COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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June 2006

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.

Because summer SWSI values are based primarily upon reservoir storage and stream flows, years with early meltout of the snowpack can have rapid reductions to the SWSI values as the summer progresses. This year we have seen an early meltout, and generally the stream flows used in the SWSI computations for May have been good, with the exception of the South Platte. Reservoir storage was also good during May for those reservoirs used in the SWSI computations. As the summer progresses, we expect significant declines in the SWSI values as the stream flows are predicted to fall below normal (due to early runoff) and the reservoirs are tapped for higher demands. The highest SWSI value for May was in the Yampa/White Basin at +3.1 and the low value was in the Rio Grande Basin at -0.4.

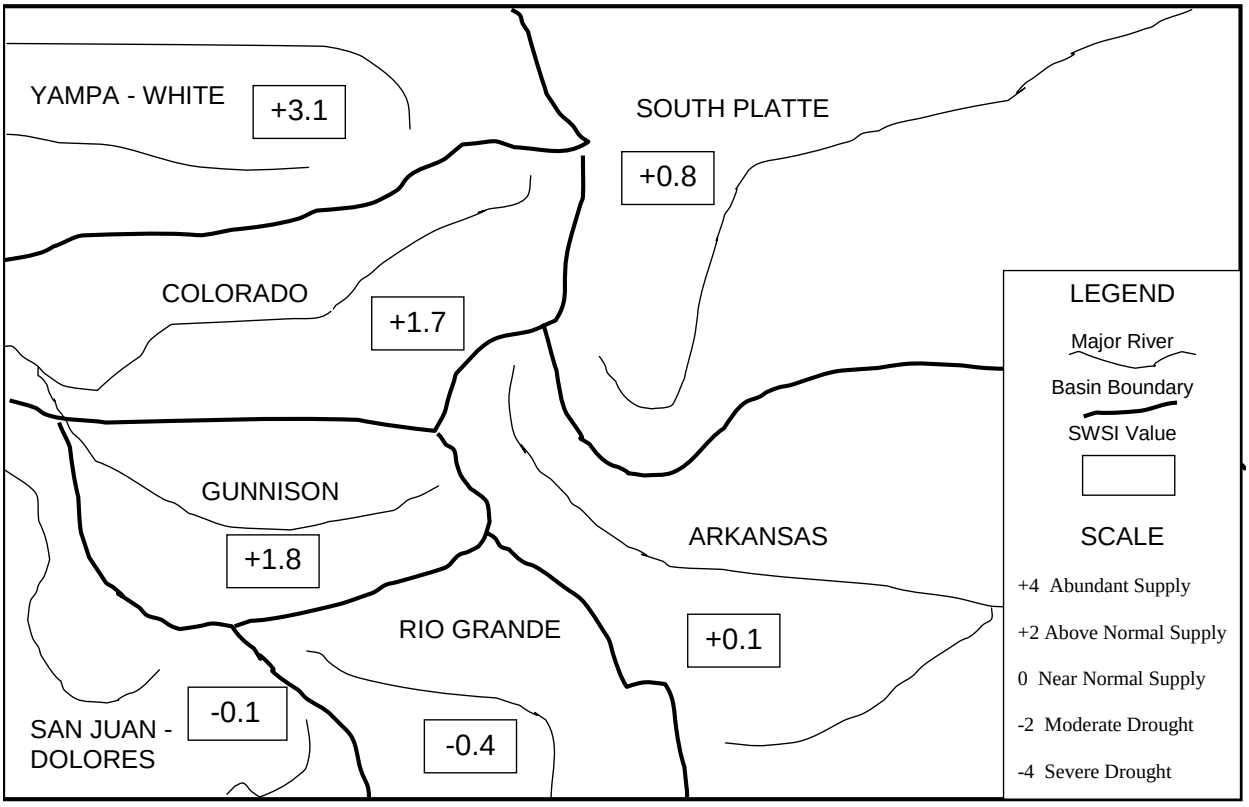
The following SWSI values were computed for each of the seven major basins for June 1, 2006, and reflect the conditions during the month of May.

Basin	June 1, 2006 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+0.8	+0.9	- 1.1
Arkansas	+0.1	+1.0	+1.7
Rio Grande	-0.4	+1.3	-3.5
Gunnison	+1.8	+2.1	+1.0
Colorado	+1.7	+1.1	+2.1
Yampa/White	+3.1	+2.4	+3.3
San Juan/Dolores	-0.1	+1.7	- 3.3

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, 2006

Basinwide Conditions Assessment

The SWSI value is +0.8 for May. Reservoir storage, the major component in this basin in computing the SWSI value, was 105% of normal as of the end of May. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 74% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 92% of capacity. Flow at the gaging station South Platte River near Kersey was 138 cfs, as compared to the long-term average of 1,766 cfs. Flow at the Colorado/Nebraska state line averaged 174 cfs.

