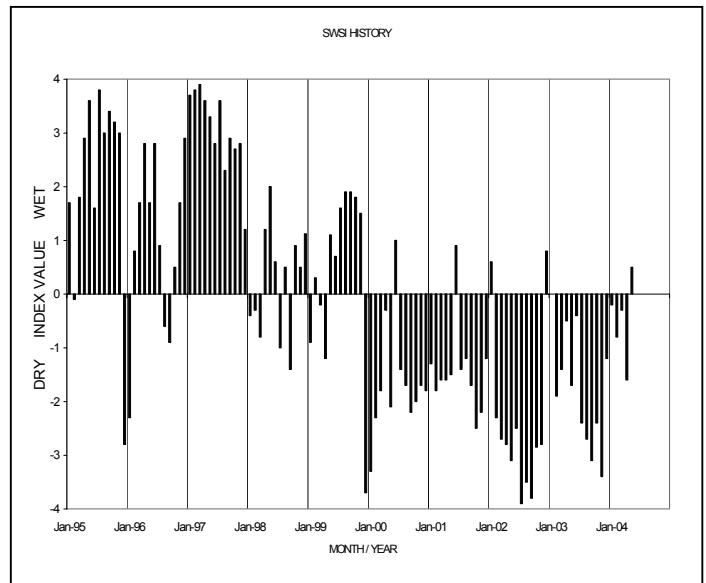
Administrative/Management Concerns

The cooler weather in May has delayed the filling of some reservoirs. Most reservoirs on the Grand Mesa should fill, providing much-needed late season irrigation for fields and orchards. The forecasted inflows to Taylor Park Reservoir were reduced in May, based on the lack of moisture in late April and early May. The May winds have seemed to reduced the runoff amounts as well. At Blue Mesa, the reservoir is steadily gaining and should continue throughout the Month of June. It will not come close to filling, probably only about 80 to 85% of full.

The fluctuations in stream flows in May are usually substantial, increasing during warm periods and drastically decreasing when a cold spell comes. This year, it has been fairly steady, making it much easier to administer the water rights on the small creeks. Since the runoff is still below normal, the local calls will likely occur earlier than normal this year, and water rights will be shut off earlier as a result. A call on the upper Gunnison River from the Gunnison Tunnel is still not anticipated this year, but conditions could change. There will likely be a call on the upper Uncompahgre River later this summer.

Public Use Impacts

Overall, this is a better water supply year than last year. Irrigators are still likely to feel the effects of the continued drought, although it will be less than the last few years. Recreations use of the reservoirs will be good, but flows will be below normal for rafters and kayakers.

