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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May 2000

As warmer temperatures and below-average precipitation pervaded this April, the statewide average snowpack decreased from 90% of normal to 69% of normal during April. Water supplies are at near normal to above normal levels in the South Platte, the Arkansas, and the Colorado river basins due to maintained or increased storage and snowpack. The Yampa/White Basin joined the Rio Grande, Gunnison, and San Juan/Dolores basins in their below normal water supplies, primarily attributable to low snowpack. Streamflows statewide appear to be peaking earlier than usual. Fortunately, reservoir storage is average to above average in most of the reservoirs across the state.

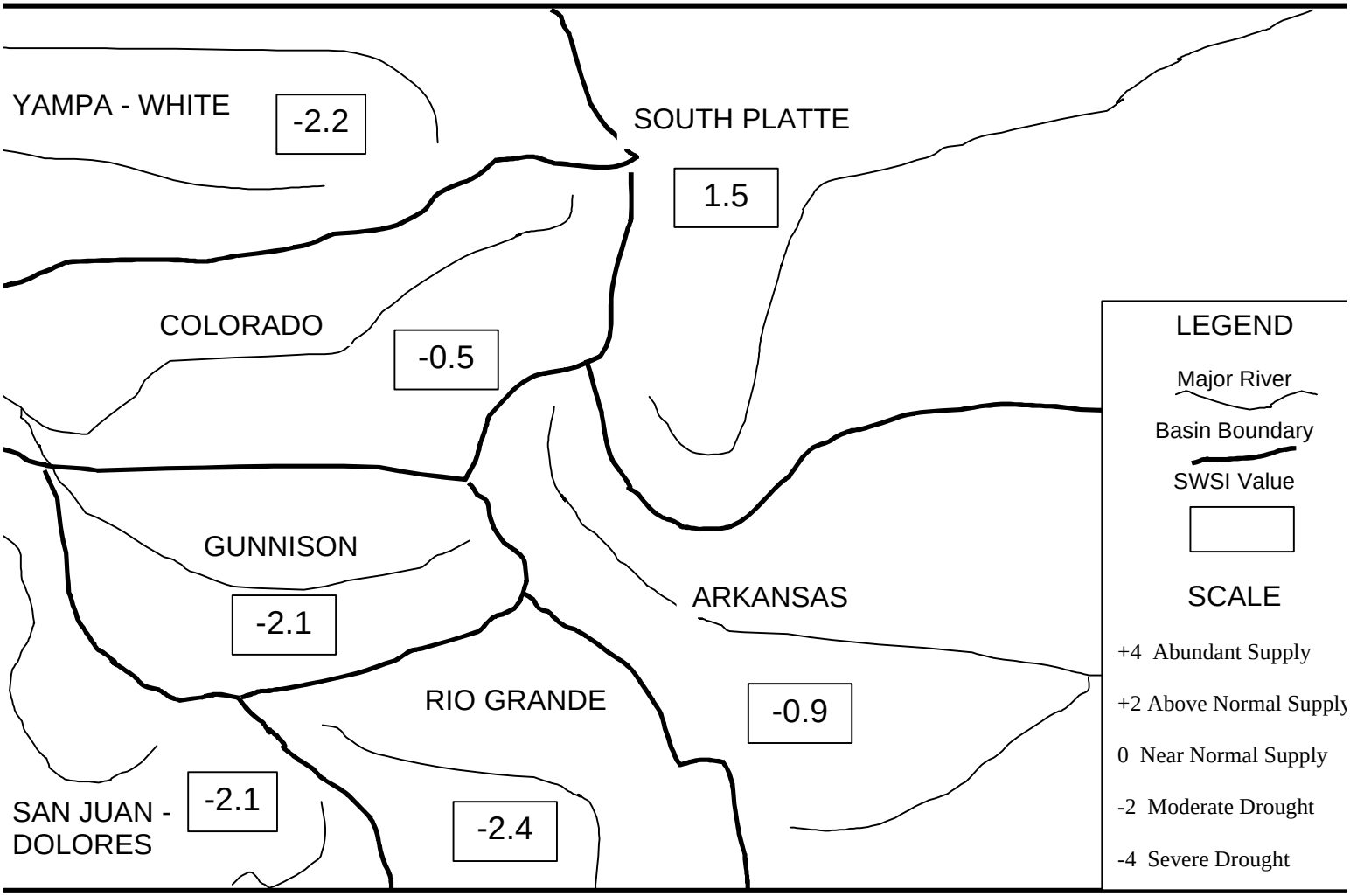
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter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

Basin	May 1, 2000 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+1.5	-0.5	-0.9
Arkansas	-0.9	-0.6	-2.0
Rio Grande	-2.4	-1.0	-3.6
Gunnison	-2.1	-1.8	-3.2
Colorado	-0.5	-0.2	-1.5
Yampa/White	-2.2	-1.6	-1.9
San Juan/Dolores	-2.1	-0.7	-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

