COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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October 2014

The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service (NRCS) is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on streamflow, reservoir storage, and precipitation for the summer period of May through October (June 1 through November 1). During the summer period, streamflow is the primary component in all basins except the South Platte basin, where reservoir storage is given the most weight. The enclosed narratives are provided by the Division of Water Resources Office in each stream basin.

The statewide SWSI values for September (October 1) range from a high value of +3.7 in the South Platte Basin to a low value of -0.8 in the Gunnison Basin. Streamflow and reservoir storage were above the 90th percentile in the South Platte Basin. There was a substantial improvement in water supply conditions in the San Juan/Dolores Basin due to above normal streamflows. Streamflows were below normal in the Gunnison River near Gunnison.

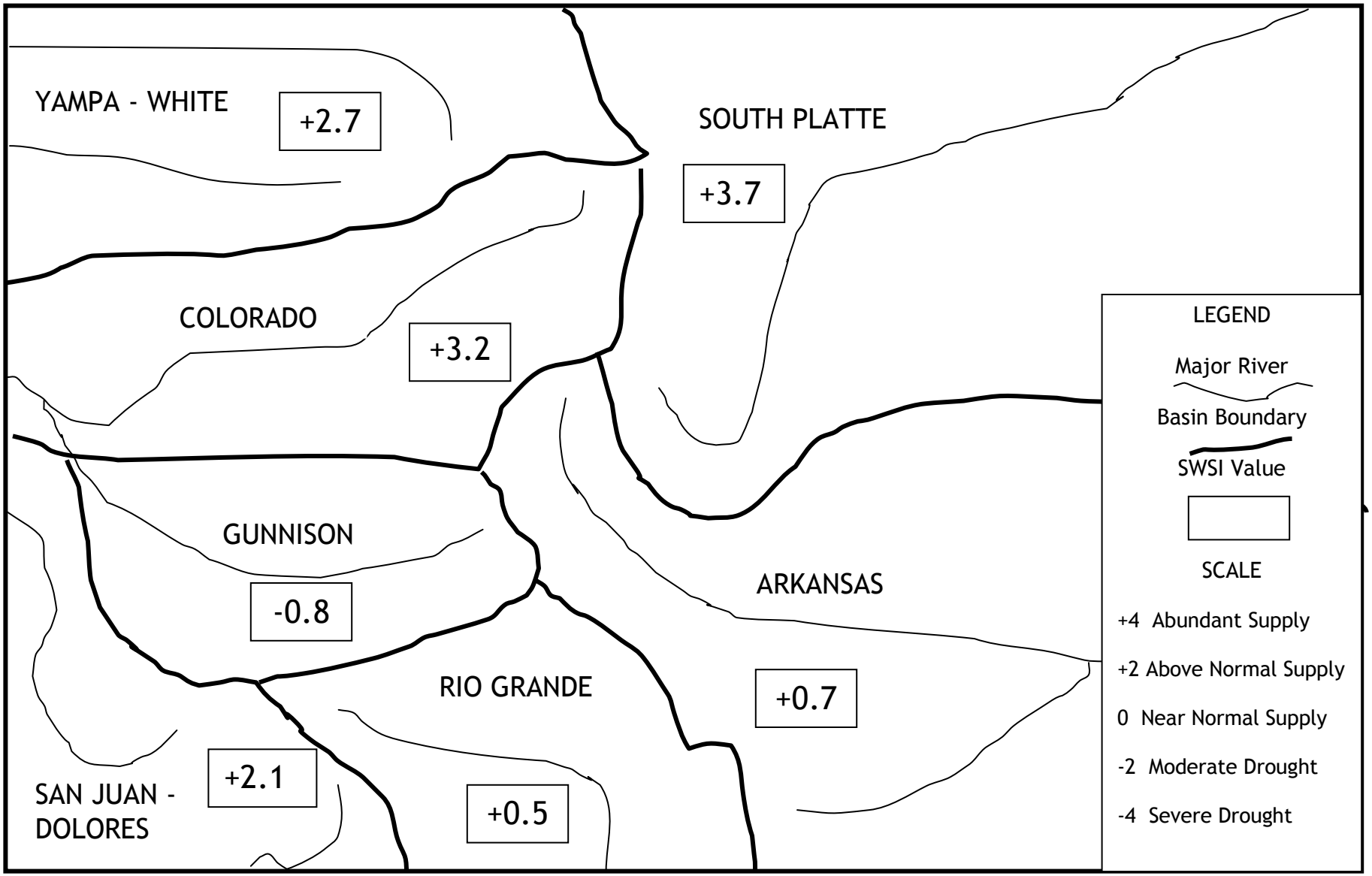
The following SWSI values were computed for each of the seven major basins for October 1, 2014. Additional information about SWSI calculations and the NRCS National Water and Climate Center SWSI by HUC are included on Page 10.

Basin	October 1 SWSI	Change from Previous Month	Change from Previous Year
South Platte	3.7	0.2	0.4
Arkansas	0.7	0.9	-0.3
Rio Grande	0.5	1.5	-2.8
Gunnison	-0.8	-0.4	0.7
Colorado	3.2	1.2	1.5
Yampa/White	2.7	-0.1	3.3
San Juan/Dolores	2.1	2.7	-1.4

