

Great Plains Fire Learning Network

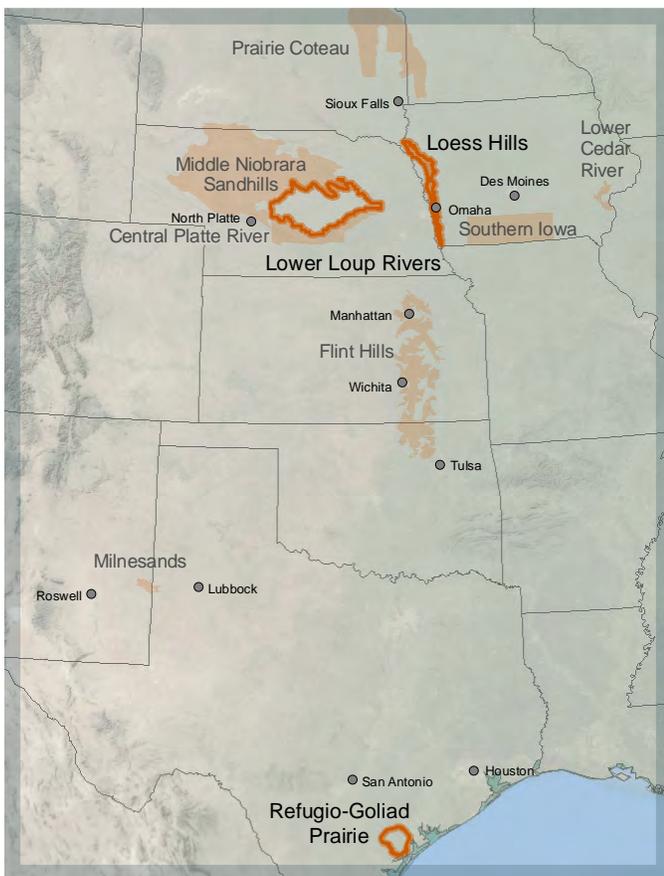
5.3 million acres

The Great Plains Fire Learning Network (GP FLN) spans the central U.S. from South Dakota to the Gulf Coast of Texas. The Loess Hills (Iowa), Lower Loup Rivers (Nebraska) and Refugio-Goliad Prairie (Texas) are the focal landscapes in the network. These sites provide leadership, share lessons learned from successes and failures, and maintain a link to the national Fire Learning Network for a number of less formally engaged landscapes—Prairie Coteau (South Dakota), Niobrara-Sandhills and Central Platte (Nebraska), Lower Cedar (Iowa), Southern Iowa, Flint Hills (Kansas) and Milnesands (New Mexico)—that are working to advance the use of fire in prairies and other grasslands.

Together, Great Plains landscapes share and network to develop collaborative strategies primarily focused on engaging private landowners and local fire practitioners.



Broken Kettle preserve in the northern Loess Hills © Susanne Hickey/TNC



map © 2011 Liz Rank/TNC



Participants from the Pottawattamie County Conservation Board and Spanish Forest Service confer on the Top of the World Burn in the Loess Hills, April 2011. Great Plains FLN landscapes have hosted numerous prescribed fire training exchanges over the last four years. These events treat significant acreage, build local capacity, and encourage the exchange of knowledge among far-flung partners. © Kyle Lapham/TNC

Network Vision

The Great Plains FLN brings together landscapes and partners to develop strategies to integrate private lands into landscape-scale fire management activities that serve ecological restoration objectives

Loess Hills
Lower Loup Rivers
Refugio-Goliad Prairie

Central Platte
Flint Hills
Lower Cedar
Middle Niobrara-Sandhills

Milnesands
Prairie Coteau
Southern Iowa

Prescribed Fire Training Exchanges

Over the last several years, landscapes in the Great Plains FLN have worked with national FLN staff to develop a program of prescribed fire training exchanges that are designed to simultaneously fill several needs. The exchanges that have been developed are designed to create opportunities for agency prescribed fire practitioners to work on their professional credentials, completing assignments in position task books and receiving evaluations from qualified trainers. In addition, private land managers participate in the exchanges to build their capacity to use prescribed fire—and contribute local knowledge to the events and to the larger fire community. The host units get a capacity boost, with a large temporary crew of qualified workers to help with large or complex burn events.

