COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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January 2011

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 of November through April (December 1 through May 1). 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 (January 1) range from a high value of +3.7 in the Yampa/White Basin to a low value of +1.3 in the Arkansas Basin. Six of the basins (South Platte, Arkansas, Rio Grande, Gunnison, Colorado, and San Juan/Dolores) experienced a gain from the previous month's value. One of the basins (Yampa/White) experienced a slight loss from the previous month's value.

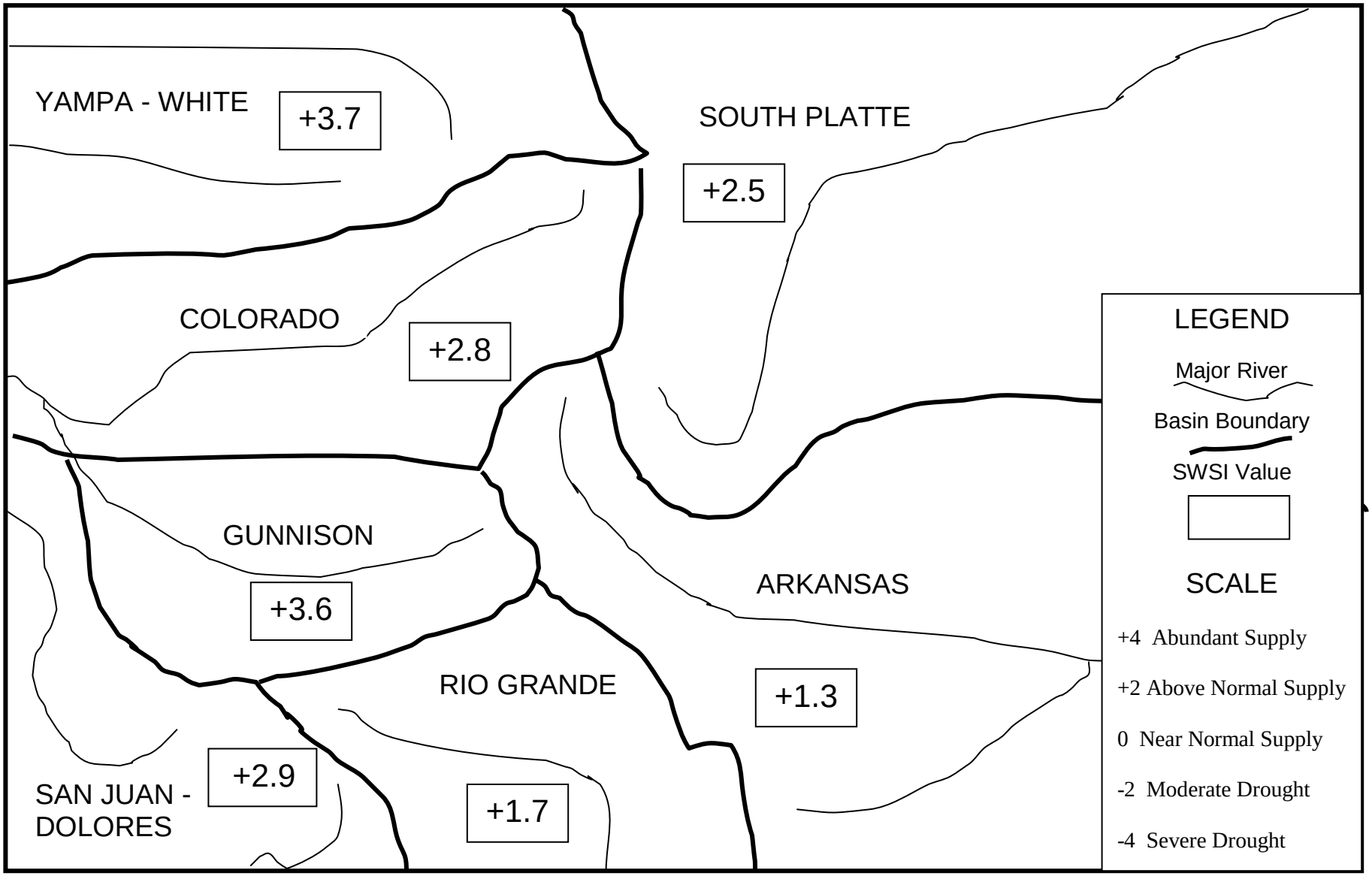
The following SWSI values were computed for each of the seven major basins for January 1, 2011, and reflect the conditions during the month of December.

Basin	January 1, 2011 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+2.5	+0.5	+0.9
Arkansas	+1.3	+1.0	+1.4
Rio Grande	+1.7	+3.5	+1.1
Gunnison	+3.6	+3.5	+4.0
Colorado	+2.8	+0.2	+4.0
Yampa/White	+3.7	- 0.2	+5.8
San Juan/Dolores	+2.9	+4.3	+3.4

