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# COLORADO

## WATER SUPPLY CONDITIONS UPDATE

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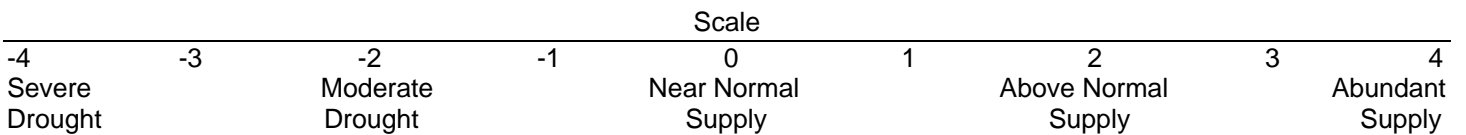
FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES  
 ROOM 818, 1313 SHERMAN ST., DENVER, CO 80203  
 303-866-3581; [www.water.state.co.us](http://www.water.state.co.us)

DECEMBER 2006

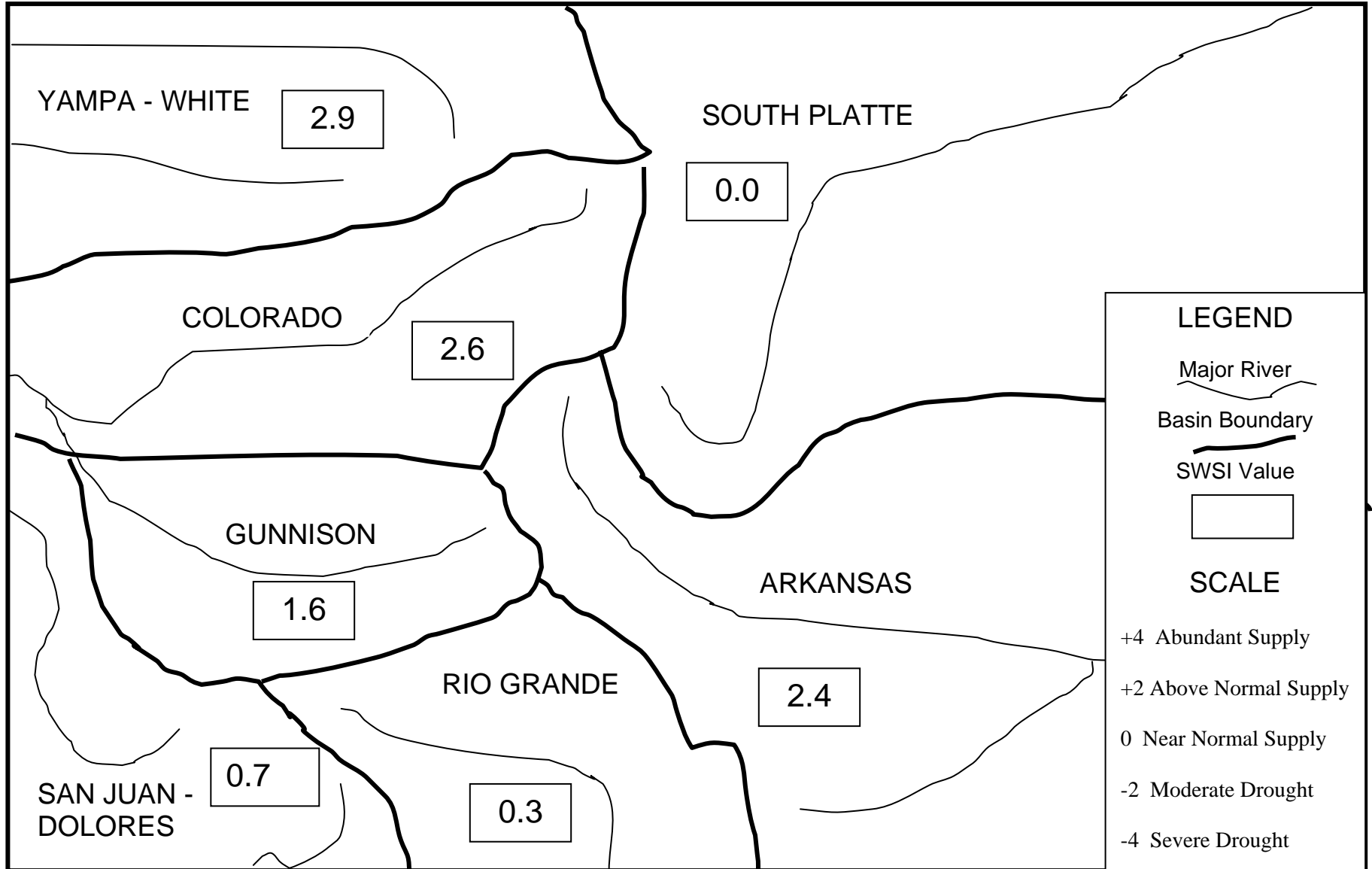
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on snowpack, reservoir storage, and precipitation for the winter period (November through January). 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 December 1, 2006, and reflect the conditions during the month of November. Two of the basins (Arkansas and Colorado) show a positive shift from last month's SWSI value. Five of the basins (South Platte, Rio Grande, Gunnison, Yampa/White, and San Juan/Dolores) show a negative shift from last month's SWSI value.

