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# COLORADO

## WATER SUPPLY CONDITIONS UPDATE

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FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES  
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October 2005

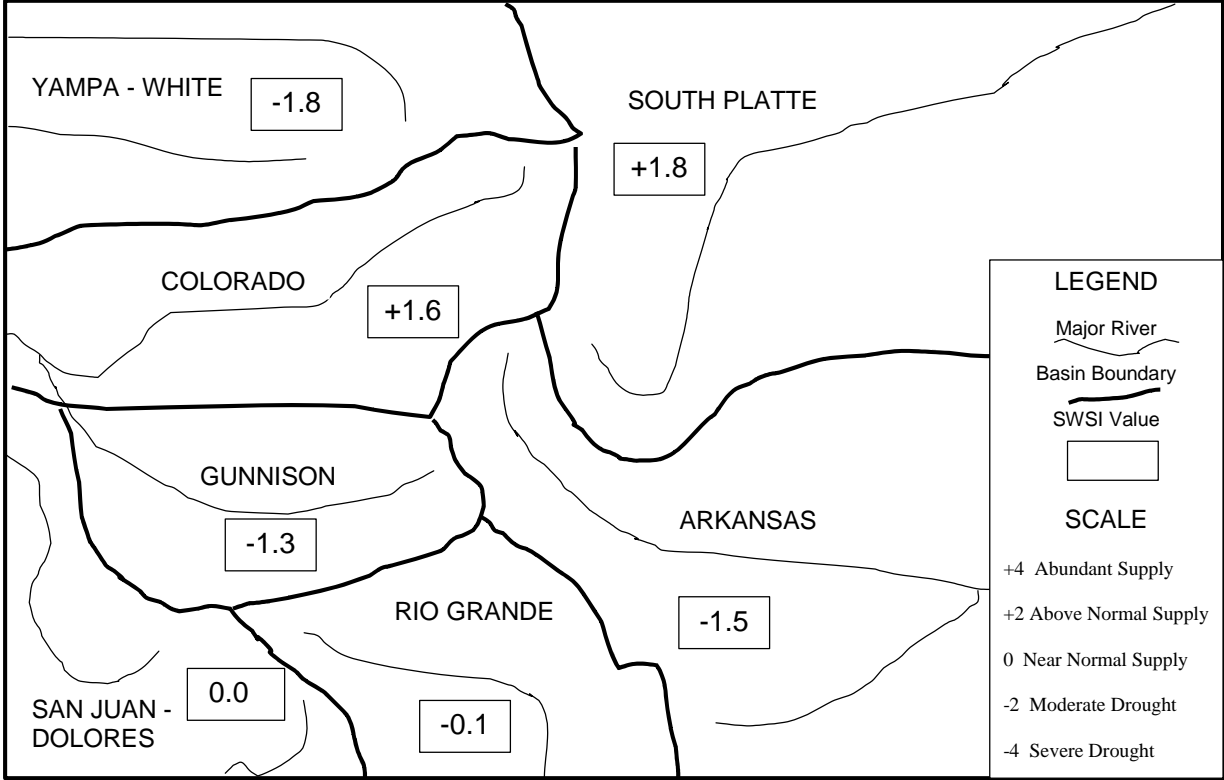
Statewide the Surface Water Supply Index (SWSI) values range from a low of -1.8 in the Yampa-White Basin to a high of +1.8 in the South Platte Basin. The streamflow factors were low in the Yampa-White, Arkansas, and Gunnison Basins, which lowered the SWSI values in those basins. The precipitation factors were generally above average across the state, except for the South Platte Basin, which was about average.

The 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, 2005, and reflect the conditions during the month of September.

<u>Basin</u>	<u>October 1, 2005 SWSI Value</u>	<u>Change From Previous Month</u>	<u>Change From Previous Year</u>
South Platte	+1.8	- 0.7	+0.2
Arkansas	-1.5	- 0.5	+0.1
Rio Grande	-0.1	+0.6	- 1.4
Gunnison	-1.3	- 0.2	+0.6
Colorado	+1.6	+1.5	+2.3
Yampa/White	-1.8	- 1.4	- 0.7
San Juan/Dolores	0.0	- 0.8	- 1.9

