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

December 2009

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 statewide SWSI values for December range from a high value of 1.3 in the South Platte Basin to a low value of -2.6 in the San Juan/Dolores Basin. All of the basins experienced a loss from the previous month's values largely due to the switch from using streamflow information in the calculation to using snowpack information in the calculation.

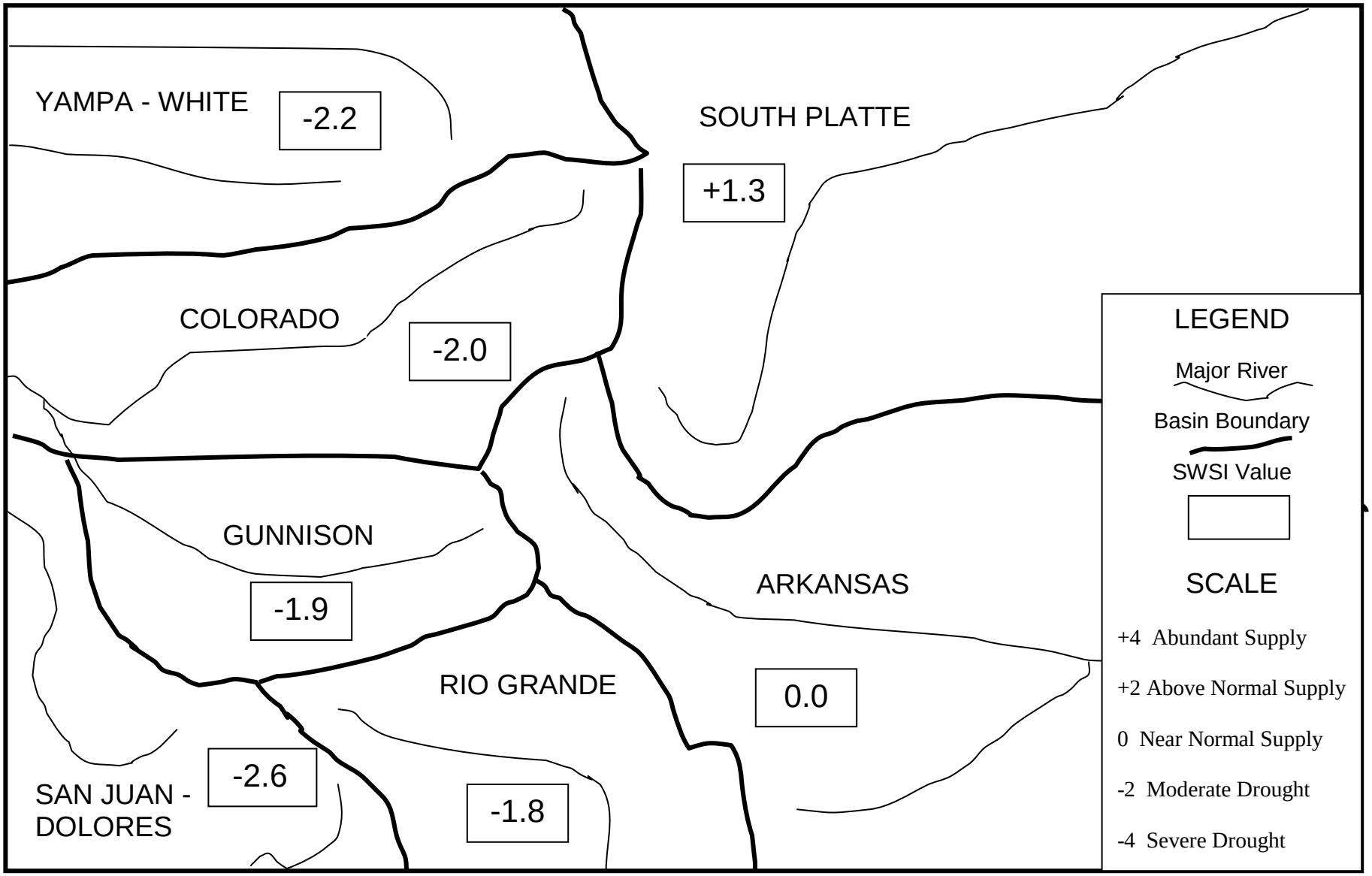
The following SWSI values were computed for each of the seven major basins for December 1, 2009, and reflect the conditions during the month of November.

Basin	December 1, 2009 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+1.3	- 1.9	+4.3
Arkansas	0.0	- 0.6	+1.7
Rio Grande	- 1.8	- 1.2	+1.4
Gunnison	- 1.9	- 0.6	+1.3
Colorado	- 2.0	- 3.4	+3.0
Yampa/White	- 2.2	- 2.5	+1.8
San Juan/Dolores	- 2.6	- 0.1	- 0.7

