COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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February 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 reservoir storage, snowpack, 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 Office in each stream basin.

The statewide SWSI values for January (February 1) range from a minimum of -1.2 in the San Juan / Dolores River basin to a maximum of 1.5 in the South Platte River and Colorado River basins. The only negative SWSI values, indicating less than normal water supply, occur in the Rio Grande River and San Juan / Dolores River basins, in southwestern Colorado. The SWSI values in both of these basins have declined by more than 1 point since last month.

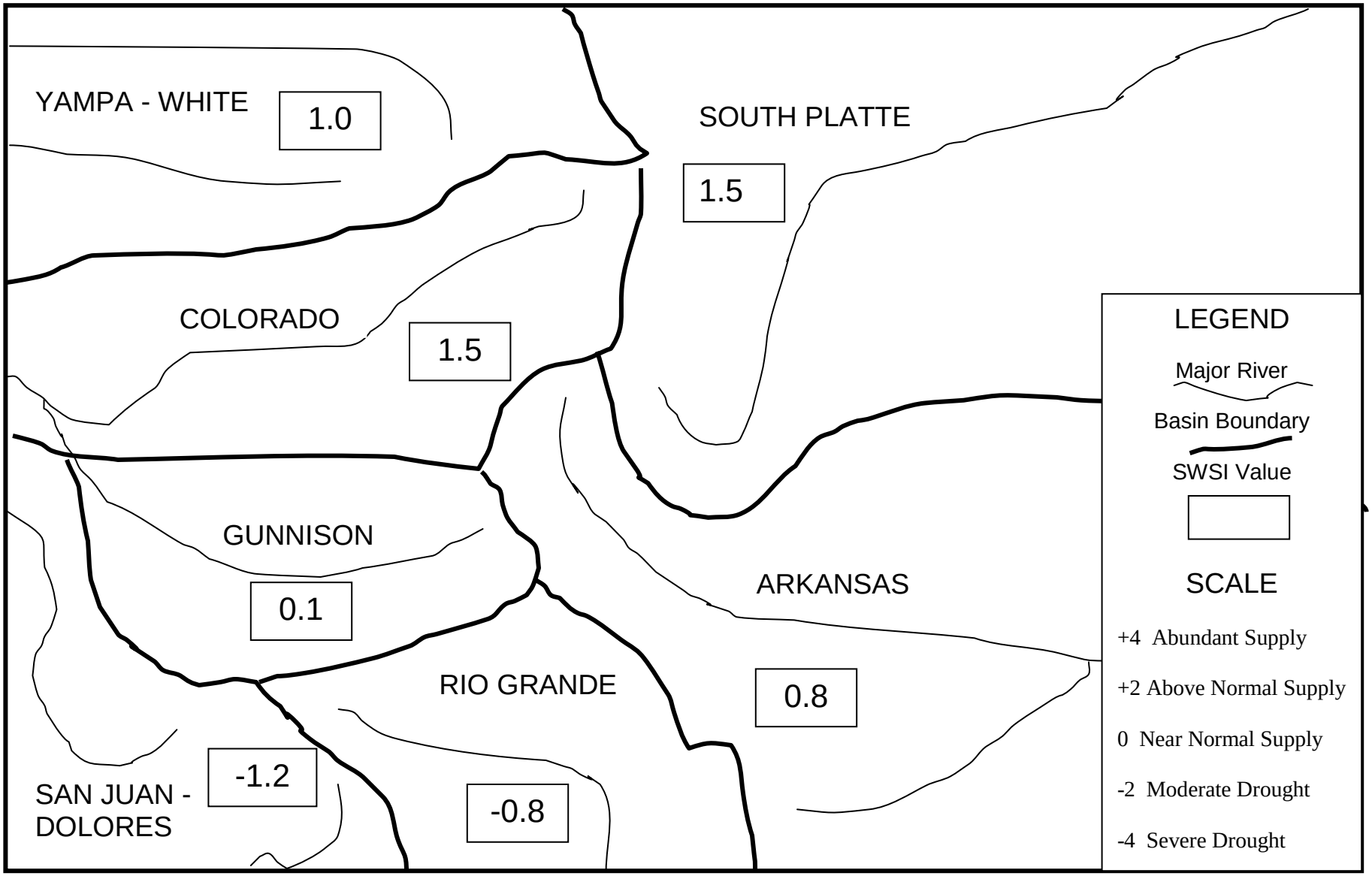
The following SWSI values were computed for each of the seven major basins for February 1, 2014. Additional information about SWSI calculations and the NRCS National Water and Climate Center SWSI by HUC are included on Page 10. The NRCS SWSI indicates variability in the level of surface water supply across smaller watersheds in the north half of Colorado, where in some cases, reservoir storage and streamflow levels reflect different drought conditions.

Basin	February 1 SWSI	Change from Previous Month	Change from Previous Year
South Platte	1.5	0.4	3.3
Arkansas	0.8	0.2	3.9
Rio Grande	-0.8	-1.1	-0.1
Gunnison	0.1	0.0	1.1
Colorado	1.5	0.5	4.8
Yampa/White	1.0	0.0	3.3
San Juan/Dolores	-1.2	-1.2	0.7

