
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
 303-866-3581; www.water.state.co.us

MARCH 2005

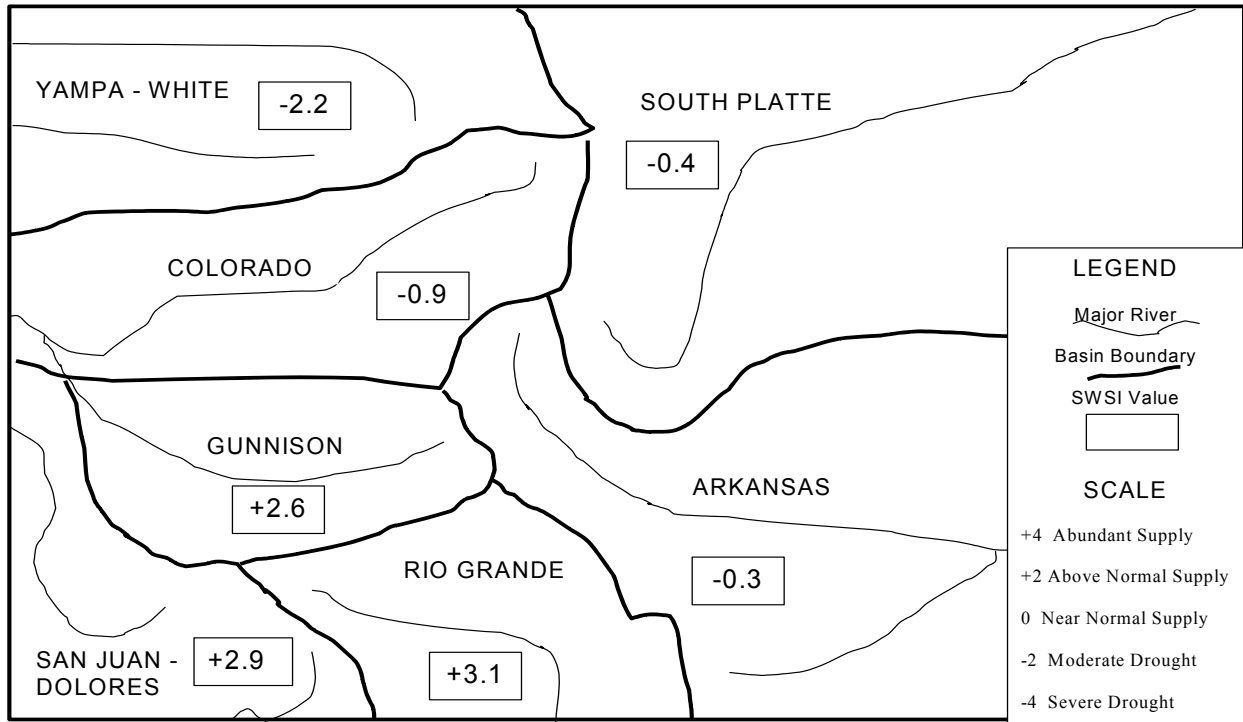
As reported by the NRCS, the March 1, 2005 snowpack averages 109% of normal statewide, with snowpack above normal in the south and below normal in the north. Snowpack is reflected in the SWSI values, which are positive in the south and negative in the north of the state. February precipitation in the southern mountains maintained well above normal snowpack in the Rio Grande, Gunnison, and San Juan-Dolores basins, and boosted stream flows to well above normal rates in the Gunnison and San Juan-Dolores basins and near normal rates in the Rio Grande basin. Unless drastic changes occur in the southwest, those basins are anticipating a well above normal runoff. The NRCS forecasts lower than normal runoff in drainages in the northern portions of the state. The cumulative storage of all the reservoirs graphed in this report is 90% of normal.

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, 2005, and reflect the conditions during the month of February.

<u>Basin</u>	<u>March 1, 2005 SWSI Value</u>	<u>Change From Previous Month</u>	<u>Change From Previous Year</u>
South Platte	-0.4	-1.0	+0.8
Arkansas	-0.3	0.0	+1.7
Rio Grande	+3.1	+0.9	+2.1
Gunnison	+2.6	+0.9	+2.9
Colorado	-0.9	+0.3	+1.3
Yampa/White	-2.2	-1.1	-0.5
San Juan/Dolores	+2.9	+1.0	+1.8

