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 2010

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 of November through April (December 1 through May 1). 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 statewide SWSI values for April (May 1) range from a high value of +1.8 in the South Platte Basin to a low value of -2.4 in the Yampa/White Basin. Three of the basins (South Platte, Colorado, and Yampa/White) experienced a gain from the previous month's value and four of the basins (Arkansas, Rio Grande, Gunnison, and San Juan/Dolores) experienced a loss from the previous month's value.

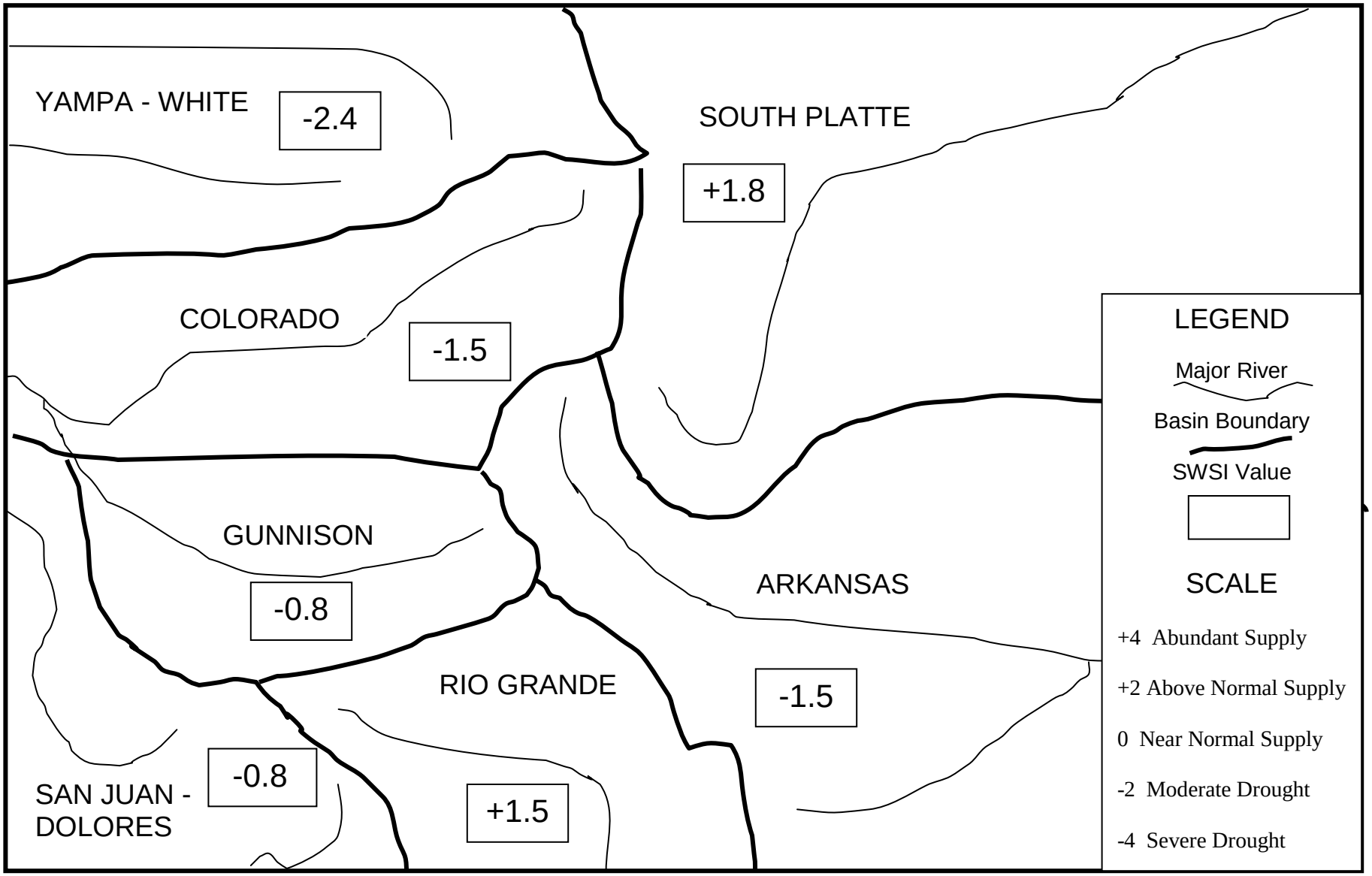
The following SWSI values were computed for each of the seven major basins for May 1, 2010, and reflect the conditions during the month of April.

Basin	May 1, 2010 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+1.8	+0.7	+0.4
Arkansas	- 1.5	- 0.4	- 1.1
Rio Grande	+1.5	- 0.3	+0.4
Gunnison	- 0.8	- 0.5	- 1.0
Colorado	- 1.5	+0.6	- 1.7
Yampa/White	- 2.4	+1.1	- 1.1
San Juan/Dolores	- 0.8	- 0.9	- 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, 2010