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



January 1, 2011

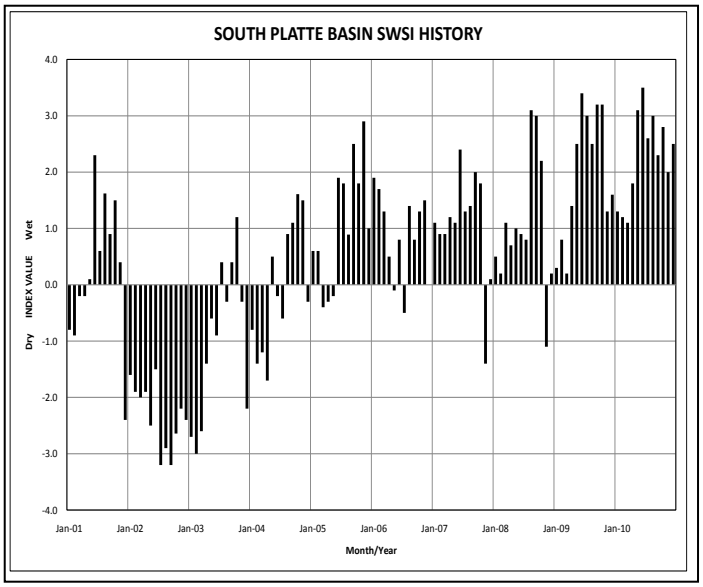
Basinwide Conditions Assessment

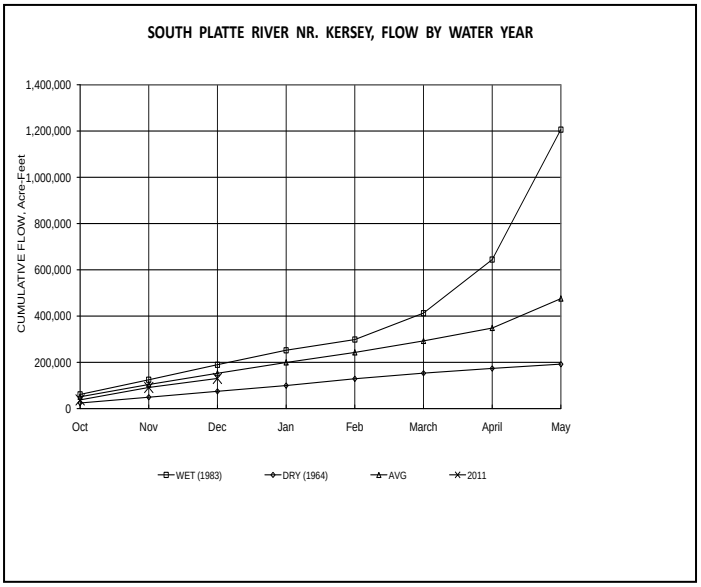
The SWSI value for the month was +2.5. The Natural Resources Conservation Service reports that January 1 snowpack is 105% of normal. Cumulative storage for the six reservoirs graphed on this page was 105% of normal as of the end of December. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 74% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 95% of capacity. Flow at the gaging station South Platte River near Kersey was 638 cfs, as compared to the long-term average of 682 cfs. Flow at the Colorado/Nebraska state line averaged 249 cfs.

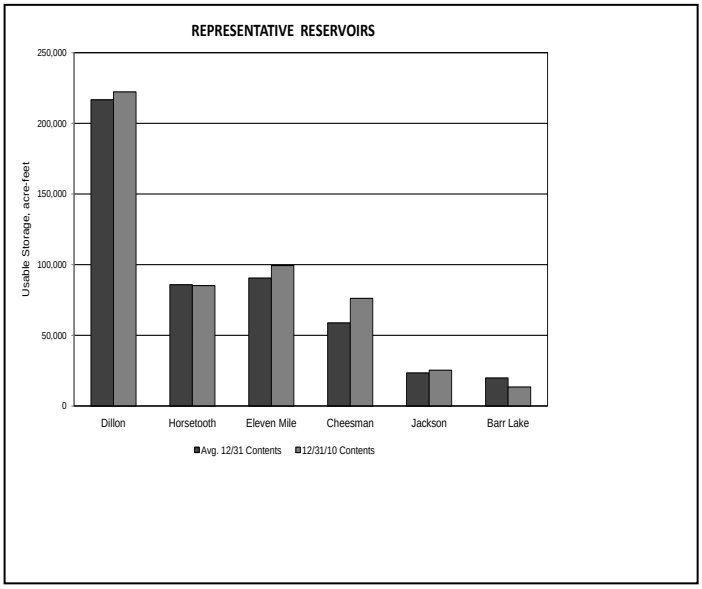
Outlook

December in Division 1 felt almost like “a tale of two basins” based on elevation. The upper elevations picked up significant snow fall to the point of being significantly above average while the lower elevations continued the warm and dry conditions of the last several months. Stream flow on the mainstem at Kersey was above average for the first half of December but fell enough below average for the last half of the month to make the overall monthly flow below average. These stream flow conditions meant there were calls for water above Water District 64 for the entire month. However, the warm conditions and stream flow combined to allow increases in the reservoir storage both above and below Kersey, though overall storage for the basin ended December somewhat below average.

The outlook for January is for near average conditions for both temperature and precipitation. However, longer term forecasts seem to be indicating a drier than normal trend. Since January is typically the coldest month, diversions may be limited by icing at diversion structures and inlet ditches.







Basinwide Conditions Assessment

The SWSI value for the month was +1.3. The Natural Resources Conservation Service reports that January 1 snowpack is 105% of normal. Flow at the gaging station Arkansas River near Portland was 415 cfs, as compared to the long-term average of 405 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 101% of normal as of the end of December.

