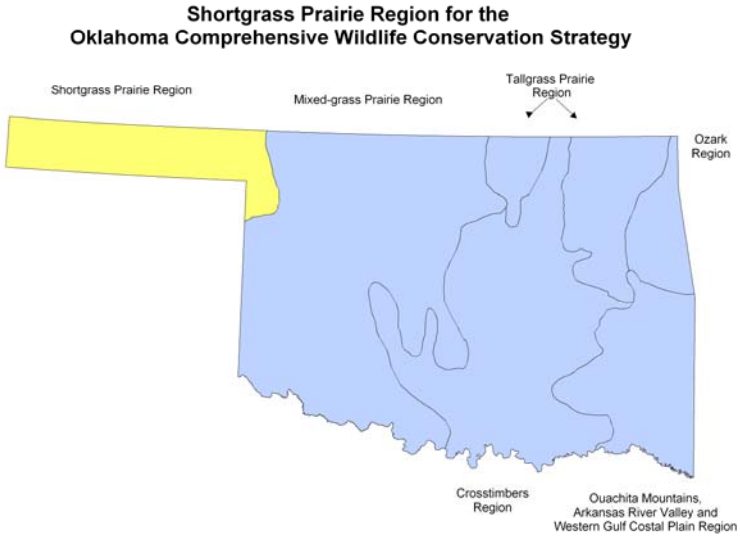
Shortgrass Prairie Region



This region is often referred to as the High Plains. It encompasses the panhandle counties and the northwestern corner of the main body of the state, and includes or portions of Cimarron, Texas, Beaver, Harper, Woodward and Ellis counties. It is equivalent to the combination of the Southern High Plains, Arkansas Tablelands and the Texas High Plains sections in Bailey's ecological classification system; and to the Western High Plains and a portion of the Southwestern Tablelands under Omernick's ecoregion classification system.

The best professional judgment of the advisory group and technical experts was used to identify each Conservation Landscape's status and trend. And, even though some issues and actions apply to multiple Regions, each Region chapter is designed to stand-alone.

Conservation Landscapes listed in general priority order:

- Very High priority Conservation Landscapes:
  - Shortgrass Prairie
  - Pinyon Pine/Juniper Woodland or Savannah and Juniper/Pinyon Pine Woodlands
- High priority Conservation Landscapes:
  - Herbaceous Wetland
  - Small Rivers and Sloughs/Ponds
  - Sand Sagebrush/Bluestem Shrublands
  - Mixed-grass Prairie
- Moderate priority Conservation Landscapes:
  - Sandy-bottom Streams and Associated Riparian Forest
  - Sand Plum/Sumac Shrubland
  - Springs

Conservation Landscape: Shortgrass Prairie

The relative condition of Shortgrass Prairie habitat within the Shortgrass Prairie Region is currently good with a stable trend. This is the most abundant habitat type found in the Shortgrass Prairie Region. Approximately 91 percent of the Shortgrass Prairie habitat in Oklahoma occurs in this Region, where it is widespread and often forms the habitat matrix within which other habitat types occur. Shortgrass Prairies are comprised of several herbaceous plant associations including Sideoats Grama (*Bouteloua curtipendula*), Blue Grama (*Bouteloua gracilis*), and Buffalograss (*Buchloe dactyloides*) on well drained soils or rocky slopes, Blue Grama / Hairy Grama (*Bouteloua hirsuta*) on loamy or sandy soils, and Blue Grama/Buffalograss on clay soils. Other grasses and forbs include Scarlet Globemallow (*Sphaeralcea coccinea*), Plains Blackfoot (*Melampodium leucanthum*), Prairie Zinnia (*Zinnia grandiflora*), Muhly Grass (*Muhlenbergia torreyi*), Pricklypear Cactus (*Opuntia humifusa*) and Yucca (*Yucca glauca*). Vine Mesquite (*Panicum obtusum*) and Western Wheatgrass (*Pascopyrum smithii*) grow in more mesic sites such as the margins of playas. As much as 747,399 acres of Shortgrass Prairie may remain in Oklahoma, but this is less than half of what occurred historically. Much of the original Shortgrass Prairie has been converted to crop production, particularly dryland wheat or irrigated corn, soybeans, or alfalfa. Many crop fields have been enrolled in the Conservation Reserve Program during the past 20 years because of the potential for soil loss due to wind erosion. However, most of the Conservation Reserve Program acreage has been planted to exotic grasses such as Yellow (Old World) Bluestem (*Bothriochloa ischaemum*) or Mixed-grass Prairie species such as Little Bluestem (*Schizachyrium scoparium*) instead of to native Shortgrass Prairie species.

Recognized vegetation associations within this habitat type include:

Blue Grama – Broom Snakeweed Grassland
Blue Grama – Buffalograss Grassland
Blue Grama – Galleta Grassland
Blue Grama – Hairy Grama Grassland
Buffalograss Grassland
Hairy Grama – Sideoats Grama Grassland
Sideoats Grama – Blue Grama-buffalograss Grassland
Sideoats Grama Grassland
Western Wheatgrass – Blue Grama Grassland

The species of greatest conservation need found in this habitat are listed in the following table. The population abundance (status and trend) of each species is described in relative terms. The best professional judgment of the advisory group and technical experts was used to identify each species status and trend. Species are sorted alphabetically within groups of amphibians (Amph), birds, fish, invertebrates (Inve), mammals (Mamm), and reptiles (Rept) for easy reference.