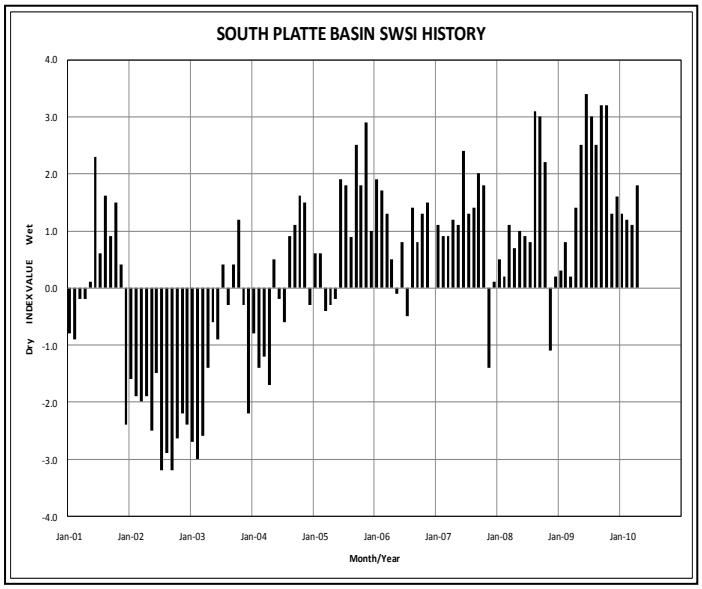
Basinwide Conditions Assessment

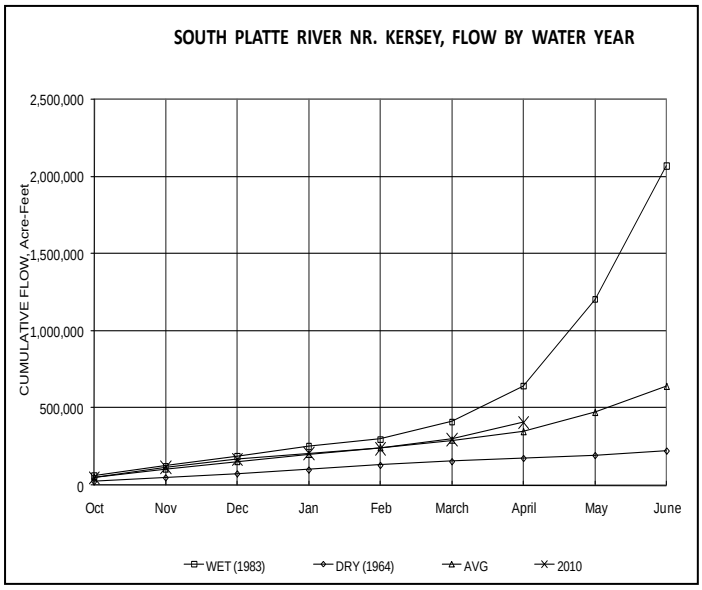
The SWSI value for the month was +1.8. The Natural Resources Conservation Service reports that May 1 snowpack is 87% of normal. Flow at the gaging station South Platte River near Kersey was 1830 cfs, as compared to the long-term average of 846 cfs. Flow at the Colorado/Nebraska state line averaged 722 cfs. Cumulative storage for the six reservoirs graphed on this page was 112% of normal as of the end of April. Cumulative storage in the major plains reservoirs (Julesburg, North Sterling, and Prewitt) is at 99% of capacity. Cumulative storage in the major upper-basin reservoirs (Cheesman, Eleven Mile, Spinney, and Antero) is at 95% of capacity.

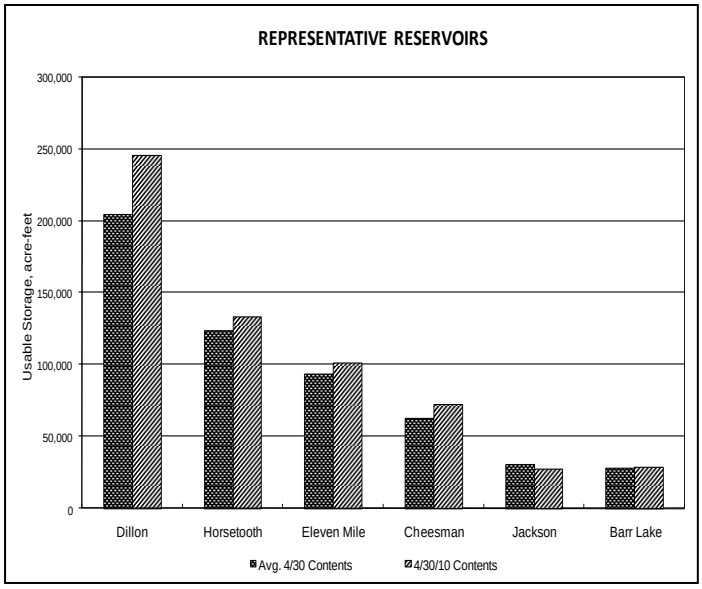
Outlook

The latter part of April included significant snowfall in the mountains and rain on the plains. This caused the monthly streamflow to be far above average throughout the basin. The significant rainfall at lower elevations also eliminated early demand for irrigation. While snowpack still lags behind average, the basin is still in great shape water supply wise going into the spring and summer due to a combination of the recent rains and wet conditions last summer that created considerably above average carryover in reservoirs and will provide substantial return flows this irrigation season.

As a result of the wet conditions in April, there were no shortages of water on the mainstem downstream of Denver and thus no call during the majority of April. This allowed for significant recharge to occur during the month. Recharge is a key supply of augmentation to replace depletions from irrigation wells the remainder of this summer and in the future.







Basinwide Conditions Assessment

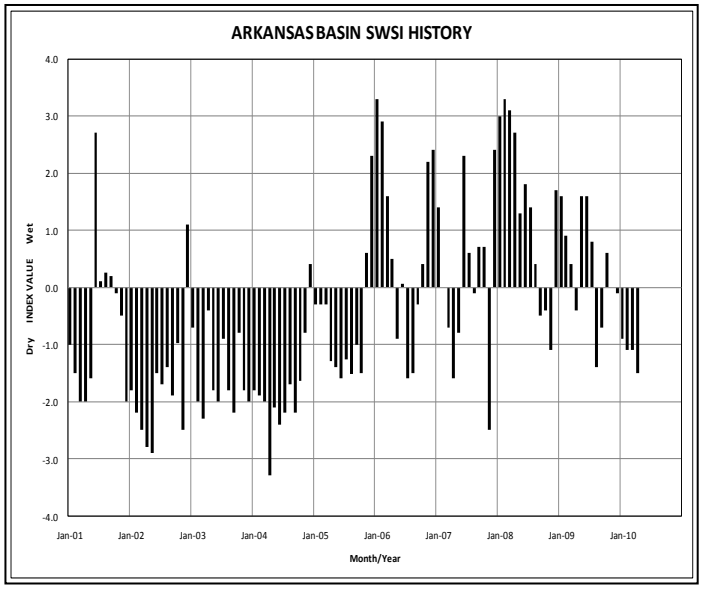
The SWSI value for the month was -1.5. The Natural Resources Conservation Service reports that May 1 snowpack is 93% of normal. Flow at the gaging station Arkansas River near Portland was 629 cfs, as compared to the long-term average of 432 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 121% of normal as of the end of April.