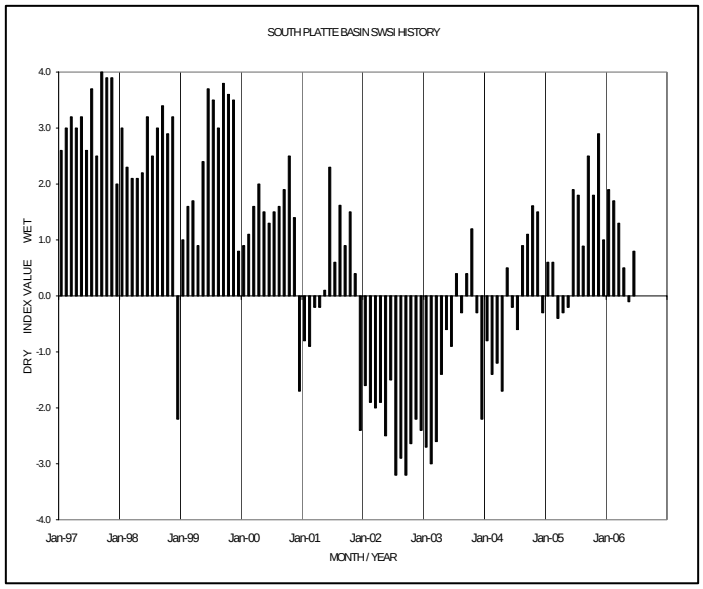
May is usually the month with the highest precipitation in the South Platte Basin. Thus, the extremely dry conditions were even more devastating during May than they would have been during other months. The snowpack has gone from above average early in the winter, to average the end of April, to less than 20% of average the end of May.

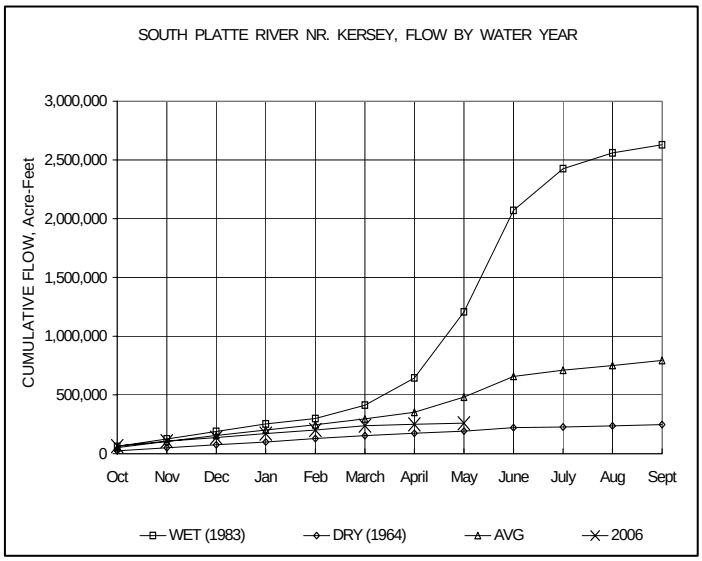
The dry conditions created very senior call scenarios for all of the tributaries and mainstem of the South Platte. In good years, irrigation users often finish filling reservoirs or refilling reservoirs that had not filled. Instead, many users were forced to rely significantly on their reservoir supplies to provide adequate resources for their emerging crops. Thus, the irrigation reservoir storage levels in the basin went down significantly. This is cause for serious concern as irrigation users depend heavily on these supplies to provide water towards the end of the irrigation season and there is question whether there will be adequate remaining supply.

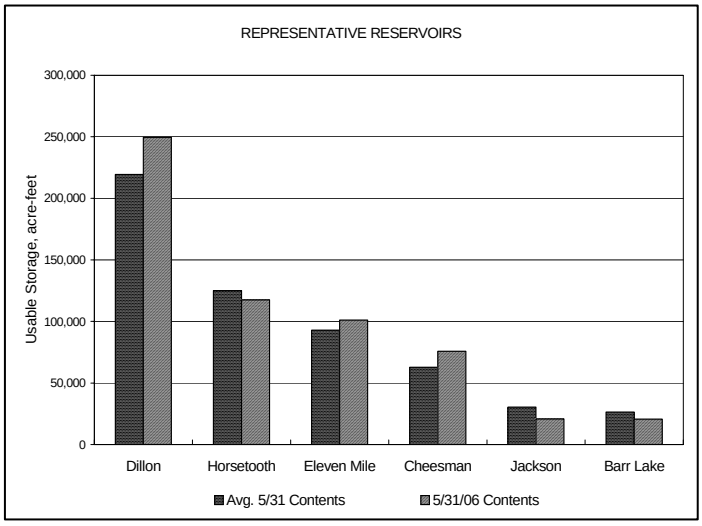
As in most years, the runoff also started towards the end of the month. Normally, the peak flows for most of the tributaries occur during the first part of June. However, many of the peak flows during the last several years have occurred during May, as may be the case this year. Peak flows in May are typically years of below average flow.

If runoff is below average as expected, then most of the benefits of what runoff there is will accrue to direct flow rights on tributaries, not direct flow rights or reservoirs on the mainstem of the South Platte. This occurs because most of the senior rights are on the tributaries and a good runoff is required to exceed the demand of these rights in dry conditions.

Because stream flow and reservoir supplies are limited, some irrigation users are even more dependent upon wells than usual for their supplies. While this works for some well user groups with significant augmentation resources to replace out-of-priority depletions, this is a major impact on other users. Specifically, our office was not able to approve the Substitute Water Supply Plan for the Central Colorado Water Conservancy District Well Augmentation Subdistrict. Subsequently, the Water Court issued an order that the approximately 450 wells in this plan could not be pumped this year. This will have a significant impact on users who depend on their wells under this plan. These well users will be added to the hundreds of other wells that have been curtailed the last few years as a result of increased competition for limited water supplies and dry conditions.





