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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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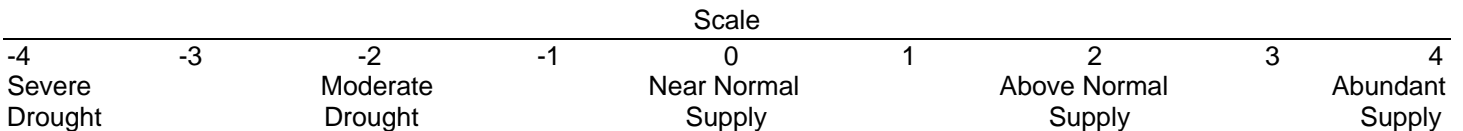
February 2003

The water supply conditions for Colorado have deteriorated since last month's report due to poor precipitation and reduced snowpack, as compared to average conditions. The statewide snowpack was 85% of average last month and has fallen to 71% of average for this report. The highest snowpack readings are from the Colorado basin at 82% of average. The lowest snowpack readings were recorded in the Rio Grande basin at 60% of average. The winter snow accumulation season is now 60% complete. Even though there is an opportunity in the next two months to increase the snowpack, the Natural Resources Conservation Service reports that statistically there is only a 10% chance of receiving enough snow to bring the snowpack to average by April 1. Water conditions could be as poor during this coming summer as they were during 2002.

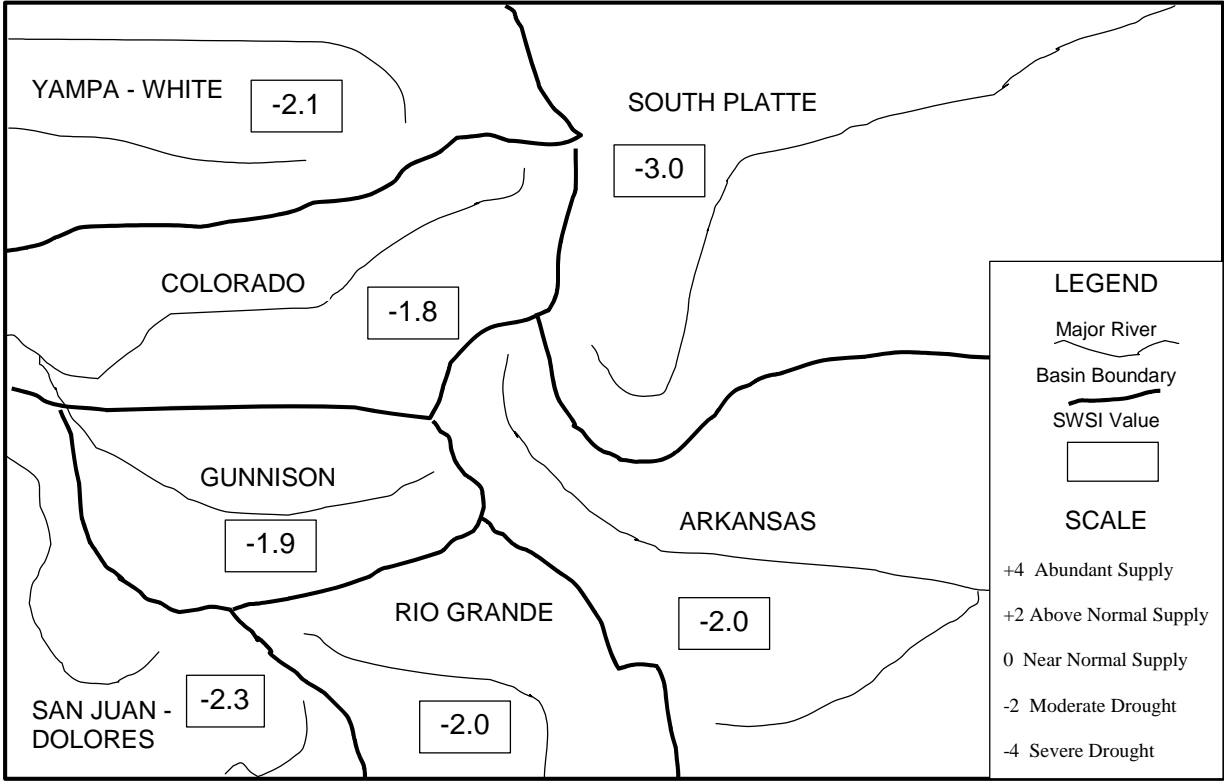
The calculated water supply index numbers range from a high of -1.8 in the Colorado basin to a low of -3.0 in the South Platte basin. These index numbers reflect a moderate drought as indicated on the scale below; however, conditions reported from the division offices suggest that actual conditions may be more severe than the index calculations.

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 snowpack, reservoir storage, and precipitation for the winter period (November through April). During the winter period, snowpack 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 February 1, 2003, and reflect the conditions during the month of January.

