COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
ROOM 818, 1313 SHERMAN ST., DENVER, CO 80203
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March 2000

The statewide average snowpack climbed from 66% of normal to 80% of normal during February. Water supplies are at near normal to above normal levels in the South Platte, the Arkansas, the Colorado, and the Yampa/White due to increased storage and snowpack. The Rio Grande, Gunnison, and San Juan/Dolores basins continue to have below normal water supplies, primarily attributable to low snowpack. However, early March SNOWTEL data indicates the snowpack in the Rio Grande Basin has improved, having increased from 45% to 61% already. And snowpack in the San Juan/Dolores basin has increased by 10% to 73% of normal. In spite of low snowpacks, stream flow levels remain adequate statewide and reservoir storage is average to above average in most of the reservoirs across the state.

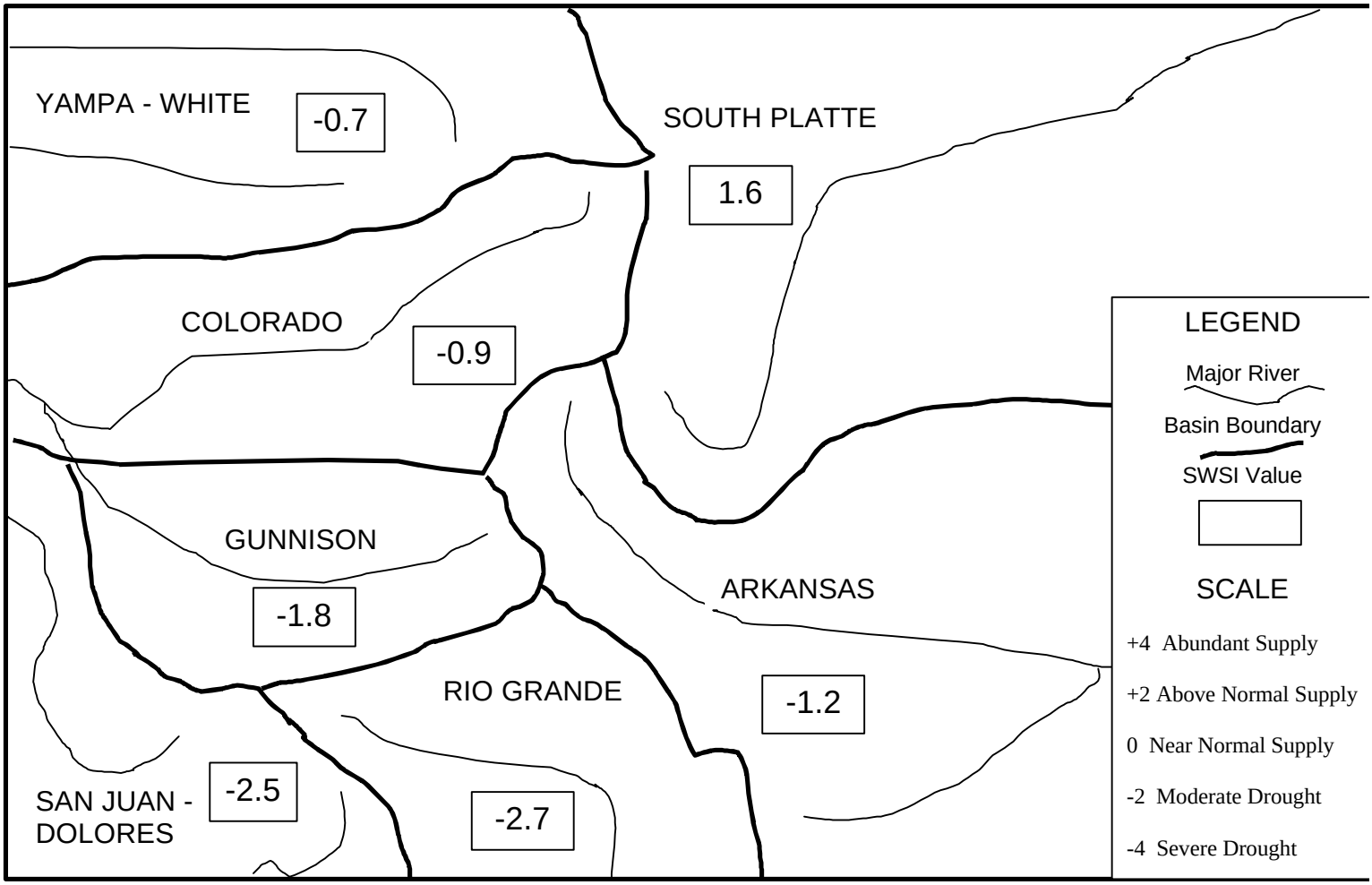
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter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

Basin	March 1, 2000 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+1.6	+0.5	-0.1
Arkansas	-1.2	-0.1	-1.4
Rio Grande	-2.7	+0.8	-3.2
Gunnison	-1.8	+0.5	-1.6
Colorado	-0.9	+0.2	-0.9
Yampa/White	-0.7	-0.1	-0.6
San Juan/Dolores	-2.5	+0.4	-2.5

