Wildfire in the Sandhills

By Kimberli Stine, USDA-NRCS, North Platte, NE

On March 16 and 17 of this year, a wildfire ran its course through the Nebraska sandhills. It started from an electrical surge through an electrical power line northwest of Mullen. Although these surges are not uncommon, this time the weather conditions were ripe for disaster. Two open winters and below-normal moisture conditions, coupled with high winds for several days, resulted in extremely dry grass conditions. The electrical surge ignited dry grass around the power line poles and the firestorm was under way.

Winds in excess of 30 miles per hour were common during the fire. An approaching cold front caused a shift in wind direction and drove the wildfire toward the town of Thedford. Fire departments from throughout the region were called on to fight the blaze. The town was spared, but thousands of acres of grazing land burned, some livestock were killed, and one home was destroyed in the fire.

DISASTER TEAM FORMED

A disaster relief team was formed to assess damages, determine needed actions, and assist those affected by the fire. The team was composed of employees of the Upper Loop Natural Resource District, Natural Resources Conservation Service, Cooperative Extension Service, and Farm Services Agency. The team worked jointly to develop an information packet containing sources of assistance as well as information on stress management, rangeland response to fire, and other helpful subjects.

An open forum meeting was held to hear from ranchers about their short-term and long-term needs.

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WILDFIRE
(Continued from page one)

Ranchers said they needed assistance to assess property damages and losses of livestock and forage resources. They also expressed a need for low-interest loans and for technical assistance with grazing management for the current year and for the future.

NRCS organized field teams to complete the damage estimates and assess the resource impacts of the wildfire. The teams were led by NRCS employees and assisted by representatives of the Farm Services Agency, Nebraska Cattlemen’s Association, U.S. Fish and Wildlife Service, and volunteers. Ranchers were contacted for permission to access their property. Assessments were made by conducting pasture-by-pasture reviews to identify fences, gates, windmills, water tanks, burned and unburned areas, blowouts, windbreaks, outbuildings, and other areas. Team members also made estimates of forage production, range trend, and carrying capacity. Seven teams completed the resource assessments in 6½ days.

After assessments were completed, each rancher received a one-on-one visit from a team member. Ranchers were provided with rangeland assessments on their land, an update on the relief effort, shelterbelt replacement options, and information on conservation improvements. During the visit, the plotted plan map showing burned and unburned areas, feet of fence, water locations, and tree windbreaks was discussed. General grazing management recommendations were also reviewed at that time.

GENERAL RECOMMENDATIONS

The response of rangeland to wildfire is directly related to the pre-burn conditions of the pastures and the moisture received for the three years following the fire. Probable response of rangeland vegetation can be predicted based on past experiences and research conducted following previous wildfire events. With average to above average rainfall, grasses can be expected to return to pre-burn conditions within three to five years. In the first year, cool season grasses and annual forbs can be expected to increase while rhizomatous grasses will be minimally affected, and little bluestem will be slow to respond. The following year, little bluestem and perennial forbs should start to increase while cool season grasses and annual forbs will begin to decline. With adequate moisture and good grazing management, the vegetation should be fully recovered by the end of the third growing season.

The biggest concern with a wildfire in the sandhills is wind erosion. The fire consumes almost all of the litter on the soil surface, leaving the sandy soils exposed to the wind. An immediate need following the fire is to replace the litter that has been lost. This is accomplished by growing forage. The key to replacing litter in this situation is to stock at less than normal carrying capacity to allow the grass to recover. A general recommendation is to defer grazing in burned areas during the first growing season following the fire. If this isn’t possible because of the extent of the fire, stocking rates should be reduced by about 50% of normal carrying capacity. These actions will promote grass growth and help re-establish the litter cover.

OPPORTUNITIES

Technical and financial assistance continues to be a coordinated and cooperative effort of the disaster relief team made up of several agencies, organizations, and individuals. An existing Environmental Quality Incentives Program (EQIP) priority area was expanded to include the entire burn area, and the sign-up period was extended for two weeks for ranchers in that area. As a result, more than 80% of the burned area was covered with EQIP applications.

NRCS has established monitoring sites in cooperation with six ranches and the Sandhills Task Force in the burned area. Vegetation response is being monitored to determine the response to different conditions and grazing management systems. Data gathered will help provide guidance to other ranchers in the future.

The wildfire in the sandhills had a devastating effect on the ranchers, livestock, and vegetation in this region. The rapid response of the disaster relief team to assess damages and provide assistance to those affected helped reduce the effects and speed the recovery from the wildfire.

