
COLORADO

WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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February 2011

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.

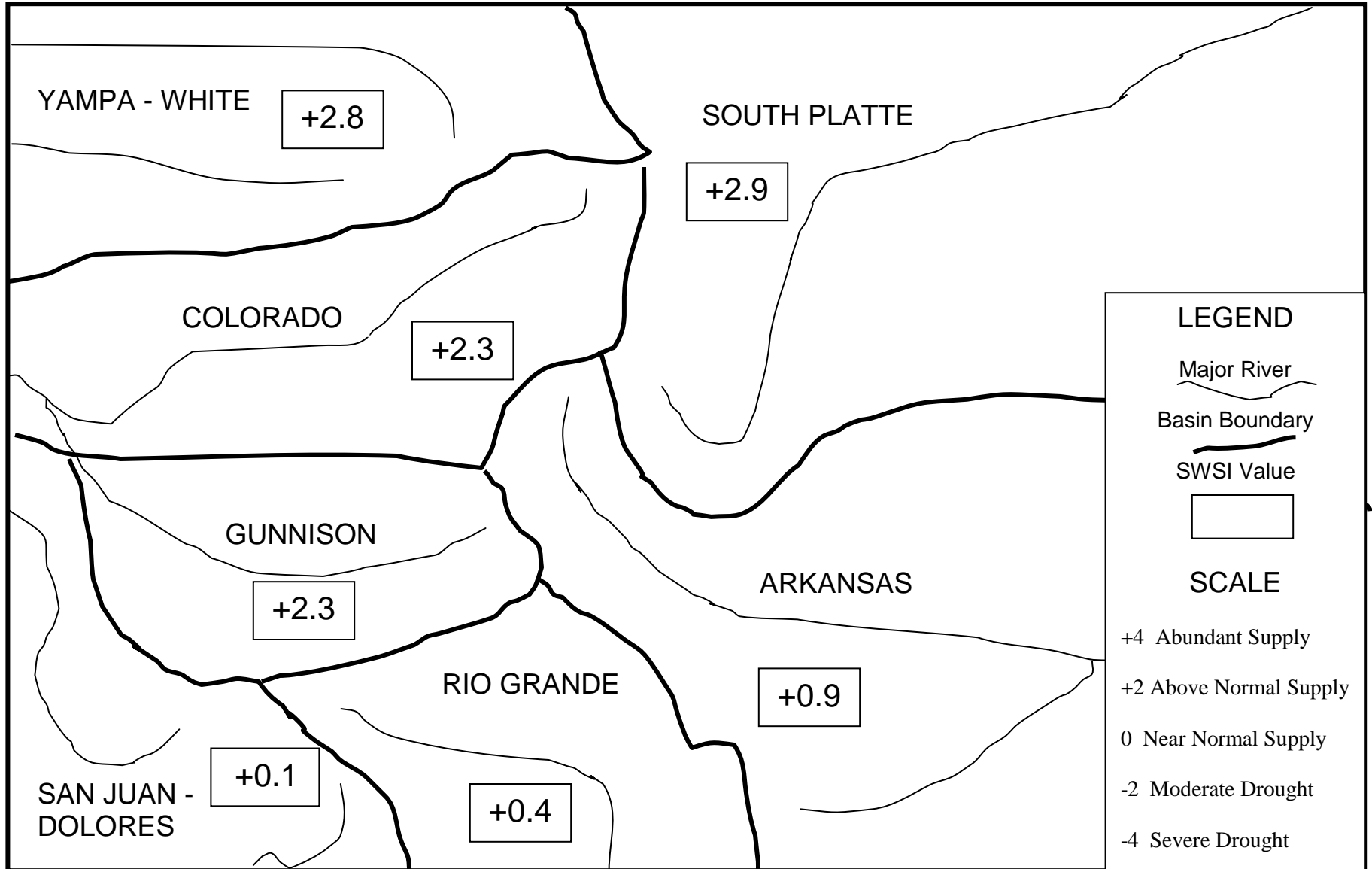
The statewide SWSI values for January (February 1) range from a high value of +2.9 in the South Platte Basin to a low value of +0.1 in the San Juan/Dolores Basin. One of the basins (South Platte) experienced a gain from the previous month's value while the remaining six basins (Arkansas, Rio Grande, Gunnison, Colorado, Yampa/White and San Juan/Dolores) experienced a loss from the previous month's value.

The following SWSI values were computed for each of the seven major basins for February 1, 2011, and reflect the conditions during the month of January.

<u>Basin</u>	<u>February 1, 2011 SWSI Value</u>	<u>Change From Previous Month</u>	<u>Change From Previous Year</u>
South Platte	+2.9	+0.4	+1.6
Arkansas	+0.9	- 0.4	+1.8
Rio Grande	+0.4	- 1.3	- 1.1
Gunnison	+2.3	- 1.3	+3.0
Colorado	+2.3	- 0.5	+4.4
Yampa/White	+2.8	- 0.9	+5.4
San Juan/Dolores	+0.1	- 2.8	- 0.2