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



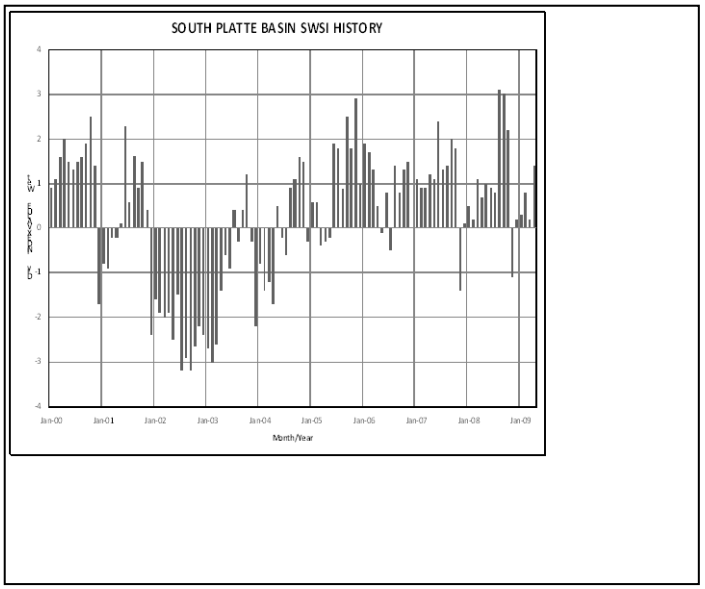
December 1, 2009

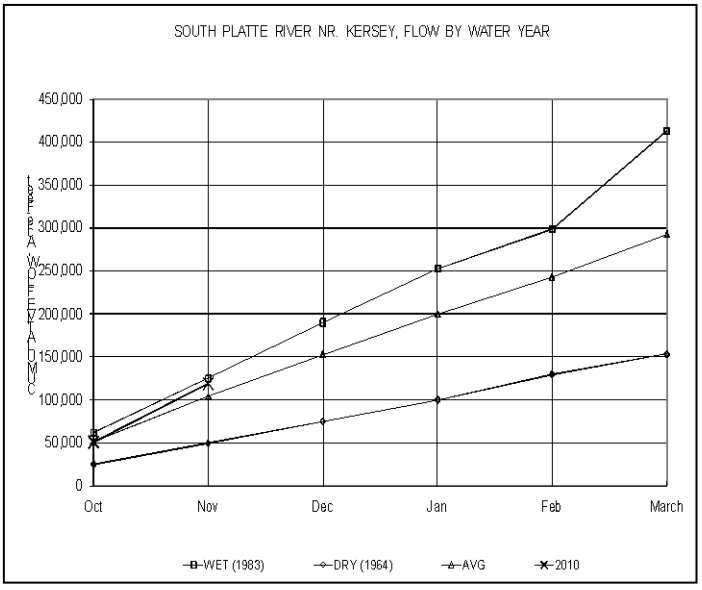
Basinwide Conditions Assessment

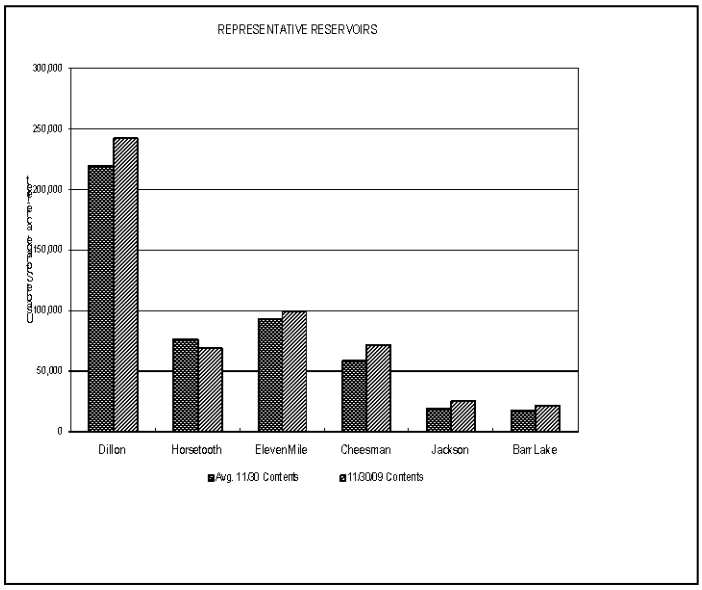
The SWSI value for the month was +1.3. Cumulative storage for the six reservoirs graphed on this page was 110% of normal as of the end of November. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 70% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 93% of capacity. The Natural Resources Conservation Service reports that December 1 snowpack is 92% of normal. Flow at the gaging station South Platte River near Kersey was 1145 cfs, as compared to the long-term average of 739 cfs. Flow at the Colorado/Nebraska state line averaged 674 cfs.

Outlook

Flow conditions along the mainstem and tributaries remained above average for this time of year. There was more water available than demand on the South Platte and most tributaries for the entire month and thus no call on the river. Diversions of water in November below Denver along the South Platte were for storage as the irrigation season ended. Upstream diversions on the mainstem and tributaries were also primarily for storage purposes with continued diversions for direct flow municipal uses for water providers. The overall storage conditions at the end of this November are better than have existed at the end of November in 10 years. Because of this, we do not expect there to be difficulty in filling most reservoirs next year except perhaps in situations where reservoirs were lowered to allow for dam safety construction work.







