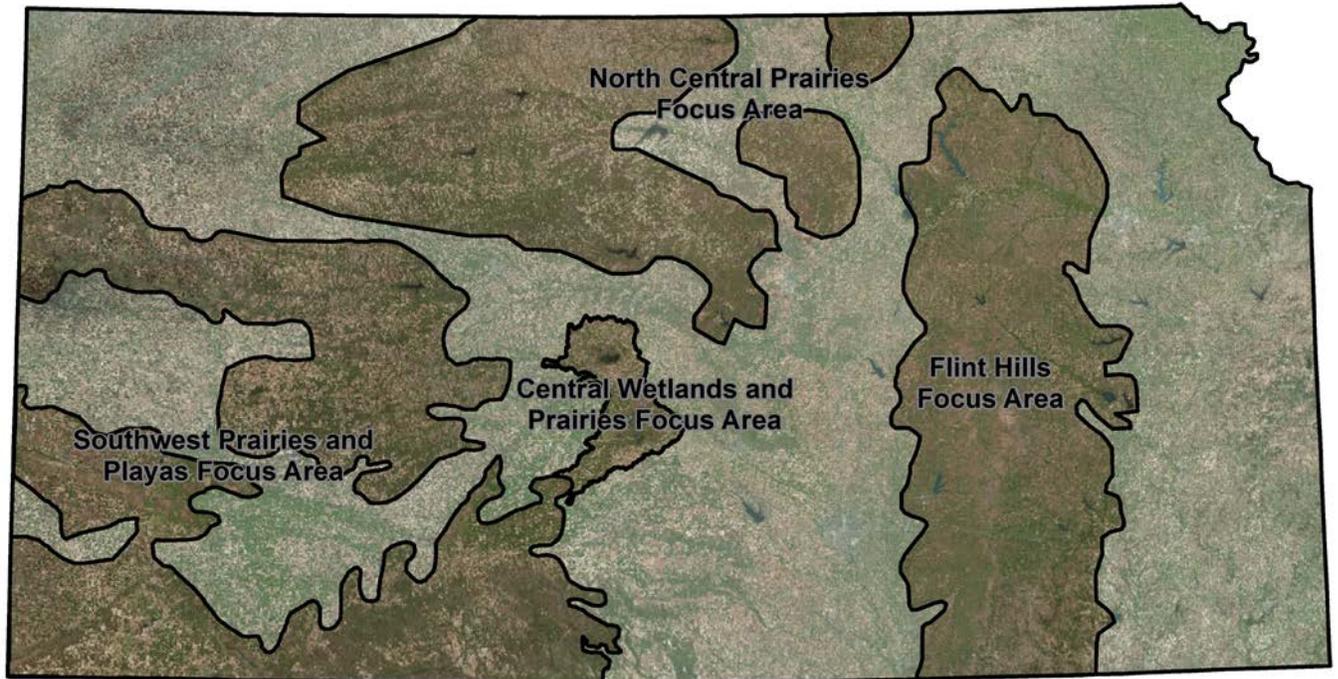


Kansas



Kansas PFW program Focus Areas. USFWS map.

Introduction and Overview

Kansas is known as the “Prairie State” and is home to over 17 million acres of native prairie that hosts a multitude of grassland obligate Federal Trust Species. Current trends demonstrate that grassland obligate birds have shown the steepest long-term decline of any other avian guild in North America. Proper prairie management via appropriate grazing, prescribed fire and invasive species control are necessary to maintain native habitat for the species that depend on these systems. Native prairies evolved and were maintained through disturbances from grazing, fire and climate. Although historical grazing effects from native herbivores have been altered, we can attempt to mimic these events through livestock grazing and appropriate timing

of prescribed fire. Following a prescribed fire, livestock are attracted to recently burned areas. As new vegetation emerges, green sprouts provide more nutrients than areas with last year’s standing vegetation. Newly burned areas are great for livestock and some wildlife species such as the horned lark and buff breasted sandpiper. In addition, the standing grass from previous years’ growth provides other grassland birds just the right cover to reproduce and thrive. Finding the right balance of fire and grazing provides conditions suitable for both the livestock that need new grass to graze and the wildlife that need previous years’ vegetation to reproduce. With the right timing and frequency, patch burn grazing is a tool that attempts to mimic the historical impacts from fire and grazing that once maintained habitat for both native herbivores as well

as other wildlife that depend on the prairie. Through patch burn grazing, rangeland managers try to recreate the randomness of historical disturbances by altering fire return intervals on the landscape therefore altering impacts from grazing as the cattle prefer the newly burned areas. By not burning every acre every year, rangeland managers can maintain a healthy prairie system that supports both livestock and native wildlife. Recent research has demonstrated that patch burn grazing provides similar livestock gains compared to whole pasture burning. Limiting fire return intervals to once every two to four years also allows appropriate fuels to build that help create more intense prescribed burns that help keep many invasive species in check. Rotating livestock to newly burned areas has also been shown to reduce parasite loads



With a goal to manage for the most susceptible species on the ranch, I feel that if I can manage the ranch and take care of that species, everything else will fall into place and take care of itself.

Private Landowner, Kansas

Grasshopper sparrow utilizing habitat restored by a Kansas PFW program project. Photo by Tony Ifland, USFWS.

that can affect livestock gains. By maintaining appropriate fire return intervals and grazing events, both the landowner and grassland dependent wildlife benefit from a healthy prairie system. From the landowner to the lesser and greater prairie-chicken, or the upland sandpiper and monarch butterfly, management of Kansas's prairies is a critical piece to the conservation puzzle that enables healthy prairie communities to thrive.

Native prairies are not the only resource concern in Kansas. Central Kansas is home to wetlands associated with Quivira National Wildlife Refuge and Cheyenne Bottoms. Located in the bottleneck of the Central Flyway, both wetland complexes are RAMSAR Wetlands of

International Importance. These wetlands provide habitat for a host of migratory waterfowl and shorebirds as well as the federally endangered whooping crane and interior least tern. Kansas rivers, streams and riparian areas also provide habitats for numerous federally listed fish species such as the Topeka shiner, Arkansas River shiner and Neosho madtom as well as mussels including the Neosho mucket, rabbitsfoot and spectaclecase.

Across all of its native habitats, invasive species control is a high priority for the Kansas PFW (KS PFW) program. Invasive species such as *Sericea lespedeza*, old world bluestem, eastern redcedar, honey locust and salt cedar degrade native habitats leading

to undesirable plant community dynamics. At the same time, these species reduce the forage yield for cattle production, threatening the livelihood of rural families. By controlling invasive species within Kansas landscapes, habitat resources for native wildlife species can be enhanced and restored while also maintaining healthy rangelands for Kansas ranchers. The broader public benefits from ecosystem services such as carbon sequestration, water quality and quantity, soil health, reduced risk of catastrophic wildfire, wildlife and plant diversity as well as outdoor recreation opportunities.

Whether it's the tallgrass prairie of the Flint Hills or Mixed and Short grass prairies further west, it is within these prairie landscapes,



PFW program project site along the Smokey Valley River, Kansas. Photo by Tony Ifland, USFWS.

that the KS PFW program plays a pivotal role in conservation delivery. With 97% of the state in private ownership there are ample opportunities for the KS PFW program to assist ranchers and farmers with voluntary fish and wildlife habitat restoration projects. Threats to native habitats in Kansas such as, invasive species, fragmentation, and improper rangeland management have led to the degradation or loss of native habitats. Through educational efforts and the application of appropriate land management strategies, the KS PFW program provides technical and financial assistance to build and strengthen conservation partnerships that enhance, establish and restore habitat for Federal Trust Species.

Partnerships are critical to conservation delivery. Conservation stakeholders bring a variety of resources and abilities to the table that a single entity cannot efficiently and/or effectively provide. A key conservation

partner for the KS PFW program is the Kansas Grazing Lands Coalition (KGLC). The KGLC is a rancher-driven non-profit organization whose mission is “To regenerate Kansas grazing land resources through cooperative management, economics, ecology, production, education, and technical assistance programs.” The KGLC is comprised of local grazing groups such as the Comanche Pool Prairie Resource Foundation, The Tallgrass Legacy Alliance, and the Smoky Hills Grazers as well as an advisory committee that represents conservation stakeholders across the state including Federal and State conservation agencies, universities and NGOs such as TNC, the Kansas Prescribed Fire Council and Pheasants Forever. The KS PFW program coordinated with the KGLC, its advisory committee, and other partners throughout the development of this 5-year strategic plan and its associated Focus Areas. The KS PFW Focus Areas not only represent high priority areas

for Federal Trust Species and their habitats, they also coincide geographically with most of the landowner driven KGLC grazing groups. Throughout the duration of this plan the KS PFW program will continue to deliver PLAs through a cooperative agreement with the KGLC, its associated local grazing groups and other conservation partners.

Focus Area Selection

Through continued communication with our conservation partners the KS PFW program maintains four focus areas across the state. The Southwest Kansas Prairies and Playas, North Central Prairies, Flint Hills, and Central Wetlands and Prairies Focus Areas prioritize our conservation efforts and help target habitats required by Federal Trust Species within the state. Using Geographic Information Systems (GIS) technologies, we incorporated datasets created by conservation partners that included spatially explicit decision support

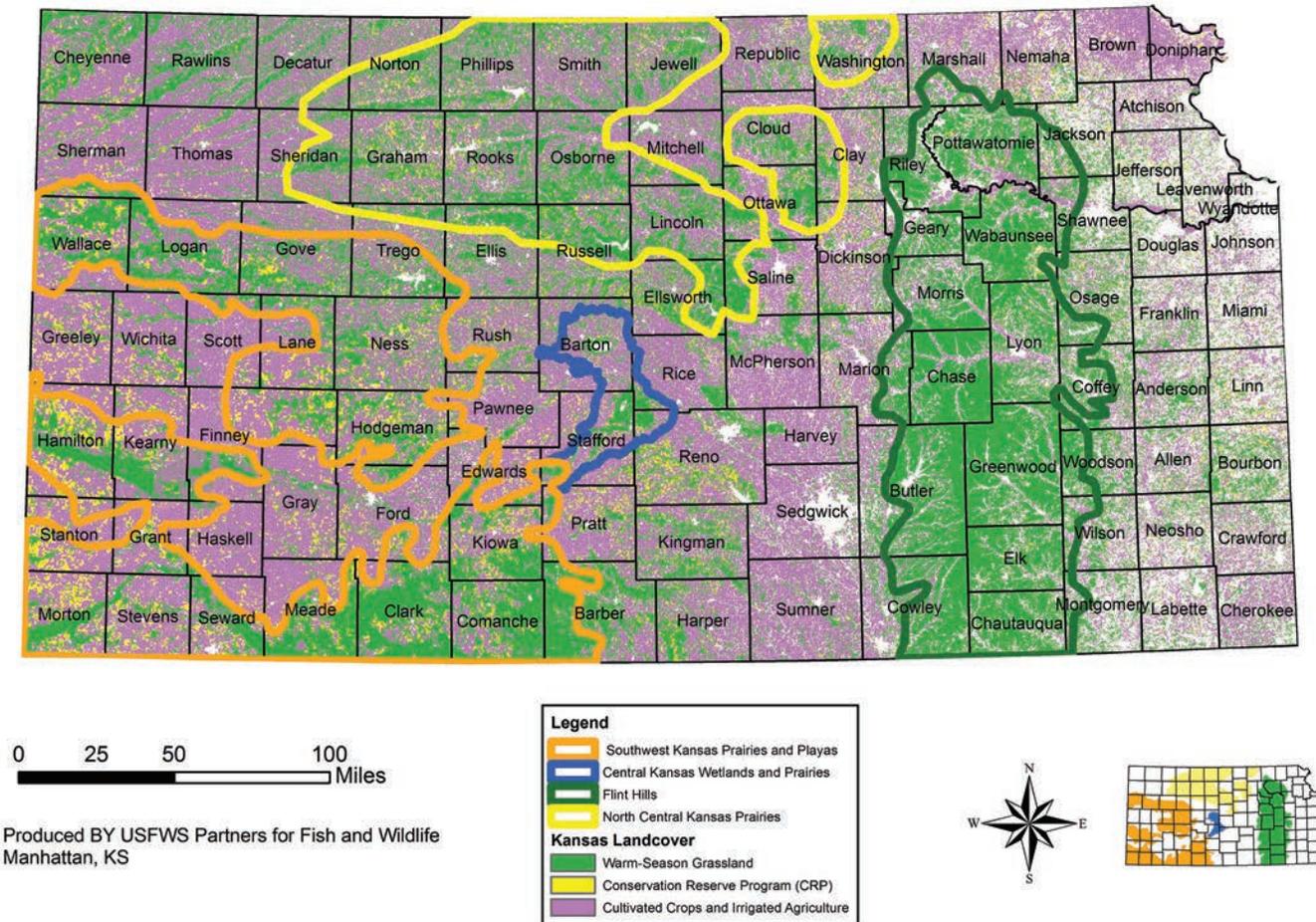
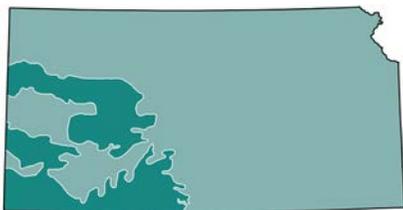


