COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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September 2000

Conditions are still quite dry statewide even though the SWSI values rose slightly from last month due to precipitation in August and a resulting rise in stream flow in limited areas. The Rio Grande and San Juan/Dolores basins have very low stream flows. The SWSI values in the South Platte and Arkansas basins are supported by their reservoir storage in spite of low stream flows in those basins. Reservoir use has caused a drop in storage levels over the whole state this summer as low stream flows have resulted only the most senior direct flow water right holders being able to take river water. Many reservoirs, especially those used for irrigation supplies, are currently holding less water than they normally have at this time of year.

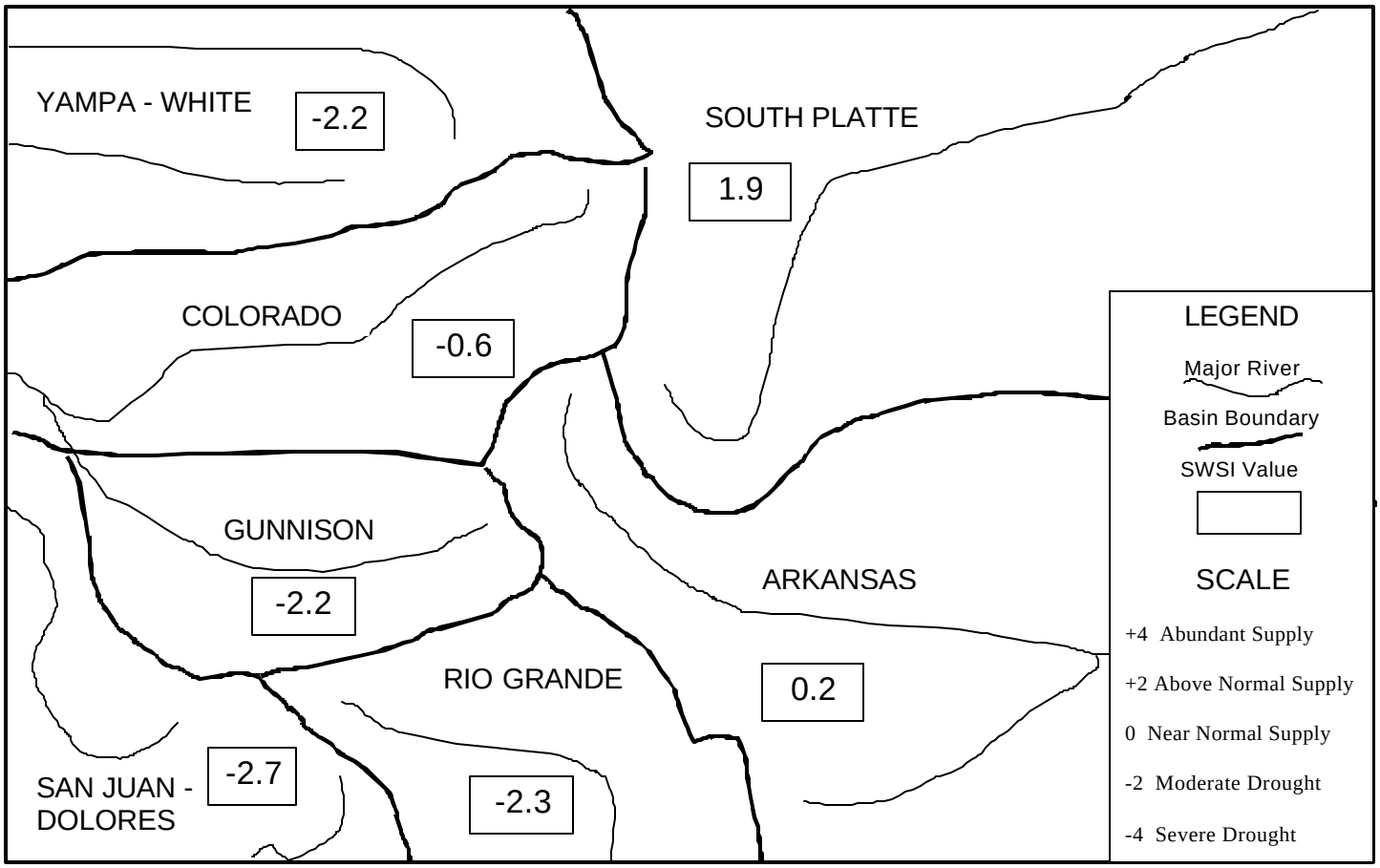
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on stream flow, reservoir storage, and precipitation for the summer 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 September 1, 2000, and reflect the conditions during the month of August.

Basin	September 1, 2000 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	1.9	+0.3	-1.9
Arkansas	0.2	0.0	-3.0
Rio Grande	-2.3	+0.9	-5.6
Gunnison	-2.2	+0.6	-4.2
Colorado	-0.6	+1.6	-3.5
Yampa/White	-2.2	+0.6	-3.8
San Juan/Dolores	-2.7	+0.5	-6.2

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



SEPTEMBER 1, 2000

Basinwide Conditions Assessment

While the SWSI value of 1.9 indicates that for August the basin water supplies were slightly above normal, the actual conditions are considered to be below normal. The SWSI value may be inaccurately boosted by municipal reservoirs feed from the west slope, and calls for water down stream of the Kersey gage causing water to flow past the gage that would otherwise be diverted above the gage.

