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

October 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 September (October 1) range from a high value of +1.0 in the South Platte Basin to a low value of -3.2 in both the Gunnison and San Juan/Dolores basins. All of the basins except San Juan/Dolores showed an improvement in conditions from the previous month. Precipitation was above normal in all basins except San Juan/Dolores and Colorado.

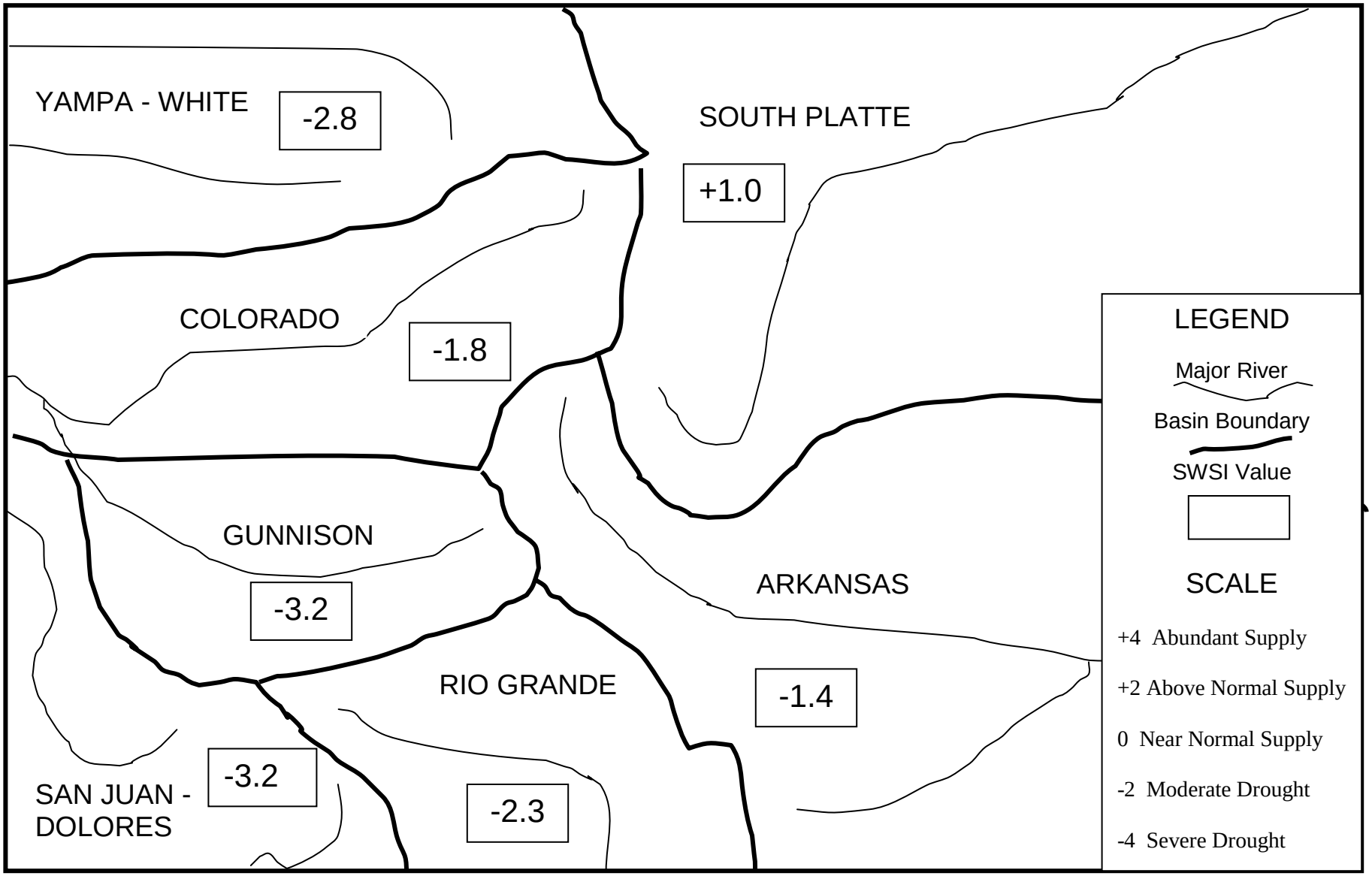
The following SWSI values were computed for each of the seven major basins for October 1, 2012, and reflect the conditions during the month of September.

Basin	October 1, 2012 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	1.0	1.3	-2.5
Arkansas	-1.4	0.6	-1.0
Rio Grande	-2.3	0.7	-1.2
Gunnison	-3.2	0.3	-3.2
Colorado	-1.8	0.8	-4.6
Yampa/White	-2.8	0.5	-5.8
San Juan/Dolores	-3.2	0.0	-1.9

