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

February 2015

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 snowpack, reservoir storage, and precipitation for the winter period of November through April (December 1 through May 1). During the winter period, snowpack 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 January (February 1) range from a high value of +1.9 in the South Platte River Basin to a low of -2.0 in the Yampa/White River Basin. Reservoir storage is very strong statewide. Snowpack is well below normal in each basin with the exception of the Arkansas River Basin.

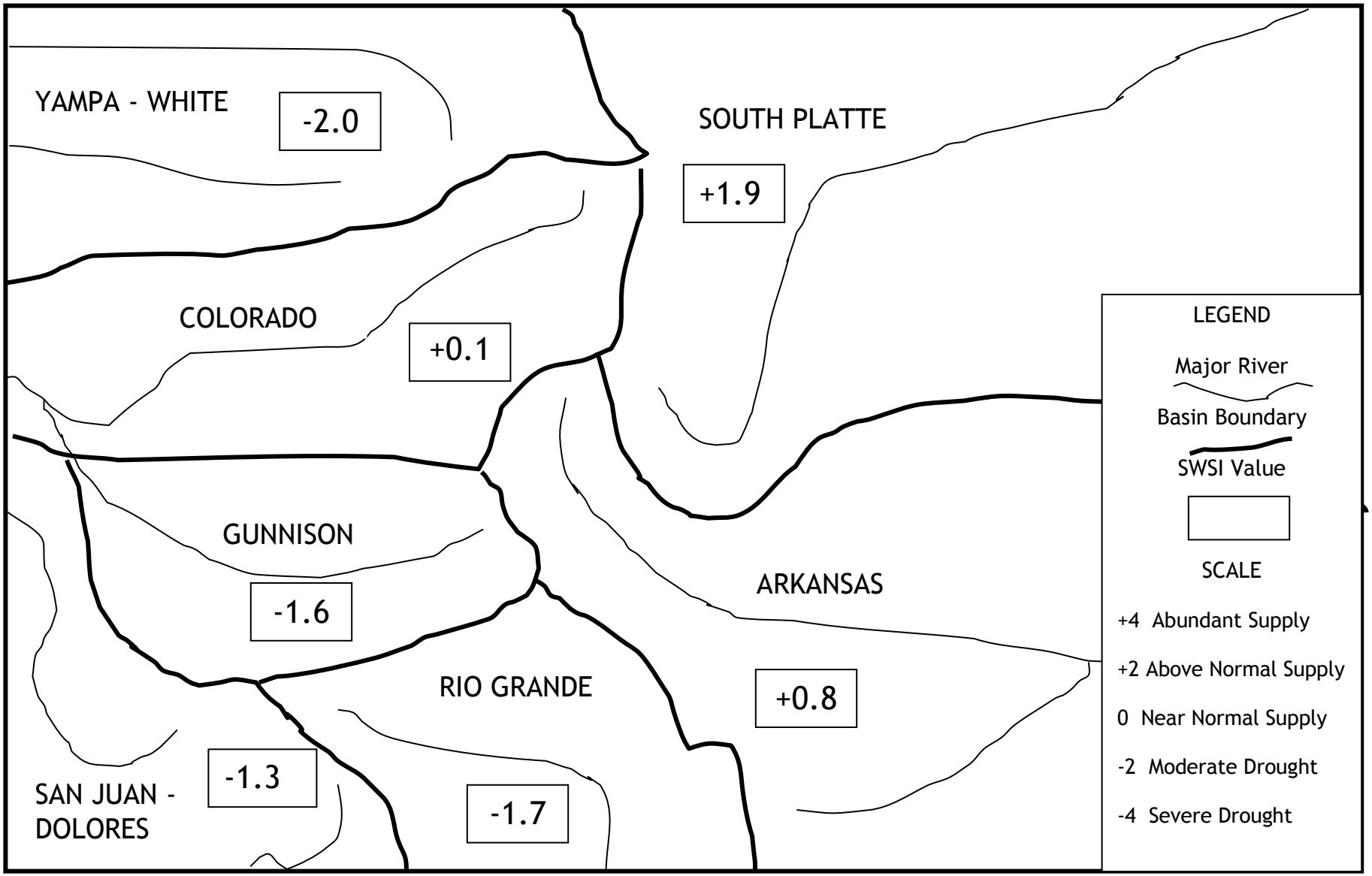
The following SWSI values were computed for each of the seven major basins for February 1, 2015. Additional information about SWSI calculations and the NRCS National Water and Climate Center SWSI by HUC are included on Page 10.

Basin	February 1 SWSI	Change from Previous Month	Change from Previous Year
South Platte	1.9	0.0	0.4
Arkansas	0.8	-1.8	0.0
Rio Grande	-1.7	-0.6	-0.9
Gunnison	-1.6	-1.6	-1.7
Colorado	0.1	-2.0	-1.4
Yampa/White	-2.0	-3.1	-3.0
San Juan/Dolores	-1.3	-0.2	-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



