COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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OCTOBER 2001

In general, Colorado's water supply was near average during September; although, lower SWSI values were reported from the Yampa-White and Gunnison Basins on the western side of the state, both due to low stream flow SWSI factors. Reservoir storage was normal or above normal for all of the basins, except the Colorado Basin. Precipitation levels were above normal in the northern basins and below normal in the southern basins.

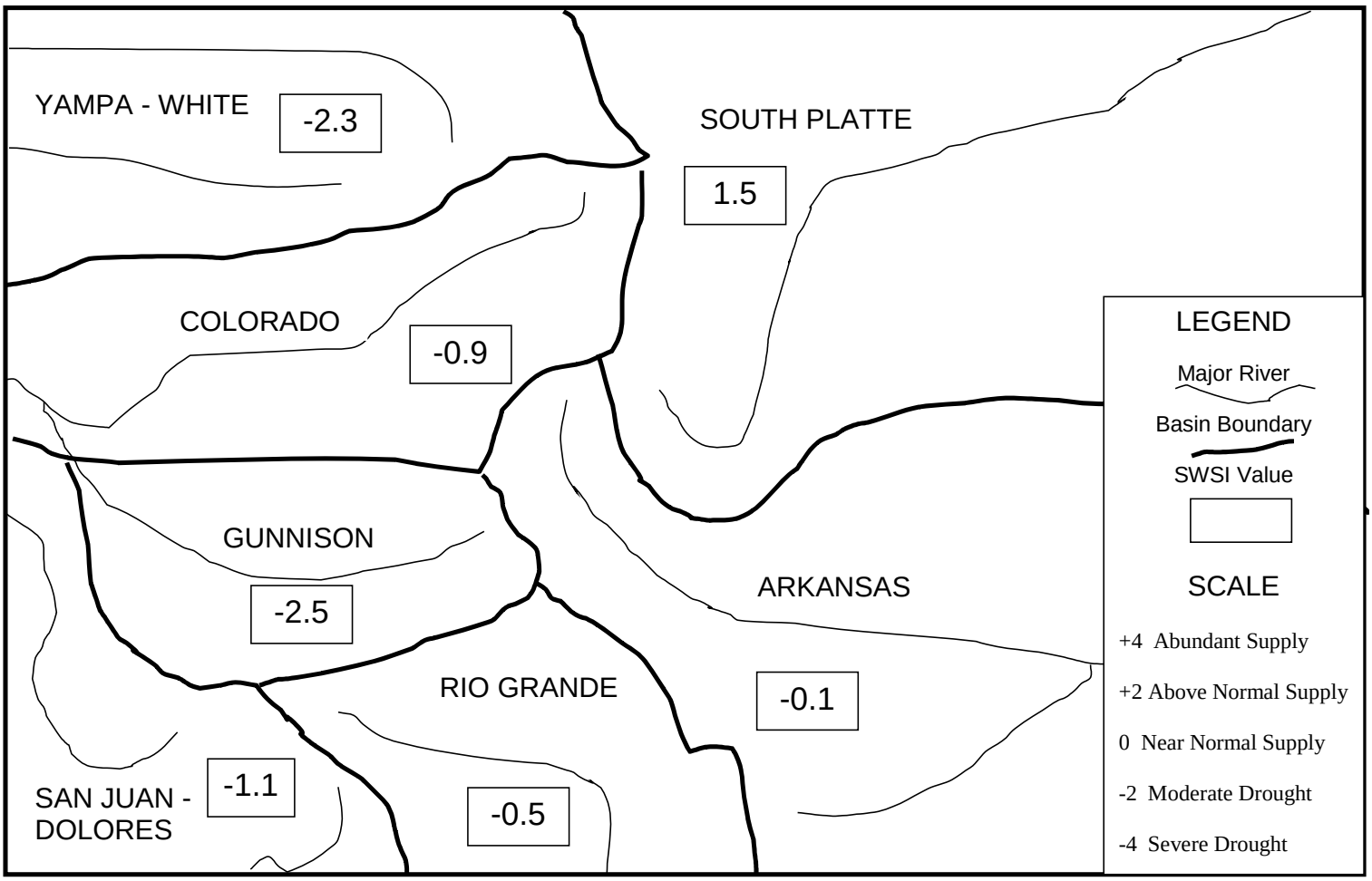
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on stream flow, reservoir storage, and precipitation for the summer 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, 2001, and reflect the conditions during the month of September.

Basin	October 1, 2001 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	1.5	+0.6	-1.0
Arkansas	-0.1	-0.3	-0.2
Rio Grande	-0.5	-1.0	+1.9
Gunnison	-2.5	-0.8	-0.5
Colorado	-0.9	-0.3	-1.7
Yampa/White	-2.3	-0.9	-3.1
San Juan/Dolores	-1.1	-2.4	+0.5

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, 2001

Basinwide Conditions Assessment

The SWSI value of 1.5 indicates that for September the basin water supplies were near normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 64% of normal as of the end of September. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 26% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 85% of capacity. Flow at the gaging station South Platte River near Kersey was 510 cfs, as compared to the long-term average of 831cfs. Flow at the Colorado/Nebraska state line averaged 147cfs.