Figure 1. Kansas PFW program Focus Areas compared to Kansas Land cover data set. USFWS map.

tools created by the Service HAPET office (Fig. 2, 3), other strategic plans, landscape models such as the Western Governors’ Association Crucial Habitat Assessment Tool, and statewide land use/landcover (Fig. 1) data to create our focus areas.

Southwest Prairies and Playas Focus Area



The Southwest Prairies and Playas Focus Area is a complex and diverse landscape composed of mixed-grass, shortgrass, sand prairie and sand sagebrush prairie that extend throughout western and south central Kansas. Portions of this focus area also garner the highest densities of playa lakes in

the state. Physiographic regions within this focus area include the Red Hills, the Smoky Hills, the Arkansas River Lowlands and the High Plains of Kansas. Each of these regions is defined by unique soil characteristics, topography and plant communities. The Red Hills and Smoky Hills comprise the mixed-grass portion of this focus area. The red-colored Permian soil of the Red Hills with its many buttes, mesas and cave formations supports Kansas’s second largest intact tract of native prairie (second only to the Flint Hills). The Smoky Hills, so named for their dark shales that produce a “smoky” heat haze when viewed by settlers approaching from the east, comprises rolling to nearly level tallgrass and mixed grass prairie. Within this focus area the Smoky Hills can be considered a transition zone between the tallgrass and shortgrass prairies. Just south of the Smoky Hills lie the Arkansas River Lowlands. This area includes sand and sandsage

prairies composed of sandy soils supporting grass-covered (and at times exposed) sand dunes. Finally, the short-grass prairie portion of this area includes the High Plains region. This is the driest portion of the state due to being in the rain shadow of the Rocky Mountains. To some, this area seems a bleak and featureless expanse. Early settlers stated “You can see so far ... it hurts.” The High Plains are more functionally dynamic than a cursory view can assess. The geology of the High Plains paints a picture of river borne sands and gravels, windblown silts, volcanic ash beds and diatomite deposits.

The diversity of the Southwest Kansas Prairies and Playas Focus Area’s topography, geology and plant communities supports a multitude of Federal Trust Species. From waterfowl and shorebirds using its playa lakes, to lesser prairie-chickens and pollinators inhabiting its grasslands, the wildlife species that occur in this



Kansas Southwest Prairies and Playas Focus Area. Photo by Aron Flanders, USFWS.

area can be as diverse as the landscape, making this a high priority for conservation. Threats of habitat fragmentation, drought, and invasive species, including eastern redcedar, old world bluestem and Tamarisk, are major concerns. Additionally, the largest wildfire in recorded Kansas history (2016 Anderson Creek Wildfire) burned close to 400,000 acres with approximately 267,000 acres within this focus area. No human fatalities occurred; however, the wildfire caused significant loss of property that supports rangeland management and the livelihoods of livestock ranchers that are stewards of the prairie landscape. Ecologically, millions of eastern redcedar trees were killed, resulting in increased herbaceous production and water in springs, streams and the soil. In order to capitalize on the reduction of live seed-producing trees, dead standing trees will need to be removed in order to allow land management practices that maintain prairie communities. KS PFW coordinated with conservation partners to help address immediate needs after the fire and will continue to work with private landowners and partners in the impacted area. In addition to supporting wildfire recovery and monitoring efforts, two of the key priorities for the program in this focus area are controlling invasive trees, especially eastern redcedar,



Lesser prairie-chicken nest. Photo by Tony Ifland, USFWS.

and promoting proper prairie management. This will be done in cooperation with several partners and community-based partnerships, such as the Comanche Pool Prairie Resource Foundation (Comanche Pool). The Comanche Pool is an organized producer-driven interest group that promotes proper grassland management throughout 5.4 million acres of

Kansas's Red Hills and north-central Oklahoma. The Comanche Pool has a long track record of bringing landowners together for outreach and education. Working with KS PFW, Kansas Department of Wildlife, Parks and Tourism (KDWPT) and other partners, the Comanche Pool has helped leverage resources to deliver over 50 on-the-ground projects to impact over



A lesser prairie-chicken chick being fitted with a radio telemetry transmitter for research conducted in the Southwest Prairies and Playas Focus Area. Photo by Tony Ifland, USFWS.

120,000 acres of habitat in Kansas. Moreover, they recently assisted in putting boots on the ground with a prescribed fire specialist position that has significantly increased the capacity to conduct prescribed burns in the region. This portion of Kansas does not have as strong a fire culture compared to the Flint Hills; therefore, prescribed burn associations and prescribed fire specialist positions play a critical role in reintroducing fire management within local communities.

The lesser prairie-chicken, whose numbers have dropped by over 90% since the 1800s, is just one of the species the PFW program is working to conserve in this area. The recovery of lesser prairie-chicken is a Service national priority and Kansas is projected to produce 70% of the 5-state population goals within the Western Association of Fish and Wildlife Agencies' lesser prairie-chicken Rangewide Conservation

Plan. The lesser prairie-chicken serves as an umbrella species for numerous wildlife because it requires landscape scale contiguous grasslands that are spatially heterogeneous in structure and composition. Additionally, practices that benefit lesser prairie-chicken also support productive working ranchlands. Ranching is one of the major land-use patterns in this focus area and ranchers have been receptive to conservation strategies that incorporate their overall objectives. From the waterways of the Arkansas, Cimarron and Smoky Hill Rivers to the Medicine River and spring-fed streams that dissect the Red Hills, the Southwest Kansas Prairies and Playas Focus Area is home to many aquatic and riparian species. Through proper prairie management, PFW program staff and their conservation partners have already detected increased flows and better riparian habitat conditions due to the installation of proper grazing systems, fire return



Prescribed fire is used to enhance native prairie by controlling invasive species like eastern redcedar. Photo by Travis Morisse, Hutchinson News.

intervals and invasive woody species removal.

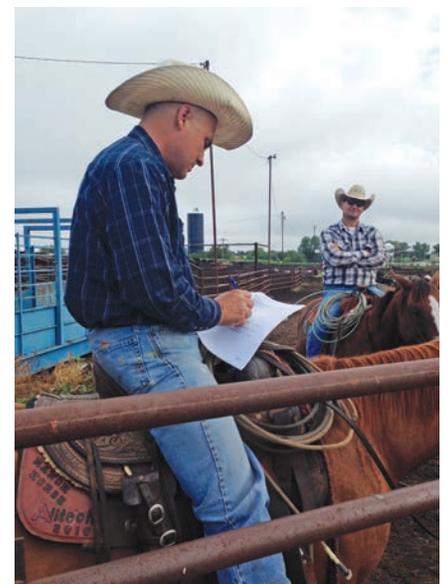
Across western Kansas, close to 10,000 depressions that formed years ago, store precious water from seasonal rains that provide a temporary oasis to wildlife on the semi-arid landscape. When



Kansas PFW program staff often conduct or assist with ranch tours, workshops, and other educational events. Photo by Bill Barby.

flooded, these depressions, called playas, attract ducks, geese, shorebirds, and waterbird species such as mallards, Canada geese, greater yellowlegs, long-billed dowitchers, whooping cranes and sandhill cranes. Playas provide important migratory stop-overs for these birds to rest and refuel, some traveling thousands of miles between breeding grounds and wintering sites. Precipitation is inconsistent in the playa region and drought is a common occurrence. Playa lakes may be the most important wetland habitat type for birds in the high plains region. Additionally, playas contribute up to 95% of the overall recharge of water to the Ogallala aquifer. Playas are often not suitable or marginal for planting and harvest of agriculture crops, leading to reduced production. Unfortunately, many playas do not function properly due to sedimentation, plowing, drainage, pitting, lack

of herbaceous buffers or altered watersheds that don't allow water to reach the playas. In addition to providing wildlife habitat, restoring hydrological function in farmed playas can contribute towards conservation of aquifer water levels that are declining drastically due to groundwater pumping for center-pivot crop irrigation. The KS PFW program is working with producers to increase awareness of the value playas hold in order to promote more participation in conservation programs and adoption of beneficial practices.



A Kansas landowner signing a Private Landowner Agreement while he breaks from sorting cows. USFWS photo.

Southwest Prairies and Playas Focus Area Focal Species

- Lesser prairie-chicken
- Grasshopper sparrow
- Loggerhead shrike
- Cassin's sparrow
- Western burrowing owl
- Northern pintail
- Long-billed curlew
- Upland sandpiper
- Whooping crane
- Arkansas River shiner (Threatened)
- Arkansas darter
- Monarch butterfly
- Western meadowlark
- Mountain plover

Southwest Prairies and Playas Focus Area Habitat Targets

- Upland Restoration/Enhancement: 17,000 acres
- Wetland Restoration/Enhancement: 250 acres
- River Miles: 20 miles

Southwest Prairies and Playas Focus Area Partnership Targets

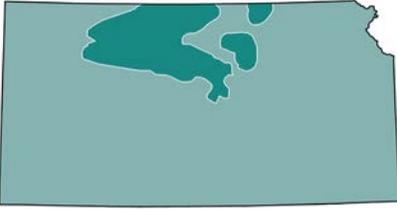
- Private Landowner Agreements: 25
- Partnerships: 225
- Technical Assistance: 125 days
- Cost-share:
 - 42% Service Funds
 - 48% Landowner Funds (in-kind or monetary)
 - 10% Other Partner funds

Please see KS PFW Implementation Strategies section following focus area narratives for additional information concerning habitat delivery in this Focus Area.



Kansas Grazing Lands Coalition addressing private landowners about community based conservation on PFW program project tour. Photo by Aron Flanders, USFWS.

North Central Prairies Focus Area



The North Central Kansas Prairies Focus Area is considered a transition zone between the tallgrass and shortgrass prairies within the state. This area includes tallgrass on the eastern edge, mixed-grass in the middle and short-grass to the west. The Smoky Hills, a large area of north central Kansas, is the primary physiographic region within this focus area. Many theories exist that attempt to explain where the Smoky Hills got their name. One historian suggests they were named for their dark shales that produce a “smoky” heat haze observed by settlers as they approached from the east. Other tales include a vast grove of cottonwoods along the Smoky Hill River that when seen from afar looked like clouds or “smoke” in the

distance. The bulk of the Smoky Hills is located within the North Central Prairies Focus Area.