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, 2005

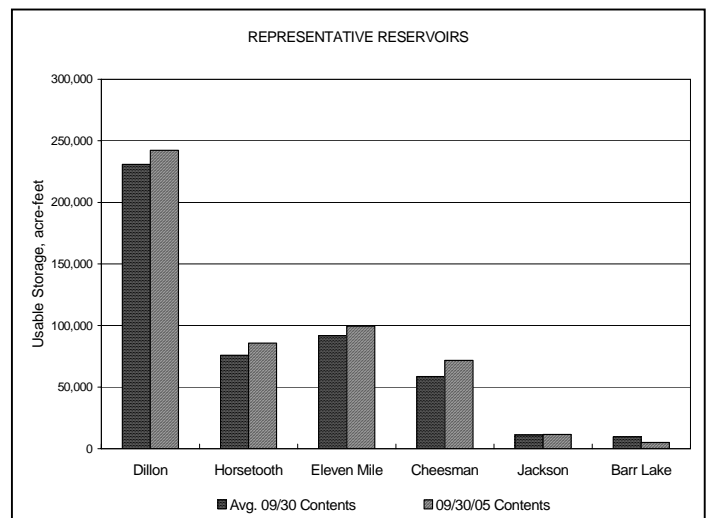
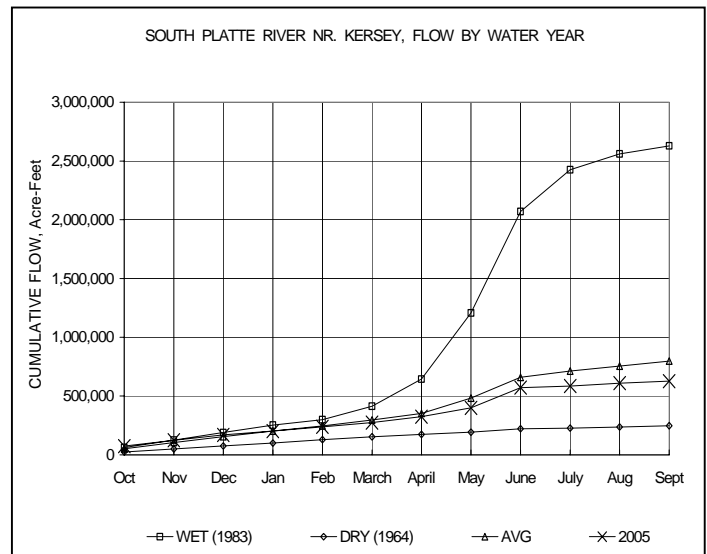
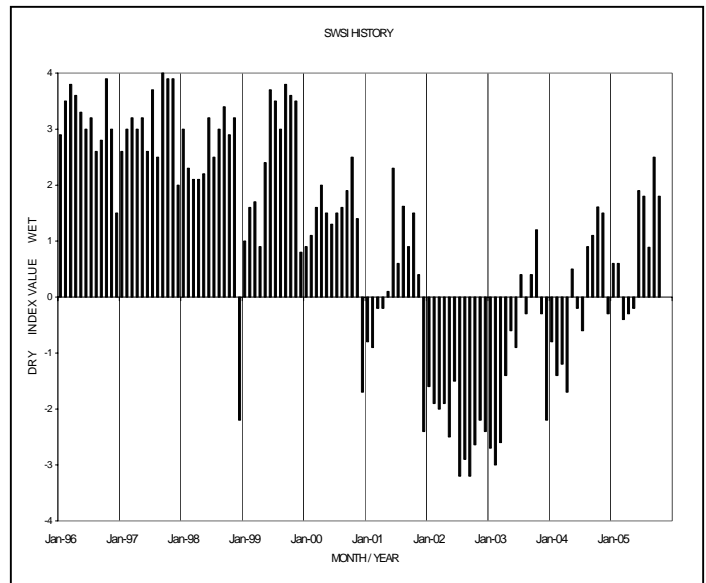
Basinwide Conditions Assessment

The SWSI value of +1.8 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 108% of normal as of the end of September. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 25% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 86% of capacity. Flow at the gaging station South Platte River near Kersey was 302 cfs, as compared to the long-term average of 516 cfs. Flow at the Colorado/Nebraska state line averaged 73 cfs.

September remained fairly dry through out the basin, but river, reservoir and well supplies were adequate to meet irrigation needs during the month. Likewise, direct flow and reservoir supplies also remain at or above average for municipal suppliers. As irrigation dropped off during the month, the river flow at Kersey climbed. Likewise, the call controlling the South Platte became less senior. These factors reduced the amount of reservoir and well water necessary to meet irrigation and municipal needs.

Outlook

In October, we hope to see conditions that allow for refilling of reservoirs and recharge within the basin as occurs in most years. If some recharge and refilling of reservoirs can occur, we will have a good start to the next water year.



Basinwide Conditions Assessment

The SWSI value of  $-1.5$  indicates that for September the basin water supplies were below normal. Flow at the gaging station Arkansas River near Portland was 233 cfs, as compared to the long-term average of 460 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 69% of normal as of the end of September.