Outlook

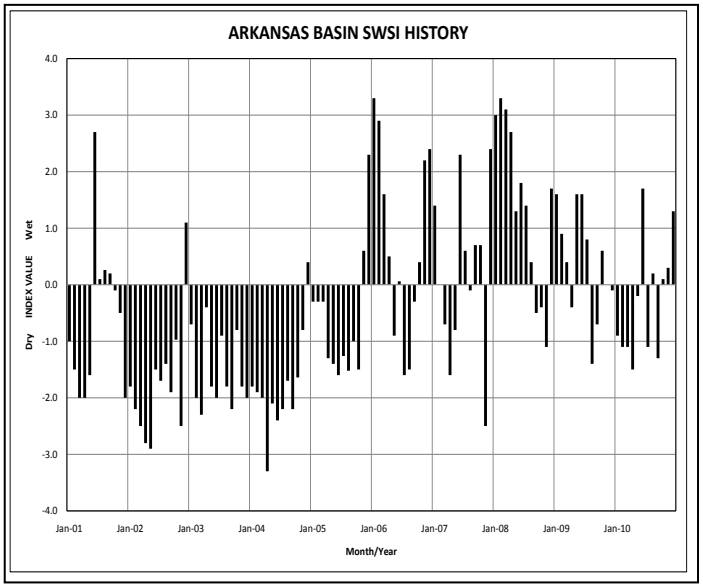
The Pueblo Winter Water system grand total was 49,143 acre-feet at the end of December representing a 20% decrease from last year's storage to date, which was 61,927 acre-feet. The previous five-year average for this period is 57,518 acre-feet and the average since 1990 for this period has been 62,232 acre-feet.

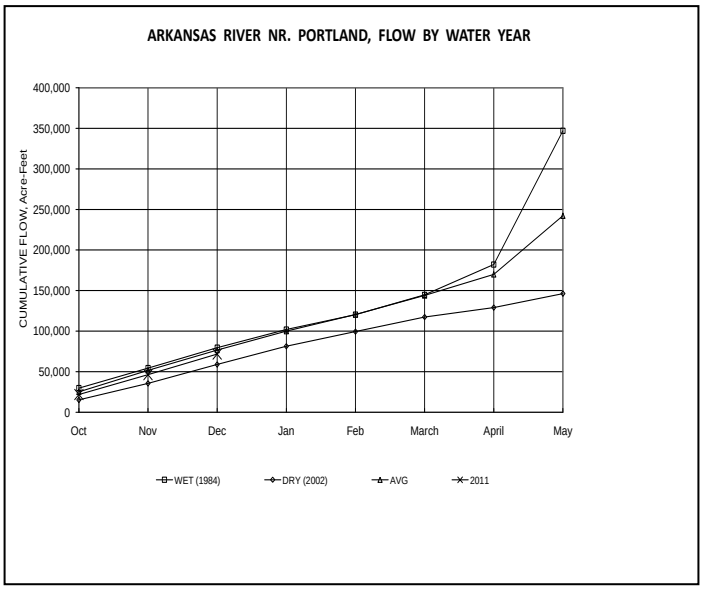
Conservation storage in John Martin Reservoir is about 32% below last year. Storage since November 1st has been 9,554 acre-feet while storage a year ago for the same time period was 13,958 acre-feet.

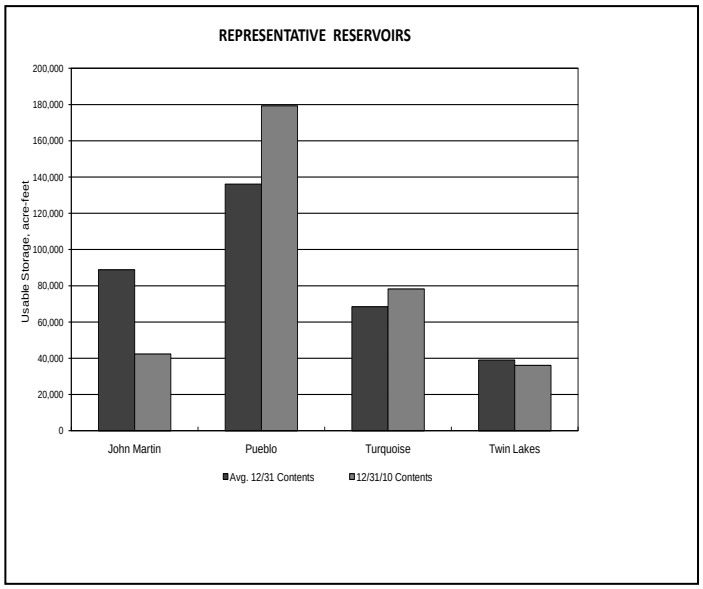
Administrative/Management Concerns

The Arkansas River Compact Administration meeting was held in Lamar, Colorado on December 6th and 7th.

Work on the Arkansas River Decision Support System Feasibility Study continues to progress towards a final report.





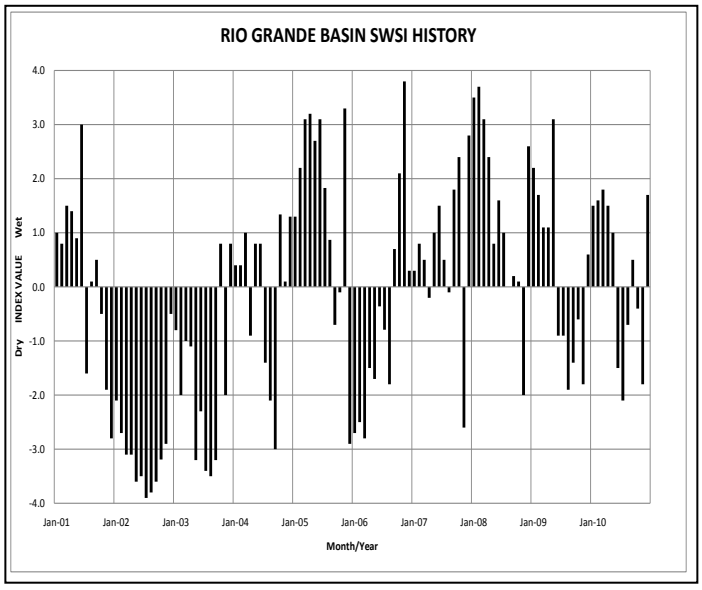


Basinwide Conditions Assessment

The SWSI value for the month was +1.7. The Natural Resources Conservation Service reports that January 1 snowpack is 107% of normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 103% of normal as of the end of December.