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, 2005

Basinwide Conditions Assessment

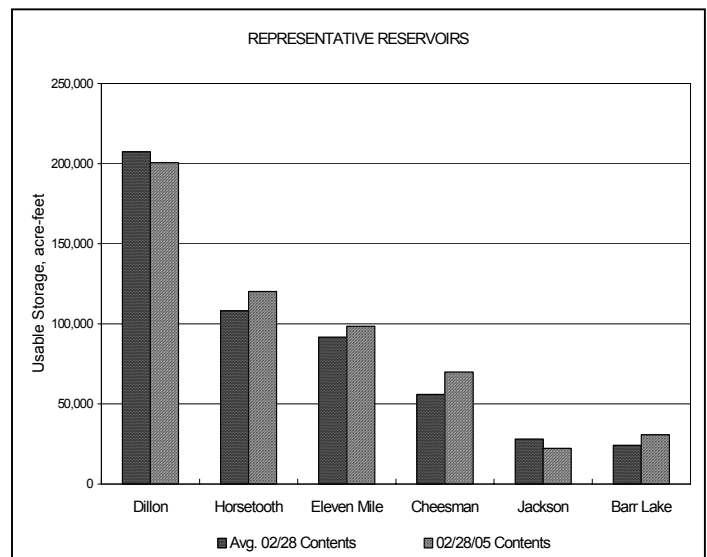
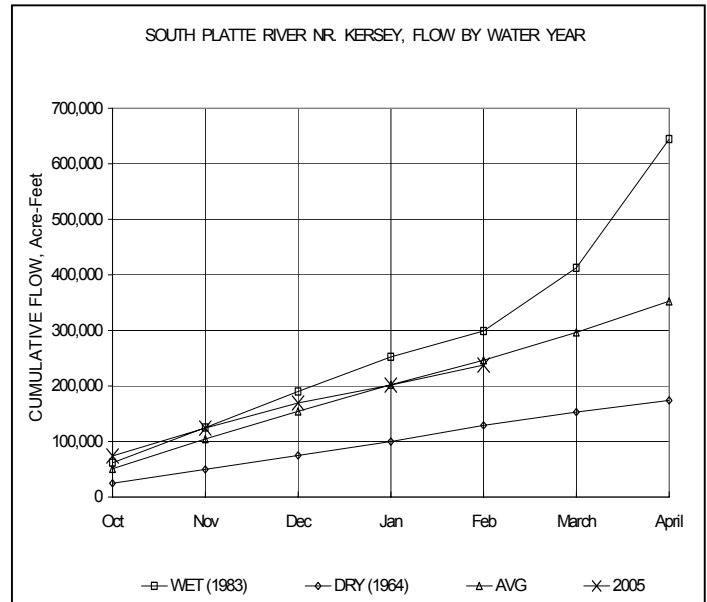
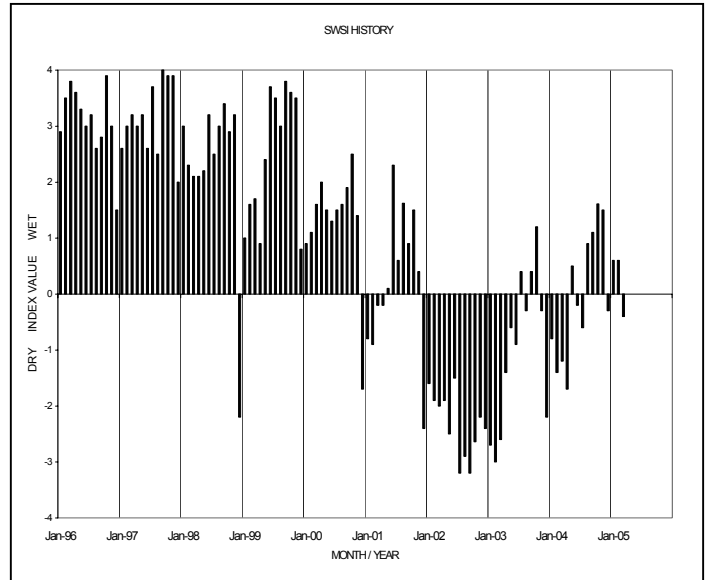
The SWSI value of -0.4 indicates that for February the basin water supplies were near normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 105% of normal as of the end of February. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 88% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 77% of capacity. The Natural Resources Conservation Service reports that March 1 snowpack is 80% of normal. Flow at the gaging station South Platte River near Kersey was 647 cfs, as compared to the long-term average of 674 cfs. Flow at the Colorado/Nebraska state line averaged 39 cfs.

Storage continued as the main use in the month of February, with the remaining diversions to direct flow municipal and industrial uses. Though the month was extremely dry on the plains, river conditions held up fairly well and significant storage occurred.

Outlook

Based on present conditions, it appears that all the main plains reservoirs will fill again this year in contrast to last year when they did not. Of some concern, a very early direct call for irrigation is possible if conditions remain dry which will curtail storage prior to all of these reservoirs filling. As in all years, spring precipitation is important to irrigate up crops allowing users to keep reservoir supplies rather than having to release them for irrigation purposes.

Though conditions were dry, overall percentage of average snowpack did not fall too dramatically during February and remained ahead of last year. Additional snow in March and April would significantly help the overall supply conditions. With the decent snowpack most municipal providers are in a fairly good position for this year for water supply though dry spring conditions could affect the safety factor available for their supplies.

