COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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April 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 March (April 1) range from a high value of +1.8 in the South Platte River Basin to a low of -3.3 in the Yampa/White River Basin, the same high and low basins as last month. Reservoir storage remained very strong statewide. April 1 snowpack was well below normal in each basin. SWSI values in each basin are lower than observed last year at this time.

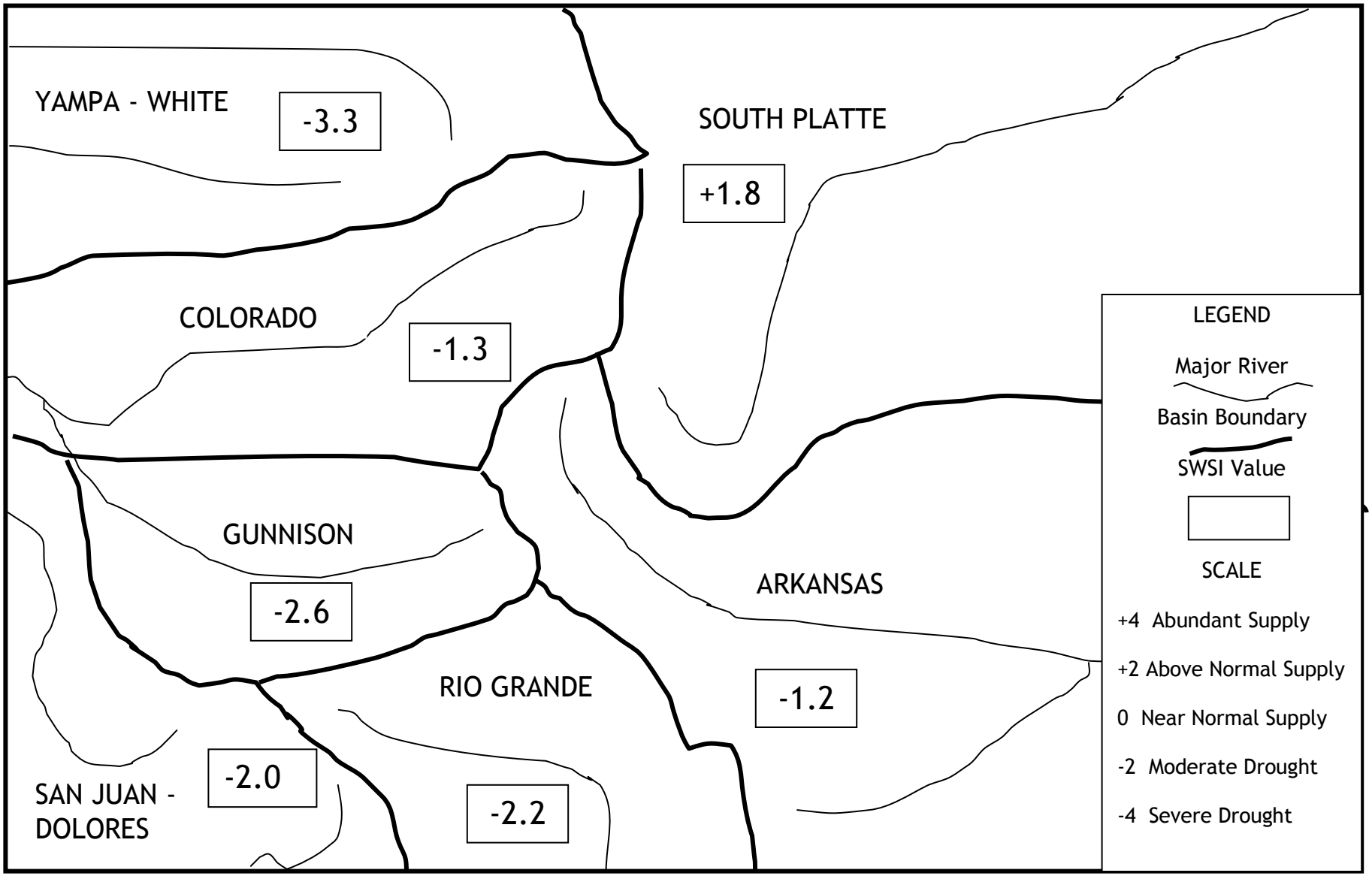
The following SWSI values were computed for each of the seven major basins for April 1, 2015. Additional information about SWSI calculations and the NRCS National Water and Climate Center SWSI by HUC are included on Page 10.

Basin	April 1 SWSI	Change from Previous Month	Change from Previous Year
South Platte	1.8	-0.1	-0.4
Arkansas	-1.2	-1.8	-1.3
Rio Grande	-2.2	-0.9	-1.4
Gunnison	-2.6	-0.6	-3.5
Colorado	-1.3	-1.3	-3.9
Yampa/White	-3.3	-0.9	-4.0
San Juan/Dolores	-2.0	-1.0	-1.3

