

Fire—Fear Not! A Tool to Enhance Our Rangelands

Matea Gordon

South Dakota

2020

Huge orange flames and billowing black smoke – it’s a fire on the land! When we hear these words and picture such a scene, most of us probably feel fear. Fear for our families and our homes, and for our livestock and our land. We’ve all seen the scary images of wildfires burning out of control in California, Kansas, and Oklahoma (Carpenter, 2017). No one wants to experience that. But, do these events mean all fire is bad for the land?

Let’s address that question by taking a closer look at “prescribed fires” as a land management tool. We will look at

- the definition of prescribed fire,
- the benefits of this management tool,
- how prescribed fire is being used in my home state of South Dakota, and
- results from a survey I conducted showing people’s perceptions toward prescribed fire.

Let’s begin with the definition of prescribed fire. A prescribed fire is a planned fire. It is also sometimes called a “controlled burn” or “prescribed burn,” and its purpose is to help meet specific land management objectives. Because the fire is planned, consideration is given to the safety of the public and the individuals working the fire, the weather conditions on the day of the fire, and the ability to accomplish the burn objectives. If conditions are not considered safe, the fire will not be set or prescribed (Wildland Fire, 2017).

So, what are some of the benefits of prescribed fire as a management tool? Most commonly, we hear about prescribed burns being used in forested areas, where low-intensity fires can help reduce dead material and fuel loads in the understory of the forest. This means if a lightning strike occurred and started a fire, there would be less fuel there for it to grow into a larger, more extreme fire (Wildland Fire, 2017).

Additionally, prescribed burns are beneficial to encourage plant species diversity. Fire can help burn out overgrowth in the forest understory and allow new plants to get established. In fact, some seeds of certain species of pine and shrubs actually need fire to help them germinate and grow. This renewal process of burning out the old growth can also improve wildlife habitat for many different types of birds and mammals that prefer the new vegetative growth and open areas (Wildland Fire, 2017).

What about rangelands? Can fire be beneficial on the prairie? The answer is yes! Similar to forest ecosystems, prescribed fire can help restore prairie grasses when the dead material becomes too dense and ungrazeable. This is a common practice in the tall grass prairie in the Flint Hills of Kansas and across Oklahoma and Nebraska (Carpenter, 2017). A prescribed fire in the early spring can help remove that material and promote new growth of grasses that are desirable to livestock and wildlife habitat. And, recent research by Agricultural Research Service ecologists in Montana has shown that fire is better than mowing for restoring soil health and producing grass with more nitrogen and phosphorus nutrients for cattle (O'Brien, 2020).

Another reason that fire is beneficial is to help prevent invasive species, like the Eastern Red Cedar tree or sagebrush, from spreading into grassland areas and taking away valuable grazing lands. Prescribed fire has been used for invasive species control in western states and in Texas, Oklahoma, Kansas and Nebraska. One statistic I read said research on the Konza Prairie in the Kansas Flint Hills identified that if fire was excluded from the land, that tallgrass prairie would transform into a cedar forest in as little as 30 years (Symstad and Leis, 2017). That would be devastating because it would remove thousands of acres of valuable livestock grazing and wildlife habitat.

By now, I hope you are recognizing not all fire on the land is bad. And, in my home state of South Dakota, prescribed fires are being used for some of these beneficial purposes. In the Black Hills, you may see smoke coming off the mountain on a winter day. Dead trees and branches have been stacked into slash piles and are burned during the winter months to reduce the fuel loads (Black Hills, n.d.). In the south central part of South Dakota along the Missouri River, prescribed fire is starting to be used on the grasslands to prevent cedar trees from overtaking the important grazing land. In the last few years, an organization called the Mid-Missouri River Prescribed Burn Association was established to work with landowners to successfully use prescribed burning (Peetz, 2017).

So there are two sides to the fire story: the scary wildfires and the prescribed burns to manage the land. But how does the public feel about having a fire purposely set to manage the land? That was the question I asked for my FFA agriscience fair project last winter. I was interested in this topic because of my involvement in South Dakota Rangeland Days, where I became familiar with the burning being done by the Mid-Missouri Prescribed Burn Association to control cedar trees on rangelands.

I conducted an online survey and had 110 people respond (Gordon, 2019). The majority were from South Dakota. 69% were male and 31% were female. They represented a cross-section of ages from age 19 to over age 70. Among the people responding to my survey:

- 86% expressed concern over cedar tree encroachment into the grasslands along the Missouri River.
- When asked if prescribed burning would be used in their county or neighboring county, 91% said they were supportive of the use of prescribed burning, and 97%

indicated they were supportive of using prescribed fire on public lands such as national forests.

- Of the landowners responding to the survey, 47 individuals said they would be willing to try this practice on their land.
- Those respondents who were opposed to prescribed burning said safety was the primary reason they were opposed to it.

From the survey responses, I believe most South Dakotans – both rural and urban – do understand that prescribed burns can be a beneficial land management tool. And those of us involved with range management must continue to share prescribed burning success stories to help others recognize the benefits as well.

In summary, today, I've talked about prescribed fire being a planned fire, with the safety of people and the surrounding area being considered; the benefits of fire as a management tool to reduce forest fuel loads, enhance wildlife habitat, restore grazing land productivity, and reduce invasive species; and the results of a survey I conducted showing that over 90% of the 110 people responding were supportive toward prescribed fire on private and public lands.

I admit fire can be a scary thing. But not all fire on the land is dangerous and bad. Prescribed fire is important to keep our forests and rangelands productive for future generations.

## References

- Carpenter, T. (2017, April 30). An annual fixture, prairie burning still sets disputes alight. The Topeka Capital-Journal e-Edition. Retrieved March 16, 2019 from <http://digital.olivesoftware.com/Olive/ODN/TopekaCapitalJournal/shared/ShowArticle.aspx?doc=TCJ%2F2017%2F04%2F30&entity=Ar02004&sk=242B026C>
- Black Hills National Forest Prepping for Fall Prescribed Burning (n.d.). Black Hills National Forest website. Retrieved September 30, 2019, from <https://www.fs.usda.gov/detail/blackhills/news-events?cid=FSERD595742>
- Gordon, M. (2019, April) A Burning Question: Do South Dakotans Support Prescribed Burning to Control Eastern Redcedar on Grasslands? Not published
- O'Brien, D. (2020, Jan. 22) ARS Ecologists Address a Burning Question. USDA Agricultural Research Service website. Retrieved January 24, 2020 from <https://www.ars.usda.gov/news-events/news/research-news/2020/ars-ecologists-address-a-burning-question/>
- Peetz, C. (2017, March 1). Prescribed burn association looking to curb area cedar nuisance. The Daily Republic. Retrieved September 30, 2019 from <https://www.mitchellrepublic.com/news/4227327-prescribed-burn-association-looking-curb-area-cedar-nuisance>
- Symstad, A.J. and Leis, S.A. (2017, Jan. 1). Woody encroachment in Northern Great Plains Grasslands: Perceptions, actions and needs. *Natural Areas Journal*, Vol. 37, pages 118-127. Retrieved March 16, 2019 from <https://bioone.org/journals/natural-areas-journal/volume-37/issue-1/043.037.0114/Woody-Encroachment-in-Northern-Great-Plains-Grasslands--Perceptions-Actions/10.3375/043.037.0114.full>
- Wildland Fire: What Is a Prescribed Fire (2017, Feb. 13). National Park Service website. Retrieved September 30, 2019 from <https://www.nps.gov/articles/what-is-a-prescribed-fire.htm>