<u>Basin</u>	<u>February 1, 2003 SWSI Value</u>	<u>Change From Previous Month</u>	<u>Change From Previous Year</u>
South Platte	-3.0	-0.3	-1.1
Arkansas	-2.0	-1.3	+0.2
Rio Grande	-2.0	-1.2	+0.7
Gunnison	-1.9	-1.9	+0.4
Colorado	-1.8	-1.7	+0.8
Yampa/White	-2.1	-1.3	+0.7
San Juan/Dolores	-2.3	-1.6	+0.3



# SURFACE WATER SUPPLY INDEX FOR COLORADO



**February 1, 2003**

Basinwide Conditions Assessment

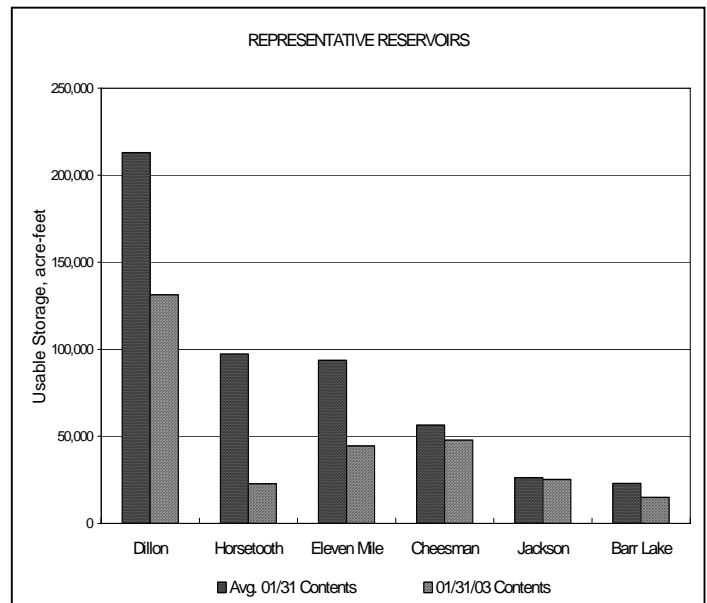
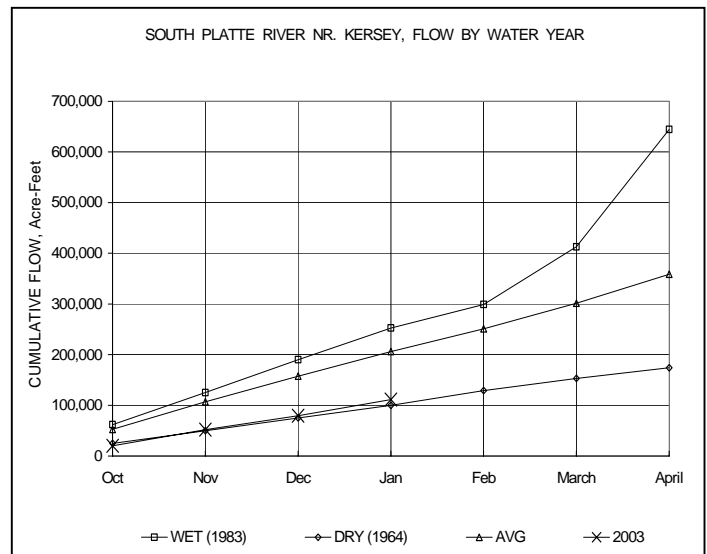
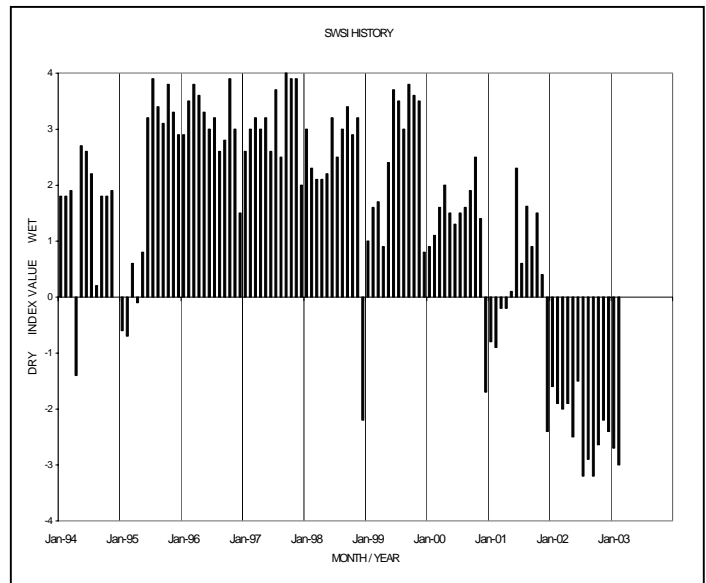
The SWSI value of -3.0 indicates that for January the basin water supplies were well below normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 56% of normal as of the end of January. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 39% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 45% of capacity. The Natural Resources Conservation Service reports that February 1 snowpack is 74% of normal. Flow at the gaging station South Platte River near Kersey was 523 cfs, as compared to the long-term average of 845 cfs. Flow at the Colorado/Nebraska state line averaged 59 cfs.

Outlook

Water supply conditions were relatively unchanged from last month. Conditions continued to be warm and dry. The primary purpose of diversions, except those for domestic use, was for reservoir storage along the mainstem and tributaries. The warm conditions alleviated problems associated with ice in filling reservoirs, but the fill rate was far less than desirable.

It still appears that the storage call along the South Platte will continue until a direct flow call for irrigation occurs. It also appears unlikely that all reservoirs will fill this spring, unless it is extremely wet. Storage levels remain similar to those in the 1950's when irrigation reservoirs did not fill.