Basinwide Conditions Assessment

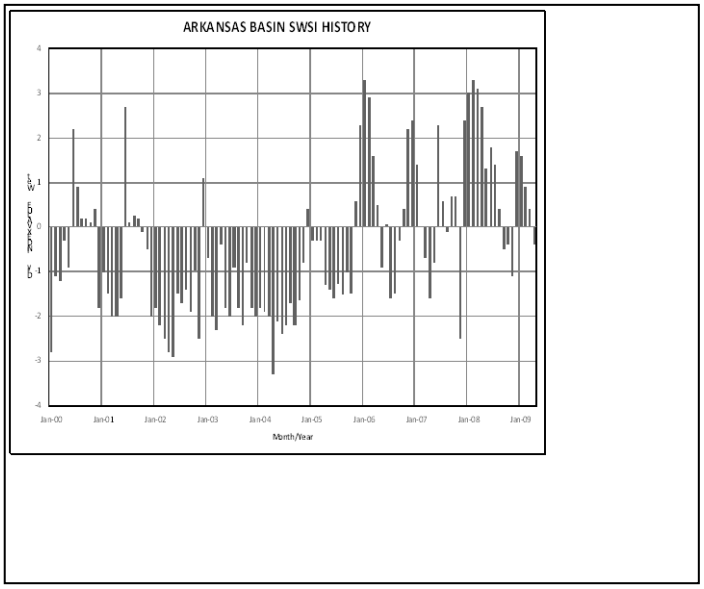
The SWSI value for the month was 0.0. The Natural Resources Conservation Service reports that December 1 snowpack is 71% of normal. Flow at the gaging station Arkansas River near Portland was 549 cfs, as compared to the long-term average of 444 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 112% of normal as of the end of November.

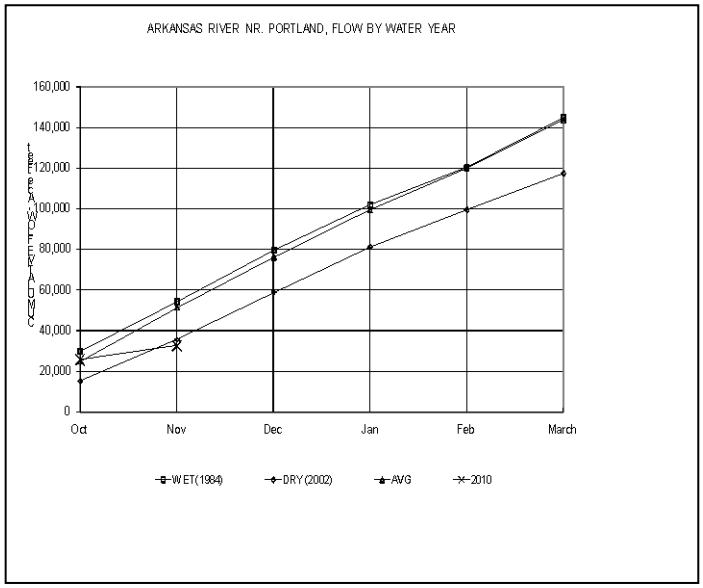
Outlook

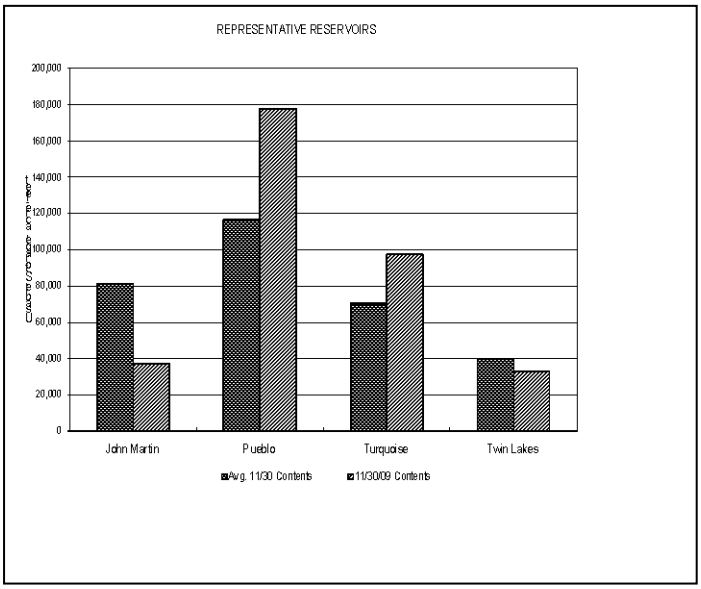
Winter Compact storage began in John Martin Reservoir on November 1, 2009. The Pueblo Winter Water Program began operation on November 15, 2009 with storage taking place initially in Pueblo and John Martin Reservoirs and under the Fort Lyon Canal system in Adobe Creek Reservoir. Storage in John Martin Reservoir during November totaled approximately 8,578 acre-feet for Conservation Storage and 3,635 acre-feet for Winter Water participants. Storage overall under the Pueblo Winter Water Program in November totaled approximately 25,706 acre-feet in all storage locations.

Administrative/Management Concerns

Russ Livingston continued to develop an updated program to estimate transit loss on reservoir releases from Pueblo Reservoir to downstream ditches and reservoirs. This project was sponsored by the SECWCD and CWCB and should result in a good tool for administering reservoir releases in conjunction with native flows in this river segment.