Reservoir storage, the major component in this basin in computing the SWSI value, was 90% of normal as of the end of August. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 30% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 90% of capacity. Flow at the gaging station South Platte River at Kersey was 328 cfs, as compared to the long-term average of 887 cfs. Flow at the Colorado/Nebraska state line averaged 24 cfs.

Dry hot conditions continued through August. As a result, stream flows continued to be significantly below average throughout the month.

Most irrigation demand on both the main stem and tributaries was met through the release of reservoir storage, which significantly depleted reservoirs. For example, August reduction in storage in North Sterling Reservoir was 20,790 acre-feet, leaving 8,120 acre-feet in storage at the end of the month out of a capacity of 73,000 acre-feet. Similarly, Riverside Reservoir dropped by 14,910 acre-feet, leaving 10,242 acre-feet out of a capacity of 63,000 acre-feet.

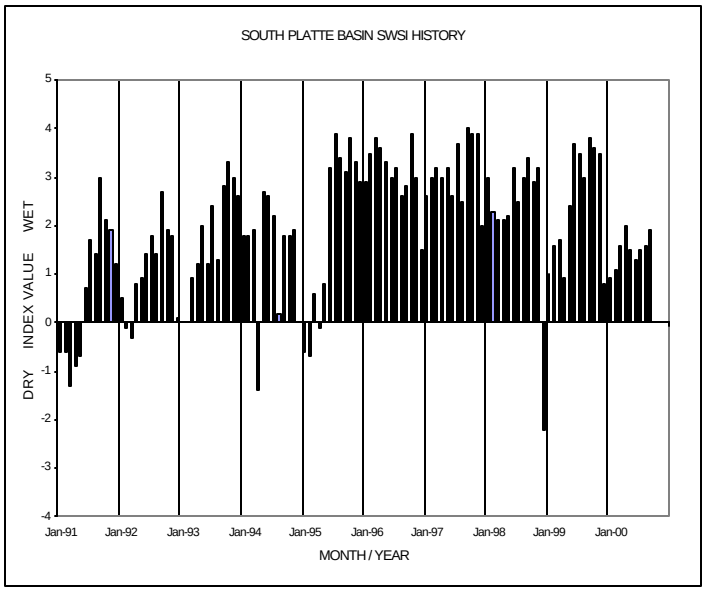
Senior calls continued throughout the basin. Runoff from one rainstorm in the Denver area did provide some significant relief during the later part of the month, but was not sufficient to remove the call completely.

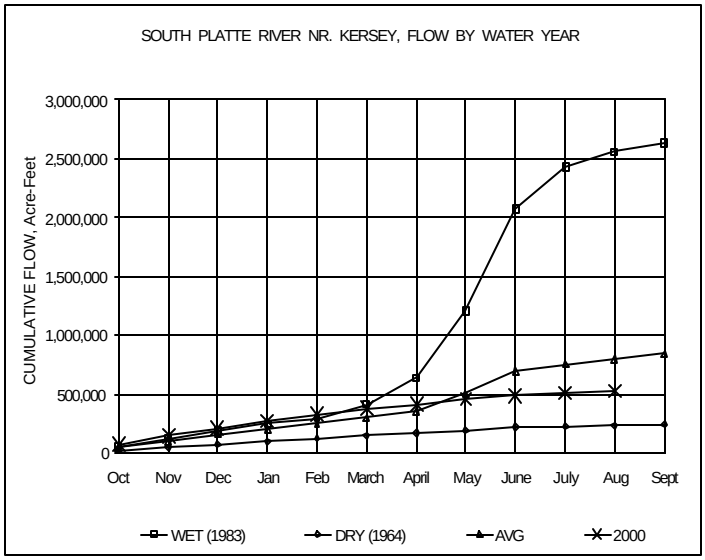
Administrative/Management Concerns

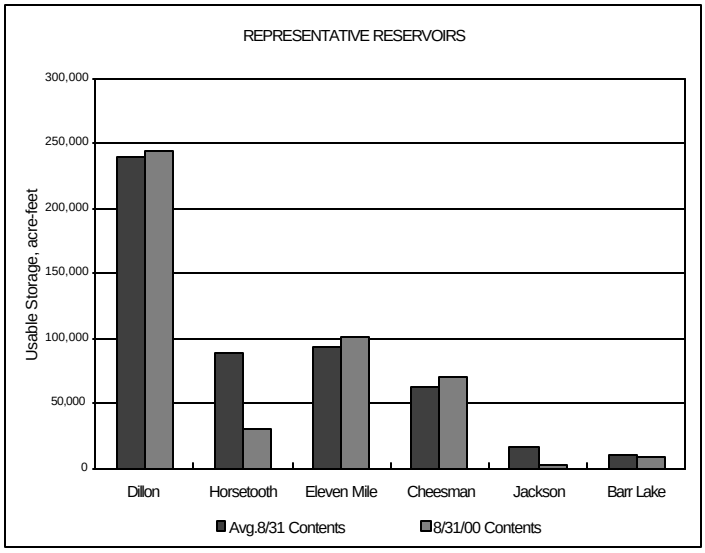
The main concern for administrators now is filling the irrigation reservoirs and diverting water into recharge projects to assure there is adequate water for next year. Without adequate storage and recharge, there could be severe short falls for irrigation next year. Most municipalities have more significant reserves and their reservoir levels are much higher, but even these suppliers may be forced to restrict water use next year if dry conditions continue.

