COLORADO
WATER SUPPLY CONDITIONS UPDATE

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

Colorado's water supply was below normal for July 2003. However, the South Platte Basin had a near normal index value of –0.3. The southwest basins have the poorest water supplies in the state with the San Juan/Dolores Basin at –3.6, the Rio Grande at –3.5, and the Gunnison at –2.7. The high weighting of reservoir storage in the South Platte Basin and the amount that is in storage contributes to a near normal index value for that basin. The very high weighting of river flows in the southwest basins cause those index values to be very low. Stream flows during July were very poor in the Arkansas, Rio Grande, and San Juan/Dolores Basins.

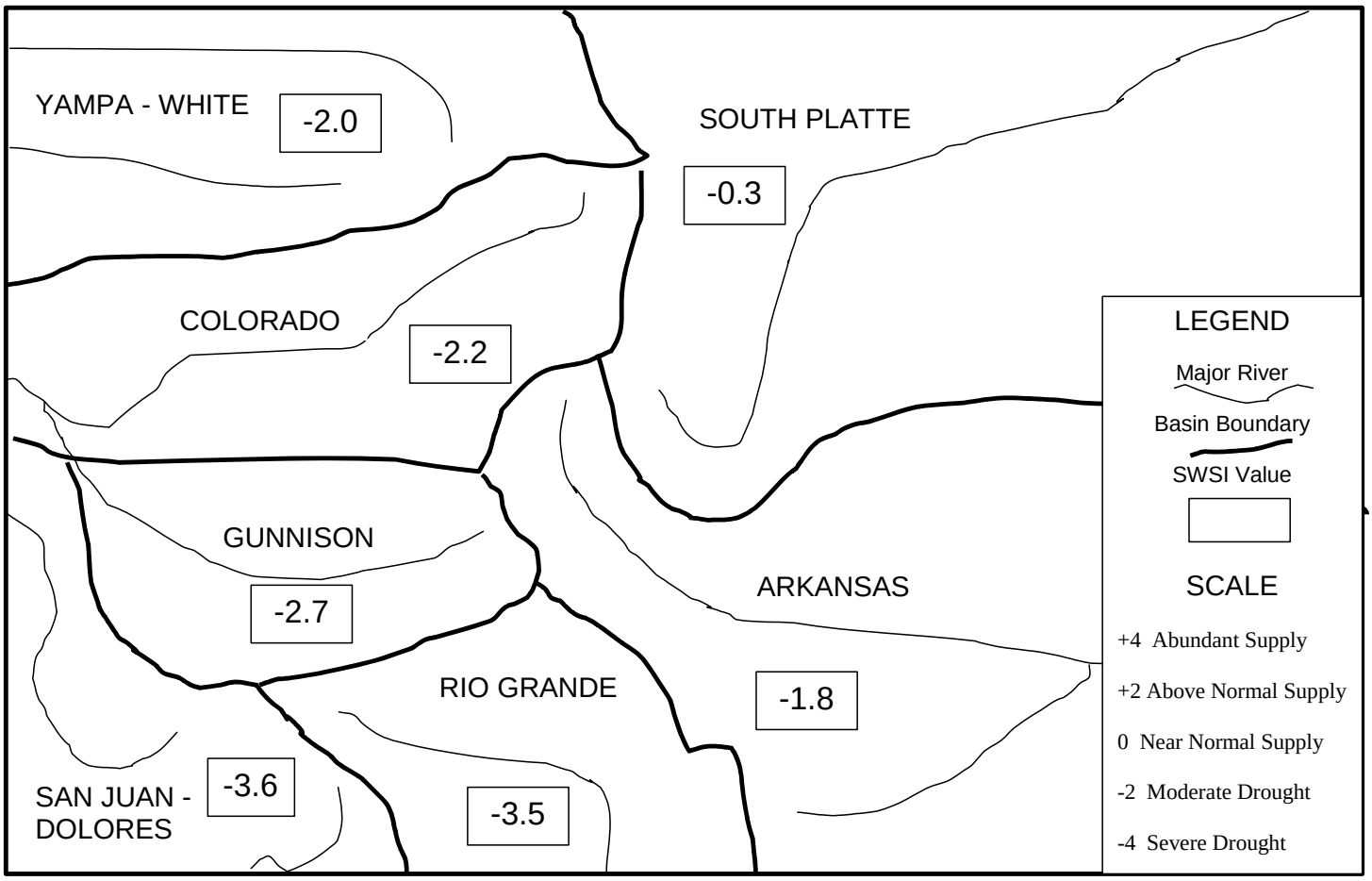
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on stream flow, reservoir storage, and precipitation for the summer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

Basin	Aug 1, 2003 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	-0.3	-0.7	+2.6
Arkansas	-1.8	-0.9	-0.4
Rio Grande	-3.5	-0.1	+0.3
Gunnison	-2.7	-0.3	+0.8
Colorado	-2.2	-0.6	+1.6
Yampa/White	-2.0	-2.0	+1.6
San Juan/Dolores	-3.6	-1.0	+0.5

