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

April 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 March (April 1) range from a minimum of -0.8 in the Rio Grande basin to a maximum of 2.6 in the Colorado River Basin. The water supply outlook also includes abundant supply in the South Platte River basin. The SWSI values this year are a considerable improvement for each basin in the state compared to last year. Nevertheless, the Rio Grande Basin and the San Juan / Dolores Basin both continue to exhibit less than average water supply conditions.

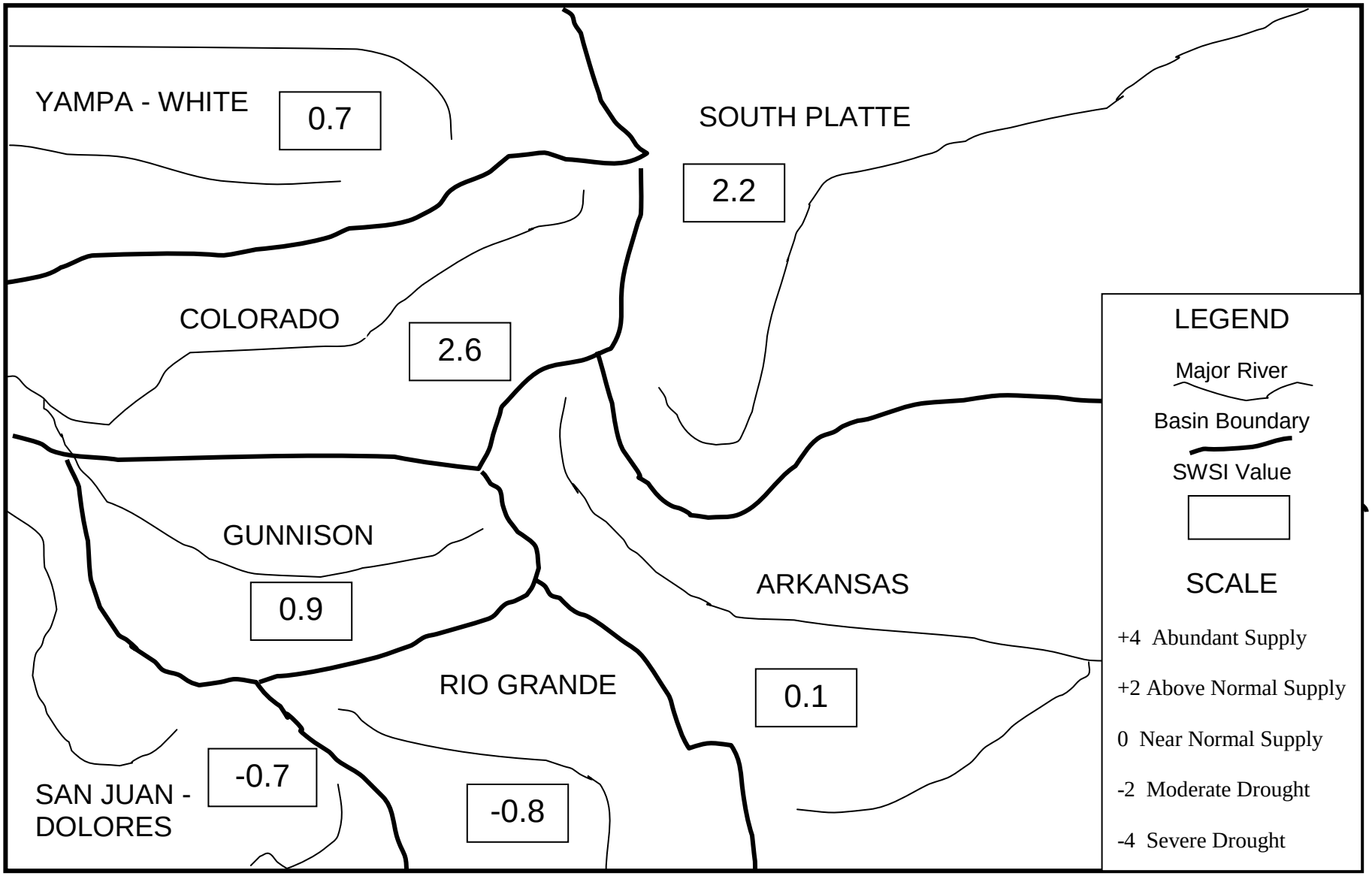
The following SWSI values were computed for each of the seven major basins for April 1, 2014. Additional information about SWSI calculations and the NRCS National Water and Climate Center SWSI by HUC are included on Page 10.

Basin	April 1 SWSI	Change from Previous Month	Change from Previous Year
South Platte	2.2	-0.4	4.3
Arkansas	0.1	-0.7	3.3
Rio Grande	-0.8	0.1	1.0
Gunnison	0.9	0.0	1.1
Colorado	2.6	0.2	5.6
Yampa/White	0.7	0.0	3.6
San Juan/Dolores	-0.7	-0.5	1.7

