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**A Tale of Two Fortunes – Winter/Spring 2018 versus 2019**

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In a *Tale of Two Cities* (1859), Charles Dickens contrasts life for the French Doctor Manette between 18 years imprisoned in Paris and being released and living with his never before met daughter in London. Clearly, this was a stark contrast for the good doctor. Likewise, the contrast between the winter/spring of 2018 versus 2019 for New Mexico farmers, ranchers and natural resource managers has been stark as well. In fact, many of these stakeholders may have felt a bit imprisoned last year given the lack of precipitation. There were limited options for stakeholders, with not much to do other than count the days since the last rain. Fortunately, those days are behind us (for now), and New Mexico agrarians have chalked up the event with the oft repeated, “The winter/spring of 2018 was the driest year on record for the Southwest.” Likewise, and in fascinating contrast, the same observers have a new mantra for the last six months, “This past winter/spring has been one of our best seasons on record.” While technically, there may have been wetter (e.g., 1983) and dryer years (e.g., 2002) in New Mexico, the interesting story is the stark contrast between these two adjacent water years (Figure 1)

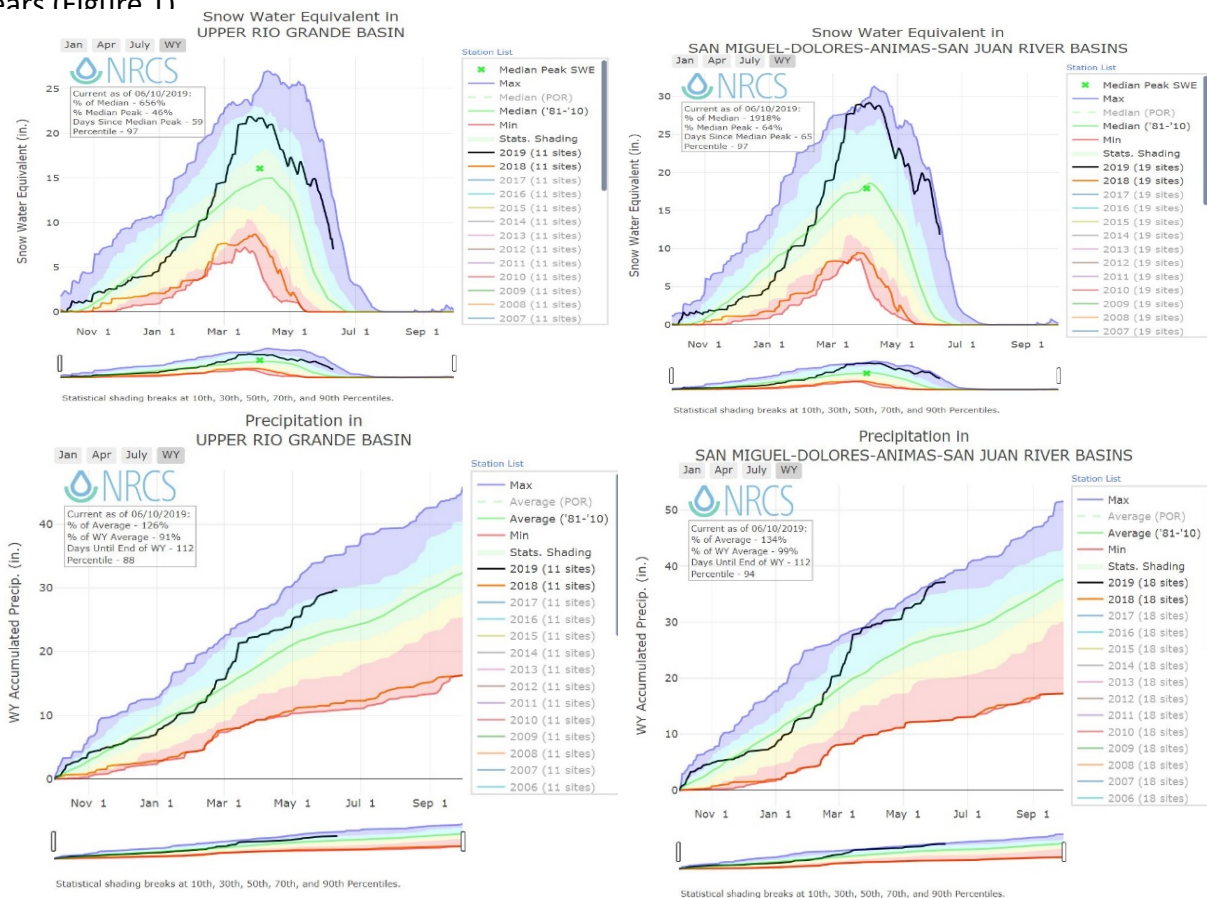


Figure 1. Snow water equivalent (top two graphs) and accumulated precipitation (bottom two graphs) in two different basins that are important to New Mexico in regard to surface water. The black line represents 2019 data while the orange line represents data from 2018. Percentile shading is based on 33 years of SNOTEL data from respective basins. These online and interactive graphs come from the New Mexico Natural Resources Conservation Service [website](#). Using the site’s search feature, type in “NM Snow Survey” to find a link to these graphs.

Another online tool that can be used to contrast the two water years is the [United States Drought Monitor](#) website. The drought monitoring site releases updated drought maps each Thursday throughout the year. See Figure 2 for yet another striking contrast between spring 2018 versus 2019. The drought maps are just that, a look at past drought conditions. It is not a forecast for what is to come...for that, you will need a crystal ball or you can visit the [National Weather Service Climate Prediction Center](#) website.

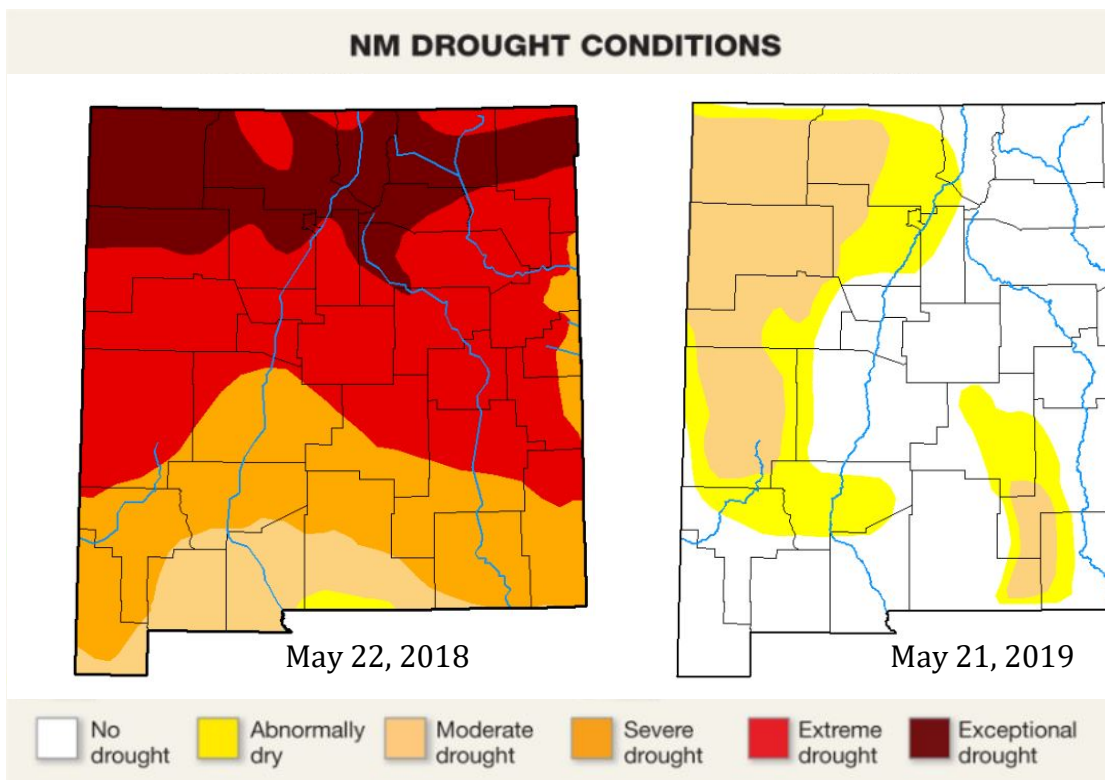


Figure 2. Contrasting New Mexico spring drought conditions between spring 2018 and 2019 as developed by the United States Drought Monitor website.