Species status definitions:
Low – species is rare, has a small population size, and/or occurs in only a small portion of the Region.
Medium – species is uncommon and occurs over a large portion of the region or species is common but occurs in only a small part of the Region.
Abundant – species is common and widespread within the Region in appropriate habitat.
Unknown – the status of this species is not known.

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	Baird's Sparrow	X							X
Bird	Barn Owl	X							X
Bird	Burrowing Owl	X							X
Bird	Cassin's Sparrow		X						X
Bird	Chestnut-collared Longspur	X							X
Bird	Ferruginous Hawk	X							X
Bird	Loggerhead Shrike		X			X			
Bird	Long-billed Curlew	X							X
Bird	McCown's Longspur				X				X
Bird	Mountain Plover	X							X
Bird	Peregrine Falcon	X							X
Bird	Prairie Falcon	X							X
Bird	Sandhill Crane		X				X		
Bird	Scaled Quail		X			X			
Bird	Short-eared Owl				X				X
Bird	Swainson's Hawk		X						X
Mamm	Black-tailed Prairie Dog		X					X	
Mamm	Brazilian (Mexican) Free-tailed Bat				X				X
Mamm	Desert Shrew				X				X
Mamm	Long-tailed Weasel				X				X
Mamm	Mountain Lion	X						X	
Mamm	Swift Fox		X				X		
Rept	Round-tailed Horned Lizard				X				X
Rept	Texas Gartersnake				X				X
Rept	Texas Horned Lizard				X				X
Rept	Texas Long-nosed Snake				X				X
Rept	Western Massasauga				X				X

The following conservation issues and actions are listed in general priority order.

Conservation Issue: Inadequate data concerning species of greatest conservation need (refer to the matrix above) and habitat, an impediment for effective conservation planning and implementation:

1. Data are incomplete for species of greatest conservation need (particularly those whose populations are low or unknown and for those whose status and trends of are declining or unknown) thus making it difficult to identify management issues and establish effective corrective strategies.
2. Baseline knowledge about flora/fauna and both the historic and current distribution and condition of this habitat type is incomplete.

Conservation Actions:

- Conduct research to determine why species of greatest conservation need are low and/or declining.

- Conduct surveys of existing literature, reports, and museum records to evaluate historic distributions, abundances and habitat affinities of species of greatest conservation need and examine possible causes of suspected population declines.
- Conduct research on species of greatest conservation need to determine why populations are low and/or declining.
- Conduct field studies on species of greatest conservation need to establish baseline population data/information.
- Conduct studies to verify the accuracy of existing data.
- Use surveys, workshops and data acquisition to monitor status and to update the Comprehensive Wildlife Conservation Strategy.
- Develop long-term funding to provide ongoing, comparative studies of population status, distribution, and habitat condition.
- Identify and prioritize core areas of habitat and corridors that need to be connected in order to provide complete conservation areas for species of greatest conservation need.
- Develop descriptions of quality habitat, based on research and empirical evidence.
- Develop and distribute information for landowners on several topics including grazing ecology, natural systems and exotic invasive species.

Conservation Issue: Habitat loss and fragmentation from land management practices:

3. Conversion of shortgrass prairie habitat to cropland and similar land uses results in the direct loss of habitat and the fragmentation of the remaining habitat.
4. Increased use of center-pivot irrigation and the related conversion of Shortgrass Prairie habitat to corn or soybean crops produces fragmentation and reduced habitat quality.
5. Conversion of shortgrass prairie and dryland wheat to irrigated corn increases the acreage of tall vegetation which is avoided by swift fox, Mountain Plover and other species endemic to the shortgrass prairie habitat.
6. Excessive fencing presents numerous obstacles to the movement of wildlife and facilitates the encroachment of woody vegetation into prairies along fence lines.
7. Under the Conservation Reserve Program, conversion of Shortgrass Prairie to Mixed-grass Prairie habitat has reduced both quantity and quality of the original habitat.
8. Currently, most lands enrolled in the Conservation Reserve Program in the Region have been planted to exotic Old World Bluestem or to Mixed-grass Prairie grasses that do not meet the ecological requirements of Shortgrass Prairie species such as Mountain Plover and Swift Fox.
9. Wind power development is thought by some people to threaten some species of greatest conservation need in this habitat.

Conservation Actions:

- Work with Natural Resources Conservation Service and others to modify their guidance/specifications to reduce undesirable species and increase desirable forbs and grasses.
- Work with Natural Resources Conservation Service to eliminate the use of Old World Bluestem or Lovegrass in Conservation Reserve Program fields and replant existing Conservation Reserve Program lands to native short grasses such as grama grasses and Buffalo Grass.
- Develop and distribute information to landowners on topics including grazing ecology, natural systems and exotic invasive species.
- Encourage conversion of existing Conservation Reserve Program fields to native Shortgrass Prairie grasses and forbs.
- Encourage the development of perpetual easement programs, leases or land acquisitions.