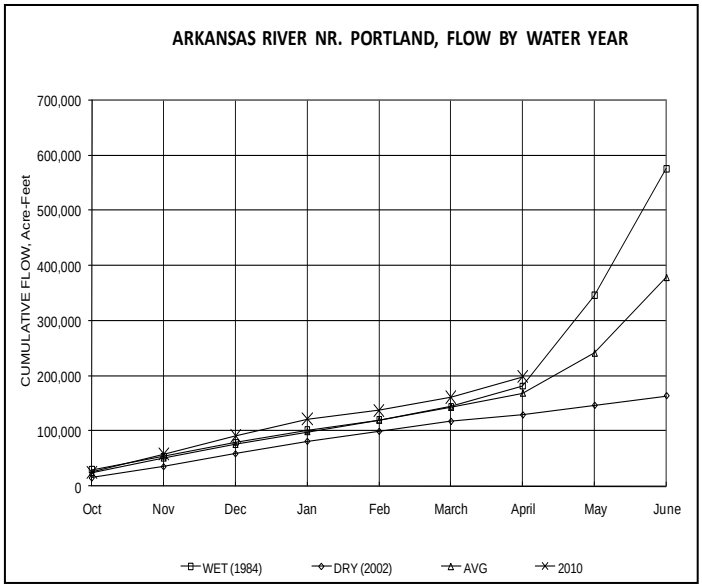
Outlook

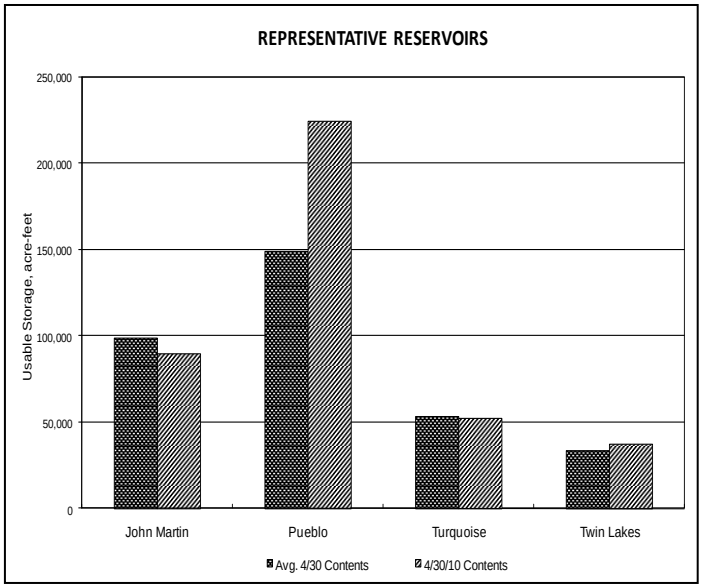
Several Water District 67 ditches below John Martin Reservoir called for water on April 1, 2010; consequently the distribution of conservation storage into accounts per the 1980 Operating Agreement for John Martin Reservoir began on April 1, 2010 at 00:00 hours. Total storage from November 1, 2009 through April 30, 2010 distributed into accounts in John Martin Reservoir was approximately a net of 63,165 acre-feet. This storage volume was considerably larger than 2009 when the conservation storage total transferred in April was 32,757 acre-feet.

Administrative/Management Concerns

Storage levels in Pueblo Reservoir and early river flows were high enough that many ditches between Pueblo Reservoir and John Martin Reservoir had a difficult time evacuating some of the carry-over Winter Water and Project Water that had to be released by May 1st. Approximately 1,900 acre-feet of carry-over Winter Water was released from Pueblo Reservoir beginning at 00:00 hours on May 1st and continuing until 08:00 hours on May 2nd temporarily causing the river calls to push to more junior calls.