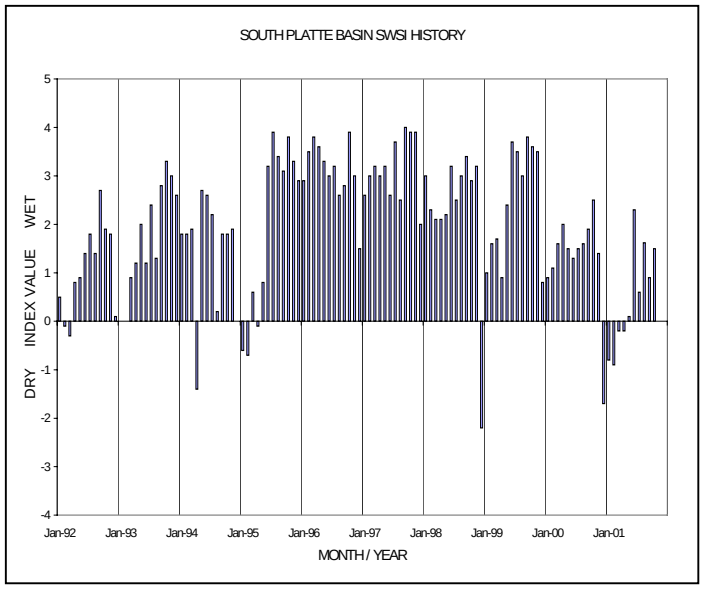
Outlook

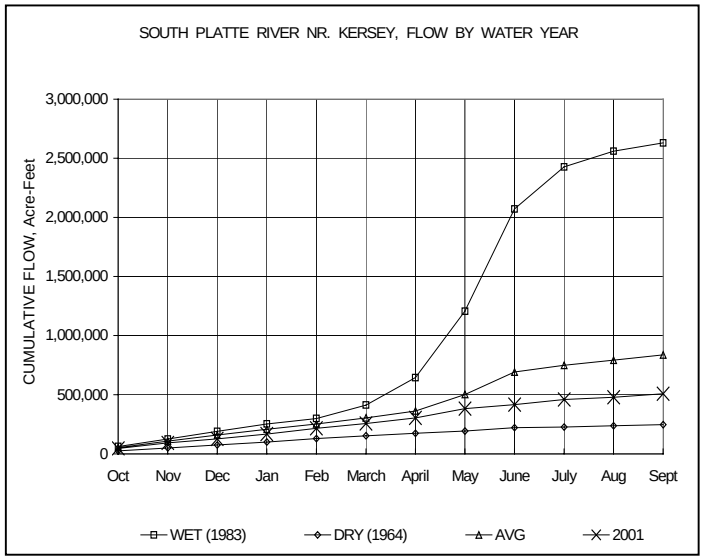
Irrigation users began to curtail their use in the month of September as crops began reaching maturity. Except for some minor irrigation, especially for hay, irrigation was generally completed by the end of the month.

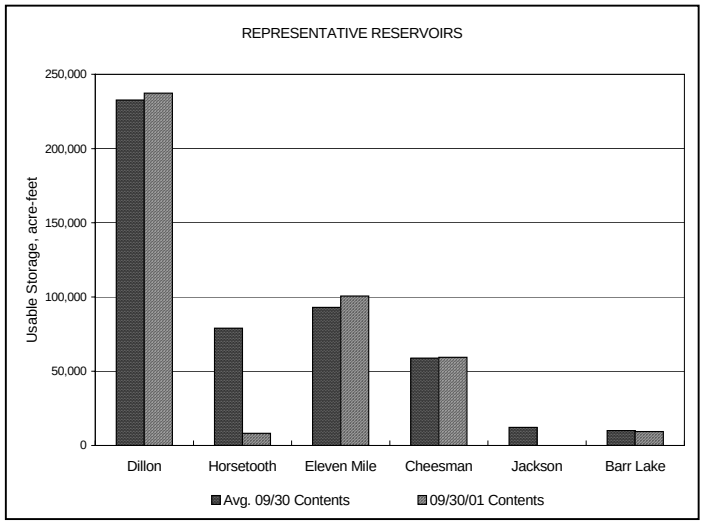
Filling major irrigation and municipal reservoirs is not expected to be difficult this year because of the relatively high level of reservoirs at the end of the irrigation season and the call coming off the river in September. In addition, recharge this fall should significantly help flow conditions and augmentation supplies next summer. Thus, the initial outlook for next year's supply is positive.

Administrative/Management Concerns

Reduced demand along with widespread storms the beginning of September provided necessary conditions to remove the call completely on the South Plate downstream of the Burlington ditch in Denver on September 8th. The removal of the call allowed some reservoirs to begin filling and allowed for recharge to begin along the South Platte.







