
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/pubs/swsi.asp

NOVEMBER 2003

All basins reported lower than normal precipitation during October, dropping the SWSI value compared to last month. The dry conditions are maintaining lower than normal stream flows in most all drainages, with a few record low flows reported in the Yampa/White basin. However, conditions are generally not as bad as they were in 2002.

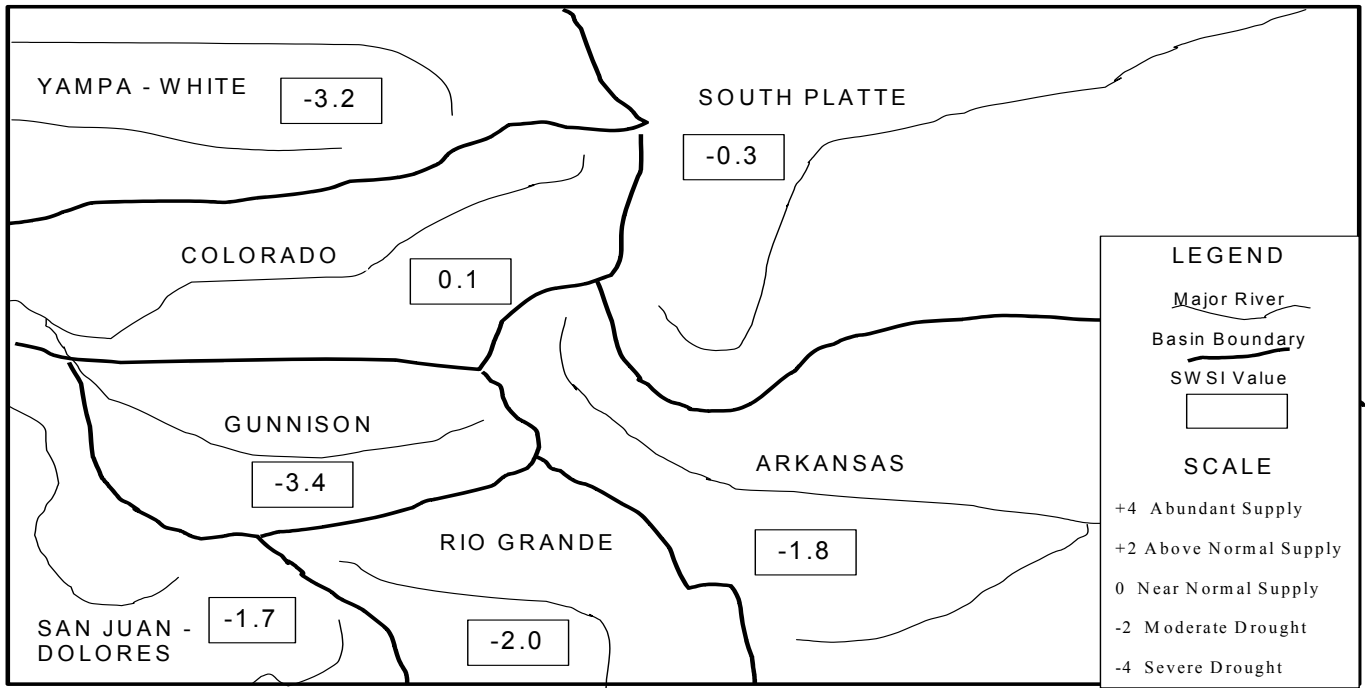
The end of October typically represents the end of the irrigation season with diversions direct to irrigation ceasing. Many irrigation reservoirs, especially off channel reservoirs in the South Platte basin, begin to store water as the senior direct flow irrigation rights stop calling. Diversions to recharge ground water also begin in the South Platte basin. The Rio Grande basin experienced a bit longer demand for direct flow irrigation water due to the dry conditions. All water users are hoping for a good snowpack accumulation over the winter, which will be the key to adequate water supplies in 2004.

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 stream flow, reservoir storage, and precipitation for the summer period (May through October). During the summer period, stream flow 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 November 1, 2001, and reflect the conditions during the month of October.

<u>Basin</u>	<u>November 1, 2003 SWSI Value</u>	<u>Change From Previous Month</u>	<u>Change From Previous Year</u>
South Platte	-0.3	-1.3	+1.9
Arkansas	-1.8	-1.0	+0.7
Rio Grande	-2.0	-2.8	+0.9
Gunnison	-3.4	-1.0	-0.6
Colorado	+0.1	-0.9	+3.6
Yampa/White	-3.2	-1.9	0.0
San Juan/Dolores	-1.7	-4.0	-0.5