<u>Basin</u>	<u>December 1, 2006 SWSI Value</u>	<u>Change From Previous Month</u>	<u>Change From Previous Year</u>
South Platte	+0.0	- 1.5	- 1.0
Arkansas	+2.4	+0.2	+0.1
Rio Grande	+0.3	- 3.5	+3.2
Gunnison	+1.6	- 0.6	+3.4
Colorado	+2.6	+1.2	- 0.1
Yampa/White	+2.9	- 0.5	+2.8
San Juan/Dolores	+0.7	- 3.2	+2.4



# SURFACE WATER SUPPLY INDEX FOR COLORADO



December 1, 2006

Basinwide Conditions Assessment

The SWSI value for the month of November was 0.0. Cumulative storage for the six reservoirs graphed on this page was 103% of normal as of the end of November. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, was at 29% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero was at 90% of capacity. The Natural Resources Conservation Service reports that the December 1 snowpack is 131% of normal. Flow at the gaging station South Platte River near Kersey was 746 cfs, as compared to the long-term average of 737 cfs. Flow at the Colorado/Nebraska state line averaged 39 cfs.

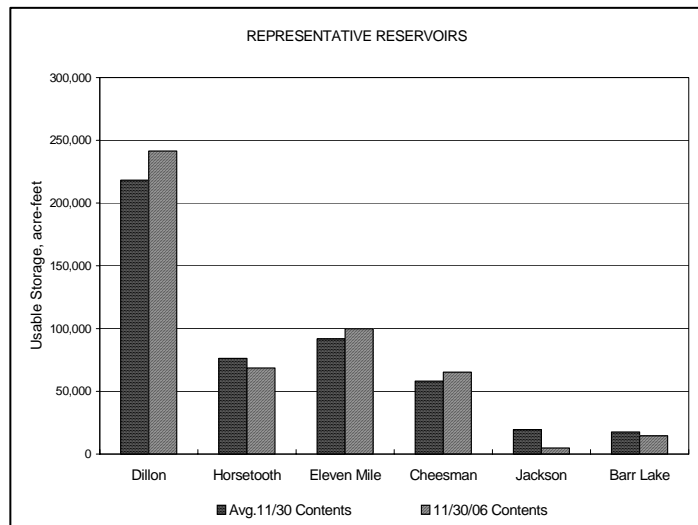
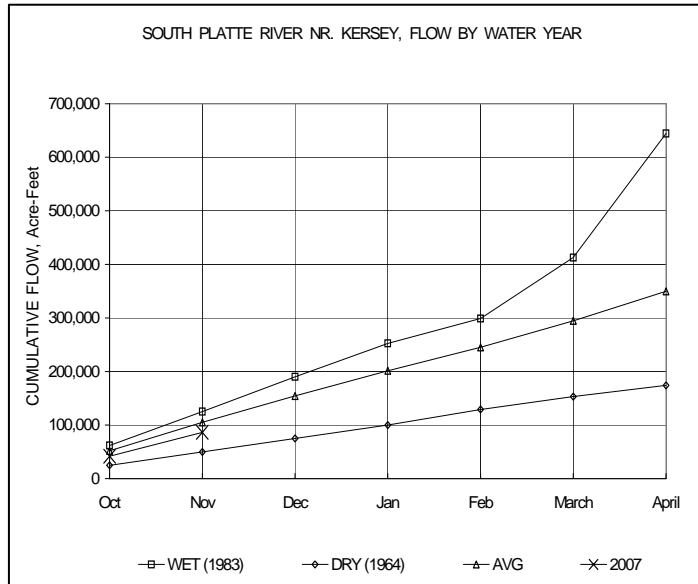
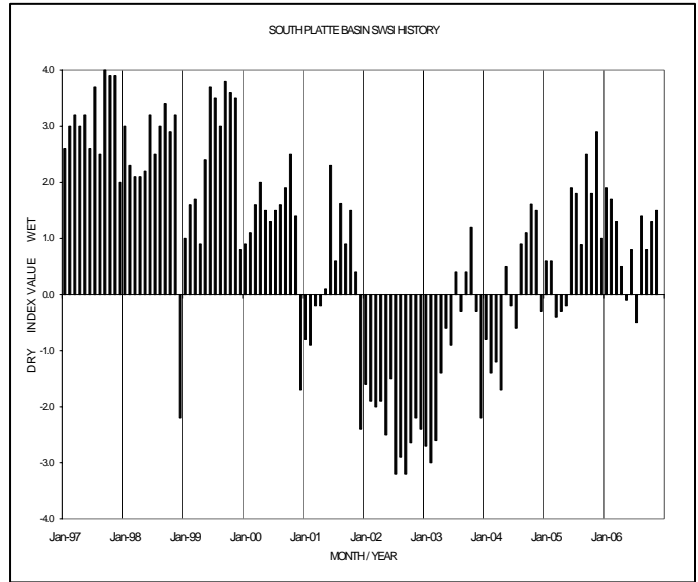
Outlook

With the start of the new water year and end of the irrigation season, water not needed for domestic purposes was stored during November.

