COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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August 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 July (August 1) range from a high value of +0.9 in the South Platte Basin to a low value of -3.2 in the San Juan/Dolores Basin. All seven the basins (South Platte, Arkansas, Rio Grande, Gunnison, Colorado Yampa/White and San Juan/Dolores) experienced a gain from the previous month's value. The improvement in water supply conditions is largely due to the arrival of monsoonal rains in July that caused precipitation to be at or above average for the month.

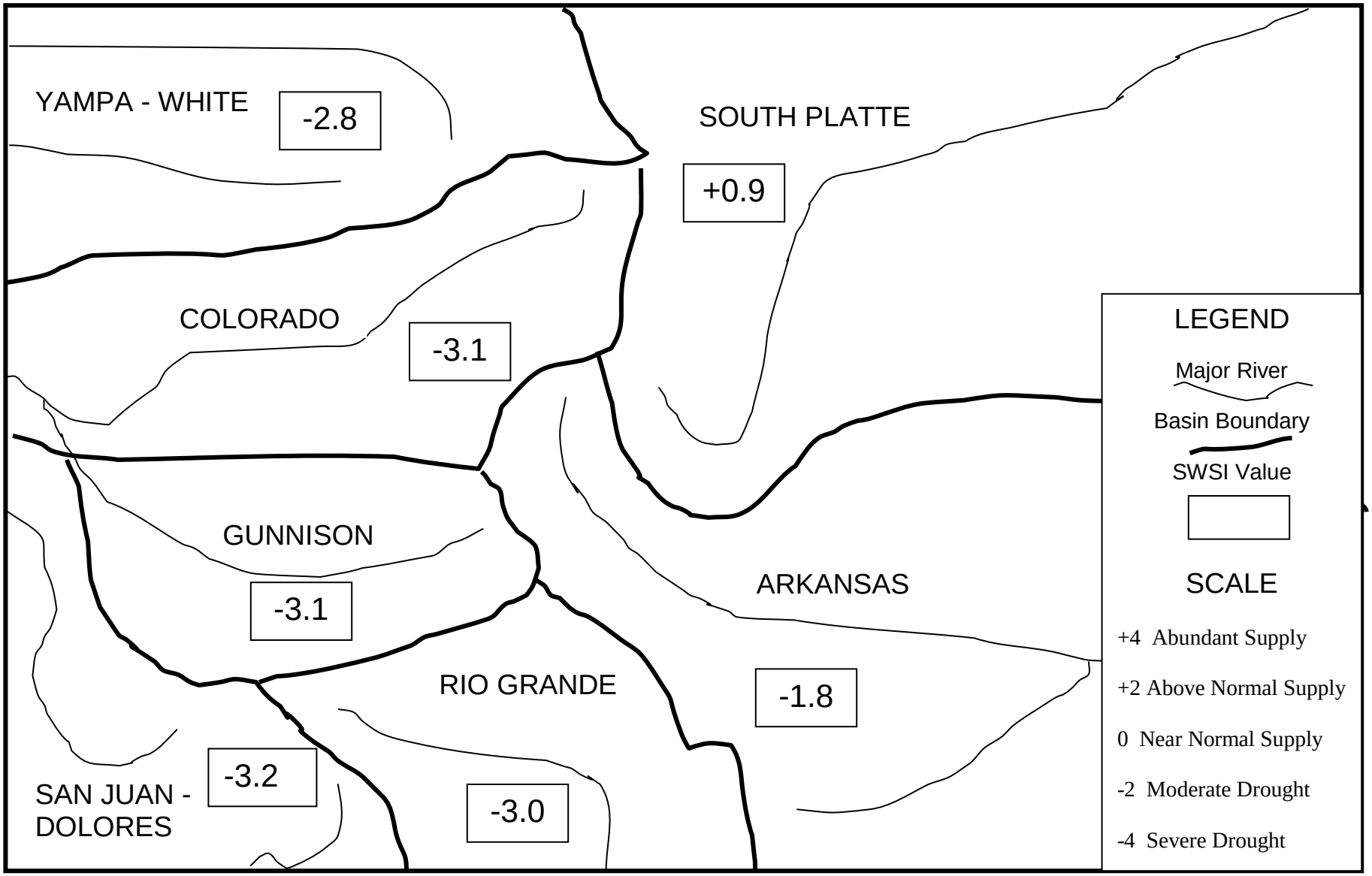
The following SWSI values were computed for each of the seven major basins for August 1, 2012, and reflect the conditions during the month of July.

Basin	August 1, 2012 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+0.9	+1.4	- 2.6
Arkansas	- 1.8	+0.7	- 4.0
Rio Grande	- 3.0	+0.8	- 2.6
Gunnison	- 3.1	+0.6	- 6.1
Colorado	- 3.1	+0.5	- 6.5
Yampa/White	- 2.8	+1.3	- 6.9
San Juan/Dolores	- 3.2	+0.5	- 5.0

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



August 1, 2012

Basinwide Conditions Assessment

The SWSI value for the month was +0.9. Reservoir storage in Dillon, Horsetooth, Eleven Mile, Cheesman, Jackson, and Barr Lake, the major component in this basin in computing the SWSI value, was 87% of normal as of the end of July. Cumulative storage in the major plains reservoirs (Julesburg, North Sterling, and Prewitt) is at 36% of capacity. Cumulative storage in the major upper-basin reservoirs (Cheesman, Eleven Mile, Spinney, and Antero) is at 89% of capacity. Flow at the gaging station South Platte River near Kersey was 292 cfs, as compared to the long-term average of 686 cfs. Flow at the Colorado/Nebraska state line was 37 cfs, as compared to the long-term average of 316 cfs.

