COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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JULY 2003

While compared to last year conditions are improved over much of the state, water supplies are still below average conditions. Streams flowed at decent rates during runoff in the northern portions of the state, but runoff was generally over by the end of June, which is earlier than the mid-July average. The total volume water in the runoff has been below average. The southwest portion of the state, particularly the Rio Grande and San Juan/Dolores River basins, have not received the improvements the northern portions of the state have. These areas ended the winter with the lowest snowpack, had well below average runoff, and received less precipitation in June.

Areas of the state received precipitation in the first half of the month, but the later half of the month turned drier. Summer rains are needed to support what will be below average stream flows the rest of the summer. Reservoir supplies were being tapped in June, where as they are normally not needed until July.

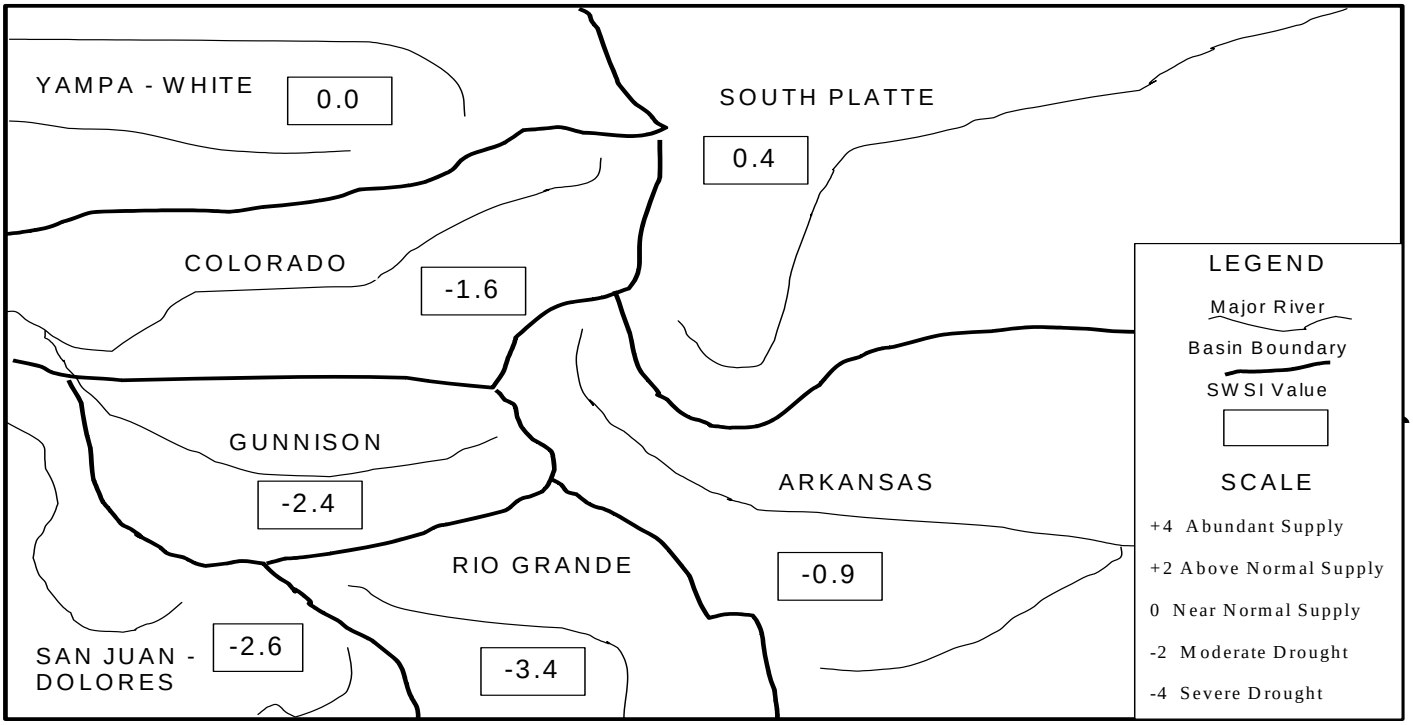
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on stream flow, reservoir storage, and precipitation for the summer 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 July 1, 2003, and reflect the conditions during the month of June.

Basin	July 1, 2003 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	+0.4	+1.3	+3.6
Arkansas	-0.9	+1.1	+0.8
Rio Grande	-3.4	-1.1	+0.5
Gunnison	-2.4	-2.0	+1.5
Colorado	-1.6	-0.1	+2.5
Yampa/White	0.0	-0.8	+4.1
San Juan/Dolores	-2.6	-1.3	-1.5

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



July 1, 2003

Basinwide Conditions Assessment

The SWSI value of 0.4 indicates that for June the basin water supplies were near normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 81% of normal as of the end of June. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 96% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 63% of capacity. Flow at the gaging station South Platte River near Kersey was 1,748 cfs, as compared to the long-term average of 3,267 cfs. Flow at the Colorado/Nebraska state line averaged 57 cfs.

Generally favorable water supply conditions continued in June. Runoff and timely rains allowed users to continue to fill reservoirs through the whole month of June. All main South Platte plains reservoirs filled by the end of the month except for Empire and Riverside which were both near full by the end of the month. In addition, Denver and other municipal providers were able to significantly reduce the amount of unfilled storage in their water supply systems.

