COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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July 2013

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 Office in each stream basin.

The statewide SWSI values for June (July 1) range from a high value of -0.1 in the South Platte Basin to a low value of -3.8 in the San Juan/Dolores and Rio Grande basins. The SWSI decreased this month compared to last in each basin, but southwestern Colorado continues to have the greatest drought impacts. There was very little precipitation statewide in June, but this represents 10 percent or less of the SWSI in each basin. Low streamflows are the driver of the negative SWSIs in each basin, reflecting drought conditions statewide.

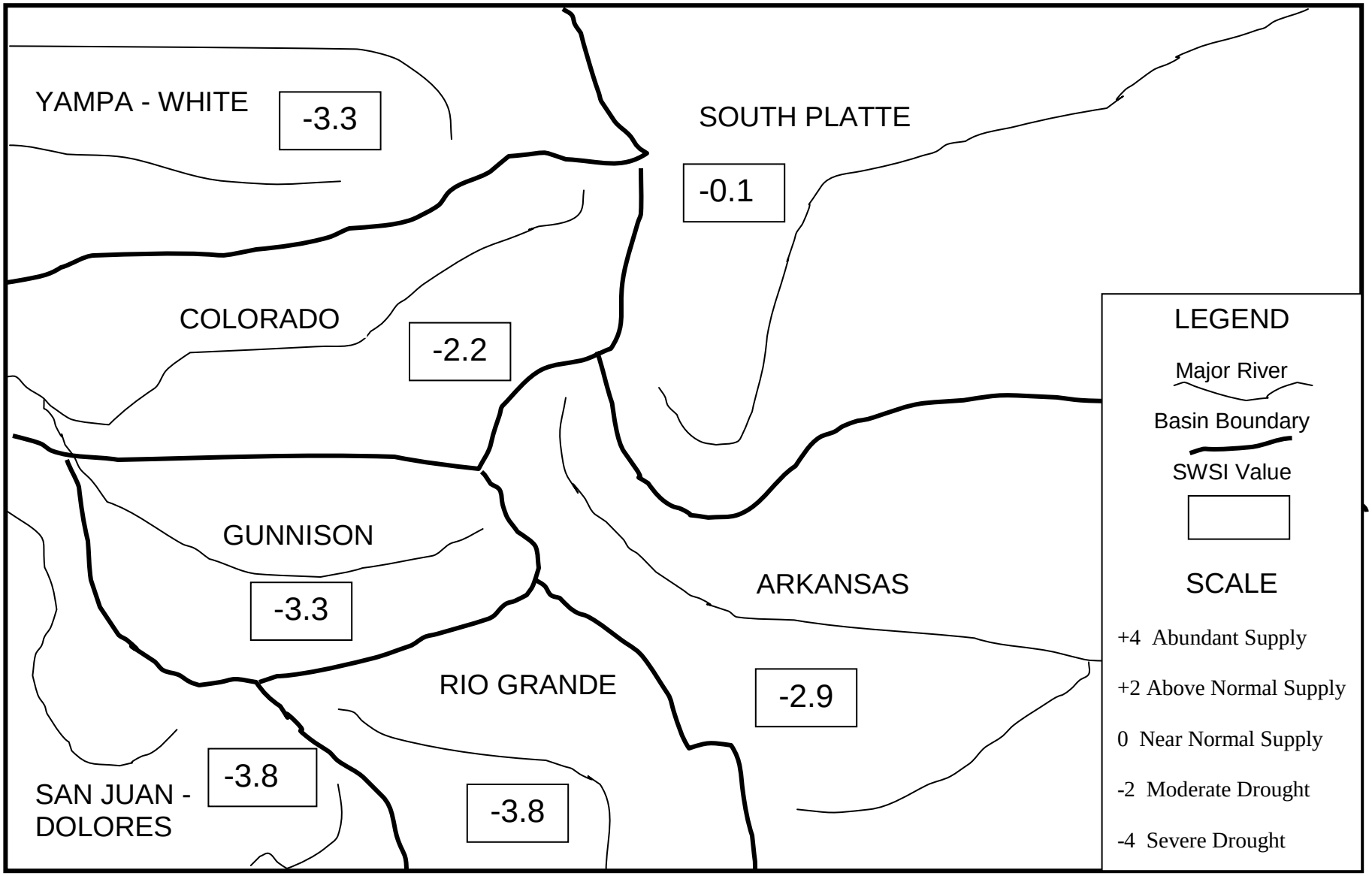
The following SWSI values were computed for each of the seven major basins for July 1, 2013. Additional information about SWSI calculations and the NRCS National Water and Climate Center SWSI by HUC are included on Page 10. The NRCS SWSI indicates variability in the level of surface water supply across smaller watersheds in the north half of Colorado, where in some cases, reservoir storage and streamflow levels reflect different drought conditions.