Unlike 2000 when municipal suppliers were able to keep nearly full reservoirs, storage levels for municipal providers along the South Platte and its tributaries and west slope storage reservoirs (Grandby and Dillon) continue to be extremely low. Municipalities along the South Platte continue to plan for ways to meet supply needs next summer and determine necessary restrictions on use to minimize demand.



Basinwide Conditions Assessment

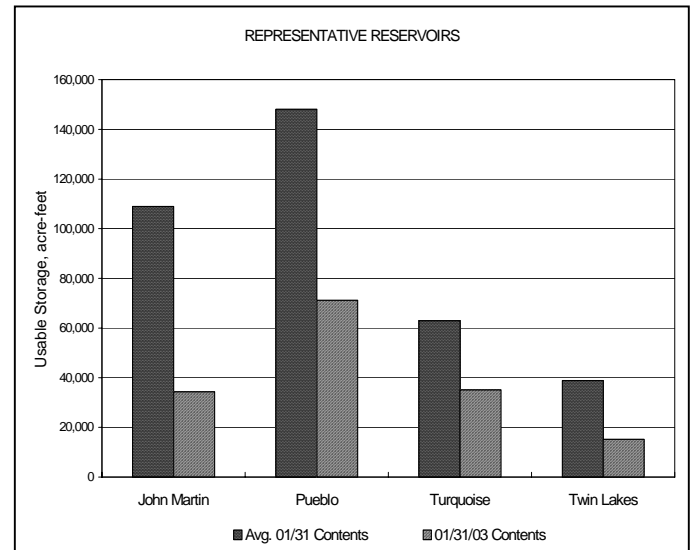
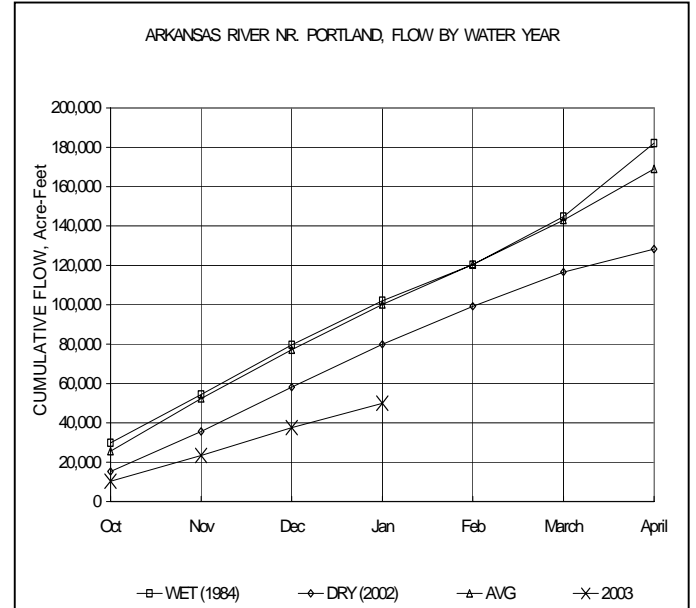
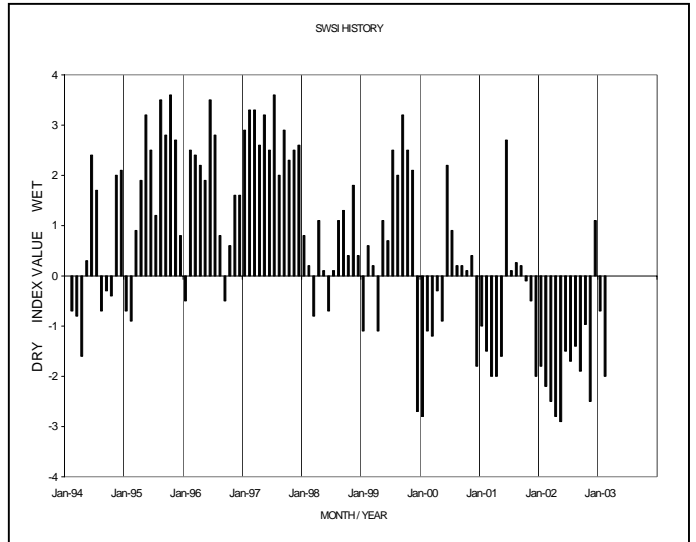
The SWSI value of -2.0 indicates that for January the basin water supplies were below normal. The Natural Resources Conservation Service reports that February 1 snowpack is 68% of normal. Flow at the gaging station Arkansas River near Portland was 202 cfs, as compared to the long-term average of 374 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 43% of normal as of the end of January.

Reservoir storage in the Pueblo Winter Water Program totaled only about 47,000 acre-feet as of the end of January. This storage amount is only about half of last year's storage to date and only about 44% of the past five year average. Several non-participants in the Winter Water Program have received some benefit from direct flow diversions for irrigation during the winter. Conservation storage in John Martin Reservoir has accumulated only about 5,600 acre-feet as of the end of January, less than half of last year's 13,200 acre-feet at this point in the season.