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

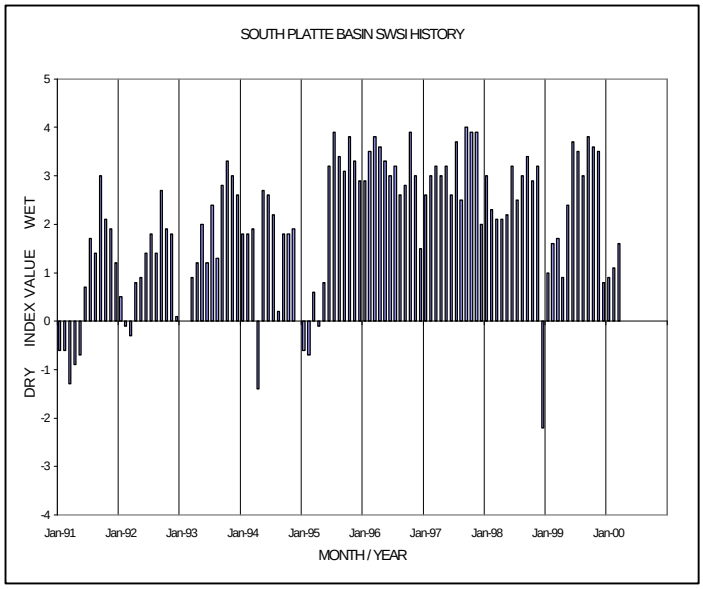


MARCH 1, 2000

Basinwide Conditions Assessment

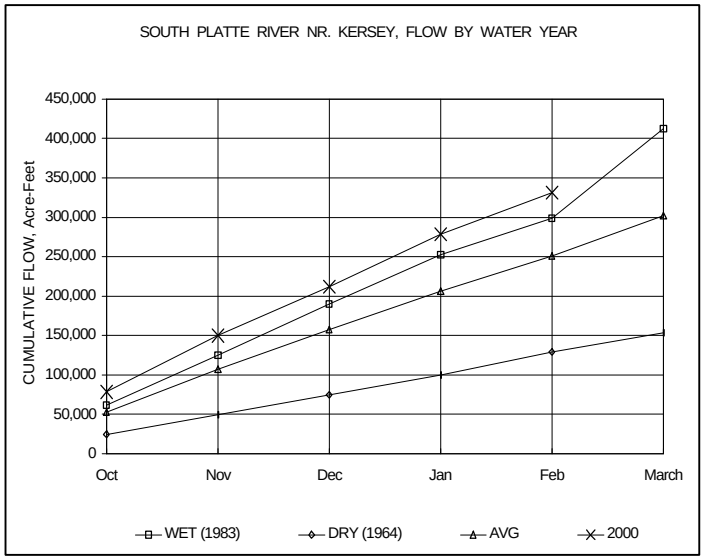
The SWSI value of 1.6 indicates that for February the basin water supplies were above normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 107% of normal as of the end of February. Storage in the major plains reservoirs: Julesburg, North Sterling, and Prewitt, increased overall by 1,790 acre-feet during February and are at 87% of capacity. Storage in the major upper basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero, increased by 246 acre-feet overall during February and are at 89% of capacity. The Natural Resources Conservation Service reports that March 1 snowpack is 93% of normal. Flow at the gaging station South Platte River at Kersey was estimated at 950 cfs, as compared to the long-term average of 799 cfs.

Diversions in February continued primarily for storage, recharge and for direct municipal use. Most reservoirs either maintained at or filled to their winter storage levels. The only call on the South Platte was for direct flow uses for Denver.



Outlook

Like last year at this time, the snowpack in the mountains remains slightly below average. The final snowpack level and subsequent flow conditions for the 2000 irrigation year will be affected by the snowfall the next two months, generally the period when the basin gets the most precipitation.

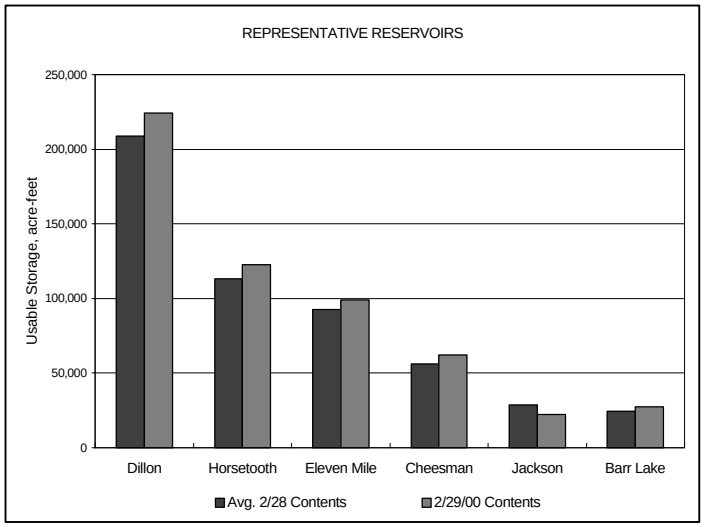


Administrative/Management Concerns

With the excellent reservoir storage situation and previous years of wet conditions which create bank storage along the South Platte, there is not very much concern that there will be shortages this year.

