Water Availability Task Force Meeting

February 16, 2012

January (Feb. 1) SWSI Report

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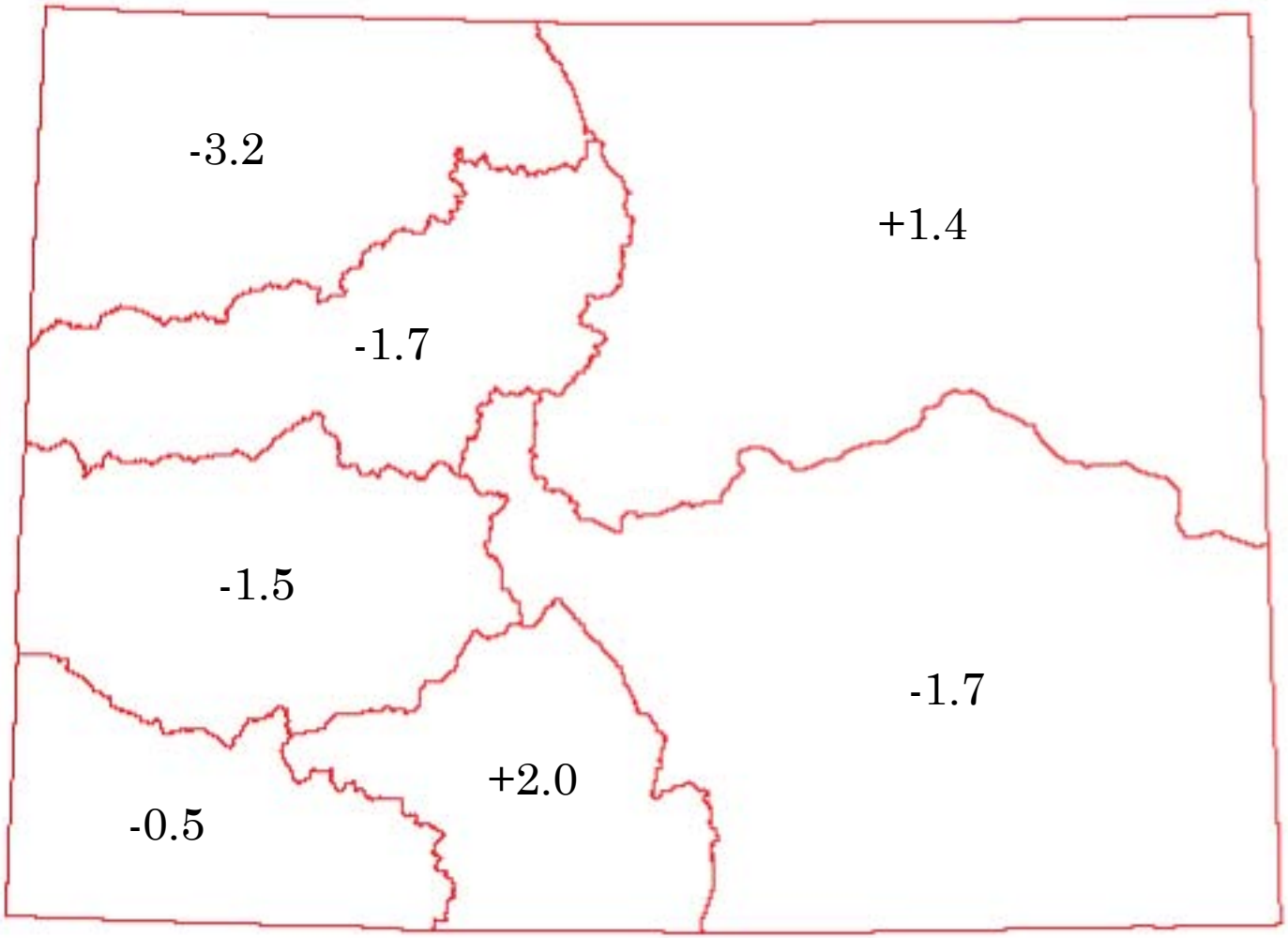
Colorado Division of Water Resources

"Old" SWSI

- Relies on actual measured data for Snowpack (P_{SP}), Precipitation (P_{PCP}), and Reservoir Storage (P_{RS}).
- Snowpack is given the most weight in all basins except the South Platte, where Reservoir Storage is the main component.

Surface Water Supply Index for Colorado ("Old" SWSI)



February 1, 2012

Division 1 – South Platte Basin

$$SWSI = \frac{(0.27 \times P_{SP}) + (0.18 \times P_{PCP}) + (0.55 \times P_{RS}) - 50}{12}$$

- The SWSI value for the month was +1.4, down 0.1 from last month's value.
- Decrease in SWSI value is likely due to a slight decline in snowpack (80% to 77%).
- Above average reservoir storage (109%) compensated for the below-average snowpack (77%).
- Stream flow in the South Platte was also above average for the month (121% at Kersey and 206% at Julesburg) .

Division 2 – Arkansas Basin

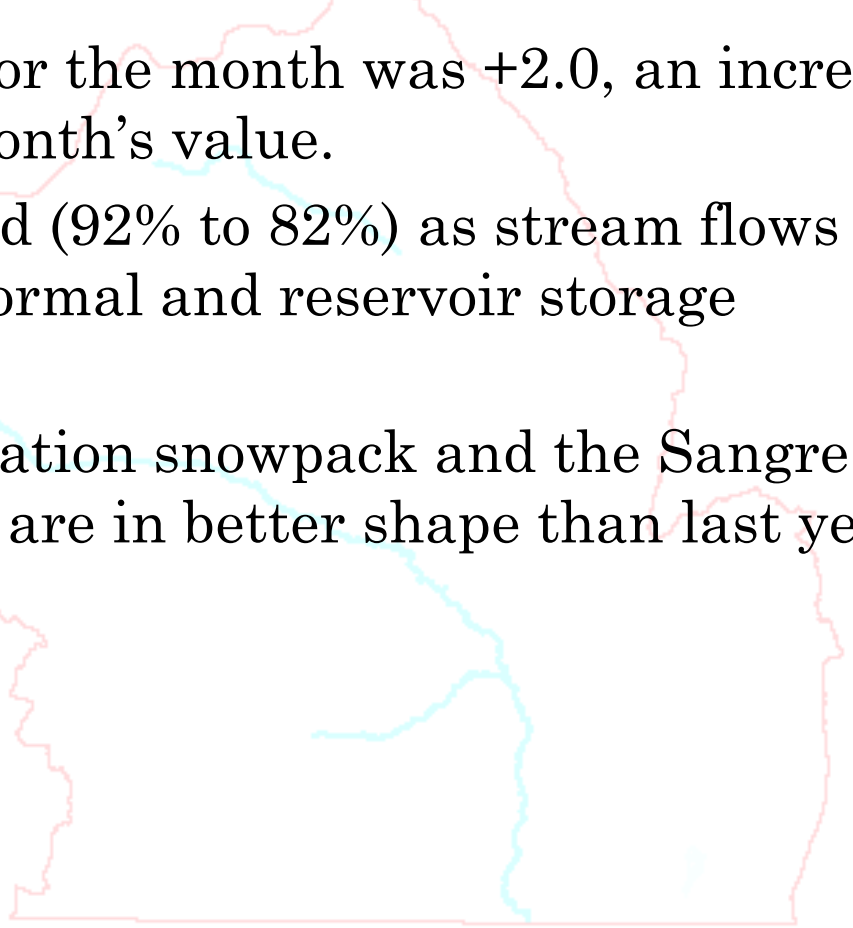
$$SWSI = \frac{(0.51 \times P_{SP}) + (0.34 \times P_{PCP}) + (0.15 \times P_{RS}) - 50}{12}$$

