
COLORADO

WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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April 2009

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.

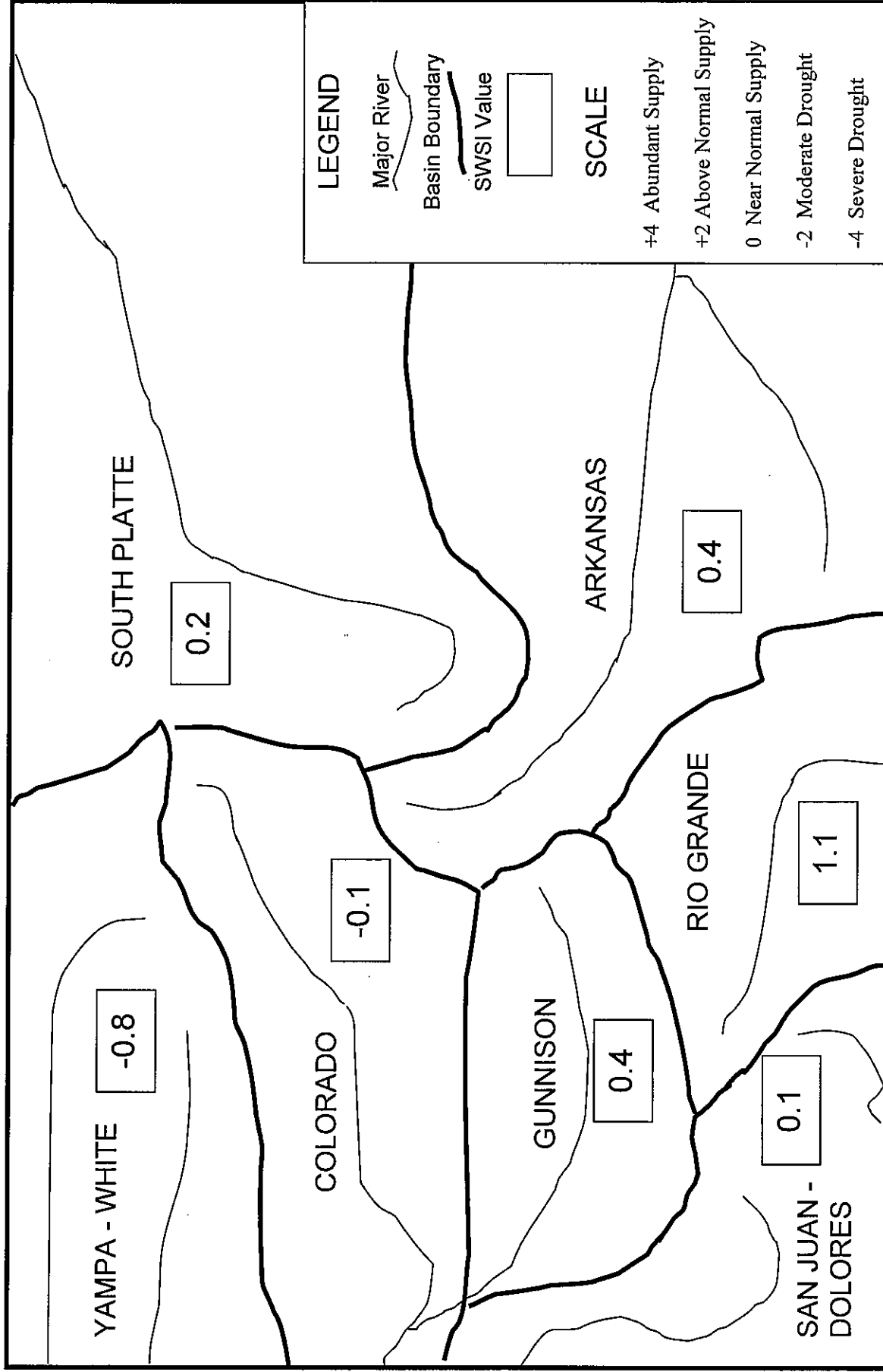
The statewide SWSI values for April 1, 2009 range from a high value of 1.1 in the Rio Grande Basin to a low value of -0.8 in the Yampa/White Basin. All seven of the basins (South Platte, Arkansas, Rio Grande, Gunnison, Colorado, Yampa/White, and San Juan/Dolores) experienced a loss from the previous month's values.

The following SWSI values were computed for each of the seven major basins for April 1, 2009, and reflect the conditions during the month of March.

<u>Basin</u>	<u>April 1, 2009 SWSI Value</u>	<u>Change From Previous Month</u>	<u>Change From Previous Year</u>
South Platte	0.2	- 0.6	- 0.9
Arkansas	0.4	- 0.5	- 2.7
Rio Grande	1.1	- 0.6	- 2.0
Gunnison	0.4	- 0.4	- 3.2
Colorado	- 0.1	- 0.2	- 2.8
Yampa/White	- 0.8	- 0.7	- 1.0
San Juan/Dolores	0.1	- 0.9	- 2.9

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



April 1, 2009

Basinwide Conditions Assessment

The SWSI value for the month was 0.2. Cumulative storage for the six reservoirs graphed on this page was 105% of normal as of the end of March. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 92% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 95% of capacity. The Natural Resources Conservation Service reports that April 1 snowpack is 90% of normal. Flow at the gauging station South Platte River near Kersey was 521 cfs, as compared to the long-term average of 690 cfs. Flow at the Colorado/Nebraska state line averaged 62 cfs.

