COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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September 2012

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 of May through October (June 1 through November 1). 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 statewide SWSI values for August (September 1) range from a high value of -0.3 in the South Platte Basin to a low value of -3.5 in the Gunnison Basin. There is not a consistent trend in the change in conditions compared to the previous month across the state, primarily due to differences in precipitation. Levels of precipitation were slightly above normal in three basins and well below normal in four basins.

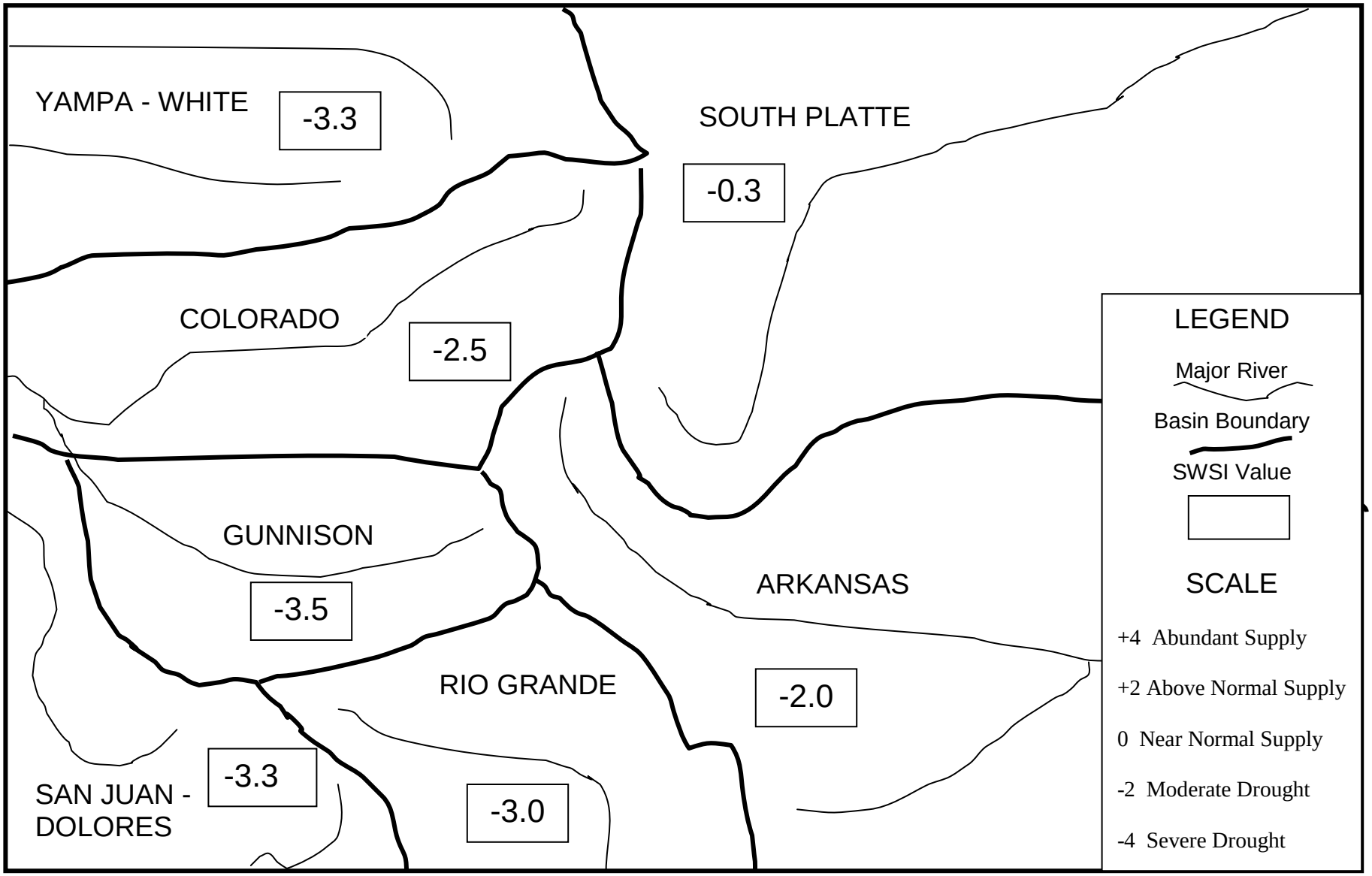
The following SWSI values were computed for each of the seven major basins for September 1, 2012, and reflect the conditions during the month of August.

Basin	September 1, 2012 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	- 0.3	- 1.2	- 3.2
Arkansas	- 2.0	- 0.2	- 1.5
Rio Grande	- 3.0	+0.0	- 2.7
Gunnison	- 3.5	- 0.4	- 4.8
Colorado	- 2.5	+0.6	- 5.9
Yampa/White	- 3.3	- 0.5	- 6.5
San Juan/Dolores	- 3.3	- 0.1	- 2.1

