COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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MAY 2005

All major drainage basins have a better water supply than they did last year, including the South Platte Basin in spite of its lower SWSI value (snowpack, stream flow, and reservoir storage are better in the South Platte basin than they were at this time last year). Cumulative storage for all the reservoirs graphed in this report is 97% of average. Statewide snowpack is 99% of average. The southern portion of the state is above average in both current snowpack and forecasted runoff, while the northern portion of the state is below average in both of those areas. Given the conditions in the north, the state as a whole cannot be said to be out of the drought that it has experienced for approximately the last 5 years.

During the latter part of April temperatures cooled and many basins received precipitation. These factors tend to benefit many water users by hopefully delaying the overall runoff, and reducing the call by senior water rights allowing junior water right holders more opportunity to take water (in particular reservoirs often have relatively junior rights). A delayed runoff, especially into June and July, generally benefits irrigators by providing more water when crops have a higher demand for water due to the higher temperatures and longer days during those months.

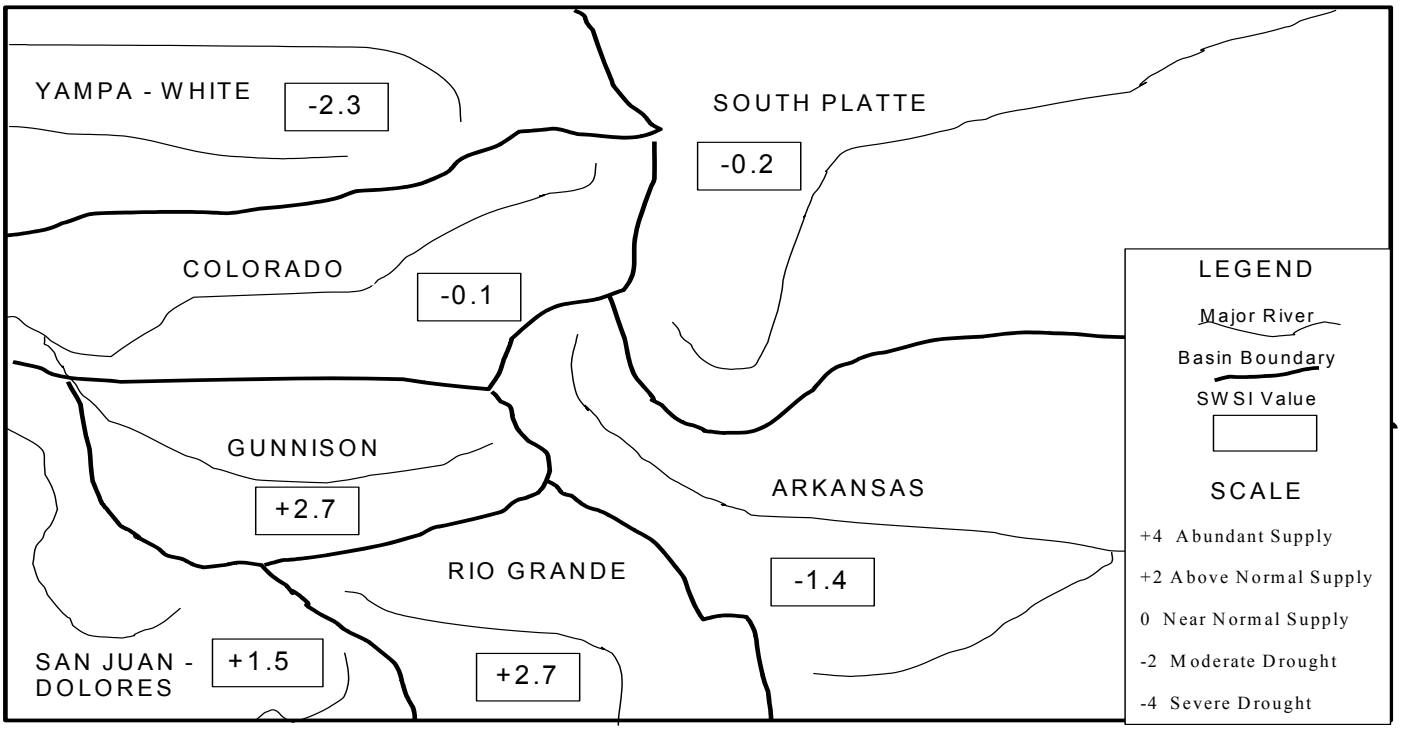
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter 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, 2005, and reflect the conditions during the month of April.

Basin	May 1, 2005 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	-0.2	+0.1	-0.7
Arkansas	-1.4	-0.1	+0.7
Rio Grande	+2.7	-0.5	+1.9
Gunnison	+2.7	+0.1	+2.2
Colorado	-0.1	+0.3	+2.0
Yampa/White	-2.3	-0.1	+0.8
San Juan/Dolores	+1.5	-0.8	+0.7