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



NOVEMBER 1, 2003

Basinwide Conditions Assessment

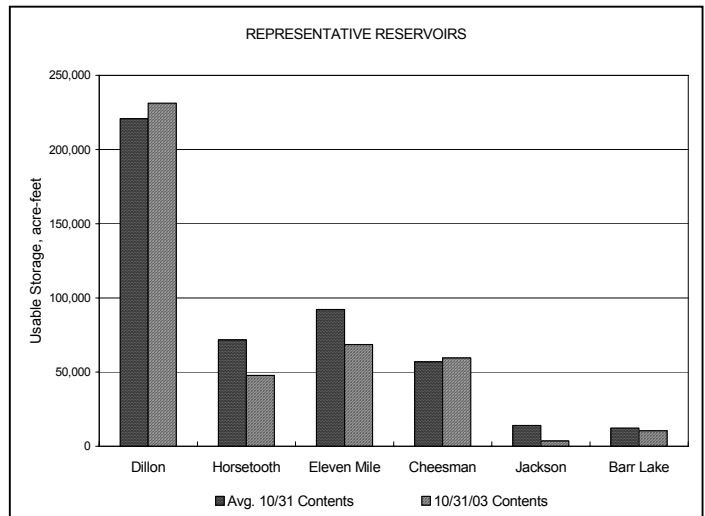
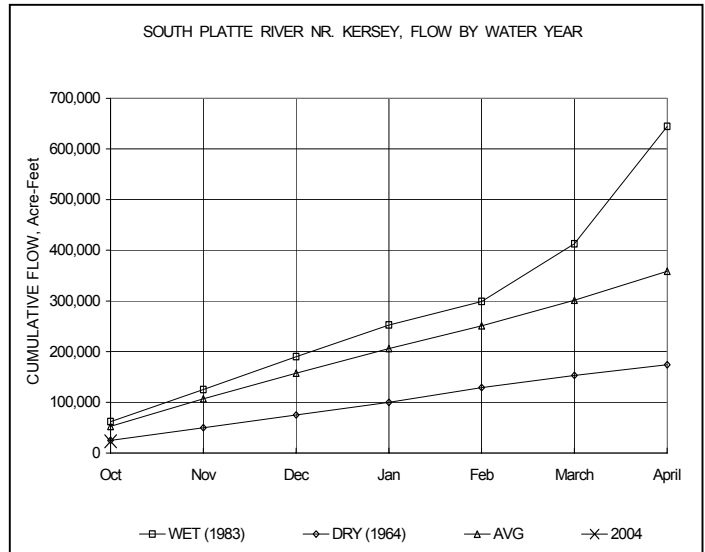
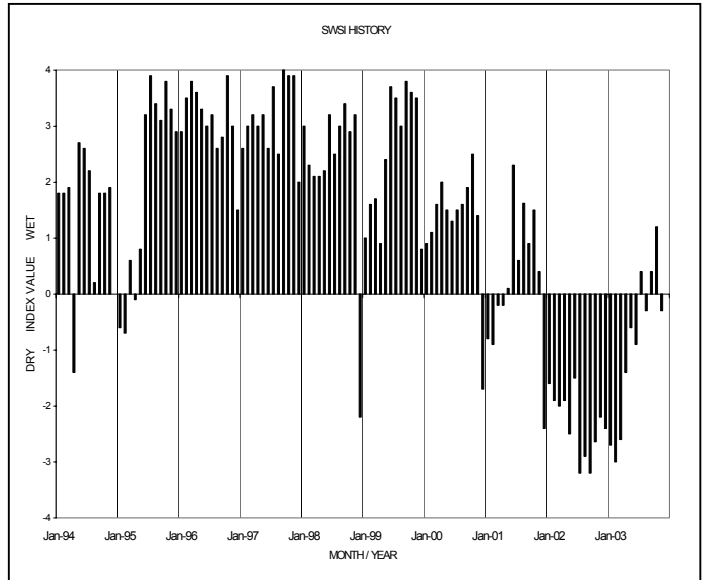
The SWSI value of -0.3 indicates that for October the basin water supplies were near normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 90% of normal as of the end of October. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 15% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 64% of capacity. Flow at the gaging station South Platte River near Kersey was 375 cfs, as compared to the long-term average of 882 cfs. Flow at the Colorado/Nebraska state line averaged 47 cfs.

October was extremely dry with no appreciable precipitation. Irrigation calls along the South Platte continued the first part of the month. As the irrigation season ended, the irrigation call on the South Platte went off allowing for recharge in much of the basin. This recharge will provide augmentation supplies for next summer.

November begins the storage season for irrigation and municipal users. Overall storage supplies are significantly better presently than a year ago. This is especially true for municipal suppliers with major reservoirs such as Dillon, Cheesman, and Standley Lake. While better than last year, irrigation user storage carryover is not near as strong as that for municipal. This is often the situation as irrigation users tend to use a higher percentage of their supplies each year.

Outlook

With overall flow conditions throughout the basin continuing less than average for the fourth straight year, there is concern for supplies next year. For adequate supplies for all major users next year, we will need at least average winter snow and spring rain.



Basinwide Conditions Assessment

The SWSI value of -1.8 indicates that for October the basin water supplies were below normal. Flow at the gaging station Arkansas River near Portland was 244 cfs, as compared to the long-term average of 426 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 69% of normal as of the end of October.