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



September 1, 2012

Basinwide Conditions Assessment

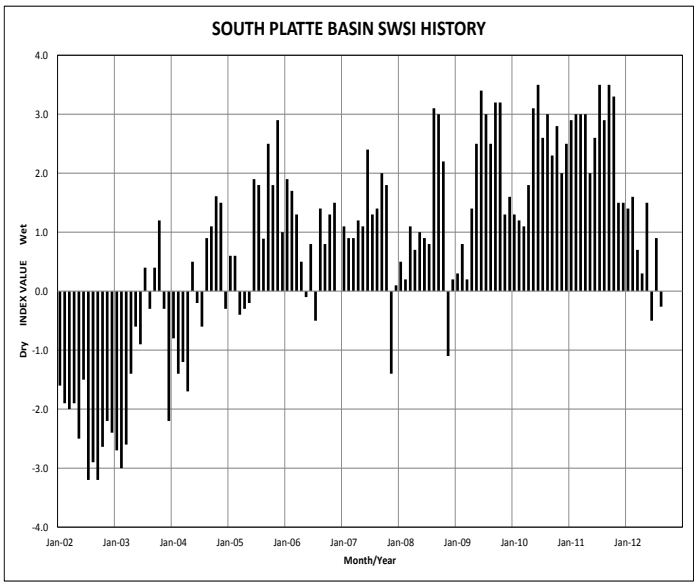
The SWSI value for the month was -0.3. Reservoir storage in Dillon, Horsetooth, Eleven Mile, Cheesman, Jackson, and Barr Lake, the major component in computing the SWSI value, was 84% of normal as of the end of August. Cumulative storage in the major plains reservoirs (Julesburg, North Sterling, and Prewitt) is at 14% of capacity. Cumulative storage in the major upper-basin reservoirs (Cheesman, Eleven Mile, Spinney, and Antero) is at 85% of capacity.

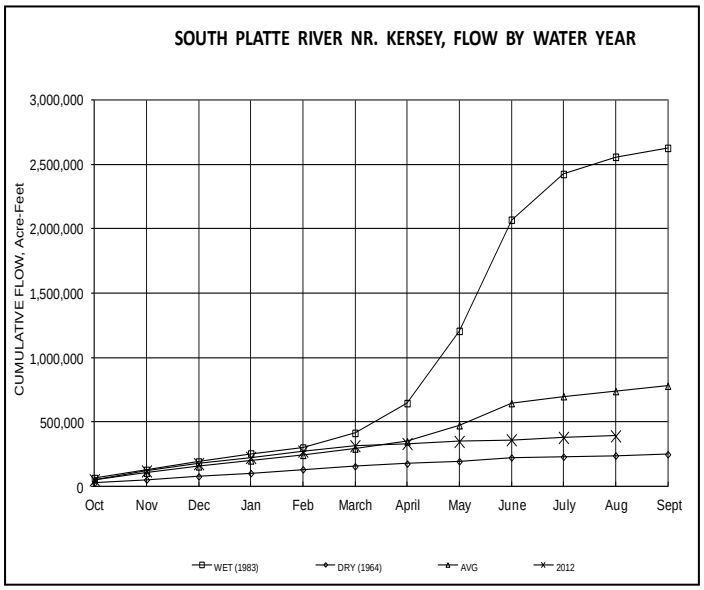
August continued the extremely dry trend in the South Platte basin. A continuation of the monsoon rains helped significantly with the fire danger in the foothills and mountains, but did very little to improve water supply conditions. As a result, the call pattern remained quite senior throughout the basin in August. This call pattern, in turn, led to the continued heavy use of reservoir storage to the point that by the end of August, many irrigation reservoirs were basically dry. For example, the useable storage in the six major plains reservoirs east of Kersey at the end of August was just under 28,000 AF out of a capacity of just under 253,000 AF. The average end of August storage is just under 95,000 AF, though the end of August 2002 storage was worse at just under 13,000 AF.

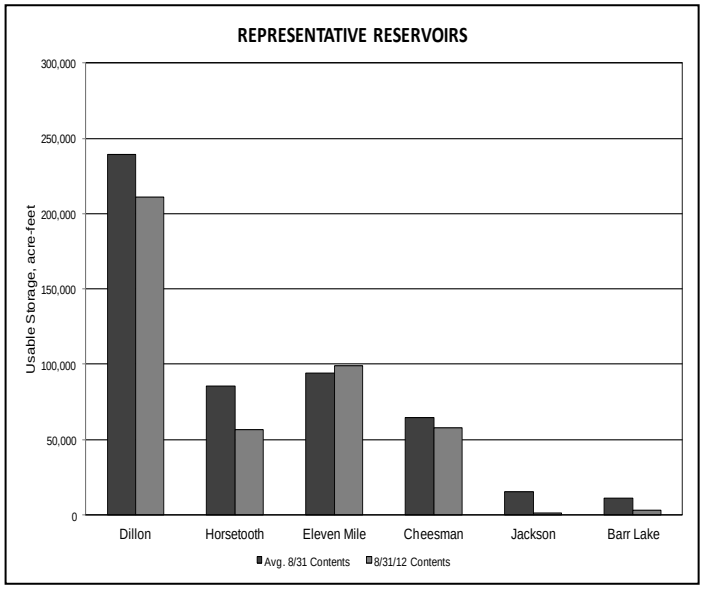
As could be expected, August stream flows at both the Kersey and Julesburg index gages remained well below average. The monthly mean stream flow at the Kersey gage in August was 198 cfs or 39% of the historic mean of 508 cfs. This compares to an August 2002 mean of 86 cfs. The Julesburg gage monthly mean stream flow value for August was 32 cfs or 18% of the historic mean of 181 cfs. This compares to an August 2002 mean of 20 cfs.

Outlook

The October – December National Weather Service outlook for the South Platte basin is for a virtual certainty of above average temperatures with equal chances of below or above average precipitation.