Aurora's attempt to establish an emergency substitute water supply plan to allow them to divert a portion of their second Rocky Ford Ditch purchase during 2003 was denied by the State Engineer. Aurora is continuing to work with the Colorado Water Protective & Development Association, the largest well augmentation association in the basin (in terms of number of member wells), to attempt to swap the Rocky Ford Ditch consumptive use water for stored water in Pueblo Reservoir. CWPDA would gain additional replacement water for well augmentation under the scheme and Aurora would get some benefit from their second Rocky Ford Ditch purchase.

Public Use Impacts

Numerous newspaper articles reflect the fact that there is deep concern over the potentially poor supply of water for agriculture and the impact that this will have on the economy of the area. There is a supply shortage of replacement water for well augmentation, at least in the early months of the replacement plan year (April and May) that will likely cause there to be almost no agricultural well pumping during those months.



Basinwide Conditions Assessment

The SWSI value of -2.0 indicates that for January the basin water supplies were below normal. The Natural Resources Conservation Service reports that February 1 snowpack is 60% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 112 cfs (59% of normal). The Conejos River near Mogote had a mean flow of 33 cfs (68% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 90% of normal as of the end of January.

Alamosa received only 0.01 inch of precipitation during January and the average daily temperature was an incredible 12 degrees above normal. This was the warmest January in the San Luis Valley in over 30 years.

Outlook

The outlook for the upper Rio Grande basin is poor. With the lowest basin snowpack in the state, local water administrators are warning users of continued drought. Updated forecasts are predicting area stream flow in 2003 to be in the range of 50 to 64% of normal.

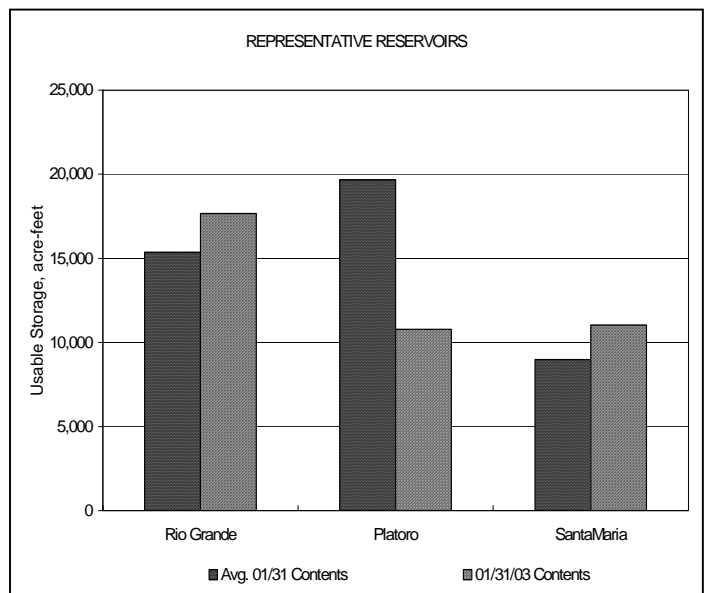
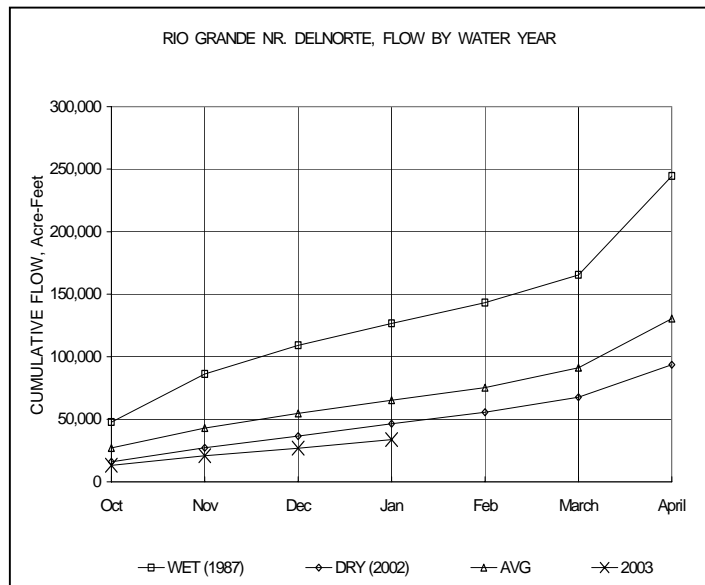
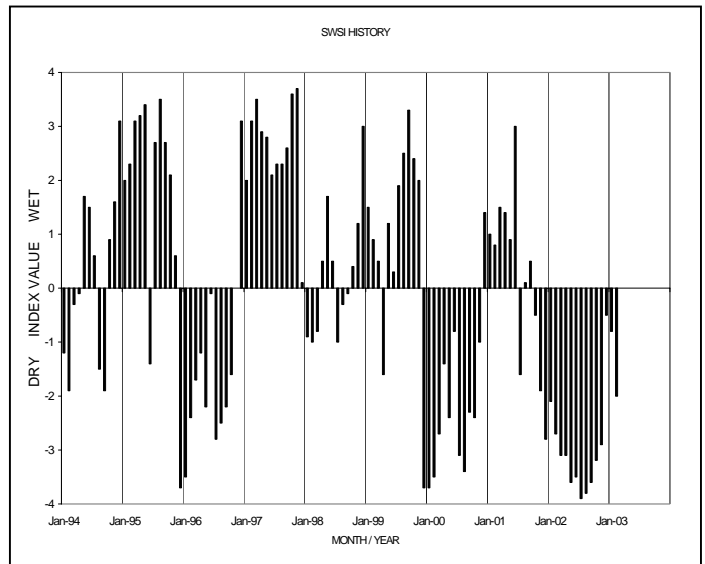
Administrative / Management Concerns

Drought and its impact on surface water availability and underground water use was the topic of a day-long seminar at Adams State College on January 10. The hall was filled to capacity with concerned farmers, ranchers and water officials.