This region also contains abundant outcrops of sandstone and limestone. The sandstone and limestone rock, as well as a lack of rainfall, helped to keep much of this area in prairie. A particular layer of limestone, called Greenhorn limestone, is unique to north central Kansas with the formation found mostly within the North Central Prairies focus area. Due to the scarcity of trees for lumber, early residents to this region, dating back to the late 1800s, eventually began utilizing this layer of limestone to construct everything from cellars, barns, and homes, to downtown city buildings and extravagant banks. Perhaps the most significant use of this layer of rock was for fence posts. For this reason, much of this PFW focus area is referred to as “Post Rock” country. This landscape still contains some large tracts of high quality tallgrass and mixed-grass prairie that are used primarily for grazing. Both short-grass and tall-grass species exist throughout this

focus area. To the east, tallgrass species such as big bluestem, Indian grass, and switchgrass, are abundant in moist areas. As you move west, shortgrass species such as buffalo grass and blue grama, are found on the shallow soils of the uplands. Mixed throughout this area you will also find mid-sized grasses such as little bluestem, tall dropseed, and side-oats grama. Dominant woody species include hackberry, smooth sumac, and rough-leaved dogwood. These native prairie pastures provide important seasonal habitat for migrating birds such as the Baird’s sparrow. They also provide crucial nesting and brood rearing habitat for grassland nesting birds such as the upland sandpiper, grasshopper sparrow, greater prairie-chicken, and lesser prairie-chicken. Portions of this area contain some of the highest densities of greater prairie-chickens in the state. Much of the Smoky Hill River, Saline River, Solomon River, and a portion of the Republican River and their tributaries are found within this focus area and correlate with the bulk of remnant prairie that still exists.



Blacksampson echinacea (Echinacea angustifolia) and a variety of other prairie wildflower species putting on a great show during early summer on this North Central Prairies Focus Area restoration project. Photo by Tony Ifland, USFWS.



Post rock country sunrise. Although PFW program restoration efforts center around controlling tree invasion, local limestone that was used for fence posts over a century ago still stand as a reminder of a more treeless era. Photo by Tony Ifland, USFWS.

Threats of fragmentation and invasive species are a major concern. Proper grazing management systems and fire return intervals are two major conservation priorities in this area. The program has been successful in delivering these priorities due to increased cooperation with several partners, such as the Smoky Hills Grazers, a producer driven interest group that promotes proper grassland management throughout the region. Ranching is one of the major land-use patterns in this focus area and ranchers have been receptive to conservation strategies that incorporate their overall objectives.

The Smoky Hill, Saline and Solomon Rivers along with their associated tributaries provide in-stream and riparian habitat to multiple Federal Trust Species within this focus area. As demonstrated in other parts of Kansas, proper prairie

management through the installation of grazing systems, appropriate fire return intervals and invasive woody species removal can provide secondary benefits to riverine habitats via increased flows and overall water quality. The federally endangered Topeka shiner once occurred within many reaches of these rivers and is a focal species for this focus area.

The primary objective for KS PFW in the North Central Kansas Prairies Focus Area is to coordinate with USDA, KDWPT, KGLC, Kansas Prescribed Fire Council, TNC and other conservation partners to enhance/restore native habitat on large tracts of land in order to provide adequate habitat for Federal Trust Species. Kirwin NWR lies within the heart of the North Central Prairies Focus Area. The KS PFW program will continue to coordinate conservation efforts on private lands adjacent to the

refuge to expand benefits to Federal Trust Species beyond the border of the refuge. These collaborations enable KS PFW program to work with producers on large tracts of land owned by several landowners involved with many different programs, all with common goals. One of the priority conservation practices promoted by KS PFW is prescribed fire. Previous fire cycles across this focus area once kept the invasive woody species in check. However those cycles have been altered, with fire suppression becoming the norm across most of the focus area over the last 140 years. The absence of this critical component to healthy herbaceous prairies has undoubtedly been a key factor in the increase of eastern redcedar and other invasive woody species. The control of invasive woody species has become a primary conservation issue that KS PFW and other conservation partners deal with, requiring a substantial



Remnant prairie within the Saline River valley at dawn. Photo Tony Iftand, USFWS.

amount of time and funding to combat. A key component to foster and promote prescribed fire is the recent inclusion of a Regional Fire Coordinator position within this focus area that can provide technical guidance on prescribed burning to landowners and aid in the development of prescribed burn associations. This position, made possible through the Kansas Prescribed Fire Council and Kansas Grazing Lands Coalition, is a much welcomed addition as a KS PFW partner in the North Central Prairies Focus Area. Through the organization of burn associations our cooperators can share information, equipment, and techniques with others in the conservation community to better facilitate the enhancement/management of our native prairies. The KS PFW program will deliver information concerning how to get involved with these conservation efforts through landowner workshops, other organizations,

and the communication of participating landowners.

Greater prairie-chickens occupy most of the North Central Prairies Focus Area. However, the lesser prairie-chicken range does extend into the far south western portion. Currently, lesser prairie-chickens do not occupy the prairies directly adjacent to Kirwin NWR. However, they are documented as much as 30 miles beyond the northern boundary of their historic range, which places the species just south and west of the refuge. Climate change forecasts discuss warming trends and decreasing precipitation causing declining habitat quality in the southwest portion of lesser prairie-chicken range. Additionally, maximum entropy modeling has demonstrated a distribution for expected climate change scenarios in the future that depicted greater probability of climatic conditions appropriate for lesser prairie-chickens north and

east of the current occupied range. These predicted shifts in habitat conditions put future expansion of the lesser prairie-chicken range further into the North Central Prairies Focus Area, with Kirwin NWR directly in the path. As such, KS PFW has identified over 1,000 mi² of potential habitat connecting Kirwin NWR to the current lesser prairie-chicken range. This further substantiates an objective listed in the refuge's Comprehensive Conservation Plan to create a minimum grassland habitat block size of 42,000 acres that connects prairies on private lands through NWR restoration efforts. With this key connective habitat in need of restoration and desired goals in mind, a Cooperative Recovery Initiative (CRI) grant will be utilized to restore and/or enhance existing lesser prairie-chicken habitat for nesting and brood rearing on and near Kirwin NWR and Quivira NWR. The long-term goal is to assist lesser

prairie-chicken population recovery through support of formalized conservation plans. These projects will expand upon occupied acres to enhance the distribution and connectivity of lesser prairie-chicken populations and increase population size. These restoration efforts will also benefit greater prairie-chicken and other grassland obligate species.

With habitat fragmentation being identified as a primary driver in the decline of prairie-chicken, reducing these threats will help to enhance prairies to improve nesting and brood rearing habitat for these species. CRI projects will address impacts from grassland invasion by woody plants, improper grazing systems, altered fire regimes, and restore cropland to native herbaceous vegetation. Within the North Central Prairies Focus Area, CRI projects will address these impacts to private lands adjacent to Kirwin NWR in particular, and these high priority projects will compliment refuge grassland restoration efforts as well. While it is unknown to what extent the progression of time and distance that lesser prairie-chicken range expansion will ultimately take place, KS PFW will continue to assist KDWP in conducting annual prairie-chicken lek surveys on strategically established routes to monitor this occurrence.



All in a day's work. PFW program biologist, Tony Ifland, assists with prairie-chicken research in western Kansas. USFWS Photo.

North Central Prairies Focus Area Focal Species

- Greater prairie-chicken
- Grasshopper sparrow
- Loggerhead shrike
- Cassin's sparrow
- Western burrowing owl
- Lesser prairie-chicken
- Eastern meadowlark
- Upland sandpiper
- Dickcissel
- Monarch butterfly
- Western meadowlark
- Regal fritillary
- Baird's sparrow
- Bell's vireo
- Topeka shiner (Endangered)

North Central Prairies Focus Area Habitat Targets

- Upland Restoration/Enhancement: 15,000 acres
- Wetland Restoration/Enhancement: 150 acres
- River Miles: 15

North Central Prairies Focus Area Partnership Targets

- Private Landowner Agreements: 40
- Partnerships: 360
- Technical Assistance: 125 days
- Cost-share:
 - 40% Service Fund
 - 50% Landowner
 - 10% Other Partners (NGO, KDWP)

Please see KS PFW Implementation Strategies section following focus area narratives for additional information concerning habitat delivery in this Focus Area.

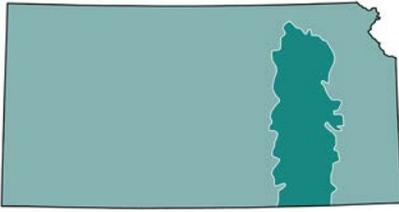


Mechanical removal of eastern redcedar trees is used to enhance prairie habitat for grassland birds and other wildlife. Photo by Tony Ifland, USFWS.



The importance of fire in the prairie is evident with this small, but dead, eastern redcedar. Photo by Tony Ifland, USFWS.

Flint Hills Focus Area



The tallgrass prairie is the most altered ecological community in North America. Of the 142 million acres that once covered the American heartland, less than 3% remain. The greater Flint Hills area of Kansas is by far the largest tallgrass prairie landscape on the continent, with more acres remaining in Kansas than in all the other prairie states and provinces combined. The shallow soils and rough terrain managed to keep the plow and other disturbances to a minimum. Even so, a sizable portion of the Flint Hills has been degraded by invasive plants, urban sprawl, woody encroachment, and continued prairie fragmentation. Physiographic regions within this focus area include the Flint Hills uplands characterized by multiple layers of flint. The Osage Cuestas, made from alternating layers of



Maintaining intact landscapes like the Flint Hills, are a priority for the PFW program in Kansas. Photo by Greg Kramos, USFWS.

limestone and shale that form what resembles a slightly collapsed staircase across the landscape. The Chautauqua Hills are comprised of prehistoric sandstone that support dense groves of post and blackjack oak forest due to the porous sandstone's ability to retain water. Lastly, the Glaciated Region at the northern end of the Flint Hills

comprised of rolling hills containing glacial till composed of quartzite and other rocks transported by glaciers from the Great Lakes region.

Ranching is king in the Flint Hills, due to the fact that there are over 3 million acres of intact native grassland that make it ideal for



Old world bluestem being treated to prevent further invasion into native tallgrass prairie. Photo by Greg Kramos, USFWS.



Flower-loving Longhorn Beetle

Texas Horned Lizard

Monarch Butterfly

Scissor-tailed Flycatcher

Giant Swallowtail Butterfly

*Promoting spot-spraying techniques to control invasive species like *Sericea lespedeza* is important in maintaining a diverse native grass and forb community. This benefits not only grassland birds but also pollinators like monarch butterflies and other wildlife. Photo by Greg Kramos, USFWS.*

grazing. The ranching community in the Flint Hills has many threats. One which weighs heavy on ranchers' minds is the presence of invasive species, such as *Sericea lespedeza*, yellow and Caucasian bluestem, collectively known as Old World Bluestems, and the encroachment of trees like Osage orange and shrubs like rough-leaf dogwood. These invasive species add to fragmentation and threaten heterogeneity within native grassland plant communities. The KS PFW program is working with several partners to control these invasive species and maintain heterogeneity within the Flint Hills by promoting burning, grazing, and invasive species control strategies that preserve native plant communities. Leading these efforts is a grass-roots, landowner-driven, non-profit organization called the Tallgrass Legacy Alliance (TLA). The TLA has enhanced over 150,000 acres of tallgrass prairie in the Flint Hills and is essential to changing rancher's philosophies about grassland management

within the area. The PFW program in Kansas has a strong, working partnership with TLA and this partnership will remain a priority for the KS PFW program.