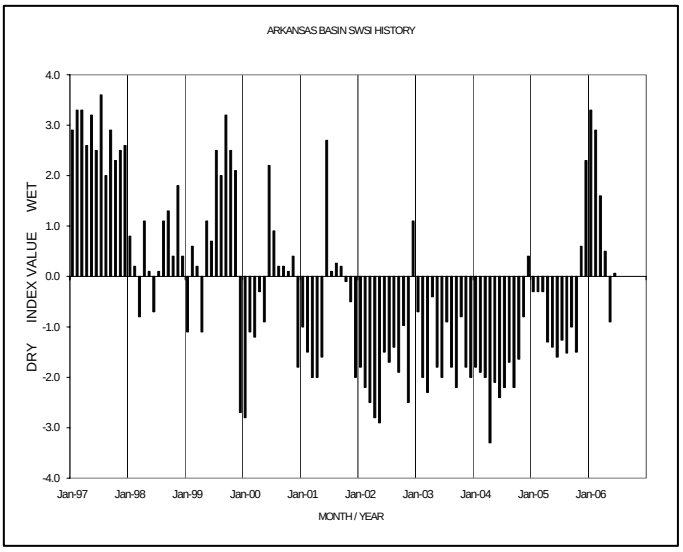


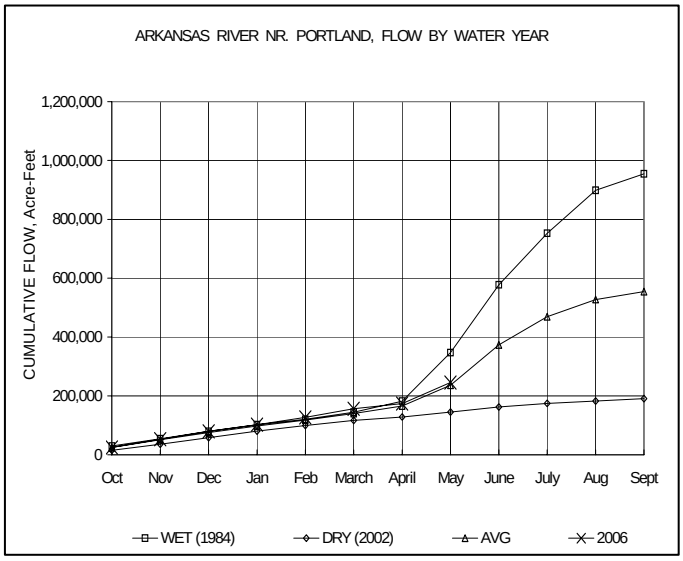
Basinwide Conditions Assessment

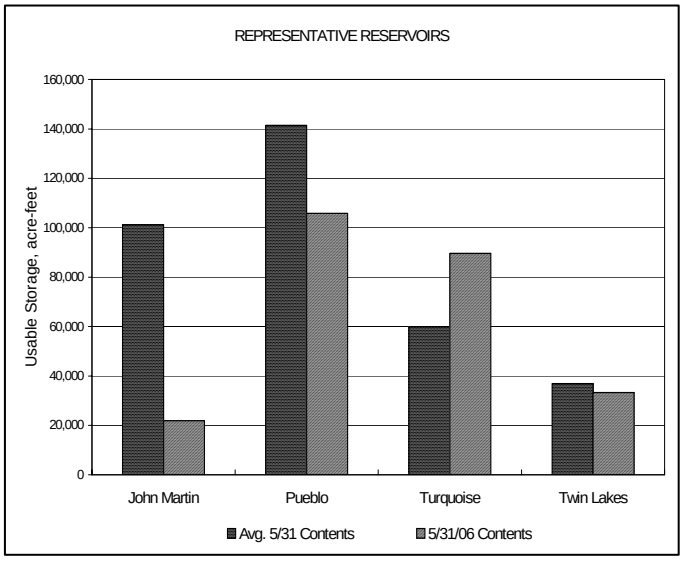
The SWSI value is +0.1 for May. Flow at the gaging station Arkansas River near Portland was 1,161 cfs, as compared to the long-term average of 1,149 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 74% of normal as of the end of May.

Runoff peaks may have occurred at many of the river gages during the month of May, however, due to the high elevation of remaining snowpack, runoff was periodically interrupted by cooling periods and therefore the runoff appears to be both protracted and perhaps with peaks dampened by the delay in runoff conditions. The Arkansas river call moved towards a much more junior call as the month progressed, but remained somewhat senior to calls in May 2005 due to the almost complete absence of any significant contribution from southern tributaries to the Arkansas River. The river call began at the Catlin/Consolidated calls on May 1st (12/3/1884) and ended with the call set at the Fort Lyon #2 right (3/1/1887).

Plans for well pumping in the Arkansas Basin were approved at pumping levels that were about the same as 2005. Efforts will still be conducted to ensure adequate stateline replacement water is made available to Kansas to avoid a problem at the end of the first ten-year compliance period (1997-2006).



