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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October 1, 2003

Although drought conditions persist, many division offices are reporting significant improvements as compared to the water supply at this time last year. Those improvements are also reflected in the SWSI values that have been computed for this month's report. Every basin has shown improvement this month, especially the San Juan/Dolores and the Rio Grande Basins, both of which benefited greatly from heavy rainfall of an early September storm. The San Juan/Dolores Basin has the highest SWSI value this month at +2.3 and the Gunnison Basin has the lowest value at –2.4. At the end of September, which closed out the 2003 water year, reservoir storage levels continued to be well below average in the Gunnison, Colorado, and San Juan/Dolores Basins.

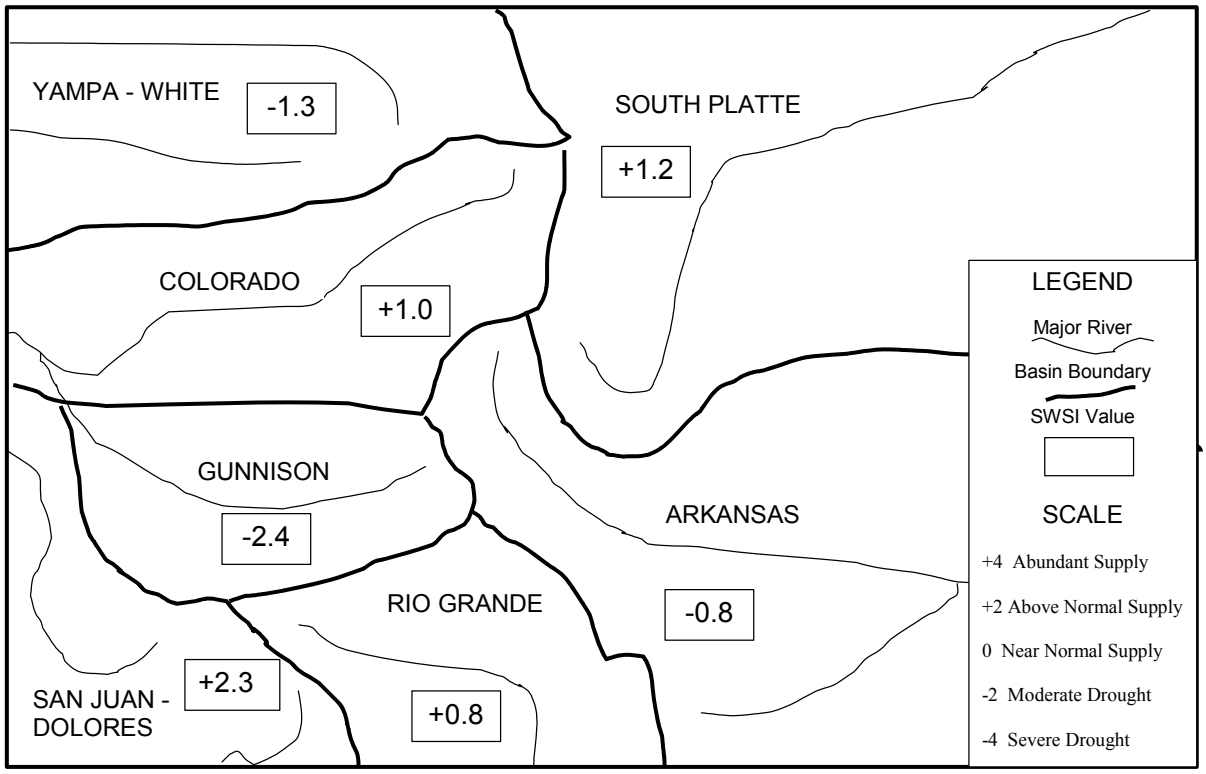
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on stream flow, reservoir storage, and precipitation for the summer 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 October 1, 2003, and reflect the conditions during the month of September.

Basin	Oct 1, 2003 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+1.2	+0.8	+3.8
Arkansas	-0.8	+1.4	+0.2
Rio Grande	+0.8	+4.0	+4.0
Gunnison	-2.4	+0.7	+0.5
Colorado	+1.0	+2.4	+4.4
Yampa/White	-1.3	+1.7	+1.7
San Juan/Dolores	+2.3	+4.5	+4.5