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



April 1, 2014

Basinwide Conditions Assessment

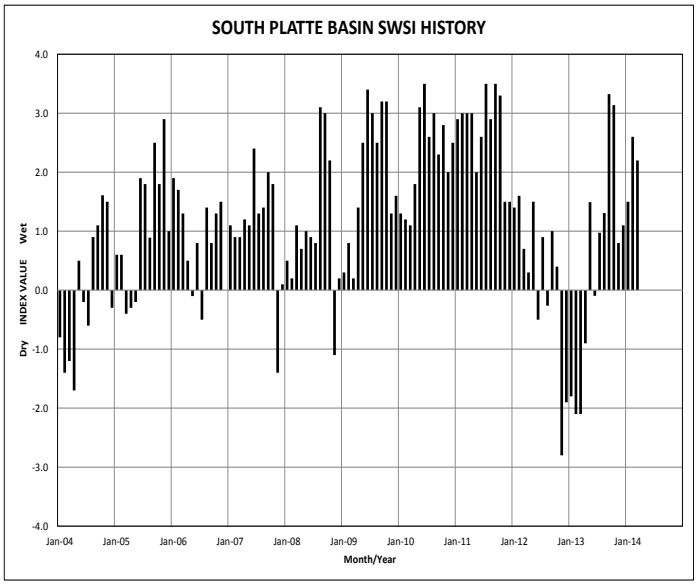
The SWSI value in this basin is 2.2. March 2014 in northeast Colorado ended as a whole being fairly average. Precipitation was slightly below average in the mountains and along the Front Range, but grew progressively less moving to the east. Temperatures were very close to normal throughout the area.

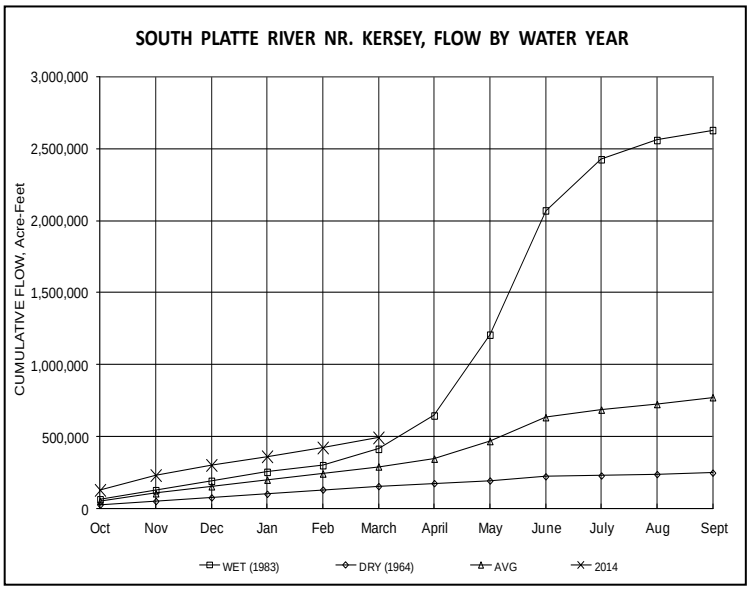
The March snow pack continued the above average trend that began in early January. On April 1, 2014 the South Platte basin snow water equivalent was 133% of average and already approximately 4 inches of water above the average peak of about 15 inches of water. This is only slightly below the April 1, 2011 snow water equivalent of 136% of average. This large snowpack is raising flooding concerns, especially in the areas heavily impacted by the September 2013 flood because of the major changes in stream channel geometry produced by the flood.

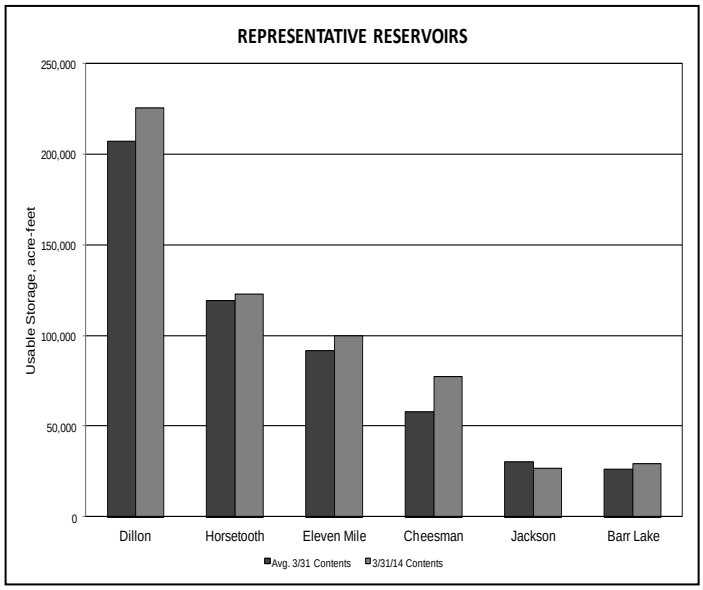
Stream flows at the Kersey index gage continued to be above average but flow at the Julesburg index gage was below average for March. This indicates heavy use of the river for both reservoir storage and groundwater recharge, both of which will primarily support irrigation use in the 2014 season. The Kersey gage monthly mean stream flow was 1,143 cfs as compared to the historic March mean flow of 688 cfs. The March monthly mean stream flow at the Julesburg gage was 485 cfs as compared to the historic February mean flow of 522 cfs.

There was only one call for water by a water right in the entire South Platte Basin during the month of March. This is indeed a rare happening. The only call was on South Boulder Creek from the ditch that fills Marshall Lake. This call came on March 13 and ended April 4.

Reservoir storage in the basin at the end of March remained good at 103% of average. This equates to a storage level of 87% of total capacity. This, along with the good amounts of water diverted for groundwater recharge and expected good stream flows, should provide an excellent supply of water for the coming irrigation season.