Flow at the gaging station Rio Grande near Del Norte averaged 206 cfs (106% of normal) during December. The Conejos River near Mogote had a mean flow of 47 cfs (91% of normal) during the month. Stream flow in the basin should be near average for the next few months.

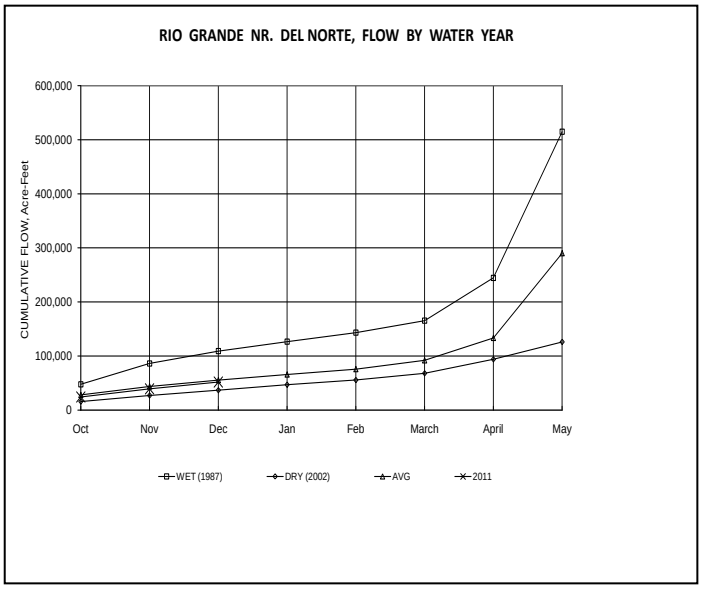
Alamosa received 0.38 inches of precipitation during December, including a very rare trace of rain on December 23rd. That system storm dropped a blanket of snow on the San Juan Mountains, but did not turn to snow in the Valley, where temperatures stayed above freezing. Alamosa's annual precipitation of 5.99 inches during 2010 was 1.26 inches below the annual average. Precipitation in other areas of the basin was poor during the summer months. For the second consecutive year and twelfth year in the past thirteen, the average annual temperature in the San Luis Valley was above normal.



Outlook

Enthusiasm for a strong start to the 2011 snowpack season waned until mid-December when the basinwide content finally approached average. Snowfall in the mountains during the last few days of December boosted snowpack to over 100% of average for the San Juan Mountains. However, current snowpack in the Sangre de Cristo Mountains is generally poor. One encouraging sign is the lack of dust on snow so far this winter season. That has been a major contributor to the recent early, abrupt runoffs.

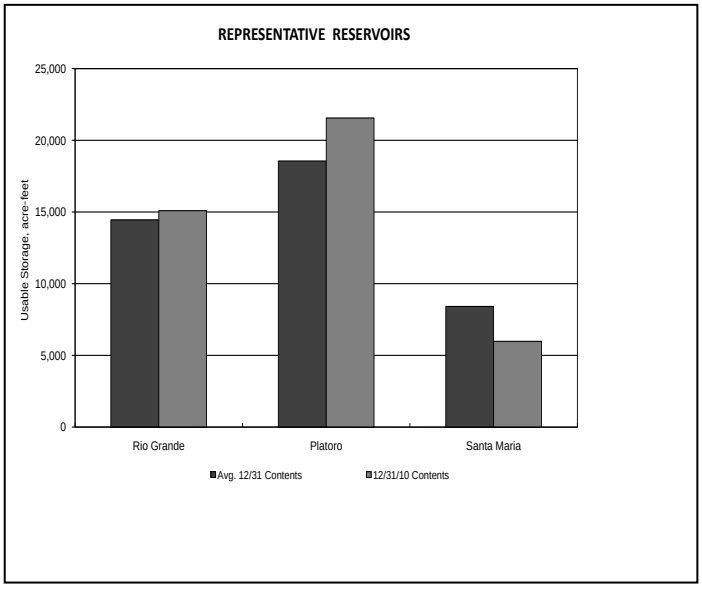
The NRCS is currently forecasting 2011 runoff levels to be 100 to 110% of normal for key streams in the San Juan Mountains but only 50 to 80% for the Sangre de Cristo Range streams. The National Weather Service is predicting a drier and warmer winter/spring for southern Colorado.



Administrative/Management Concerns

The Rio Grande and its tributaries generated about 540,000 acre-feet through the gage near Del Norte during 2010. The long-term average is 625,000 acre-feet. Indexed flow on the Conejos River near Mogote totaled about 200,000 in 2010, compared to an average of 220,000 acre-feet. Colorado will meet its Compact delivery requirements to New Mexico and Texas for 2010.

Closed Basin Project delivery to the Rio Grande totaled about 13,000 acre-feet during 2010. All Project canal deliveries met water quality standards.



