

Drought information from Dolores River water users in western Montezuma County  
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The numbers provided here emphasize key points resulting from management of our water resources in times of drought, and the value of storage (both reservoir storage and groundwater storage) in adapting to severe drought years. Success of our life in the arid west has always required an evening out of mother nature's water supply (annual hydrographs) both through her annual cycles and through her longer, multiyear, dry and wet periods.

The numbers will look at Dolores River water availability and use for agriculture in the San Juan Basin in the three lowest years of water supply on record: 1977, 2002 and 2018. I will also share some first cutting alfalfa yield numbers from 2018 that illustrate an important point for future management decision making.

1977 was a pre McPhee year. MVIC shareholders' minimal storage was close to nonexistent that year due to the low flows, so they only had the scarce Dolores River direct flows, coupled with their 100 years of irrigation developed groundwater storage, to provide consumptive use water to their croplands.

2002 followed a fairly dry 2001, and came very shortly after Dolores Project construction had finally reached the full development stage. Water users were fully using the water allocations that had been designed into Project supply. MVIC's senior river rights took the entire river, and the project's carryover McPhee storage was shared among all Project users, which included supplemental water for MVIC as well as the entire supply for other project allocations. However a year like 2002 had not been part of the record that shaped the designed supply. MVIC received a 50% supply in 2002. Agricultural Project water users were left with something close to a 25% supply. That 25% supply was provided during some spring frost periods. Those frosts stole from the potential crop yield significantly.

2018 is a year that followed a really good year of hydrology. McPhee's large carryover storage from 2017 only required a minimal addition of supply for it to have provided full water allocations to all users. A season long projection of at least one good winter storm never did materialize. The worst case scenario, another 2002 year of hydrology, is what we got. However, this year still has a water supply of roughly 70% for agricultural Project allocations, and somewhere between a 73 and 83% supply for MVIC. Water suppliers are expecting to have some water to meet user demands for both systems up to close to September 1.

Storage and management significantly enhanced all three of these exceptionally dry years.

I want to share my farm's first cutting alfalfa yield numbers with some observations. Average yield was 37.5% of my 2017 yield for those same fields. That average came from individual field yields that varied from 20%, with most close to 45%, and one field that produced 80%. The 80% field was 2/3 sprinkler (probably close to those 45% numbers) and 1/3 gated pipe that I estimate to have produced 130 to 140% of 2017 yields. The enhanced yield ties directly to carryover groundwater storage.