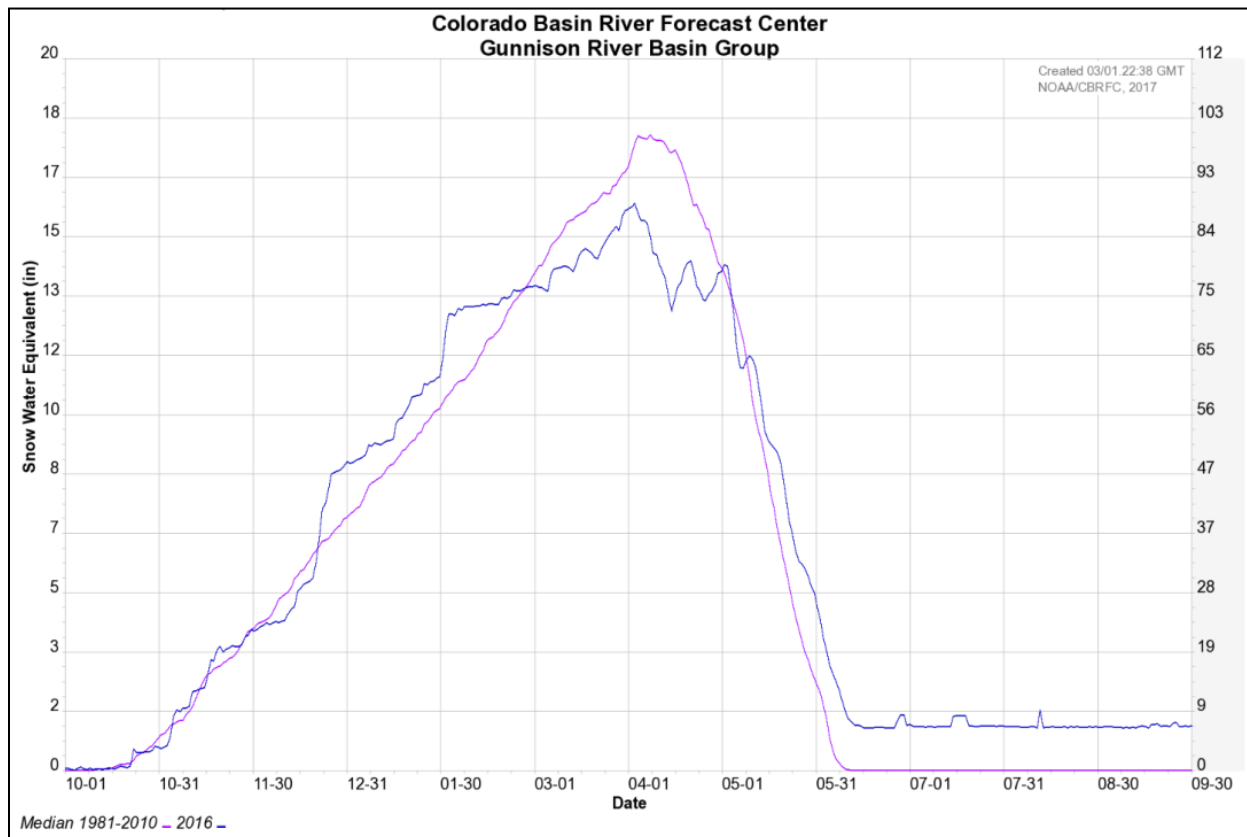


Water Division 4, 2016

Water Supply

The 2016 water year began with near normal conditions as temperatures maintained in the normal range and snowpack accumulated favorably until the month of February when things started to move sideways. February was warmer and drier than normal and March was also drier than normal. Thus, we never reached the median annual peak which occurs typically in the first or second week of April. In fact, it appeared the runoff was actually commencing slightly early in 2016 with high elevation snowpack melting in the first two weeks of April. Then, conditions changed with cooler temperatures prevailing for the remainder of April and May as well as significant precipitation events which boosted the expected runoff totals for the season and helped to extend the runoff a little longer than normal. Such runoff timing is beneficial to irrigators because they can take advantage of free river conditions longer before having to fall back to senior direct flow water rights. In addition, the extended runoff helps to preserve storage supplies for use later into the summer.

