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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NOVEMBER 1999

For October the water supply conditions held at an acceptable level as indicated by the SWSI values, in spite of all basins experiencing a drop in their SWSI number from the previous month. Most basin administrators reported dry conditions during October, with precipitation amounts well below average. The dry conditions caused more irrigation water to be applied in October than is typical. Reservoir levels are above average statewide.

October is the first month of the water year, with snowpack beginning to build during October and November. The first snowpack reports from the Natural Resources Conservation Service are due December 1.

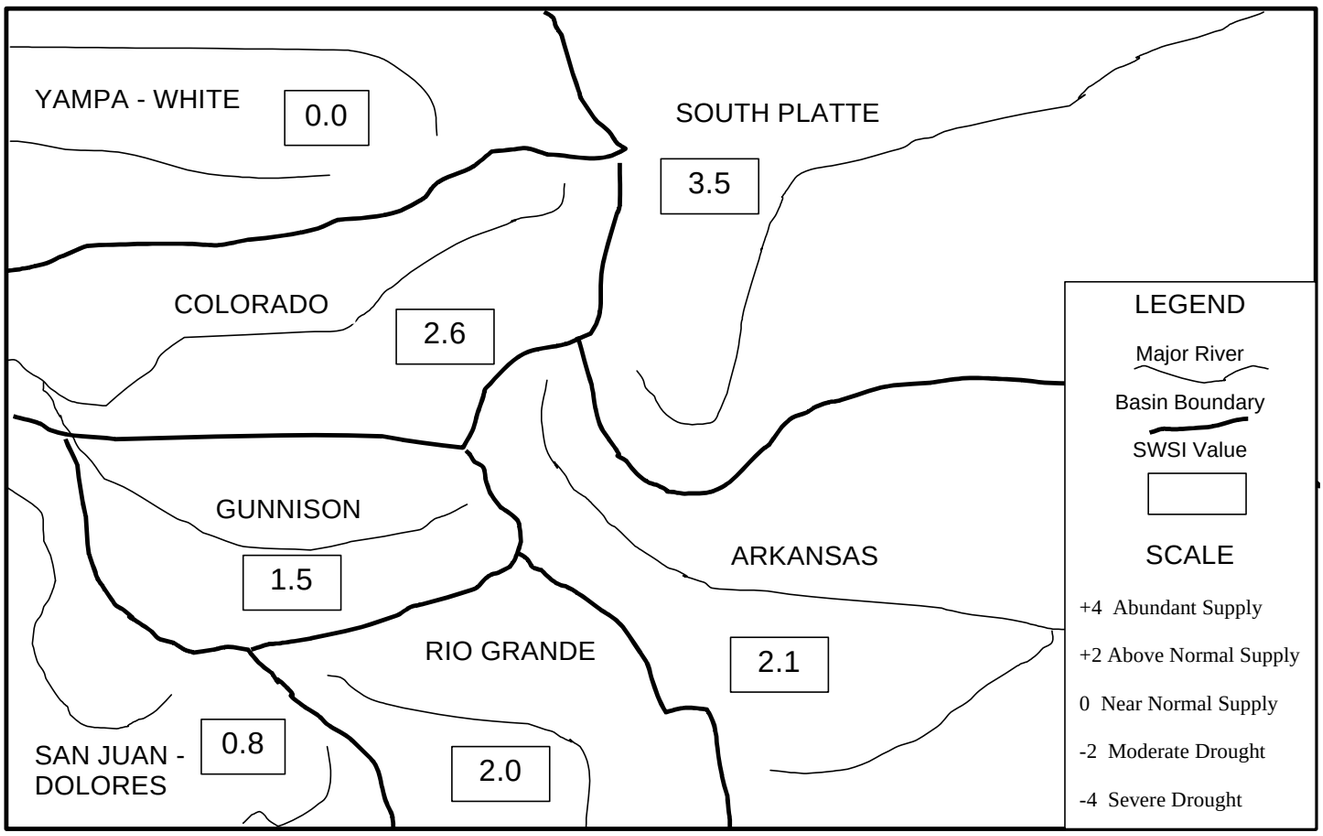
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on stream flow, reservoir storage, and precipitation for the summer 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, 1999, and reflect the conditions during the month of October.