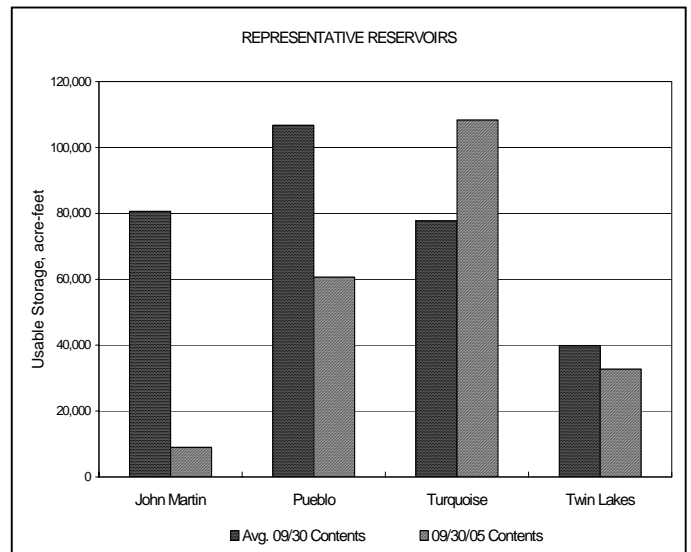
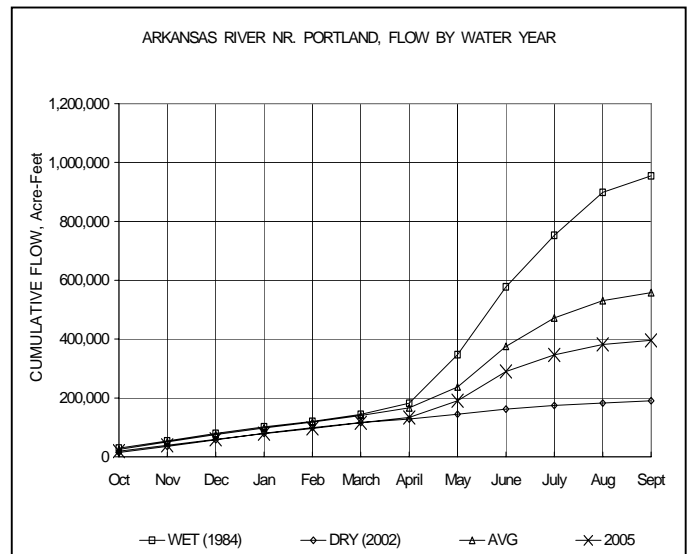
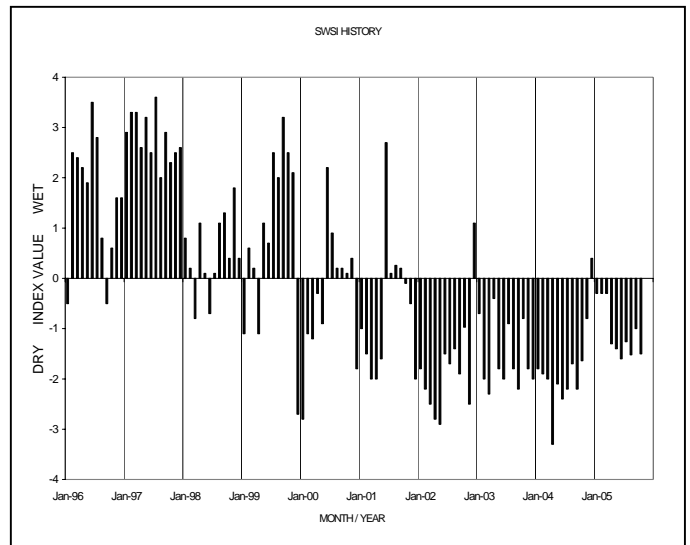
Outlook

The river call for September was set on the more senior 1884 call of Fort Lyon Canal to start and end the month with a fifteen day period towards the latter part of the month where the call went to the Keesee (1883) and South Canon Ditch (1882) as river flows diminished. Inflows into John Martin Reservoir dropped drastically from the first of September to the end of September severely limiting the surface water supplies to ditches below John Martin Reservoir.

Several periods occurred during September when exchanges into Pueblo Reservoir were curtailed under the Inter-Governmental Agreement between Pueblo, Colorado Springs and Aurora to maintain flows through the City of Pueblo. Especially notable was the period over Labor Day Weekend. The IGA desired flow would have been 1,000 cfs with a minimum flow of 300 cfs. Although the desired figure was impractical to achieve, releases of augmentation water for well depletions helped stream flows approach the minimum stream flow target. There remains a significant gap in understanding of the realities of streamflow conditions on the part of some portions of the public that viewed the IGA as a program, which guaranteed certain minimum flow rates through the City of Pueblo. Communication over time has helped to educate the public about what must occur in order for the priority system to function as required by Colorado Water Law and Statute.

Administrative/Management Concerns

Significant time in August and September was devoted to discussions between the Colorado State Engineer and Kansas Chief Engineer and their technical staff resulting in a number of agreements being reached to help resolve remaining disputes associated with the Kansas v. Colorado lawsuit. A few areas of dispute are set to be resolved by arbitration or direct ruling by the Special Master appointed by the Supreme Court in the latter part of 2005. A final decree in the case is expected late in 2005 or early in 2006.