- The SWSI value for the month was -1.7, no change from last month's value.
- A decline in snowpack (96% to 86%) was offset by an increase in reservoir storage.
- The Lower Arkansas Valley Water Conservancy District has planned a pilot project for the Super Ditch Rotational Fallowing Program, which will will involve a SWSP application for a demonstration of the project using 6 to 8 farms under the Catlin Canal.

Division 3 – Rio Grande Basin

$$SWSI = \frac{(0.63 \times P_{SP}) + (0.32 \times P_{PCP}) + (0.05 \times P_{RS}) - 50}{12}$$

- The SWSI value for the month was +2.0, an increase of 1.6 from last month's value.
- Snowpack declined (92% to 82%) as stream flows moved closer to normal and reservoir storage increased.
- Low and mid-elevation snowpack and the Sangre de Cristo Mountains are in better shape than last year at this time.



Division 4 – Gunnison Basin

$$SWSI = \frac{(0.54 \times P_{SP}) + (0.36 \times P_{PCP}) + (0.10 \times P_{RS}) - 50}{12}$$

- The SWSI value for the month was -1.5, up 0.4 from last month's value.
- Conditions improved slightly in January due to above average precipitation.
- As of the beginning of February the Gunnison Basin now has snowpack greater than at the same time in 2002.
- Southern areas of the basin are in better condition than northern areas.

Division 5 – Colorado Basin

$$SWSI = \frac{(0.51 \times P_{SP}) + (0.34 \times P_{PCP}) + (0.15 \times P_{RS}) - 50}{12}$$

- The SWSI value for the month was -1.7, down 0.2 from last month's value.
- Upper Colorado River Headwaters and Roaring Fork River Basin snowpack improved slightly since last month, but continues to be significantly below normal, with above average reservoir storage unable to make up the difference.
- The elevation of Lake Mead is expected to drop 13 feet by January 2013, based on forecasted inflows to Lake Powell.

Division 6 – Yampa/White Basin

$$SWSI = \frac{(0.60 \times P_{SP}) + (0.40 \times P_{PCP}) - 50}{12}$$

- The SWSI value for the month was -3.2, down 0.6 from last month's value and down 6.0 from last year's value.
- Snowpack increased slightly for the Yampa/White River Basin (61% to 63%) and decreased slightly for the Laramie and North Platte River Basin (69% to 68%).
- Precipitation for the month was approximately 70% of average for the Yampa, White, and North Platte River basins.
- There is no reservoir component for this basin.

Division 7 – San Juan/Dolores Basin

$$SWSI = \frac{(0.54 \times P_{SP}) + (0.36 \times P_{PCP}) + (0.10 \times P_{RS}) - 50}{12}$$

- The SWSI value for the month was -0.5, up 0.2 from last month's value.
- Snowpack remained constant from last month at 73% of average.
- Precipitation in Durango was below average for the month, just 78% of the 30-year average.
- Storage in Vallecito and McPhee Reservoirs was above average (141% and 112%, respectively), while storage in Lemon Reservoir was below average (73%).

Questions?

COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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February 2012

The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service 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 statewide SWSI values for January (February 1) range from a high value of +2.0 in the Rio Grande Basin to a low value of -3.2 in the Yampa/White Basin. Three of the basins (Rio Grande, Gunnison, and San Juan/Dolores) experienced a gain from the previous month's value, three of the basins (South Platte, Colorado, and Yampa/White) experienced a loss from the previous month's value, and the remaining basin (Arkansas) experienced no change from the previous month's value. Low snowpack statewide was offset somewhat by near- or above-average reservoir storage in most basins, with the exception of the Yampa/White.

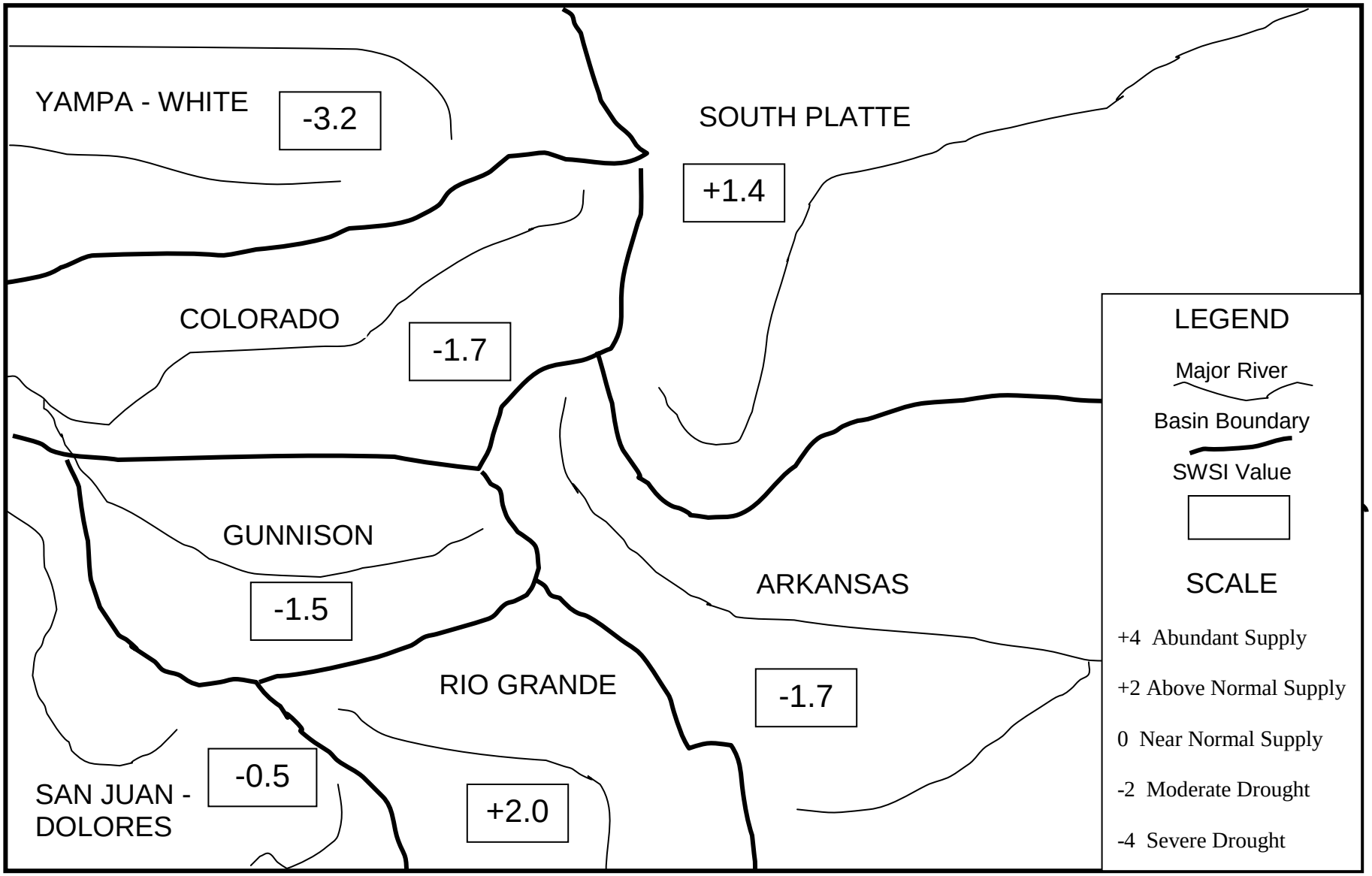
The following SWSI values were computed for each of the seven major basins for February 1, and reflect the conditions during the month of January.