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



October 1, 2012

Basinwide Conditions Assessment

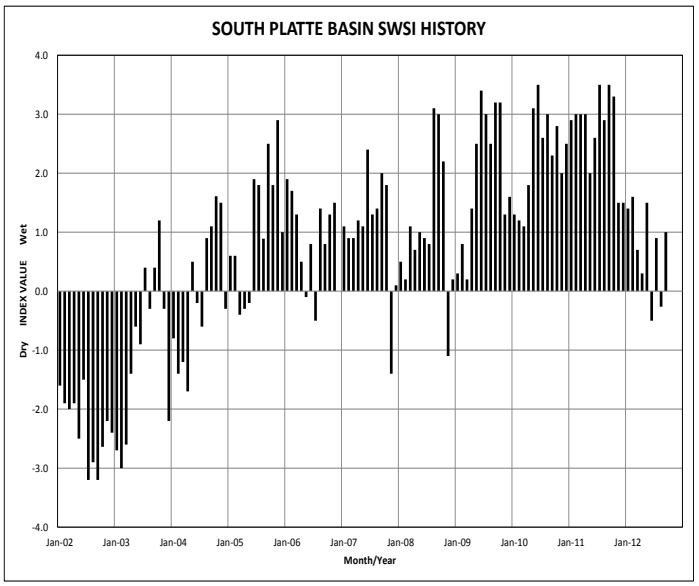
The SWSI value for the month was +1.0. Reservoir storage in Dillon, Horsetooth, Eleven Mile, Cheesman, Jackson, and Barr Lake, the major component in computing the SWSI value, was 85% of normal as of the end of September. Cumulative storage in the major plains reservoirs (Julesburg, North Sterling, and Prewitt) is at 9% of capacity. Cumulative storage in the major upper-basin reservoirs (Cheesman, Eleven Mile, Spinney, and Antero) is at 82% of capacity.

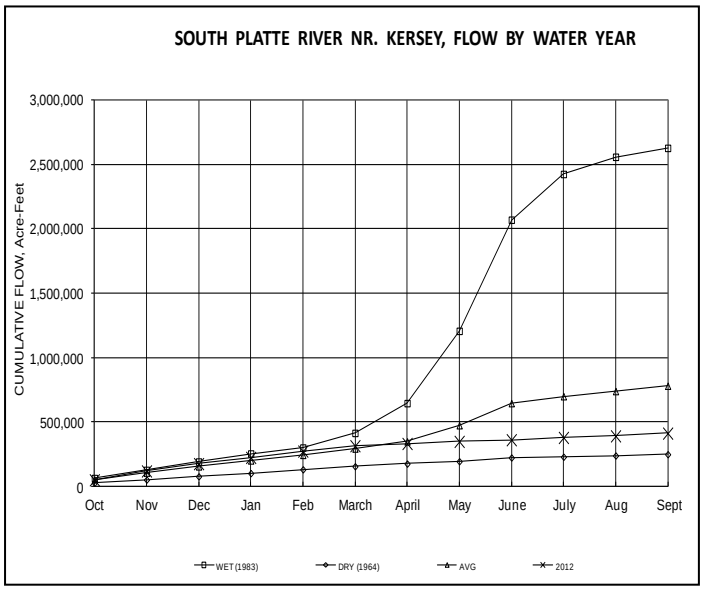
The extremely dry conditions in the South Platte basin moderated somewhat in September with two almost basin wide events. While these events were not nearly large enough to abate the overall dry conditions, they did provide a tremendous boost to the prospects of the dry-land winter wheat crop. The precipitation events also moved the river calls from very senior to only somewhat more senior than normal for September. However, the overall dry conditions for the 2012 growing season have severely depleted reservoir storage in the basin with many irrigation reservoirs at or near dead pool.

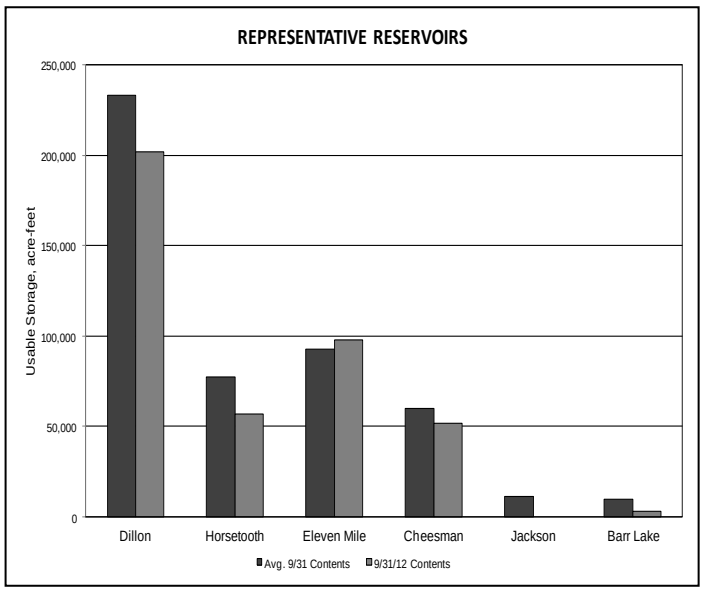
The September stream flows at both the Kersey and Julesburg index gages remained below average. The monthly mean stream flow at the Kersey gage in September was 365 cfs or 71% of the historic mean of 517 cfs. This compares to a September 2002 mean of 143 cfs. The Julesburg gage monthly mean stream flow value for September was 46 cfs or 19% of the historic mean of 239 cfs. This compares to a September 2002 mean of 13 cfs.

Outlook

The November – January 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.