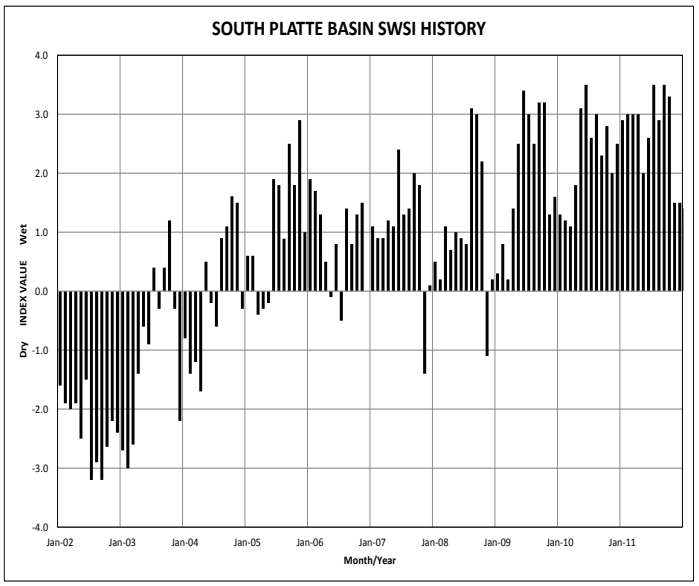
Outlook

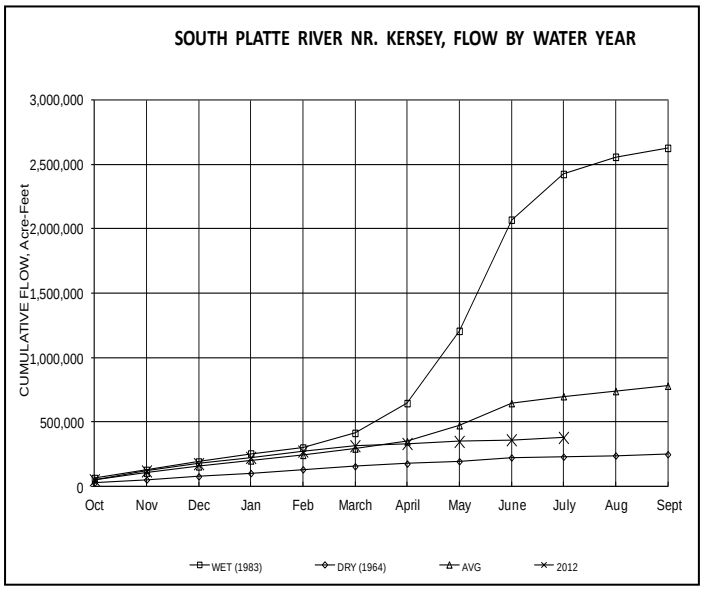
The extremely dry conditions experienced from February through June abated slightly in July with the advent of the monsoon rains in the South Platte basin. An almost basin wide precipitation event occurred from July 6 through 8 that significantly improved stream flow volumes for a few days. However, this same event caused significant water quality issues in the Cache la Poudre basin with black runoff from the High Park Fire burn area. Most irrigators continued to divert and use the black water, but the Cities of Ft. Collins and Greeley were forced to stop direct diversions. More localized precipitation events/thunderstorms continued for the rest of the month and kept stream flows from being as bad as in June.

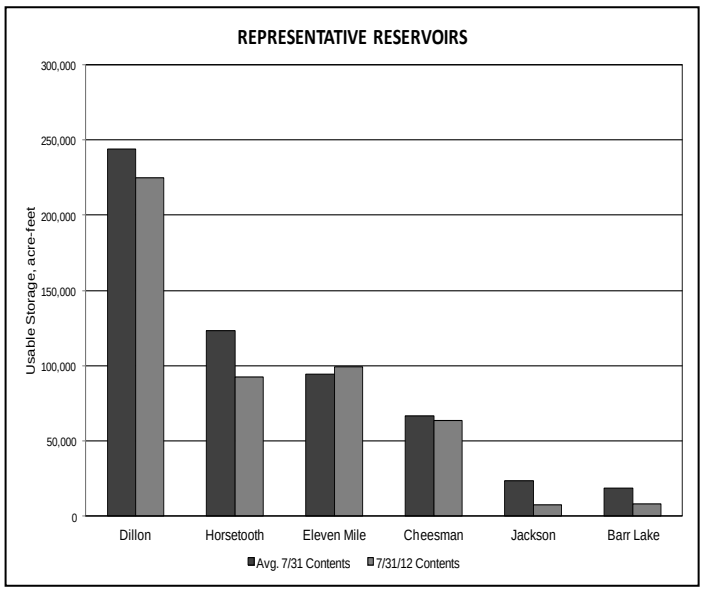
The July 6 – 8 precipitation event actually allowed the call on the mainstem and many tributaries to go relatively junior for a few days. However, the localized precipitation events could not sustain the junior calls and river calls were, as a whole, more senior than is generally expected in July. This call pattern moderated somewhat the early declines in reservoir storage to a total storage of 76% of the end of July average as compared to 79% of the end of June average.

July stream flows at the Kersey and Julesburg index gages continued to be below average – as they have since March. The monthly mean stream flow at the Kersey gage in July was 292 cfs or 44% of the historic mean of 659 cfs. This compares to a July 2002 mean of 115 cfs. The Julesburg gage monthly mean stream flow for July had a value of 37 cfs or 13% of the historic mean of 296 cfs. This compares to a July 2002 mean of 26 cfs.

The September – November National Weather Service outlook for the South Platte basin is for a virtual certainty of above average temperatures. However, there are equal chances of below or above average precipitation.







Basinwide Conditions Assessment

The SWSI value for the month was -1.8. Flow at the gaging station Arkansas River near Portland was 304 cfs, as compared to the long-term average of 1547 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 78% of normal as of the end of July.