Basinwide Conditions Assessment

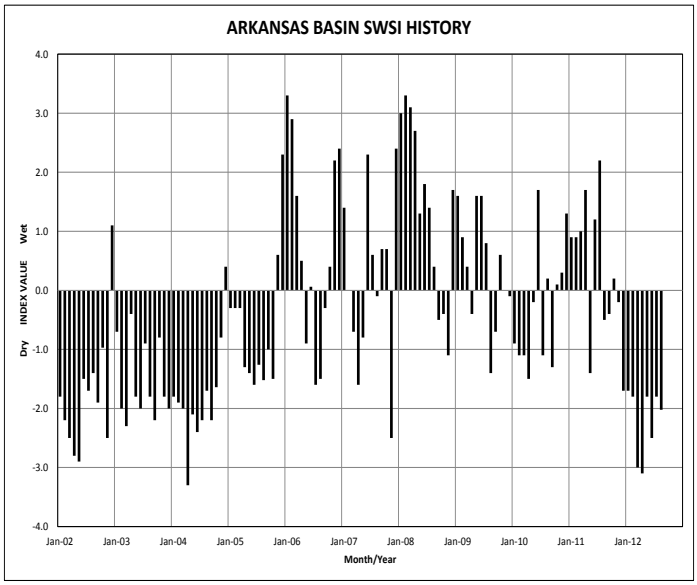
The SWSI value for the month was -2.0. Flow at the gaging station Arkansas River near Portland was 261 cfs, as compared to the long-term average of 917 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 76% of normal as of the end of August.

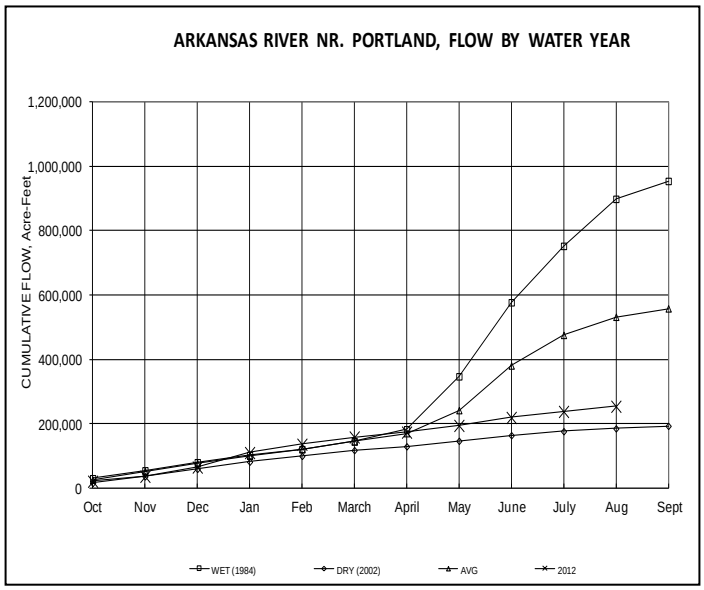
River calls during August ranged from a senior call of 5/15/1874 Rocky Ford to 12/3/1884 Catlin with the Rocky Ford Ditch call dominating for all but nine days of the month. Call conditions remained similar to the epic conditions that occurred in 2002.

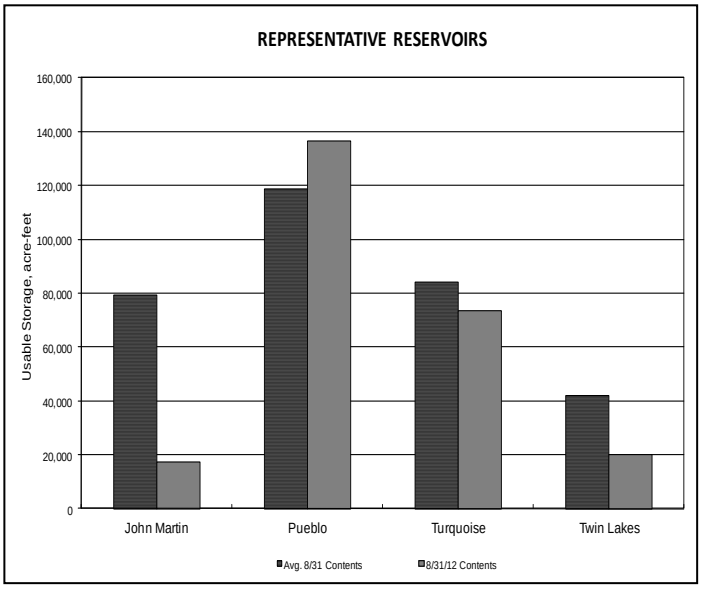
John Martin Reservoir levels fell to just under 17,410 acre-feet at the end of August. This level is not as low as at the end of August 2011 due to the fact that Kansas chose not to run any water this season and retained their stored water for use in 2013. This level is still strikingly low compared to John Martin's 346,000 acre-foot capacity for conservation storage. Pueblo Reservoir also reached a five year low level at 166,754 acre-feet of stored water.

Outlook and Administrative Concerns

Well augmentation groups are attempting to manage smaller replacement supplies than expected and will have to release most of their stored water by the end of the plan year in March 2013 if drought conditions persist.







Basinwide Conditions Assessment

The SWSI value for the month was -3.0. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 69% of normal as of the end of August.

Flow at the gaging station Rio Grande near Del Norte averaged 289 cfs (36% of normal). The Conejos River near Mogote had a mean flow of 115 cfs (56% of normal). Throughout the month, streamflow in the upper Rio Grande Basin continued to be generally one-third to one-half of historic averages. Not much relief came to the upper Rio Grande basin in the form of rainfall during August. The San Luis Valley continued to lag behind normal precipitation amounts, about one inch below average year-to-date. August was not quite the scorcher that June and July were, but temperatures still remained above normal.

Outlook

Barring a consistent deluge of rain, the call for water from area creeks and rivers should remain very senior until winter. The aquifers of the region are particularly stressed as nearly all irrigation water used in the area must come from wells.