THE FINAL NUMBERS

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Acres Assessed</td>
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<tr>
<td>Acres Burned</td>
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<tr>
<td>Ranchers Contacted</td>
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<tr>
<td>Ranchers Affected by Fire</td>
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<tr>
<td>Acres of Windbreaks within Area</td>
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<tr>
<td>Approximate Number of Trees Burned</td>
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<td>Miles of Fence Inside Burned Area</td>
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<td>Animal Unit Months of Forage Removed by Fire</td>
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"THE CHAIR'S CORNER"

As GLCI News went to press, it seemed all but certain that appropriations for GLCI in fiscal year 2000 would remain at its current level of $15 million. Both the House and Senate report language agreed on the $15 million figure. While this may be viewed as good that we are maintaining our own, it still leaves plenty of room for improvement. Increased funding for technical assistance, educational activities, and research for grazing lands would be a wise investment for this nation.

Grazing lands offer innumerable potential benefits to every citizen of the U.S. We need to be constantly reminding our elected officials of the following:

- Grazing lands are our country's largest land use.
- Grazing lands are our most extensive watershed and contain the majority of our riparian areas. Well-managed grazing lands increase water yields and water quality, while providing other offsite benefits such as sustained stream flow, groundwater recharge, and flood reduction.
- Grazing lands are important areas for the recycling of organic by-products from agriculture, cities, and industry. These organic wastes are put to beneficial use by conversion of nutrients from these materials into forage, and then into grazing land products such as food, fiber, pharmaceuticals, cosmetics, and natural fertilizers.
- Well-managed grazing lands have tremendous potential to improve ecosystem health and human health through reduction of invading noxious weeds and brush. In many parts of the country, invading plants not only degrade grazing land plant communities, but they also produce an abundance of allergens harmful to human health.
- Most wildlife populations—game and non-game species—are dependent on the habitat diversity occurring on grazing lands for food and shelter.
- Other benefits derived from well-managed grazing lands include restoration of natural spring flow, stream fisheries enhancement, sustained ecosystem health and productivity, and a reduction of the nation's dependence on fossil fuel energy.

Let me encourage you to invite and take your elected officials and their staff members to the farm or ranch to see grazing lands management in action for themselves!

BOB DRAKE, Chairman
National GLCI Steering Committee

GLCI News

Visit the GLCI homepage at http://www.glci.org
Can you produce forage, beef, and trees on the same land at the same time?

Tradition says you can't. Cows and trees don't mix! Grass won't grow under trees! So, livestock and forage production are incompatible with trees, right? Not necessarily!!

Modern agricultural practices are showing that livestock and forage can not only co-exist with trees, they can provide additional sources of income from land formerly used to produce a single product. "Silvopasture" is the term used to describe systems where livestock uses overlap with tree production. The concept of silvopasture provides for production of trees, forage, and livestock simultaneously.

Planting income-producing trees or shrubs interspersed with grasses and other forages can provide landowners with multiple sources of income and other benefits from the same acreage. Trees can provide income from timber, pulpwood, mulch, fruits, or nuts. They provide wildlife habitat, natural beauty, and add diversity to the landscape. Grasses and other forages can be used for livestock grazing or hay production as additional sources of income.

ADDING TREES TO PASTURE

Trees can be established into pasture systems and maintain normal forage production while adding a long-term tree crop. Row spacing must be wide enough to allow adequate sunlight penetration for forage production.

In years preceding timber harvest, straw can be sold for mulch and landscaping. Selective thinning and pulpwood cuttings can be an ongoing source of income. A wide variety of commercially important fruit, nut, and berry trees can also be used as a source of income in these systems. Many more species of wildlife are attracted to pastures where there are trees.

ADDING FORAGES TO WOODLANDS

Incorporating grazing or forage production into a forested area can increase cash flow to the enterprise and possibly increase timber production.

Canopy closure reduces forage production as trees mature. In many ecosystems, when tree canopy exceeds 30 to 50%, forage production declines to the point that livestock grazing is not economically feasible. Selective thinning to maintain desired canopy will allow enough sunlight to reach the soil to allow forage growth under the tree canopy. Remaining trees should then grow faster and have increased value.

Shaded and sheltered forest pasture environments provide protected grazing and reduce environmental stress on the animals. Forages not grazed by livestock can be harvested as a hay or seed crop for additional income. Excess forage can be leased to others for grazing. A forested area with a diverse forage understory is more attractive to wildlife than an area with trees only.

When livestock grazing is a part of the operation, a planned grazing management system is needed to assure proper management of the forage, trees, and wildlife habitat. Silvopastoral systems can benefit the landowner, the land, and the livestock all at the same time.

Benefits

Working trees in silvopastoral systems can:

- Improve overall economic performance of an agricultural enterprise through diversification
- Maintain or increase tree growth and timber production
- Improve cool-season forage production
- Allow warm-season forage production with careful canopy management
- Provide shade and windbreaks for livestock
- Produce by-products such as pulpwood and mulch for additional income
- Aid in erosion control
- Enhance wildlife habitat and increase wildlife populations
- Improve water quality
- Increase recreation opportunities
- Enhance aesthetics and property values

For best results, select forage species and management options that are compatible. Some forage species are more shade tolerant than others. Selection of forage species/varieties and trees that are well-suited to silvopasture is essential.