Conservation of monarch butterflies is a national priority for the Service and the Flint Hills in Kansas is one of their strong holds. The KS PFW program will continue to work with landowners, other conservation partners and other Service programs to maintain and protect the over 3 million acres of native tallgrass prairie and native prairie hay meadows the monarch butterflies call home.

Efficient delivery of on-the-ground habitat restoration for focal species is key to the success of the KS PFW program. In an effort to become even more efficient, KS PFW has been working with the Service Flint Hills HAPET Office to develop spatially explicit decision support tools (Fig. 2, 3) that identify where habitat restoration work will be the most effective

for focal species. KS PFW will continue to work with the HAPET office to refine and develop these and other models.

In 2010, the Service initiated the Flint Hills Legacy Conservation Area program which is a voluntary perpetual conservation easement program through the National Wildlife Refuge System. The support that the PFW program has provided to the Flint Hills Legacy Conservation Area has played an important role in its success. PFW program staff will continue to work with the Flint Hills Legacy Conservation Area by increasing awareness of the program through daily interactions with landowners and providing technical assistance to prospective easement holders as well as helping to deliver habitat restoration projects on private lands already enrolled in the program.



Greater prairie-chicken on a lek in the Flint Hills. By providing quality habitat for greater prairie-chickens we enhance habitat for many other grassland species. Photo by Greg Kramos, USFWS.



Topeka shiner, Flint Hills, Kansas. Photo by Greg Kramos, USFWS.

Flint Hills Focus Area Focal Species

- Greater prairie-chicken
- Monarch butterfly
- Topeka shiner
- Mead’s milkweed
- Dickcissel
- Eastern meadowlark
- Grasshopper sparrow
- Reagal fritillary
- Henslow’s sparrow
- American golden plover
- Short-eared owl
- Neosho mucket (Endangered)
- Upland sandpiper
- Buff-breasted sandpiper
- Neosho madtom (Threatened)
- American burying beetle (Endangered)
- Scissor-tailed flycatcher

Flint Hills Focus Area Focus Area Habitat Targets

- Upland Restoration/Enhancement: 20,000 acres
- Wetland Restoration/Enhancement: 200 acres
- River Miles: 10

Flint Hills Focus Area Partnership Targets

- Private Landowner Agreements: 35
- Partnerships: 315
- Technical Assistance: 125/days
- Cost Share
 - 40% Service Funds
 - 40% Landowners and In-Kind
 - 20% Other Partners (NGO, KDWPT)

Please see KS PFW Implementation Strategies section following focus area narratives for additional information concerning habitat delivery in this Focus Area.

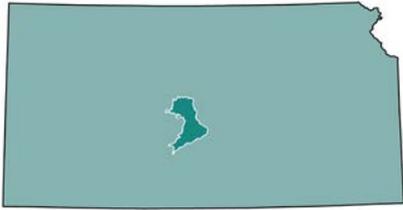


Strong partnerships with private landowners ensure success of conservation efforts. USFWS photos.



Milkweed species like butterfly milkweed and Sullivant’s milkweed are just some of the native wildflowers found in the Flint Hills that are important for monarch butterfly survival. Photo by Greg Kramos, USFWS.

Central Wetlands and Prairies Focus Area



In central Kansas, the Arkansas River flows between the Smoky Hill River (to the north) and the Cimarron River (to the south). Over time, as the “Ark” (as it is called in Kansas) adjusted its course, it deposited vast amounts of sand and gravel creating a massive alluvial fan in the heart of the mixed-grass prairie of Kansas. These grass covered sand dunes associated with the river comprise the Great Bend Prairie. At the north end of this alluvial fan exists a unique geological phenomenon that includes closed depressional wetlands at the 19,857-acre Cheyenne Bottoms and a little to the south at the 22,135-acre Quivira NWR. Both of these

wetland complexes have been designated as RAMSAR Wetlands of International Importance and part of the Western Hemisphere Shorebird Reserve Network. Quivira NWR was also designated as an Important Bird Area by the National Audubon Society and the American Bird Conservancy. Cheyenne Bottoms and Quivira NWR are jointly considered one of the eight wonders of Kansas. It has been reported that nearly half of North American shorebirds migrating east of the Rocky Mountains and close to a quarter million waterfowl stopover at Quivira NWR and Cheyenne Bottoms annually as they travel through the bottleneck of the central flyway. For some species, such as stilt sandpiper and white-rumped sandpiper, 90% of the world’s population may utilize the area annually. Additionally, Quivira’s unique inland saltmarsh systems and alkali flats provide critical habitat for the federally endangered whooping crane. From shorebirds to waterfowl, these wetlands are considered one of the

most important stopover points for a multitude of Federal Trust Species and also provide breeding habitat for the American avocet, least tern, snowy plover and black-necked stilt.

The wetlands however, are not the only conservation priority in the area. The landscape surrounding both Cheyenne Bottoms and Quivira NWR include portions of the Great Bend Prairie. These native grasslands support focal species such as migrating and breeding monarch butterflies, dickcissel, burrowing owl, and upland sandpiper. Quivira NWR recently completed a Comprehensive Conservation Plan that included a strategy to utilize private land programs to promote sustainability of water resources, control invasive species and restore native plant communities in the Rattlesnake Creek watershed. Addressing resource concerns surrounding these conservation strongholds is a priority for the PFW program within this focus area. For example, a primary



Long-billed dowitchers and other shorebirds utilize PFW program restored wetlands in Kansas. USFWS photo.



Kansas's Central Wetlands and Prairies Focus Area is recognized for its inland salt marshes that provide habitat for sandhill cranes and other waterbirds. USFWS photo.

resource concern is invasive phreatophytes on Rattlesnake Creek and surrounding marshes that provide surface water and spring flow to Quivira NWR and Cheyenne Bottoms. Additionally, practices that restore, enhance and maintain natural hydrological processes will be pursued in order to positively influence water resources.

Proper prairie management is an additional conservation priority in this area. This focus area is a relatively new addition to the KS PFW Strategic Plan and we look forward to partnering with landowners within this focus area to deliver grassland, riparian and wetland centered technical assistance and restoration.



The Central Wetlands and Prairies Focus Area provides important stopover and breeding habitat for whooping cranes and other migratory birds. USFWS photo.



Before (top) and after (middle) photos of a PFW program project site. Bottom, sandhill cranes and a radio-collared whooping crane utilize the project area after invasive phreatophytes (e.g., tamarisk, Russian olive) were removed. Photos by Aron Flanders, USFWS.

Central Wetlands and Prairies Focus Area Focal Species

- Whooping crane
- American avocet
- Black-necked stilt
- Black rail
- Loggerhead shrike
- Dickcissel
- Western burrowing owl
- Snowy plover
- Northern pintail
- Upland sandpiper
- Greater prairie-chicken
- Arkansas shiner (Threatened)
- Arkansas darter
- Monarch butterfly
- Lesser prairie-chicken
- Eastern meadowlark

Central Wetlands and Prairies Focus Area Habitat Targets

- Upland Restoration/Enhancement: 1,000 acres
- Wetland Restoration/Enhancement: 100 acres
- River Miles: 2

Central Wetlands and Prairies Focus Area Habitat Targets

- Private Landowner Agreements: 5
- Partnerships: 45
- Technical Assistance: 40/days
- Cost-share:
 - 40% Service Fund
 - 50% Landowner
 - 10% Other Partners (NGO, KDWPT)

Please see KS PFW Implementation Strategies section following focus area narratives for additional information concerning habitat delivery in this focus area.



Prescribed grazing and fire are the primary drivers that maintain prairies in Central Wetlands and Prairies Focus Area of Kansas. Photo by Aron Flanders, USFWS.

Kansas PFW Implementation Strategies

- Upland, riparian, and wetland objectives will be met by conducting technical assistance and on-the-ground conservation efforts on private land within designated focus areas. Voluntary private landowner agreements (PLA) involve geospatial mapping and calculation of attributes associated with resource concerns, practices and priorities; consultations with landowner and partners; development of technical specifications; establishment of scope, timeline and budget; administration of archaeological clearance, biological evaluations, project selection and NEPA; evaluation

of benefits to Federal Trust Species and contribution to national/regional priorities and conservation plans; monitoring, and incorporation of long-term maintenance plans.

- Capacity building will be accomplished through on-going communication and coordination with conservation partners to enhance/restore native habitat in order to provide adequate habitat quantity and quality for Federal Trust Species. Strategic coordination of conservation projects that build upon past achievements will create biologically significant landscape scale areas benefiting wildlife. For playa and other wetland conservation, KS PFW will partner with DU, KDWPT,

KAWS and others to apply for NAWCA and other funding sources to increase restoration and conservation. KS PFW will assist in increasing awareness of the importance of playas and other wetlands across the state.

- Continue to incorporate biological planning into conservation delivery, based upon formalized conservation plans and coordination among our research partners, such as Kansas State University, Kansas Biological Survey, KDWPT, TNC, Service HAPET, NWR CCPs and others. Conservation practices will continue to be scientifically-based and adapted to the best available information to be effective and efficient. To help reduce

uncertainty, adaptive management processes will be utilized to apply a feedback loop of research results and experience to change management as needed. PFW, in consultation with its partners, will identify research needs and promote and support implementation of research projects through universities and other institutions.

- Monitoring and adaptive management will be applied as part of the strategic habitat conservation framework. Monitoring will be accomplished by following the established KS PFW Monitoring Plan in addition to other efforts, such as the lesser prairie-chicken Cooperative Recovery Initiative (CRI). The CRI monitoring protocol is consistent with NRCS lesser prairie-chicken and WAFWA monitoring efforts, which utilize established metrics for quantifying habitat-based biological outcomes. Additionally, WAFWA coordinates annual Lesser prairie-chicken aerial surveys that are coupled with KDWPT ground lek surveys.
- Priority will be given to conservation of intact landscapes, particularly in watersheds that still support high-value native fish and mussel communities, monarch butterflies and grassland nesting birds. Furthermore, stream channel restorations, fish passages and riparian buffers will be promoted in these priority watersheds.
- Maintain coordination with NRCS and Prescribed Fire Specialists to develop comprehensive prescribed grazing and burning plans. Patch-burn grazing and other techniques that maintain grassland processes and create heterogeneous landscapes will be delivered. A critical component of capacity building is the inclusion of prescribed fire specialist positions

across the state that can provide technical guidance on prescribed burning to landowners and aid in the development of PBAs. Through the organization of burn associations, our cooperators can share information, equipment, and techniques with others in the conservation community to better facilitate the enhancement/management of our native prairies. The KS PFW program will deliver information concerning how to get involved with these conservation efforts through landowner workshops, other organizations, such as the Comanche Pool, and the communication of participating landowners.

- Continue to utilize Farm Bill programs, such as Lesser Prairie-Chicken Initiative, CRP Grasslands, Continuous CRP practices, EQIP, and CSP. For example, TNC and other partners were awarded a Regional Conservation Partnership Program grant for projects in the Flint Hills and Red Hills of Kansas. Staff will continue to harness these resources to enhance conservation delivery to landowners.
- Continue to seek private conservation partner contributions and leverage other outside resources to deliver on-the-ground projects, outreach and education. For example, KS PFW coordinated with Quivira and Kirwin NWRs to acquire CRI funds to restore habitat on private lands and increase the NWR's capacity to undertake habitat restoration projects, such as native prairie plantings in retired cropland.
- Long-term conservation will be supported by increasing landowner awareness of easement opportunities through programs such as the Flint Hills Legacy Conservation Area. KS PFW will coordinate with FSA/

NRCS to provide review and recommendations for easements under the Agricultural Conservation Easement Program.