February 1, 2015

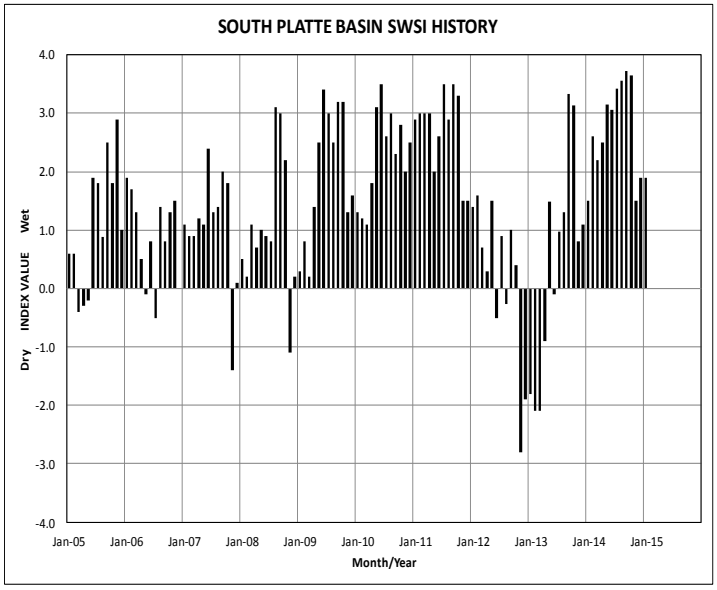
Basinwide Conditions Assessment

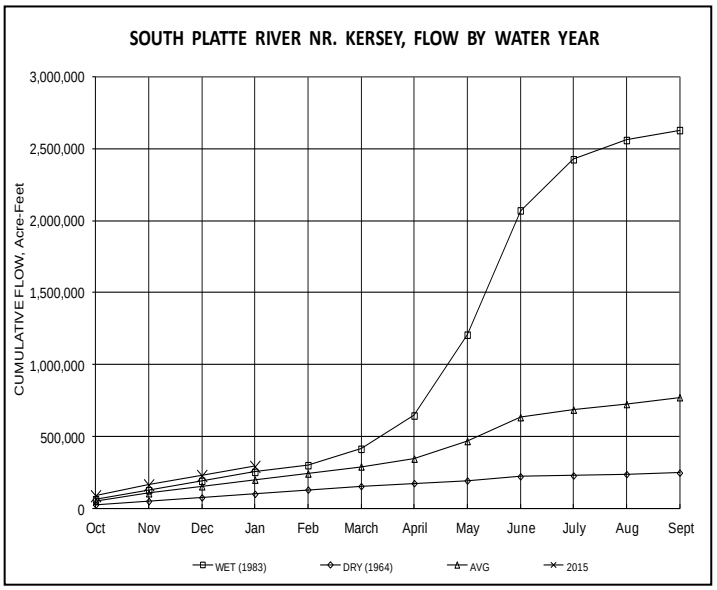
The SWSI value for the month was 1.9. January 2015 felt warm and dry over most of northeast Colorado. The temperature data do reflect that most of northeast Colorado was somewhat warmer than normal. Precipitation, as is often the case, was not as uniform as temperature. In general, the higher elevation areas on the south side of northeast Colorado were near to above normal while the more northern areas, regardless of elevation, were below normal.

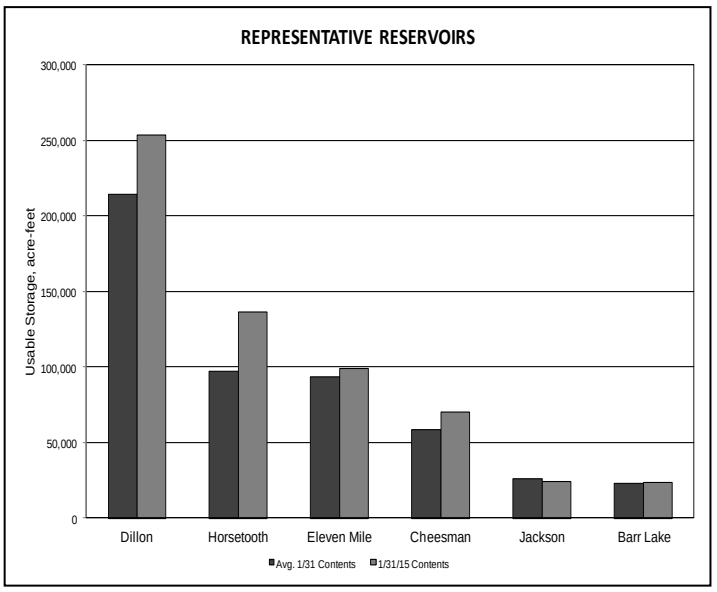
The river flows at both the Kersey and Julesburg index gages continued the well above mean flows that have existed for quite some time. The Kersey mean monthly flow was 1030 cfs or 158% of the historic mean of 652 cfs. The Julesburg mean monthly flow was 1910 cfs or 375% of the historic mean of 509 cfs. This flow at Julesburg is very unusual because it marks the third month in a row of the mean monthly flow at Julesburg exceeding the mean monthly flow at Kersey.

This is beginning to feel like a broken record, but free river conditions again existed almost everywhere in the South Basin during all of January. There were no calls on the South Platte mainstem for the entire month of January. There was a call on Ralston Creek, a tributary of Clear Creek, the first half of January. There were also calls on South Boulder and Boulder Creeks the entire month.

The reservoir storage in the South Platte basin continued the trend of above average storage. Using 32 major reservoirs, storage at the end of January increased to about 84% of capacity – a 2% increase (about 22,000 AF) from the end of December. For comparison, the average end of January storage is about 71% of capacity.