- Encourage expansion of the Conservation Reserve Program in the Farm Bill as well as increasing funding from the subsidy side of the Farm Bill.
- Encourage the use of tax incentives and tax relief to motivate landowners to maintain good quality prairie that meets the needs of Shortgrass Prairie species of greatest conservation need.
- In cooperation with the agriculture community and other conservation-minded partners, develop demonstration areas that show grazing and fire regimes that are beneficial for species of greatest conservation need.
- Conduct literature reviews and field studies to understand the impacts of wind power development on species of greatest conservation need in this habitat.

Conservation Issue: Invasive and exotic plants and animals that are detrimental to species of greatest conservation need:

10. Introduced species and introduced species such as Old World Bluestem and Russian Thistle have become widespread throughout this habitat in this Region.

Conservation Actions:

- Work with Natural Resources Conservation Service and others to modify guidance and specifications that will result in a reduction of undesirable species and increase desirable forbs and grasses.
- Work with Natural Resources Conservation Service and others to modify guidance needed to eliminate the use of Old World Bluestem or Lovegrass in Conservation Reserve Program fields and replant existing Conservation Reserve Program to native short grasses such as grama grasses and Buffalo Grass.
- Develop and distribute information to landowners on several topics including grazing ecology, natural systems and exotic invasive species.
- Develop and implement management plans to control or eliminate invasive and exotic plant species.

Conservation Issue: Black-tailed Prairie Dog habitat related issues:

11. Prairie Dog control can have detrimental impacts on the habitat for a number of species of greatest conservation need.
12. Loss of Prairie Dog town communities can impact the total health of the ecosystem.
13. Fragmentation of Prairie Dog complexes can put a number of species of greatest conservation need at added risk.

Conservation Actions:

- Identify and encourage development of incentives for Black-tailed Prairie Dog conservation, restoration and enhancement.
- Encourage ecotourism in the Shortgrass Prairie Region to make it economically advantageous for landowners to provide for complete, intact Shortgrass Prairie ecosystems.
- Encourage the development of Prairie Dog control regulations that minimize negative impacts on Shortgrass Prairie ecosystems.
- Develop and distribute information to landowners on several topics including grazing ecology, natural systems and exotic invasive species.
- Working with a variety of partners in the Shortgrass Prairie Region, encourage the maintenance – and possibly expansion – of programs like the Landowner Incentive Program for the conservation of Black-tailed Prairie Dogs and other species.
- Support legislation that will enable large ranches to remain in single family ownership.
- Consider land acquisition and conservation easements (e.g., land trusts and non-governmental organizations such as The Nature Conservancy) for the preservation of important tracts of Shortgrass Prairie habitat in the Shortgrass Prairie Region.

- Support increased funding from the subsidy side of the Farm Bill for the Conservation Reserve Program.
- Encourage and support ranch diversification for lower grazing rates and off set by lease hunting, fishing access, and ecotourism viewing.
- Support, encourage and assist with development or updating of Best Management Practices for agricultural development.
- Identify and prioritize core areas of Prairie Dog colonies to enhance complex development.

Potential indicators for monitoring the effectiveness of the conservation actions:

- Acres enrolled in conservation programs, including Landowner Incentive Program.
- Changes in acreage/coverage of native and exotic vegetation communities.
- Easements secured and acreage enrolled in conservation programs.
- Develop GIS datasets to monitor rates of land cover change.
- Numbers of acres of native plant communities restored / Conservation Reserve Program fields converted from Old World Bluestem to native Shortgrass Prairie.
- Population sizes and distributions of species of greatest conservation need, Prairie Dog - associated species, and indicator species (e.g., Mountain Plover, Burrowing Owl, Long-billed Curlew, Swift Fox, Texas Horned Lizard, and Cassin's Sparrow).
- Relative condition (populations/trends) of species of greatest conservation need and key indicator species.
- Relative condition and quantity of habitat.

Conservation Landscape: Pinyon Pine/Juniper Woodland or Savannah and Juniper/Pinyon Pine Woodlands

The relative condition of Pinyon Pine/Juniper Woodland or Savannah and Juniper/Pinyon Pine Woodlands habitat is currently good with a stable trend. In Oklahoma, this habitat type is unique to the Shortgrass Prairie Region. It is found on rocky soils in the Black Mesa area in the northwestern corner of the Oklahoma panhandle. The dominant woody plants in this woodland community are One-seeded Juniper (*Juniper monosperma*) and Pinyon Pine (*Pinus edulis*). The understory of this woodland is dominated by short grasses including Sideoats Grama, Hairy Grama, Blue Grama, Buffalograss and Silver Bluestem. Other less common woody plants include clump-forming shrubs such as Skunkbrush (*Rhus aromatica*), Mountain Mahogany, Gamble Oak (*Quercus gambelii*), and several cacti including Tree Cholla (*Opuntia immbricata*) and Prickly Pear (*Opuntia sp*.). Ponderosa Pine (*Pinus ponderosa*) occurs in one location within this habitat in Oklahoma.

Recognized vegetation associations within this habitat type included:

Oneseed Juniper – Pinyon Pine/Grama Woodland
Oneseed Juniper/Grama Woodland
Ponderosa Pine/Grama – Little Bluestem Woodland

The species of greatest conservation need found in this habitat are listed in the following table. The population abundance (status and trend) of each species is described in relative terms. The best professional judgment of the advisory group and technical experts was used to identify each species status and trend. Species are sorted alphabetically within groups of amphibians (Amph), birds, fish, invertebrates (Inve), mammals (Mamm), and reptiles (Rept) for easy reference.