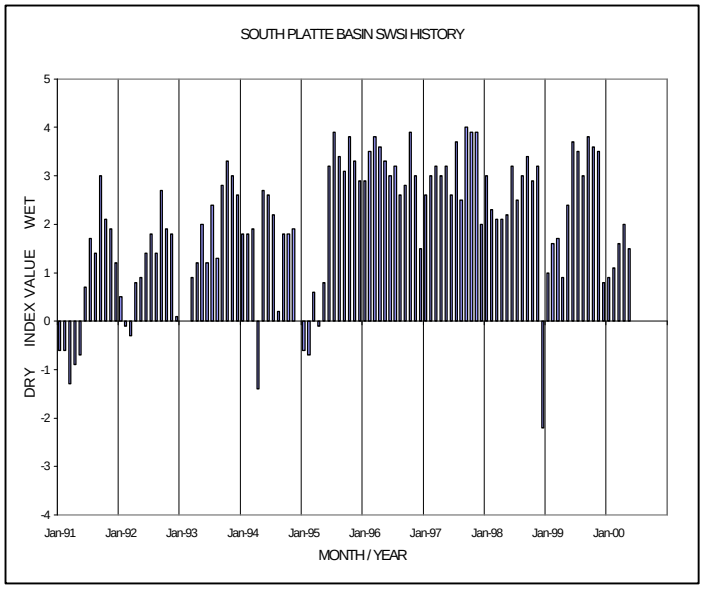


MAY 1, 2000

Basinwide Conditions Assessment

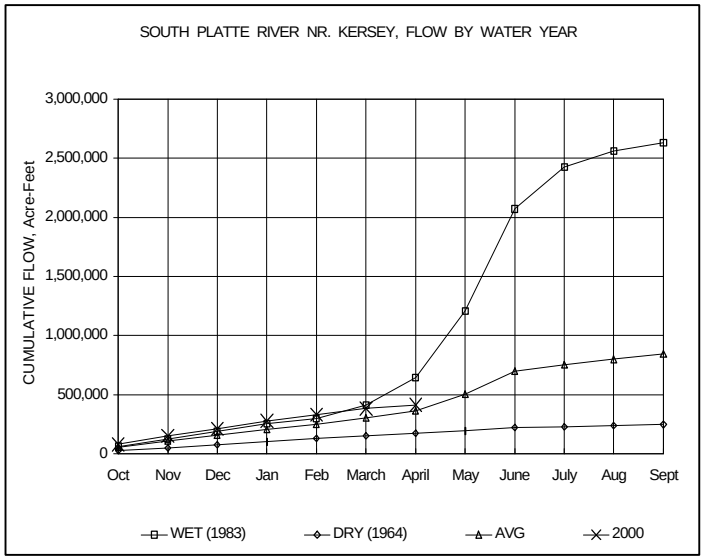
The SWSI value of 1.5 indicates that for April the basin water supplies were above normal. Reservoir storage, the major component in this basin in computing the SWSI value, was normal as of the end of April. Storage in the major plains reservoirs: Julesburg, North Sterling, and Prewitt, increased overall by 320 acre-feet during April and these reservoirs are at 93% of capacity. Storage in the major upper basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero, increased by 2,820 acre-feet overall during April and these reservoirs are at 92% of capacity. The Natural Resources Conservation Service reports that May 1 snowpack is 85% of normal. Flow at the gaging station South Platte River at Kersey was 520 cfs, as compared to the long-term average of 992 cfs.

Because of the dry conditions in March, stream flow in the South Platte was approximately average for the month of April. This is a major departure from the previous months this year in which the stream flow far exceeded the average. It is also a dramatic departure from last year when there were storms that provided large amounts of rainfall on the plains and significant snowfall in the mountains raising the South Platte to flood stage below the Big Thompson River.



Outlook

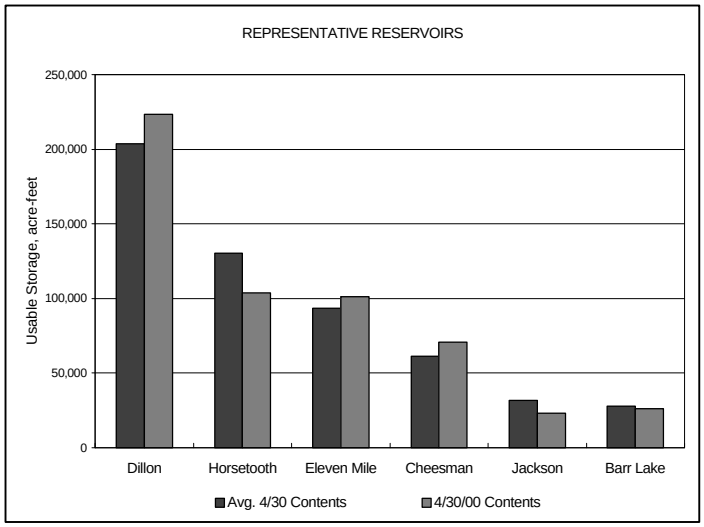
A significant aid to the water supply availability during the month of April was non-charge Colorado Big Thompson water made available to meet shortages on the tributaries to the South Platte. This kept a call off most of the tributaries within the Northern Colorado Water Conservancy District boundaries.



