COLORADO
WATER SUPPLY CONDITIONS UPDATE

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

While the early season snowpack was good, providing hope that the next runoff would produce more water than received last spring and summer, snowfall decreased through late December into January which began to reduce the snowpack accumulation as measured against long term average. However, much of the winter season snowpack accumulates after January 1, so next spring's conditions are still subject to change. Water use is low during winter, although reservoirs do store water during this time. Most reservoirs that normally store during the winter are doing so now. Most rivers are flowing at near to slightly below normal rates.

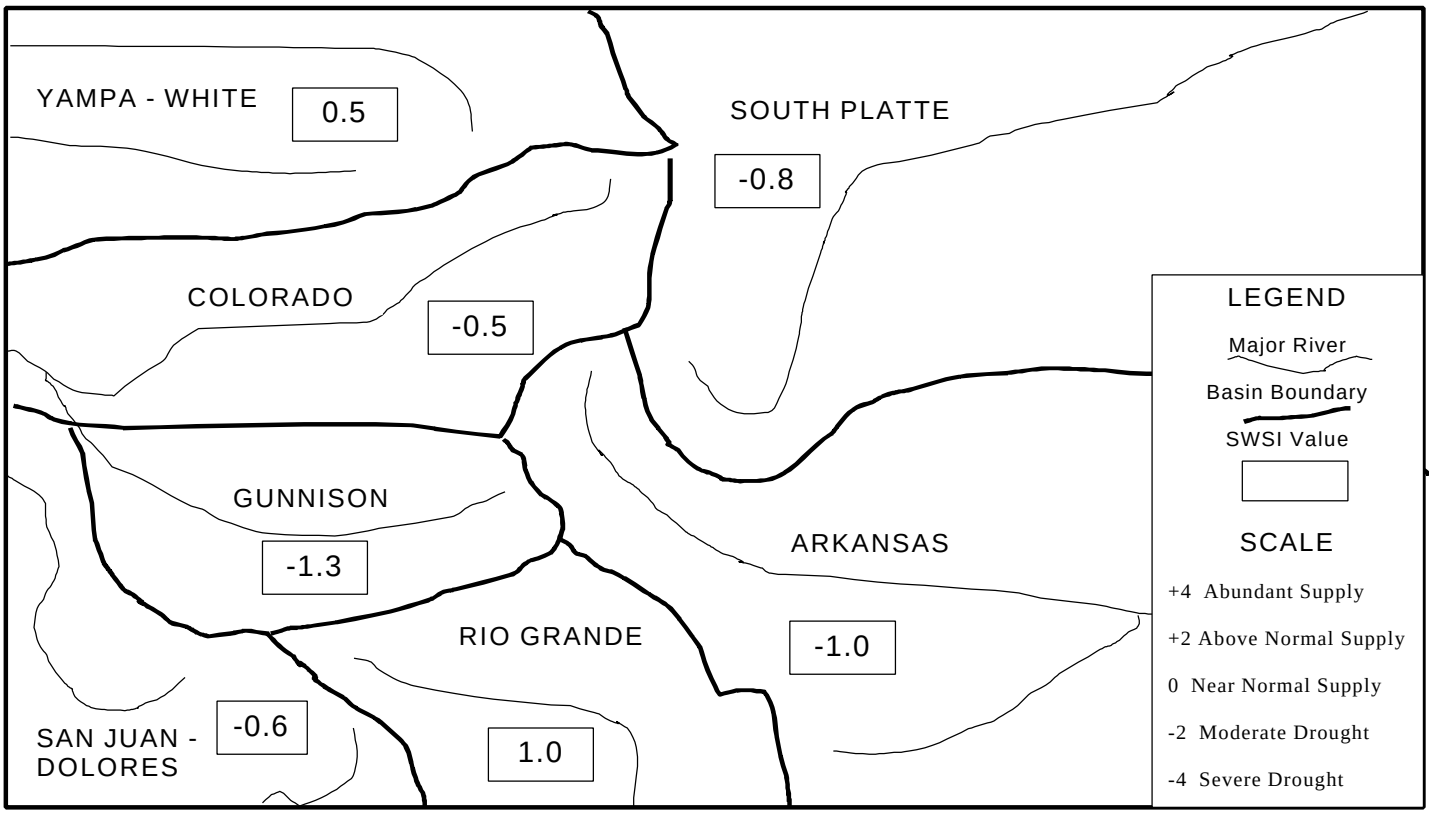
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter 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 January 1, 2001, and reflect the conditions during the month of December 2000.

Basin	January 1, 2001 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	-0.8	-0.9	-1.7
Arkansas	-1.0	-0.8	+1.8
Rio Grande	+1.0	-0.4	+4.7
Gunnison	-1.3	-0.5	+2.0
Colorado	-0.5	-1.3	+1.6
Yampa/White	+0.5	+1.9	+3.0
San Juan/Dolores	-0.6	-1.1	+2.7

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



JANUARY 1, 2001

Basinwide Conditions Assessment

The SWSI value of –0.8 indicates that for December the basin water supplies were near normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 89% of normal as of the end of December. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 59% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 76% of capacity. The Natural Resources Conservation Service reports that January 1 snowpack is 84% of normal. Flow at the gaging station South Platte River near Kersey was 568 cfs, as compared to the long-term average of 866 cfs. Flow at the Colorado/Nebraska state line averaged 225 cfs.