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



August 1, 2003

Basinwide Conditions Assessment

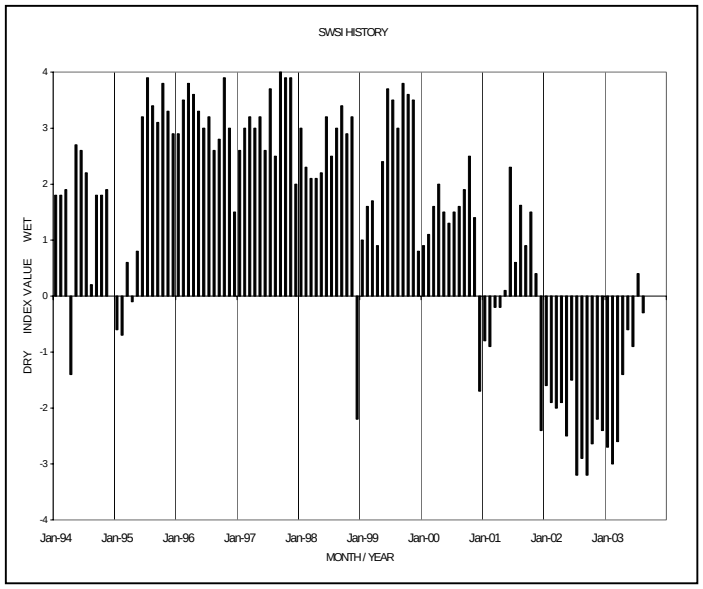
The SWSI value of –0.3 indicates that for July the basin water supplies were about normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 81% of normal as of the end of July. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 57% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero is at 68% of capacity. Flow at the gaging station South Platte River near Kersey was 212 cfs, as compared to the long-term average of 1,040 cfs. Flow at the Colorado/Nebraska state line averaged 21 cfs.

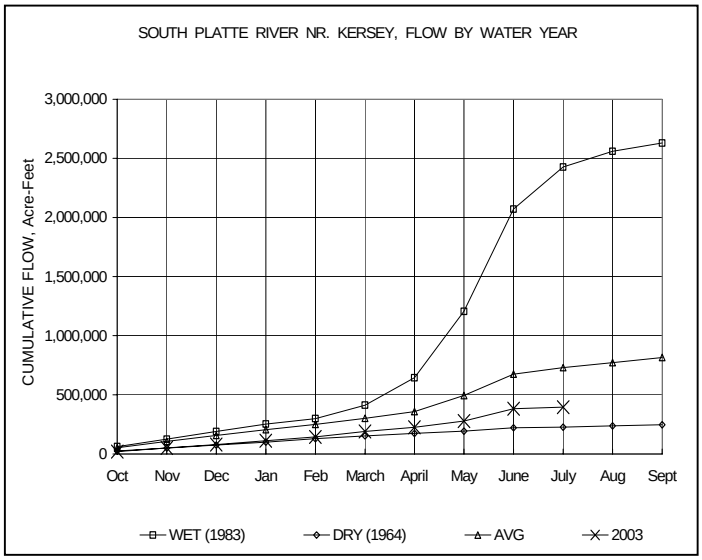
As usually is the case in the South Platte drainage, July was both hot and dry. There were direct flow calls through out the month on all of the river and on its tributaries. In general, the calls were not as senior as last year, but represented an average call scenario for the month of July. For instance, the call in District 2 below Denver and above the confluence of the Saint Vrain was generally an 1871 call, the normal call for this stretch of the river in average years. Though the call regime was normal, the low flow in parts of the river was unusual. For instance, the flow at the Kersey gage returned to very low levels--near those experienced last year. This may be the result of the reduction in return flows with four years of fairly dry conditions.

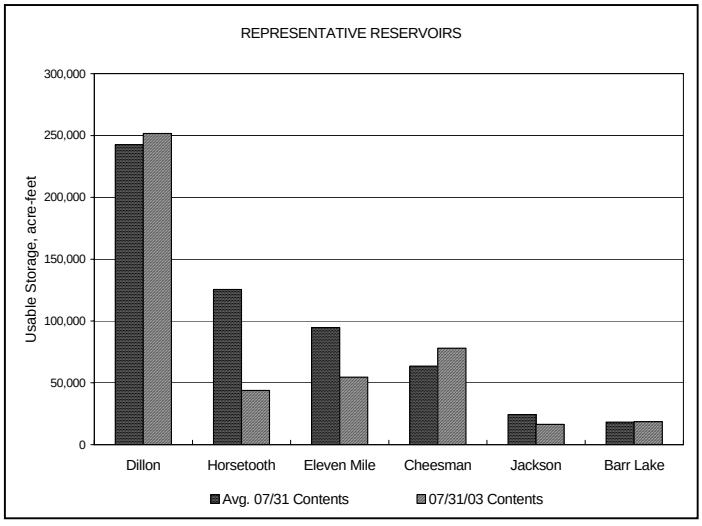
Most important, storage this year is in a significantly better position than last year. Last year, storage in the plains reservoirs below Kersey was only at 58,000 acre-feet. This year, storage was at 142,000 acre-feet below Kersey at the end of July. The additional storage will help assure an adequate supply for many users this year and bodes well for potentially having some carryover storage for next year. This is in contrast to this year when there very was little carryover storage.