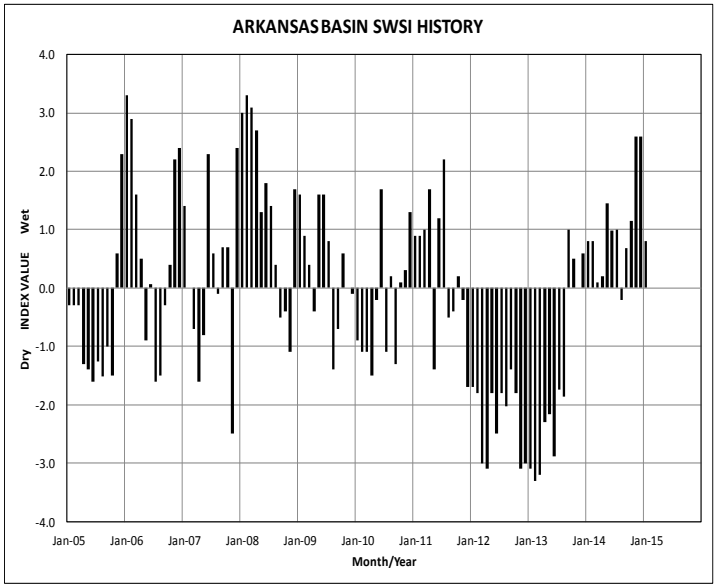
Basinwide Conditions Assessment

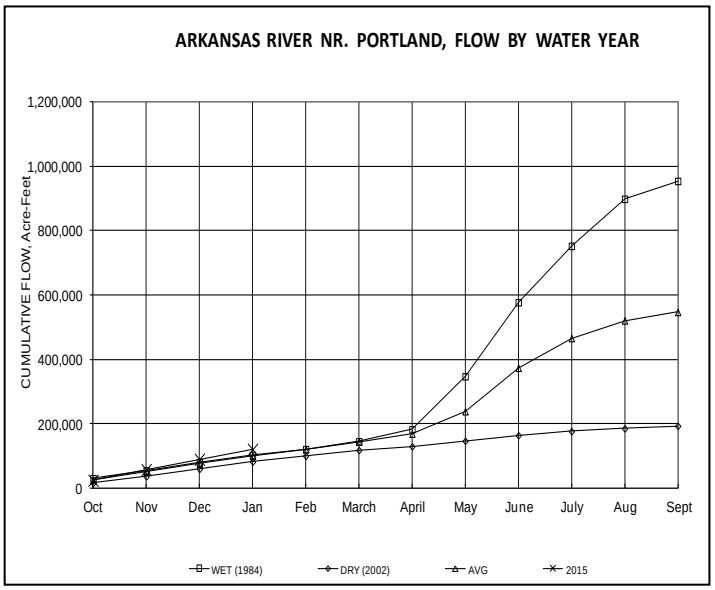
The SWSI value for the month was +0.8. Reservoir storage in the Pueblo Winter Water Program totaled 88,867 acre-feet as of the end of January. This storage amount is significantly more than last year's storage to date of 69,160 acre-feet and represents 119% of the past five-year average and is just below the last twenty year average.

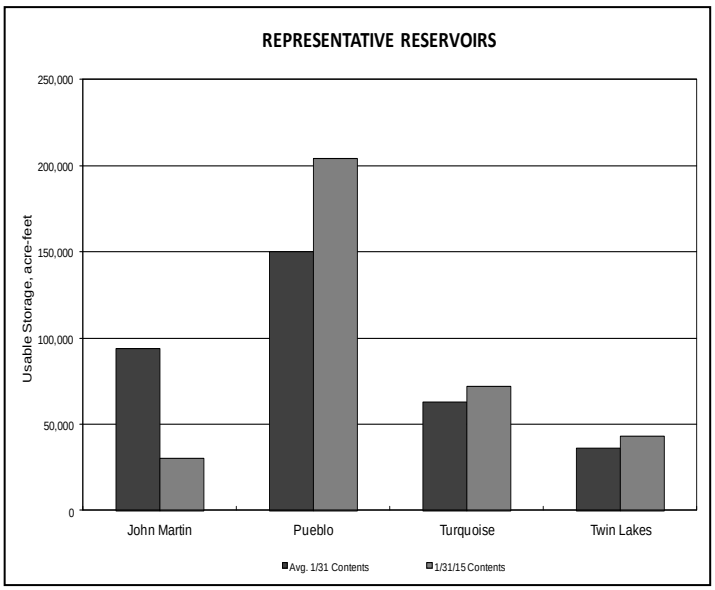
Conservation storage in John Martin Reservoir has accumulated 9,891 acre-feet versus 6,132 acre-feet as of the end of January last year.

Administrative / Management Concerns

The project application for a pilot project for rotational lease fallowing pursuant to HB13-1248 was approved in the Arkansas Basin. This project utilizes farms under the Catlin Canal to provide municipal supplies to the Town of Fowler, City of Fountain and Security Water District.







Basinwide Conditions Assessment

The SWSI value for the month was -1.7. Flow at the gaging station Rio Grande near Del Norte averaged 190 cfs (109% of normal). The Conejos River near Mogote had a mean flow of 40 cfs (81% of normal). Some streams within Division 3 continue to benefit from the August, September, and October 2014 rainfall.

There was very limited snowfall in the San Juans and Sangre de Cristos during December and January. It was a very mild January in the San Luis Valley where the lack of snowfall kept temperatures well above normal.