Scale

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

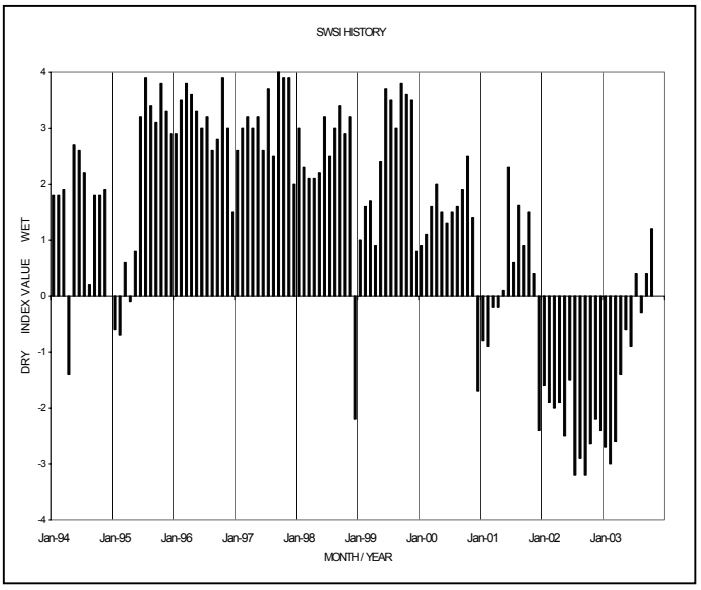
SURFACE WATER SUPPLY INDEX FOR COLORADO



October 1, 2003

Basinwide Conditions Assessment

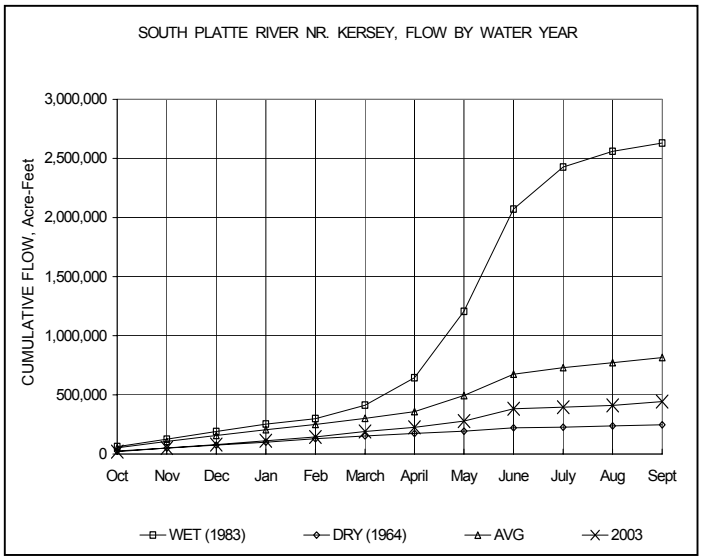
The SWSI value of +1.2 indicates that for September the basin water supplies were above normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 90% of normal as of the end of September. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 16.9% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 63% of capacity. Flow at the gaging station South Platte River near Kersey was 540 cfs, as compared to the long-term average of 784 cfs. Flow at the Colorado/Nebraska state line averaged 62 cfs.

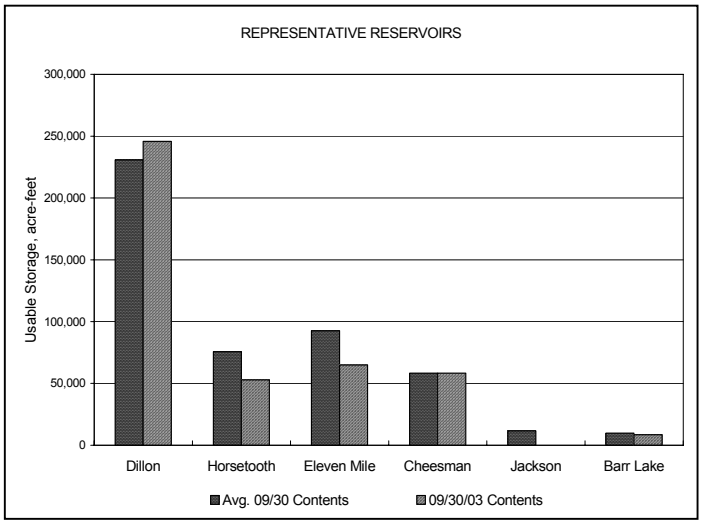


Outlook

September continued the warm and dry pattern typical for most of the South Platte basin this summer. Significant rain along the Front Range near the first of the month pushed flows at the Kersey gage well above average for a few days, but flows remained at about half or less of average for most of the month. River calls on the South Platte returned to the pattern of being more senior than generally expected, although not as senior as last year. This was especially true in the last half of the month.

Demand from the plains irrigation reservoirs was higher than expected because of the warm, dry conditions and lower stream flows, but the end of September reservoir contents were still well above last year. Demand on both municipal and irrigation reservoirs along the front range was much smaller than last year. The lower demand along with higher irrigation season stream flows resulted in significantly more water in storage than last year. The improved reservoir storage situation and river flows this year increase the chances of users filling reservoirs this winter and early spring. While, as always, conditions next year will be highly dependent on the winter snow pack and spring rains, water supply conditions going into the winter are dramatically better than last year at this time.





Basinwide Conditions Assessment

The SWSI value of –0.8 indicates that for September the basin water supplies were slightly below normal. Flow at the gaging station Arkansas River near Portland was 313 cfs, as compared to the long-term average of 469 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 39% of normal as of the end of September.