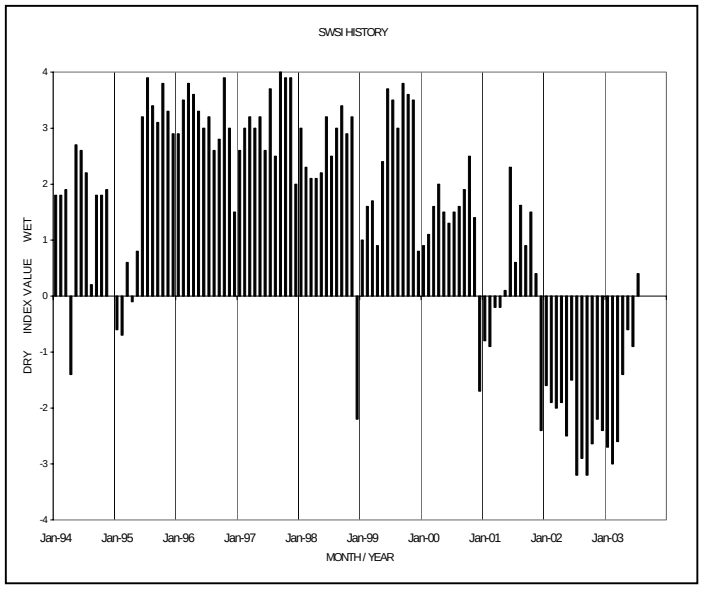
This was a radical departure from the previous year when high demand and dry conditions called for the release of significant amounts of reservoir storage during April, May and June. Thus, the storage situation has gone from very poor to significantly better than last year at the end of June.

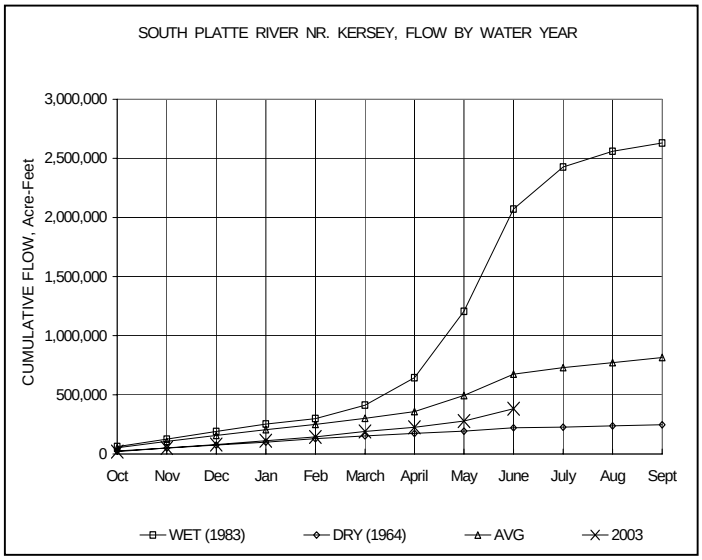
Outlook

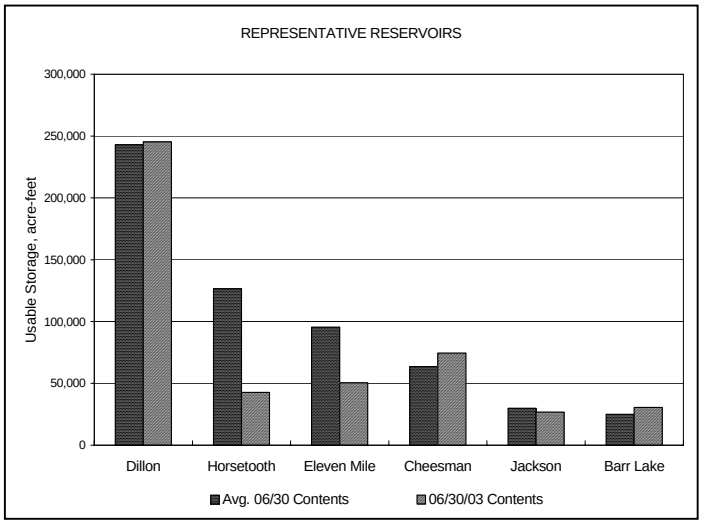
By the end of month, runoff had begun to decline and a direct flow irrigation call occurred on the South Platte for the first time this spring. It is a sign of the start of a good water year when the first direct flow call does not occur until the end of June. Based on the water supply conditions, we anticipate at least an average water supply year this summer unless we return to very dry conditions again.

Public Use Impacts

The substitute supply plans for many alluvial well user groups have been approved allowing many irrigation wells to begin to pump. However, there are still several hundred irrigation wells that users that cannot pump because they do not have an approved plan and subsequently there is a significant amount of fallow land this irrigation season.