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, 2014

Basinwide Conditions Assessment

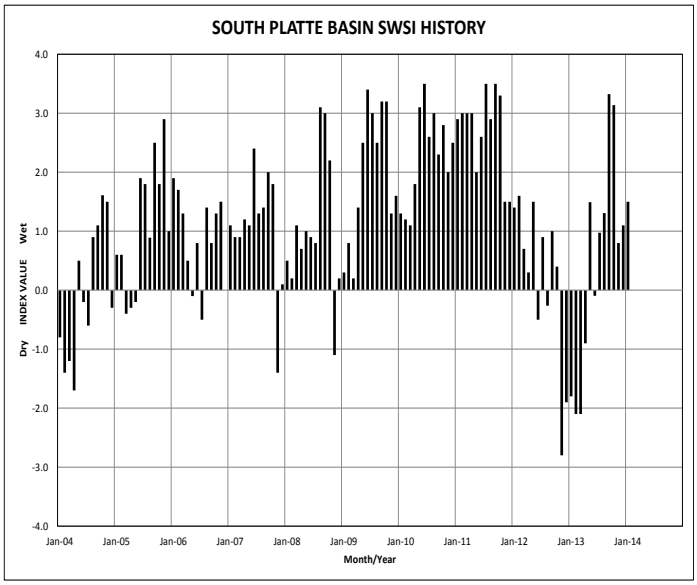
The SWSI value in this basin is 1.5. Northeast Colorado started 2014 with near normal temperatures. Most of the South Platte basin was slightly warmer than normal with an area in the foothills and near the Palmer Divide slightly cooler than normal. Precipitation however was a different story. Precipitation over most of the basin was well above normal with large areas seeing more than twice the amount of normal precipitation. Since January is one of the drier months over the lower elevations of the basin, the actual amounts of water are not as impressive at less than two inches. However, this moisture is significant in terms of keeping soil moisture over most of the basin at or above normal levels.

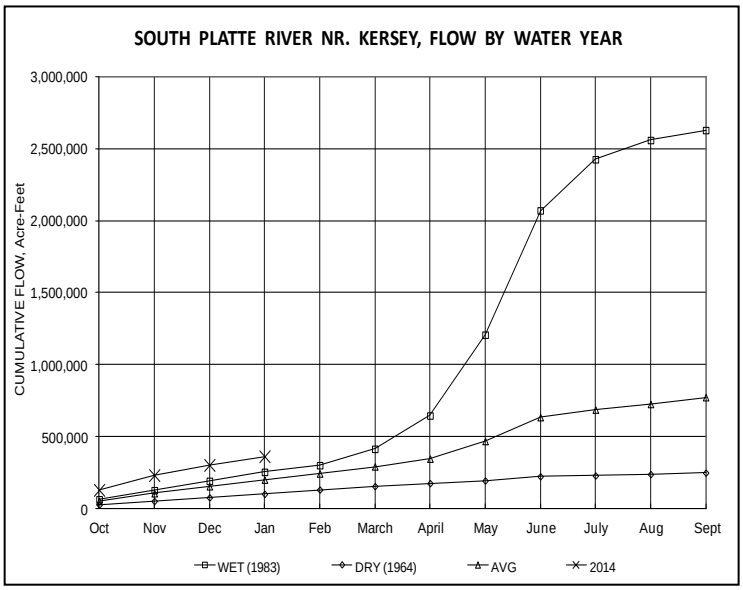
The South Platte basin snow water equivalent was 124% of average on February 1, 2014. This is good news from a water supply standpoint. It does however create some flooding concerns since the September 2013 floods significantly changed the stream channel configuration in many areas and it is not currently known how those new channels would handle a significant spring runoff.

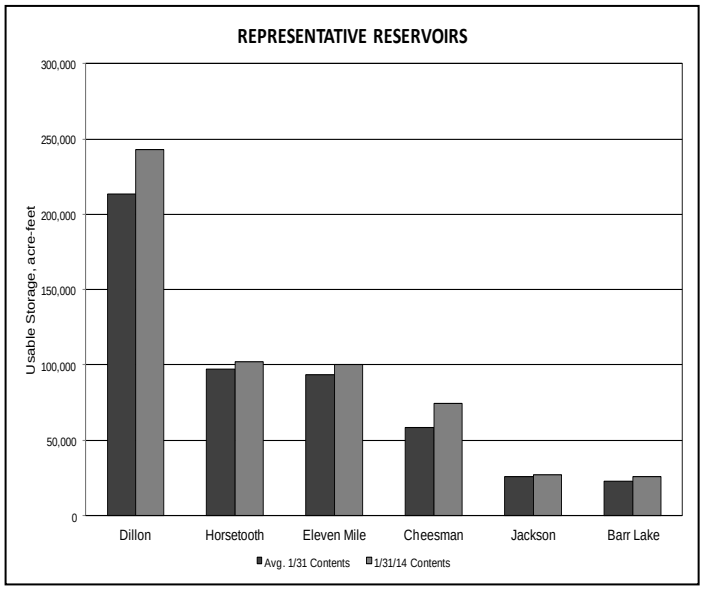
It should be no surprise given the overall favorable conditions in January, but from January 8 through the end of the month there were no calls in the entire South Platte basin. The call from January 1 to 8 was a mainstem call from a 1909 reservoir with a diversion point on the north end of the metro Denver area.

The January stream flows at both the Kersey and Julesburg index gages were above the long term averages. It is believed the reason for this is a combination of impacts from the September flooding (both some continued drainage from the most heavily impacted areas and not-yet-fully repaired diversion structures) and the above average precipitation. The Kersey gage monthly mean stream flow was 977 cfs as compared to the historic January mean flow of 652 cfs. The January monthly mean stream flow at the Julesburg gage was 588 cfs as compared to the historic January mean flow of January 509cfs.

Overall reservoir storage in the basin by the end of January was good and remained at the end of December number of 105% of average. Though some reservoirs were below (and above) the end of January average, overall storage was at 79% of capacity. This compares to an average end of January storage of 75% of capacity and storage at 60% of capacity the end of January last year.