Outlook

Overall, river conditions continued to deteriorate in the upper Arkansas River basin, with flows dropping nearly 100 cfs during the month of September. The first two weeks of September saw a gradual improvement in flows, with an increase of approximately 200 cfs at the Arkansas River near Portland gaging station. However, flows for the remainder of September quickly deteriorated, decreasing approximately 300 cfs at the Arkansas River near Portland gaging station. River conditions in the lower portion of the basin saw some fluctuation in response to the available supply from Fountain Creek and the upper portion of the basin.

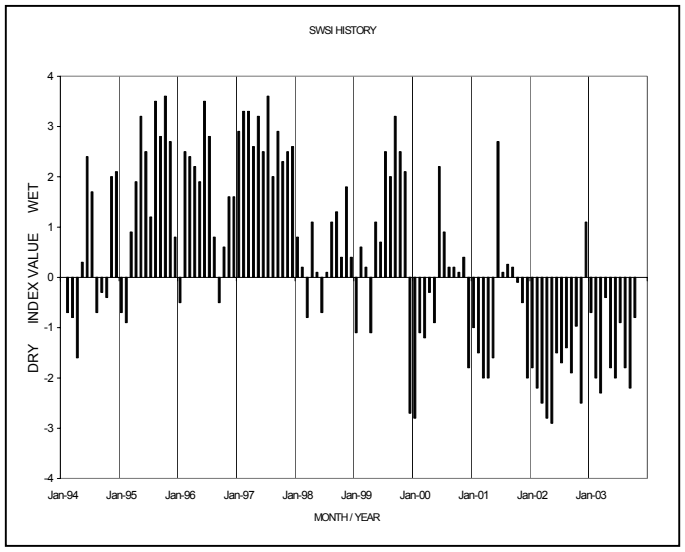
Since precipitation in the basin has been significantly below average for July, August, and September, river conditions will continue to deteriorate until irrigators begin to reduce diversions for the winter and the basin receives average or above average precipitation.

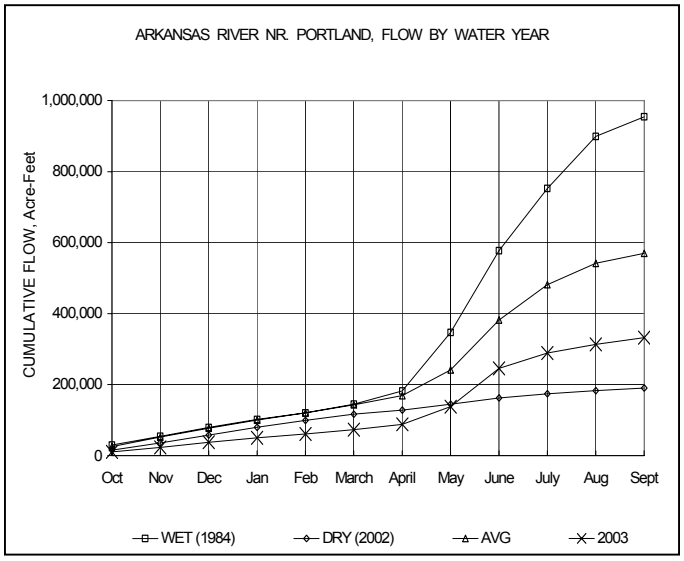
Administrative/Management Concerns

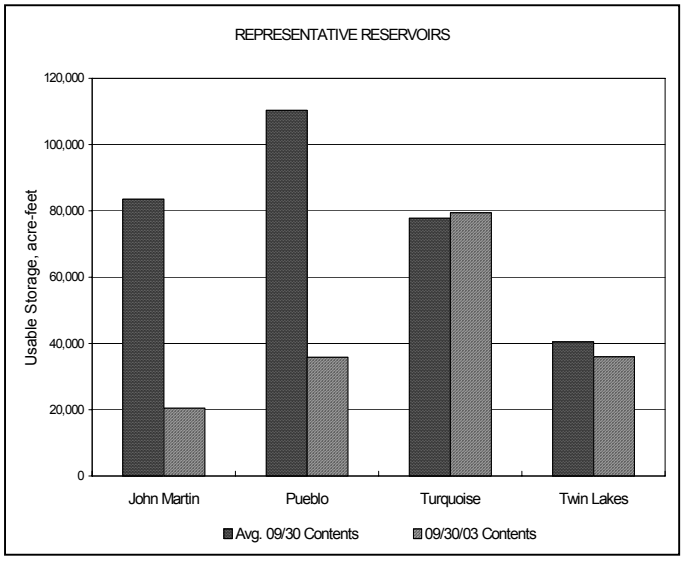
The river call on the main stem of the Arkansas River held steady at several close 1884 rights, only varying slightly as intermittent supplemental flows fluctuated.

Public Use Impacts

Most irrigators appear to be preparing for the winter water storage season. The Southeastern Colorado Water Conservancy District will hold the annual Winter Water Board of Trustee meeting in La Junta on October 17th.