The experience goes far beyond working on position task books or “blackening acres,” however. For example, hosts typically schedule activities to demonstrate the role of fire in conservation and local fire management practices, highlight local fuel types and fire ecology, and allow fire practitioners to work with stakeholders and natural resource managers. This integration of various aspects of fire helps practitioners prepare for the multitude of challenges that an increasingly complex fire environment presents. Each exchange also has its own focus, a function of host landscape needs and the composition of the participating crew. For example, in 2011, the Texas exchange, hosted by the Refugio-Goliad Prairie landscape, allowed burn bosses from the U.S. Fish & Wildlife Service and Conservancy to develop regional teams; in the Loess Canyons (near Gothenburg, Nebraska), the exchange was designed to promote the use of local burn associations; at the Niobrara, Nebraska exchange, students from the University of Idaho’s College of Natural Resources gained practical experience alongside working professionals; and in the Flint Hills (Kansas), the exchange integrated state forestry, Conservancy, National Park Service and U.S. Fish and Wildlife Service crews.

All told, in 49 days of work together, 120 participants accomplished all these objectives—along with the treatment of 14,785 acres of land in need of fire.

“... The burned units will be beautiful later this spring, and ideal for providing some tours for folks in the area who are not familiar with the benefits of prescribed burning, and likely hesitant to venture into this management practice on their own lands. The potential education and demonstration values are tremendous ...”

—host unit landowner



USDA Forest Service, state and private practitioners conduct a site inspection and briefing for a burn that took place on private land in the Lower Loup landscape the next day. © Mike Peterson/USFS

Network Partners

Lower Loup Natural
Resources District
Prescribed Burn Task Force
The Nature Conservancy—
Iowa, Texas



In 2011, the Great Plains FLN hosted prescribed fire training exchanges near (top to bottom) Callaway (NE) and Niobrara (NE) and in the Flint Hills (KS).

© Mike Peterson/USFS; Jim Wills/Firestorm;
Dennis Caril/USFS

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Loess Hills

Great Plains FLN

Iowa

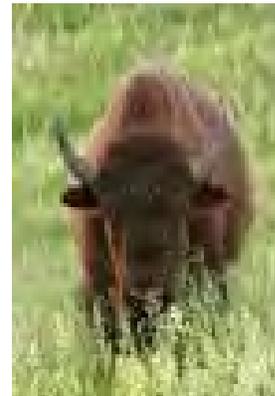
649,000 acres

The Loess Hills of western Iowa are of primary importance to local, state and regional conservationists because of the relatively intact prairie and oak woodland habitat, providing habitat to numerous declining and rare species. The area provides habitat for over 49 grassland species of special concern including the regal fritillary butterfly, birds such as the bobolink and dickcissel, reptiles like the ornate box turtle and Great Plains skink, and Iowa's only known population of prairie rattlesnakes. Historically the area was periodically swept by fires and grazed by bison and elk; together, these disturbances kept Iowa's prairies healthy. Today, the natural role of fire has been significantly altered, resulting in accelerated woody encroachment into grasslands and a decline in the regeneration of oak woodland. This alteration, coupled with increased residential development and other incompatible land use, threatens to harm the area's fragile natural areas.

The Loess Hills Alliance, in which this FLN is an active partner, is a coalition of individuals and stakeholders from the seven-county Loess Hills region of western Iowa that provides leadership and a forum for developing and implementing strategies to restore and protect the natural areas of the hills. Similar to the other landscapes in the Great Plains, the Loess Hills are predominantly privately owned (and primarily agricultural), so restoration must involve numerous landowners across large areas. Acceptance of prescribed fire and grassland restoration varies across the landscape, but can be accelerated by creating jobs in rural communities. Tree shearers, fire crew professionals and native seed producers can enable compatible economic uses, such as livestock grazing and native seed production. Through collaboration, partners will find compatible activities that meet the ecological and economic needs of both natural areas and landowners.



June burn on the Conservancy's Broken Kettle Grasslands Preserve, in the northern Loess Hills © Kyle Lapham/TNC



The diverse fauna and flora of the Loess Hills region includes (clockwise) the bison, regal fritillary butterfly, downy paintbrush and painted turtle.