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



MAY 1, 2005

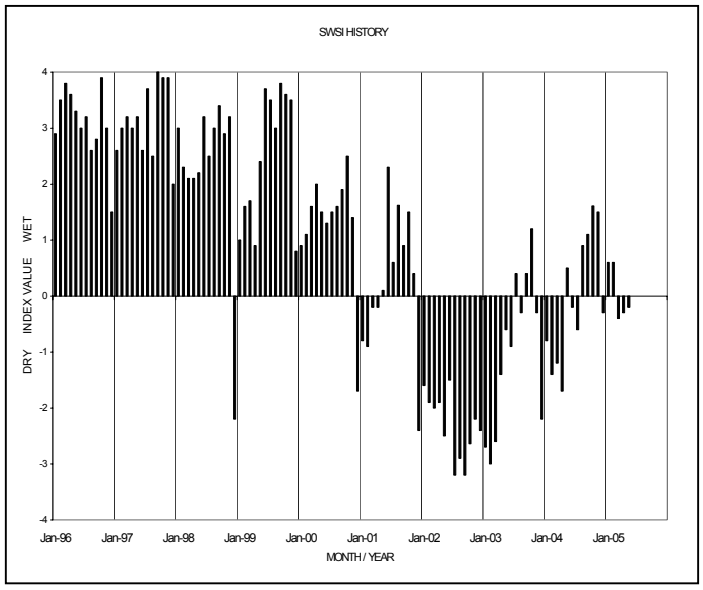
Basinwide Conditions Assessment

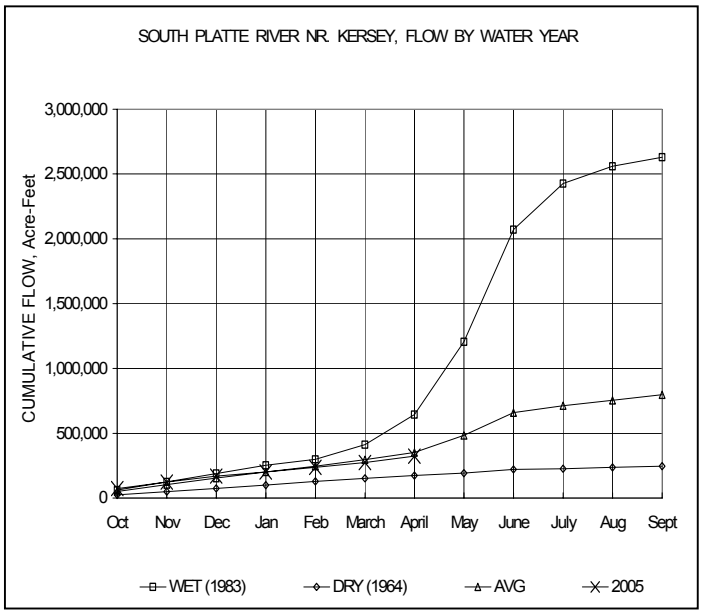
The SWSI value of –0.2 indicates that for April the basin water supplies were near normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 105% of normal as of the end of April. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 97% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 82% of capacity. The Natural Resources Conservation Service reports that May 1 snowpack is 77% of normal. Flow at the gaging station South Platte River near Kersey was 854 cfs, as compared to the long-term average of 853 cfs. Flow at the Colorado/Nebraska state line averaged 125 cfs.

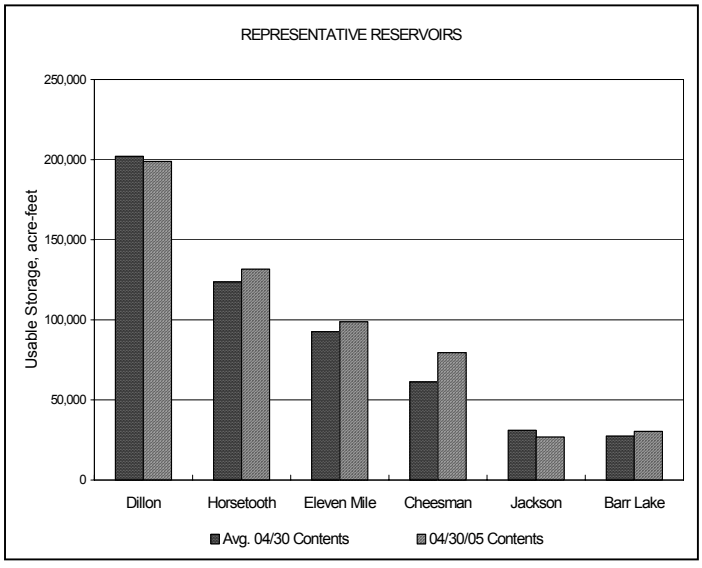
April saw a variety of water uses as recharge, storage, municipal and some irrigation all took their turns or occurred simultaneously on different sections of the river. Initially, April started out a little warm and dry, but quickly turned cool and wet along the Front Range with these conditions eventually extending out into the plains the last week of the month. These conditions contributed to a stable to slightly increased snowpack and the ability to allow extended periods of diversion by fairly junior recharge rights on the plains. The wet conditions also allowed most of the major plains reservoirs to remain full and refill any water lost to seepage and evaporation, in contrast to April 2004 when users were forced to withdraw water from these reservoirs for irrigation.

Outlook

In May, the irrigation users hope for conditions wet enough to keep the junior recharge rights diverting as that will provide a larger augmentation supply for wells, but not so wet as to adversely impact planting and other necessary activities. Moderately wet conditions in May would also significantly help irrigators dependent on reservoirs, as they would not have to use reservoir supplies to “irrigate up” their crops. These conditions would also serve municipalities by allowing additional storage and reducing lawn and landscape irrigation demand.







Basinwide Conditions Assessment

The SWSI value of –1.4 indicates that for April the basin water supplies were slightly below normal. The Natural Resources Conservation Service reports that May 1 snowpack was 107% of normal. Flow at the gaging station Arkansas River near Portland was 291 cfs, as compared to the long-term average of 431 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 78% of normal as of the end of April.

There is a sharp distinction between the northern and southern drainages in both snowpack and forecasted runoff, with the southern drainages being well above average and the northern drainages, including the mainstem, below average.