Likewise, the storage reserves and overall water supply situation for most municipal providers remains significantly better than last year. Further, those with water short situations have taken steps to assure an adequate supply this summer. We do not anticipate any major new shortages for most suppliers with the improved conditions.

The substitute supply plans for many alluvial well user groups have been approved allowing many irrigation wells to pump this summer. However, there remain several hundred irrigation wells that users cannot pump because they do not have an approved plan. Subsequently there is a significant amount of fallow land this irrigation season. There is also irrigated land that will not receive an adequate supply of water because ground water is not available and the limitations on surface sources.







Basinwide Conditions Assessment

The SWSI value of –1.8 indicates that for July the basin water supplies were below normal. Flow at the gaging station Arkansas River near Portland was 694 cfs, as compared to the long-term average of 1,618 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 54% of normal as of the end of July.

Outlook

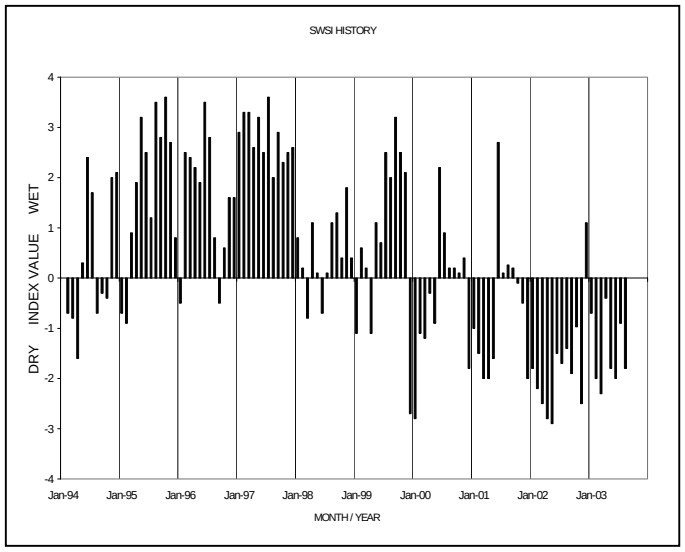
River conditions began to deteriorate somewhat in July despite occasional precipitation that provided short periods of improved flows. July was marked by record setting high temperatures. Pueblo had over 20 days of plus 100° daily high temperatures, which reflected conditions throughout most of the lower valley. Stored water sources have been drawn down significantly throughout the summer for agricultural users. Municipal users have not been hit as hard as in 2002 with many municipalities maintaining moderate watering restrictions and able to draw from improved stored water supplies.

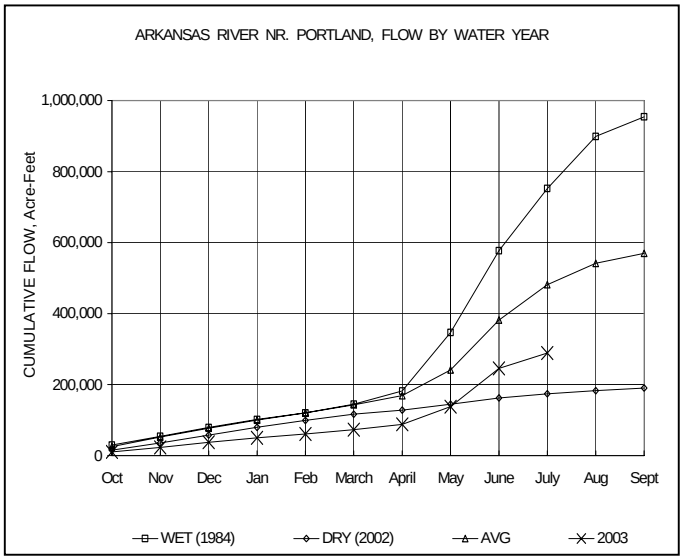
Administrative/Management Concerns

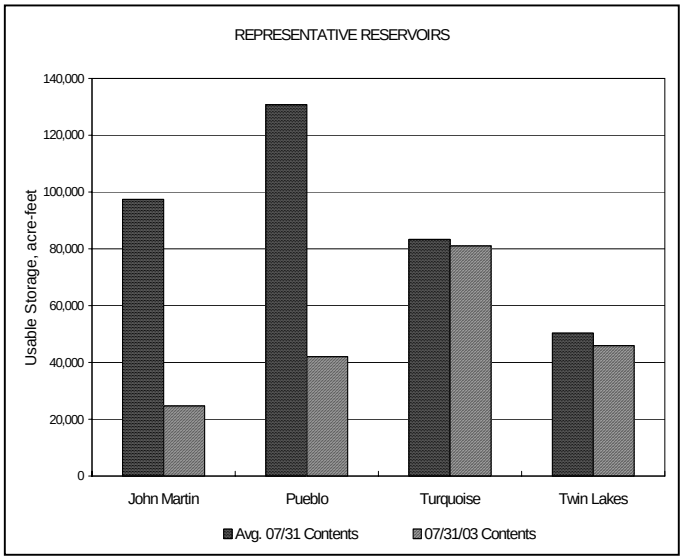
Pueblo Board of Water Works marked the anniversary of their worst month (July 2002) when all of their leases to augmentation entities had to be suspended with a good faith lease of 3000 acre-feet of transmountain water that will give the agricultural community a much needed boost. Half of the water went to the Bessemer Ditch where vegetable farmers will particularly benefit by being able to finish out critical irrigation of water sensitive crops. The balance of the water was purchased for other agricultural purposes in the valley.

