COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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November 2000

During October, the first month of the 2001 water year, stream flows dropped to their winter base flows. The Rio Grande and San Juan/Dolores basins, and various other individual areas throughout the state, continue to suffer from below normal stream flows. Irrigation reservoirs in the South Platte, Rio Grande, and San Juan/Dolores basins contain below normal amounts, while municipal reservoirs in the South Platte basin and almost all reservoirs in the Arkansas basin are above normal amounts. While precipitation, including early winter snow, has fallen in many areas, including the Rio Grande and San Juan/Dolores basins where it is especially needed, it is too early to predict how the coming winter's snowpack will develop.

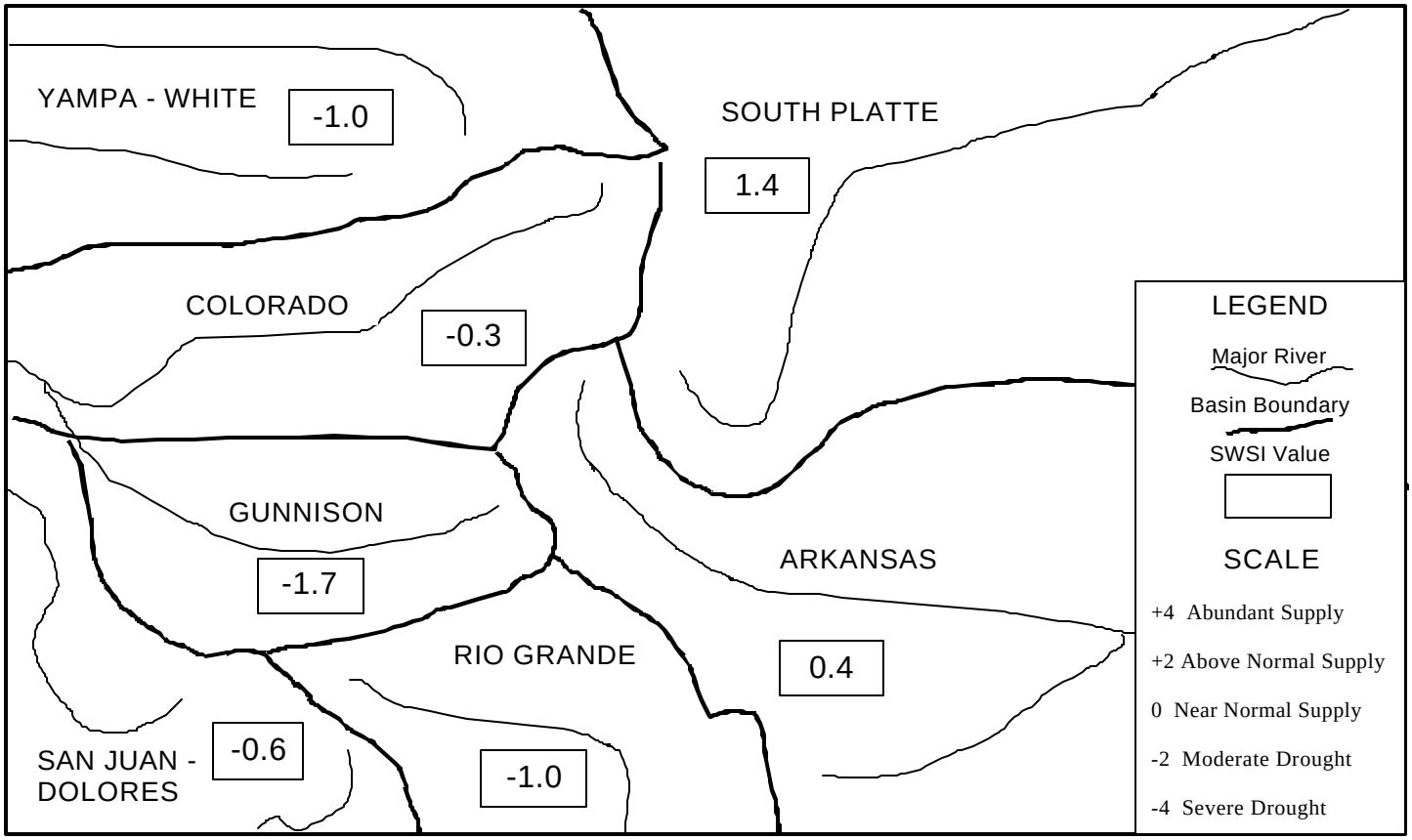
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on stream flow, reservoir storage, and precipitation for the summer 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, 2000, and reflect the conditions during the month of October.