Basinwide Conditions Assessment

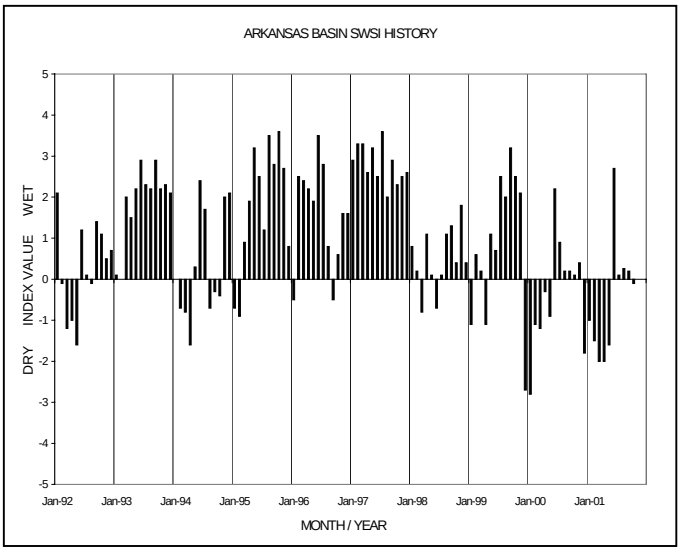
The SWSI value of –0.1 indicates that for September the basin water supplies were normal. Surface flows were low, but they were offset in the SWSI calculation by high reservoir storage factors. Flow at the gaging station Arkansas River near Portland was 281 cfs, as compared to the long-term average of 484 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 82% of normal as of the end of September.

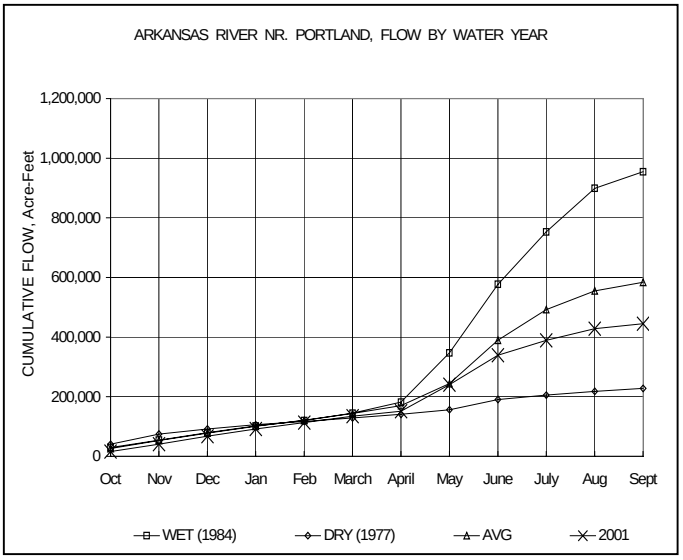
Outlook

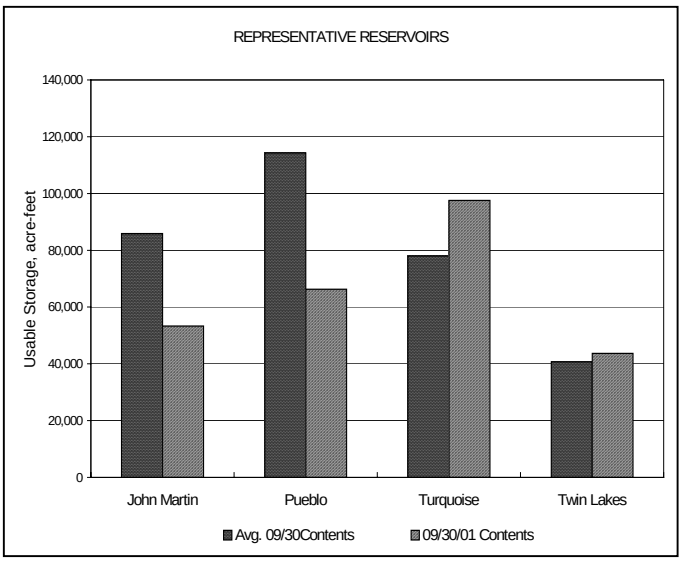
September was characterized by careful management of stored water supplies by both agricultural and municipal entities. Native flows were low in the lower Arkansas River mainstem area with inflows to Pueblo Reservoir averaging just over 275 cfs and inflows to John Martin Reservoir averaging only slightly over 100 cfs. Well pumping was relatively high for the latter portion of the summer, but was less than the same period in 2000, likely due to careful management by the well associations to stretch limited replacement water supplies. Entities with stored water supply appeared to be doing a good job of stretching their supplies to the end of the irrigation season.

Administrative/Management Concerns

The State Engineer held several public meetings in August, September, and October in Buena Vista, La Junta, Walsenburg, and Fountain to discuss the pilot project to Water Banking in the Arkansas River Basin as established by House Bill 1354. A final public meeting will be held in Lamar on October 15, 2001. The Winter Water Storage Program Annual Meeting will be held on October 16, 2001 in La Junta.