Administrative/Management Concerns

As reported last month, the reservoir storage levels were extremely low for large irrigation reservoirs on the lower end of the river. Thus, a call for reservoir storage existed through the basin. While significant storage occurred during November, warm conditions during the winter (to avoid freezing problems) and wet conditions in March and April will be necessary to make sure that all these reservoirs can be filled. The wet conditions in the spring will allow users to continue to fill reservoirs rather than the need to use water to irrigate up crops.

Municipal suppliers in the Metro area continue to be in excellent condition with carryover storage from the previous year. This carryover was due to near record trans-basin diversions this last season because of the high flow conditions in the Colorado basin. Storage further north along the Front Range continues to be average overall for this time of year. Of note, storage in the Poudre basin is below average due to the very dry conditions last year in the northern part of the basin.



Basinwide Conditions Assessment

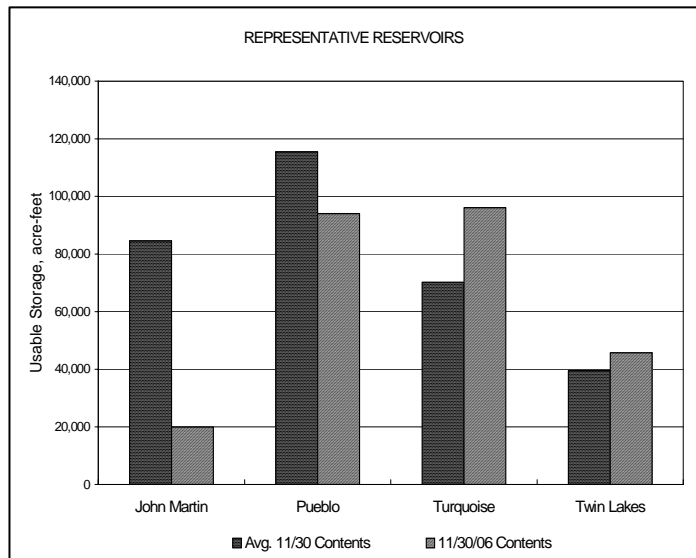
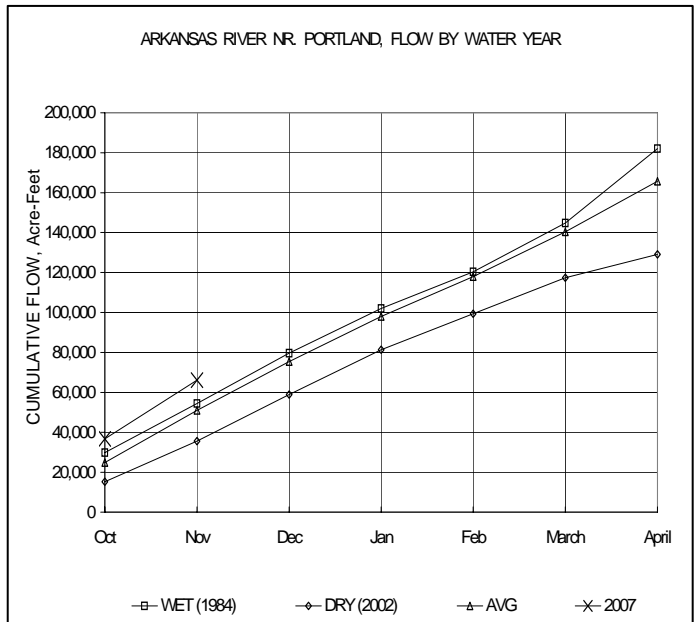
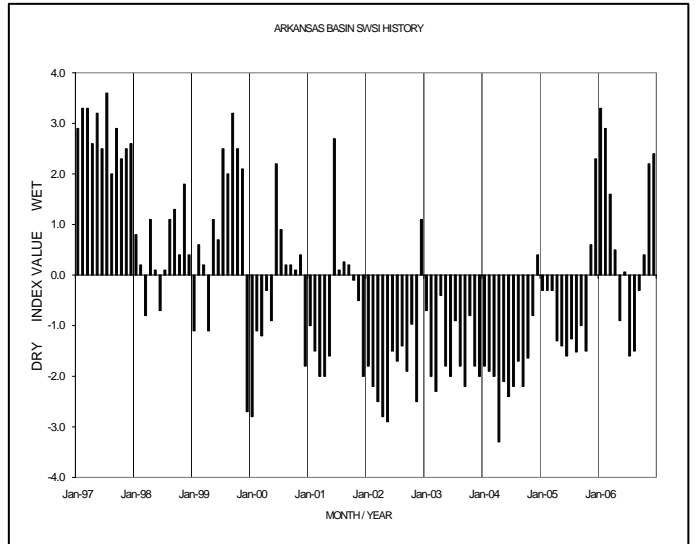
The SWSI value for the month of November was +2.4. The Natural Resources Conservation Service reports that the December 1 snowpack is 113% of normal. Flow at the gaging station Arkansas River near Portland was 494 cfs, as compared to the long-term average of 439 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 83% of normal as of the end of November.

Outlook

Winter Compact storage began in John Martin Reservoir on November 1, 2006. The Pueblo Winter Water Program began operation on November 15, 2006 with storage taking place initially in Pueblo and John Martin Reservoirs and under the Fort Lyon Canal system in Adobe Creek Reservoir.