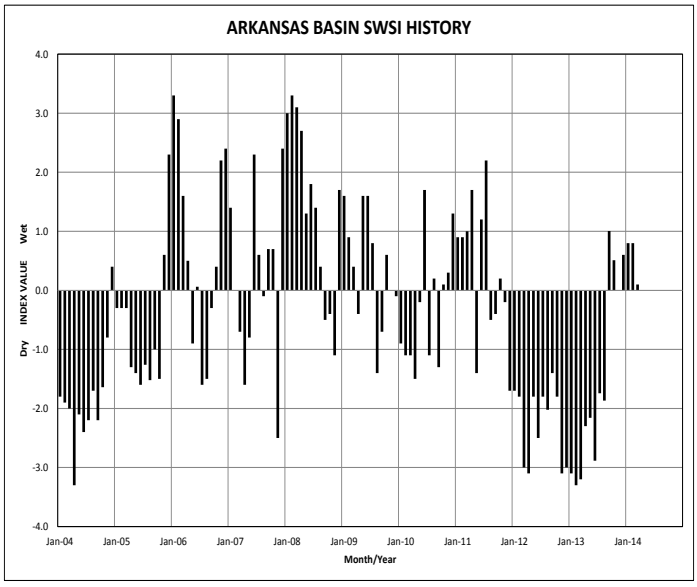
Basinwide Conditions Assessment

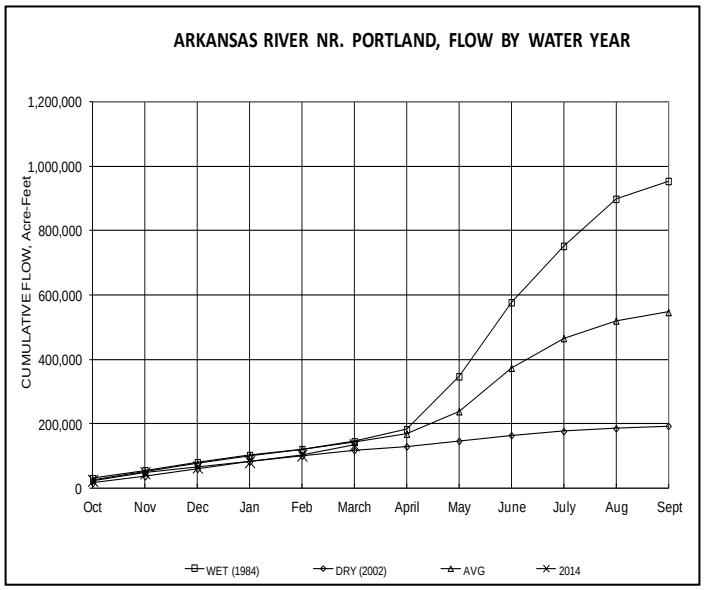
The SWSI value for the month is 0.1. Total distributed reservoir storage following the Pueblo Winter Water Program was 100,378 acre-feet, including 32,295 acre-feet in Pueblo Reservoir, 55,030 acre-feet in off-channel reservoirs, and 13,053 acre-feet in John Martin Reservoir (after distribution to accounts). Conservation Storage in John Martin Reservoir through March 31, 2014 totaled 9,937 acre-feet. Storage values are higher than last year for the Pueblo Winter Water Program and for Conservation Storage in John Martin Reservoir, but are still below the long-term average values for storage.

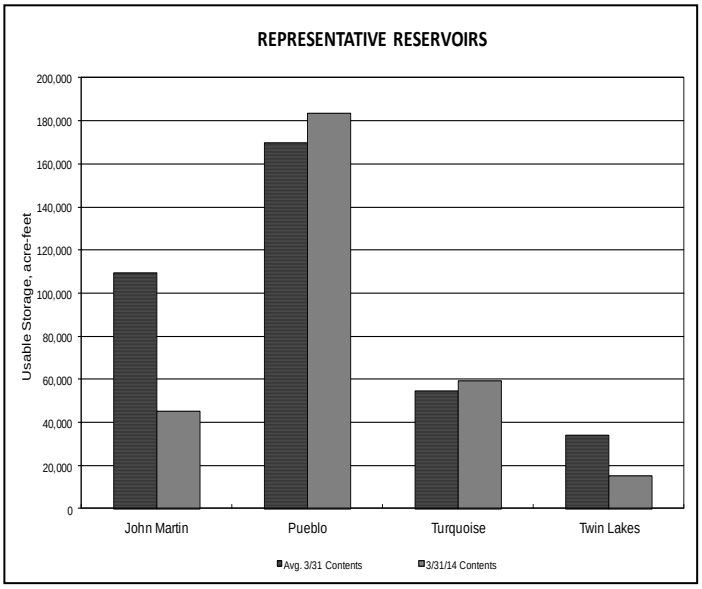
Administrative / Management Concerns

The first Pilot Project request submitted pursuant to HB-1248, passed by the legislature in 2013, was withdrawn in March. This project would have demonstrated rotational fallowing under the Rocky Ford Highline Canal to provide fully consumable water for the benefit of Town of Fowler for well augmentation.

Well association plans were approved in March with higher pumping values than those approved in 2013 due to more favorable replacement supplies being expected for 2014.







Basinwide Conditions Assessment

The SWSI value for the month is -0.8. Flow at the gaging station Rio Grande near Del Norte averaged 280 cfs (103% of normal). The Conejos River near Mogote had a mean flow of 70 cfs (80% of normal). Flow at the state line was 93% of normal. Throughout the upper Rio Grande basin, streamflow during March was near normal.

Weather conditions in the San Luis Valley were drier than normal for the third consecutive month. A good snowstorm the first few days of the month produced a significant jump in the basin snowpack. But the remainder of the month brought little additional accumulation.