Basin	November 1, 2000 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	1.4	-1.1	-2.1
Arkansas	0.4	+0.3	-1.7
Rio Grande	-1.0	+1.4	-3.0
Gunnison	-1.7	+0.3	-3.2
Colorado	-0.3	-1.1	-2.9
Yampa/White	-1.0	-1.8	-1.0
San Juan/Dolores	-0.6	+1.0	-1.4

Scale

-4	-3	-2	-1	0	1	2	3	4
Severe Drought		Moderate Drought		Near Normal Supply		Above Normal Supply		Abundant Supply

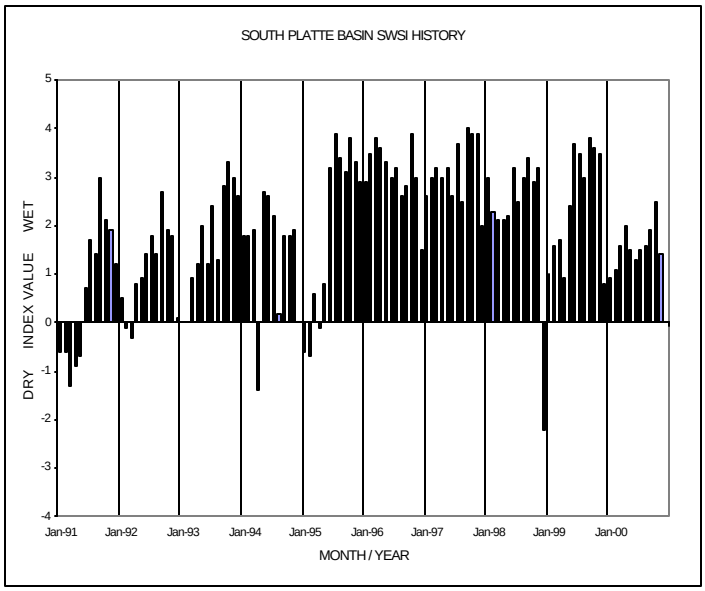
SURFACE WATER SUPPLY INDEX FOR COLORADO



NOVEMBER 1, 2000

Basinwide Conditions Assessment

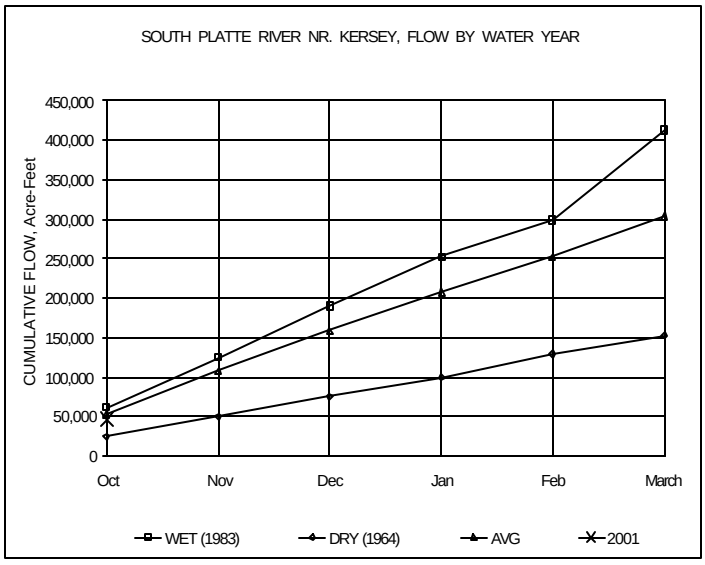
While the SWSI value of 1.4 indicates that for October the basin water supplies were slightly above normal, the actual conditions are considered to be below normal. The SWSI value may be inaccurately boosted by high municipal reservoir storage, contrasted to low amounts of irrigation reservoir storage which see greater use. Cumulative storage of the reservoirs shown on the graph was 87% of normal as of the end of October. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 30% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 78% of capacity. Flow at the gaging station South Platte River at Kersey was 758 cfs, as compared to the long-term average of 884 cfs. Flow at the Colorado/Nebraska state line averaged 84 cfs.



Outlook

Most irrigation use was concluded by October. The relatively dry conditions continued during the whole month. As irrigation demand ended users began to store again in an attempt to fill very low reservoirs on the plains. Thus the call on the South Platte below Denver for the whole month was the 1929 refill call. This storage was extremely important for the plains irrigation reservoirs. For example, at the beginning of October Riverside Reservoir was down to only approximately 13,000 acre-feet of its over 63,000 acre-feet capacity. By the end of the month enough water was diverted to storage to raise the level to approximately 30,000 acre-feet.

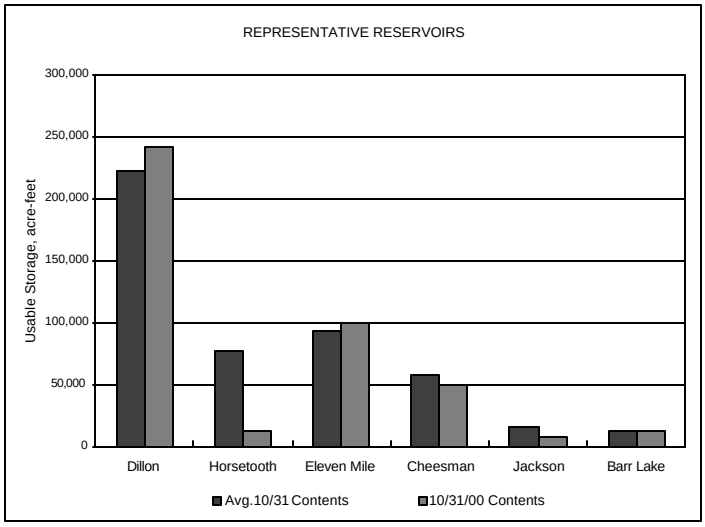
Even with storage in October, plains reservoirs are still very low. In contrast, many of the reservoirs which are used to supply the cities continue to be near full or at least at their seasonal average. These reservoirs tend to stay full as the cities reserve them for severe droughts.



