
COLORADO

WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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June 2001

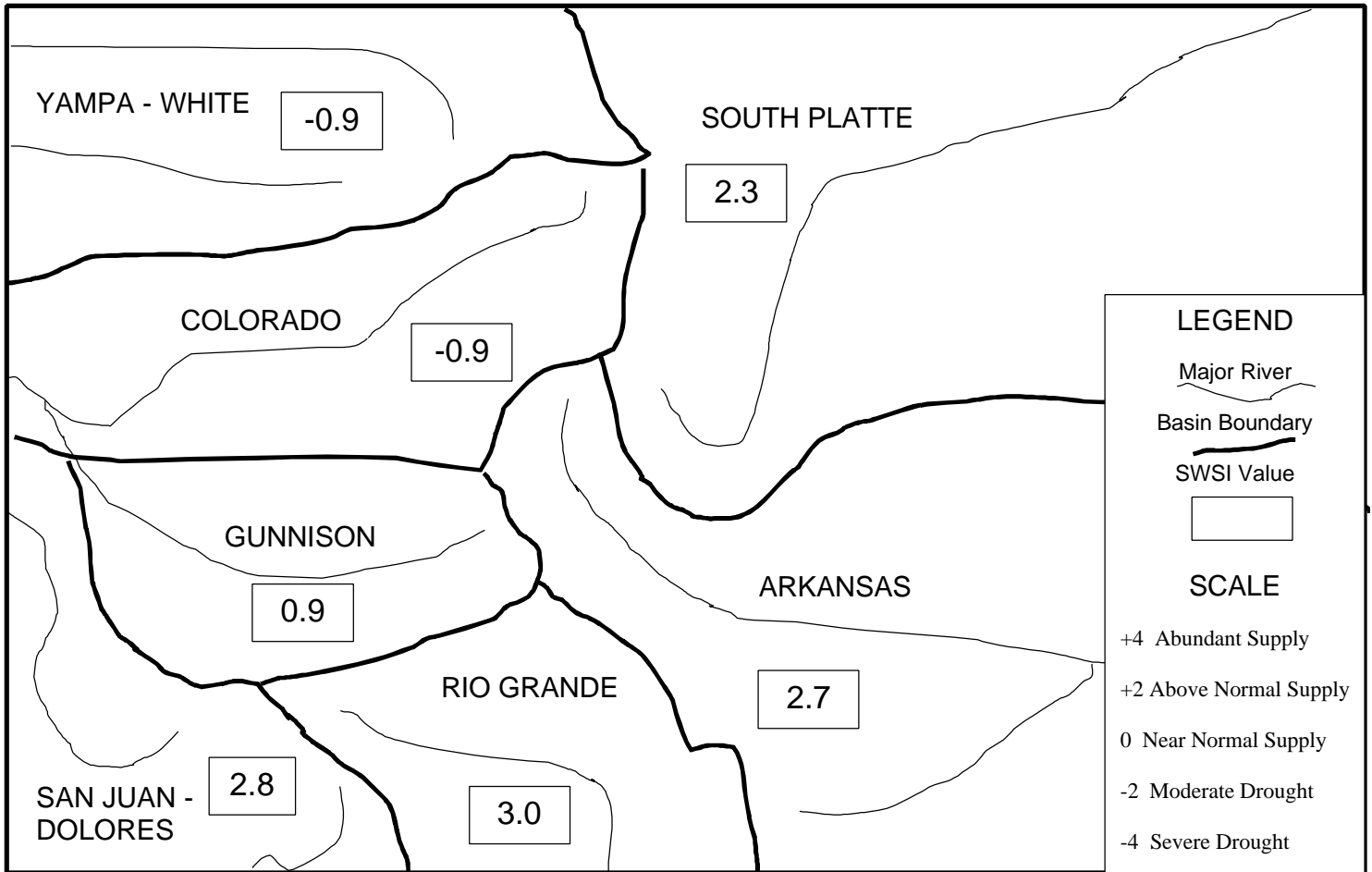
A warm, dry May led to a dramatic decline in snowpack statewide, from 84% of normal as of May 1, to 24% of normal by the end of the month. Consequently, stream flows peaked early. Reservoir storage ranges from 91% in the South Platte Basin to 133% in the Rio Grande Basin, boding well for maintaining adequate water supplies throughout the summer. However, the Yampa/White basin, with minimal reservoir storage available, will be most reliant upon precipitation to augment the low water supplies. This month the calculation of the Surface Water Supply Index changes from utilizing snowpack to stream flow, which primarily accounts for the increases seen from last month's values.

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 stream flow, reservoir storage, and precipitation for the summer period (May through October). During the summer period, stream flow is the primary component in all basins except the South Platte basin where reservoir storage is given the most weight. The following SWSI values were computed for each of the seven major basins for June 1, 2001, and reflect the conditions during the month of May.