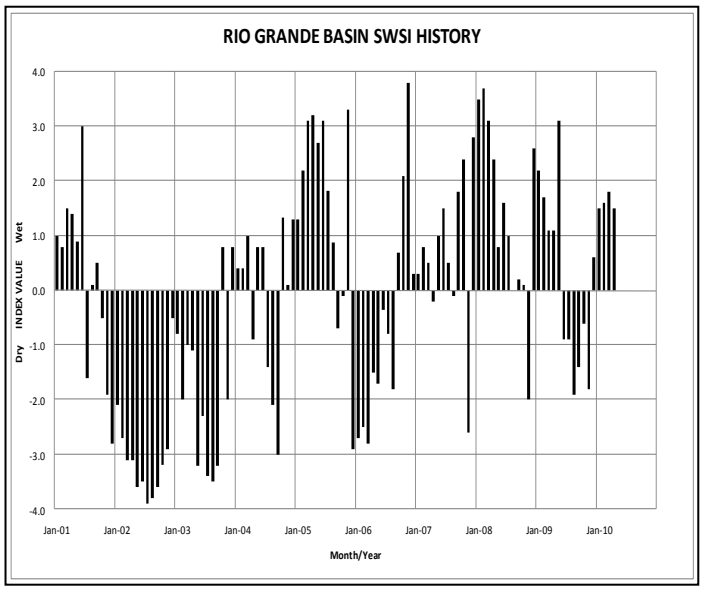




Basinwide Conditions Assessment

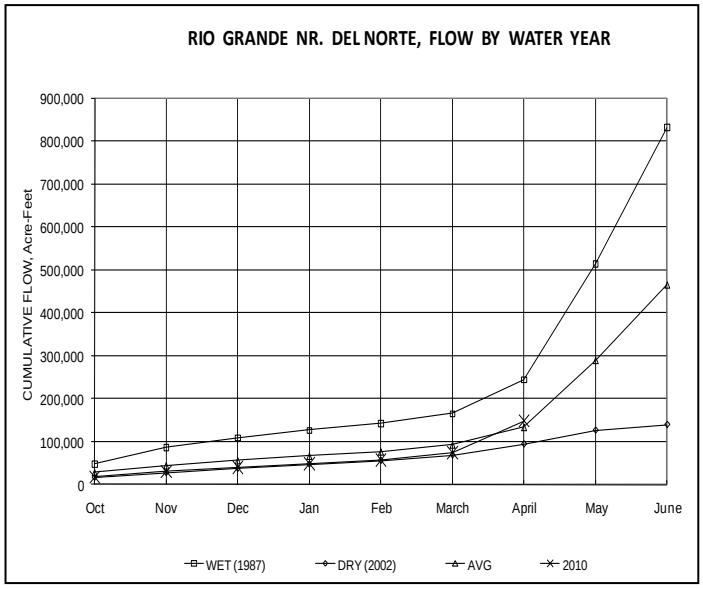
The SWSI value for the month was +1.5. The Natural Resources Conservation Service reports that May 1 snowpack is 97% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 1244 cfs (188% of normal). The Conejos River near Mogote had a mean flow of 382 cfs (119% of normal). Flow to the state line was about 150% of normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 103% of normal as of the end of April.

Streamflow in the upper Rio Grande basin was well above average during most of April as warm temperatures created an early runoff from a near-normal snowpack. Cooler temperatures during the last week of April and first week of May dropped streamflow to below average. The Valley floor had above average precipitation and temperatures during April.



Outlook

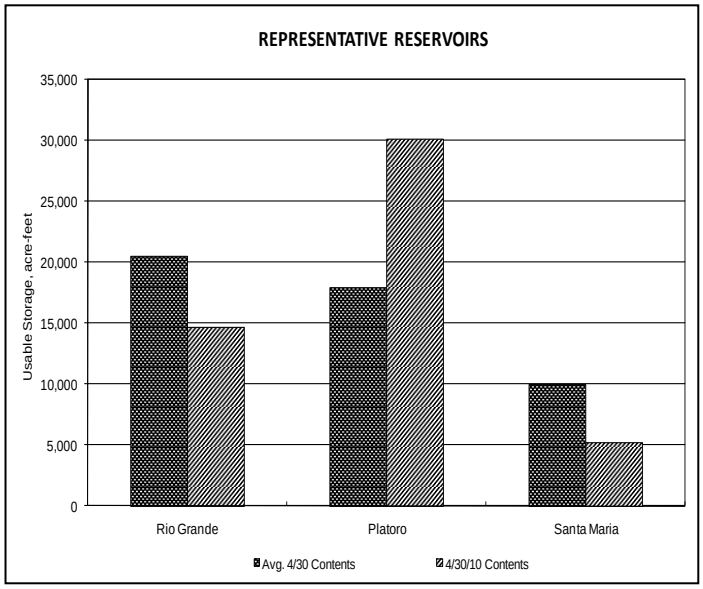
Natural Resources Conservation Service May 1 forecasted runoff in the upper Rio Grande basin was greatly influenced by the high April runoff. A significant amount of the forecasted April through September runoff is past. May through September forecasts range from a low of 75% for the Rio San Antonio near Antonito to a high of 139% for Trinchera Creek near Fort Garland. In general, the east side of the Valley has normal or above normal runoff forecasted. The Conejos and its tributaries should expect normal runoff. The Rio Grande and its tributaries come in around 85% of normal. The streams in the northwest part of the Valley are expected to have only 80% of normal runoff.



Administrative/Management Concerns

The start of runoff in 2010 was even earlier than 2009. This is a concern because a significant amount of the snowpack came out before most ditches were ready to divert. The upper Rio Grande basin entered the month of April with a basinwide snowpack of approximately 110%. Warm temperatures and wind dropped that number by at least 20% before the first of May.

Along with early warm temperatures, dust on snow events occurred as heavy winds during April brought particulates from the American southwest to the region. This was a significant contributor to the early runoff last year.



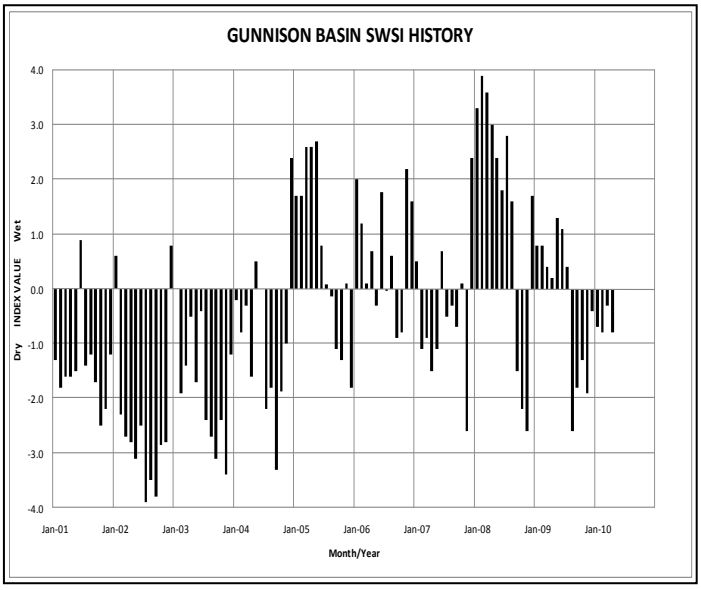
Public Use Impacts

Early runoff can create localized flooding issues. And the lack of runoff in June and July increases the reliance on irrigation wells. The aquifers of the San Luis Valley have not recovered fully from the 2002 – 2004 drought.