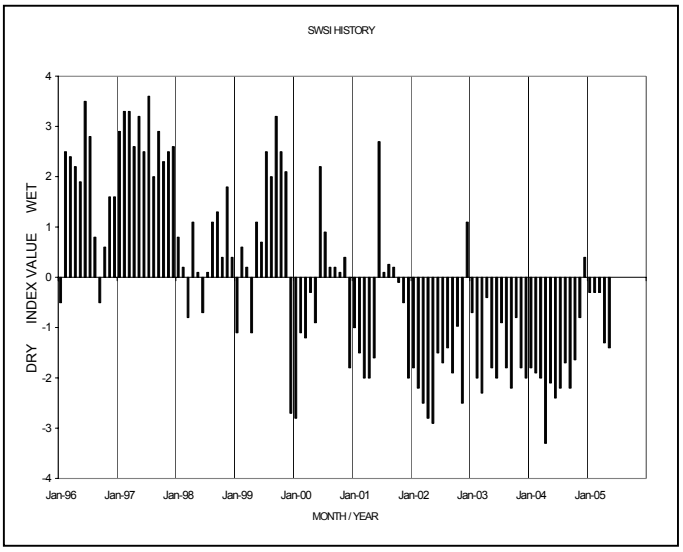
Ditches below John Martin Reservoir called for water from the reservoir on April 1, 2005 triggering distribution of conservation storage into accounts per the 1980 Operating Agreement for John Martin Reservoir. Cool, rainy weather in early April tended to reduce the demand for reservoir releases and heavy inflows into John Martin Reservoir from the Purgatoire River caused the distribution to take all of April to complete.

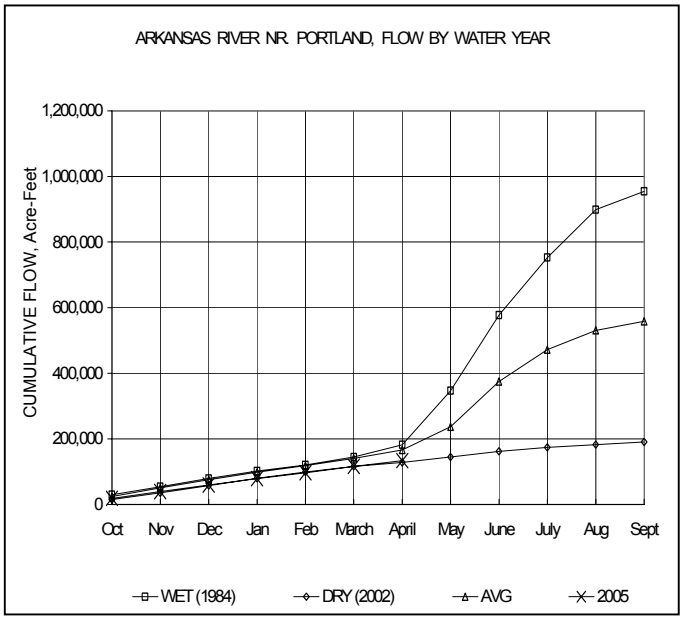
The Arkansas River call started at Fort Lyon Canal's second water right (3/1/1887) and ended on the same call with a few days slightly junior and a few days slightly senior to that river call at different points throughout the month. Flows from southern tributaries were very strong in April even though the flows through Pueblo Reservoir were fairly weak.

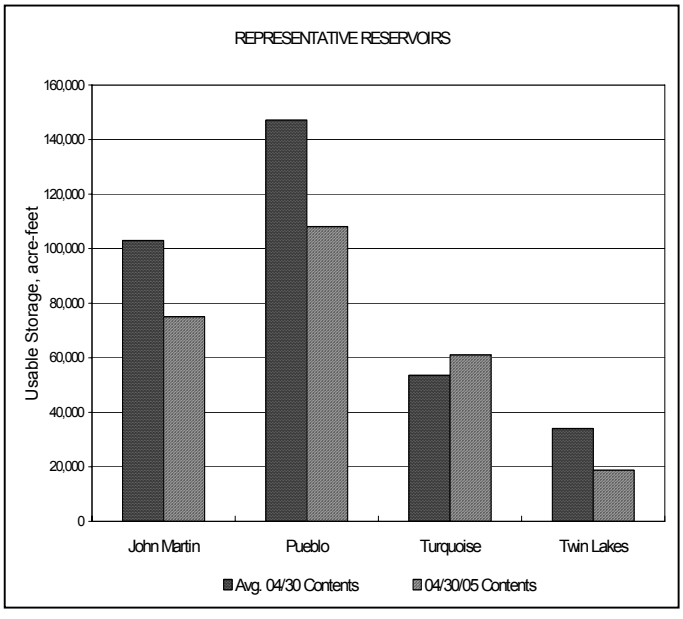
Total storage from November 1, 2004 through April 30, 2005 in John Martin Reservoir was approximately a net of 59,500 acre-feet. The storage in April alone exceeded 35,000 acre-feet.

Administrative/Management Concerns

This is the first year of operation under some of the revisions instituted due to the Inter-Governmental Agreement between Pueblo, Colorado Springs, Aurora and several other entities. A substitute water supply plan is in place that allows storage of unexchangeable return flows by participating entities in Holbrook Reservoir for subsequent exchange at times of higher flows.