Administrative/Management Concerns

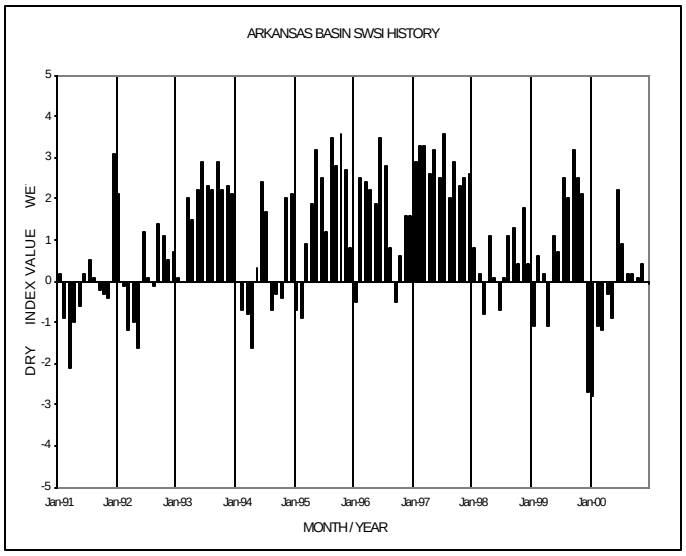
Administrators are very concerned that irrigation reservoirs fill this winter as the reservoir levels were drawn down so far this past summer because of the very dry conditions. Without full reservoirs, there is a major concern about having adequate water to meet the irrigation demand next summer. The primary factor in filling reservoirs, in addition to good stream flow, is warm weather so that the reservoirs and inlet canals do not freeze.

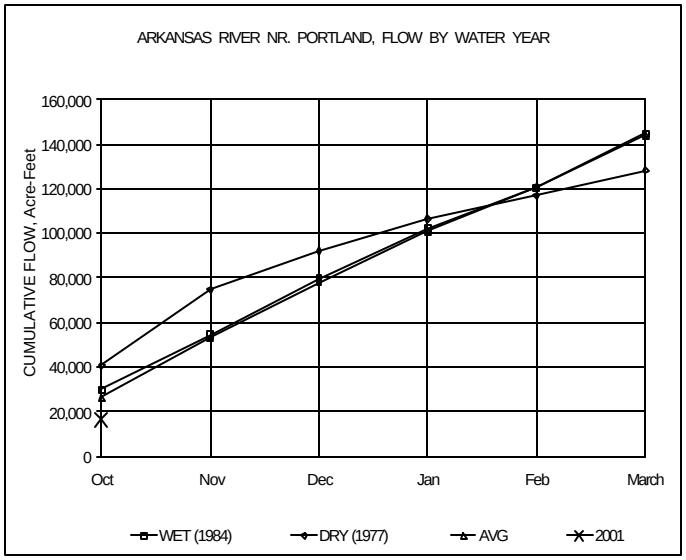
There is also concern that adequate recharge is accomplished to provide augmentation and maintain next summer's river flows. Since recharge rights are generally junior to reservoir rights, this will be difficult to accomplish without significant winter flows and warm weather conditions allowing filling.

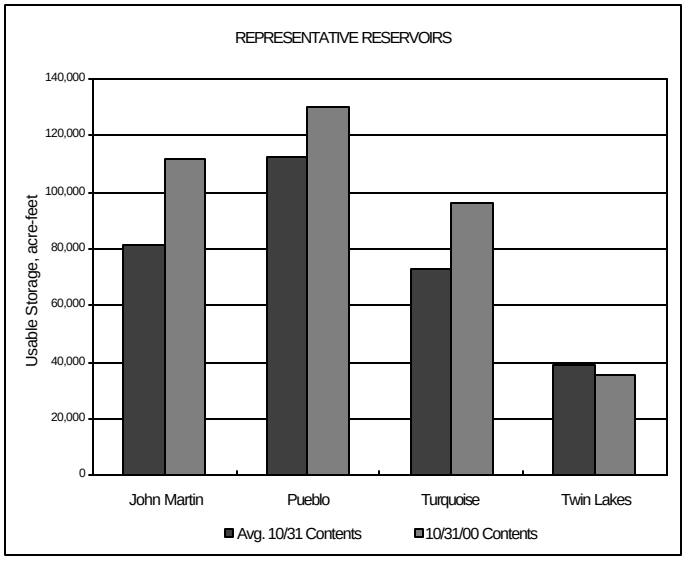


Basinwide Conditions Assessment

The SWSI value of 0.4 indicates that for October the basin water supplies were near normal. Flow at the gaging station Arkansas River near Portland was 266 cfs, as compared to the long-term average of 420 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 122% of normal as of the end of October.