Administrative/Management Concerns

The snowpack dropped significantly the last few days of April due to the dry conditions, warm temperatures, and wind. Because of this drop, the overall average snowpack conditions were below average by the end of April. The conditions on the plains were also very dry by the end of April. This has created some concern among water administrators that this may be a somewhat dry year in contrast to previous years. Nevertheless, because of the excellent storage conditions and bank storage from previous wet years, the overall water supply outlook for the South Platte continues above average. As in most years, the adequacy of the supply this year will be very dependent upon precipitation within the next month or so.

Irrigation users began taking water along the South Platte and tributaries toward the end of April. By the last week of the month, the call on the South Platte was for irrigation in District 2 above the confluence with the Saint Vrain. The priority date of the call was 11-20-1885. This is not an unusual call for this time of year.



Public Use Impacts

None.

Basinwide Conditions Assessment

The SWSI value of –0.9 indicates that for April the basin water supplies were nearly normal. The Natural Resources Conservation Service reports that May 1 snowpack is 72% of normal. Flow at the gaging station Arkansas River near Portland was 401 cfs, as compared to the long-term average of 439 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 198% of normal as of the end of April.

Outlook

Reservoir storage levels remained high during April. Pueblo, John Martin and Trinidad reservoirs averaged 95% of conservation pool capacities.

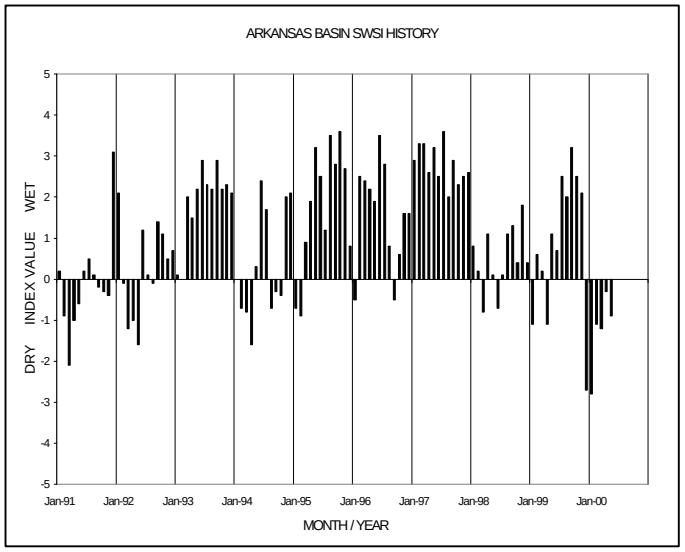
Administrative/Management Concerns

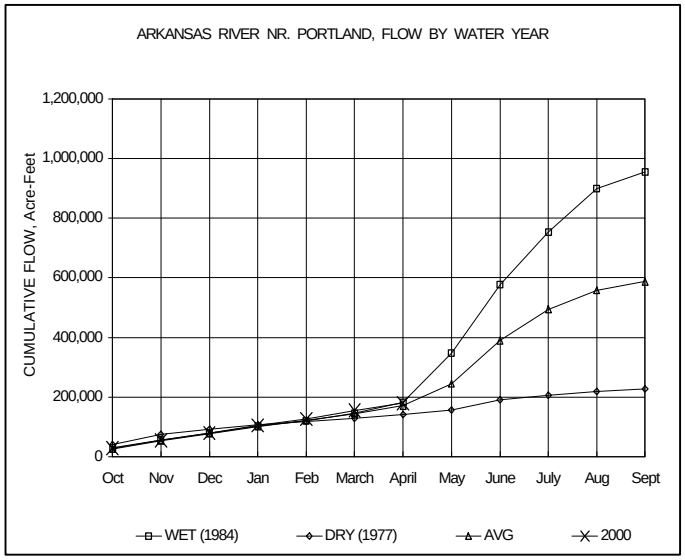
Entities owning water in the Pueblo Reservoir seasonal conservation pool spilled water in April in order to evacuate water out of the flood pool. Approximately 3,900 acre-feet of Winter Water and 2,529 acre-feet of If and When contract water spilled over a three day period.

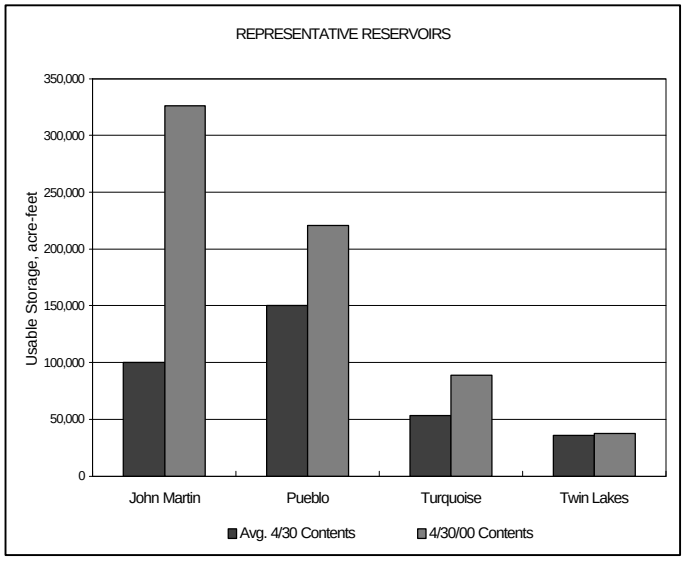
Public Use Impacts

The spill in April provided the Bureau of Reclamation with an opportunity to test the Safety of Dams repairs work at Pueblo Reservoir. Releases up to 5,000 cfs were successfully accomplished with no problems noted.