Public Use Impacts

Recreational interests have felt a mixed impact this year. Rafting companies and those who enjoy river fishing are enjoying much better conditions than in 2002 due to the ability of cooperators to voluntarily maintain minimum stream flows throughout the summer by moving water down from upper reservoirs to Pueblo Reservoir. On the other hand, recreational interests on reservoirs, such as Pueblo Reservoir and John Martin Reservoir, are feeling the pinch of lower and lower water levels and bemoan the significant lowering that has occurred as a result of water being delivered to support critical municipal and agricultural uses.



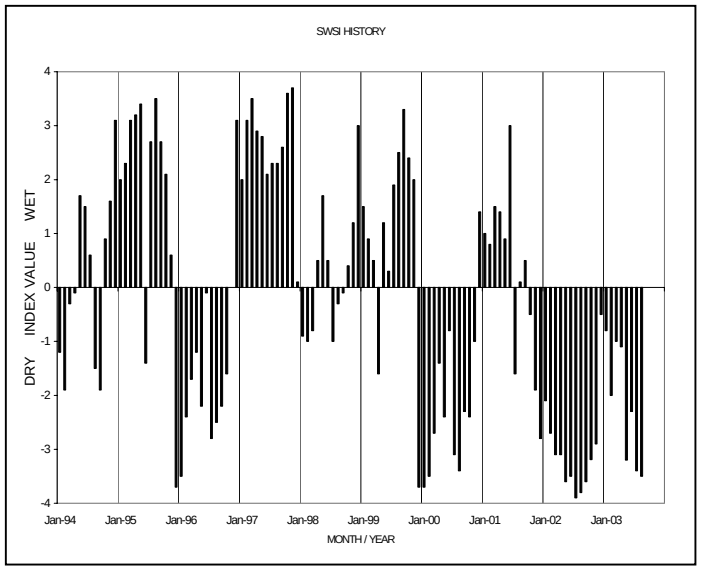




Basinwide Conditions Assessment

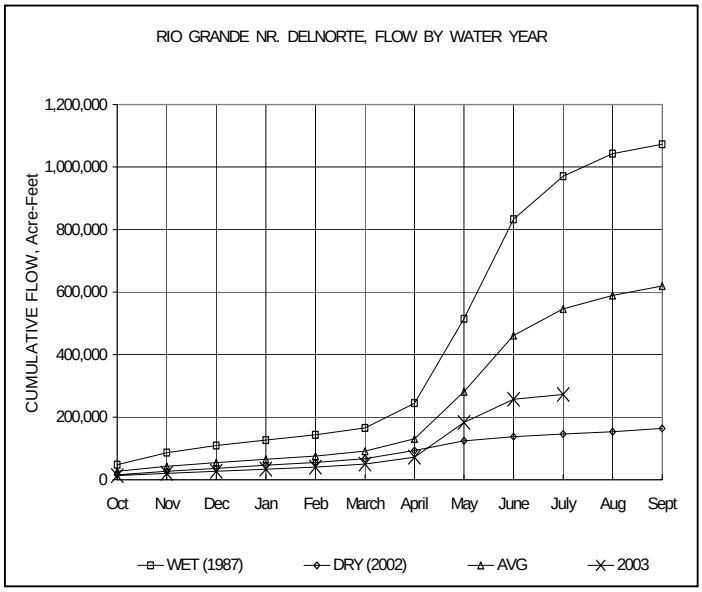
The SWSI value of –3.5 indicates that for July the basin water supplies were well below normal. Flow at the gaging station Rio Grande near Del Norte averaged 251 cfs (18% of normal). The Conejos River near Mogote had a mean flow of 165 cfs (35% of normal). Precipitation of 0.94 inches during July in Alamosa was equal to the average. Even with normal rainfall during June and July, the valley floor and some mountainous areas are still very dry. Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 38% of normal as of the end of July.

Temperatures in Alamosa soared to 90 degrees or above on 20 of the 31 days during July. No big deal for folks on the eastern plains. But here, temperatures on the valley floor usually equal or exceed 90 degrees only two days a year. The average monthly temperature in Alamosa was 68.3 degrees during July. That's the warmest month on record in at least 35 years.



Outlook

The hot, dry conditions are expected to continue. Without a significant change in the current weather patterns, the upper Rio Grande Basin will continue to experience drought conditions. With the majority of the high runoff months behind us, it appears the Rio Grande will index only 48% of normal annual flow. The Conejos and its tributaries will be only slightly better.