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, 2011

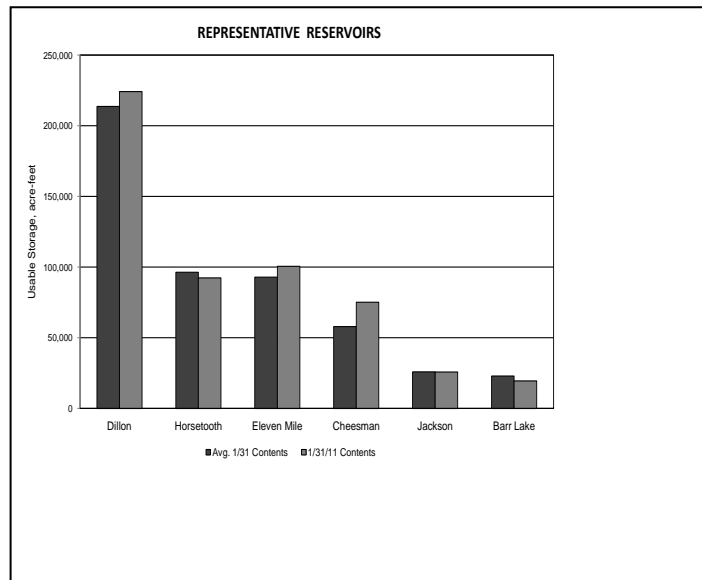
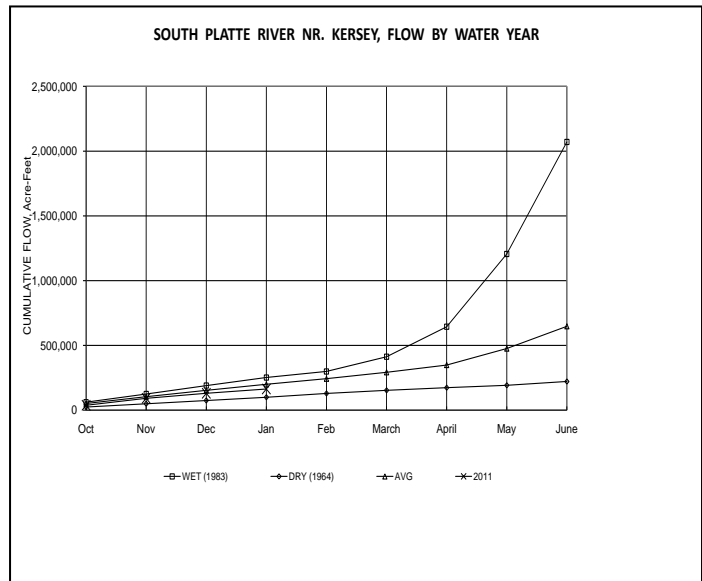
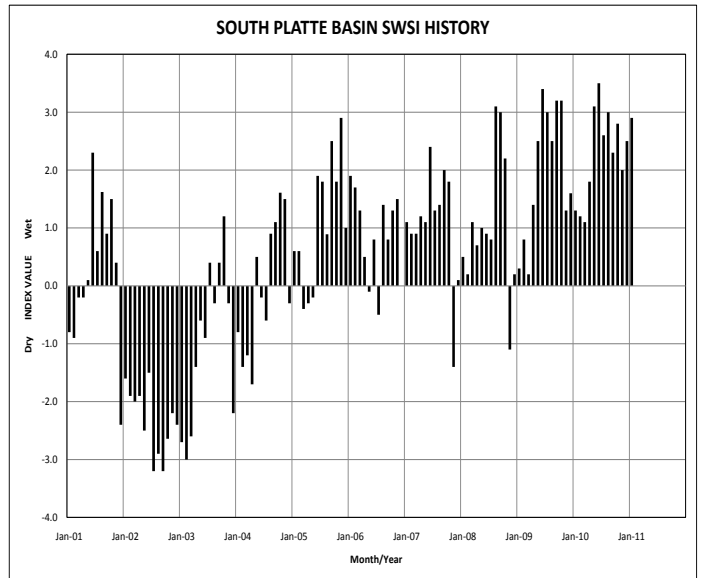
Basinwide Conditions Assessment

The SWSI value for the month was +2.9. The Natural Resources Conservation Service reports that February 1 snowpack is 118% of normal. Cumulative storage for the six reservoirs graphed on this page was 105% of normal as of the end of January. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 87% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero, is at 94% of capacity. Flow at the gaging station South Platte River near Kersey was 538 cfs, as compared to the long-term average of 652 cfs. Flow at the Colorado/Nebraska state line averaged 404 cfs.

Outlook

January in the South Platte turned out to be both cold and dry. The New Year began with a significant cold snap that limited diversions to storage and recharge in the lower end of the basin. This resulted in free river on the mainstem below metro Denver for virtually the entire month. Though there were some good precipitation events, overall precipitation on the plains continued the below average trend started in the fall. Greeley experienced approximately 60% of average January precipitation, for example. However, the overall snowpack numbers remained above average for the basin and reservoir storage continues to be strong at 99% of the end of January average. Stream flow on the mainstem at Kersey was below average for the entire month.

The outlook for February is for below average precipitation and near average to slightly above average temperatures. This warmer and somewhat dryer than average trend is currently predicted to last into the summer, but if the current storage and snowpack trends continue, the overall water supply should be near normal.