The aquifers of the San Luis Valley are in peril, due in part to heavy pumping for irrigation and the lack of water available for recharge. Underground storage in a portion of the unconfined aquifer of the Closed Basin dropped 400,000 acre-feet during 2002. Much of the artesian head on the confined aquifer has also been lost. This affects homeowners and ranchers alike as they scramble to find an alternate water supply or secure a driller to redrill the well. These topics will continue to be discussed in the coming months.

Public Use Impact

Outdoor activities dependent on snow depth are suffering from the below average snowpack conditions in the mountains.



Basinwide Conditions Assessment

The SWSI value of  $-1.9$  indicates that for January the basin water supplies were below normal. The Natural Resources Conservation Service reports that February 1 snowpack is 74% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 44 cfs, as compared to the long-term average of 45 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 61% of normal as of the end of January.

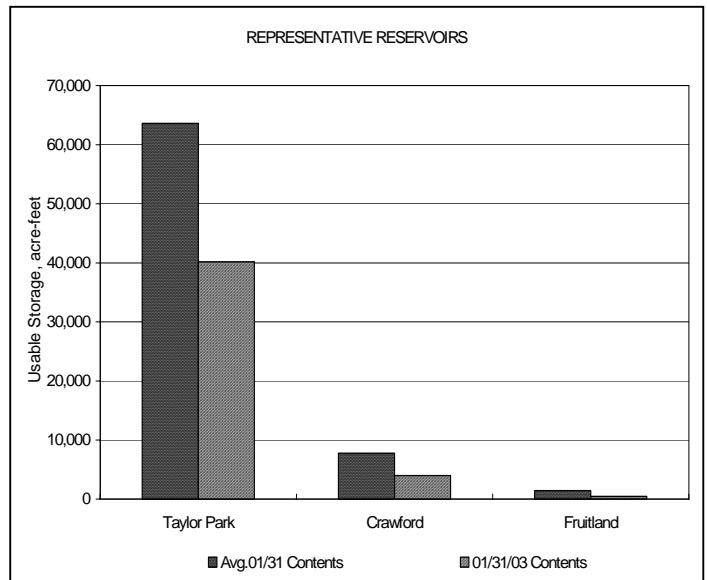
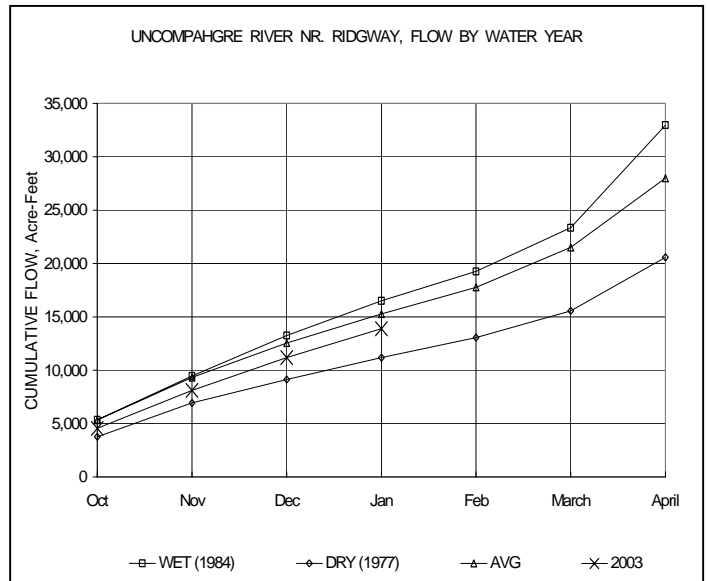
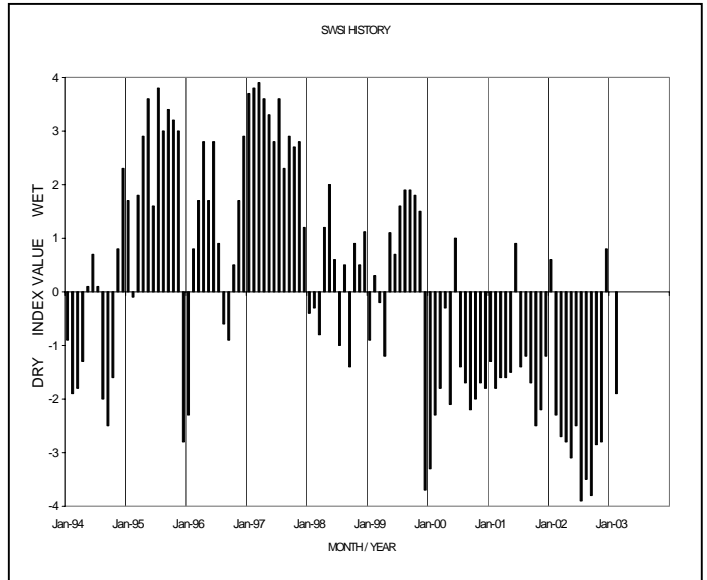
Outlook

The water supply outlook continued its bleak trend in January in the Gunnison and San Miguel Basins, as most areas again reported below-average precipitation for the month. Crested Butte and Telluride received only 24% and 42% of their normal January precipitation, respectively. Cochetopa Creek and Bedrock only reported 0.11 and 0.19 inches of moisture, respectively. Warmer-than-normal temperatures were predominant, as Grand Junction and Montrose both reported average temperatures for the month of eight or more degrees above normal. The combination of scarce precipitation and above-average temperatures had an adverse affect on the basin's snowpack.