Basinwide Conditions Assessment

The SWSI value of –1.0 indicates that for October the basin water supplies were below normal. Flow at the gaging station Rio Grande near Del Norte was 330 cfs, as compared to the long-term average of 420 cfs. The Conejos River near Mogote had a mean flow of 108 cfs (93% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 60% of normal as of the end of October.

Precipitation in Alamosa was 1.26 inches, 0.56 inches above normal. The largest precipitation event in over a year occurred on October 23 when 0.60 inches of rain fell.

Reservoirs in the basin reduced outflows and began storing inflow as the month came to a close. As the demand for irrigation dropped off, some ditches on the Rio Grande and Conejos prepared to divert water for recharge purposes.

Outlook

Precipitation in the basin during October greatly improved the soil moisture and stream flow conditions. Although not yet back to normal, the increases were encouraging. Snow pack in the higher elevation got off to a strong start during the last half of the month.

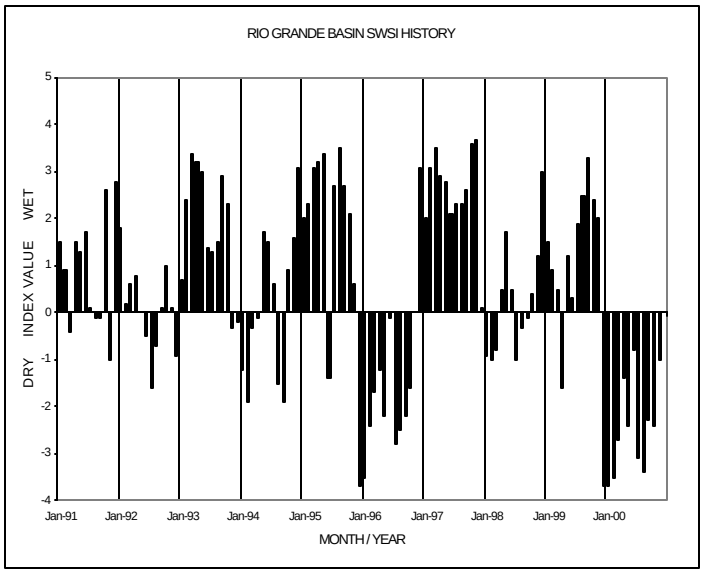
Administrative/Management Concerns

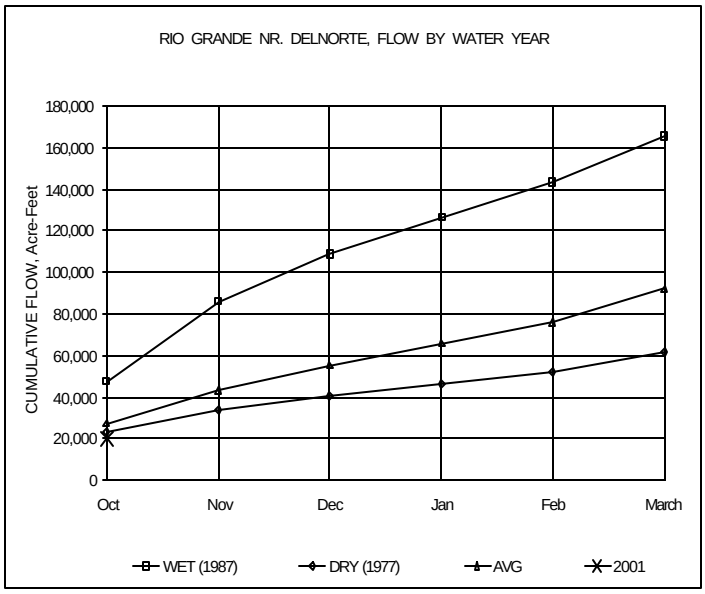
On Wednesday, October 25, the U.S. House of Representatives unanimously passed a bill allowing the Great Sand Dunes National Monument to become a National Park. The bill now awaits President Clinton's signature. If finalized, this legislation could possibly end the prospect of private development of the vast water resources on the Baca Grande Ranch. Separate legislation had been previously passed that would fund federal acquisition of this large private land holding.

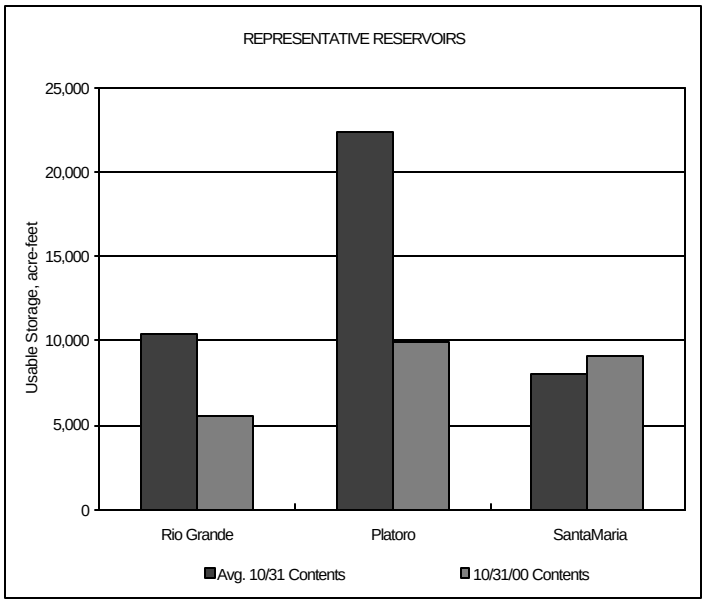
Now that the 2000 irrigation year is over, Water Commissioners are busy finalizing diversion records.