© Chris Helzer/TNC



Landscape Vision

The partnership will restore and maintain viable ecological communities, provide protection from unwanted wildland fire and improve productivity and value of the land through implementation of a regional fire management plan.

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Students in the basic wildland fire training (\$130/ 190) offered by the Loess Hills Alliance prepare for a day of field exercises. Completion of this course allows the students to participate in prescribed fire training exchanges that meet NWCG standards. © Kyle Lapham/TNC

Landscape Partners

Iowa Department of Natural Resources—
Forestry, Loess Hills State Forest, Wildlife
Loess Hills Alliance
Loess Hills Alliance Stewardship Committee
Pottawattamie County Conservation Board
The Nature Conservancy—Iowa
U.S. Fish & Wildlife Service



In a large cooperative effort, partners completed two burns at the Little Sioux Scout Ranch in October 2011, restoring an area badly damaged by a 2008 tornado. The first burn (640 acres) involved 50 personnel and the second (173 acres), 28 personnel. DNR-Wildlife led the burns, with crews and equipment provided by five County Conservation Boards, the Boy Scouts, the Mondamin VFD, five branches of the Iowa DNR (Wildlife, Forestry, Law Enforcement, Fisheries, Parks), The Nature Conservancy and private landowners. © Kyle Lapham/TNC; Susanne Hickey/TNC



With a new fire coordinator position in the Loess Hills, the partnership has renewed its outreach efforts to landowners as well as volunteer fire departments to build local capacity for putting fire on the ground. Efforts are currently focused on this kind of capacity building, rather than on the operation of a mobile fire crew, in part for financial reasons, but also as a means to reestablish fire use in the culture of landowners in the area, a core strategy in the region. The highly-divided landscape also challenges the partnership to the develop cross-property solutions, and this strategy contributes to that as well.

As with other landscapes in the Great Plains FLN, the Loess Hills landscape emphasizes capacity-building through training experiences and hands-on fire opportunities. Building on the successes of prescribed fire training exchanges in Nebraska and on the Refugio-Goliad Prairie in Texas, the Loess Hills plans to host a national training exchange in spring 2012. The Loess Hills provides a unique opportunity to develop multi-owner burn units and to incorporate private lands with state, county and Conservancy-owned lands. The Loess Hills partnership is also modifying the national exchange model by establishing “local-training burns” using a day-crew hire model and linking new fire practitioners to planned burns during 2011. The partnership’s Fire Coordinator is able to organize and manage new practitioners who work on burns planned by the Conservancy, County Conservation Boards and the Department of Natural Resources; this provides a relatively inexpensive and logistically simpler opportunity to host “mini-trainings” while also meeting individual partner burn objectives.

On a larger scale, working with the Refugio-Goliad Prairie and the Lower Loup Rivers teams, the Loess Hills continues to provide leadership to the Great Plains regional FLN, making connections across the region, sharing lessons learned and seizing opportunities to build a stronger network of fire and restoration practitioners within the region.

Lower Loup Rivers

The Lower Loup Natural Resources District project area comprises all or parts of 16 counties and covers 7,923 square miles in central Nebraska, including the Central Loess Hills and parts of the southern Sandhills region. About half of the district is tilled agricultural land; the remaining 2.5 million acres are native grasslands, which are severely threatened by eastern redcedar encroachment. Numerous landowner cooperatives have formed to manage this threat, and their numbers are increasing in the region. Lessons learned from their efforts are shared with other landscapes in the Great Plains FLN that face similar issues.

Recent Accomplishments

This project conducts ongoing outreach to volunteer fire departments, landowner training and burn plan development to develop further capacity in the landscape. The Prescribed Burn Task Force is extending its reach, and is now offering training in area beyond the founding four counties.

In 2011, a major accomplishment in this landscape was the formation of the Custer County Prescribed Burn Association, which was spearheaded by Ben Wheeler and



Regrowth on the 2011 Ernest Bruha fire, Custer County, Nebraska
© John Ortmann/Lower Loup NRD

Landscape Vision

Partners wish to maintain the biologically unique Central Loess Hills Prairie as prairie, both by reversing brush encroachment and by improving and restoring diverse native plant communities. To this end, the primary strategy is to empower the area's private landowners and managers to take control of fire in their own hands, safely, economically, and effectively, to preserve their economic well-being and the region's ecological integrity.