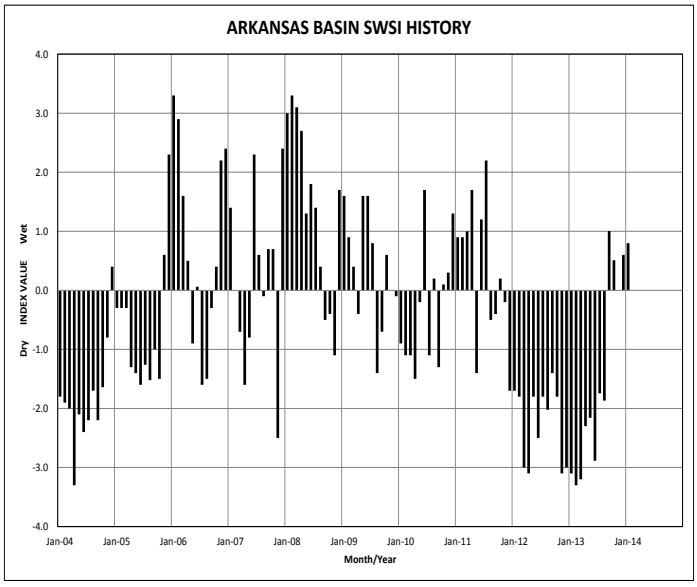
Basinwide Conditions Assessment

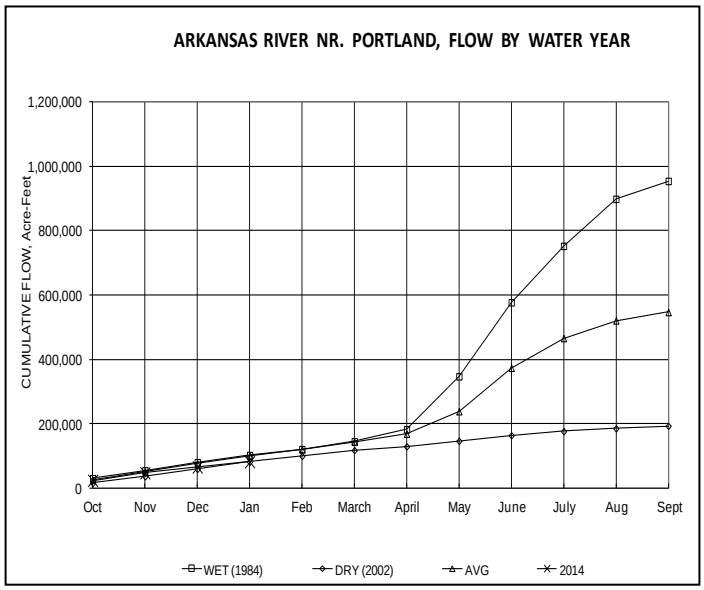
The SWSI value for the month is 0.8. Reservoir storage in the Pueblo Winter Water Program totaled 69,160 acre-feet as of the end of January. This storage amount is significantly more than last year's storage to date of 45,383 acre-feet and represents 85% of the past five-year average.

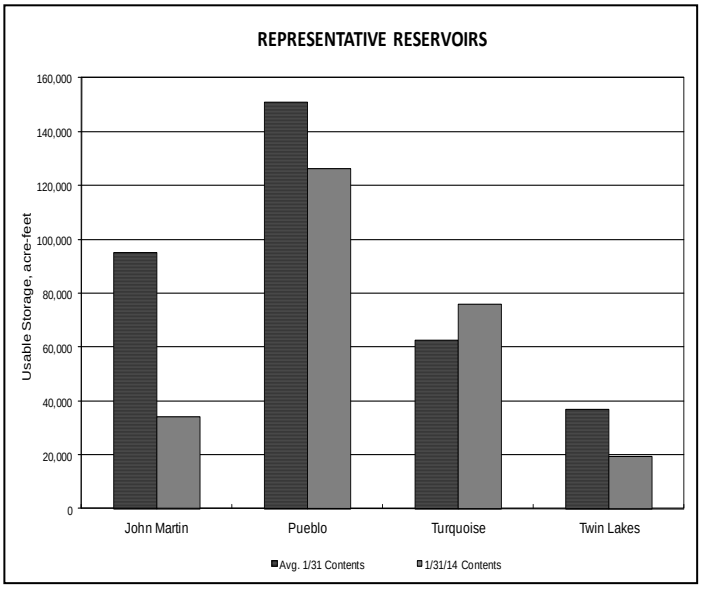
Conservation storage in John Martin Reservoir has accumulated 6,132 acre-feet versus 3,406 acre-feet as of the end of January last year.

Administrative / Management Concerns

The first project application for a pilot project for rotational lease fallowing pursuant to HB13-1248 was submitted in the Arkansas Basin on behalf of the Town of Fowler.







Basinwide Conditions Assessment

The SWSI value for the month is -0.8. Flow at the gaging station Rio Grande near Del Norte averaged 193 cfs (111% of normal). The Conejos River near Mogote had a mean flow of 39 cfs (79% of normal). Some streams within Division 3 continue to benefit from the August, September, and October 2013 rainfall.

There was very limited snowfall in the San Juans and Sangre de Cristos during late December and all of January. Relief finally came in the form of a basin-wide snowstorm on January 31 - February 2. Overall, the upper Rio Grande Basin has below average snowpack at start of February.

It was another bitter cold January for the San Luis Valley where a layer of snow on the ground produced temperatures as low as -20 degrees.