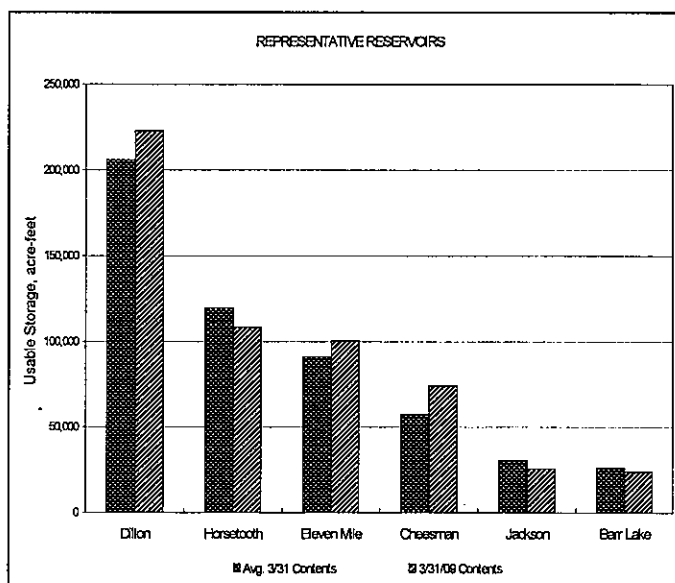
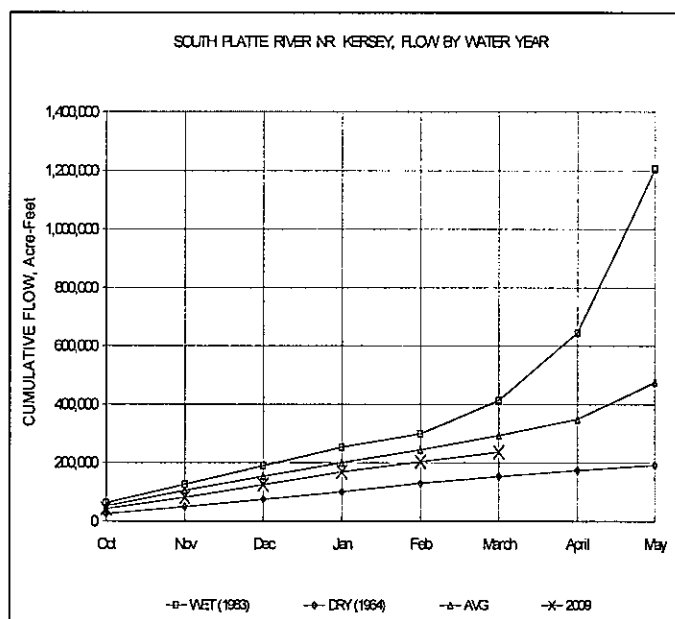
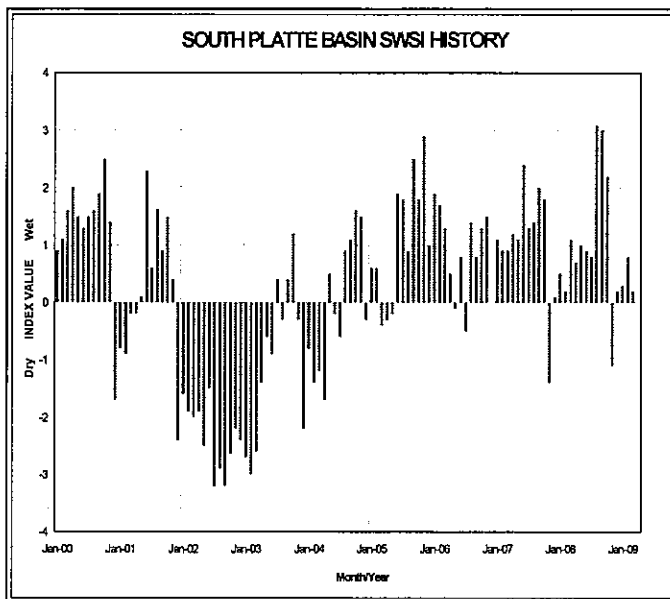
Outlook

It appeared that we would be moving toward an early spring direct flow call on the mainstem of the South Platte and the tributaries by the end of March because of the continued dry, warm conditions on the plains. This would have been an extremely early direct flow call. Continued dry conditions would have created concerns for the adequacy of supplies for the remainder of the year as many farmers would have had to turn on wells or release reservoir supplies to irrigate up their crops reducing available supplies for later in the irrigation season.

A large widespread snowstorm March 27, 2009 significantly improved conditions through the whole basin delaying the direct flow call for at least two or three weeks by reducing irrigation demand and increasing river flow. This highlights how dependent the South Platte basin is on spring precipitation on the plains to assure adequate supplies. As an indication of increased river flow, the gage at Kersey, a good gage for evaluating overall flow conditions, went from a flow of approximately 300 cfs before the storm to a sustained flow of over 700 cfs after the storm. The storm allowed continued storage and recharge to occur in the basin.

The snowfall also dramatically improved the prospects for the winter wheat crop; continued dry conditions would have severely damaged the crop.

With the existing storage and snowpack, we expect an average or good water year for users provided precipitation the remainder of the spring and summer is anywhere near average.



