










## Drought Monitoring Tools for Arizona Rangelands

Description	QR Code Link
<p><b>Standardized Precipitation Index (SPI) Explorer Tool:</b> The Standardized Precipitation Index (SPI) is a widely used drought index that has several strengths including the ability to calculate precipitation anomalies at different timescales and the ability to interpret SPI units (standard deviations) in probabilistic terms. This tool allows users to explore SPI and SPEI values and other historic climate data at specific locations by accessing gridded climate data (PRISM Climate). Data are accessed through the Applied Climate Information Web Service and analyzed and plotted using several R based packages. Updated monthly.  <a href="https://viz.datascience.arizona.edu/SPITool/">https://viz.datascience.arizona.edu/SPITool/</a></p>	
<p><b>Standardized Drought Index (SDI) Visualization Tool:</b> The SDI Viz Tool creates customizable multiscale SPI and SPEI plots that visualize all timescales of drought. The plots can be useful in determining if a location is experiencing a divergence in short and long-term drought conditions. The tool also allows for comparison of SPI versus SPEI drought estimates and also interactive plots to explore the driving monthly data. Plots can be generated for counties, climate divisions, states and special regions and use the NOAA Climate Division Dataset (nClimDiv) available from 1895-present. Updated monthly.  <a href="https://viz.datascience.arizona.edu/SDIViz/">https://viz.datascience.arizona.edu/SDIViz/</a></p>	
<p><b>Precipitation Logbook Generator:</b> The Precipitation Logbook Generator was developed to generate supporting reference climate information to be used with simple accumulation gauges, often deployed in remote locations. These types of gauges are often read infrequently and at irregular intervals making the interpretation of the precipitation observations difficult without support climate context. This tool generates a reference chart and table for a gauge location by leveraging a spatially continuous, gridded, long-term dataset of daily precipitation estimates (PRISM) for all locations in the continental United States. The chart and table indicate 'normal' and extreme wet and dry cumulative precipitation amounts for a specified season based on historical estimates for the gauge location. When an observation is made in the field, the entry for that date can be compared to the typical and extreme historical values to provide context and inform a possible management decision. Updated daily.  <a href="https://viz.datascience.arizona.edu/precipChart/">https://viz.datascience.arizona.edu/precipChart/</a></p>	
<p><b>myRAINgeLog:</b> myRAINgeLog is an online data management and visualization tool specifically designed for ranchers and land managers who collect and interpret cumulative precipitation observations at remote sites. The account-based tool allows users to collect, manage and analyze multiple gauges and share observations through a public mapping feature. Custom reports can be generated for each gauge with accompanying charts of observations against historical climate conditions and summaries of field notes and photos entered by the user. Updated daily.  <a href="https://myraingelog.arizona.edu/">https://myraingelog.arizona.edu/</a></p>	

<p><b>DroughtView:</b> DroughtView is an online tool that provides easy, web-based access to several near-real time and historical remote sensing and climate drought monitoring datasets. The tool can be used to track high-resolution (~250 to 750m) changes in remotely sensed 'greenness' (Normalized Differenced Vegetation Index) data collected on a bi-weekly basis from the NASA MODIS and VIIRS sensor platforms. This index can be particularly useful for tracking changes in rangeland conditions related to livestock forage production and forest drought stress which can indicate longer-term drought impacts and wildfire risk. Updated biweekly.  <a href="https://droughtview.arizona.edu/">https://droughtview.arizona.edu/</a></p>	
<p><b>Monthly Climate Reports:</b> Climate reports for various land management units across Arizona and New Mexico are being produced on a monthly basis. These reports summarize and visualize different climate statistics and drought indices at land management scales. Several National Forests have dedicated email lists where new reports are sent each month. Directions on how to sign up are available at each National Forest page: <a href="https://cales.arizona.edu/climatereports/">https://cales.arizona.edu/climatereports/</a></p>	
<p><b>Station Climate Summary Plot:</b> Typical drought monitoring products or seasonal climate summaries report totals and averages with respect to precipitation, but often fail to capture the subtle shifts in the timing, type, intensity and frequency of precipitation events as well as associated temperature variability that can create drought impacts. These station-level climate summary plots work to present many different variables that can be calculated from daily precipitation and temperature observations to depict sometimes subtle variations climate that can occur across the southwest U.S. Updated daily.  <a href="https://cals.arizona.edu/climate/misc/stations/index.html">https://cals.arizona.edu/climate/misc/stations/index.html</a></p>	
<p><b>Southwest Climate Outlook:</b> The SWCO summarizes climate and weather information from numerous sources on a monthly basis for the Southwest region. Conditions over the past month as well as seasonal outlooks are presented in graphical form with non-technical language. Updated monthly.  <a href="https://www.climas.arizona.edu/swco">https://www.climas.arizona.edu/swco</a></p>	
<p><b>UofA Drought and Grazing Website:</b> Clearinghouse site with tools and guides focused on drought monitoring and planning to support livestock production and rangeland management in the Southwest.  <a href="https://cales.arizona.edu/droughtandgrazing/">https://cales.arizona.edu/droughtandgrazing/</a></p>	

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<http://cales.arizona.edu/climate>