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



April 1, 2015

Basinwide Conditions Assessment

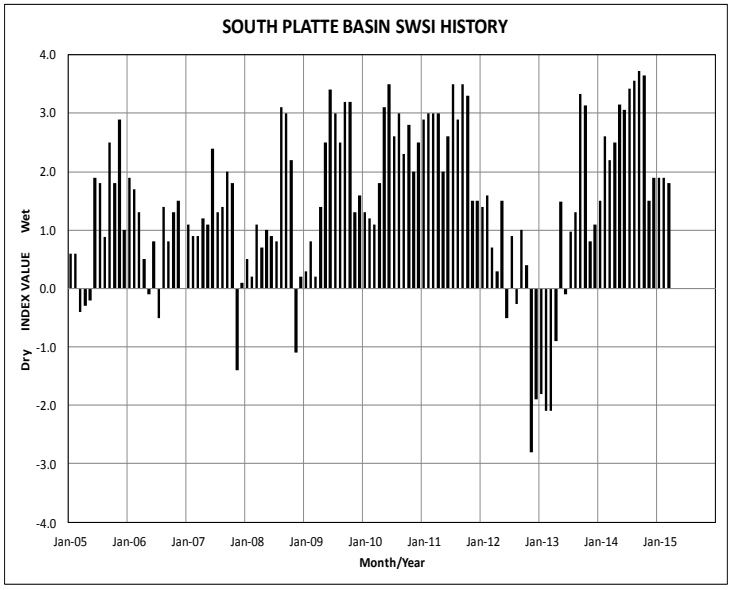
The SWSI value for the month was 1.8. March is normally a mild and moist month in northeast Colorado, but March 2015 was a very warm and very, very dry month. Temperatures for the month were above average over the entire area. Precipitation was very small with significant areas along the eastern and northern borders receiving no precipitation at all. This lack of precipitation led to moving most of the northeast portion of the basin from a no drought situation to a D0 "Abnormally Dry" Drought Index Rating. If the March dry conditions persist in April, an even larger area will probably be in the D0 category by the end of the month.

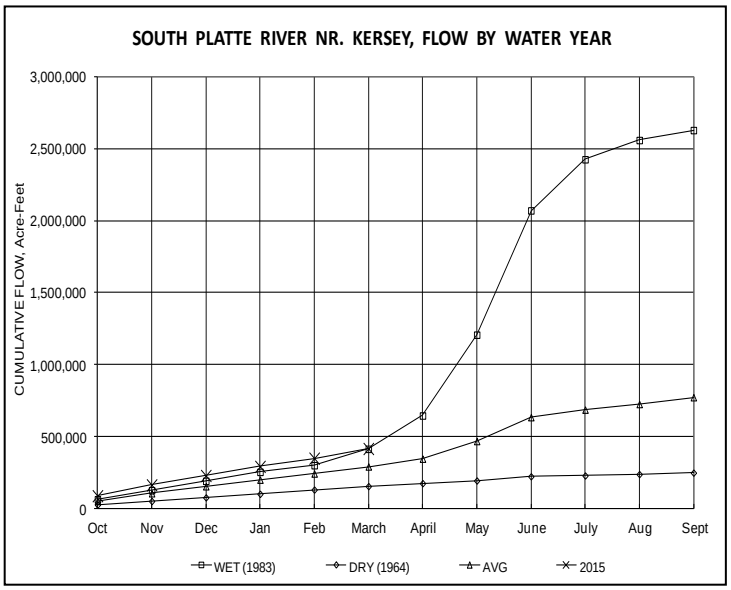
The South Platte basin snow water equivalent according to the SNOWTEL network was 110% of average on March 3, but had fallen to 87% of average by April 2, 2015. An examination of the snow water equivalent for the South Platte basin indicates that things remained relatively flat in March at about 12 inches of water as opposed to the normal increase to about 14 inches of water. For comparison, the average maximum snow water equivalent for the South Platte basin is about 15 inches by the end of April.

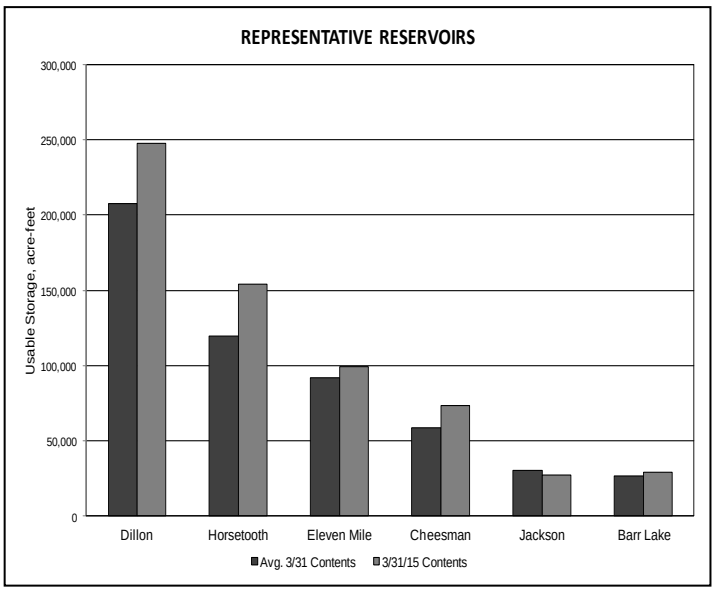
River flows at the Julesburg index gage showed a marked change (decrease) from earlier in the 2015 Irrigation Year, though Kersey gage flows remained strong. The mean monthly flow at Kersey was about 1090 cfs or 158% of the historic mean of 688 cfs. In contrast, the mean monthly flow at Julesburg was about 517 cfs almost exactly (99%) the historic mean of 522 cfs. Previously flows at both Kersey and Julesburg had been running well above the historic mean flows since October 2014.

For the fourth month in a row, free river conditions again existed almost everywhere in the South Basin the entire month. March also represents the seventh month in a row (since August 26, 2014) of free river on the South Platte mainstem below the Denver metro area. The only calls in the South Platte River basin in March were on Boulder Creek.

In light of the dry conditions and low snow pack, reservoir storage in the South Platte basin continued to be a bright spot in the water supply situation as it remained above average. Storage in 31 major reservoirs at the end of March was at about 91% of capacity. This compares to an average end of March storage of about 80% of capacity.