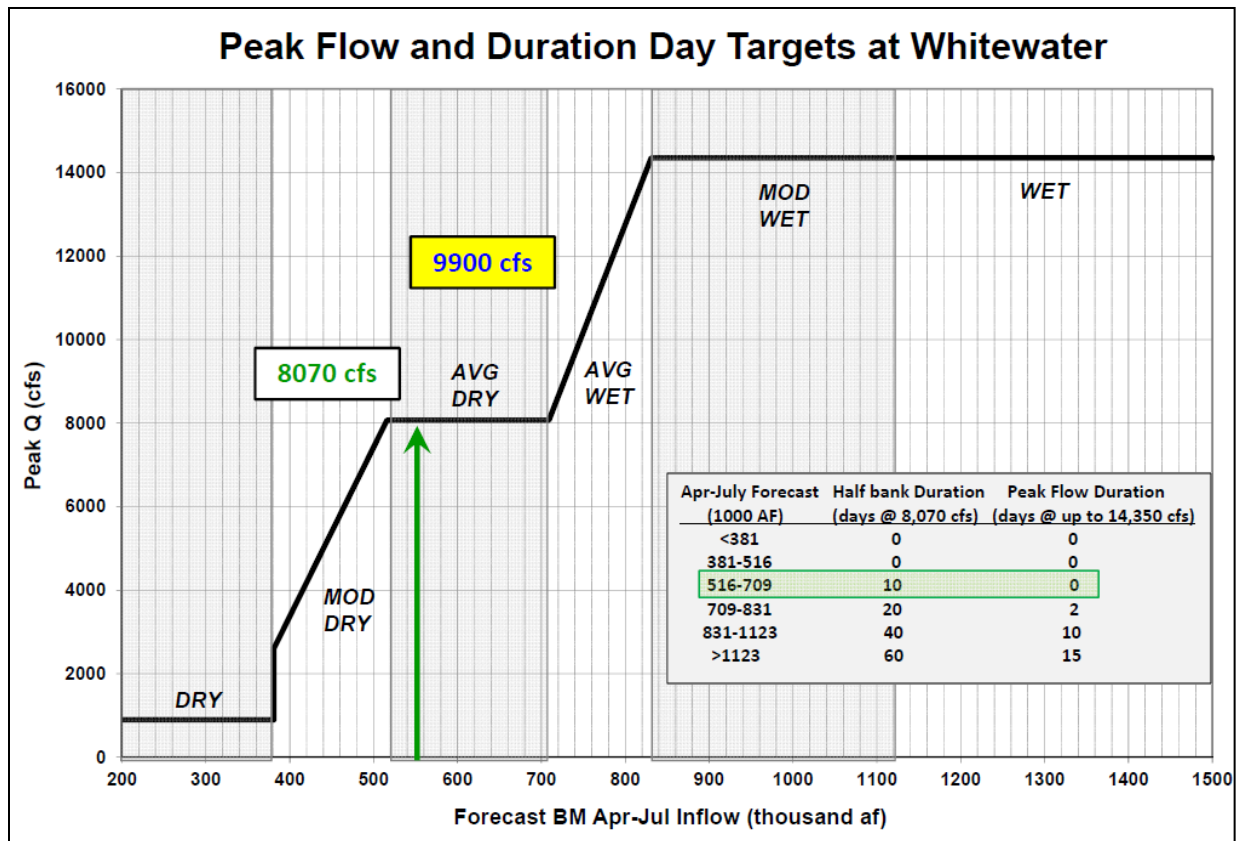
A chart of the 2016 snowpack conditions in the Gunnison Basin is shown below. The three major water producing watersheds are the upper Gunnison, the Uncompahgre and the North Fork Rivers. The upper Gunnison River drainage produced approximately 84 percent of its annual April through July average. The North Fork River only 78 percent and the Uncompahgre River yielded approximately 98 percent of its April through July runoff average flow.



In addition to the late snow and heavy rain in April and May, the Gunnison Basin received a good monsoon season in July and August, adding significantly to storage supplies. Base flows on all streams in the Gunnison Basin remained at or above normal flow rates for the most of the irrigation season. Many reservoirs were also able to store water in priority before the reservoir fill season began on November 1st, which will be very helpful for water supply conditions during the 2017 irrigation season. In summary, even though the snowpack conditions were well below normal, the very wet spring improved water supply conditions to nearly 100 percent of normal. As a result, the late runoff, which extended well into June, postponed most typical river calls which occur in June on many streams throughout the basin. Some streams such as the San Miguel River had no river call throughout the entire irrigation season which is not common in an average to below average snowpack season.