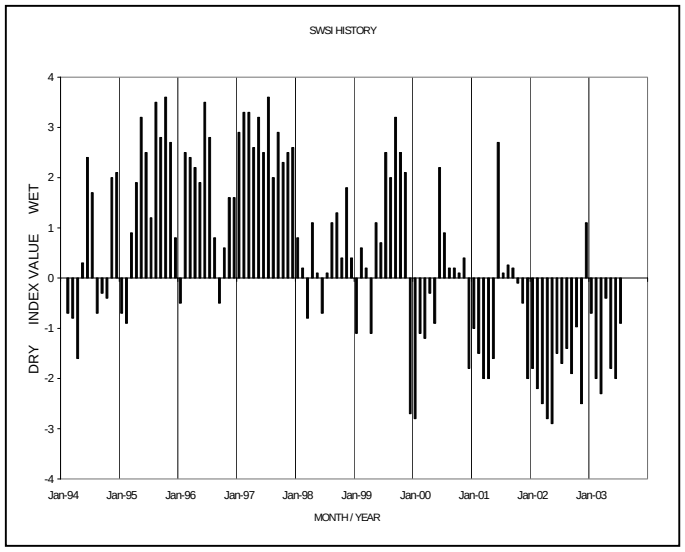




Basinwide Conditions Assessment

The SWSI value of -0.9 indicates that for June the basin water supplies were slightly below normal. Flow at the gaging station Arkansas River near Portland was 1,814 cfs, as compared to the long-term average of 2,441 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 53% of normal as of the end of June.

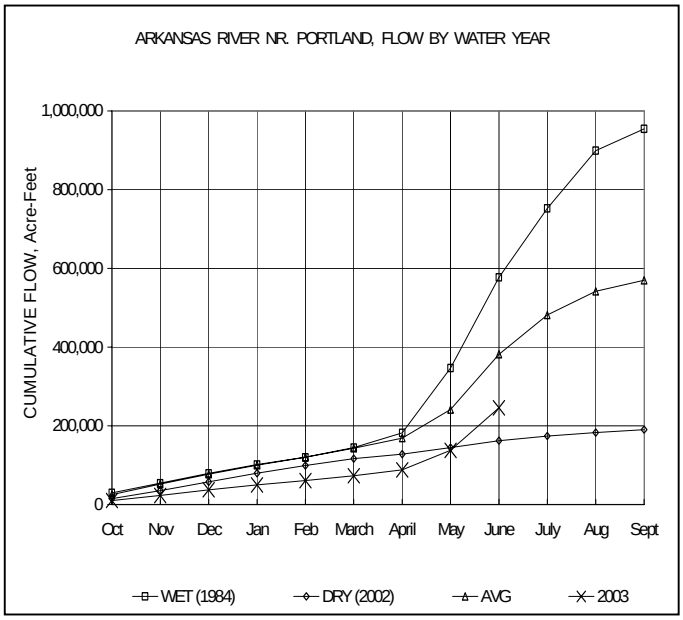
Stream flows continued to be fairly strong during the month of June. Transmountain diversions were particularly encouraging with flows through the Boustead Tunnel (Fryingpan-Arkansas Project) averaging over 550 cfs and flows through the Twin Lakes Tunnel averaging over 380 cfs for June. Homestake Tunnel (Colorado Springs/Aurora) flows averaged over 280 cfs for a little over two weeks of June. The Pueblo Board of Water Works also improved transmountain imports through the Busk-Ivanhoe Tunnel and via their Ewing, Wurtz and Columbine Ditches.

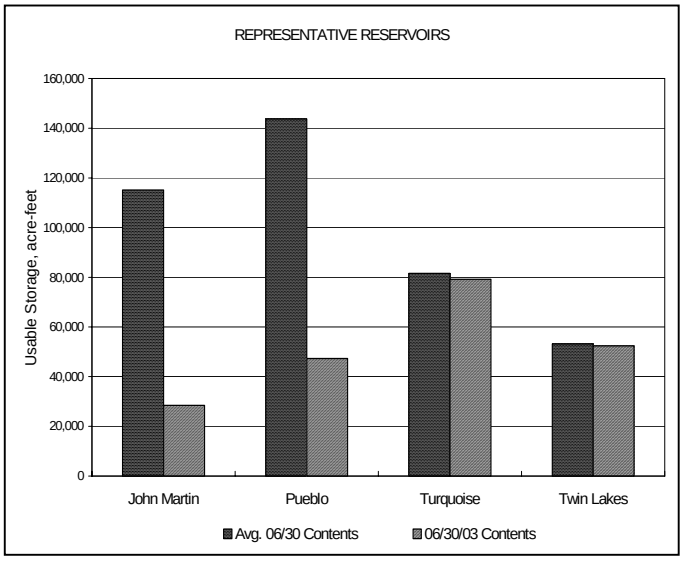


Administrative/Management Concerns

Improved stream flows put agricultural interests in somewhat of a dilemma in that many farmers had switched cropping patterns after the 2002 drought or fallowed acreage to shield themselves against low surface diversions for 2003. Due to continued uncertainty about later season stream flows, a number of farmers appear to have chosen to go ahead and leave acreage fallow. The rainy portions of June coincided with some of the hay harvest and made it difficult for ditch superintendents to judge ditch demand as farmers worked to get hay off of fields and irrigation water back on.

Cooperative agreements between several of the well associations and municipalities appear to be working well to give some much needed well augmentation water while providing opportunities for municipal interests to swap for strategic amounts of stored water. Well association replacement plans that were originally approved at the end of March with very limited pumping have been able to amend their plans to provide some additional well pumping for the replacement plan year.