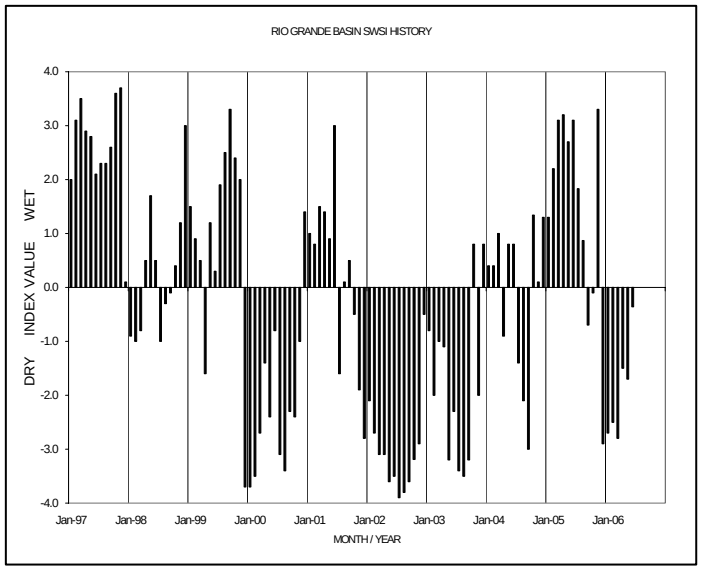




Basinwide Conditions Assessment

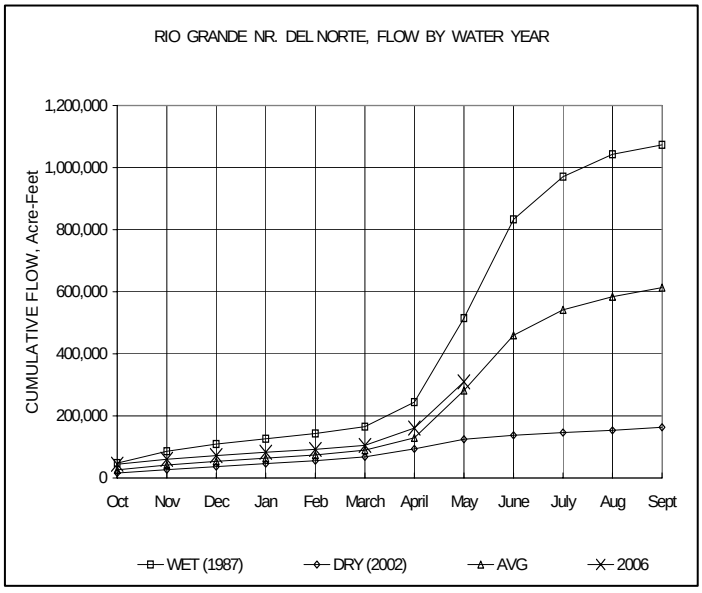
The SWSI value is –0.4 for May. Flow at the gaging station Rio Grande near Del Norte averaged 2426 cfs (97% of normal). The Conejos River near Mogote had a mean flow of 862 cfs (78% of normal). Flow to the state line was only 22% of normal as upstream diversions for irrigation needs continued. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 74% of normal as of the end of May.

The flow in many local streams was surprisingly high during the latter days of May. The expected quick drop-off was held off by a combination of reservoir releases and warm weather, which melted out the high elevation snowpack. Alamosa received precipitation totaling only 0.18 inches during May, 0.52 inches below normal. Temperatures in the San Luis Valley were above normal levels for the eleventh month in a row.



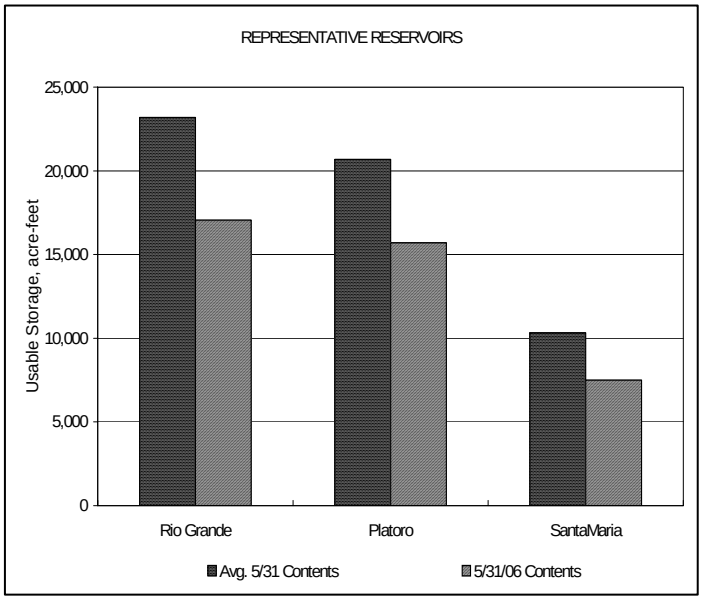
Outlook

The final 2006 forecast for runoff was issued recently by the Natural Resources Conservation Service. The predicted runoff is 66% of average at the Rio Grande near Del Norte and the Conejos near Mogote. Other drainages of particular concern are Saguache Creek (67%), the Alamosa River (66%), and the Sangre de Cristo range creeks where runoff will be early and diminished and only 12 to 38% of normal. Based on these forecasts, water users in the basin who are reliant on stream flow for irrigation and stock watering needs should expect extremely limited availability from June through October.



Administrative/Management Concerns

A small percentage of index flow is being curtailed on the Conejos and Rio Grande for Rio Grande Compact delivery requirements. A combination of carryover credit, winter deliveries and Closed Basin Project production will meet the 2006 delivery obligation. After the initial runoff, only the most senior water rights will be able to divert throughout the summer. Massive pumping from the valley's already stressed aquifers will be necessary to meet irrigation demand.