Surface Water Administration

The April-through-July forecasted inflow to the Aspinall Unit (Blue Mesa, Morrow Point, and Crystal Reservoirs) as of May 1st was only about 78 percent of the 30-year median seasonal peak, only 525,000 acre-feet, categorizing the season as a “moderately dry” year for storage management purposes under the Record of Decision for the operation of the Aspinall Unit. However, due to the late April and May precipitation, the actual April through July runoff volume into Blue Mesa Reservoir finally measured at 602,000 acre-feet. Based on the Colorado Basin River Forecast Center’s May 1st forecasted inflows into Blue Mesa Reservoir, the target peak flow in the critical stream reach of the lower Gunnison River for 2016 was 8,070 cfs as measured at the Whitewater stream gage, shown in the chart below. However, due to such high inflows during April through June, the peak was actually accomplished by normal releases from Crystal Reservoir, combined with tributary runoff peaks on the North Fork River and Uncompahgre River resulting in a “double peak” flow being measured at the Whitewater stream gage of just over 9,900 cfs on May 17th and May 23rd.



Again, each year, the Bureau of Reclamation attempts to meet the peak flow target on the critical habitat stretch of the lower Gunnison River as measured at the river gage at the little town of Whitewater at the lower end of that stream reach. In addition, there is a duration component involved with the releases from the Aspinall Unit as show in the inset table on the chart above. For example, in 2016, the peak flow to meet at the Whitewater gage was 8,070 cfs with duration requirement of 10 days.

As explained above, the delayed runoff conditions coupled with higher than average precipitation during April through June for much of the basin, and certainly in the upper Gunnison River Basin, resulted in much more inflow into Blue Mesa Reservoir than could have been forecasted by the snowmelt runoff alone.

Taylor Park Reservoir had its first fill account filled at the beginning of the fill season with excess carryover storage left in the account in Blue Mesa Reservoir and 71,000 acre-feet of water in Taylor Park Reservoir as of November 1st, 2015. The second fill account in Taylor Park was filled not until the last week of August. Given the ample water supply conditions in the Upper Gunnison River basin, the Uncompahgre Valley Water Users Association was able to provide 100 percent supply to its users in 2016. There was no chance of a call on the Uncompahgre River during 2016 due to the sufficient supply through the Gunnison Tunnel and thanks in part to the late spring snows and cool spring weather which provided for more prolonged runoff conditions than expected.

In District 40, the runoff conditions from the Grand Mesa were less than average, but certainly better than the previous two years and carryover storage was also improved. Water users did not

need to start using reservoir water this year until July. Reservoir storage is critical in this area, thus the hundreds of reservoirs constructed on the Grand Mesa. Late March and early April precipitation helped to delay the timing of the runoff and reservoirs were able to fill prior to the main stream systems (Ward Creek and Surface Creek) going on call. The season ended with significant rainfall in September and early snow in October resulting in good carryover in all of the five main drainages on Grand Mesa in Division 4. Fruitgrowers Reservoir filled in priority over the winter due to the increased base flows from the monsoon season. In addition, the twenty-nine reservoirs on Leroux Creek system were able to fill during the runoff and went into the next fill season in good shape.

Paonia Reservoir dominates river operations on the North Fork River during irrigation season and the storage water is primarily owned by the Fire Mountain Canal Company. The Fire Mountain Canal relies on natural flow during the spring until the runoff season ends; then it relies on storage out of Paonia Reservoir. The North Fork Farmer's Ditch placed a river call on the North Fork River on July 11, which calls out the Fire Mountain Canal. This action is typical of a normal water administration year.

In water District 60, the San Miguel River held up surprisingly well due to seasonal monsoon events and there were no calls by the downstream irrigators (namely the Highline Canal) on the San Miguel River in 2016.