Basinwide Conditions Assessment

The SWSI value of –0.5 indicates that for September the basin water supplies were normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 76% of normal as of the end of September. Flow at the gaging station Rio Grande near Del Norte was 339 cfs, (67% of normal). The Conejos River near Mogote had a mean flow of 116 cfs (91% of normal). Generally, stream flow in the Upper Rio Grande Basin was below normal during September. Minimal rainfall and warm temperatures contributed to the steady decline in stream flow in this region. This summer, the Valley had an unusually green landscape, the result of frequent rainstorms. However, the driest September in over 30 years has soil moisture content dropping and the hillsides turning brown.

Outlook

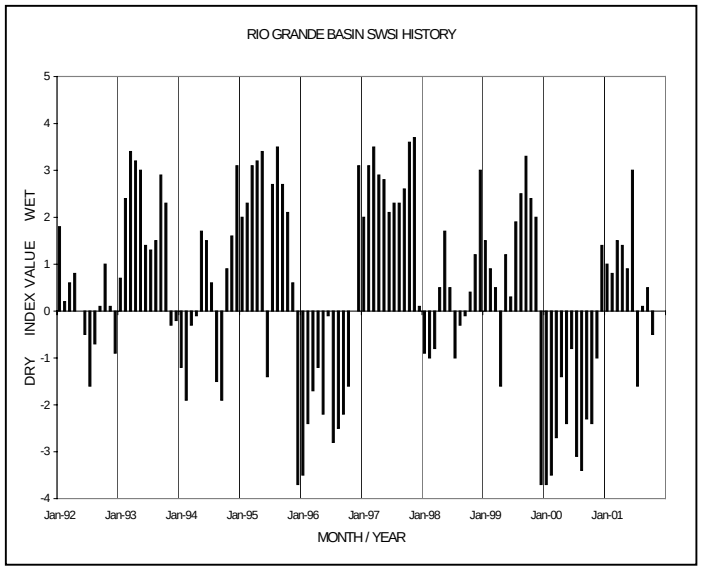
Streams in the Upper Rio Grande Basin will experience below normal flows this fall. The abundance of rainfall during July and August gave way to a warm, dry September. The call remains very senior on all creeks and rivers in the Division.

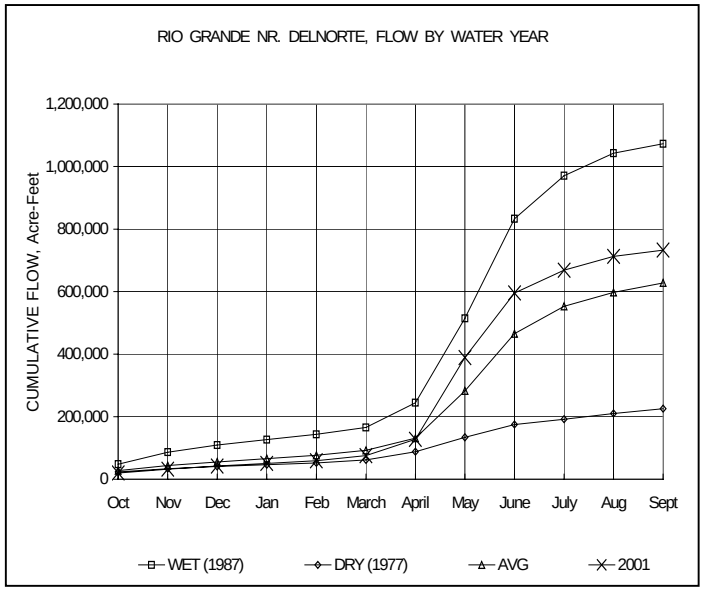
Administrative/Management Concerns

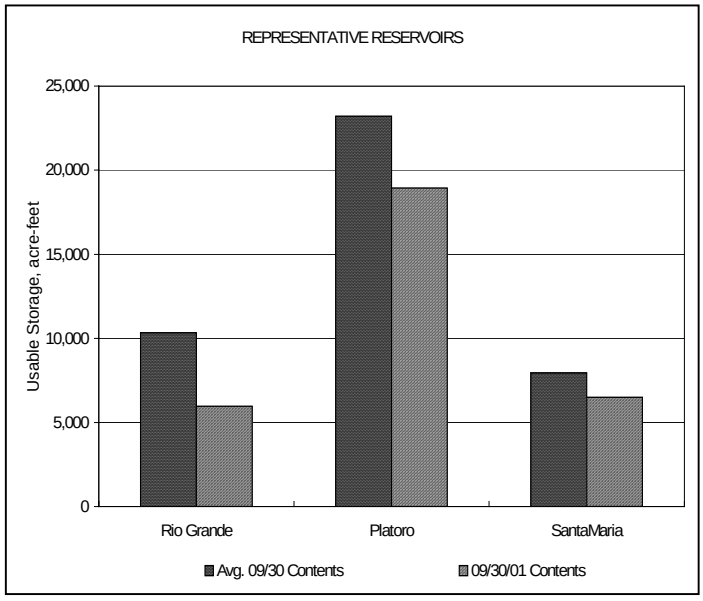
Colorado will meet its delivery obligation to New Mexico and Texas under the Rio Grande Compact.