The Gunnison Basin avoided a winter administrative call thanks to an agreement brokered by the Colorado River Water Conservancy District (other parties to this agreement included the U.S. Bureau of Reclamation and the U.S. Fish and Wildlife Service). The CRWCD paid the Redlands Power Authority for lost power revenues in exchange for no placement of a call by the Redlands Power Canal. This allowed reservoirs to store throughout the winter when they would otherwise be called out by the 1912 Redlands right.

Public Use Impacts

Skier, snowmobilers and other winter outdoor enthusiasts have been impacted by the meager snowpack. One positive note is that big game herds stressed by poor grazing conditions have a greater chance of survival due to the warm and dry winter.



Basinwide Conditions Assessment

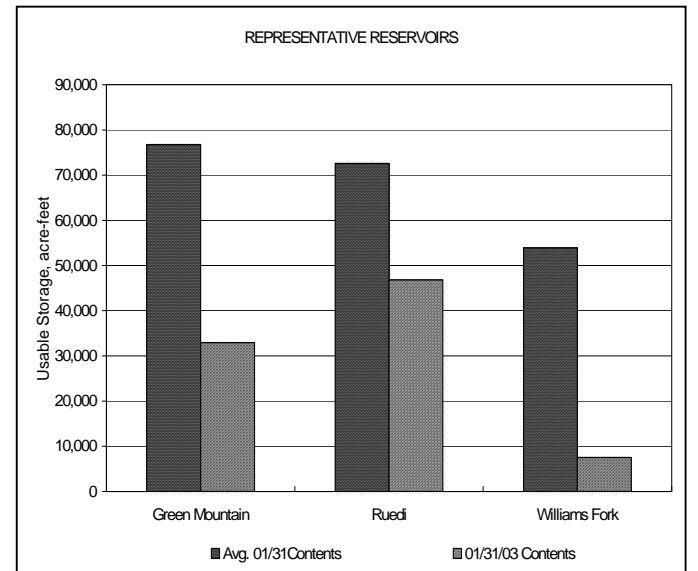
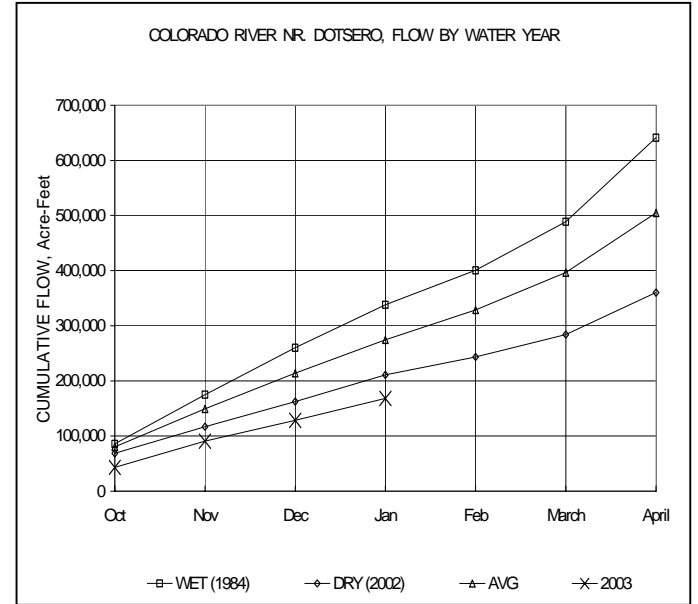
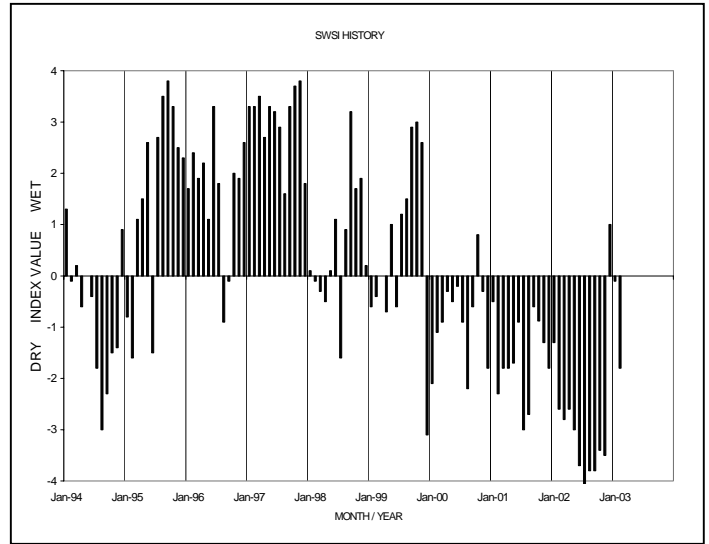
The SWSI value of -1.8 indicates that for January the basin water supplies were below normal. The Natural Resources Conservation Service reports that February 1 snowpack is 82% of normal. Flow at the gaging station Colorado River near Dotsero was 642 cfs, as compared to the long-term average of 983 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 43% of normal as of the end of January.