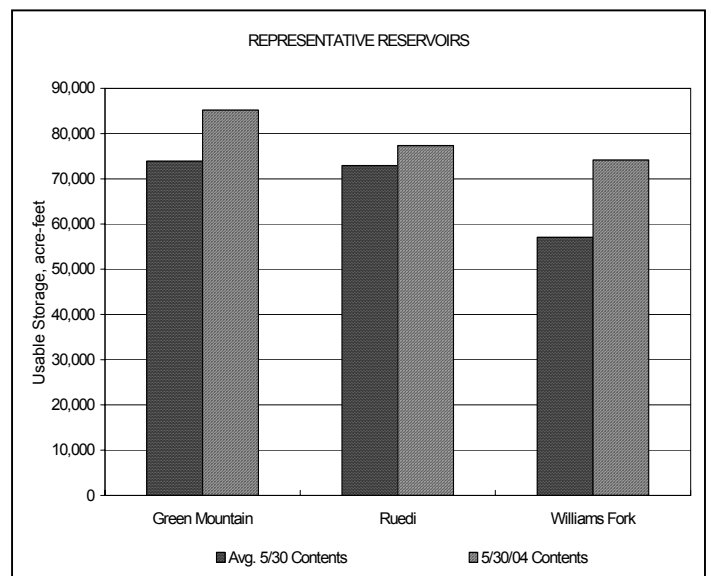
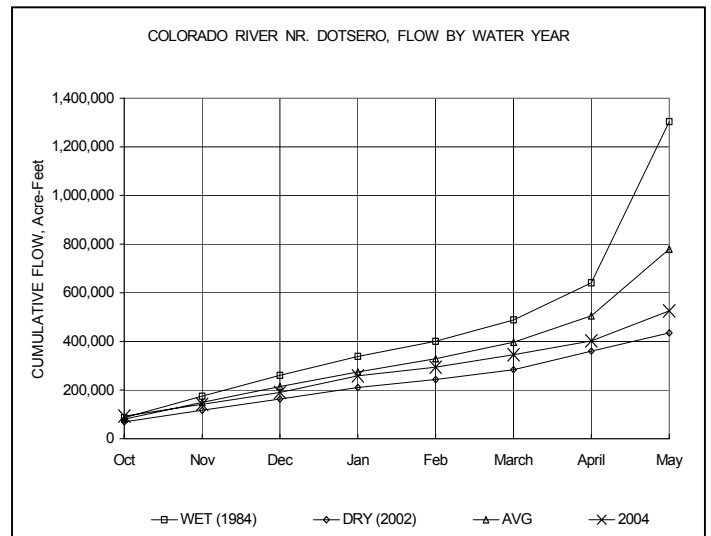
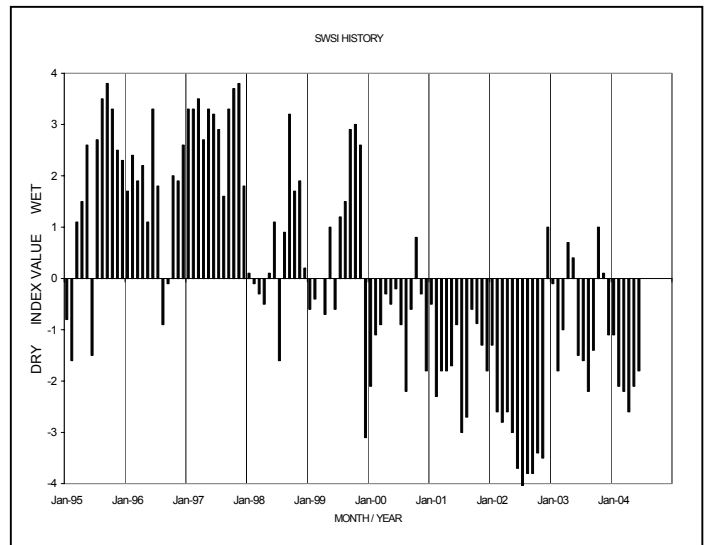


Basinwide Conditions Assessment

The SWSI value of -1.8 indicates that for May the basin water supplies were below normal. Flow at the gaging station Colorado River near Dotsero was 2,007 cfs, as compared to the long-term average of 4,472 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 116% of normal as of the end of May.

Administrative/Management Concerns

Local fire managers are concerned about the dry conditions throughout the Colorado River basin, which are as bad as in 2002 when several large fires ravaged the basin.



Basinwide Conditions Assessment

The SWSI value of -3.2 indicates that for May the basin water supplies were below normal. Flow at the gaging station Yampa River at Steamboat was 1,185 cfs, as compared to the long-term average of 1,604 cfs.

May brought a mixture of hot dry weather and cold, wet periods. The snow pack continued to decline, even given the storms that brought new snow to the high country. Precipitation for May was about 53% of average. Snowpacks declined to 40% on the North Platte River Basin and 36% on the White/Yampa River Basins at the end of the month. Stream flows peaked in mid-month following a period of hot dry weather. This was followed by a cold spell that caused flows to drop dramatically. When the warm weather returned, there was not enough high snow left to produce higher peaks. Many of the area gaging stations saw daily historic low flows during May.