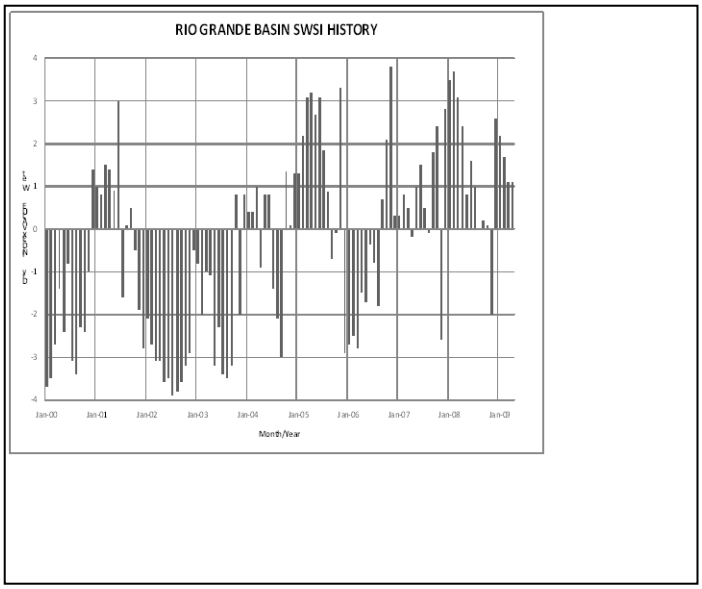




Basinwide Conditions Assessment

The SWSI value for the month was -1.9. The Natural Resources Conservation Service reports that December 1 snowpack is 61% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 217 cfs (79% of normal). The Conejos River near Mogote had a mean flow of 57 cfs (59% of long term average). The streamflow in the Conejos is very near normal conditions as releases from Platoro Reservoir for irrigation needs ceased near the beginning of November and the release was reduced to approximately 7 cfs for winter mitigation flows below the reservoir. In general, stream flow in the basin was still slightly below normal due to a relatively dry summer and autumn. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 129% of normal as of the end of November.

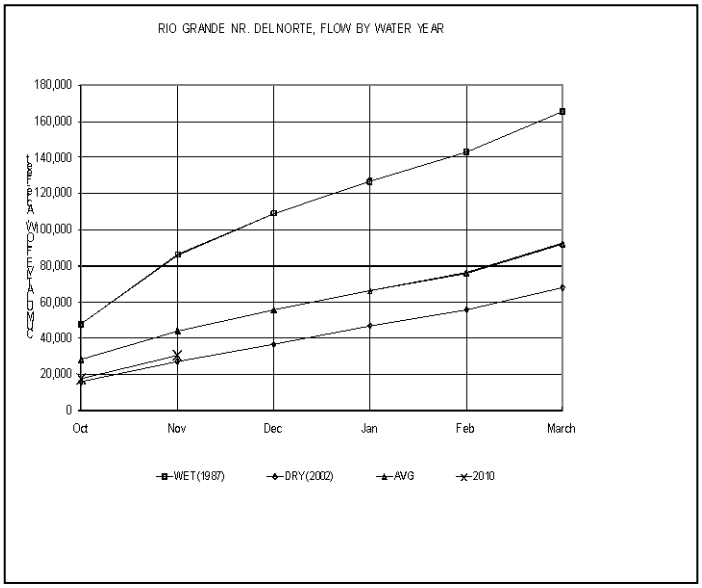
Warmer than normal temperatures have generally been the rule in 2009 and November was no exception. The average temperature in Alamosa was five degrees above normal for the month. The first two weeks of the month were so mild that farmers and ranchers had an opportunity to finish up their annual operation under warm conditions.



Outlook

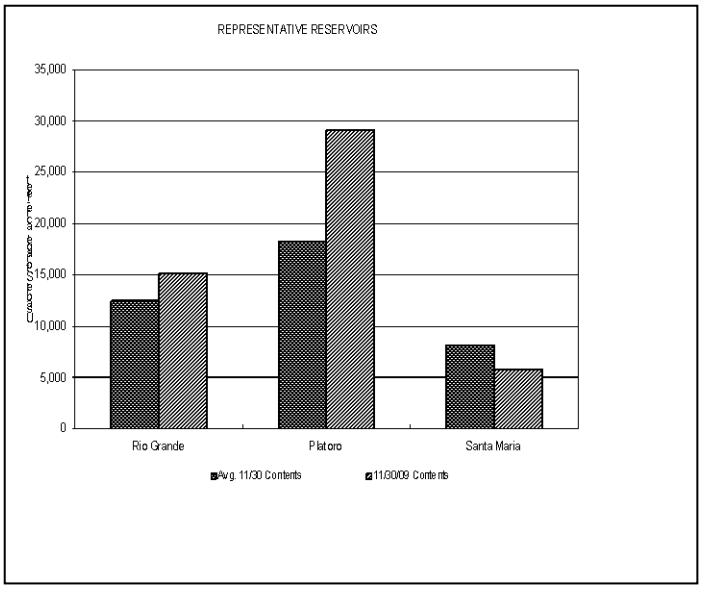
The snowpack at the end of November was poor after little or no snowfall from the middle of the month onward. By the date of this report however, two storms brought significant snowfall to much of the area. As of December 14, the basinwide snowpack was up to 113% of normal. This pattern almost mirrors last year when about one-half of the winter's snow water equivalent was dumped on the San Juans during December.

National Weather Service forecasts are predicting above normal precipitation this winter for the states to the south of Colorado. There is hope that some of that moisture finds its way northward.



Administrative/Management Concerns

Water users on the Conejos River and its tributaries ceased diverting water for irrigation at the beginning of November for Compact delivery requirements. Diversions from the Rio Grande for decreed recharge use continued until the end of November. These decrees allow water to be diverted out of the Rio Grande into specific ditches for recharge of the Valley's aquifers. This year, about 10,000 acre-feet were diverted. The Rio Grande Compact delivery requirements for the Conejos and the Rio Grande will be met or exceeded this year.



Public Use Impacts

The first part of November was very mild, with clear skies, warm temperatures and low wind. As pleasant as that may be for area residents, the resultant lack of snowpack in the higher elevations didn't bode well for winter sports enthusiasts.

Basinwide Conditions Assessment

The SWSI value for the month was -1.9. The Natural Resources Conservation Service reports that December 1 snowpack is 58% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 64.1 cfs, as compared to the long-term average of 67.7 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 105% of normal as of the end of November.