Basinwide Conditions Assessment

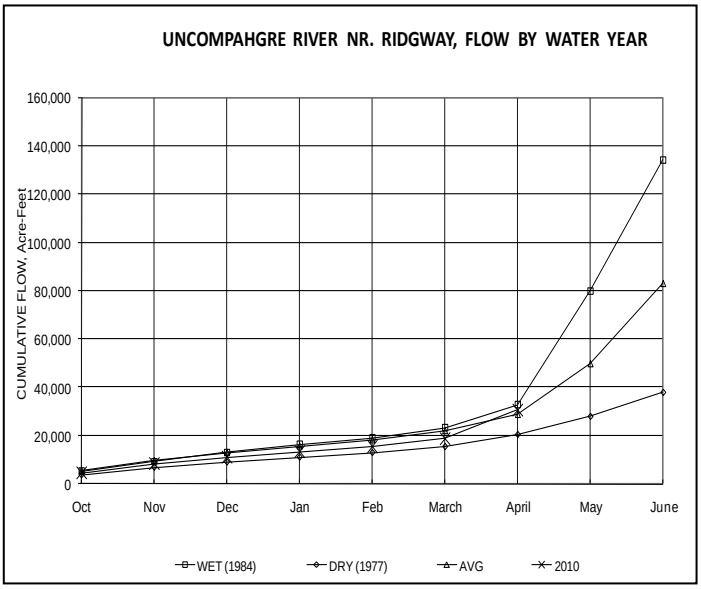
The SWSI value for the month was -0.8. The Natural Resources Conservation Service (NRCS) reports that May 1 snowpack is 77% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 199 cfs, as compared to the long-term average of 113 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 111% of normal as of the end of April.

The Gunnison Basin received between 100 and 115 percent of normal precipitation during April, however, due to a warm period at the beginning of the month the average snow water equivalent (SWE) decreased from 96 percent to 78 percent in April. The San Miguel basin experienced below normal precipitation during the month of April, which caused the average SWE basin wide to experience a more drastic decrease in April from 98 percent to 70 percent. This decrease occurred despite average temperatures for both the Gunnison and San Miguel basins that have ranged from 1 to 3 degrees below normal during the month of April. The main reason for the decrease in snowpack appears to be the three substantial dust-on-snow events that occurred during the month of April. These events occurred on April 5th, 12th, and 29th.



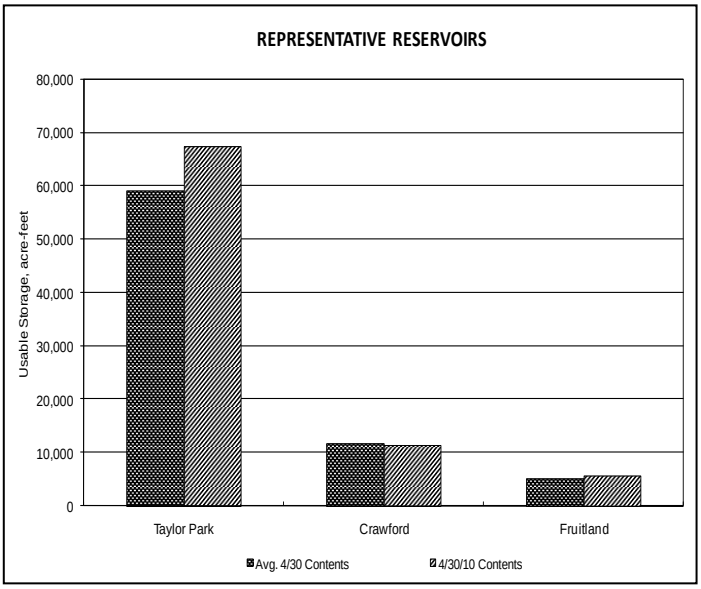
Outlook

Runoff volumes and peak flows are forecast to be below normal for 2010. The CBRFC currently projects a median runoff volume of 70 to 90 percent of average for the Gunnison and San Miguel River Basins while spring peak flows are forecast at between 67 and 78 percent of normal for streams in the Gunnison Basin. Following two good years in a row, carry-over storage in Bureau of Reclamation reservoirs is similar to last year and most are expected to fill again this year. Therefore, irrigators should receive their full allotment of water during this summer. The National Weather Service predicts above average precipitation for the month of May in the Basin, but equal chances of above normal and below normal precipitation for the months of June and July. It appears that although the dust-on-snow events in April and early May will cause the snowpack to melt out earlier than average, it will not melt as quickly as it did in 2009. Currently (as of May 14th), SWE percentages have rebounded to above 2009 levels in most areas.



Administrative/Management Concerns

Snowmelt began in earnest during the second week of April, but slowed due to cooler than average conditions the following week, which allowed the snowpack above Blue Mesa to rebound from 74 percent to 80 percent of average on May 1st. Due to the cooler temperatures at the end of April, some streams within the Gunnison basin have been close to going on call when freezing temperatures at higher elevations have decreased stream flow. The Bureau of Reclamation began increasing Crystal Reservoir releases on May 11th to meet the one day peak flow required for the Black Canyon Water Right of 3,883 cfs. Flows will be ramped up at 500 cfs per day until reaching this amount on May 18th and then begin decreasing 400 cfs per day to reach a stable flow in the Gunnison Gorge of 700 to 800 cfs on May 26th. Inflow for 2010, however, is currently forecast at 560,000 acre-feet or 78 percent of normal, which means that Blue Mesa is not projected to reach its normal fill target.