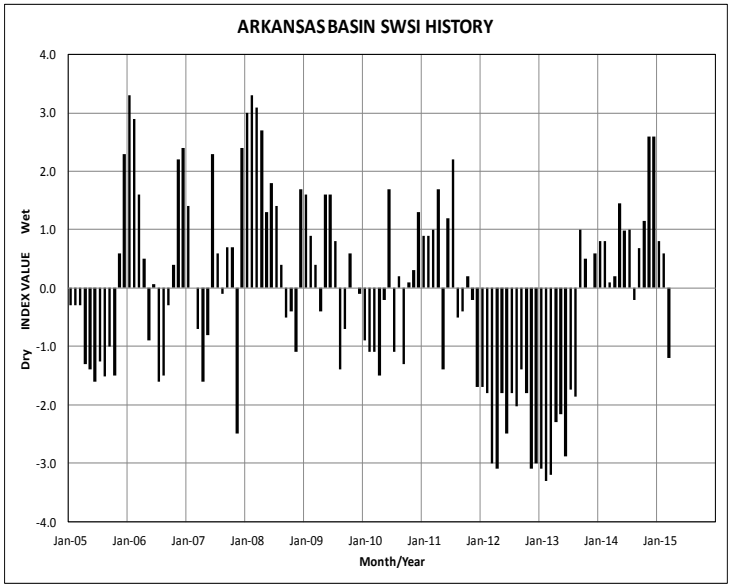






Basinwide Conditions Assessment

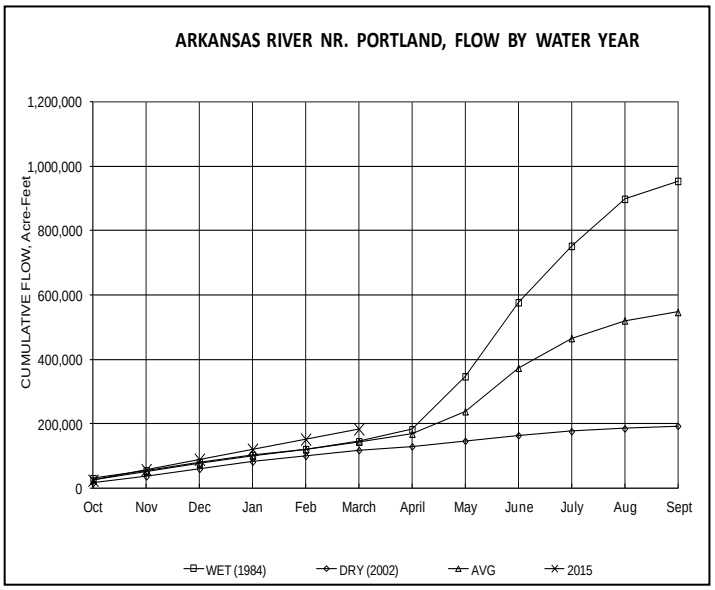
The SWSI value for the month was -1.2. Total distributed reservoir storage following the Pueblo Winter Water Program was 128,901 acre-feet, including 51,949 acre-feet in Pueblo Reservoir, 61,323 acre-feet in off-channel reservoirs, and 15,629 acre-feet in John Martin Reservoir (after distribution to accounts). Conservation Storage in John Martin Reservoir through March 31, 2015 totaled 18,753 acre-feet. Storage values were higher than last year for the Pueblo Winter Water Program and for Conservation Storage in John Martin Reservoir, but were still below the long-term average values for storage.

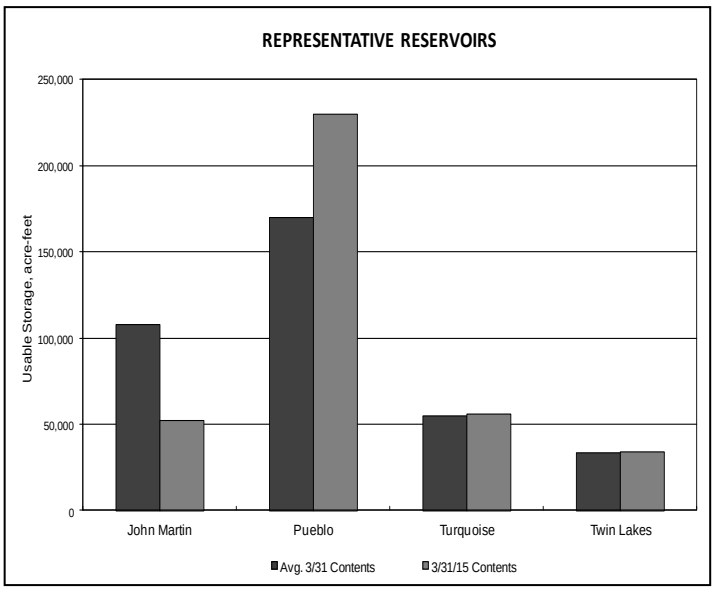


Administrative / Management Concerns

The Catlin Pilot Project approved pursuant to HB-1248, passed by the legislature in 2013, went into operation on March 15, 2015. This project will be the first to demonstrate rotational fallowing under this legislation and is being operated under the Catlin Canal to provide fully consumable water for the benefit of Town of Fowler, City of Fountain and Security Water District. The first two weeks of operation in March were successfully carried out.

Well association plans were approved in March with pumping values comparable to those approved in 2014 due to continued favorable replacement supplies being expected for 2015.





Basinwide Conditions Assessment

The SWSI value for the month was -2.2. Flow at the gaging station Rio Grande near Del Norte averaged 501 cfs (184% of normal). The Conejos River near Mogote had a mean flow of 109 cfs (124% of normal). Streamflow in the upper Rio Grande basin was generally well above average during March as low and mid-elevation snowpack melted out.

March temperatures in the San Luis Valley were much higher than the long-term average. The warmth was enjoyable for residents and visitors. But the dry conditions melted out too much snow too early, leaving substantially less available for the irrigation season.

Some streams in this basin have already reached peak runoff flow and begun to recede. Low elevation drainages such as La Jara and Sangre de Cristo Creeks peaked in the last few days of March and began a quick declination to base flows. This continues an alarming trend towards early runoff seen in this basin for the past 15 years.