<u>Basin</u>	<u>June 1, 2001 SWSI Value</u>	<u>Change from Previous Month</u>	<u>Change from Previous Year</u>
South Platte	2.3	+2.2	+1.0
Arkansas	2.7	+4.3	+0.5
Rio Grande	3.0	+2.1	+4.9
Gunnison	0.9	+2.4	-0.7
Colorado	-0.9	+0.8	-0.7
Yampa/White	-0.9	+1.9	-2.0
San Juan/Dolores	2.8	+3.0	+2.6

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



JUNE 1, 2001

Basinwide Conditions Assessment

The SWSI value of 2.3 indicates that for May the basin water supplies were above normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 91% of normal as of the end of May. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 99% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 92% of capacity. The Natural Resources Conservation Service reports that June 1 snowpack is 22% of normal. Flow at the gaging station South Platte River near Kersey was 1,257 cfs, as compared to the long-term average of 2,609 cfs. Flow at the Colorado/Nebraska state line averaged 587 cfs.

Outlook

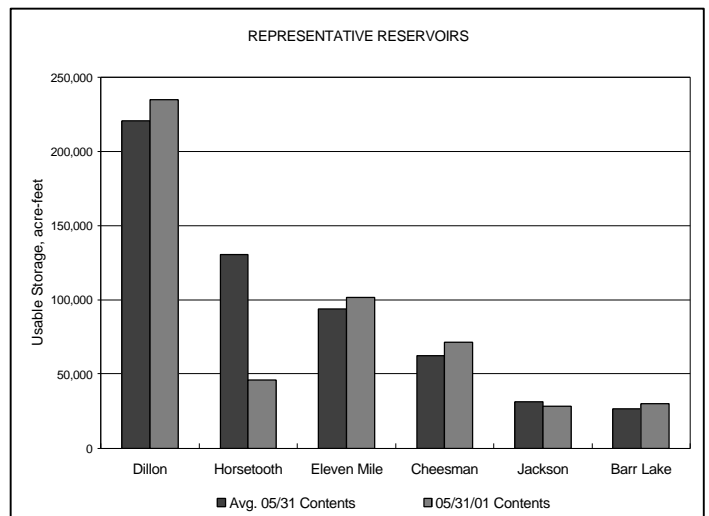
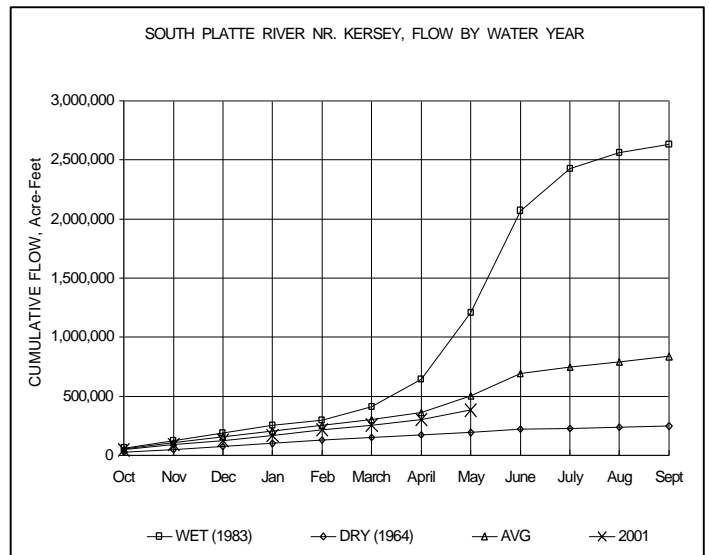
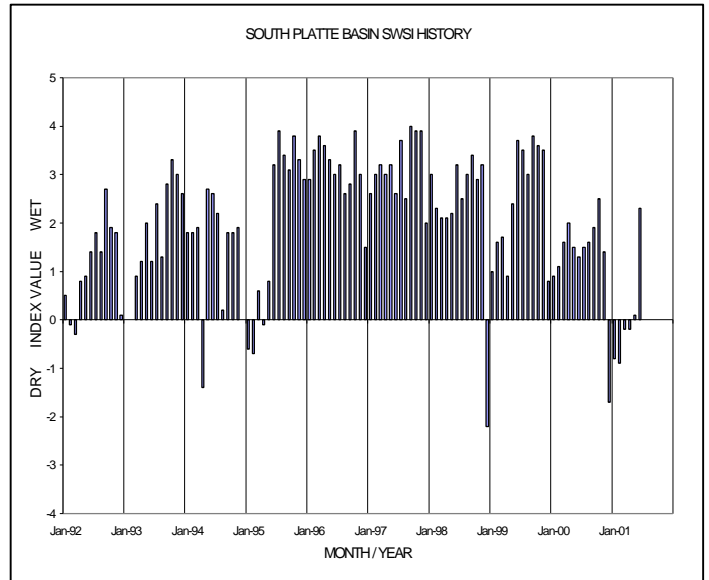
Use for recharge and reservoir storage began to be replaced by direct flow irrigation demand in May. A storm early in May, the beginning of runoff and limited demand, kept the mainstem call junior during the month. The senior call in May was a North Sterling direct call toward the end of the month. By the end of the month, the call was back to a recharge call. Conditions allowed for significant recharge to occur during most of May.

Administrative/Management Concerns

Snowpack returned to below average in May though it is difficult to determine the accuracy of snowpack numbers very late in the year. We are unsure how good the runoff will be this year though there does seem to be good snowpack in the Clear Creek basin, a basin which often supports diversions in the river between Denver and Kersey until the end of June. Runoff will be dependent on conditions the next few weeks including rainstorm precipitation that is sometimes severe in June. Runoff and rainstorm in June often delay the call until toward the end of the month. The mainstem reservoirs are full going into June helping to assure the supply for this summer for irrigators. Municipal suppliers generally have adequate supplies going into this summer.