Winter water storage commitments during the first part of April 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 –2.4 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 35% of normal.

Flow at the gaging station Rio Grande near Del Norte averaged 815 cfs (123% of normal). The Conejos River near Mogote had a mean flow of 235 cfs (73% of normal). Flow to the state line was only 35% of normal as upstream diversions for irrigation needs continued.

Alamosa received precipitation totaling 0.60 inches during April, 0.11 inches above normal. Temperatures in the San Luis Valley were above normal levels for the sixth month in a row. Heavy winds exceeding 60 miles per hour buffeted the area on April 18 severely hampering fire-fighting efforts as 5500 acres burned near the Sand Dunes National Monument.

Outlook

NRCS forecasts are now predicting runoff to be only 61% of average on the Rio Grande near Del Norte and 55% for the Conejos near Mogote. Other drainages of particular concern are the Alamosa River (52%) and LaJara Creek (44%) where runoff will be early and diminished.

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.

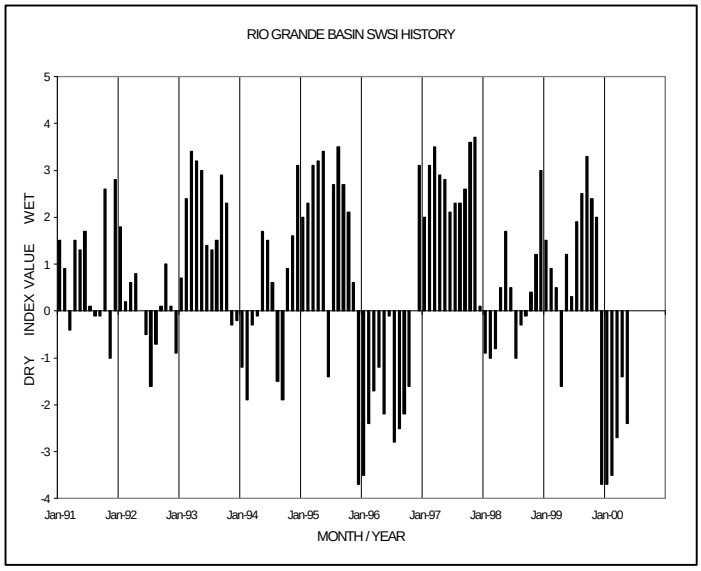
Administrative/Management Concerns

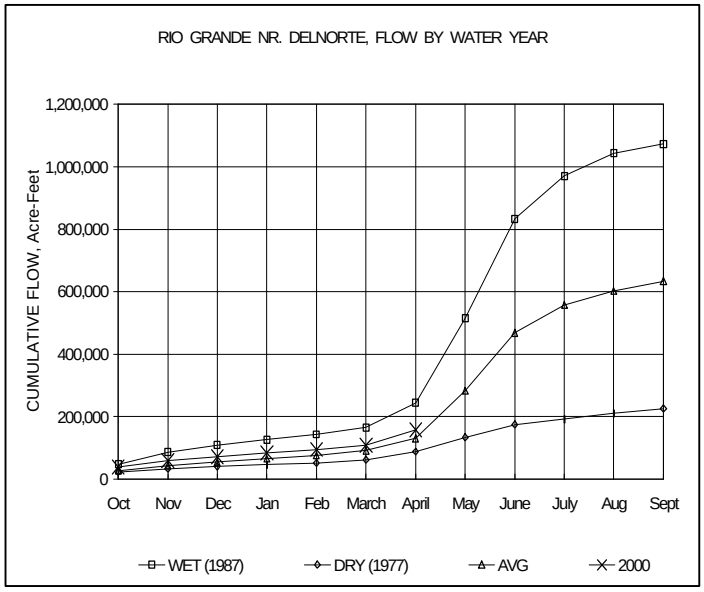
Water rights were not being curtailed on the Rio Grande or the Conejos during April. It appears that no curtailment will be necessary on these drainages to make water available for Rio Grande Compact deliveries in 2000.

