

## Collaborating to Restore Fire Adapted Landscapes in the Great Plains

### Background

Like most grassland systems, the ecology of the Great Plains was formed by two major disturbances: grazing and fire. Natural ignitions and anthropogenic fire shaped and maintained grassland and oak savanna systems from Canada to Mexico by sustaining a dominant prairie/savanna ecotype and influencing grazing patterns. The gradual elimination of fire as a cultural practice and the suppression of other fires—along with shifting land use and grazing patterns—has resulted in the decline of the grassland in both extent and species diversity.

While many native species have declined in the absence of fire some native species have thrived and become problematic. In particular, the eastern redcedar (*Juniperus virginiana*) is now a serious threat in many areas. This fire intolerant evergreen species was kept in check by regular fires; today, when unmanaged, it will grow so densely that grasses and other plants are shaded out, resulting in loss of the ecological and economic value of the grassland. Eastern redcedar has become a particular concern to the ranchers of the Great Plains, as loss of pasture directly correlates with loss of livelihood. Indeed many landowners in the Great Plains are increasingly aware of the value of healthy grasslands and savannas, and the necessary role of fire in preserving the economic and ecological health of their land.

The landowners, agencies, and non-profits in the Great Plains are resource limited in their ability to increase fire use in the region. Much of the Great Plains is also characterized by private land ownership; less than 1% of land is publicly owned in Iowa and 2% in Nebraska. This land ownership pattern coupled with limited resources makes cooperation and collaboration imperative for all parties interested in fire management. If grassland systems are to be well-managed and include fire as a management tool, then collaboration across ownership boundaries - including private lands - is the best option to achieve our mutual goals. Collaboration takes multiple forms, from directly providing operational assistance to providing training and technical expertise with the goal of empowering independent action.

Cross-pollination of philosophy, tactics, equipment design, and other elements of fire management will be crucial to the effectiveness of our mission to increase safe fire use in the Great Plains. To that end, regional partners have implemented a number of strategies to increase the level of cooperation and collaboration in fire management between agencies, non-profits, contractors, fire departments, and private landowners. Lessons have been learned regarding the effectiveness and sustainability of these strategies; this white paper is an effort to coalesce and export these lessons to inform fire management efforts in other regions.

### Strategies

Training Exchanges (TREX): A training event providing firsthand prescribed fire experience, tailored to the particular needs of a landscape or community.

*Why do it:* TREX events build both local and national capacity and provide participants with training experiences they may not otherwise receive. The ability to burn additional acres with the assistance of TREX participants is a secondary but welcome benefit.

*What worked:*

- Lessons learned at TREX events in Nebraska and Iowa have influenced and strengthened local fire programs by providing outside perspectives to local challenges.
- Requesting assistance with a TREX strengthens cohesion and working relationships between agencies, leading to greater cross-border work and cooperation.
- TREX provide opportunities for local and national participants to receive NWCG taskbook evaluations and advance their skills.
- Engaging VFD participants has multiple benefits (see Fire Departments).
- The flexibility of the model allows for tailoring to participants' needs, demands of the landscape, and social dynamic of the wider community.
- Provides an opportunity to educate partners and the public on the essential role of 'good fire' on the landscape.

Cooperative Burns: Agencies and non-profits in the region sometimes struggle to fully staff burns, depending on burn unit size and complexity, and instead depend on partners to provide staff and equipment assistance.

*Why do it:* Beyond acres treated, cooperative burns allow personnel from different agencies to build cohesion and explore different approaches to prescribed fire. Cooperative burns also expose partners to higher levels of the Incident Command System, different ignition techniques, advanced radio communications, and larger and more complex burn units. This has been a particularly successful strategy in the Loess Hills of Iowa where 10 different agencies, plus fire departments and private landowners, conduct burns for ecological management and/or respond to wildland fires.

*What worked:*

- Reciprocation—While cooperative burns provide training opportunities, this is secondary to the objective of assisting partners and receiving assistance in return.
- People like to help out—there is a social aspect to assisting others which should not go unacknowledged. Building cohesion between agencies can have benefits beyond the fireline.
- Cooperative Agreements—Removing bureaucratic barriers between agencies in Iowa's Loess Hills with cooperative agreements facilitates cross-boundary work including non-fire land management.
- Provides opportunities to learn or work in a new role in a different place.