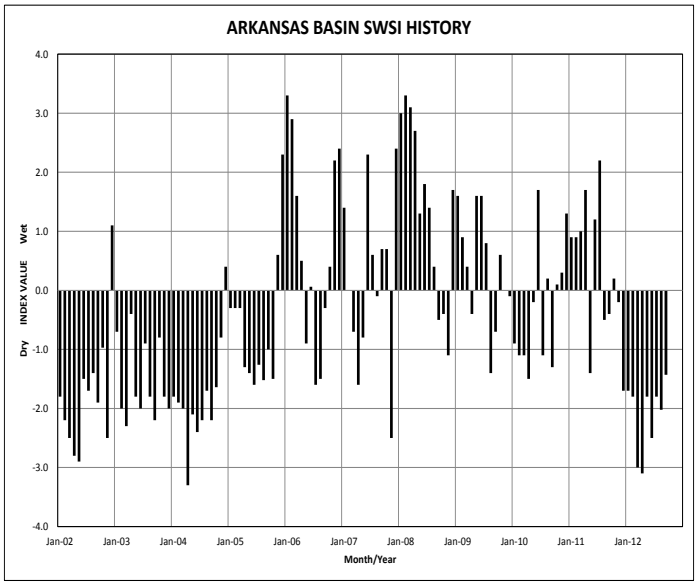
Basinwide Conditions Assessment

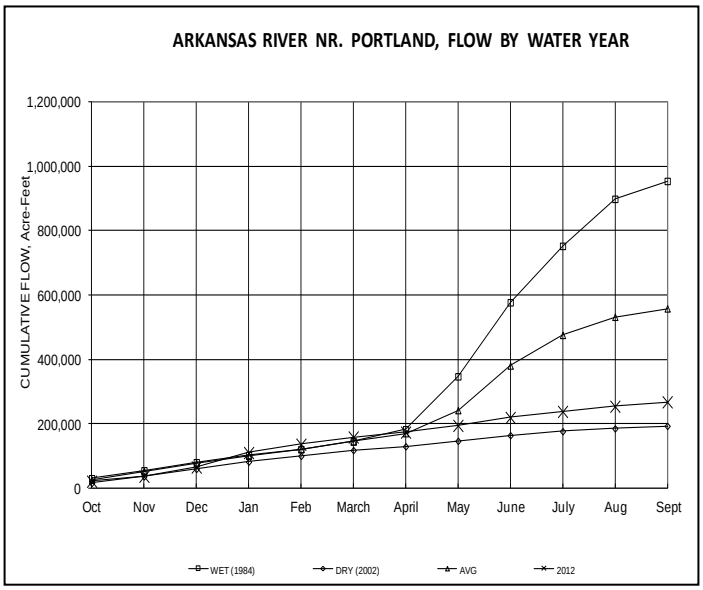
The SWSI value for the month was -1.4. Although flows were very low, strong precipitation and reservoir storage moderated this month's SWSI. Flow at the gaging station Arkansas River near Portland was 231 cfs, as compared to the long-term average of 439 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 75% of the long term average as of the end of September.

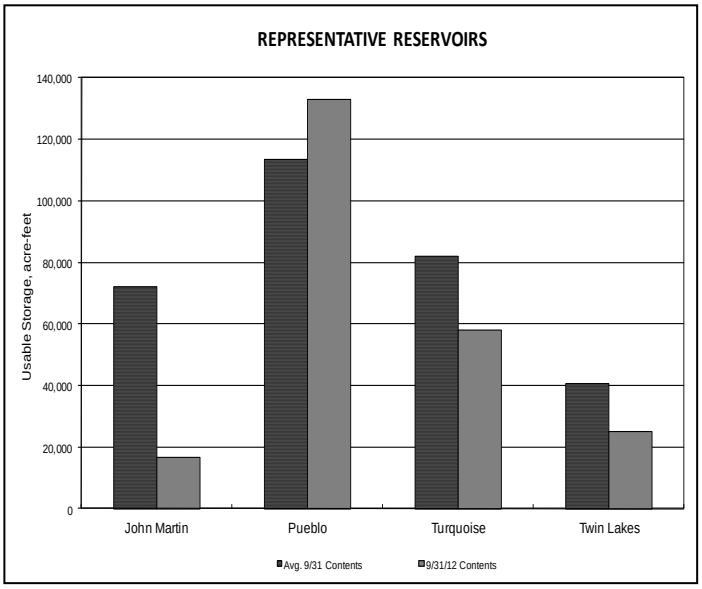
The Arkansas River call remained stubbornly senior despite a number of small rain events in September that brought some needed relief. A very senior Rocky Ford Ditch call (5-15-1874) dominated all but a half dozen days in September with a few days of Bessemer Ditch (3-31-1882) call providing the only relief. The recent call regime has meant that a number of the large ditches below Pueblo Reservoir have been unable to divert and also has impacted senior water rights in the upper part of the basin that tend to enjoy no period of call from downstream during most years.

Outlook and Administrative Concerns

Ground water use has provided an important hedge to the drought for many farmers. The major well association plans will end the irrigation season extended significantly on replacement sources. Coupled with the announcement by Pueblo Board of Water Works that they likely will not have water to lease on the short-term market in 2013, the outlook is unfavorable for the well associations to be able to operate their plans at anywhere near average levels in 2013-14 absent a significant change in precipitation pattern.