Public Use Impacts

Irrigation and agricultural use continue to track a couple of weeks behind schedule due to cooler than average conditions. Those planning to visit the Gunnison Gorge should be aware that from May 11th to May 26th flows will be higher than average due to the Black Canyon Water Right releases from Crystal Dam.

Basinwide Conditions Assessment

The SWSI value for the month was -1.5. The Natural Resources Conservation Service reports that May 1 snowpack is 73% of normal. Flow at the gaging station Colorado River near Dotsero was 1,328 cfs, as compared to the long-term average of 1,781 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 144% of normal as of the end of April.

Outlook

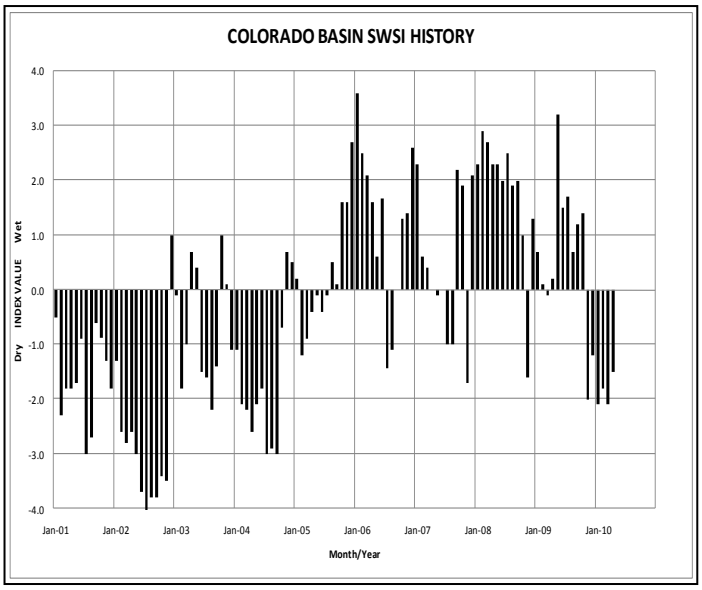
Cooler temperatures in early May will keep Colorado River flows below average; however, flows will likely increase to average or above average later in the month. Similarly, the Crystal and Roaring Fork Rivers will remain below average in early May with potential to increase significantly later in the month. Ruedi Reservoir releases will remain well below average at 115 cfs in May. Snowpack in the Upper Colorado Basin continued to decline from 77 to 74% (snow water equivalent) as of May 1st. No significant increase in snowpack can be anticipated, and run-off is expected to be well below average. Although three of the first five months of water year 2010 recorded precipitation at or above average, November 2009 recorded precipitation was only at 40%.

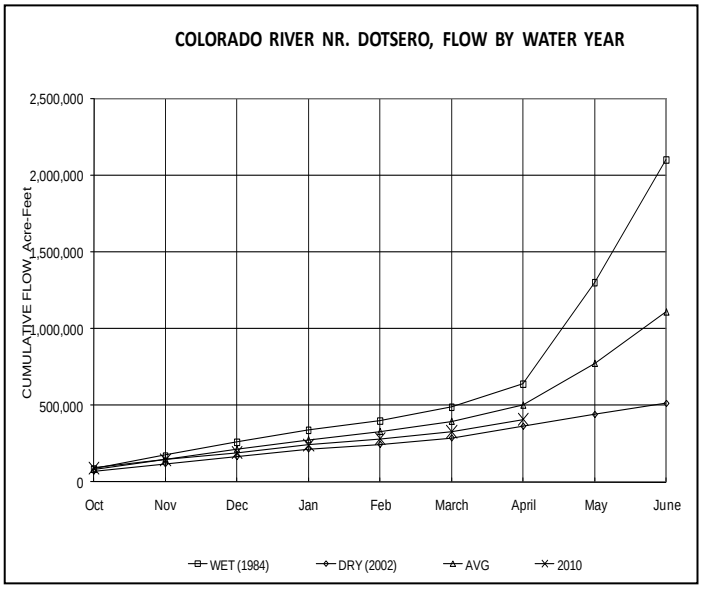
Administrative/Management Concerns

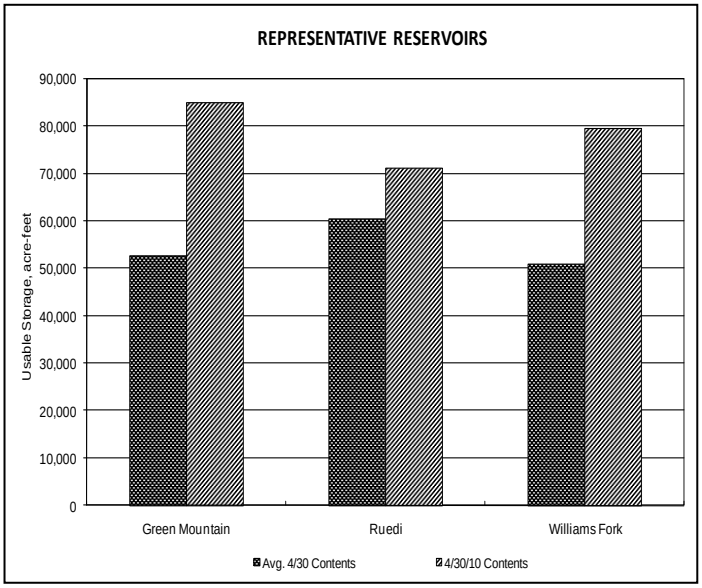
Green Mountain Reservoir which began its start of fill April 20th is expected to fill this year with additional water available for Denver and Colorado Springs. Shoshone Power Plant brought the second turbine on line in mid April, and a call remains a possibility. Grand Valley Irrigators currently have sufficient water to satisfy their needs.