Public Use Impacts

None.



Basinwide Conditions Assessment

The SWSI value of –1.2 indicates that for February the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 61% of normal. Flow at the gaging station Arkansas River near Portland was 387 cfs, as compared to the long-term average of 345 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 199% of normal as of the end of February.

Outlook

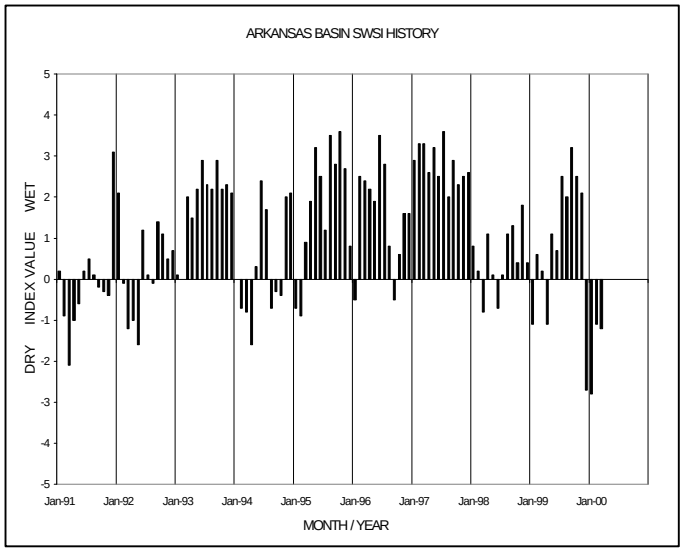
Reservoir storage levels remained high for February. Winter water storage in Pueblo Reservoir gained 11,000 acre feet, bringing the total winter water storage to 25,200 acre feet. Direct flow irrigation and off-channel storage continued throughout the Arkansas Valley. The winter water system grand total through February was 159,840 acre feet. The Army Corp of Engineers, Albuquerque District, is planning to exercise the tainter gates at John Martin Reservoir during the first week in March. John Martin Reservoir entered the flood pool on January 28th thereby allowing the Corps to store approximately 5,000 acre feet of water into the flood pool for the gate exercise.

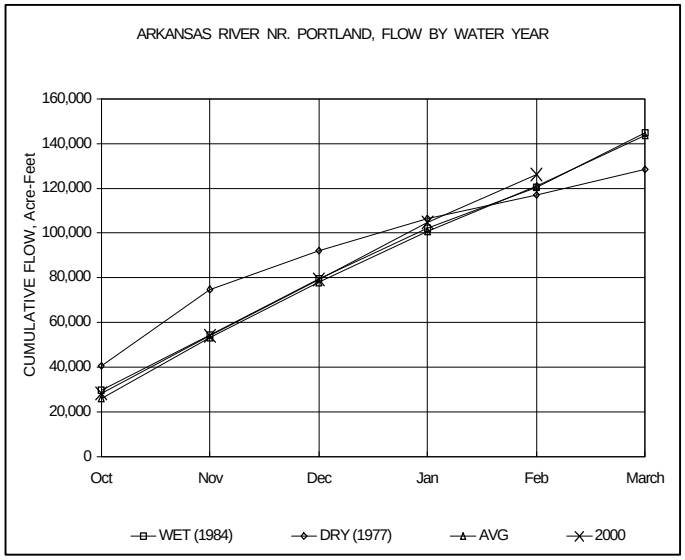
Administrative/Management Concerns

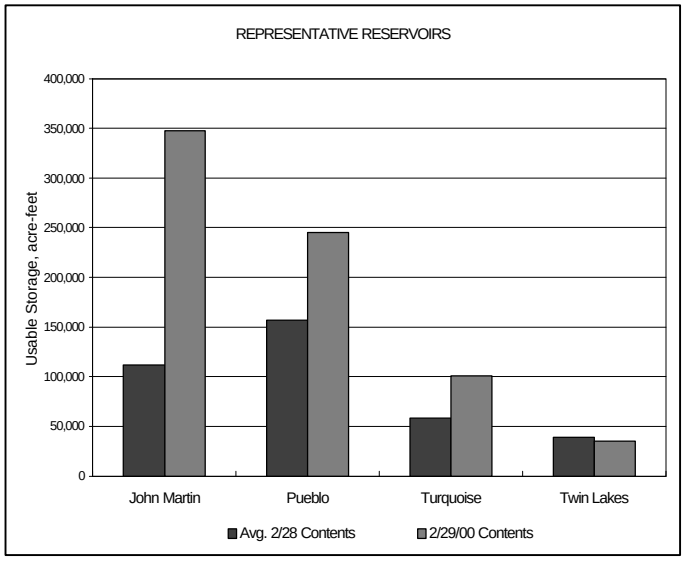
The Winter Water Storage Program ends on March 14th. Winter water participants and other entities that have water stored above the season top of conservation pool have until April 15th to evacuate stored water from Pueblo Reservoir. With John Martin reaching the flood pool in January and winter water participants satisfied, the Bureau of Reclamation was able to exercise their Pueblo Reservoir east-slope storage rights, thus changing the main stem Arkansas River call to June 25, 1962.