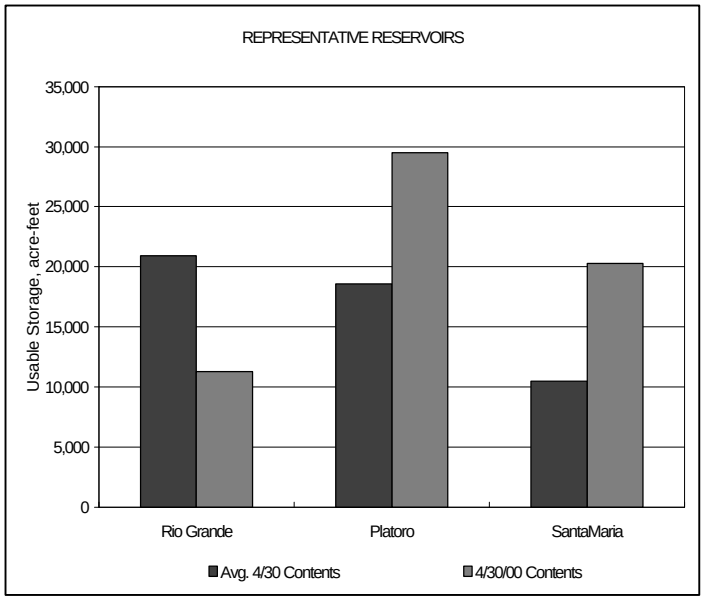
With only the most senior water rights able to divert throughout the summer, massive pumping from the valley's aquifers will be necessary to meet demand.

Public Use Impacts

Mild weather conditions allowed many farmers to begin working in the fields well ahead of normal years. The expected well below average stream flow will adversely affect the farming, ranching, and recreational industries in the basin.

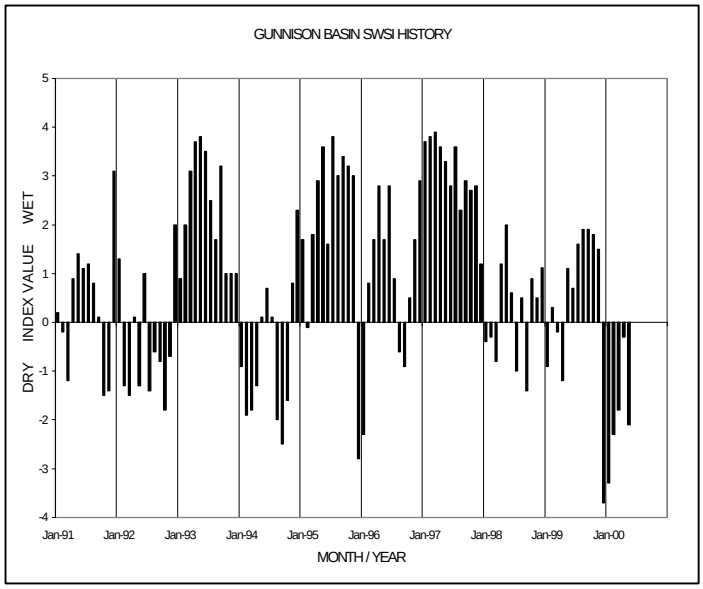


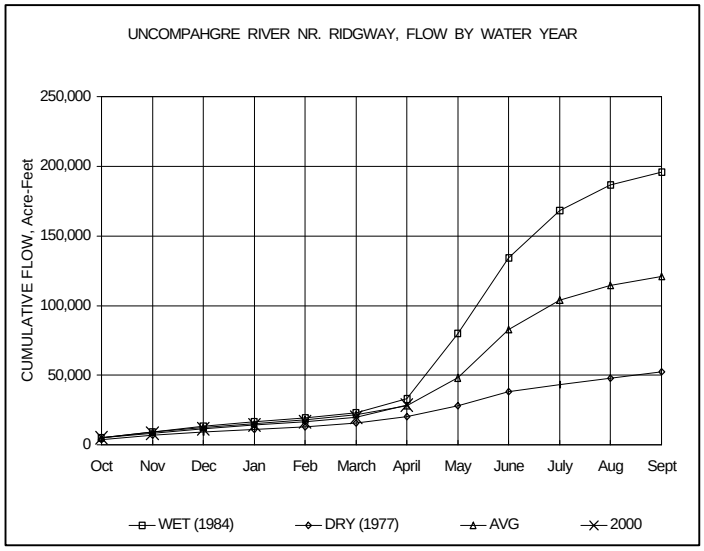


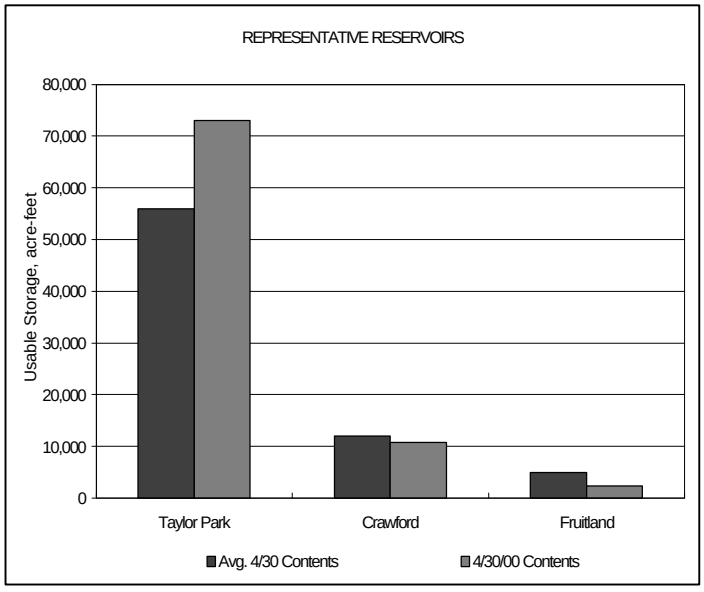


Basinwide Conditions Assessment

The SWSI value of –2.1 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 58% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 147 cfs, as compared to the long-term average of 109.4 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 118% of normal as of the end of April.