Basin	July 1 SWSI	Change from Previous Month	Change from Previous Year
South Platte	-0.1	-1.6	0.4
Arkansas	-2.9	-0.7	-0.4
Rio Grande	-3.8	-1.5	0.0
Gunnison	-3.3	-1.4	0.5
Colorado	-2.2	-1.1	1.4
Yampa/White	-3.3	-1.7	0.8
San Juan/Dolores	-3.8	-1.4	-0.1

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



July 1, 2013

Basinwide Conditions Assessment

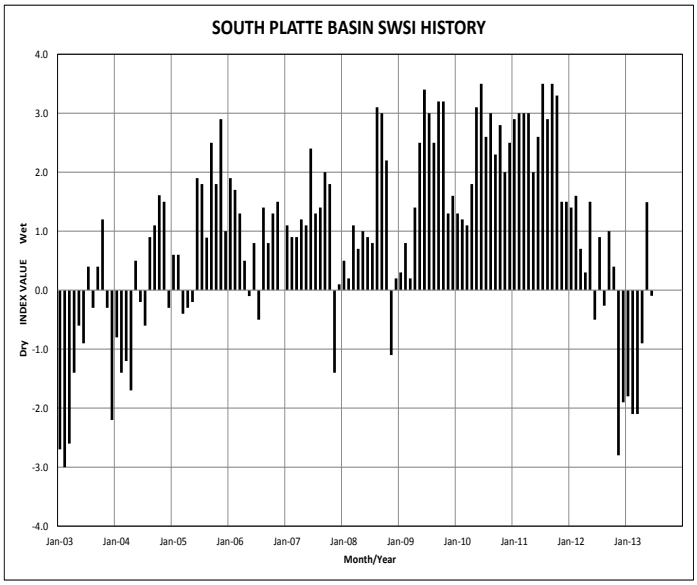
The SWSI value for the month was -0.1. Though June 2013 was not as hot as June 2012, it did turn out to be almost as dry as precipitation amounts in many were not significantly different between 2012 and 2013. Unlike 2012, there were no major forest fires within the South Platte basin in June 2013, but the Black Forest fire did move into the very southern edge of the basin along the Palmer divide.

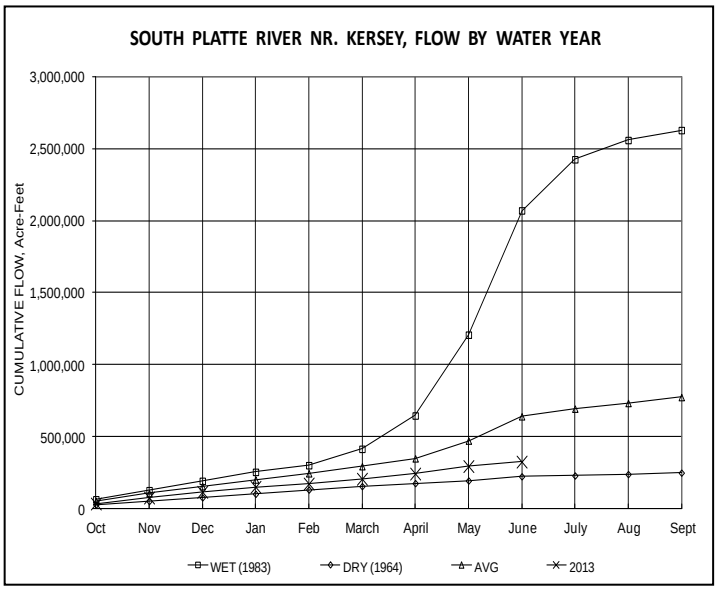
The June stream flows at the Kersey and Julesburg index gages continued the below to well below historic trend that began in March of 2012. The Kersey gage monthly mean stream flow was 521 cfs or 22% of the historic June mean flow of 2,323 cfs. The June Julesburg gage monthly mean stream flow was 70 cfs or 5% of the historic mean of 1,430 cfs. Considering that June is typically the peak flow month at both Kersey and Julesburg, these flows were especially disheartening for many water users.

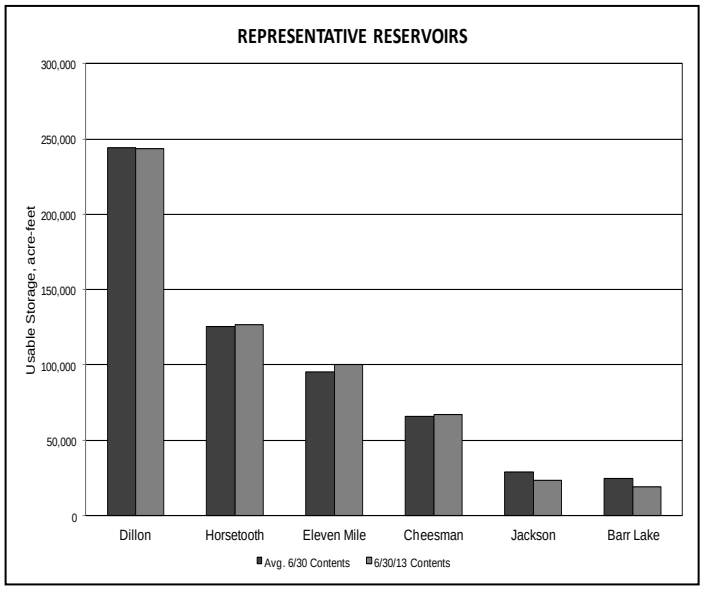
The end of June reservoir storage in the basin was at 89% of the end of June average. However, a cause for concern is that storage in the large reservoirs east of Kersey declined by approximately 50,000 AF in June, compared to an average June decline of approximately 10,000 AF.

The mainstem river calls were more senior than is typical of June. There was no free river at all and the South Platte Compact call was on for the entire month. Probably because of the flows contributed by the April and May snowpack increases, the calls on the main tributaries were more typical of a "normal" June.

The lack of June precipitation along the Front Range reversed the improved drought rating seen in May. By the end of June the northern Front Range area that had improved to "abnormally dry" (D0) by the end of May was back to the "moderate drought" (D1) category it was in at the end of April. The rest of northeast Colorado was in the "severe" (D2) or "extreme" (D3) drought categories with even an expansion of the "extreme" (D3) area from the end of April.