Public Use Impacts

Winter water storage commitments during the first part of February reduced outflows from Pueblo Reservoir and allowed several canal companies to repair diversion structures damaged during last year's floods.



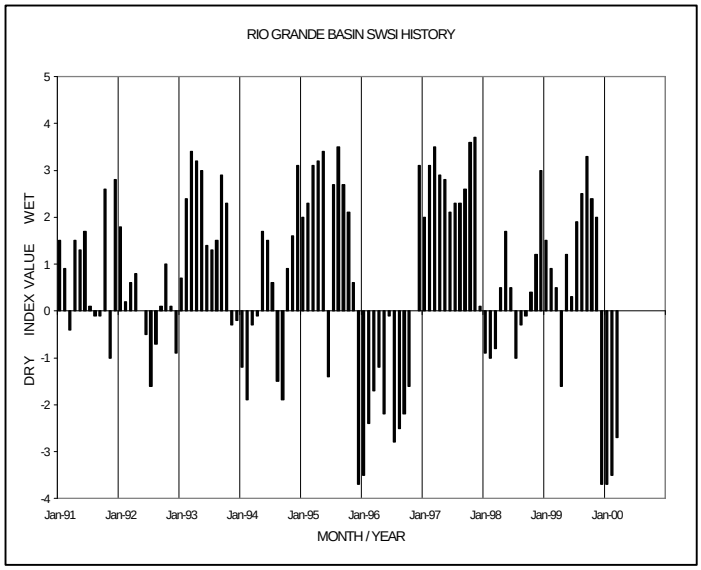




Basinwide Conditions Assessment

The SWSI value of –2.7 indicates that for February the basin water supplies were below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 45% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 202 cfs (102% of normal). The Conejos River near Mogote had a mean flow of 47 cfs (91% of normal). Flow to the state line was 127% of normal.

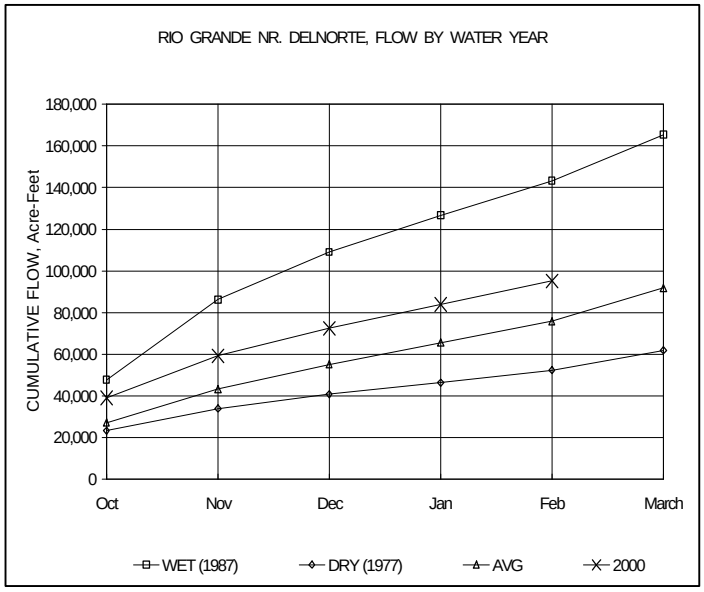
Temperatures during February were well above normal in the San Luis Valley. Alamosa received 0.02 inches of precipitation during the month, 0.27 inches below normal. Of great concern to local farmers and ranchers is the fact that the valley floor has received only ¼ inch of precipitation since the first of November. Soil moisture reduction coupled with limited snowpack looms as a double threat to successful farming this season.



Outlook

Snowpack conditions improved slightly during February. However, with the two snowiest months yet to come, there's still hope the snowpack can approach average levels.

Recent NRCS stream flow forecasts are calling for well below average conditions in the entire upper Rio Grande basin this year. Expected runoff in the Rio Grande near Del Norte is just 53 percent of normal and only 50 percent of average for the Conejos near Mogote. Carryover storage in the basin reservoirs cannot counteract the effects of low runoff for most water users and activities dependent on higher flows.