Public Use Impacts

Depletion of storage levels forced the removal of fish from several reservoirs.







Basinwide Conditions Assessment

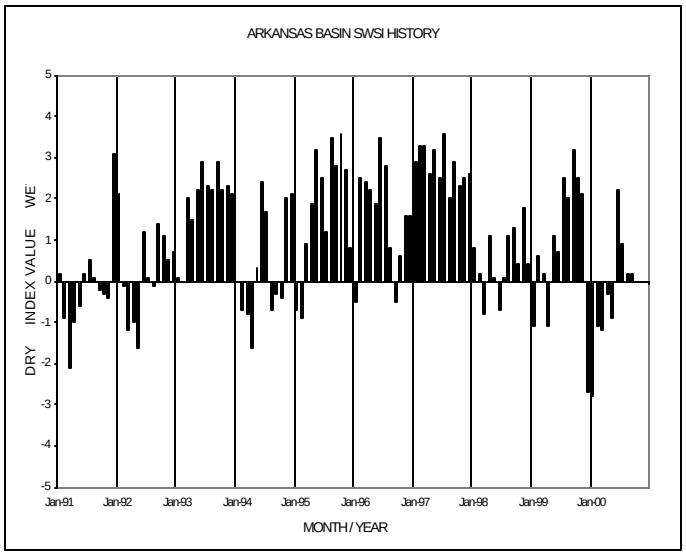
The SWSI value of 0.2 indicates that for August the basin water supplies were near normal. Flow at the gaging station Arkansas River near Portland was 554 cfs, as compared to the long-term average of 1,008 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 127% of normal as of the end of August.

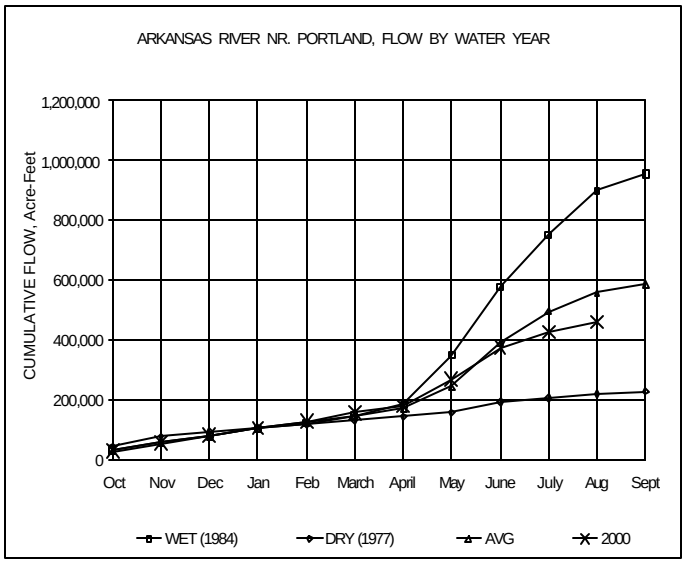
Outlook

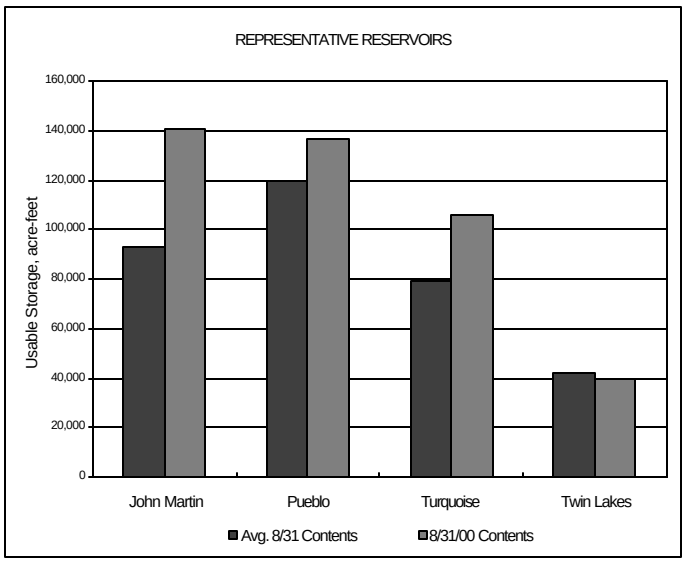
Reservoir storage levels dropped during August. Pueblo, John Martin and Trinidad Reservoirs averaged 49% of conservation pool capacities, down from previous months. Reservoir levels are decreasing as dry weather is causing irrigators to release more stored water.