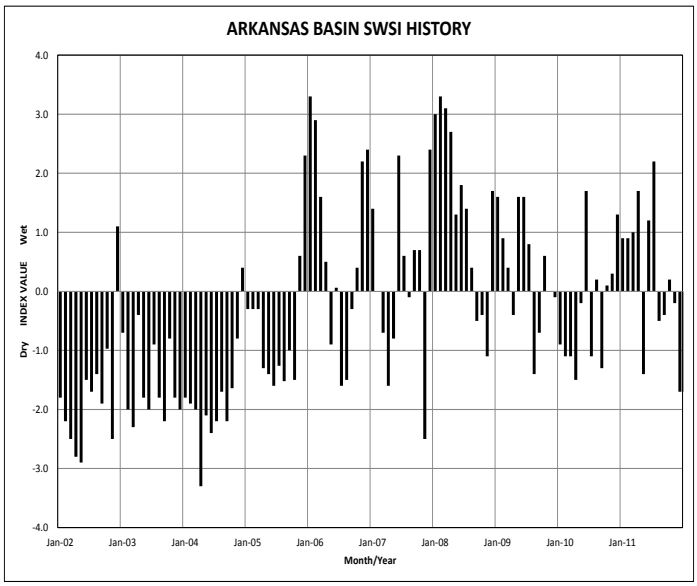
Outlook

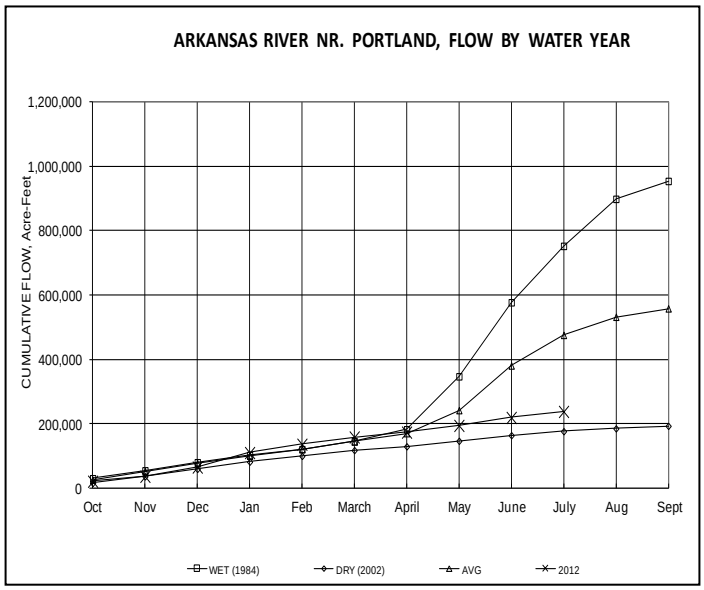
Runoff remained poor in July. Flows through the Arkansas River at Portland gage averaged only a little over 300 cfs with a peak daily discharge of 550 cfs. The contrast to 2011 is stark when the peak flow in July reached 3,800 cfs.

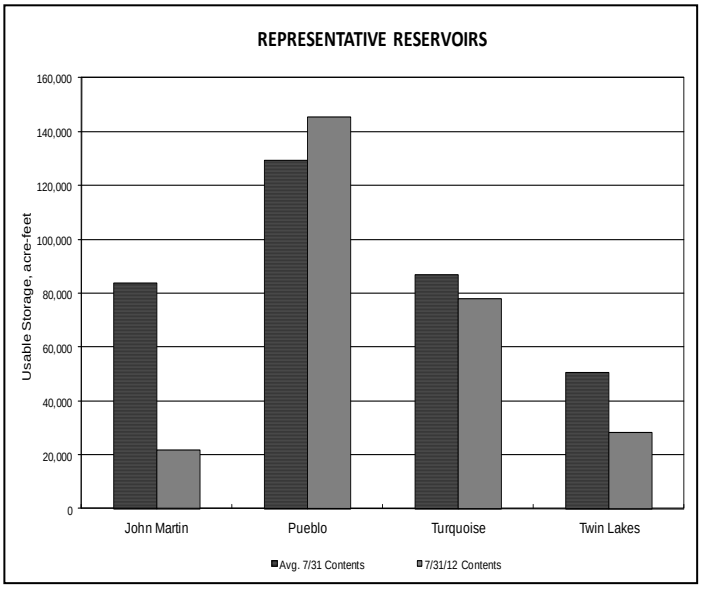
The Arkansas River call was at the Rocky Ford Highline (3/7/1884) right to begin the month, but became more senior (Rocky Ford Ditch 5/15/1874) on a number of days in the month. This senior Rocky Ford Ditch call results in less municipal storage for Aurora in Pueblo Reservoir for this changed water right, but also has a large impact on water rights upstream of Pueblo Reservoir that aren't normally called out by a mainstem call.

Administrative Concerns

Kansas elected not to run any of their water from John Martin Reservoir due to poor river conditions on the Arkansas River and in Kansas. This includes the Offset Account which is used to offset depletions from post-Compact well pumping in Colorado, primarily for the Lower Arkansas Water Management Association (LAWMA) which represents well owners near or below John Martin Reservoir. This decision will result in no stateline credit from the Offset Account in 2012 and will negatively impact the ten-year compliance accounting for Colorado. Fortunately, LAWMA and the other large well associations have previously built up a large stateline credit so the net impact is hoped to be softened.