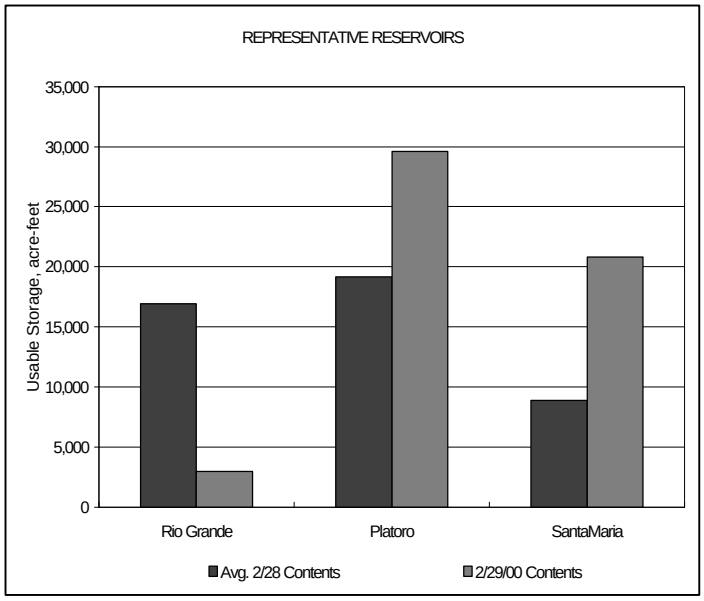
Administrative/Management Concerns

The annual meeting of the Rio Grande Compact Commission will be held at the University of Texas at El Paso campus on March 23, 2000. The public is invited to attend.

The Division Engineer has received early calls for irrigation water on some of the tributaries. Diversions from the Rio Grande and Conejos are expected to begin around the middle of March.

Public Use Impacts

Winter sports enthusiasts reliant on snowcover suffered through another disappointing month.



Basinwide Conditions Assessment

The SWSI value of –1.8 indicates that for February the basin water supplies were below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 76% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 44.6 cfs, as compared to the long-term average of 44.0 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 108% of normal as of the end of February.

Outlook

The continued increase in snowpack is encouraging to water administrators and users.

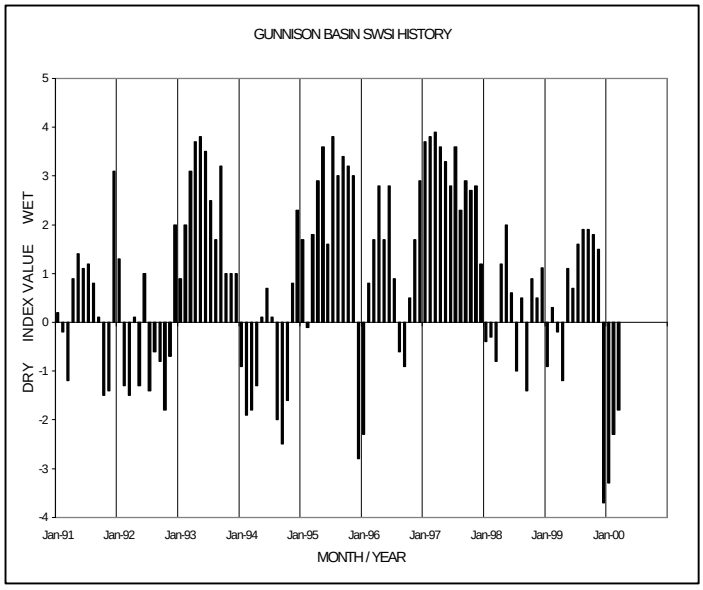
Administrative/Management Concerns

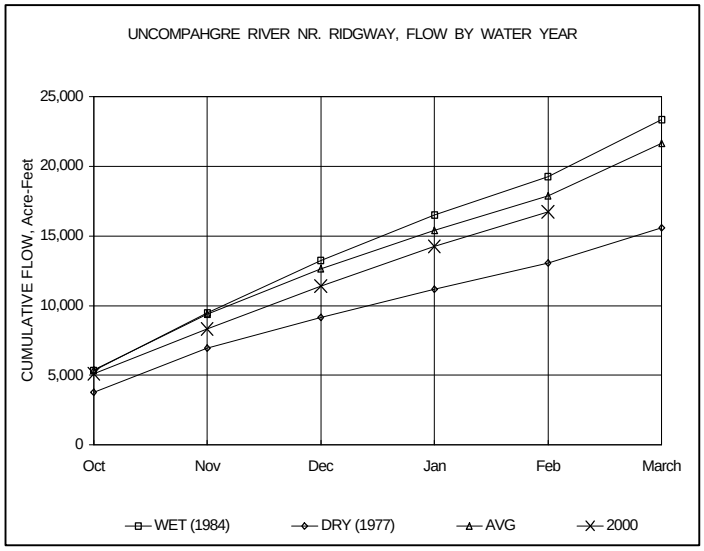
Low flows could very well trigger a call from the Redlands Canal, necessitating a release from Blue Mesa Reservoir.