SWSI 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, 2014

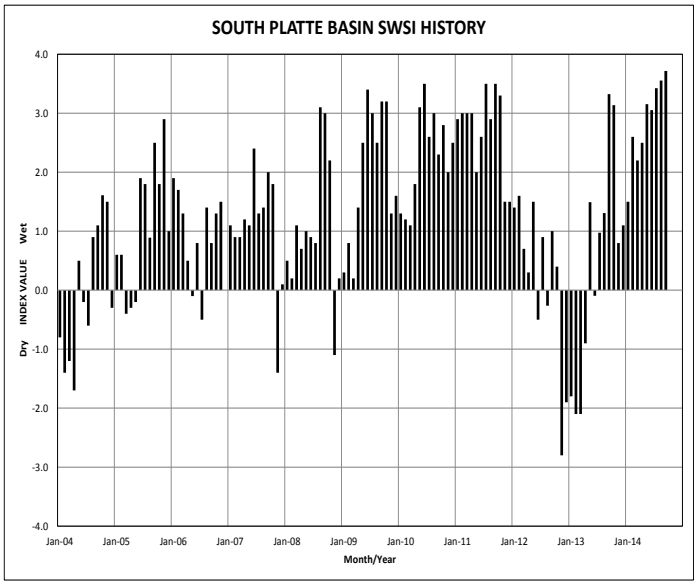
Basinwide Conditions Assessment

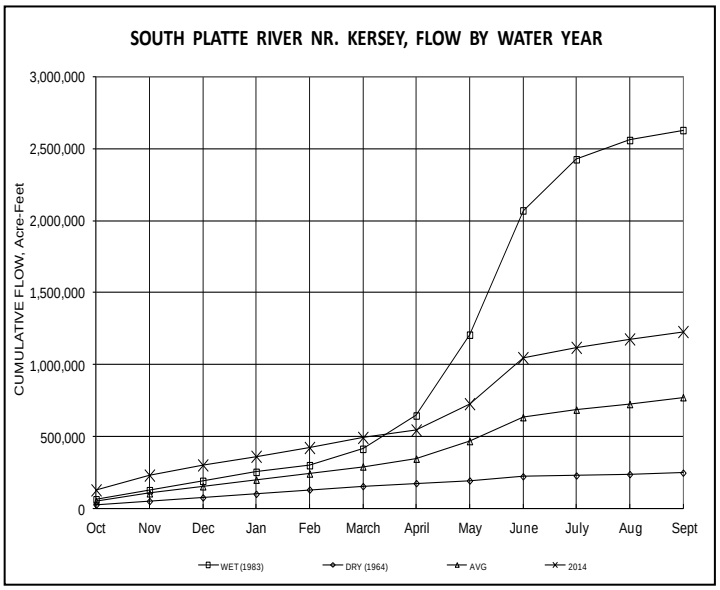
The SWSI value for the month was 3.7. September 2014 was a bit of an anomaly in northeast Colorado. Other than a few small areas, precipitation was near and often above normal. This would generally be expected to produce cooler than normal temperatures. However, temperatures for September were, with the exception of two small areas, above to well above average in northeast Colorado. After the generally cooler than normal summer, these warm temperatures were welcomed by many producers as they helped crops that were less mature than normal for September "catch up" in terms of expected yield.

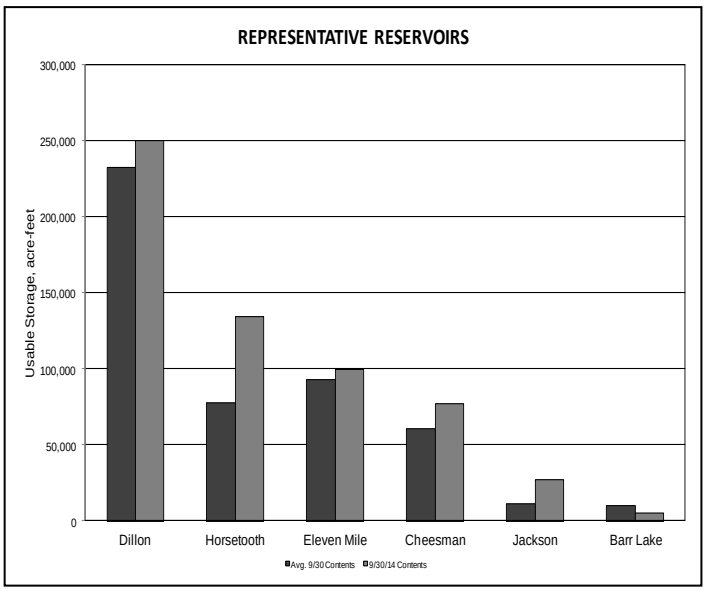
As has been the pattern for 2014, stream flow at the Kersey index gage continued to be well above the September historic mean. The monthly mean stream flow at Kersey was 838 cfs or 162% of the 517 cfs historic mean flow. Stream flow at the Julesburg index gage was also greater than the historic mean. The monthly mean stream flow at Julesburg was 323 cfs or 135% of the 239 cfs historic mean flow.

In another anomalous circumstance, the South Platte River mainstem had no calls for the entire month of September. This is a rare occurrence indeed. However, the major tributaries downstream of metro Denver did not share in the free river status of the mainstem. Though there were calls on the major tributaries, they were often more junior than the September calls typically in place.

Reservoir storage remained very strong in September. There was an overall decrease in storage in September, but it amounted to only about 3% of the overall capacity. Storage at the end of September was at about 78% of overall capacity. This compares to about 56% of capacity as the average end of September storage. To put this another way, many reservoirs were already at their preferred winter fill levels at the end of September instead of hoping to start working their way toward winter fill before the new Irrigation Year starts November 1.