Administrative/Management Concerns

Well Associations in the Arkansas Basin as well as the Colorado Division of Water Resources are anxiously awaiting further word from the Special Master in the Kansas vs. Colorado court case on remaining issues that impact the first ten-year compliance period (1997-2006).



Basinwide Conditions Assessment

The SWSI value for the month of November was +0.3. The Natural Resources Conservation Service reports that the December 1 snowpack is 85% of normal. Flow at the Rio Grande near Del Norte gaging station averaged 389 cfs (137% of average). The Conejos River near Mogote had a mean flow of 110 cfs (118% of average). Precipitation in Alamosa was 0.15 inches, significantly below the average of 0.48 inches for November. Temperatures ranged from -21 degrees to 67 degrees in Alamosa where the average monthly temperature was 32.3 degrees, 3.9 degrees above normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 77% of normal as of the end of November.

Outlook

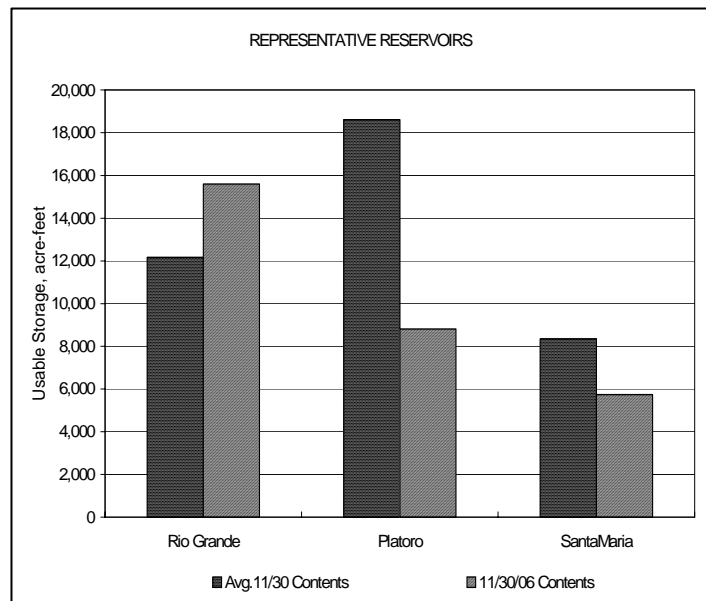
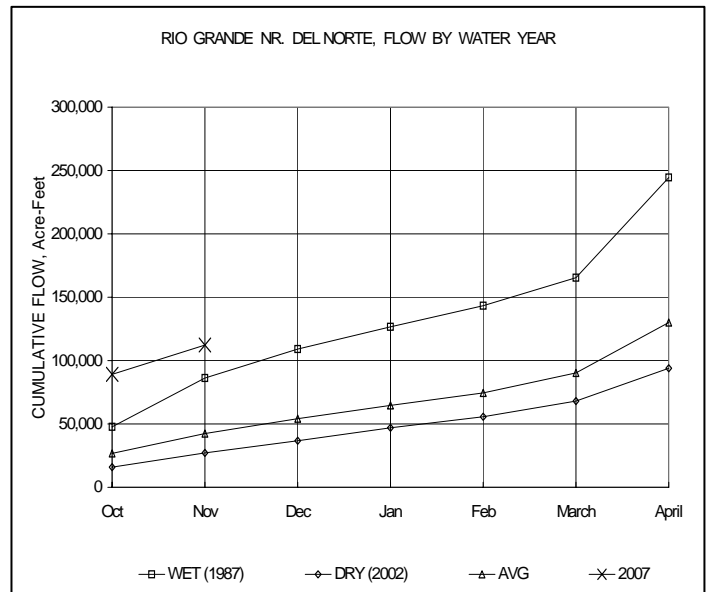
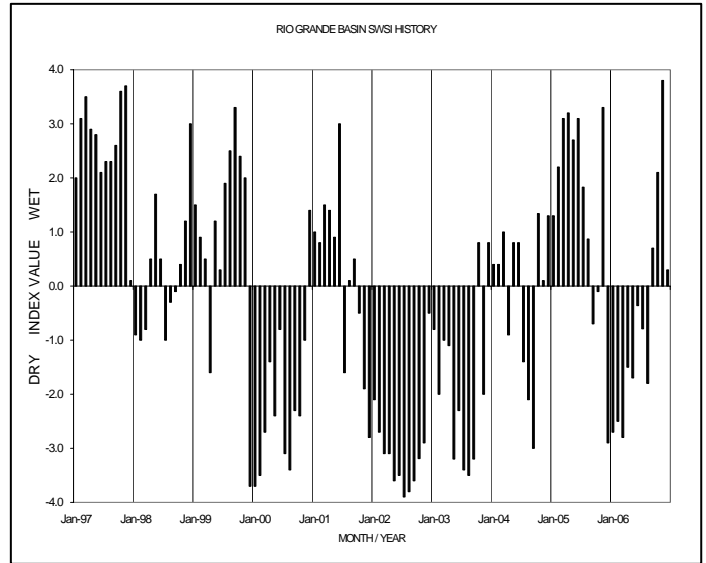
Stream flow on the upper Rio Grande and its tributaries should remain above average throughout the winter, while flows in the Conejos River should be close to normal. The effects of the rainy summer and fall are starting to diminish. The precipitation for October was significantly higher than average, and the snowpack got off to a good start. Unfortunately, the low precipitation in November caused the snowpack to drop below normal for this time of year.