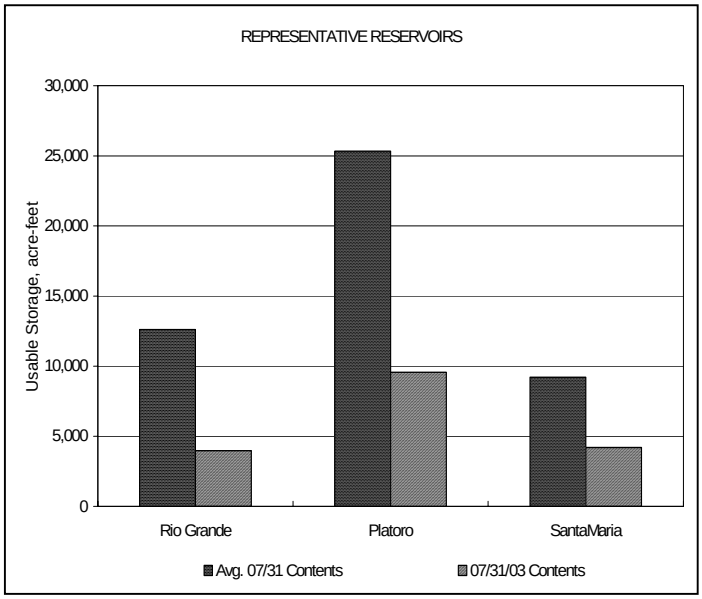


Administrative/Management Concerns

Junior water right owners in Division 3 should expect senior calls to keep them out of priority for the rest of the irrigation season. Although very low, the delivery of water to the State line has been more than adequate to meet Colorado's obligation under the Rio Grande Compact to New Mexico and Texas. Well production from the Closed Basin Project during July was routed mostly to the Blanca Wildlife Area and the Alamosa National Wildlife Refuge. Very little of the production is currently reaching the Rio Grande.

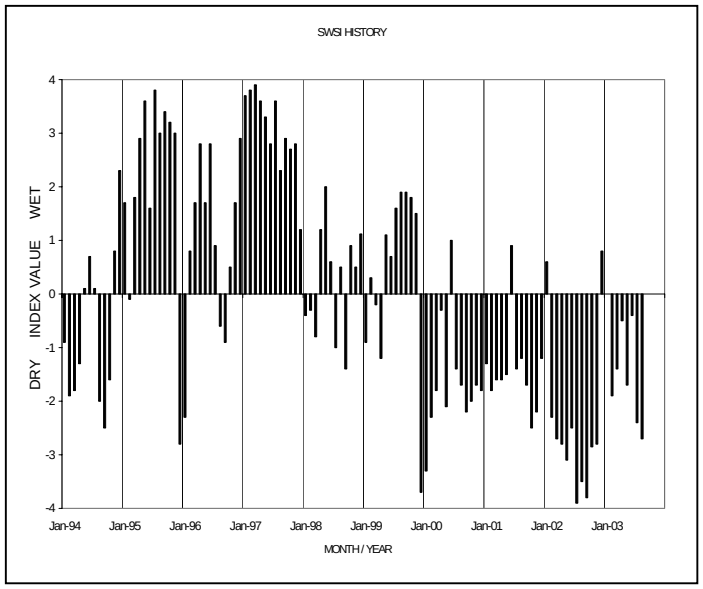
Public Use Impacts

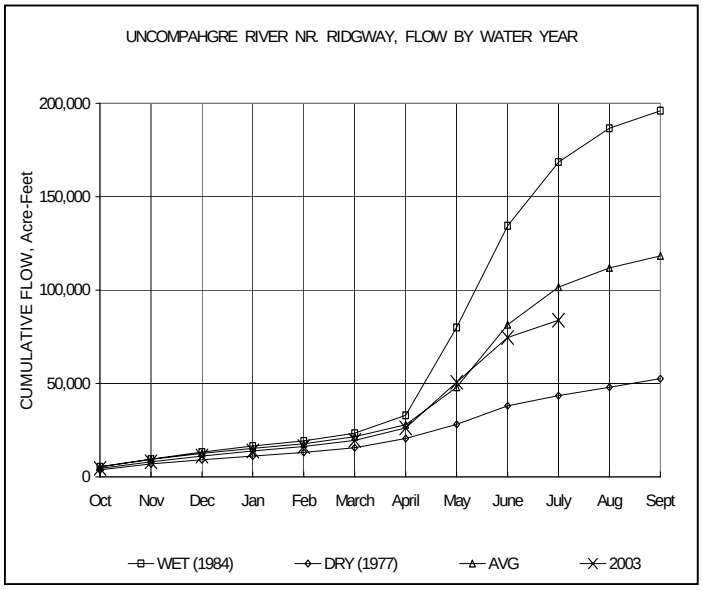
Water users and recreators should expect below average stream flows and reservoir levels through the end of the summer.