- Drought contingency planning will be included in prescribed grazing plans to avoid negative impacts to wildlife habitat and range condition due to environmental uncertainty.
- Stream channel restorations, fish passages and riparian buffers will be promoted in priority watersheds. For example; the Rattlesnake Creek and associated watershed will receive conservation emphasis in the Central Wetlands and Prairies Focus Area. Invasive species, such as Tamarisk, Russian olive and phragmites will be targeted.
- Continue to make Monarch Butterfly conservation a priority by maintaining and building new partnerships and leveraging other program dollars, such as the work being accomplished under the KGLC/NFWF Grazing Lands as Monarch Habitat Grant.
- Continue to work with Service Flint Hills HAPET to evaluate conservation benefits to focal species through the development of spatially explicit decision support tools.
- Deliver information concerning how to get involved with ongoing conservation efforts through landowner workshops, other organizations, and the communication of participating landowners.
- Explore the development of Service Cooperative Agreement(s) with TLA, Comanche Pool and other conservation groups to designate specific funding for targeted areas, when available. PFW PLA's will be the mechanism to deliver on-the-ground habitat restoration projects with individual



The sun sets on a working cattle ranch within the Flint Hills, Kansas. Photo by Dominic Barrett, USFWS.

- landowners. PFW will assist these groups in increasing awareness of the importance of preserving native prairies and the ranching communities they support.
- New partnerships will be sought, such as recent work completed in coordination with the Commission for Environmental Cooperation (CEC). The CEC projects generated over 70% outside funding for projects completed as part of their North American initiative.
 - Continue to assist partners in conducting essential annual surveys. For example, such as prairie-chicken lek routes and Breeding Bird Survey routes.
 - Sand sagebrush prairies will have conservation emphasis in Southwest Prairies and Playas Focus Area due to severe long-term declines in quantity and quality.
 - Efforts will be made within the Central Wetlands and Prairies Focus Area to develop community-based partnerships and the formation of landowner-driven initiatives, similar to Comanche Pool and TLA.
 - In the Anderson Creek Wildfire area, removal of dead standing trees will be included in projects because they will shelter cedars emerging from the seed bank, provide perches for songbirds to deposit new invasive tree seeds, logistically prevent beneficial land management practices (i.e. grazing, firebreaks, herbaceous weed control), act as raptor perches and cause lesser prairie-chicken avoidance behavior. KS PFW will work with landowners impacted by the wildfire to support rangeland health recovery.

Kansas Statewide Goals

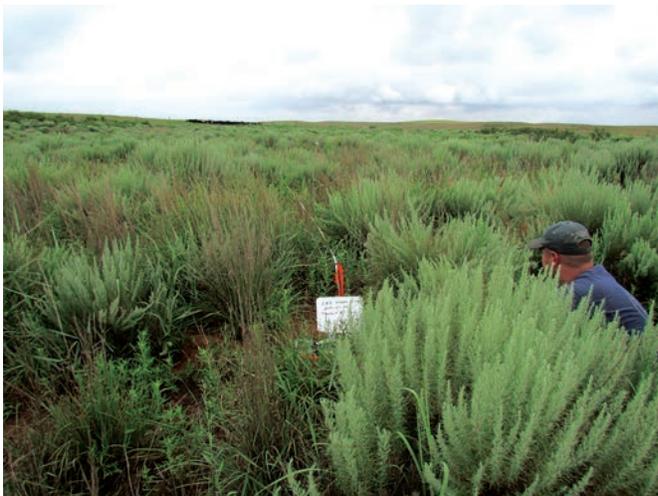


Improve Information Sharing and Communication

The KS PFW program staff has excellent relationships with many partners and conservation stakeholder groups. It is a high priority to maintain these relationships. This will be achieved through the following:

- Participating in semi-annual coordination meetings with NRCS and KDWPT staff
- Continuing to be active members of the state technical committee and sub-committee members for the Environmental Quality Incentive Program, Conservation Reserve Program and Agriculture Conservation Easement Program
- Coordinating with/Supporting NGOs, such as the:
 - o Kansas Grazing Lands Coalition
 - o Kansas Prescribed Fire Council
 - o Comanche Pool Prairie Resource Foundation
 - o Tallgrass Legacy Alliance
 - o Smoky Hill Grazers
 - o Kansas Alliance for Wetlands and Streams
 - o TNC
 - o Ducks Unlimited
 - o Kansas Livestock Association
 - o Western Association of Fish and Wildlife Agencies
 - o Pheasants Forever
 - o National Wild Turkey Federation
- Maintaining working relationships with state agency partners such as KDWPT, KFS, KDHE

This will be accomplished through attending meetings/conferences/workshops, leading tours and being involved in educational programs across the state.



KS PFW program staff will continue to maintain information concerning habitat restoration efforts and technical assistance that will be entered into the PFW program HabITS database.

Measurable Objectives

- Participate in 45 workshops, ranch tours, conferences or meetings involving partners in Kansas
- Contribute to 10 media events involving the KS PFW program
- Participate in 10 Semi-annual Coordination meetings with NRCS and KDWPT staff
- Sponsor 10 rancher conferences, workshops or tours throughout Kansas
- Conduct 5 Congressional Outreach activities (i.e. events, tours, briefings, correspondence materials, etc)
- Conduct 10 events that connect children with nature (i.e. community outreach events, presentations, outdoor classrooms, Boy/Girl scout activities, etc.)
- Maintain active role in USDA State Technical Committees and Sub-Committees

Enhance our Workforce

The KS PFW program staff is responsible for large geographic areas and must have the skills to effectively deliver technical and financial assistance concerning conservation delivery for a wide variety of landscapes and habitat types. These range from wildlife ecology, invasive species management/control, plant ecology, water law, grazing management and other agricultural



Kansas PFW program and National Wildlife Refuge System staff perform monitoring to quantify habitat metrics before and after projects. Photo by Aron Flanders, USFWS.

practices. KS PFW staff are required to maintain a broad knowledge-base of conservation practices within a landscape that is maintained via disturbance events such as grazing and fire. Appropriate timing and duration of these disturbance events is the key to maintaining desired ecological states. These skills are maintained through experience, mentoring and training. Providing an opportunity to take appropriate training is a cornerstone to maintaining a highly motivated and effective team.

Measurable Objectives

- KS PFW staff will spend 40 hours in another KS PFW biologist's area to exchange techniques, ideas and address challenges.
- KS PFW staff will attend at least 40 hours training annually. This may include formal coursework, workshops, conferences, mentoring,

work details, regional program meetings, required training, etc.

- Work with KS PFW staff to update Individual Development Plans and provide opportunities to achieve goals identified within each plan.
- Annually assist PFW staff in attending pertinent training for cutting edge habitat restoration techniques.
- Semi-annual staff meeting to provide policy updates, issues of concern across the state and guest speakers.
- Annual award recognition for outstanding accomplishments

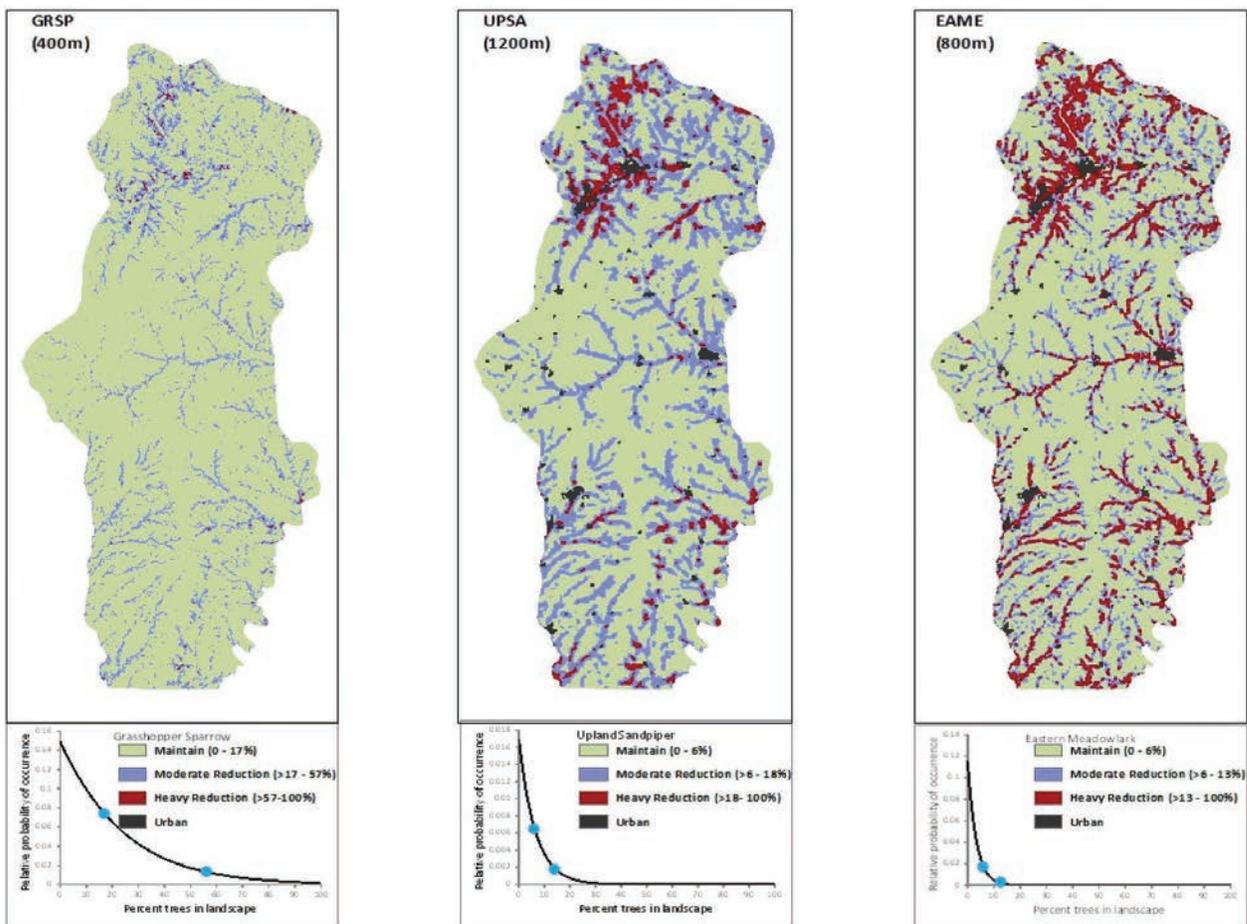


Figure 2. Service HAPET model depicting grassland bird response to tree removal within the Flint Hills Focus Area. Using Breeding Bird Survey data, HAPET isolated bird response to woody vegetation and plotted the response curve (below each map). Based on the response curve we can see maximum benefit from removing trees or preventing encroachment in the green areas, moderate response in the blue (needs moderate levels of tree removal) and low response in the red areas (needs extensive tree removal to obtain response). Also note each species responds at a different landscape size (400m, 800m, and 1200m) as well as to different thresholds of % trees (grasshopper sparrow (GRSP) high response up to 17% trees in landscape while upland sandpiper (UPSA) and eastern meadowlark (EAME) drop off sharply at around 6% trees).