Administrative/Management Concerns

Surface water diversions on both the Rio Grande and Conejos Rivers were shut off at the end of October, with the total streamflow being delivered to the Stateline to pay the Rio Grande Compact obligation. Due to the significant precipitation this fall, the rivers are experiencing less stream loss than has occurred in the last several years. The compact delivery requirements for the Rio Grande and the Conejos River should be met or exceeded this year.

Public Use Impacts

The Wolf Creek Ski Area was able to open earlier than ever before due to the significant amount of snowfall in October. Unfortunately the high rate of precipitation has not continued into November, and the snowpack is suffering.



Basinwide Conditions Assessment

The SWSI value for the month of November was +1.6. The Natural Resources Conservation Service reports that the December 1 snowpack is 114% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 74.4 cfs, as compared to the long-term average of 67.5 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 123% of normal as of the end of November.

Outlook

After four consecutive months of above average precipitation, the trend reversed and November was drier and warmer than normal.

Administrative/Management Concerns

The abundant precipitation has caused the flow in the streams and rivers to continue flowing strong. Seeps and springs are flowing the most they have in numerous years, encouraging water users that the ground water conditions are improving after the multi-year drought.

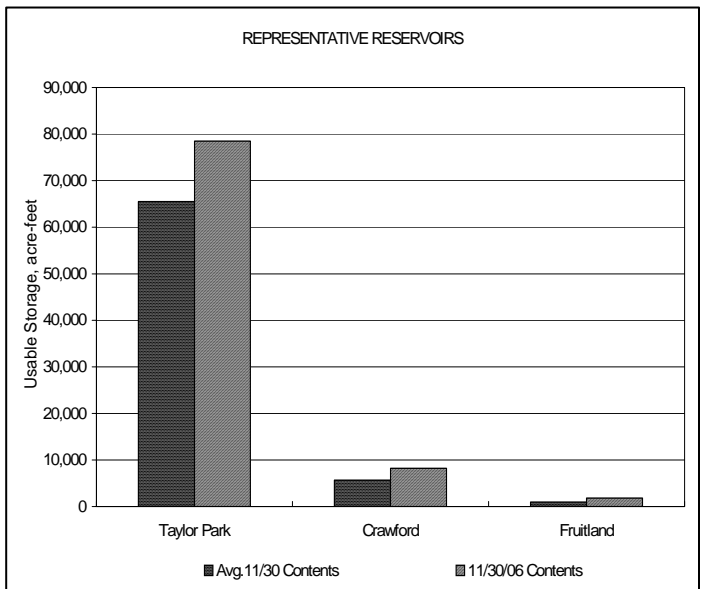
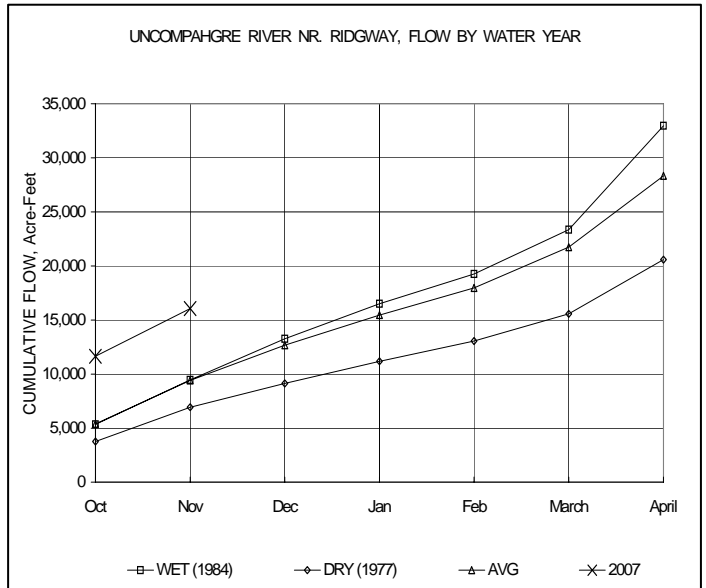
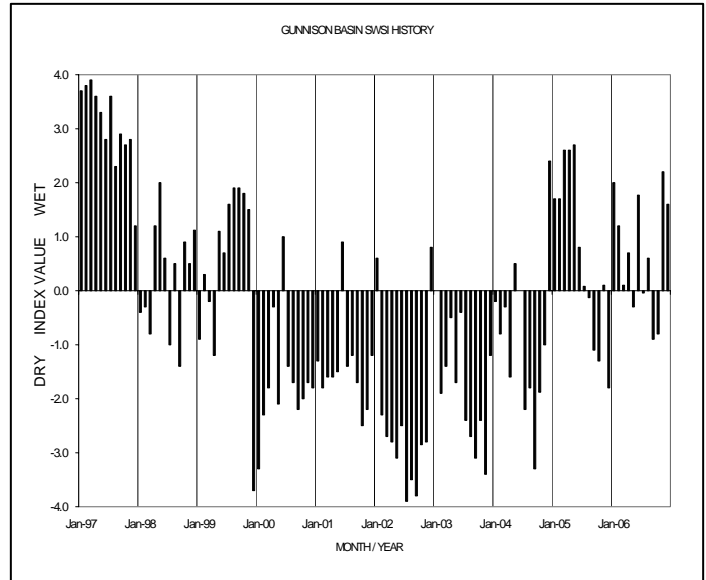
Because of the strong flows, Ridgway reservoir has filled within 3 feet of spilling and the winter releases have been increased to double the normal amount. The releases from the Aspinall Unit are usually set at 600 cfs for the winter season. They are now releasing 1600 cfs to meet the reduced storage target at Blue Mesa Reservoir. This January 1 target was established to avoid river icing conditions on the Gunnison River just above the reservoir and up into the town of Gunnison.