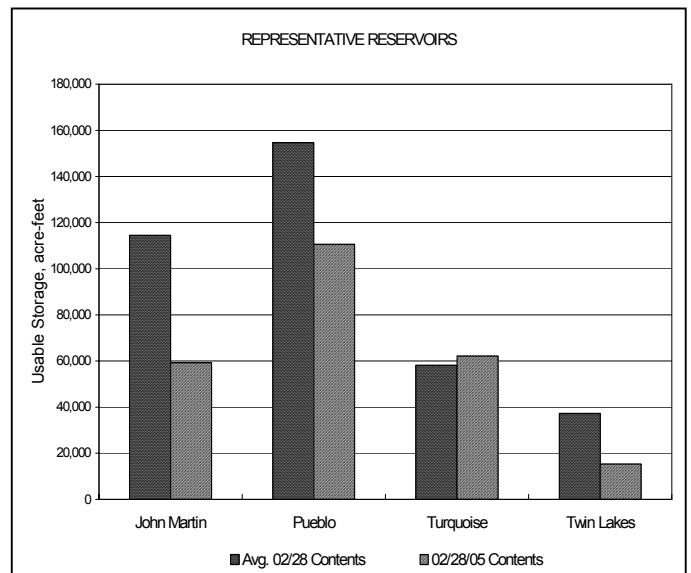
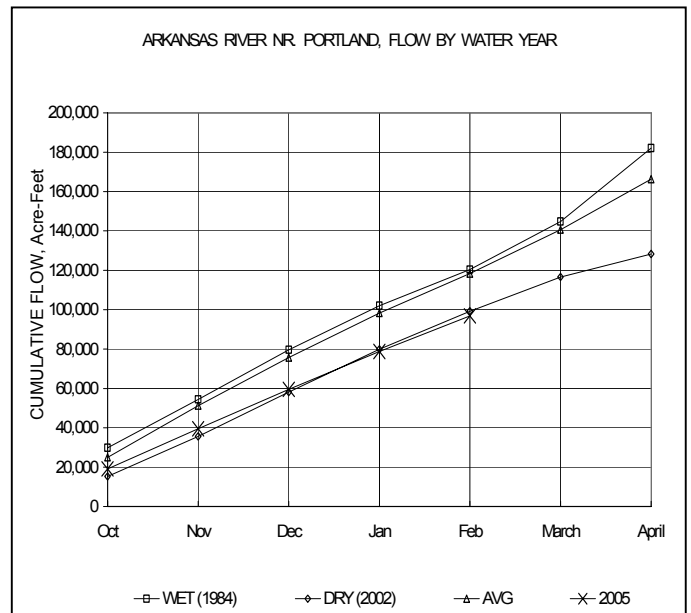
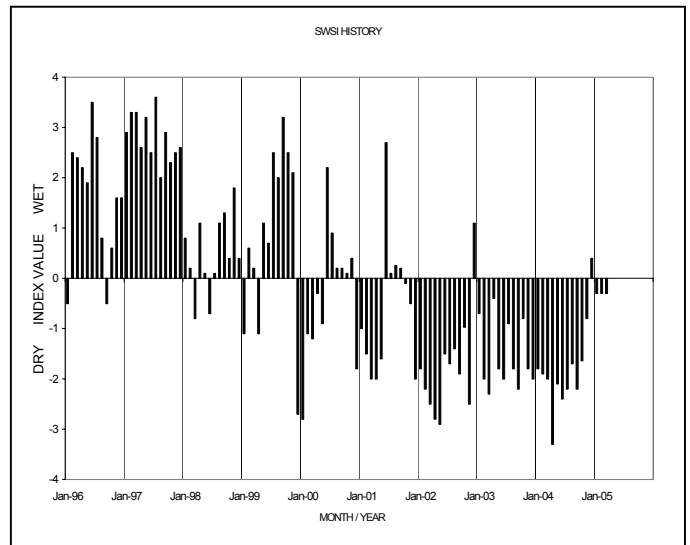


Basinwide Conditions Assessment

The SWSI value of -0.3 indicates that for February the basin water supplies were near normal. The Natural Resources Conservation Service reports that March 1 snowpack was 115% of normal. Flow at the gaging station Arkansas River near Portland was 325 cfs, as compared to the long-term average of 357 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 68% of normal as of the end of February.

Administrative/Management Concerns

The month of February proved to offer interesting challenges in administration even though stream flows contributing to the various winter storage programs are vastly improved over the past few years. Participants in the Winter Water Storage Program opted to a larger degree to store water in Pueblo Reservoir as opposed to some of the off-channel downstream reservoirs historically used. As a result the gates at Pueblo Reservoir were closed except for a small amount of water delivered to the Pueblo Board of Water Works Northside river intake, with most of this flow being released through the Bureau of Reclamation/Division of Wildlife fish hatchery just below the dam. The result of this administrative step to honor the calling water right was complete curtailment of exchanges by Colorado Springs and other entities who were left with the option of delivering their transmountain and fully consumable return flows accruing at the Fountain Creek confluence on down the Arkansas River to the Colorado Canal for storage in Lake Meredith or Lake Henry Reservoirs. Flows became so low through the City of Pueblo that numerous news articles were published decrying the woeful conditions. Division of Wildlife worked with DWR to monitor the fishery through Pueblo and attempt to come up with some available supplies to keep the minimal flows from going to zero through the area below the Pueblo Board of Water Works intake. There was considerable confusion over the cause of the low flows and the Division 2 Office spent a great deal of time explaining the reasoning that caused the gate releases to be curtailed. Ironically the low flows probably helped the Corps of Engineers have better working conditions on the channel improvements that are being constructed as part of the City of Pueblo's recreational in-channel flow improvements.



Basinwide Conditions Assessment

The SWSI value of 3.1 indicates that for February the basin water supplies were above normal. The Natural Resources Conservation Service reports that March 1 snowpack is 147% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 197 cfs (99% of normal). The Conejos River near Mogote had a mean flow of 52 cfs (101% of normal). Flow to the state line was 118% of normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 75% of normal as of the end of February.