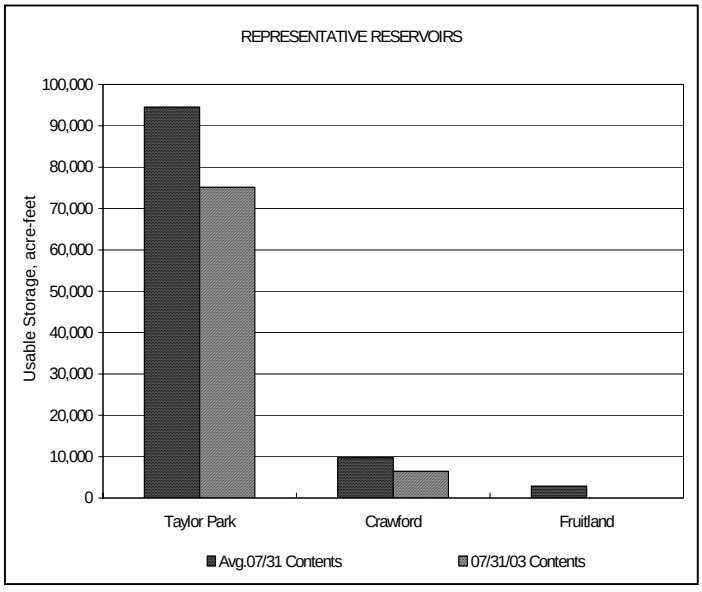


Basinwide Conditions Assessment

The SWSI value of –2.7 indicates that for July the basin water supplies were below normal. Flow at the gaging station Uncompahgre River near Ridgway was 151 cfs, as compared to the long-term average of 327 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 76% of normal as of the end of July.







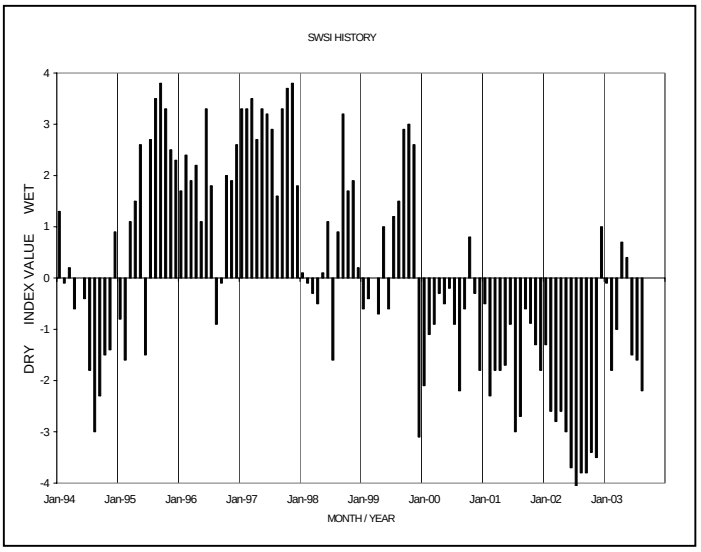
Basinwide Conditions Assessment

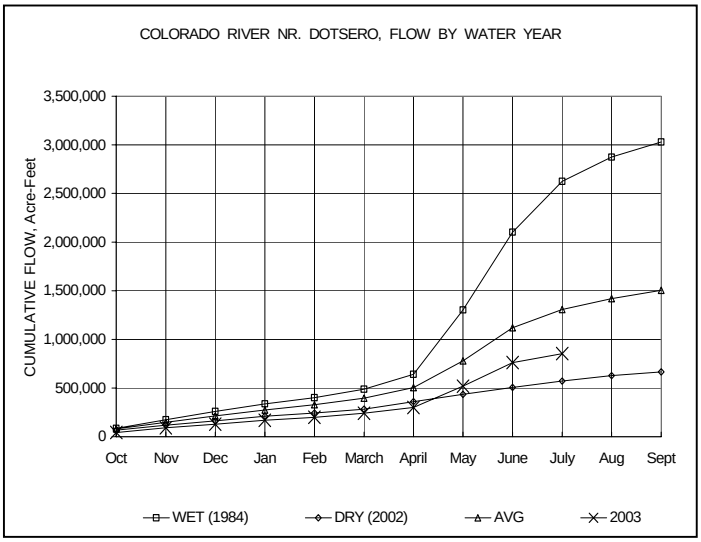
The SWSI value of –2.2 indicates that for July the basin water supplies were below normal. Flow at the gaging station Colorado River near Dotsero was 1,492 cfs, as compared to the long-term average of 3,038 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 102% of normal as of the end of July.