Basinwide Conditions Assessment

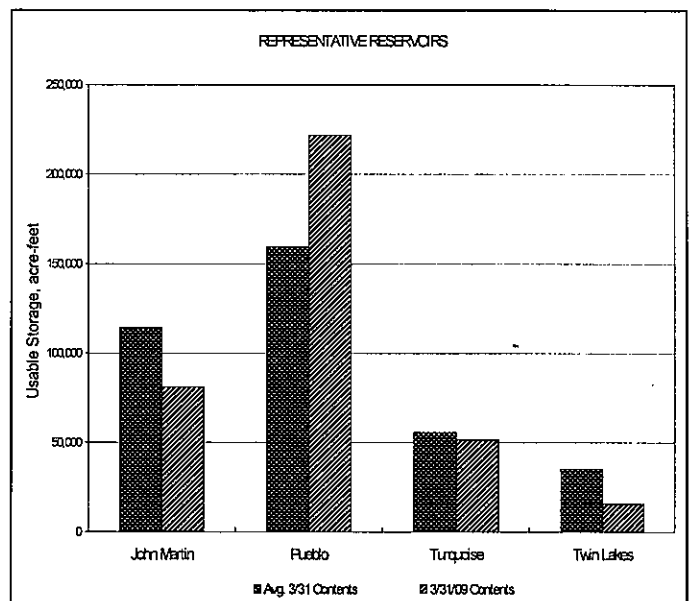
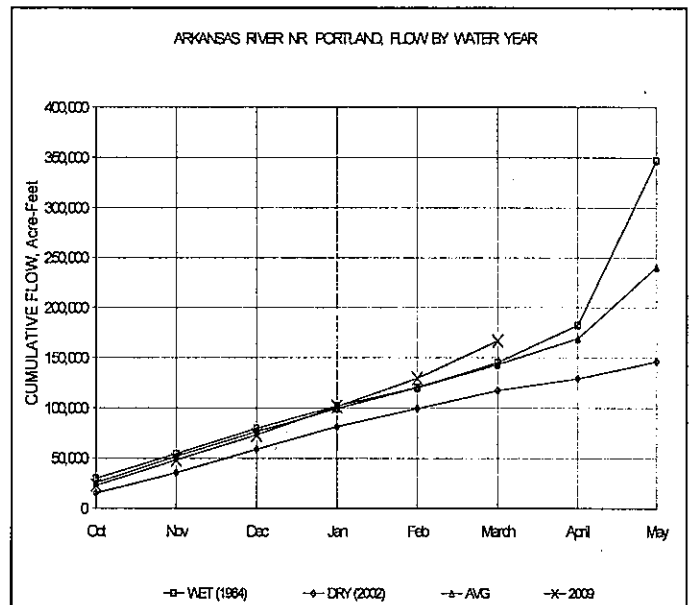
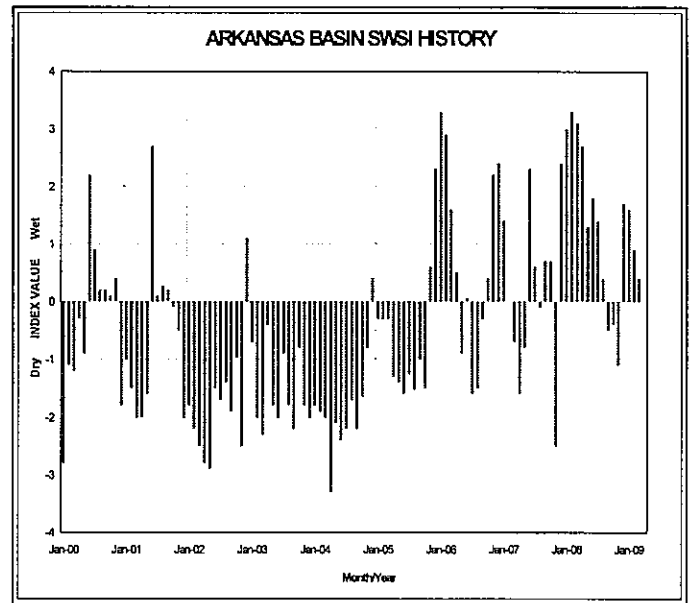
The SWSI value for the month was 0.4. The Natural Resources Conservation Service reports that April 1 snowpack is 101% of normal. Flow at the gauging station Arkansas River near Portland was 606 cfs, as compared to the long-term average of 376 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 101% of normal as of the end of March.

Outlook

Total distributed reservoir storage following the Pueblo Winter Water Program was 139,731 acre-feet, including 48,037 acre-feet in Pueblo Reservoir, 68,595 acre-feet in off-channel reservoirs, and 23,099 acre-feet in John Martin Reservoir (after distribution to accounts). Storage in John Martin Reservoir through March 31, 2008 in conservation storage totaled 27,929 acre-feet.

Administrative/Management Concerns

An unusually dry period through the first part of 2009 caused snowpack to drop from above average to nearer average, but winter storage has been fairly strong.



Basinwide Conditions Assessment

The SWSI value for the month was 1.1. The Natural Resources Conservation Service reports that April 1 snowpack is 97% of normal. Flow at the gauging station Rio Grande near Del Norte averaged 316 cfs (118% of normal). The Conejos River near Mogote had a mean flow of 111 cfs (141% of normal). Flow to the state line was 140% of normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 94% of normal as of the end of March.

Weather conditions in the San Luis Valley and surrounding mountains were drier than normal during March. Alamosa received 0.53 inches of precipitation during the month, 0.07 inches above normal, but most of it coming with one snowstorm in late March. The mountains received below normal snowfall for the month.