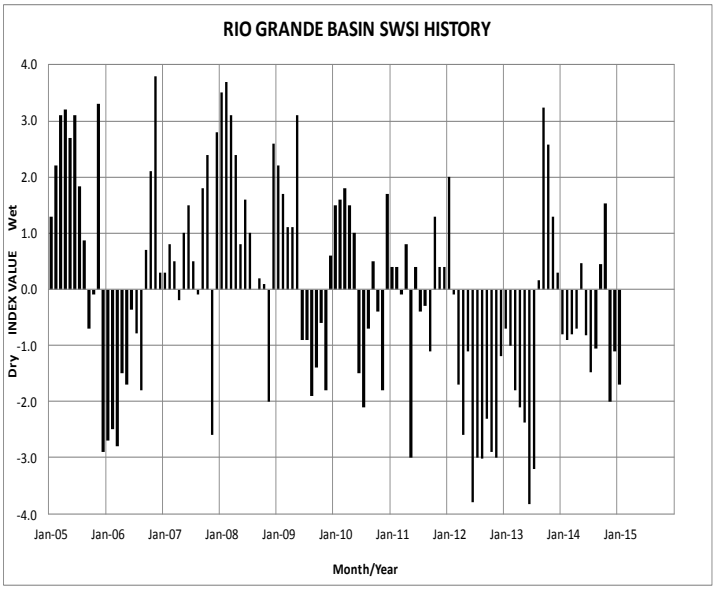
Outlook

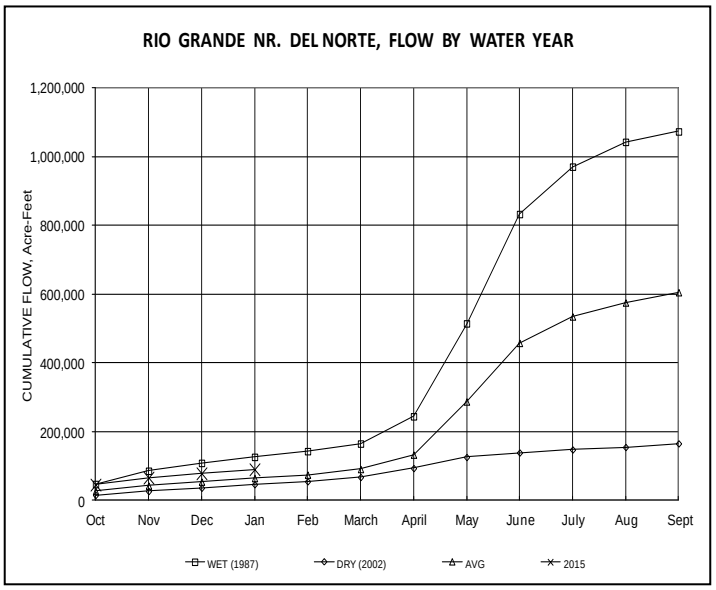
The most recent Natural Resources Conservation Service stream flow forecasts are predicting runoff in area streams to be in the range of 49% Rio San Antonio) and 57% (La Jara Creek) to 97% (Saguache Creek) of average during the 2015 irrigation season. While none of the streams in the upper Rio Grande basin have forecasted runoffs greater than the long-term averages, it seems the southern drainages of the San Luis Valley are in worse snowpack condition than the rest of the basin.

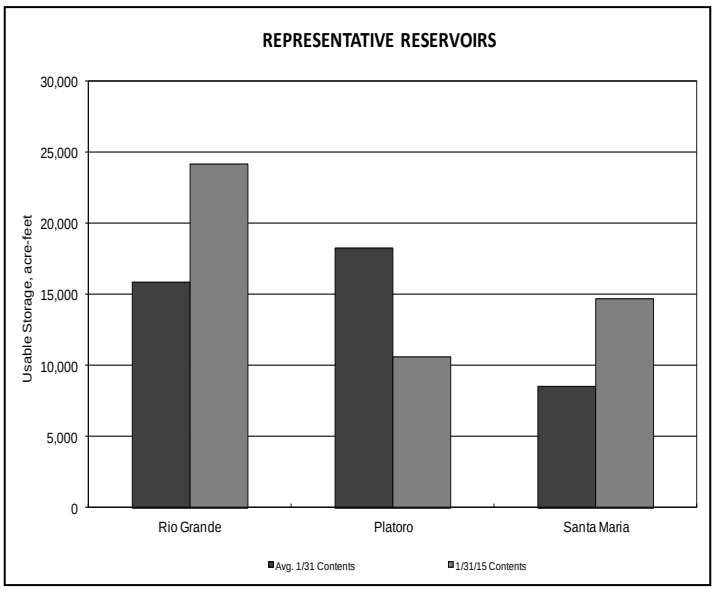
Current National Weather Service forecasts for February through April, 2015 are still calling for above average precipitation and temperatures in this area of the state.

Administrative/Management Concerns

Division staff is putting 2014 to bed and getting ready for the 2015 irrigation season. The warm and dry conditions have resulted in an early call for irrigation water. And it seems without additional precipitation on the Valley floor, the annual presumptive start of the irrigation season of April 1 may be pushed forward this year.