Groundwater Administration

The Well Permitting Program in Division 4 continues to provide timely issuance of exempt well permits. There were 274 well permits issued within Division 4 during the 2016 water year, a fair increase from the 217 permits issued the previous year. 236 of the total 274 permits were exempt well permits issued by Scott King, the Division 4 well commissioner. The remaining 38 non-exempt permits were issued by the Divisions 456 Team staff out of the Denver Division of Water Resources Office. The Division 4 Office will continue issuing exempt well permits for the foreseeable future.

Water District 40 is the largest district and much development relies on individual wells for water supply. Similarly, development and growth in Water Districts 59 and 60 rely on individual wells for water supply. The most well permitting activity in Division 4 occurred in Water Districts 59 (Upper Gunnison area) and Water District 60 (San Miguel River basin area). 62 well permits were issued in Water District 59 and 68 well permits were issued in Water District 60. Due to the availability of a treated potable water supply throughout the Uncompahgre Valley, comparatively fewer domestic use wells are drilled in Districts 41 and 68.

As all exempt well permits in Division 4 were issued out of the Montrose office, staff has spent a considerable amount of time identifying and correcting information in the well permit database. The Well Commissioner has also undertaken several GIS projects involving this database that is proving very useful in getting parcel information from the counties in a useable form and moving toward replacing the hand drawing process on the paper maps. Use of Aquamap has allowed the Well Commissioner to use GIS parcel data to easily identify parcels that are locked up with a

permit. His use of GIS data continues to expand to make him more efficient in approving and tracking well permit applications.

Hydrographic Activities

Div 4 has thirty-one Satellite Monitoring Stations (SMS), an increase of two additional SMS gages this season. Eleven of these gaging stations are record gages that are published annually. The data from these stations may all be found on the *Colorado's Surface Water Conditions* web site. We cooperate with the US Bureau of Reclamation at four sites and publish two of these. Hydrographer Jerry Thrush continues to provide hydrographic support for this Division. With the assistance of several Water Commissioners, Jerry maintains the eleven published gages, twenty-five administrative gages and keeps satellite monitoring equipment maintained. In 2016, a total of 219 measurements were made by Jerry and the water commissioners that assist him.

Division 4 has experimented with replacing Stage Discharge Recorders with Radar Water Level Sensors at several stations with excellent results. The radar units are more expensive than the SDRs but they require less maintenance and there are fewer electronic components associated with the system, which translates to less maintenance.

Jerry led an informal training session this year at the Cedaredge Field Office with the water commissioners who assist him concerning communication with DCPs and going over proper field procedures. Five water commissioners performed a total of 109 measurements, some administrative only, others for published records.

Community Involvement

Past experience has revealed the extreme importance of having respectful and trusting relationships with the variety of water use organizations and members of the community. Without such trust and respect, this office would have limited effectiveness. Division 4 appears to be somewhat unique, wherein the major water user groups work together with the government organizations for the betterment of the basin. It is a pleasure to be a part of that cooperation.

The Division 4 staff was greatly involved in 2016 with our water users and we see such interaction as an increasingly important part of our responsibility as water stewards. To this end, we frequently attended meetings of the Upper Gunnison River Water Conservancy District, Tri-County Water Conservancy District, North-Fork Water Conservancy District, Uncompahgre Valley Water Users Association and its Board of Directors, Farmers Water Development, Surface Creek Ditch and Reservoir Company, Granby Ditch and Reservoir Company, Big Ditch Company and Park Reservoir Company, Overland Ditch and Reservoir Company, and other water interest groups.

The Division Engineer consistently attended meetings of the Colorado Water Conservation Board, Southwest Water Conservation District in Durango, US Forest Service, Bureau of Land Management, and the US Bureau of Reclamation. Not only is valuable input offered, there is an opportunity to be informed of many other basin issues potentially affecting this office.

Our public involvement included participation on the Gunnison and San Miguel Basin Roundtables, both for the Statewide Water Supply initiative, or SWSI, and the Interbasin Compact Committee. We have worked closely with both the Executive Director's Office of DNR as well as the Colorado Water Conservation Board in providing a local perspective of basin water issues. We helped identify existing water supplies and pointed out areas where future growth might be faced with water shortages.

Many Water Commissioners attend local water user meetings in their communities, a practice strongly encouraged by this office. As they are the local water experts in the area, they can provide local knowledge and valuable input.