The Valley floor experienced a warm, yet wet month as the average temperature in Alamosa was nearly five degrees above normal. Precipitation was above normal.

Outlook

At the close of February, snowpack in the Rio Grande basin was outstanding. Basinwide, the snowpack was right around 150%, but skewed by high snowpack at the upper Rio Grande sites. The Sangre De Cristo Range, the Saguache Creek drainage and the southern San Juan Mountains are in the 120 to 140% of normal range. Water administrators hope that with the two snowiest months yet to come, snowpack will remain above normal. A high runoff could begin to heal the basin from the past three to five year drought.

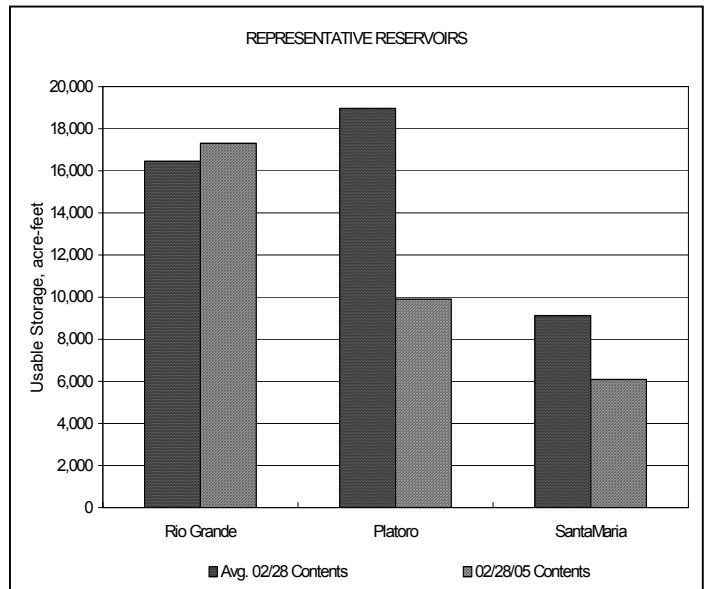
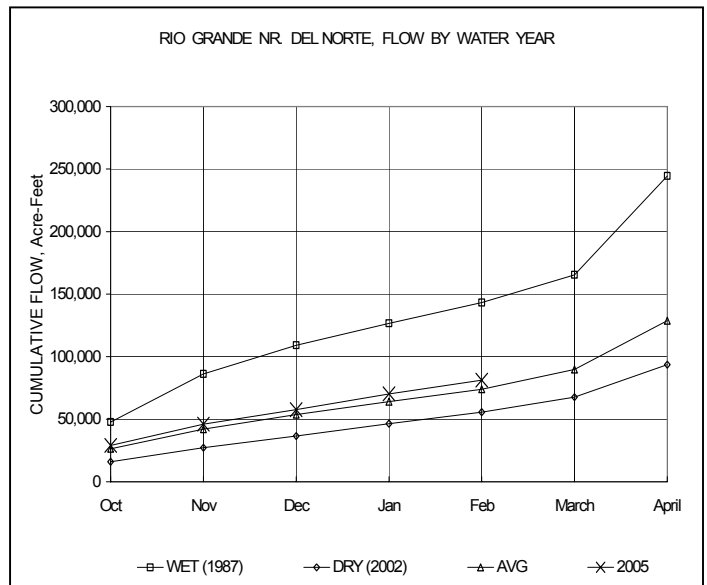
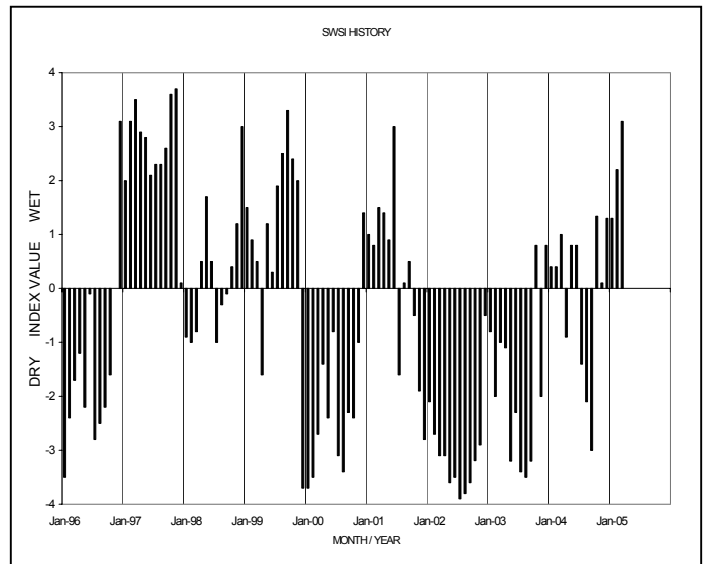
Stream flow forecasts are calling for significantly above average runoff this year. Carryover storage in the basin reservoirs was generally poor, but some of the expected high runoff should go into reservoir storage.

Administrative/Management Concerns

The annual meeting of the Rio Grande Compact Commission will begin at 9:00 a.m. on March 31, 2005 at Morgan Hall in Santa Fe, NM. The public is invited to attend. Colorado met its Rio Grande Compact delivery obligation to the downstream states of New Mexico and Texas during 2004. The important issues of the Rio Grande basin in the three states include endangered species protection (Rio Grande Silvery Minnow and the Southwestern Willow Flycatcher), prior and paramount Native American water rights administration, and low reservoir storage.