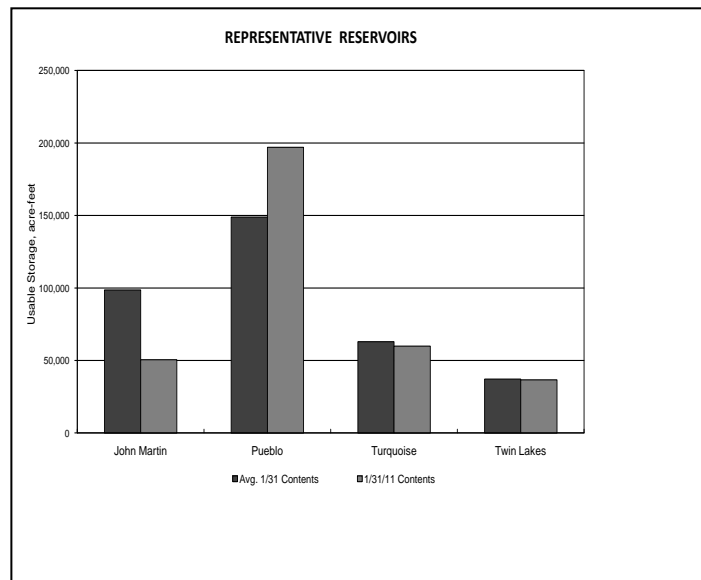
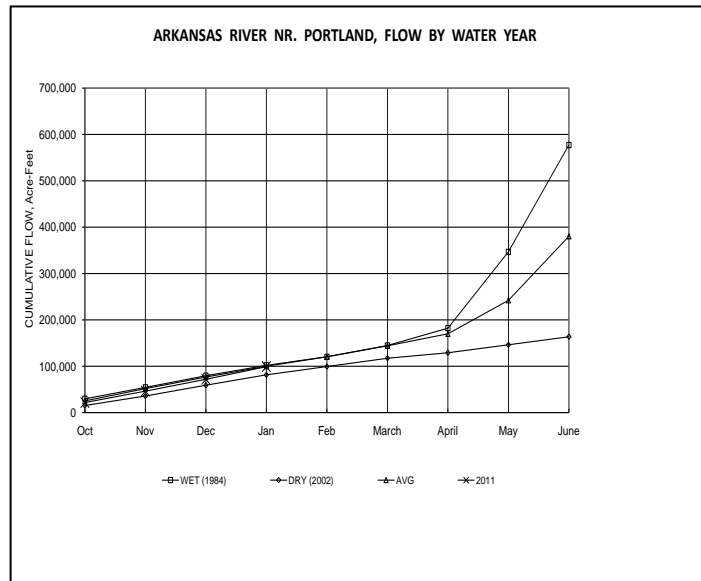
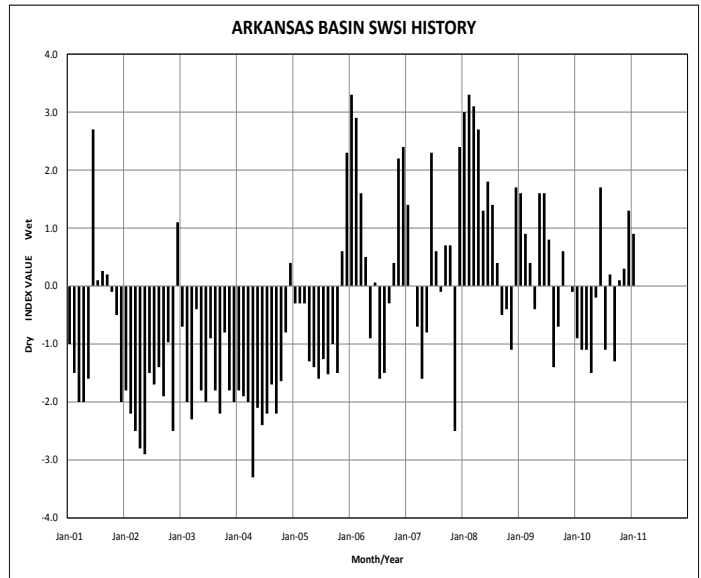
Basinwide Conditions Assessment

The SWSI value for the month was +0.9. The Natural Resources Conservation Service reports that February 1 snowpack is 96% of normal. Flow at the gaging station Arkansas River near Portland was 441 cfs, as compared to the long-term average of 380 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 99% of normal as of the end of January.

Outlook

Reservoir storage in the Pueblo Winter Water Program totaled 80,981 acre-feet as of the end of January. This storage amount is slightly lower than last year's storage to date of 96,531 acre-feet and represents 85% of the past five-year average. The overall Pueblo Reservoir storage content of 227,421 acre-feet at the end of January leaves plenty of additional storage space in the Conservation Storage Pool in Pueblo Reservoir (256,949 acre-feet represents the maximum conservation storage).

Conservation storage in John Martin Reservoir has accumulated 13,521 acre-feet versus 19,333 acre-feet as of the end of January 2010.



Basinwide Conditions Assessment

The SWSI value for the month was +0.4. The Natural Resources Conservation Service reports that February 1 snowpack is 85% of normal. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 104% of normal as of the end of January.

Flow at the gaging station Rio Grande near Del Norte averaged 191 cfs (109% of normal). The Conejos River near Mogote had a mean flow of 46 cfs (96% of normal). Alamosa received only 0.06 inch of precipitation during January and the average daily temperature was nearly 5 degrees above normal. This is right in line with the National Weather Service forecast of warm and dry conditions in the Rio Grande basin through April, 2011.

Outlook

The runoff outlook is generally fair to good for drainages in the eastern San Juan Mountain Mountains (west) and poor for the Sangre de Cristo Range (eastern side of the Valley). With the lowest overall basin snowpack in the state, local water administrators are warning users of expected below normal runoff this spring. Updated forecasts are predicting area stream flow in 2011 to be in the range of 40 to 93% of normal.