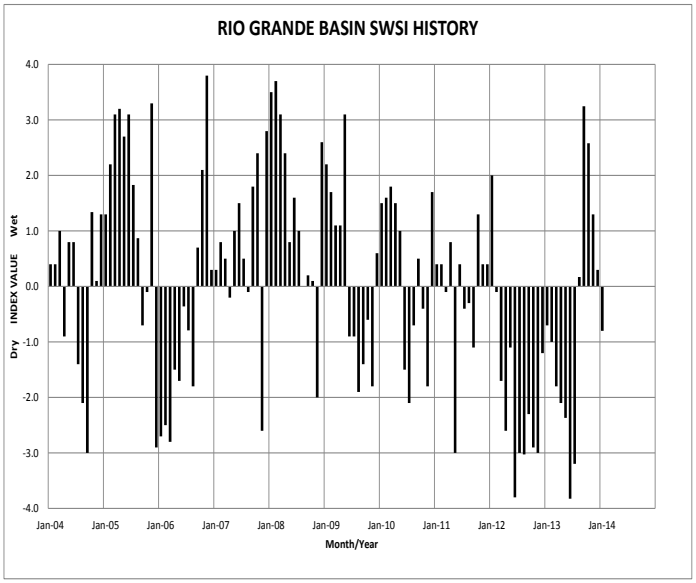
Outlook

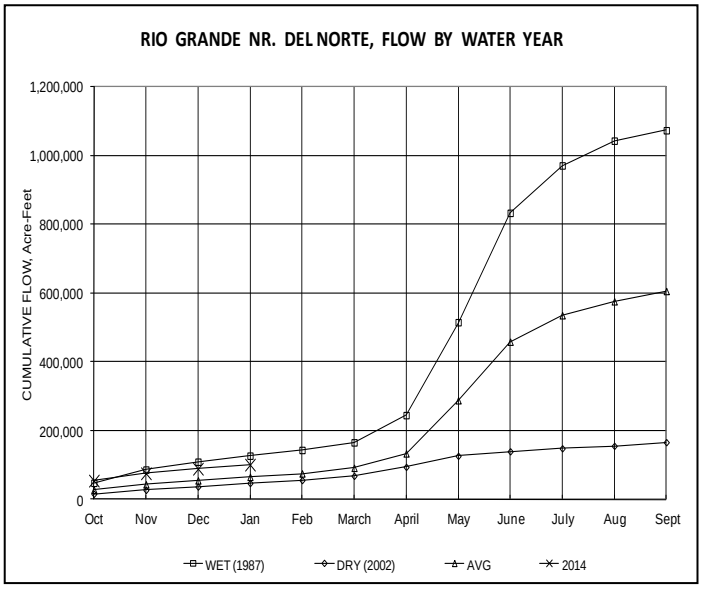
The Natural Resources Conservation Service stream flow forecasts are predicting runoff in area streams to be in the range of 53% Rio San Antonio) and 56% (Sangre de Cristo Creek) to 100% (Saguache Creek) of average during the 2014 irrigation season. It seems the Sangre de Cristo Mountains on the eastern side of the San Luis Valley are in worse snowpack condition than most other parts of the basin.

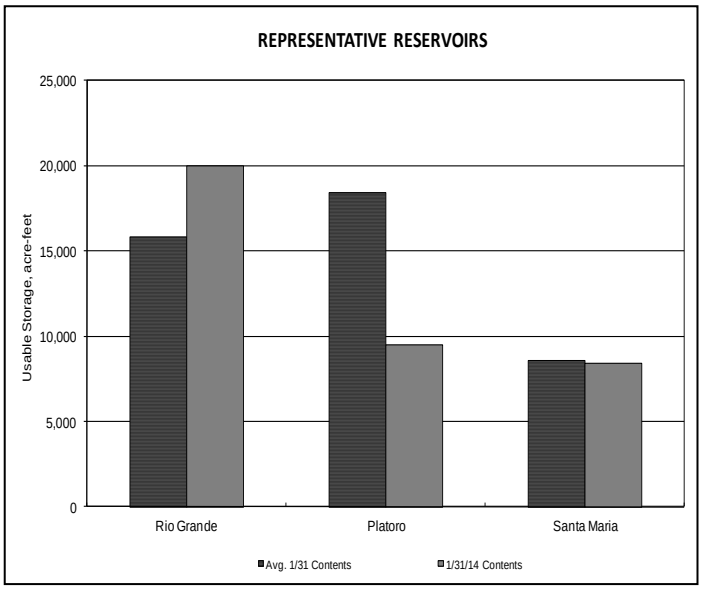
Current National Weather Service forecasts for February through April, 2014 are calling for above normal temperatures and near normal precipitation in this area of the state.

Administrative/Management Concerns

Much effort was spent during January finalizing streamflow and diversion records. The annual meetings of local districts and ditch boards are held this time of year to reflect back on the 2013 season and plan for the upcoming irrigation season.