Public Use Impacts

Winter sports enthusiasts reliant on snow cover enjoyed another month of above-average snowfall. For the first time in ten years, there is some concern about localized flooding in the basin, particularly if weather conditions force a sudden runoff peak.



Basinwide Conditions Assessment

The SWSI value of 2.6 indicates that for February the basin water supplies were above normal. The Natural Resources Conservation Service reports that March 1 snowpack was 133% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 66 cfs, as compared to the long-term average of 45 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 99% of normal as of the end of February.

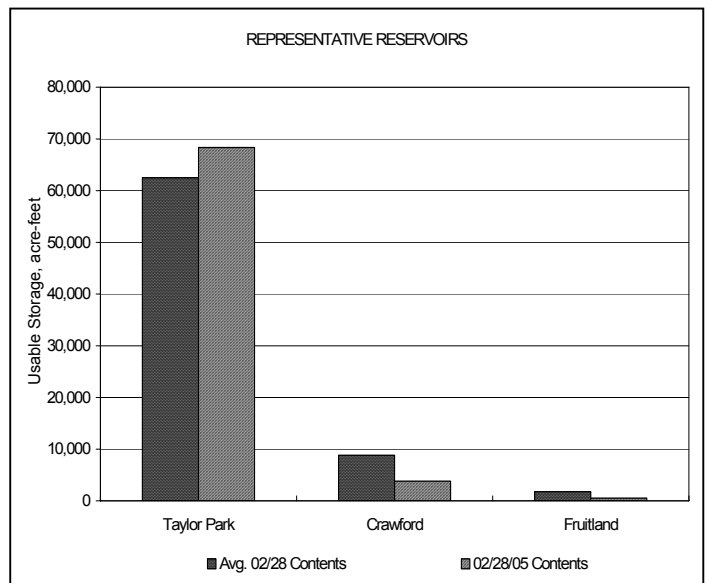
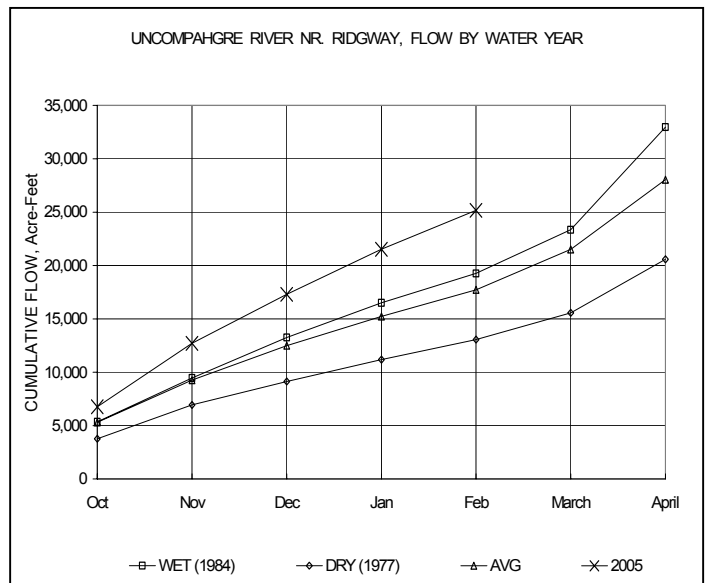
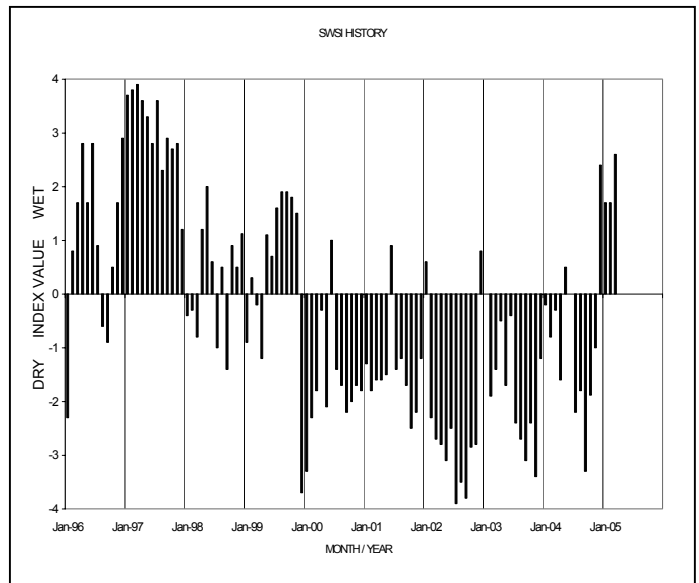
February is normally the second driest month of the year, but 2005 brought a warmer and wetter February than usual. In some areas such as the Grand Mesa, there is actually concern about flooding. This is not something we have seen in quite a few years.

Outlook

Irrigators are looking forward to full supply this year. In the Cedaredge area, there may be a short time this spring when free water is available. This rarely occurs. The drought conditions have caused a lot of tension among water users, but it is not felt this year. The hope is that the storms keep coming and we don't get a March like last year, where the unusually warm temperatures and lack of precipitation drastically reduced the snowpack levels.