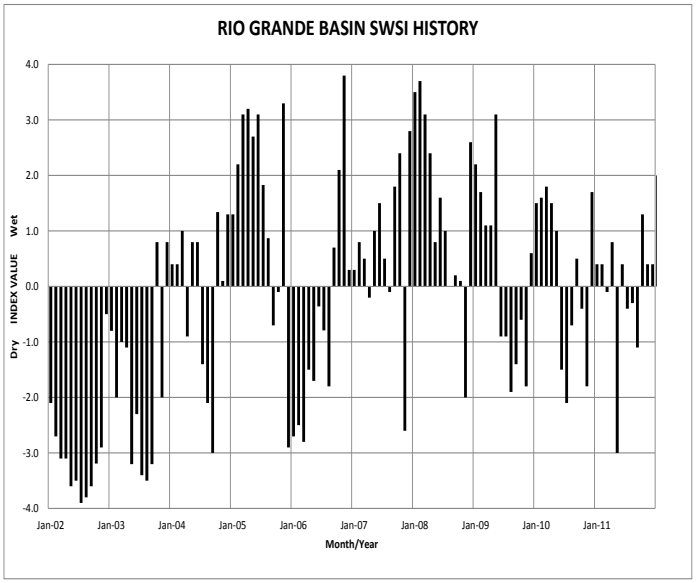
Basinwide Conditions Assessment

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 July.

Flow at the gaging station Rio Grande near Del Norte averaged 381 cfs (28% of normal). The Conejos River near Mogote had a mean flow of 158 cfs (33% of normal). The Conejos River flow was enhanced by storage releases from Platoro Reservoir.

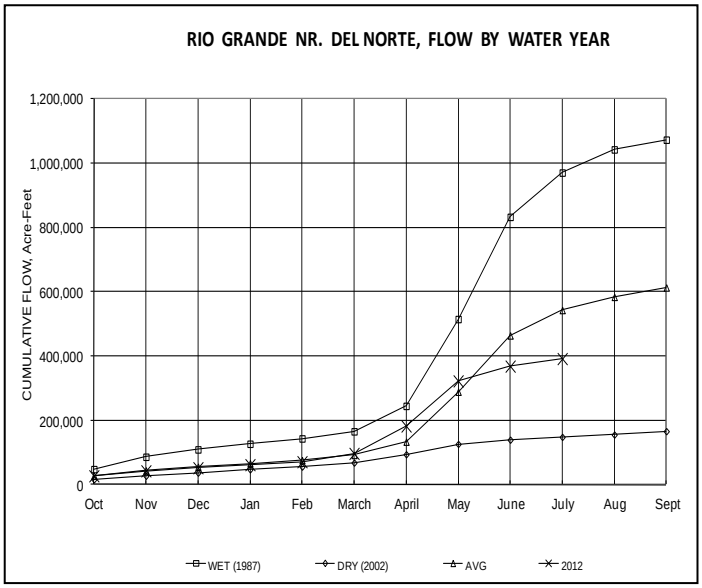
Precipitation of 0.99 inches during July in Alamosa was near average. The valley floor and most mountainous areas are still very dry after scattered July rains, but enough rainfall allowed the fire bans to be lifted. Overall, rainfall in the area is nearly two inches below normal this year.

Temperatures in Alamosa equaled 90 degrees or above only two days during July, a great relief from the previous month. But the average temperature in Alamosa was still 1.4 degrees above normal.



Outlook

Recent National Weather Service forecasts predict warmer than normal temperatures but a good chance of above average precipitation for August through October. That would bring much relief to the parched foothills. However, without a significant change in the current weather patterns, the upper Rio Grande Basin will continue to experience drought conditions. With the high runoff months behind us, only significant rainfall will increase streamflow.

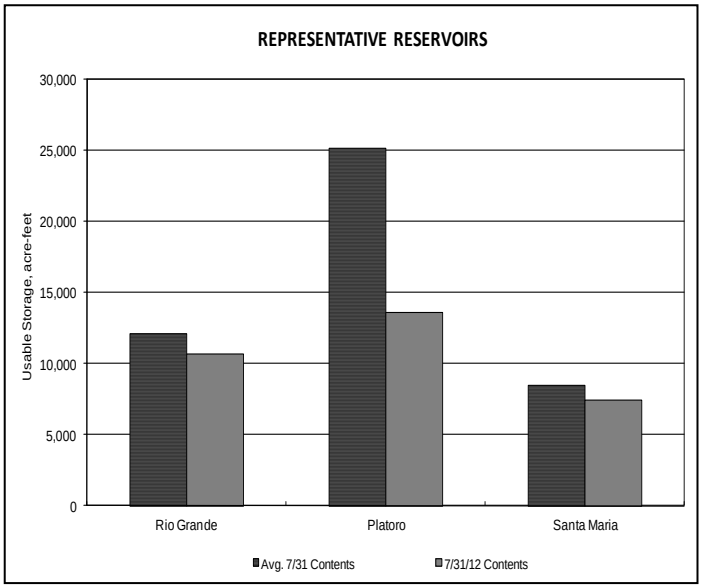


Administrative/Management Concerns

Junior surface water right owners in Division 3 should expect senior calls to keep them out of priority for the rest of the irrigation season.

No drainages in the upper Rio Grande basin have experienced anywhere near normal streamflow since May. The past month yielded only 20% to 40% of normal flow.

Lack of rainfall and ditch diversions increase the reliance on groundwater in the San Luis Valley where over 5000 irrigation wells exist. Those wells producing from the shallow aquifers are experiencing severe declines in pumping rates. Wells producing from the confined aquifer have dropped some, but are not as quickly impacted by the massive draw on ground water. Another severe decline in the unconfined aquifer storage is expected this year. Reservoir storage in the basin has again been severely depleted.



Public Use Impacts

Water users and recreators should expect below average stream flows and reservoir levels through the end of the summer. The warm temperatures in June and July moved up harvest dates by at least two weeks.

Basinwide Conditions Assessment

The SWSI value for the month was -3.1. Flow at the gaging station Uncompahgre River near Ridgeway was 106 cfs, as compared to the long-term average of 322 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 66% of normal as of the end of July.

