COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
ROOM 818, 1313 SHERMAN ST., DENVER, CO 80203
303-866-3581; www.water.state.co.us

July 2000

June saw the expected dramatic declines in stream flows after early peaks in May, resulting in many water users calling for their storage rights from reservoirs. These combined declines in water supply translated into lower SWSI values in all river basins, except the South Platte. Absent significant rainfall, reservoir levels are anticipated to continue to decrease and refilling in preparation for next season is unlikely. The water divisions report heavy administration required in response to the below normal water supplies.

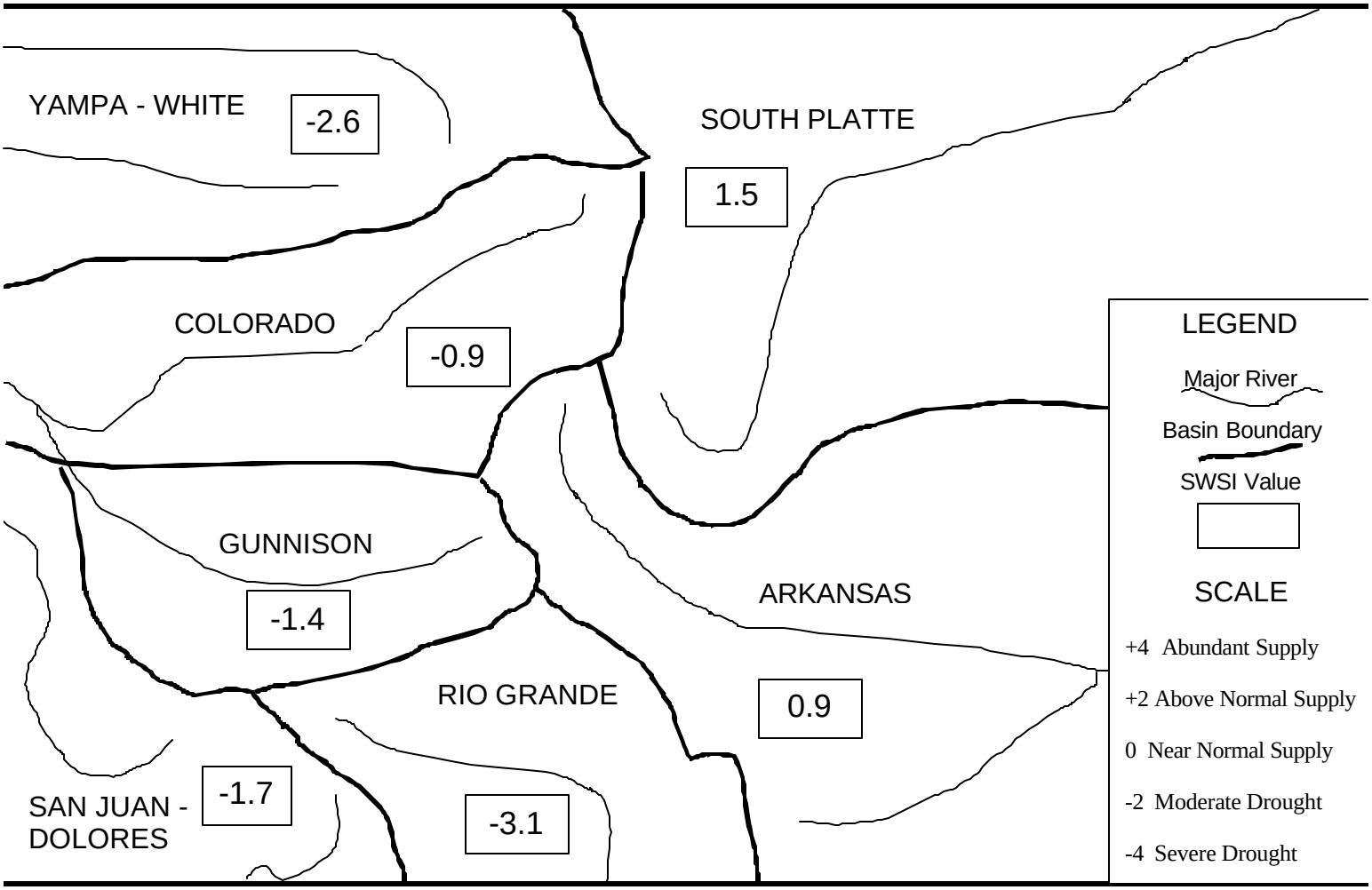
The Surface Water Supply Index (SWSI) developed by this office and the U.S.D.A. Natural Resources Conservation Service is used as an indicator of mountain-based water supply conditions in the major river basins of the state. It is based on stream flow, reservoir storage, and precipitation for the summer 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, 2000, and reflect the conditions during the month of June.