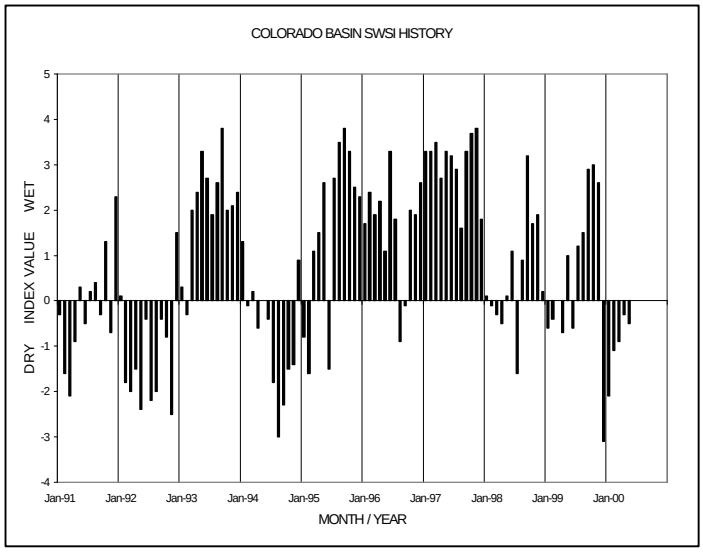






Basinwide Conditions Assessment

The SWSI value of –0.5 indicates that for April the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 84% of normal. Flow at the gaging station Colorado River near Dotsero was 1,571 cfs, as compared to the long-term average of 1,818 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 126% of normal as of the end of April.

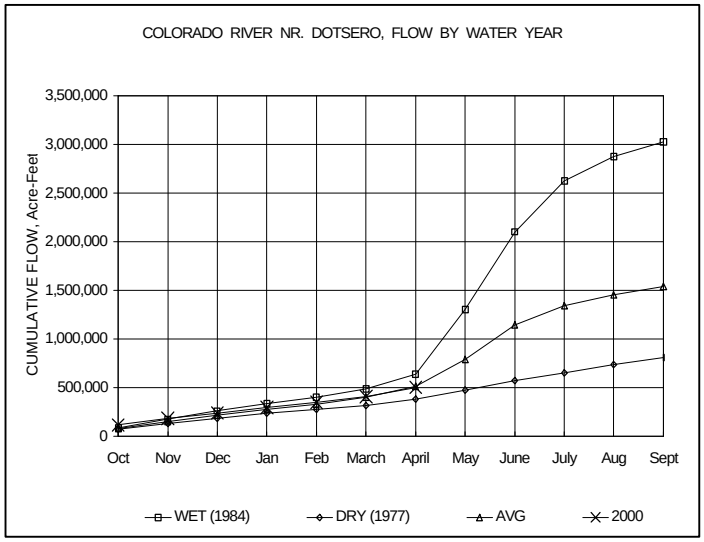


Outlook

Snowpack for the Upper Colorado River basin as of May 1 was 84% of normal, ranging from 128% at Willow Creek Pass to 46% at McClure Pass and dropping consistently through early May. Since streams are peaking earlier than normal, this may leave diverters with less water sooner. Reservoir storage in the Colorado River basin is 37% above average, allowing adequate availability to those depending on upstream storage water.

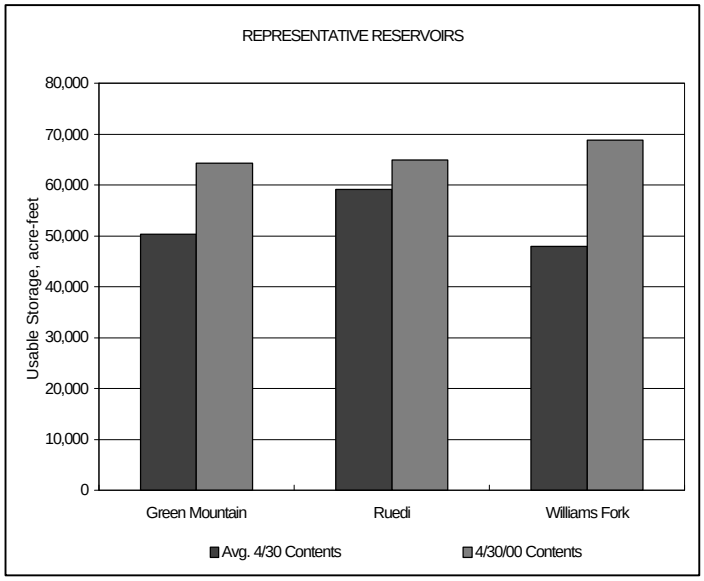
Administrative/Management Concerns

Major reservoir operators - Denver Water, USBR, Colorado River District and Northern Colorado Water District - are attempting to 'augment' the peak flow on the Colorado River to enhance the fish population. The operators will try to enhance the peak, as measured at the Cameo gage for the 15-Mile Reach, by making additional releases while still obtaining fills in their reservoirs. The reservoirs participating in this year's coordinated reservoir releases include Dillon, Green Mountain, Granby, Willow Creek, Wolford and Ruedi.