Highest Priority for Four Species Combined (EAME, GRSP, UPSA, WEME)

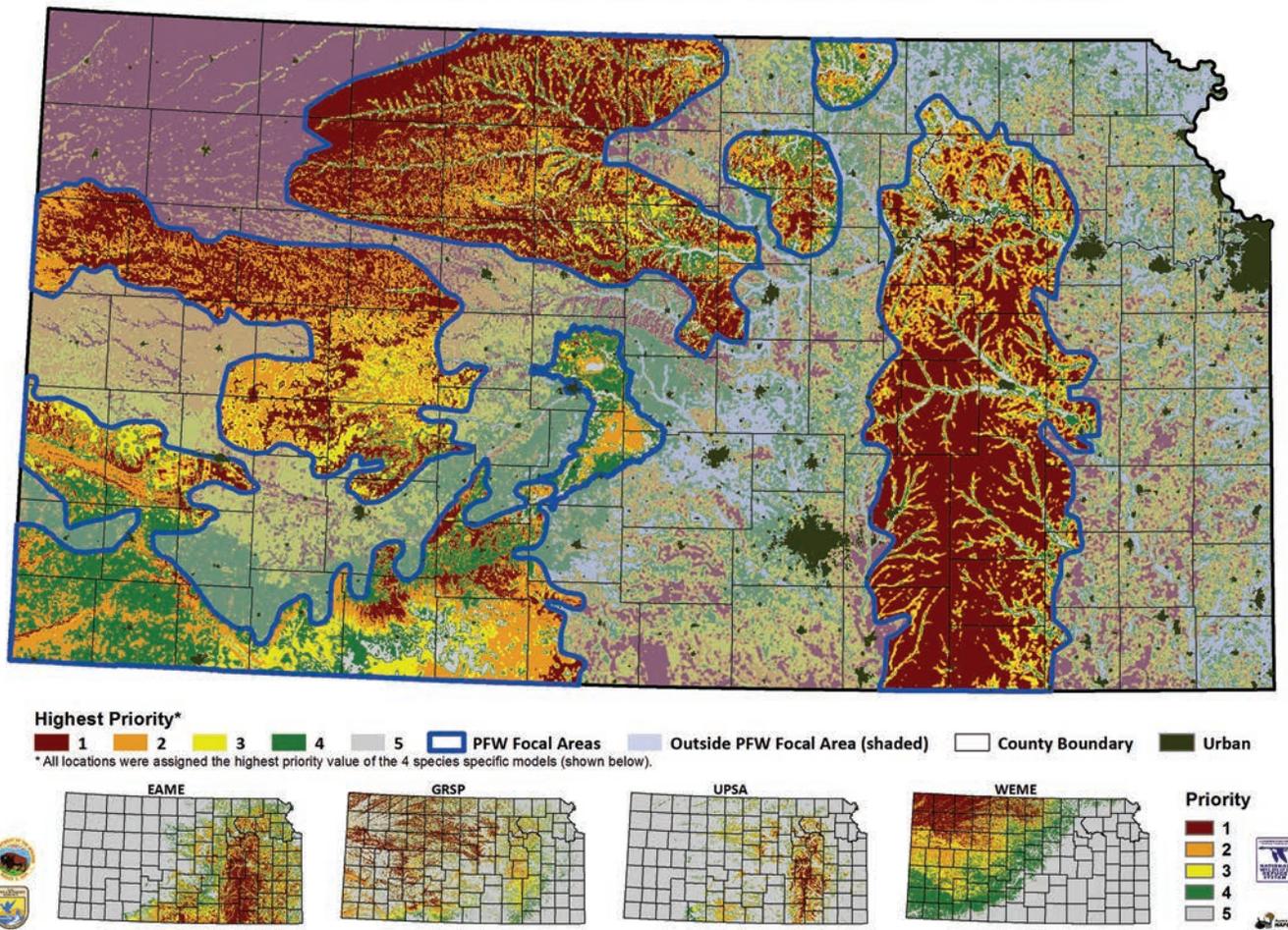


Figure 3. Service HAPET model depicting highest priority grasslands for the eastern meadowlark, grasshopper sparrow, upland sandpiper and western meadowlark in Kansas using Breeding Bird Survey and landcover data. Areas in red indicate where restoration efforts will have the most benefit for at least one of the modeled species. Models such as this provide valuable input when prioritizing landscapes and delineating Kansas PFW program Focus Areas.

Increase Accountability

The KS PFW program will use many factors in prioritizing projects under this strategic plan. Criteria evaluated for each PLA will include an analysis of conservation benefits to Federal Trust Species and other focal species as demonstrated by the following:

- Determining most cost-effective means to deliver project accomplishments (this will include exploring all possible options to leverage PFW funds)
- Using best available science to document benefits to target species within each PLA
- Evaluating conservation benefits to focal species defined by Spatially Explicit Habitat Models
 - o FWS HAPET Treatment Specific prioritization models (Fig. 2)
 - o FWS HAPET Relative Probability of Detection models for priority grasslands (Fig. 3)
 - o Southern Great Plains Crucial Habitat Assessment Tool for the lesser prairie-chicken
- Proximity to National Wildlife Refuges

- Projects within the identified four conservation focus areas will be given the highest priority

To ensure conservation objectives have been met and benefits to Federal Trust Species are captured, all funded projects will be monitored via the established KS PFW Monitoring Protocol. Level I monitoring will be conducted on all funded projects and reported in the HABITS Database. Level II (photo points and qualitative habitat response evaluation) and Level III monitoring (biological outcomes) will occur on a subset of projects.

Measurable Objectives

- Implementation of KS PFW PLA Monitoring Plan for Level I, II and III monitoring efforts (this includes establishment of photo points, documenting accomplishment effectiveness, measuring habitat response to conservation practices)
- Produce/publish an annual accomplish report concerning conservation delivery and coordination via technical and financial assistance

- Relating proposed benefits to focal species as defined by Spatially Explicit decision support tools within PLAs (i.e. HAPET Treatment and Species Models, SGPCHAT for lesser prairie-chicken)
- Increase the amount of photos entered into HabITS by 10%
- Provide summary updates to partners at semi-annual coordination meetings
- Work with Service-HAPET office to continue development of statewide spatially explicit species and treatment prioritization decision support tools.
- Work with universities and extension service to increase monitoring of KS PFW project sites

External Factors

Invasive species present on the landscape and those yet to come will continue to be a major threat to native prairies in Kansas. Control methods for invasive species are continually being enhanced and updated. KS PFW will use the best available science and methodology to address current and future impacts from invasive species. Prescribed fire is a necessary management tool to maintain native prairie systems. Climate and local regulations can impact the ability to deliver prescribed fire in any given year. KS PFW will maintain flexibility when delivering prescribed fire via PLAs and apply the practice when feasible. The conversion of native prairie is also a factor that the PFW program has to anticipate. Whether it is conversion to cropland, cool-season grasses, or urban development, all are threats to native prairies and may cause fragmentation of large intact grasslands. How much conversion actually occurs can depend on the ever-changing agricultural community. Continuing drought cycles will also impact the number of projects that landowners may be able to complete. Availability of funds for leveraging may be reduced for projects if profits are small. Also, an increase in fuel and material prices drastically impacts contractor prices and reduces the number of restoration acres the PFW program is able to fund.

Monitoring Plan

The KS PFW program has been working with Kansas private landowners to conserve habitat for Federal Trust Species since 1988. Kansas is a “Prairie” state noted for its native grasslands, streams and wetlands, abundant blue skies and green prairie vistas. The Kansas landscape includes almost 16 million acres of native grasslands or rangelands. The native grasslands that exist throughout Kansas are one of the State’s most important renewable natural resources. These grasslands help maintain the landscape and its watersheds and aid in maintaining the water quality in our streams, wetlands and lakes. Grasslands in Kansas are home to a rich diversity of native plants and wildlife species. Grassland-dependent birds have shown a steeper, more consistent decline than any avian group in North America. Fragmentation, land conversion, invasive species encroachment, decoupling of the fire and grazing interaction and the

lack of heterogeneity resulting from inflexible grazing management regimes are all causes in the precipitous decline of grassland bird populations. With 97% of the State held in private ownership, partnerships are the key to delivering habitat conservation. Locally-lead, rancher-driven grazing groups across the state have played a critical role in conservation delivery through the KS PFW program. These groups include the Comanche Pool Prairie Resource Foundation, the Tallgrass Legacy Alliance, the Smoky Hills Grazers and the Kansas Grazing Lands Coalition. These partnerships, along with collaboration with other federal/state/local agencies and NGOs have resulted in the KS PFW program working with over 500 private landowners to restore/enhance/establish 460,000 acres of upland, 23,000 acres of wetland and 205 miles of riparian/stream habitat for Federal Trust Species. Just as partnerships were the key in delivering habitat conservation, these same partnerships will be critical when implementing the KS PFW program monitoring plan. Monitoring conducted by local landowner driven groups, other federal/state/local agencies and NGOs will provide valuable information concerning the effectiveness and overall benefits derived from strategic habitat conservation delivery by the KS PFW program.

KS PFW program Level I, II and III Monitoring

Level I - Compliance Monitoring for On-the-Ground Practices

To ensure that the on-the-ground habitat restoration practices identified within the Private Landowner Agreement were completed and are functioning, per the scope of work identified in the Exhibit A, an annual site visit will be conducted when restoration practices are completed, and repeated at least once between years 3 and 6 and again between years 8 and 10. Compliance monitoring will be conducted by the Service’s private lands biologist in coordination with the landowner and other partners to the project. The Site Visit Report form developed by the R6 PFW program (Attachment 1) will be filled out, recorded in HabITS and filed in the official file. The initial Site Visit Report form will meet the requirements for compliance monitoring as well as serve as the close-out report for the financial assistance award in PRISM.

Note: In years when Level II monitoring occurs (described below) the Level II monitoring will take place of Level I efforts.

Level II - Biological Monitoring at the Project Level

Biological monitoring (Level II) will be completed on a subset of projects prior to initiating habitat restoration work and repeated at least once between years 3 and 6 and again between years 8 and 10. During the site visits the project will be evaluated to determine if the vegetative composition and fish and wildlife use of the project is meeting anticipated goals. Photos will be taken from established photo points to document changes in project conditions over time. The KS PFW program Level II Accomplishment Monitoring

Table 1. Biological and Habitat Monitoring Metrics		
KS PFW Conservation Practice	Key Habitat Attributes (Presence or Absence)	Federal Trust Species (Presence or Absence Only)
Prairie Enhancement	Perennial Cover (Y/N) Native Grass Species (Y/N) Native Forb Species (Y/N) Milkweed (Y/N)	Invasive Species (Y/N)
Prairie Restoration	Perennial Cover (Y/N) Native Grass Species (Y/N) Native Forb Species (Y/N) Milkweed (Y/N)	
Wetland Establishment	Hydrology (Y/N) Hydrophytes (Y/N) Mudflats (Y/N)	Grassland Songbirds (Y/N) Shorebirds (Y/N) T&E Species (Y/N) Monarch Butterfly (Y/N)
Wetland Restoration	Hydrology (Y/N) Hydrophytes (Y/N) Mudflats (Y/N)	Number of Shorebirds, T&E Species and Waterbirds Utilizing the Project
Riparian Enhancement	Native Grass Species (Y/N) Wetland Plants (Y/N) Desirables Shrubs (Y/N) Desirable Trees (Y/N)	Number of Shorebirds, T&E Species, Riparian species, Waterbirds Utilizing the Project

form (Attachment 2) will be filled out, recorded in HabITS, to tie biological data to spatial and other project information data, and filed in the official file. Information to be entered in the fillable sections of the Level II Accomplishment Monitoring form will address attributes from Table 1 above.