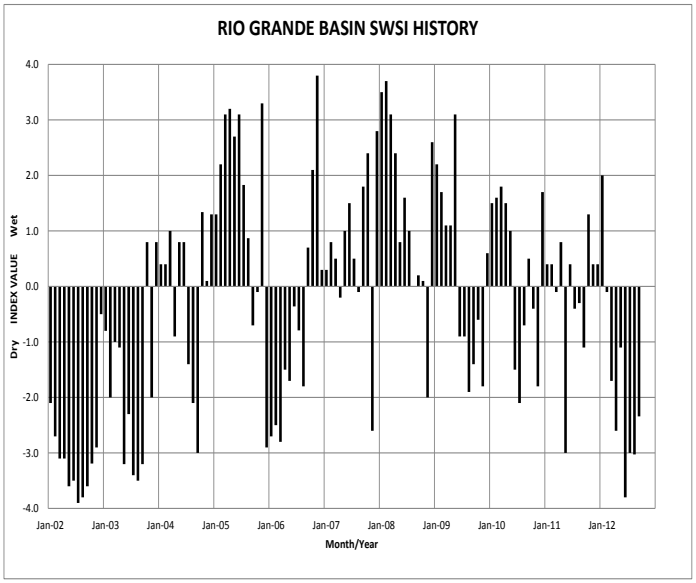
Basinwide Conditions Assessment

The SWSI value for the month was -2.3. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 63% of the long term average as of the end of September.

Flow at the gaging station Rio Grande near Del Norte averaged 252 cfs (48% of normal). The Conejos River near Mogote had a mean flow of 71 cfs (56% of normal). Generally, stream flow in the Upper Rio Grande basin was between 40% and 70% of normal levels during September.

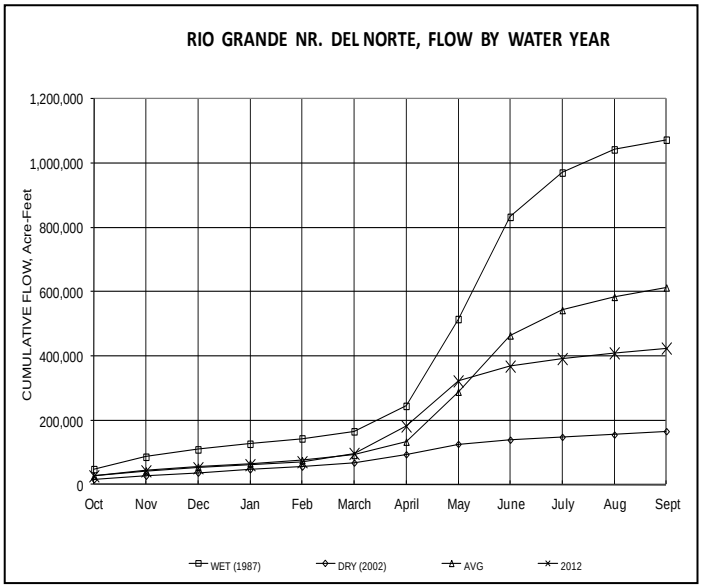
Temperatures in the basin have been above normal all year. September was the month with closest to normal temperature, with a deviation of only 0.3 degrees above normal.

Precipitation in the basin has been generally below normal all year until a much-needed event on September 12 brought nearly an inch of rainfall to the parched Valley.



Outlook

Streams in the upper Rio Grande basin will experience below normal flows this fall. The hydrographs for area streams are closely following those of the 1996 and 2000 seasons, two drought years with characteristics similar to this year. After the majority of the snowmelt went out in early June this year, only small rain peak events have occurred. The call remains very senior on all creeks and rivers in the Division.

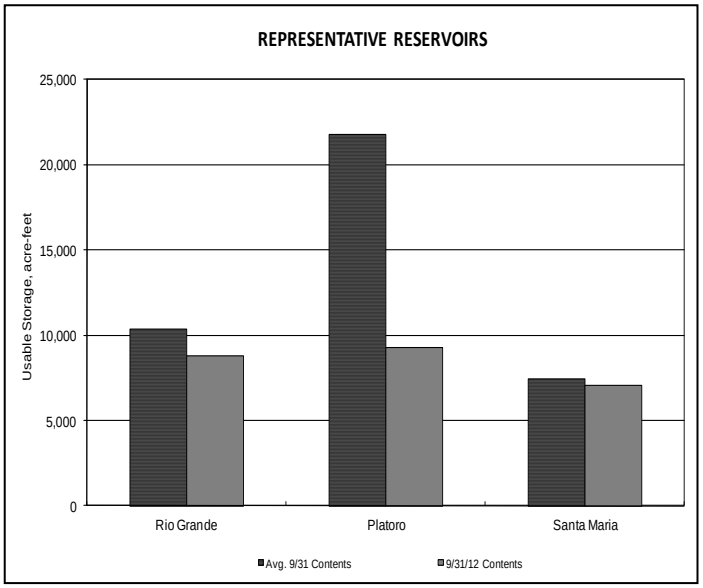


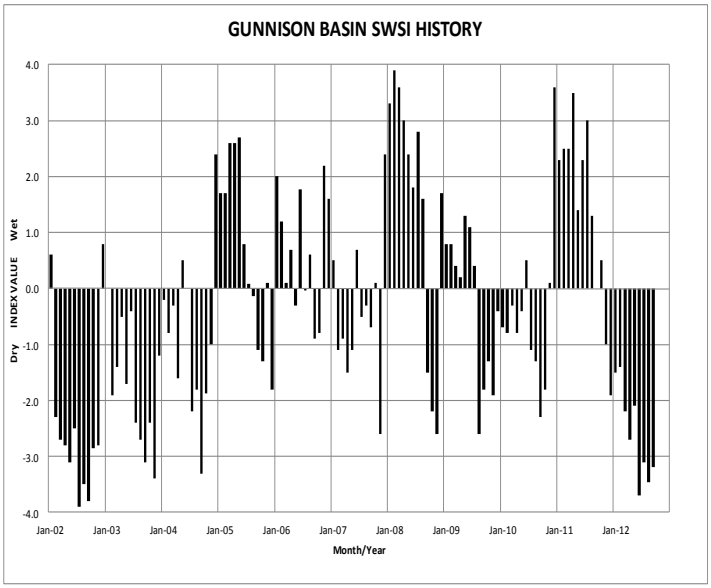
Administrative/Management Concerns

Colorado will meet its delivery obligation to New Mexico and Texas under the Rio Grande Compact. Administrators are hoping that a mild fall will allow water diversions to continue for irrigation purposes.