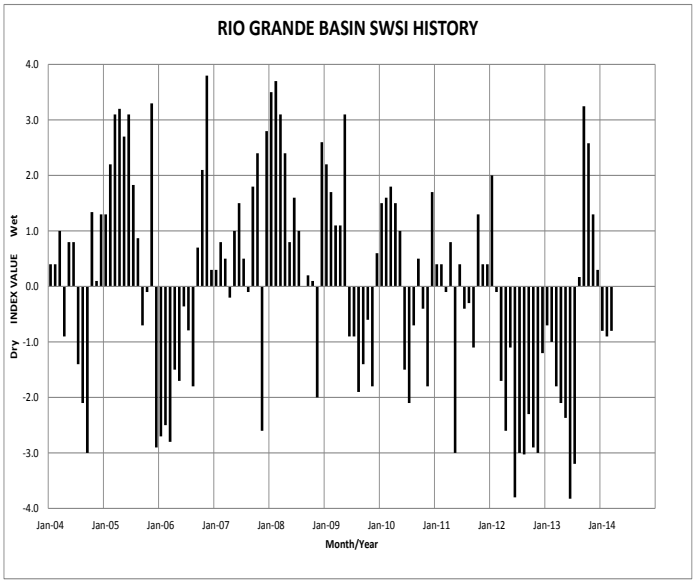
Outlook

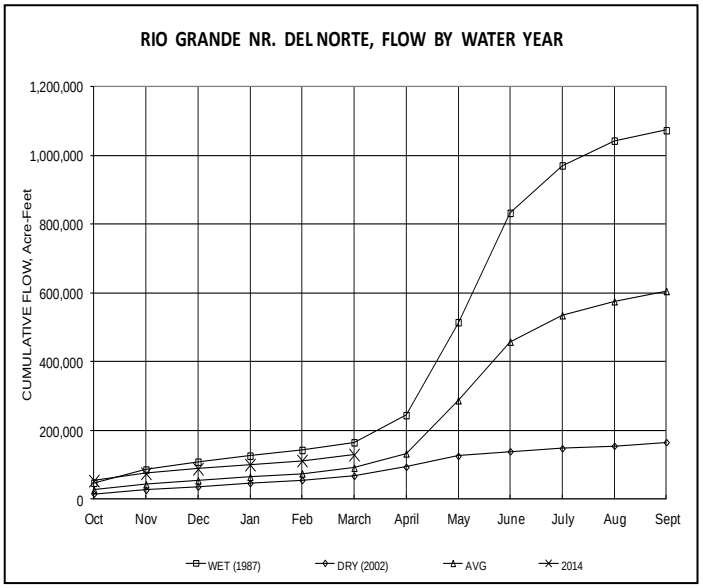
Current NRCS streamflow forecasts predict the April through September runoff to be 80% of average on the Rio Grande near Del Norte and 68% of average for the Conejos near Mogote. Other streams in the basin are forecast as low as 35% of normal for the Rio San Antonio and as high as 103% for Saguache Creek.

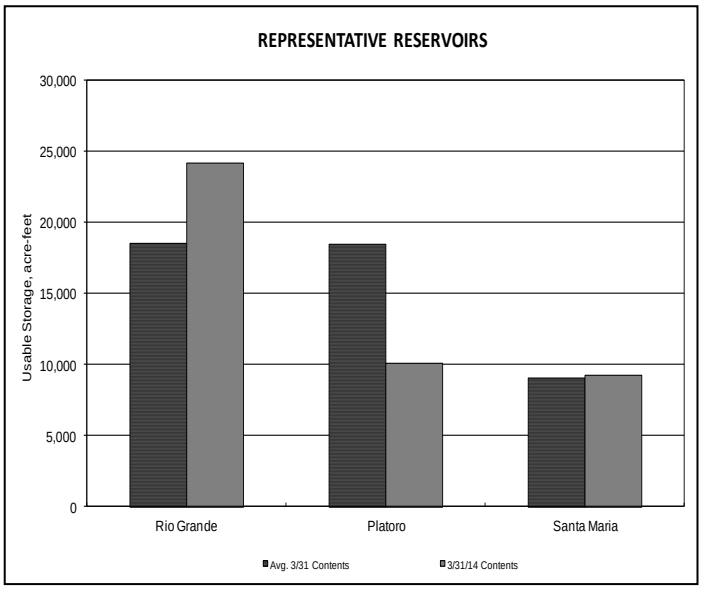
Soil moisture conditions are still reasonably good in most locations around the basin due to extensive autumn precipitation.

Administrative/Management Concerns

Based on the current forecast, the delivery targets on the Rio Grande of approximately 10% and for the Conejos River system approximately 6% this irrigation season. The 2014 irrigation season began on April 1 for all upper Rio Grande drainages with the exception of Culebra Creek and LaJara/Hot Creeks which began earlier in March.