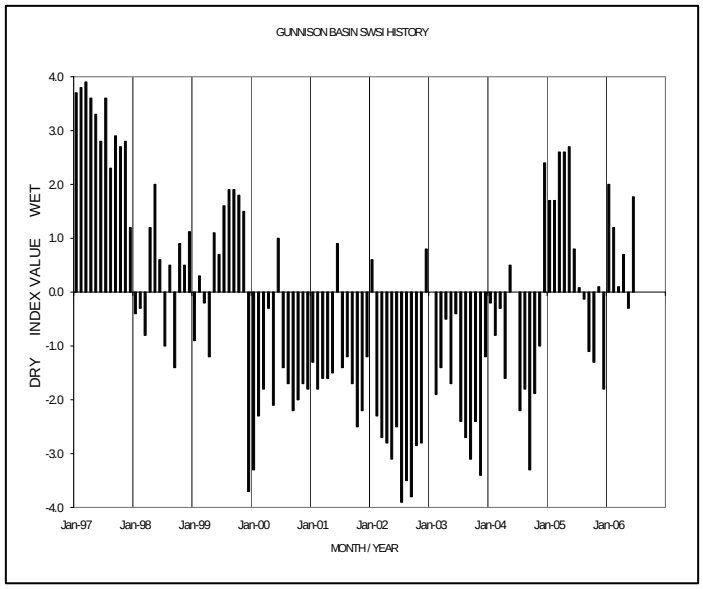


Public Use Impacts

The expected well below average stream flow after mid-June will adversely affect the farming, ranching, and recreational industries in the basin.

Basinwide Conditions Assessment

The SWSI value is +1.8 for May. Flow at the gaging station Uncompahgre River near Ridgway was 357 cfs, as compared to the long-term average of 332 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 123% of normal as of the end of May.



Outlook

The months of April and May are key months for the snowpack and spring runoff in the Gunnison Basin. After warm temperatures and relatively little precipitation in April, matters only became worse in May. This was a dry May and temperatures were above normal. The Grand Junction weather station recorded the 7th driest May on record, with only two days of precipitation and 0.11 inches of moisture the entire month. This led to the spring runoff coming out about three weeks early, and a far lower peak than forecasted.

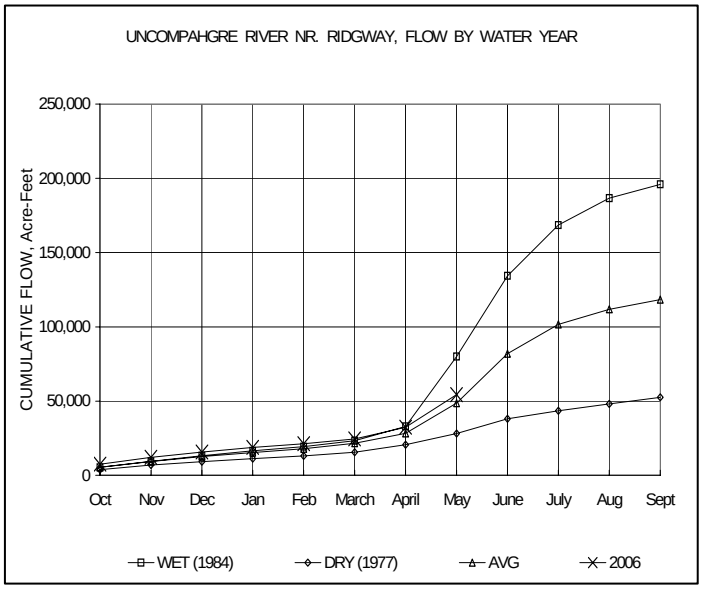
Administrative/Management Concerns

The runoff, being about three weeks sooner than normal, has caused some concerns for irrigators. Much of the usable water has already passed the headgates before the irrigation demand was very high. This means less water will be available in June and July when it is really needed. Where there are reservoirs, the water can be stored. When full, the over flow from the reservoirs adds to the natural flow and helps satisfy the ditch demands.

On April 1, the forecasted April to July inflow to Blue Mesa Reservoir was 675,000 af. On May 1, it had dropped to 565,000 af and again on June 1 to 525,000 af. This 150,000 af drop in forecast in one of the highest the USBR has ever seen. It was expected to fill by July 1, but is 6.5 feet from filling as of June 5th. It may gain a few more feet this month, but will still be short of filling. The good news is that through conservative operations, it contains more water than it has since before the drought started in the late 1990's.

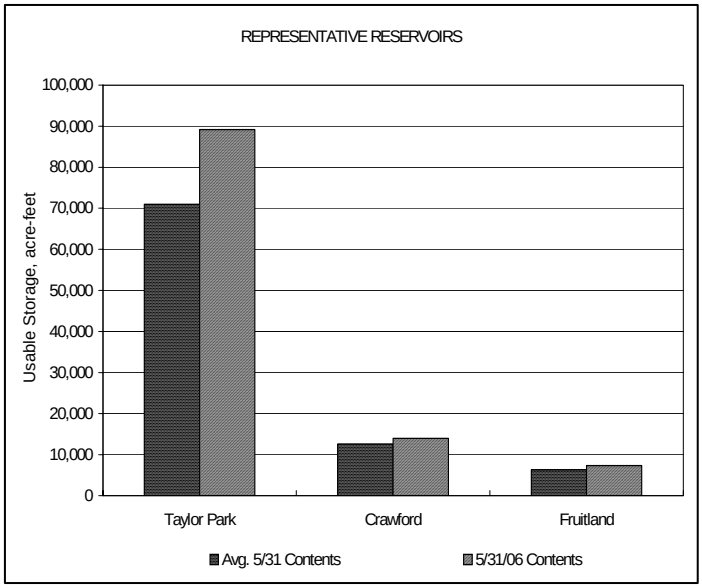
Ridgway should start spilling the next few days. Under normal operations, the reservoir is not allowed to spill to avoid losing Kokanee fry out of the reservoir. However, the wood debris from the spring runoff flows has built up around the edge and on the face of the dam. The dam owners, in cooperation with State Parks, are attempting to fill and spill the reservoir for a few days to wash the debris over the morning glory spillway.