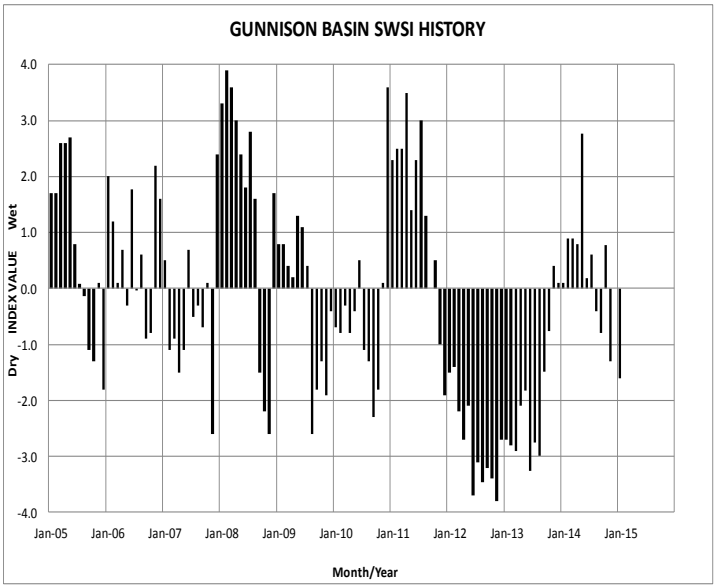






Basinwide Conditions Assessment

The SWSI value for the month was -1.6. Snow water equivalent (SWE) values, when compared to the median for the date, plummeted in the Gunnison basin during January and early February due to the lack of precipitation. Precipitation basin-wide was generally less than half of average, which reduced the basin-wide SWE from 97% of the median on January 1st to 74% on February 10th. Taylor Park Reservoir's drainage continues to be in the best shape, but dropped from a healthy 122% to 97% of the median during that same time. Areas to the west, such as the Grand Mesa and Uncompahgre Plateau, alarmingly are at levels below 2002 with Park Reservoir and Columbine Pass snotel sites recording only 92% and 81%, respectively, of the SWE on February 10, 2002! These values were confirmed with manual snow course measurements made by water commissioners in the past week. Further, temperatures in the basin during the same period were much warmer than average, causing some sites such as Idarado and McClure Pass to experience SWE loss in recent days, indicating that melting may be occurring at some locations already.

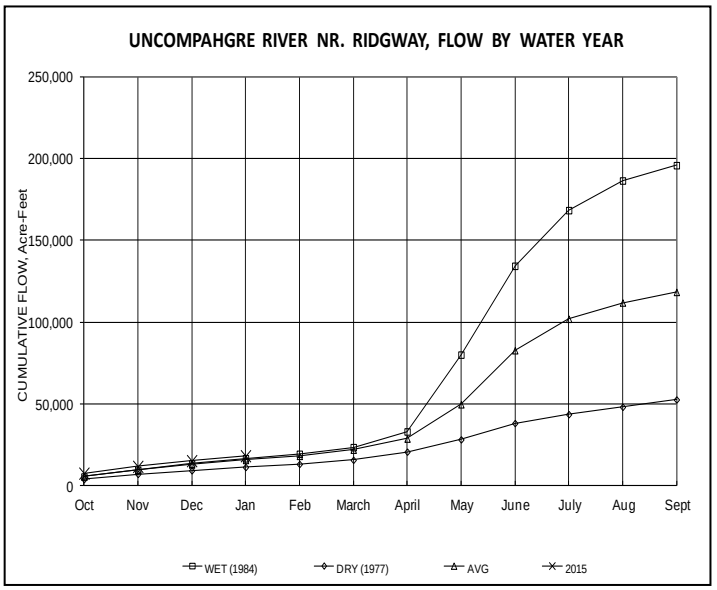


Outlook

The outlook for February, March and April from the National Weather Service places the Gunnison basin within an area expected to have greater than average precipitation so here's hoping that this forecast comes to pass.

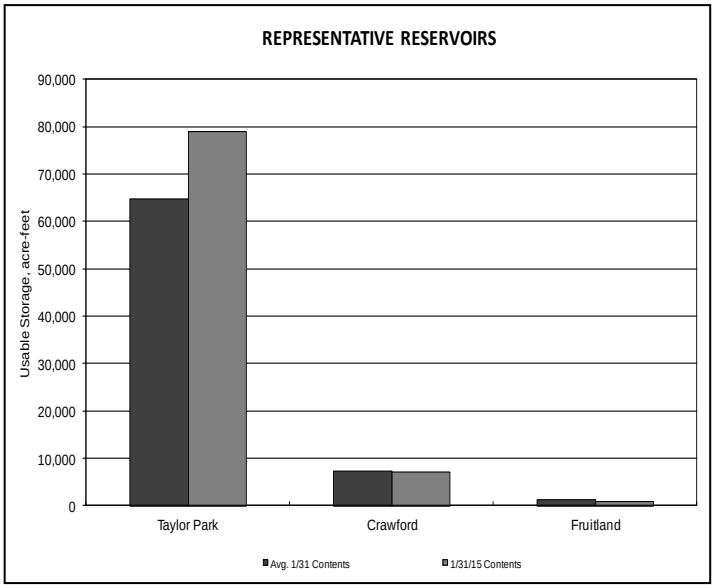
Snowpack non-exceedance projections published by the NRCS on February 10th predict that the basin will reach a peak SWE of 87% of the median provided that it receives an amount of precipitation that has 50% chance of occurring during the remaining accumulation season.

Streamflow forecasts by the Colorado Basin River Forecast Center range from 57% of average on Surface Creek in Cedaredge to 100% of average on Tomichi Creek in Gunnison.



Administrative/Management Concerns

It is beginning to look like good 2014 reservoir carryover storage on the Grand Mesa and elsewhere could be critical to getting irrigators, especially in the North Fork Gunnison River basin, through the season. Taylor Park continues to accrue second fill water and contains over 18,000 acre-feet on February 10th. As a result, even if the remaining season is dry, use of Taylor Park Reservoir's first fill should not occur until late in irrigation season. Releases from Crystal Dam were reduced to 600 cfs in response to the declining inflow forecast for the Aspinall Unit. The February 1st forecast April to July inflow into Blue Mesa Reservoir is 620,000 acre-feet, which is sure to decline further when it is updated in mid-February. This inflow places the basin in an average-dry condition and would result in a Black Canyon National Park reserved water right peak flow target of 4,797 cfs and an Aspinall Re-operations ROD flow target of 8,070 cfs for 10-days.