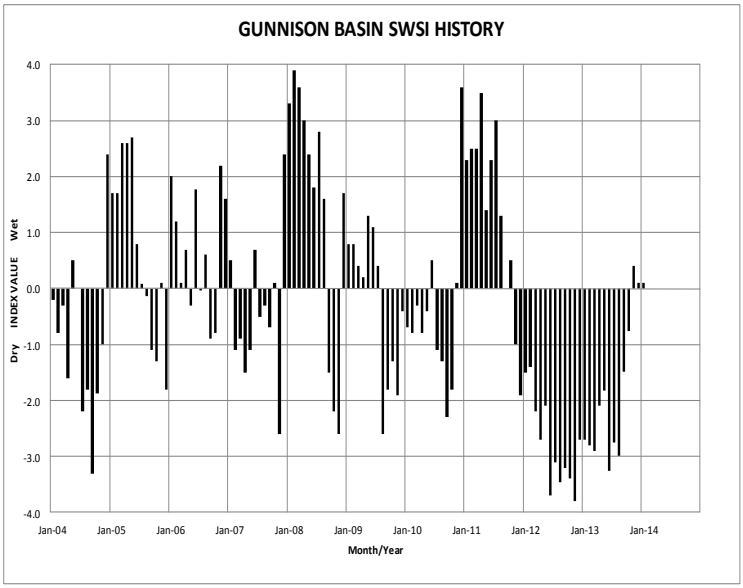






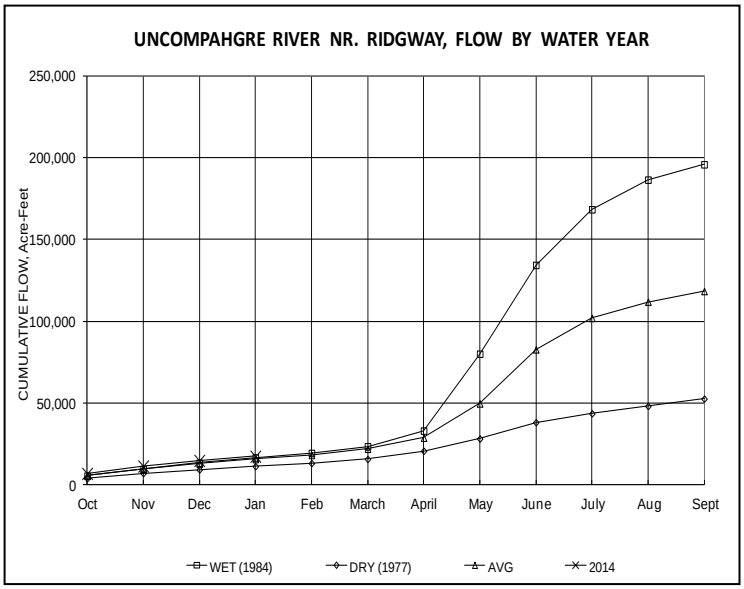
Basinwide Conditions Assessment

The SWSI value for the month is 0.1. Precipitation in the Gunnison basin was below average for most of the month, but a large and very moist Pacific flow at the end of the month boosted snowpack in all areas, especially in the East River Drainage where they received up to four inches of snow water equivalent from January 30th to February 2nd. As a result, the East River and Cochetopa Creek drainages received between 120 and 150% of the average in January. The Taylor River drainage received the most snow and on February 1st contains 125% of the median, while the area above Ridgway Reservoir contains 104% of the median. The good news is that almost all Snotel sites are in much better shape than in 2013, as the overall Gunnison basin February 1st SWE is 130% of the 2013 value.



Outlook

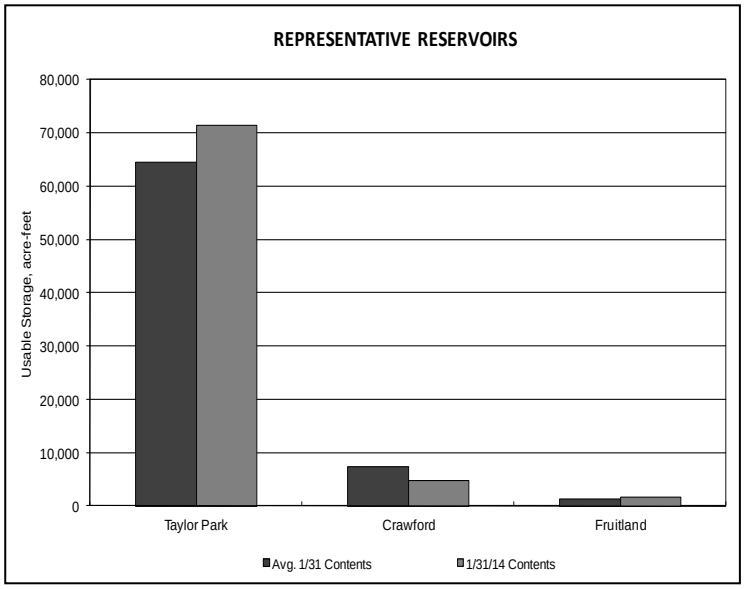
The Climate Center continues to predict neutral El Nino Southern Oscillation (ENSO) conditions for Spring 2014, which has resulted in 30-day and 90-day forecasts including equal chances of below or above average precipitation in the Gunnison basin.



Administrative/Management Concerns

Taylor Park Reservoir continues to fill and contains 15,000 acre-feet of second fill on February 1st. Last year Taylor Park still had 20,000 acre-feet to go to complete their 1st fill and the Reservoir inflow was barely enough to keep the Reservoir level steady. The main benefit of second fill, which is owned by the Upper Gunnison River Water Conservancy District, is that it helps fill the Gunnison Tunnel demand and keeps the UVWUA from dipping into their first fill, which will prevent them from placing a call on the Gunnison in the early season even if the remaining snowpack season is dry.

The USBR January 24 month study projects an inflow into Blue Mesa Reservoir of 660,000 acre-feet, which would correspond to an average wet year. Resulting peak content forecasts are that Blue Mesa will reach a content of 786,000 acre-feet in July of this year, which is not full, but a huge improvement over the maximum level reached in 2013 of 451,000 acre-feet. February forecasts are expected to be even greater due to the moist storm at the beginning of the month.



Public Use Impacts

Gunnison basin ski areas continue to enjoy a great season with Crested Butte receiving almost three feet of snow during a storm at the end of January.