Fortunately, unlike 2002 where the rains waited until September to materialize, significant monsoon rains brought some relief in July. In fact, depending on location, the Gunnison basin received between 110 and over 150 percent of average precipitation.

Outlook

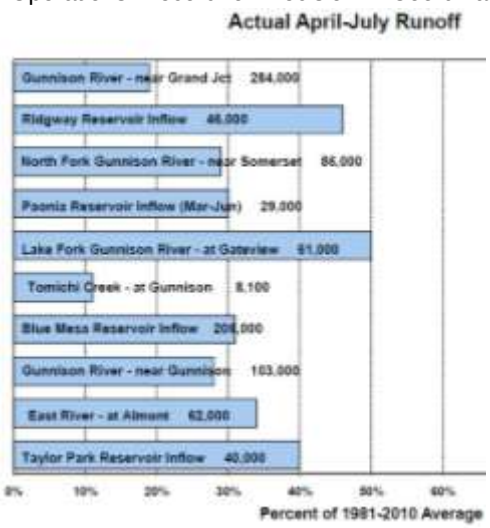
Forecasts for precipitation are encouraging as they indicate a better than average chance for precipitation in the three month period beginning in August. We are hoping that NWS predictions of above average precipitation comes true and helps to refill reservoirs so we can begin 2013 in better shape.

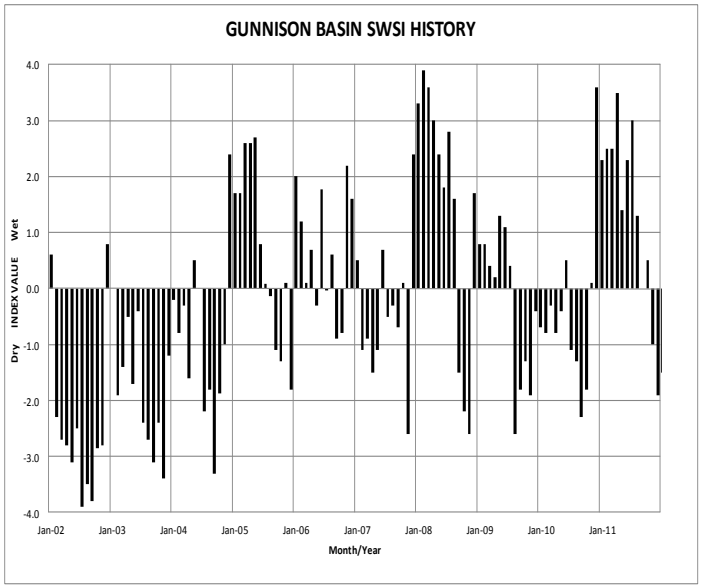
Administrative/Management Concerns

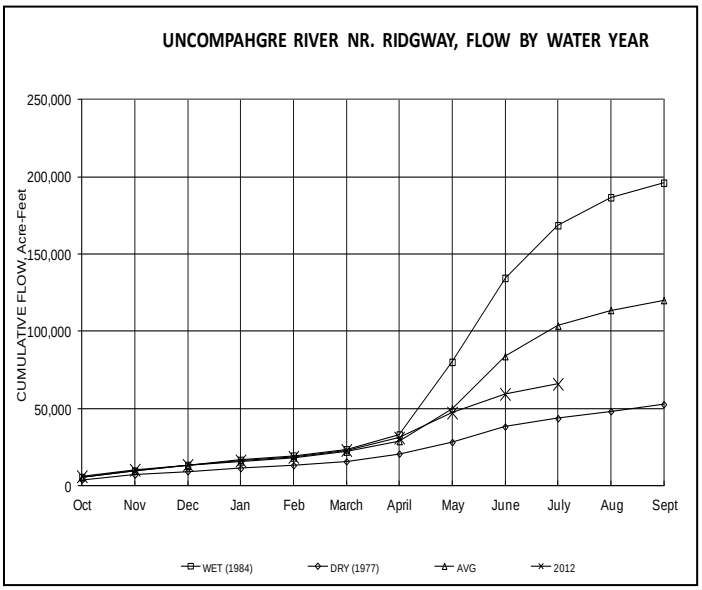
The monsoon rains in July really boosted growth of the feed in the higher elevations, which helped out ranchers with grazing leases in the higher elevations. Furthermore, it has increased hay yields for those that had water earlier and decreased the water usage by irrigators. As you can see in the April-July runoff volume chart below, 2012 has still been historically dry, only exceeded by 1977 and 2002 in the Gunnison basin. Some ditches that usually have water throughout the season are already completely off. One example is the Fire Mountain Canal, whose direct flow right was called out on June 27th and whose Paonia Reservoir water was used up on August 4th leaving it completely dry.

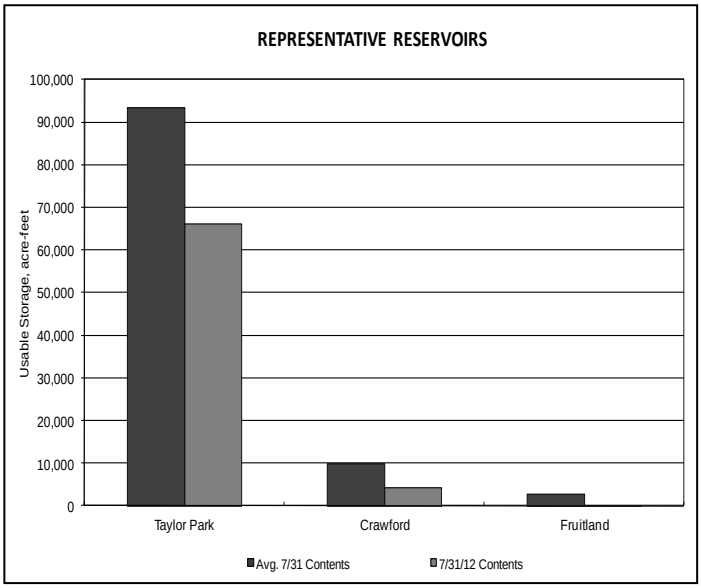
July rains have helped Ridgway Reservoir storage remain in fair condition. As a result, the Uncompahgre Valley Water Users (UVWUA) are releasing more from Ridgway and reducing their diversions at the Gunnison Tunnel, which will preserve additional storage in Taylor Park. This tactic will most likely prevent a call on the Upper Gunnison as the Taylor Park second fill may not run out until mid-August.