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Abundant – species is common and widespread within the Region in appropriate habitat.
Unknown – the status of this species is not known.

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	Cassin's Sparrow		X			X			
Bird	Juniper Titmouse	X							X
Bird	Lewis's Woodpecker	X							X
Bird	Loggerhead Shrike		X			X			
Bird	Pinyon Jay	X							X
Bird	Prairie Falcon	X							X
Bird	Scaled Quail		X			X			
Bird	Swainson's Hawk	X							X
Mamm	Colorado Chipmunk				X				X
Mamm	Desert Shrew				X				X
Mamm	Hog-nosed Skunk				X				X
Mamm	Mountain Lion	X							X

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Mamm	Ringtail	X							X
Mamm	Western Big-eared Bat	X				X			
Rept	Common Checkered Whiptail	X				X			
Rept	Common Lesser Earless Lizard	X							X
Rept	Round-tailed Horned Lizard	X							X
Rept	Texas Horned Lizard	X				X			
Rept	Western Diamond-backed Rattlesnake			X					X

The following conservation issues and actions are listed in general priority order.

Conservation Issue: Inadequate data concerning species of greatest conservation need (refer to the matrix above) and habitat, an impediment for effective conservation planning and implementation:

1. Data are incomplete for species of greatest conservation need (particularly those whose populations are low or unknown and for those whose status and trends of are declining or unknown) thus making it difficult to identify management issues and establish effective corrective strategies.
2. Baseline knowledge about flora/fauna and both the historic and current distribution and condition of this habitat type is incomplete.

Conservation Actions:

- Conduct research to determine why species of greatest conservation need are low and/or declining.
- Conduct surveys of existing literature, reports, and museum records to evaluate historic distributions, abundances and habitat affinities of species of greatest conservation need, and examine possible causes of suspected population declines.
- Conduct field studies on species of greatest conservation need to establish baseline population data/information.
- Conduct field studies to verify existing data.
- Use surveys, workshops and data acquisition to monitor species and update the Comprehensive Wildlife Conservation Strategy.
- Develop long-term funding sources to enable continuation of studies that will allow tracking of populations of species of greatest conservation need and habitat trends into the future.
- Develop methods to accurately identify and map the distribution and the condition of this habitat.
- Identify/prioritize core areas of habitat and corridors to connect.

Conservation Issue: Habitat loss and fragmentation from land management practices:

3. Fragmentation of forest tracts has resulted from conversion of these habitats to other uses.
4. Fire suppression and heavy grazing pressure have resulted in an increase in juniper density and abundance within this habitat type in the Shortgrass Prairie Region resulting in increased soil erosion.
5. In some places intensive grazing by cattle has resulted in a reduction of tall grasses, forbs, and deciduous shrubs.

Conservation Actions:

- Consider land acquisition, conservation easements, and leases to conserve especially valuable tracts of this habitat.
- Demonstrate the potential for restoration of this habitat type on public lands.
- Encourage and facilitate the development a program to assist landowners with proper fire management.
- Encourage the development of incentive programs for landowners to enable restoration of habitat through prescribed burning and deferred grazing.

Potential indicators for monitoring the effectiveness of the conservation actions:

- Acres acquired and number of acres in conservation programs.
- Amount of technical assistance being provided.
- Increased use of prescribe fire on the landscape.
- Landowners participating in landowner incentive programs.
- Relative condition (populations/trends) of species of greatest conservation need and key indicator species.
- Relative condition and quantity of habitat.
- Vegetation response to fire (e.g., grasses and woody plants).

Conservation Landscape: Herbaceous Wetland

The relative condition of the Herbaceous Wetland habitat in the Shortgrass Prairie Region of Oklahoma is currently poor with a declining trend. The majority of herbaceous wetlands in the Shortgrass Prairie Region are found in playas. Playas are round, clay-lined depressions that occur on flat terrain within Shortgrass Prairie habitat. They collect surface runoff after heavy rains to form small seasonally wet wetlands. Playa wetlands are small (i.e., average about 17 acres in size) and often separated from the next nearest wetland/playa by several miles. Other seasonal wetlands occur in the floodplains of streams and the Beaver and Cimarron rivers. These floodplain wetlands often form small complexes of strings of wetlands tied together. Wetland plant communities are diverse as a result of variations in length of time the soil is saturated. Widespread wetland plants in the Shortgrass Prairie Region include: Common Spikerush (*Elocharis palustris*), Pink Smartweed (*Polygonum pensylvanicum*), Three-square Bulrush (*Schoenplectus pungens*), and Sand Spikerush (*Elocharis montevidensis*). In saline or alkaline wetlands, inland Saltgrass (*Distichlis spicata*) and Alkali Sacaton (*Sporobolus airoides*) may be the dominant plants. Other common wetland plants include Saltmarsh Aster (*Aster sublatus*), Barnyard Grass (*Echinochloa crus-galli*), Plains Coreopsis (*Coreopsis tinctoria*), and Marshelder (*Iva sp*.).