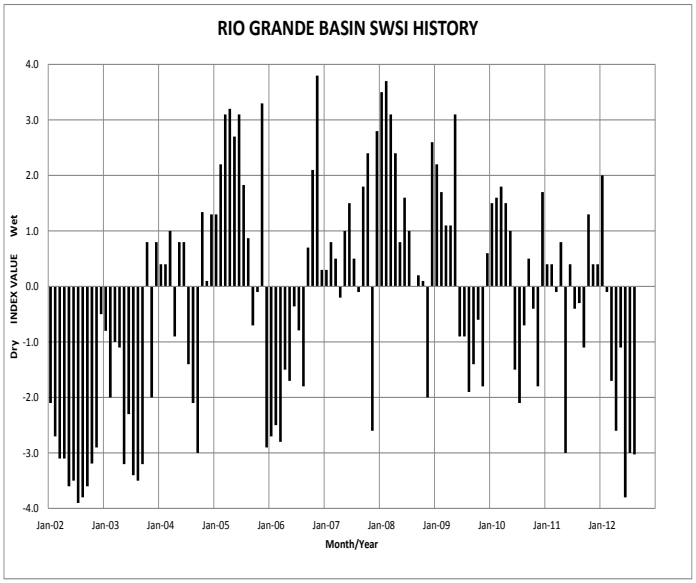
Administrative/Management Concerns

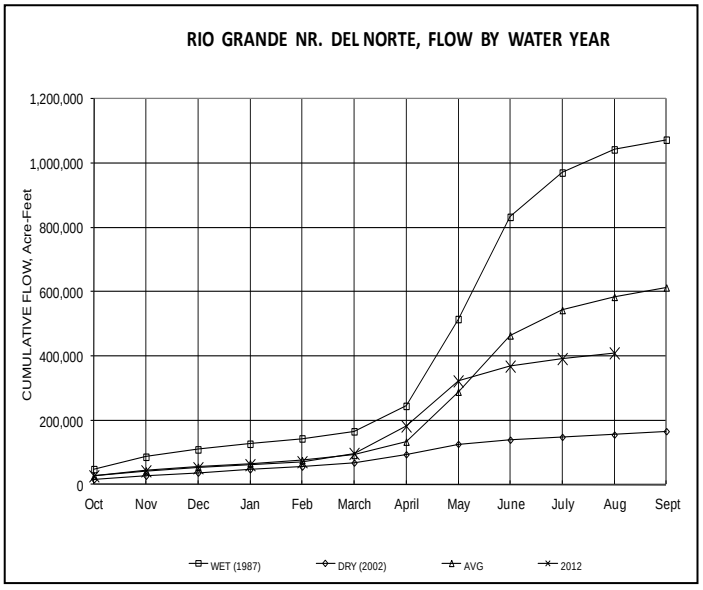
Aquifer monitoring by the Rio Grande Water Conservation District (RGWCD) and Davis Engineering Service revealed that water storage in the unconfined aquifer in a defined study area of the Closed Basin has now dropped nearly 1,300,000 acre-feet below the baseline established in 1976. This translates into approximately four years of groundwater withdrawals in that area.

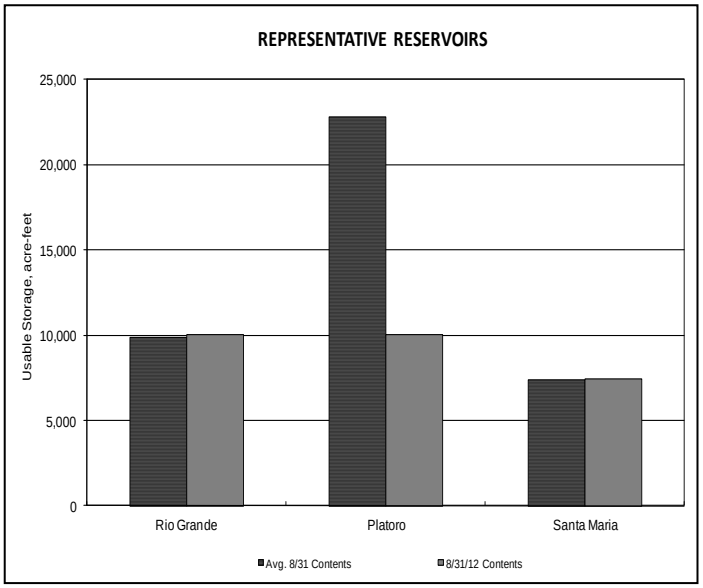
Monitoring compliance with the Rules and Regulations for Well Measurement in Water Division No. 3 is a critical task for Division employees these days. Accuracy of well production is essential for groundwater modeling efforts and fee calculation within Groundwater Management Subdistrict No. 1 of the RGWCD. Hundreds of flowmeters were re-calibrated this summer as the four-year cycle is coming back around on those meters installed in 2008.

Public Use Impacts

Late summer and fall harvest is in full swing in the San Luis Valley. Weather conditions have had little impact on the actual harvest, but have had a major impact on crop irrigation and yield. Only the senior-most surface water rights have been in priority the past two months. Reservoir storage is now severely depleted. For those farms and ranches with senior rights and/or well water, it could be a very good economic year. But it will be a very disappointing year for those who rely on runoff and rainfall.







Basinwide Conditions Assessment

The SWSI value for the month was -3.5, the lowest in the state. Flow at the gaging station Uncompahgre River near Ridgeway was 74 cfs, as compared to the long-term average of 164 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 65% of normal as of the end of August.

Gunnison basin precipitation in the month of August was near average at 95 percent of normal, which helped improve high country feed conditions and boosted streamflows, but not for any extended period of time. The dry soil moisture conditions in many areas prevented significant increases to streamflows.