Basin	February 1 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+1.4	- 0.1	- 1.5
Arkansas	- 1.7	0.0	- 2.6
Rio Grande	+2.0	+1.6	+1.6
Gunnison	- 1.5	+0.4	- 3.8
Colorado	- 1.7	- 0.2	- 4.0
Yampa/White	- 3.2	- 0.6	- 6.0
San Juan/Dolores	- 0.5	+0.2	- 0.6

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, 2012

Basinwide Conditions Assessment

The SWSI value for the month was +1.4. The Natural Resources Conservation Service (NRCS) reports that February 1 snowpack is 77% of normal. Reservoir storage in Dillon, Horsetooth, Eleven Mile, Cheesman, Jackson, and Barr Lake, the major component in this basin in computing the SWSI value, was 122% of normal as of the end of January. Cumulative storage in the major plains reservoirs (Julesburg, North Sterling, and Prewitt) is at 89% of capacity. Cumulative storage in the major upper-basin reservoirs (Cheesman, Eleven Mile, Spinney, and Antero) is at 95% of capacity. Flow at the gaging station South Platte River near Kersey was 791 cfs, as compared to the long-term average of 652 cfs. Flow at the Colorado/Nebraska state line averaged 1049 cfs, as compared to the long-term average of 511 cfs.

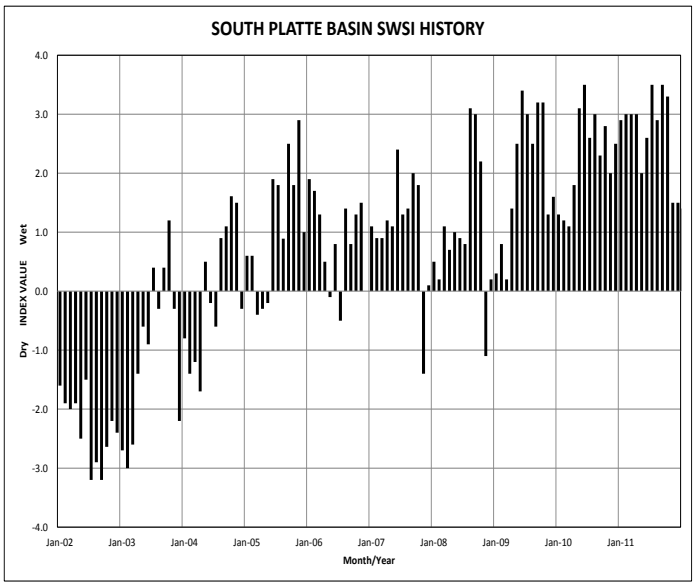
Outlook

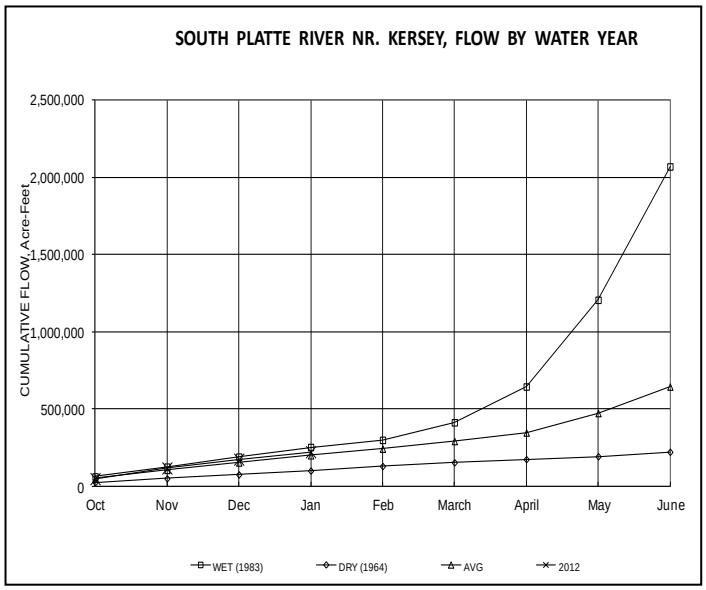
The end of January saw the first quarter of the 2011-12 Irrigation Year showing very good flow and reservoir levels, though the lack of precipitation created a bit of unease in the basin. The stream flows recorded by the key South Platte index gages at Kersey and Julesburg were well above average with Kersey at 121% of its January average and Julesburg at 206% of its January average. Storage in the basin also remained above average with end of January reservoir contents at 109% of average.

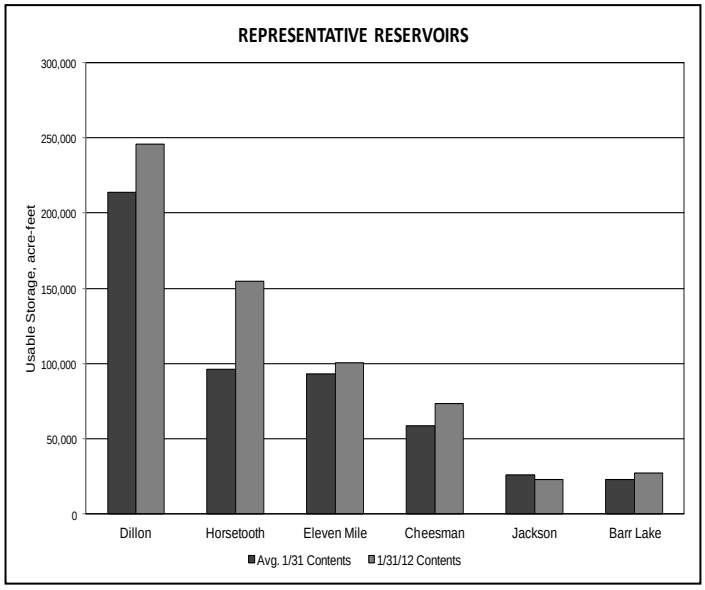
The end of January has historically been the average snow water equivalent (SWE) mid-point of mass for the South Platte basin. The end of January SWE was 77% of average, indicating that the odds of this year reaching at least average SWE are diminishing.