Basin	July 1, 2000 SWSI Value	Change From Previous Month	Change From Previous Year
South Platte	1.5	+0.2	-2.0
Arkansas	0.9	-1.3	-1.6
Rio Grande	-3.1	-1.2	-5.0
Gunnison	-1.4	-2.4	-3.0
Colorado	-0.9	-0.7	-2.1
Yampa/White	-2.6	-3.7	-3.4
San Juan/Dolores	-1.7	-1.9	-3.2

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

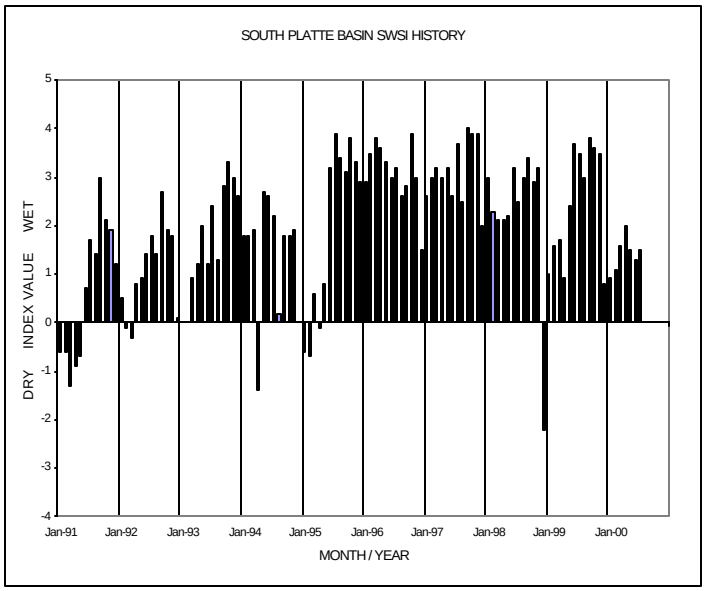


JULY 1, 2000

Basinwide Conditions Assessment

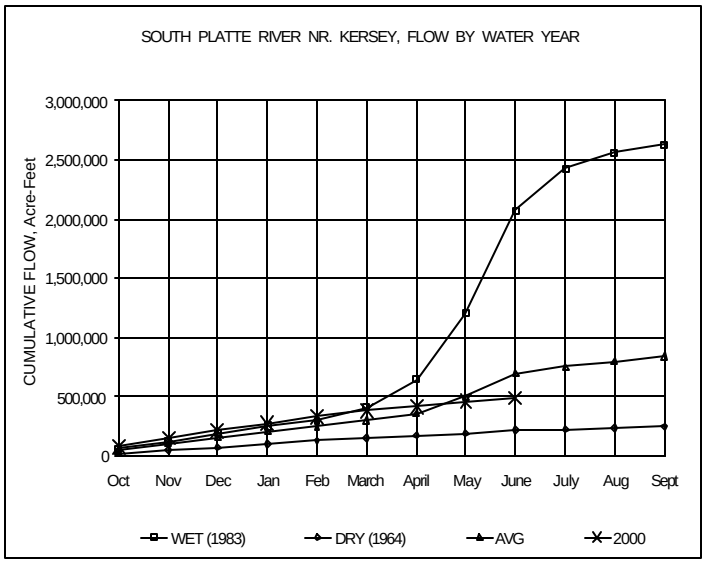
The SWSI value of 1.5 indicates that for June the basin water supplies were near normal. Reservoir storage, the major component in this basin in computing the SWSI value, was 96% of normal as of the end of June. Cumulative storage in the major plains reservoirs: Julesberg, North Sterling, and Prewitt, is at 68% of capacity. Cumulative storage in the major upper-basin reservoirs: Cheesman, Eleven Mile, Spinney, and Antero, is at 96% of capacity. Flow at the gaging station South Platte River at Kersey was 436 cfs, as compared to the long-term average of 2,853 cfs. Flow at the Colorado/Nebraska state line averaged 60 cfs.

Dry warm conditions continued throughout June. As expected, runoff was significantly earlier and less than in average years. These conditions created senior direct flow calls in the entire the basin for all but the first few days of the month when there was sufficient flows to allow some minor storage. This is a major departure from the average year when runoff and rain conditions cause adequate flows to meet all direct demands within the basin for two or three weeks in June.



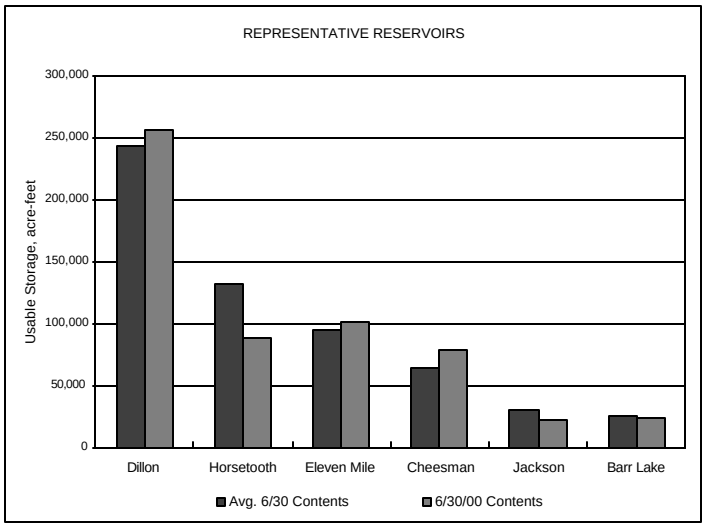
Outlook

Because of the lack of supply, it also became necessary for many users to begin to use their storage supplies to meet needs during much of June. Without adequate rain later in the summer, this could portend shortages for some irrigation users in the basin. It also could affect the ability to refill storage reservoirs next year. Most suppliers of municipal water have a higher safety factor and the dry conditions should not impact their ability to deliver water unless the dry conditions continue for an extended period of time into next year.