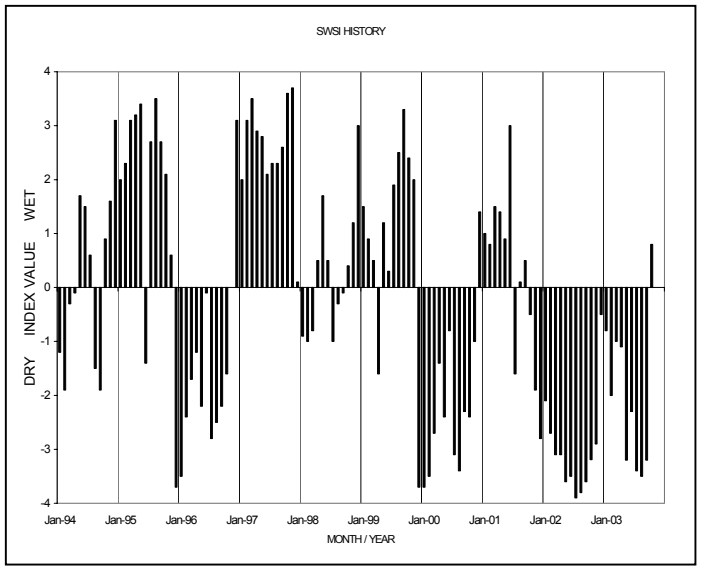




Basinwide Conditions Assessment

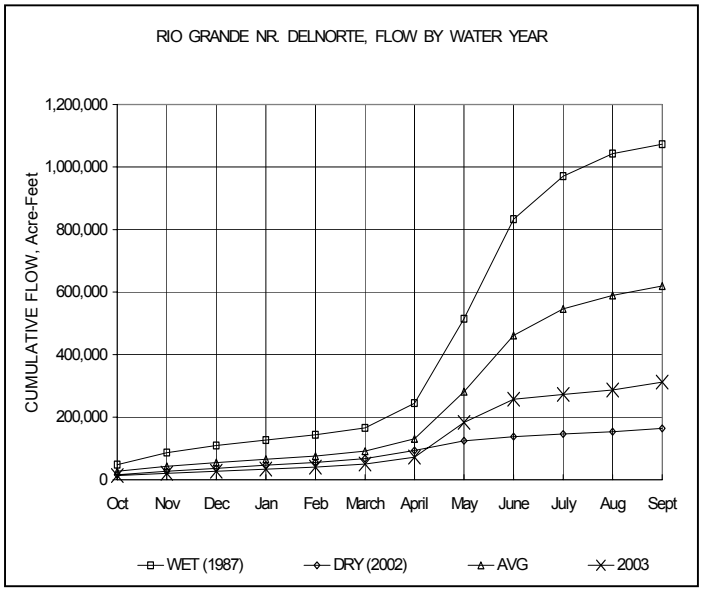
The SWSI value of +0.8 indicates that for September the basin water supplies were slightly above normal. Flow at the gaging station Rio Grande near Del Norte averaged 420 cfs (83% of normal). The Conejos River near Mogote had a mean flow of 215 cfs (168% of normal). When compared to long-term averages, stream flow during September was by far the best month since the summer of 2001. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 39% of normal as of the end of September.

Precipitation in the basin has been below or near normal all year. But that rare rain event of over one inch on September 9 was a huge jump-start for the mountains and plains of the upper Rio Grande basin. Snowfall during that event in the higher elevations was very damaging to the trees that had not yet shed their leaves. However, that one storm provided a great benefit to soil moisture conditions and stream flow.



Outlook

Despite normal or above normal precipitation during the last four months, streams in the upper Rio Grande basin should experience below normal flows this fall. The worst stream flow in recorded history was experienced during 2002. This year is better, but still ranks in the top ten in lowest streamflow during the last 100 years. The drought is not over. But the outlook is much better going into this winter than it's been the last two years.

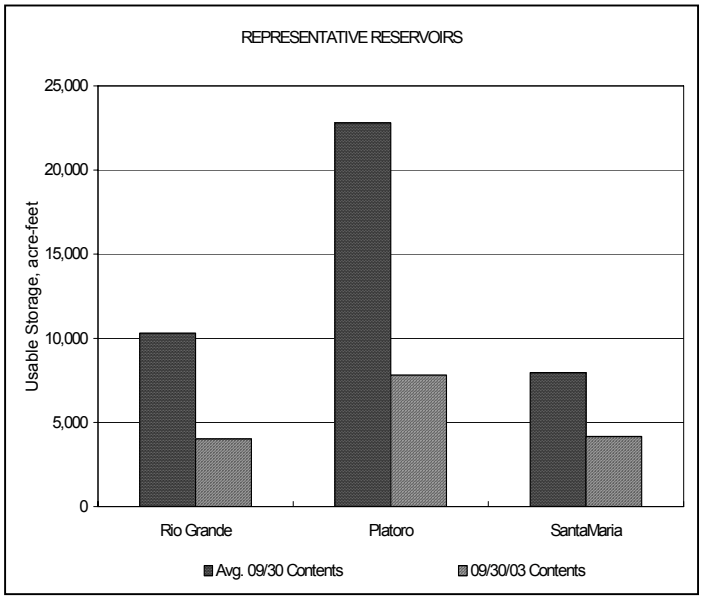


Administrative/Management Concerns

Colorado will meet its delivery obligation to New Mexico and Texas under the Rio Grande Compact by using a portion of the accrued delivery credit. Very little water was routed through the system to meet the delivery obligation during 2003. A high percentage of the basin inflow was diverted for irrigation needs this summer. The call remains very senior on all creeks and rivers in the Division.