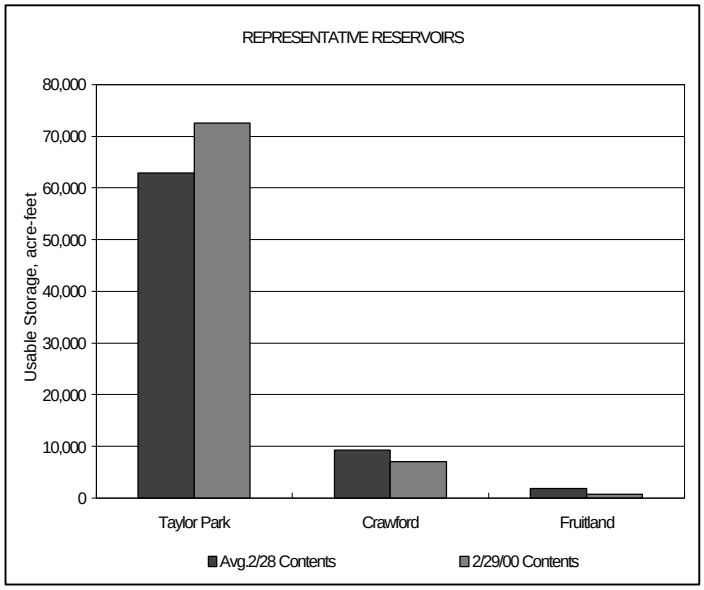
Public Use Impacts

Although the recent snowfall is very promising to most, it did not come in time for the opening of certain ski areas in Crested Butte, according to the USFS. The snow is now sufficient to consider the opening of the new ski area; however the application to the Forest Service is late in coming and may not be granted this year. The approval is also contingent upon the final approval of the boundary adjustment.

The upper end of the Blue Mesa Reservoir began to see the ice breaking. Ice fishing is still the "happening thing" in the upper end.







Basinwide Conditions Assessment

The SWSI value of –0.9 indicates that for February the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 94% of normal. Flow at the gaging station Colorado River near Dotsero was 966 cfs, as compared to the long-term average of 971 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 115% of normal as of the end of February.

The monthly precipitation for February, on the average for Water Division 5, was 129%. The accumulated precipitation for the water year is 86% of average.

Outlook

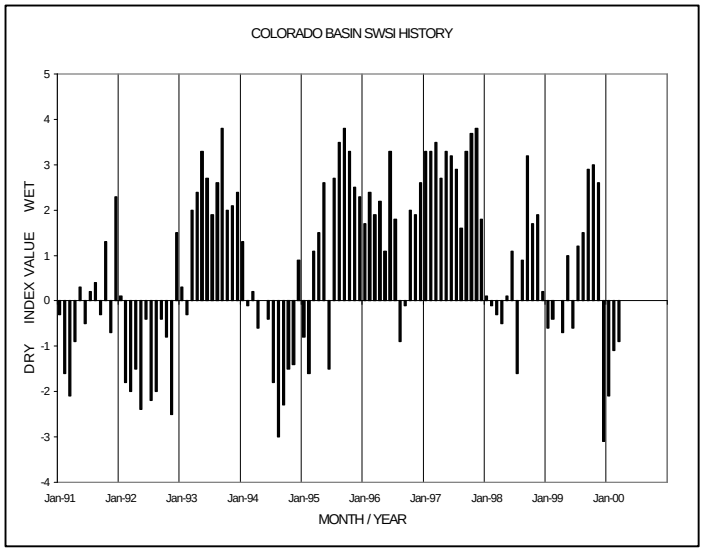
The forecasts for the basin indicate below to near average spring runoff.

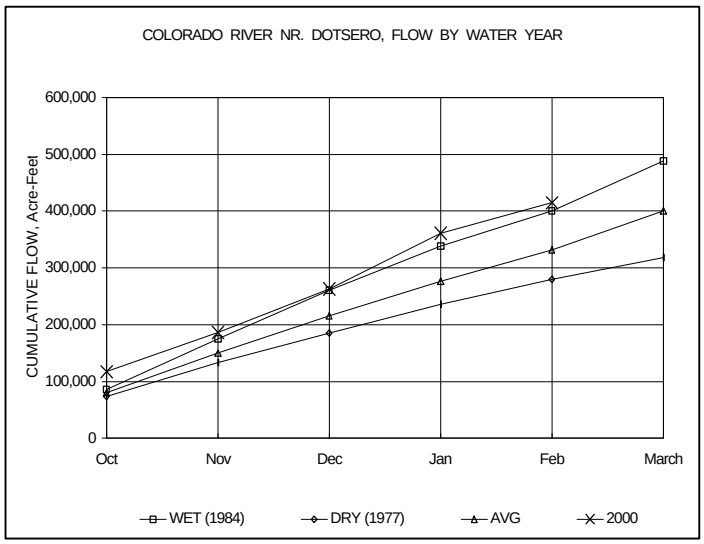
Administrative/Management Concerns

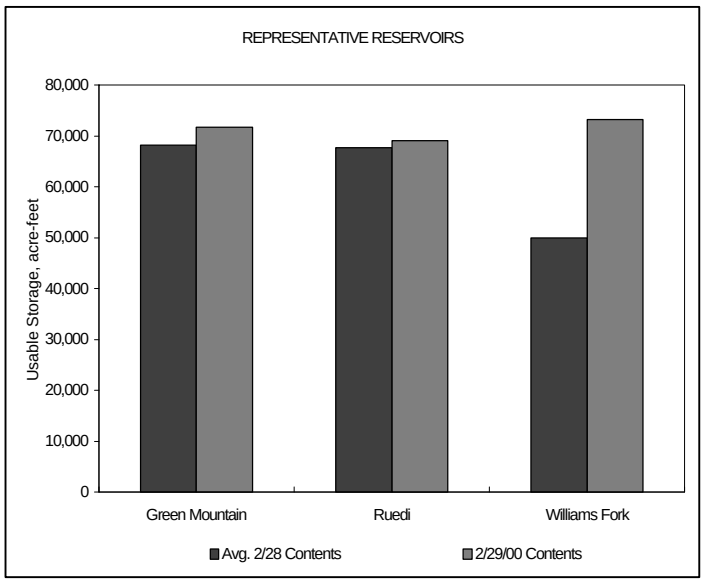
The Shoshone Power Plant, the senior water right along the mainstem of the Colorado River near Glenwood Springs, anticipates their second turbine to go on line in late March. Low flows recorded at the Colorado River near Dotsero gage help determine the call situation. The last three years of records indicate adequate stream flows to avoid a call.