Administrative/Management Concerns

Because of the dry warm conditions, the Northern Colorado Water Conservancy District revised their quota for 2000 from 70% to 100% for Colorado Big Thompson Water. This quota is only used in dry years to help in providing adequate supplemental supplies for users. The previous time that the quota was 100% was 1989.



Basinwide Conditions Assessment

The SWSI value of 0.9 indicates that for June the basin water supplies were near normal. Flow at the gaging station Arkansas River near Portland was 1,813 cfs, as compared to the long-term average of 2,362 cfs. Storage in Turquoise, Twin Lakes, Pueblo, and John Martin reservoirs totaled 160% of normal as of the end of June.

Outlook

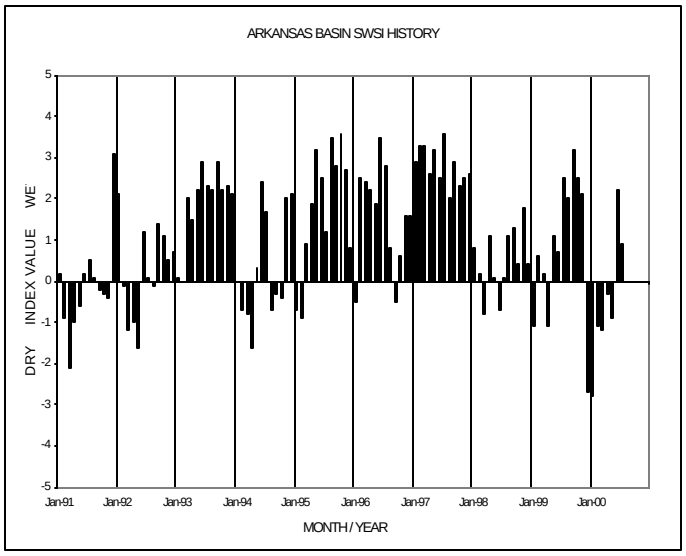
Reservoir storage levels dropped during June. Pueblo, John Martin, and Trinidad reservoirs averaged 75% of conservation pool capacities, down from 90% in the previous month. Reservoir levels are decreasing as dry weather is causing irrigators to release more stored water.

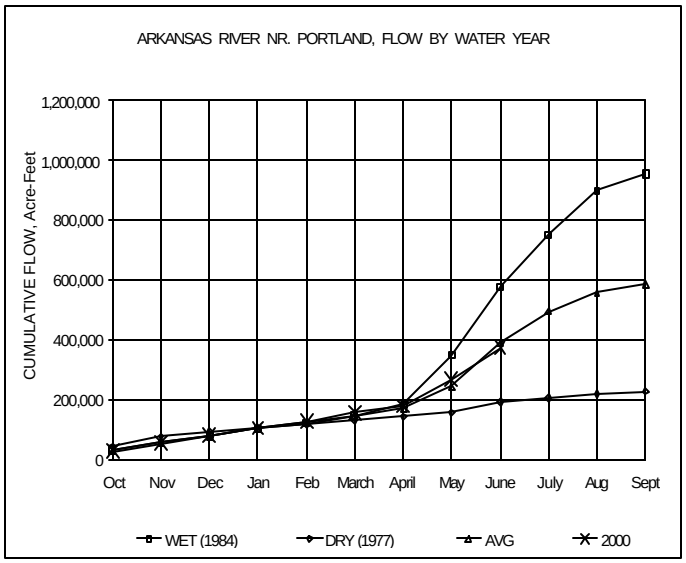
Administrative/Management Concerns

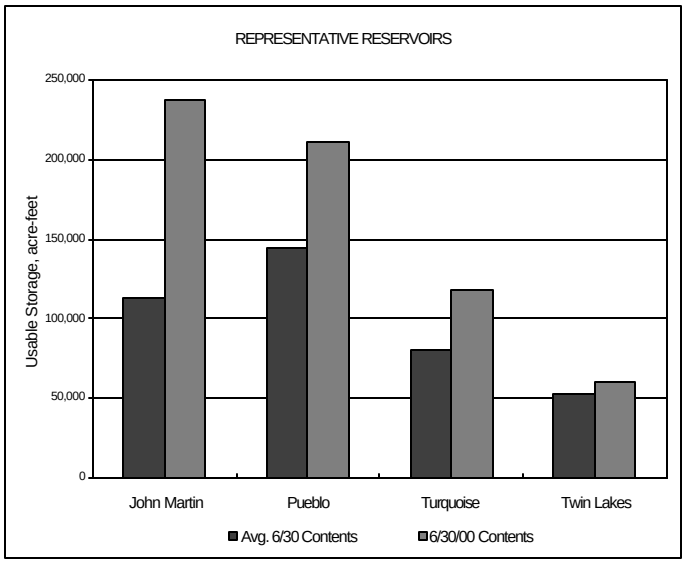
The dry weather trend is the primary factor for a Water District 67 main stem Arkansas River call and Fountain Creek tributary call at times during June.