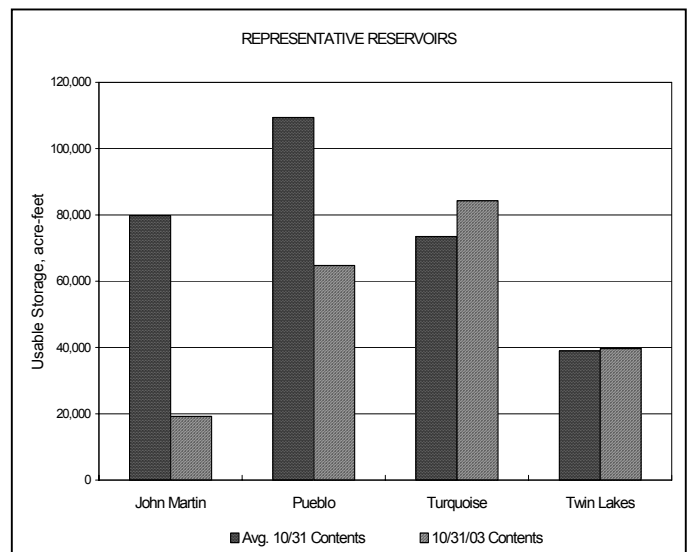
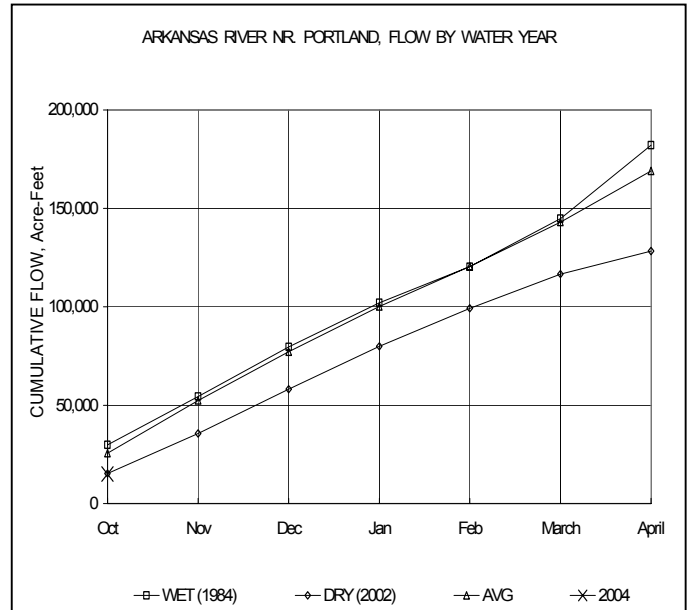
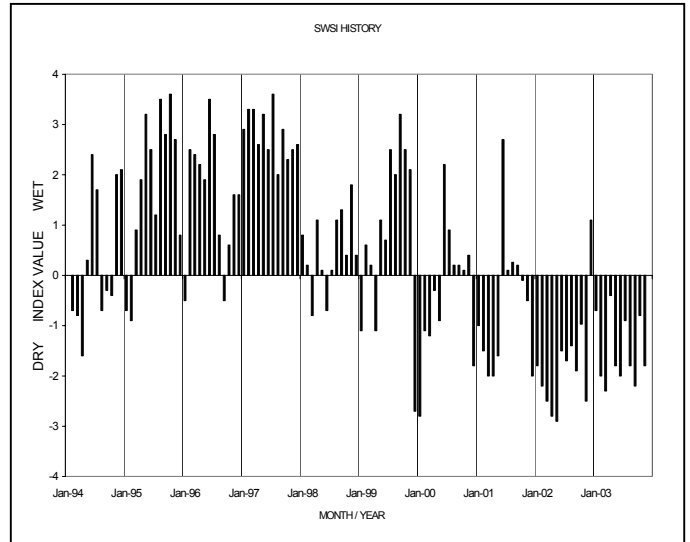
Administrative/Management Concerns

The river call for October stayed relatively senior with no significant relief from precipitation events. The month began with the call on Rocky Ford Highline Canal's March 7, 1884 water right and then shifted to Fort Lyon Canal's April 15, 1884 water right for the last 27 days of the month. River flows into John Martin Reservoir are significantly below average entering the period of conservation storage, which began on November 1, 2003.

Careful use of stored water for direct flow irrigation as well as for augmentation supplies helped agricultural entities work their way through another difficult irrigation season.

Outlook

Imports of Fryingpan-Arkansas Project water improved last winter, but will still be a critical factor in determining how tight water supplies are in 2004.



Basinwide Conditions Assessment

The SWSI value of -2.0 indicates that for October the basin water supplies were below normal. Flow at the gaging station Rio Grande near Del Norte was 223 cfs (46% of normal), as compared to the long-term average of 446 cfs. The Conejos River near Mogote had a mean flow of 79 cfs (68% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 40% of normal as of the end of October.

Precipitation in Alamosa was only 0.38 inches, 0.29 inches below normal and considerably less than the previous three months where an inch or more fell every month. Temperatures ranged from 7 degrees to 76 degrees in Alamosa where the average monthly temperature was 47.3 degrees, 4.5 degrees above normal. Several record high daily temperatures were recorded during the month.

Soil moisture conditions in the basin are now generally good.