Outlook

Reservoir storage continued in December for the plains reservoirs, although the call on the mainstem downstream of Denver for reservoir storage was removed on December 13, 2000. By the end of the month, several of the plains reservoirs had reached their winter storage levels and it appeared the remaining reservoirs would also reach their winter storage levels. North Sterling Reservoir remained the farthest from filling, with only about 50% of the reservoir full. This contrasts to the previous year when it was 95% full by this time of the year. However, overall irrigation storage on the river, above and below Kersey and on the tributaries, is ahead of the 1994-1995 winter, which is the winter after the last dry summer on the South Platte.

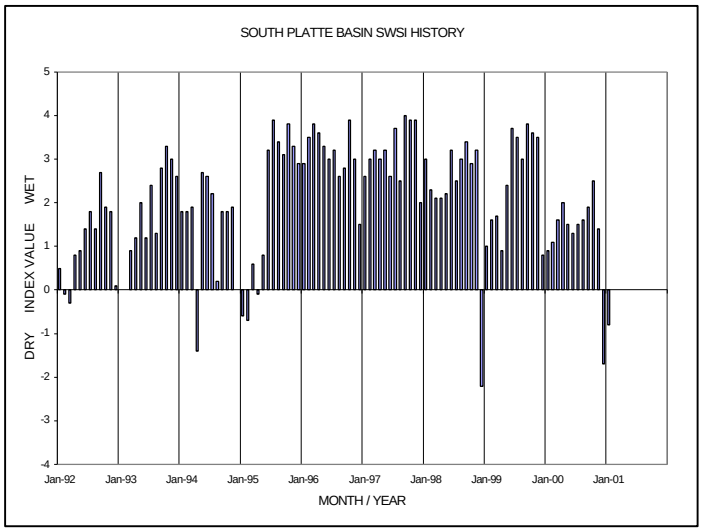
Municipal storage continues to be satisfactory. Many of these reservoirs tend to stay somewhat full as the cities reserve them for severe droughts.

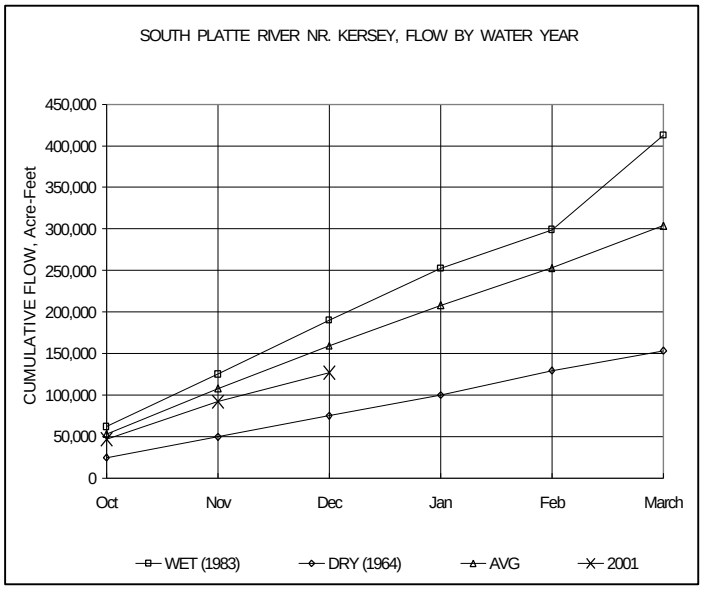
Administrative/Management Concerns

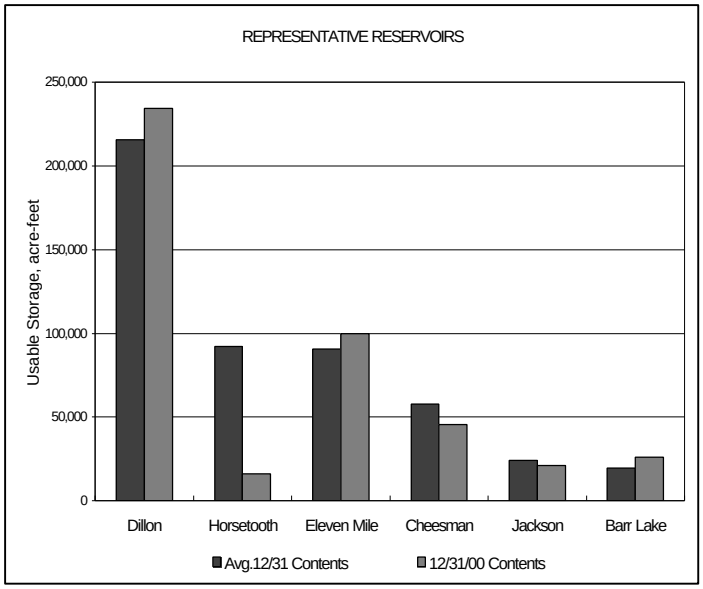
Basin administrators are gaining optimism that major irrigation reservoirs will fill this winter and spring, especially if the weather is not unseasonably cold the remainder of the winter. Filling these reservoirs is very important in having an adequate water supply in the spring.