Reservoir carryover storage in the entire basin is substantially above normal, a good position for going into the next irrigation season.

A major storm in the last part of November dropped a lot of snow in the basin and created an extended period of below-normal temperatures in the first part of December.

Public Use Impacts

In the mountains, the snowpack is a little above normal. Many forecasters are thinking the high soil moisture conditions under the snow will significantly add to next year's spring runoff



Basinwide Conditions Assessment

The SWSI value for the month of November was +2.6. The Natural Resources Conservation Service reports that the December 1 snowpack is 126% of normal. Flow at the gaging station Colorado River near Dotsero was 1032 cfs, as compared to the long-term average of 1134 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 106% of normal as of the end of November.

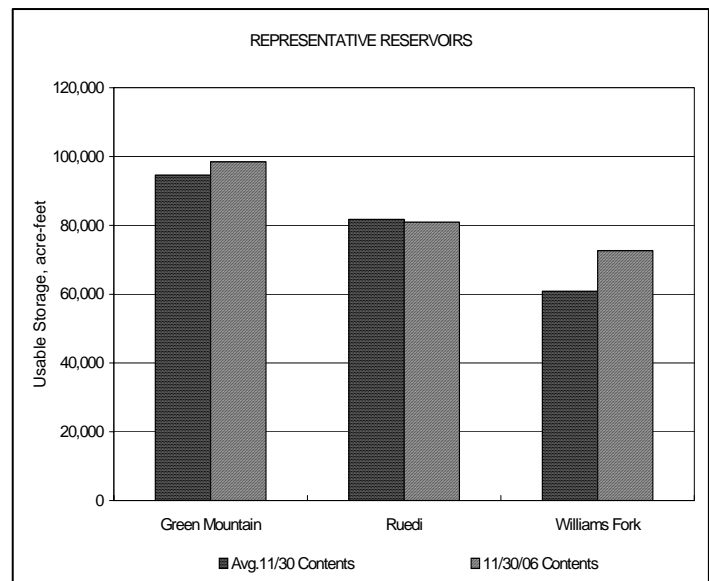
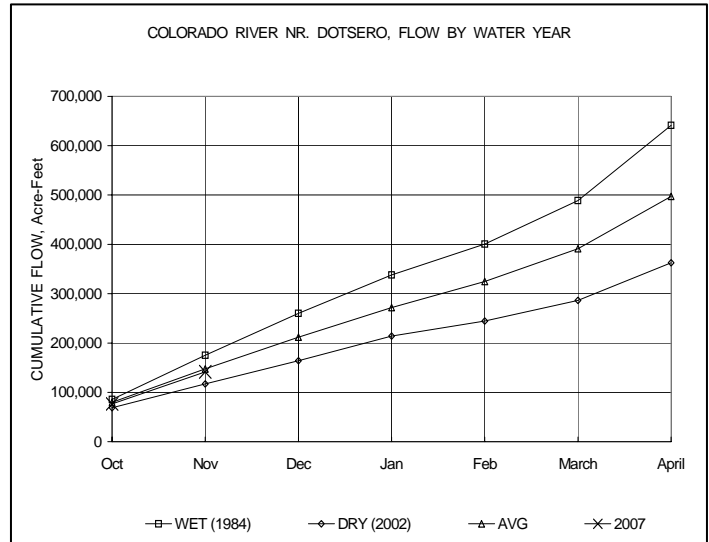
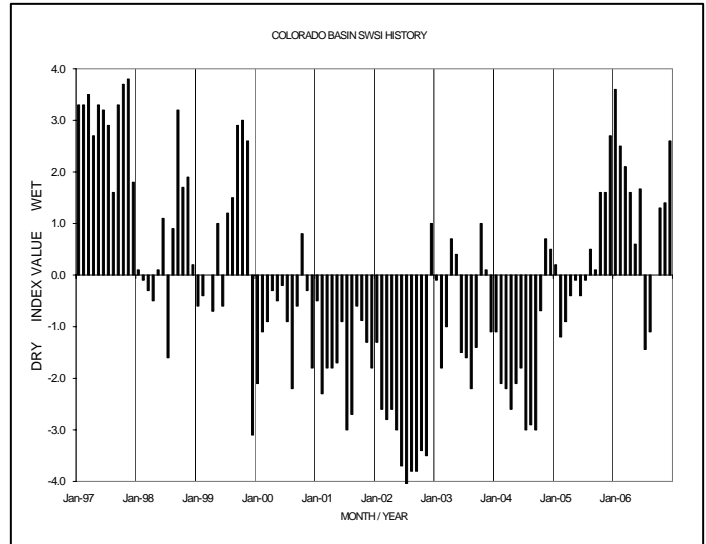
Outlook

Snowpack for the Colorado River Basin is slightly above average heading into December. Locations throughout the basin vary from 81% to 140% of average snowpack, with no clear pattern.