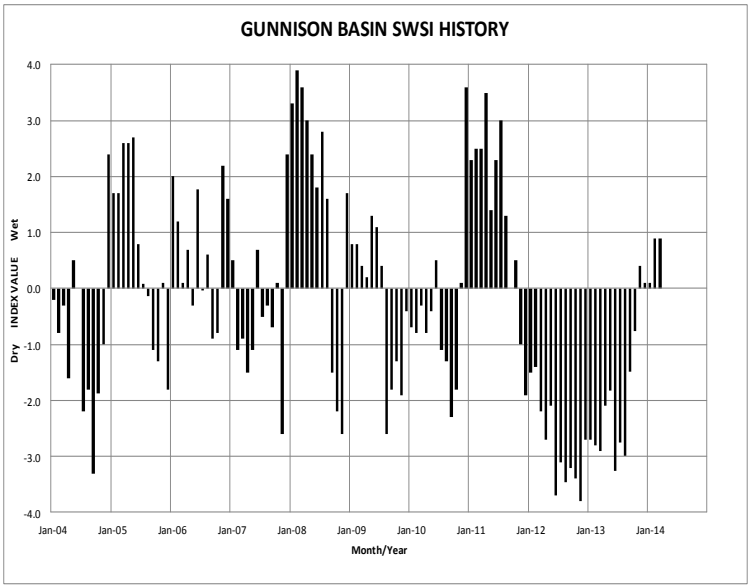






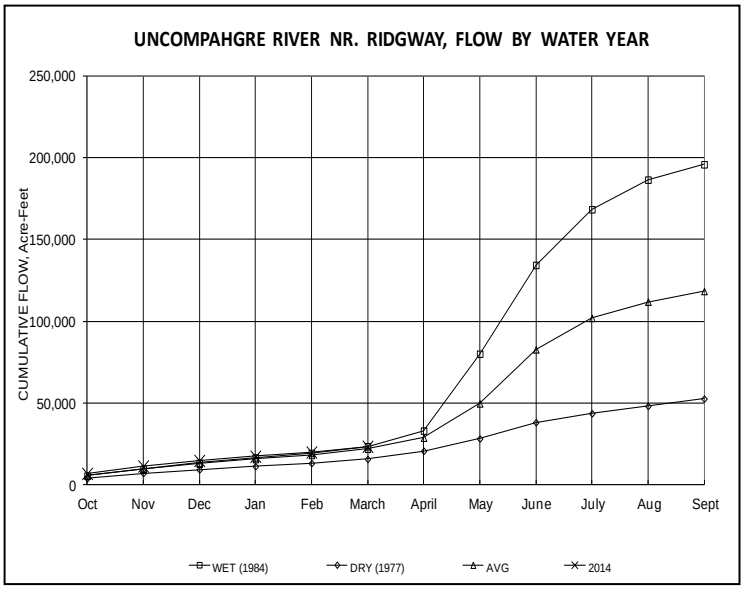
Basinwide Conditions Assessment

The SWSI value for the month is 0.9. Precipitation in the Gunnison basin at 70-89% of average in most areas during March reduced the basin-wide snow water equivalent (SWE) by 6% to 108%. The East River and Cochetopa Creek drainages continued to receive close to average precipitation and therefore, still have the most SWE when compared with the median and sit at 127% of the median for the date and 122% of the seasonal peak. Other areas, such as the Uncompahgre and North Fork Gunnison basins had a reduction in their SWE and on April 1st had 100% (95% of seasonal) and 105% (96% of seasonal) respectively. Interestingly, Snotel data shows that there is one area of the basin that contains less SWE than in 2013 and that is the Uncompahgre Plateau. The Columbine Pass gage contains only 72% of the median SWE on April 1st and is only 89% of the amount on April 1, 2013.



Outlook

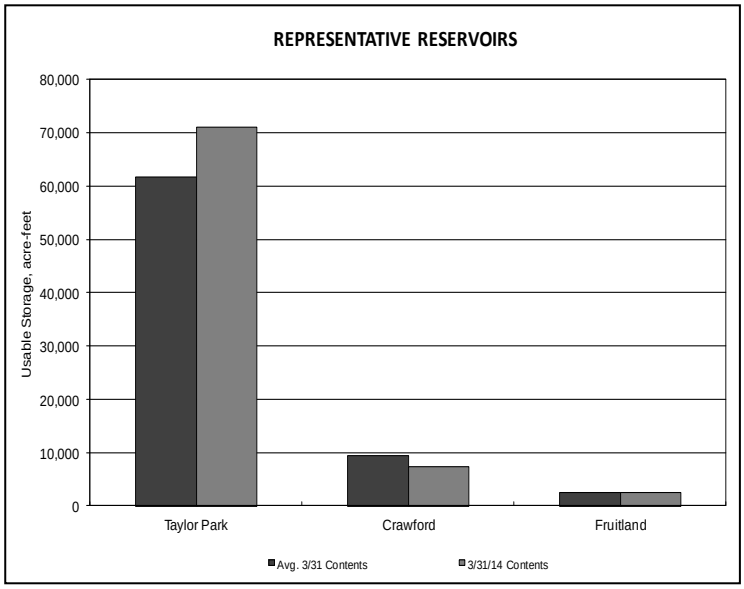
The 30-day and 90-day forecasts continue to include equal chances of below or above average precipitation in the Gunnison basin with a slightly higher probability of above average temperatures.



Administrative/Management Concerns

Blue Mesa Reservoir currently contains 412,000 acre-feet and is more than 12 feet higher than a year ago. The latest 24 month study from the USBR was unchanged and predicts an April to July inflow into Blue Mesa Reservoir of 850,000 acre-feet (126% of average), which would require a Black Canyon one-day peak flow of 6,427 cfs. USBR projections show that Blue Mesa will fill to within 3 feet of its active conservation pool. In addition, the peak runoff at Whitewater due to releases from Crystal dam and North Fork Gunnison flows are forecast to reach 11,000 cfs in 2014. Taylor Park Reservoir continues to fill and contains over 24,000 acre-feet of second fill on April 1st.

The Uncompahgre Valley Water Users Association (UVWUA) opened the Gunnison Tunnel on March 31st at 100 cfs and will be ramping up 100 cfs at a time through April until they get to their full diversion of 1,000 cfs. Instead of beginning delivery this year at 50%, UVWUA users will receive their full share at the beginning of 2014.