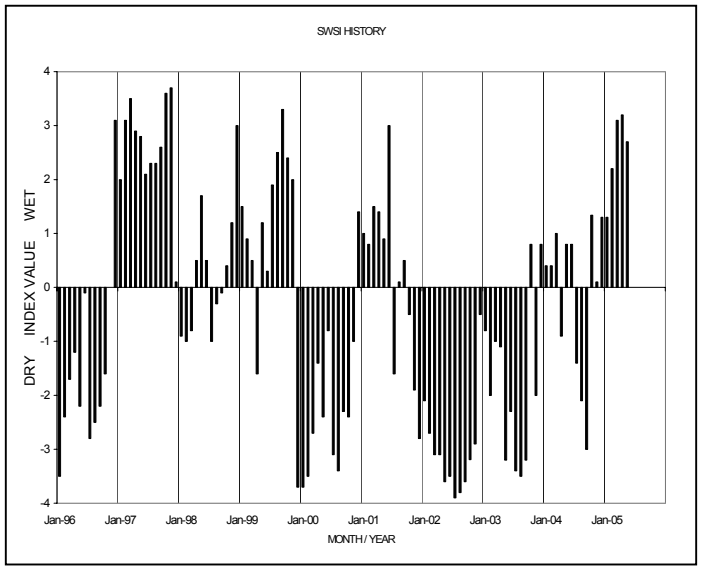


Basinwide Conditions Assessment

The SWSI value of 2.7 indicates that for April the basin water supplies were above normal. The Natural Resources Conservation Service reports that May 1 snowpack is 139% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 1,003 cfs (129% of normal). The Conejos River near Mogote had a mean flow of 460 cfs (143% of normal). Flow to the state line was 163% of normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 64% of normal as of the end of April.

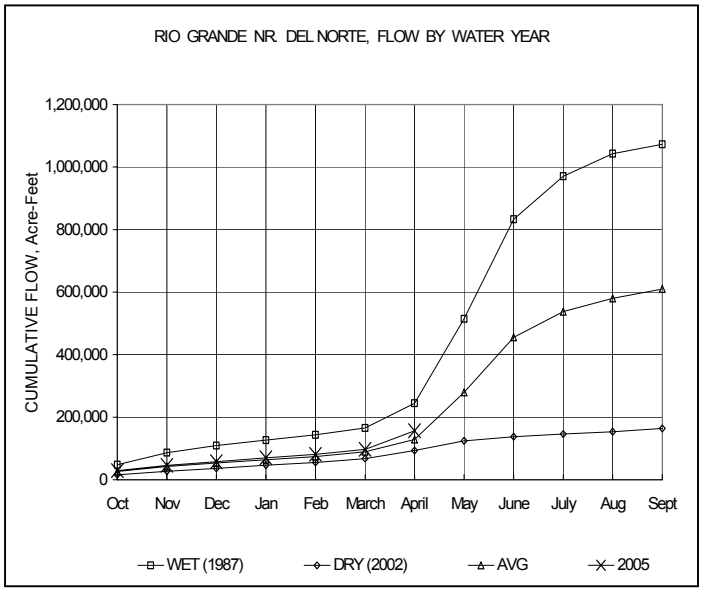
Stream flow in the upper Rio Grande basin was well above average during the first three weeks of April as warm temperatures created an early runoff from the abundant snowpack. Cooler temperatures during the last week of April dropped runoff flows to below average.

The Valley floor received above average precipitation and temperatures during April.



Outlook

Additional snowfall and cool temperatures during the latter part of April increased Natural Resources Conservation Service runoff forecasts to 148% of average on the Rio Grande near Del Norte and 135% for the Conejos near Mogote. These forecasts are the highest since 1995. Saguache Creek, in the northwest part of the San Luis Valley has the lowest forecast at 106% of normal. Sangre de Cristo Creek, on the east side near Fort Garland, has the high forecast at 177% of normal.



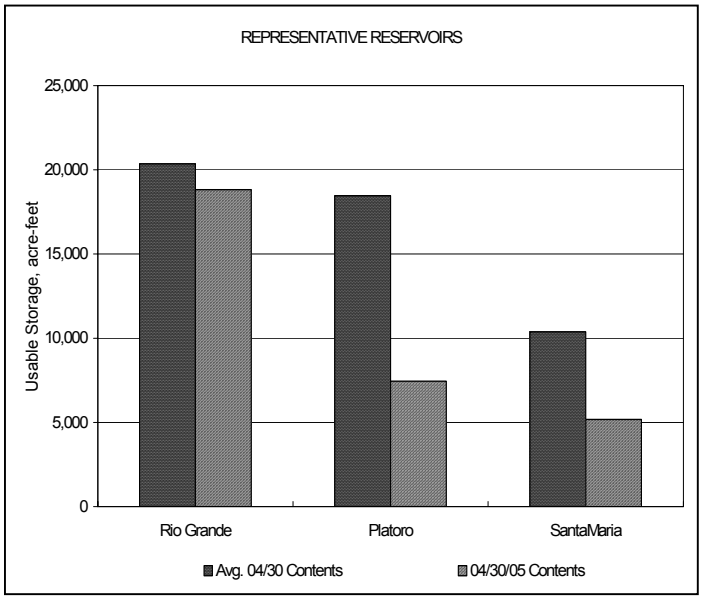
Administrative/Management Concerns

Snowstorms and cold temperatures brought the early snowmelt to a sudden halt. Many ditches had to be shut down or off after only a few days of diversion. However, water officials expect the runoff to be high and prolonged after this early respite.

Localized flooding could be a problem this runoff season. If weather patterns sustain warm temperatures for more than a week, the snowmelt will peak and cause bank-full conditions.