Outlook

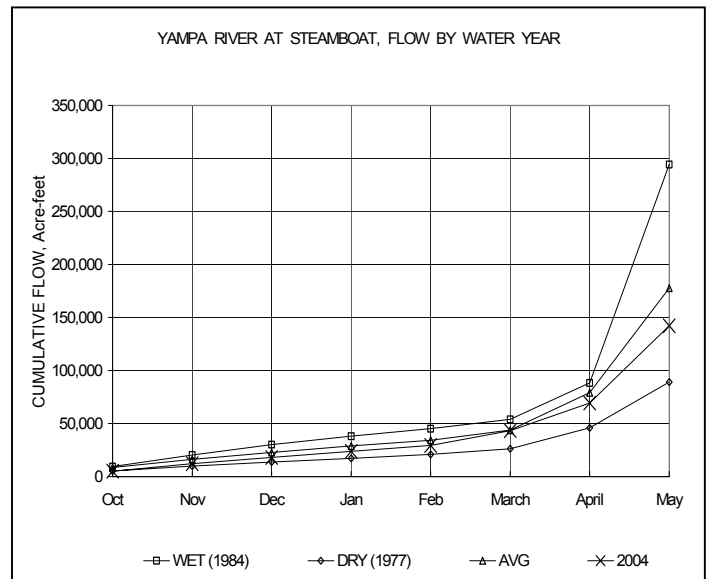
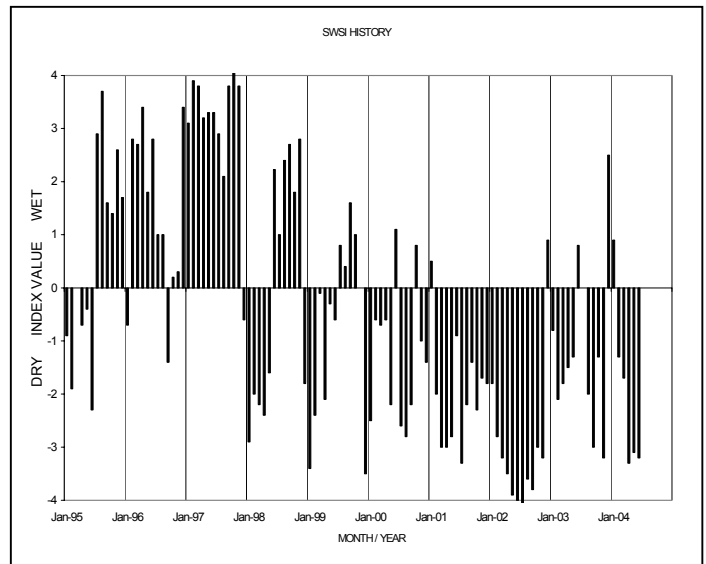
River flows will begin to drop steadily as the last of the high snow melts. Absent normal levels of precipitation, flows will decline to base levels rapidly. Runoff forecast call for well below average volumes. The June 1st runoff forecasts, prepared by the Natural Resources Conservation Service, were essentially the same as the previous month. The percent of average runoff under the most probable forecast is 33% for the North Platte River near Northgate, 53% for the Yampa River near Maybell, and 55% for the White River near Meeker.

Administrative/Management Concerns

Many streams and rivers in the Division went under administration in May. With stream flows well below average, administration began much sooner than normal. By the end of May, many irrigation reservoirs had already begun releasing water to their users.

Public Use Impacts

The river flows will quickly dissipate as the last of the high snow melts. Activities will soon switch from high-flow to low-flow recreational opportunities.