Administrative/Management Concerns

The dry weather trend has caused the main stem Arkansas River call to remain with senior rights.







Basinwide Conditions Assessment

The SWSI value of –2.3 indicates that for August the basin water supplies were below normal. Conditions may be drier than this number indicates. Flow at the gaging station Rio Grande near Del Norte was 263 cfs, as compared to the long-term average of 702 cfs. The Conejos River near Mogote had a mean flow of 145 cfs (71% of normal). Releases from Platoro Reservoir made up nearly half of the flow in the Conejos River. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 80% of normal as of the end of August.

Although average temperatures were higher than normal, precipitation in the San Luis valley was near normal during August.

Outlook

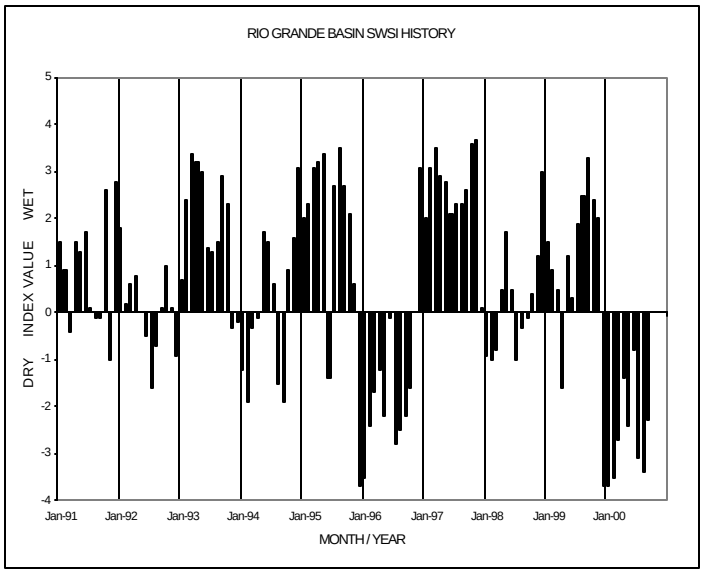
The large rain storms that enhanced stream flow last year didn't appear this year. Thus, administrators and water users are expecting below average stream flow for the next several months. The call for water from area streams should remain very senior until storage season begins November 1.

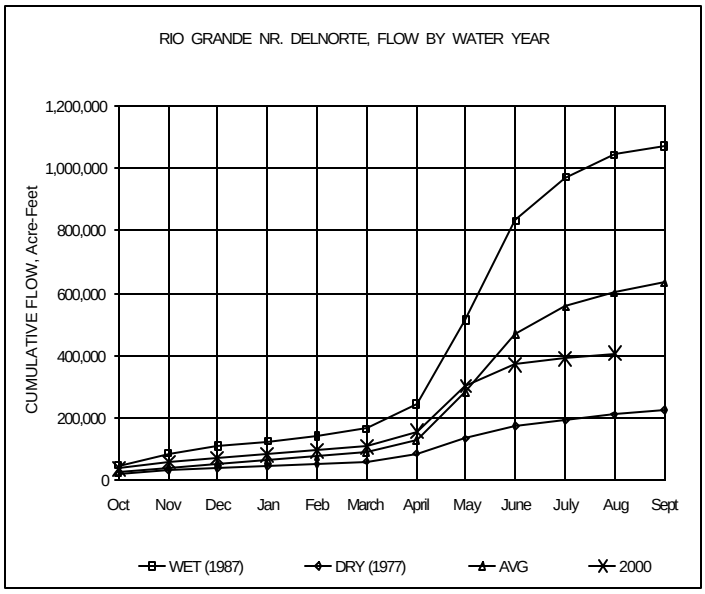
Administrative/Management Concerns

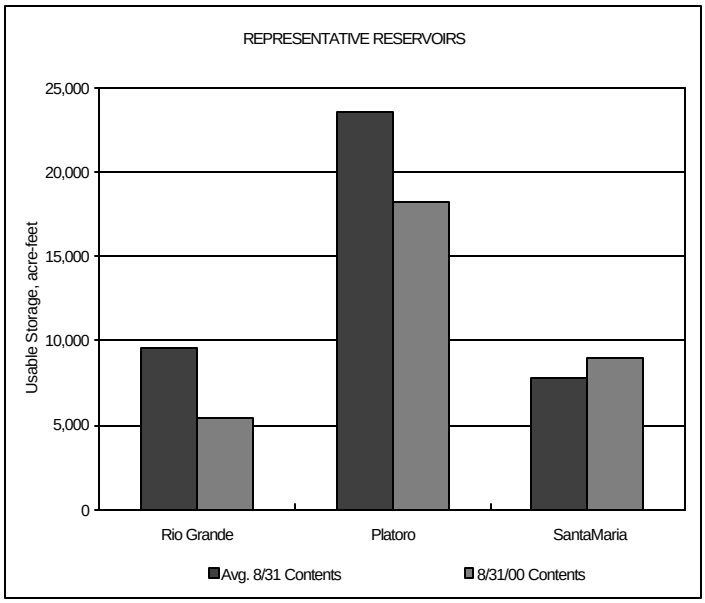
The aquifers of the upper Rio Grande basin were used extensively this year for irrigation supplies. The resulting draw down of available ground water could be hazardous if the snowpack and runoff are blow average again next year.

