

Burn Schools Signature Program Kansas Natural Resources

The Situation

AIR QUALITY and SMOKE MANAGEMENT

There is pressure to improve air quality by better smoke management from prescribed burning. There is a need to burn the prairie and other grasslands for ecological management and livestock production (economic) reasons. The constraint occurs due to negative air quality impacts downwind, particularly in urban areas, many times beyond Kansas' borders. The primary pollutant is ground-level ozone and particulate matter. Excessive smoke on roadways limiting visibility is also a safety concern.

Kansas grasslands are of prime economic importance to not only the state, but the entire nation. The state nationally ranks 12th in acres of pasture and rangeland. Of North America's 140 million presettlement tallgrass prairie acres, only 4% survives to this day and 80% is located in Kansas. Kansas presently has about 15.8 million total acres of native grasslands or rangelands, 2.5 million acres of pastureland, and at any given time 3 to 6 million acres of annual forages. These grasslands are vital in supporting the state's largest agricultural commodity, beef cattle production. In 2009 cattle generated \$5.55 billion in cash receipts for the state.

Sericea lespedeza is a non-native invasive weed of rangelands in the eastern half of Kansas. The most common current control method is chemical application, which is expensive and detrimental to non-target species. Current research has identified a novel, highly effective method of control. By burning infested rangeland in early September when seed pods are filling, *Sericea lespedeza* populations have significantly declined without hurting native forage. To encourage adoption of this new technology, a coordinated outreach program will be conducted utilizing numerous methodologies and targeting several strategic audiences such as producers and volunteer fire department staff.

Short-Term (Knowledge)

Participants will learn the reasons for and benefits of prescribed burning including: a) Maintain open grassland, b) Enhance biological diversity, c) Improve plant growth and vigor, d) Improve soil health, e) Increase livestock performance, f) Improve wildlife habitat, g) Weed control, h) Grazing and habitat distribution, and i) Wildfire risk reduction.

In cooperation with local authorities, participants will learn state and local regulations in regards to prescribed burning and obtain the proper documentation, including burn permits where applicable.

Participants will be aware and take appropriate actions related to prescribed burning liability and insurance considerations.

Participants will develop and implement a burn plan considering but not limited to hazard evaluation and preparation, smoke management and air quality considerations, fire management and control techniques, equipment and manpower, communication, and contingency/emergency plans appropriate for their operation.

Participants will be aware of resources, technical, and financial support available to them.

Indicators

- Increased participation in Burn Schools.
- Completed evaluation instruments by participants at the Burn Schools.
- Knowledge and awareness gains documented by pre- and post- event surveys.

Medium-Term (Behavior)

Improved utilization of the KSFire.org website, including decision models, and smoke management guidelines.

Plans are made to conduct prescribed burns safely.

Continue widening of the burn window in early spring and late summer (for lespedeza control).

Indicators

- Acres burned using a formal burn plan.
- Number of burn permits requested.
- Fewer complaints to environmental agencies on smoke issues (ozone and particulate matter).
- Fewer roadway smoke-visibility complaints.
- Increased number and activity of burn cooperatives.
- Increased number of acres safely burned.

Long-Term (Change in Condition)

Fire is retained as a range management tool.

Better public support for fire use and management.

Indicators

- Less out-of-state EPA air pollutant exceedances.
- Improved productivity of grasslands, as measured in livestock production, and enhanced wildlife habitat.
- Reduced woody encroachment and Sericea lespedeza coverage.

Public Value

The unique and productive prairie landscape will be maintained and enhanced on private holdings across Kansas.

Air quality will not be negatively impacted by Kansas prescribed burning.

Outputs

ACTIVITIES

Support existing resources as well as develop, implement, and evaluate new programs, services, publications, and decision-making tools that support Burn Schools.

A burn school will include at least 4 hours of material presented by K-State Research and Extension specialists, local emergency management professionals, USDA staff, Extension agents, and/or local producer cooperators. It may or may not include sand box models or an on-site demonstration.

Specifically for smoke management:

- Burn schools
- Workshops in the Flint Hills will address using the decision models and weather forecasts on the KSFire.org website.
- Press releases on the need for burning

PARTICIPANTS & STAKEHOLDERS

- Producers, Operators, and Land Managers
- Agricultural Landowners
- Local, State, and Federal Government Agency Personnel
- Agricultural and Environmental Advisors and Consultants
- Local, State, and National Media
- Agricultural, Natural Resource, Environmental, and Industry Organizations
- Local, State, and Federal Government Officials