There was a call on the South Platte mainstem above the Burlington Ditch headgate (Commerce City) for all but 3 days in January and, as in December; calls remained on Clear and Boulder Creeks for the entire month

The February–April National Weather Service outlook for the South Platte basin is for below average precipitation and above average temperatures. The longer term forecasts show the South Platte basin shifting to warmer than average conditions with equal chances of above or below average precipitation until late summer.







Basinwide Conditions Assessment

The SWSI value for the month was -1.7. The NRCS reports that February 1 snowpack is 86% of normal. Flow at the gaging station Arkansas River near Portland was 733 cfs, as compared to the long-term average of 381 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 98% of normal as of the end of January.

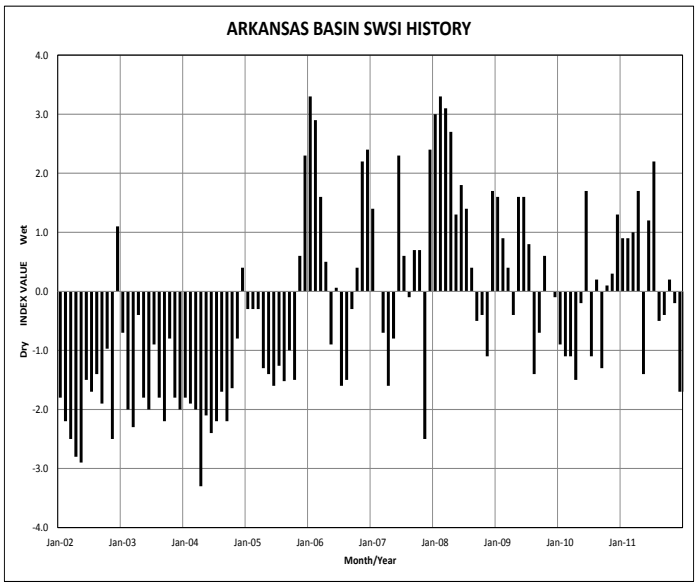
Outlook

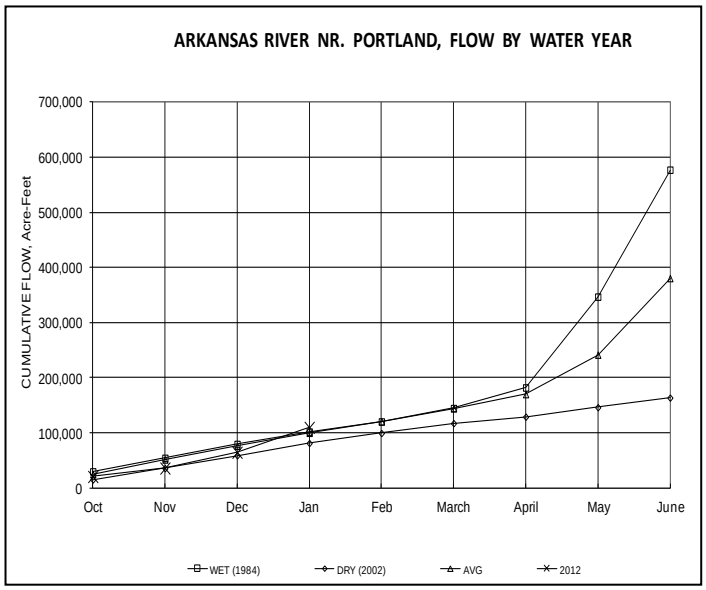
Reservoir storage in the Pueblo Winter Water Program totaled 85,899 acre-feet as of the end of January. This storage amount is slightly higher than last year's storage to date of 81,966 acre-feet and represents 89% of the past five-year average.

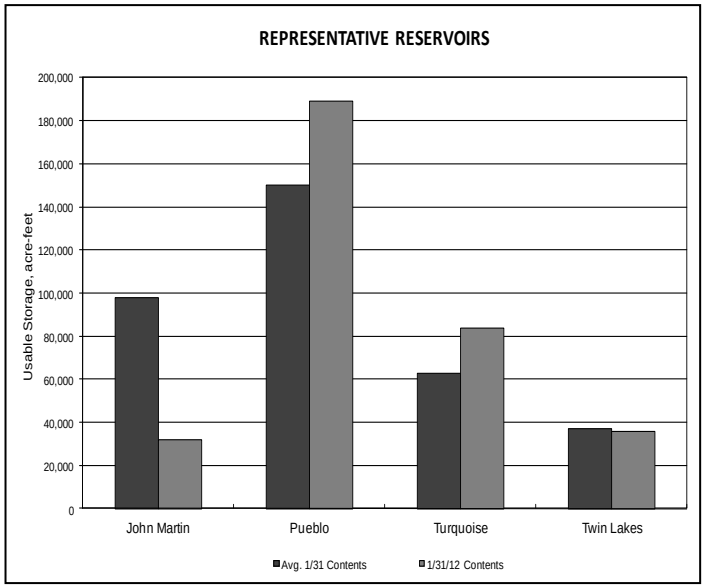
Conservation storage in John Martin Reservoir has accumulated 11,602 acre-feet versus 13,521 acre-feet as of the end of January last year.

Administrative/Management Concerns

A public meeting was held in January sponsored by the Lower Arkansas Valley Water Conservancy District to discuss the planned pilot project for the Super Ditch Rotational Fallowing Program. This project will involve an SWSP application for a demonstration of the project using 6-8 farms under the Catlin Canal. A tremendous amount of both interest and concern has been generated by this project.







Basinwide Conditions Assessment

The SWSI value for the month was +2.0. The NRCS reports that February 1 snowpack is 82% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 154 cfs (89% of normal). The Conejos River near Mogote had a mean flow of 39 cfs (80% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 94% of normal as of the end of January.

Snowfall in the high country during January was a bit disappointing after the near-average December snowpack accumulation. Precipitation in Alamosa was only 0.06 inches, 0.19 inches below normal. It was a very mild January for the southern part of the San Luis Valley where lack of snow on the ground allowed warmer conditions. But the icebox effect was in place in the northern end as snow lingered on the ground and dropped night-time temperatures well below zero for most of the month.