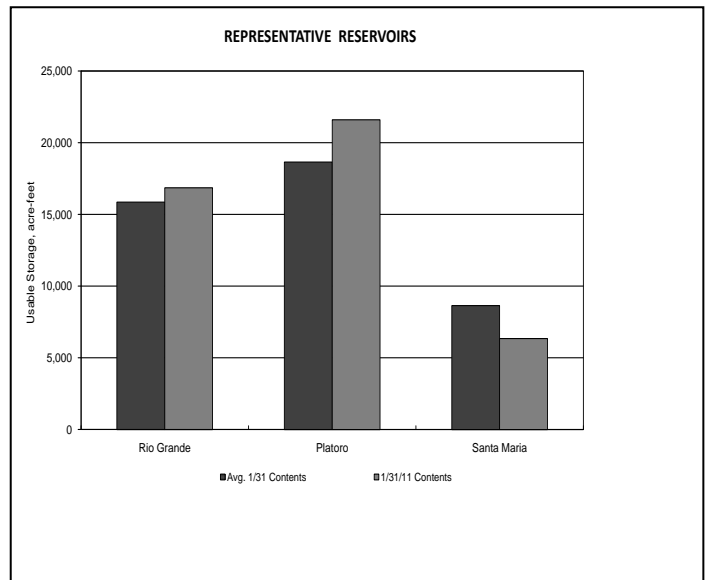
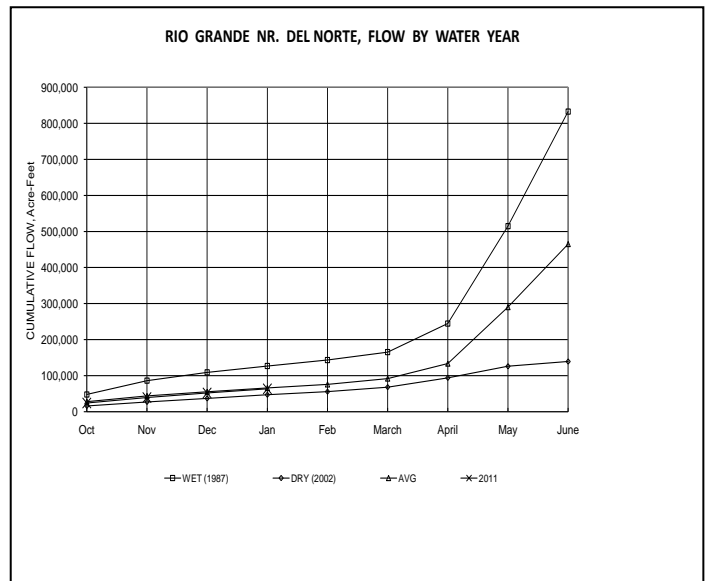
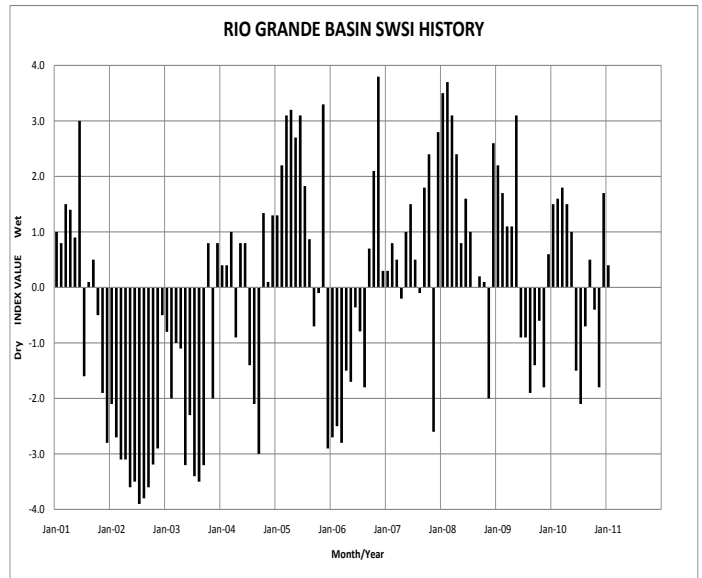
Administrative/Management Concerns

The aquifers of the San Luis Valley continue to be in peril despite above normal runoffs in three of the past six years and nearly a decade removed from the 2002 - 2003 drought. A slight drop in groundwater storage was found in a study area of the unconfined aquifer of the Closed Basin during 2010 due to the hot, dry conditions last summer. The overall ground water storage in that aquifer is 800,000 acre-feet below the reference storage level in 1976. This aquifer provides a large portion of the water supply for irrigation of over 200,000 acres north of the Rio Grande. The aquifer is normally recharged by ditch diversions from the Rio Grande.

Much of the pressure head on the confined aquifer has also been lost. The 'artesian' flow of most confined aquifer wells has diminished in the past decade. This affects homeowners and ranchers alike as they struggle to find an alternate water supply.

Public Use Impacts

The high elevations in the upper Rio Grande basin have near average snowpack, particularly west of the Valley floor. However, outdoor activities dependent on snow depth at the intermediate and lower elevations are suffering from well below average snowpack conditions.



Basinwide Conditions Assessment

The SWSI value for the month was +2.3. The Natural Resources Conservation Service reports that February 1 snowpack is 128% of normal. Flow at the gaging station Uncompahgre River near Ridgeway was 43.6 cfs, as compared to the long-term average of 40.3 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 112% of normal as of the end of January.

In January the roller coaster weather continued in the Gunnison basin with monthly precipitation falling from over 150% in December, to between 50 and 89 percent (depending on location). Thankfully, the seasonal precipitation still remains at 110 to 129 percent of average. The below average precipitation in January dropped snow water equivalent in the Gunnison basin from 160 percent on January 1st to 128 percent on February 1st according to the Colorado Basin River Forecast Center (CBRFC).