Public Use Impacts

For the first time in several years, both farmers and ranchers in the San Luis Valley should benefit from high commodity prices. Those farmers with potatoes and grain as their primary crops have suffered through a succession of poor return on their investment. Although crop yields were not outstanding, this year should provide an opportunity for many to recover from the economic tailspin of the late '90's.







Basinwide Conditions Assessment

The SWSI value of –2.5 indicates that for September the basin water supplies were below normal. Flow at the gaging station Uncompahgre River near Ridgway was 73 cfs, as compared to the long-term average of 110 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 83% of normal as of the end of September.

Outlook

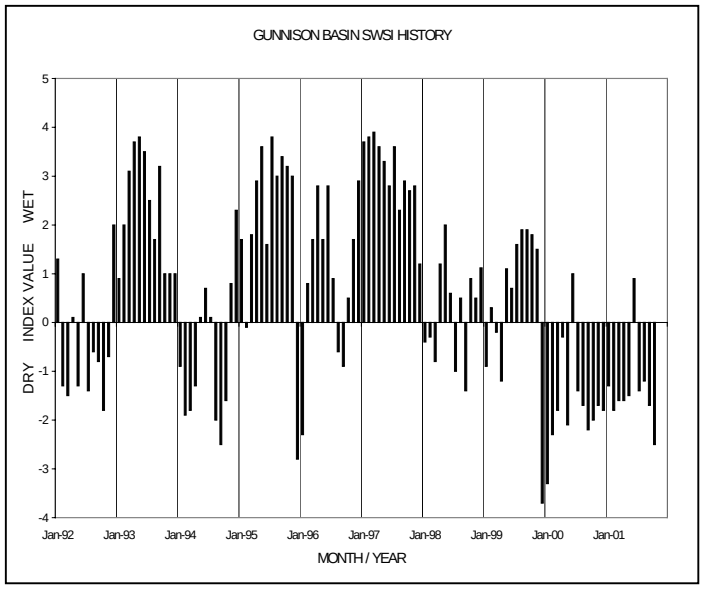
The month of September was extremely dry, and in a rare instance, the San Miguel River went on call for about a two-week period. Because of the dry summer and fall, the ground water sources have been depleted; therefore, hopes are high that this winter's snowpack improves this situation.

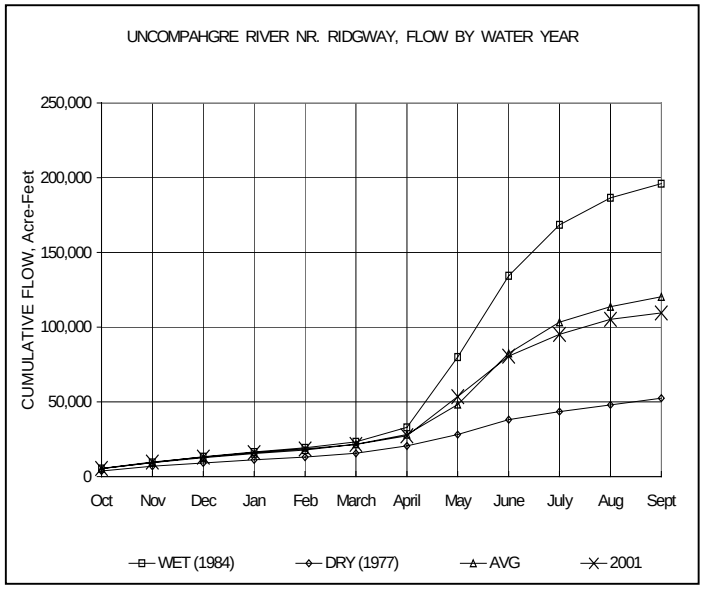
Administrative/Management Concerns

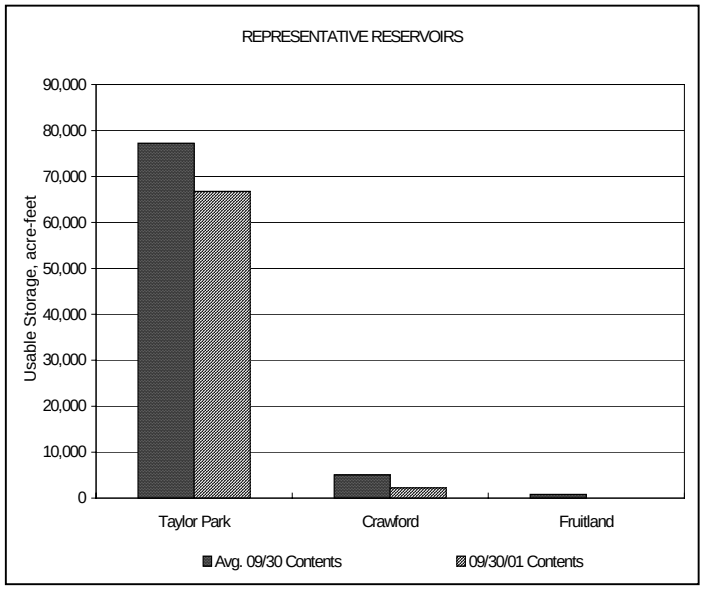
Well permitting increased substantially over Septembers of the past. Since requests to use ground water are increasing, water administrators must more closely examine formations, call points, and depths of wells to insure that new irrigation uses do not injure senior water rights.