Public Use Impacts

The big rain event on September 9 slowed the fall harvest for a few days. But mild, dry weather conditions allowed farmers and ranchers to get their work done and put up good yields. Cattle prices are up, a good thing for those ranchers with cows left to sell.



Basinwide Conditions Assessment

The SWSI value of –2.4 indicates that for September the basin water supplies were below normal. Flow at the gaging station Uncompahgre River near Ridgway was 133 cfs, as compared to the long-term average of 108 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 86% of normal as of the end of September.

Outlook

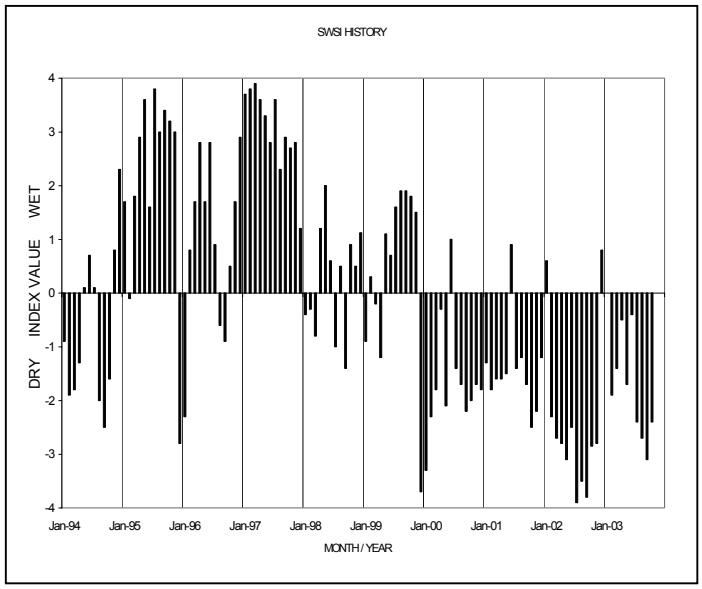
Timely and substantial rains in the first part of September greatly benefited irrigators and recreators and overall soil moisture conditions in the entire Division 4. The rains also increased base flows of streams and rivers. After being so low during the summer, it appears like the flows might be closer to normal going into the winter season.

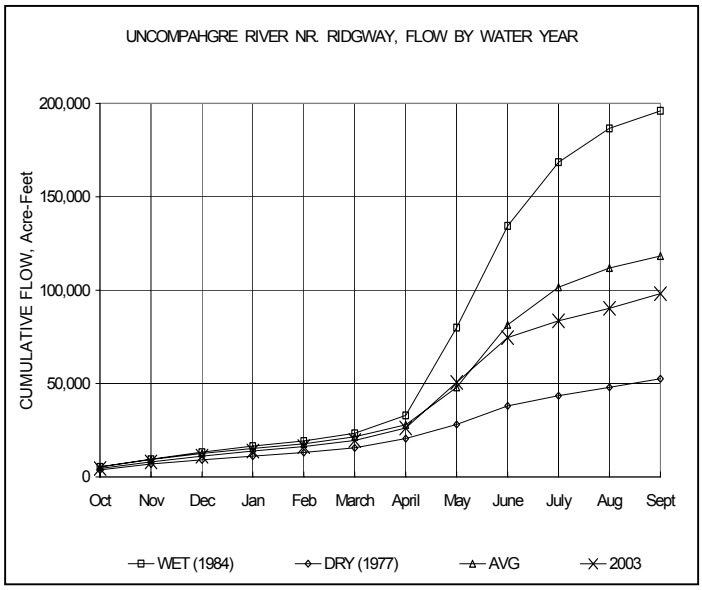
Administrative/Management Concerns

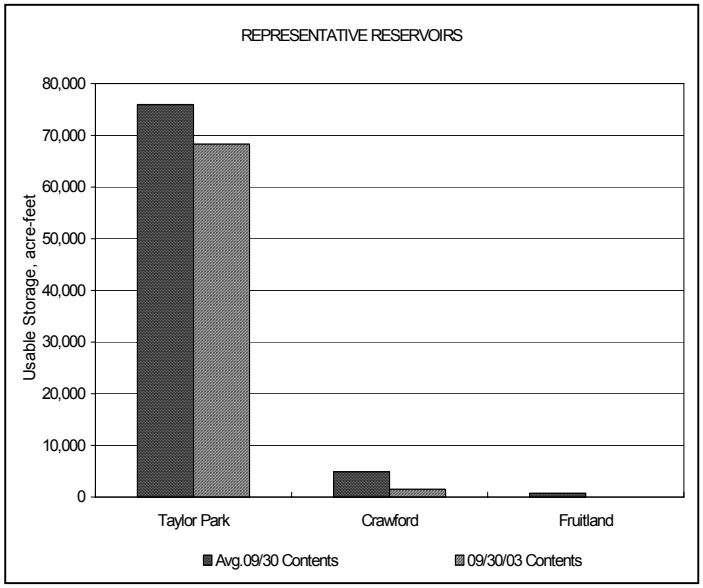
As a result of the rains, the two major river calls were lifted. The call from the Gunnison Tunnel, which called out junior water users in the entire upper Gunnison Basin, was halted on September 8. The call on the Uncompahgre River from the M & D Canal was lifted on September 9. Numerous reservoirs also were able to stop releasing and actually gained some storage during the rainy periods in September. Irrigation for the rest of the month was accomplished by natural flow for the most part. Some reservoir storage was used and is still needed in October for fruit trees and late vegetables, such as onions. The administration season is about over since most irrigators only use a small amount in October.