Outlook

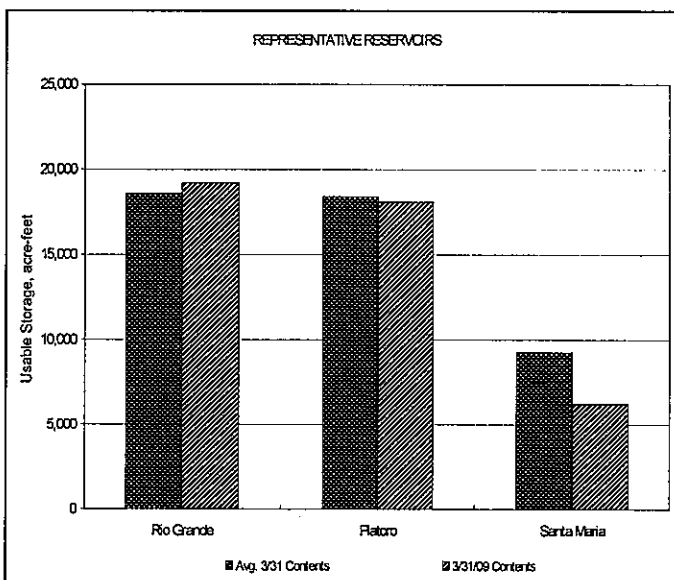
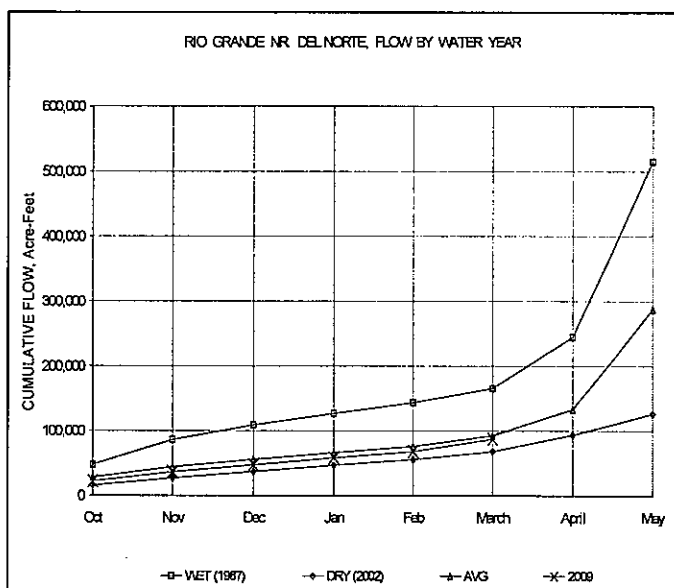
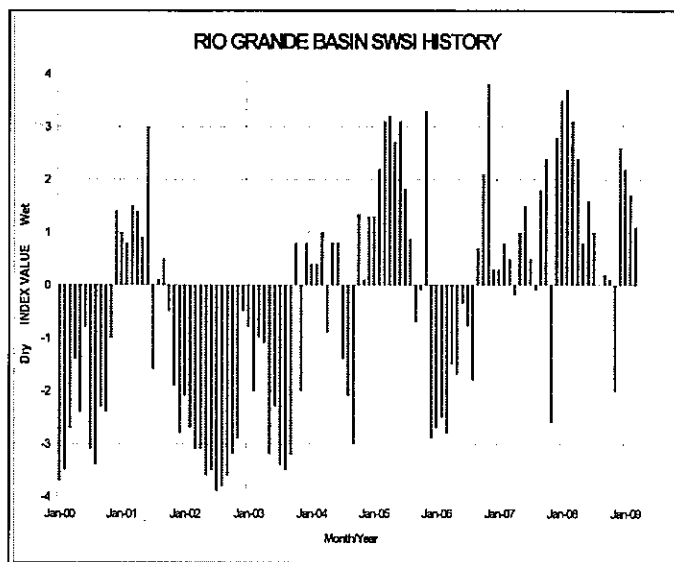
Recent NRCS stream flow forecasts are calling for a range of 76% (Saguache Creek) to 104% of normal (the Conejos River and its tributaries). Expected runoff at the Rio Grande near Del Norte gauging station is 91 percent of normal. These estimated runoffs are approximately 10% lower than the March 1 forecasts and reflect the below normal snowfall in the mountains surrounding the San Luis Valley during the past 30 days. In general, the southern part of the basin has the best snowpack with lessening amounts as you travel northward.

Administrative/Management Concerns

The 2009 annual meeting of the Costilla Creek Compact Commission will be held at the RCCLA House 72 in Costilla, New Mexico on Wednesday, May 6, 2009 at 10:30 a.m. The public is invited to attend.

Public Use Impacts

Despite the dry March, winter sports enthusiasts reliant on snowcover still enjoyed good snowpack at the higher elevations. Enough sun and warmth freed the lower elevations from ice and snow cover and temperatures rose to a moderate level. Irrigation diversions began in most areas of the San Luis Valley on April 1st.



Basinwide Conditions Assessment

The SWSI value for the month was 0.4. The Natural Resources Conservation Service reports that April 1 snowpack is 101% of normal. Flow at the gauging station Uncompahgre River near Ridgway was 64.0 cfs, as compared to the long-term average of 62.4 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 114% of normal as of the end of March.