Public Use Impacts

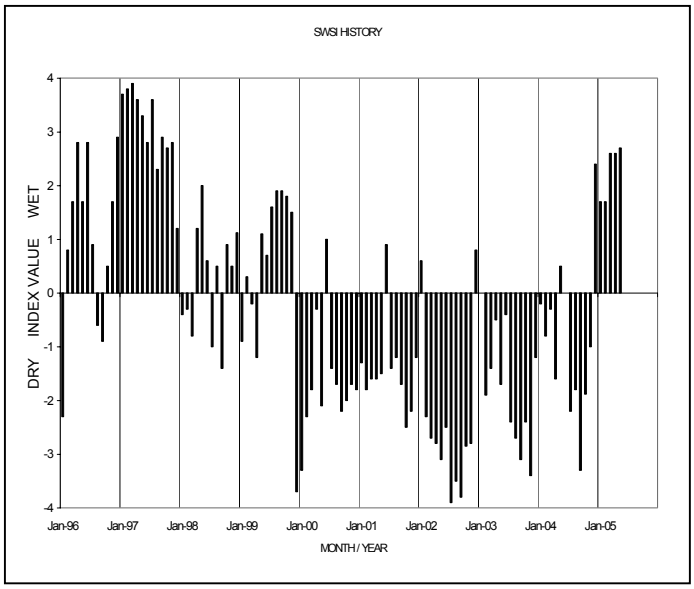
Many reservoirs in the upper Rio Grande basin will fill for the first time in several years due to the expected runoff. Low-lying areas near rivers and creeks will be saturated.



Basinwide Conditions Assessment

The SWSI value of 2.7 indicates that for April the basin water supplies were above normal. The Natural Resources Conservation Service reports that May 1 snowpack was 125% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 134 cfs, as compared to the long-term average of 110 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 112% of normal as of the end of April.

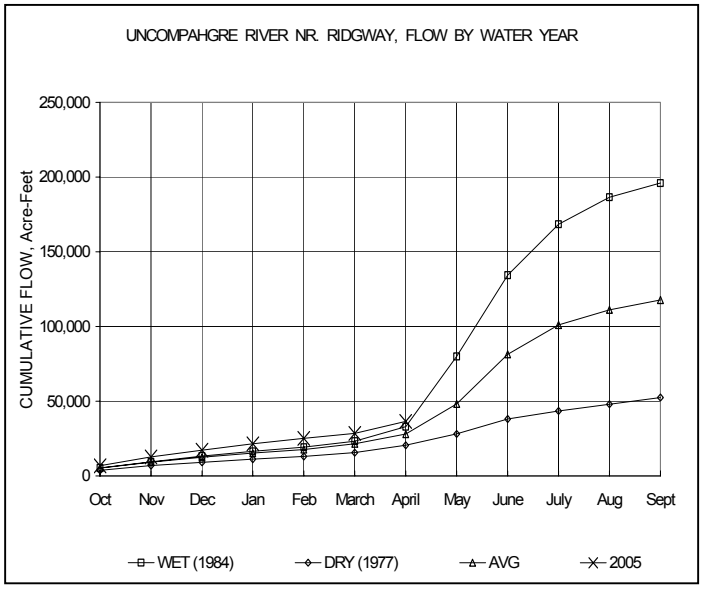
April was a cooler month than normal, but the Gunnison basin still received enough moisture to keep the snowpack percentages up. The entire Gunnison snowpack is 150% of average as of May 11, 2005. Although the sites didn't pick up substantial precipitation during the month of April, the snow levels remained about the same. This time of year, the average amount at each station starts dropping, and if the cold weather keeps the snow from melting, the percentage of average goes up.



Outlook

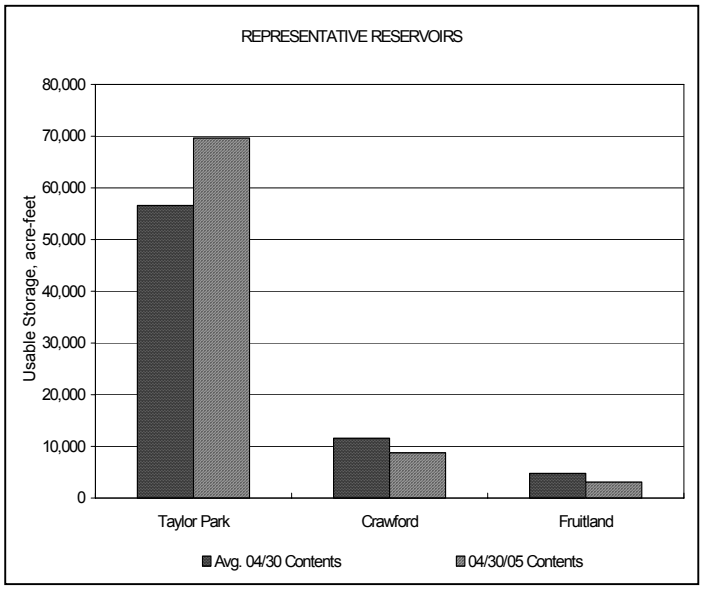
It is still anticipated that all reservoirs will fill except for Taylor Park, which will be within 4 feet of filling. At this time, Paonia, Ridgway and Blue Mesa reservoirs are being drawn down to make room for the anticipated runoff. All the reservoirs on the Grand Mesa are expected to fill.

Of special note in this basin is the high percentage of snowpack on the Grand Mesa. The three courses average 188% of average. Obviously, this situation could lead to some substantial flooding on those streams that flow from the Mesa. The worst areas in Division 4 will probably be Surface Creek and Kannah Creek, this situation will be closely monitored as the weather warms up. If the weather warm up suddenly and stays hot, there will be problems basin-wide.