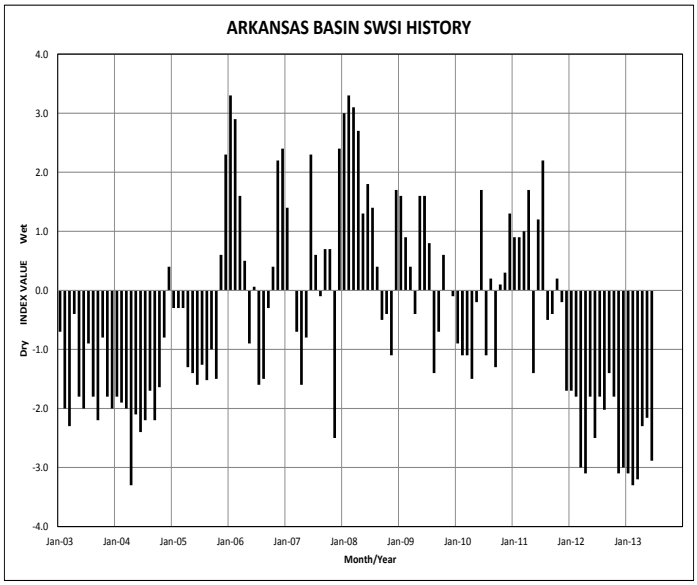


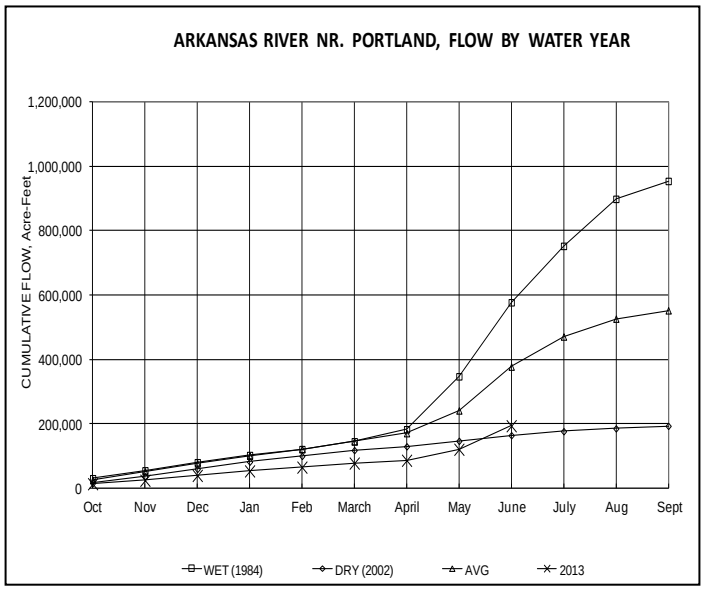
Basinwide Conditions Assessment

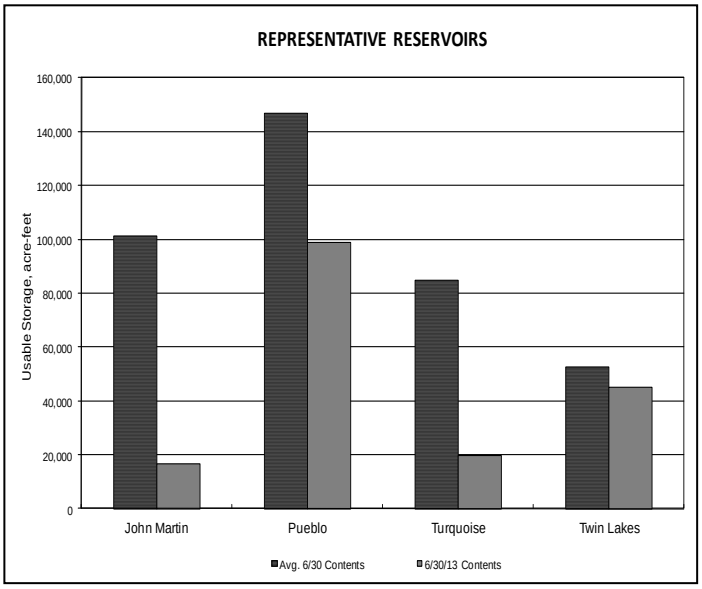
The SWSI value for the month was -2.9. All components of the SWSI were well below normal, but streamflow was particularly low with a nonexceedance probability of 10.5.

Runoff during June increased substantially peaking just prior to mid-June and sustaining a fair runoff for the balance of the month. The river call hovered near the Rocky Ford Highline March 11, 1886 water right through most of the month with one small storage event occurring in John Martin Reservoir around June 18th-19th.

The Southeastern Colorado Water Conservancy District allocated approximately 37,648 acre-feet of Fryingpan Arkansas Project water, with 20,549 acre-feet allocated for municipal use and 17,099 acre-feet allocated for agricultural use. This was significantly higher than the 9,882 acre-feet in the initial allocation in 2012.







Basinwide Conditions Assessment

The SWSI value for the month was -3.8. Flow at the gaging station Rio Grande near Del Norte averaged 862 cfs (28% of normal). The Conejos River near Mogote had a mean flow of 375 cfs (29% of normal). At the end of the month, most streams in the upper Rio Grande basin were nearing baseflow condition. Generally, the volume of runoff during June 2013 was far better than June of 2002, but less than June of 2003 and 2012. In drainages where reservoirs exist in the upper Rio Grande basin, the flow was enhanced by reservoir releases that have left the upper basin with very little carryover storage.

Although the total precipitation was near normal on the valley floor during June, most of it came during a four day run from the 27th through the 30th, right when most alfalfa farmers were trying to put up their first cutting. Alamosa made it to 94 degrees on June 27, only two degrees shy of the all-time record high.