Outlook

After a slow start, snow pack in the higher elevations got a strong boost as significant rain and snowfall hit the eastern San Juan and Sangre de Cristo mountains during the first four days of November.

Administrative/Management Concerns

Reservoir operations in the upper Rio Grande basin deviated from the norm this fall. Typically, reservoir operators reduce outflow on November 1st when the demand for irrigation ceases and the junior storage priorities of the reservoirs can be honored. This year, however, the continued demand for irrigation diversions by the senior water right owners on the Rio Grande prevented storage until November 10. Those reservoirs had to pass inflow to meet the senior irrigation demand. Mild weather conditions coupled with the effects of another poor runoff in 2003 have made late season diversions necessary for pasture irrigation.

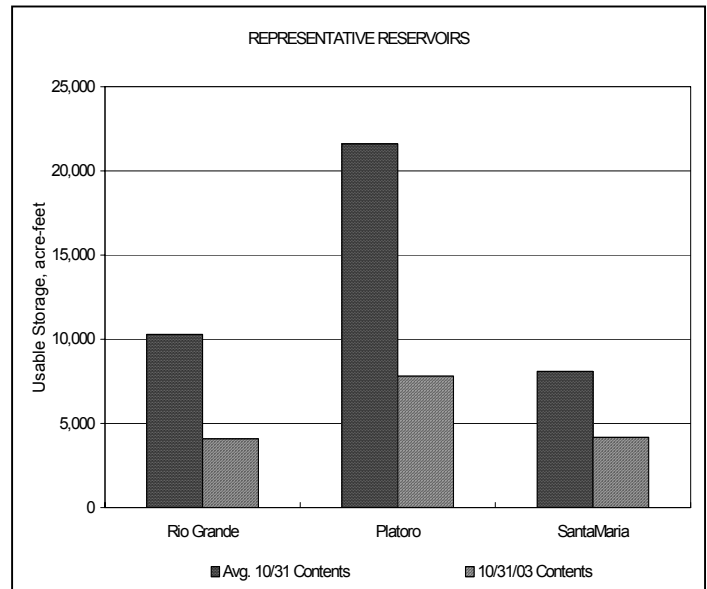
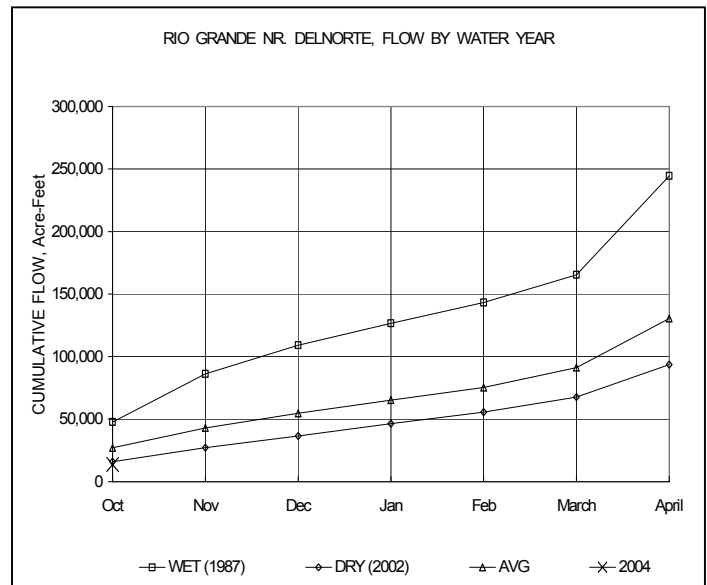
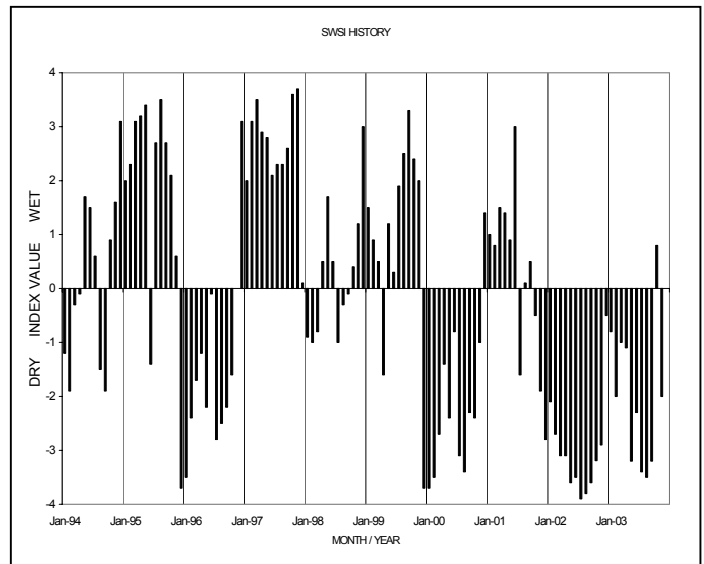
Under Article 7 of the Rio Grande Compact, the amount of water stored in Platoro Reservoir, near the headwaters of the Conejos River, will not be allowed to increase because the amount of Project Storage in Elephant Butte and Caballo Reservoirs in New Mexico is below 400,000 acre-feet. Platoro Reservoir is a post-Compact reservoir, having been constructed after 1929. Most of the larger reservoirs in the upper Rio Grande and its tributaries are pre-Compact.