Actual runoff into Blue Mesa, as you can see from the below chart, was well below average at 206,000 acre-feet. However, this is well above the 2002 record low of 156,000 acre-feet. The USBR projections for end of October storage content in Blue Mesa has improved, but is still at 70 feet below full because of higher September through November releases needed to meet the 900 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. It is clear that even with an average snowpack, Blue Mesa will not fill in 2013 due to of the low amount of storage that will remain at the end of 2012.









Basinwide Conditions Assessment

The SWSI value for the month was -3.1. Flow at the gaging station Colorado River near Dotsero was 1448 cfs, as compared to the long-term average of 3085 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 78% of normal as of the end of July.

Outlook

Colorado and Roaring Fork River below average flows will continue through August with small duration increases associated with monsoonal precipitation. The Grand Valley Water Users 730 right will drive upper Colorado River flows with the entire basin called out junior to an appropriation date of 2-27-1908. The precipitation forecast for western Colorado is above average through the month of August, but even significant amounts are unlikely to change the call scenario.

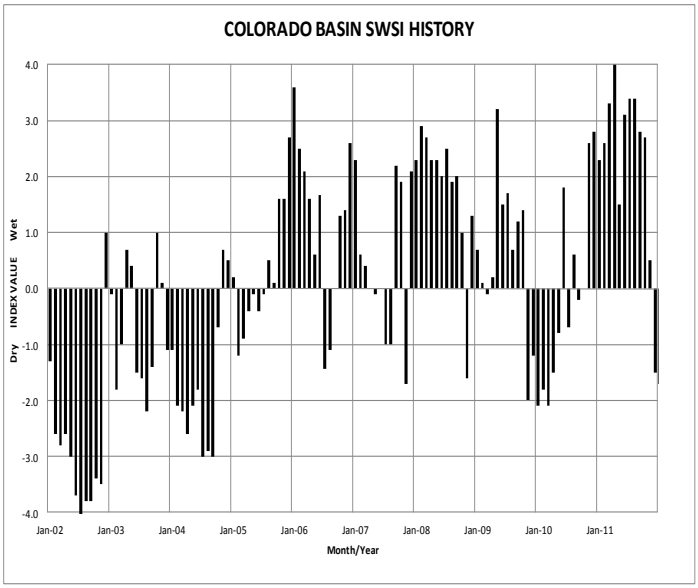
Administrative/Management Concerns

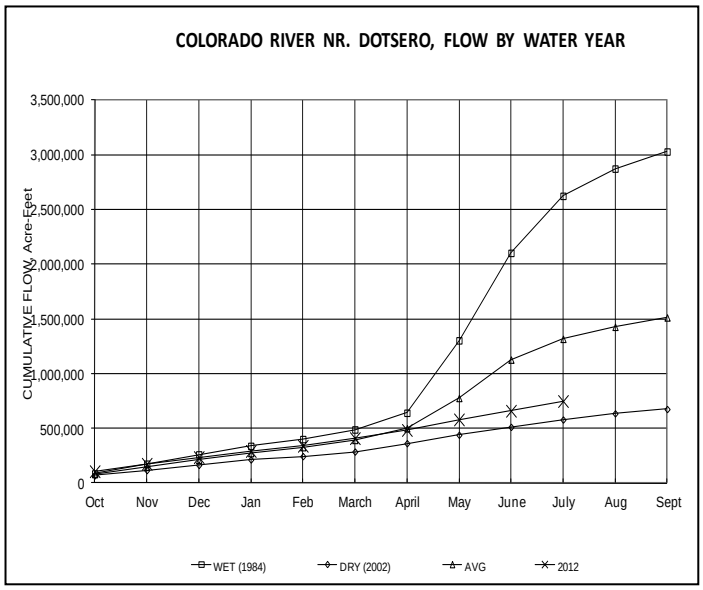
The Grand Valley Water Users Association 730 cfs right went into effect on August 6th. Green Mountain Reservoir is making direct releases to the Grand Valley Irrigation Company's (GVIC) 119 cfs right (HUP), bypassing all inflow, making contract releases, and replacing Silt Water Project out of priority depletions. Williams Fork Reservoir began releases to off-set Moffat Tunnel out-of-priority diversions on August 6th. Flows for endangered fish support continue to increase with Wolford Mountain and Williams Fork Reservoir contributing a combined 100 cfs for this purpose. Over half of the current Ruedi Reservoir release order (125 cfs) is also for endangered fish support in the 15-mile reach, 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.