Basinwide Conditions Assessment

The SWSI value of -0.1 indicates that for September the basin water supplies were normal. Flow at the gaging station Rio Grande near Del Norte averaged 326 cfs (64% of normal and much less than the previous two "dry" years). The Conejos River near Mogote had a mean flow of 186 cfs (145% of normal). This was due to releases from Platoro Reservoir for irrigation needs downstream. Generally, stream flow in the Upper Rio Grande basin was below normal during September, continuing the trend begun in mid-July.

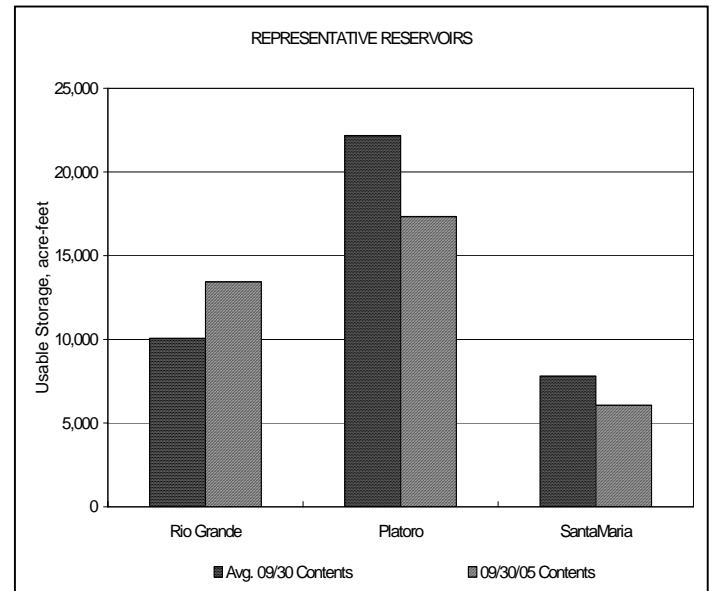
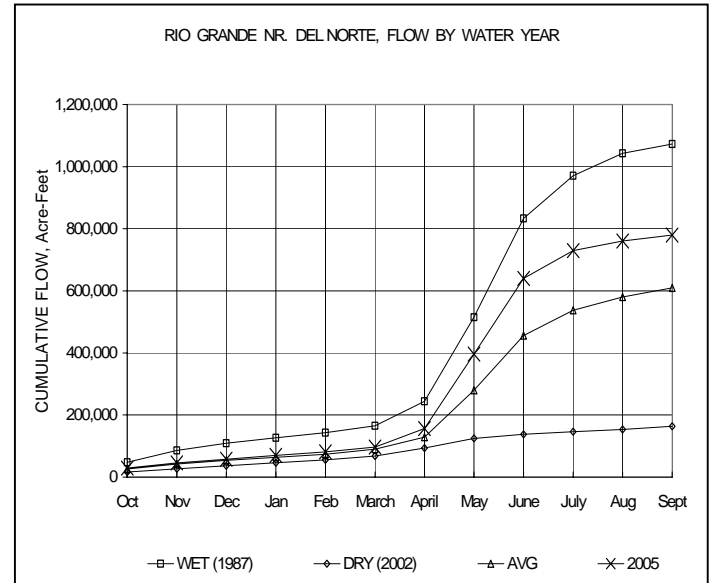
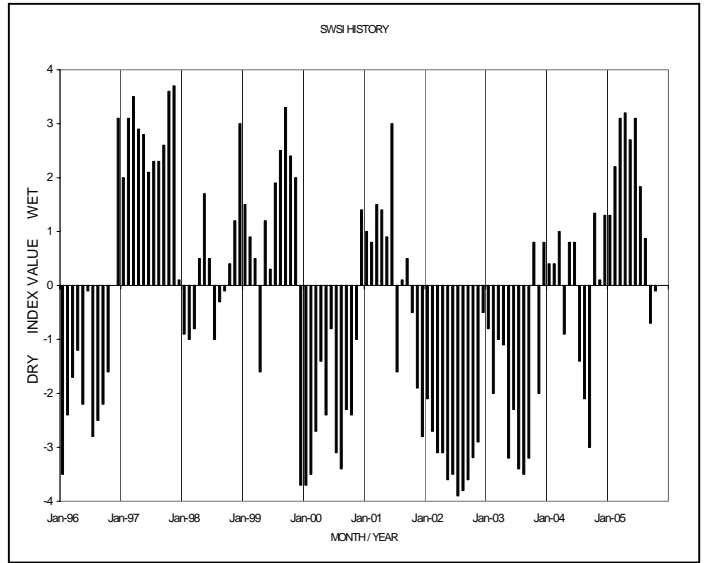
Precipitation in the basin has been above normal on the valley floor for the past two months. This is welcomed by many farmers and ranchers who needed the moisture after the dramatic decrease in streamflow during July. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 92% of normal as of the end of September.