Outlook

Conditions throughout Water Division 4 for the month of November have been drier than normal, especially in the San Miguel Basin. Temperatures remained mild for November and natural stream flow levels are down considerably.

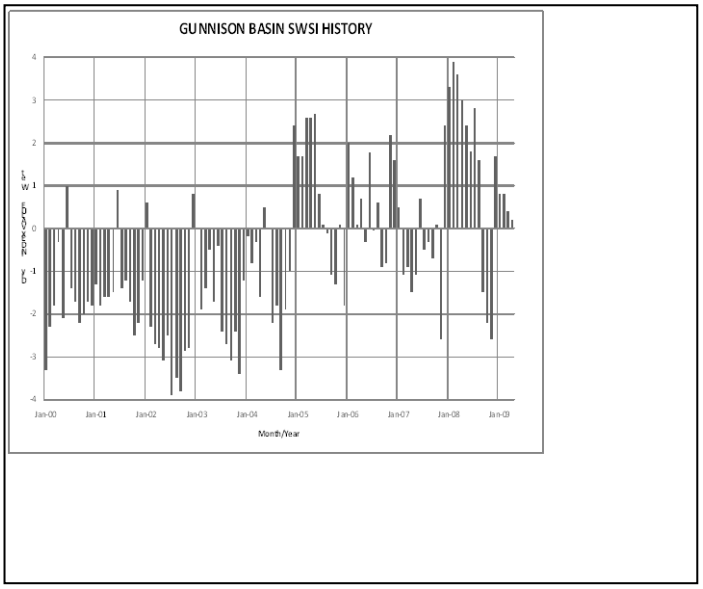
The Uncompahgre River near Ridgway at 42 cfs is approximately 75 percent of average for this time of year. The San Miguel basin is similarly affected by the lack of precipitation. However, a significant snow storm in late October helped to bring snowpack levels back up to normal by the beginning of November. It is too early to forecast at this point how the snowpack conditions will be for this winter. An initial forecast will come out in January.

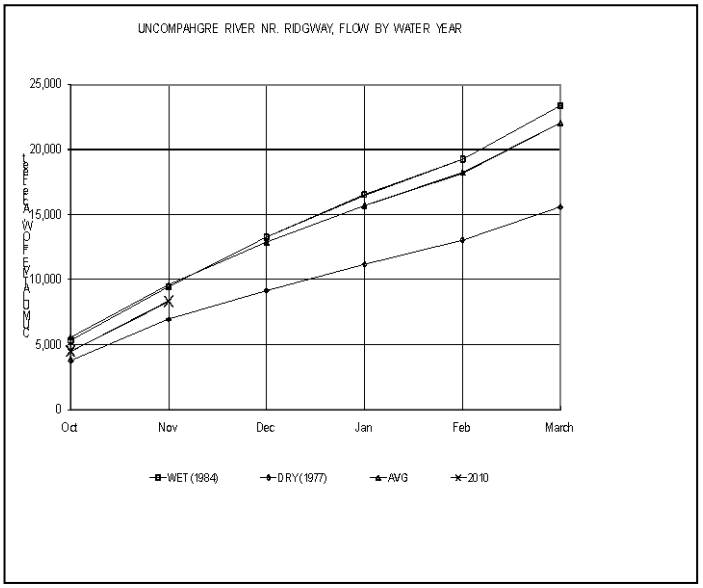
Administrative/Management Concerns

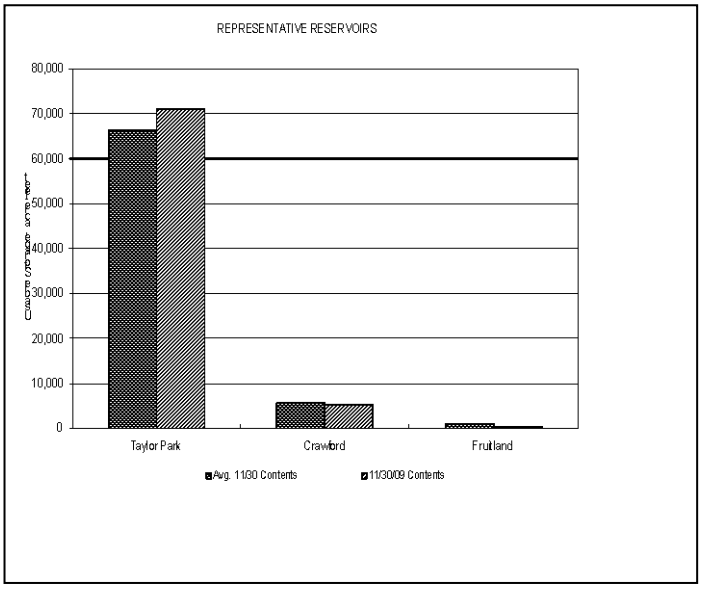
Administrative issues are relatively few at the time of this report. Generally, this time of year allows the water commissioners and Division Engineer to resolve standing issues, bring various structures into compliance, compile information for the annual report, and address outstanding water court matters.

Public Use Impacts

Winter recreation enthusiasts and irrigators are hoping for another good snowpack this year. However, this water year is getting off to a very slow start. Snowmaking efforts in the Gunnison Basin have been affected by mild temperatures and minimum stream flows. December storms will need to bring significant snowfall in order for the snowpack levels to catch up to normal levels.