Public Use Impacts

A subsidiary of Nestle plans to draw 65 million gallons annually from two springs tributary to and located along the Arkansas River north of Buena Vista. Nestle will purchase the water from the City of Aurora which diverts water via trans-mountain diversions from Grizzly Reservoir and the upper Fryingpan Basin/Busk-Ivanhoe Project - both of which are diverted from the Roaring Fork watershed and stored in Twin Lakes Reservoir. The Roaring Fork Conservancy is warning that the Roaring Fork Valley's water is indirectly being "tapped" by the water bottling industry, as Arkansas River flows are bolstered by trans-mountain diversions from the Roaring Fork watershed. Although water from Twin Lakes could be used as a source for augmentation, it is unlikely. Twin Lakes Reservoir water is piped directly to the Otero Pumping Station which sends piped water to the Front Range. Instead, the City of Aurora plans to augment spring water drawn by Nestle using purchased water from Lake County Ranches and the Columbine Ditch which feed the Arkansas River directly.







Basinwide Conditions Assessment

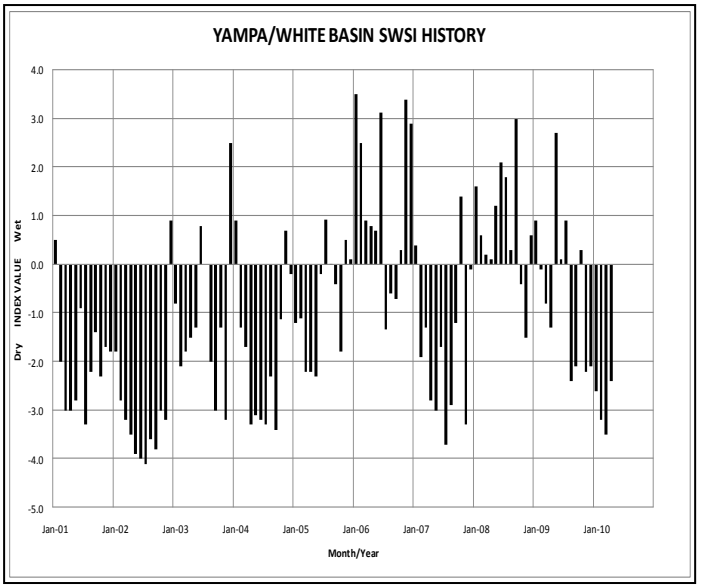
The SWSI value for the month was -2.4. Flow at the gaging station Yampa River at Steamboat was 336 cfs, as compared to the long-term average of 588 cfs.

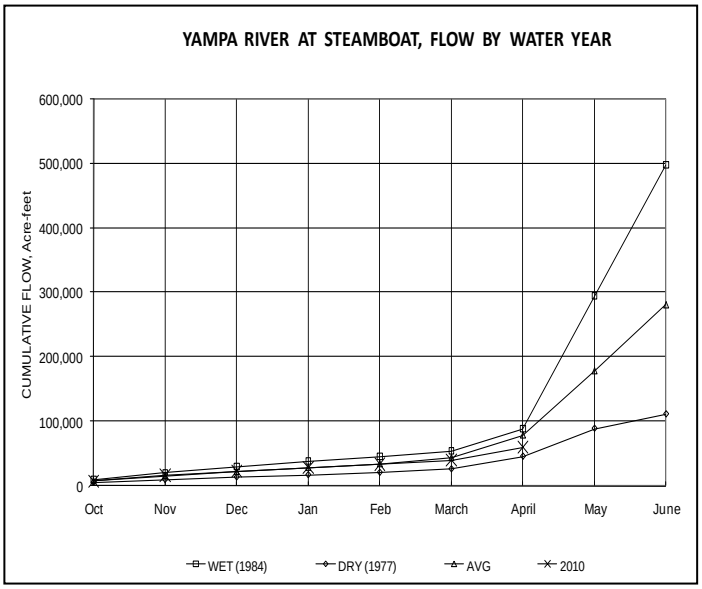
After five consecutive months of below average precipitation in northern Colorado, April precipitation was well above average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by the NRCS, was reported at approximately 150% of average for the Yampa/White River basin and 161% of average for the North Platte River basin. Precipitation for the combined Yampa, White, and North Platte River basins was reported at approximately 156% of average for the month of April and 91% of average for the water year to-date.

The snow water equivalent (SWE) as of April 30, 2010 was 83% of average for the North Platte River basin, 78% of average for the Yampa River basin, and 72% of average for the White River basin.

NRCS continues to predict below average to well below average runoff this spring and summer in the Yampa, White, and North Platte River basins. The latest runoff forecasts from the NRCS for the May through July period are 83% of average for the North Platte River near Northgate, 67% of average for the Yampa River near Maybell, 84% of average for the Little Snake River near Lily, and 69% of average for the White River near Meeker. The lowest runoff forecast is for the Upper Yampa River basin. Streamflow volume is projected to be 46% of average for the Yampa River above Stagecoach for the May through July runoff period.

Most Division 6 stream gages, which had been closed for the winter season, re-opened in April. The remaining stations will re-open in May.





Outlook

Fish Creek Reservoir storage level increased in April and was reported at approximately 53% of capacity at the end of the month. Yamcolo Reservoir continued to rise throughout the month and was reported at capacity and spilling by the end of the month. In order to delay the spill of Elkhead Creek Reservoir, releases were started on April 6. The reservoir reached capacity and was reported to be spilling the week of April 18. Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Elkhead Creek Reservoir for municipal, industrial, and recreational purposes, as well as fish recovery releases.

Administrative/Management Concerns

Although precipitation increased dramatically in April, precipitation and snowpack levels remain below average for the water year. Below average runoff is projected for the basin and it is anticipated that many Division 6 streams will go under administration this irrigation year. A call was placed on Talamantes Creek on March 30 and it remains under administration.