Engaging Fire Departments: Outside large urban areas, fire departments in the Great Plains tend to be volunteer-based, cover a large land area, and have primary responsibility for wildland and structural fires.

*Why do it:* Fire departments value quality training opportunities. Some fire departments offer prescribed burn services to the community in exchange for a donation, providing both training for their personnel and a way to financially support the department. Integrating these fire practitioners into wider efforts may improve workforce capacity and management of wildland fire incidents.

*What worked:*

- The Loup TREX in Nebraska dedicates days specifically to local fire department personnel. Prescribed fire offers the ability to learn and practice indirect suppression techniques, as well as observe and learn fire behavior without the urgency typically felt during normal suppression activities.
- Nebraska statute lists local fire chiefs as the agent responsible for issuing prescribed fire permits. By participating in a TREX, fire departments gain exposure and appreciation for the impacts and benefits of safe prescribed fires, and are perhaps more likely to issue permits.
- As a department outsider, a collaborative model is an effective way to influence tactics and increase ecological knowledge; use cooperative agreements to facilitate working with departments adhering to diverse standards.
- Fire department personnel have important local knowledge to share with others.
- Timing is important for VFD personnel as their ability to attend trainings is often limited to the weekends.

Private Lands Out-reach: Private landownership dominates in the Great Plains. Often private landowners have multiple and overlapping reasons to consider fire management, from wildlife habitat to maintaining quality grasslands as pasturage for ranching operations.

*Why do it:* No agency or non-profit has the resources to directly manage private land. Empowering private landowners in the Great Plains to utilize fire management with minimal or no agency assistance is a more sustainable model. Landowners in the Conservation Reserve Program (CRP) are also required to conduct mid-contract management for which prescribed fire is one management option.

*What worked:*

- Agency/non-profit staff provide training to landowners including technical assistance, classroom time, and hands-on live fire experience alongside agency personnel.
- Landowner Burn Associations/Burn Cooperatives—associations or cooperatives to facilitate burning on private land in a ‘neighbors helping neighbors’ model. These groups vary widely in organization with some requiring dues and carrying liability insurance while others are more loosely associated.

Engaging Volunteers: Individuals are sometimes interested in fire management as a volunteer, either to gain experience or because they support the mission of the agency or non-profit.

*Why do it:* Landowners, students, fire department personnel, etc., may find volunteering a fulfilling or educational experience. Experienced volunteers may broaden the available local fire workforce.

*What worked:*

- Following specific agency guidelines is important to ensure safe and effective use of volunteers. The Iowa Department of Natural Resources allows volunteers who have not completed NWCG's S-130/190 courses; however the volunteer must be partnered with an experienced crew member during a burn.
- Volunteerism may lead to a career in fire management, thus supporting and influencing the next generation of fire practitioners.
- Private landowners gain experience that allows them to safely and effectively conduct prescribed fire on their own property.

Supporting Contractors: There are few qualified contractors in the Great Plains and long distances between contractors is a limiting factor; however, for-profit entities fill an important niche in fire management.

*Why do it:* Private landowners are sometimes more comfortable hiring a qualified contractor than conducting their own burns. Some agencies and non-profits are limited by staffing, equipment, or by distance and use private contractors to achieve fire management goals.

*What worked:*

- Including contractors as participants and leaders during TREX events and cooperative burns allows for training and/or business opportunities for the contractor.
- Supporting cost-share programs for private landowners through NRCS and other agencies provides potential business to private contractors. However, cost-share usually covers only initial work whereas stewardship requires ongoing maintenance and practices.
- Educating landowners of the cost-effectiveness of fire vs. other management options may lead to increased business for contractors.

### **Lessons Learned/Overarching Themes**

Some lessons learned apply more broadly to our efforts than to a single strategy. The following section seeks to lay out the more important overarching themes.

Event Logistics: Getting the basics wrong can hamper an event before it starts, while attention to detail can have a very positive effect on how participants view their experience.