Basin	November 1, 1999 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	3.5	-0.1	+0.3
Arkansas	2.1	-0.4	+0.3
Rio Grande	2.0	-0.4	+0.8
Gunnison	1.5	-0.3	+1.0
Colorado	2.6	-0.2	+0.7
Yampa/White	0.0	-1.0	-2.8
San Juan/Dolores	0.8	-2.9	+0.3

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

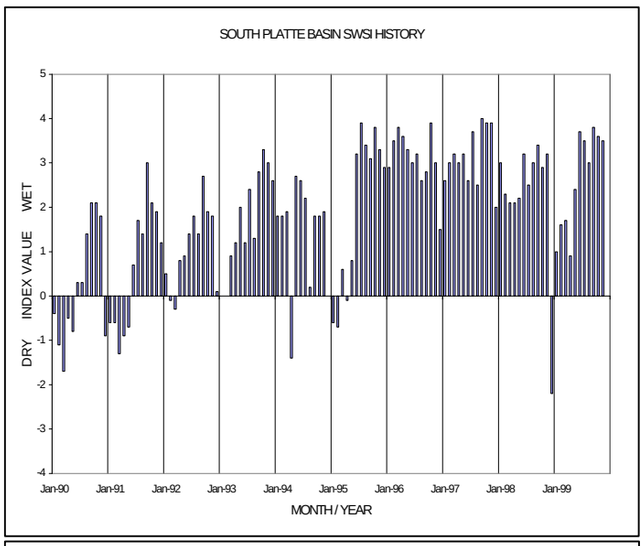


NOVEMBER 1, 1999

Basinwide Conditions Assessment

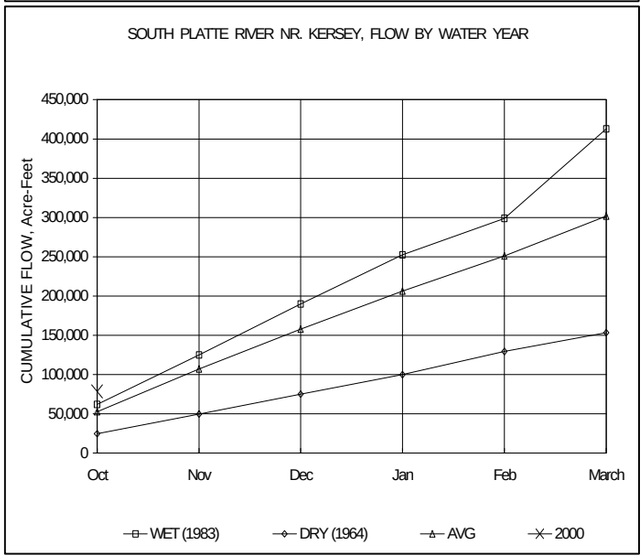
The SWSI value of 3.5 indicates that for October the basin water supplies were above normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 114% of normal as of the end of October. Flow at the gaging station South Platte River at Kersey averaged 1,277 cfs, as compared to the long-term average of 885 cfs.

The irrigation season was completed in October. As in most years, supply was adequate throughout the South Platte basin downstream of Denver in October to meet demand, and there was no mainstem call the whole month downstream of Denver's intake. Flows throughout the basin were above normal. Like last year, this turned out to be a very good water year in the South Platte basin as far as water supply.



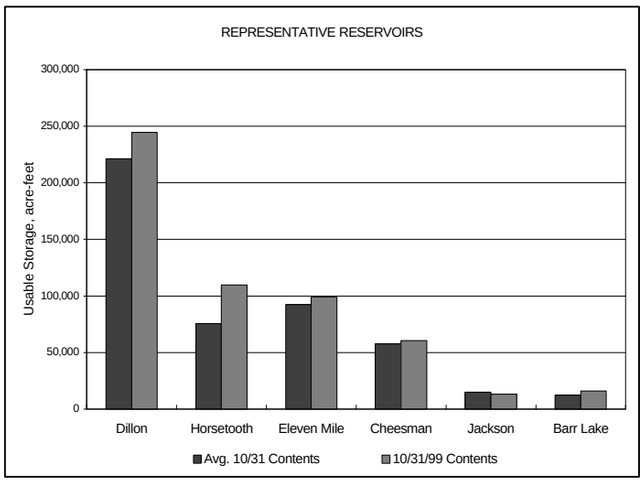
Outlook

Having reached the end of the irrigation season, diversions will now be primarily for storage, municipal use, and ground water recharge. Based on the present above average flow conditions, above average end of season storage, and recharge that occurred during the irrigation season, initial prospects for next year's water supply are excellent.