Basinwide Conditions Assessment

The SWSI value for the month is 1.5.

Outlook

Colorado River and Roaring Fork river flows will run near average through February, but could increase slightly with lower elevation precipitation and forecast above average temperatures. Ruedi reservoir release and subsequent lower Fryingpan River flow will increase to boost storage capacity based on anticipated above-average precipitation. As of February 1st, Upper Colorado River and Roaring Fork Basin snowpack increased to 126 and120 percent of median snow water equivalent respectively. Despite heavy precipitation in late January and early February, below average precipitation is forecast for western Colorado through the month of February.

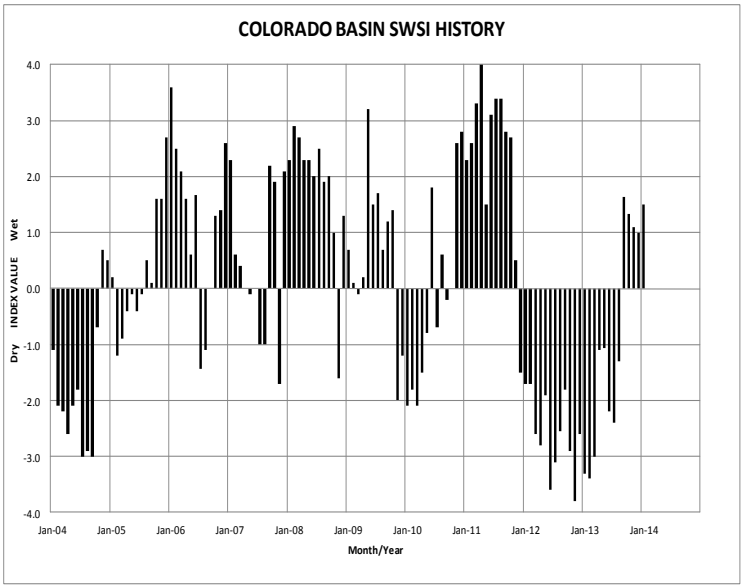
Administrative/Management Concerns

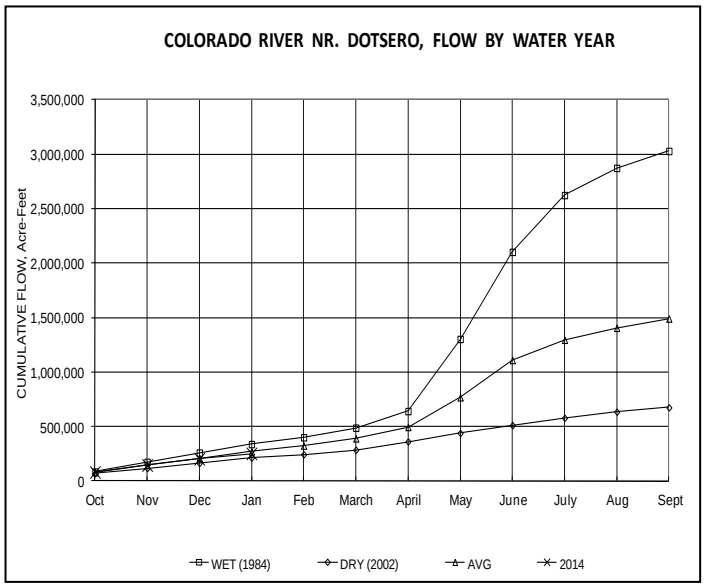
The Ruedi Reservoir release rate will increase to 143 cfs due to increasing, above-average basin snow pack. Green Mountain reservoir releases continue to be increased to reach the carryover storage target. The Government Highline canal has resumed diversion for winter power generation. Adams and Moffat Tunnel diversions continue at a constant rate, with considerably above-average C-BT diversions in excess of 525 cfs.

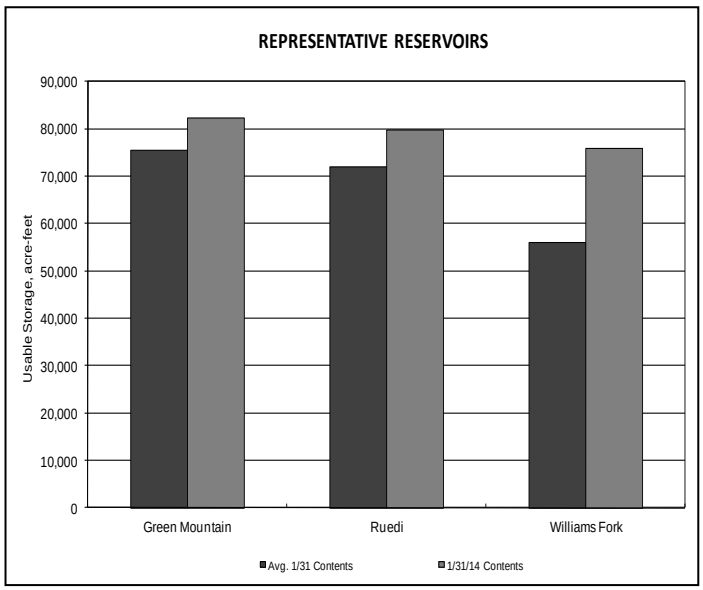
Public Use Impacts

Expanding on the Outlook, Colorado and Roaring Fork basin snowpack has increased significantly in early February. Despite rain at lower elevations, heavy snow accumulations have increased all active basin Snotel sites to 115 to 175 percent of median snow water equivalent as of February 10th.