Outlook

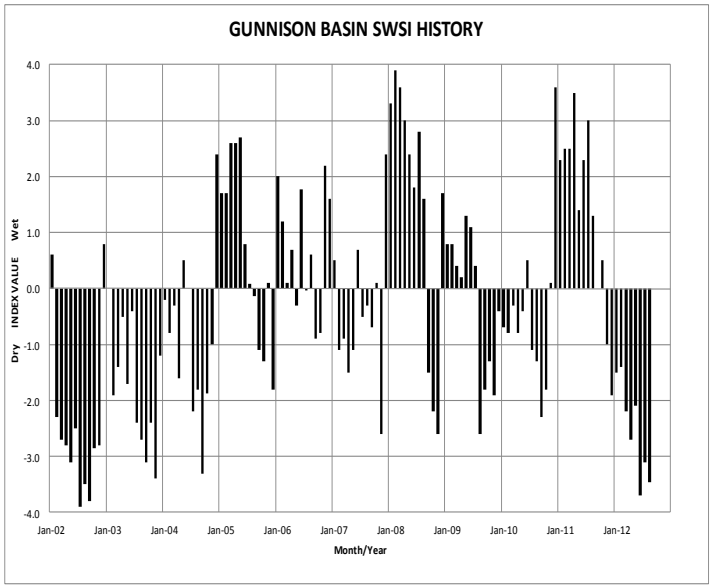
Forecasts for precipitation during the next 30 to 90 days are showing equal chances of below or above average with a temperature forecast of warmer than normal.

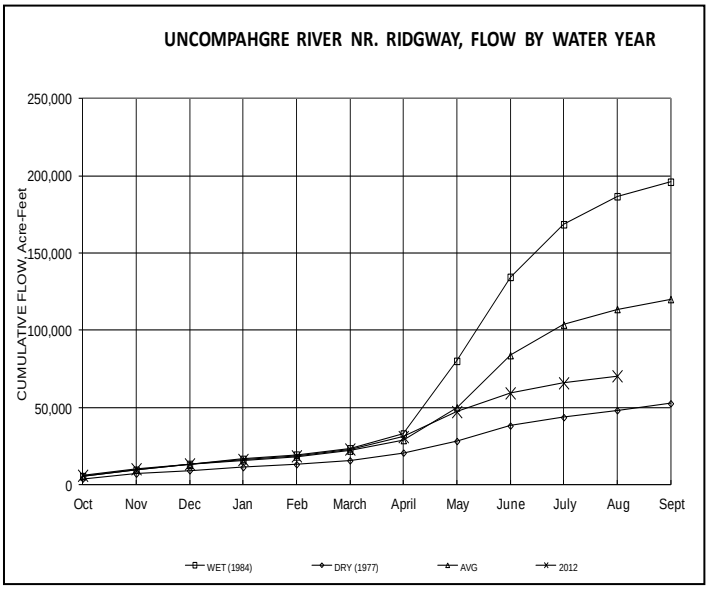
Administrative/Management Concerns

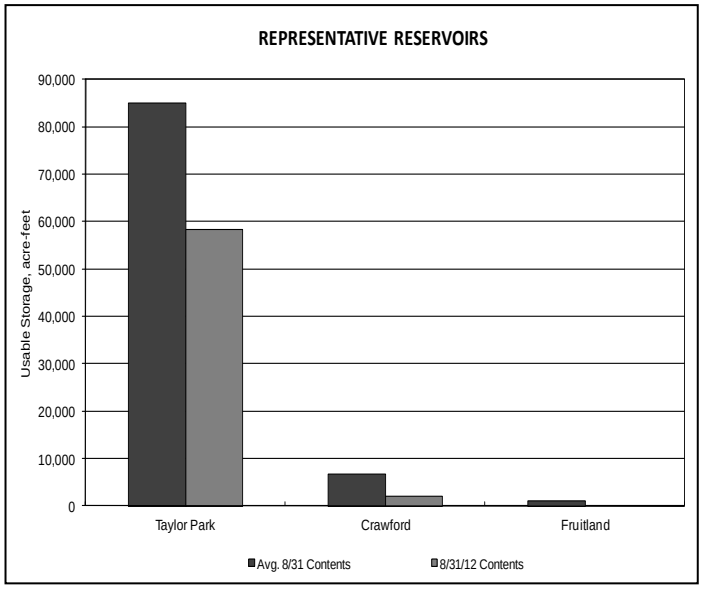
Unfortunately, many streams near the end of August and into early September, especially in the Upper Gunnison area, are at record low flows for long periods of record. For example, during the past 85 years of record the lowest flow recorded at the Gunnison River in Gunnison gage on September 15th was 167 cfs in 2002. That is until this year when the flow on September 15th was 110 cfs. For reference, the mean for the same date is over 500 cfs.

Reservoir storage has dropped significantly in most areas of the basin with water levels similar to 2002. On the Grand Mesa, many of the drainages will end the season with 20 to 25 percent of storage remaining. The Uncompahgre Valley Water Users Association (UVWUA) use of Ridgway helped prolong the second fill in Taylor Park until August 20th. However, as of September 11th they have exhausted their irrigation credits in Ridgway and now the Gunnison Tunnel is using Taylor Park first fill storage to the tune of up to 800 cfs per day. The UVWUA is using additional measures to preserve storage, including turning their canals off two weeks early on October 15th.