Outlook

January precipitation was much less than average and basin-wide runoff predictions dropped from 85% of average to 75% of average. Plateau Creek and Muddy Creek (Wolford Reservoir) runoff predictions are particularly low with 57% and 67% of average, respectively. Basin-wide snowpack dropped below 80% of average.

Administrative / Management Concerns

The senior Shoshone power call remained on with flows less than one turbine's capacity, allowing turbine maintenance without relaxation of the call. Plans to temporarily suspend the call have so far been unsuccessful, leaving upstream reservoirs in their typical winter position of not being able to store.



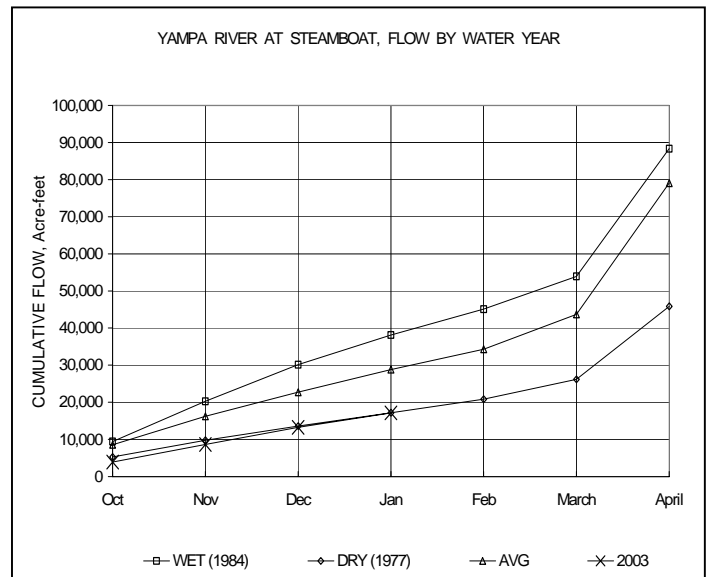
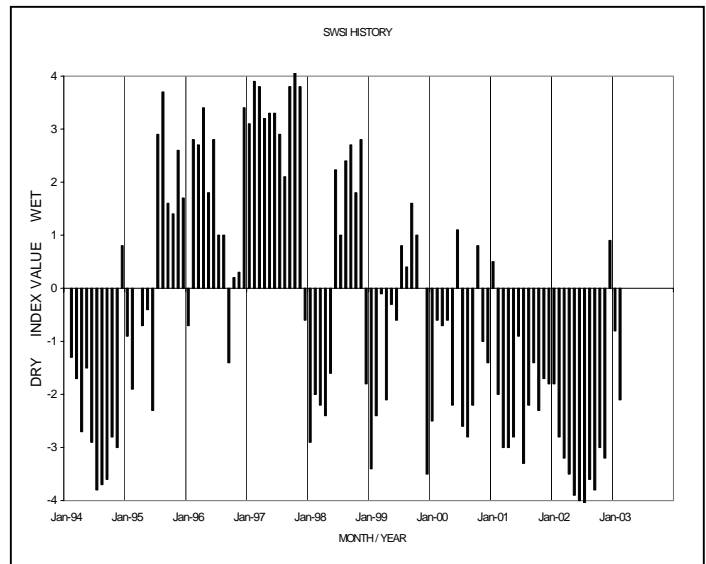
Basinwide Conditions Assessment

The SWSI value of -2.1 indicates that for January the basin water supplies were below normal. The Natural Resources Conservation Service reports that February 1 snowpack is 80% of normal. Flow at the gaging station Yampa River at Steamboat was 63 cfs, as compared to the long-term average of 100 cfs.

January was a very dry month with above average temperatures. Basin-wide, precipitation was only 55% of average for the month and totals 82% of average for the water year. At the end of January the snowpack was 76% of average for the North Platte River Basin; 80 % of average for the Yampa River Basin; 72 % of average for the White River Basin; and 76 % of average for the Little Snake River. All were down considerably from the previous month, except for the Little Snake, which was about the same. Along with the decrease in the snowpack, stream runoff predictions decreased. The most probable streamflow forecasts reported by the Natural Resources Conservation Service are 55 % of average for the North Platte near Northgate, 66 % of average for the Yampa River near Maybell, 63 % of average on the Little Snake near Dixon, and 66 % of average for the White River near Meeker. These forecast predictions are significantly lower than those published for January 1 of this year.

Outlook:

While talk of an above normal pattern of precipitation for the rest of the winter continues to be heard, the runoff forecasts show that a serious situation continues in the basin. Without significant increases in the snowpack, a repeat of last year's drought may be likely.