Administrative/Management Concerns

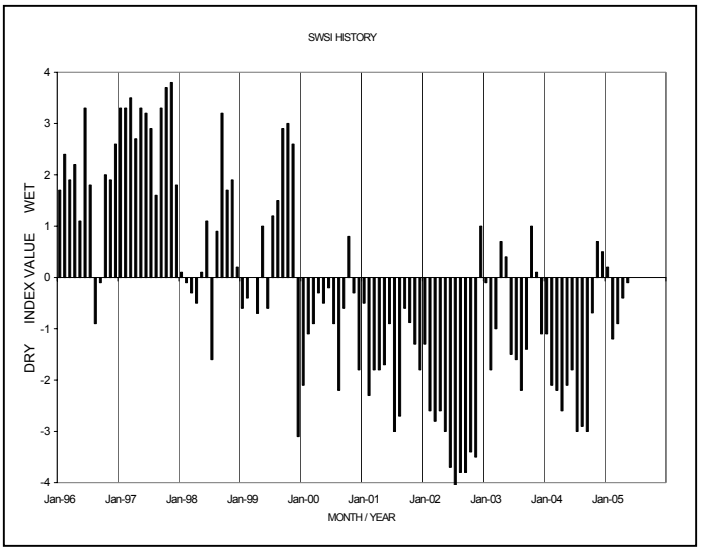
The irrigation water use picked up in April, although the cool weather and precipitation kept the demand fairly low. In most areas, the supply was enough to keep up with the demand. This will be a good year for irrigators and recreational users, both in river flows and increased reservoir storage.



Basinwide Conditions Assessment

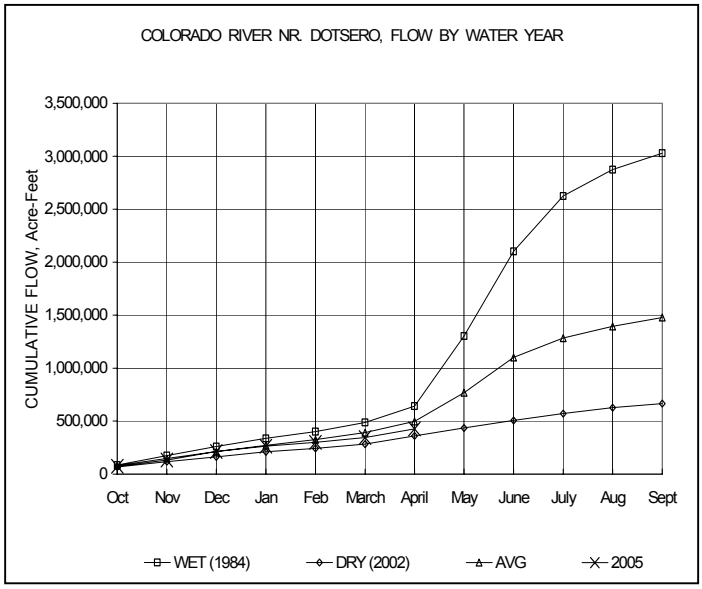
The SWSI value of –0.1 indicates that for April the basin water supplies were near normal. The Natural Resources Conservation Service reports that May 1 snowpack is 88% of normal. Flow at the gaging station Colorado River near Dotsero was 1,384 cfs, as compared to the long-term average of 1,779 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 123% of normal as of the end of April.

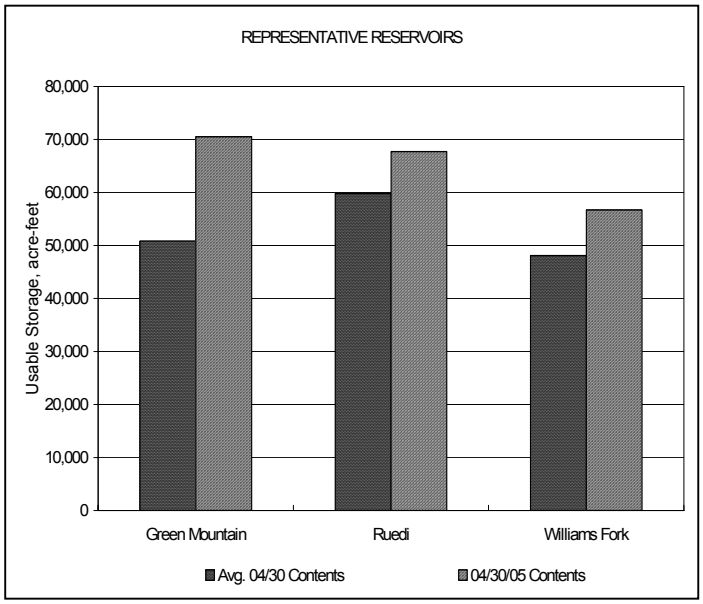
Snowpack for the entire Colorado River basin is only at 88% of average, but this represents a 57% increase over last year's May 1 snowpack, according to the "Colorado Basin Outlook Report May 1, 2005" (NRCS). Significant variations occur throughout the basin. The Plateau Creek basin is doing very well at 145% of average, while the Blue River, Willow Creek, Upper Colorado River, and Muddy Creek (below Wolford Mtn. Res.) basins are at all less than 80% of average. Variations occur within basins, too, such as the Roaring Fork River basin where the Crystal River has above average snowpack and the Frying Pan River has below average snowpack.