The USBR projections for end of October storage content in Blue Mesa have improved, but are still low at 317,000 acre-feet (33 percent of capacity) because of higher September through November releases needed to meet the 890 cfs endangered fish flow target specified in the Aspinall Unit Operations Record of Decision. Coordinated operations by the USBR this year have continued to prevent flows from dropping below the flow target for more than a few days and have continued to prevent the Redlands Power Canal from placing a call. Even with an average snowpack, Blue Mesa will not fill in 2013 due to the low amount of storage that will remain at the end of 2012.







Basinwide Conditions Assessment

The SWSI value for the month was -2.5. Flow at the gaging station Colorado River near Dotsero was 1,371 cfs, as compared to the long-term average of 1,790 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 72% of normal as of the end of August.

Outlook

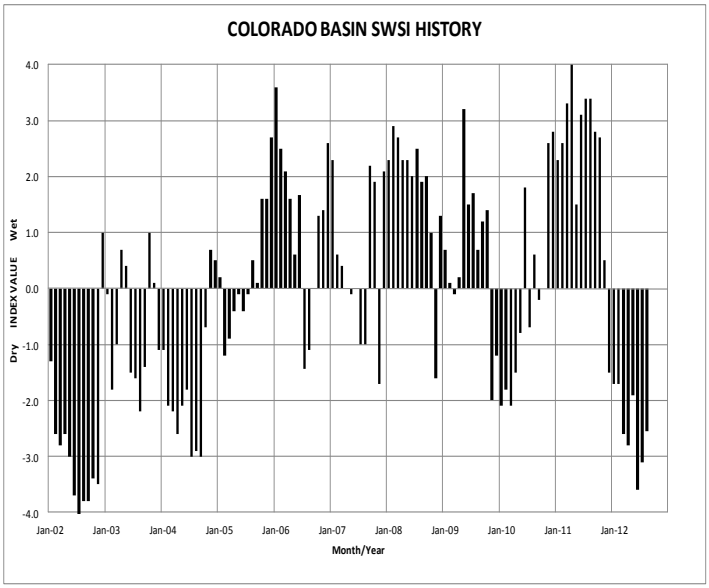
Colorado and Roaring Fork River below average flows will continue through September with small duration increases associated with monsoonal precipitation. The Grand Valley Water Users 730 right continues to drive upper Colorado River flows with the entire basin called out junior to an appropriation date of 2-27-1908. The western Colorado precipitation forecast through the month of September varies from average in the southwest to below average in the northwest.

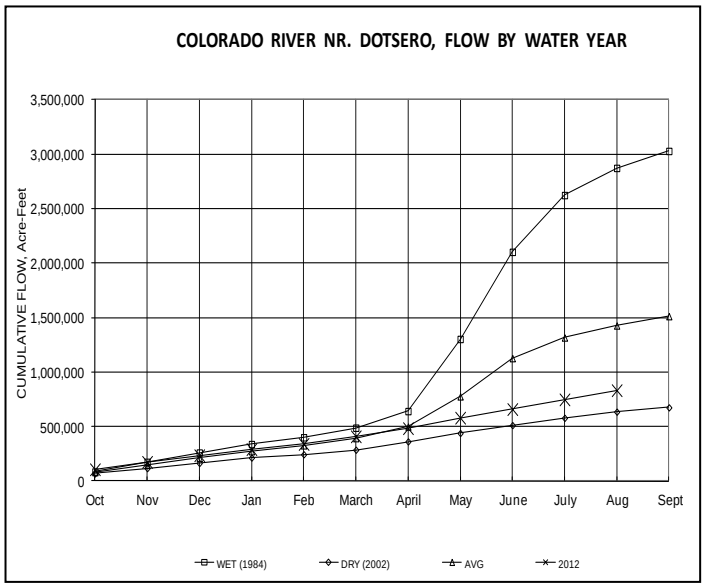
Administrative/Management Concerns

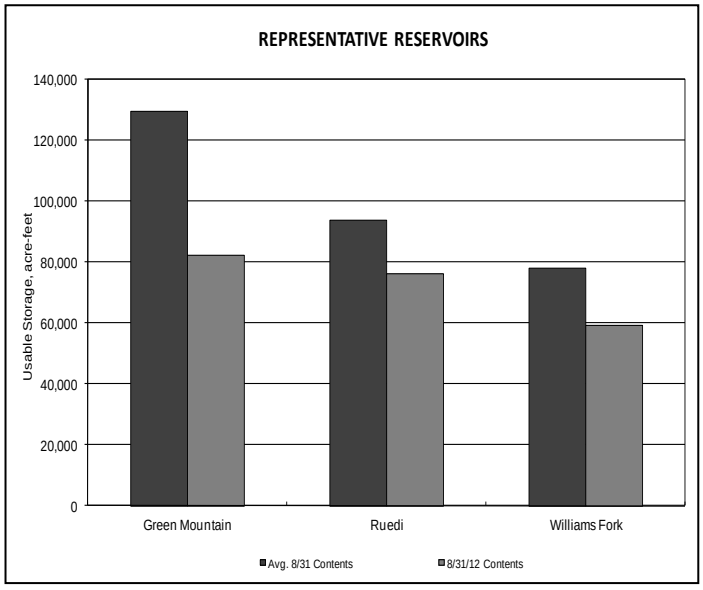
Green Mountain Reservoir will continue making direct releases to the Grand Valley Irrigation Company's (GVIC) 119 cfs right (HUP), bypassing all inflow, making contract releases, and replacing Silt Water Project out of priority depletions. Additional direct HUP releases will be made according to changes in Colorado River flow associated with intermittent precipitation. Green Mountain Reservoir releases will also decrease temporarily for power plant maintenance operations. Shoshone Power plant will maintain a reduced diversion amount due to problems associated with spauled concrete. Williams Fork and Wolford Mountain Reservoirs will continue releases for endangered fish support and substitution releases for Green Mountain Reservoir. Over half of the Ruedi Reservoir release order (175 cfs) is also for endangered fish support, with the remainder comprised of inflow bypass, evaporation, and contract releases. Minor reservoir release adjustments will also continue dependent upon intermittent river/reservoir surplus accounts and monsoonal precipitation.