Public Use Impacts

Many have commented how the reservoir levels are a lot higher than last year, and indeed they are. But it will still take one to two good years to get them full again, especially the larger reservoirs such as Blue Mesa and Taylor Park. Public perception of the water supply has been interesting this year. Even though the river flows were still well below average, such as 60% of the normal inflow to Blue Mesa Reservoir, it was still so much better than last year that people were appreciative. It seems to be a matter of perspective; but compared to last year, this was a wet year!







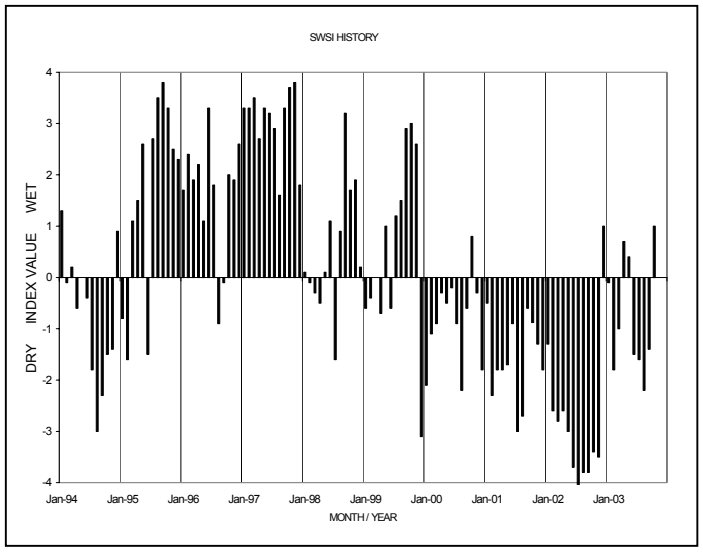
Basinwide Conditions Assessment

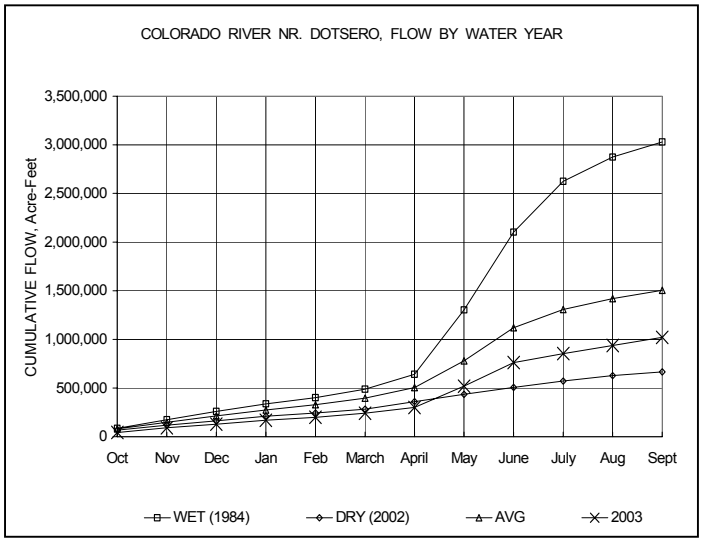
The SWSI value of +1.0 indicates that for September the basin water supplies were above normal. Flow at the gaging station Colorado River near Dotsero was 1403 cfs, as compared to the long-term average of 1415 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 96% of normal as of the end of September.

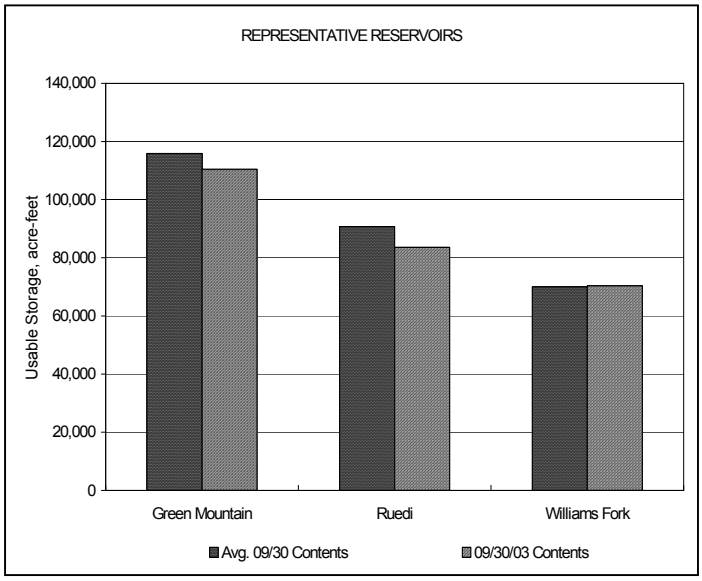
Outlook

September is historically one of the wettest months in the Colorado River basin, particularly in the western, lower elevation areas of the basin. This occurs even though most Septembers are dry because very wet Septembers occur infrequently, bringing up the average. September of 2003 was very wet with some stations reporting more than 100 percent of average monthly precipitation.