Outlook

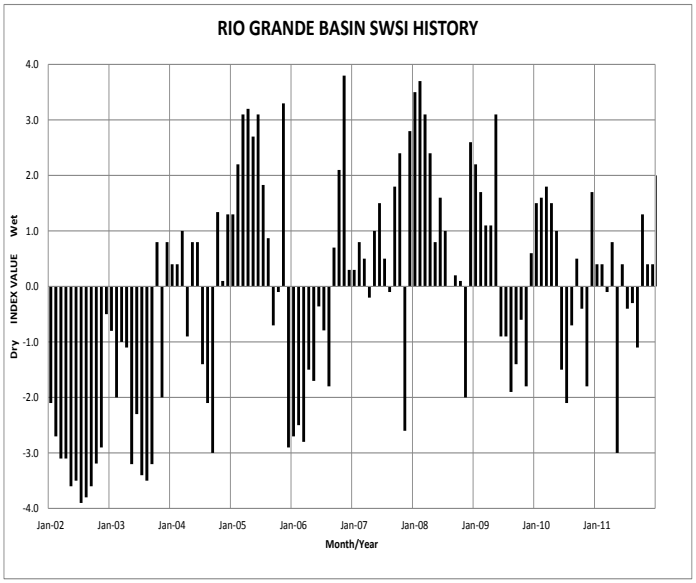
Modest snowfall in the San Juans and Sangre de Cristos during January kept the snowpack below the long-term averages. Basinwide snowpack accumulation stood at about 80% of normal at the end of the month. At least the low and mid-elevation snowpack and the Sangre de Cristo Mountains are in better shape than last year at this time.

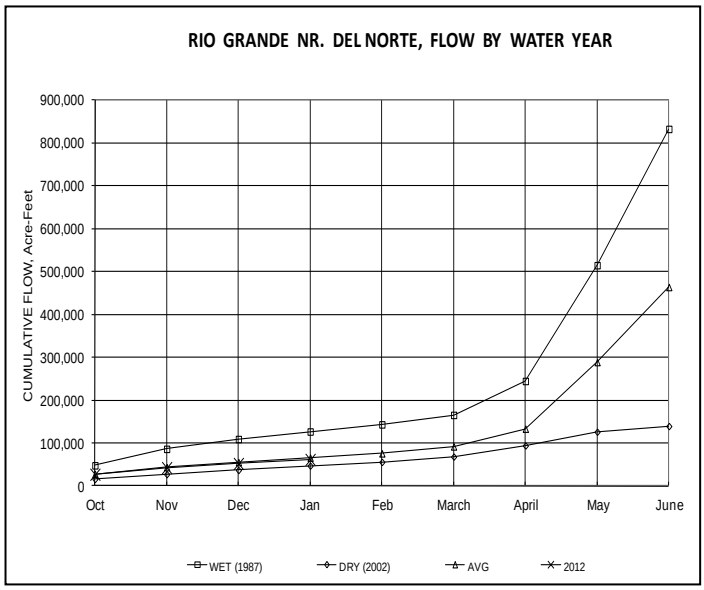
The Natural Resources Conservation Service stream flow forecasts are predicting runoff in area streams to be in the range of 61% (San Antonio River) to 88% (Rio Grande near Rio Grande Reservoir) of average during the 2012 irrigation season.

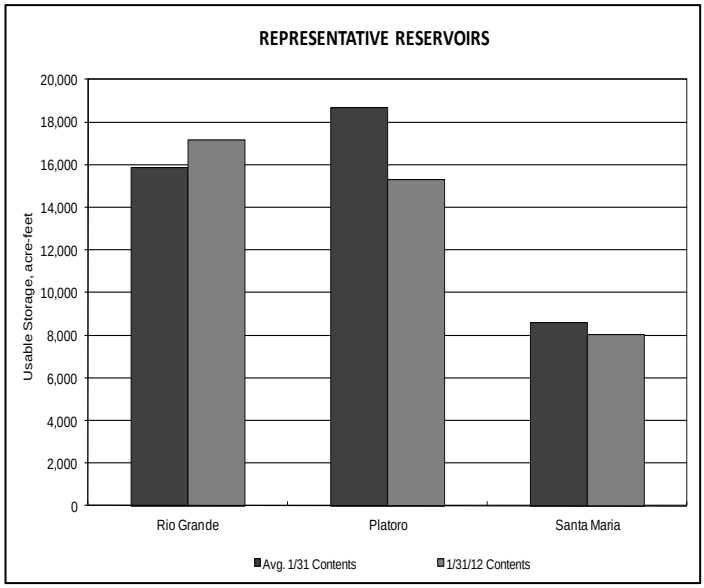
Current National Weather Service forecasts for February through April, 2012 are calling for above normal temperatures and below normal precipitation in this area of the state.

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 2011 season and plan for the upcoming irrigation season.



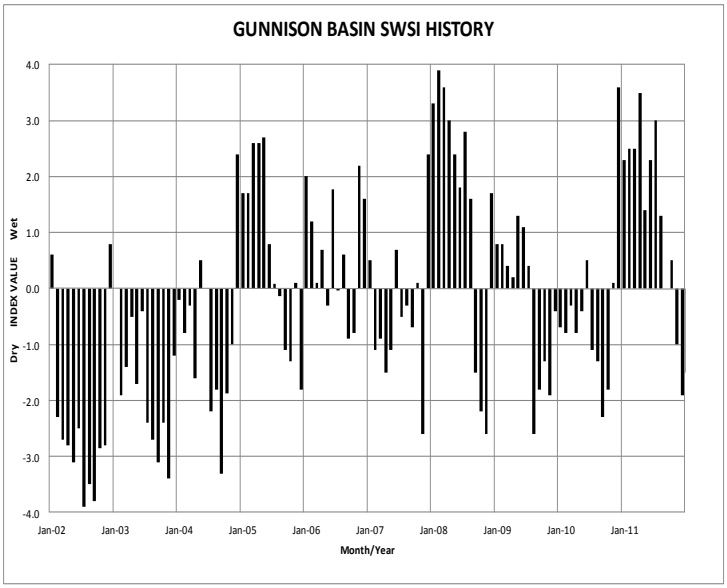




Basinwide Conditions Assessment

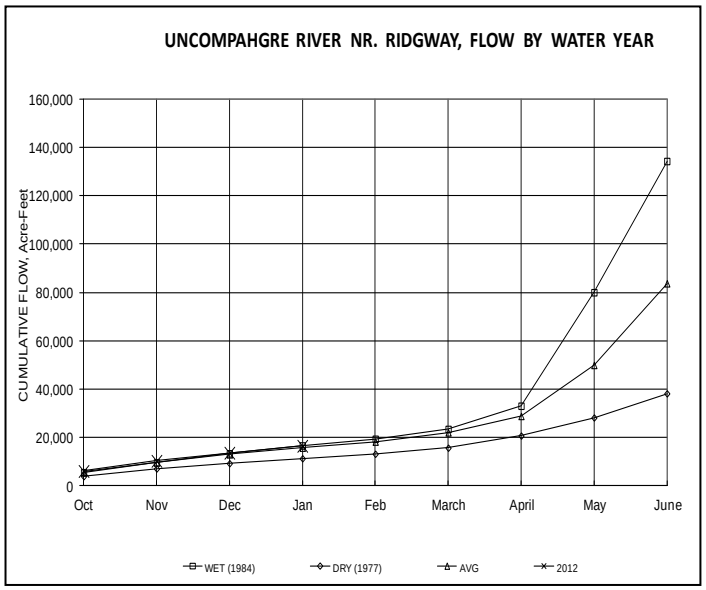
The SWSI value for the month was -1.5. The NRCS reports that February 1 snowpack is 73% of normal. Flow at the gaging station Uncompahgre River near Ridgeway was 46.7 cfs, as compared to the long-term average of 45.3 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 100% of normal as of the end of January.