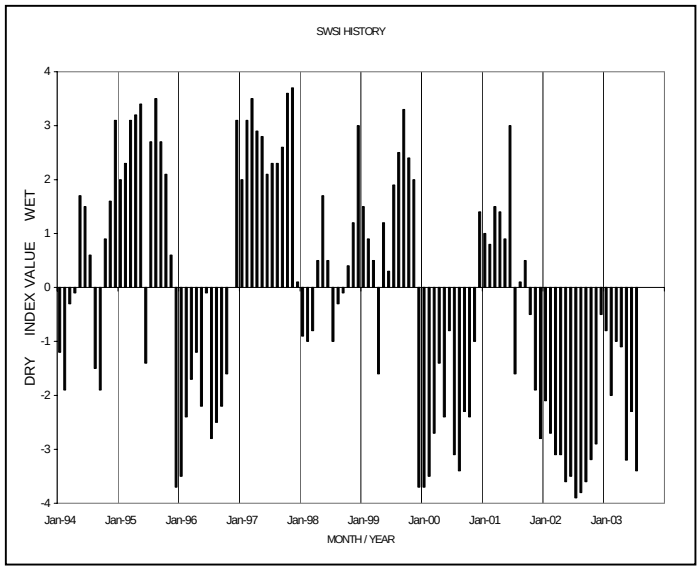
Basinwide Conditions Assessment

The SWSI value of –3.4 indicates that for June the basin water supplies were well below normal. Flow at the gaging station Rio Grande near Del Norte was 1,250 cfs (40% of normal). The Conejos River near Mogote had a mean flow of 573 cfs (44% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 35% of normal as of the end of June.

At the end of the month, all streams in the upper Rio Grande basin were near base flow condition. The volume of runoff during June of this year was far better than June of 2002. However, this year's runoff was enhanced by reservoir releases that have left the upper basin with very little carryover storage.

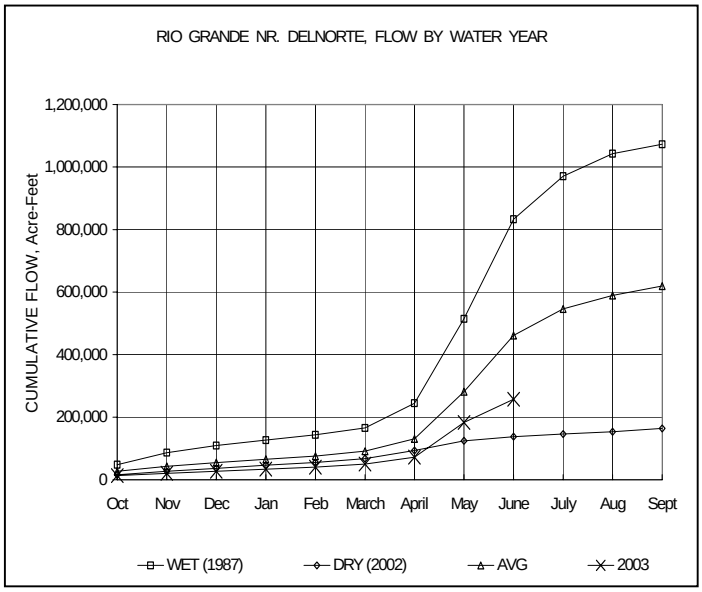
Although the total precipitation was near normal on the valley floor during June, most of it came during a four day run from the 17th through the 20th, right when most alfalfa farmers were trying to put up their first cutting.

Soil moisture conditions in non-irrigated areas are getting worse.



Outlook

Generous amounts of rainfall will be needed in the near future to neutralize the damage done to crop and rangeland by the continuing drought conditions. However, long-term weather forecasts don't predict any extraordinary precipitation for the next several months.



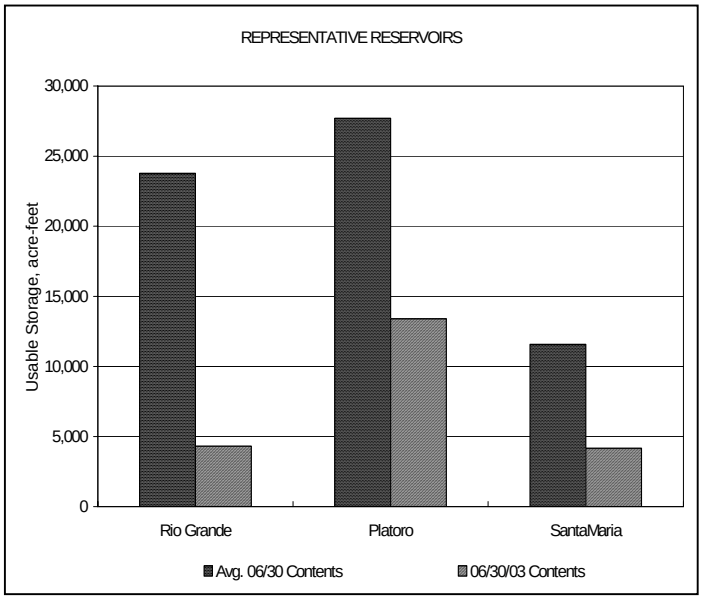
Administrative/Management Concerns

The extraordinarily large amounts of pumping from the basin's aquifers are taking a toll. Static water levels in the alluvial aquifers continue to drop significantly. No one knows what the long-term effects on the confined aquifer will be.

At the close of the month, only some of the more senior priorities were diverting water from the Rio Grande, Conejos, Los Pinos, Alamosa, La Jara, Pinos, and Saguache Creek drainages.