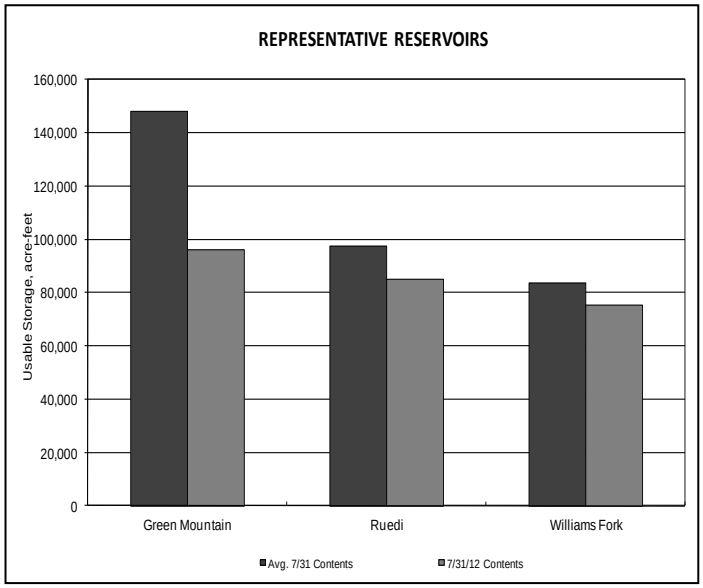
Public Use Impacts

A large fish kill (several thousand) occurred in late July, most likely associated with a heavy monsoon precipitation event which flushed large amounts of sediment/debris into the Colorado River above Dotsero. The fish were primarily bottom dwelling native and non-native suckers, which are more susceptible to heavy sediment loads.

Endangered Fish support releases for the lower Colorado River, ordered by the U.S. Fish and Wildlife Service will create favorable fishing conditions on the lower Fryingpan River with flows above 200 cfs through the remainder of the summer.



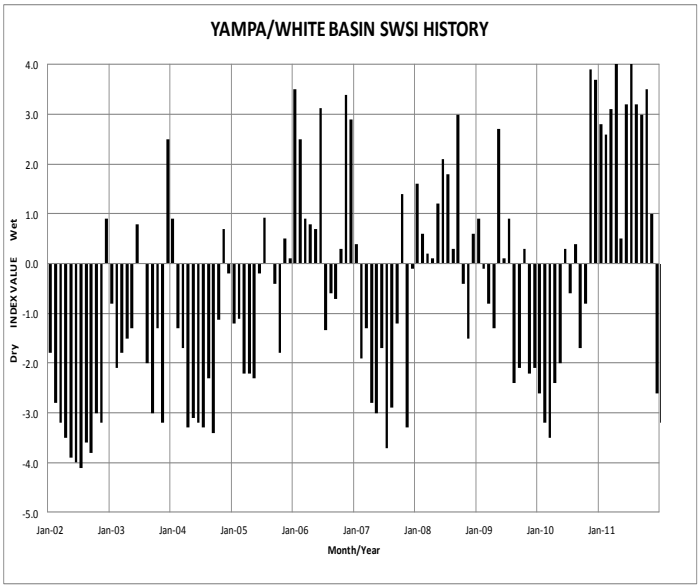




Basinwide Conditions Assessment

The SWSI value for the month was -2.8. Flow at the gaging station Yampa River at Steamboat was 101 cfs, as compared to the long-term average of 402 cfs.

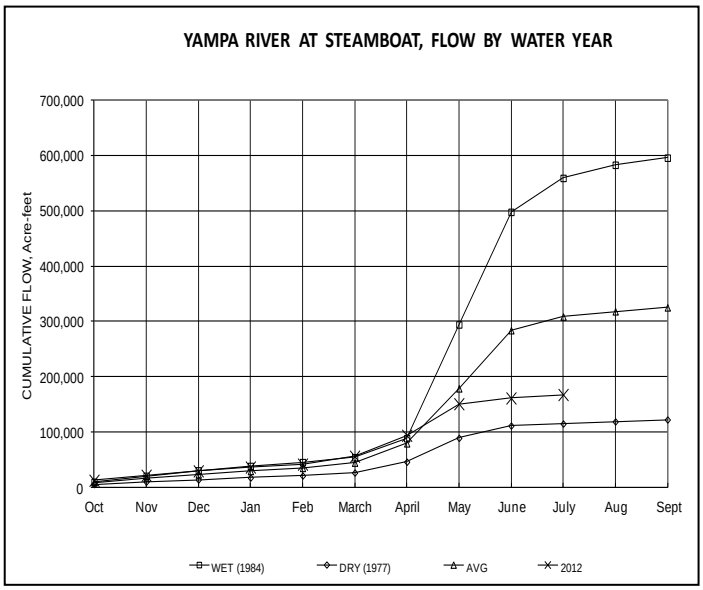
July precipitation was well above average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by NRCS, was reported at 182% of average for the Yampa, White, and North Platte River basins. Total precipitation for the water year as a percent of average to date in the combined basins at the end of July was 69%. Streamflows in the Yampa, White, and North Platte River basins remain well below average at this time and most of the Division 6 area is experiencing severe to extreme drought conditions as classified by the US Drought Monitor.



Outlook

As of July 31st Fish Creek Reservoir was storing approximately 3,700 AF, 89% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF. Daily data is currently unavailable at Yamcolo Reservoir due to a broken pressure transducer at the gaging station. A new transducer is planned for installation before the end of August. The Water Commissioner for Water District 58 reported Yamcolo Reservoir was storing 2,837 AF at the end of July 2012. That represents 32% of Yamcolo's capacity. On July 31st Elkhead Creek Reservoir was storing 21,982 AF, 89% of capacity. On July 31st, 2012, Stagecoach Reservoir was storing 33,057 AF and at 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

Tailwater fishing at Stagecoach has been reported as great with anglers catching high numbers of fish. Fishing at Steamboat Lake has been slower with continued warm weather. Fire restrictions have been lowered to Stage 1 in Rio Blanco and Routt Counties. However Moffat County continues to have a fire ban in place.

Commercial tubing on the Yampa River remained open for most of July helped by above average rainfall along with the Colorado Water Trust's agreement with the Upper Yampa Water Conservancy District to lease 4,000 acre-feet of water from Stagecoach Reservoir, enough to support flows of 26 cfs into September. In addition the board of directors of the Catamount Homeowners Association has agreed to release 500 acre-feet from Lake Catamount this summer to help boost the Yampa River as well.