Public Use Impacts

Crop harvest wound down as September came to an end. Harvest was good in areas where well water was available to offset the greatly diminished ditch and reservoir water. As the irrigation season draws to a close, area reservoirs are at very poor storage levels.





Basinwide Conditions Assessment

The SWSI value for the month was -3.2. Flow at the gaging station Uncompahgre River near Ridgeway was 80 cfs, as compared to the long-term average of 108 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 71% of the long term average as of the end of September.

Unfortunately dry conditions returned to the Gunnison basin in September with the lower basin receiving only 50 to 69 percent of average precipitation and the upper basin receiving 70 to 89 percent of average. Resulting flows were at historic lows in many locations as of the end of the September.

Outlook

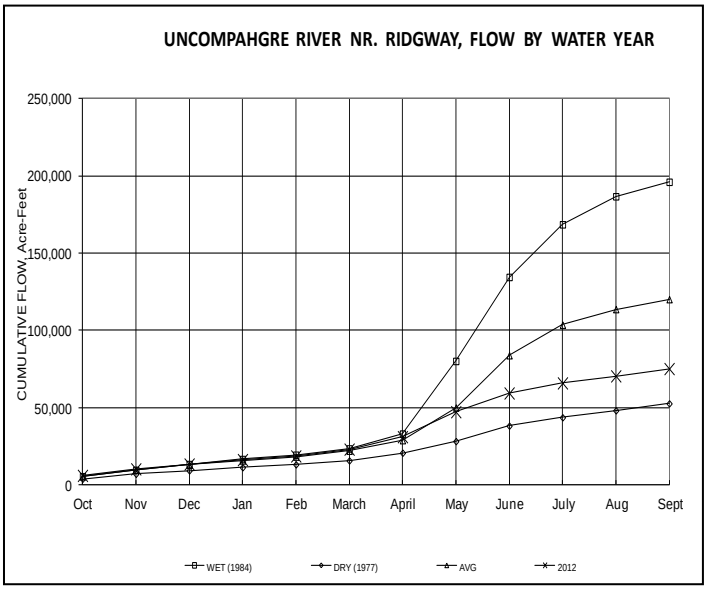
Precipitation forecasts for the next 30 to 90 days show equal chances of below or above average conditions, while temperatures are forecast to be warmer than normal.

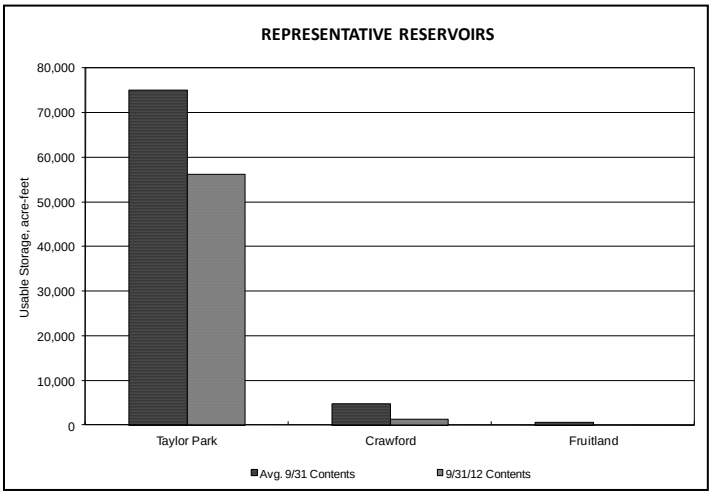
Administrative/Management Concerns

Many streams remained at record lows through September, especially in the Upper Gunnison area. The Gunnison River in Gunnison gage almost set a new all time record low at 82 cfs (record low is 80 cfs in December). The previous minimum for that date in the 85 years of record was 181 cfs in 2002. This is mainly due to extremely dry conditions above this gage, but is also partly attributed to continued diversions by upstream senior irrigators attempting to raise the soil moisture and produce pasture grass before winter.

It appears the Grand Mesa reservoirs will end the season with 18 percent of storage capacity remaining. The Uncompahgre Valley Water Users (UVWUA) use of Ridgway and reduction in diversions at the Gunnison Tunnel significantly reduced the amount of water used from Taylor Park. In fact, it appears that Taylor Park's first fill account will contain at least twice what it did on November 1st of 2002. The UVWUA is also going to shut down irrigation diversions at the Gunnison Tunnel two and a half weeks early (October 15th) to further preserve Taylor Park storage for 2013.