Public Use Impacts

None.



Basinwide Conditions Assessment

The SWSI value of 2.7 indicates that for May the basin water supplies were above normal. The Natural Resources Conservation Service reports that June 1 snowpack is 54% of normal. Flow at the gaging station Arkansas River near Portland was 1,438 cfs, as compared to the long-term average of 1,193 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 123% of normal as of the end of May.

Outlook

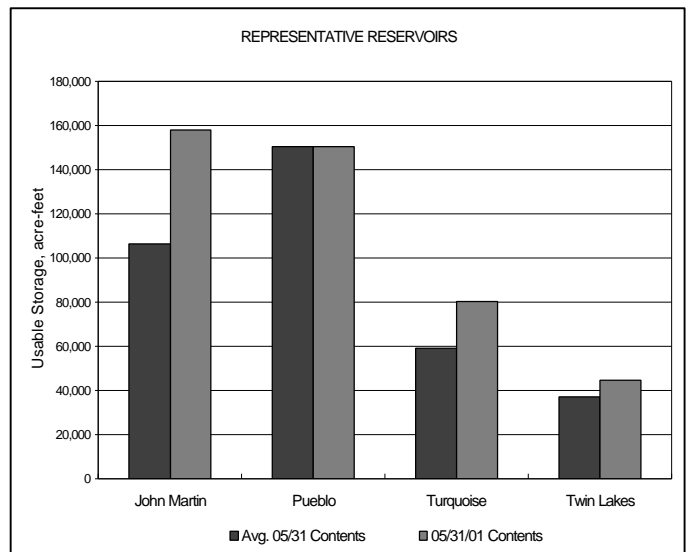
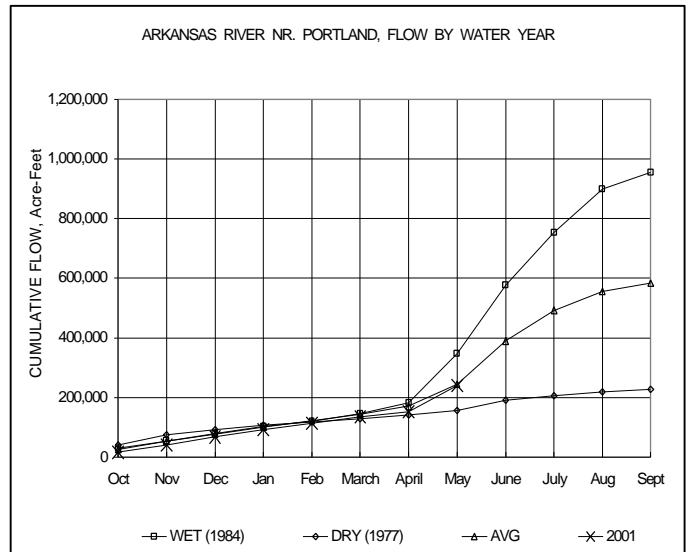
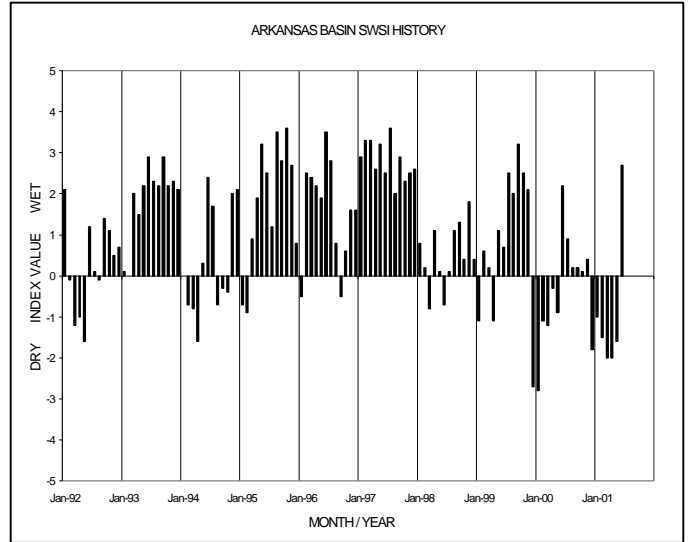
Dry conditions exist on many of the tributary areas in the basin with only the most senior rights able to divert water. Timely storms have temporarily lessened the impact of dry conditions.

Administrative/Management Concerns

If the dry weather trend continues, the potential is high for a Water District 67 mainstem Arkansas River call and Fountain Creek tributary call to control.

Public Use Impacts

Storms throughout the lower Arkansas River basin in May were damaging, causing many irrigators to temporarily stop irrigating.



Basinwide Conditions Assessment

The SWSI value of 3.0 indicates that for May the basin water supplies were above normal. The Natural Resources Conservation Service reports that June 1 snowpack is 57% of normal. Flow at the gaging station Rio Grande near Del Norte averaged 4250 cfs (170% of normal). The Conejos River near Mogote had a mean flow of 1280 cfs (115% of normal).