Now that the 2003 irrigation year is over, Water Commissioners are busy finalizing diversion records.

A series of public meetings concerning the creation of a ground water management "subdistrict" continues into this fall. The focus of this effort is to try to manage the aquifer storage crises from within, rather than rely upon the State Engineer to promulgate rules. For more information, contact Ralph Curtis, manager of the Rio Grande Water Conservation District at (719) 589-6301.

Public Use Impacts

The heavy snowfall in the higher elevations was so abundant, Wolf Creek Ski Area opened early.



Basinwide Conditions Assessment

The SWSI value of -3.4 indicates that for October the basin water supplies were well below normal. Flow at the gaging station Uncompahgre River near Ridgway was 73 cfs, as compared to the long-term average of 88 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 95% of normal as of the end of October.

Outlook

Since the Month of October was much hotter and drier than normal, the increased stream flows from September rains are over and the flows are back to drought levels. The dry October has reduced the soil moisture conditions, and it will take more water next spring to get crops started.

It is disheartening to water users to get such a slow start to the snow pack season. Hopefully, the precipitation will increase the rest of the winter.

Administrative/Management Concerns

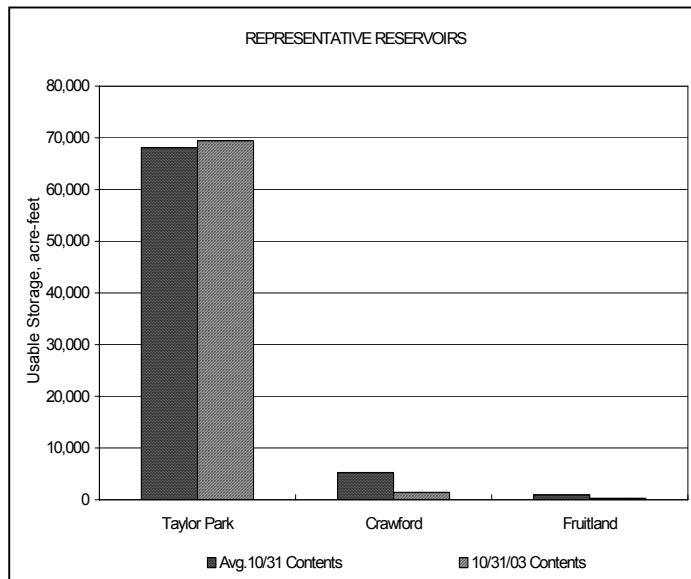
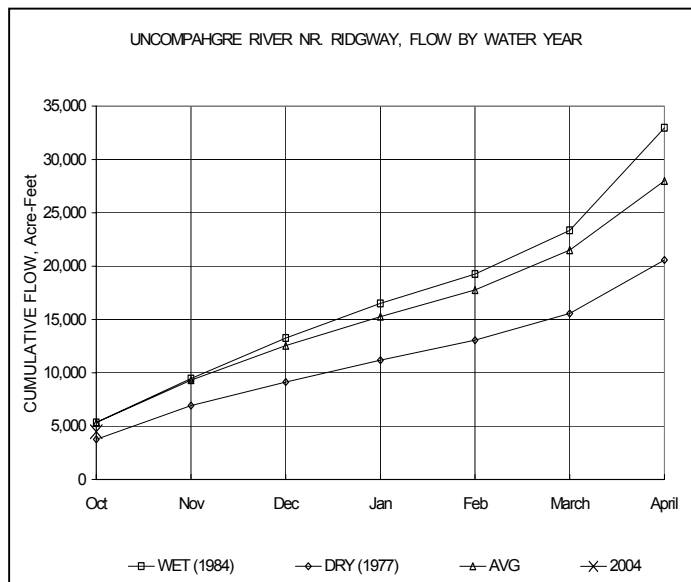
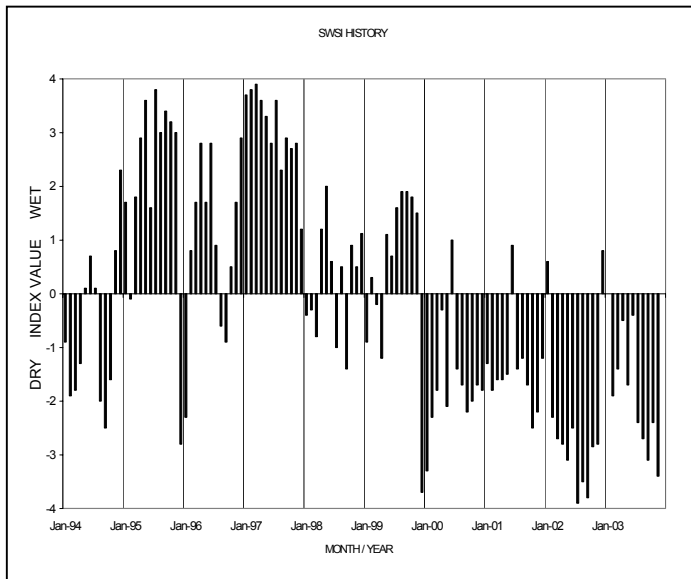
Very little water is going into storage with the reduced flows. In fact, the larger reservoirs are still using storage just trying to maintain minimum flows in the river below the reservoirs.