Public Use Impacts

A high-flow release from Glen Canyon Dam will likely occur later this fall (November) in accordance with two long-term research and experimental programs of high-flow releases. The first will help determine the effect of high-flow releases simulating natural flood conditions on conservation/rebuilding of sandbars, beaches and backwater habitats. The second program involves actions and research to control non-native fish, in hopes of reducing competition and bolstering protection of endangered native fish such as the humpback chub.



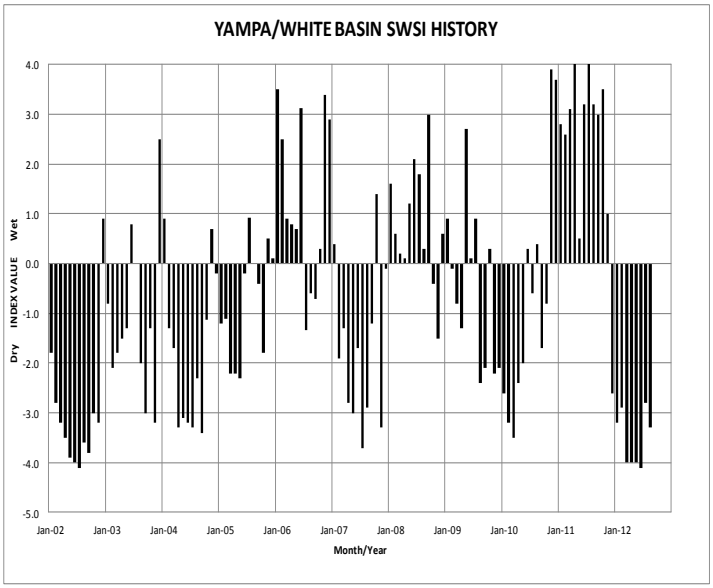




Basinwide Conditions Assessment

The SWSI value for the month was -3.3. Flow at the gaging station Yampa River at Steamboat was 97 cfs, as compared to the long-term average of 153 cfs.

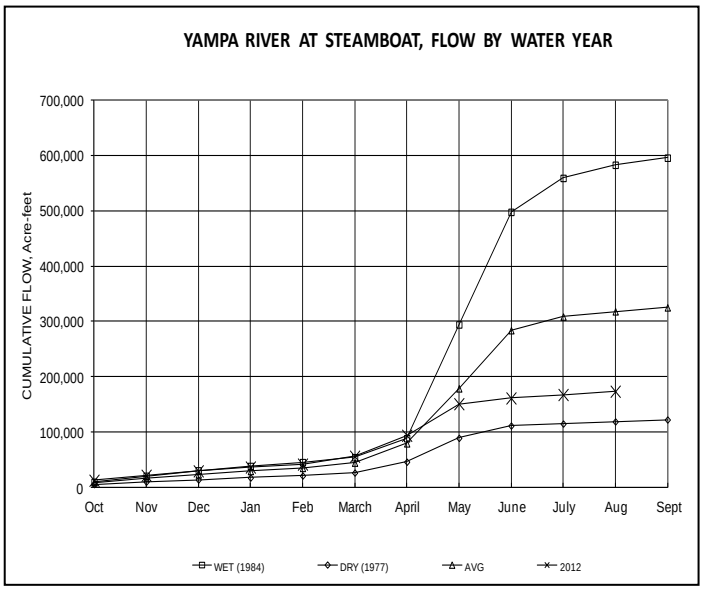
August precipitation was well below average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by NRCS, was reported at 54% of average for the Yampa, White, and North Platte River basins. Total precipitation for the water year as a percent of average to date in the combined basins at the end of August was 68%. Streamflows in the Yampa, White, and North Platte River basins remain below average at this time and most of the Division 6 area is experiencing severe drought conditions as classified by the US Drought Monitor.



Outlook

As of August 31st, Fish Creek Reservoir was storing approximately 3,013 AF, 72% of capacity. Daily data is currently unavailable at Yamcolo Reservoir due to broken monitoring equipment at the gate house. The Water Commissioner for Water District 58 reported Yamcolo Reservoir was storing 2,700 AF at the end of August 2012. That represents 30% of Yamcolo's capacity. On August 31st, Elkhead Creek Reservoir was storing 19,415 AF, 79% of capacity. At the same time, Stagecoach Reservoir was storing 30,514 AF, 91% of capacity.

Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Elkhead Creek Reservoir for municipal, industrial, recreational, and fish recovery releases. Stagecoach Reservoir is primarily used for recreation though a significant amount of stored water is allocated for municipal, industrial, irrigation and augmentation uses. However, water is rarely released for those purposes.



Public Use Impacts

At Stagecoach Reservoir, trout and pike fishing will continue to improve with the cooling water temperatures. The Morrison Cove boat ramp is closed for the season. Fall colors are nearing peak around the park.

Steamboat Lake is reporting strong fishing at Rainbow Ridge, Meadow Point, and the dam. The swim beach is closed for the season. The majority of aspens in the park are changing color and will peak soon.

Fire restrictions have been lifted in Routt County. However Moffat and Rio Blanco Counties continue to have Stage 1 fire restrictions in place.