Public Use Impacts

None.





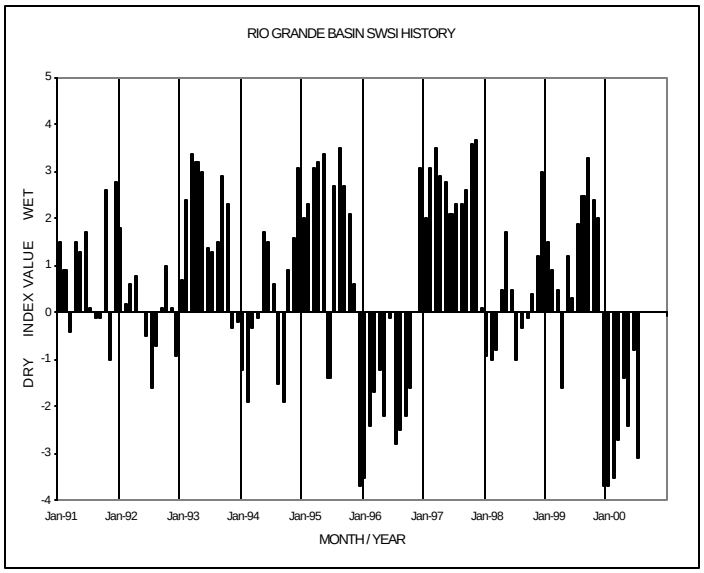


Basinwide Conditions Assessment

The SWSI value of –3.1 indicates that for June the basin water supplies were below normal. Flow at the gaging station Rio Grande near Del Norte was 1,144 cfs, as compared to the long-term average of 3,092 cfs. The Conejos River near Mogote had a mean flow of 387 cfs (30% of normal). Storage in Platoro, Rio Grande, and Santa Maria reservoirs totaled 69% of normal as of the end of June.

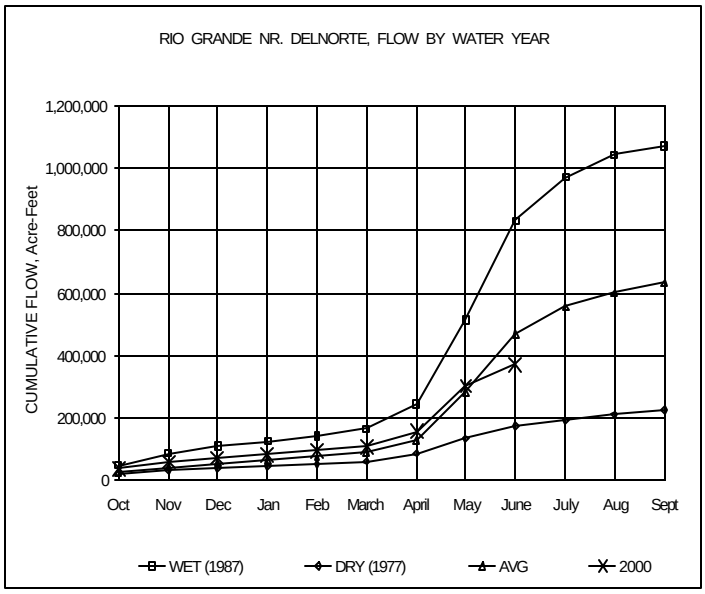
Precipitation in Alamosa was 0.54 inches, 0.13 inches below normal. The average temperature in Alamosa during June was 60.6 degrees, 1.2 degrees above normal. This marked the eighth consecutive month of above normal temperatures in the San Luis Valley.

Breezy, dry conditions persisted throughout the month. Soil moisture conditions in non-irrigated areas are poor and stream flow throughout the basin was well below average.



Outlook

Generous amounts of rainfall will be needed in the near future to neutralize the damage done to crop and rangeland by the drought-like conditions.



