

Wildfires Affect Forage Production

The lack of rainfall across much of North Dakota has created ample fuel for wildfires this year.

Dry, brittle vegetation has gone up in smoke on hundreds of acres of range and pastureland in the western half of the state this spring.

Land managers must plan their grazing or haying year differently as a result of these fires, according to Kevin Sedivec, North Dakota State University Extension Service rangeland specialist.

Historically, land managers have taken different approaches to managing fire-impacted range and pastureland. Public lands once were rested for two years following a wildfire, whereas insurance agents and many ranchers believe once the rains come, the grass will regrow and forage production will be normal.

"The truth lies within these two philosophies," Sedivec says.

The NDSU Animal and Range Sciences Department and U.S. Department of Agriculture Forest Service conducted a trial in western North Dakota from 2002 to 2005 to test the impacts of a dormant-season fire on forage production and plant species composition. The researchers also were interested in the grazing management practice (rotational grazing, seasonlong grazing and no grazing) the year before a fire and if the burning impact differed by type of grazing.

The researchers found that fire negatively impacted forage production, regardless of grazing history. On average, dormant-season fire reduced forage production by 40 percent during the first growing season after a fire. Forage production was affected negatively even during the second growing season following a fire. Production reductions ranged from 10 percent on the rotational grazing system and nongrazed areas to 30 percent on the seasonlong grazing pastures.

"One interesting note: These negative impacts on forage production occurred in a year when spring rainfall was normal to above normal," Sedivec says.

The NDSU Animal and Range Sciences Department and North Dakota Army National Guard conducted a trial from 1999 to 2001 in east-central North Dakota to test the impacts of spring fires on forage production of grasses and leafy spurge. As in western North Dakota, spring fires negatively impacted grass production. It was reduced by 17 percent, compared with unburned sites; however, leafy spurge production increased by 27 percent.

Researchers also learned that grass production in eastern North Dakota was impacted only the first growing season following a fire, while leafy spurge production remained greater on the burned sites for two growing seasons.

In both studies, plant species composition was not affected by a one-time fire event.

Annual weeds usually don't need to be controlled because range and pasturelands will recover to preburn conditions. However, if weather conditions continue to remain dry, annual and noxious weeds may become a problem. If they do, state law requires land managers to control them with the appropriate weed management strategies, Sedivec says.

Ranchers and land managers can continue to graze or hay their range and pasture following a wildfire, but they need to take precautions and reduce stocking rates, sometimes substantially, depending on moisture conditions and location in the state, Sedivec says. Here are some of his suggestions:

- * Delay the livestock turn-out date two to four weeks. Grazing should begin no earlier than late May for crested wheatgrass or smooth brome grass and mid-June for native rangeland following an early spring burn.

- * Reduce stocking rates by 30 percent to 50 percent in the western Dakotas, 20 percent to 30 percent in the central part of the states and 10 percent to 20 percent in eastern areas. These stocking rate reductions will be greater if dry conditions persist into May and June. Range and pastureland in the Dakotas, Minnesota and eastern Montana grow the majority of forage in May, June and July. If rain doesn't fall during this period, plan for substantially less forage.

- * Use plant phenology, or stage of plant development, in determining forage-quality goals for hay production. Forage production increases with maturation, peaking at the seed set stage; however, forage quality declines. If fire impacted your hay land, maturation will be delayed slightly, forage production will be reduced and forage quality will be improved.

“Determine your forage-quality goal and harvest accordingly to optimize production and quality,” Sedivec says.

To learn more about forage production on land affected by wildfires, visit the NDSU Extension Service's drought information Web site at www.ag.ndsu.edu/disaster/drought.html or contact Sedivec at (701) 231-7647 or kevin.sedivec@ndsu.edu.

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