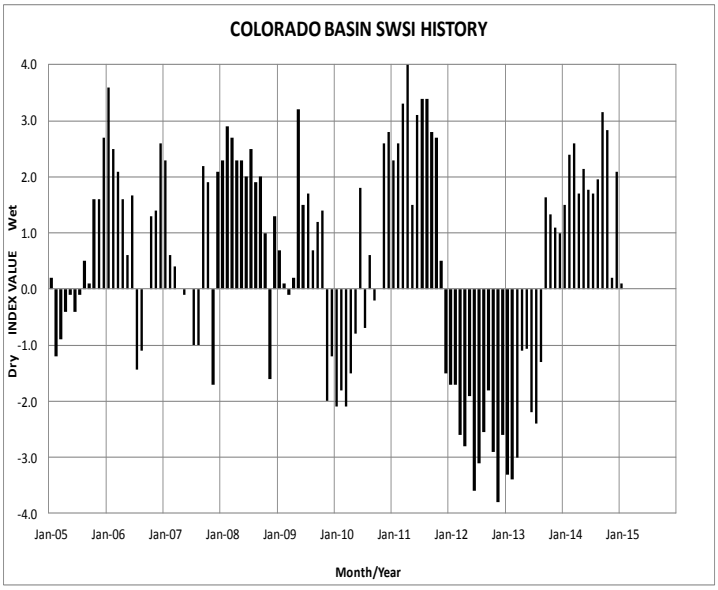


Pubic Use Impacts

The previously mentioned reduced releases from Crystal Reservoir have reduced flows through Black Canyon National Park and the Gunnison Gorge accordingly.

Basinwide Conditions Assessment

The SWSI value for the month was +0.1.

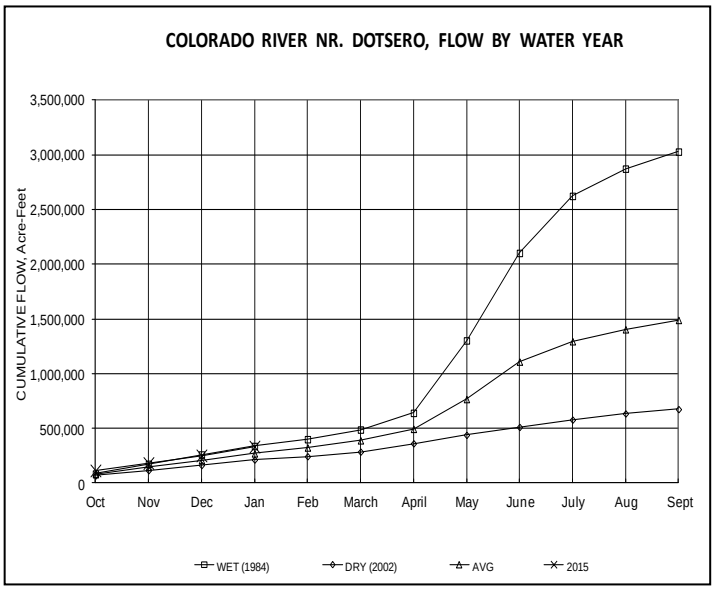


Outlook

Continuing warm temperatures will contribute to significantly above average Colorado River flows, with Roaring Fork and Eagle River flows likely to remain consistently above average throughout February. As of February 1st, Upper Colorado River Headwaters and Roaring Fork Basin snowpack has fallen considerably to 96 and 89 percent of median snow water equivalent respectively. Basin wide (all sites above Lake Powell) percentage is slightly lower at 85 percent of median. Continuing below normal precipitation, couples with considerably above average temperatures forecast for late February will further decrease snowpack going into March.

Administrative/Management Concerns

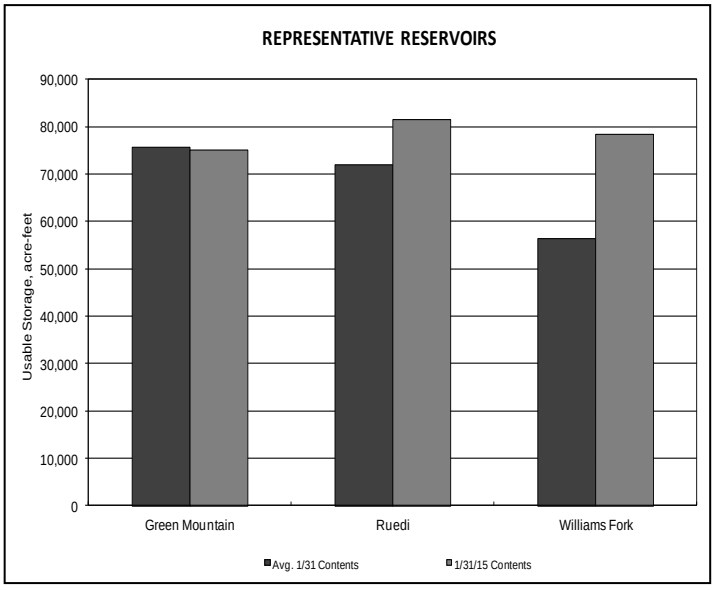
The senior Shoshone power call on the Colorado mainstem at Dotsero remains in effect. Green Mountain Reservoir releases will fluctuate in accordance with Dillon Reservoir release changes. Release adjustment may also be made to assist with channel work in Gore Canyon. Ruedi Reservoir releases should remain unchanged. Wolford Mountain, Willow Creek, and Williams Fork Reservoir releases are also likely to remain unchanged through February.



Public Use Impacts

Continuing steady settlement coupled with horizontal movement of Ritschard Dam forming Wolford Mountain Reservoir has prompted the Colorado River District to address the problem. Although monitoring and analysis show the dam remains stable, continued movement could cause further damage to the structure – particularly the clay core.

According to precipitation records kept by the Aspen Water Treatment plant, last month was the second driest January since 1935. 5.26 inches of snow was recorded last month, the only lower being 5.0 inches in 1961. The average January snowfall over the same 80 year period is 25.74 inches. November and December snowfall was considerably above average to maintain the current snow water equivalent value near 90 percent.