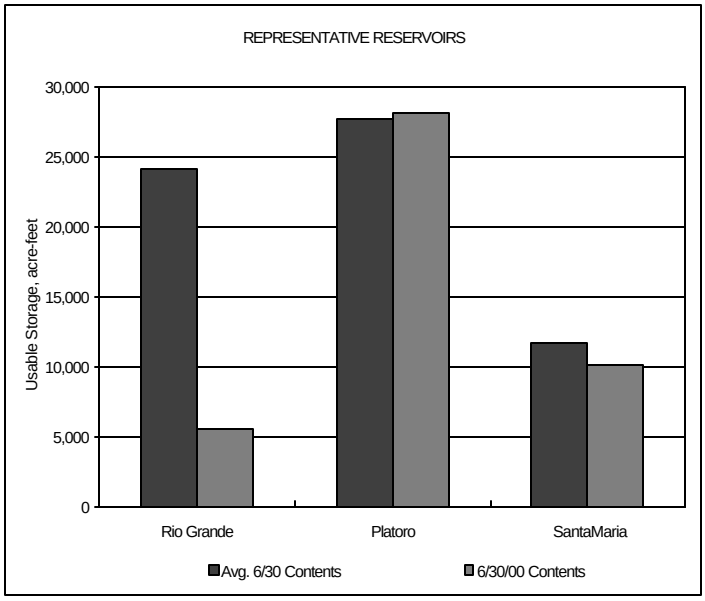
Administrative/Management Concerns

As the natural flow plummeted in area streams, a few ditches relied on reservoir releases to offset the dry conditions. Irrigation well use was extremely high. Officials are concerned that the large amount of water pumped this season could create a cavity in our underground reservoirs that recharge will not quickly replace.

Stream flow in the Rio Grande basin has dropped to levels even lower than the drought of 1996 and most creeks are approaching the record-setting low levels of 1977. Only those ditch rights with very senior rights will have a full diversion season.

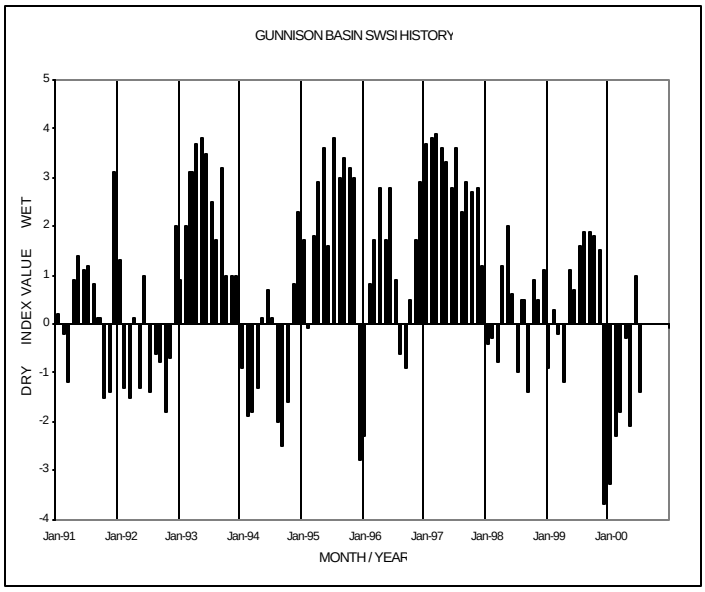
Public Use Impacts

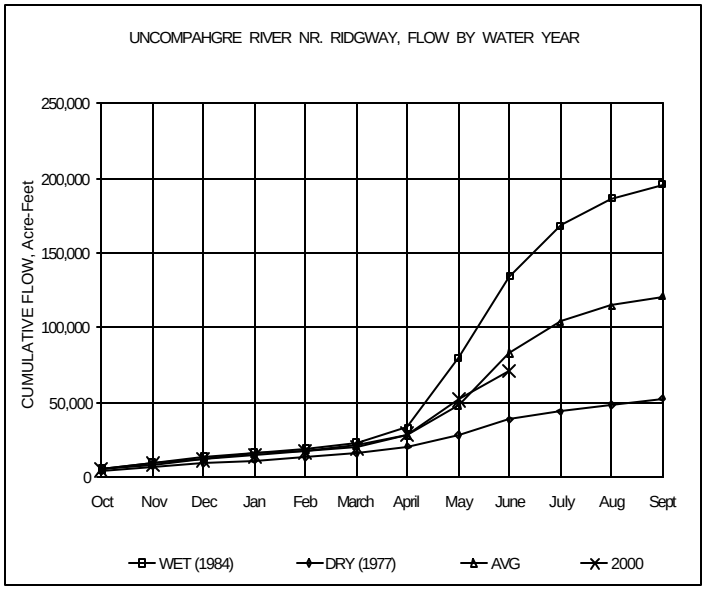
At this rate of decline, significant damage will occur to stream habitat throughout the basin.