During this time of year, filling of some of the plains reservoirs occurs under ice in the ditches. This must be closely monitored to assure that changes in temperature do not create ice restriction in the ditch and potential flooding.

Basin administrators continue to be concerned about adequate recharge occurring to provide augmentation supplies to maintain flows in the river next summer.

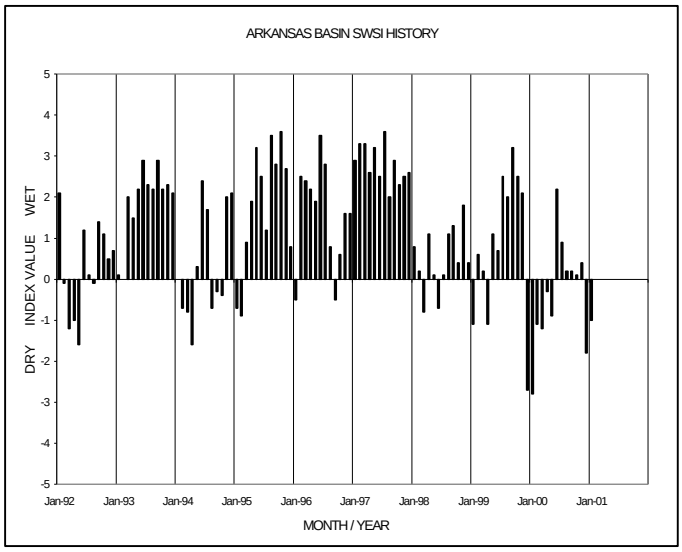






Basinwide Conditions Assessment

The SWSI value of –1.0 indicates that for December the basin water supplies were near normal. The Natural Resources Conservation Service reports that January 1 snowpack is 86% of normal. Flow at the gaging station Arkansas River near Portland was 430 cfs, as compared to the long-term average of 394 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 114% of normal as of the end of December.



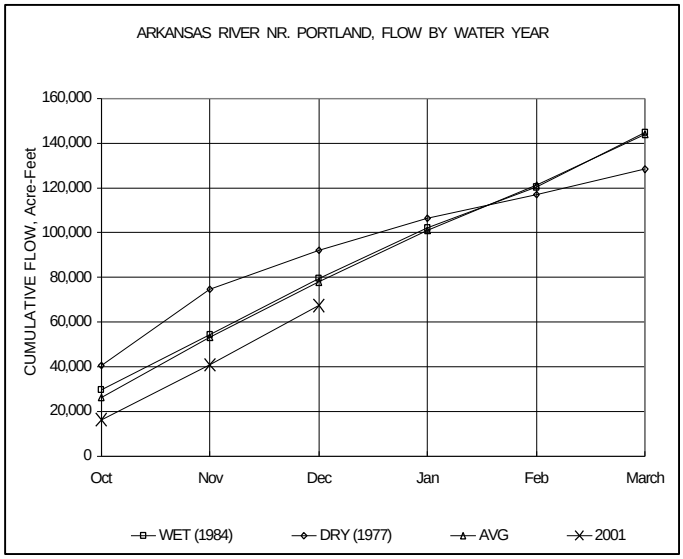
Administrative/Management Concerns

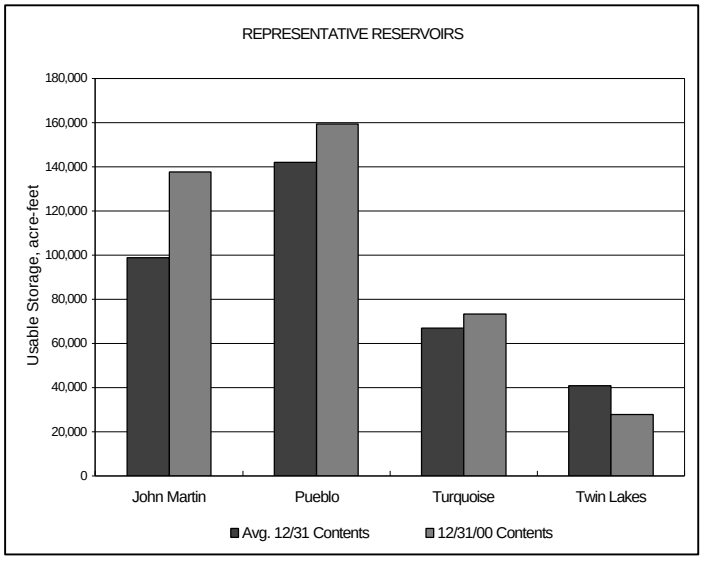
The Winter Water storage program is continuing with six of the sixteen weeks completed. The first six weeks have yielded a system grand total of 69,415 acre-feet. Last year's storage at this time was 78,554 acre-feet, while the previous five year average is 77,758 acre-feet.

Basin administrators are currently finalizing the diversion records for the 2000 water year.