The average for the three snow courses on the Grand Mesa is 166% of normal. This should provide enough water to fill up all of the reservoirs, which hasn't happened since the late 1990's.

The USBR is still forecasting that Blue Mesa Reservoir will fill this year and still have a small amount of extra water to release for flushing flows in the Black Canyon. Taylor Park Reservoir should come close to filling also.



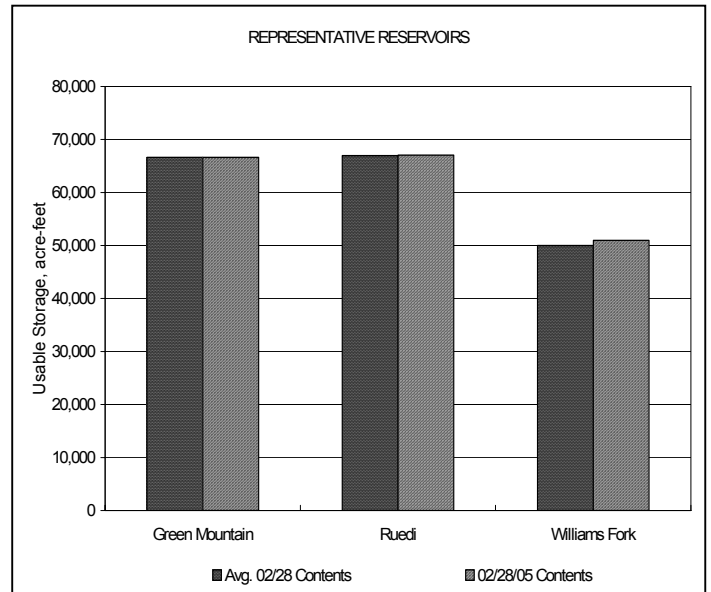
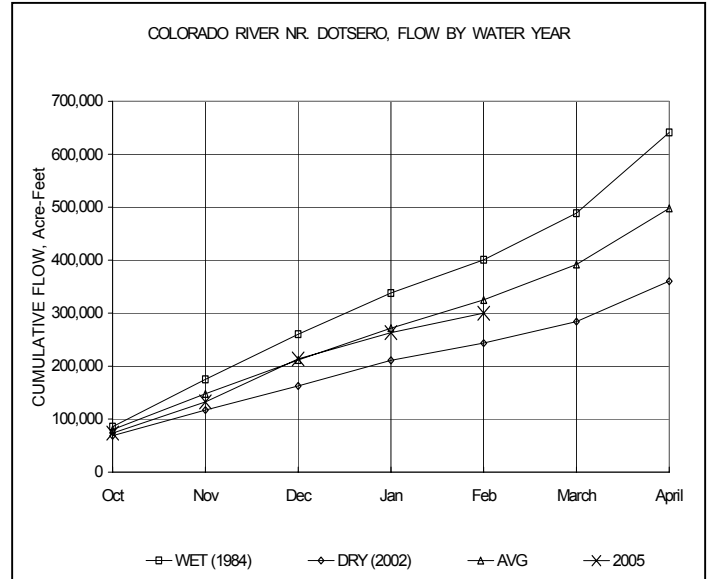
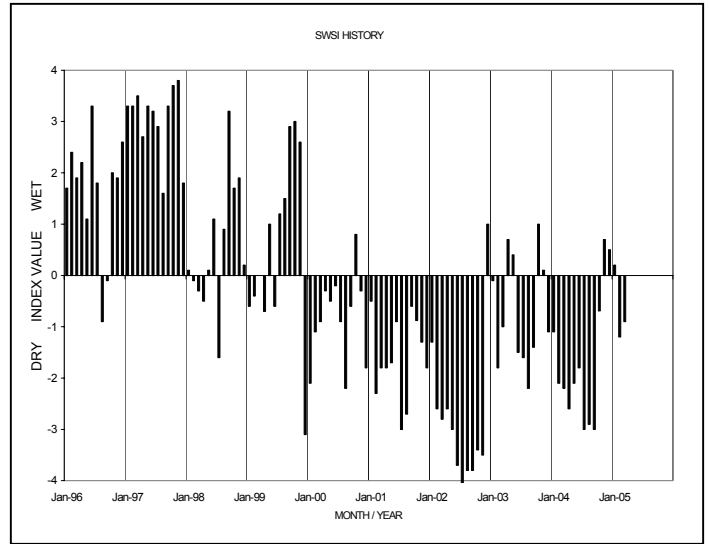
Basinwide Conditions Assessment

The SWSI value of -0.9 indicates that for February the basin water supplies were near normal. The Natural Resources Conservation Service reports that March 1 snowpack is 98% of normal. Flow at the gaging station Colorado River near Dotsero was 656 cfs, as compared to the long-term average of 952 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 101% of normal as of the end of February.

Snowpack for the entire Colorado River basin is near normal, which represents the best March 1 snowpack conditions in the basin since 1997, according to the "Colorado Basin Outlook Report March 1, 2005" (NRCS). Significant variations occur throughout the basin. The Plateau Creek basin is doing very well at 164% of average, while the Blue River basin and the Williams Fork River basin are at only about 80% of average.