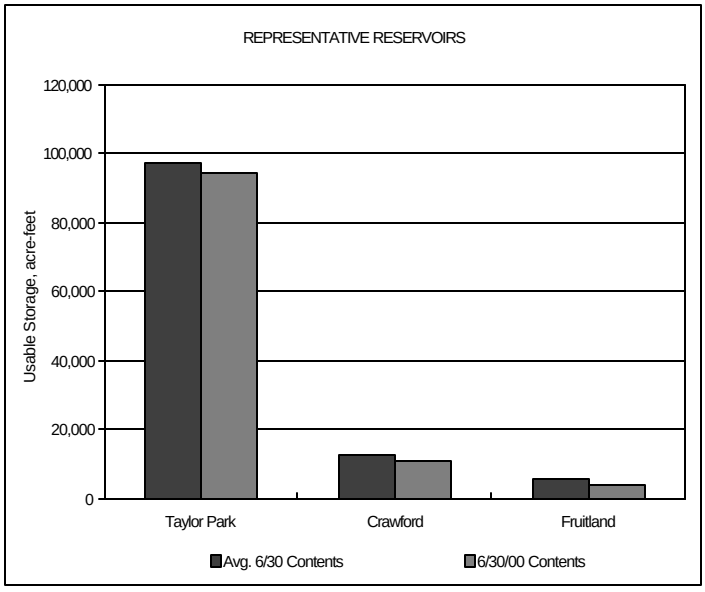


Basinwide Conditions Assessment

The SWSI value of –1.4 indicates that for June the basin water supplies were below normal. Flow at the gaging station Uncompahgre River near Ridgway was 317 cfs, as compared to the long-term average of 570 cfs. Storage in Taylor Park, Crawford, and Fruitland reservoirs totaled 95% of normal as of the end of June.







Basinwide Conditions Assessment

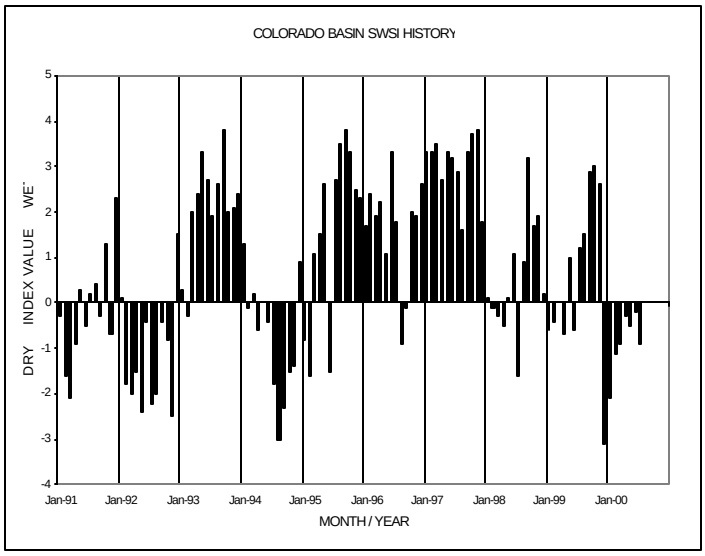
The SWSI value of –0.9 indicates that for June the basin water supplies were near normal. Flow at the gaging station Colorado River near Dotsero was 5,071 cfs, as compared to the long-term average of 5,674 cfs. Storage in Green Mountain, Ruedi, and Williams Fork reservoirs totaled 115% of normal as of the end of June.

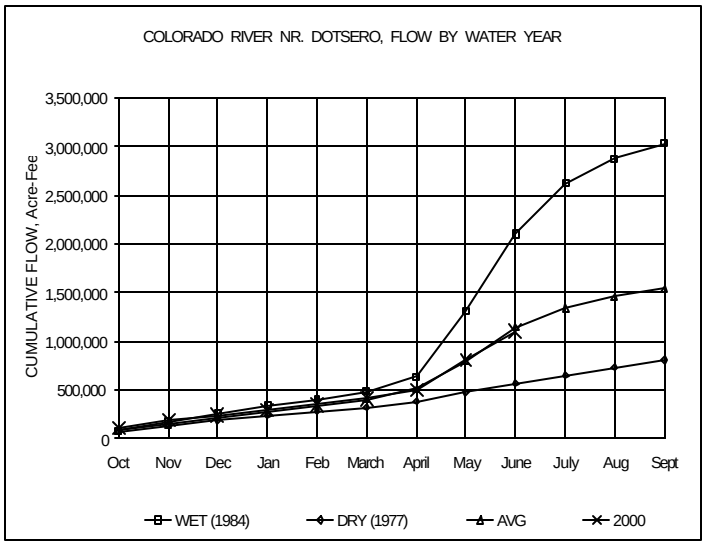
Outlook

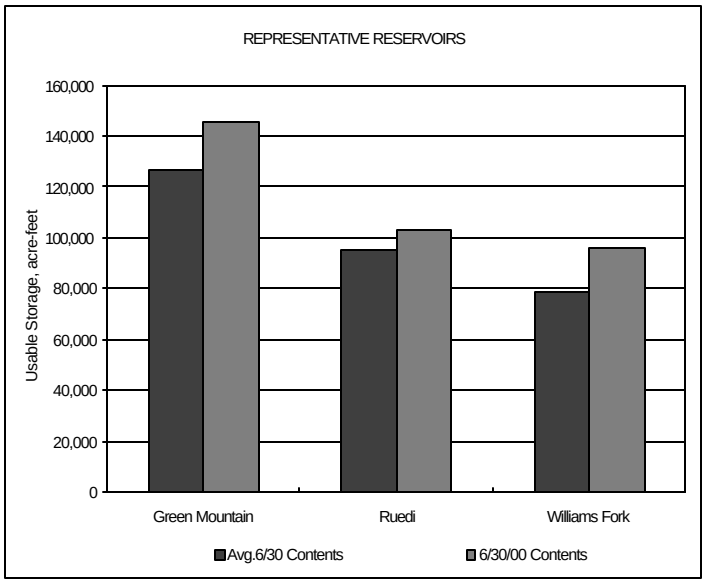
Hot and dry conditions continue throughout the upper Colorado River basin. Most major drainages have been on call for over a month and are under heavy administration.