Public Use Impacts

Fruit growers in the Grand Valley are anticipating a tenfold increase from last year in production for this summer. Weather for May indicates no frosts for the peach, apple, grape, pear and cherry orchards.

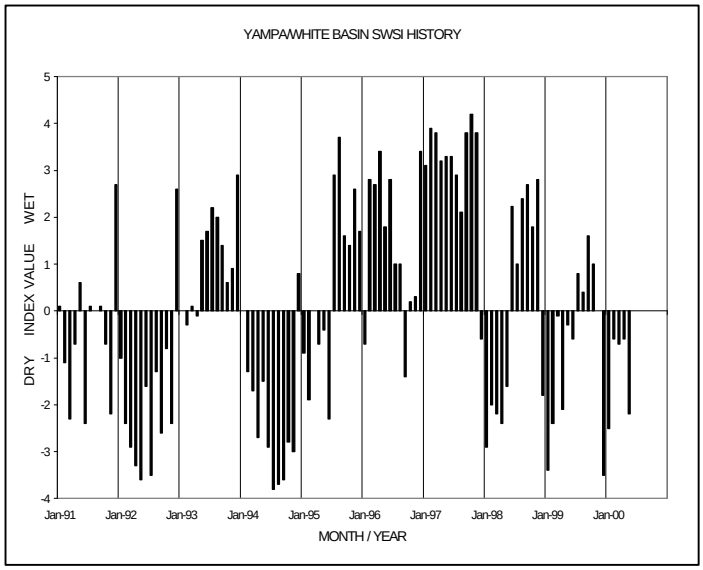


Basinwide Conditions Assessment

The SWSI value of –2.2 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 79% of normal in the Yampa/White Basin. Flow at the gaging station Yampa River at Steamboat was 636 cfs, as compared to the long-term average of 598 cfs.

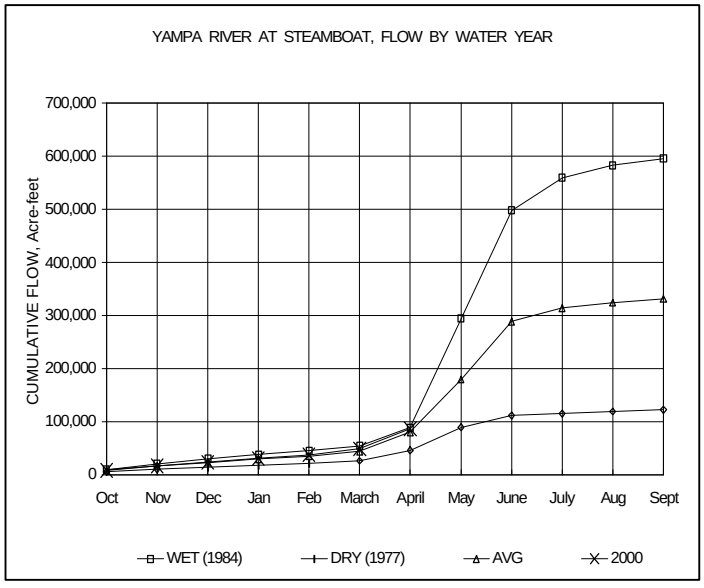
Temperatures in April continued to be above average for most of the basin. Precipitation was below normal for the month in many areas. This combination caused a significant reduction in the snowpack for the basins in the Division.

The May 1st snowpack for the Yampa and White Rivers was about 79% of average, while the Little Snake drainage was only 68% of average. The North Platte drainage had the best snowpack in the Division, 94% of average. The warm temperatures caused most rivers to see elevated flows for this time of year. The only snowpack that still exists is in the mountains at high elevations.



Outlook

Streams and rivers in the Division may experience early runoffs this spring. Flows are currently at levels normally seen two to three weeks later in the season. The early runoff may cause shortages of water later in the spring as irrigators start diverting.



Administrative/Management Concerns

Early runoff has reduced the snowpack significantly. Many smaller tributaries could see water shortages. It is anticipated that administration will begin earlier then normal in water-short drainages. Use of irrigation reservoirs to supplement natural streamflow may be greater this year.

Public Use Impacts

Streams and rivers have been flowing at higher than normal levels. Some localized flooding may occur as the runoff continues. Caution is advised for all activities on the waterways. Most reservoirs are ice-free and nearing full capacity.

Basinwide Conditions Assessment

The SWSI value of –2.1 indicates that for April the basin water supplies were below normal. The Natural Resources Conservation Service reports that May 1 snowpack is 46% of normal. Flow at the gaging station Animas River near Durango was 957 cfs, as compared to the long-term average of 786 cfs. Reservoirs continued with extra carryover. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 122% of normal as of the end of April.