Outlook

Streams in the upper Rio Grande basin have experienced below normal flows during the late summer and early fall. However, there is still optimism that rain and snowfall in October and November can jump-start a snowy winter. 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. Administrators are hoping that a mild fall will allow water diversions to continue for irrigation and recharge purposes.



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 Uncompahgre River near Ridgway was 168 cfs, as compared to the long-term average of 109 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 93% of normal as of the end of September.

The month of September was a great month for precipitation in the Gunnison Basin. There were several storms that produced more than one-inch of rain in most areas, and the resulting high stream flows set daily record highs at some gages.

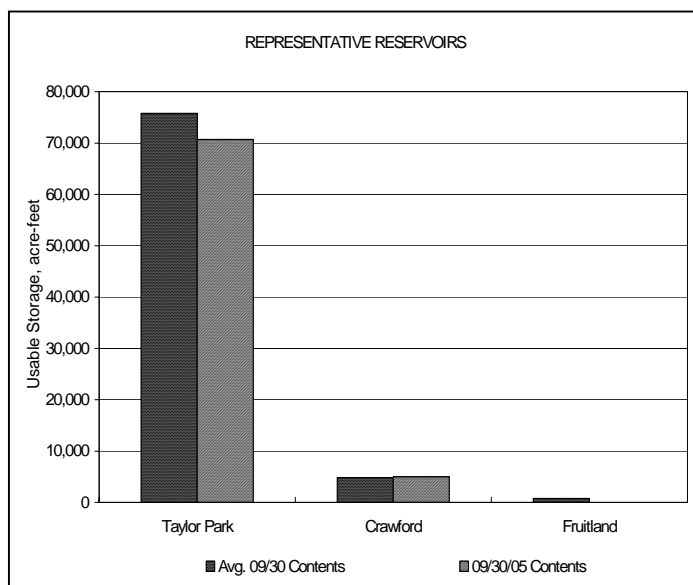
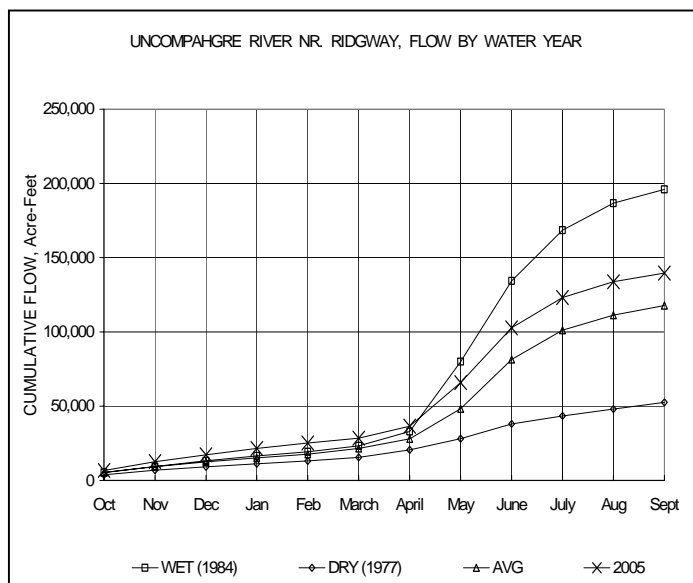
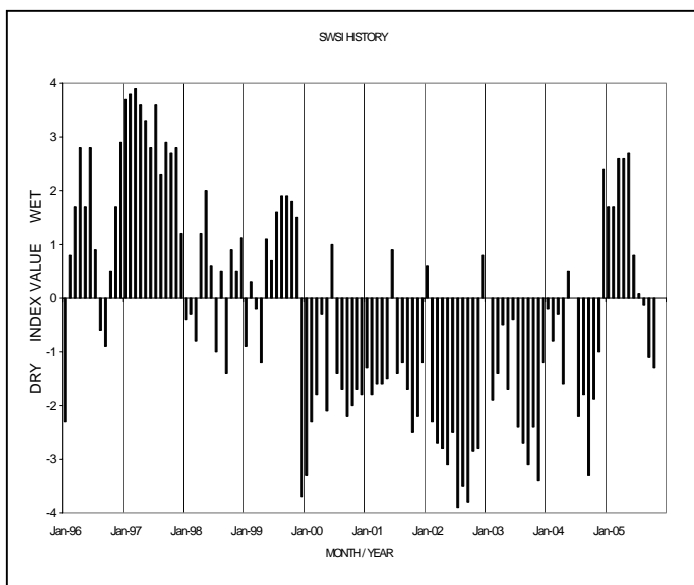
Administrative/Management Concerns

Many irrigators have shut off earlier than normal this year, not needing to get that late water on the crops or build soil moisture. Orchard trees will still need the late (October) irrigation before winter, needing to be watered well to survive the winter season and be productive the next spring. The orchard owners call this "putting them to bed wet".