Though wetlands are widespread in the Region, they comprise less than two percent of the total acreage. Many wetlands are in poor condition as a result of sedimentation due to exposed soil from surrounding crop fields being carried to and deposited into the wetlands in storm water runoff. Many playas and other seasonal wetlands have been plowed and converted to agricultural uses.

Recognized vegetation associations (Hoagland 2000) within this habitat type include:

Broadleaf Cattail Marsh
Common Spikerush – Hairy Waterclover Marsh
Inland Saltgrass – Alkali Sacaton Temporarily Flooded Grassland
Inland Saltgrass – Three-square Bulrush Temporarily Flooded Grassland
Pennsylvania Smartweed – Curlytop Smartweed Wetland
Prairie Cordgrass Marsh
Three-square Bulrush Marsh
Water Smartweed Wetland

The species of greatest conservation need found in this habitat are listed in the following table. The population abundance (status and trend) of each species is described in relative terms. The best professional judgment of the advisory group and technical experts was used to identify each species status and trend. Species are sorted alphabetically within groups of amphibians (Amph), birds, fish, invertebrates (Inve), mammals (Mamm), and reptiles (Rept) for easy reference.

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Medium – species is uncommon and occurs over a large portion of the Region or species is common but occurs in only a small part of the Region.
Abundant – species is common and widespread within the Region in appropriate habitat.
Unknown – the status of this species is not known.

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	American Golden Plover		X						X
Bird	Baird's Sparrow	X							X
Bird	Bald Eagle	X						X	
Bird	Barn Owl	X							X
Bird	Black Rail	X							X
Bird	Buff-breasted Sandpiper	X				X			
Bird	Canvasback	X							X
Bird	Hudsonian Godwit				X				X
Bird	Interior Least Tern	X							X
Bird	LeConte's Sparrow		X						X
Bird	Lesser Scaup		X			X			
Bird	Little Blue Heron		X						X
Bird	Long-billed Curlew	X							X
Bird	Northern Pintail		X			X			
Bird	Piping Plover	X							X
Bird	Prairie Falcon	X							X
Bird	Sandhill Crane		X				X		
Bird	Short-eared Owl				X				X
Bird	Solitary Sandpiper	X							X
Bird	Trumpeter Swan	X							X
Bird	Upland Sandpiper				X		X		
Bird	Western Sandpiper	X							X
Bird	Whooping Crane	X						X	
Bird	Wilson's Phalarope				X				X
Bird	Yellow Rail				X				X
Rept	Spiny Softshell Turtle				X				X

The following conservation issues and actions are listed in general priority order.

Conservation Issue: Inadequate data concerning species of greatest conservation need (refer to the matrix above) and habitat, an impediment for effective conservation planning and implementation:

1. Data are incomplete for species of greatest conservation need (particularly those whose populations are low or unknown and for those whose status and trends of are declining or unknown) thus making it difficult to identify management issues and establish effective corrective strategies.
2. Incomplete information about the distribution, ecology and abundance of the flora/fauna of wetlands, and of the wetlands.
3. Incomplete data regarding both the historic and current distribution and condition of this habitat type.

Conservation Actions:

- Conduct research to determine why species of greatest conservation need are low and/or declining.

- Conduct surveys of existing literature, reports, and museum records to evaluate historic distributions, abundances and habitat affinities of species of greatest conservation need, and examine possible causes of suspected population declines.
- Conduct research on species of greatest conservation need to determine why populations are low and/or declining.
- Conduct field surveys to establish baseline conditions for the current distributions, abundances and habitat affinities of species of greatest conservation need, and to monitor changes over time.
- Conduct ecological studies on priority species of greatest conservation need to identify factors that limit population size, evaluate factors that may be responsible for population declines, and develop recommendations to enhance populations.
- Verify the accuracy of existing data.
- Use surveys, workshops, and data acquisition to monitor the status of species and to update the Comprehensive Wildlife Conservation Strategy.
- Develop and maintain databases to store and analyze distributional and ecological data for species of greatest conservation need.
- Identify/prioritize core areas of habitat and corridors to connect.
- Develop studies to deal with data gap items.
- Form partnerships to jointly pursue habitat/species knowledge.

Conservation Issue: Altered patterns of water flow that negatively affect both habitat and species:

4. Some irrigation practices result in impacts including lowering of the water table and disruption of the normal hydrological cycle.
5. Certain farming practices cause sedimentation problems, including failure to provide buffer vegetation around wetlands to control sediment in storm water runoff.

Conservation Actions:

- Work with the agricultural community to improve the technology and application of irrigation.
- Develop and distribute information about the ecological value of wetlands.
- Encourage the increased use of Farm Bill programs to create vegetative buffers around wetlands.
- Encourage landowners to enroll wetlands into the Wetlands Reserve Program.
- Develop and distribute information about how landowners can reduce soil erosion and movement of sediment into wetlands.

Conservation Issue: Habitat loss and fragmentation from land management practices:

6. Draining or filling of wetlands for cropland development causes reduced habitat quantity and quality in herbaceous wetland habitat in the Shortgrass Prairie Region.
7. Fire suppression and heavy cattle grazing sometimes cause conditions favorable to invasion of wetlands in floodplains by Salt Cedar and other introduced plant and animal species.
8. Herbaceous wetlands can be maintained, enhanced or restored by using ground water to flood dry playas and basins.