Precipitation in Alamosa was a generous 1.09 inches during the month, 0.45 inches above normal. Temperatures were generally well above normal during May, which promoted the high runoff. Stream flow was well above average throughout the basin during May. The Rio Grande near Del Norte gaging station had the 2nd highest volume of flow for the month of May in the last 35 years. And the La Garita and Carnero Creek peak flows were the highest in recent memory.

Outlook

NRCS stream flow forecasts are predicting April – September runoff volumes from 96 to 130% of average for the Division’s larger drainages. Based on the unusually high volumes seen in May, these predictions seem to be valid. Although most streams had already reached peak flow by the end of the month, administrators expect a prolonged runoff.

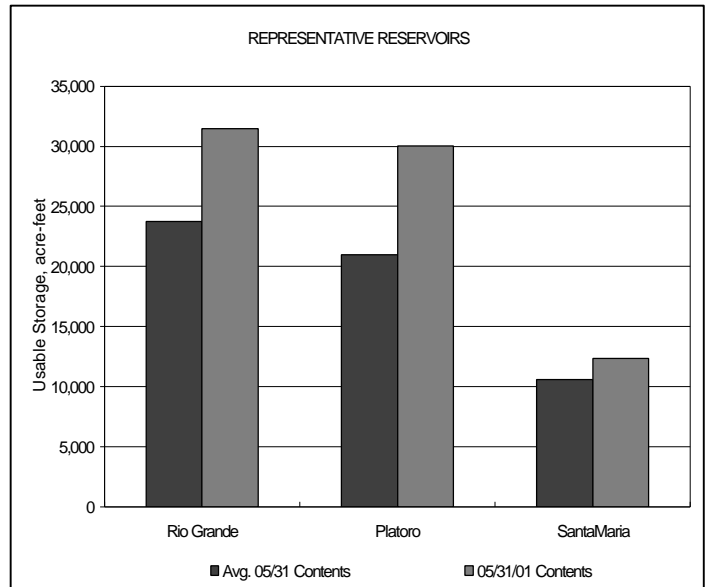
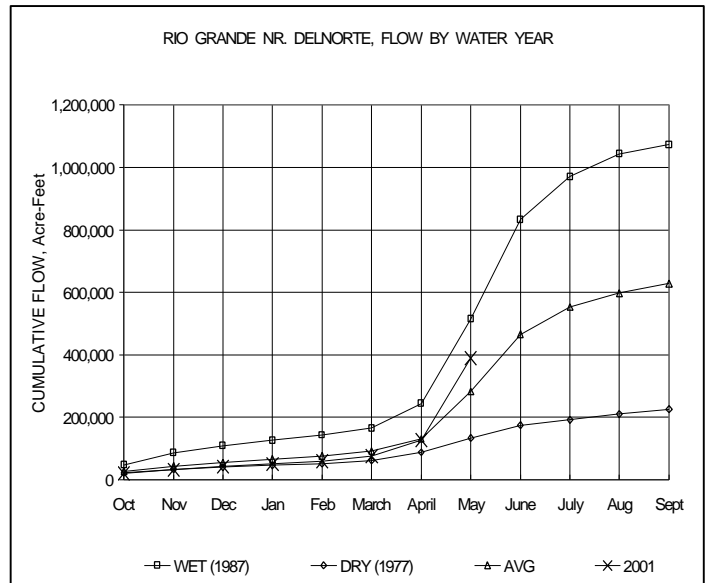
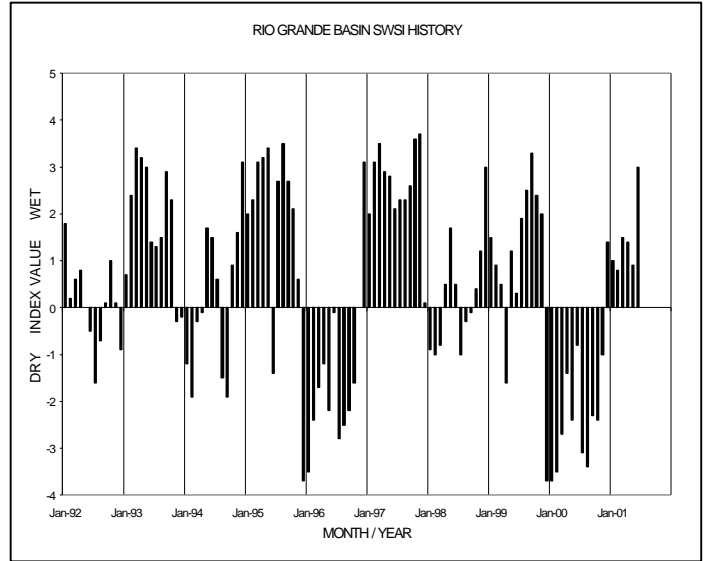
Administrative/Management Concerns

Last year’s drought and extreme use of the Valley’s aquifers has created a “hole” in the system that is requiring a great deal of water to fill. A surprisingly large portion of the runoff is recharging this void. Thus, return flows to the system are much lower than normally expected.

Curtailment of available native flows is necessary this year to meet Colorado’s delivery requirement under the Rio Grande Compact. Currently, 25% of the indexed native flows on the Rio Grande and Conejos are being passed through the system to the state line.