Public Use Impacts

The weather was mild enough to allow a few ditches to continue diversions for irrigation throughout the month. Enough snow fell in the mountains that Wolf Creek ski area opened for business.







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 Uncompahgre River near Ridgway was 90 cfs, as compared to the long-term average of 84 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 89% of normal as of the end of October.

This month continued to show signs of the dry summer conditions. There were more replacement well permits issued than normal for this time of year due to drying up of wells. In addition there were a record number of permits issued in the Montrose office for new wells.

Outlook

As this dry year ends all are hoping for an abundance of winter precipitation for storage purposes, as a lack of precipitation may very well create a record dry year for 2000.

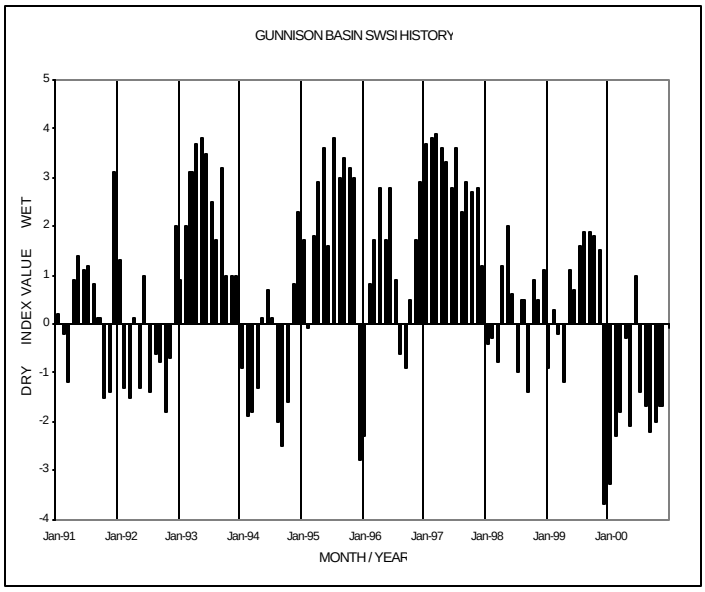
Administrative/Management Concerns

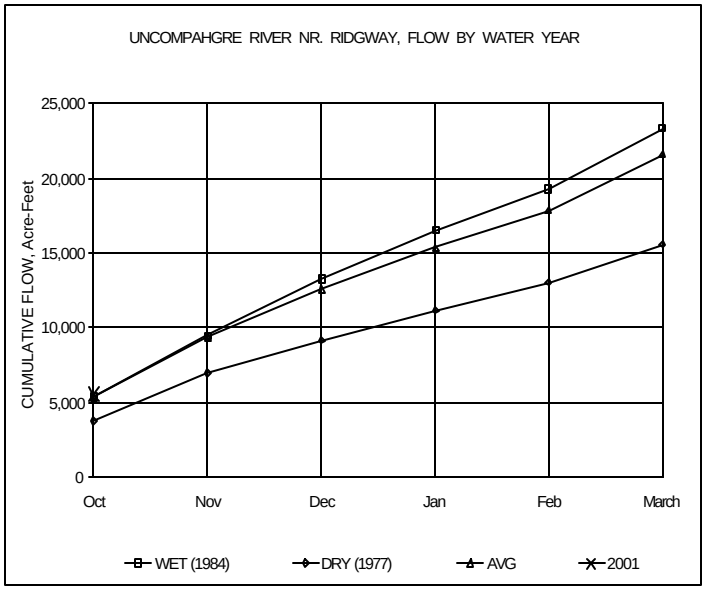
There is a concern that the City of Grand Junction has considered putting a winter call on Kannah Creek. This would continue the ongoing battle for that area. The local Water Commissioner will be trying to assist all parties involved in negotiating a solution in everyone's best interest.