As a member of the [Range Improvement Task Force](#), an interdisciplinary team of scientists that provide science based solutions to producers and federal land managers to resolve resource management conflicts, we started preparing ourselves in the spring of 2018 for what we believed would be a continuous wave of conflict-mitigation calls from across the state regarding range conditions on federal grazing units given the exceptionally dry conditions. For example, on at least two other occasions over the last 15 years, the Task Force has mitigated livestock removal orders on federal lands during periods of drought. However, in yet another interesting contrast, the Task Force did not receive any calls specific to livestock removal orders on federal lands during the spring or summer of 2018. Although somewhat anecdotal, we attribute the lack of crisis management calls in 2018 to a combination of factors including: 1) decades of institutional knowledge



within the livestock grazing industry that for the most part has embraced light to conservative stocking rates (Holeckek and Galt 2000), 2) recent and reoccurring experience implementing drought management plans, and 3) federal grazing managers committed to finding win-win solutions.

Range management has come a long way since the Dust Bowl and the Taylor Grazing Act of 1934 thanks in part to the contributions of range science and management. For example, the use of minimum grass stubble-height measurements for assessing rangeland condition, especially during drought conditions (Holechek and Galt 2004). As a result, rangelands across New Mexico have shown great resilience to drought conditions (Figure 3).



Figure 3. Contrasting rangelands in Colfax County between spring 2015 and 2019. Notice the dust blowing in the lower left picture.

In summary, despite the fact that “...no season gets the upper hand” (Johnny Cash – *Seasons of my Heart*), we know from experience as well as tree-ring records (Rose et al. 1982) that droughts have been a reoccurring pattern in the Southwest for hundreds of years (Figure 4). So while winter, spring, summer and fall keep playing musical chairs, drought is always on the horizon in the Southwest. Are you prepared for the next

drought? Drought fortunes can be mitigated with drought planning. See New Mexico State University's [Drought Management for Range Livestock Producers](#) website for helpful drought management tools. With continued and adaptive drought planning and cooperation between managers, impacts can be mitigated.

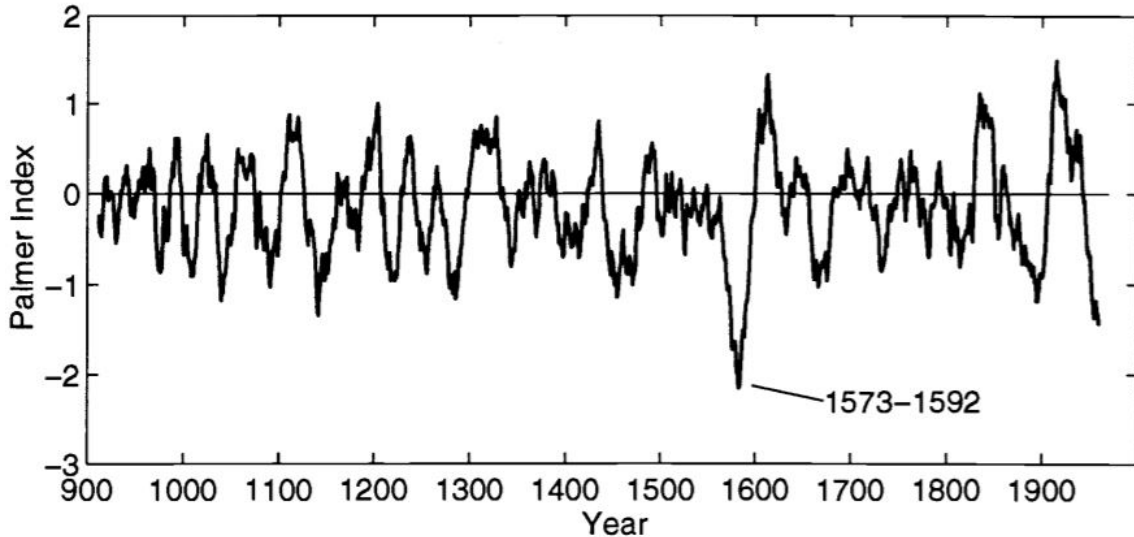


Figure 4. Tree-ring reconstructed July Palmer Drought Severity Index (900–1970) for the Northern Rio Grande Climatic Division, New Mexico (from Rose et al. 1982).

References:

Holechek, J., and D. Galt. 2000. Grazing intensity guidelines. *Rangelands* 22(3):11–14.

Holechek, J., and D. Galt. 2004. More on stubble height guidelines. *Rangelands* 26(4):3–7.

Rose, M., W. Robinson, and J. Dean. 1982. Dendroclimatic reconstruction for the southeastern Colorado Plateau. Final Report to Dolores Archaeological Program, University of Colorado.

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