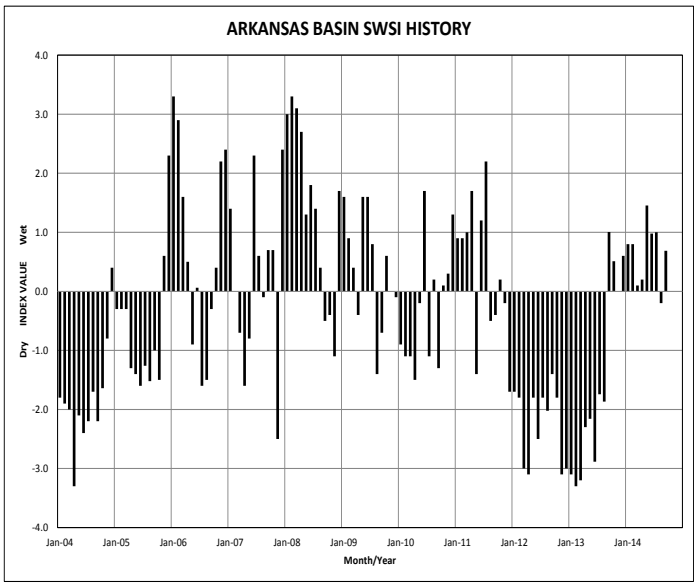
Basinwide Conditions Assessment

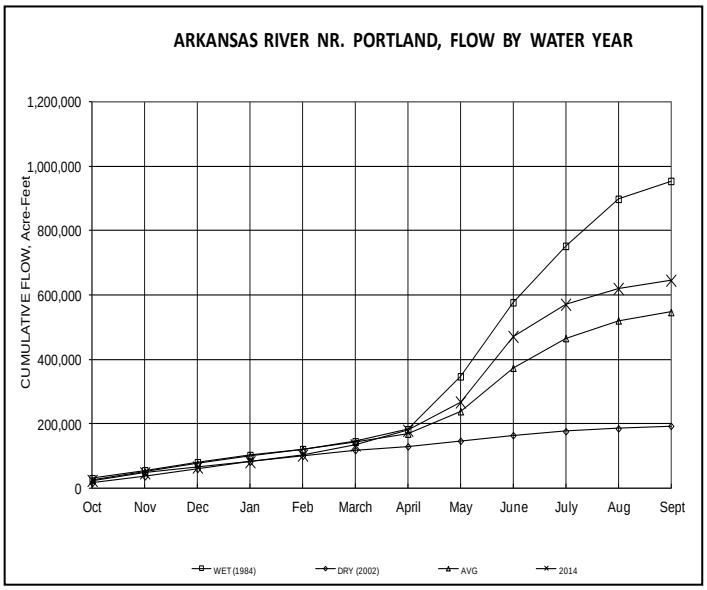
The SWSI value for the month was +0.7. River calls during September again ranged from a senior call of 12/3/1884 Catlin Canal to 3/1/1887 Fort Lyon Canal. Below Fort Lyon Canal, the Purgatoire River produced a significant amount of flow from a large rain event in mid-September and resulted in even more junior calls below John Martin Reservoir for part of the month.

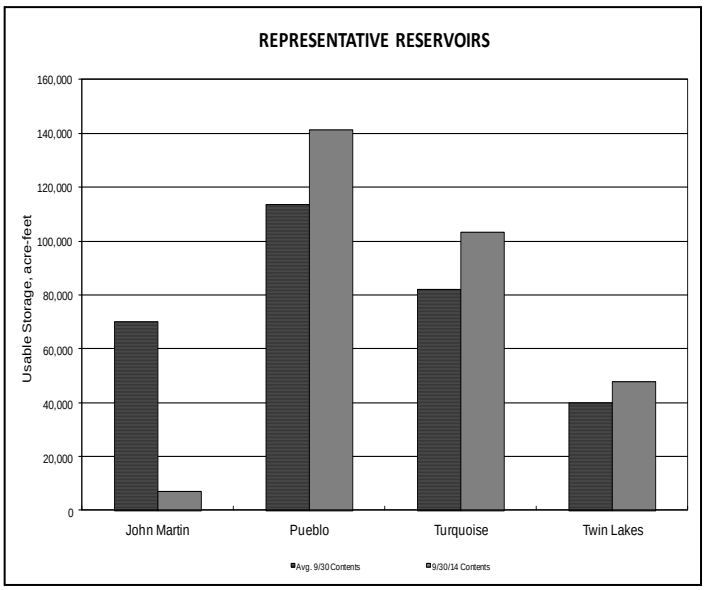
Administrative / Management Concerns

Improved water supplies resulted in good crop production in the basin, however there have been concerns related to some of the larger feedlots in the lower basin due to a shortage of feeder cattle. This impacts both the feedlot operators and the local farmers who relied on the feedlots for sale of crops.

The Arkansas Groundwater Users Association (AGUA) hired a new manager, Kevin Niles, to replace Scott Lorenz who moved on to a position with Colorado Springs Utilities. Colorado Water Protective & Development Association (CWPDA) is attempting to fill the general manager position recently vacated by the departure of Ann Lopkoff who left to work for the Otero County District Attorney's Office.







Basinwide Conditions Assessment

The SWSI value for the month was +0.5. Flow at the gaging station Rio Grande near Del Norte averaged 476 cfs (96% of average). The Conejos River near Mogote had a mean flow of 114 cfs (76% of normal). Alamosa received only 0.41 inches of precipitation during the month, 0.50 inches below average. September was warmer than normal for the San Luis Valley.

Multiple rainfall events at the end of the month resulted in September runoffs close to the long term average for streams in the western and northern part of the San Luis Valley. However, the southern part of the Valley did not receive as much benefit from the late September rains.

Outlook

Weather forecasters predict slightly cooler temperatures and better than average precipitation for the autumn and winter in the San Luis Valley.