Conservation Actions:

- Encourage landowners to enroll wetlands in the Wetlands Reserve Program.
- Develop and distribute information about playas and the value of wetlands.
- Develop descriptions of quality herbaceous wetland habitats in the Shortgrass Prairie Region.
- Encourage legislation to designate pumping for wetlands as a beneficial use of groundwater.
- Consider land acquisition and conservation easements for conserving especially valuable or critical tracts.

- Recognize conservationists and landowners practicing land stewardship through registration and certification programs.
- Develop financial or tax incentives to cover the cost of maintenance and preservation of herbaceous wetlands.
- Encourage and support fencing playas to control cattle and land tillage.
- Conduct field studies to evaluate the severity and magnitude of the ecological damage done by exotic plant and animal species.
- Identify those exotic species causing the greatest impact to this habitat and to species of greatest conservation need.
- Develop and implement control or management plans for the exotic species that cause the greatest ecological damage.
- Develop and implement monitoring programs to measure and evaluate the effectiveness of control measures.
- Develop and distribute educational materials about the playa habitat, fire ecology in the Shortgrass Prairie, and the dangers of invasive species.
- Encourage implementation of controlled burning regimes.
- Develop an Oklahoma Department of Wildlife Conservation policy to appropriately protect employees conducting prescribed fires.
- Develop funding mechanisms for private lands prescribed fire assistance.
- Develop and distribute information related to the value of wetlands and the benefits of flood irrigation increasing and sustaining some of these habitats.

Potential indicators for monitoring the effectiveness of the conservation actions:

- Acreages enrolled in the Wetlands Reserve Program.
- Acreages fenced and burned.
- Acreages of Salt Cedar in floodplains.
- Acres either acquired or under conservation easements.
- Amounts of money devoted to baseline studies.
- Development of information and education materials and their delivery to land managers.
- Evaluation of effectiveness of educational material production and distribution.
- GIS evaluation of the location and distribution of wetlands.
- GIS or aerial survey tracking of buffers around wetlands.
- GIS tracking of irrigated acreages.
- Legislation related to water use.
- Numbers of ecological studies.
- Numbers of partnerships involved.
- Periodical checks of the U.S. Geological Survey water table measurements.
- Relative condition (populations/trends) of species of greatest conservation need and key indicator species.
- Relative condition and quantity of habitat.

Conservation Landscape: Small Rivers and Sloughs/Ponds

The relative condition of Small Rivers and Sloughs/Ponds habitat is currently poor with a declining trend. Small rivers and sloughs/ponds habitats include the Cimarron and Beaver Rivers.

The species of greatest conservation need found in this habitat are listed in the following table. The population abundance (status and trend) of each species is described in relative terms. The best professional judgment of the advisory group and technical experts was used to identify each species status and trend. Species are sorted alphabetically within groups of amphibians (Amph), birds, fish, invertebrates (Inve), mammals (Mamm), and reptiles (Rept) for easy reference.

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Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	Bald Eagle	X						X	
Bird	Canvasback	X							X
Bird	Interior Least Tern	X							X
Bird	Lesser Scaup		X			X			
Bird	Little Blue Heron		X						X
Bird	Mountain Plover	X							X
Bird	Northern Bobwhite		X			X			
Bird	Northern Pintail		X			X			
Bird	Peregrine Falcon	X							X
Bird	Sandhill Crane		X				X		
Bird	Snowy Plover	X							X
Bird	Solitary Sandpiper	X							X
Bird	Trumpeter Swan	X							X
Bird	Whooping Crane	X						X	
Fish	Arkansas Darter	X							X
Fish	Arkansas River Shiner	X				X			
Fish	Arkansas River Speckled Chub	X				X			
Fish	Flathead Chub	X				X			
Fish	Plains Minnow			X		X			
Fish	Red River Shiner			X			X		
Mamm	Brazilian (Mexican) Free-tailed Bat				X				X
Mamm	Western Big-eared Bat	X							X
Rept	Spiny Softshell Turtle				X				X

The following conservation issues and actions are listed in general priority order.

Conservation Issue: Inadequate data concerning species of greatest conservation need (refer to the matrix above) and habitat, an impediment for effective conservation planning and implementation:

1. Data are incomplete for species of greatest conservation need (particularly those whose populations are low or unknown and for those whose status and trends of are declining or unknown) thus making it difficult to identify management issues and establish effective corrective strategies.
2. Baseline knowledge about flora/fauna and both the historic and current distribution and condition of this habitat type is incomplete.
3. Incomplete biological resource monitoring.

Conservation Actions:

- Conduct research to determine why species of greatest conservation need are low and/or declining.
- Conduct surveys of existing literature, reports, and museum records to evaluate historic distributions, abundances and habitat affinities of species of greatest conservation need in this habitat.
- Conduct field investigations to establish baseline conditions for the current distributions, abundances and habitat affinities for species of greatest conservation need in this habitat.
- Conduct field research on species of greatest conservation need to determine why populations are low and/or declining.
- Conduct studies to verify existing data.
- Use surveys, workshops and data acquisition to monitor species status and to update the Comprehensive Wildlife Conservation Strategy.
- Develop long-term funding mechanisms for baseline studies to allow comparisons of populations and habitats under a variety of conditions.
- Develop and distribute information to landowners and the general public about the ecology and value of intact ecosystems in small rivers and sloughs/ponds within the Shortgrass Prairie Region.
- Database development and updating such that ecological condition and progress can be measured and monitored.
- Develop a description of what quality small river and sloughs/ponds habitat is in the Shortgrass Prairie Region.
- Develop and implement a monitoring program to track changes in habitat condition/quality and the population status of species of greatest conservation need.
- Encourage and facilitate the development of local watershed councils, citizen's groups or stream teams to address local concerns and to help monitor wildlife populations.