Soil moisture conditions in non-irrigated areas are getting worse.

Outlook

Generous amounts of rainfall will be needed in the near future to neutralize the damage done to crop and rangeland by the continuing drought conditions. However, long-term weather forecasts don't predict any extraordinary precipitation for the next several months.

Administrative/Management Concerns

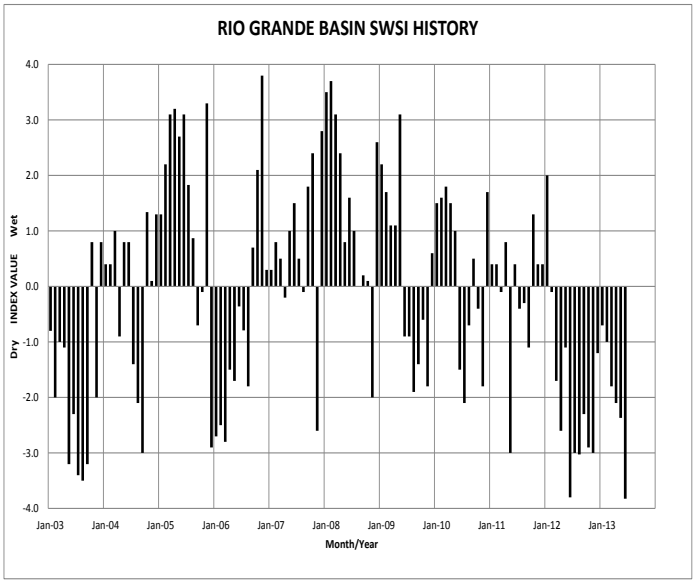
The large amounts of pumping from the basin's aquifers are taking a toll. Static water levels in the alluvial aquifers continue to drop significantly. No one knows what the long-term effects on the confined aquifer will be.

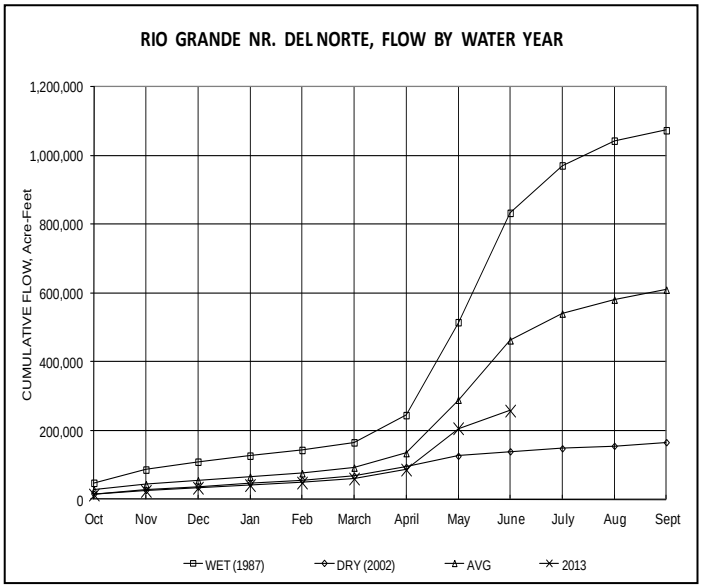
At the close of the month, only single digit priorities were diverting water from the Conejos, Los Pinos, Alamosa, La Jara, Pinos, and Saguache Creek drainages.

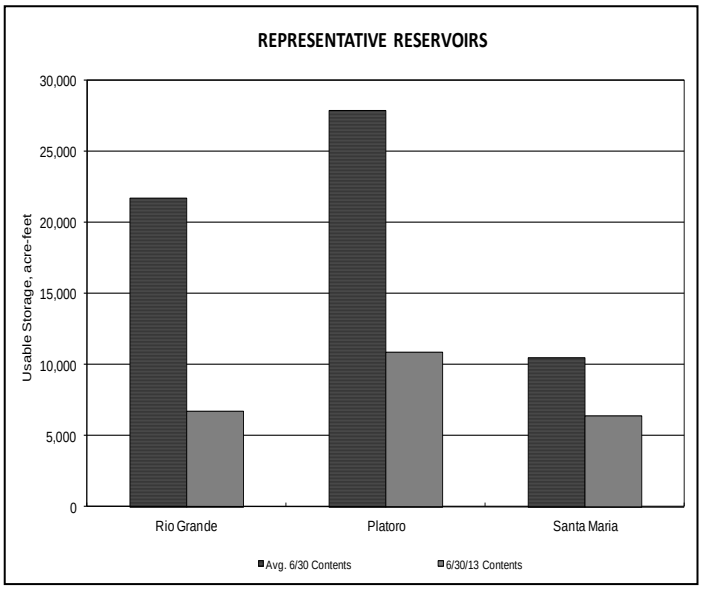
The West Fork fire complex ravaged over 100,000 acres of forest in the South Fork and Rio Grande Reservoir areas during June. Now comes the threat of flash flooding and massive debris flows.

Public Use Impacts

Low streamflow and reservoir levels in the basin are having a very detrimental impact on farming, ranching, and recreational activities.







Basinwide Conditions Assessment

The SWSI value for the month was -3.3. Dry conditions returned in June with the entire Gunnison basin receiving less than 50% of average precipitation. June also included above average temperatures (3-5 degrees above average) and hot dry winds that seemed to cause streamflows to peak below what was expected in some areas

Outlook

Colorado Basin River Forecast Center (CBRFC) streamflow forecasts for Gunnison basin streams in July range from 33% on Surface and Tomichi Creeks to 60% above Paonia Reservoir. Flows near the confluence in Grand Junction are predicted to be at 44% of average in July. Climate Center forecasts indicate that the Gunnison basin will have equal chances of below or above average precipitation for the next 90 days, but is on the edge of the area in the southwestern U.S. with a greater chance for above average precipitation so hopefully a good monsoon flow arrives in July.