Outlook

NOAA weather forecasts for the next three months call for above normal precipitation and warmer than normal temperatures.

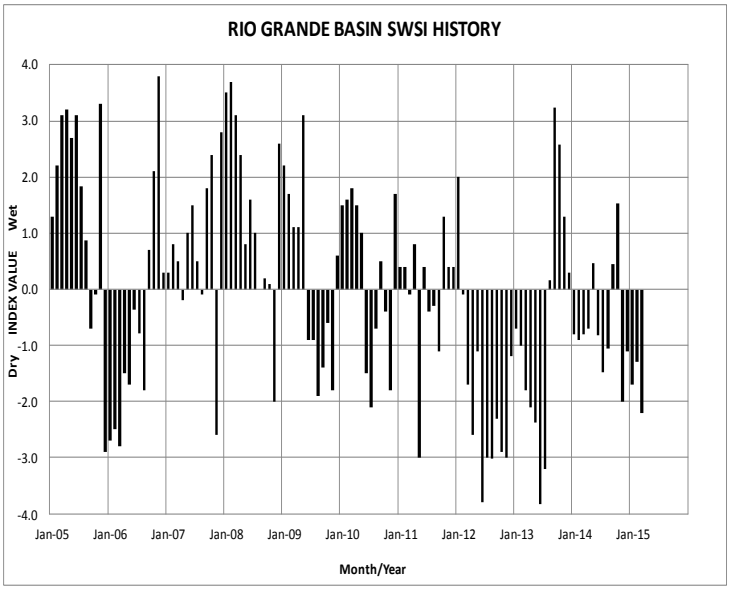
The recent coordinated forecast by the NRCS and NWS predict below normal runoff conditions throughout the upper Rio Grande basin. The best forecast within the basin is Ute Creek near Fort Garland at 95% of average. The Rio Grande at Del Norte is slated for 58%, the Conejos near Mogote at 55%, Saguache Creek at 88% and the Alamosa River at 50%. Low on the totem pole for 2015 is the Rio San Antonio at only 36% of average April through September runoff. Very little or no snowpack at the lower and mid-elevations is much of the reason for these forecasts.

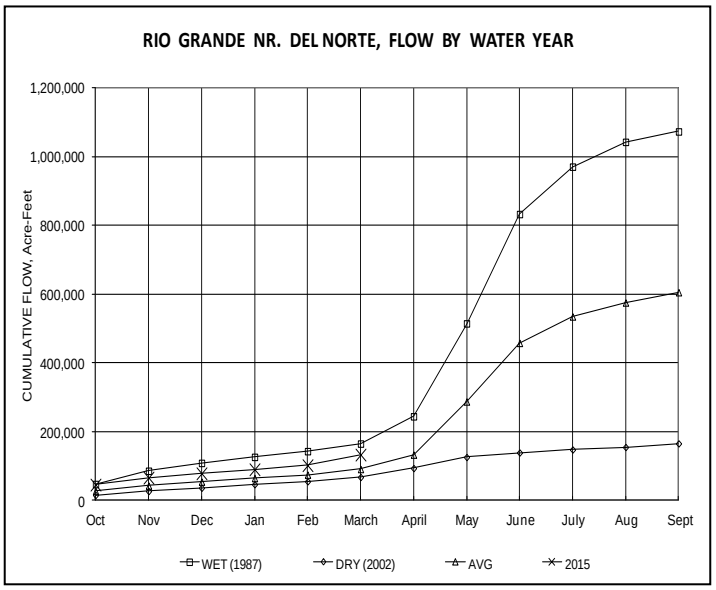
Administrative/Management Concerns

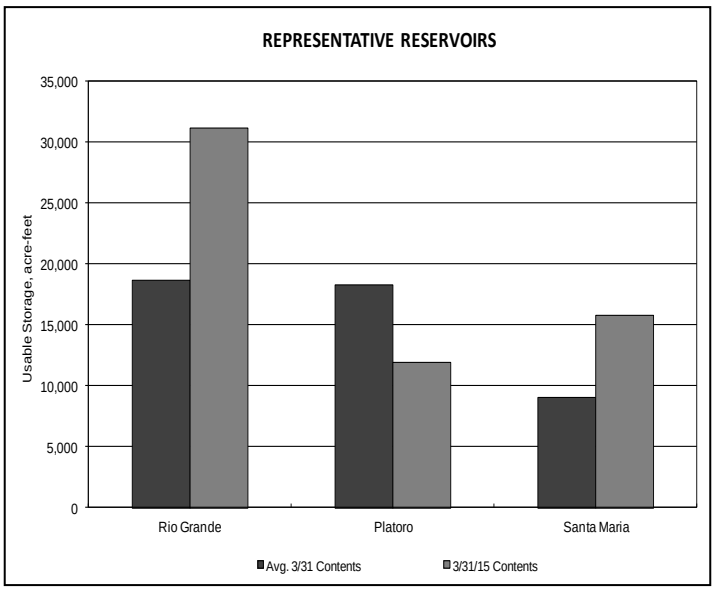
Water users and administrators are bracing for an irrigation season that will be very short on supply. The Valley's already strained aquifers will once again be a primary source of irrigation supply. Reservoir storage benefits a minority of water users in this basin. And most reservoirs in the basin are currently storing less than the long-term average. Some, such as Sanchez, Continental, and Beaver Reservoirs are slated for extensive repair work this year.

Public Use Impact

Due to the warm and dry conditions, all drainages in Water Division No. 3 (the upper Rio Grande basin and its tributaries) began irrigation season diversions on or before April 1.