Public Use Impacts

Cold weather conditions caused ice jams in December for those entities participating in the Winter Water storage program.





Basinwide Conditions Assessment

The SWSI value of 0.1 indicates that for December the basin water supplies were near normal. The Natural Resources Conservation Service reports that January 1 snowpack is 81% of normal. Flow at the gaging station Rio Grande near Del Norte was 162 cfs, as compared to the long-term average of 188 cfs. The Conejos River near Mogote had a mean flow of 42 cfs (78% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 87% of normal as of the end of December.

Conditions were warmer and drier than normal in the San Luis Valley during December. Snowpack in the basin plummeted, with the basin wide average dropping by approximately 80 percentage points (from about 160% of normal) since mid November. Looking back at the 2000 calendar year shows that, in general, stream flow totals in the upper Rio Grande basin were 50%-70% of average. Alamosa's total precipitation of 5.05 inches was well below the annual average, being the driest year since 1989. The annual average temperature of 43.5^{o} was the highest it has been in over 20 years.

Outlook

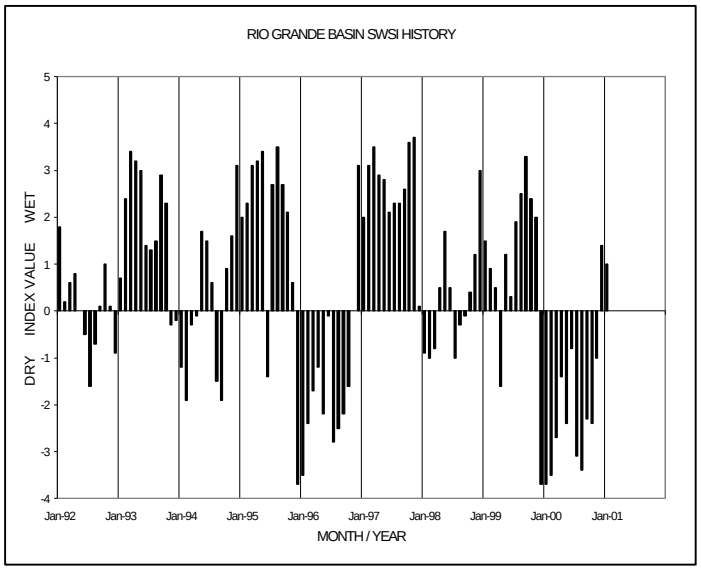
Stream flow in the basin is expected to be below average for the next few months. Lack of significant precipitation on the valley floor will allow for bad dust storms when the wind picks up.

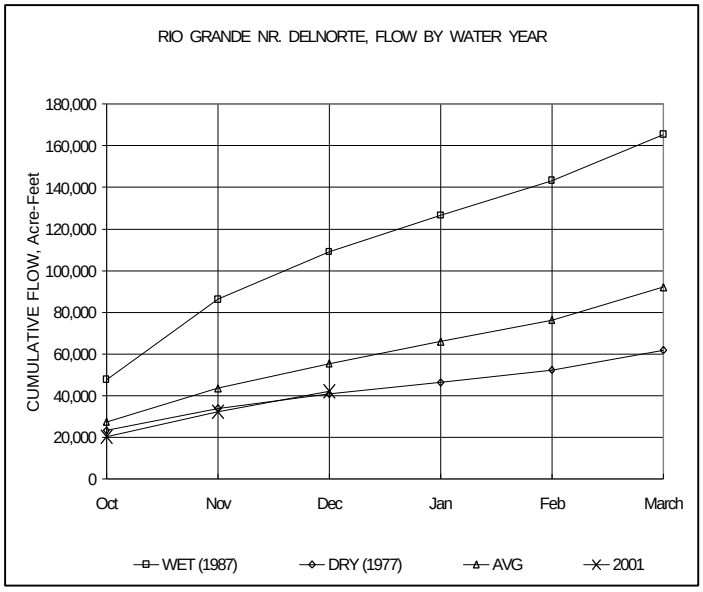
Administrative/Management Concerns

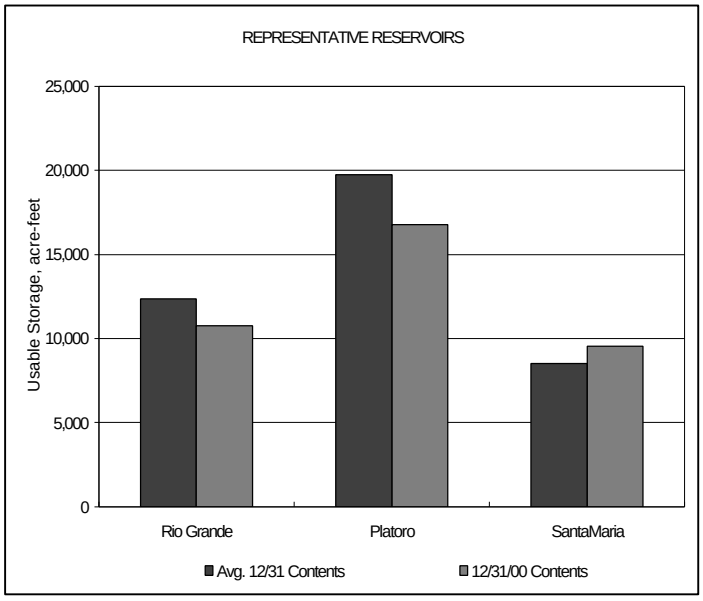
Pursuant to the articles of the Rio Grande Compact, Colorado had a minimal delivery requirement (about 110,000 acre-feet) to New Mexico and Texas in 2000 because of the drought. Colorado should exceed this obligation by approximately 13,000 acre-feet. This over delivery can be attributed to the inability to prevent water from flowing past the state line during the winter months.