A call from the Redlands Canal on the Gunnison River near Grand Junctions would be very probable this winter. This call is very important to the Gunnison Basin, as it affects water rights in the entire basin. However, various water user organizations, such as the Colorado River Water Conservation District, Upper Gunnison River Water Conservancy District, and Uncompahgre Valley Water Users Association have contracted with the Redlands Water and Power Company to reduce the call to a lesser amount and pay for power revenue losses. This contract will allow storage in reservoirs and junior diverters to continue to use water.

On a brighter note, the reservoir elevation in the State's largest reservoir, Blue Mesa Reservoir, is 17 feet higher than it was at this time last year.

Public Use Impacts

Water users and recreationalists are hoping for a good snow season this winter and an end to the drought conditions.



Basinwide Conditions Assessment

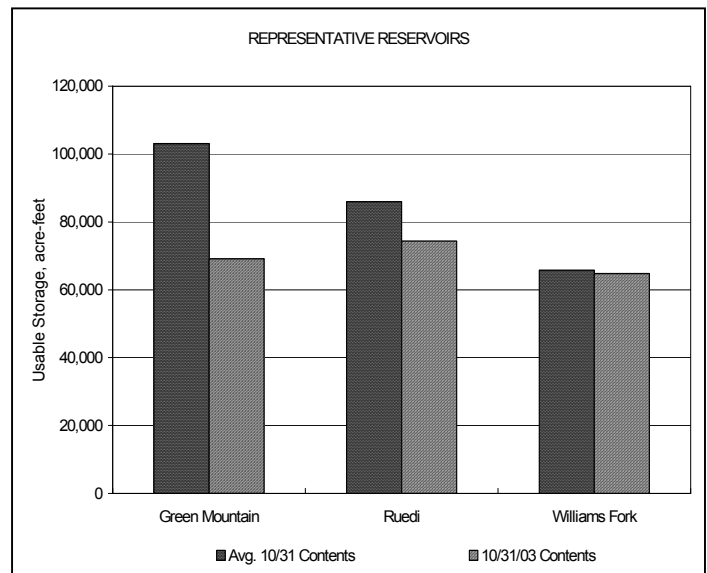
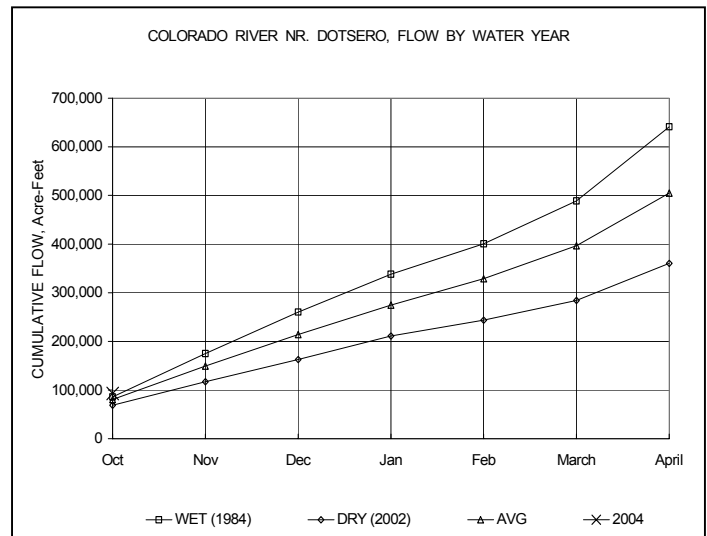
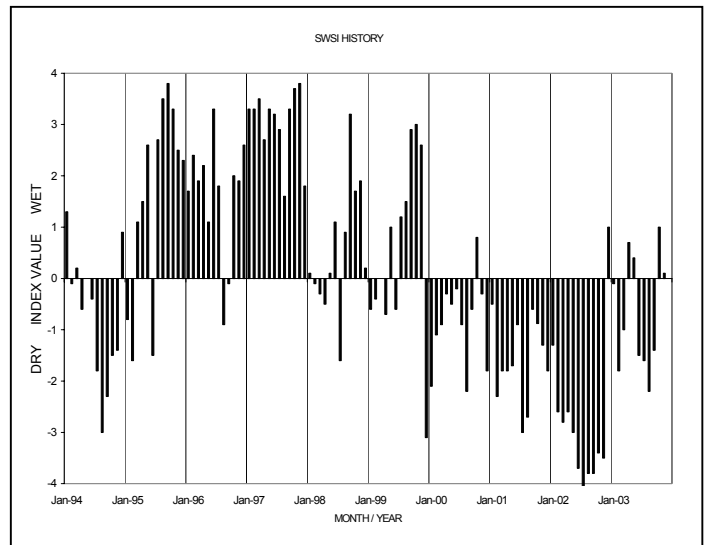
The SWSI value of 0.1 indicates that for October the basin water supplies were near normal. Flow at the gaging station Colorado River near Dotsero was 1,513 cfs, as compared to the long-term average of 1,317 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 81% of normal as of the end of October.