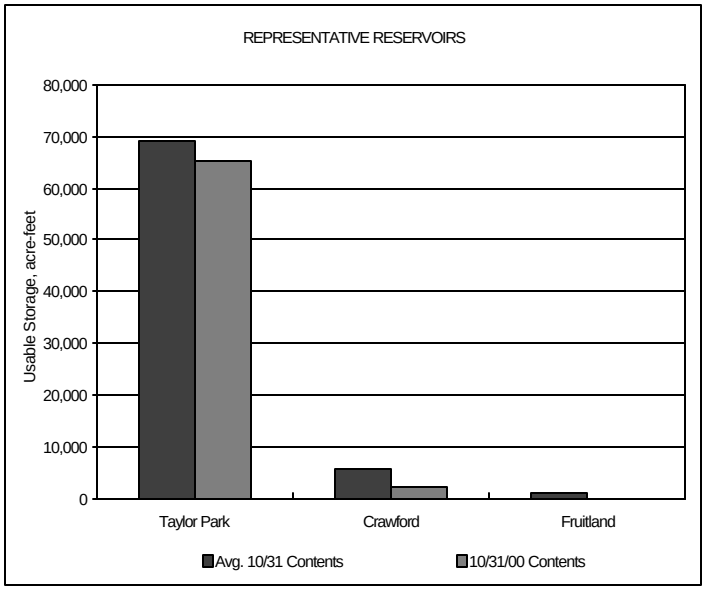
The San Miguel River drainage continues to suffer from growth issues. Many more illegal wells are surfacing that require augmentation plans. Sources of augmentation water are scarce and a variety of options are being looked into to resolve this issue, including but not limited to a valley wide water and sewer system. This could be several years in the future.

Public Use Impacts

The election caused a slight panic among property owners who feared if Amendment 24 passed that they would be less able to further develop their property. This caused the rush for new well permits.







Basinwide Conditions Assessment

The SWSI value of -0.3 indicates that for October the basin water supplies were near normal. Flow at the gaging station Colorado River near Dotsero was 1,326 cfs, as compared to the long-term average of 1,293 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 76% of normal as of the end of October.

Outlook

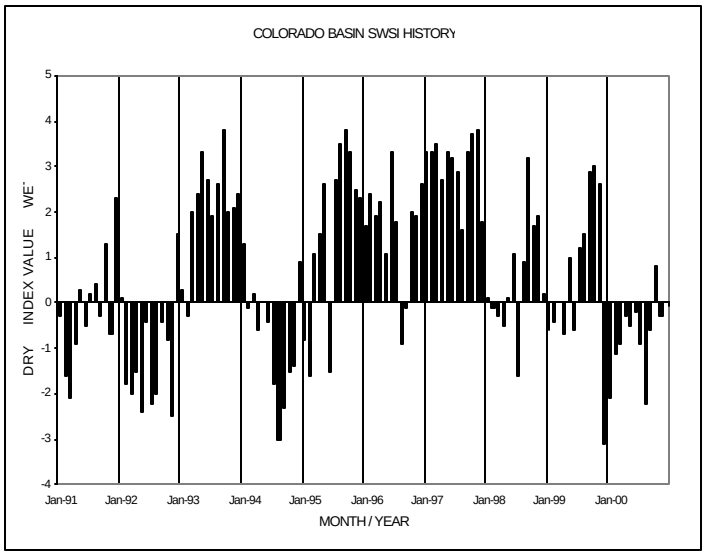
Irrigation diversions have ceased throughout Division 5, with the Grand valley irrigation canals shut off by November 3. Early season snowfall amounts are encouraging (i.e. about average for early November). The Shoshone senior power call was on throughout October, and is expected to remain on until annual power plant maintenance in January.