Blue Mesa currently sits at 327,000 acre-feet, which is 34 percent of capacity. Throughout September, Bureau of Reclamation operations at Crystal provided enough water to meet the 890 cfs endangered fish flow target specified in the Aspinall Unit Operations Record of Decision (ROD). The target base flow drops to 790 cfs in October and November and 750 cfs in December. A storm at the end of September provided enough runoff that the Bureau reduced releases at Crystal Dam and still met these target flows, thus saving some storage in the Unit. Discussions between the Redlands Power Canal and other affected parties in the basin may occur in the coming months in the interest of finding a creative way to reduce the target base flow at Whitewater in dry years like 2012 in order to save additional storage in the Aspinall Unit. In 2002, the Colorado River Water Conservation District (CRWCD) paid Redlands for their lost power revenue to prevent a call of the entire Gunnison River basin. This reduced the diversions at their headgate because the discharge required to run their turbines and generate power are much greater than their irrigation diversions. A similar agreement could reduce the amount required at their headgate, possibly reducing Aspinall Unit releases in dry years. Since 2002, however, other complicating operational considerations, such as the ROD, have entered into the picture.





Basinwide Conditions Assessment

The SWSI value for the month was -1.8. Flow at the gaging station Colorado River near Dotsero was 1,124 cfs, as compared to the long-term average of 1,439 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 69% of normal as of the end of September.

Outlook

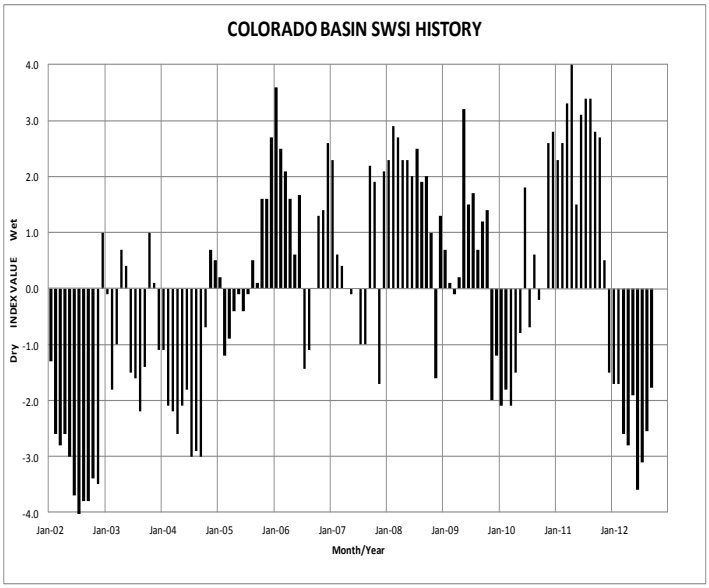
Colorado River below average flows will continue through October with significantly more pronounced below average flows for the Roaring Fork River given significant reductions in Ruedi Reservoir releases. The Grand Valley Water Users 730 right continues to drive upper Colorado River flows with the entire basin called out junior to an appropriation date of 2-27-1908. The western Colorado forecast through the month of October calls for below average precipitation.