Great Plains FLN

Nebraska

5.1 million acres



The North Loup River seen from Happy Jack Peak, part of the planned spring 2012 Prescribed Fire Training Exchange

© John Ortmann/Lower Loup NRD

Pheasants Forever; this Association, which also includes Valley County, encompasses an area of over two million acres.

Planning has also been completed for a spring 2012 prescribed fire training exchange on 5,200 acres, and has begun for another two training complexes scheduled for spring 2013. These training events enable significant acreage to be treated with fire in a short period of time--while providing a long-term boost in prescribed fire capacity by providing training for local and national practitioners from federal and state agencies, private practitioners and university students.

"I burned to control eastern redcedar trees, but I was amazed at the grass response. The pastures were stocked with yearlings, which gained 3.2 pounds per day, and I got a performance bonus from the livestock owner. I'm going to start burning for livestock performance."

*Ernest Bruha,
rancher*

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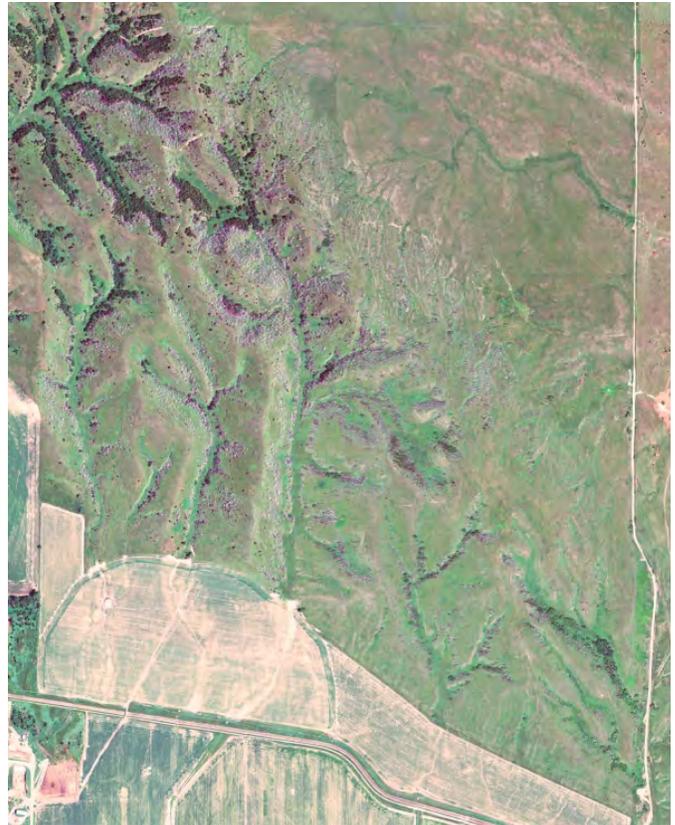
© John Ortmann/Lower Loup NRD

Landscape Partners

Lower Loup Natural Resources District
Nebraska Game and Parks Commission
Pheasants Forever
Prescribed burn associations
Prescribed Burn Task Force
Private landowners
USDA Natural Resources Conservation Service
Volunteer fire departments

In the central Loess Hills, terrain can be a problem—or it can be an opportunity for getting to scale. Deep loess soils have the properties of being highly erosive, and being able to hold a high angle of repose. This results in extremely rugged terrain, which makes the traditional approach of burning single pastures difficult and risky. However, using a “landscape-scale” method—burning large units configured so that boundaries are placed on good existing firebreaks—converts the terrain from an enemy to a friend of prescribed burning. Not only are units safer to burn, but greater fire intensity can be used, which is more effective on eastern redcedar. By increasing unit size, fire is more economical, and the landscape is treated at an effective scale.

Local landowners have developed methods and prescriptions to safely maximize eastern redcedar kill. Informal landowner groups pool time, labor and equipment to crew large, hot fires, acting as their own contingency force. Increasingly, formal prescribed burn associations are joining the fire scene because they offer the same benefits, plus learning opportunities and an incentive to reach out to previously unengaged landowners. The FLN is working to support this revived fire culture for the benefits it brings to plains communities, both human and natural.