Basinwide Conditions Assessment

The SWSI value for the month was -2.0. The Natural Resources Conservation Service reports that December 1 snowpack is 65% of normal. Flow at the gaging station Colorado River near Dotsero was 889 cfs, as compared to the long-term average of 1127 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 99% of normal as of the end of November.

Outlook

Colorado River flows, which were mostly below average throughout November, will remain below average in December. Green Mountain Reservoir releases have been reduced in accordance Shoshone Powerplant turbine maintenance shut-downs. Ruedi and Dillon Reservoir releases will remain low through December. Crystal and Roaring Fork River flows should remain below average through December as well.

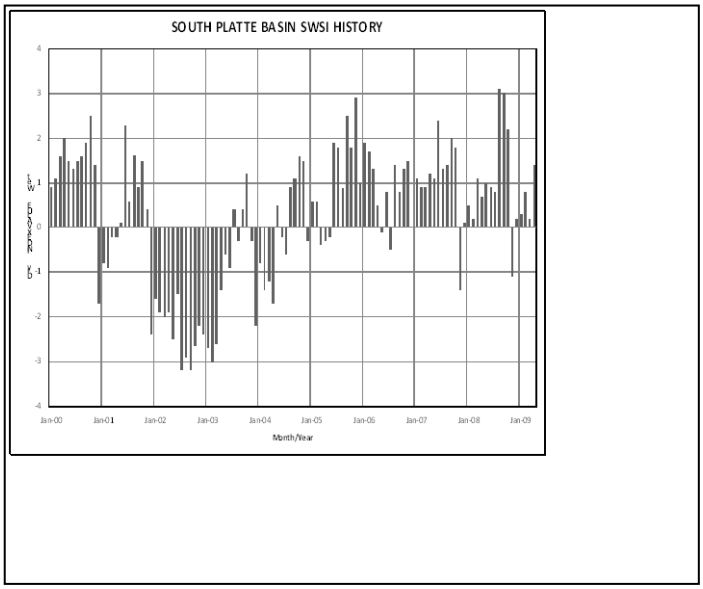
Administrative/Management Concerns

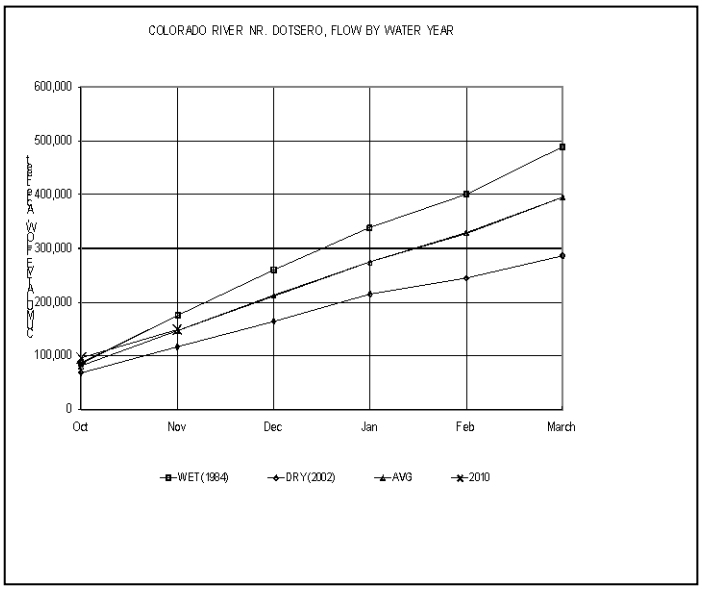
With the exception of the Green Mountain Powerplant exciter testing on December 1st, Green Mountain Reservoir releases will likely remain at 100 cfs through December.

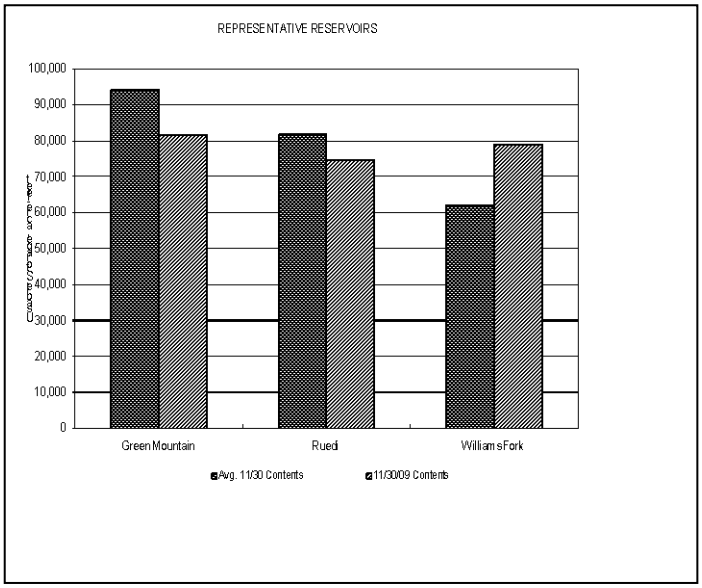
Public Use Impacts

The Bureau of Reclamation released water purchased from Ruedi Reservoir by the U.S. Fish and Wildlife Service earlier this fall to assist endangered fish in the 15-Mile Reach of the Colorado River near Grand Junction. The resulting higher flows (300-500 cfs) severely impeded trout fishing in the lower Fryingpan River. The Ruedi Water and Power Authority, Town of Basalt, and Bureau of Reclamation will meet to discuss the operations sometime next year.