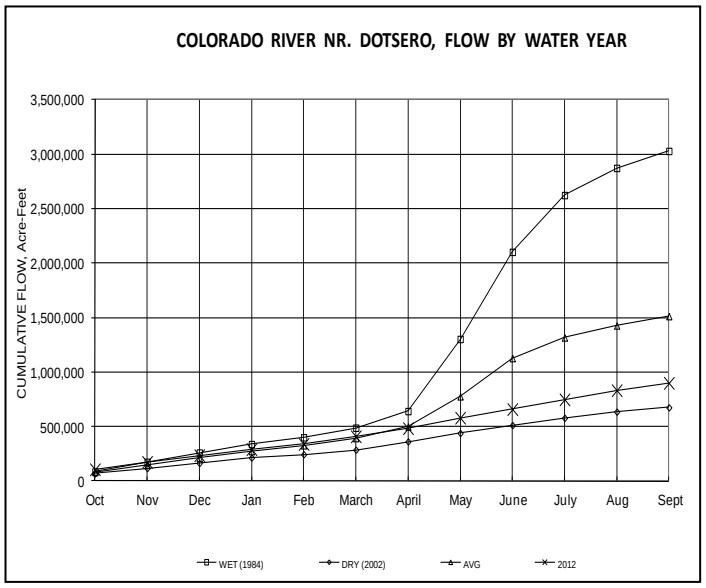
Administrative/Management Concerns

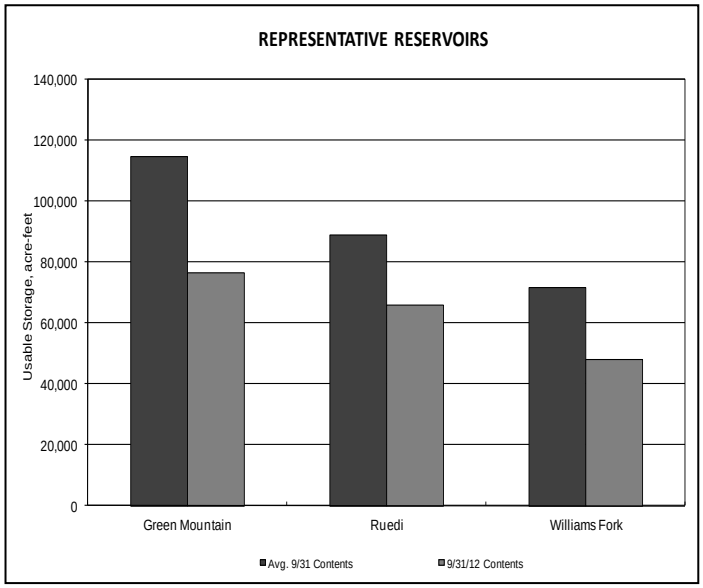
Direct releases from Green Mountain Reservoir to the Grand Valley Irrigation Company's (GVIC) junior 119 cfs right (HUP) will end in late October, leaving approx. 9,500 ac-ft. remaining in the Historic Users Pool. Green Mountain releases for Silt Water Project out of priority depletions releases ended in early October. Increasing Green Mountain Reservoir releases as substitution for decreasing Williams Fork and Wolford Mountain releases have been offset by declining C-BT depletions. Shoshone Power plant is, and will remain shut down through October. Endangered fish support releases from Williams Fork and Ruedi Reservoirs ended on September 14th, and October 3rd respectively. Green Mountain Reservoir is contributing 50 cfs, but as a re-classification of an owed to river account. Releases from Upper Blue Reservoir began October 7th for compensation to Green Mountain Reservoir for out-of-priority storage and Breckenridge snow-making beginning mid-October.

Public Use Impacts

Fishing on the lower Fryingpan and Roaring Fork Rivers remain good despite significant flow reductions. The lower flows increase accessibility and improve fly fishing with more abundant pockets of water.

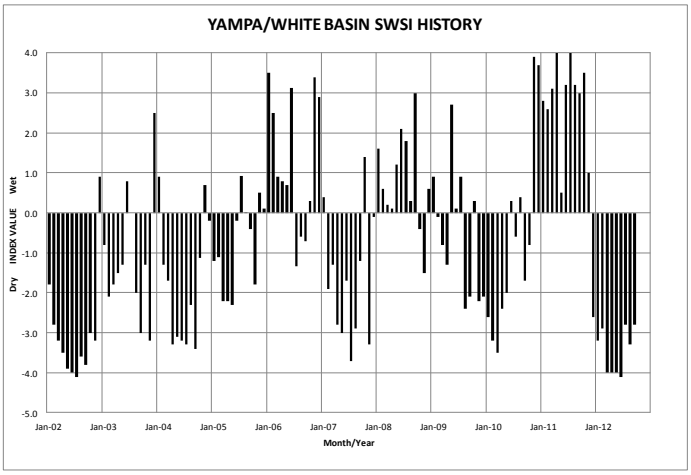




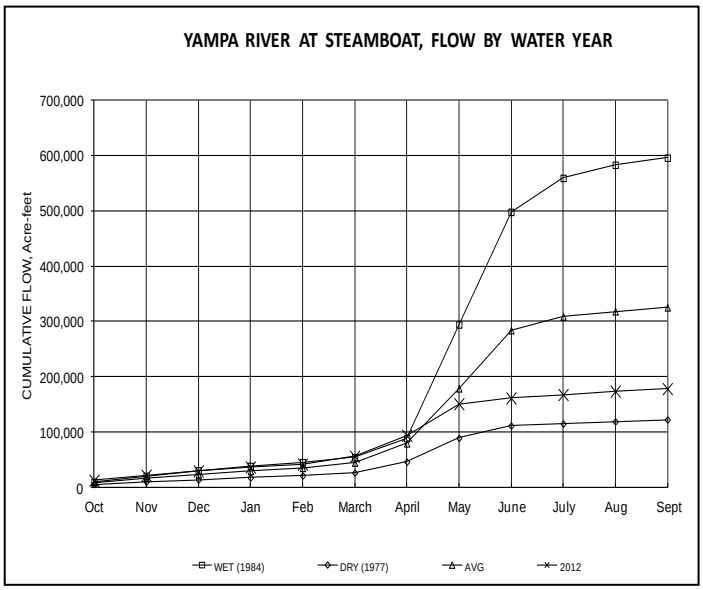


Basinwide Conditions Assessment

The SWSI value for the month was -2.8. Flow at the gaging station Yampa River at Steamboat was 79 cfs, as compared to the long-term average of 120 cfs.



September 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 52% 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 September remained at 68%. Streamflows in the Yampa, White, and North Platte River basins remained well below average for September and most of the Division 6 area is experiencing severe to extreme drought conditions as classified by the US Drought Monitor.



Outlook

As of September 30th Fish Creek Reservoir was storing approximately 2,450 AF, 59% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF. Daily data from September was 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 2,805 AF at the end of September, 31% of Yamcolo's capacity. On September 30th, Elkhead Creek Reservoir was storing 15,881 AF, 64% of capacity. On September 30th, Stagecoach Reservoir was storing 28,900 AF, 86% 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, although 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

Fishing at Stagecoach Reservoir is reported as very good with tailwater fishing particularly good. The reservoir will remain open for boating through October 31st.

Steamboat Lake is reporting good fishing at Rainbow Ridge, Meadow Point, and the dam. Boating is still open, weather permitting.