Public Use Impacts

The pleasant weather conditions and abundant water supplies have been a boon to the local farmers and ranchers.



Basinwide Conditions Assessment

The SWSI value of 0.9 indicates that for May the basin water supplies were near normal. The Natural Resources Conservation Service reports that June 1 snowpack is 18% of normal. Flow at the gaging station Uncompahgre River near Ridgway was 425 cfs, as compared to the long-term average of 327 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 111% of normal as of the end of May.

Outlook

Surface water conditions in Division 4 continue to be significantly drier than normal, with total runoff projections of only 65% of the long-term average. The areas feeling the biggest impact were the East and Taylor Rivers and the Grand Mesa. Surprisingly, most of the Grand Mesa reservoirs filled. Only the larger ones on the west end, like Island Lake, Deep Ward, and Eggleston, did not fill. This resulted in a loss of 2800 acre-feet of storage on Ward and Kiser creeks. Conversely, Surface Creek and Leroux Creek reservoirs filled. Irrigators in the North Fork Valley have started using reservoir water earlier than normal this year and expect to use most of the supply this year.

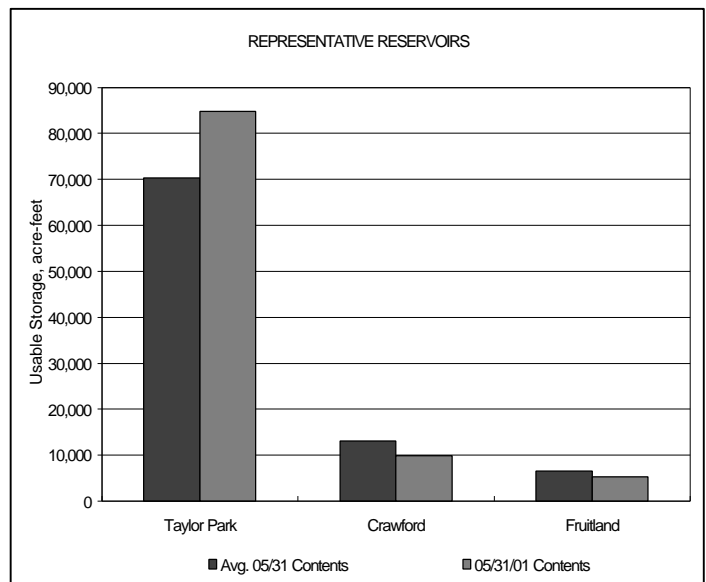
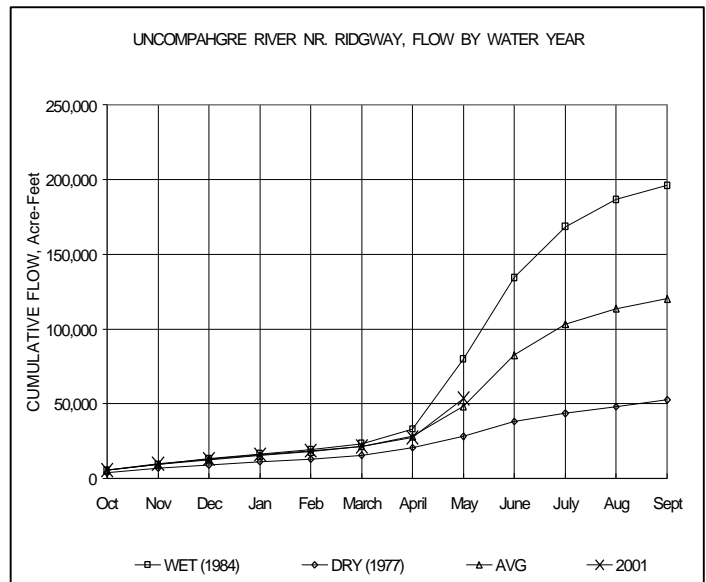
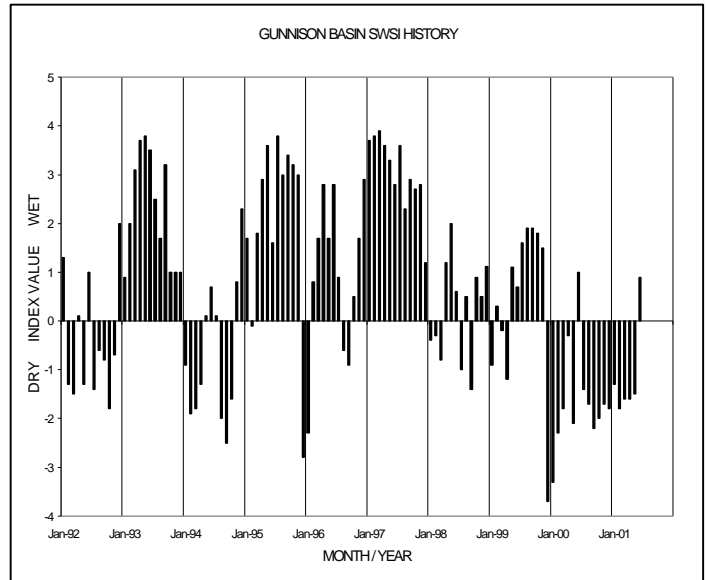
Administrative/Management Concerns

The Uncompahgre and Gunnison Rivers peaked anywhere from one to two weeks earlier than normal, reflecting the abnormally warm temperatures in May. The impact on irrigators was that those with junior water rights did not get their usual allotment of water during the peak runoff. The one bright spot to this was in the Lake Fork of the Gunnison drainage, where snowpack levels had been 130% of normal much of the winter. The runoff continued at a relatively high and steady rate, providing an ample supply for irrigation.