Public Use Impacts

The early snowpack was very promising. However, bare hillsides are evidence of the lack of recent snow fall. This is having an unfavorable impact on winter recreation.



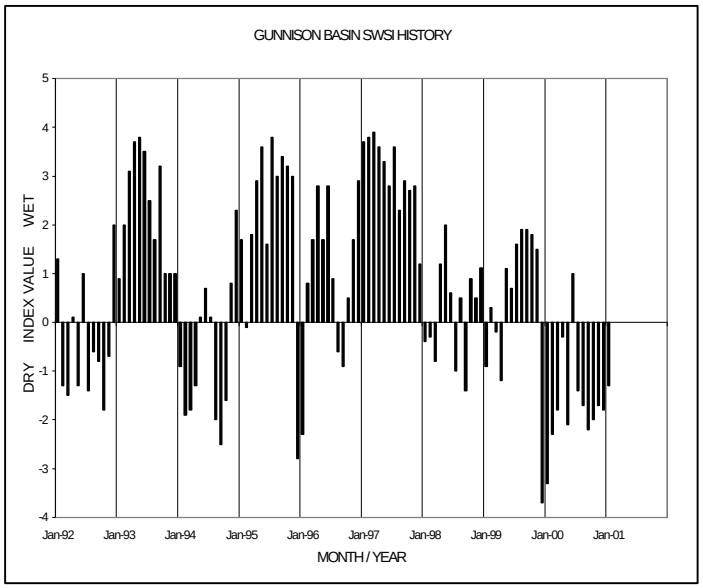




Basinwide Conditions Assessment

The SWSI value of –1.3 indicates that for December the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that January 1 snowpack is 83% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 54 cfs, as compared to the long-term average of 51 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 93% of normal as of the end of December.

Precipitation in Montrose for December 2000 was 0.51 inches, reflects a slight increase over the December 1999 total of 0.41 inches. So far the Snotel figures are a little below average basin wide. The latter part of December did not yield much moisture.



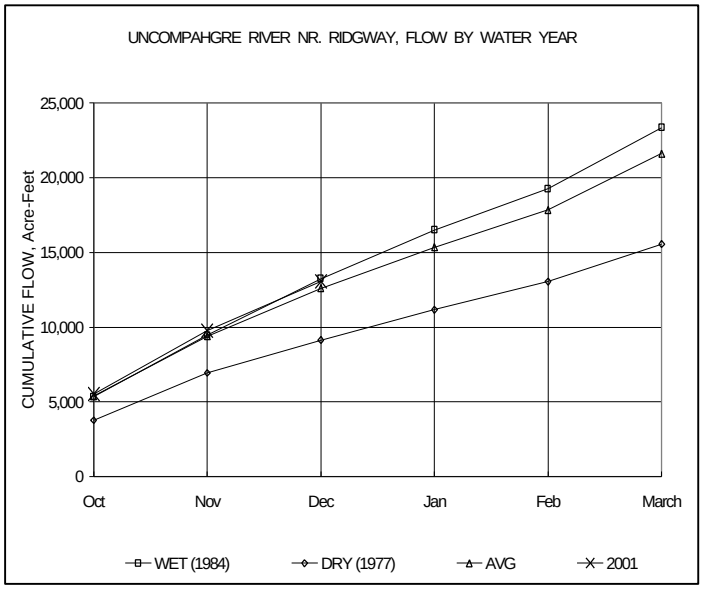
Outlook

There are a couple of areas that have above average snowpack, but overall conditions are not encouraging to some local basin administrators.

Administrative/Management Concerns

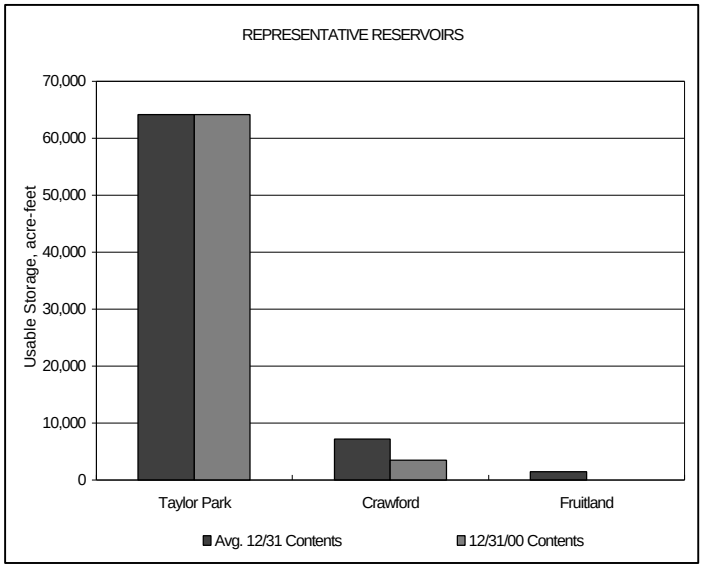
Administrative activity is slow in winter. Administrative duties are concentrated on compilation of diversion records by the water commissioners. The end of December had its typical large influx of year end filings in water court.