Basinwide Conditions Assessment

The SWSI value for the month was -2.6. Precipitation in the Gunnison basin during March and early April was dismal at between 50 to 69% of the average. On top of that, temperatures between 3 and 5 degrees above average started the snowmelt early and in some areas much of the snow has already runoff. According to snotel measurements, on April 13th the basin has 49% of the average snow water equivalent (SWE). Throughout the Gunnison basin, peak SWE consistently occurred near March 15th, which is about 3-4 weeks prior to average of around April 8th. Unfortunately some areas of the basin contain the lowest SWE values recorded for the date, including the basin above Paonia Reservoir, which on April 13th sits at 4% of the median for the date. SWE in the North Fork Gunnison basin is alarmingly at 18% and 45% of the SWE in 2002 and 2012, respectively.

Outlook

The CBRFC April 1st forecasted April to July streamflows range from 36% of average on Surface Creek in Cedaredge to 77% of average on Tomichi Creek in Gunnison. Part of this decrease is due to the amount of snow that has already runoff during March, thus shifting some of the runoff that would normally occur from April to July into March.

Administrative/Management Concerns

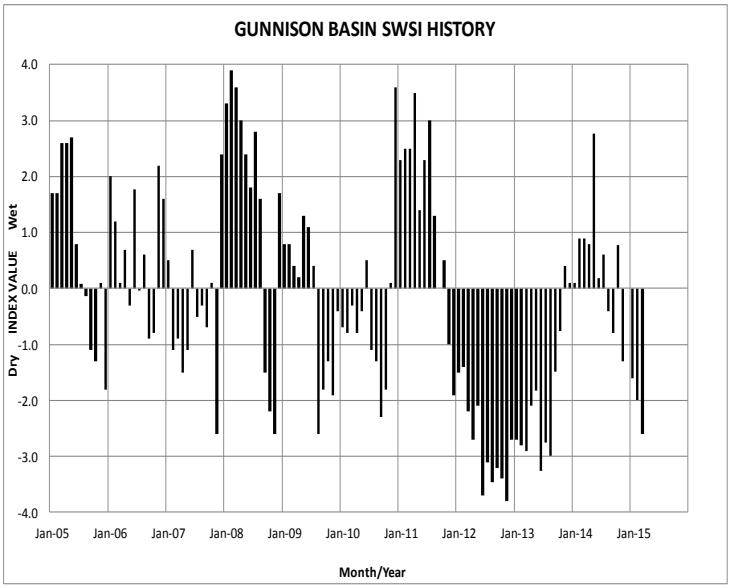
It appears that the Gunnison basin will experience significant administrative issues this year. Actually, it is already occurring as tributaries of many streams throughout Division 4 are already on call. In fact, an April 13th call on Tongue Creek will prevent reservoirs on the Grand Mesa in the Ward Creek, Young's Creek and Dirty George Creek drainage from filling, at least during the early season, which will mean less water in storage for use later in the summer. This will require administering pursuant to the upstream storage statute because water commissioners cannot turn water out of reservoirs that remain under snow. Out of priority storage in these reservoirs will be turned back to the creeks once the reservoir outlets are administrable. Part of the problem is that irrigators of orchards below have turned on because of the unseasonably warm weather and higher creek flows, but off and on cooler weather has repeatedly shrank the creek back to a point that the decrees for natural flow cannot be filled, precipitating the placement of calls on many tributaries. It appears that the USBR may struggle to fill Paonia Reservoir in 2015 since it is only 57% full, snowpack is at 4% of the median and a call is expected on the North Fork Gunnison River in the next week that would require DWR to curtail storage at Paonia Reservoir.

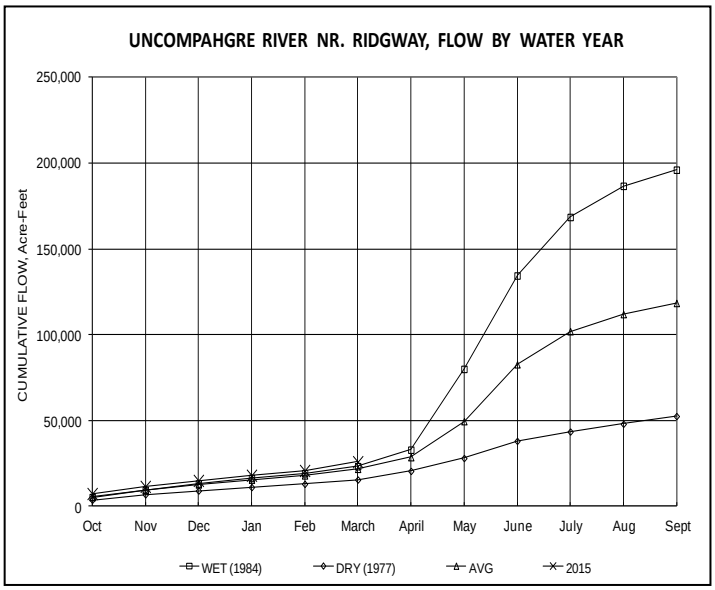
Taylor Park continues to accrue second fill water and contains over 30,000 acre-feet on April 13th (6,000 acre-feet more than 2014). As a result, use of Taylor Park Reservoir's first fill should not occur until late in the irrigation season, hopefully preventing a Gunnison Tunnel call.