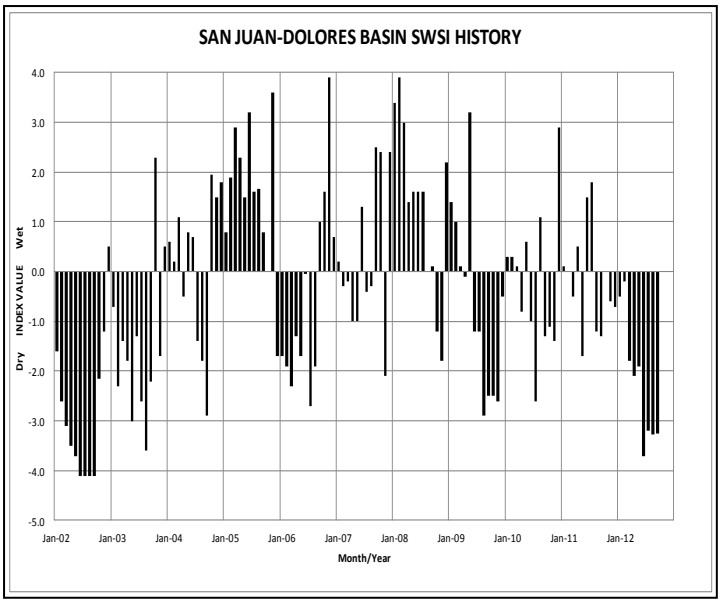
Fire restrictions have been lifted in Rio Blanco County. Moffat County continues to have Stage 1 fire restrictions in place with fire danger classified as high.

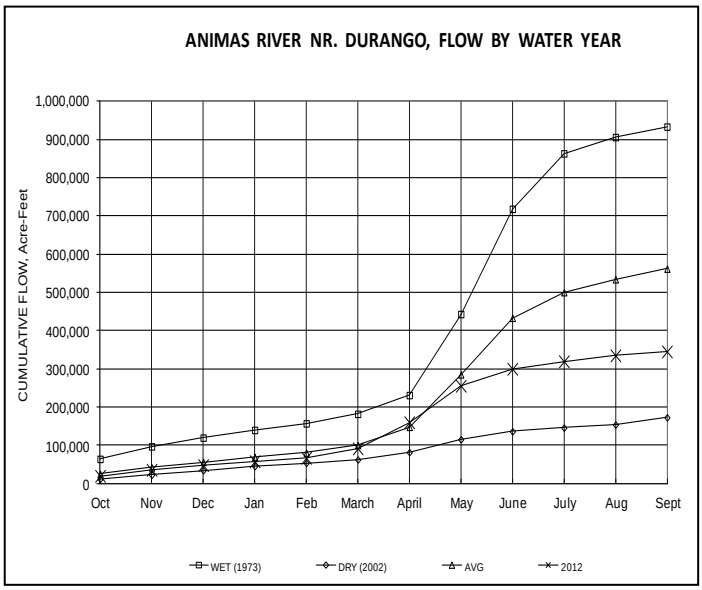
Basinwide Conditions Assessment

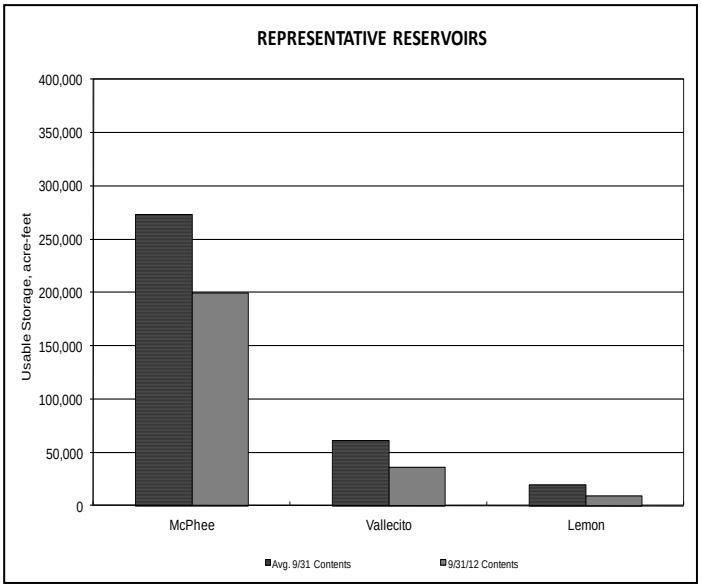
The SWSI value for the month was -3.2. Flow at the Animas River at Durango averaged 170 cfs (37% of average). The flow at the Dolores River at Dolores averaged 65 cfs (36% of average). The La Plata River at Hesperus averaged 6.2 cfs (31% of average).

Precipitation in Durango was 0.58 inches for the month, 25% of the 30-year average of 1.94 inches. Precipitation to date in Durango, for the water year, is 15.05 inches, 77% of the 30-year average of 19.51 inches. The average high and low temperatures for the month of September in Durango were 78^{o} and 47^{o}. In comparison, the 30-year average high and low for the month is 76^{o} and 44^{o}. At the end of the month Vallecito Reservoir contained 35,770 acre-feet compared to its average content of 57,751 acre-feet (62% of average). McPhee Reservoir was up to 199,943 acre-feet compared to its average content of 277,746 (72% of average), while Lemon Reservoir was up to 8,800 acre-feet as compared to its average content of 19,114 acre-feet (46% of average).

Precipitation (0.58-inches) was well below average for September in Durango. There are 104 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. The flows on the Animas River were well below average this September. There are 101 years out of 102 years of record where there was more at flow in September, at the Animas River at Durango gage than this year. The total flow was 10,130 acre-feet. The only year lower than 2012, occurred in 1956. The total flow in September, 1956 was 9,576 acre-feet.







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