The Shoshone power plant, owned and operated by Xcel Energy, has scheduled major overall repairs to begin in late October and extend until Spring. At times during this period, both turbines will be off-line, which will remove the river administrative call completely. This should allow all upstream reservoirs, such as Dillon, Green Mountain, Wolford, and Granby, to store during the winter when they normally would not, and should allow all these reservoirs to fill earlier next spring.



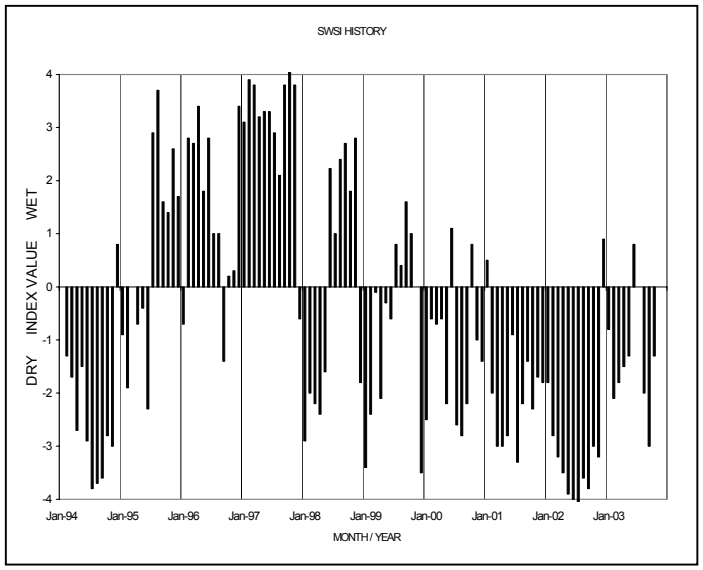




Basinwide Conditions Assessment

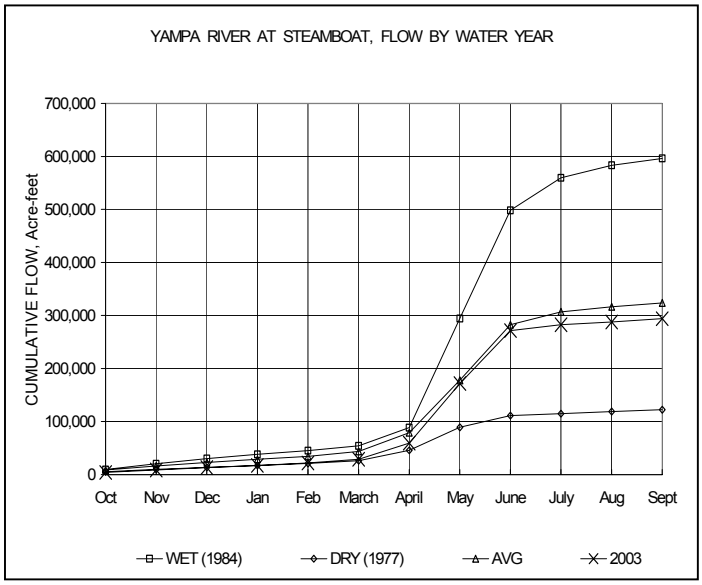
The SWSI value of –1.3 indicates that for September the basin water supplies were below normal. Flow at the gaging station Yampa River at Steamboat was 100 cfs, as compared to the long-term average of 121 cfs.

September started out with above average precipitation in much of the basin. Widespread rain brought hope that the much awaited monsoon moisture had finally arrived. However, the second half of the month was extremely dry with above average temperatures. Stream flows tracked the precipitation events, reaching normal levels in the early part of the month and receding to below normal levels by month's end. Soil moisture content remains low going into the start of the fall season. Irrigation had all but creased by the end of September.



Outlook

The long range forecast calls for below normal levels of precipitation for the fall.



Basinwide Conditions Assessment

The SWSI value of +2.3 indicates that for September the basin water supplies were above normal. Flow at the gaging station Animas River near Durango was 617 cfs, as compared to the long-term average of 477 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 64% of normal as of the end of September.