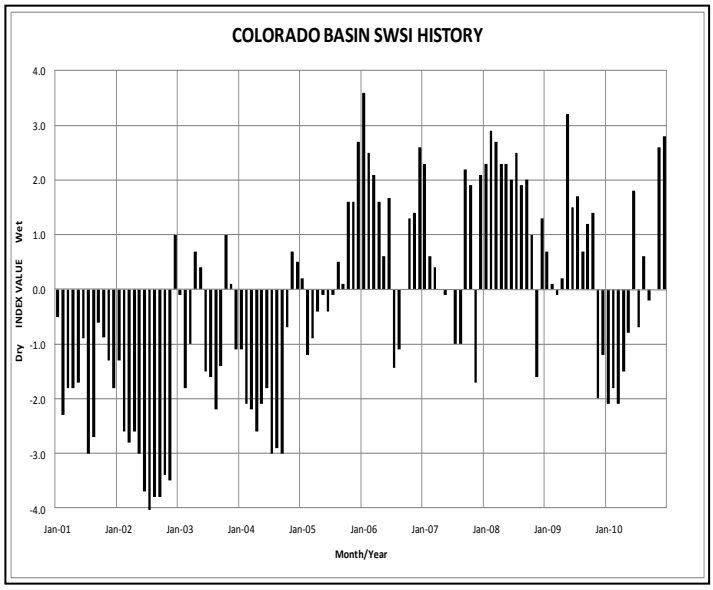
Public Use Impacts

In summary, 2010 started out with average basin snowpack that climbed to approximately 115% by the beginning of April. Some areas of the upper basin such as Saguache and LaGarita Creeks had disappointing runoffs while the LaJara Creek drainage had normal runoff. In general, annual runoffs of 80 to 90% in the upper Rio Grande basin were the result of an early melt-out followed by little precipitation. Crop and rangeland yields were affected by the lack of rainfall.

Basinwide Conditions Assessment

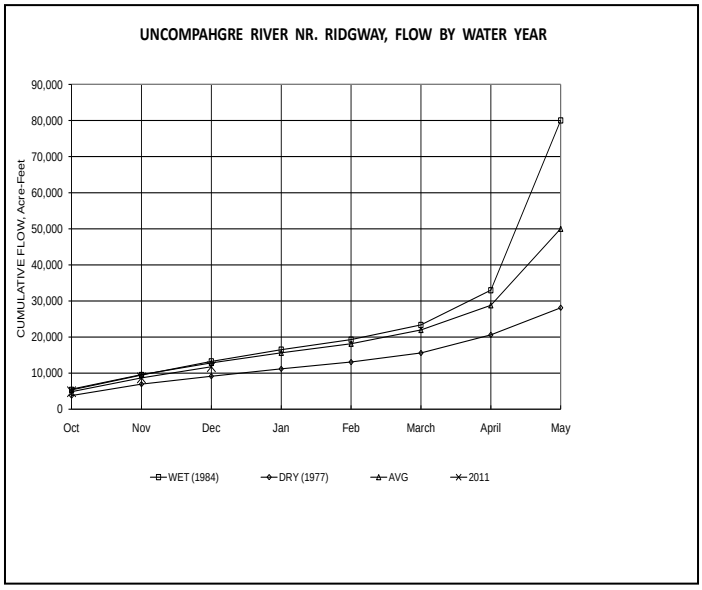
The SWSI value for the month was +3.6. The Natural Resources Conservation Service reports that January 1 snowpack is 158% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 50.5 cfs, as compared to the long-term average of 53.4 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 111% of normal as of the end of December.

What a difference a month makes! Two storm systems during the end of December greatly improved our snowpack conditions from below average to significantly above average. A large "pineapple express" system during the week prior to Christmas brought epic snow to the high country and rain to the lower valleys in the Gunnison basin. This storm alone raised the Gunnison basin snow water equivalent (SWE) from 79 to 147 percent of normal. Another storm on New Year's Eve increased the snowpack further, bringing the Gunnison basin to 160 percent of average on January 1st. At the beginning of 2011 all areas in the Gunnison and San Miguel basins are above average, but due to the storm track, the areas with predominantly south and southwest facing slopes, such as the Grand Mesa and the Uncompahgre Plateau have the highest snowpack at over 200 percent of normal while more north facing slopes stand at around 120 percent.



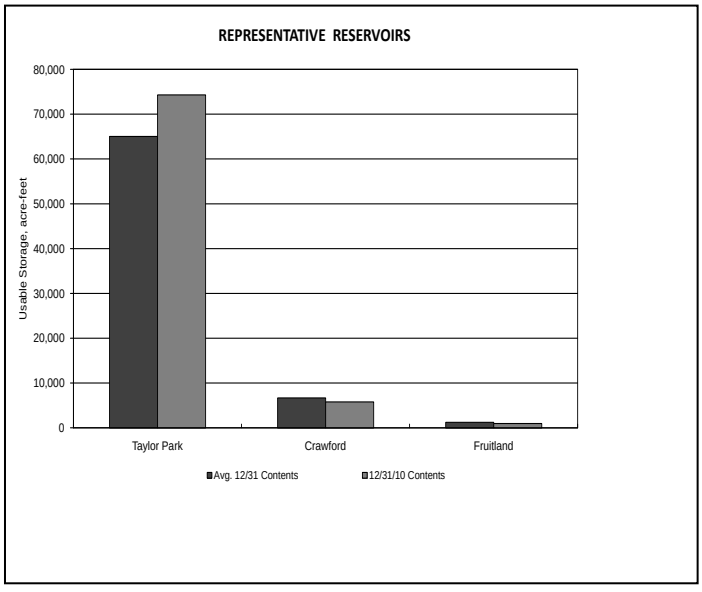
Outlook

The year's first snowpack projections were released by the NRCS on January 3rd. Their end of season Gunnison basin snowpack predictions range from 91 to 168 percent of average based on a historical range of what the remaining season could bring. In fact, if storms from now until May bring average snow to the Gunnison basin they predict that we will end the season with 118 percent of average SWE. The National Weather Service (NWS) climate forecasts continue to predict that the Gunnison basin has an equal chance of below or above average precipitation during the next 30 to 90 days. Hopefully the storm track continues to put the Gunnison and San Miguel basins in the above average category during the next few months.