During January, conditions similarly declined in the San Miguel basin to 100 percent of average. Although conditions declined as a percent of average during January, the Gunnison basin snowpack remains above the average and above last year's snowpack at the beginning of February. Generally, areas in the north part of the Gunnison basin continue to have the highest snowpack with the Grand Mesa and North Fork drainage containing approximately 139 percent of average, while areas in the south part of the Gunnison basin contain around 110 percent of average.

Outlook

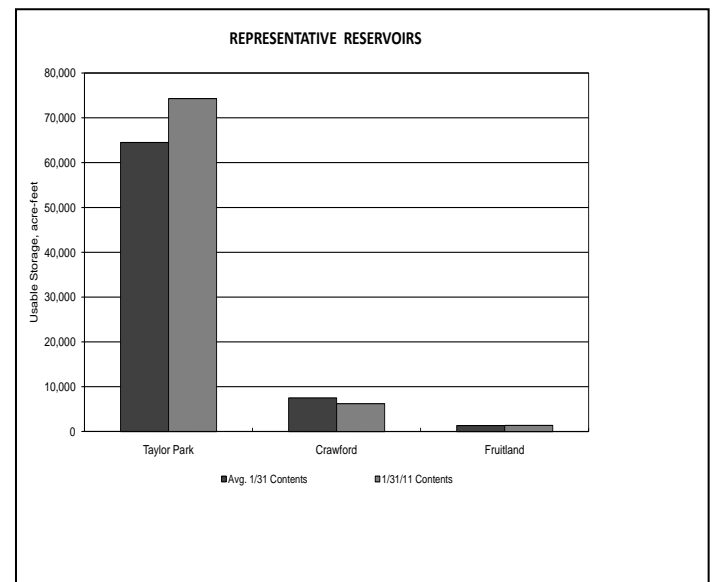
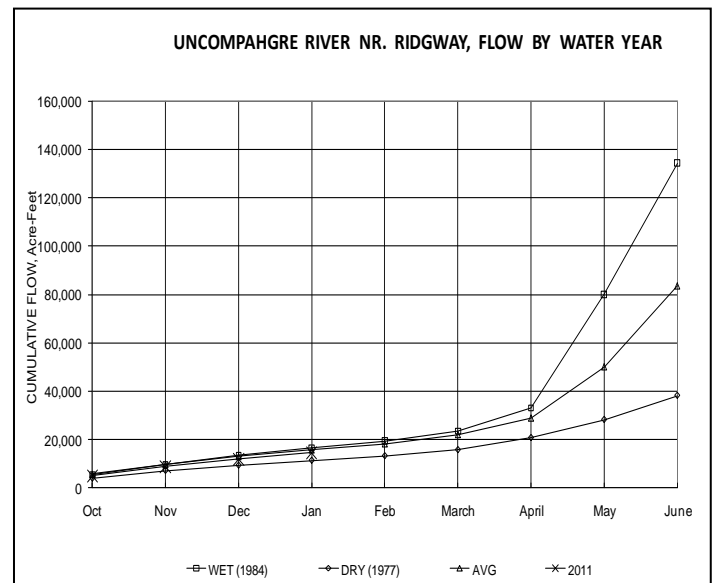
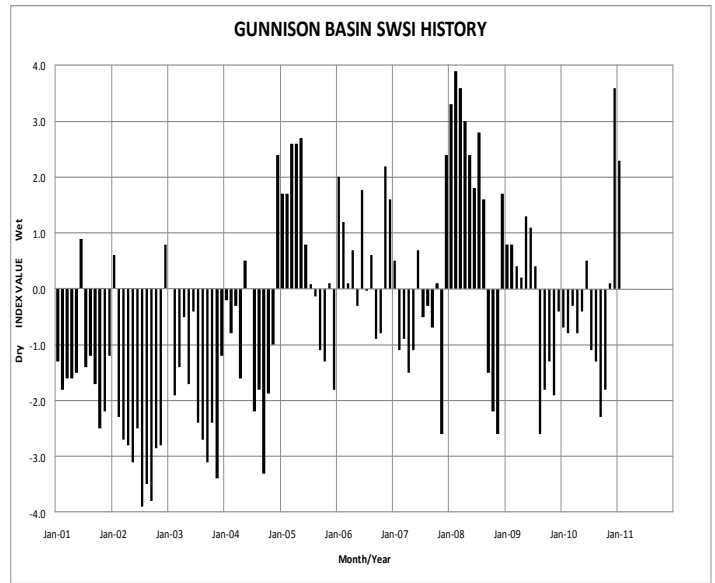
The NRCS released new snowpack predictions on February 4, 2011. Their end of season Gunnison basin snowpack predictions range from 89 to 156 percent of average based on a historical range of what the remaining season could bring. In fact, if storms from now until May bring average snow to the Gunnison basin they predict that we will end the season with 116 percent of average SWE. The National Climate Center continues to predict that the Gunnison basin has slightly greater than equal chances of below average precipitation and above average temperatures during the next 30 to 90 days. Hopefully, like in January this prediction will not be correct and we will end up well above the average.

