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Helping drought-stressed rangeland recover from fire

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The wildfires that threatened ranches and communities in northwest Nebraska in late July and early August have been extinguished. But the scorched pasture land left behind will feel the fire's effects for years, and landowners should adjust accordingly when making management decisions about pastures that were burned, University of Nebraska Lincoln experts say.

UNL Extension Educator Scott Cotton of Dawes County said three fires in Dawes County burned 27,954 acres, including 11,016 acres of privately owned land. Three fires in Sioux County burned 40,211 acres, almost all privately owned. The fires were contained in early August after burning for about a week. In all, about 75 landowners, including 50 ranchers, were affected by the fires, according to Chuck Butterfield, a grazing lands specialist at Chadron State College.

UNL and other agencies and organizations are working to mobilize resources to help the area recover from the wildfire. A "post-wildfire" symposium was conducted September 9 at Chadron State College. The symposium was a joint effort by UNL, Chadron State College, NRCS, FSA, Forest Service, Upper Niobrara-White NRD, and weed districts.

Landowners have many resources available to provide assistance with fire recovery, according to Cotton and Butterfield. These include Extension; CSC; USDA Natural Resources Conservation Service and Farm Service Agency; the Upper Niobrara-White NRD; U.S. forest Service; and Nebraska Game and Parks Commission. There have also been some private funds set up to help with costs, feed and fencing.

The USDA Natural Resources Conservation Service has funding available to assist agricultural producers whose lands were impacted by wildfires in Nebraska. The sign-up for this special initiative runs through September 29th. Actual payments will come from fiscal year 2007 appropriations, which will be decided by Congress this fall.

Landowners who sustained damage from a documented 2006 wildfire may be eligible for a one-time \$11 per acre incentive payment. This incentive payment is intended to partially reimburse landowners for the recovery of natural vegetation with a grazing plan for deferment. To participate, landowners must agree not to graze these lands again until November 1, 2007. The minimum contract acreage is 40 acres with a maximum of 3,000 acres. Landowners of private agricultural lands should visit the local NRCS office to get more information.

The primary recovery goal for ranchers with fire-damaged pastures should be the recovery of grasses and restoration of plant cover to pre-fire conditions, according to Dr. Pat Reece, UNL Extension Rangeland Ecologist at the Panhandle Research and Extension Center. Reece notes that this could take several years, especially with the current prolonged drought. Changes in management may be required, such as deferring grazing, reducing pasture stocking rates, and installing temporary fencing.

“Even without fire, the severe drought of 2006 on its own will cause measurable decline in grass next year, making careful management in 2007 and subsequent years more important,” Reece said. “Late summer wildfires during a prolonged drought are the worst-case scenario.”

However, landowners still won't need to reseed those pastures. It does mean that post-fire management will be very critical.

“Plant growth will be limited the rest of 2006 because of the drought and declining day length,” Reece said. “Soil erosion is likely to occur between now and next summer. Every effort should be made to avoid grazing burned areas in 2007. This will greatly enhance rangeland recovery.”

Reece is co-author of an Extension Circular titled “Management After Wildfire in Central and Western Nebraska,” which is available at the Dawes County Extension office and was to be made available on the UNL Extension Publications web site.

Reece said the effect of wildfire on plants can depend on numerous factors: the season when the fire damage occurs; the soil and climactic conditions for growth after the fire; and grazing management decisions. In western Nebraska it is usually expected to take two to three years before herbage returns to pre-fire levels in non-drought years. To allow plants to attain full growth and enhance the recovery of vigor, Reece said, livestock should be excluded from grazing until October of the year after a fire – in this case, October 2007.

Depending on how much of the ranch was affected by wildfire, this may not be feasible. If ranchers choose to graze during the first full growing season after a wildfire, Reece recommended that a producer wait until mid-June or later, and only do so if precipitation is above average.

Reece said stocking rates should be no more than 25 percent to 50 percent of normal on burned upland range sites during the first year after a summer fire. Plant growth in these pastures may look adequate or even abundant next year, but reduced stocking rates will improve the restoration of residual herbage needed to enhance infiltration of rain water and moderate temperature extremes in the surface soil. Stocking rates during the second year after wildfire could be 70 percent to 90 percent of normal, he said.

If large non-burned portions of pastures include livestock water, temporary fencing may be justified. If burned and non-burned areas are not separated with temporary electric fence, stocking rates should be based on proper use of burned areas without regard for under-utilization of the unburned areas, according to Reece. He explained that livestock will heavily graze previously burned areas, because of the high nutrient density and the absence of residual herbage from preceding years.

Livestock should be excluded from areas that are highly prone to erosion until enough herbage has been produced to ensure site stability after grazing.

In all situations, further reductions in stocking rate would be needed to accommodate drought or delayed recovery of key forage-producing species.

Depending on the species, trees and shrubs may or may not fare well after a wildfire. Most broadleaf trees and some shrubs, such as chokecherry, resprout from buds near or below the soil surface after fire occurs. Evergreen trees such as cedar and pine will not resprout. If the foliage on evergreen trees turns reddish-brown and dry after a fire, the trees are most likely dead.