In an effort to complement the Snotel sites and more accurately measure snowpack, scientists are using arieal laser mapping at two demonstration projects, one in the Uncompahgre Plateau in Western Colorado. Measurements taken of the land surface contour prior to snowfall are compared with measurements taken during present flights to measure the height of the snow surface. In addition to snow depth, laser mapping also measures reflectivity.







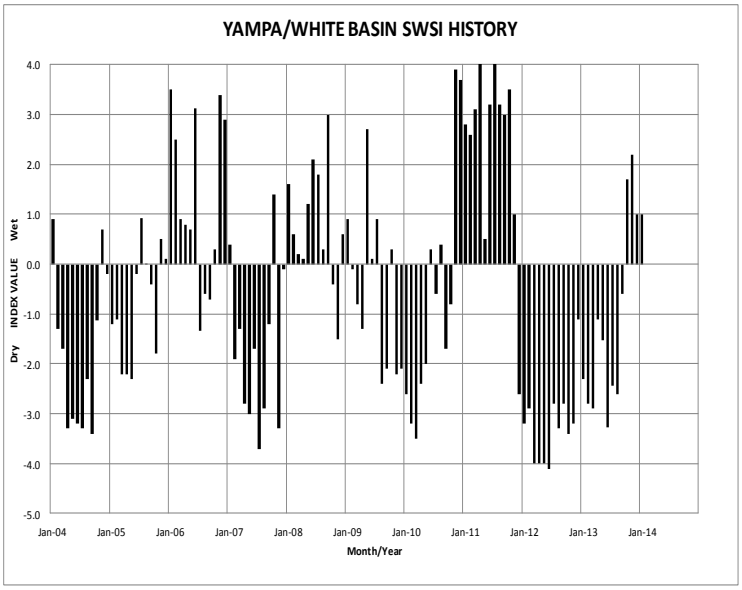
Basinwide Conditions Assessment

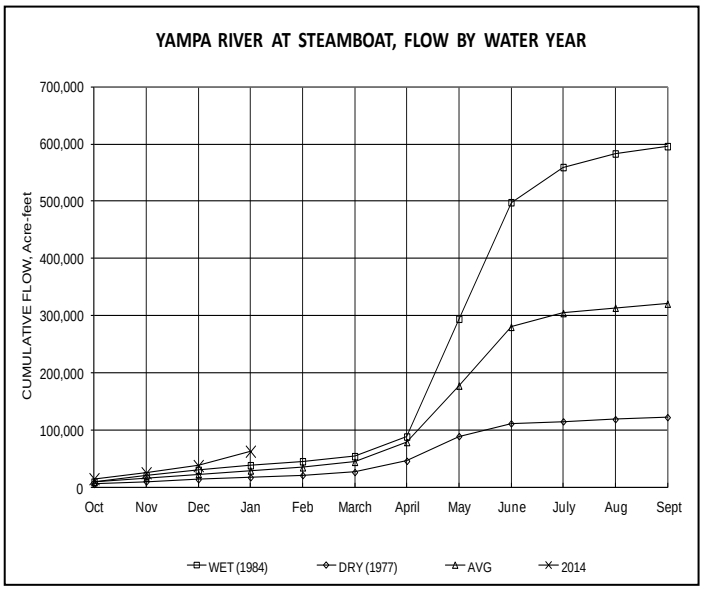
The SWSI value for the month is 1.0. January precipitation was well above average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by NRCS, was reported at 133% of average for the Yampa, White, and North Platte River basins. Total precipitation for the water year as a percent of average to date in the combined basins at the end of January was 114%.

Snowpack for the Yampa and White River basins was at 115% of average and the North Platte and Laramie River basins were at 119% of average as of February 1, 2014. The snow water equivalent (SWE) as of January 31, 2014 was 119% of average for the North Platte River basin and 117% of average for the Yampa River basin and White River basin.

NRCS predicts above 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 116% of average for the North Platte River near Northgate, 114% of average for the Yampa River near Maybell, 114% of average for the Little Snake River near Lily, and 93% of average for the White River near Meeker

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





Outlook

As of January 31 Fish Creek Reservoir was storing approximately 3,298 AF, 79% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF. Yamcolo Reservoir was storing 4,500 AF at the end of January 2014. The capacity of Yamcolo Reservoir is 8,700 AF. On January 31 Elkhead Creek Reservoir was storing 17,585 AF. The capacity of Elkhead Creek Reservoir is 24,778 AF. On January 31, 2014, Stagecoach Reservoir was storing 33,600 AF, 92% 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

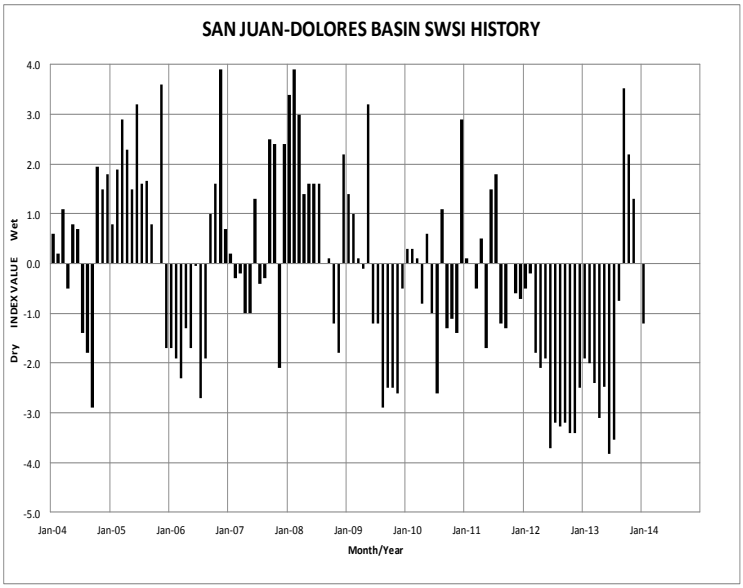
As of February 11, 2014 Steamboat Ski Resort had received 265 inches of snow and had a 73 inch base with excellent conditions since mid-December.