Administrative/Management Concerns

Based on the January 15th runoff forecast into Blue Mesa (780,000 af), the Black Canyon water right will call for a 6,345 cfs one-day peak. Due to the heavy snowpack in the North Fork of the Gunnison, this peak will be timed with runoff from the North Fork in an attempt to reach the endangered fish flow recommendation of 11,700 cfs at Whitewater while preventing flooding in the Delta area. As of the beginning of February we have experienced no measurable dust-on-snow events and most residents in the Gunnison basin are hoping that this continues through the spring.

Public Use Impacts

The above average snowpack in the Gunnison basin has provided great ski conditions for most ski areas and cold temperatures (sub-zero) during January finally fully froze over reservoirs such as Blue Mesa, much to the delight of avid ice fisherman that were willing to brave the cold temperatures.



Basinwide Conditions Assessment

The SWSI value for the month was +2.3. The Natural Resources Conservation Service reports that February 1 snowpack is 129% of normal. Flow at the gaging station Colorado River near Dotsero was 962 cfs, as compared to the long-term average of 1010 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 113% of normal as of the end of January.

Outlook

Colorado River flows have fallen below average through January and into February with periods of extreme cold weather. Gages on the Roaring Fork River are not transmitting due to ice affect; however are likely somewhat below average as well. Ruedi Reservoir releases will keep Fryingpan River flows near 75 cfs for power generation through February. Blue River flows are currently and should remain slightly above average through February.

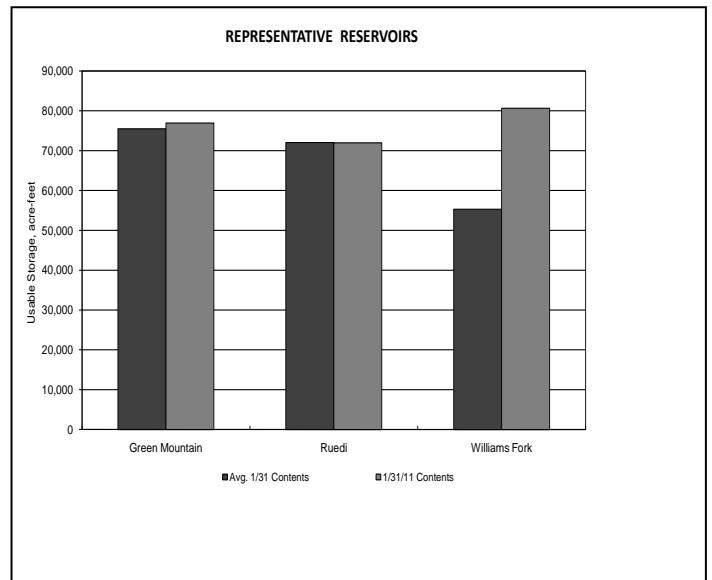
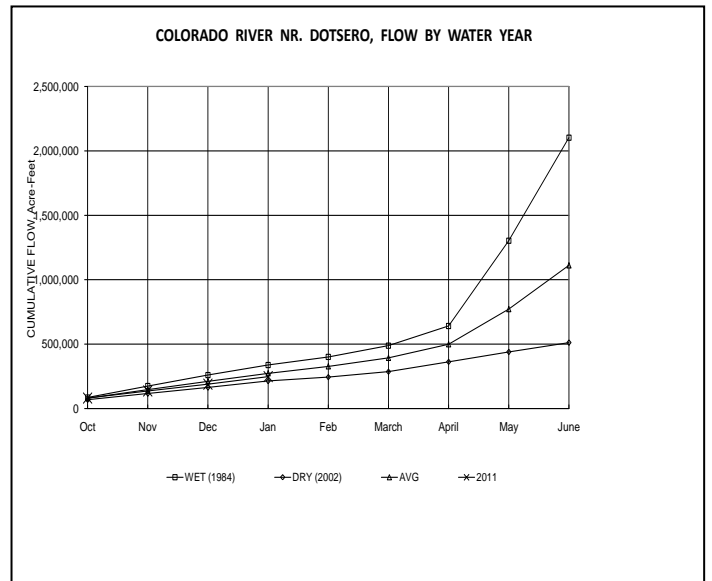
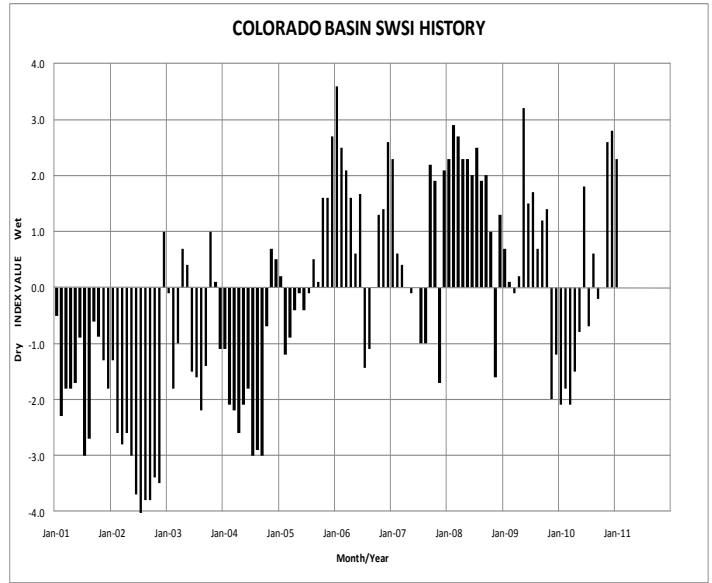
Administrative/Management Concerns

Green Mountain Reservoir releases were increased by 50 cfs to open space for the projected above average inflow from the relatively large snowpack above the reservoir.