Public Use Impacts

The first open fire ban of the season was instituted by Mineral County during the first week of July. Activities dependent on reservoir storage and stream flow are suffering



Basinwide Conditions Assessment

The SWSI value of –2.4 indicates that for June the basin water supplies were below normal. Flow at the gaging station Uncompahgre River near Ridgway was 402 cfs, as compared to the long-term average of 577 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 82% of normal as of the end of June.

Outlook

Even though the flows this year have been below normal, they are so much better than last year that diverters are happy to be getting any of their water. Since the hot weather and peak runoff occurred in Late May and early June, the flows have dropped sharply. As a result, the flows for the remaining summer months are likely to be low. Water availability will be limited unless the streams are supplemented by rainfall.

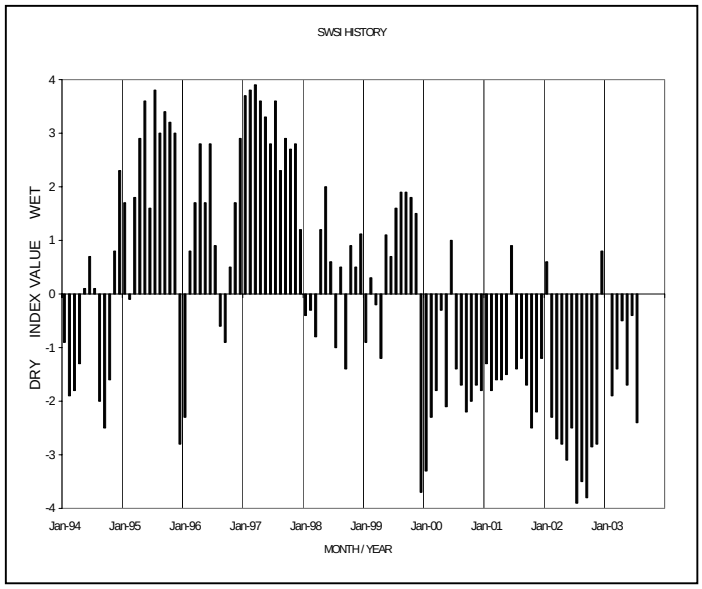
Irrigators in the Uncompahgre will have a full supply this year, ensuring a good crop of the world famous 'Olathe Sweet' sweet corn. The orchards in the Cedaredge and Paonia areas should have sufficient stored water to raise a good crop of fruit.

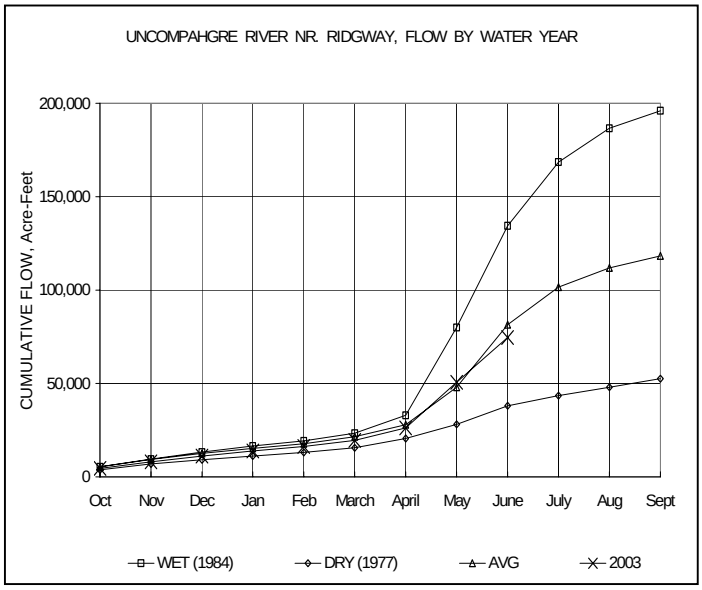
Administrative/Management Concerns

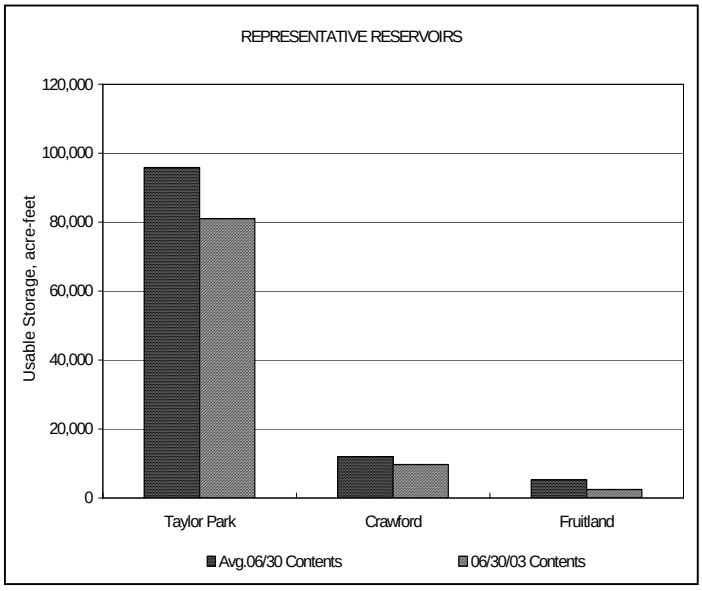
The strong runoff in late May and early June, caused by cool weather in April and early May followed by very hot temperatures at the end of May, filed most reservoirs. Irrigators on the Grand Mesa have observed for many years that when the runoff happens fast, they seem to get more storage in the reservoirs. After starting with mostly empty reservoirs, most were able to fill. Some of the larger reservoirs on the southwest end of the Grand Mesa were not quite able to fill.