Administrative/Management Concerns

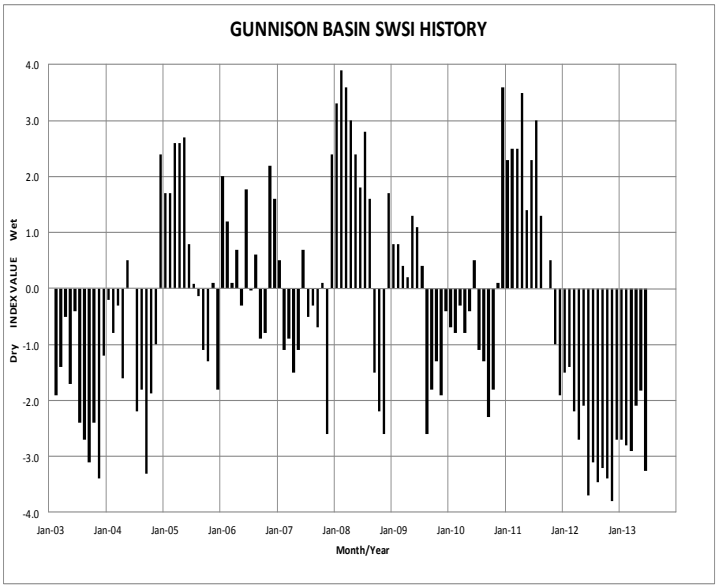
Gunnison Tunnel diversions began exceeding Aspinall Unit inflows on July 1st, which is important because when that occurs the Tunnel's direct flow rights are not met and it could place a call on the entire upper Gunnison basin. In 2013, as mentioned before however, the Upper Gunnison River Water Conservancy District (UGRWCD) purchased 4,500 acre-feet of water for use at the Tunnel by the Uncompahgre Valley Water Users (UVWUA) in order to forestall a call. In addition, despite early season predictions that Taylor Park Reservoir (stores water for use by UVWUA at the Tunnel) would not accrue any water to second fill, the late snows and cold spring allowed the reservoir to put 34,282 acre-feet into 2nd fill in 2013. The Taylor Park 2nd fill is extremely important to the upper Gunnison basin because the UVWUA doesn't typically call for their direct flow rights until the 2nd fill is empty and the Tunnel begins using 1st fill. With this amount in 2nd fill and the UGRWCD contract water available at the beginning of July, we believe a call from the Tunnel is not likely until mid-August at the earliest. The UVWUA call was placed on the Uncompahgre on June 26th. This is the second year in a row that the call has been placed on the Uncompahgre and by July has required curtailment to rights with 1897 adjudication dates. Although Ouray County irrigators fared better this year than last, since the call in 2012 was placed on May 2nd, they still will see a reduced hay yield due to lack of water in July. These irrigators are above Ridgway Reservoir and do not have a large storage source to supply their needs in the late season.

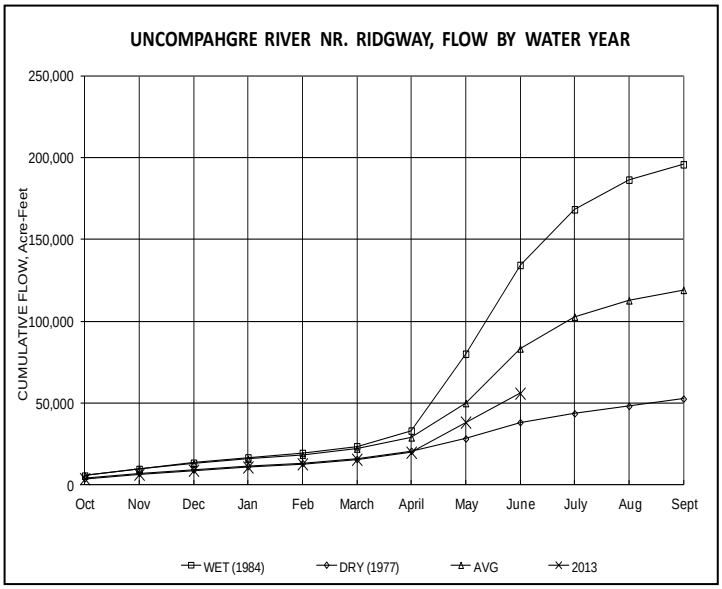
The dry, hot and windy June caused many Gunnison basin streams to dip more quickly than anticipated on June 1st. As a result, many streams are on call at the beginning of July. An offsetting positive, however, is that range conditions are better than in 2012 as the grass received some late spring moisture which produced some growth unlike in 2012 where it was dry from March through June.