Level III - Biological Monitoring at the Landscape Level

The KS PFW program staff will work with both internal and external partners to determine those species and landscapes that the KS PFW program, in coordination with its partners, can reach Level III biological monitoring at the landscape level. Level III biological monitoring will contribute towards evaluating the biological outcomes for target species from the acres/miles of habitat being restored throughout conservation focus areas, where the opportunity exists. Level III biological monitoring will take place at a landscape scale. When achievable,

Level III biological monitoring at the landscape level will involve coordination with conservation partners (i.e., Kansas Department of Wildlife and Parks and Tourism, Playa Lakes Joint Venture, Refuge I&M Team, universities, and other partners) to assist in identifying, prioritizing, implementing, and funding Level III biological monitoring efforts. Outcomes for Level III biological monitoring efforts will include (a) decision support tools, (b) habitat use models, and (c) other tools to help guide future conservation efforts throughout our high priority conservation focus areas. As a part of this process, each KS PFW program private lands biologist worked with their State counterparts and other conservation partners to identify and list ongoing monitoring efforts that are occurring throughout each of the KS PFW program conservation focus areas. A list for each conservation focus area is provided in Attachment 3.

Example of Ongoing Level III Landscape Level Biological Monitoring

Lesser Prairie-Chicken Cooperative Recovery Initiative Monitoring

Project Name

Lesser prairie-chicken conservation and recovery in Kansas

Project Goal

The primary goal of this project is to restore/enhance over 15,000 acres of lesser prairie-chicken habitat and maintain quality nesting and brood-rearing habitat into the foreseeable future through prescribed grazing and burning on private lands and NWRs within the current range of the lesser prairie-chicken. This project will implement on-the-ground recovery efforts for the lesser prairie-chicken on private lands through PFW Private Landowner Agreements (PLAs). Other goals of this project include establishing, maintaining and enhancing partnerships with stakeholders focused on lesser prairie-chicken conservation, including state/federal agencies, private landowner groups, and NGOs. This project will also increase the coordination of lesser prairie-chicken conservation between Service staff within Ecological Services, NWR and the KS PFW program.

Monitoring

Kirwin NWR staff will perform habitat based monitoring (Pitman et al. 2005, Grisham 2012, Van Pelt et al. 2013), in accordance with monitoring for NRCS Lesser Prairie-Chicken Initiative and the Western Association of Fish and Wildlife Agencies (WAFWA) lesser prairie-chicken Range Wide Plan, on project sites. Baseline information will be collected prior to project implementation. Metrics for high quality lesser prairie-chicken nesting and brood-rearing habitat will quantify biological outcomes relative to established objectives for quality habitat (Hagen et al. 2013, Van Pelt et al. 2013; pp. 75-76). Range Technical Note 8 techniques will be utilized to estimate ERC cover before and after tree control projects. Achievement of habitat objective measures will be monitored annually.

The WAFWA coordinates annual aerial Lesser prairie-chicken surveys (<http://www.wafwa.org/>) during the lekking season within Kansas' sand sagebrush, mixed-grass prairie and short grass-CRP prairie regions (2014 McDonald et al.) in order to estimate lesser prairie-chicken populations, lek sizes and distribution among ecoregions. Results from these surveys will be used to evaluate potential population level benefits provided by the KS PFW lesser prairie-chicken CRI projects.



Attachment 2
KS PFW Level II



Accomplishment Monitoring Form

To be completed prior to Monitoring Accomplishment

Agreement Date: _____ Date Work Completed: _____

PLA Number: _____

Accomplishment Type: (Acres &/or Miles) Upland _____ Wetland _____ Riparian _____

Primary Trust Resources: _____

Accomplishment Objectives:

Photo Point Coordinates (Decimal Degrees)

Photo Point # _____ Lat: _____ Long: _____

Observed Biological and Habitat Monitoring Metrics: (related to accomplishment objectives)

Factors that influence current condition: (i.e. climate, grazing, time since fire or other disturbances)

*See Table 1 in KS PFW Level II Monitoring Guidelines

Cooperator Comments: (are cooperator's objectives being met?)

Are accomplishment objectives being met: Yes No

Observations:

Kansas PFW Level II Monitoring Guidelines

- **Timing of Monitoring:**
Attempt to monitor same time of year (i.e. Fall, Spring)

Monitoring for specific wildlife species should adhere to established

Monitoring protocols if applicable. (i.e. shorebird surveys following National Shorebird Survey/Cornell dates, grassland birds following the Breeding Bird Survey time frames.)
- **Minimum of one photo point per accomplishment**
 - Photo point establishment will follow guidance provided by USDA publications concerning:
 - General selection criteria
 - Photo point marking
 - Reference point
 - GPS
 - Image management
- **Standardized photo name (i.e. 64860-14-RL01-2014-04-15-P1N)**
(PLA Number-Year-Month-Day-Photo Point # Direction)
- **Monitoring Veg Response:**
Estimate veg condition related to accomplishment

Objectives related to (height, density, species comp)
- **Comments regarding whether accomplishment objectives are being met could include:**
Concerns, Observations, Recommendations, Future Project Needs

Attachment 3

Kansas Ongoing Monitoring Efforts Listed by Focus Area

Statewide Monitoring Efforts

- A. KDWP Stream Survey and Monitoring
 - i) River and stream monitoring May-August on public and private land in order to assess the biological community of stream systems in the state
- B. Mid-Winter Waterfowl Survey
 - i) Aerial survey to look at numbers and distribution of waterfowl
 - ii) Conducted by Service and KDWP
- C. Breeding Bird Survey
 - i) Standardized survey routes and methodology for long-term monitoring of breeding bird trends that is conducted by numerous individuals and organizations
- D. Kansas State University Old World Bluestem Invasion Monitoring and Control
 - i) Mapping known patch populations of Yellow old world bluestem to track rate of increase
 - ii) Investigating herbicide application strategies to control Caucasian and Yellow old world bluestems
- E. Wichita State University Biological Field Station
 - i) Current monitoring efforts include:
 - (1) prairie restoration and recovery
 - (2) plant-insect interactions
 - (3) ecology of aquatic invertebrates
 - (4) fitness maximization of birds in the non-breeding season
 - (5) monitoring riparian and prairie bird nesting communities
 - (6) stopover ecology of long distance Neotropical avian migrants
 - (7) monitoring of fish, reptile and mammal population dynamics
- F. Kansas Forest Service
 - i) GIS-Based Riparian Forest Assessment
 - ii) Identify Riparian Restoration Areas above Federal Reservoirs
 - iii) Conducted by Kansas Forest Service, NRCS, Kansas Dept. of Ag.
- G. Kansas Forest Service
 - i) State-wide Forest Inventory
 - ii) 20% of the state is inventoried each year and compiled every 5 years.
 - iii) US Forest Service - Northern Research Station, Kansas Forest Service
- H. Fort Hays State University
 - i) Northern long-eared bat and associated species surveys
 - ii) Monitoring maternal roost sites, winter hibernacula, diet and foraging across 68 counties in Kansas

Southwest Prairies and Playas Focus Area

- A. USDA NRCS LPCI
 - i) Annual habitat monitoring relative to lesser-prairie chicken habitat requirements
 - ii) Monitoring efforts primarily occur
 - iii) Conducted by NRCS staff and Pheasants Forever Farm Bill biologists
- B. WAFWA Lesser prairie-chicken Rangewide Plan
 - i) Annual habitat monitoring relative to lesser prairie-chicken habitat requirements
 - ii) Monitoring efforts primarily occur
 - iii) Conducted by KDWP staff and WAFWA lesser prairie-chicken coordinators
- C. KDWP Lesser Prairie-Chicken Lek Surveys
 - i) Annual ground based transect surveys for monitoring lesser prairie-chicken lek trends
 - ii) Monitoring efforts occur in spring
 - iii) Conducted by KDWP, TNC, and Pheasants Forever Farm Bill Biologists

- D. Kansas State University Lesser-Prairie Chicken Research
 - i) Investigating influence landscape characteristics on nest survival and nest site selection
 - ii) Monitoring efforts occur throughout spring and summer
 - iii) Conducted by Kansas State University graduates students and technicians
- E. WAFWA Lesser Prairie-Chicken Aerial Surveys
 - i) Annual surveys along transects utilizing distance sampling techniques across the Lesser prairie-chicken range in order to estimate population trends within ecoregions
 - ii) Occur in the spring
 - iii) Conducted by West Ecosystems, Inc.
- F. Lesser-Prairie Chicken Interstate Working Group Crucial Habitat Assessment Tool (CHAT)
 - i) Ranked geospatial areas of relative importance to Lesser prairie-chicken population
 - ii) Updated periodically when new information and resources are available
- G. PLJV Playa Lakes Decision Support Tool
 - i) Geospatial analysis and mapping of playas of high conservation priority
- H. KDWPT Biannual Bat Surveys
 - i) Monitor traditional bat roost areas in the Red Hills and monitor for signs of white-nose syndrome
 - ii) Conducted by KDWPT and TNC
- I. Playa Lakes Joint Venture IMBCR Monitoring
 - i) Attempt to estimate bird densities, population sizes and occupancy rates at local and regional scales for birds in the short and mixed grass prairies
 - ii) Trends can be used to determine which species require additional conservation action
 - iii) Population estimates can be used to formulate population goals which can trigger conservation action when populations reach a predetermined level
- J. Rocky Mountain Bird Observatory
 - i) Grassland Bird Surveys
 - ii) Evaluating the effectiveness of LPCI prescribed grazing for increasing populations of grassland birds
 - iii) Determining habitat relationships for grassland birds at local and landscape scales
 - iv) Investigating the extent that the Lesser prairie-chicken served as an umbrella species for other species of grassland birds

North Central Prairies Focus Area

- A. Kirwin National Wildlife Refuge Annual Sandhill Crane Survey
 - i) Long term survey conducted during spring to survey numbers of sandhill cranes
 - ii) Conducted by Service
- B. Kirwin National Wildlife Refuge Whooping Crane Monitoring/Surveys
 - i) Ongoing monitoring of whooping cranes during migration
 - ii) Monitoring efforts in spring and fall
 - iii) Conducted by Service
- C. Kirwin National Wildlife Refuge Least Tern Surveys
 - i) Annual nest surveys and habitat use
 - ii) Conducted by Service
- D. USDA NRCS LPCI
 - i) Annual habitat monitoring relative to lesser-prairie chicken habitat requirements
 - ii) Monitoring efforts primarily occur
 - iii) Conducted by NRCS staff and Pheasants Forever Farm Bill biologists
- E. WAFWA Lesser Prairie-Chicken Rangeland Plan
 - i) Annual habitat monitoring relative to lesser-prairie chicken habitat requirements
 - ii) Monitoring efforts primarily occur
 - iii) Conducted by KDWPT staff and WAFWA lesser prairie-chicken coordinators

- F. KDWPT Lesser Prairie-Chicken Lek Surveys
 - i) Annual ground based transect surveys for monitoring Lesser prairie-chicken lek trends
 - ii) Monitoring efforts occur in spring
 - iii) Conducted by KDWPT, TNC, and Pheasants Forever Farm Bill Biologists
- G. Kansas State University Lesser-Prairie Chicken Research
 - i) Investigating influence landscape characteristics on nest survival and nest site selection
 - ii) Monitoring efforts occur throughout spring and summer
 - iii) Conducted by Kansas State University graduates students and technicians
- H. WAFWA Lesser Prairie-Chicken Aerial Surveys
 - i) Annual surveys along transects utilizing distance sampling techniques across the Lesser prairie-chicken range in order to estimate population trends within ecoregions
 - ii) Occur in the spring
 - iii) Conducted by West Ecosystems, Inc.
- I. Lesser-Prairie Chicken Interstate Working Group Crucial Habitat Assessment Tool (CHAT)
 - i) Ranked geospatial areas of relative importance to Lesser prairie-chicken population
 - ii) Updated periodically when new information and resources are available
- J. PLJV Playa Lakes Decision Support Tool
 - i) Geospatial analysis and mapping of playas of high conservation priority
- K. Playa Lakes Joint Venture IMBCR Monitoring
 - i) Attempt to estimate bird densities, population sizes and occupancy rates at local and regional scales for birds in the short and mixed grass prairies
 - ii) Trends can be used to determine which species require additional conservation action
 - iii) Population estimates can be used to formulate population goals which can trigger conservation action when populations reach a predetermined level
- L. Kansas State University Honey Locust Research and Monitoring
 - i) Investigating best methods and herbicides to control invasive honey locust trees
 - ii) Monitoring mortality and resprouting capability of herbicide treated trees
- M. KDWPT Greater Prairie-Chicken Lek Surveys
 - i) Annual ground based transect surveys for monitoring GPC lek trends
 - ii) Monitoring efforts occur in spring
 - iii) Conducted by KDWPT, TNC, and Pheasants Forever Farm Bill Biologists
- N. KDWPT Greater Prairie-Chicken Aerial Survey
 - i) Aerial survey along transects utilizing distance sampling techniques across the GPC range in order to estimate population trends across Kansas
 - ii) Conducted by West Ecosystems, Inc.