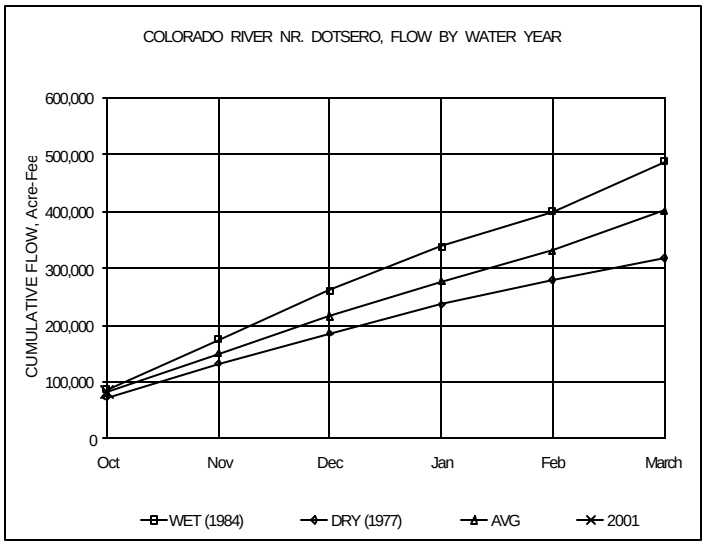
Administrative/Management Concerns

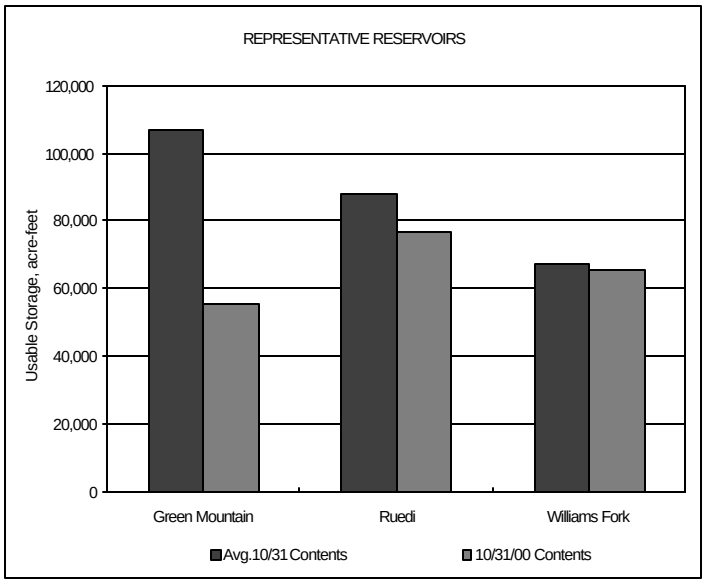
Monitoring of minimum stream flows, particularly at snow making diversion points, will remain a critical concern throughout November and December. Additional hydrographic measurements will be made to capture low flow points on the rating curves for several streams with critical minimum stream flows. Regular monitoring of satellite data and field conditions for these stations is crucial in order to catch trigger points that will result in diversion curtailments or mitigation measures.

Public Use Impacts

Many ski areas, particularly in the Blue River basin, have opened limited terrain by early November with a base of man made snow and some early season natural snow storms. Late season big game hunters were also pleased to see the snow storms in early November.



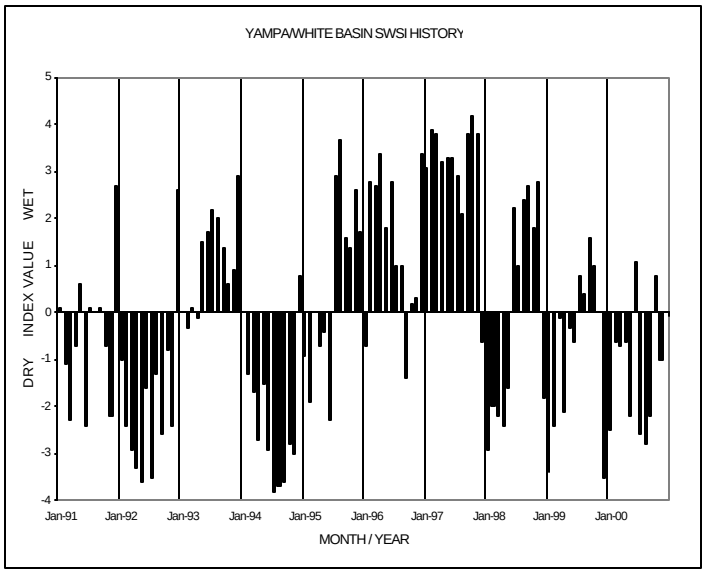




Basinwide Conditions Assessment

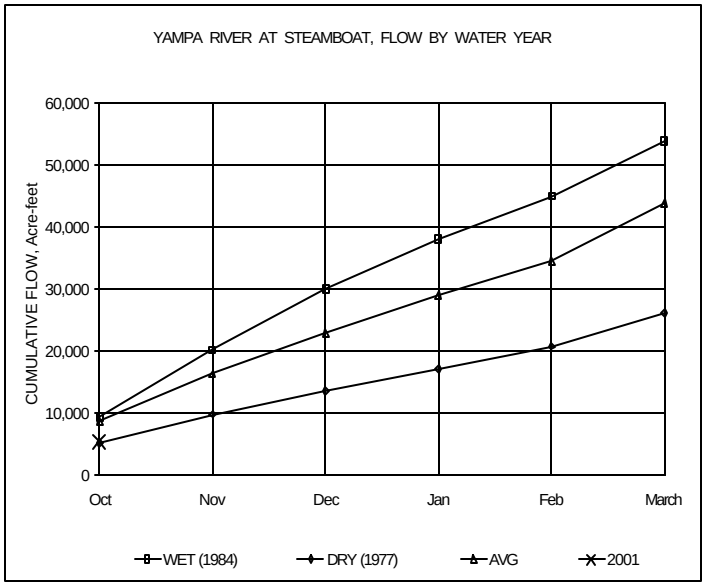
The SWSI value of –1.0 indicates that for October the basin water supplies were slightly below normal. Flow at the gaging station Yampa River at Steamboat was 89 cfs, as compared to the long-term average of 135 cfs.

Conditions in October returned to the dry pattern that was seen for most of the summer. Following the first snow fall in late September, little precipitation was received until the last week in October when significant amounts fell. Total precipitation in Steamboat Springs was only about 25% of average for the month. Stream flows throughout the basin have remained at near normal levels for this time of year. Most reservoirs have gone into storage mode as irrigation demands have decreased.



Outlook

Recent moisture has brought hopes for a return to normal precipitation patterns. Stream flows should remain near normal for the remainder of the fall.



Basinwide Conditions Assessment

The SWSI value of –0.6 indicates that for October the basin water supplies were slightly below normal. Flow at the gaging station Animas River near Durango was 327 cfs, as compared to the long-term average of 376 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 72% of normal as of the end of October.