Approximately 500 residents of Silt Mesa, an area north of Interstate 70 between the towns of Rifle and Silt, are being surveyed by the Silt Water Conservancy District regarding interest in a domestic water delivery system. The conservancy operates Rifle Gap and Harvey Gap reservoirs. Domestic wells in the area, served by water table recharge from flood irrigation and ditch seepage, are lacking capacity as efficiency improvements such as piping ditch water and sprinkler irrigation continue. Depending on the amount of interest, a feasibility study would follow to review the service area, analyze the water supply, demand, and treatment options.

Public Use Impacts

Powder ski conditions at Vail Mountain and Beaver Creek have been excellent so far this season with Vail Mountain receiving 44 inches of new snow in the first 11 days of February. Meteorologists attribute the favorable weather patterns to La Nina, a trend with storms favoring the northern part of the state.



Basinwide Conditions Assessment

The SWSI value for the month was +2.8. Flow at the gaging station Yampa River at Steamboat was 124 cfs, as compared to the long-term average of 102 cfs.

January precipitation was below the monthly 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 approximately 84% of average for the Yampa, White, and North Platte River basins. However, total precipitation for the water year to date in the combined basins continued to be well above average at 132%.

The snow water equivalent (SWE) as of January 31, 2011 was 134% of average for the North Platte River basin and 124% of average for the Yampa and White River basins.

As of January 1, 2011, NRCS predicts above average to well 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 149% of average for the North Platte River near Northgate, 129% of average for the Yampa River near Maybell, 119% of average for the Little Snake River near Lily, and 116% of average for the White River near Meeker.

Due to cold temperatures, many Division 6 stream gages are either closed for the winter season or currently ice-affected.

Outlook

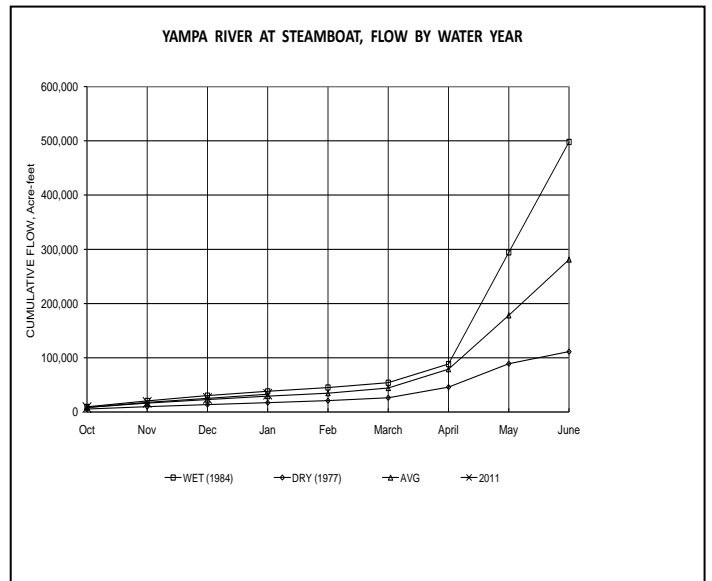
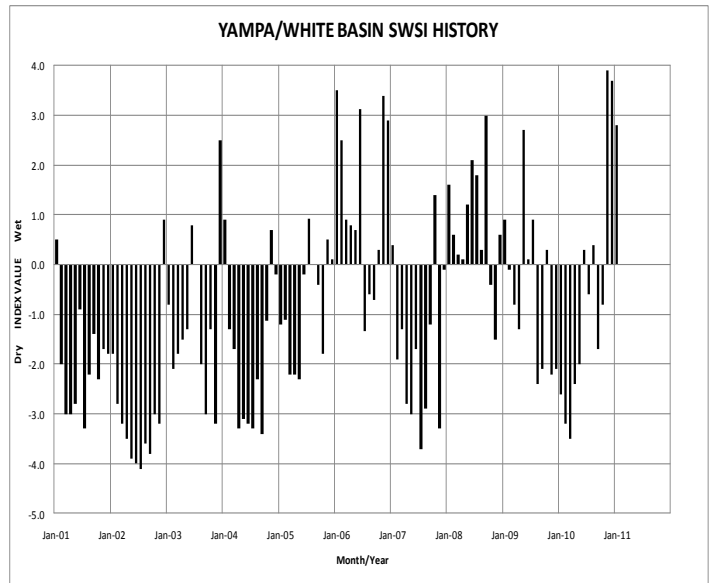
As of January 31st Fish Creek Reservoir was storing 2,535 AF. The capacity of Fish Creek Reservoir is 4,167 AF. Yamcolo Reservoir storage increased during January to 7,833 AF. That volume is 82% of Yamcolo Reservoir's capacity. As of January 31st, Elkhead Creek Reservoir was storing 20,675 AF and was at 83% of capacity. At the end of January, Stagecoach Reservoir was storing approximately 22,300 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. However, water is rarely released for those purposes.

Administrative/Management Concerns

The fourth year of the fish recovery release from Elkhead Creek Reservoir was completed successfully and data collected during the release are being compiled and reviewed by participating agencies.

Public Use Impacts

Steamboat Ski Resort had received 252 inches of snow at mid-mountain as of January 31, 2011. The snowfall to date has provided outstanding opportunity for all winter recreational activities throughout the region. Ice fishing on both Steamboat Lake and Stagecoach Reservoir has been reported as good to very good.