Organizers associated with The Colorado River District and the Sonoran Institute are looking to create a watershed working group focusing on the Colorado River watershed in Garfield County. The proposed group would focus on a variety of issues including potential water requirements for the oil shale industry, water quality concerns linked to gas drilling, population growth impacts, and invasive plant species impacting native plant life along the river banks.







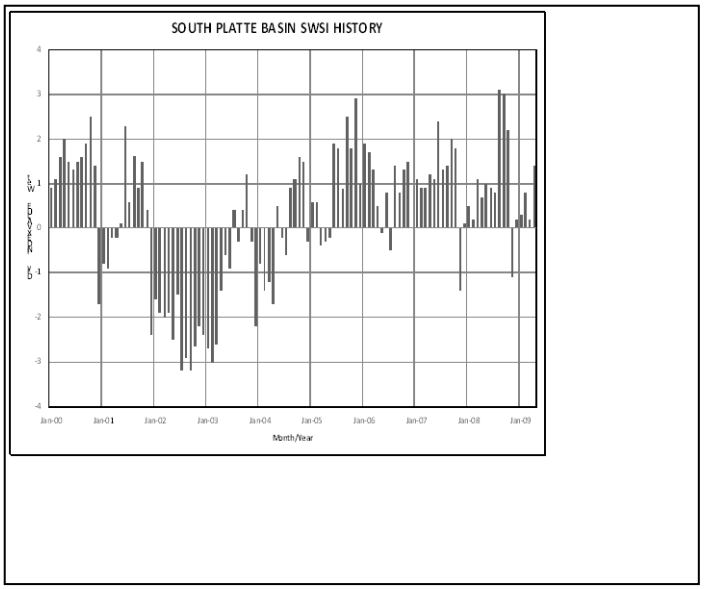
Basinwide Conditions Assessment

The SWSI value for the month was -2.2. Flow at the gaging station Yampa River at Steamboat was 148 cfs, as compared to the long-term average of 131 cfs.

November precipitation was well below average for the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by the NRCS, was reported at approximately 49% of average for the Yampa/White River basin and 43% of average for the North Platte River basin. Precipitation for the combined Yampa, White, and North Platte River basins was reported at approximately 48% of average for the month of November and 89% of average for the water year to-date.

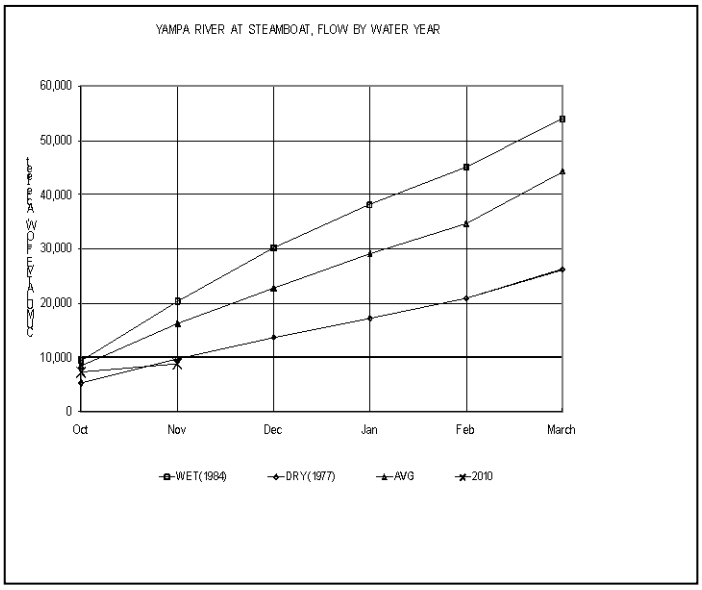
The snow water equivalent (SWE) as of November 30, 2009 was 71% of average for the North Platte River basin, 54% of average for the Yampa River basin, and 56% of average for the White River basin.

Due to extremely cold temperatures, many Division 6 stream gages are either closed for the winter season or currently ice-affected.



Outlook

Fish Creek Reservoir storage level declined in November and was reported at approximately 65% of capacity at the end of the month. Elkhead Creek Reservoir level rose slightly during the month and the reservoir was at approximately 75% of its' enlarged capacity. Yamcolo Reservoir storage level also increased and the reservoir was at approximately 66% of capacity at the end of November. Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Elkhead Creek Reservoir for municipal, industrial, and recreational purposes, as well as fish recovery releases.



Administrative/Management Concerns

Remaining calls were released in October and no Division 6 streams currently remain under administration.

The third year of the fish recovery release from Elkhead Creek Reservoir was completed successfully and data collected during the release are being compiled and reviewed by participating agencies. The program was directed by the Colorado River District, on behalf of the Recovery Program and Division 6 is responsible for protecting this water through the Yampa River critical habitat reach (from Craig to the confluence with the Green River at Echo Park).

Public Use Impacts

Area reservoirs are beginning to freeze. The ski mountain opened, as planned, the day before Thanksgiving, with several runs open.

Basinwide Conditions Assessment

The SWSI value for the month was -2.6. The Natural Resources Conservation Service reports that December 1 snowpack is 49% of normal. Flows at the Animas River at Durango averaged 174 cfs (61% of average). The flow at the Dolores River at Dolores averaged 58 cfs (70% of average). The La Plata River at Hesperus averaged 5.4 cfs (56% of average). Precipitation in Durango was 0.46 inches for November, 24% of the 30-year average of 1.91 inches. Precipitation to date in Durango, for the water year, is 2.16 inches, compared to the average of 3.35 inches. The flow on the Animas River for November (10,344 acre-feet) was the second lowest total for the month out of 99 years of record. Only November 1935 has a lower monthly total flow at 9,374 acre-feet. The average high and low temperatures for the month of November in Durango were 56° and 23°. In comparison, the 30-year average high and low for the month is 51° and 23°.