Ridgway Reservoir, after only storing for a total of 17 days in 2002, filled and spilled for short time. Taylor Park Reservoir was only able to fill to 76% of capacity. Although Blue Mesa, the largest reservoir in the state, was able to fill to 514,000 af, it is still only 55% of the 939,000 af when it is full. Both Taylor Park and Blue Mesa are normally able to store water through the entire month of July. As of the first of July, they are already starting to be drawn down from downstream demands. Also, the first fill account in Taylor Park Reservoir, owned by the UVWUA, has been completed and second fill is starting to accumulate. The second fill account is valuable when a call is received from the Gunnison Tunnel, since it can be released to satisfy the call and delay curtailment of water rights.

A call from the Redlands Canal was narrowly escaped at the end month when flows dropped just below their decreed amount. The 1995 Contract kicks in on July 1, and the USBR released extra water out of Blue Mesa Reservoir to keep the flows up. A UVWUA call from the Gunnison Tunnel and the M&D Canal is expected in the first part of July. They are confident they will also have sufficient storage this year between Blue Mesa and Ridgway Reservoirs.



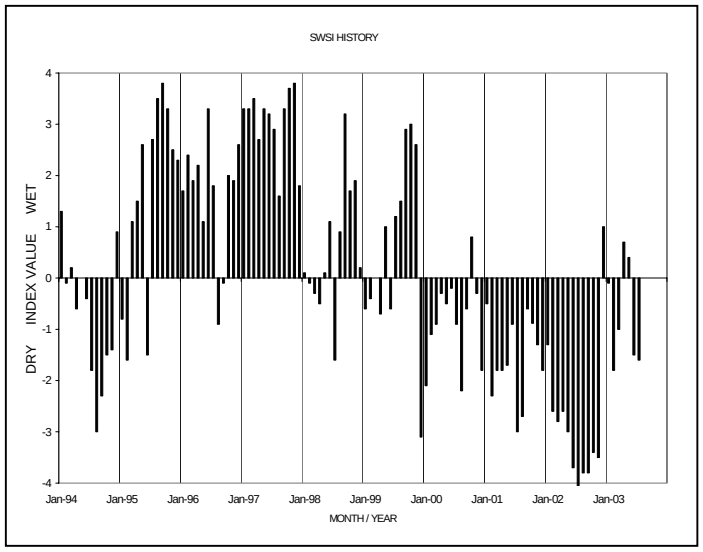


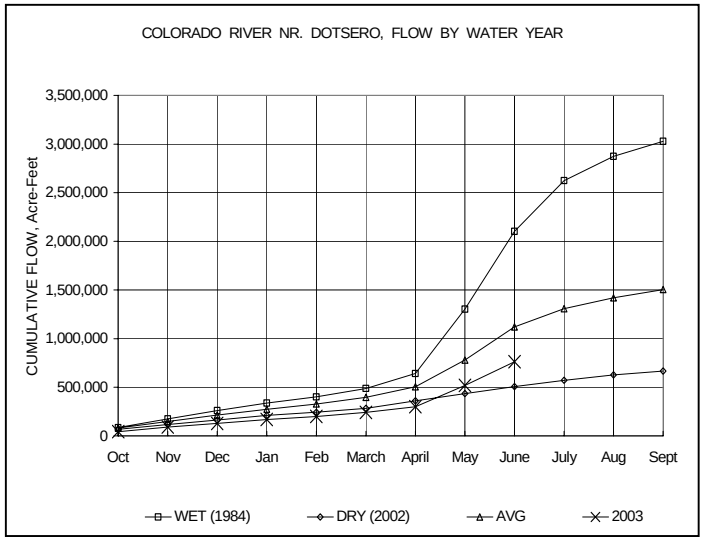


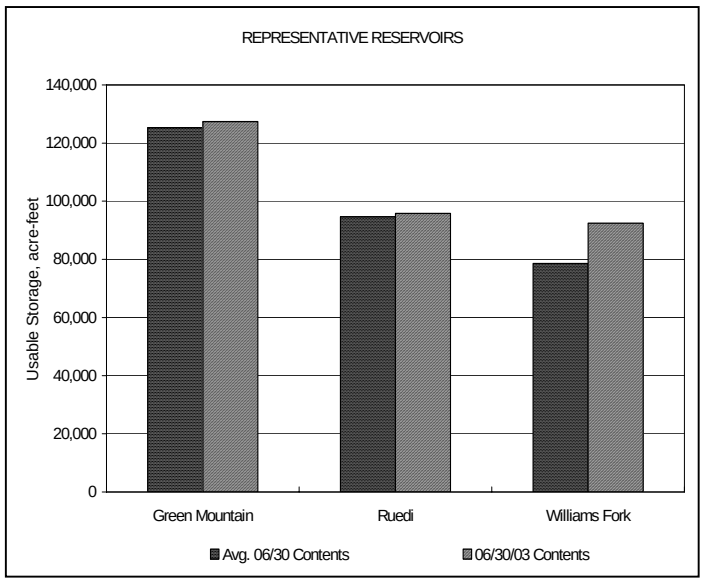
Basinwide Conditions Assessment

The SWSI value of –1.6 indicates that for June the basin water supplies were slightly below normal. Flow at the gaging station Colorado River near Dotsero was 4,092 cfs, as compared to the long-term average of 5,928 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 106% of normal as of the end of June.