Public Use Impacts

Many anglers and kayakers have returned to the Yampa River to enjoy the snowmelt season and higher river flows. The Steamboat ski area closed the second week of April.

Basinwide Conditions Assessment

The SWSI value for the month was -0.8. The Natural Resources Conservation Service (NRCS) reports that May 1 snowpack is 74% of normal. Flows at the Animas River at Durango averaged 433 cfs (51% of average). The flow at the Dolores River at Dolores averaged 439 cfs (59% of average). The La Plata River at Hesperus averaged 40.9 cfs (51% of average).

Precipitation in Durango was 0.56 inches for April, 38% of the 30-year average of 1.47 inches. Precipitation to date in Durango, for the water year, is 13.94 inches, compared to the average of 11.40 inches. The average high and low temperatures for the month of April in Durango were 62° and 30°. In comparison, the 30-year average high and low for the month is 62° and 31°.

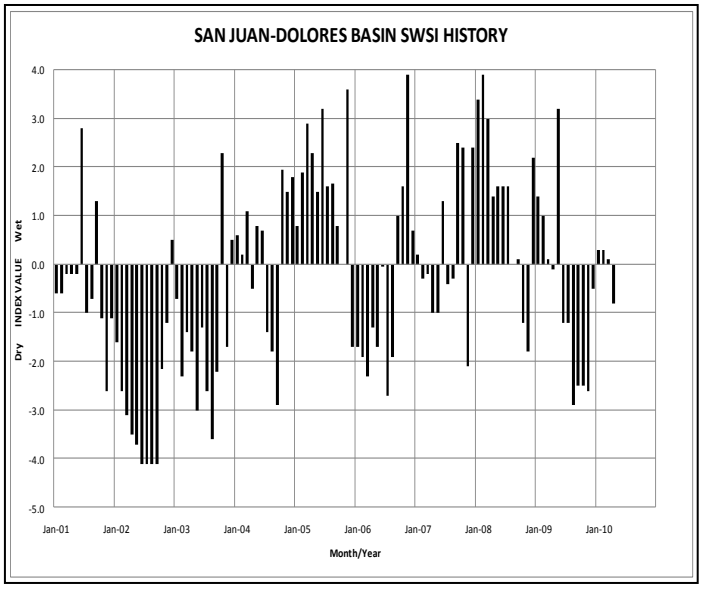
At the end of the month Vallecito Reservoir contained 64,500 acre-feet compared to its average content of 63,705 acre-feet (101% of average). McPhee Reservoir was up to 325,237 acre-feet compared to its average content of 298,098 (109% of average), while Lemon Reservoir was up to 14,710 acre-feet as compared to its average content of 22,454 acre-feet (66% of average).

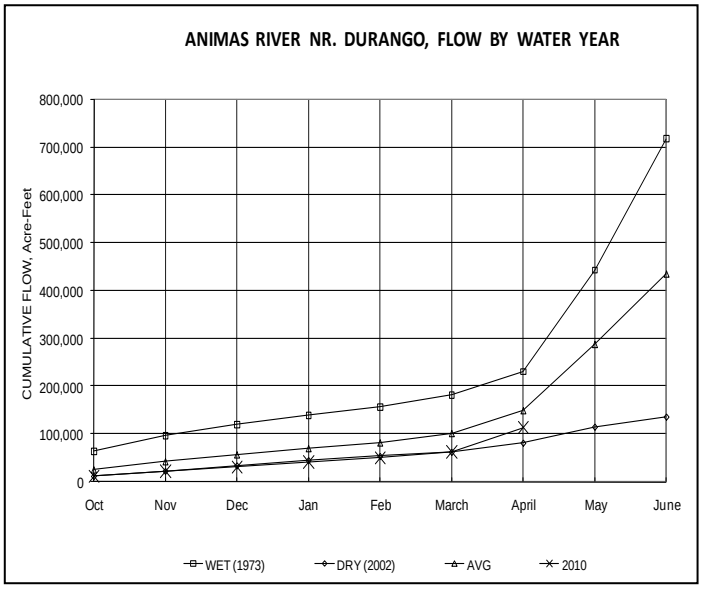
Outlook

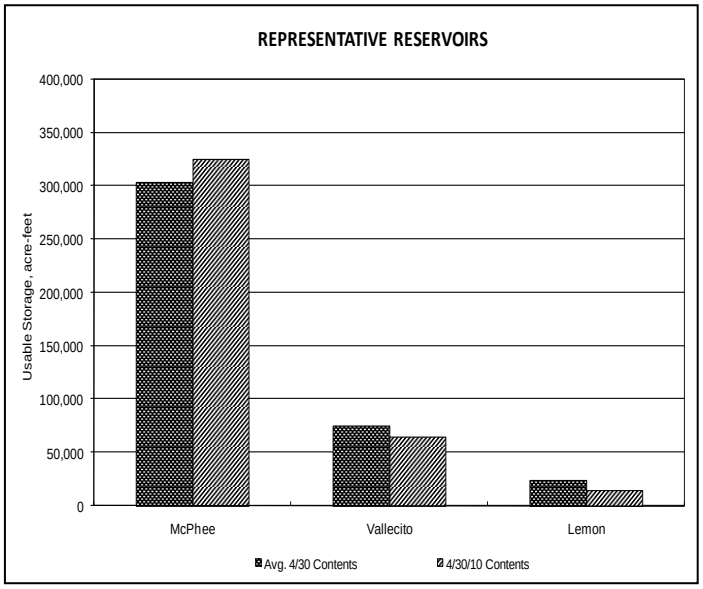
April temperatures were average for the month. On April 30th the NRCS SNOTEL sites are reporting a 73% snow-water equivalent within the basin.

Administrative/Management Concerns

The La Plata River compact between Colorado and New Mexico remained off call for the month. The compact requires that half the flow at the upper index gages (Hesperus and above) must be delivered across the Stateline the following day.







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