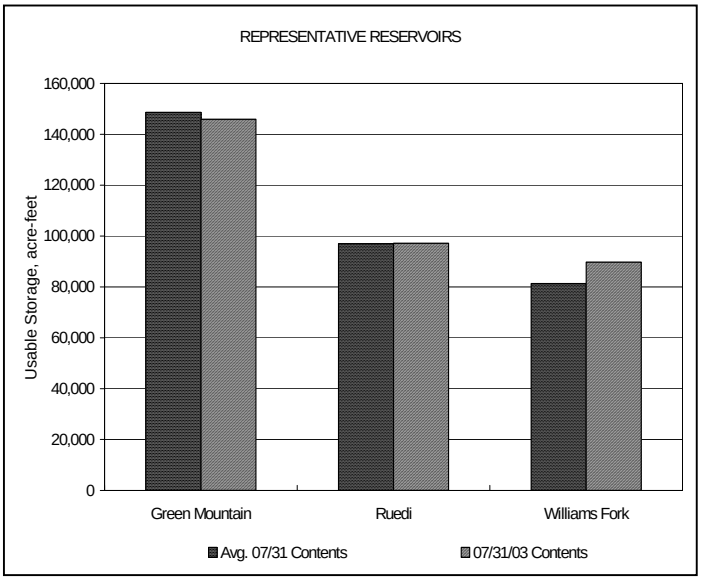
Contrary to most predictions for this water year, Green Mountain Reservoir achieved a physical fill on July 22. This means that, unlike the last three years, 2003 is not a "substitution year" and upstream diverters such as Denver Water (Dillon Reservoir and Roberts Tunnel) and Colorado Springs (Con-Hoosier system) do not have to pay back the system for spring and early summer diversions.

Heading into August, the Shoshone power call on the mainstem has not reached its full senior call but normal streamflow decreases should precipitate this full call by mid-month. The "Cameo" call has been placed on the lower portion of the mainstem.

Above average temperatures and a lack of significant July "monsoon" rains have been hard on hay farmers who do not have the best irrigation supplies. In addition, fire danger has risen to extreme in many parts of the basin and fire-fighting crews have been kept busy throughout the basin. Everyone is keeping their fingers crossed that this fire season will not explode into a tragic season similar to last year's.

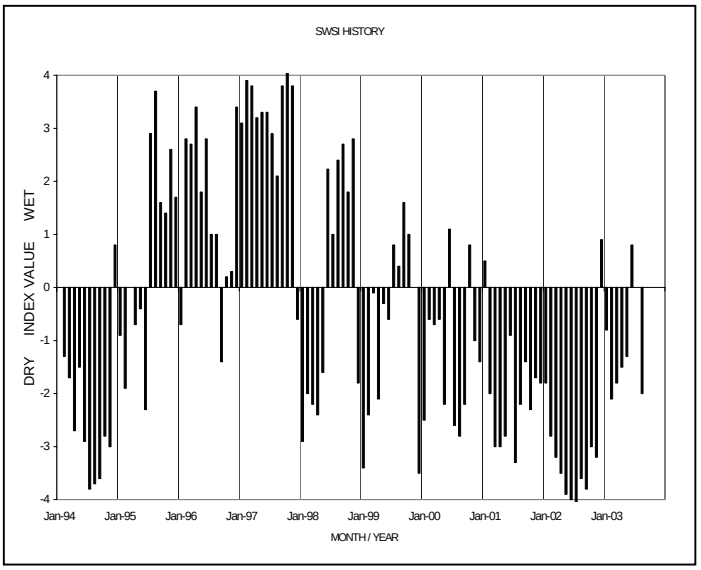


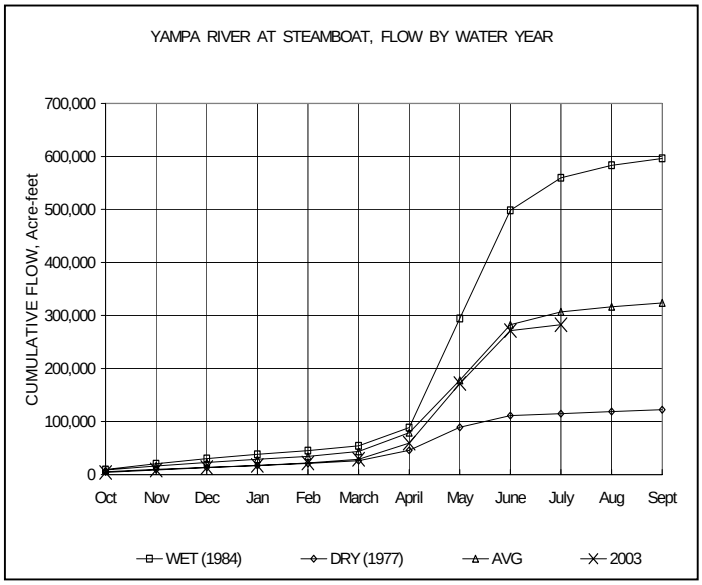




Basinwide Conditions Assessment

The SWSI value of –2.0 indicates that for July the basin water supplies were below normal. Flow at the gaging station Yampa River at Steamboat was 179 cfs, as compared to the long-term average of 395 cfs.





Basinwide Conditions Assessment

The SWSI value of –3.6 indicates that for July the basin water supplies were well below normal. Flow at the gaging station Animas River near Durango was 339 cfs, as compared to the long-term average of 1,143 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 59% of normal as of the end of July.