Administrative/Management Concerns

Currently, we have few administrative concerns as snowpack conditions are great and reservoir levels are near average. If the snowpack continues at a significantly above average level, flooding concerns may dominate in some areas during the spring.



Public Use Impacts

The huge storm in late December kick started the winter recreation season in the Gunnison basin. Areas like Crested Butte received over 65 inches of snow in one week and had great skiing conditions for holiday visitors. Lower areas (below 9,000 ft), however, still had relatively little snowpack as the storms were warm Pacific ones with rain and above freezing temperatures in the valleys. In fact, Blue Mesa Reservoir remained ice free with the exception of the area east of the Lake City bridge until almost the end of December.

Basinwide Conditions Assessment

The SWSI value for the month was +2.8. The Natural Resources Conservation Service reports that January 1 snowpack is 145% of normal. Flow at the gaging station Colorado River near Dotsero was 863 cfs, as compared to the long-term average of 1042 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 106% of normal as of the end of December.

Outlook

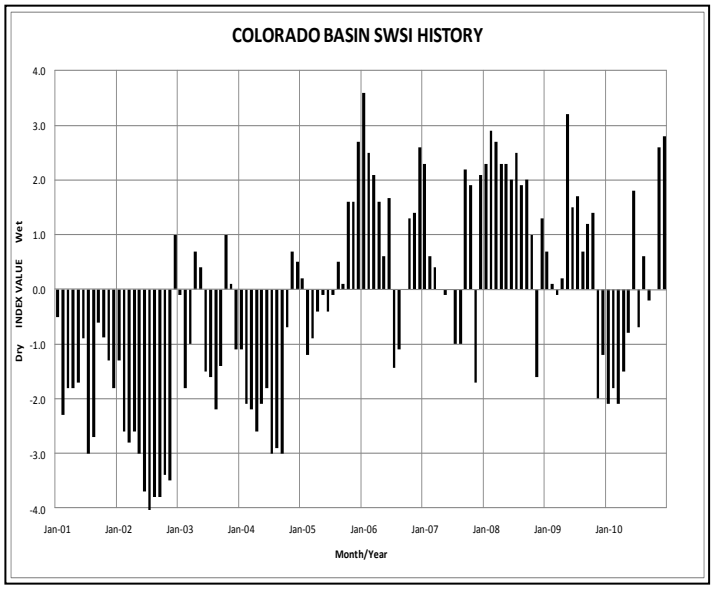
Colorado and Roaring Fork River flows should remain near average through December, although significant precipitation and/or substantially low temperatures could cause minor variances. Ruedi Reservoir releases will remain near 75 cfs for power generation through December. Blue River flows should remain near average for the month of December as well.

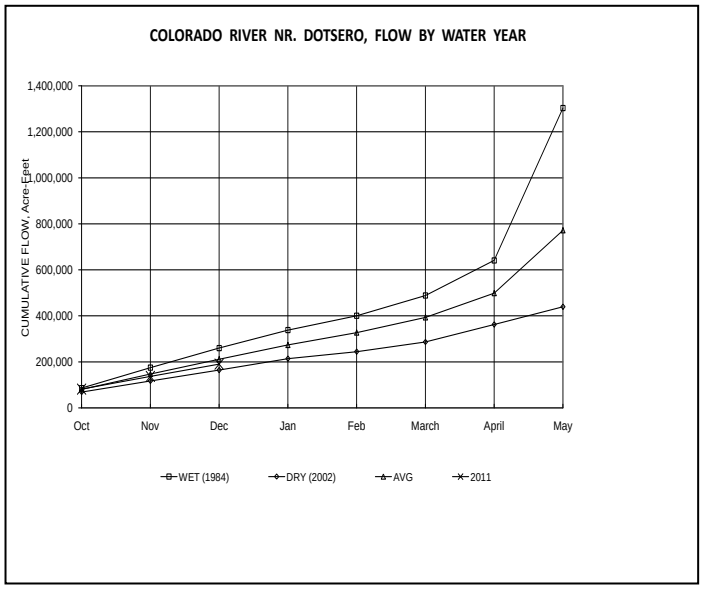
Administrative/Management Concerns

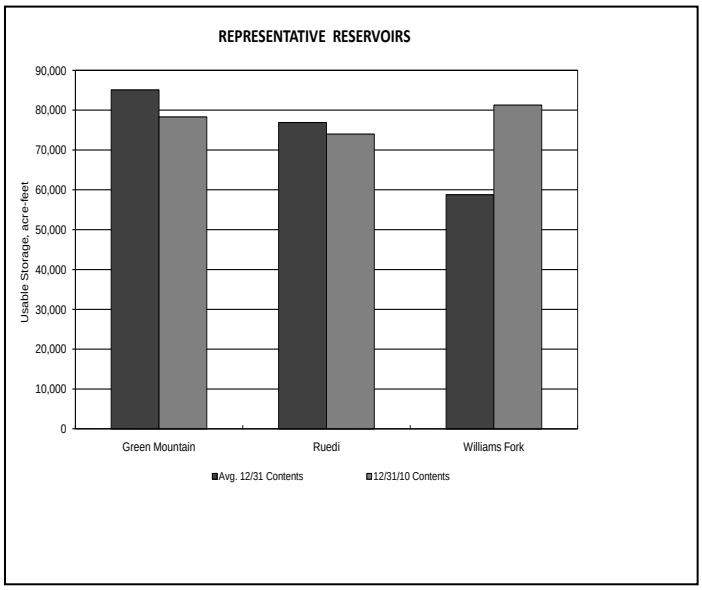
The Denver Water Department will close the Roberts Tunnel for significant maintenance and repairs around December 15th. This impacts snowmaking operations at Keystone Ski Area (Vail Resorts) which pumps water from the Roberts Tunnel via the Montezuma Shaft to maintain the minimum Snake River in-stream flow of 6 cfs. Following approval from the Forest Service and Corps of Engineers, Keystone Ski Area will be allowed to reduce flows to 2 cfs to maintain their snowmaking water supply. Dillon Reservoir's second fill will replace Denver Waters' call on the Blue River during this period. Shoshone Power Plant is scheduled to resume power generating operations in mid-December.