Reservoir storage in the basin was variable, with the mid-sized reservoirs doing well. Paonia Reservoir filled, and Ridgway Reservoir could have, but for operational constraints. Blue Mesa and Taylor Park Reservoirs are projected to be some ten and six vertical feet short of filling, respectively.

Public Use Impacts

None.



Basinwide Conditions Assessment

The SWSI value of -0.9 indicates that for May the basin water supplies were near normal. The Natural Resources Conservation Service reports that June 1 snowpack is 18% of normal. Flow at the gaging station Colorado River near Dotsero was 3,058 cfs, as compared to the long-term average of 4,588 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 111% of normal as of the end of May.

Outlook

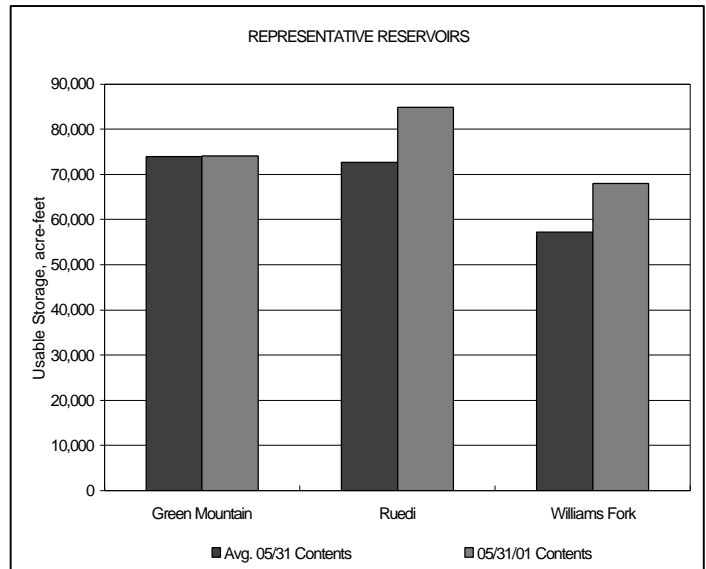
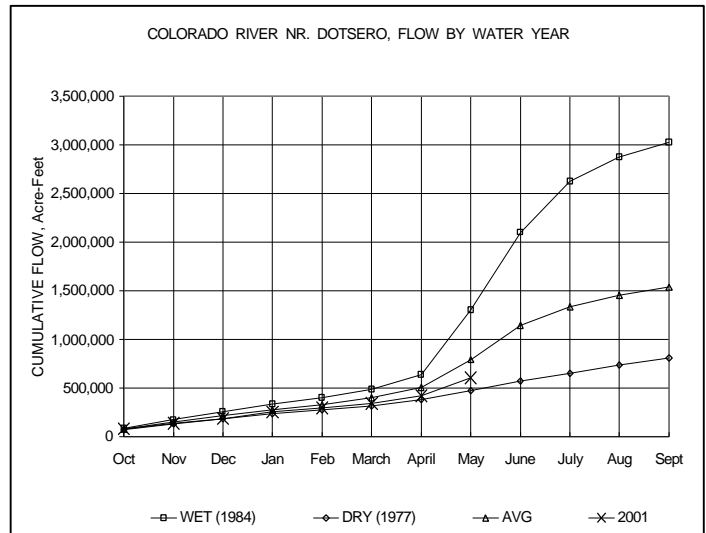
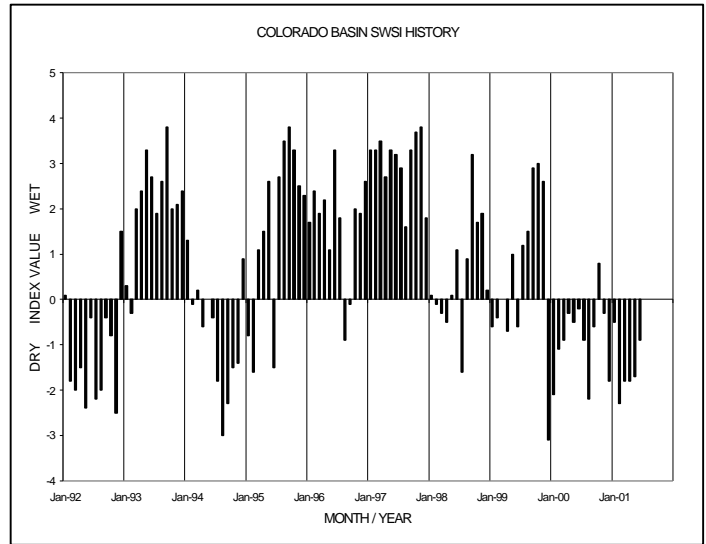
With the Colorado-Utah State line flows 5,000 cfs less than the 50 year average and the Colorado River below Glenwood Springs flows 2,000 cfs lower than its 34 year average, the basin is lacking natural flows. Few reservoirs - namely Ruedi, Dillon, and Vega - are anticipated to fill or have filled while others - Granby, Williams Fork, Wolford, and Green Mountain - will not get their physical fill.