Administrative/Management Concerns

As of July 1, there was no call on the mainstem of the Colorado River, either from Shoshone nor Grand Valley. A Shoshone call in anticipated by late July.



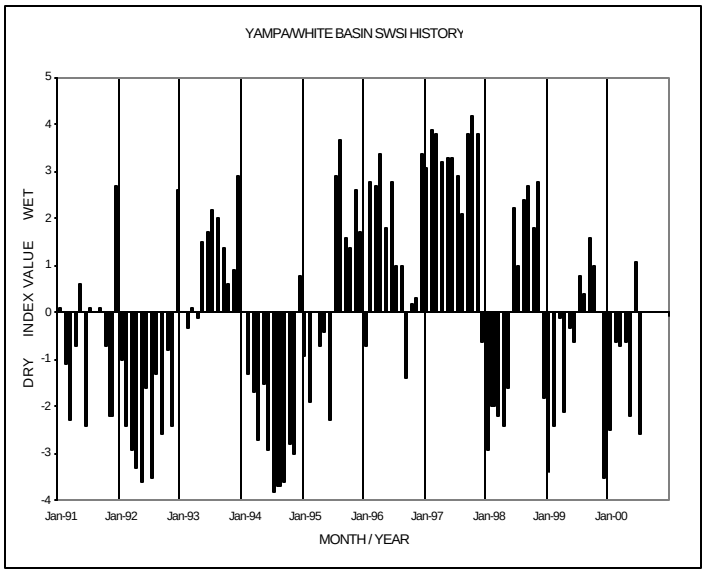




Basinwide Conditions Assessment

The SWSI value of –2.6 indicates that for June the basin water supplies were below normal. Flow at the gaging station Yampa River at Steamboat was 1,219 cfs, as compared to the long-term average of 1,802 cfs.

After peaking at the end of May, streams and rivers in the Division dropped rapidly in June as the last of the high elevation snowpack melted. The trend of above-average temperatures and below-average precipitation continued throughout June. Stream flows are currently running at levels that would normally be seen in early August.

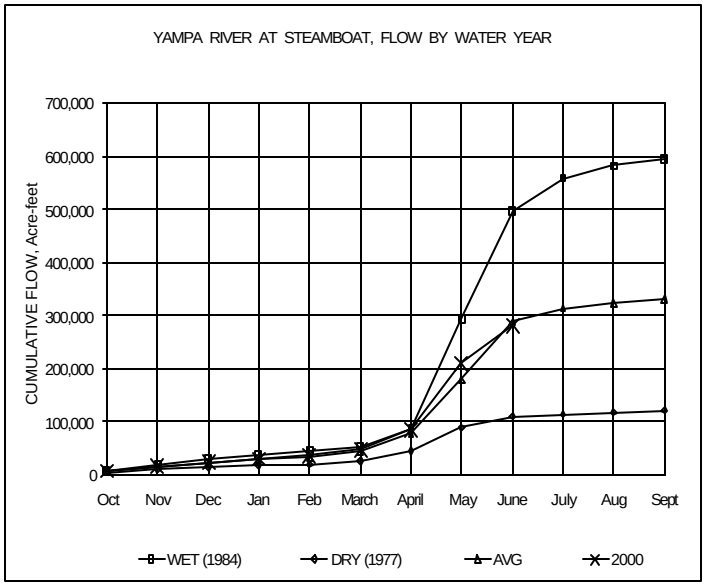


Outlook

The outlook continues to call for above-average temperatures and below-average precipitation. If this forecast holds, stream flows will continue to decrease towards drought type base flows. Irrigation reservoirs are anticipated to release above-average amounts of storage to compensate for reduced native flows.

Administrative/Management Concerns

The low flows have caused many smaller rivers and streams to go under administration. This situation will likely continue throughout the irrigation season. This administration is causing increased demands on available resources.



