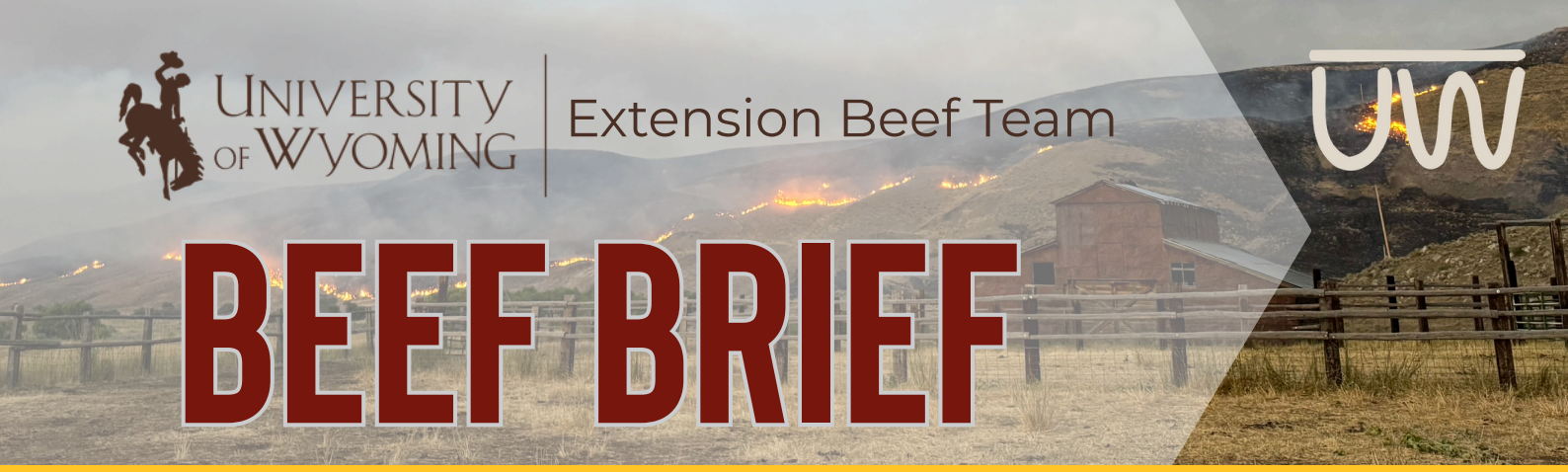


University of Wyoming | Extension Beef Team

BEEF BRIEF

Livestock Grazing After Wildfires

Should Burned Rangelands be Rested from Grazing?

Fires on rangelands, whether wild or prescribed, often raise livestock grazing management questions, along with no shortage of answers to those questions. Among those answers is frequently a call for multiple years (or longer) of rest from grazing. Each post-fire recovery area is a little different, but the following summarizes what several recent studies have concluded about post-fire recovery as it relates to livestock grazing. This discussion focuses mainly on areas found in, or are similar to, rangelands in Wyoming which commonly consist of sagebrush steppe, shortgrass prairie, and mixed-grass prairie. The sagebrush steppe is dominated by sagebrush but also has abundant grasses, forbs, and other shrubs. It extends across much of the western United States and into parts of Canada, and most of Wyoming's rangelands are considered sagebrush steppe. Portions of central and eastern Wyoming mark the western edge of the shortgrass and mixed-grass prairies and the transition into sagebrush steppe.

Research from Wyoming Sagebrush Steppe

The study Postfire Succession in Big Sagebrush Steppe with Livestock Grazing by Bates et al., published in Rangeland Ecology & Management, is a great resource on the possible impacts of livestock grazing after a fire in the sagebrush steppe ecosystem. In this study, the authors applied several different treatments after a fire, including spring and summer grazing during varying numbers of years post fire, burned areas with no grazing, and unburned areas with no grazing. There are many interesting details in the study that are too lengthy to describe here, and readers are encouraged to review the original publication. One conclusion from the management implications section stands out: "Properly applied livestock grazing after one growth cycle following fire will not slow or reduce the recovery of herbaceous plant communities in Wyoming big sagebrush steppe." Another way of describing one growth cycle would be one spring growing season. This varies depending on factors such as elevation, but late March through mid-June would generally be considered the primary growth cycle for all but the highest elevations.

This is when cool season grasses (which are the vast majority of the grasses in Wyoming) are growing. The study also demonstrated that "requiring grazing rest the first 2 years after fire to encourage herbaceous recovery, as applied in the Spring 2 treatment, may not be necessary in all situations."

Research from Mixed-Grass Prairie

In another study, Reconsidering Rest Following Fire: Northern Mixed-Grass Prairie Is Resilient to Grazing Following Spring Wildfire by Gates et al., published in Agriculture, Ecosystems & Environment, the authors erected grazing exclosures following a fire to simulate no grazing while livestock grazed outside the exclosures. They took a variety of measurements both inside and outside the exclosures. Again, there are many details worth reading, but here is a line from their conclusions: "The results of this study indicate that moderate post-fire grazing rendered few impacts on northern mixed-grass prairie vegetation and was positive with regard to diversity. Although post-fire rest from grazing may be desirable in some situations, the results of this study and growing evidence from other research indicate that rest is not required to maintain plant productivity or ground cover."



Common Findings Across Studies

Several other studies from ecosystems similar to those found in Wyoming present a common theme, that light to moderate livestock grazing has little to no impact on recovery when compared to no grazing after fire.

Using Research to Guide Grazing Decisions

The results and conclusions presented in these studies don't exactly represent what will happen after every fire in Wyoming. However, these studies, along with others, do offer valuable insights based on peer-reviewed research into the realities of post-fire grazing management. There are too many variables to assume that every fire will recover exactly as the areas where these research projects were conducted, and the authors themselves provide that same caution. Still, there are lessons to be learned from these studies that can have important implications for rangeland management.



Red Canyon Fire 2025, Hot Springs Co. Wyoming

Putting the Research to Use

Livestock producers, natural resource professionals, and others interested in rangelands are encouraged to become more familiar with post-fire livestock grazing research before adopting blanket management practices. An easy way to search for these and similar journal articles is to use an internet search engine such as Google Scholar with the search terms "livestock grazing post wildfire recovery." When searching for articles, pay attention to the geographical areas and ecosystems that interest you, and look for peer-reviewed journal articles about research conducted in similar environments. Knowledge of the key plant species in an area will also help determine whether a study location is comparable to the area of interest.



The Image above shows the Red Canyon Fire approximately 9 months post fire (Spring 2026).

Drought Changes the Equation

Wyoming and much of the western United States is currently in a drought as of June 2026. Drought has major impacts on grass growth, whether an area is recovering from fire or not. For Wyoming rangelands, spring rains and snowfall have the greatest influence on how much forage is produced.

This brief was created by UWyo Extension Beef Team, 2026-2

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Sources:

Bates, J.D., E.C. Rhodes, K. W. Davies, & R. Sharp. 2009. Postfire succession in big sagebrush steppe with livestock grazing. Rangeland Ecology & Management, 62 (1), 98-110.

Gates, E.A., et al. Reconsidering rest following fire: Northern mixed grass prairie is resilient to grazing following spring wildfire. 2017. Agriculture, ecosystems & environment, 237:258-264.