Public Use Impacts

Water in the Grand Mesa Reservoirs fell to such low levels this year that water for irrigation was not available for the late irrigation season. Water levels in Blue Mesa Reservoir were lower this summer than years in the past; however, water is still being contracted for augmentation purposes (mainly for winter augmentation coverage). The growth rate is increasing substantially in the Gunnison Basin, which is creating great demands on both resources and personnel.







Basinwide Conditions Assessment

The SWSI value of –0.9 indicates that for September the basin water supplies were near normal. Flow at the gaging station Colorado River near Dotsero was 1,506 cfs, as compared to the long-term average of 1,432 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 83% of normal as of the end of September.

Outlook

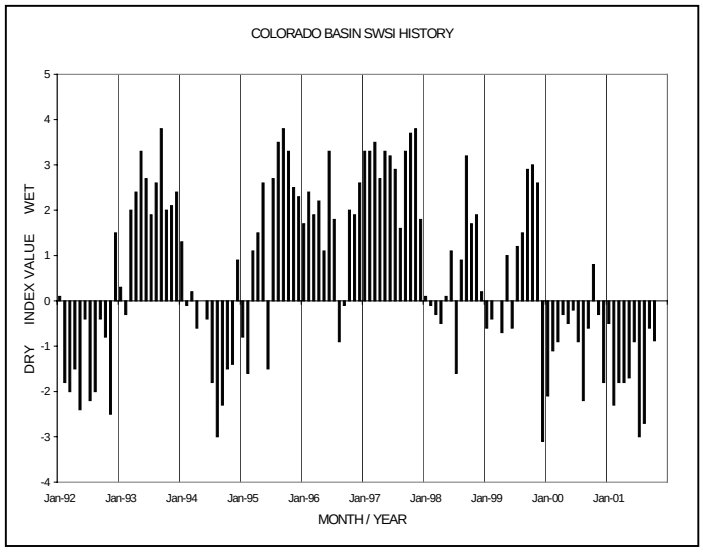
September weather was generally hot and dry, which kept most streams below historic levels. Irrigation diversions were above average for the month because of the dry conditions. Forecasts call for cooler, wetter weather patterns to extend through at least mid-October.

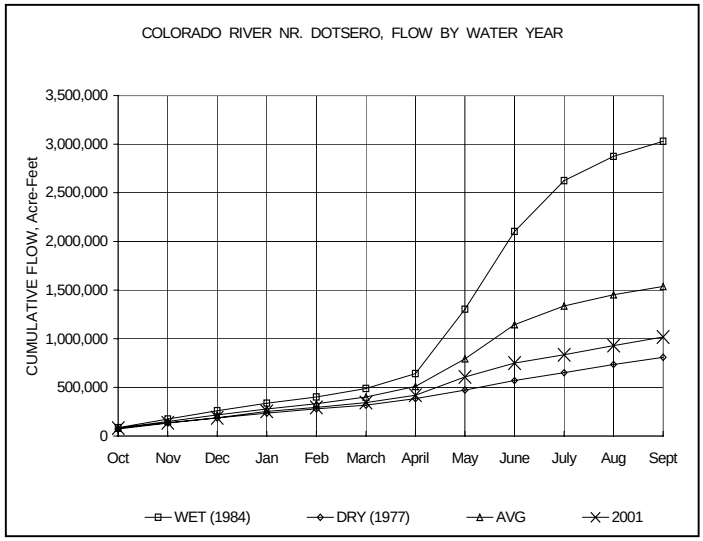
Administrative/Management Concerns

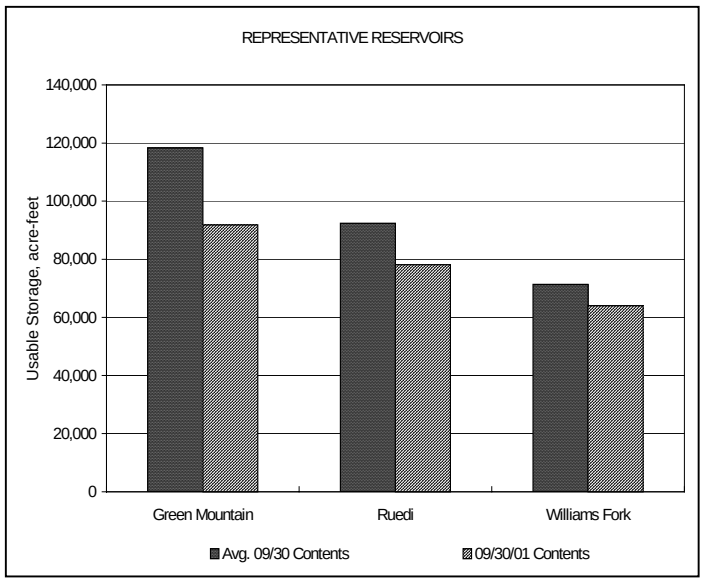
The senior Shoshone call, with no swing right, controlled upper basin water rights for the entire month of September. The Cameo call, both junior and senior, controlled lower basin water rights for all but on week in September. Reservoir releases for endangered fish were completed by early October. Snowmaking has begun at several ski areas, which will require close scrutiny of minimum streamflow levels this year.