Public Use Impacts

The U.S. Department of the Interior will meet with Mexican officials to reach a water deal. Canals and reservoirs that supply the agricultural area in northern Mexico were damaged from the 7.2 magnitude earthquake which struck earlier this year. As a result, Mexico is unable to take its full share of 1.5 million Acre-feet annual allotment of the Colorado River under a 1944 treaty. The deal could allow Mexico to leave as much as 260,000 acre-feet of water in Lake Mead through 2013. This could prevent potential restrictions from being imposed on California, Arizona, and Nevada should current drought conditions persist. Mexico could then take the stored water incrementally beginning in 2014, presumably conditional upon potential to worsen existing drought conditions, subtraction for evaporation, etc.







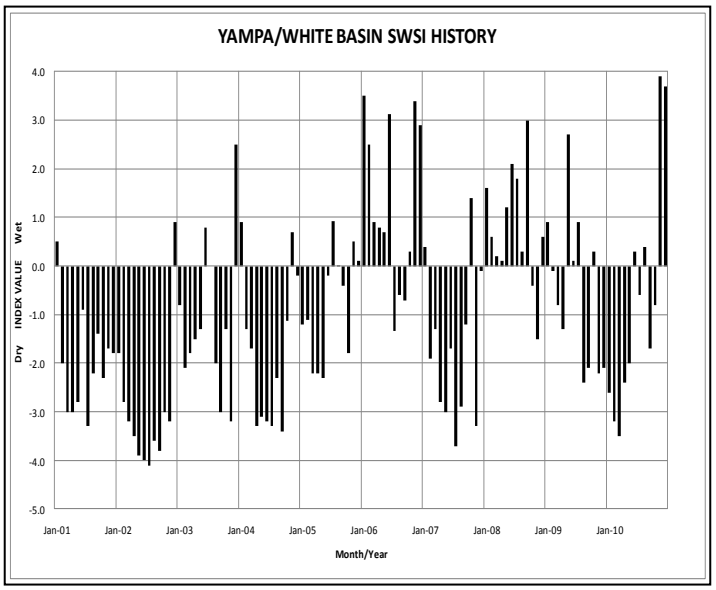
Basinwide Conditions Assessment

The SWSI value for the month was +3.7. Flow at the gaging station Yampa River at Steamboat was 121 cfs, as compared to the long-term average of 107 cfs.

December precipitation continued to be well above average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by NRCS, was reported at approximately 142% of average for both the Yampa/White River basin and North Platte River basin. Precipitation for the combined Yampa, White, and North Platte River basins was 149% of average for the water year to-date.

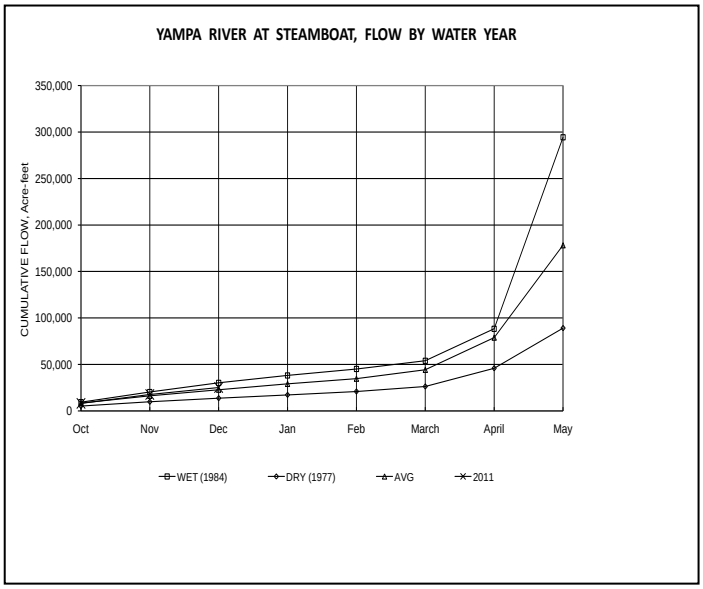
The snow water equivalent (SWE) as of December 31, 2010 was 151% of average for the North Platte River basin and 146% of average for the Yampa and White River basins combined.

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



Outlook

At the end of December, Fish Creek Reservoir was storing 2,554 AF. The capacity of Fish Creek Reservoir is 4,167 AF. At the end of December, Yamcolo Reservoir was storing 7,083 AF. The capacity of Yamcolo Reservoir is 9,580 AF. At the end of December, Stagecoach Reservoir was storing 22,615 AF. The enlarged capacity of Stagecoach Reservoir is 36,460 AF. Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Stagecoach Reservoir is primarily used for recreation though a significant amount of water stored is allocated for municipal, industrial, irrigation and augmentation uses. Water however is rarely released for these purposes.



Administrative/Management Concerns

At the end of December there were no stream systems on call within all of Division 6.

Public Use Impacts

Steamboat Ski Resort had received 184 inches of snow at mid-mountain as of December 31, 2010 with 100% of their terrain open.