Above normal temperatures throughout the month caused snowmelt runoff to be high and early this year, and essentially over with by the start of July. Reservoir storage benefited from the runoff with three major reservoirs filling this year, a surprise to some. These three are Dillon, Williams Fork, and Vega. The end of June finds very little remaining snowpack, stream levels have dropped to below average throughout much of the basin, and the Shoshone power call has been initiated.



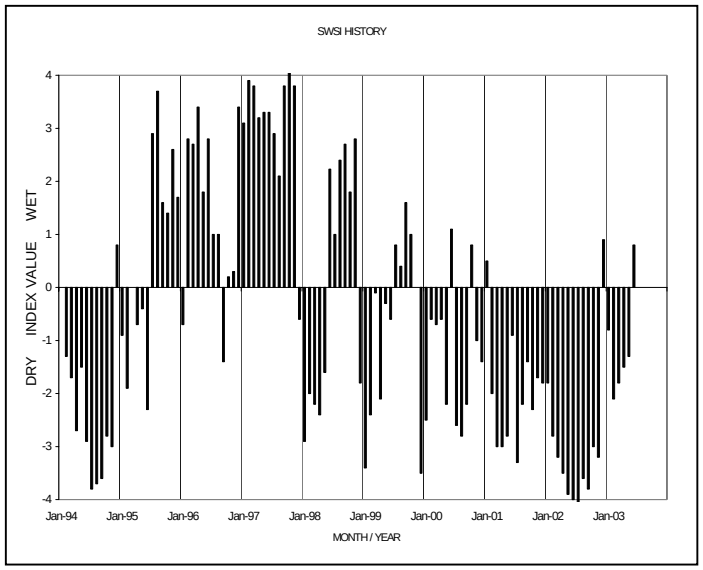




Basinwide Conditions Assessment

The SWSI value of 0.0 indicates that for June the basin water supplies were near normal. Flow at the gaging station Yampa River at Steamboat was 1,677 cfs, as compared to the long-term average of 1,822 cfs.

June was hot and dry in the Northwest part of the state. Warmer than normal temperatures at the beginning of the month cause a rapid melt of the high elevation snowpack. Localized flooding of low laying areas in the Steamboat Springs area occurred for over a week. Stream flows throughout the Division rose rapidly to above average levels. Temperatures remained above average for the rest of the month and precipitation was confined to the first two weeks. Little to no precipitation occurred in the second half of June. By the end of the month, most gaging stations were recording below average flows.



Outlook

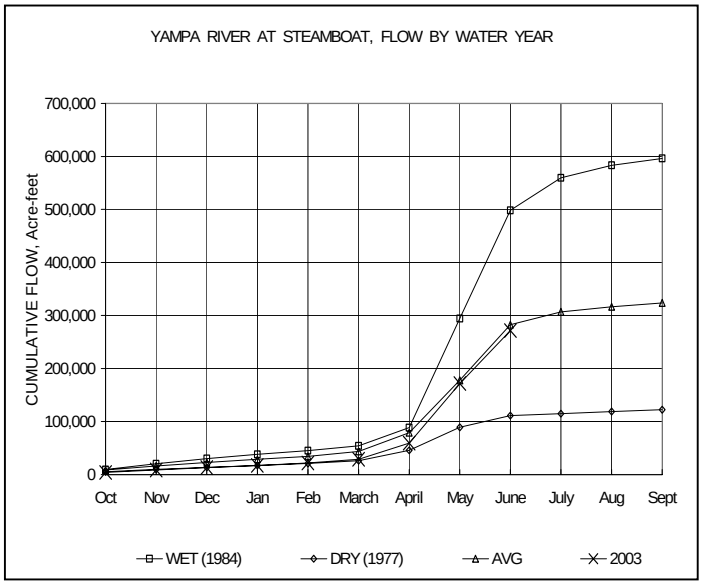
Flows have steadily dropped in most streams over the month. Hot and dry conditions are forecast through the middle of July. The advent of the monsoon moisture flows is much anticipated. Without additional moisture steam flows will continue to decline throughout the summer.

Administrative/Management Concerns

Storage for irrigation use in the North Platte was reduced to the limit of 17,000 acre-feet as allowed under the U S Supreme Court decree in Nebraska v. Wyoming. Many lower elevation streams, and tributaries of the main rivers are under administration. The water supply in most areas should be adequate as many ranchers are beginning to harvest their crops, or will begin to do so by mid-July.

Public Use Impacts

Water levels have fallen and the streams and rivers are running clear. Fishing has been improving throughout the region. The larger rivers are still floatable, but levels will continue to fall as the summer progresses.



Basinwide Conditions Assessment

The SWSI value of –2.6 indicates that for June the basin water supplies were below normal. Flow at the gaging station Animas River near Durango was 1,346 cfs, as compared to the long-term average of 2,590 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 67% of normal as of the end of June.