Conservation Issue: Altered patterns of water flow that negatively affect both habitat and species:

4. Irrigation has changed water availability and distribution within small rivers and sloughs/pond habitats in the Shortgrass Prairie Region.
5. Dams and water diversions have altered hydrology of small rivers and sloughs/ponds within this Region, reducing flows and periodic scouring..
6. Pumping of shallow groundwater in floodplains have decreased flows, including natural flooding and scouring of the river channel during the spring.
7. A variety of activities have decreasing groundwater quality and amount.
8. Lack of headwaters protection results in compounding of both water quantity and quality issues downstream.

Conservation Actions:

- Support Farm bill incentives for practices favorable to the conservation of small rivers and sloughs/ponds.
- Consider land acquisition, conservation easements, and leases to protect the most important tracts or stream sections and especially to protect headwaters.
- Support and facilitate the development and functioning of local watershed councils, citizen's groups or stream teams to address local concerns and to help monitor wildlife populations and habitat condition.
- Develop and implement procedures to restore river channel morphology, flow patterns and the structure of riparian vegetation.
- Develop and distribute information for landowners regarding riparian habitat, grazing concerns within riparian habitats, Best Management Practices, and existing Farm Bill programs.
- Promote erosion control incentives and programs such as the stream buffer program of the Farm Bill.
- Identify areas that are of quality habitat, and reward those landowners and showcase those properties to let others know how the dedication to quality management has resulted in recognition and awards without diminished economic returns to the landowner.
- Encourage the protection of riparian areas from grazing using fencing.
- Support and encourage the development of landowner incentive payments to restore riparian vegetation structure.

Conservation Issue: Invasive and exotic plants and animals that are detrimental to species of greatest conservation need:

9. Non-native Salt Cedar has invaded many of the riparian areas along small rivers and sloughs/ponds in the Shortgrass Prairie Region.
10. A variety of plant and animal species have invaded or encroached into natural communities in small rivers and sloughs/ponds in the Shortgrass Prairie Region.
11. Periodic fires were historically part of the natural condition in riparian areas along small rivers and sloughs/ponds in the Shortgrass Prairie Region. The exclusion of fire has resulted in altered conditions.

Conservation Actions:

- Re-evaluate burning laws to see if there is a way to protect personal property and at the same time allow fire to be used to restore and maintain healthy riparian areas in this habitat.
- Encourage the development of Farm Bill incentives that will result in healthy riparian areas in this habitat.
- Encourage and facilitate the creation of prescribed burn cooperatives.
- Use all available mechanisms to control invasive plant and animal species.
- Consider the use of land acquisition, conservation easements, and leases to protect the most valuable tracts and sections of this habitat, especially headwaters.
- Develop and implement exotic and invasive species management plans.
- Develop and distribute educational materials for anglers about the ecological problems associated with the introduction of fish from other watersheds through bait bucket releases.

Conservation Issue: Water quality changes which negatively affect both habitat and species of greatest conservation need:

12. Lack of control of livestock in channels and floodplains results in increased nutrients in the water, reduced riparian vegetation and contributes to bank erosion.
13. Concentrated farming operations/hog farms increase nutrient inputs into rivers due to increased nutrients in storm water runoff from the land application areas around such facilities.

14. Endocrine disruptors related to agricultural runoff/discharges associated with poultry, hogs, cattle, and crop pesticides disrupt the development and reproduction of invertebrates, fish and amphibians.

Conservation Actions:

- Support the use of Farm Bill incentives that provide habitat protection for riparian areas.
- Consider land acquisition, conservation easements, and leases to protect important riparian areas.
- Develop and/or improve Best Management Practices for grazing to protect watersheds.
- Encourage more effective cost sharing for landowners who reduce inputs of agricultural chemicals and animal waste products into streams.
- Facilitate the development of local watershed councils, citizen's groups or stream teams to address local concerns and to help monitor wildlife populations.
- Develop and distribute information to landowners regarding riparian habitat, grazing concerns within riparian habitats, Best Management Practices, and existing Farm Bill programs.
- Identify and help provide alternative water sources for livestock to get them out of the river.
- Promote erosion control incentives and programs such as the stream buffer program of the Farm Bill.
- Encourage the strengthening of Confined Animal Feeding Operation regulations that limit the volume of animal waste that can be applied on the land.
- Identify limits to chemicals such as phosphorous at the watershed level.
- Encourage the protection of riparian areas from grazing using fencing and landowner incentives payments to restore riparian vegetation structure.