Public Use Impacts

Some farms in the area were devastated by hail recently, spoiling what otherwise would have been good crop yields. In those areas where well water was available for irrigation crop yields will be acceptable. However, low commodity prices will leave many valley farmers and ranchers in economic peril.







Basinwide Conditions Assessment

The SWSI value of –2.2 indicates that for August the basin water supplies were below normal. Flow at the gaging station Uncompahgre River near Ridgway was 105 cfs, as compared to the long-term average of 166 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 78% of normal as of the end of August.

Recent rains throughout the basin pretty much took care of the water needs for the late part of the season. The San Miguel basin residents found that they could finally breathe easier as the rain eased the stress of the dry summer conditions.

The dry summer is proving to be a problem for wells in many areas as applications for replacement permits are coming in steadily for wells that have dried up.

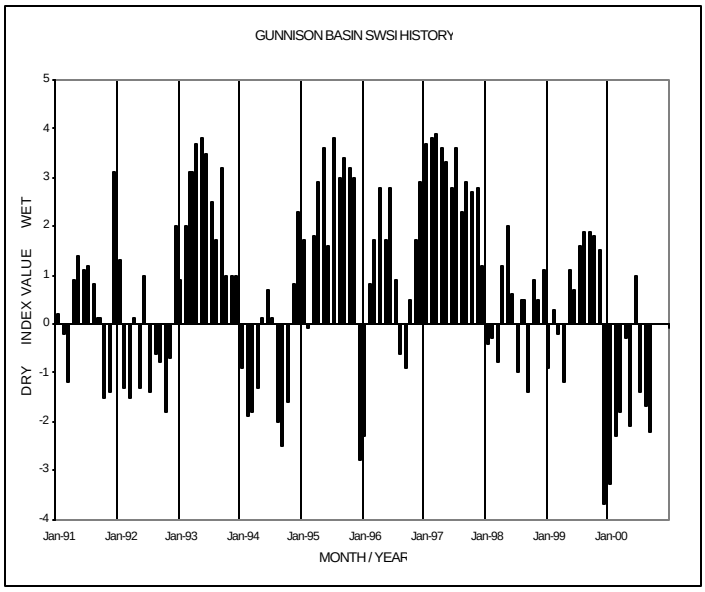
Outlook

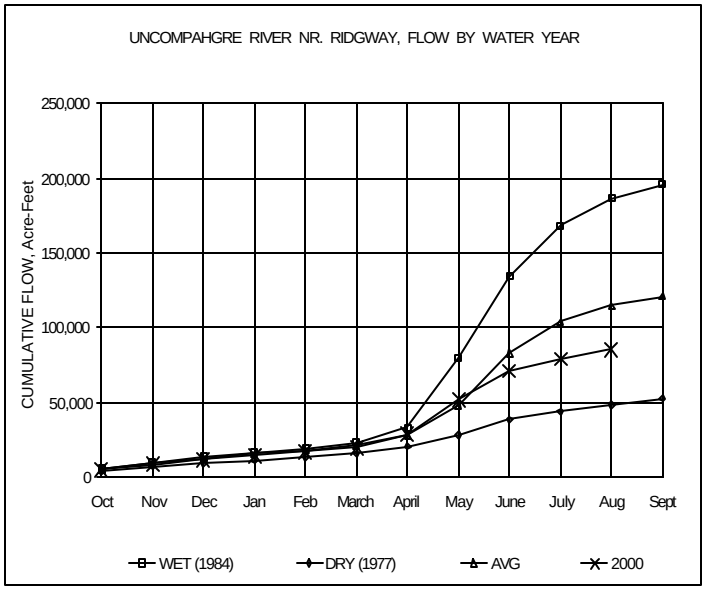
Administrators hope that the coming winter brings good snowfall so as to bring back stream flow and replenish the reservoirs for next year.

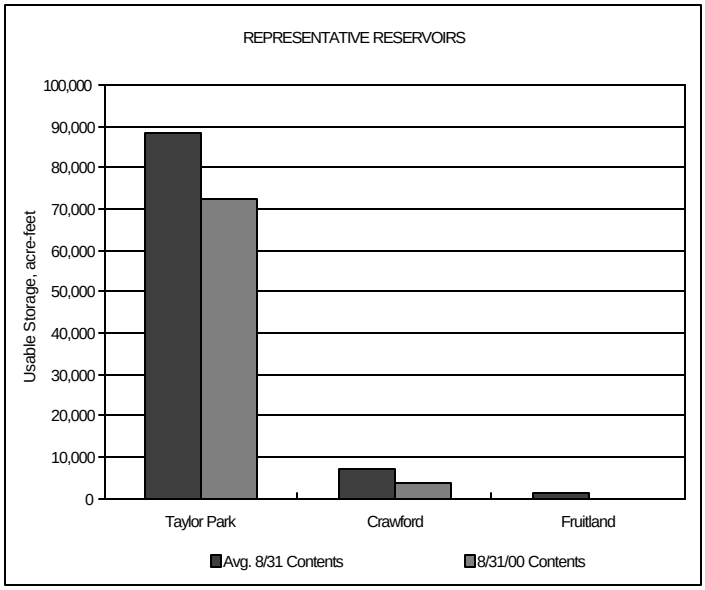
Administrative/Management Concerns

The Uncompahgre River officially went off call during August due to precipitation.