Public Use Impacts

Many reservoirs have been drawn down below typical operating levels, impacting public recreation opportunities. Warm and dry forest conditions contributed to an outbreak of several significant wild fires in September.



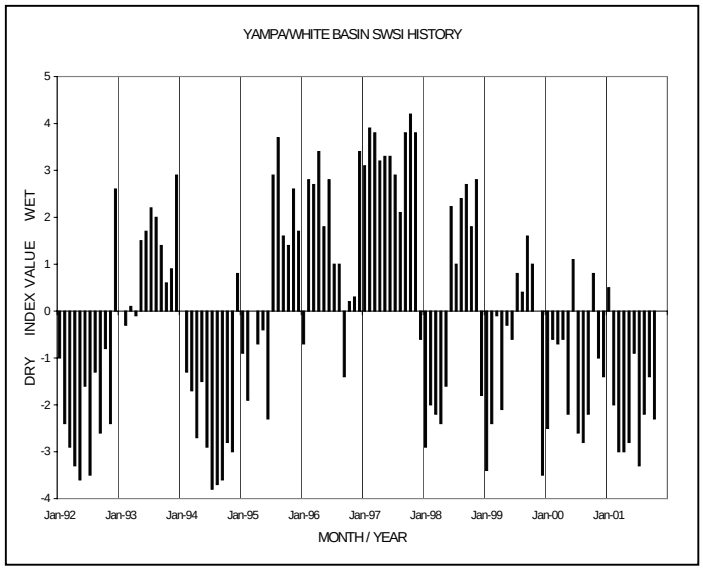




Basinwide Conditions Assessment

The SWSI value of –2.3 indicates that for September the basin water supplies were below normal. Flow at the gaging station Yampa River at Steamboat was close to normal at 116 cfs, as compared to the long-term average of 122 cfs. However, the White River near Meeker was substantially lower than normal at 239 cfs and significantly affected the SWSI value for September.

Precipitation varied throughout the basin with above normal measurements in some areas and little or no precipitation in others. Overall, rainfall for the basin was about 68% of average, as measured at snowtel sites, which represents about 50% of the amount of precipitation that was received in September. Soil moisture contents remain very low. Stream flows continued to be well below seasonal averages throughout the month. Water was released from Steamboat Lake in early September to augment the natural river flow in the Yampa River through the critical habitat area below Craig.

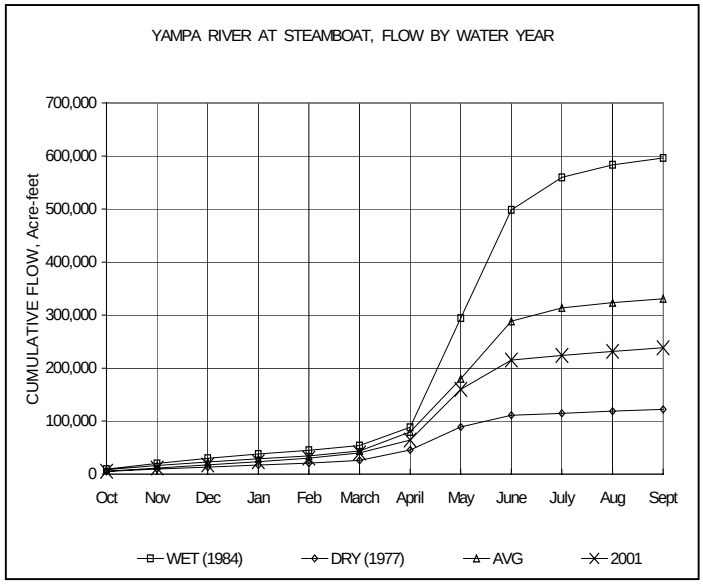


Outlook

The low soil moisture contents are of growing concern. Without substantial fall moisture, most of next spring's runoff could be consumed recharging the soil moisture profile, resulting in lower flow rates.

Administrative/Management Concerns

Several streams remain under administration. Reservoirs will begin storing water soon, but they may not be able to fill before the next irrigation season due to reduced stream flows.



Basinwide Conditions Assessment

The SWSI value of –1.1 indicates that for September the basin water supplies were slightly below normal. September is typically the month where the lowest streamflows are recorded and reservoirs reach their minimum levels. This month was no exception. A mere 0.33 inches of precipitation fell in Durango during the month. This is only 16% of the 2.08 inches averaged over 30 years in September. The water year ended with 21.9 inches or 112% of average.