Administrative/Management Concerns

A major Water Court trial began in late October and will continue through the next several weeks concerning Denver Water's application to make some exchanges absolute. The main issue of contention concerns the adequacy of the water quality of the substitute supply and accounting for the exchanges.



Basinwide Conditions Assessment

The SWSI value of 2.1 indicates that for October the basin water supplies were above normal. Flow at the gaging station Arkansas River near Portland averaged 460 cfs, as compared to the long-term average of 420 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 237% of normal as of the end of October.

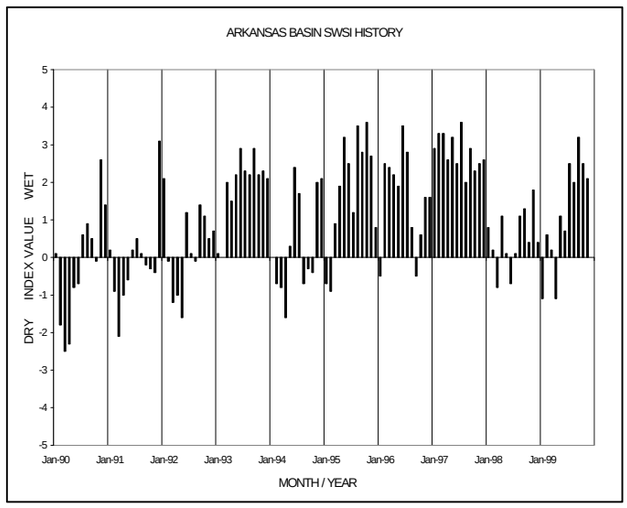
The Winter Water Storage Program starts November 15th. Current reservoir storage levels remain high. Irrigation continues throughout the Arkansas Valley with demand satisfied by direct flow.

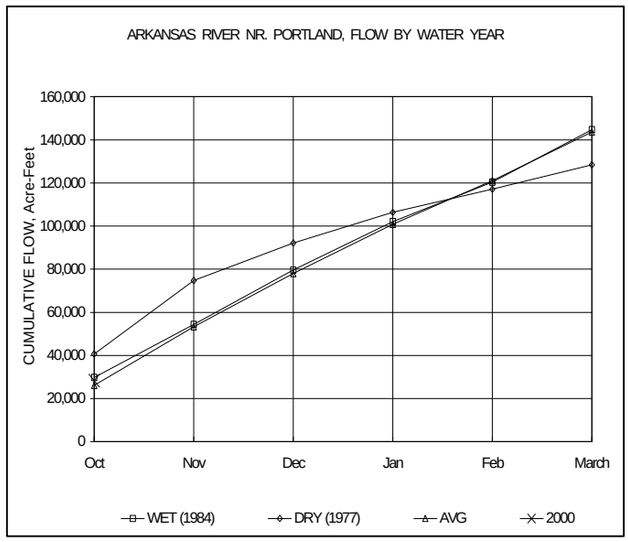
Outlook

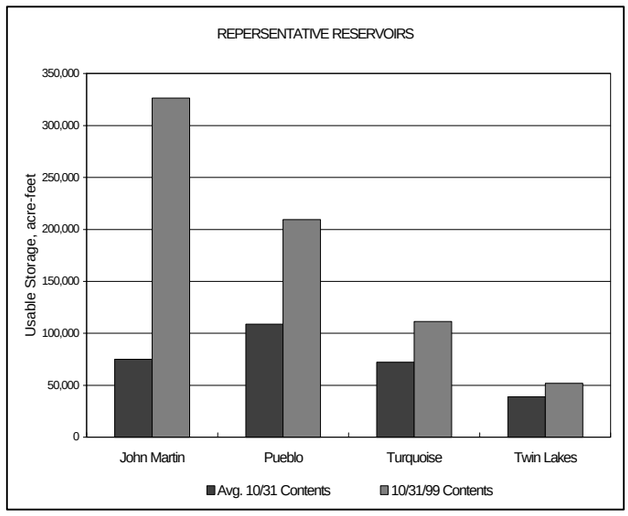
The potential for free river conditions during the winter months continues.