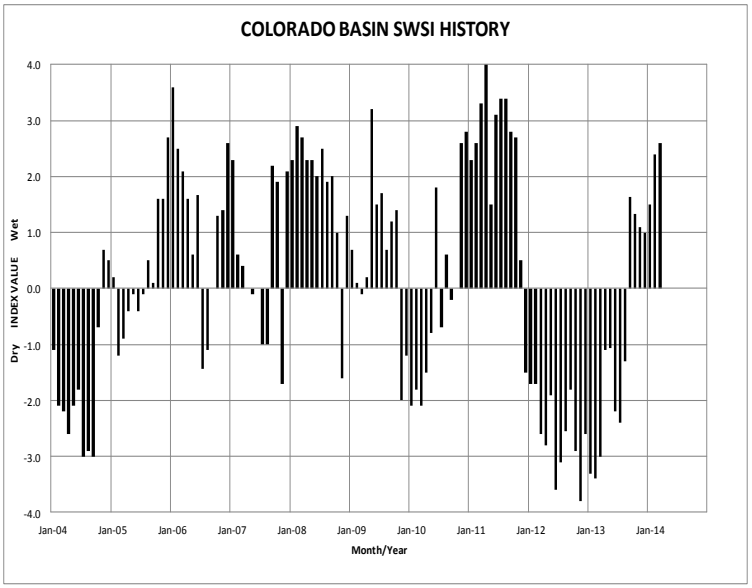


Public Use Impacts

Although flows in the Gunnison Gorge will remain at around 450 cfs until the ramp up to the one-day peak for the Black Canyon Reserved water right, releases from Crystal Reservoir will continue to step up in 100 cfs increments to keep up with increasing diversions at the Gunnison Tunnel.

Basinwide Conditions Assessment

The SWSI value for the month is 2.6.

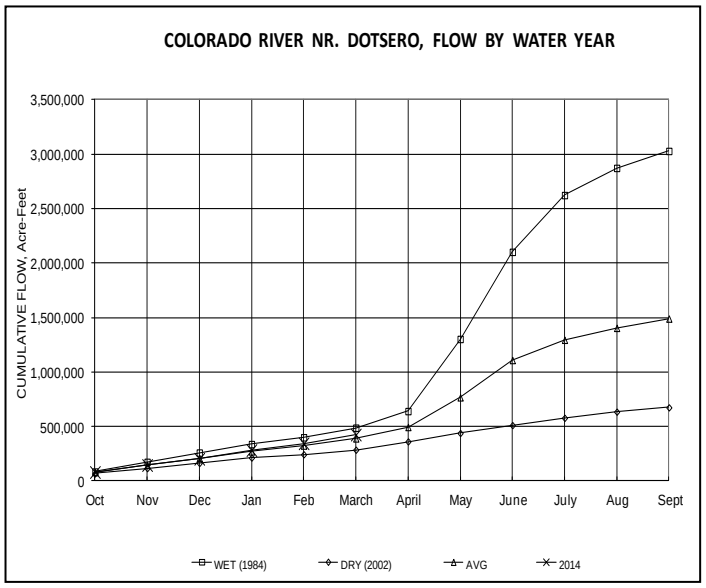


Outlook

All Colorado River tributaries will rise through the month of April as snowmelt runoff begins, although periods of cooler average daily temperatures and intermittent precipitation could stabilize flows. Average precipitation and slightly above average temperatures are forecast for western Colorado through the month of April. Ruedi reservoir releases increased in mid-march will continue through April to continue additional storage. As of April 1st, Upper Colorado River and Roaring Fork Basin snowpack is at 136 and125 percent of median snow water equivalent respectively.

Administrative/Management Concerns

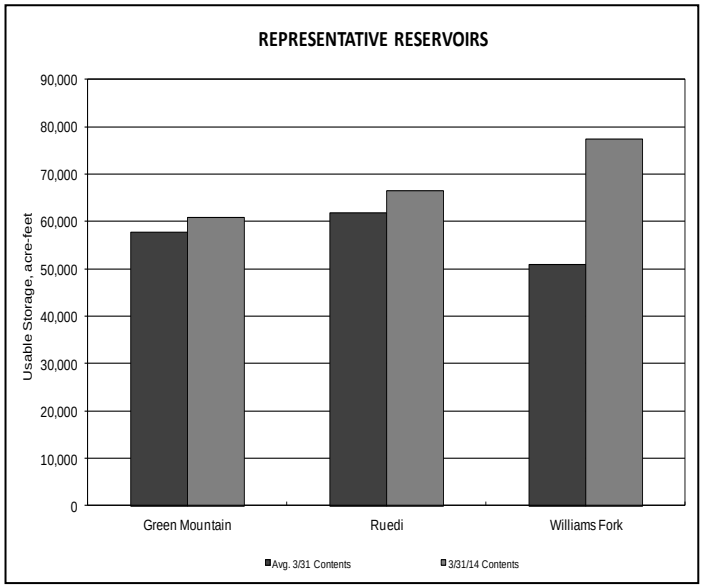
A Colorado River main stem call is not anticipated through the month of April. Grand Valley Irrigation diversions (Government Highline/Orchard Mesa Irrigation, Grand Valley Irrigation canals) have initiated and will increase to full capacity by mid-April. Increased Ruedi Reservoir release rate will continue as a result of considerably above average basin snowpack. Green Mountain reservoir releases have increase significantly following a 300 cfs reduction in late March to facilitate powerplant inspection and downstream channel work. Blue River Basin snowpack is also considerably above-average. Williams Fork and Wolford Mountain Reservoir will also continue significantly increased releases to open storage space for above average runoff.