Administrative/Management Concerns

In November the Shoshone power plant shut down one of two turbines for maintenance until Thanksgiving. This reduces the mainstem river call to 700 cfs, allowing upstream junior rights to divert, and reduces the flows on the mainstem Colorado River to below historic average levels. From March through May of 2004 the power plant will shut down both turbines for automation upgrades and remove the river call altogether, which will benefit major transmountain diverters such as Denver Water and the Northern Colorado Water Conservancy District, but reduce mainstem flows during the winter to potentially record lows.

Early season snowpack in the Colorado River basin was non-existent through most of October, but early November storms have brought the snowpack up to about 50% of average for the basin.

Ski areas are relying heavily on snowmaking to build up early base snowpack and are hoping for big storms to get the slopes ready for the Thanksgiving holiday crowds. Streams affected by snowmaking diversions have held up well above the necessary in-stream flows thus far this season.



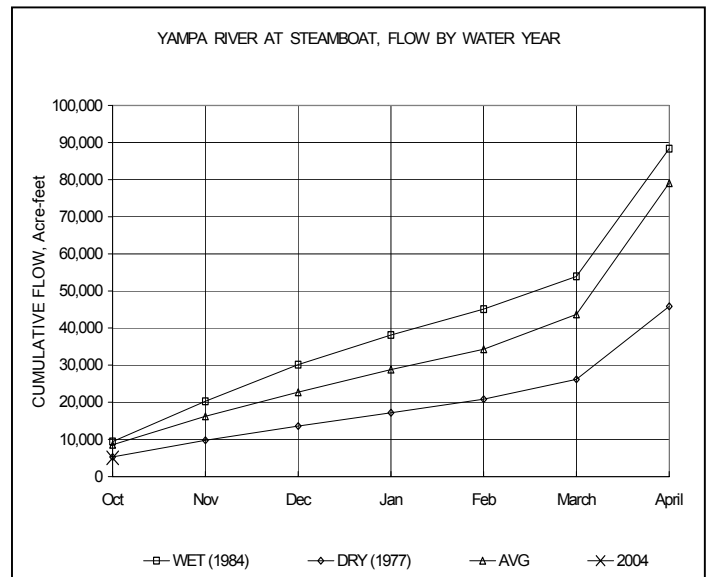
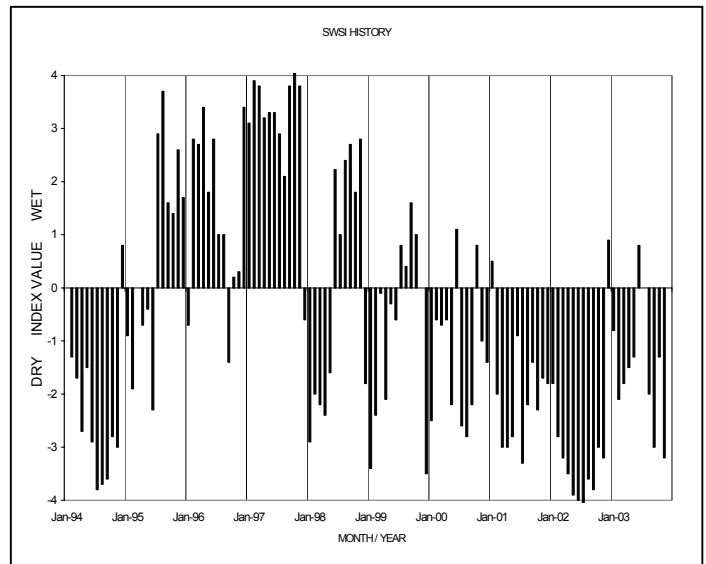
Basinwide Conditions Assessment

The SWSI value of -3.2 indicates that for October the basin water supplies were well below normal. Flow at the gaging station Yampa River at Steamboat was 82 cfs, as compared to the long-term average of 141 cfs.

October continued the trend of above average temperatures and below normal precipitation. As of October 29th Steamboat Springs had only received 0.19 inches of precipitation for the month, 10% of average. At the very end of the month, wide spread showers moved into the region and brought the first significant moisture in over six weeks. Because of the extremely dry conditions stream flows at many of the gage stations recorded record daily low flows in the latter half of the month.

Outlook

The long range forecast calls for normal levels of precipitation for the fall. The moisture at the end of the month brought hope that the weather patterns were finally changing and the area would indeed see at least normal levels of precipitation.



Basinwide Conditions Assessment

The SWSI value of -1.7 indicates that for October the basin water supplies were below normal. Flow at the gaging station Animas River near Durango was 245 cfs, as compared to the long-term average of 388 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 65% of normal as of the end of October.