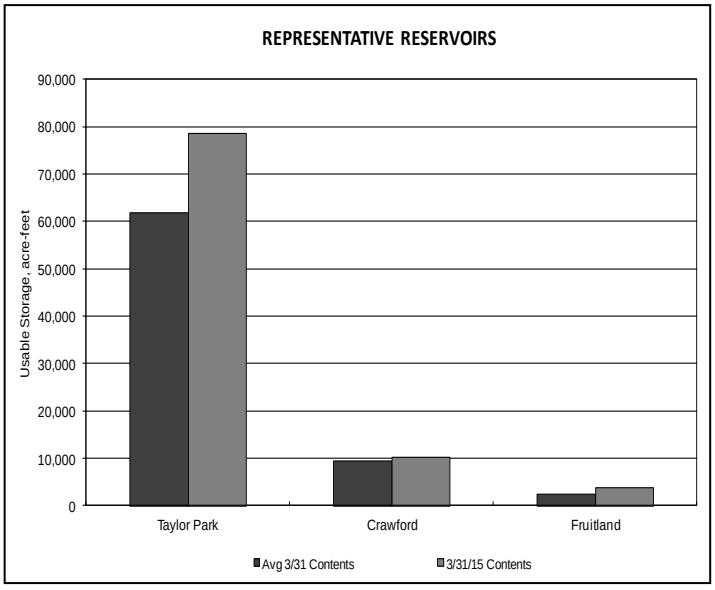
The April to July inflow forecast for Blue Mesa Reservoir is now 480,000 acre-feet, which places the basin in a moderately dry condition. The resulting one-day peak flow in the Black Canyon would be 2,664 cfs and the ROD flow target at Whitewater would be 6,611 cfs for only one day.

Pubic Use Impacts

The lower flows to be released from the Aspinall Unit should make for a good floating season in the Gunnison Gorge during June, certainly much improved from 2014.







Basinwide Conditions Assessment

The SWSI value for the month was -1.3.

Outlook

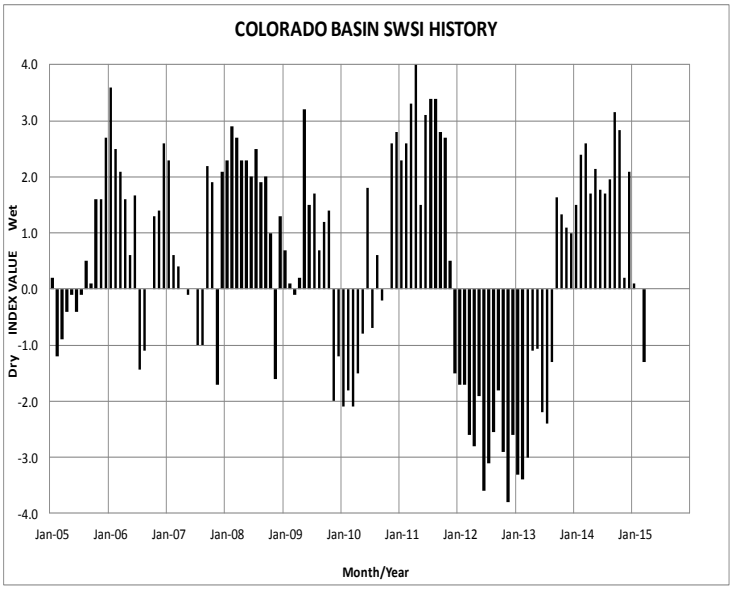
Colorado River flows are running above average likely due to the warmer temperatures. Roaring Fork and Eagle River flows likely to remain consistent at above average to average throughout April. As of April 1st, Upper Colorado River Headwaters and Roaring Fork Basin snowpack has fallen from the previous month to 56 and 57 percent of median snow water equivalent, respectively. The basin-wide snowpack (all sites above Lake Powell) percentage was lower as well at 60 percent. Average temperatures and light precipitation are forecasted for April.

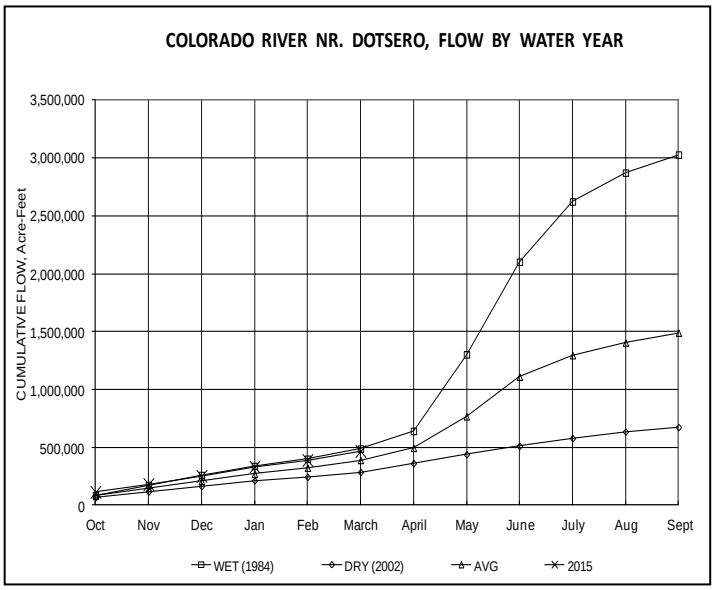
Administrative/Management Concerns

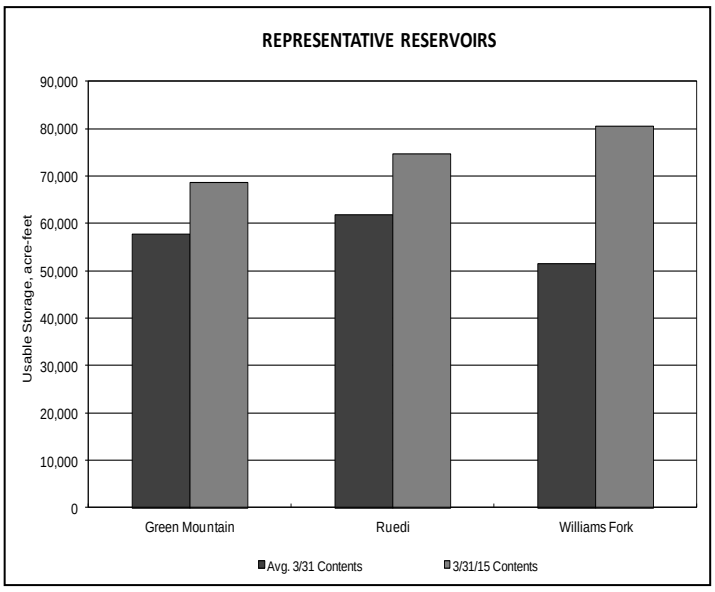
There is currently no call on the Colorado River. The Green Mountain Reservoir Administrative Protocol is currently in effect through the end of the irrigation season. A paper fill of Green Mountain is projected for early June with a physical fill expected by mid July. Increased release from Dillon Reservoir resulted in increase flow into Green Mountain Reservoir. Due to the increased flow into Green Mountain and spring runoff, Green Mountain releases have increased slightly.