Administrative/Management Concerns

The Bureau of Reclamation placed a storage call for Green Mountain Reservoir effective April 30. If the basin stays dry without rainfall and the senior Shoshone call comes on before mid-July, Green Mountain Reservoir may not fill and the substitution provisions, as provided for in the Blue River decrees, will be in effect.

Public Use Impacts

None.



Basinwide Conditions Assessment

The SWSI value of -0.9 indicates that for May the basin water supplies were near normal. Flow at the gaging station Yampa River at Steamboat was 1,552 cfs, as compared to the long-term average of 1,627 cfs.

While early May brought much needed snow to the basin, by the end of the month near record temperatures had melted much of the upper level snowpack. Runoff for all the major rivers and streams peaked during May, many at least three weeks sooner than normal. By the end of the month most snowtel sites were dry. Basin-wide precipitation was 82% of average and only 72% of last May. Fortunately, most reservoirs are nearly full.

Outlook

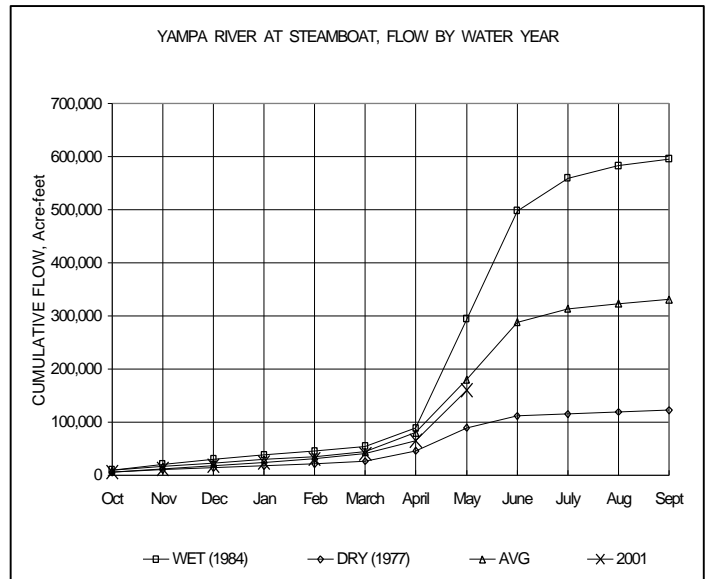
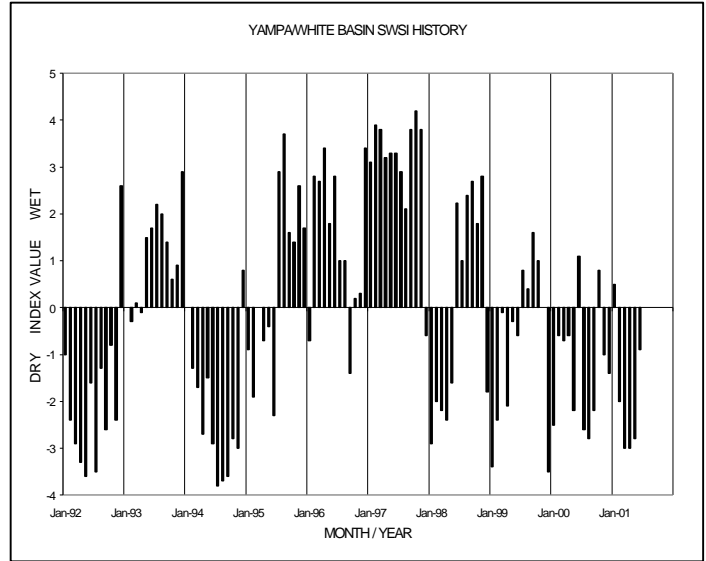
The June 1st forecast for the most probable spring runoff based on current conditions are; 56% of average for the North Platte River near Northgate, 66% of average for the White River near Meeker, 62% for the Little Snake River near Lily and 68% of average for the Yampa River near Maybell. These predictions are the same or slightly lower than those from the May 1st forecast. At the end of May, the snowpack was only 31% of average for the North Platte drainage and 29% of average for the White and Yampa Rivers. Stream flows are expected to decrease rapidly over the next month.

Administrative/Management Concerns

Many of the smaller streams and tributaries are experiencing rapidly declining stream flows. Administration has begun on many systems. Without substantial rainfall these systems will be under administration for the remainder of the summer.

Public Use Impacts

River flows are beginning to decline after the early runoff peaks. Water-related activities that depend on high river flows will have a shortened season this year. Releases from irrigation reservoirs are likely to begin earlier than normal.



Basinwide Conditions Assessment

The SWSI value of 2.8 indicates that for May the basin water supplies were above normal. The Natural Resources Conservation Service reports that June 1 snowpack is 32% of normal. Flow at the gaging station Animas River near Durango was 3,144 cfs, as compared to the long-term average of 2,198 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 105% of normal as of the end of May.