On the Grand Mesa, where the runoff was very high, there has not been the usual high demand for stored water. As a result, many of the reservoirs are still full. Historically, almost all of the reservoirs are pulled down or emptied each year. Some of the dam embankments do not function well being full all year long. The dam becomes saturated and problems develop. To avoid this safety concern, the reservoir owners have agreed to dump some of the storage to pull the water levels down to a safe level for the entire winter. There is normally about 25% storage carryover in all of the reservoirs. This year, even with dumping a significant amount of storage, the reservoirs will still carry over about 50% of their total storage. This will be a significant benefit going into next year, especially if the snowpack is below normal. To them, it's like having money in the bank.

Public Use Impacts

The September rains have dramatically improved the soil moisture conditions, which should help going into the winter. This always seems to help the spring runoff, since more water runs off into the streams rather than just soak into the ground. It also helps build the groundwater aquifers that will produce more water in the following year.



Basinwide Conditions Assessment

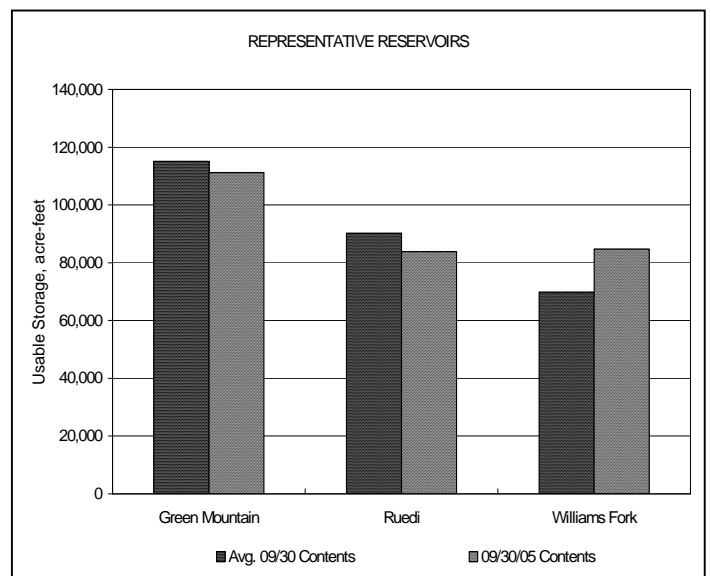
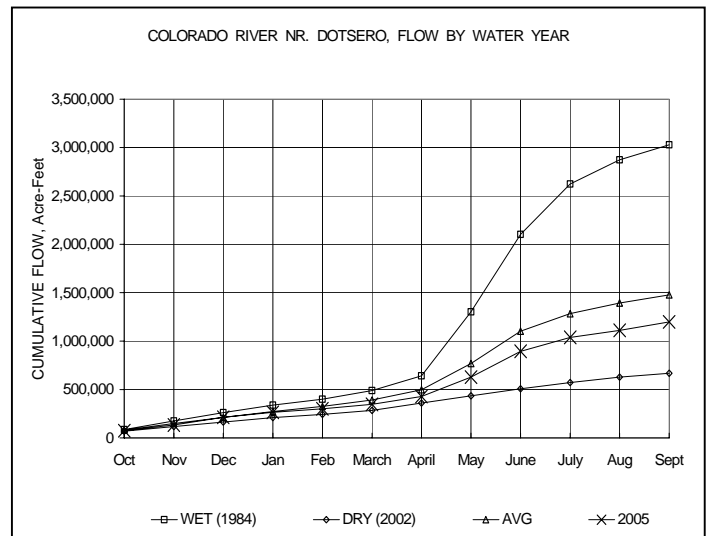
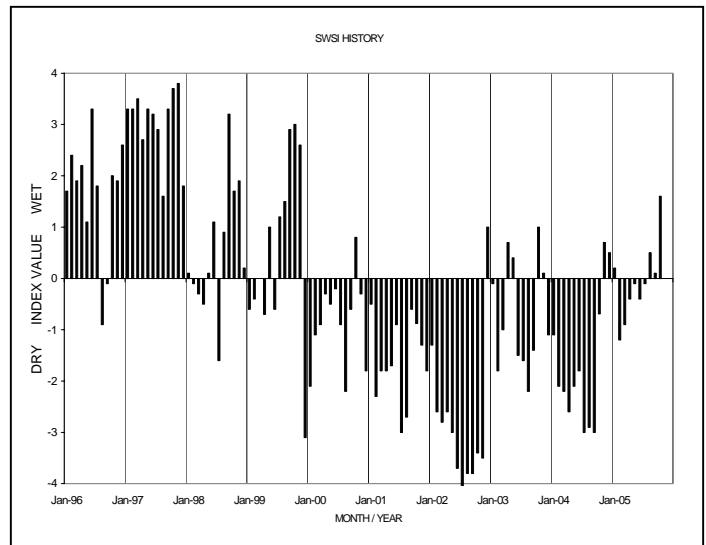
The SWSI value of +1.6 indicates that for September the basin water supplies were above normal. Flow at the gaging station Colorado River near Dotsero was 1,457 cfs, as compared to the long-term average of 1,410 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 102% of normal as of the end of September.