Public Use Impacts

Primary Front Range water user, Denver Water, have stated their consideration not to seek “firm yeild” but willingness to settle for diversions following “wet winters” only from a new trans-mountain diversion project. Potential projects include Green River at Flaming Gorge Reservoir, the lower Yampa River, and the Gunnison River at Blue Mesa Reservoir. Colorado River Compact obligations are also a concern based on the post 1922 adjudication of many Front Range diversions from the West Slope.

Meanwhile conservation group, American Rivers, has placed the Upper Colorado River and its major tributaries as the “second most endangered river” in the United States, further highlighting the Roaring Fork River from the potential for additional diversions.



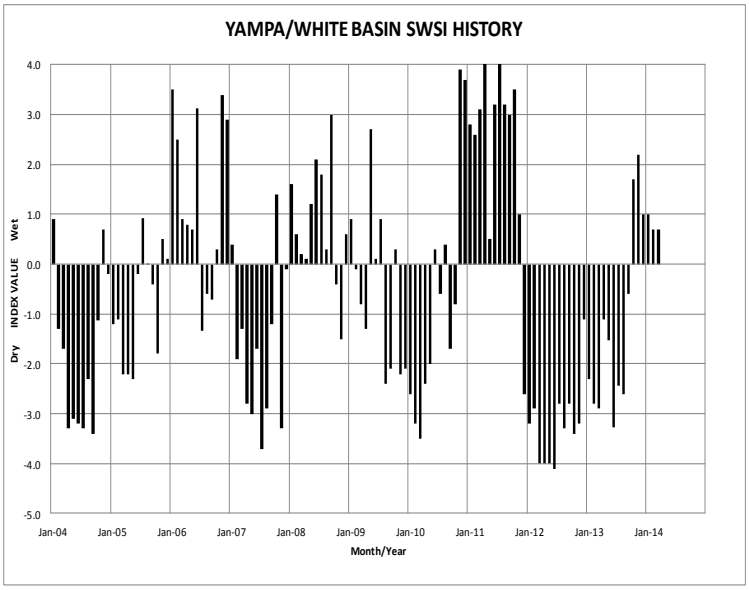
Basinwide Conditions Assessment

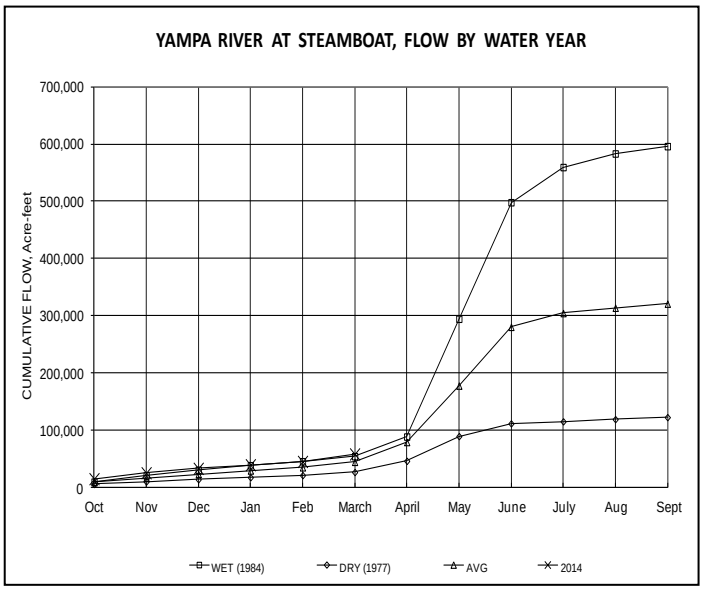
The SWSI value for the month is 0.7. March precipitation was above average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by NRCS, was reported at 125% of average for the combined Yampa, White, and North Platte River basins. Total precipitation for the water year as a percent of average to date in the combined basins at the end of March increased to 123%.

Snowpack for the Yampa and White River basins was at 125 % of average and the North Platte and Laramie River basins were at 141% of average as of April 1st, 2014. The snow water equivalent (SWE) as of April 1st was 140% of average for the North Platte and Laramie River basins and 127% of average for the Yampa River basin and White River basin.

NRCS predicts mostly 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 122% of average for the North Platte River near Northgate, 143% of average for the Yampa River near Maybell, 122% of average for the Little Snake River near Lily, and 89% 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

Yamcolo Reservoir was storing 5,300 AF at the end of March 2014. The capacity of Yamcolo Reservoir is 8,700 AF. On March 31st. Elkhead Creek Reservoir was storing 19,415 AF. The capacity of Elkhead Creek Reservoir is 24,778 AF. On March 31st, 2014, Stagecoach Reservoir was storing 30,300 AF which is 91% of capacity.