- A bed and a meal go a long way. Providing lodging and food options, either included or as pre-arranged guidelines, provides necessary basic support to participants. For single day events, providing food often increases participation.
- Lining up the necessary equipment ahead of time—equipment, fuel, PPE—is critical.
- Timing is important; regular job duties may prevent participation during certain times of the year. Volunteer fire fighters and landowners may only be available on weekends and may not be able to commit multiple weekends in a row.

Training Opportunities: Ensuring that participants have their training requirements met is an obvious 'must'; however, individual needs can get lost in the shuffle.

- Know participants' needs and expectations and plan for them ahead of time by specifically assigning roles or deliberately incorporating specific training elements into the event.
- Tailoring the event to participants is important; however, cross-pollination of ideas, tactics, or philosophy is beneficial too.
- Assign a training coordinator to ensure participants are assigned appropriate roles.
- Trainees are also trainers. Teaching provides an additional learning opportunity while often simultaneously reducing overhead personnel.

Tailor the Approach: The approach and methods used to influence people make a difference and should be tailored to the audience, taking into account their particular needs, beliefs, and values.

- Forcing a method or philosophy on unreceptive groups is not constructive and may miss valuable insights of the group. An invitation to collaborate as a partner is more effective at creating an environment where lessons may be shared both ways with lasting influence.
- National Wildfire Coordinating Group (NWCG) requirements and procedures do not resonate with all stakeholders. Few entities in the Great Plains strictly follow NWCG. Promoting NWCG standards or courses may reduce training participation due to disinterest in NWCG and/or a lack of pre-requisite qualifications; instead, distill and promote the knowledge and skills which participants stand to gain.
- Make the strategy fit the landscape. Large events work on large landscapes but may not be suitable everywhere. In the Loess Hills of Iowa, for instance, fewer people are required for typical burn unit size and a smaller event is often more effective.
- Labelling events "training" doesn't produce strong participation with some groups. Training objectives can be imbedded in cooperative burns or other strategies; people are more likely to respond to a request for help than for training they aren't sure they need.

Reciprocate or Reward: No one does something for nothing; participants and partners need to see a benefit either personally or for their wider objectives in order to participate in a strategy.

- Who doesn't love free stuff? Increased training participation by VFDs has been achieved by giving away equipment such as drip torches. Something as simple as a t-shirt or a meal can be effective.
- Reciprocating help is important, especially for cooperative burns. It seems obvious; however ensuring that cooperation is flowing in more than one direction can be challenging when juggling a large workload or when overhead is not supportive of spending budget funds or staff time.

Sustainability: The ability of a strategy to substantially move the needle and effect lasting change is correlated to its sustainability.

- Funding is a challenge when grant opportunities fluctuate and budgets get tight. Strategies that do not require large amounts of additional funding beyond normal operating costs are more likely to be sustainable (i.e. asking for in-kind contributions of time, equipment, lodging, etc. rather than registration fees). When partners and participants see real benefit personally or for their objectives they are also more likely to allocate limited resources.
- Cost-share programs struggle to be effective in the long-term because they typically only cover first year costs for a multi-year project. Landowners accustomed to using cost share programs may be reluctant to pay full cost for contracted services.
- Educate landowners and policy makers about the economic and environmental costs of inaction; where appropriate make the case that action now is cheaper and prescribed fire is the cheapest method.
- Retaining groups that make long-term commitments even improve the chances of a strategy being successful over multiple years (i.e. SAFE groups from universities such as the University of Idaho, fire departments from the front range of Colorado, Spanish firefighters).
- Cultivate local investment in fire management. Fire is local and building local capacity is critical for sustainability. Local people know the land, water, politics, and challenges. They have the ability to be flexible and take advantage of opportunities because they are not restricted by travel or other logistical challenges.
- Focus on long-term solutions to bureaucratic barriers rather than on what is perceived to be impossible. There is usually a way to work collaboratively; the barriers are not as great as they seem. Consider cooperative agreements between agencies and get agreements in place before the work needs to be done.

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*Additional input provided by the Loess Hills Fire Partners and other regional partners*