The reservoirs on the Grand Mesa are full and will provide a full supply for the summer irrigators. This will be greatly needed since spring runoff was early and the flows are now dropping fast.



Public Use Impacts

Since the winter and spring was so dry in the valleys, it is taking a lot more water to get the ground wet. As one irrigator states, "this water sure is a lot dryer than usual this year". Conversely, it is good for the public to have the reservoirs so full, both from a irrigator and a recreational point of view. People are hoping the summer monsoonal rains will be good this year and will supplement the water supplies.

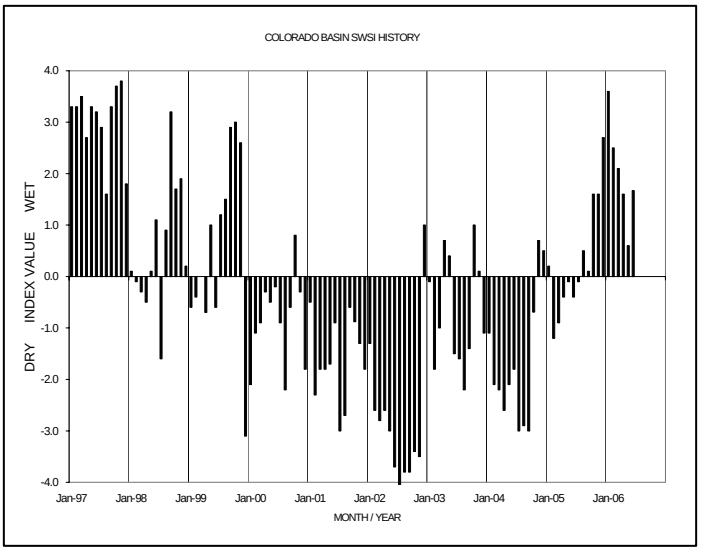


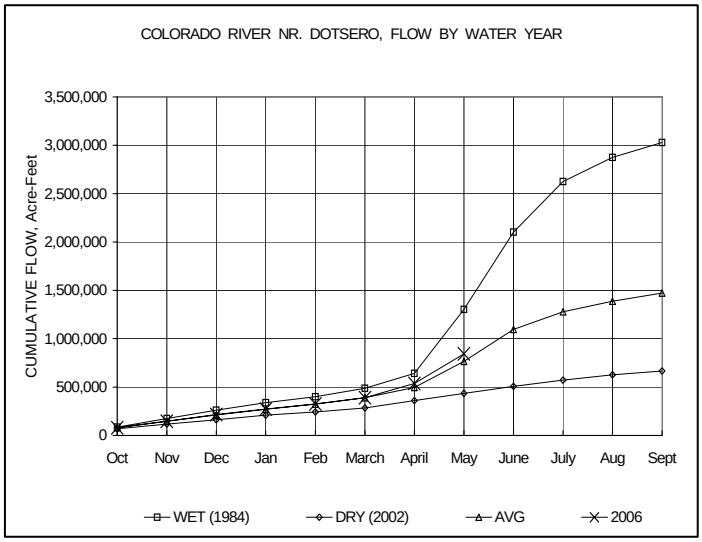
Basinwide Conditions Assessment

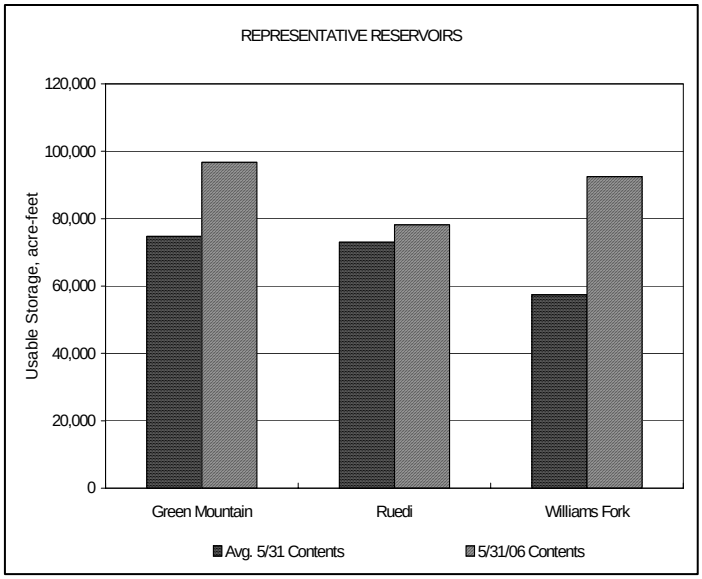
The SWSI value is +1.7 for May. Flow at the gaging station Colorado River near Dotsero was 5,008 cfs, as compared to the long-term average of 4,369 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 130% of normal as of the end of May.