Stagecoach Reservoir is covered by approximately 18-24 inches of ice with 8 inches of snow on top. Fishing is reported as good in most of the prime fishing locations. The tailwater area re-opened as of January 1, 2014. As always, anglers should use extreme caution when venturing onto the ice as conditions vary. The ski trail is open and groomed.

Steamboat Lake State Park is reporting ski trails open with regular grooming. Ice in the Marina area is approximately 18-20 inches and fishing there is reported as good.

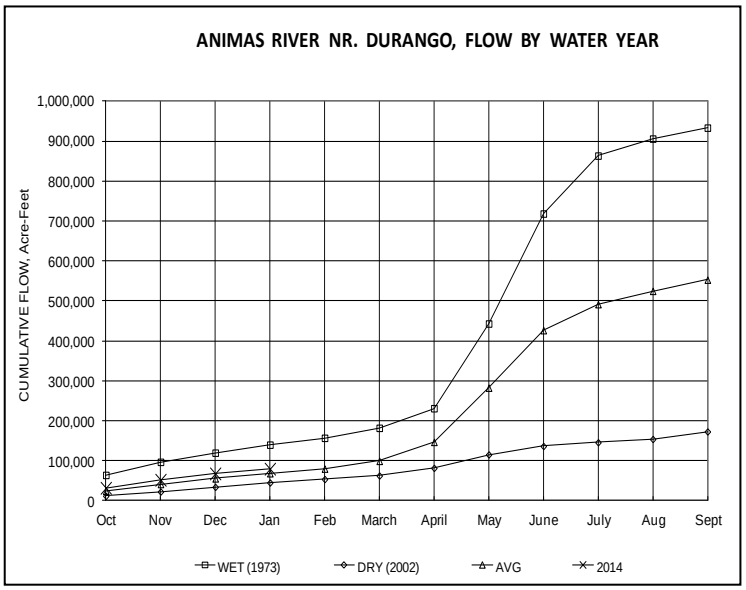
Basinwide Conditions Assessment

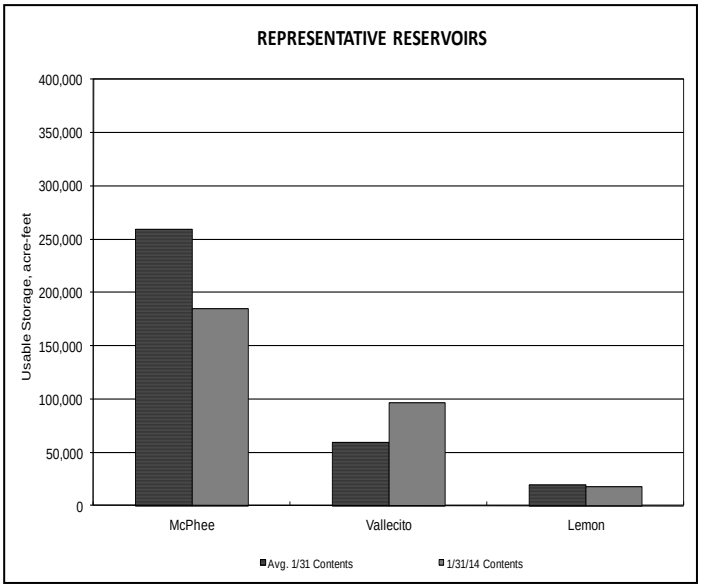
The SWSI value for the month is -1.2. Flow at the Animas River at Durango averaged 193 cfs (95% of average). The flow at the Dolores River at Dolores averaged 56 cfs (109% of average). The La Plata River at Hesperus averaged 8.4 cfs (123% of average). Precipitation in Durango was 0.27 inches for the month, 14% of the 30-year average of 1.92 inches. Precipitation to date in Durango, for the water year, is 4.88 inches, 72% of the 30-year average of 5.07 inches. The average high and low temperatures for the month of January in Durango were 48^{o} and 17^{o}. In comparison, the 30-year average high and low for the month is 40^{o} and 13^{o}. At the end of the month Vallecito Reservoir contained 96,645 acre-feet compared to its average content of 54,565 acre-feet (177% of average). McPhee Reservoir was up to 184,501 acre-feet compared to its average content of 264,757 (70% of average), while Lemon Reservoir was up to 17,380 acre-feet as compared to its average content of 19,758 acre-feet (88% of average).



Outlook

Precipitation (0.27 inches) was well below average for January in Durango. There were 102 years out of 120 years of record where there was more precipitation than this year. The flows on the Animas River were near average this January. There were 53 out of 104 years of record where the total flow past the Durango stream gauge was more than this year. The other basins within the division fared about the same. There were 34 out of 103 years of record where the total flow past the Dolores stream gauge was more than this year and 22 out of 97 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year. The end of month content in Vallecito Reservoir is the highest ever when compared to the same period. On January 31, the NRCS SNOTEL sites reported an average snow-water equivalent within the basin at 76%. Last month the snow-water-equivalent was 102%.





ADDITIONAL INFORMATION ABOUT COLORADO SWSI CALCULATIONS - Feb-14

The SWSI for each basin is based on probability of nonexceedance (PN) curves for each of three components: reservoir storage, snowpack, and cumulative precipitation. 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 (Water Year 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 observed streamflow. The scale of -4 to +4 is the same as shown on Page 1.