Views before (*left*, 2003) and after (*right*, 2010) cooperative burning that allowed effective removal of invasive redcedar

© FSA

Refugio-Goliad Prairie

Great Plains FLN

Texas

664,000 acres

Refugio-Goliad Prairie (RGP) is a privately-owned landscape that contains one of the largest and highest-quality expanses of coastal tallgrass prairie remaining in Texas; such prairie once spanned 800 miles from Louisiana to Tamaulipas, Mexico covering 24 million acres. This landscape was historically a fire-dependent ecosystem. However fire was largely removed for a century or more and this disruption of the historical fire regime has allowed woody plant encroachment on the prairie. Habitat for many grassland-dependent wildlife species such as Attwater's prairie chicken is greatly reduced by this woody plant invasion. Private landowners also incur economic losses through a decrease in available livestock forage and lost opportunities for fee hunting of some wildlife species dependent on grasslands.

In 2003, the Conservancy staffed and equipped a prescribed fire module to assist landowners in implementing prescribed fire. The fire module has assisted more than 33 cooperating landowners (who together manage 289,208 acres) by applying prescribed fire on 71,631 acres in 181 burn days within the Refugio-Goliad Conservation Area. In addition, prescribed fire burn plans that meet National Wildfire Coordinating Group (NWCG) standards have been written for 191,051 acres, and can be implemented when conditions allow. Because the Conservancy adheres to NWCG standards, the module is able to partner with the nearby Aransas National Wildlife Refuge Complex where the focal species is the last wild migrating population of whooping cranes. With careful management, the population of this imperiled species has consistently grown by 4% per year; in 2011 a record 300 cranes are wintering on the refuge. The Conservancy's fire module has assisted Aransas on 76 burns totaling 56,757 acres to maintain habitat for the cranes.

During restoration, units need to be burned multiple times, and once restored they must be burned on a four-year rotation to maintain the grassland. The acreage needing prescribed fire on RGP for restoration and maintenance of grasslands is beyond the capacity the Conservancy's prescribed fire module, or that of any other single entity in the area. Consequently, this FLN is working on methods to prioritize prescribed burn efforts and strategies to further engage partners such as volunteer fire departments, Texas Parks and Wildlife Department, Coastal Bend Prescribed Burn Association, Texas Forest Service and the US Fish & Wildlife Service in order to bring treatments to the needed scale. The Refugio-Goliad continues to be a leader in training fire professionals around the country from federal, state, municipal and private organizations to increase qualifications levels and incorporate ecological goals into prescribed fire application.

Landscape Vision

The Refugio-Goliad Prairie will be an ecologically functional coastal tallgrass prairie network, capable of supporting its historic richness and diversity of plants and wildlife, as well as local agricultural enterprises.



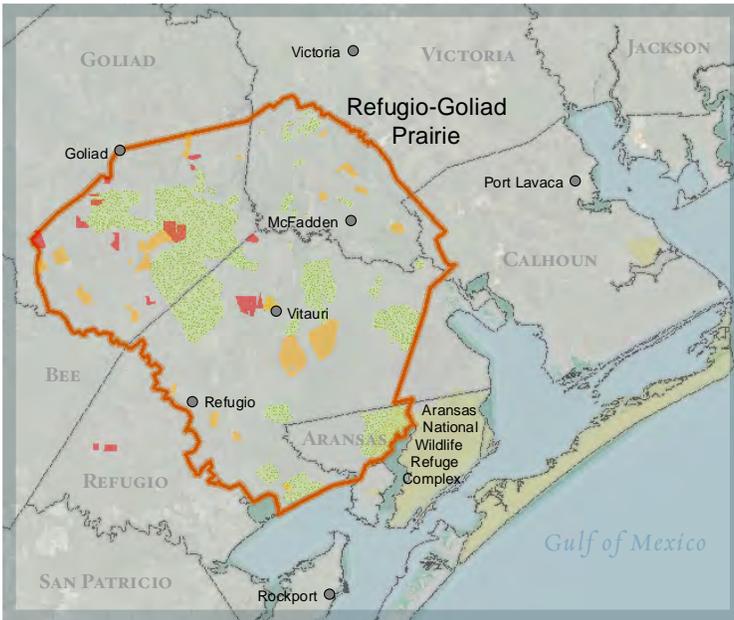
Top to bottom: A squad boss trainee from South Metro (CO) Fire and Rescue directs ignition at an August 2010 training event; a squad boss trainee from the Conservancy's Washington chapter on a prairie restoration burn with chemically treated dead brush at a February 2011 training exchange; a 1,300 acre burn on the Aransas NWR under a burn boss trainee from the South Nevada BLM was also part of the February training; a barn owl hunts along the leading edge of an October 2011 NWR fire conducted to improve whooping crane habitat
Photos: training events © Dave Reid/South Metro Fire and Rescue; owl © Jeff Adams/US FWS