Public Use Impacts

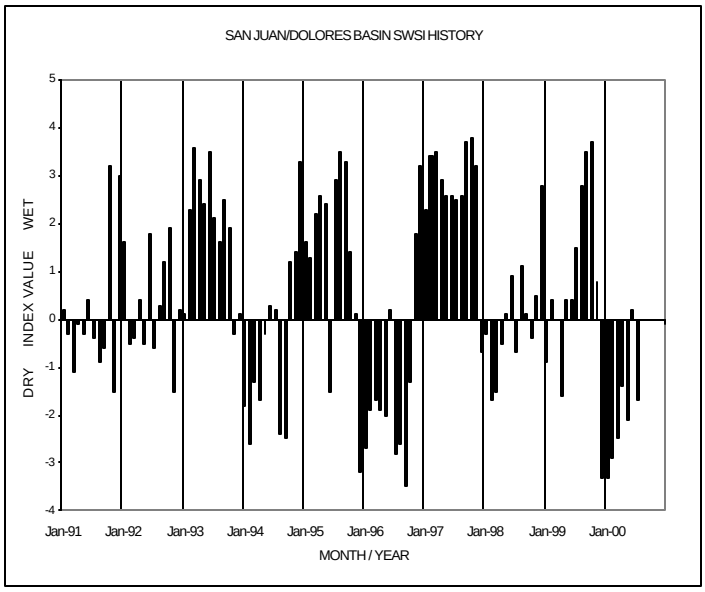
The low level of the rivers and streams has curtailed much of the boating activities on these water bodies; however, lake and reservoirs continue to provide boating opportunities in many places in the Division.

Basinwide Conditions Assessment

The SWSI value of –1.7 indicates that for June the basin water supplies were below normal. Flow at the gaging station Animas River near Durango was 1,155 cfs, as compared to the long-term average of 2,556 cfs. Storage in McPhee, Vallecito, and Lemon reservoirs totaled 101% of normal as of the end of June.

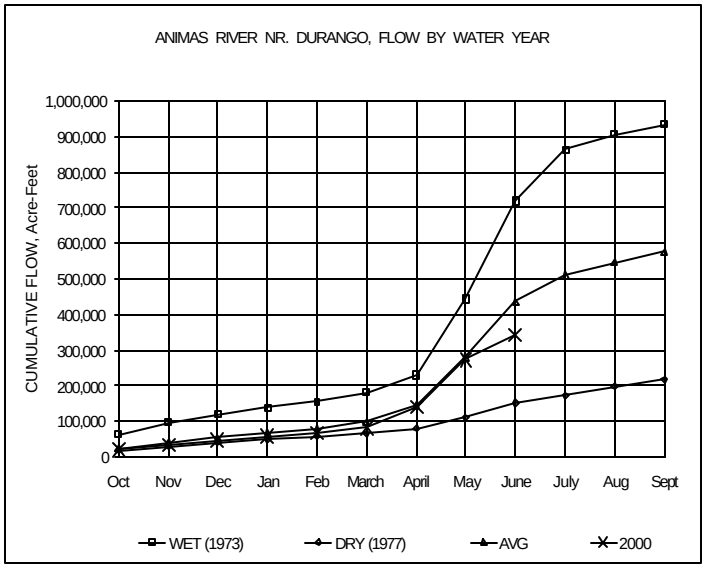
Streamflows fell off early and were typical of July in many areas. Total flow for the month fell to below 50% of normal and the highest flow on most streams was found on the first day of the month.

June weather displayed the continuation of the dry conditions of the previous months. Temperatures were still significantly above normal with the lows in Durango being 7°F higher than the typical 42°F average. The early runoff this year led to increased moisture monsoonal activity developing thunderstorm formations each afternoon. This occurred later in the month as the average precipitation was exceeded for the entire month by 50%.



Outlook

Prospects are not good for better late-season stream flows and reservoirs are anticipated to use most of their capacities during the summer.

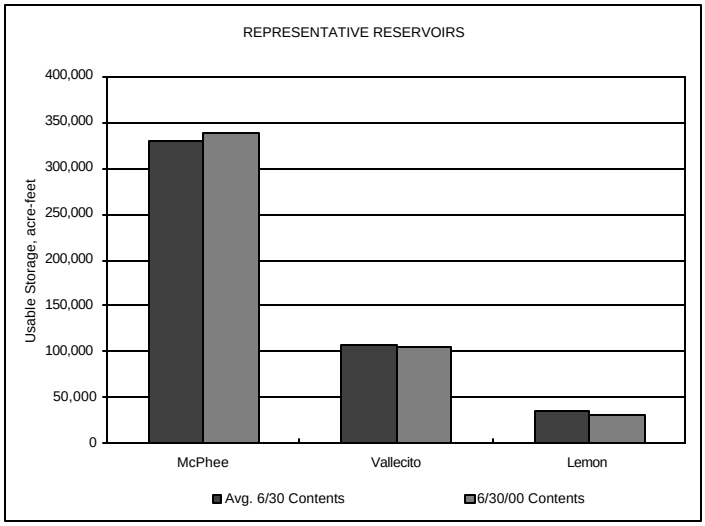


Administrative/Management Concerns

Reservoir storage was being used heavily by the month end. Streams were on call throughout the Division but were especially short in Archuleta/Hinsdale/Mineral County areas.

Public Use Impacts

The hay crops were cut early and some areas produced well. Other crops did well, as there was only a mild freeze late in May and none in June. The precipitation experienced at the end of the month was very welcome because it fell in the lower elevations and benefited many areas. However the soil moisture dried out quickly and water did not carry well to the ditches or along them to the fields. Rafting activities continued throughout the month.



OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 SHERMAN STREET ROOM 818
DENVER CO 80203