Conditions improved slightly in January, with above average precipitation, which has improved the Gunnison basin's snowpack to 72 percent of the 30-year average (normal) on February 1st. Thankfully, as of the beginning of February we now have snowpack greater than at the same time in 2002. Southern areas of the basin are in better condition with areas above Ridgway Reservoir at 78 percent of normal, while northern areas such as Grand Mesa and McClure Pass in the upper 60 and 70 percent range, respectively. Although conditions have improved, they remain well below average in the basin, especially in the Crested Butte area, which according to the Butte Snotel only contains 55 percent of normal snowpack. Temperatures during January were much greater than normal at 5 degrees above average basin wide.



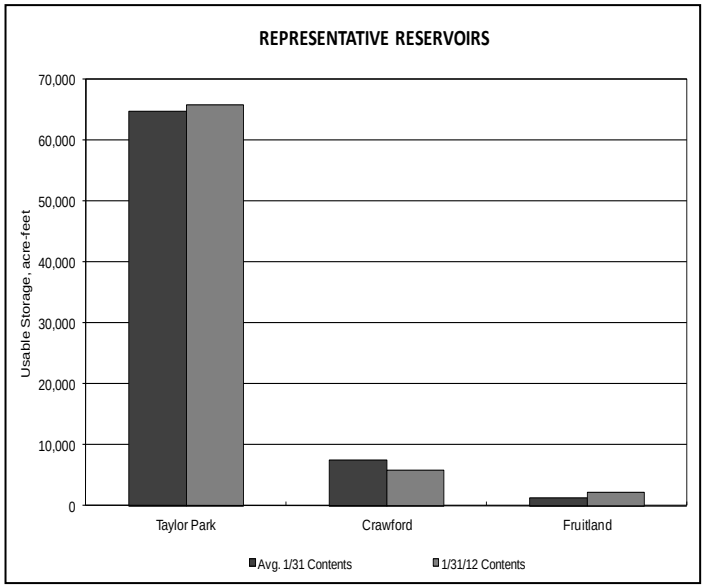
Outlook

NRCS snow water equivalent (SWE) projections from February 10th have improved from last month as well and project that if we have an average remaining accumulation season the Gunnison basin will end the year at 86 percent of peak snowpack. If we are to reach the 30-year average peak SWE, the Gunnison basin will need to receive 149 percent of normal precipitation during the next few months. The National Weather Service (NWS) climate forecasts have grown less rosy and show greater than average chances of below normal precipitation and above average temperatures during the next 90-days.



Administrative/Management Concerns

As over half of the accumulation season is behind us now and it currently looks like there is the potential to have the driest water year since 2002, water users are getting a bit concerned about the potential for early calls. Over half the accumulation season remains, however, so we are hoping that the rest of the year will bring an active storm track to southern Colorado. On February 8th the U.S. Bureau of Reclamation (USBR) reduced flows out of Crystal by another 200 cfs to 600 cfs as the February 1st forecasted inflow to Blue Mesa Reservoir remained at 450,000 acre-feet, which is 67 percent of normal.



Public Use Impacts

The USBR's Aspinall Unit operation plans included higher than average releases from Crystal Dam and Morrow Point to generate a significant amount of hydropower during the winter months. The less than ideal inflow forecasts have resulted in reduced power generation from the reduction in releases. Warm temperatures during January meant that ice fishing conditions at Blue Mesa Reservoir were less than ideal this year with plenty of open water as of February 1st.

Basinwide Conditions Assessment

The SWSI value for the month was -1.7. The NRCS reports that February 1 snowpack is 70% of normal. Flow at the gaging station Colorado River near Dotsero was 1474 cfs, as compared to the long-term average of 1006 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 120% of normal as of the end of January.

Outlook

Roaring Fork, Eagle and Colorado River flows should run near average throughout February. Blue River flows have and will continue to run slightly above average. Mid-season snowfall continues to be significantly below average in the Upper Colorado Basin.