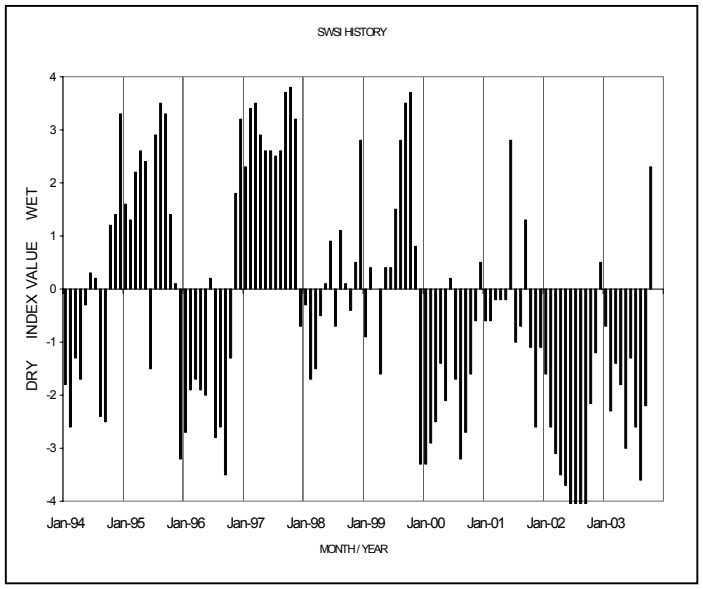
Outlook

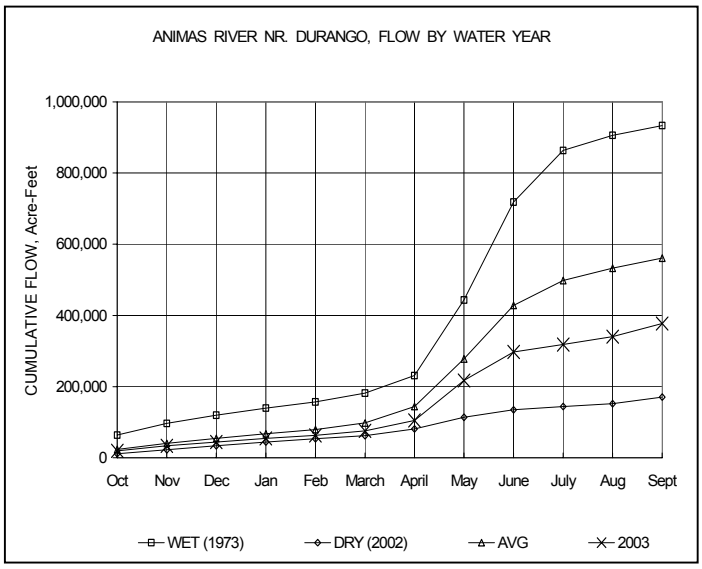
The drought was momentarily broken by a major precipitation event which occurred on September 9, 2003. Lower elevation areas were especially impacted as major runoff was witnessed on the mesa tops. Flows on the San Juan River exceeded 14,000 cfs at Four Corners. The area around the La Plata County Airport received near-record amounts of rainfall in one day measured at 4 to 5 inches in various locations.

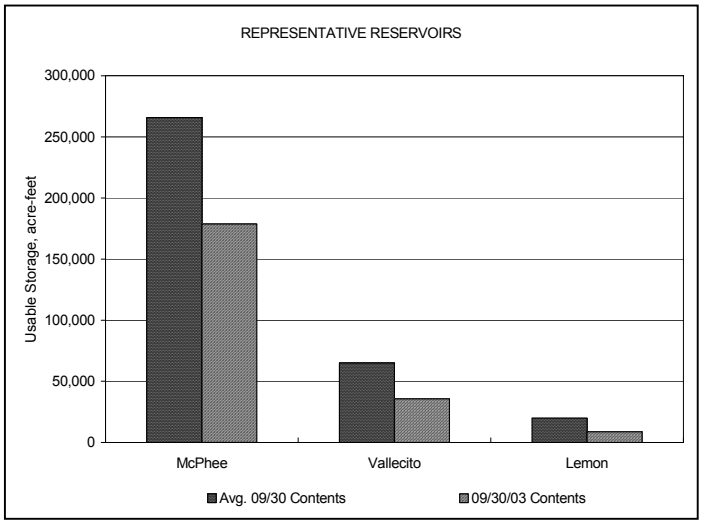
The area reservoirs benefited greatly from the additional water caused by the storm. The reservoir levels still remain well below average, but, for the most part, this gain will be carried over into next year. Navajo Reservoir gained two feet in elevation and Lemon Reservoir picked up 50% of its storage to about 9,000 acre-feet.

Streams gained and were running near average flows for most of the month. Base flows in the higher reaches remained at elevated levels but dropped off as the month ended.

This was the only major storm of the month. Although snow fell in the higher mountains, most of that melted into the ground by the end of September. The precipitation recorded barely exceeded the average for the month. On the water year 2003, Durango reached a total of 17.81 inches, which was 91% of normal. The outlook for future water supply is much more promising with the increased soil moisture and carryover storage. However, the totals for the year do not reveal the continuing nature of the shortage in water supply. Weather patterns do not appear to have changed enough at this point to replace water depletions on a regular basis or to accumulate a significant snowpack in the mountains.







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