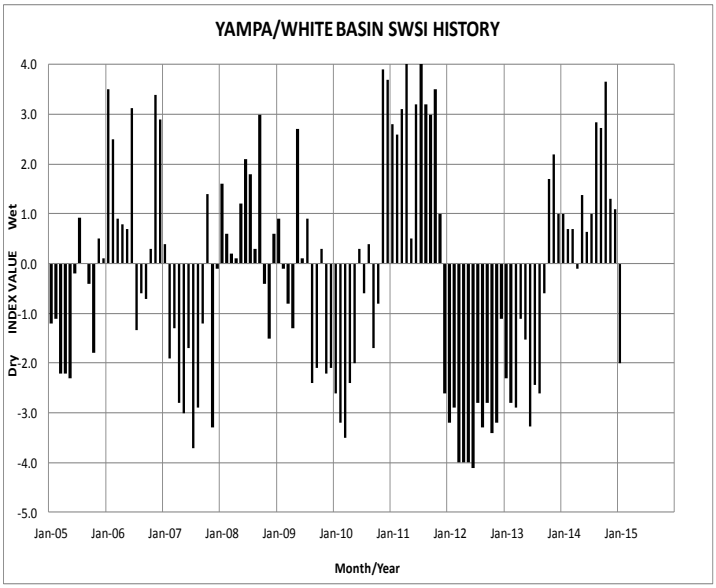
Basinwide Conditions Assessment

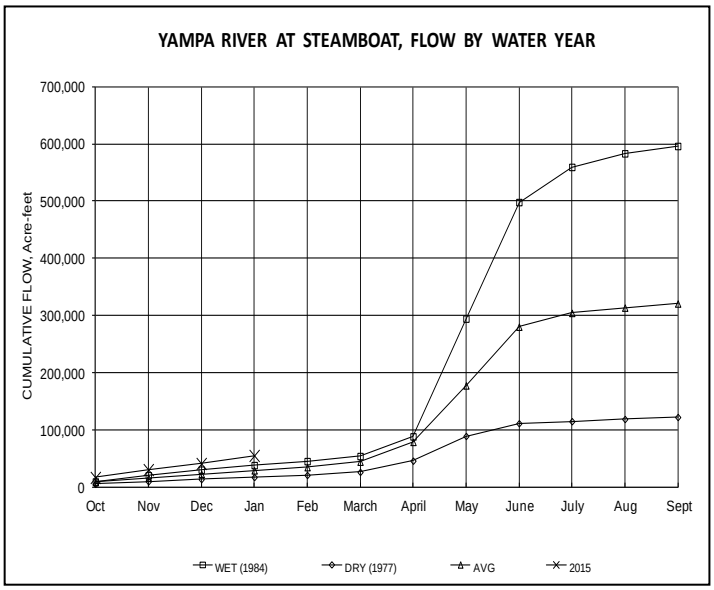
The SWSI value for the month was -2.0. January precipitation was well below average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by NRCS, was only 32% of average for the Yampa, White, and North Platte River basins. Total precipitation for the water year as a percent of average to date in the combined basins at the end of January decreased to 79%.

Snowpack for the Yampa, White, North Platte and Laramie River basins was at 77% of average as of February 1st, 2015. The snow water equivalent (SWE) as of January 31, 2015 was 79% of average for the North Platte River basin and 79% of average for the Yampa River basin and White River basin.

NRCS predicts below average spring and summer streamflows in the Yampa, White, and North Platte River basins. The latest runoff forecasts from the NRCS for the April through July period are 61% of average for the North Platte River near Northgate, 76% of average for the Yampa River near Maybell, 56% of average for the Little Snake River near Lily, and 80% of average for the White River near Meeker

Due to night time cold temperatures and river ice, all Division 6 stream gages except the Yampa River and White River gages are either closed for the winter season or currently ice-affected.





Outlook

As of January 31st Fish Creek Reservoir was storing approximately 3,616 AF, 87% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF. Yamcolo Reservoir was storing 6,300 AF at the end of January 2015. The capacity of Yamcolo Reservoir is 8,700 AF. On January 31st Elkhead Creek Reservoir was storing 21,329 AF. The capacity of Elkhead Creek Reservoir is 24,778 AF. On January 31, 2015, Stagecoach Reservoir was storing 33,600 AF, 100% 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.

Public Use Impacts

As of February 11, 2015 Steamboat Ski Resort had received 161 inches of snow and had a 50 inch base. Ski conditions are holding up well despite warm daytime temperatures and scant January snow.

Stagecoach Reservoir is covered by approximately 14-20 inches of ice with 6-8 inches of snow on top. As always, anglers should use extreme caution when venturing onto the ice as conditions vary. All park trails are open and snow covered.

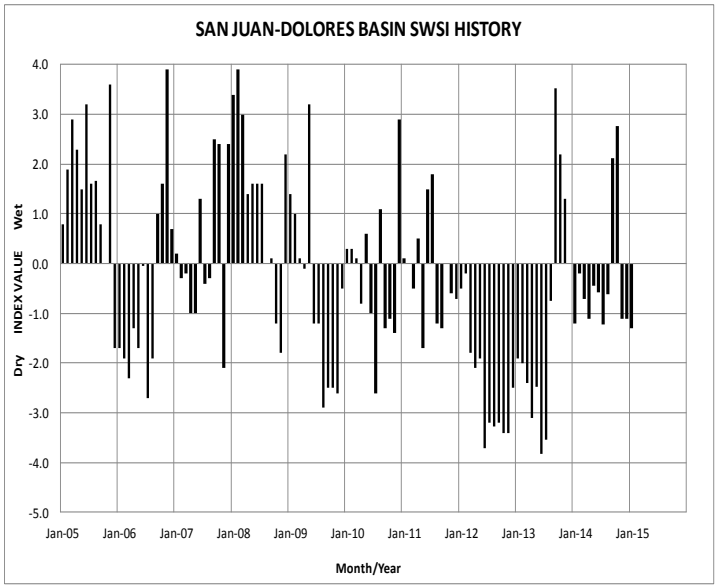
Steamboat Lake State Park is reporting ski trails open. Ice in the Marina area is approximately 0-14 inches and fishing there is reported as great.