Outlook

The NRCS forecasts that April-July stream flows will be less than or 85% of average at Lake Granby inflow, Muddy Creek below Wolford Mtn. Reservoir, Dillon Reservoir inflow, Williams Fork Reservoir inflow, Green Mountain Reservoir inflow, Eagle River below Gypsum, Colorado River near Dotsero, and Ruedi Reservoir inflow. Colorado River near Cameo stream flow is forecasted at 81% of average. Near average stream flow is forecasted for the Roaring Fork River at Glenwood Springs.

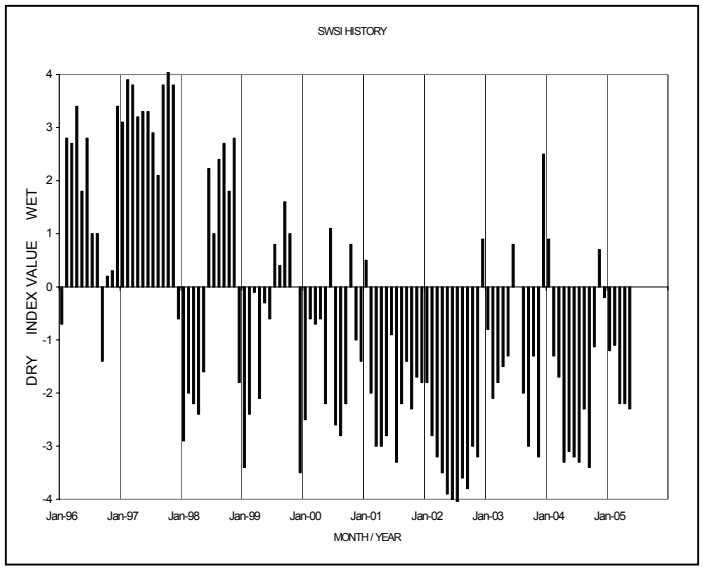


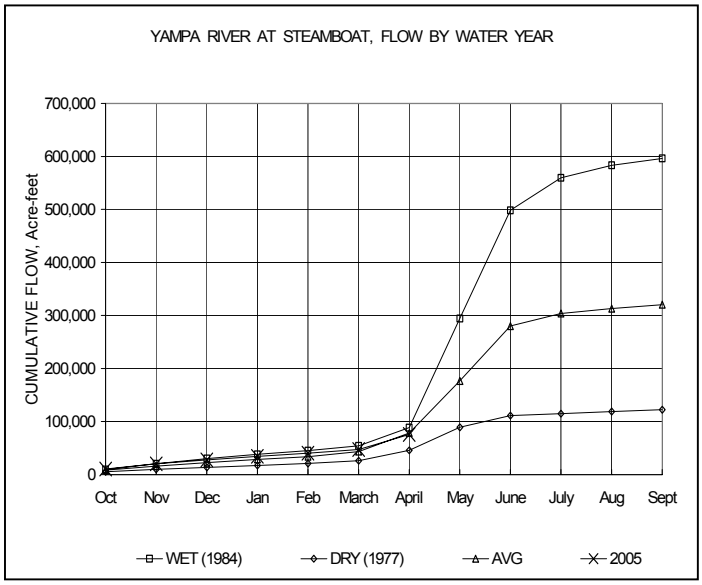


Basinwide Conditions Assessment

The SWSI value of –2.3 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. Flow at the gaging station Yampa River at Steamboat was estimated at 476 cfs, as compared to the long-term average of 589 cfs.

Precipitation for April was approximately 94% of average for the basin, with much of this coming in the later part of the month. Year–to-date precipitation for the water year is about 88% of average. The basin-wide snowpack was 79% of average, down from 89 % of average at the end of March. The highest snowpack readings were recorded on the Little Snake and Elk River drainages, which were 89% and 84% of average, respectively. The snowpack for the North Platte River Basin was 79 %, the Yampa River Basin 72 % and the White River Basin 73 % of average. In the first half of the month the warm, dry weather resulted in an early snowmelt that increased stream flows above seasonal norms. In the second half of the month, cool wet weather slowed the rate of snowmelt and stream flows decreased to below-average levels.





Outlook

The May 1 runoff forecast released by the Natural Resources Conservation Service for the most probable runoff condition is for 68% of average for the North Platte River near Northgate; 75% of average for the Yampa River near Maybell; 86 % of average for the Little Snake River near Dixon; and 68% of average for the White River near Meeker. These percentages are essentially the same as the previous month, with slight increases in the forecast for the North Platte and White River basins.

Storms in the second half of April brought additional snows to the basins and slowed the rate of melting at the higher elevations. If this change in the weather pattern holds, the runoff may follow a more normal pattern with respect to the timing of the peak flows and the anticipated duration. Given the lower than normal snowpack, peak flows are expected to be lower than normal.

Administrative/Management Concerns

Piceance Creek, a tributary to the White River went under administration on April 15th. While this drainage has had more precipitation this winter than in the last several years, there is still insufficient flow to satisfy the demand. It is anticipated that administration will also occur in the North Platte Basin and on some tributaries of the Yampa River.

Public Use Impacts

Flows in the rivers and streams at lower elevations are beginning to increase as the snowpack begins to melt out. Extreme caution should be exercised when recreating on or near the watercourses. Most high elevation reservoirs are still ice covered.

Basinwide Conditions Assessment

The SWSI value of 1.5 indicates that for April the basin water supplies were above normal. The Natural Resources Conservation Service reports that May 1 snowpack is 135% of normal. Flow at the gaging station Animas River near Durango was 1,620 cfs, as compared to the long-term average of 771 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 102% of normal as of the end of April.

The SWSI number indicates a lower water supply than actually exists because major reservoirs were dropped to make room for upcoming runoff.

With precipitation at 127% of normal in Durango during April soil moisture continued higher throughout the basin.