Public Use Impacts

Fruit growers in the Grand Valley are experiencing favorable weather trends, which help guarantee a bumper crop of peaches, pears, apples, cherries and grapes this summer. If a frost free April can be maintained, either by ambient conditions or with the help of wind machines, the crops can generate a substantial positive economic impact on the region.



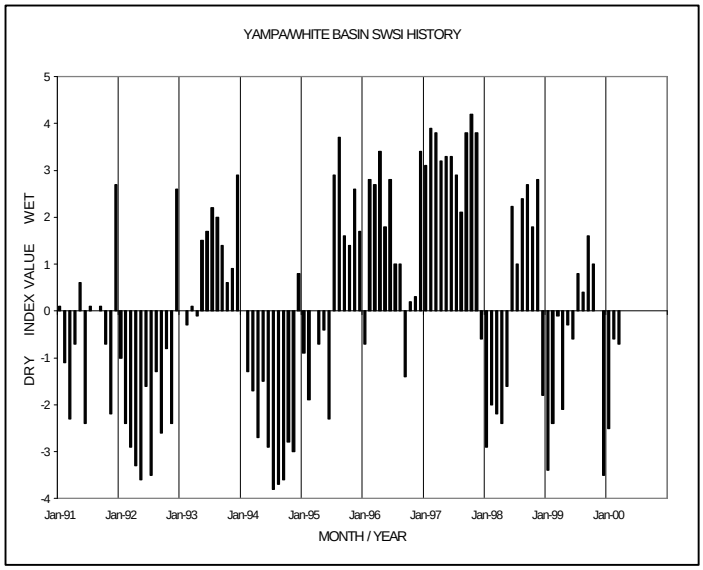




Basinwide Conditions Assessment

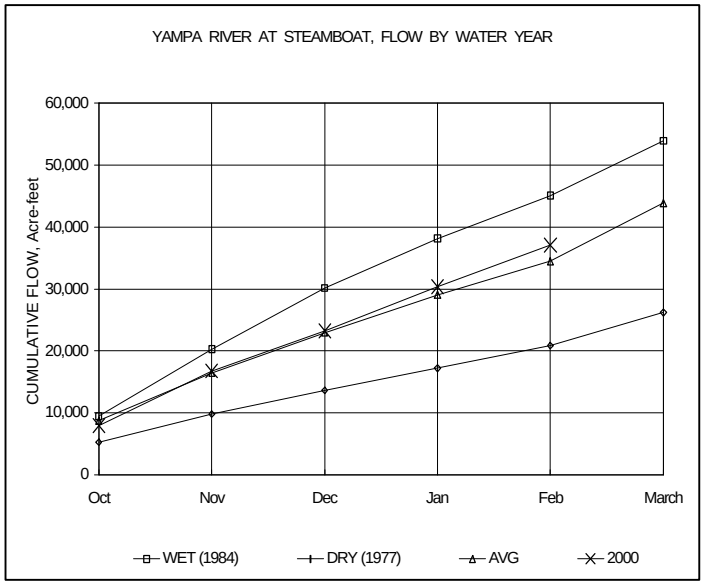
The SWSI value of –0.7 indicates that for February the basin water supplies were near normal. The Natural Resources Conservation Service reports that March 1 snowpack is 100% of normal. Flow at the gaging station Yampa River at Steamboat was 121 cfs, as compared to the long-term average of 92.6 cfs.

February brought above-average moisture to the entire basin. Precipitation for the basin was 133% of average for the month, but the total for the water year is only 89% of average. The snowpack at the end of the month was at average levels, with the North Platte drainage at 107% of average. While precipitation was well above average, temperatures were also very mild.



Outlook

Runoff forecasts for the basin range from a low of 82% on the Little Snake River to 102% on the North Platte. The Yampa River is predicted to see an average runoff based on the March 1st forecast. With the extremely dry fall of last year, water lost to replenishing the soil moisture content may have a large effect on the amount of runoff on smaller, low elevation drainages.



Administrative/Management Concerns

None.

Public Use Impacts

Winter activities are in full swing. The warm temperatures of February often made for spring skiing conditions.

Basinwide Conditions Assessment

The SWSI value of –2.5 indicates that for February the basin water supplies were below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 63% of normal. River flows continued slightly below normal. Flow at the gaging station Animas River near Durango was 175 cfs, as compared to the long-term average of 211 cfs. Reservoirs continued with extra carryover. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 120% of normal as of the end of February.