Users on the North Fork of the Gunnison River drew their reservoirs down extensively, as the Fire Mountain Canal and Overland Canal are shut off. Most reservoirs on this drainage are extremely low, but late season rains were encouraging.







Basinwide Conditions Assessment

The SWSI value of –0.6 indicates that for August the basin water supplies were slightly below normal. Flow at the gaging station Colorado River near Dotsero was 1,686 cfs, as compared to the long-term average of 1,760 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 91% of normal as of the end of August.

Outlook

Early September is forecasted for warm and dry conditions, so the senior Shoshone call on the main stem is projected to continue during September. The Cameo Call should remain off during September.

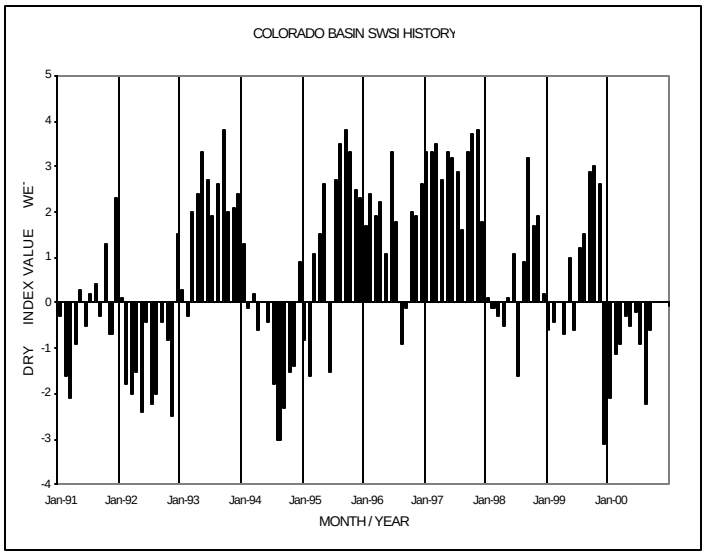
Administrative/Management Concerns

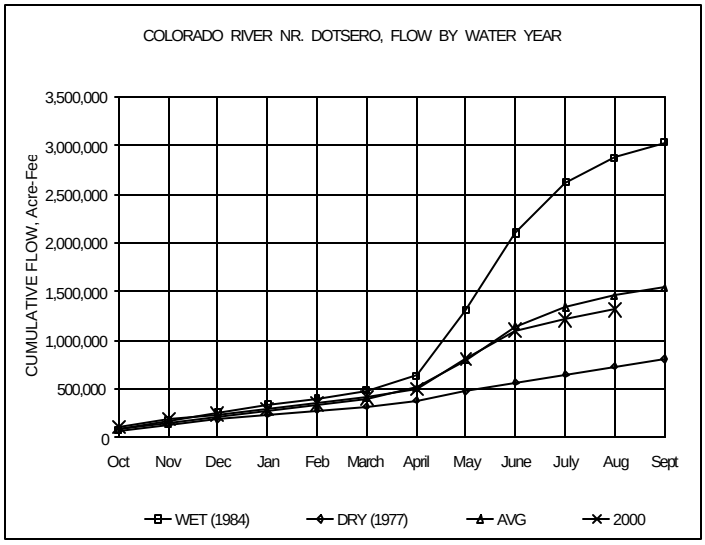
Calls on smaller tributaries may remain in effect throughout the fall as senior irrigators try to take advantage of slightly higher stream flows (caused by late summer rains) to increase soil moisture content going into the winter.