Administrative/Management Concerns

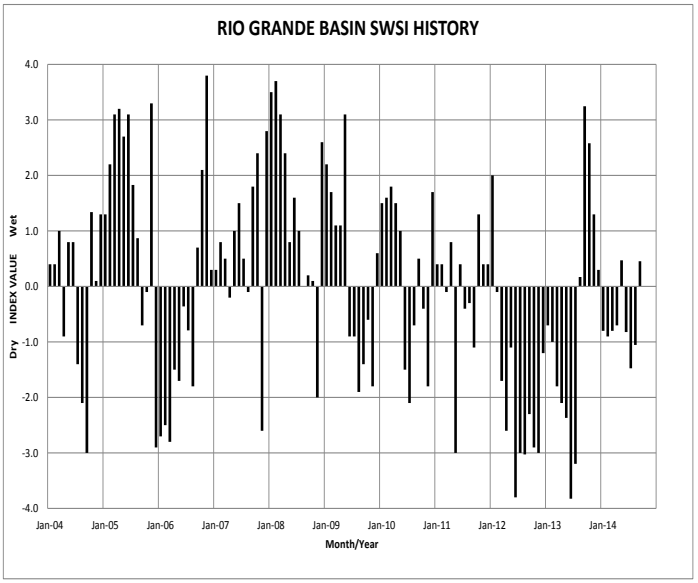
In an effort to meet Rio Grande Compact delivery requirements to New Mexico and Texas, a curtailment of 21 to 28% of the native flow in the Rio Grande was set during the summer months. The curtailment will be passed through diverters and on to the State Line to help make required delivery to New Mexico and Texas.

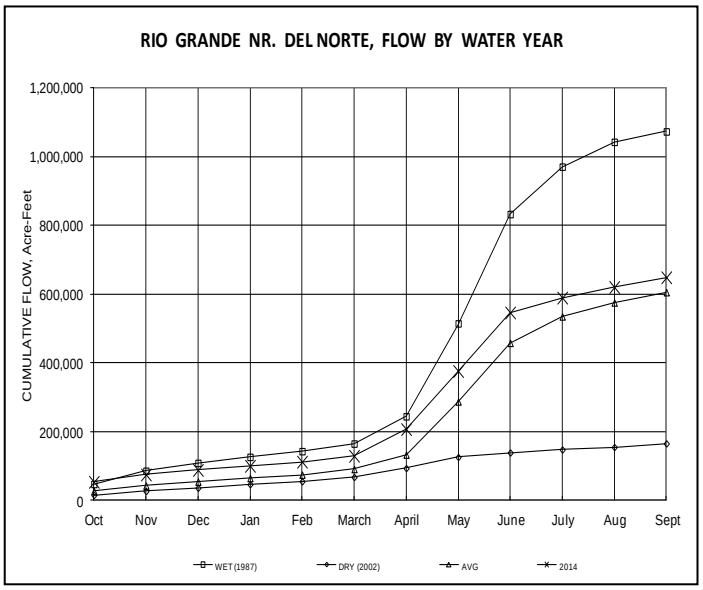
Much more water flowed down the Rio Grande this summer than anyone expected. The May 1, 2014 NRCS forecast of the April through September flows for the Rio Grande near Del Norte led to a projected annual volume of 475,000 acre-feet, about 75% of the long-term average. The current outlook is for 640,000 acre-feet.

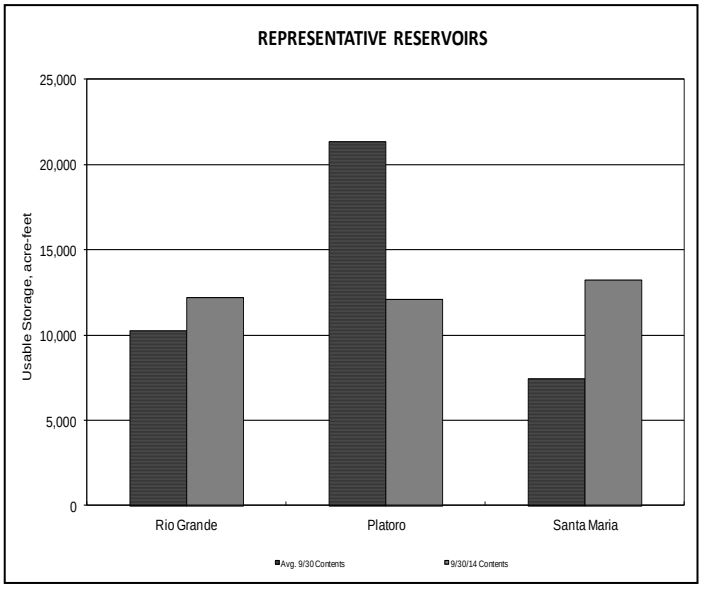
For the Conejos River system, the annual streamflow index is currently estimated at 225,000 acre-feet. The Conejos River had to bear a curtailment in excess of 40% for much of the summer. This curtailment severely reduced the amount of native water that could be diverted.

Public Use Impacts

The late September rains interfered with harvest of crops. But for the high country, it was a much-welcome relief from the dry summer conditions.







Basinwide Conditions Assessment

The SWSI value for the month was -0.8. The entire Gunnison Basin received well above average precipitation in September with the North Fork Gunnison and lower Gunnison receiving between 129 and 150% of average and all other areas receiving greater than 150% of average. As a result, streamflows throughout the basin generally stayed well above average with three spikes caused by storms on September 10th, 23rd and 30th.

Outlook

During the next 30 days the Gunnison basin has a much greater than equal chance of above average precipitation, however, the outlook for October, November, and December has turned drier with closer to equal chances of above average precipitation likely due to the decreasing chances that an El Nino will develop in the Pacific this winter.