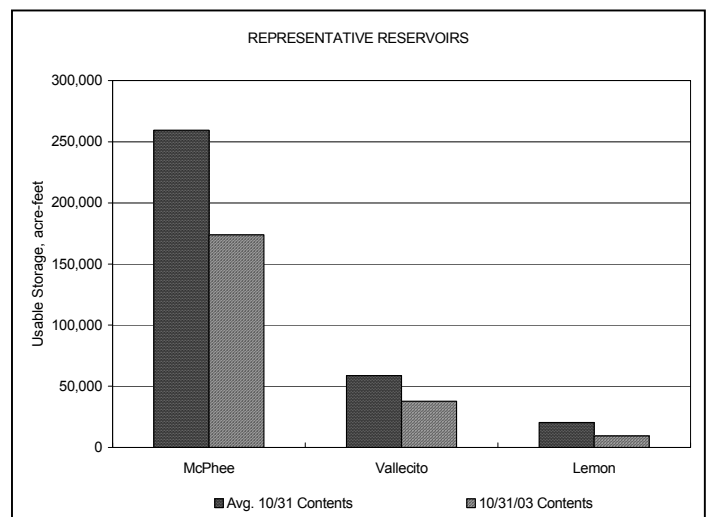
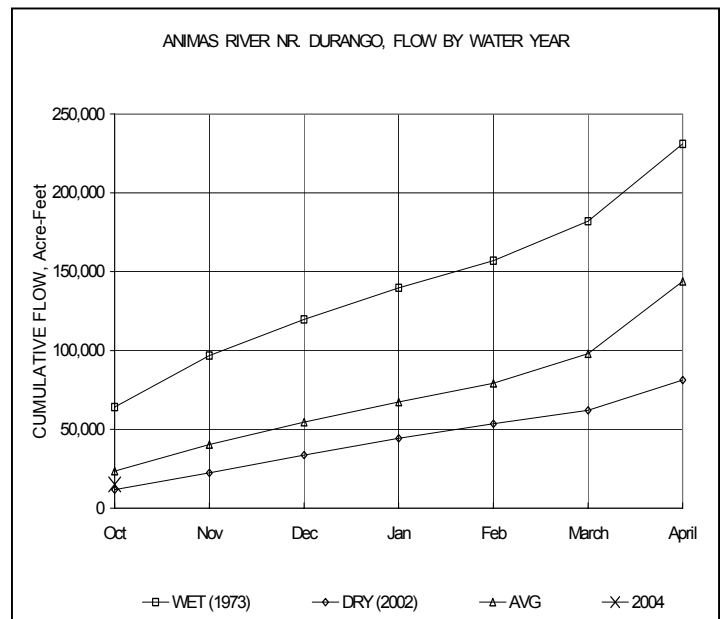
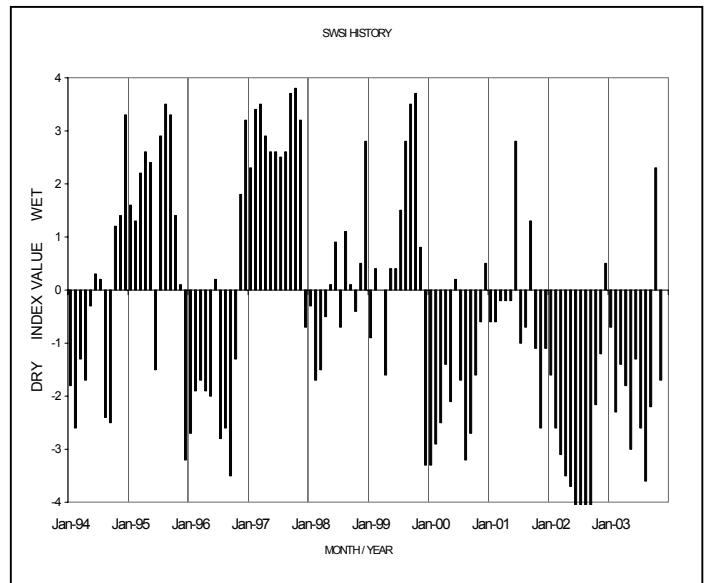
October continued the pattern of the previous month, a few days of rain followed by weeks of dry, sunny weather. Durango received just 0.68 inches of precipitation in October. This is only 36% of normal. Not a good start for the new water year. The snowpack in the mountains is reported at only 27% of the long term average.

River flows remained well below normal. The La Plata River at Hesperus and the Dolores River at Dolores were both at 59% of their average monthly flow. The Animas River at Durango was slightly better at 68% of average.

Temperatures were well above average with 72° F for the average high and 39° F for the average low in Durango. These are 4.9° and 7.4° above average respectively.

Reservoirs remained very low. Lemon Reservoir contained 9,461 acre-feet, 47% of normal. Vallecito and McPhee Reservoirs were at 75% and 66% of normal storage respectively. They were all gaining at a very low rate.

There were concerns that the weather may clear up and remain dry like the previous two years. However, in early November the weather pattern off the California coast changed, bringing precipitation to the southwest Rocky Mountains.



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