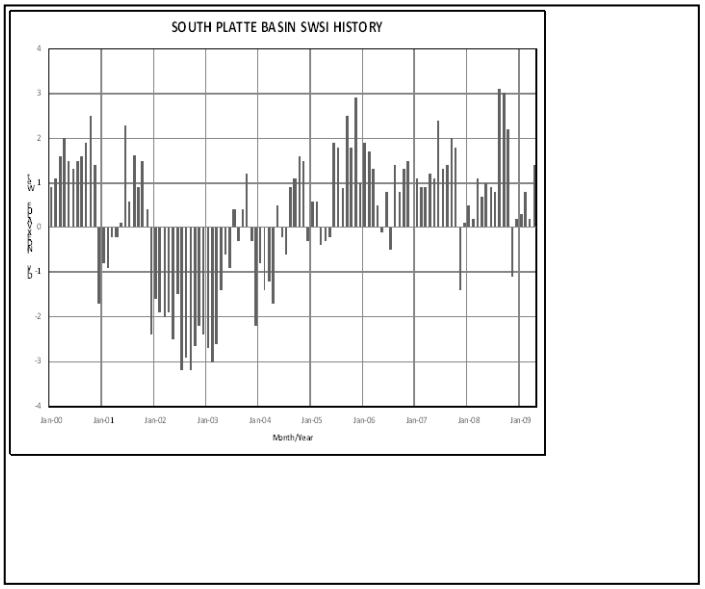
At the end of the month Vallecito Reservoir contained 45,670 acre-feet compared to its average content of 52,384 acre-feet (87% of average). McPhee Reservoir was up to 256,320 acre-feet compared to its average content of 257,059 (100% of average), while Lemon Reservoir was up to 9,590 acre-feet as compared to its average content of 19,673 acre-feet (49% of average).

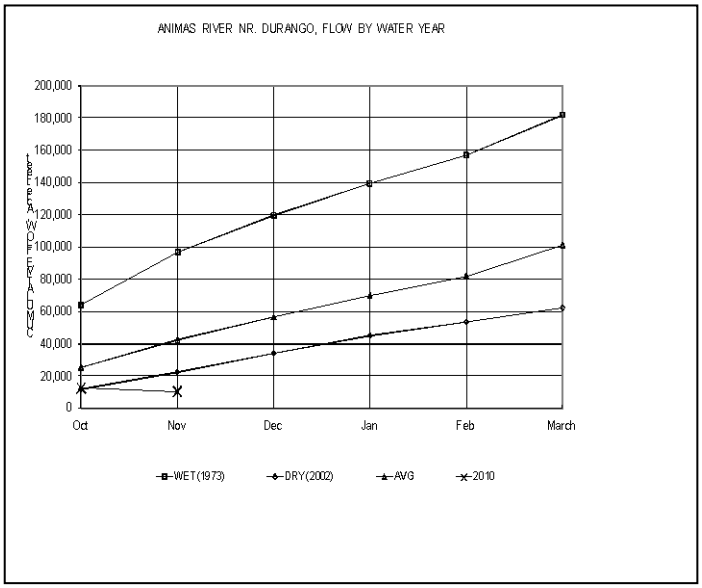
Outlook

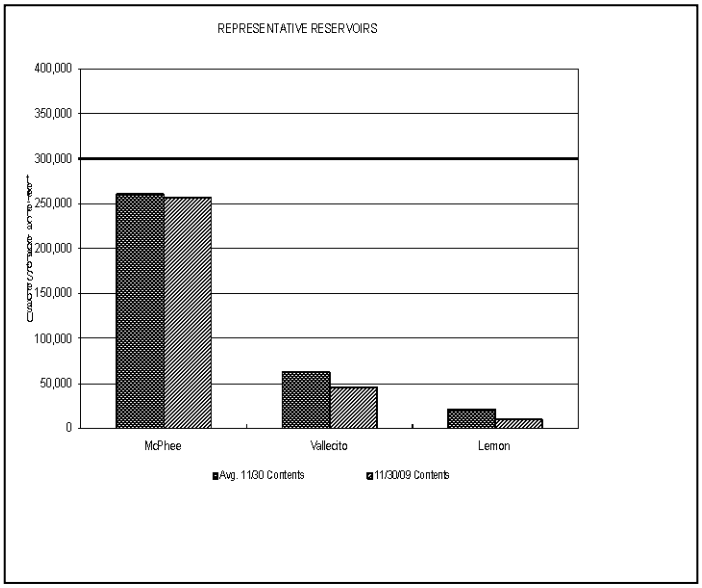
November was another dry month. Reservoirs were heavily relied upon for irrigation supplies all summer long this year and are below average as we head into the storage months. With stream flows below average the prospect of filling the reservoirs will not be very likely unless we can maintain an above average snowpack for the winter. On November 30th the NRCS SNOTEL sites are reporting a 48% snow-water equivalent within the basin.

Administrative/Management Concerns

The flows in most if not all the rivers within the basin remain very low. Without some type of moisture soon it could be a very long upcoming irrigation season or very short depending on your perspective. Most of the La Plata River just below the Hesperus gage to the confluence of Long Hollow remained dry. No pumping into Ridges Basin Reservoir occurred in November.







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