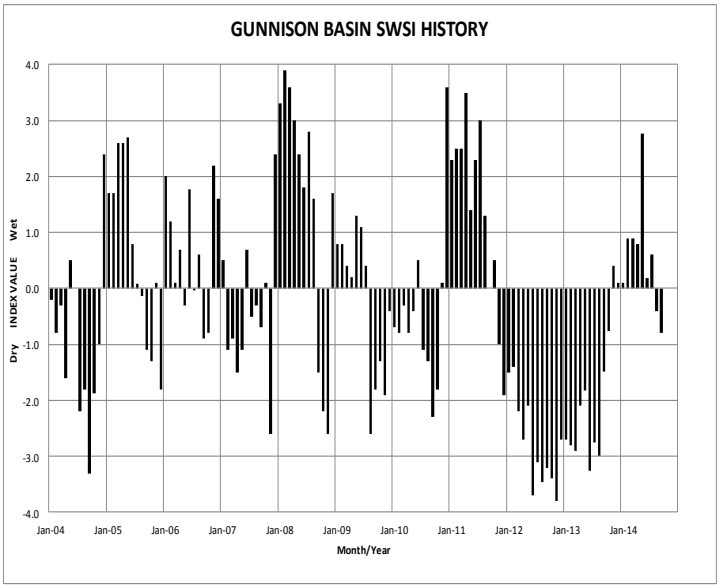
Administrative/Management Concerns

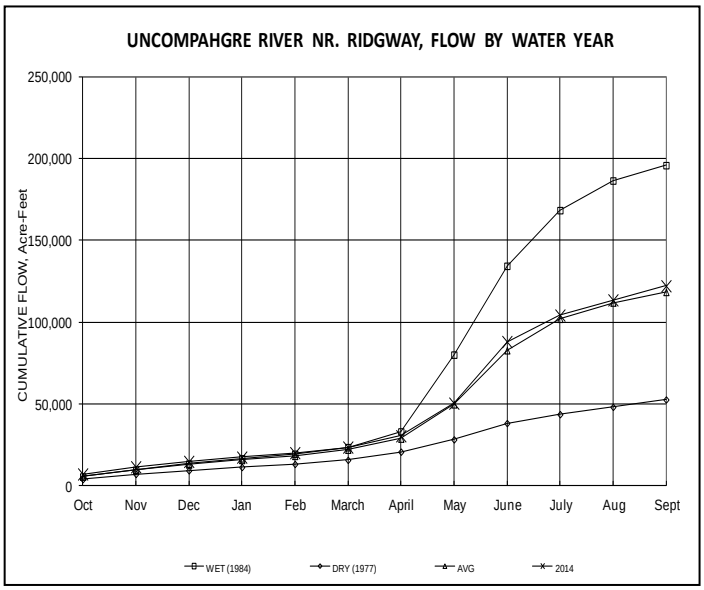
The call situation remains light throughout Water Division 4, including both the Gunnison and San Miguel basins. Greater than average streamflows and decreasing demand due to rainfall during most of the month kept any additional calls from being placed. Most remaining calls are on the North Fork Gunnison and its tributaries, but even those should go off in October with the amount of precipitation received in late September and early October. The Uncompahgre River, East River, Tomichi Creek, and San Miguel River finished 2014 without requiring administration of any calls for the first time in two years.

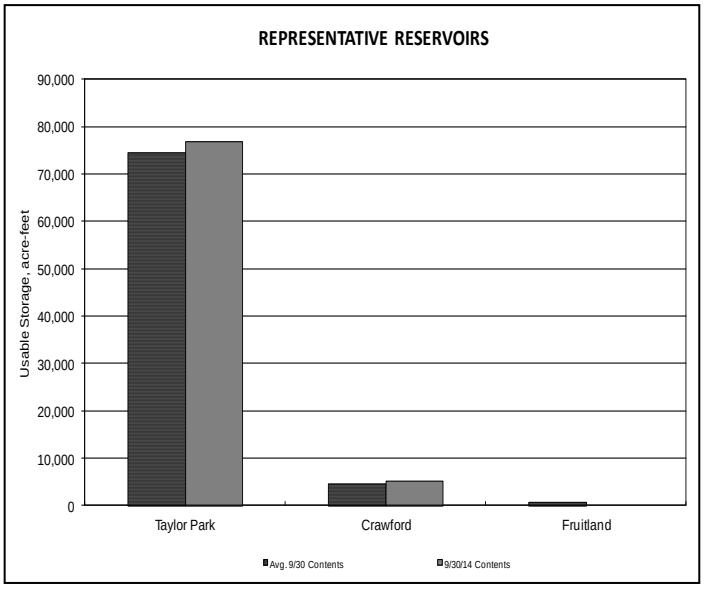
Inflows to the Aspinall Unit remained high during the month and actually exceeded Gunnison Tunnel diversions during the three storm periods mentioned previously. Blue Mesa and Taylor Park Reservoir inflows were 127% and 140% of average during the month, respectively. This helped Taylor Park end September with 76,789 acre-feet in storage, which is 6,000 acre-feet more than remained in Taylor Park following the big snowpack of 2011. In addition, only 29,000 acre-feet of Blue Mesa storage was used during the month, which brought the content down to 598,984 acre-feet on September 30th. This is 250,856 acre-feet greater than at the same time last year and corresponds to an elevation of 7491.1 feet, or 11 feet above the December 31st target elevation of 7480 feet that is intended to prevent damage upstream of the Reservoir due to ice buildup. Other reservoirs in the basin also fared well with much higher storage remaining in the Grand Mesa Reservoir system, Crawford Reservoir, and Fruitgrowers Reservoir than the past two years.

Pubic Use Impacts

The USBR continued to reduce Crystal Reservoir releases because runoff from basin-wide storm events kept flows above the ROD target, which reduced the demand on the Aspinall Unit and decreased flows in the Gunnison Gorge to 450 cfs for much of September.