Outlook

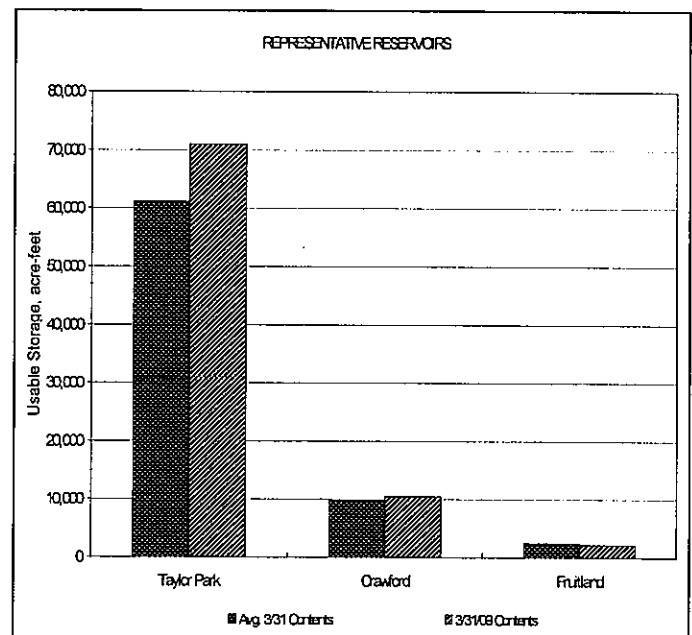
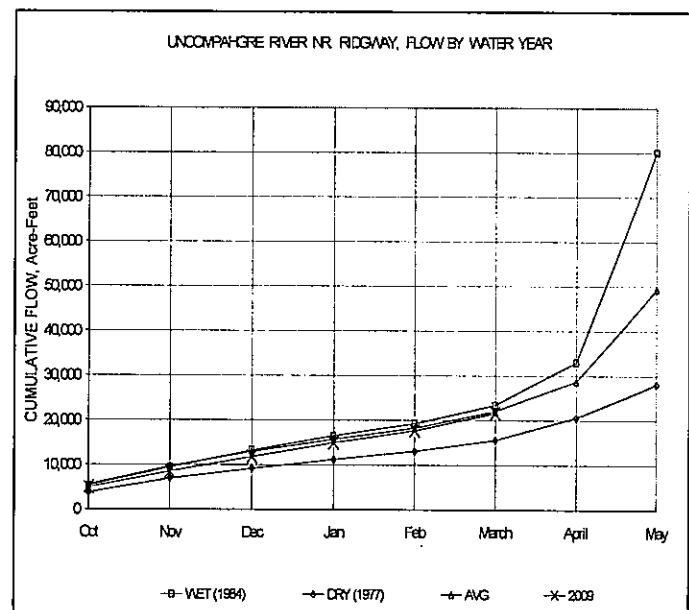
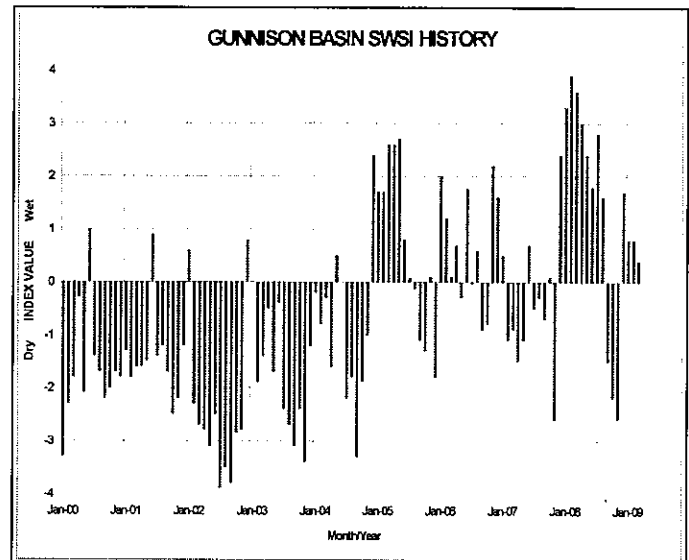
Snowpack conditions have held fairly steady in the Gunnison Basin over the month of March, with the average snow water equivalent measurements from NRCS SNOTEL sites reporting 110% of average on February 28, down to 100% of average on March 31. With good carry over storage in the reservoirs and recent early April storms, supply conditions still look very good for 2009 in the Gunnison Basin. Two significant dust-on-snow events occurred in the basin, one in late March and the other in early April. These events will have an impact on the snowmelt as the weather warms in April and May.

Administrative/Management Concerns

Gunnison Tunnel diversions began the middle of March to provide irrigation water to the Uncompahgre Valley Water Users Association. Currently, the total release out of Crystal Dam is approximately 1,100 cfs, with approximately 450 cfs being diverted to the Gunnison Tunnel. Inflows to the Aspinall Unit are only running about 700 cfs. However, the runoff forecast is still about 104% of average. To accommodate expected runoff, the Bureau of Reclamation will increase releases from the Aspinall Unit in April and May in order to bring down Blue Mesa Reservoir elevation and to supply an increase to the Gunnison Tunnel diversion from the current 450 cfs to approximately 1,100 cfs.

Public Use Impacts

With little low elevation snow in the Uncompahgre Valley this year, farmers began preparing their fields by the end of March and are ready for irrigation water, which is already being turned into the larger canals. Late March and early April storms have provided much needed moisture in the lower valleys. However, the recent storms also brought very cold weather, with overnight lows in the teens, causing damage to 30 percent of the Grand Valley peach crop.