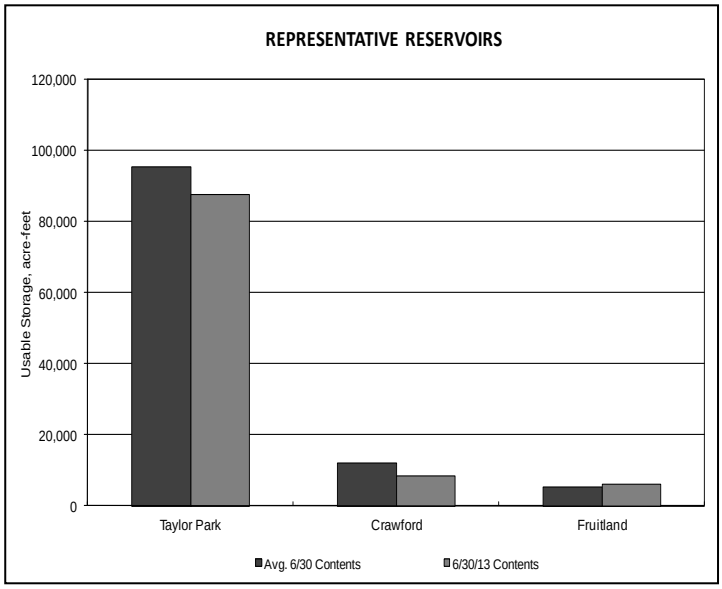
Crystal Dam is releasing 400 cfs of additional water to meet the Aspinall Unit Operations endangered fish flow targets at Whitewater. Blue Mesa reached peak storage of 451,289 acre-feet (54% full) on June 20th, but due to these increased releases, dropped to 437,771 acre-feet by July 1st.

Pubic Use Impacts

Taylor Park Reservoir operation plans call for the release of 250 cfs through September. Increased Crystal releases have produced July Black Canyon flows over 700 cfs.







Basinwide Conditions Assessment

The SWSI value for the month was -2.2.

Outlook

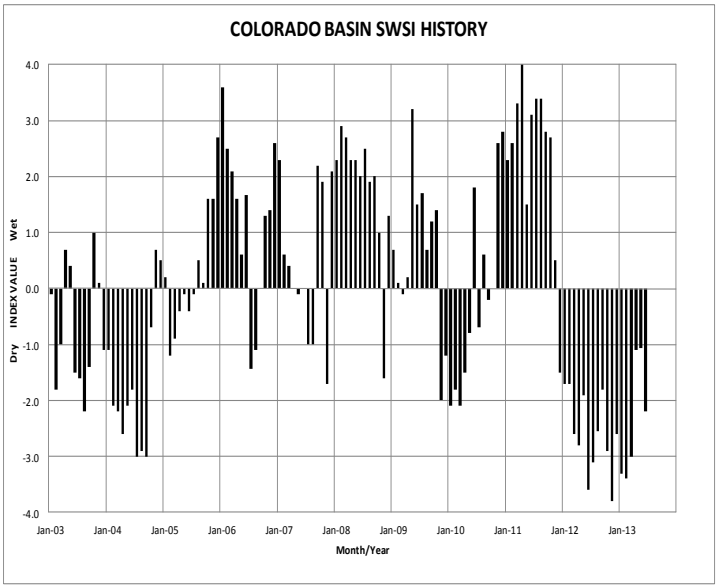
Colorado and Roaring Fork River flows will run significantly below average, trending closer to average by the end of July. Blue and Eagle river flows will exhibit a similar below-average trend with less of a disparity from average flows. Short term flow increases are likely with monsoonal precipitation forecast for the second half of July. The western Colorado forecast calls for average chance of precipitation through the month of July.

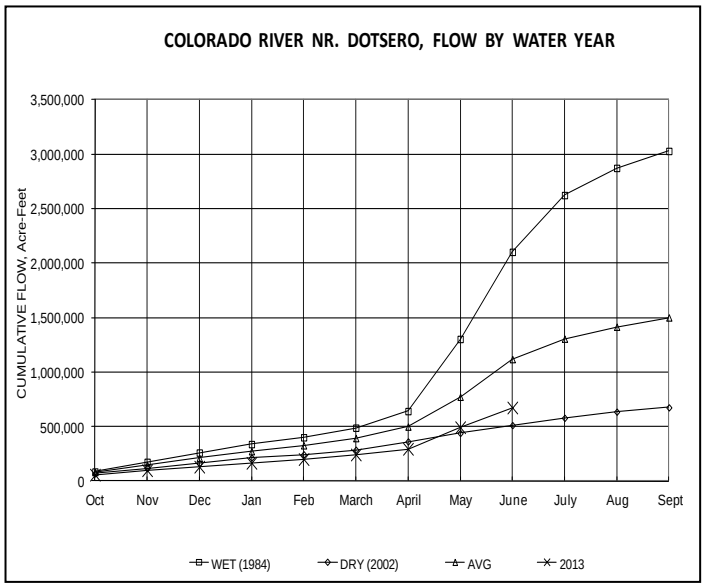
Administrative/Management Concerns

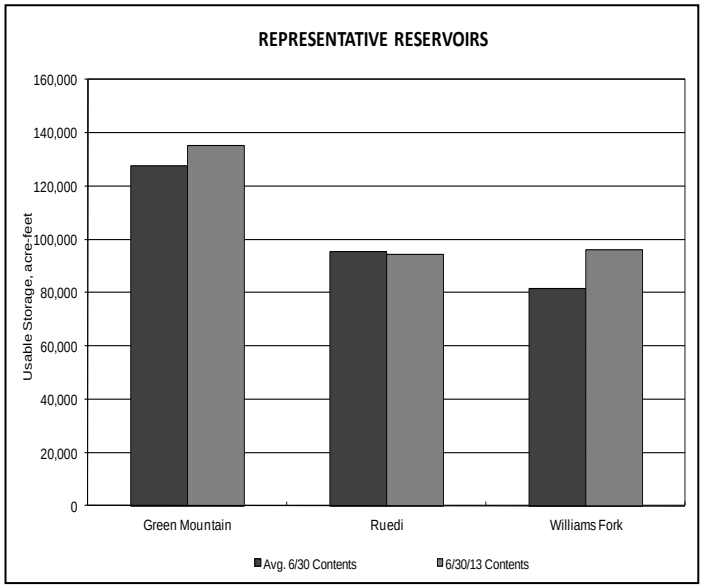
For the first time ever, a call was placed by the Colorado River District for the Ruedi Reservoir storage right on May 11th. Ruedi Reservoir should attain storage of 93 percent capacity by late July. Reservoir releases increased to 105 cfs on July 1st in accordance with the lower Fryingpan minimum flow requirement. Releases will increase further in mid July to benefit fish habitat in the 15 mile reach. A call on the Colorado main stem by Shoshone Power has been on consistently since July 3rd, and will continue through July. Irrigators of approximately 6000 acres in the Silt Water Conservancy District will be allowed only 25 days of available irrigation water, half of the typical 50 days. Placement of a call by the Grand Valley Irrigators is dependent on the rate of diminishing river flows and amount of precipitation.