February 2000 continued some of the break in the dry spell of the past fall. Precipitation was again below normal across the San Juan Basin. A series of small snowstorms came through the area, on the 9th to the 13th, 17th and 18th, and the 24th to the 25th of February. These served to increase the snowpack % of normal by about 10% by the end of the month. However for the year-to- date totals, the area has experienced only 31% of normal precipitation.

Temperatures were very warm. The lows experienced were as low as 11°F on February 8th in Durango. But the average lows were over 7.2°F above normal. The high temperatures averaged 3.3°F above normal.

Outlook

The extra storage water in the reservoirs currently appears to be critical for stream supplies next year.

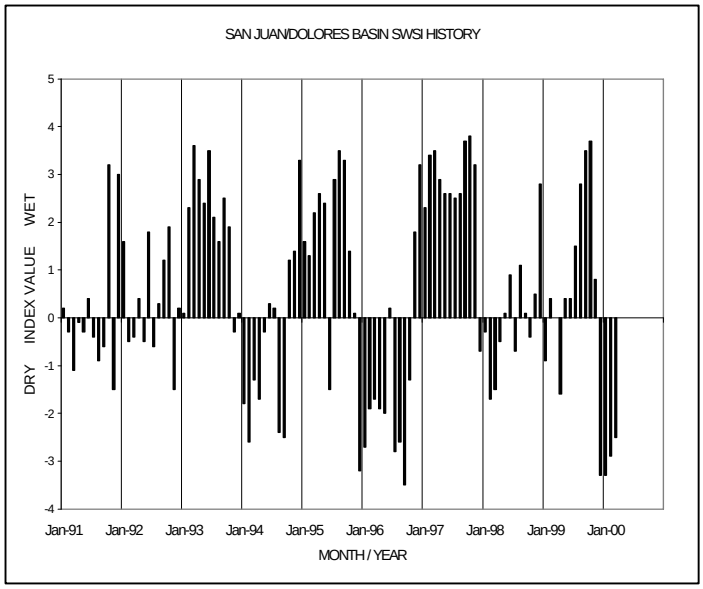
In spite of recent storms, much more precipitation is needed in order to develop a significant runoff scenario.

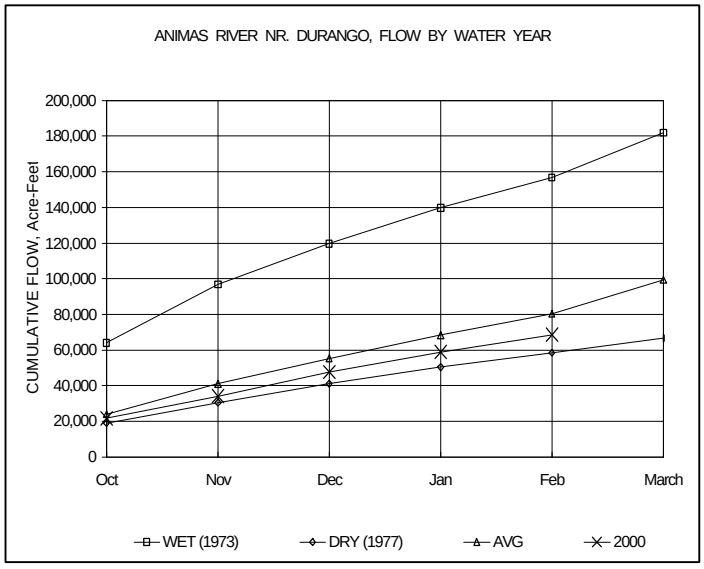
Administrative/Management Concerns

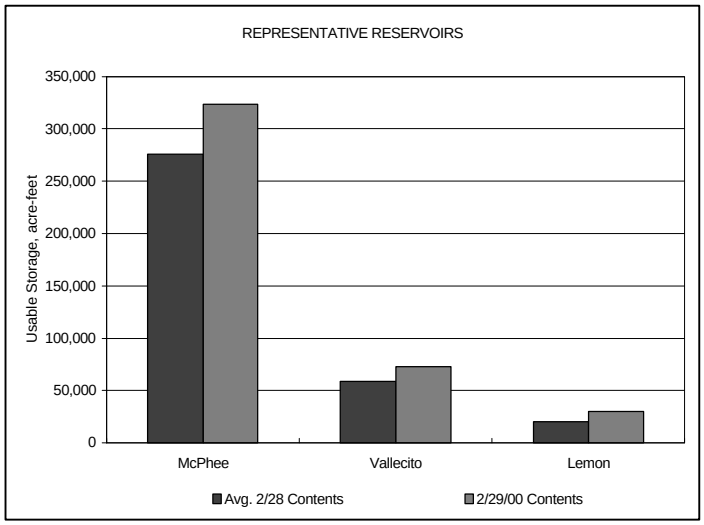
None.

Public Use Impacts

Winter recreation was salvaged by the additional storms in the mountains.







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