Administrative/Management Concerns

Winter Water Storage Program participants convened in La Junta recently to review the past year and discuss the upcoming year. The general consensus of the group is that storage is possible early this program year under free river conditions with potential spilling of winter water later in the program.







Basinwide Conditions Assessment

The SWSI value of 2.0 indicates that for October the basin water supplies were above normal. Flow at the gaging station Rio Grande near Del Norte averaged 634 cfs, as compared to the long-term average of 484 cfs. The Conejos River near Mogote had a mean flow of 126 cfs (108% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 126% of normal as of the end of October.

Precipitation in Alamosa was 0.24 inches, 0.46 inches below normal. Alamosa temperatures ranged from 8^{o} to 75^{o}F. At this time of the year, it is common for temperatures to fluctuate 50^{o} or more in the San Luis Valley during a 24 hour period.

Outlook

Below average precipitation is expected for the upper Rio Grande basin this fall.

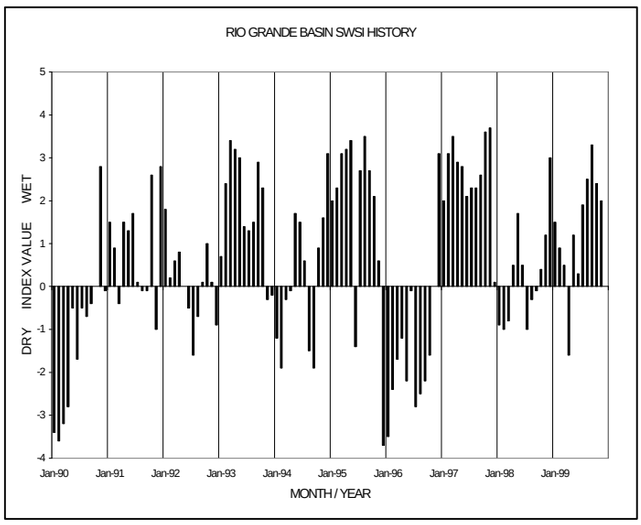
Administrative/Management Concerns

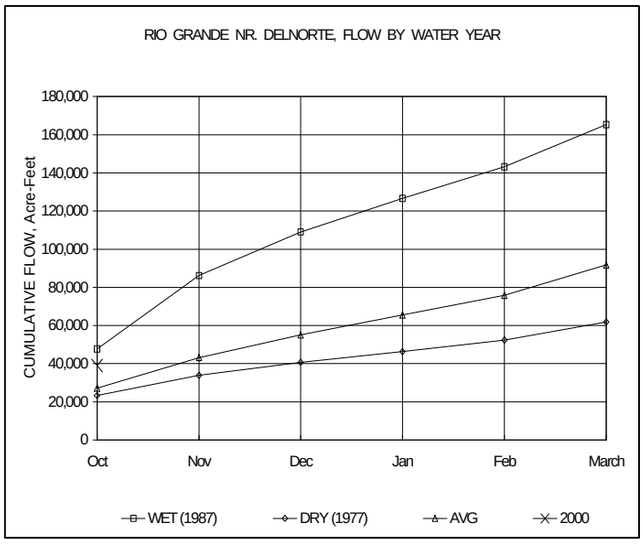
Diversions for irrigation needs by senior water rights continued throughout October. Beginning November 1, six ditches will divert water from the Rio Grande for ground water recharge purposes pursuant to their 79CW91 decree.

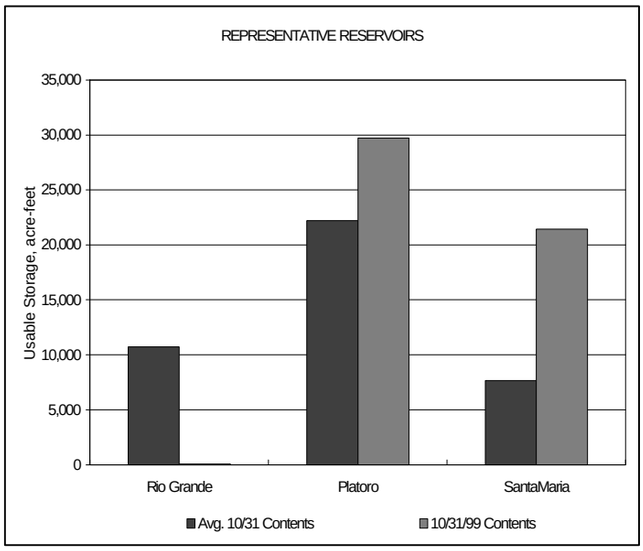
Rio Grand Reservoir has been emptied to accommodate repair work on the outlet structure. The work is scheduled to start November 1 and be completed by the end of the year.