Basinwide Conditions Assessment

The SWSI value for the month was +3.2.

Outlook

Colorado, Roaring Fork and Eagle River flows will remain significantly above average throughout October. Significantly above average precipitation continuing into October continues to support tributary demand from senior water rights. Significantly above average temperatures are forecast for western Colorado through October.

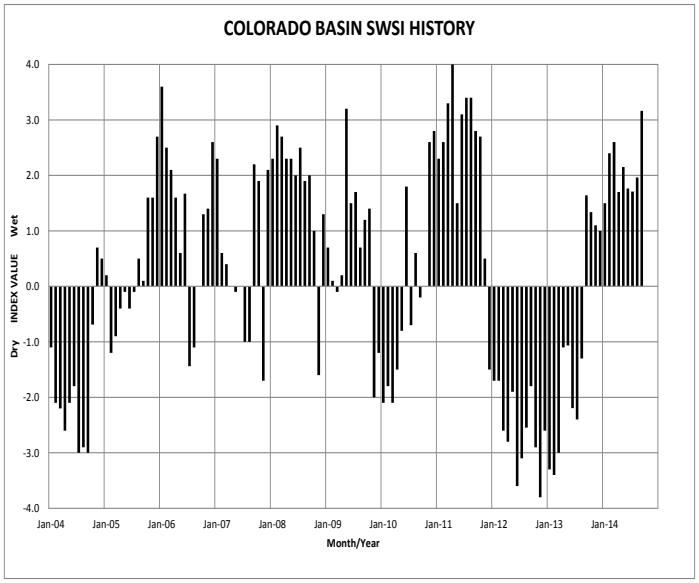
Administrative/Management Concerns

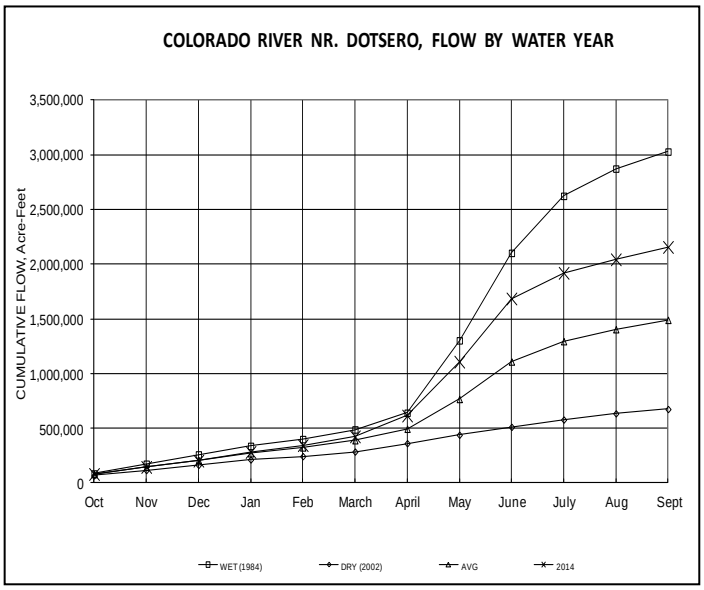
There will be no main stem call on the Colorado River at Cameo during the month of October. There also will be no Shoshone Hydro Power right call at Dotsero given the facility is not operational as of October 8th. Green Mountain Reservoir HUP surplus releases will increase throughout October to maintain target flows in the 15-mile reach. These will off-set decreasing Willow Creek Reservoir releases throughout October. Ruedi Reservoir releases have been decreased significantly in late September/early October and will presumably remain low.

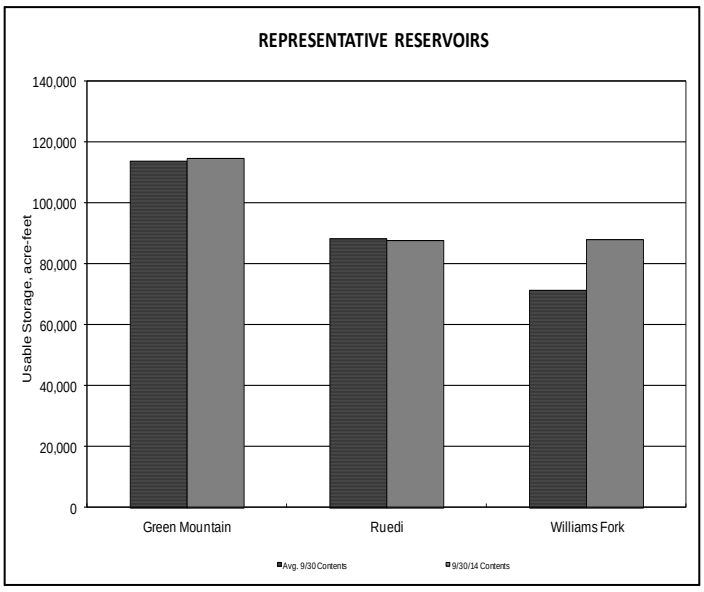
Public Use Impacts

The Colorado River and Southwestern water conservation districts have adopted operation principles for the River's storage system during extended drought conditions. Lake Powell and Lake Mead levels would be boosted from Flaming Gorge, Navajo, and Blue Mesa Reservoir releases, removal of non-native trees, and weather modification (winter cloud seeding). If insufficient, "demand management" proposals would follow including reduced consumption by municipal and irrigation users.