Public Use Impacts

Ute Water Conservancy District has asked the Colorado Water Conservation Board about leasing their water to benefit four endangered species of fish in the Colorado River and to help Lake Powell water levels. Ute Water owns 12,000 acre feet of Ruedi water that they have no need for this water year. Aspen and Pitkin County officials are raising questions about the plan since they could use the water for electricity and recreational fishing.







Basinwide Conditions Assessment

The SWSI value for the month was -3.3. March 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 reported at 73% of average for the combined 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 March decreased to 81%.

Snowpack for the Yampa, White, and North Platte and Laramie River basins was below normal at 68% of average. The snow water equivalent (SWE) as of April 1st was 76% of average for the North Platte and Laramie River basins and 65% of average for the Yampa River basin and White River basin.

NRCS predicts well 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 49% of average for the North Platte River near Northgate, 59% of average for the Yampa River near Maybell, 40% of average for the Little Snake River near Lily, and 55% of average for the White River near Meeker.

Seasonal stream gages will be opened during April as conditions permit. All Division 6 stream gages will be operational by the end of April.

Outlook

As of March 31st Fish Creek Reservoir was storing approximately 3,421 AF, 82.1% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF Yamcolo Reservoir was storing 7,500 AF at the end of March 2015. The capacity of Yamcolo Reservoir is 8,700 AF. On March 31st Elkhead Creek Reservoir was storing 20,045 AF. The capacity of Elkhead Creek Reservoir is 24,778 AF On March 31st, 2015; Stagecoach Reservoir was storing 34,700 AF which is 104% of capacity.

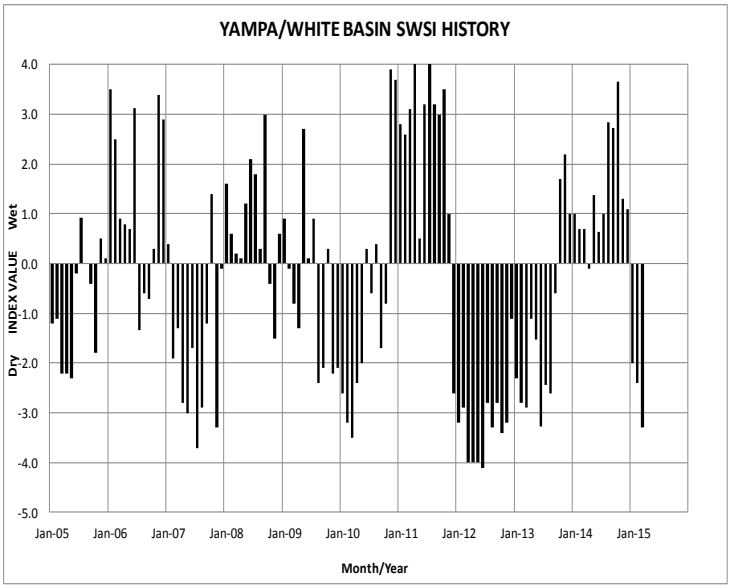
Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Elkhead Creek Reservoir for municipal, industrial, recreational, and fish recovery releases. Stagecoach Reservoir is primarily used for recreation though a significant amount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

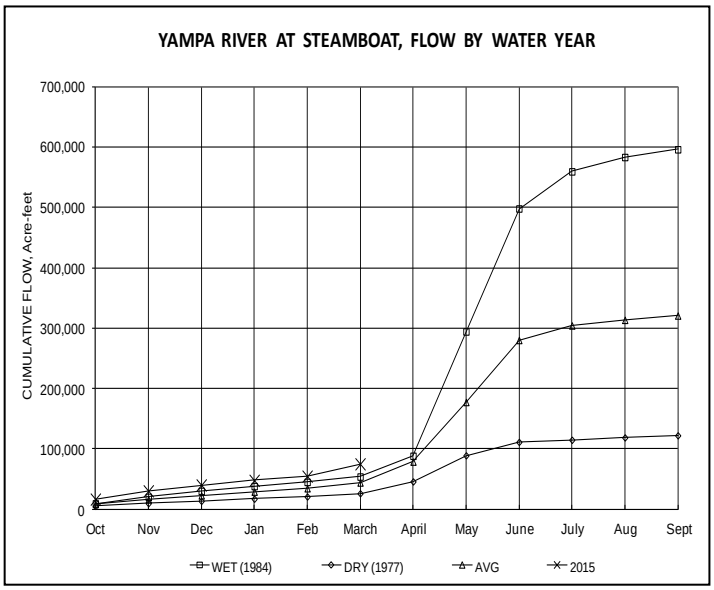
Public Use Impacts

As of April 12, 2015 Steamboat Ski Resort had closed for the season with a total mid-mountain snowfall of 232 inches since October 2014. That snow total is only slightly above the 2011-12 season, the most recent below average season at the resort.

Stagecoach Reservoir as of April 8 is ice free. Boating on the reservoir is scheduled to begin May 1st. Fishing is reported as "good" at the inlet and coves around the lake.

Steamboat Lake is reporting that ice is thinning however the lake remains iced over with slush on top.