Public Use Impacts

The dry conditions forced many farmers to irrigate alfalfa and hay fields during October.







Basinwide Conditions Assessment

The SWSI value of 1.5 indicates that for October the basin water supplies were slightly above normal. Flow at the gaging station Uncompahgre River near Ridgway averaged 83 cfs, as compared to the long-term average of 84 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 111% of normal as of the end of October.

So far this fall has been dry as compared to the wet summer. Early high country snow is down from this time last year. Diversions to irrigation occurred more in October than usual because of the dry conditions. Reservoir water was released for some irrigation as well.

Outlook

Reservoirs should remain full and good carry over to next season is expected.

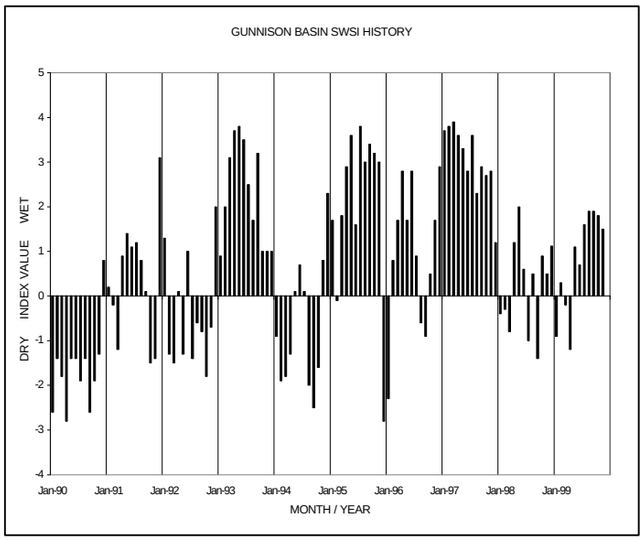
Administrative/Management Concerns

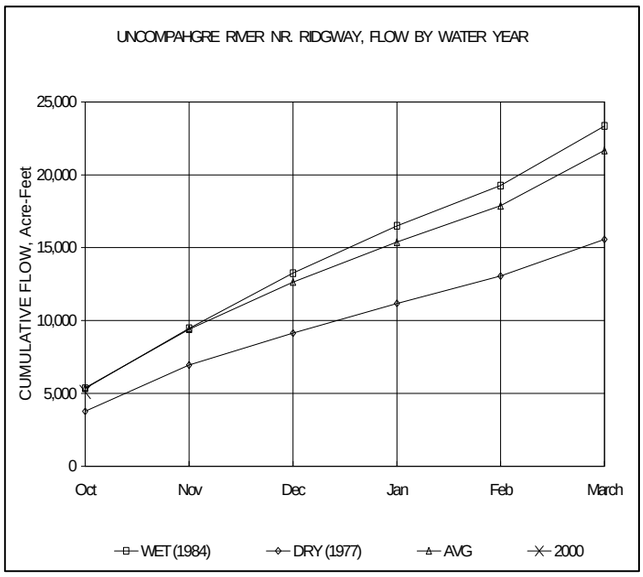
The Redlands Power canal was shut down temporarily due to some necessary repairs and maintenance.

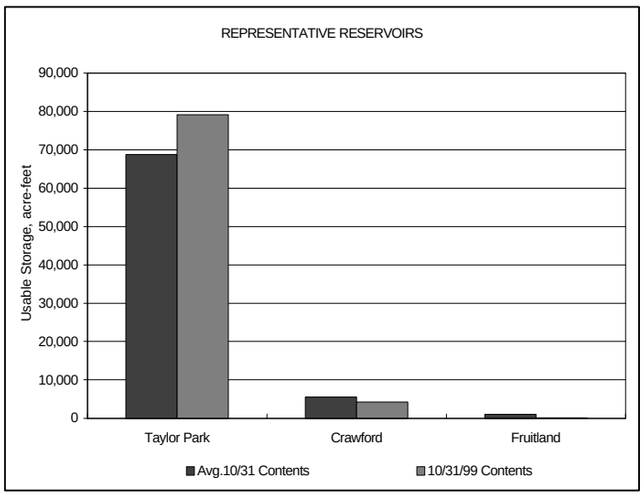
Flows in the Uncompahgre River were very high until diversions through the Gunnison tunnel were decreased substantially to about 2 cfs.