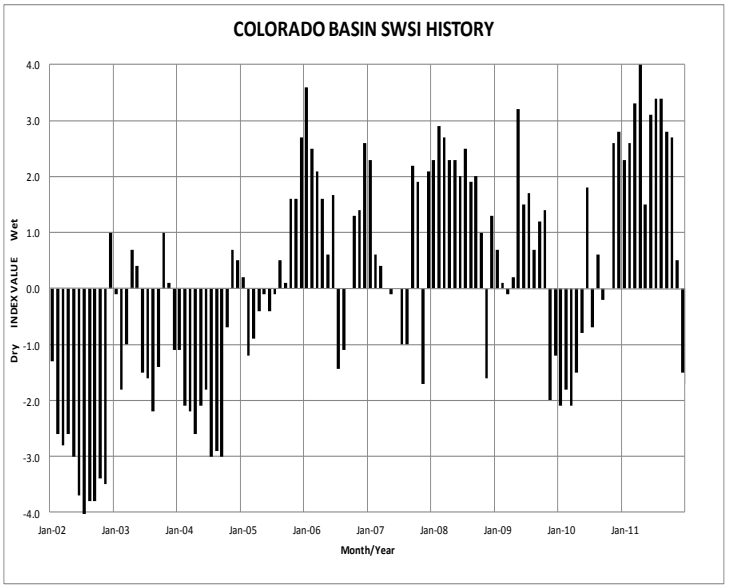
Administrative/Management Concerns

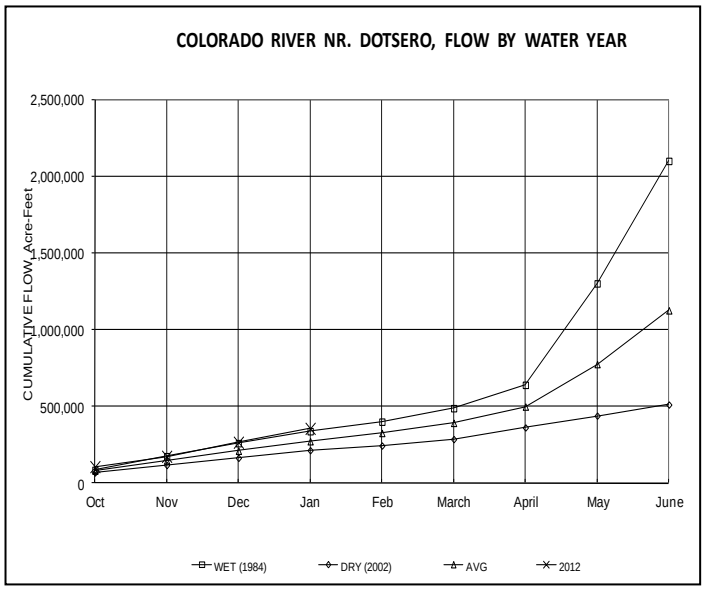
Green Mountain and Ruedi Reservoir releases are likely to remain at current levels throughout February with current snowpack and resultant runoff forecast well below average for the Blue River Basin. Homestake Reservoir will be drained this year (2012) to make repairs to the gate and intake structure and replace the dam's asphalt face, which was first installed in 1968. The reservoir will begin water collection in April 2013, with refill duration depending upon WY2013 snowpack and runoff conditions.

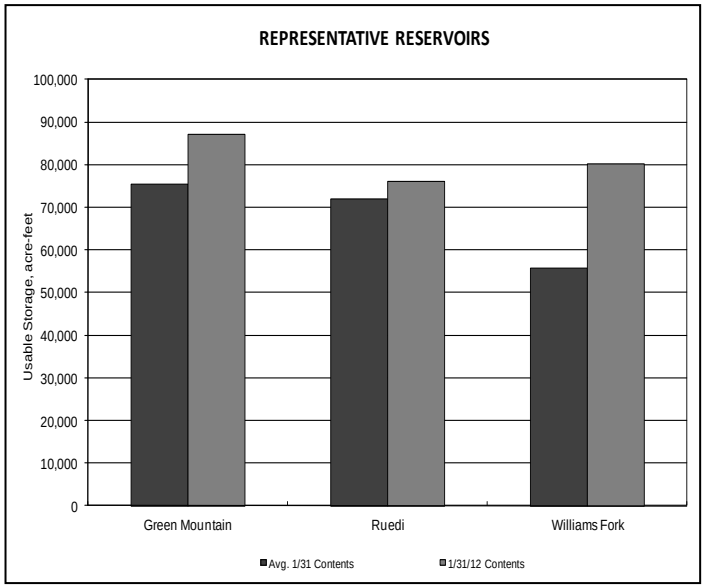
Public Use Impacts

Upper Colorado River Headwaters and Roaring Fork River Basin snowpack improved slightly since last month, but continues to be significantly below normal, with snow water equivalent basin-wide percentage at 70 percent of average as of February 1st.

Current water supply forecasts for Lake Powell show an inflow volume of 5.05 maf - 71 percent of average and less than 32 percent of the of the 16 maf inflow recorded last year (WY2011). This prompts concern for the elevation of Lake Mead which is expected to drop 13 feet by January 2013.







Basinwide Conditions Assessment

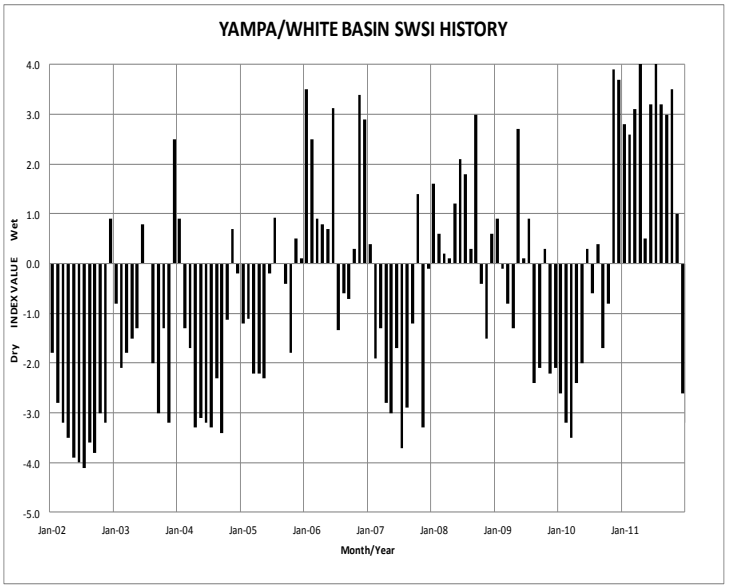
The SWSI value for the month was -3.2. The NRCS reports that February 1 snowpack is 63% of normal. Flow at the gaging station Yampa River at Steamboat was 175 cfs, as compared to the long-term average of 102 cfs.

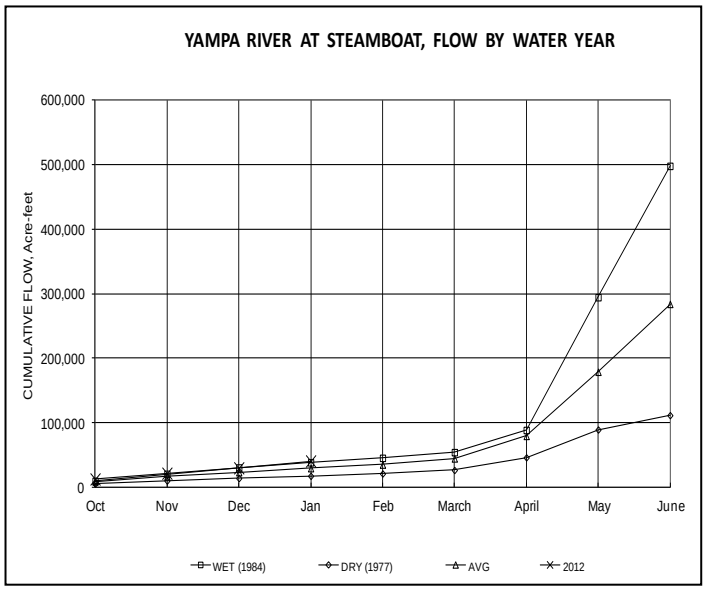
January precipitation was well below the monthly average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at SNOTEL sites operated by NRCS, was reported at approximately 70% of average for the Yampa, White, and North Platte River basins. Total precipitation for the water year to date in the combined basins is also well below average at 74%.

The snow water equivalent (SWE) for water year 2012 to date as of January 31, 2012 was 69% of average for the North Platte River basin and 63% of average for the Yampa and White River basins.

As of February 1, 2012, 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 57% of average for the North Platte River near Northgate, 64% of average for the Yampa River near Maybell, 66% of average for the Little Snake River near Lily, and 72% of average for the White River near Meeker.