Basinwide Conditions Assessment

The SWSI value for the month was -0.1. The Natural Resources Conservation Service reports that April 1 snowpack is 108% of normal. Flow at the gauging station Colorado River near Dotsero was 836 cfs, as compared to the long-term average of 1,082 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 127% of normal as of the end of March.

Outlook

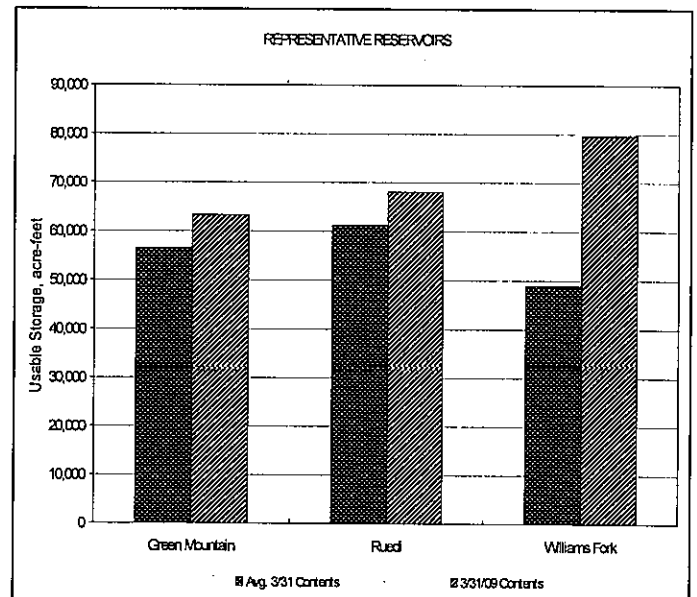
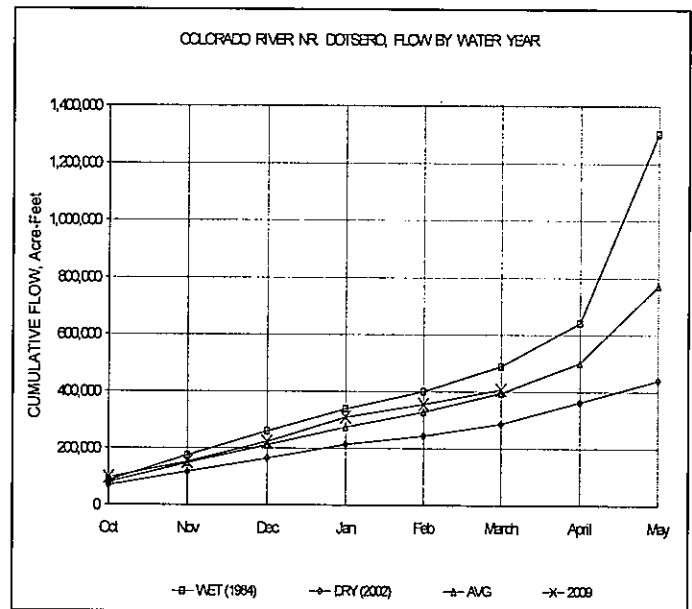
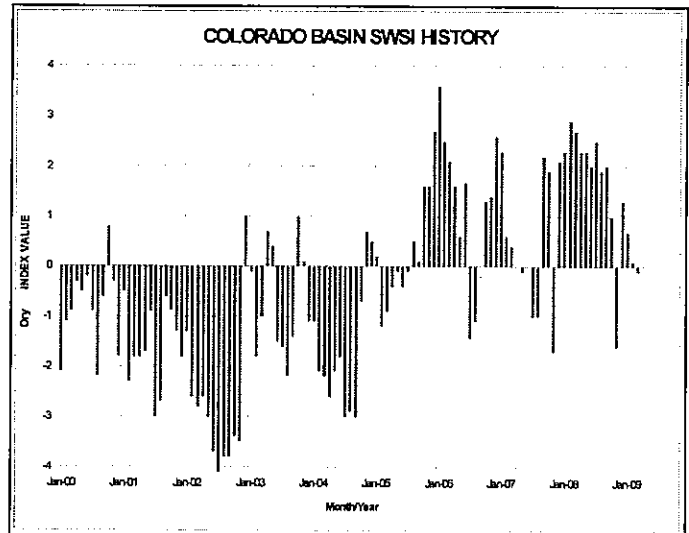
Lack of precipitation and warm temperature reduced Upper Colorado River basin snow water equivalent from 117% to 100% of average through March 23rd. This loss was partially recovered from heavy precipitation and unseasonably cold temperatures in late March, which boosted basin wide snow water equivalent to 108%. Continued heavy precipitation in early April has increased this average further to 111%. Colorado River flows were considerably below average the majority of March, with the exception of March 5th, 23rd, and 24th when flows were slightly above average. This was due in part to decreasing releases from Green Mountain Reservoir. Roaring Fork River flow varied from 10-20 cfs above and below average throughout March. Ruedi Reservoir releases remained constant.

Administrative/Management Concerns

Shoshone Power Plant removed one of its turbines on March 11th for routine maintenance. The Shoshone Power Plant call remained on until March 18th when the call on the Colorado River was removed due to increasing flows. The Green Mountain power call on the Blue River remained on until March 19th when the call transferred from the power right to the junior refill right. There is no irrigation call from Grand Valley.

Public Use Impacts

Heavy snow late in the month was a welcome relief to skiing enthusiasts who had tolerated less than ideal conditions since mid-February.