November precipitation was about average for the Colorado River Basin, with above average moisture in the Eagle River and Roaring Fork River basins and below average moisture in some far western parts of the basin.

Administrative/Management Concerns

Many tributaries that do not see major winter diversions continue to show above average flows into December, helped by the saturated ground from strong rains back in October. On the other hand, the Colorado River mainstem is exhibiting typical early winter flows because these flows are more regulated by reservoir releases and trans-mountain diversions.



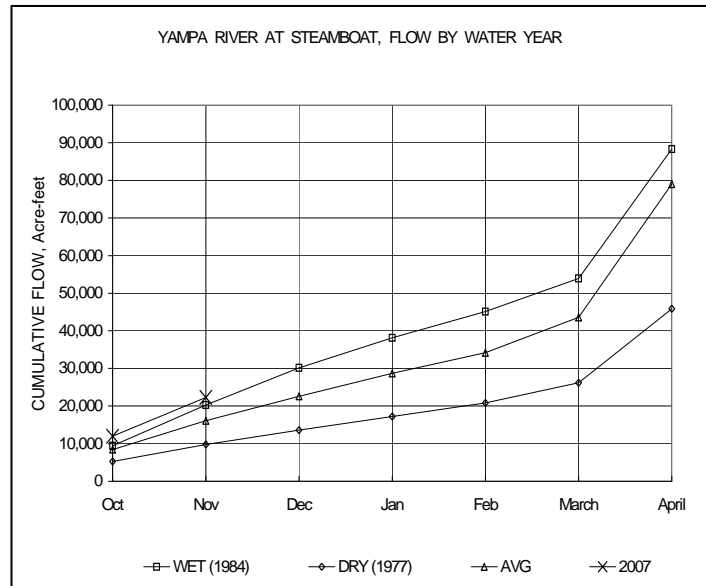
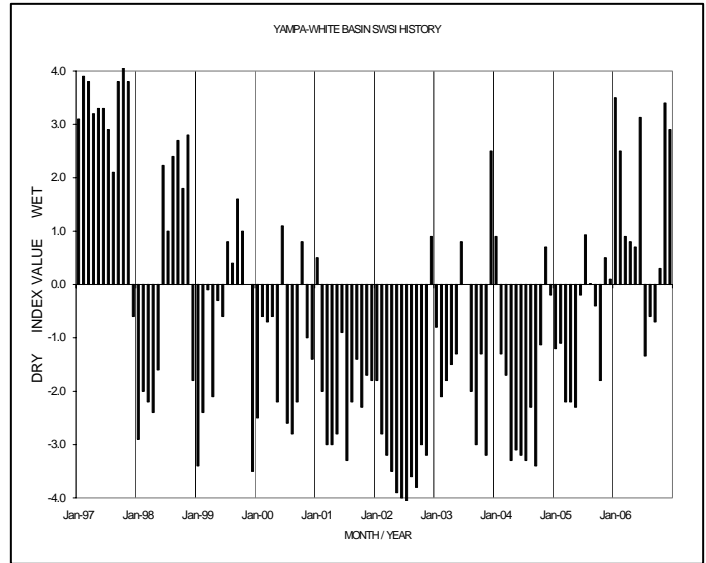
Basinwide Conditions Assessment

The SWSI value for the month of November was +2.9. Flow at the gaging station Yampa River at Steamboat was 173 cfs, as compared to the long-term average of 129 cfs. The Natural Resources Conservation Service reports that the December 1 snowpack is 95% of normal.

Outlook

Precipitation for the month of November was below average with the precipitation, as recorded at the SNOTEL sites operated by the NRCS, totaling 75% of average (average period being from 1971 to 2000) and 54% of November of last year for the Yampa, White and North Platte River Basins combined. For the Yampa and White River Basins the precipitation totaled 75% of average and 54% of November of last year and for the North Platte River basin it totaled 73% of average and 51% of November of last year.

Despite the below normal precipitation, river flows in the Yampa River basin were well above average, in the White River basin they were around average, and for the North Platte River basin they were around average throughout the month.





Basinwide Conditions Assessment

The SWSI value for the month of November was +0.7. The Natural Resources Conservation Service reports that the December 1 snowpack is 80% of normal.

The higher than average flows of October continued into November with flows at the Animas River at Durango averaged 457 cfs (159% of normal) with a maximum average daily peak flow of 645 cfs on Nov. 1st. The Dolores River at Dolores averaged 164 cfs (195% of normal) with a maximum average daily peak flow of 251 cfs on Nov. 1st. The La Plata River at Hesperus averaged 16.4 cfs (153% of normal) with a maximum average daily peak flow of 28.4 cfs on Nov. 1st.