Based on historical SNOWTEL data there is less than a 10% chance that the snowpack in the Yampa, White and North Platte River basins will reach the historical average annual snowpack before the end of the season.





Outlook

As of January 31st Fish Creek Reservoir was storing 3,000 AF which is 72% of capacity. Yamcolo Reservoir storage increased during January to 7,632 AF. That volume represents 80% of Yamcolo Reservoir's capacity. As of January 31st, Elkhead Creek Reservoir was storing 22,665 AF and was at 91% of capacity. At the end of January, Stagecoach Reservoir was storing approximately 31,100 AF. The enlarged capacity of Stagecoach Reservoir is 36,460 AF. 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

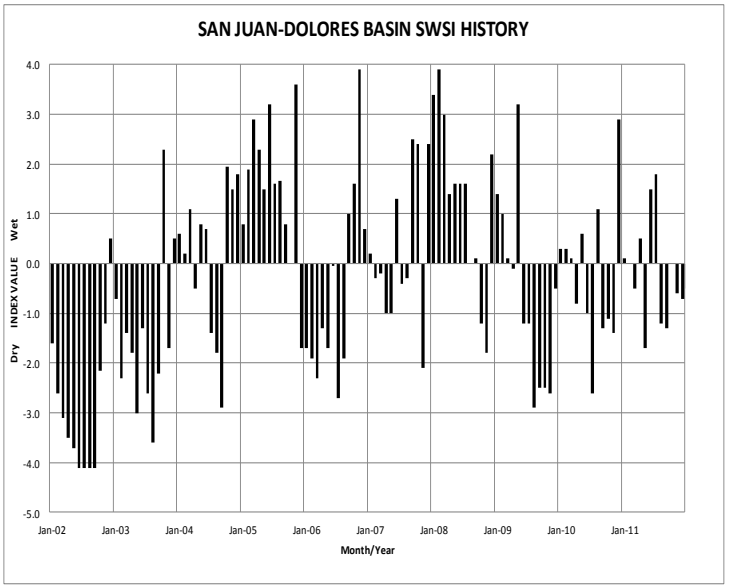
Steamboat Ski Resort had received slightly over 100 inches of snow at mid-mountain as of January 31, 2012. That is 152 inches less than last year at this time. Despite the less than average snowfall, trail groomers have done an excellent job maintaining conditions. Stagecoach Reservoir is reporting good trout fishing for fish up to 18 inches. Ice on the reservoir is approximately 16-18 inches thick at the coves and at the inlet with only 4-6 inches of snow cover. However ice conditions will vary across the reservoir. At Steamboat Lake 90% of the park's winter trails have been groomed and are open. Trail poles should be in place at this time.

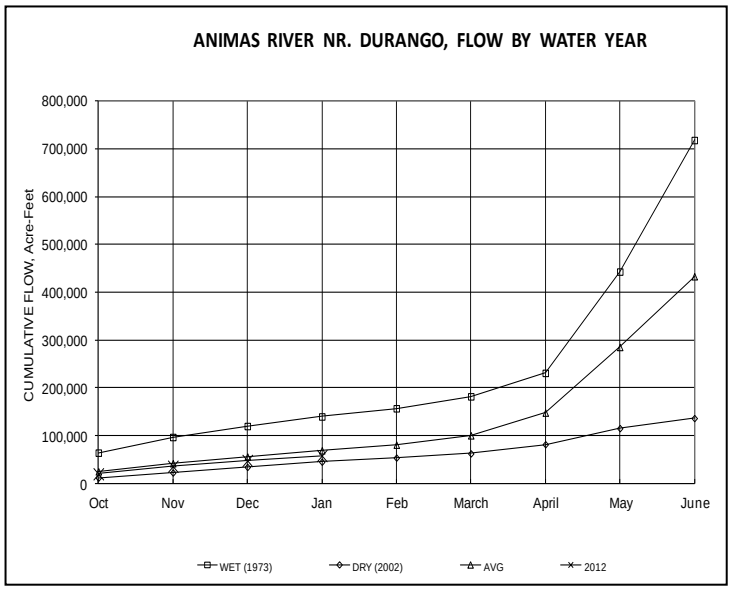
Basinwide Conditions Assessment

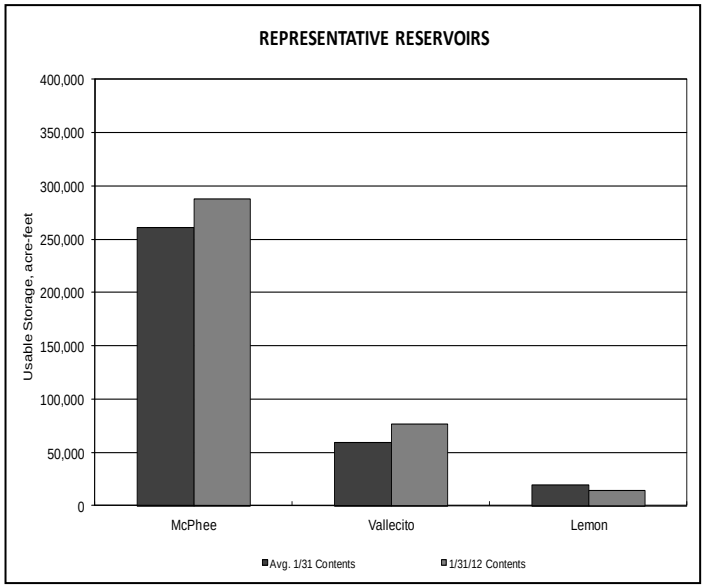
The SWSI value for the month was -0.5. The NRCS reports that February 1 snowpack is 73% of normal. Flow at the Animas River at Durango was estimated to average 166 cfs (82% of average). The flow at the Dolores River at Dolores was estimated to average 40 cfs (77% of average). The La Plata River at Hesperus averaged 6.8 cfs (99% of average). Precipitation in Durango was 1.47 inches for the month, 78% of the 30-year average of 1.89 inches. Precipitation to date in Durango, for the water year, is 6.65 inches, 98% of the 30-year average of 8.34 inches. The average high and low temperatures for the month of January in Durango were 44^{o} and 14^{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 76,420 acre-feet compared to its average content of 54,248 acre-feet (141% of average). McPhee Reservoir was up to 288,066 acre-feet compared to its average content of 258,285 (112% of average), while Lemon Reservoir was up to 14,240 acre-feet as compared to its average content of 19,441 acre-feet (73% of average).

Outlook

Precipitation (1.47-inches) was below average for the month of January in Durango. There are 62 years out of 118 years of record where there was more precipitation than this year. We hope we will have an above average snowpack season to fill the reservoirs again. On January 31 the NRCS SNOTEL sites reported an average snow-water equivalent within the basin at 74%. Last month the snow-water-equivalent was 74%. The snow survey in the La Plata River Basin was completed on January 30, 2012. The water content averaged 7.8 inches.







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