Basinwide Conditions Assessment

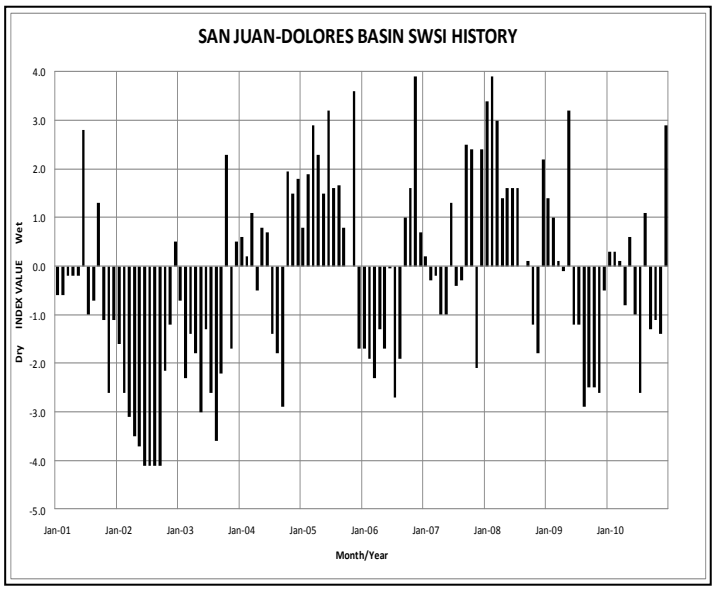
The SWSI value for the month was +2.9. Flows at the Animas River at Durango averaged 224 cfs (100% of average). The flow at the Dolores River at Dolores was estimated to average 58 cfs (100% of average). The La Plata River at Hesperus averaged 6.2 cfs (76% of average). Precipitation in Durango was 3.71 inches for the month, 223% of the 30-year average of 1.67 inches. Precipitation to date in Durango, for the water year, is 6.13 inches, 121% of the 30-year average of 5.08 inches. The average high and low temperatures for the month of December in Durango were 42° and 19°. In comparison, the 30-year average high and low for the month is 41° and 15°. At the end of the month Vallecito Reservoir contained 67,040 acre-feet compared to its average content of 53,004 acre-feet (126% of average). McPhee Reservoir was up to 275,429 acre-feet compared to its average content of 257,216 (107% of average), while Lemon Reservoir was up to 14,400 acre-feet as compared to its average content of 19,425 acre-feet (74% of average).

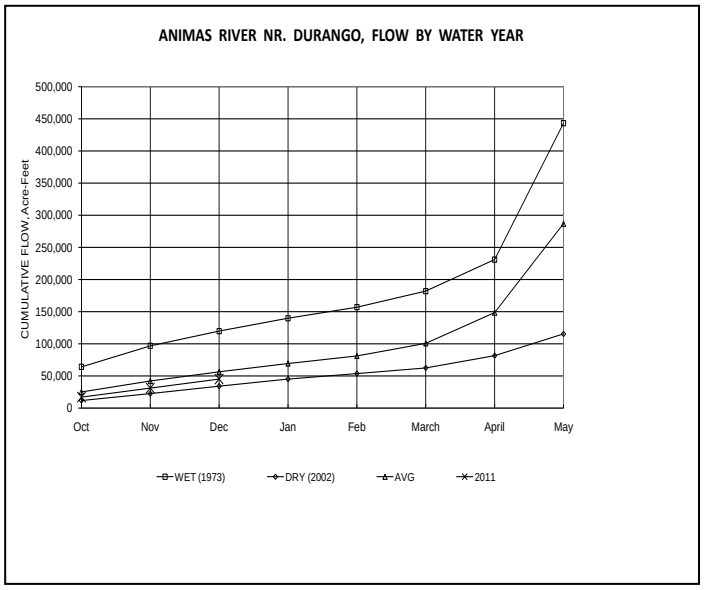
Outlook

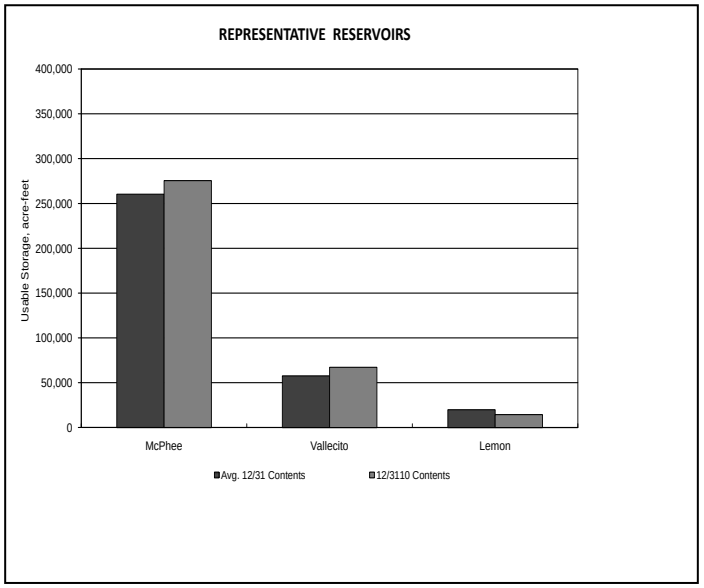
December precipitation more than made up for the dry November with rain in Durango and snow in the mountains. On December 31st the NRCS SNOTEL sites estimated 141% snow-water equivalent within the basin which is much higher than last month at 66% of average.

Administrative/Management Concerns

The base flow in most, if not all the rivers within the basin remained near average. Most of the La Plata River just below the Hesperus gage to the confluence of Long Hollow remained dry.







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