Basinwide Conditions Assessment

The SWSI value for the month was -0.8. Flow at the gauging station Yampa River at Steamboat Springs was 178 cfs, as compared to the long-term average of 156 cfs. March precipitation was below average for 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 95% of average for the Yampa/White River basin and 84% of average for the North Platte River basin. Precipitation for the combined Yampa, White, and North Platte River basins was reported at approximately 90% of average for the month of March and 102% of average for the water year to-date.

The snow water equivalent (SWE) as of March 31, 2009 for the Yampa and White River basins was 109% of average and for the Laramie and North Platte River basins was 101% of average. For the individual Division 6 basins, the snowpack at the end of the month was 101% of average for the North Platte River basin, 111% of average for the Yampa River basin, and 101% of average for the White River basin.

NRCS predicts near average to above average spring and summer streamflows in the Yampa, White, and North Platte River basins. The latest runoff forecasts from the NRCS for the April through July period are 94% of average for the North Platte River at Northgate, 108% of average for the Yampa River near Maybell, 118% of average for the Little Snake River near Lily, and 100% of average for the White River near Meeker.

Due to the cold night temperatures, many of the Division 6 stream gauges are either closed for the winter season or ice-affected. Most gauge stations are expected to re-open in April.

Outlook

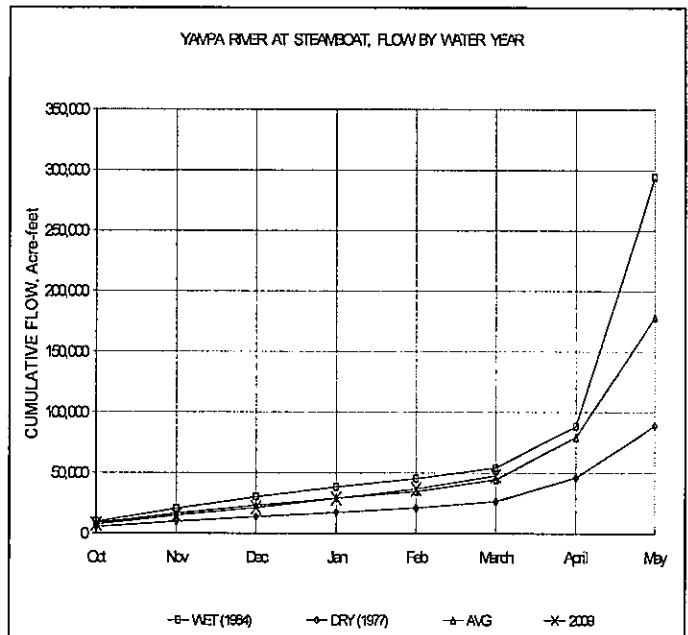
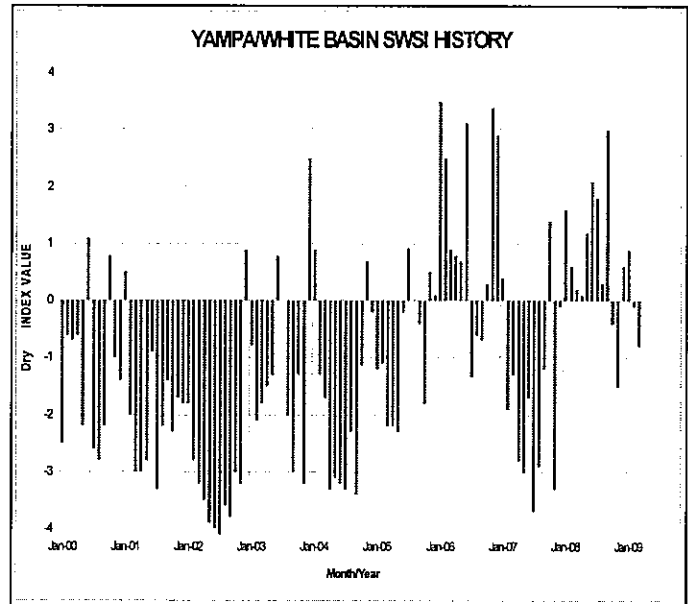
Fish Creek Reservoir storage level decreased slightly in March and was reported at approximately 58% of capacity at the end of the month. Elkhead Creek Reservoir level increased during the month and the 5 cfs winter release to Elkhead Creek was ramped up to approximately 150 cfs by the end of the month to provide additional reservoir storage capacity for spring runoff. The reservoir was at approximately 90% of its' enlarged capacity at the end of the month. Yamcolo Reservoir storage level also increased in March and the reservoir was at approximately 95% of capacity at the end of the month. Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Elkhead Creek Reservoir for municipal, industrial, recreation, and fish recovery releases.

Administrative/Management Concerns

The second year of the fish recovery release from Elkhead Creek Reservoir was completed successfully and data collected during the release are being compiled and reviewed by participating agencies. A meeting with local landowners to discuss the recovery program and operation of Elkhead Reservoir is being scheduled for mid-April.

Public Use Impacts

End-of-month snowfall provided skiers and boarders with excellent spring skiing opportunities. Local anglers are out in numbers enjoying early snowmelt conditions on the Yampa River.



Basinwide Conditions Assessment

The SWSI value for the month was 0.1. The Natural Resources Conservation Service reports that April 1 snowpack is 89% of normal. Flows at the Animas River at Durango averaged 345 cfs (113% of average). The Dolores River at Dolores was estimated to have averaged 173 cfs (129% of average). The La Plata River at Hesperus averaged 19.3 cfs (120% of average).