The water supply held up in terms of snow water accumulation during April in southwestern Colorado. An extended warm spell melted much of the south facing slopes at levels up to and above 11,000 feet for a time causing the snow pack to drop off considerably, but storms at the end of the month raised snow water levels back to 135% across the San Juan-Dolores and San Juan Miguel River Basins. Snow density was near 45% water on the La Platas at the end of April. Extraordinary accumulations of snow water were seen in the La Platas, the Florida River, Los Pinos River and the San Juan River drainages. More storms early in May were keeping the content high, especially compared to the declining average and percentages of normal reached 160% or higher.

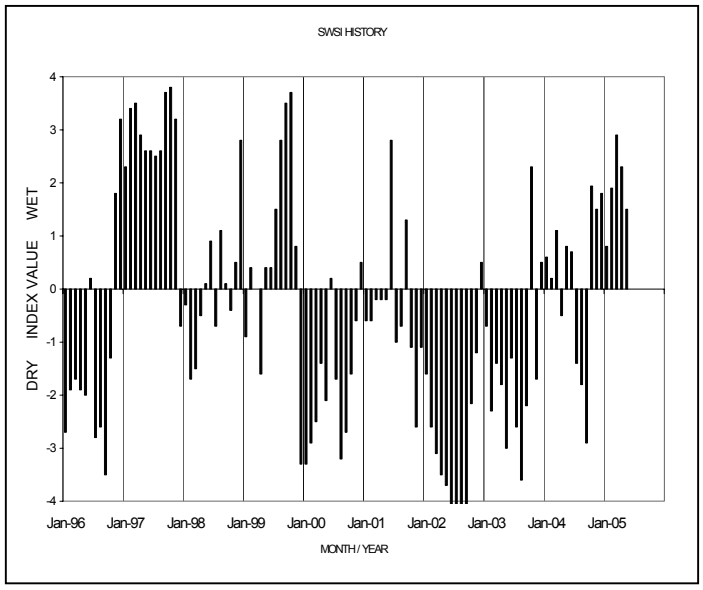
A significant rise in the rivers developed with the Animas at Durango reaching 2,880 cfs for an average flow. May 24th the Dolores at Dolores reached 2,440 cfs and the San Juan in Pagosa Springs was running at bank full but not reporting due to removal of the control area as well as damage to recording equipment. All the reporting streams ran well above 150% of normal for April.

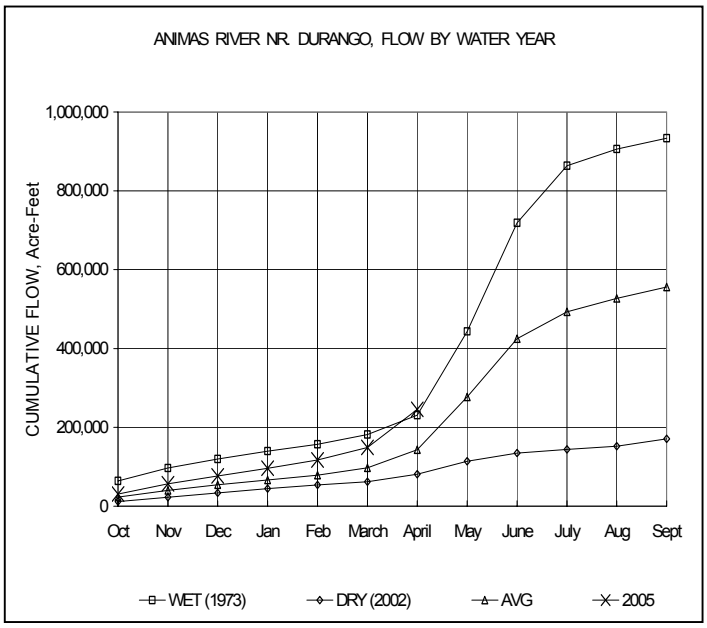
Outlook

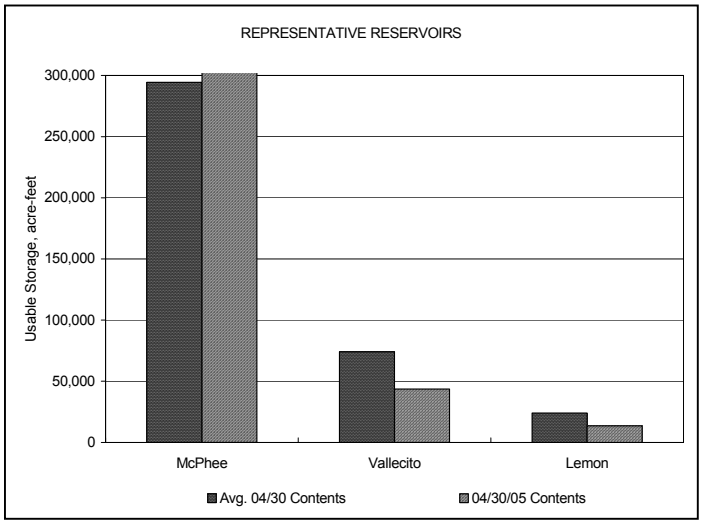
While levels in major reservoirs were lowered in anticipation of the runoff, most of the other reservoirs in the area remained full or topped out during the month. Concern about flooding remains high; however, with most reservoirs being off-channel and others being reduced, it is expected that the seasonal cooling and heating will moderate the runoff. Still, very high flows up to levels seen in past flood years may occur this year.

Public Use Impacts

A good water supply was still welcome in the area and river users as well as recreationists are looking forward to a good season of water supply.







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