Basinwide Conditions Assessment

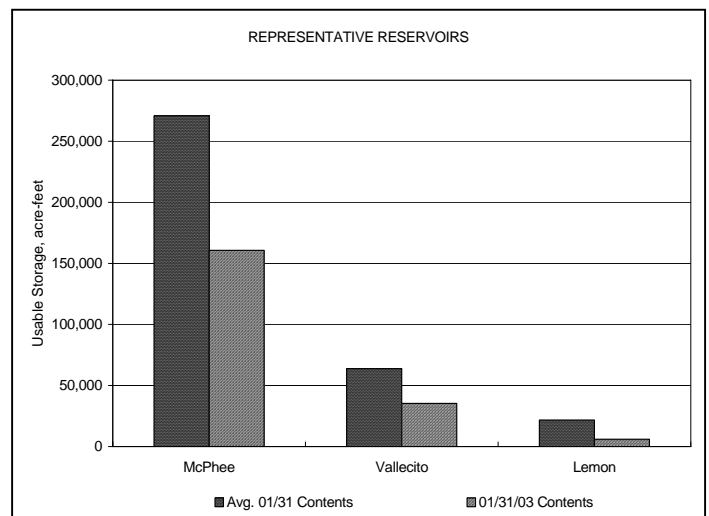
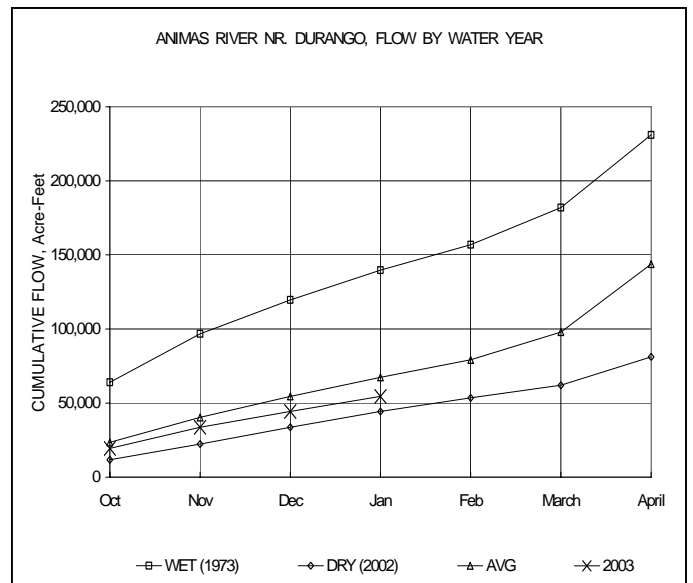
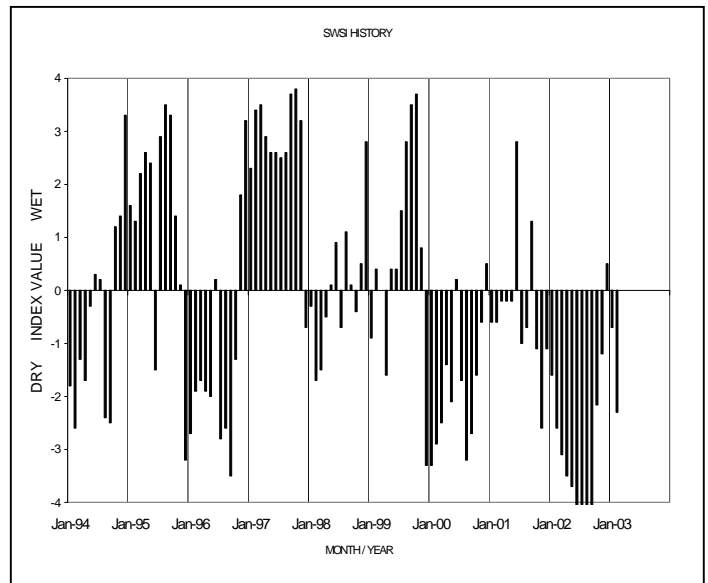
The SWSI value of -2.3 indicates that for January the basin water supplies were below normal. The Natural Resources Conservation Service reports that February 1 snowpack is 63% of normal. Flow at the gaging station Animas River near Durango was 166 cfs, as compared to the long-term average of 210 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 57% of normal as of the end of January.

Historically, January is one of the highest snowfall months in Southwestern Colorado. The 30-year average precipitation for January in Durango is 1.95 inches. Only 0.23 inches was recorded in January 2003, which is 11.8 % of average. River flows continued to be about 80% of average. The average flow for the month on the Animas River at Durango was 166 cfs and the La Plata River at Hesperus recorded 5.5 cfs.

Reservoir storage is well below normal for this time of year with low carry-over amounts due to the drought in 2002. End of the month reservoir content was 30% of average at 5,935 af for Lemon Reservoir on the Florida River, which is the second lowest recorded value for the month; 67% for Vallecito Reservoir on the Pine River; and 61% at McPhee Reservoir on the Dolores River.

Due to the above average temperatures during the month, most of the snow at the lower elevations in the basin is gone. The average high in Durango for January was 48.3° compared with the 100-year average of 39.5°, and the average low was recorded at 20.9° compared to an average low of 10.8°. The Snotel sites were at about 64% of average at the end of the month.

With reservoir levels, streamflows, and snow pack well below normal, many water users are preparing for conditions similar to, or worse than, Irrigation Year 2002. Even so, it is hoped that the projected wet spring may bring some relief to the drought stricken area.



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