Outlook

The entire Colorado River basin had above average precipitation for the month of September, with some areas receiving rainfall amounts above 150 percent of monthly average. Most of this rain occurred during two major rainfall events in the second half of the month. Early October rain and snow has continued this wet trend in the Colorado River basin.

2005 became the first year since 1999 that a Cameo administrative river call was not issued; the above average precipitation in late September allowed the mainstem flow to satisfy the major diverters in the Grand Valley. Reservoir releases to enhance endangered fish habitat in the Grand Valley were discontinued in late September because their need was eliminated by the increased precipitation.

Low flows in early September on several tributaries prompted the Colorado Water Conservation Board to issue written administrative calls for their instream flow water rights. The tributaries included the upper Roaring Fork River, the lower Crystal River, and the lower Eagle River. These calls were removed late in the month when rains boosted the river flows.



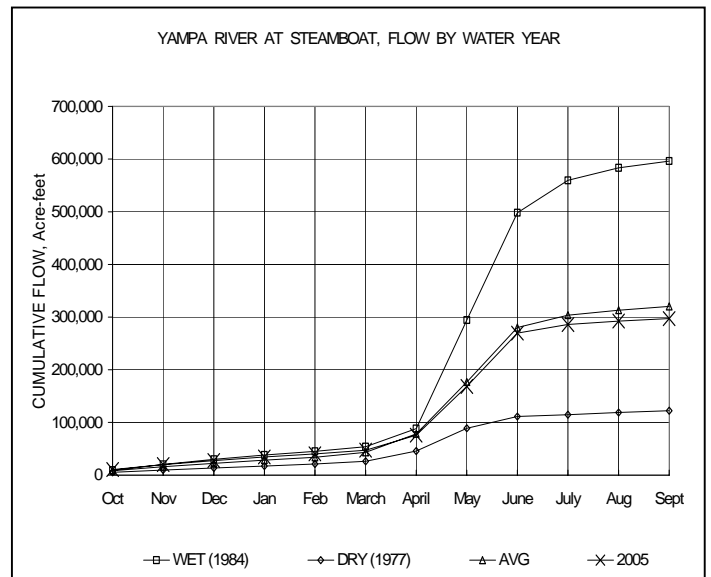
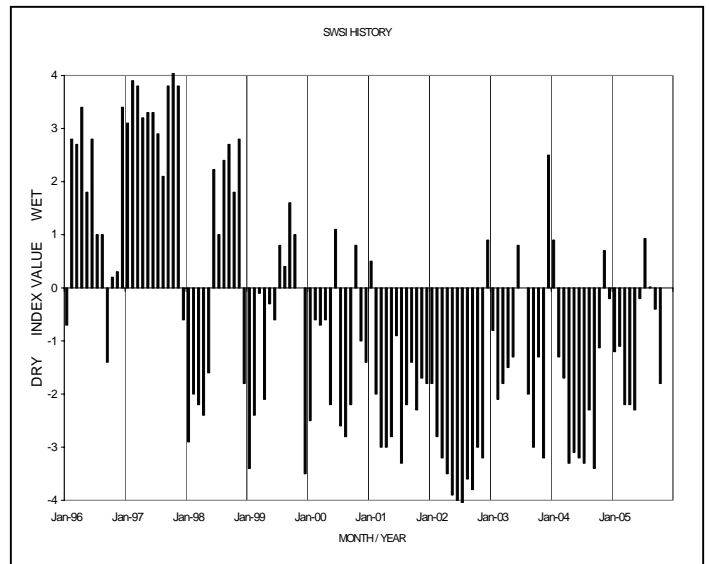
Basinwide Conditions Assessment

The SWSI value of  $-1.8$  indicates that for September the basin water supplies were below normal. Flow at the gaging station Yampa River at Steamboat was 77 cfs, as compared to the long-term average of 120 cfs.

September proved to be another dry month in the basin. Precipitation, as recorded at the SNOTEL sites operated by the NRCS, totaled 76% of average for September. Total precipitation for the 2005 water year was 93% of average. Stream flows throughout the basin were below average for the month.

Administrative/Management Concerns

The flows in the Yampa River at the Maybell gage have increased to levels where releases should not have to be made by the U. S. Fish and Wildlife Service for the endangered fish species in the critical habitat area below Craig, Colorado. No releases were required in September.