Public Use Impacts

The two ski areas in the basin have the ability for snow making, so in the event it proves to be a lean year for snow they should be able to still have good skiing.

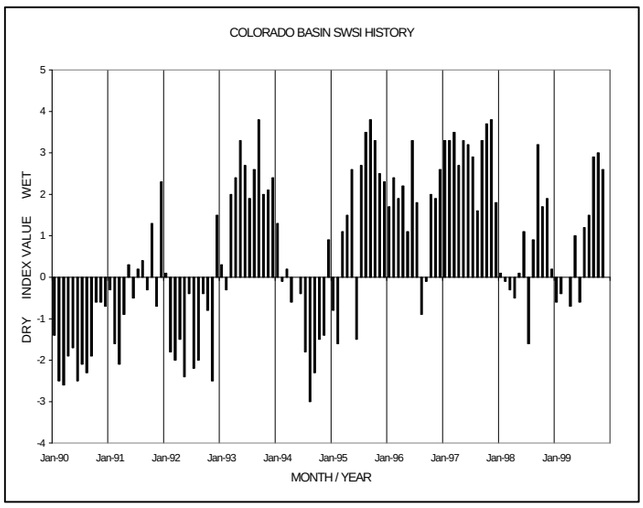






Basinwide Conditions Assessment

The SWSI value of 2.6 indicates that for October the basin water supplies were above normal. Flow at the gaging station Colorado River near Dotsero averaged 1,900 cfs, as compared to the long-term average of 1,295 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 105% of normal as of the end of October.

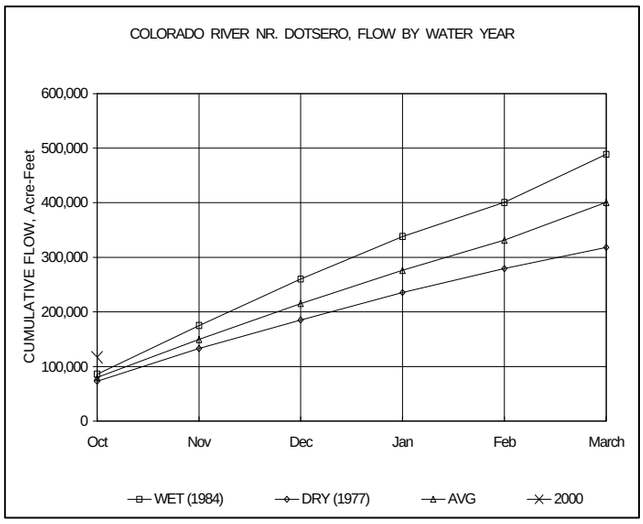


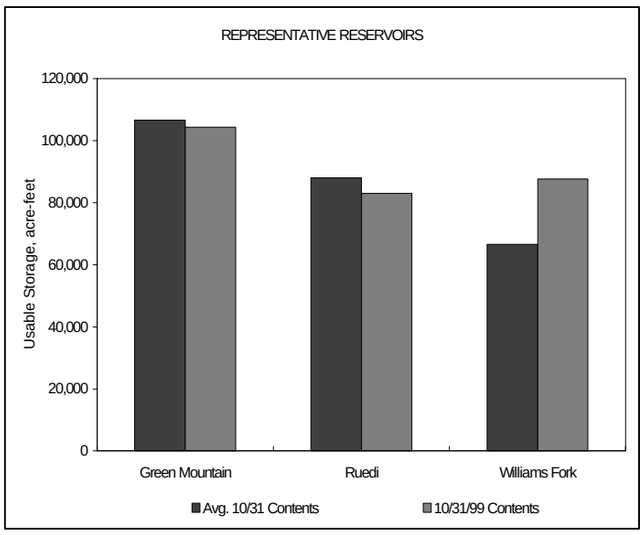
Administrative/Management Concerns

The U.S. Bureau of Reclamation is inviting comments on a proposal to build two additional fish ladders on the Colorado River in the Grand Valley. One ladder is proposed for the Price Stubbs diversion dam, which is where I-70 crosses the Colorado River near Palisade. The second ladder is proposed for the Grand Valley Project diversion dam, which is upstream of the confluence of Plateau Creek and the Colorado River. One ladder is currently built and operational upstream of the Grand Valley Irrigation Canal.