Problems with illegal wells in the San Miguel River basin are coming to peoples attention, with compliance options being looked into.



Public Use Impacts

The ski areas appear to be getting enough snow for the most part. Telluride was making snow for part of December, but they stopped after receiving a couple of good storms. Recreation at this point seems to be moving along successfully.



Basinwide Conditions Assessment

The SWSI value of –0.5 indicates that for December the basin water supplies were near normal. The Natural Resources Conservation Service reports that January 1 snowpack is 95% of normal. Flow at the gaging station Colorado River near Dotsero was 828 cfs, as compared to the long-term average of 1,054 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 80% of normal as of the end of December.

The early snowpack is below average for the western part of the basin, encompassing the Roaring Fork drainage, Grand Mesa, and Flat Tops areas. Grand Mesa continues to stay behind with only approximately 55% of average snowpack.

Outlook

January forecasts are calling for average snow fall in the Colorado River basin, except for the western part of the basin which is expected to get slightly below average snow fall.

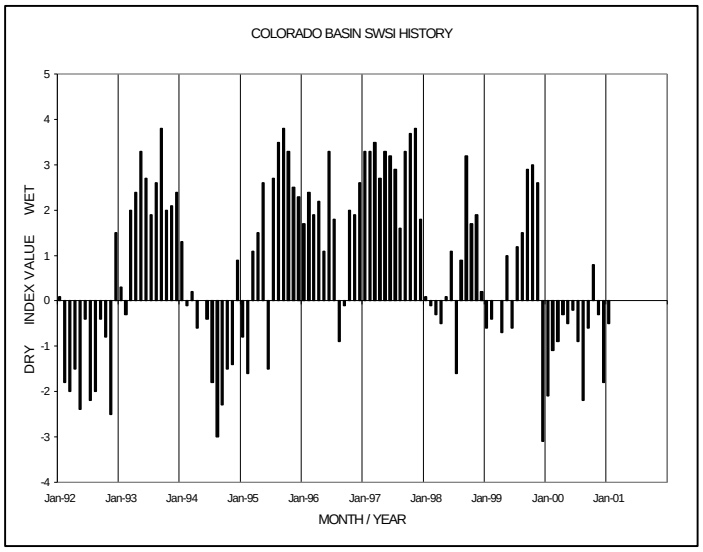
Administrative/Management Concerns

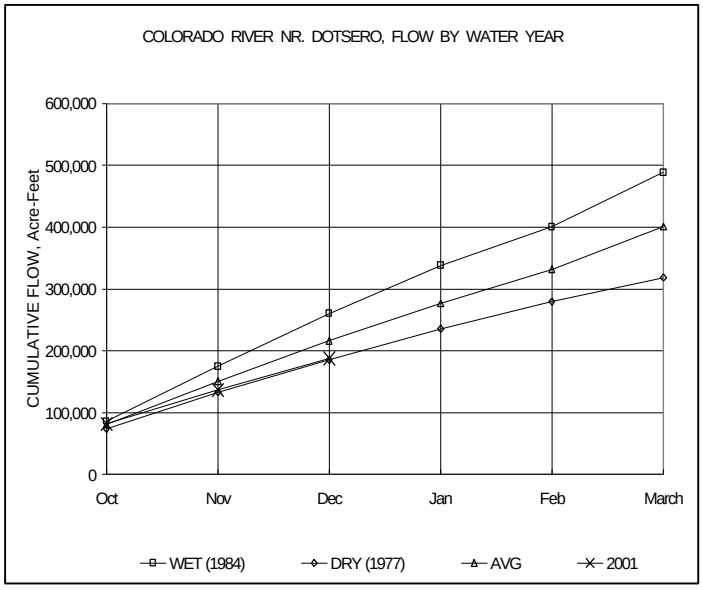
Several ski area snowmaking operations are continuing into January, extending their typical snowmaking season. This will require continued monitoring of minimum stream flow gaging stations below the snow making diversions.