Outlook

The NRCS forecasts that April-July stream flows will vary from 75% of average on Muddy Creek below Wolford Mountain Reservoir to 104% of average for Willow Creek Reservoir inflow. Colorado River near Cameo stream flow is forecasted at 85% of average.



Basinwide Conditions Assessment

The SWSI value of -2.2 indicates that for February the basin water supplies were below normal. The Natural Resources Conservation Service reports that March 1 snowpack is 90% of normal. Flow at the gaging station Yampa River at Steamboat was estimated at 104 cfs, as compared to the long-term average of 98 cfs.

Precipitation for February was 75% of average across the basin. Temperatures continued to be above average. Year-to-date precipitation for the water year fell to 90% of average. The basin-wide snowpack decreased slightly to 90% of average. For the North Platte, Yampa and White Rivers, this makes seven out of the last eight years that the March 1 snowpack was below average.

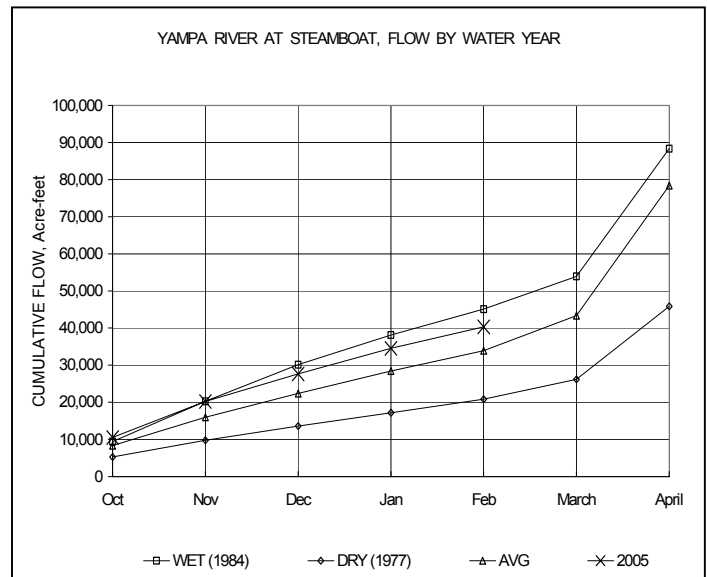
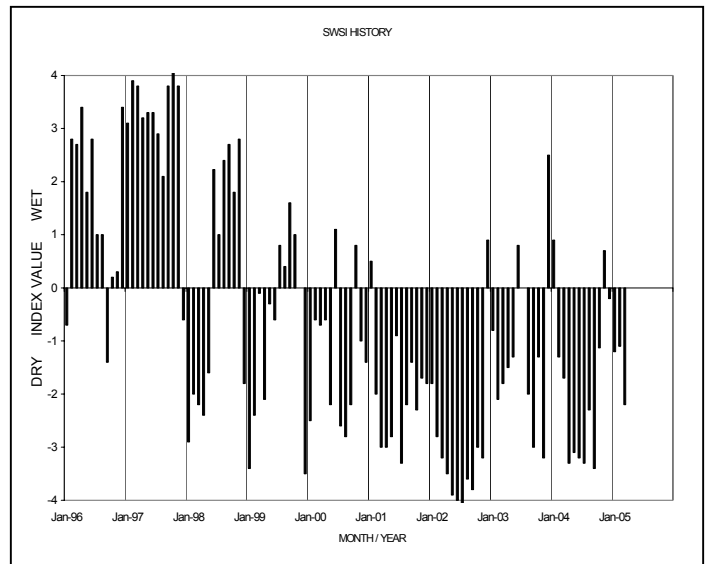
Outlook

The March 1 runoff forecast released by the Natural resources Conservation Service for the most probable runoff condition is for 75% of average for the North Platte River near Northgate; 76% of average for the Yampa River near Maybell; 92 % of average for the Little Snake River near Dixon; and 69% of average for the White River near Meeker. These percentages represent about a 5% decrease from the previous month for the North Platte and Yampa Rivers, and a 20% drop for the White River.

With only about four to six weeks remaining in the normal snow accumulation season, it will be difficult to reach average snowpack conditions without a shift in the existing weather conditions. If the below average snowpack conditions continue, the basin is likely to see drought conditions continue.

Public Use Impacts

Many area rivers, especially at lower elevations, are free of ice and open for fishing. Elkhead Reservoir has been lowered to a minimum level for construction purposes, and will be closed to the public for at least two years.



Basinwide Conditions Assessment

The SWSI value of 2.9 indicates that for February the basin water supplies were above normal. The Natural Resources Conservation Service reports that March 1 snowpack is 145% of normal. Flow at the gaging station Animas River near Durango was 374 cfs, as compared to the long-term average of 208 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 85% of normal as of the end of February.

The water supply situation changed dramatically during January and February. One of the fastest accumulations of snow pack administrators claim to have seen occurred which brought snow moisture content up to 160% of normal with more than 27" of water on the average snow course. The snow water density was high for this time of year (around 30%) and total accumulation was the highest since 1997 and 1993. The Dolores drainage was lower but still held well above average water content.