Public Use Impacts

The rafting industry has enjoyed a significant improvement compared to last year, with flows rates between 3,000 and 10,000+ cfs in Glenwood Springs from early May through the end of June. Heavy rafting volume has continued into early July despite lower flows







Basinwide Conditions Assessment

The SWSI value for the month was -3.3. June precipitation was extremely low 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 6% 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 June fell to 82%.

Flow in all major rivers of the Yampa, White, and North Platte River basins was also well below average for the month of June. Flows peaked in mid to late May and had receded to near pre-runoff flow rates by the end of June.

Outlook

As of June 30th, Fish Creek Reservoir was full and storing 4,151 AF. Yamcolo Reservoir was storing 4,426 AF at the end of June 2013. The capacity of Yamcolo Reservoir is 9,580 AF. On June 30th, Elkhead Creek Reservoir was just below full and storing 24,062 AF. On June 30th, 2013, Stagecoach Reservoir was full and storing 36,400 AF.

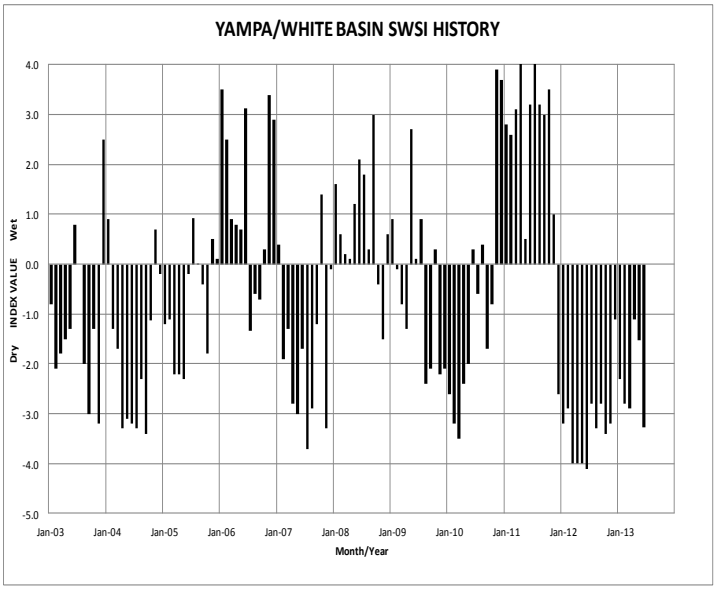
Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Elkhead Creek Reservoir for municipal, industrial, recreational, and fish recovery releases. Stagecoach Reservoir is primarily used for recreation though a significant amount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

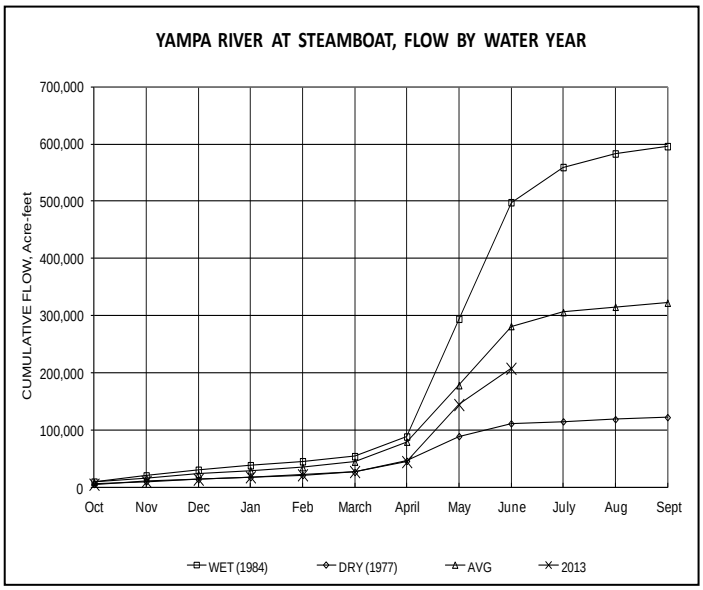
Public Use Impacts

To maintain flow on the Yampa River through Steamboat Springs, the Colorado Water Trust is once again considering leasing water from the Upper Yampa Water Conservancy's Stagecoach Reservoir. Due to the lower than normal flow on the Yampa River, river enthusiasts have been able to enjoy recreational opportunities earlier than usual.

Due to the extreme dry conditions and lack of rain across Division 6, there are various watering and fire restrictions in place in Jackson, Routt, and Moffat counties. National Forest lands in Division 6 also have varying fire restrictions in place.

Swim beaches at both Steamboat Lake and Stagecoach Reservoir are now open.