Basinwide Conditions Assessment

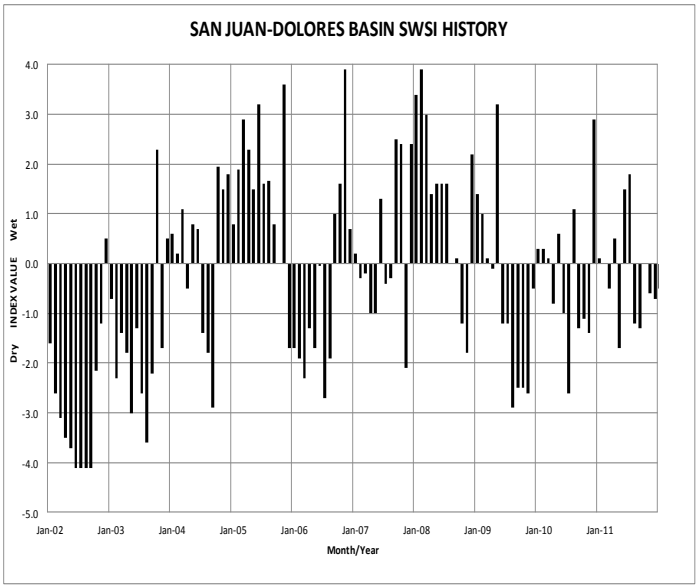
The SWSI value for the month was -3.2. Flow at the Animas River at Durango averaged 330 cfs (28% of average). The flow at the Dolores River at Dolores averaged 151 cfs (38% of average). The La Plata River at Hesperus averaged 7.6 cfs (21% of average).

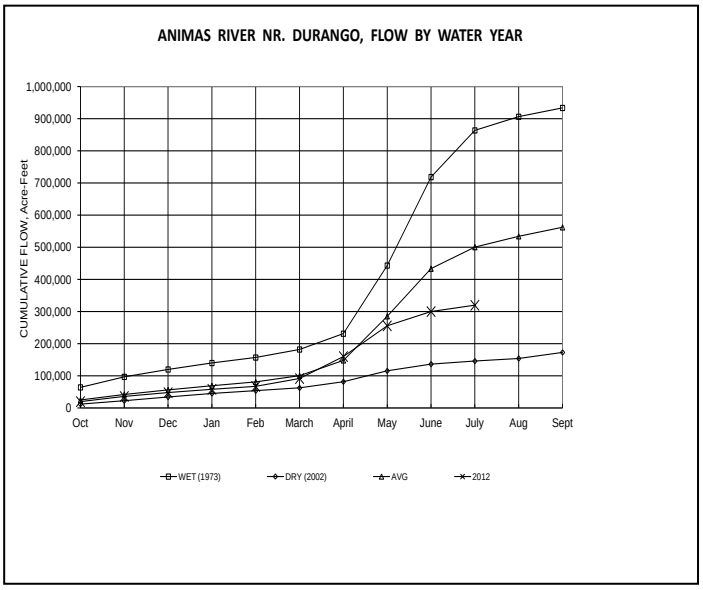
Storage in McPhee, Vallecito, and Lemon reservoirs totaled 82% of normal as of the end of July. At the end of the month Vallecito Reservoir contained 80,220 acre-feet compared to its average content of 89,769 acre-feet (89% of average). McPhee Reservoir was up to 260,852 acre-feet compared to its average content of 317,963 (82% of average), while Lemon Reservoir was up to 13,170 acre-feet as compared to its average content of 27,564 acre-feet (48% of average).

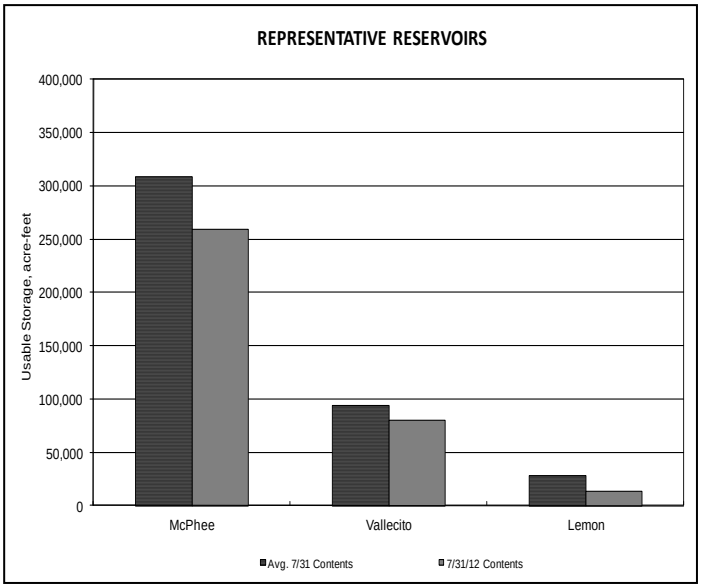
Precipitation in Durango was 3.24 inches for the month, 169% of the 30-year average of 1.92 inches. Precipitation to date in Durango, for the water year, is 13.67 inches, 90% of the 30-year average of 15.19 inches. The average high and low temperatures for the month of July in Durango were 83^{o} and 55^{o}. In comparison, the 30-year average high and low for the month is 86^{o} and 53^{o}.

Outlook

Precipitation (3.24-inches) was above average for July in Durango. There are 15 years out of 118 years of record where there was more precipitation than this year. The monsoon rains have returned and drastically reduced the fire danger in the basin but drought conditions still remain. 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 99 years out of 101 years of record where there was more at flow at the Animas River at Durango gage than this year. There are 84 years out of 95 years of record where there was more at flow at the upper index gages on the La Plata River than this year.







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