May precipitation was well below average for the entire Colorado River basin, with the lower part of the basin receiving less than 50% of average precipitation. Continuing a trend that started in mid-March, above normal temperatures in May produced streamflows that were above average. The Colorado Basin River Forecast Center (NWS) June 1 volume runoff forecast (April – July) for the entire basin is approximately 96% of average, down again this month from previous forecasts.

The mainstem of the river peaked initially on May 23, helped by Coordinated Reservoir Operations releases from several major reservoirs (i.e., Ruedi, Green Mountain, Wolford, Williams Fork, and Dillon), which were timed to increase flows to augment the peak flows to help with endangered fish recovery near Grand Junction. A second mainstem peak (and many tributaries also had this second peak) occurred around June 10 as snowpack runoff nears an end for the year, several weeks earlier than typical.







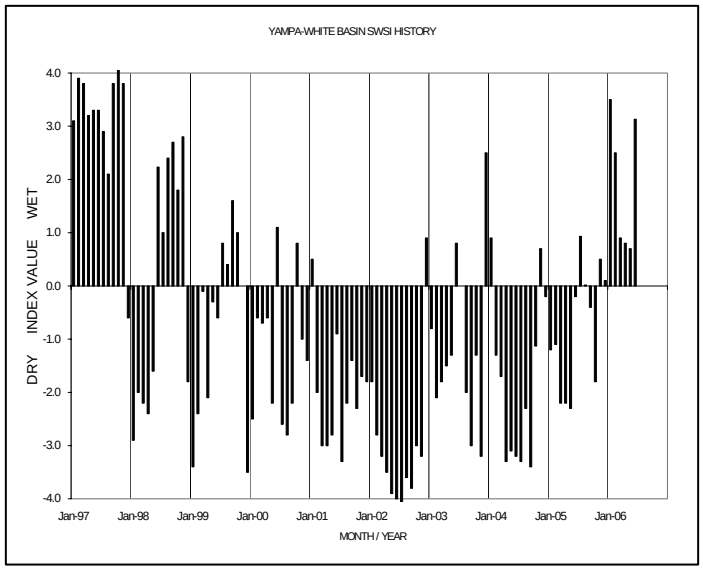
Basinwide Conditions Assessment

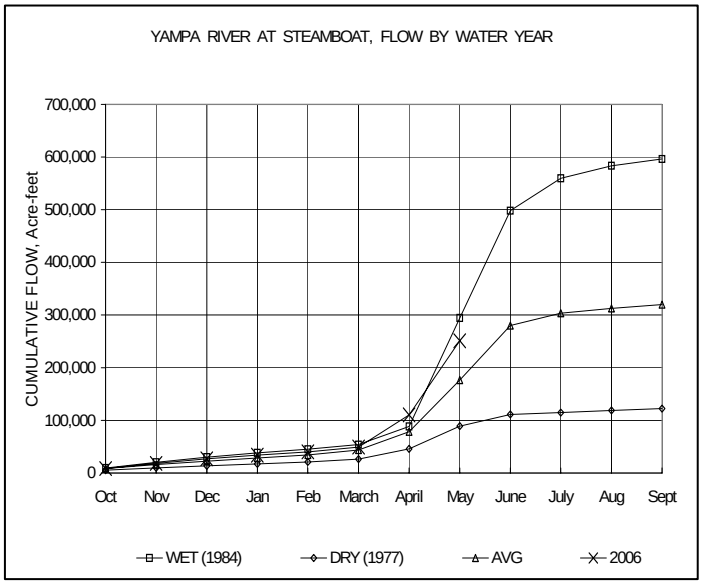
The SWSI value is +3.1 for May. Flow at the gaging station Yampa River at Steamboat was 2,290 cfs, as compared to the long-term average of 1,598 cfs.

The snowpack in the basins continued to decline significantly in May as precipitation was only about 59% of average and temperatures were well above normal. This marked the fourth consecutive month of below normal precipitation. The overall snowpack for the Division was only 45% of average, down from 87% at the end of April.

For the individual basins, the snowpack at the end of the month was: 56% of average for the North Platte River Basin, 42% of average for the Yampa River Basin, and 56% of average for the White River Basin. These values are all down significantly from the previous month. It is also important to note that these averages are misleading and must be viewed with care since most of the low elevation SNOTEL sites melted out in April and May, and the snowpack now only exists at the highest elevations.

The overall runoff forecast for the rivers for April through July still shows near average amounts. However, when the runoff that has occurred to date is factored out, the picture is much different. The June 1 runoff forecast from the NRCS for the June through July period is 60% of average for the North Platte River at Northgate, 47% of average for the Yampa River near Maybell, 60% of average for the Little Snake River near Dixon, and 50% of average for the White River near Meeker. These runoff forecasts are significantly lower than for the previous month, again showing the effect of the rapid snowmelt during May. One bright spot is that with the early runoff most reservoirs in the basin are full.





Administrative/Management Concerns

Many of the lower elevation tributaries have already gone under administration. These situations will most likely increase as river flows drop. The basin could be facing significant water shortages this summer absent a strong summer monsoon season. Having above average reservoir storage going into the summer may provide some relief for irrigators that have access to storage supplies.