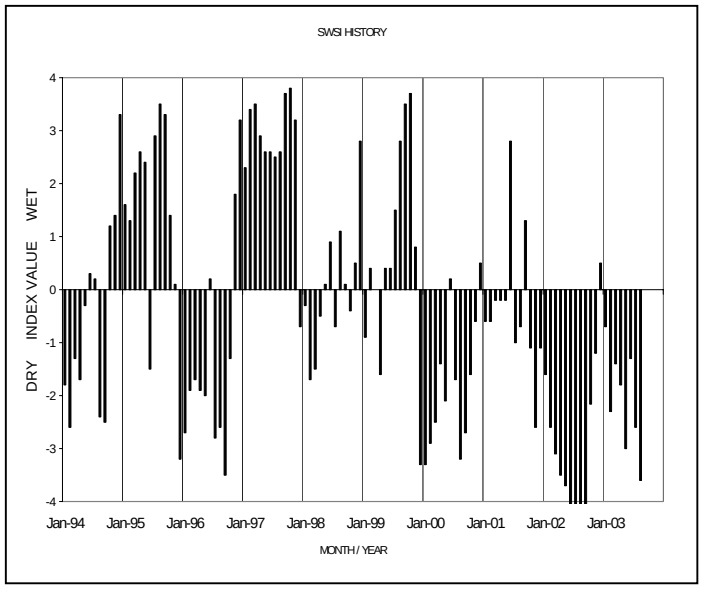
This month was a continuation of the poor water supply conditions from previous months. The general monsoonal conditions came and went with 85% of the normal 1.85 inches of precipitation in Durango.

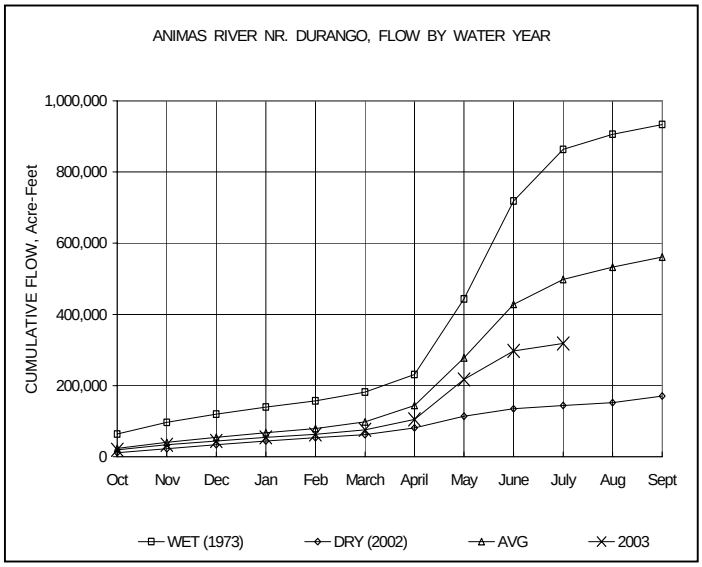
Reservoirs were used up for the most part. Red Mesa was essentially drained by the end of the month. Lemon Reservoir finished the irrigation season and some ditches on the Pine River were slowing down as Vallecito dropped to 40,000 acre feet, 47% of normal. Mcphee and Vallecito carried more water into August than last year. Groundhog Reservoir was drained to a very low stage by the end of the month.

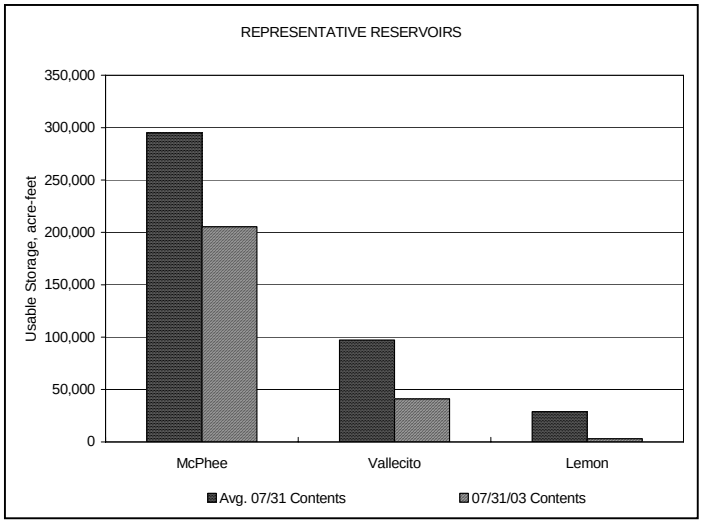
Rivers ran at around 30% of normal flows. The Animas River at Durango started at 558 cfs on the first. It continued to decline to under 300 cfs but regained some from the rainstorms at the end of the month. The La Plata River at state line totally dried up for the first time since 1970 on July 11, 2003.

Temperatures were very warm, about 7 degrees higher than the average for both the high and the low.

Agriculture production was excellent in some areas where irrigation was sufficient. McElmo Creek remained short of water all month and was curtailed significantly. River sports were doing well with the warm temperatures.







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