Temperatures cooled a bit, with Durango's temperatures averaging about 5^{o} to 6^{o} below normal.

Reservoirs continued about the same as last month, which was well below normal. No storage of significant amounts occurred during October, except for Lemon Reservoir which gained 3,000 acre-feet.

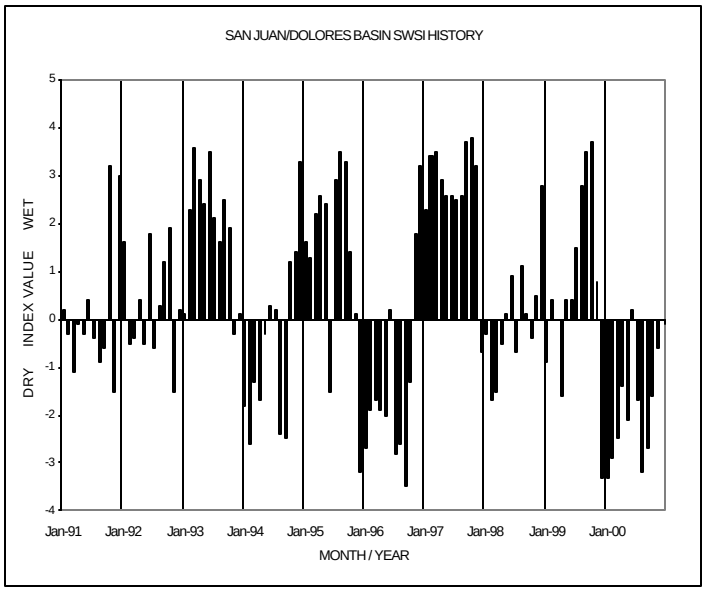
Outlook

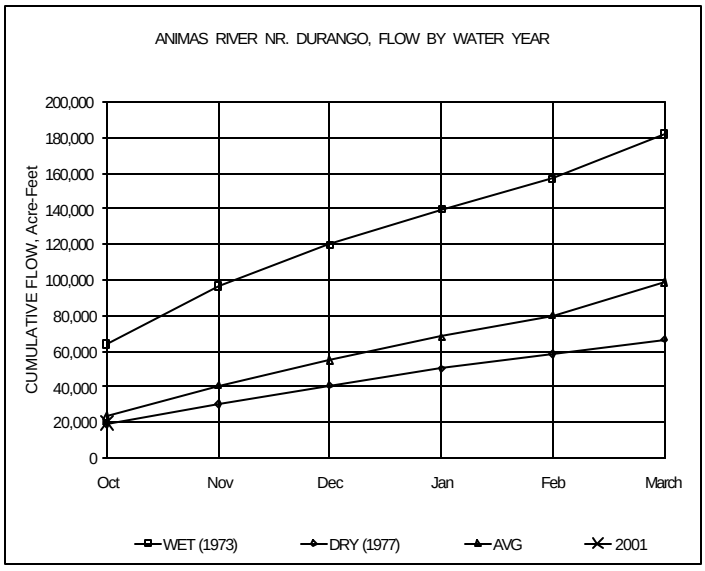
During October significant moisture came through the area leading to improvement in the outlook for the upcoming snow season. Durango's total monthly precipitation of 4.52 inches accumulated from several events, including many thunderstorms. The 1.04 inches that fell on October 21 led to a significant rise in stream flow, but flows still did not reach what would normally be expected because of the extreme soil moisture deficiency. Overall monthly flows were well below normal, with the Dolores River at Dolores at 58% of normal.

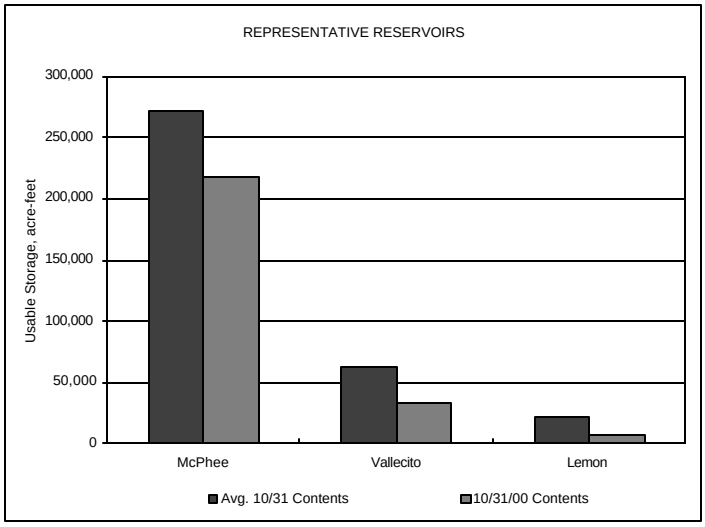
Snow courses had early readings over 200% of normal as the snow fall in the mountains was sticking. Continued precipitation will lead to prospects of a good runoff year and restoration of storage amounts in the local reservoirs.

Public Use Impacts

Wolf Creek ski area opened from natural snow on October 28. Hunters found game moving to lower elevations.







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