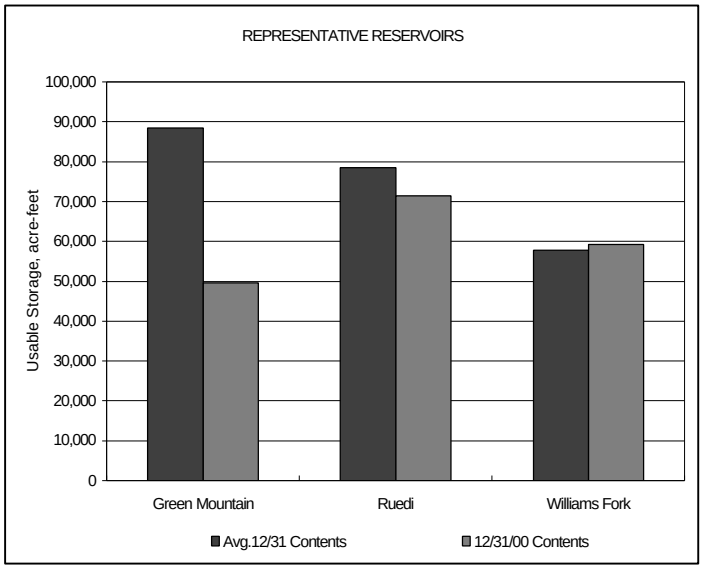
The senior Shoshone power plant call is now not expected to be taken off during scheduled turbine maintenance because the entire Colorado River flow at the power plant is being taken through a single turbine.

Public Use Impacts

Cold temperatures have increased river and stream damming problems in the basin. One ice dam breached and sent a surge of approximately 1,000 cfs down the Roaring Fork River at a time when the upper section of the river had been running about 250 cfs. In another situation, ice buildup at a major diversion dam forced too much water into a canal, which subsequently overtopped and caused minor flooding.







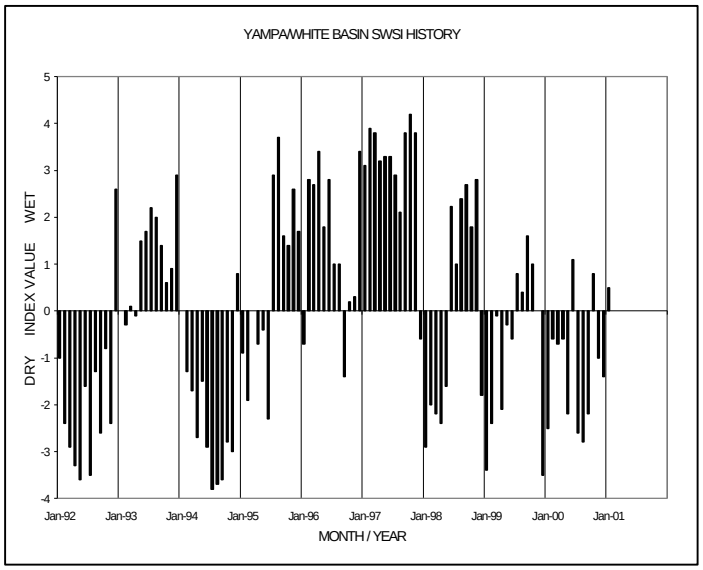
Basinwide Conditions Assessment

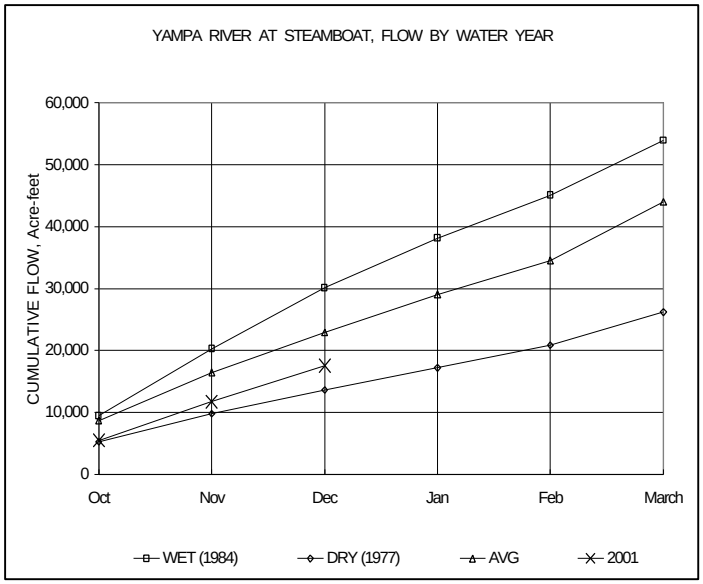
The SWSI value of 0.5 indicates that for December the basin water supplies were near normal. The Natural Resources Conservation Service reports that January 1 snowpack is 99% of normal. Flow at the gaging station Yampa River at Steamboat was 95 cfs, as compared to the long-term average of 100 cfs.

December brought snow and cold temperatures to the basin. For the month precipitation was 111% of average basin wide. The snow pack analysis as of January 1 shows the North Platte basin at 140% of average, the White River basin at 166%, and the Yampa River basin at 148%. Most of the substantial snow fall for December occurred during the first two weeks.

Outlook

January 1st predictions, based on current conditions, give the most probable spring runoff as being 90% of average for the North Platte River near Northgate, 93% of average for the White River near Meeker, and 95% of average for the Yampa River near Maybell. While it is early in the snowpack season, these predictions are all well ahead of what was forecasted at the same time last year.





Basinwide Conditions Assessment

The SWSI value of –0.6 indicates that for December the basin water supplies were near normal. The Natural Resources Conservation Service reports that January 1 snowpack is 93% of normal. Flow at the gaging station Animas River near Durango was 230 cfs, as compared to the long-term average of 227 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 74% of normal as of the end of December.