Precipitation overall was 25% above normal with the yearly total amounting to 13.3 inches in Durango (161% of average). There were 14 days of measurable accumulation during February, and this fell as rain or wet snow so that by the end of the month much of the low elevation snow ran into the ground or off to the streams. Temperatures were near normal highs but well above the normal lows (8° F higher).

Stream flows were flowing well above 150% of normal at the end of the month, with the Animas at Durango at 371 cfs and the Dolores River at the town of Dolores at 98 cfs.

Due to runoff expectations, Vallecito releases were being made. Other reservoirs were gaining and near normal except at McPhee which rose to 85% with 216,000 acre feet.

Soil moisture is in excellent shape and promises to give vegetation an early boost for growth in the spring.

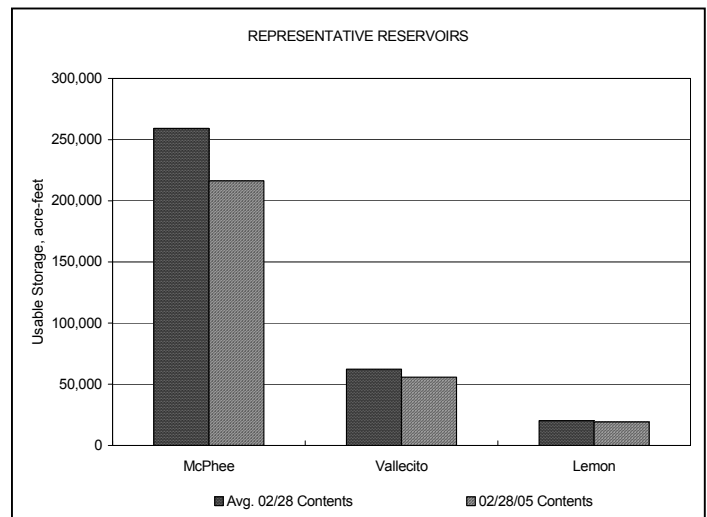
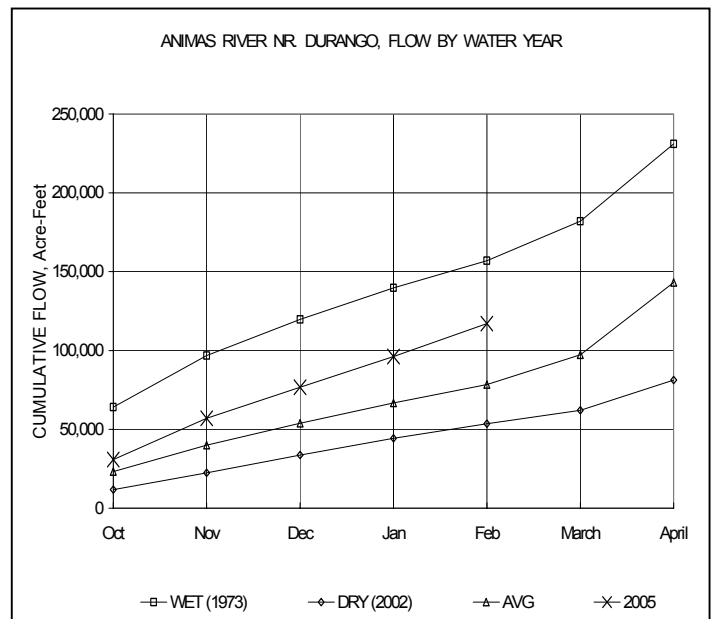
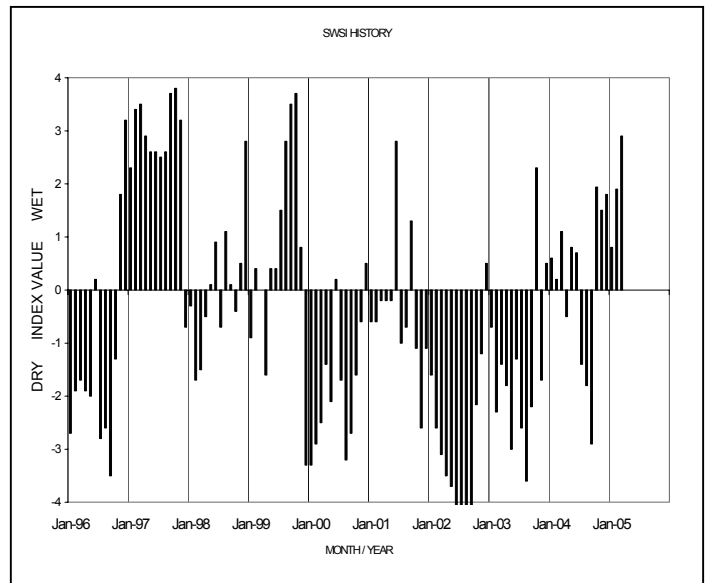
Outlook

The water accumulation was encouraging, but with the warm temperatures there was some concern about how long the runoff would last. Also, the possibility of flooding was developing, especially if the precipitation continues. The actual runoff could vary considerably depending on the weather over the next month a half. There will be a controlled spill occurring from McPhee Reservoir at some point this year.

Public Use Impacts

From the La Plata Mountains eastward to Wolf Creek Pass, heavy snow accumulated over an unstable base causing many snow slides to run during February.

It would appear that white water recreation will be good this year.



OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 SHERMAN STREET ROOM 818
DENVER CO 80203