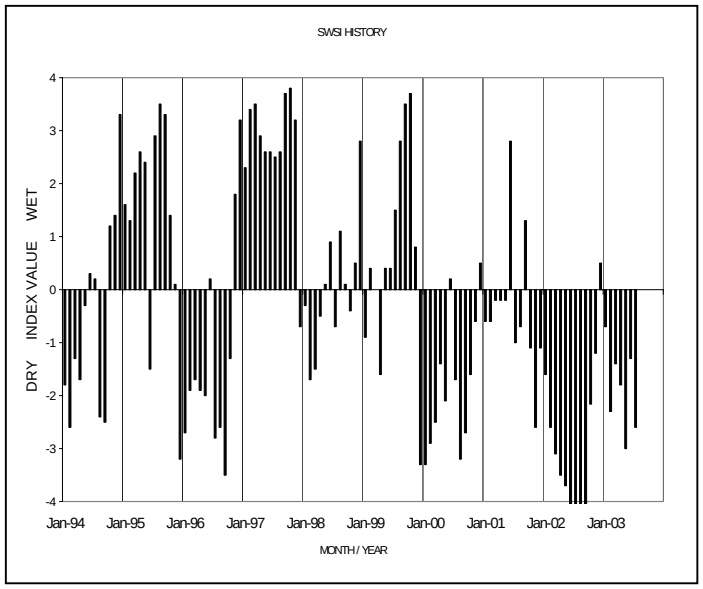
The Southwestern Colorado area experienced continued dry conditions during June, although one significant storm during the 18th-20th provided close to the monthly average (Durango received .54 inches). The remainder of the month conditions were totally dry and hot with wind storms on most days. The precipitation was not generalized across the area.

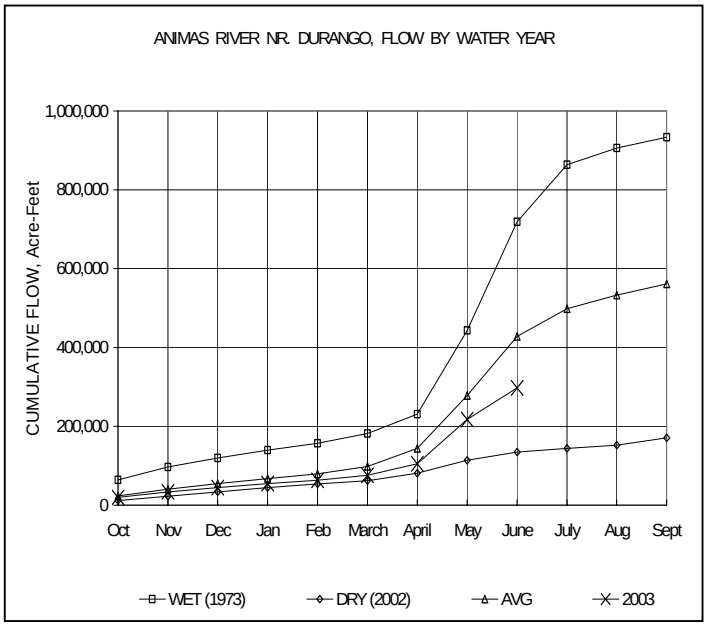
There was not a significant runoff from the upper level snowpack. Stream flows peaked in May and dropped steadily through June. The Animas River in Durango declined from 3,200 cfs to 614 cfs over the month. The Dolores River at Dolores also dropped from 1,440 cfs to 184 cfs. The high flow numbers at the beginning of the month are nearer the historic averages for the whole month.

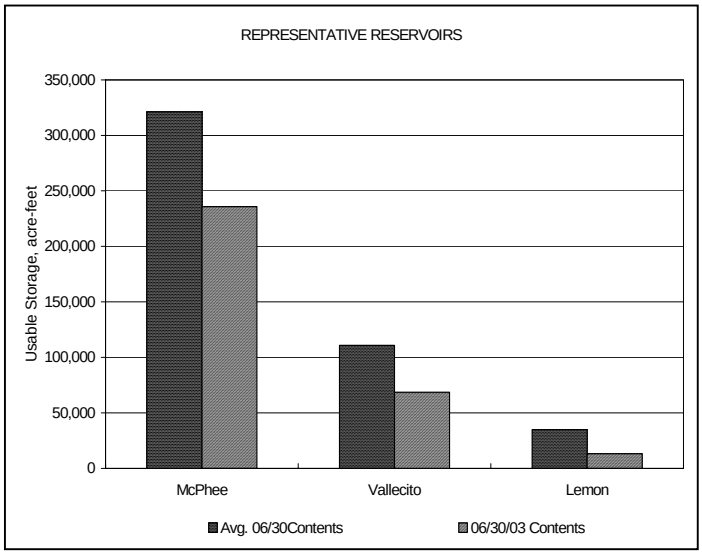
Reservoirs reached higher levels than were anticipated because of the early runoff. However, in June they were tapped significantly and held far less than average going into July. Lemon Reservoir contained only 13,000 acre-feet, which is 39% of normal.

Outlook

This year has to date has been at least a welcome relief from the fire and extreme drought of last year. However, groundwater continues to decline and the drought conditions have not been overcome by events this year.







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