Significant melting of the snowpack in the San Juan drainage occurred during the month. Stream flows ran well above average on most drainages. Even the Dolores with predictions of 80% of normal ran 104% during the month of May. Temperatures were very warm. In Durango, both the lows and the highs were 5° higher than normal.

The precipitation was slightly below normal but most of it occurred in the first week. After that only a few days recorded measurable rain. Warm winds dried the ground out quickly. Plants grew quickly and alfalfa matured early. This is one of the earliest years in memory for the first spring hay cutting to have occurred. Most of the rivers peaked at midmonth. The Animas exceeded 5,300 cfs on May 16th but the average that day was computed at 4,760 cfs, using preliminary data. The Dolores River reached a high at around 3,300 cfs into McPhee Reservoir.

Outlook

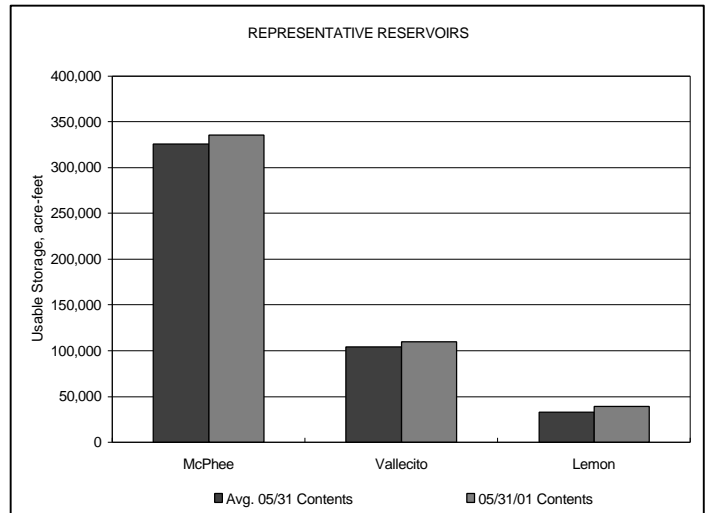
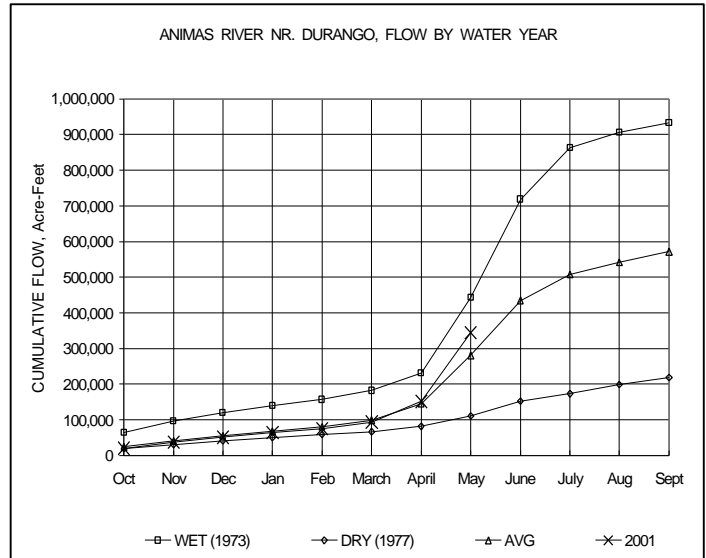
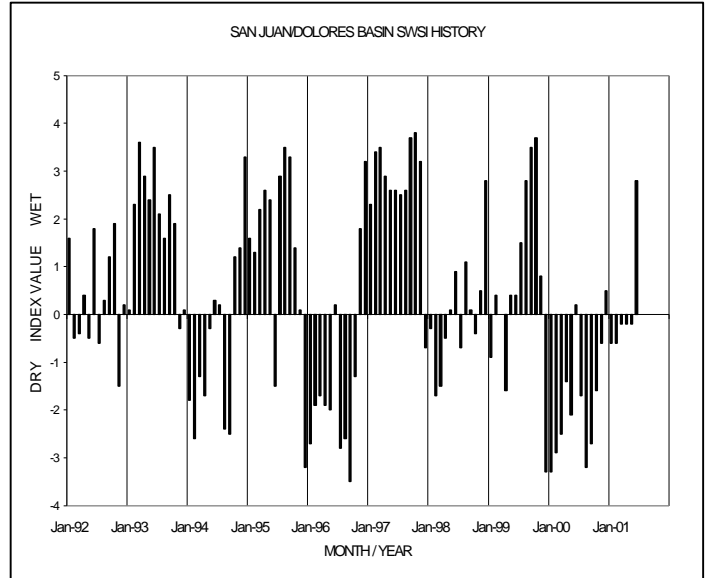
Reservoirs including Lemon Reservoir captured much of the excess flows. Lemon had nearly filled by the end of the month and even McPhee was above normal storage levels. There was still snow in the mountains but it appeared unlikely that earlier flow stages would be exceeded in June.

Administrative/Management Concerns

Additional precipitation was greatly needed but in general the amount available for agriculture appeared adequate up to this point in time. The ground water carryover provided the early supplies.

Public Use Impacts

Unfortunately for rafters on the Dolores River, water was not available for spill releases this year but recreation flows on other rivers were readily available for at least a short time this year.



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