Public Use Impacts

The Colorado Division of Wildlife requested decreased flows from Ruedi Reservoir into the Frying Pan River in order to conduct their annual fish count. Flows, which historically average between 250 cfs and 300 cfs this time of year, are expected to drop to 80 cfs to allow DOW to count sport fish on November 8, 9, and 10. Upon completion of the count, flows will be brought to the winter level of 100 cfs.

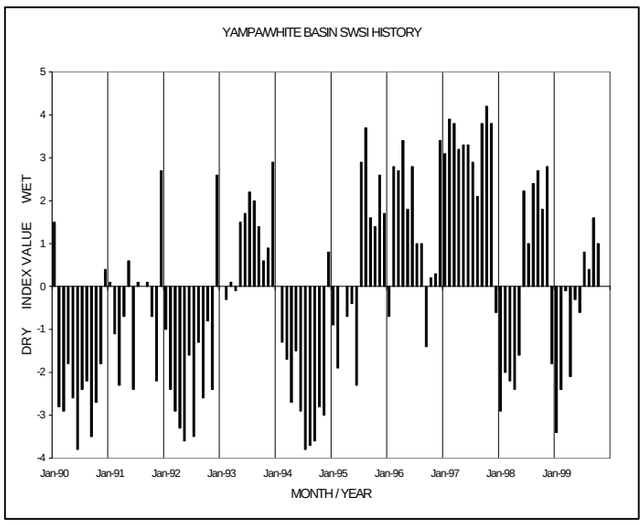




Basinwide Conditions Assessment

The SWSI value of 0.0 indicates that for October the basin water supplies were near normal. Flow at the gaging station Yampa River at Steamboat averaged 129 cfs, as compared to the long-term average of 135 cfs.

October was an extremely dry month throughout the Division. Steamboat Springs received 0.39 inches of moisture for the month, 22% of average. At Marvine Ranch in the White River drainage, they received 0.68 inches of rain (33% of average), and at Hayden they recorded 0.41 inches (26% of average). This lack of moisture resulted in very dry conditions. Many areas have imposed fire bans. There has been a marked reduction in soil moisture content. In combination with the dry conditions temperatures were well above normal.



Outlook

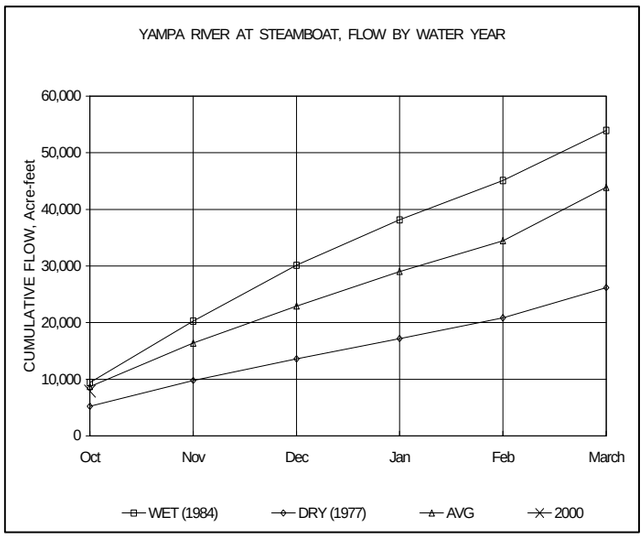
Stream flows were at near normal levels in October. If dry conditions persist flow may start to decrease. Springs and small tributaries may see reduced flows this fall.

Administrative/Management Concerns

None at this time.

Public Use Impacts

With the dry conditions the fire hazard is extremely high throughout the area.