Water stored in 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

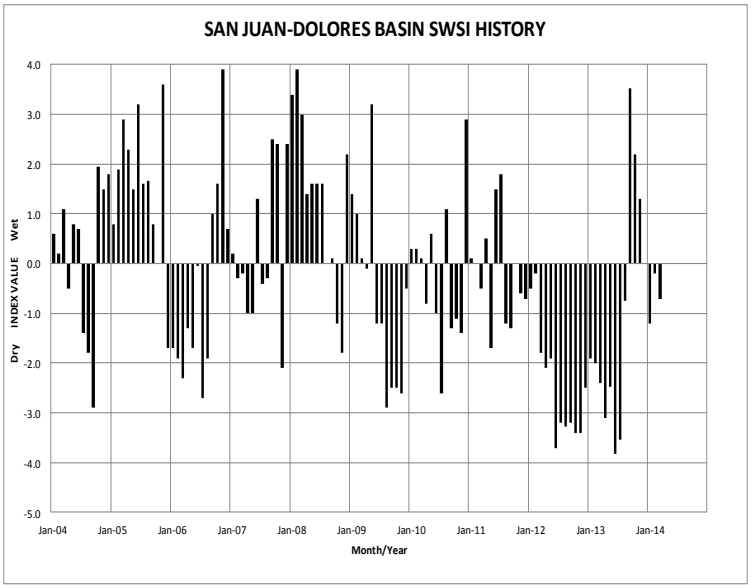
As of April 14, 2014 Steamboat Ski Resort had closed for the season with a total mid-mountain snowfall of 346 inches and 410 inches at the summit since October 2013.

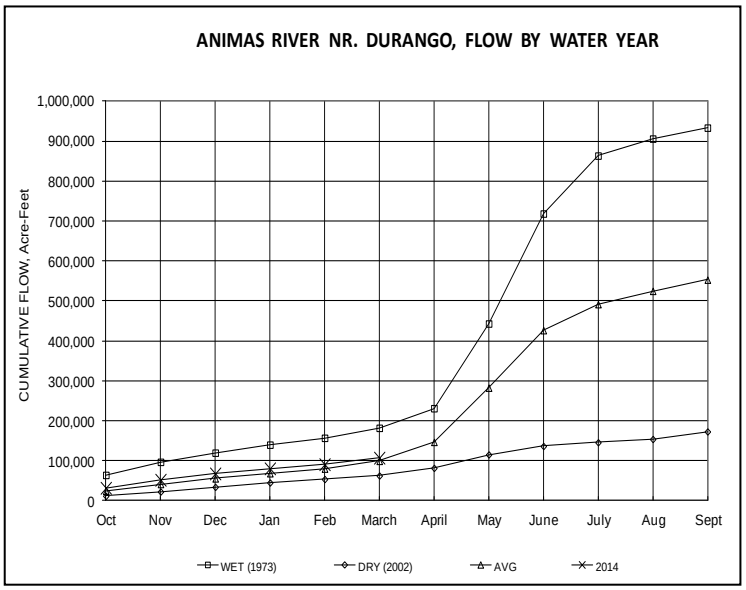
Stagecoach Reservoir as of April 14 remains 98% iced over with no safe access to the ice. Boating on the reservoir is scheduled to begin May 1st however considering current ice that may be delayed. Fishing is reported as “good” at the inlet.

Conditions at Pearl Lake and Steamboat Lake State Parks have not been recently updated.

Basinwide Conditions Assessment

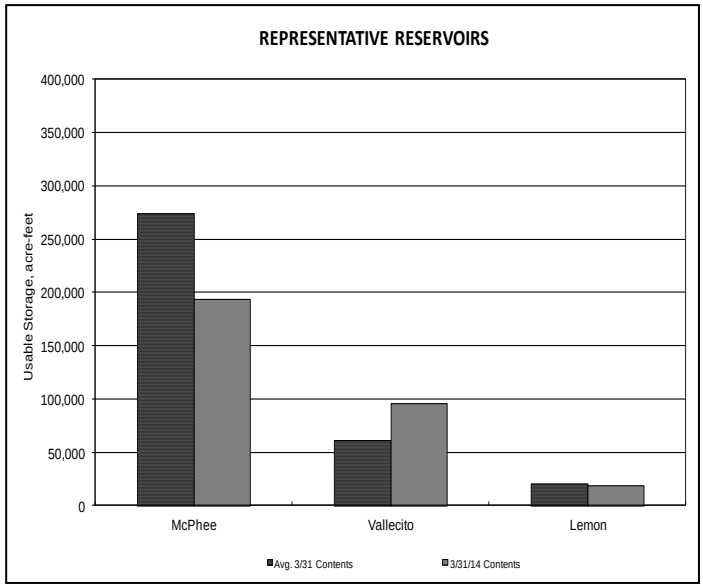
The SWSI value for the month is -0.7. Flow at the Animas River at Durango averaged 266 cfs (88% of average). The flow at the Dolores River at Dolores averaged 117 cfs (87% of average). The La Plata River at Hesperus averaged 15.4 cfs (95% of average). Precipitation in Durango was 1.08 inches for the month, 80% of the 30-year average of 1.35 inches. Precipitation to date in Durango, for the water year, is 6.69 inches, 67% of the 30-year average of 9.95 inches. The average high and low temperatures for the month of March in Durango were 57o and 26o. In comparison, the 30-year average high and low for the month is 55o and 25o. At the end of the month Vallecito Reservoir contained 95,285 acre-feet compared to its average content of 56,335 acre-feet (169% of average). McPhee Reservoir was up to 193,800 acre-feet compared to its average content of 278,099 (70% of average), while Lemon Reservoir was up to 18,260 acre-feet as compared to its average content of 20,458 acre-feet (89% of average).





Outlook

Precipitation (1.08 inches) was below average for March in Durango. There were 69 years out of 120 years of record where there was more precipitation than this year. The flows on the Animas River was below average this month. There were 56 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 44 out of 103 years of record where the total flow past the Dolores stream gauge was more than this year and 40 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 March 31, the NRCS SNOTEL sites reported an average snow-water equivalent within the basin at 86%. Last month the snow-water-equivalent was 88%.



ADDITIONAL INFORMATION ABOUT COLORADO SWSI CALCULATIONS - Apr-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 March 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.