Precipitation in Durango was 0.52 inches for March which is below the 30-year average of 1.66 inches. Precipitation to date in Durango, for the water year, is 9.70 inches which is below the average of 9.99 inches. Temperatures were near normal for the month. Durango was 0.3° below its 30-year average high and 1.8° above the 30-year average low.

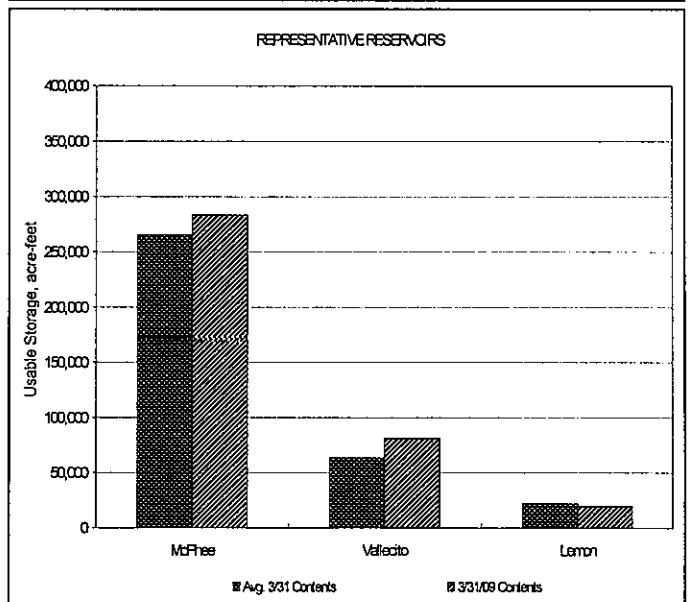
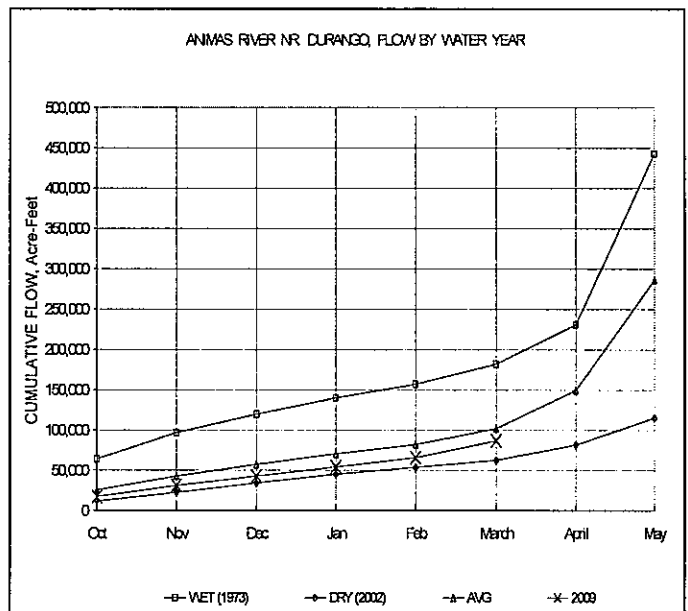
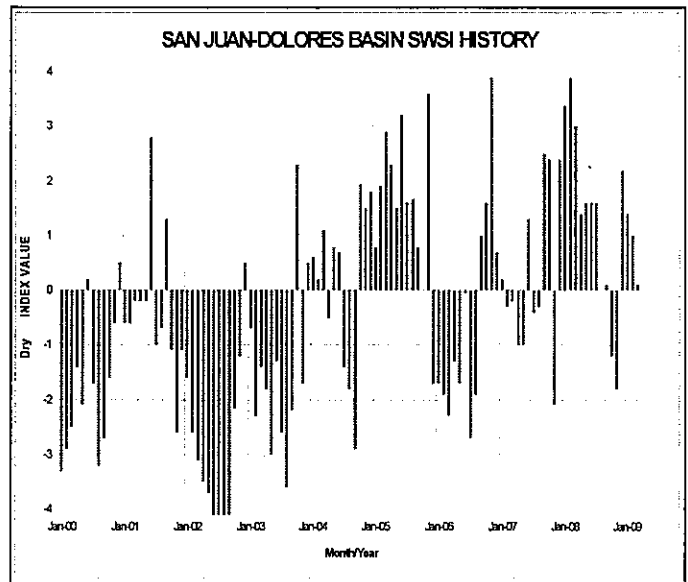
At the end of the month Vallecito Reservoir contained 80,830 acre-feet compared to its normal contents of 55,656 acre-feet (145% of normal). McPhee Reservoir was up to 283,286 acre-feet compared to its normal contents of 272,370 acre-feet (104% of normal), while Lemon Reservoir was up to 19,500 acre-feet as compared to its normal content of 20,442 acre-feet (95% of normal).

Outlook

Dry and windy was the theme for southwest Colorado. It seems there was more dust pilling up than snow. With all the dust, the snow is expected to melt at a faster rate than normal. This will mean higher peaks and shorter duration for the spring runoff. At the beginning of March the NRCS was reporting a snow-water-equivalent for the San Miguel, Dolores, Animas and San Juan River basins at 109% of average. By the end of March the value had declined to 89% of average. The NRCS typically does not measure dust but if they did I am sure it would be well above average.

Administrative/Management Concerns

The USBR is planning to begin filling Ridges Basin Reservoir in the spring of 2009. The reservoir is expected to take up to two years to fill depending on available water supplies and pumping plant capacity.



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