The City of Aspen and the Colorado River District have reached an agreement with the Twin Lakes Reservoir and Canal Co. to boost late season Roaring Fork River flows. Objection to the 1994 water court application by Twin Lakes to increase diversions during years of high run-off, resulted in an agreement leave 40 acre feet of water in Grizzly Reservoir for release during late season period of low flows. The agreement benefits Lincoln Creek flow substantially more than the Roaring Fork River.



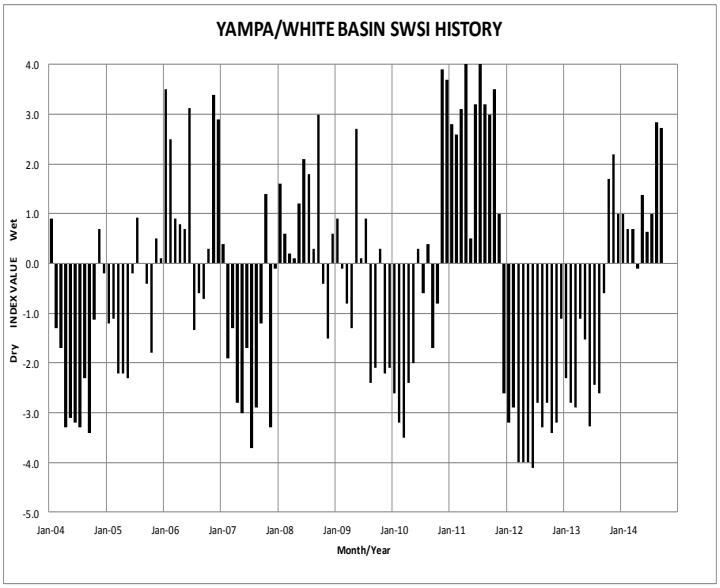




Basinwide Conditions Assessment

The SWSI value for the month was +2.7. September precipitation was 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 130% 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 was 117%.

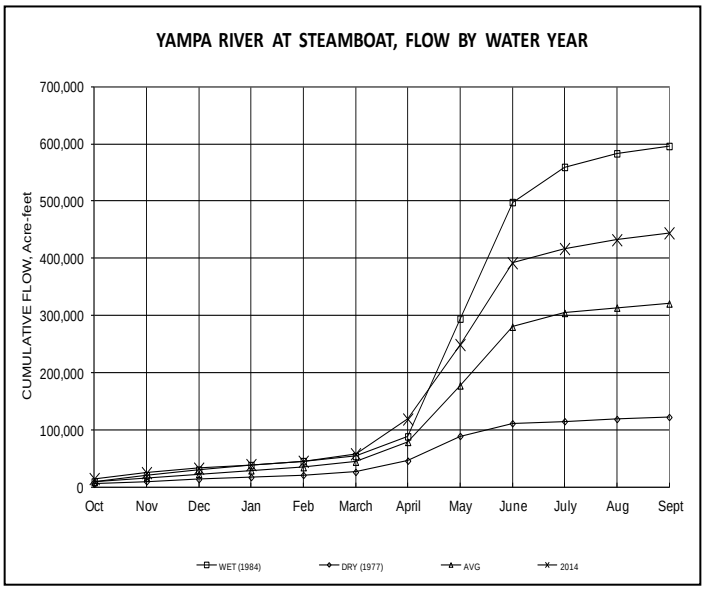
Flow in the major rivers of the Yampa, White, and North Platte River basins was also well above average during September due to the increased precipitation. All Division 6 seasonal stream gage stations will be closed before the end of October.



Outlook

As of September 30th, Fish Creek Reservoir was storing 3,607 AF which is 86% of capacity. Yamcolo Reservoir was storing 8,081 AF at the end of September 2014. The capacity of Yamcolo Reservoir is 9,580 AF. On September 30th, Elkhead Creek Reservoir was 92% full and storing 22,665 AF. On September 30, 2014, Stagecoach Reservoir was 97% full and storing 35,291 AF.

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.



Public Use Impacts

At Steamboat Lake, The Marina is closed for the season. Fishing is picking up for both bank fisherman and boaters especially in the early morning and late evening. The swim beach is closed.

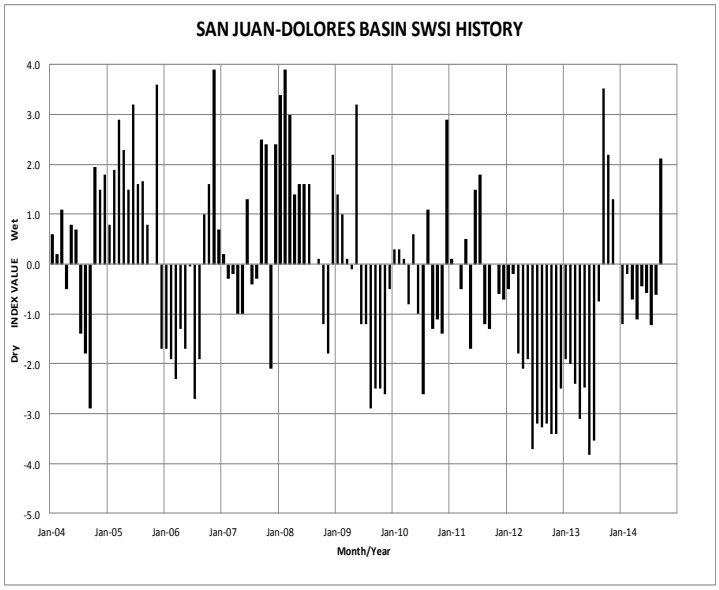
At Stagecoach State Park boating will be open through October 31st. The South Boat Ramp is closed for the season. Tailwater fishing is open. The swim beach is closed for the year.