Basinwide Conditions Assessment

The SWSI value of 0.8 indicates that for October the basin water supplies were near normal. Flow at the gaging station Animas River near Durango averaged 353 cfs, as compared to the long-term average of 376 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 124% of normal as of the end of October.

October was extremely dry in southwest Colorado. Although typical rainfall in the Durango area is 2.21 inches, this month there was only one storm resulting in 0.06 inches of precipitation. As a result, more soil moisture was depleted and more irrigation was seen in some areas that earlier in the year.

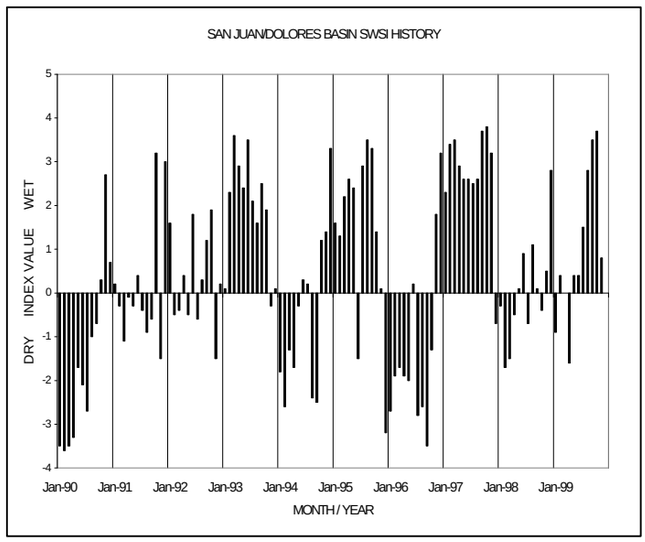
Stream flows dropped to below normal in most areas, but not as low as has been experienced in drought years.

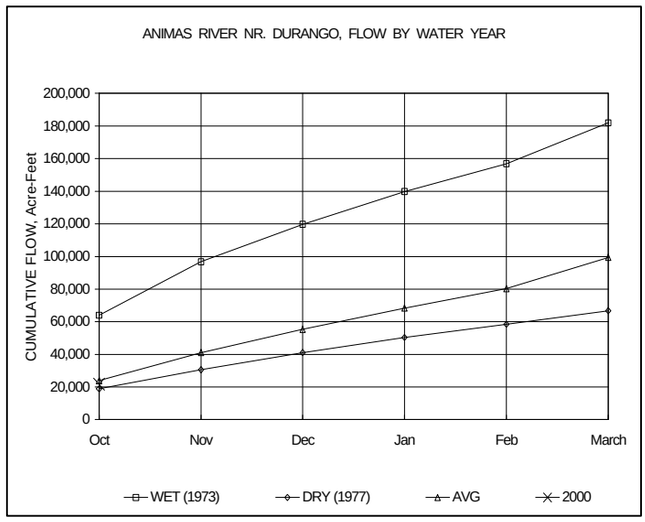
Very little snow was deposited in the mountains. Warm temperatures continued. The high daily temperatures in Durango averaged 5°F above normal, with the month's low being 20°F.

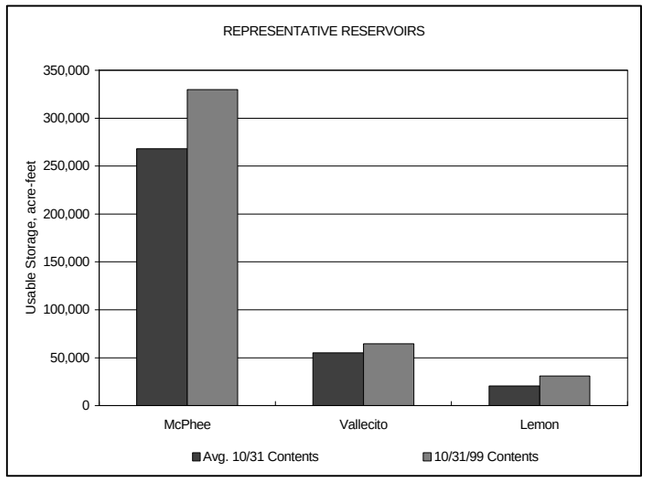
Reservoirs continued to store above normal amounts. Lemon carried about 30,000 acre-feet and is at 150% of normal.

Outlook

The outlook is for a continuation of dry weather for the near future.







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