Public Use Impacts

Area streams and rivers are still flowing strong but are now near normal levels. Many tributaries are dropping quickly. Rafters and kayakers have been enjoying the high flows. Elkhead Reservoir continues to remain closed for all recreational activities for the summer of 2006.

Basinwide Conditions Assessment

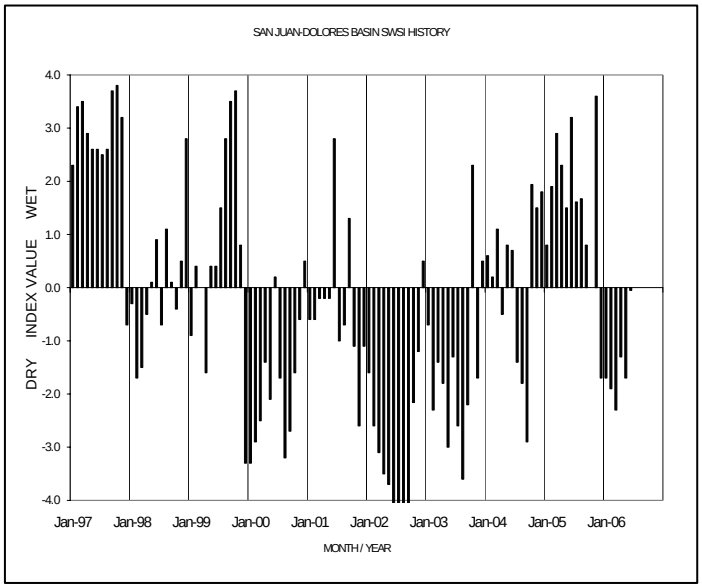
The SWSI value is – 0.1 for May. Flow at the gaging station Animas River near Durango was 2,138 cfs, as compared to the long-term average of 2,219 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 113% of normal as of the end of May.

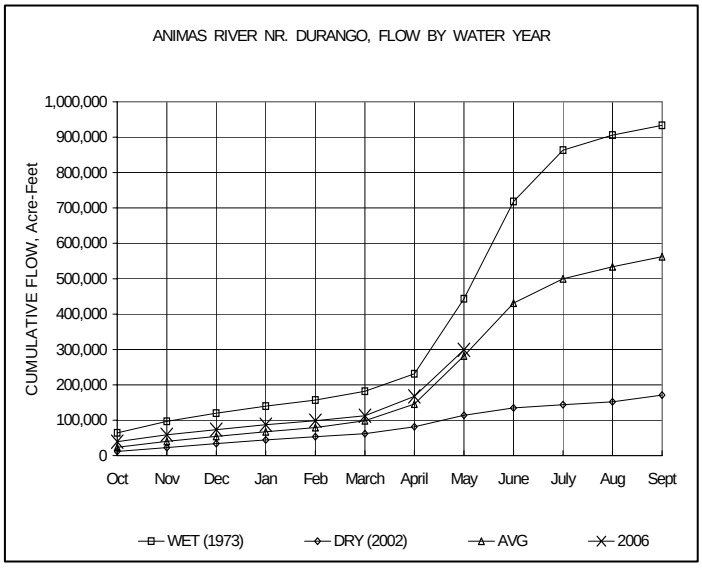
May weather stayed in the weather pattern that occurred from November 2005 to March 2006 and April 2006, drier and warmer than normal. In Durango, only 0.13 inches of precipitation were recorded, 10% of average. So far this Water Year Durango is at 71% of normal precipitation. As of May 1st the snowpack for the San Juan River Basin was at 48% of normal, as of June 1st the snowpack had decreased to 9% of normal.

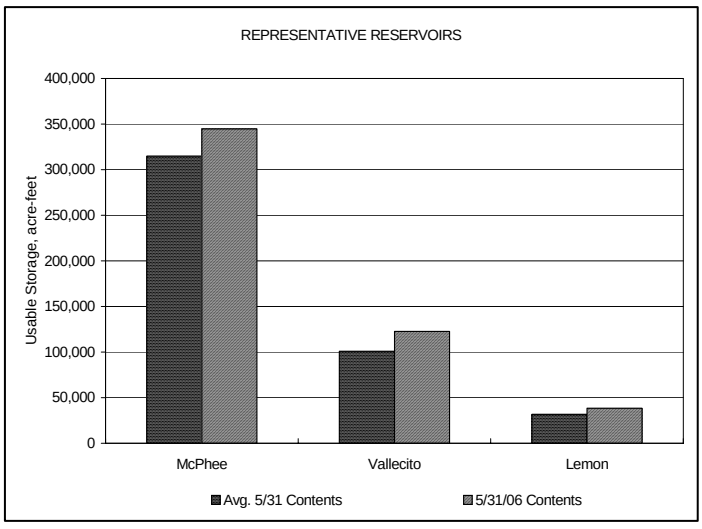
Stream flows remained below normal for the month due to the lack of snowmelt. The Animas River peaked at 3140 cfs on May 25th. The Dolores River averaged just 1120 cfs for the month, well below the 1750 cfs normal, and the La Plata River at Hesperus averaged only 93.2 cfs for the month compared with it's normal flow of 172 cfs.

Reservoirs continued to be the bright spot in the water supply outlook. The three major reservoirs still maintained above average storage at the end of the month. An adequate water supply is projected for those irrigators fortunate enough to have storage water in these reservoirs.

The clear and dry weather kept the high and low temperatures above normal. Overall Durango was 4.3° above its 30-year average high and 5.7° above its 30-year average low.







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