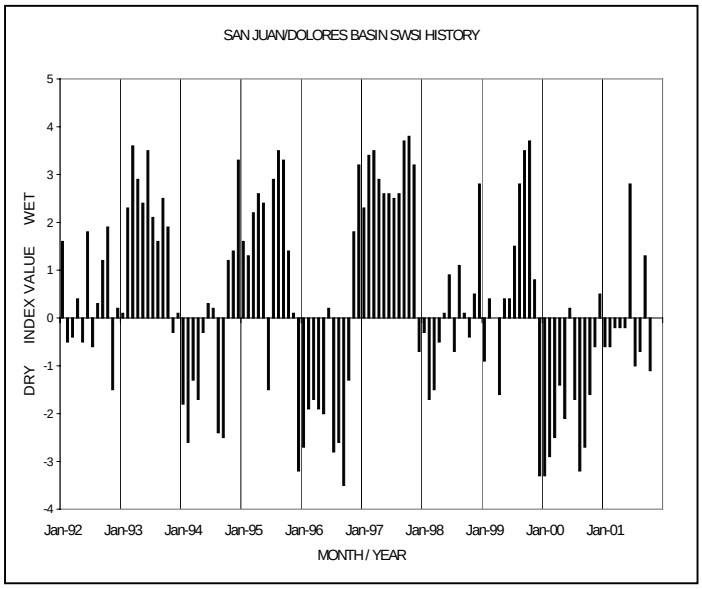
Temperatures remained very warm, being 5-6°F above normal lows and highs on the average. Durango did not record a freeze, but surrounding areas and the mountains cooled considerably and the aspen color changes occurred relatively early. Gusty winds soon ended the fall color display but Indian Summer conditions remained.

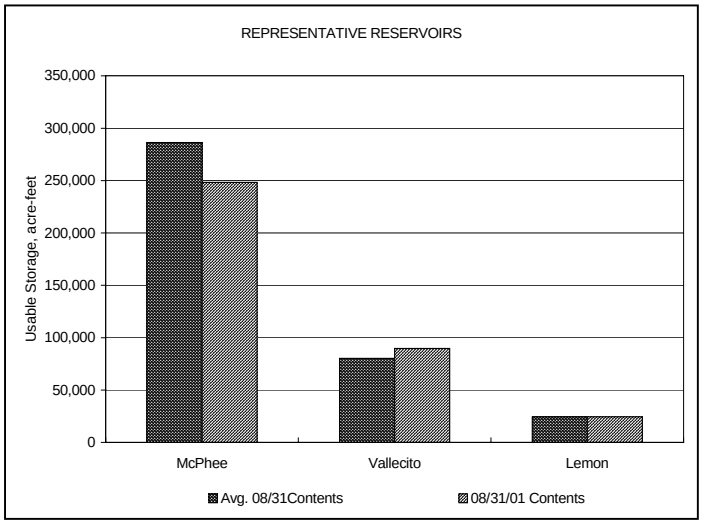
Reservoirs ended the season with below normal storage levels in general. McPhee and Lemon Reservoirs contained 80% of normal supply. Vallecito Reservoir remained at 57,000 AF, or 112% of normal, but was being drawn down rapidly by late season irrigation demands.

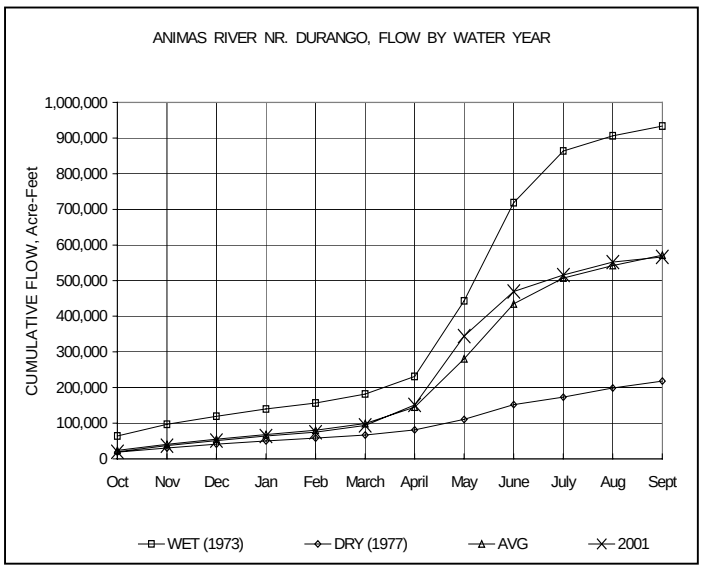
Stream flows were well below normal. The Animas River flow rate was 53% of average and never exceeded 336 cfs throughout the month. Flow at the gaging station Animas River near Durango was 244 cfs, as compared to the long-term average of 487 cfs. The La Plata River reduced to 5.4 cfs at the end of the month. Fishing on the rivers and lakes continued and rafting activities reduced.

Outlook

Future expectations of water supply are uncertain as many fronts have been moving through the area with significant moisture, but they did not precipitate within the basin. A continuation of this trend would result in a very dry winter with poor soil moisture conditions.







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