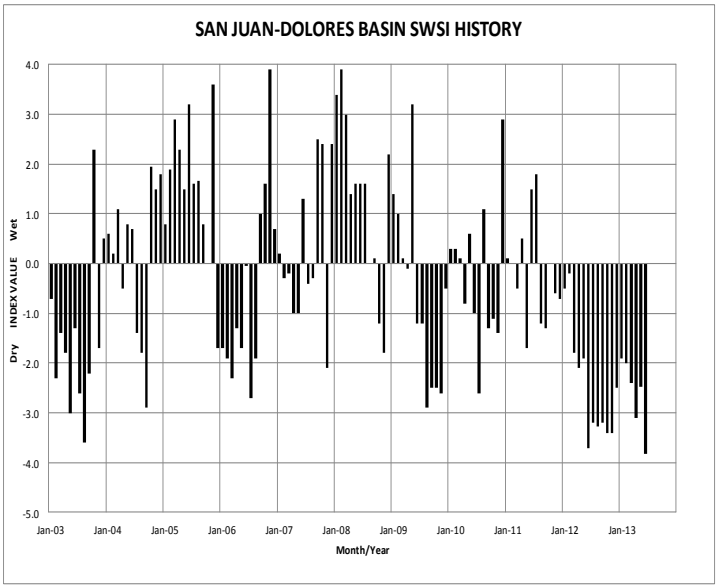


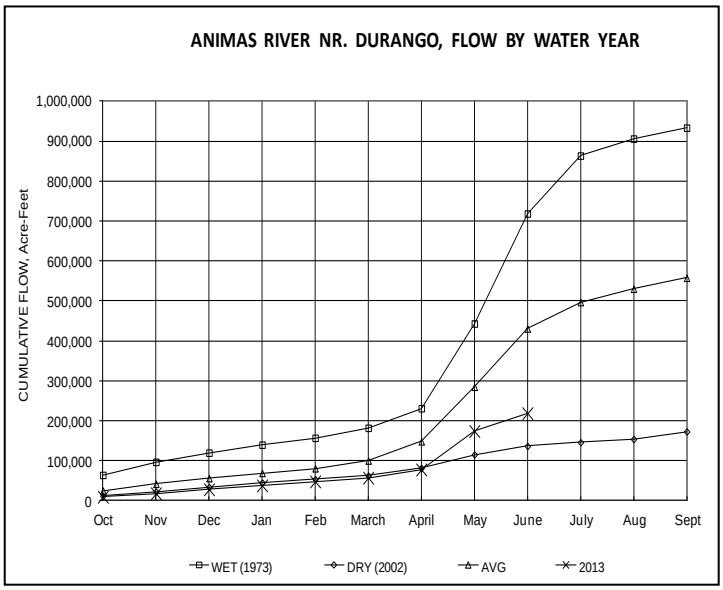


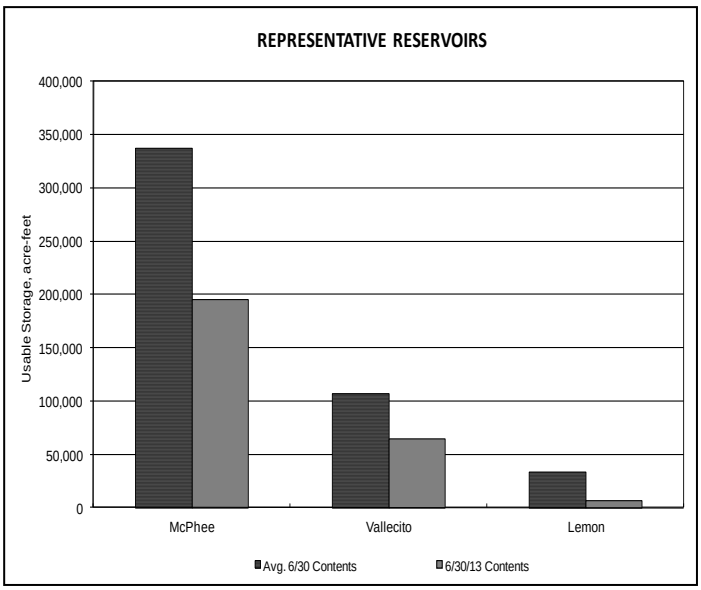
Basinwide Conditions Assessment

The SWSI value for the month was -3.8. Flow at the Animas River at Durango averaged 726 cfs (26% of average). The flow at the Dolores River at Dolores averaged 224 cfs (17% of average). The La Plata River at Hesperus averaged 22.2 cfs (18% of average). Precipitation in Durango was 0.25 inches for the month, 36% of the 30-year average of 0.69 inches. Precipitation to date in Durango, for the water year, is 6.74 inches, 51% of the 30-year average of 13.25 inches. The average high and low temperatures for the month of June in Durango were 86° and 47°. In comparison, the 30-year average high and low for the month is 82° and 46°. At the end of the month Vallecito Reservoir contained 64,8190 acre-feet compared to its average content of 104,988 acre-feet (62% of average). McPhee Reservoir was up to 195,368 acre-feet compared to its average content of 344,489 (57% of average), while Lemon Reservoir was up to 6,370 acre-feet as compared to its average content of 33,801 acre-feet (19% of average).

Precipitation (0.25-inches) was well below average for June in Durango. There are 82 years out of 119 years of record where there was more precipitation than this year. The flows on the Animas River were below average this June. There were 98 out of 102 years of record where the total flow past the Durango stream gauge was more than this year. The other basins within the division did not fare much better. There were 98 out of 102 years of record where the total flow past the Dolores stream gauge was more than this year and 92 out of 96 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 - Jul-13

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 July 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 observed streamflow. The scale of -4 to +4 is the same as shown on Page 1.