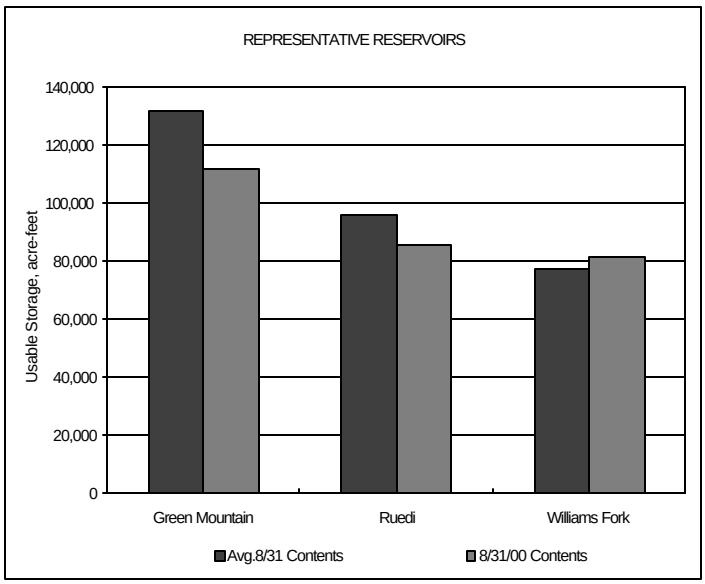
Public Use Impacts

Adequate irrigation water to the Grand Valley helped provide a good fruit crop in that area even though temperatures were above normal. Over the entire basin, hay production and quality was below normal because below average precipitation limited irrigation water on many tributaries. Late August rains, when they finally came, also hindered many harvesters.

The late rains and cooler temperatures have now allowed the lifting of most fire bans.





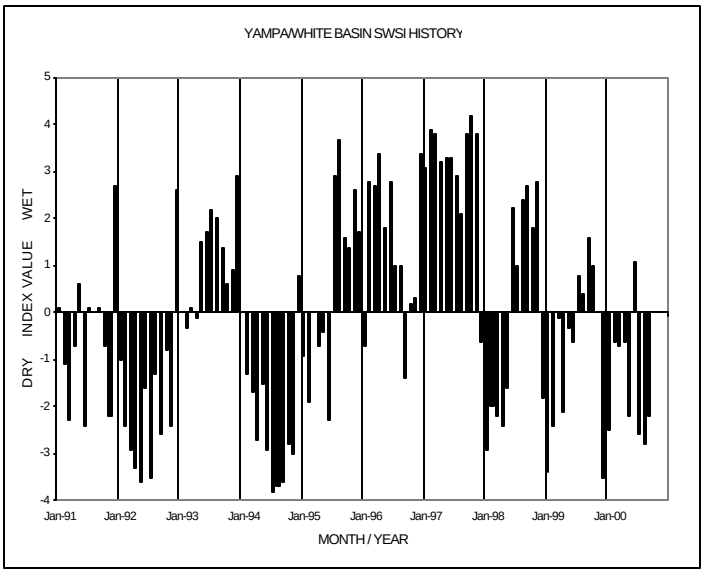


Basinwide Conditions Assessment

The SWSI value of –2.2 indicates that for August the basin water supplies were below normal. Flow at the gaging station Yampa River at Steamboat was 103 cfs, as compared to the long-term average of 157 cfs.

August brought much needed relief from the string of months of below normal precipitation. Recorded rainfall throughout the basin was above average. Still, many areas remain extremely dry.

Helped by the rains, stream flows rose to normal levels by the end of the month. Irrigation reservoirs have been drawn down significantly, to levels not seen in years.

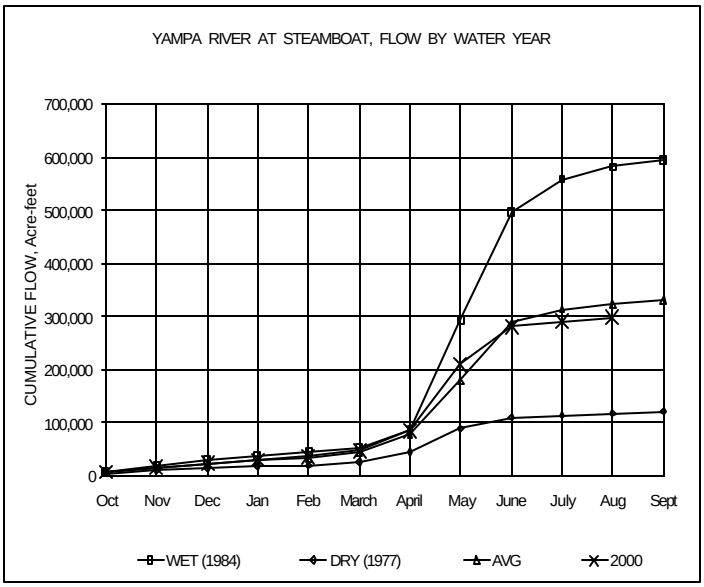


Outlook

The outlook continues to call for above average temperatures and below average precipitation. It is anticipated that stream flows will return to below normal levels. Irrigation reservoirs are expected to continue to drop until the storage season begins.

Administrative/Management Concerns

Administration continues on the tributaries of the main rivers. While some streams were taken off call during the haying season, many have gone back under administration as ranchers try to grow some pasture for the fall.



Public Use Impacts

Many ranchers have been forced to remove their livestock from BLM grazing leases much earlier than normal. With little pasture, and the price of hay up, many people are reducing the size of their herds.

Basinwide Conditions Assessment

The SWSI value of –2.7 indicates that for August the basin water supplies were below normal. Flow at the gaging station Animas River near Durango was 271 cfs, as compared to the long-term average of 556 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 79% of normal as of the end of August.