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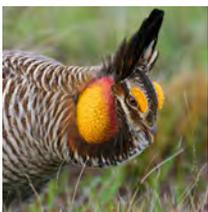


A March 2008 aerial survey documented 119,000 acres of prairie in good condition (light green stippled areas). The survey also showed 23,000 acres of burning on private lands in the landscape (orange), in addition to known burns conducted by Conservancy crews (red).

Such aerial surveys are expensive and must be conducted in a fairly narrow time window to be accurate. In 2011 the FLN used the 2008 data to test the use of satellite data sets for this kind of monitoring. Using archived satellite datasets, they were able to demonstrate a 20-fold increase in the number of fire events in the landscape over the past ten years. This dramatic increase is likely due in large part to the FLN's education and outreach efforts, which are renewing a fire management culture among private landowners. *map © 2011 Liz Rank/TNC*

The Coastal Prairie Conservation Initiative, a partnership among private landowners, the Grazing Lands Conservation Initiative, the U.S. Fish and Wildlife Service, the Texas Parks and Wildlife Department, the Natural Resources Conservation Service and The Nature Conservancy was formed to restore coastal prairie habitat.

Until the early 1990s, the area supported one of the last known wild populations of Attwater's prairie chicken, federally listed in 1967 and one of the most endangered bird species in North America. The birds are currently being reintroduced at a US FWS refuge, a Conservancy preserve in Texas and two private ranches on RGP. Due to its expanse and limited habitat fragmentation, RGP is considered the best location to establish a sustainable population of this species. Prairie chicken reintroductions on RGP began in 2007, and these efforts continue on two private ranches in the heart of the largest remnant of intact prairie. Continuing to increase the geographic scope and frequency of habitat enhancement through prescribed fire is needed on RGP to support a viable population of prairie chickens over the long-term.



Left: An Attwater's prairie chicken male displaying © Lynn McBride/TNC

Right: The US FWS Aransas Wildlife Refuge Complex, which overlaps the RGP, was created to protect winter habitat for the only naturally migrating population of whooping cranes. © Steve Hillebrand/US FWS

Landscape Partners

- Bureau of Land Management—National Interagency Fire Center
- Coastal Bend Prescribed Burn Association
- De-Go-La Resource Conservation and Development Inc.
- Grazing Lands Conservation Initiative
- National Wild Turkey Federation—Coastal Bend Chapter
- South Metro Fire and Rescue
- Texas Forest Service—Victoria Region
- The Nature Conservancy—Texas
- USDA Natural Resources Conservation Service —Victoria, TX District
- U.S. Fish & Wildlife Service—Aransas National Wildlife Refuge Complex
- U. S. Fish & Wildlife Service—Partners for Fish & Wildlife and Coastal Programs (Coastal Prairies Conservation Initiative)
- West Metro Fire and Rescue

"Texas is experiencing a prolonged drought of historic proportions that has dramatically affected many people. Historically, conditions such as this promoted the fire that created and maintained the grasslands we work to protect—so we are working with a newly established state Burn Ban Working Group to provide information to government officials and the public and influence the ability to conduct prescribed fires under these conditions. Kansas is also experiencing drought conditions and has reached out to our fire module for guidance in conducting prescribed fires in these extreme drought conditions."

Ray Guse,
FLN landscape lead

More information:

The Conservation Action Plan for this landscape is available at www.nature.org/media/texas/refugio_goliad_prairie_cap.pdf