April 2000 did not match the previous year in that the much-needed precipitation did not arrive in the mountains. Two significant storms brought substantial moisture on the first and the fifteenth, but Durango finished April with 1.21 total inches of precipitation compared to a normal 1.33 inches.

Temperatures were 5-6ºF above normal on the highs and lows for each day. The daily low was on April 2nd, with 24ºF. Windy days were common.

Because of the very warm temperatures and clear weather, the snowpack melted quickly. Early peak flows showed up to 2160 cfs on the Animas River, 2,110 cfs on the Dolores River, and 206 cfs on the La Plata River. These were recorded on April 28th. These flows were well above average. However, the snow pillow results showed a decline from 80% to 50% of normal by the month end.

Outlook

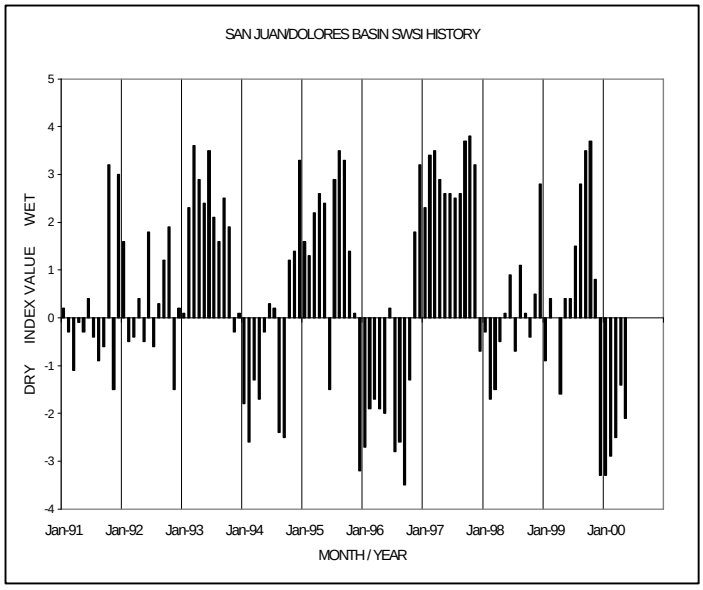
Reservoirs were able to store during the month and held up to 155% of normal capacity by May 1st. Rivers had not reached their maximum, but the anticipated high water season appeared to be headed for an early end, barring more rain.

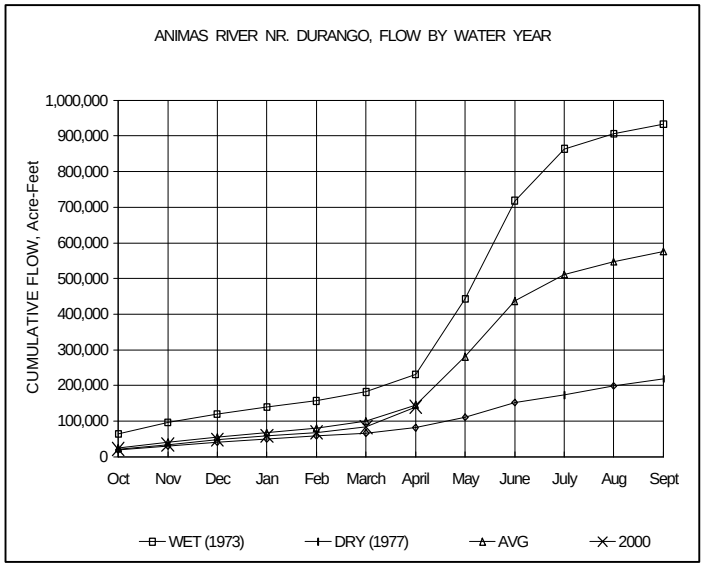
Administrative/Management Concerns

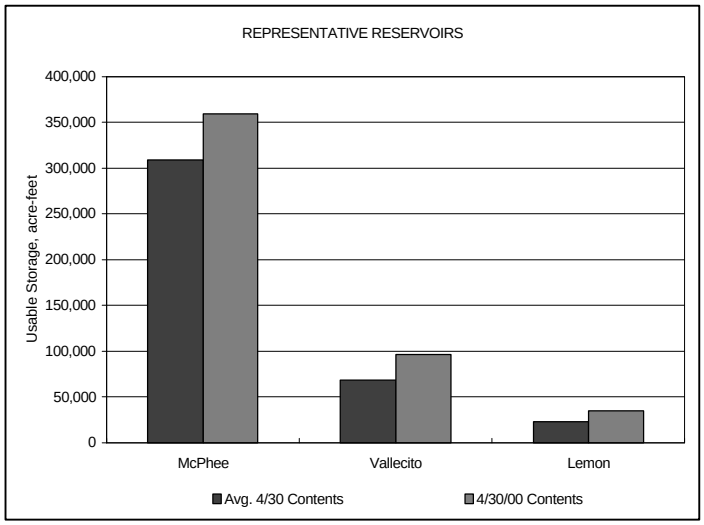
Reservoir carryover will prove essential in meeting water demand this season.

Public Use Impacts

None.







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