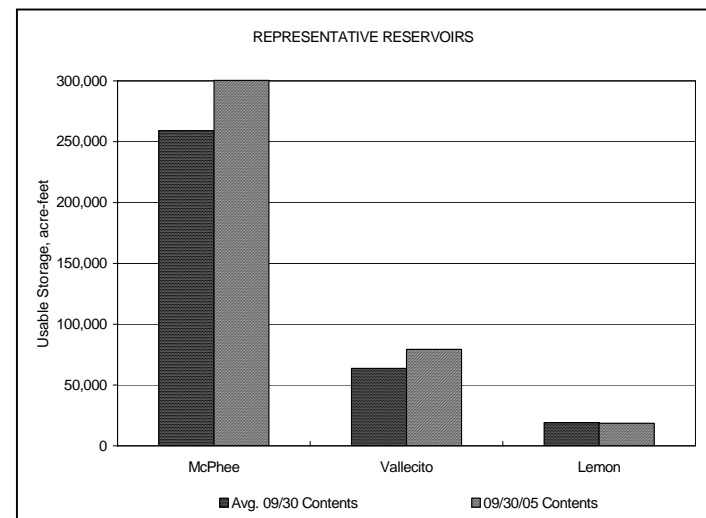
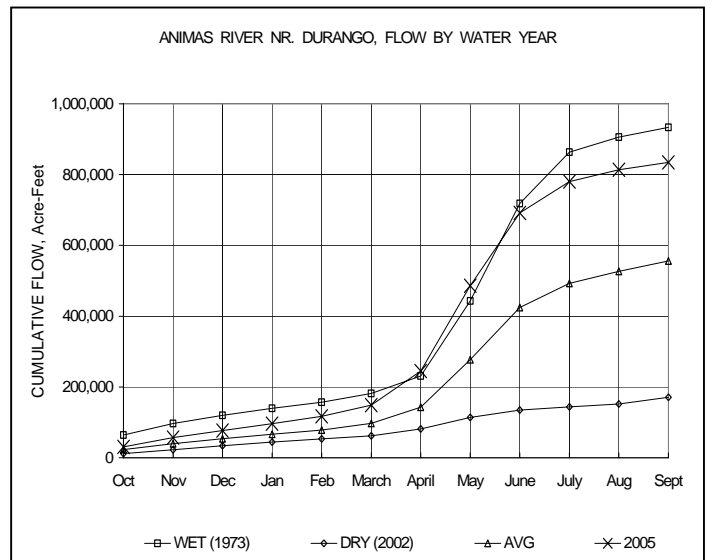
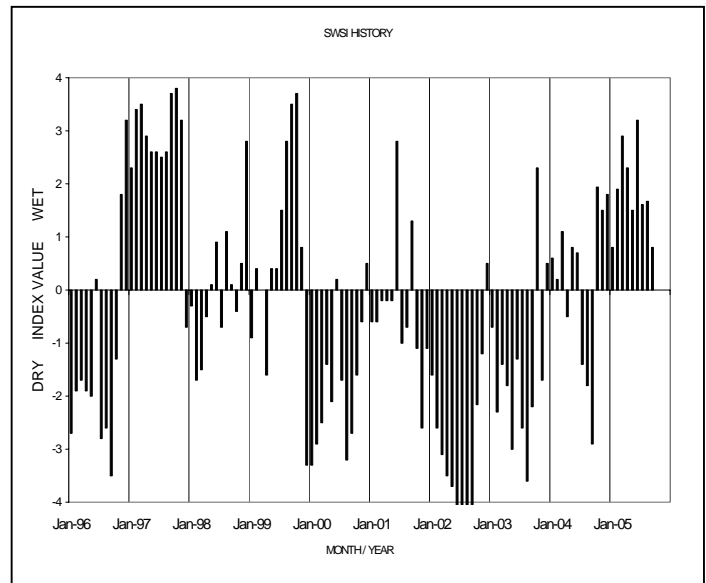


Basinwide Conditions Assessment

The SWSI value of 0.0 indicates that for September the basin water supplies were normal. Flow at the gaging station Animas River near Durango was 344 cfs, as compared to the long-term average of 483 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 116% of normal as of the end of September.

The weather during the month was impacted by wet air movement out of the southwest perhaps influenced by several hurricanes in the southeastern part of the country. Heavy, intense thunderstorms were experienced in the SW Colorado area during this time period. The total for the month was only slightly above normal (120%, Durango) bringing the water year total up to 117% of average in Durango at 22.9 inches. This, however, was a welcome break from the hot and dry summer experienced. Reservoirs continued to drop as storage water was put to use but remained near or above normal in most cases. Red Mesa Reservoir on the La Plata River was nearly out, but Vallecito Reservoir continued to store at a high level with an amount of around 80,000 acre-feet of storage. It appeared that carryover storage would be enough to ensure significant useable water for the next season.

Temperatures were well above normal for the month with a mild freeze being experienced in many areas on September 14<sup>th</sup>. The soil moisture was doing well by the end of the month across the area as many irrigation operations were shut down and calls went off by early October.



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