With irrigation in the basin subsiding, most reservoirs took the opportunity to store water with the exception of Vallecito Reservoir which continued to release water to prepare for winter operating conditions. At the end of the month Vallecito Reservoir contained 76,560 acre-feet. McPhee Reservoir was up to 268,418 acre-feet, while Lemon Reservoir was up to 32,220 acre-feet. The storage in Lemon Reservoir is the highest amount stored for an end of November period based on 43 years of record. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 111% of normal as of the end of November.

Outlook

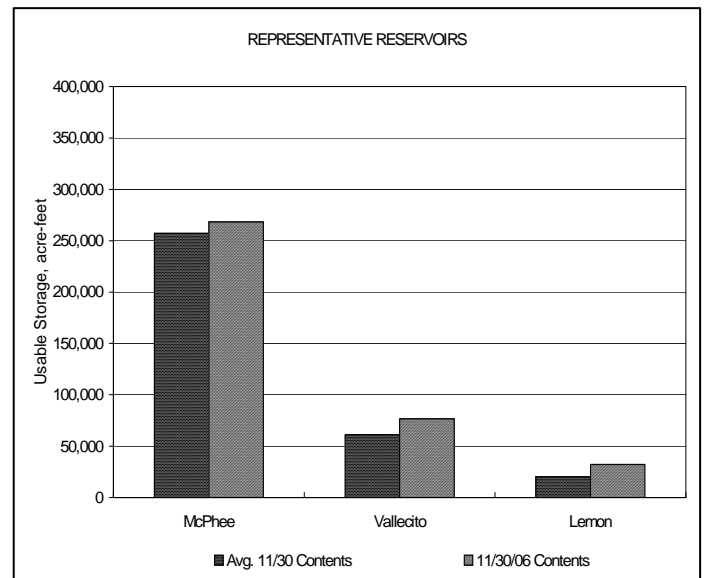
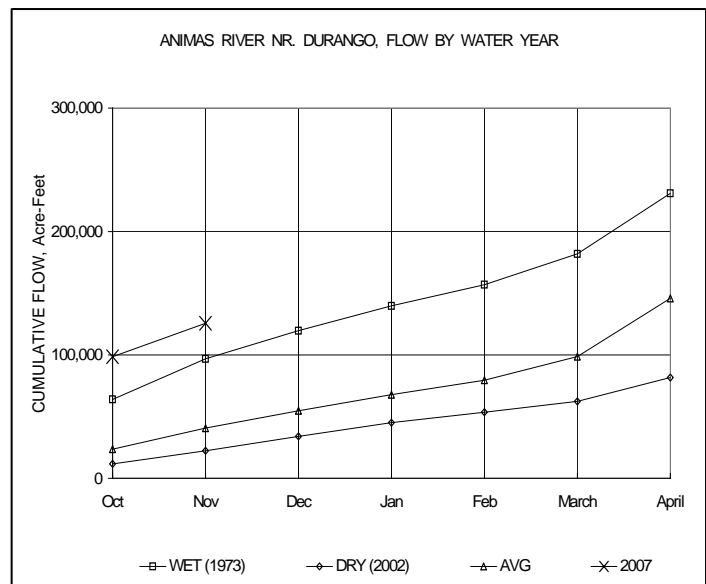
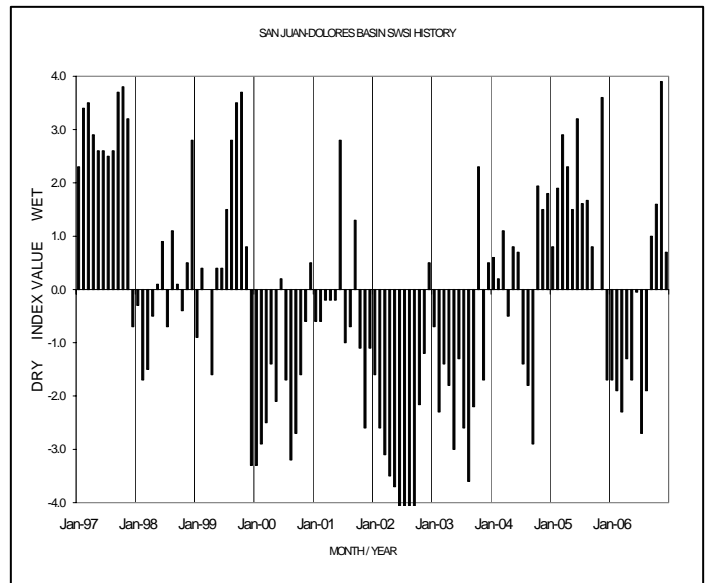
Current snowpack for the basin is below average. Although storage is high, the basin will need more precipitation in the following months to maintain reservoir levels and river flows for next year irrigation season.

Administrative/Management Concerns

The La Plata River remained on compact call for the month. The two states agreed on the reduced flows at the state line due to reduction in beneficial use requirements by New Mexico.

Public Use Impacts

Very few kayakers were observed on the Animas River in the month of November.



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