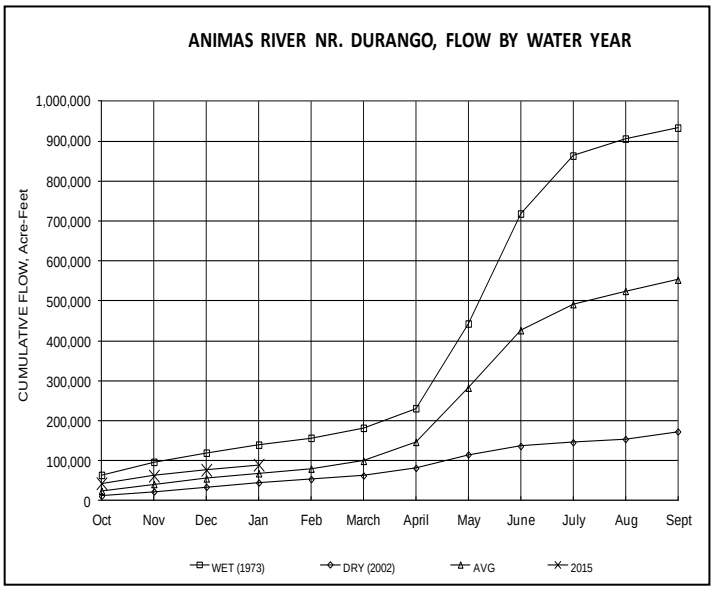
Basinwide Conditions Assessment

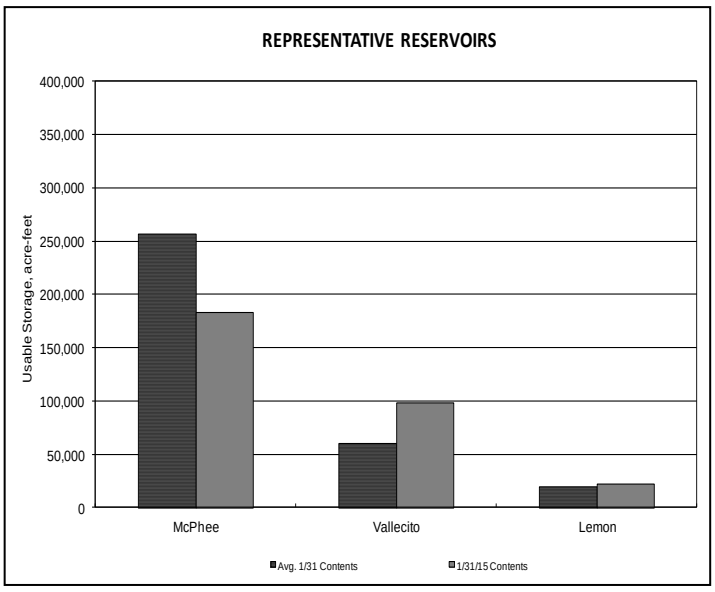
The SWSI value for the month was -1.3. Flow at the Animas River at Durango averaged 202 cfs (100% of average). The flow at the Dolores River at Dolores was estimated to average 51 cfs (100% of average). The La Plata River at Hesperus averaged 8.2 cfs (119% of average). Precipitation in Durango was 2.18 inches for the month, 115% of the 30-year average of 1.90 inches. Precipitation to date in Durango, for the water year, is 4.88 inches, 72% of the 30-year average of 6.76 inches. The average high and low temperatures for the month of January in Durango were 45o and 20o. In comparison, the 30-year average high and low for the month is 41o and 14o. At the end of the month Vallecito Reservoir contained 98,043 acre-feet compared to its average content of 55,150 acre-feet (178% of average). McPhee Reservoir was up to 183,509 acre-feet compared to its average content of 261,990 (70% of average), while Lemon Reservoir was up to 22,140 acre-feet as compared to its average content of 19,709 acre-feet (112% of average).

Outlook

Precipitation (2.18 inches) was above average for January in Durango. There were 31 years out of 120 years of record where there was more precipitation than this year. The flows in the rivers within the basin were average. The Animas River was average. There were only 43 out of 105 years of record where the total flow past the Durango stream gauge was more than this year. There were 41 out of 104 years of record where the total flow past the Dolores stream gauge was more than this year and 27 out of 98 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year. On January 31, the NRCS SNOTEL sites reported an average snow-water equivalent within the basin at 66%. End of last month the snow-water-equivalent was 76%.







ADDITIONAL INFORMATION ABOUT COLORADO SWSI CALCULATIONS - Feb-15

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

Winter SWSI Component Weights

Basin	Reservoir Storage	Snowpack	Precipitation (cumulative)
South Platte	0.55	0.27	0.18
Arkansas	0.15	0.51	0.34
Rio Grande	0.05	0.63	0.32
Gunnison	0.1	0.54	0.36
Colorado	0.15	0.51	0.34
Yampa/White	None	0.6	0.4
San Juan/Dolores/Animas	0.1	0.54	0.36

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 February 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.