Basinwide Conditions Assessment

The SWSI value for the month was +0.1. The Natural Resources Conservation Service reports that February 1 snowpack is 106% of normal. Flow at the Animas River at Durango was estimated to average 190 cfs (93% of average). The flow at the Dolores River at Dolores was estimated to average 48 cfs (93% of average). The La Plata River at Hesperus was estimated to average 7.8 cfs (113% of average).

Precipitation in Durango was 0.03 inches for the month, 1.6% of the 30-year average of 1.89 inches. Precipitation to date in Durango, for the water year, is 6.16 inches, 90% of the 30-year average of 6.81 inches.

The average high and low temperatures for the month of January in Durango were 40° and 6°. In comparison, the 30-year average high and low for the month is 41° and 14°.

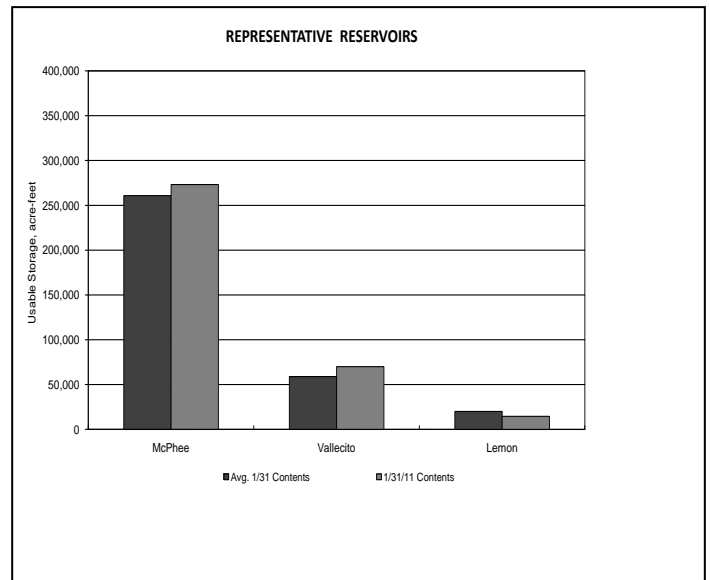
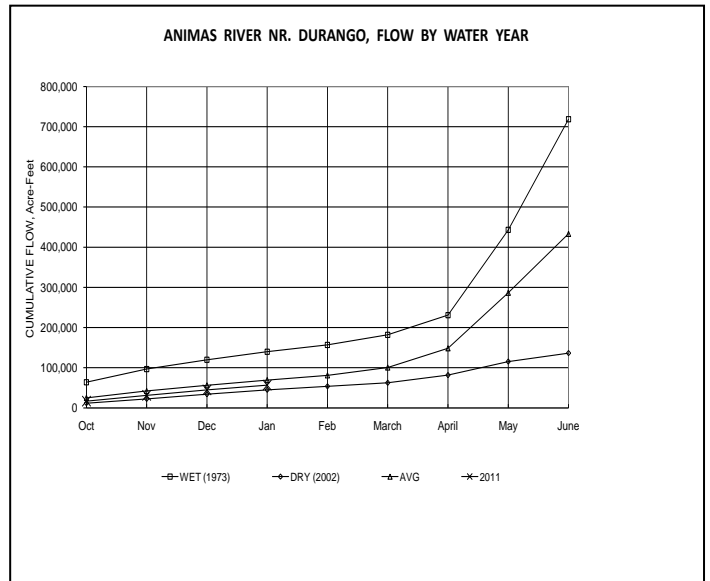
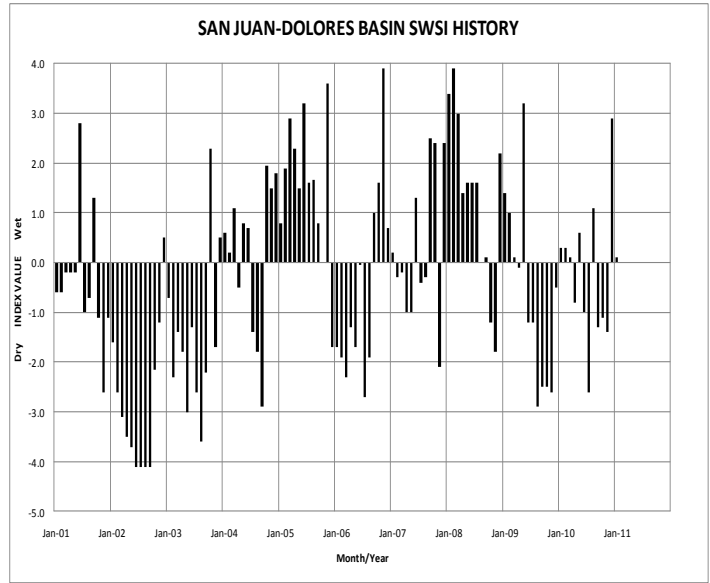
At the end of the month Vallecito Reservoir contained 69,940 acre-feet compared to its average content of 54,020 acre-feet (129% of average). McPhee Reservoir was up to 273,041 acre-feet compared to its average content of 257,718 (106% of average), while Lemon Reservoir was up to 14,500 acre-feet as compared to its average content of 19,546 acre-feet (74% of average).

Outlook

January precipitation (0.03-inches) was the lowest recorded amount out of 117 years on record. On January 31 the NRCS SNOTEL sites estimated 107% snow-water equivalent within the basin which is lower than last month at 141% of average.

Administrative/Management Concerns

The base flow in most, if not all the rivers within the basin remained near average. Most of the La Plata River just below the Hesperus gage to the confluence of Long Hollow remained dry.



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