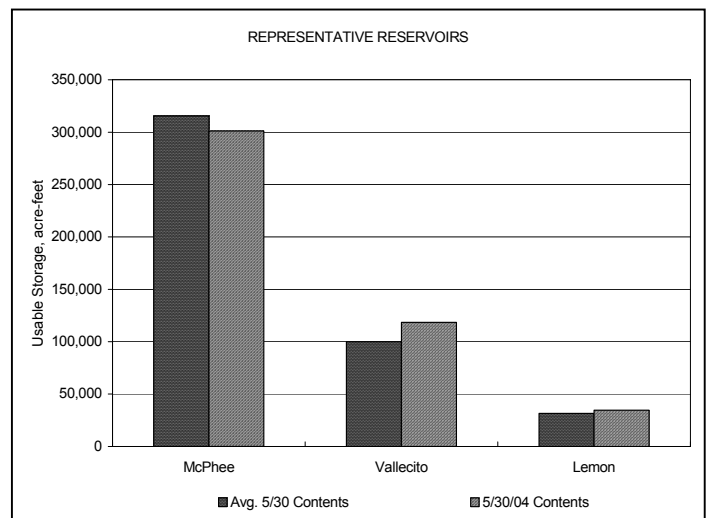
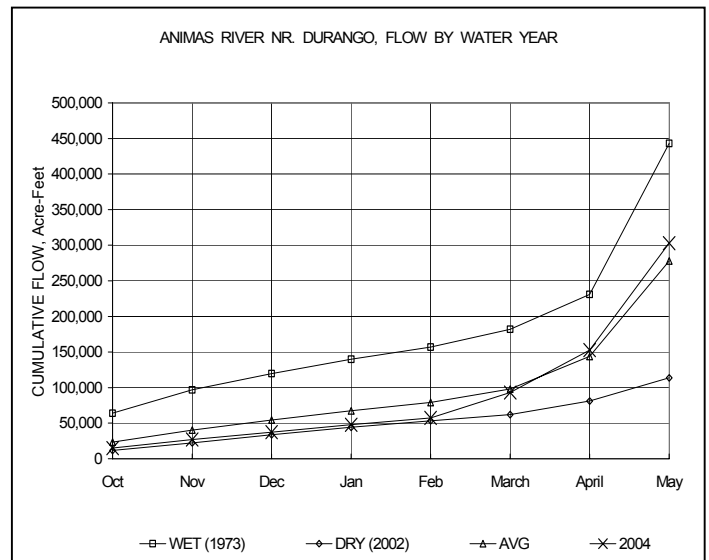
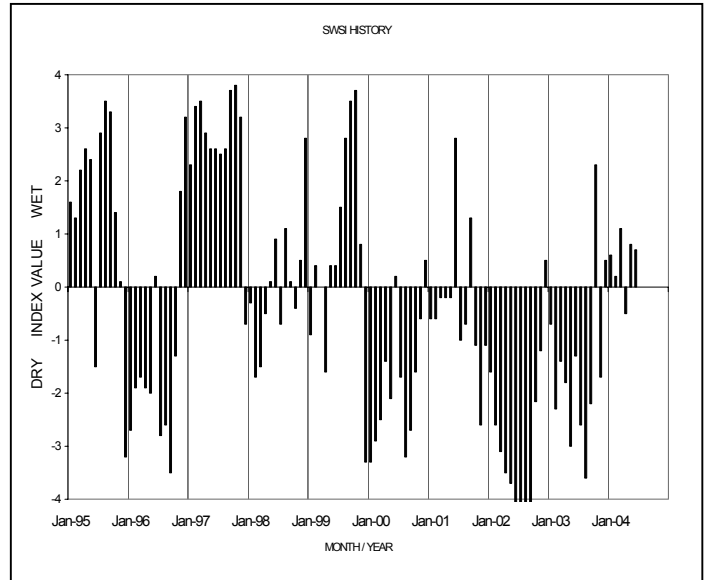
Basinwide Conditions Assessment

The SWSI value of 0.7 indicates that for May the basin water supplies were above normal. Flow at the gaging station Animas River near Durango was 2,444 cfs, as compared to the long-term average of 2,181 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 102% of normal as of the end of May.

May weather was reminiscent of recent springs. The spring months are typically the lowest precipitation months of the year. May 2004 showed no precipitation recorded in Durango. Small amounts were recorded in surrounding areas. This is the lowest of record and equal to May of 2002 when the month passed without a measurable storm. The total for the year in Durango remains above average with 15.12 inches since October 1, 2003. This is 21% above average.

Snow pack content diminished greatly during the month as rivers climbed to high levels again. The peak flows did not reach the levels of last year but were sustained and high levels were reached on three occasions during the month. The Animas River had a high daily flow of 3540 cfs on May 20 and the Dolores River reached 2430 cfs on May 10 which was the day most of the lower gaging stations peaked. The reason for the moderate flow was because of the early run in April of low snow areas and the remaining high levels which should be contributing to flows in June and hopefully drain out slowly through the summer.

Reservoir levels were doing well as the major reservoirs obtained normal storage levels. It appears that Lemon Reservoir will now fill along with Vallecito and Jackson Gulch. McPhee contained 302,000 acre-feet, 95% of normal.



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