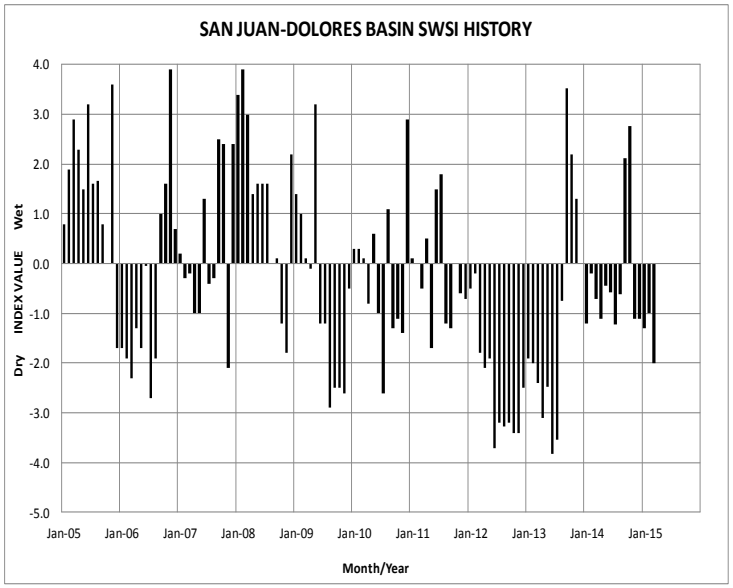


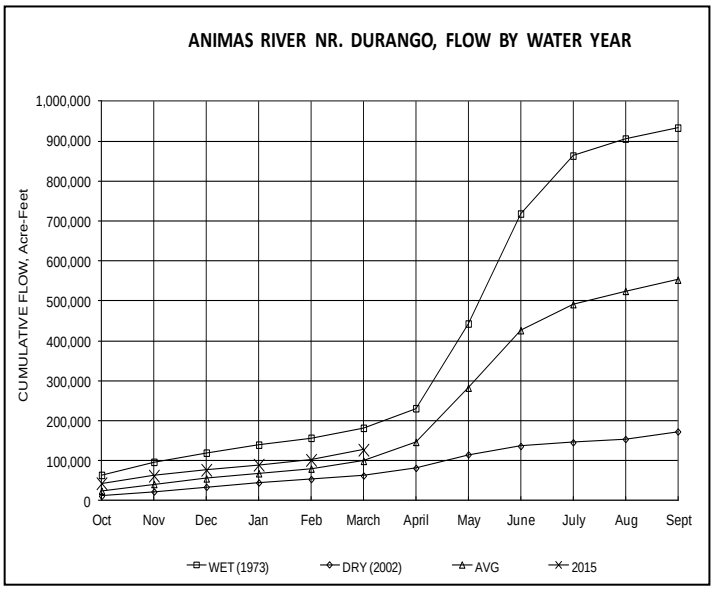
Basinwide Conditions Assessment

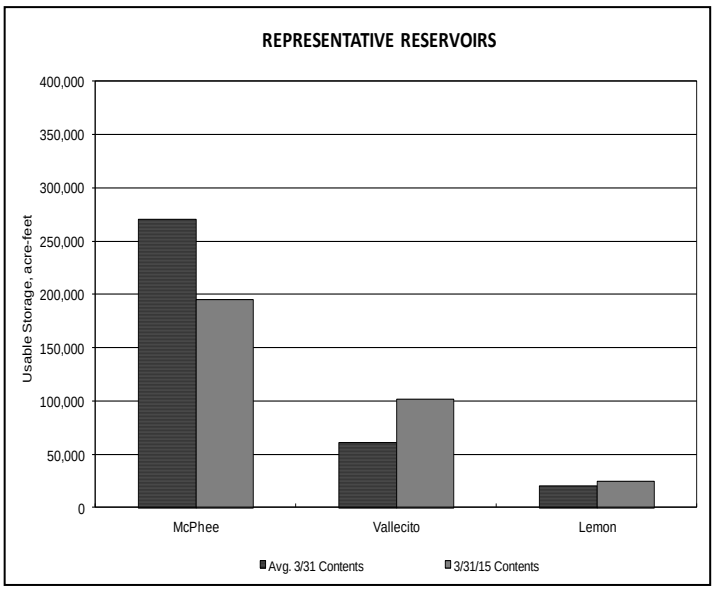
The SWSI value for the month was -2.0. Flow at the Animas River at Durango averaged 421 cfs (139% of average). The flow at the Dolores River at Dolores was estimated to average 209 cfs (156% of average). The La Plata River at Hesperus averaged 30.2 cfs (187% of average). Precipitation in Durango was 0.72 inches for the month, 53% of the 30-year average of 1.35 inches. Precipitation to date in Durango, for the water year, is 7.60 inches, 77% of the 30-year average of 9.92 inches. The average high and low temperatures for the month of March in Durango were 62° and 29°. In comparison, the 30-year average high and low for the month is 55° and 25°. At the end of the month Vallecito Reservoir contained 101,737 acre-feet compared to its average content of 56,876 acre-feet (179% of average). McPhee Reservoir was up to 195,423 acre-feet compared to its average content of 275,192 (71% of average), while Lemon Reservoir was up to 24,450 acre-feet as compared to its average content of 20,413 acre-feet (120% of average).

Outlook

Precipitation (0.72 inches) was below average for March in Durango. There were 90 years out of 121 years of record where there was more precipitation than this year. The flows in the rivers within the basin were well above average. There were only 18 out of 105 years of record where the total flow past the Animas River at Durango stream gauge was more than this year. There were 20 out of 104 years of record where the total flow past the Dolores stream gauge was more than this year and 11 out of 98 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year. On March 31, the NRCS SNOTEL sites reported an average snow-water equivalent within the basin at 56%. End of last month the snow-water-equivalent was 68%.







ADDITIONAL INFORMATION ABOUT COLORADO SWSI CALCULATIONS - Apr-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 April 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.