The dry weather pattern that started in November continued throughout December with only two snow storms occurring during the month. The basin average snow pack started December at 129% of normal, dropping to below normal during the month. Durango received a total of 0.57 inches of precipitation (36% of average), provided by 5 inches of snow. For the water year to date, Durango precipitation remains high at 131% of average.

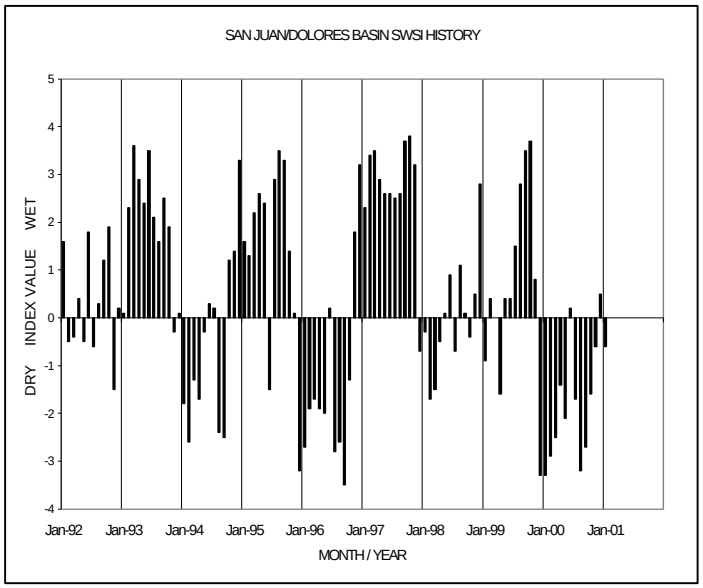
Temperatures returned to an above normal pattern, with Durango's average high at 1.3^{o} above normal.

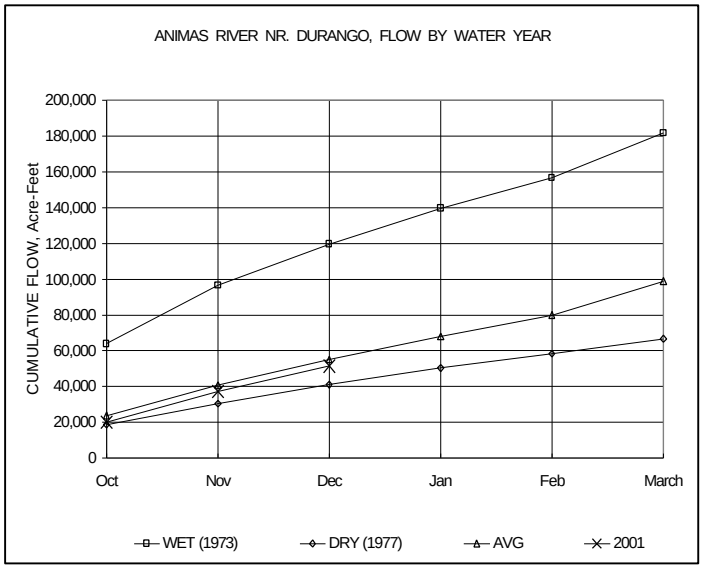
River flows were near normal. Soil moisture conditions were fair, and the ground was frozen in the exposed areas.

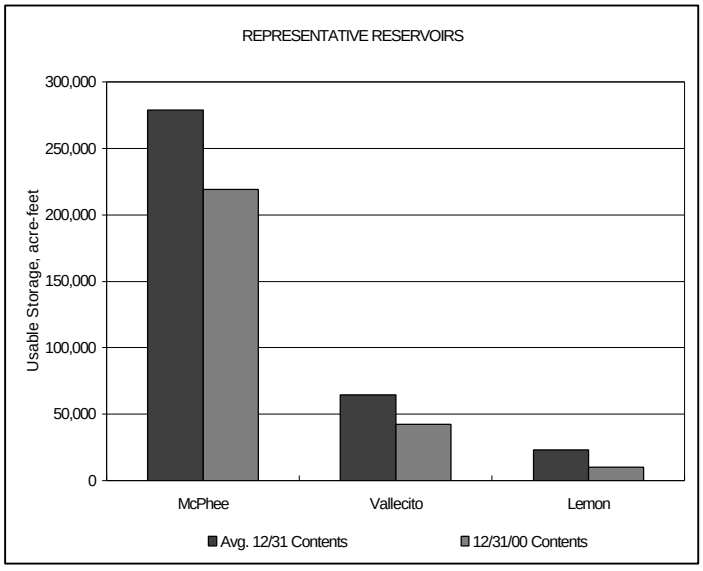
Reservoirs continued to suffer from last year's lack of precipitation, as storage levels raged from 49% of normal at Lemon Reservoir, to 82% of normal at Vallecito Reservoir. Jackson Gulch Reservoir re-opened its diversion ditches in order to begin filling.

Outlook

It is still early in the snow pack season and much more snow fall is needed to assure an adequate water supply for next year.







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