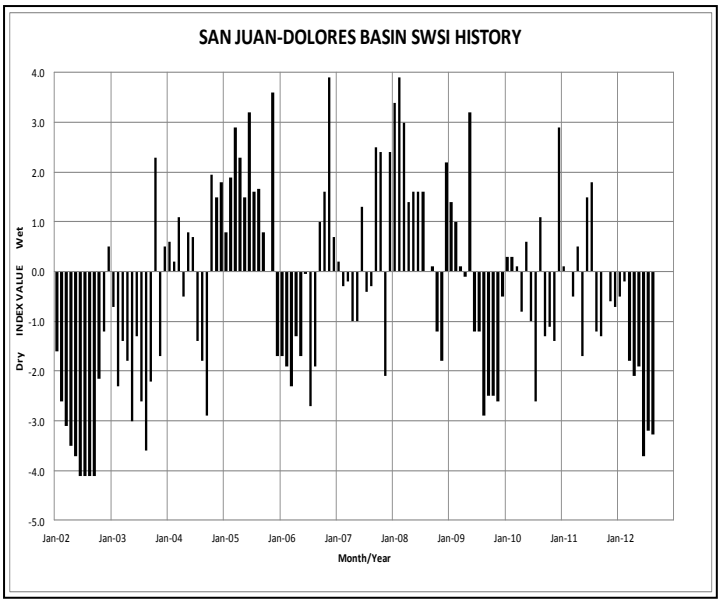
Commercial tubing on the Yampa River through Steamboat Springs remained open for most of August with continued releases by upstream reservoirs helping to sustain flows greater than 85 cfs.

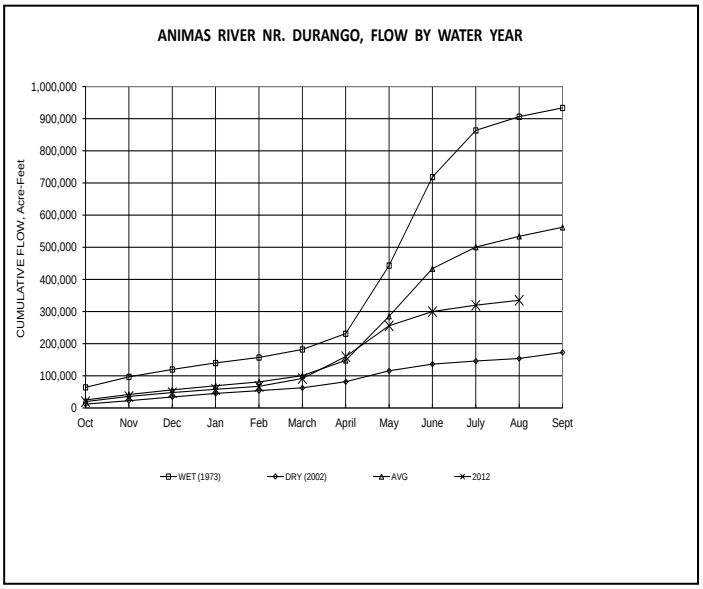
Basinwide Conditions Assessment

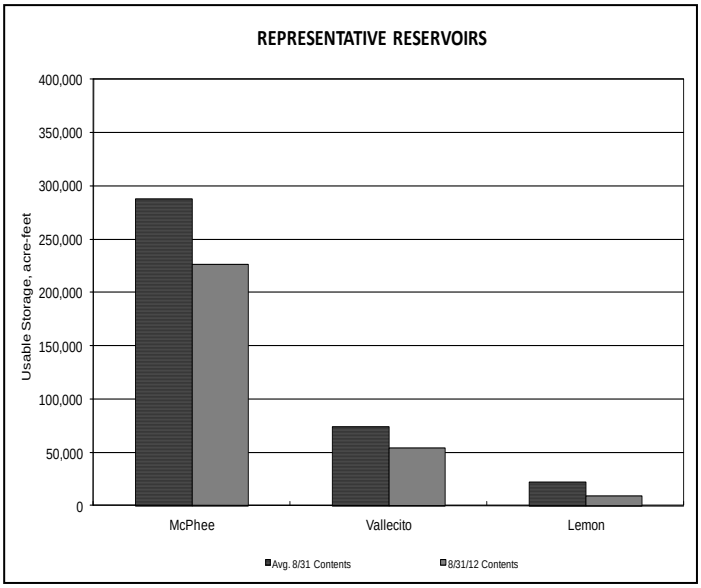
The SWSI value for the month was -3.3. Flow at the Animas River at Durango averaged 261 cfs (45% of average). The flow at the Dolores River at Dolores averaged 115 cfs (47% of average). The La Plata River at Hesperus averaged 7.6 cfs (33% of average).

Precipitation in Durango was 0.80 inches for the month, 29% of the 30-year average of 2.71 inches. Precipitation to date in Durango, for the water year, is 14.47 inches, 82% of the 30-year average of 17.57 inches. The average high and low temperatures for the month of August in Durango were 83º and 55º. In comparison, the 30-year average high and low for the month are 84º and 52º. At the end of the month Vallecito Reservoir contained 54,190 acre-feet compared to its average content of 70,761 acre-feet (77% of average). McPhee Reservoir was up to 226,285 acre-feet compared to its average content of 293,866 (77% of average), while Lemon Reservoir was up to 8,840 acre-feet as compared to its average content of 22,088 acre-feet (40% of average).

Precipitation (0.80-inches) was well below average for August in Durango. There are 110 years out of 118 years of record where there was more precipitation than this year. The flows on the Dolores River at Dolores were better than expected but only because releases from Groundhog Reservoir kept the flows higher. There are 94 years out of 101 years of record where there was more at flow at the Animas River at Durango gage than this year.







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