Flint Hills Focus Area

- A. Kansas State University Cooperative Wildlife Research Unit
 - i) Wildlife Response to Restoration of Sericea Invaded Grasslands
 - 1) 4-year study involving fire, cattle, and sheep to reduce Sericea in grasslands
 - 2) Surveys conducted annually in Geary and Woodson Counties
 - ii) Ecology of Regal Fritillary
 - 1) A multi scale examination of the distribution and habitat use patterns of the Regal fritillary (*Speyeria idalia*) within the Fort Riley Military Reservation
 - 2) 3-year study relating Fritillary population to land management on Konza and Fort Riley
 - 3) Kansas Cooperative Fish & Wildlife Research Unit, Department of Defense & National Science Foundation
- B. Emporia State University
 - i) Marsh bird surveys; Investigation of habitat associations of rails and bitterns
 - ii) Flint Hills National Wildlife Refuge, Marais des Cygnes Wildlife Area, Marais des Cygnes National Wildlife Refuge, McPherson Valley Wetlands
 - iii) March-June and Sept-Nov

- C. Kansas State University Dept of Biology and Emporia State University
 - i) Grassland Bird Surveys
 - ii) Effects of patch-burn grazing on species diversity and abundance of grassland birds
 - iii) Conducted annually (27 May - 30 Jun) on Konza Prairie Biological Station, Riley Co.

- D. Service KS Ecological Services
 - i) Least Tern and Piping Plover Surveys
 - ii) Jeffrey Energy Center and (when habitat is suitable) the Kansas River
 - iii) May – August
 - iv) Conducted by Service & Westar Energy

- E. Kansas State University Dept of Animal Sciences and Industry
 - i) Effects of intensive late-season sheep grazing following early-season steer grazing on population dynamics of sericea lespedeza in the Kansas Flint Hills
 - 1) 4-year study monitoring frequency, seed production, herbivory, and whole-plant DM weight of sericea lespedeza in native tallgrass prairie
 - 2) May 2013 to November 2016
 - 3) National Fish and Wildlife Foundation & K-State
 - ii) Effects of growing-season prescribed burning on vigor of sericea lespedeza (*Lespedeza cuneata*) in the Kansas Flint Hills
 - 1) 4-year study monitoring frequency, seed production, herbivory, and whole-plant DM weight of sericea lespedeza in native tallgrass prairie
 - 2) May 2014 to November 2017
 - 3) National Fish and Wildlife Foundation & K-State
 - iii) Measuring the response of grassland avian and lepidopteran communities to the management of an invasive forb with prescribed fire and targeted livestock grazing
 - 1) 2-year study monitoring abundance, density, species diversity, species richness, and species evenness of grassland passerines and lepidopterans to management of sericea lespedeza with targeted livestock grazing and growing-season prescribed burning
 - 2) May 2015 to November 2017
 - 3) National Fish and Wildlife Foundation & K-State

- F. Department of Defense, Fort Riley, KS
 - i) Anuran Surveys
 - 1) Determine the status and population trends of 10 species of frogs and toads
 - 2) Since 2002 - Several times during the calling season, to catch the early through late breeding species
 - ii) Annual Bat Conservation & Monitoring
 - 1) Identify species, populations, and habitats of bats on Fort Riley
 - iii) Grassland Bird Surveys
 - 1) Locate and document Henslow's sparrow, Grasshopper sparrow, Dickcissel, Meadowlark sp., Upland sandpiper and other grassland bird species on Fort Riley, to census suitable habitat, and to establish an index of these bird species numbers in the habitat surveyed
 - 2) Point count method – Annually – Since 1994
 - i) Greater Prairie-Chicken Lek Surveys
 - 1) Monitor population trends and to obtain data on the distribution of the breeding population of the greater prairie chicken on Fort Riley
 - 2) Annually – (Mar 1 – Apr. 15)
 - ii) Regal Fritillary Butterfly Survey
 - 1) Determine and monitor breeding populations of Regal Fritillary Butterflies on Fort Riley
 - 2) Annually – since early 2000s
 - iii) Shorebird Surveys
 - 1) Determine and monitor shorebird use on Fort Riley
 - 2) Started in 1994 – Annually Since 2002 – (July 1-October 31)
 - iv) Stream Fish Sampling Survey
 - 1) Determine the status of the federally listed endangered Topeka Shiner in Fort Riley streams and produce a general portrait of fish assemblages
 - 2) Seining or use of electro-fish sampling equipment in late summer when stream flows are low
 - 3) Annually since 1991

- G. KDWPT Greater Prairie-Chicken Lek Surveys
 - i) Annual ground based transect surveys for monitoring GPC lek trends
 - ii) Monitoring efforts occur in spring
 - iii) Conducted by KDWPT, TNC, and Pheasants Forever Farm Bill Biologists
- H. KDWPT Greater Prairie-Chicken Aerial Survey
 - i) Aerial survey along transects utilizing distance sampling techniques across the GPC range in order to estimate population trends across Kansas
 - ii) Conducted by West Ecosystems, Inc.
- I. Konza Prairie Biological Station
 - i) Long Term Ecological Research (LTER) on the tallgrass prairie
 - ii) Research primarily focused on fire, grazing and climatic variability
 - iii) Encompasses studies across multiple ecological levels (organismic, population, community and ecosystem) and spatial (plot-level, watersheds, regional landscapes) and temporal (days to decades) scales
- J. Service Flint Hills Spring Shore Bird Surveys
 - i) Roadside surveys to determine migrant shorebird habitat use throughout the Flint Hills
 - ii) Conducted by Service and TNC 2011-2014
- K. Kansas State University Department of Entomology
 - i) Long term monitoring of pollinator (native bee and butterfly) response to grassland management
- L. Tallgrass Prairie Preserve National Park Service – The Nature Conservancy
 - i) Aquatic Monitoring
 - 1) Annual monitoring of population trends of prairie stream fish (including T. shiner)
 - 2) Periodic monitoring of population trends of Macro-invertebrates
 - ii) Terrestrial Monitoring
 - 1) Breeding Bird Surveys
 - 2) Monitoring population trends of breeding birds
 - 3) Annually select sites and every few years all sites
 - iii) Native Plant Transects
 - 1) Periodic monitoring of population trends of prairie plants
 - 2) Every few years
 - iv) Invasive Plant Monitoring
 - 1) Periodic monitoring of population trends of invasive plants
 - v) Monitoring Bat Populations
 - 1) Annual Bat Acoustic Monitoring
- M. The Nature Conservancy Tallgrass Prairie Preserve (Oklahoma Flint Hills)
 - i) Reintroduction of fire for restoration of post oak-blackjack oak savannah in the crosstimbbers
 - ii) Coyote movement and landscape use on the Tallgrass Prairie Preserve
 - iii) Greater prairie-chicken annual lek monitoring
 - iv) Determining the impacts of energy development on greater prairie-chickens
 - v) American burying beetle population distributions, movement patterns and response to patch-burn fire regimes
 - vi) Interactions between fuel, fire, and climate: effects on aquatic biota across landscapes
 - vii) Tallgrass prairie forb reduction and impacts to native pollinators, grassland birds, and livestock performance
- N. Kansas Department of Wildlife Parks and Tourism
 - i) American burying beetle surveys in southern Flint Hills
 - ii) Annual unionid mussel population surveys across multiple rivers in Flint Hills
 - iii) Neosho mucket and rabbitsfoot mussel propagation and reintroduction
 - iv) Reptile and amphibian population trend surveys

Central Wetlands and Prairies Focus Area

- A. Quivira National Wildlife Refuge Annual Sandhill Crane Survey
 - i) Long term survey conducted during spring to survey numbers of sandhill cranes
 - ii) Conducted by Service

- B. Quivira National Wildlife Refuge Whooping Crane Monitoring/Surveys
 - i) Ongoing monitoring of whooping cranes during migration
 - ii) Monitoring efforts in spring and fall
 - iii) Conducted by Service
- C. Quivira National Wildlife Refuge Secretive Marsh Bird Surveys
 - i) Conducted on the Quivira NWR and Cheyenne Bottoms Wildlife Area with refinements to national marsh bird protocol development,
 - ii) Performed periodically with data provided for large-scale analysis
- D. Cheyenne Bottoms and The Nature Conservancy
 - i) Whooping crane migration surveys
 - ii) Waterfowl migration abundance and chronology monitoring
 - iii) Mid-continent sandhill crane survey
 - iv) Mid-winter waterfowl survey
 - v) Grassland bird surveys
 - vi) Bald eagle surveys
 - vii) Conducted by KDWPT and TNC staff
- E. Fort Hays State University Grassland Bird Monitoring
 - i) Examining grassland bird abundance during the breeding season in relation to habitat types and grazing management on Cheyenne Bottoms and adjacent TNC property
- F. Quivira National Wildlife Refuge Annual Shorebird Surveys
 - i) Conducted following International Shorebird Survey (Audubon and Cornell Lab of Ornithology 2014) protocol within Refuge boundaries
 - ii) Examine trends in use, diversity, and abundance in relation to habitat conditions
 - iii) Conducted by Quivira NWR staff
- G. Fort Hays State University Amphibian and Reptile Surveys
 - i) Monitoring diversity, distribution, and relative abundance of amphibians and reptiles in varying Refuge habitats during spring and summer
 - ii) Coordinated by Quivira NWR, Fort Hays State University and R6 Inventory and Monitoring Program
- H. Quivira National Wildlife Refuge Pending Monitoring Efforts
 - i) Grassland Meadow Composition and Structure
 - ii) Water Quality
 - iii) Grassland Bird Surveys
 - iv) Wetland Food Production
 - v) Arkansas Darter Presence/Absence
 - vi) Plant and Animal Phenology
 - vii) Interior Least Tern and Snowy Plover Trend and Habitat Use

As long as I incorporate fire in my management, I'm not going to have a tree problem. I'm going to have more wildlife and I'm going to produce more pounds of beef.

Ed Koger, KS PFW Cooperator



Partners working together helped me accomplish long-term goals and support the future of healthy grasslands and sustainable, profitable ranching.

Landowner Bill Barby, Kansas



I am absolutely certain that without the network of great people and vast knowledge in the conservation world in Kansas the undertaking of management of family heritage land would have been vastly different. It is truly a precious gift of a lifetime to have the opportunities coincide with my need for them.

Landowner Lisa Ballout, Kansas