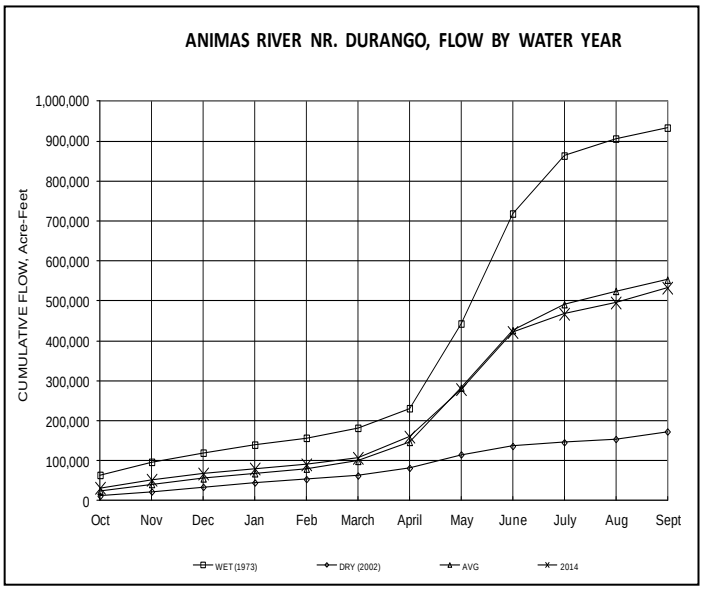
Basinwide Conditions Assessment

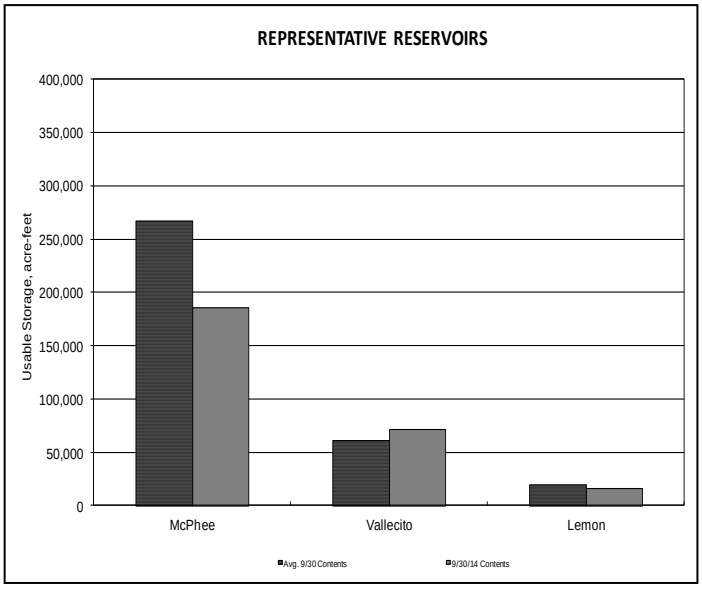
The SWSI value for the month was +2.1. Flow at the Animas River at Durango averaged 506 cfs (110% of average). The flow at the Dolores River at Dolores averaged 236 cfs (131% of average). The La Plata River at Hesperus averaged 19.4 cfs (97% of average). Precipitation in Durango was 4.43 inches for the month, 186% of the 30-year average of 2.38 inches. Precipitation to date in Durango, for the water year, is 16.77 inches, 86% of the 30-year average of 19.45 inches. The average high and low temperatures for the month of September in Durango were 81° and 46°. In comparison, the 30-year average high and low for the month is 76° and 44°. At the end of the month Vallecito Reservoir contained 71,424 acre-feet compared to its average content of 57,538 acre-feet (124% of average). McPhee Reservoir was up to 186,130 acre-feet compared to its average content of 271,264 (69% of average), while Lemon Reservoir was up to 16,440 acre-feet as compared to its average content of 18,790 acre-feet (87% of average).

Outlook

Precipitation (4.43 inches) was well above average for September in Durango. There were 9 years out of 120 years of record where there was more precipitation than this year. The flows in the rivers within the basin were at or slightly above average. The Animas River was above average this month. There were 28 out of 104 years of record where the total flow past the Durango stream gauge was more than this year. There were 19 out of 105 years of record where the total flow past the Dolores stream gauge was more than this year and 34 out of 98 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year.







ADDITIONAL INFORMATION ABOUT COLORADO SWSI CALCULATIONS - Oct-14

The SWSI for each basin is based on probability of nonexceedance (PN) curves for each of three components: reservoir storage, streamflow, and precipitation for the month. The weighting, or importance, for each component in the SWSI calculation varies by basin as shown below.

Summer SWSI Component Weights

Basin	Reservoir Storage	Streamflow	Precipitation (this month only)
South Platte	0.65	0.25	0.1
Arkansas	0.35	0.55	0.1
Rio Grande	0.05	0.9	0.05
Gunnison	0.3	0.6	0.1
Colorado	0.25	0.7	0.05
Yampa/White	0	0.9	0.1
San Juan/Dolores/Animas	0.1	0.85	0.05

The PN curves were developed in the 1980s and are generally based on a period of record of 1950-1979. As reservoir storage (and streamflow for the summer SWSI) is affected by human action, the reservoir storage PN curves may not reflect current practices for reservoir operation. DWR and NRCS are currently considering options for modifying the SWSI to address this and other concerns about its computation.

SWSI BY HUC FROM NRCS NATIONAL WATER & CLIMATE CENTER

Included below is the SWSI generated by the NRCS National Water and Climate Center, based on data as of October 1. The SWSI below is a predictive indicator of surface water availability for the spring and summer water use seasons. It is calculated by combining reservoir storage with forecasts of spring and summer streamflow, based on current snowpack and other hydrologic variables. The scale of -4 to +4 is the same as shown on Page 1.