August brought welcome relief from the dry conditions through near daily precipitation from the 10th till the end of the month. Precipitation from some thunderstorm events exceeded 0.50 inch. Total August precipitation in Durango of 4.30 inches was unusually high (168% of average), bringing the water tear total to 14.73 inches (83% of average). Temperatures were very warm, averaging over 5° above normal.

River flows subsided to very low levels, however most stayed above 1996 levels. The Animas River stayed above 300 cfs most of the time and was above 400 cfs at month end. The Dolores River returned to 200 cfs with the onset of rains later in the month, and the La Plata River rose to 11 cfs from 6 cfs earlier in the month.

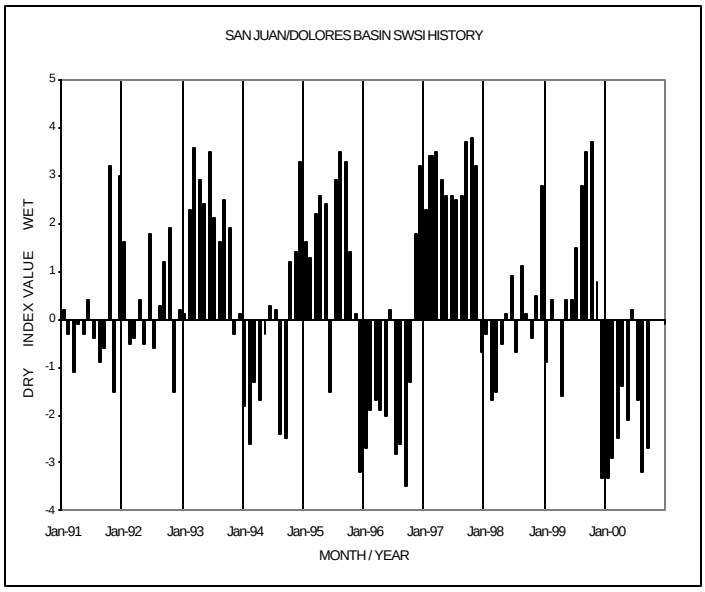
Reservoir storage is considerably reduced compared to average, although McPhee Reservoir remained at 95% of full capacity. Lemon Reservoir appeared to be headed toward being emptied, with it's water enabling users to complete an early crop.

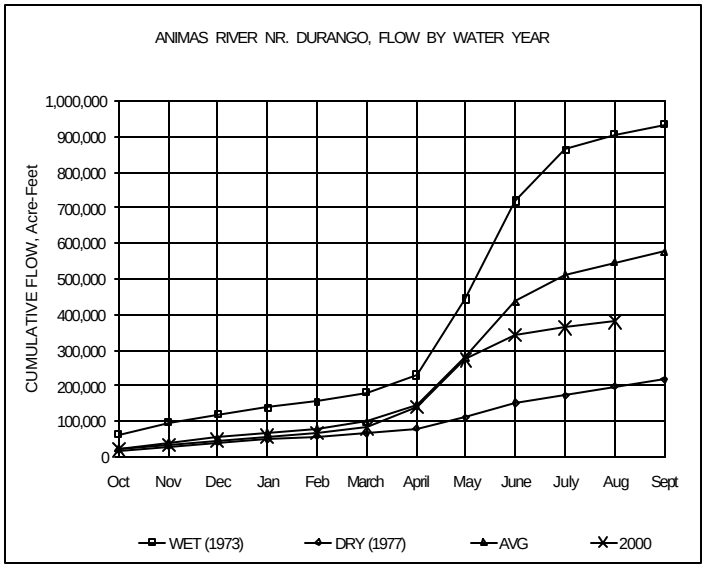
Outlook

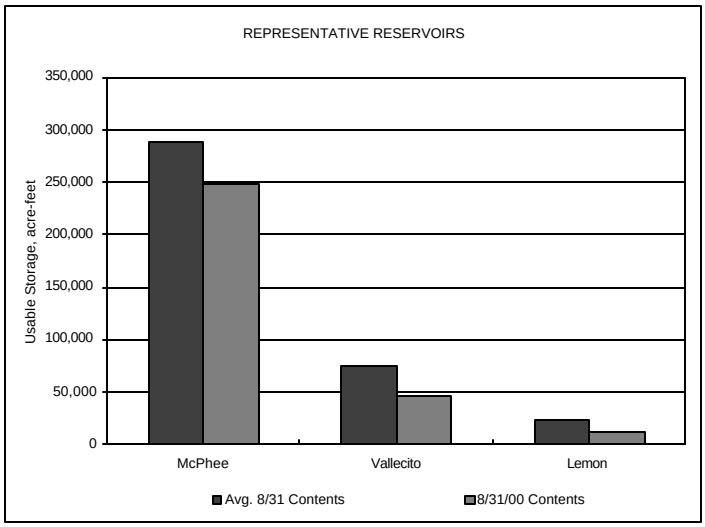
Prospect for water supplies are not promising in spite of the temporary relief brought by the rains. With the low reservoir storage going into winter, there remains the possibility of shortages for the upcoming season.

Public Use Impacts

River recreation continued to be popular for tubers and swimmers. Fishing activity in streams and lakes was active this month.







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