Conservation Issue: Habitat loss or damage caused by heavy recreational use that negatively affects species of greatest conservation need:

15. Uncontrolled use of off-road vehicles can result in reduction of the quantity and quality of this habitat.

Conservation Actions:

- Conduct research to better understand the impacts of off-road vehicles in this habitat.
- Determine and monitor the impacts of off-road vehicles by monitoring wildlife populations (especially indicator species) and by monitoring water quality.

Potential indicators for monitoring the effectiveness of the conservation actions:

- Acres degraded and restored.
- Acres under easements or conservation practices.
- Creation of new local conservation groups and their effectiveness.
- Groundwater level and surface flow rates, using U.S. Geological Survey data.
- Landowners participating in conservation practices.
- Playa Lakes Joint Venture Wetland datasets – periodic review.
- Pubic opinion toward conservation actions.
- Relative condition (populations/trends) of species of greatest conservation need and key indicator species.
- Relative condition and quantity of habitat.
- Riparian acres acquired or proportion of acres protected/acquired within a given watershed.
- U.S. Geological Survey groundwater levels check.
- U.S. Geological Survey monitoring stations.
- Water quality.

Conservation Landscape: Sand Sagebrush/Bluestem Shrublands

The relative condition of Sand Sagebrush/Bluestem Shrublands habitat is currently good with a stable trend. Sand Sagebrush (*Artemisia filifolia*) shrublands are found in scattered locations across most of the Shortgrass Prairie Region, but are most common in the eastern third of the Region and restricted to sites with deep sandy soils and stabilized dunes, primarily in the vicinity of the Beaver/North Canadian and Cimarron rivers. Sand sagebrush is typically associated with Sand Dropseed (*Sporobolus cryptandrus*) and Little Bluestem (*Schizachyrium scoparium*). In these plant communities, Sand Sagebrush may comprise 5 to 50 percent of the canopy cover depending upon factors such as grazing pressure which tends to decrease grass coverage and increase sagebrush, or fire frequency which tends to decrease sagebrush and increase the coverage by grasses. Other grasses and forbs found in this community include Sand Bluestem (*Andropogon hallii*), Sideoats Grama (*Bouteloua curtipendula*), Prairie Sandreed (*Calamovilfa longifolia*), Sand Lovegrass (*Eragrostis trichodes*), Sand Paspalum (*Paspalum stramineum*), Prairie Sunflower (*Helianthus petiolaris*), Mentzelia (*Mentzelia sp.*), Hairy Goldenaster (*Chrysopsis villosa*), Halfshrub Sundrops (*Calylophus serrulatus*), Annual Buckwheat (*Eriogonum anuum*), Indian Blanket (*Gaillardia pulchellum*), Western Spiderwort (*Tradescantia occidentalis*) and Yucca (*Yucca glouca*). The Shortgrass Prairie Region encompasses approximately half of the sand sagebrush shrublands that occur in Oklahoma.

Recognized vegetation associations within this habitat type include:
Sand Sagebrush/Sand Dropseed – Little Bluestem Shrubland

The species of greatest conservation need found in this habitat are listed in the following table. The population abundance (status and trend) of each species is described in relative terms. The best professional judgment of the advisory group and technical experts was used to identify each species status and trend. Species are sorted alphabetically within groups of amphibians (Amph), birds, fish, invertebrates (Inve), mammals (Mamm), and reptiles (Rept) for easy reference.

Species status definitions:
Low – species is rare, has a small population size, and/or occurs in only a small portion of the Region.
Medium – species is uncommon and occurs over a large portion of the Region or species is common but occurs in only a small part of the Region.
Abundant – species is common and widespread within the Region in appropriate habitat.
Unknown – the status of this species is not known.

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	Barn Owl	X							X
Bird	Bell's Vireo		X			X			
Bird	Burrowing Owl	X							X
Bird	Cassin's Sparrow		X						X
Bird	Ferruginous Hawk	X							X
Bird	Harris's Sparrow		X						X
Bird	Lesser Prairie Chicken	X				X			
Bird	Loggerhead Shrike		X			X			
Bird	Northern Bobwhite		X			X			
Bird	Painted Bunting		X						X

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	Red-headed Woodpecker		X			X			
Bird	Scaled Quail		X			X			
Bird	Swainson's Hawk		X						X
Mamm	Black-tailed Prairie Dog		X					X	
Mamm	Brazilian (Mexican) Free-tailed Bat				X				X
Mamm	Western Big-eared Bat	X							X
Rept	Common Lesser Earless Lizard				X				X
Rept	Texas Gartersnake				X				X
Rept	Texas Horned Lizard				X				X
Rept	Texas Long-nosed Snake				X				X
Rept	Western Massasauga				X				X

The following conservation issues and actions are listed in general priority order.

Conservation Issue: Inadequate data concerning species of greatest conservation need (refer to the matrix above) and habitat, an impediment for effective conservation planning and implementation:

1. Data are incomplete for species of greatest conservation need (particularly those whose populations are low or unknown and for those whose status and trends of are declining or unknown) thus making it difficult to identify management issues and establish effective corrective strategies.
2. Baseline knowledge about flora/fauna and both the historic and current distribution and condition of this habitat type is incomplete.

Conservation Actions:

- Conduct research to determine why species of greatest conservation need are low and/or declining.
- Conduct surveys of existing literature, reports, and museum records to evaluate historic distributions, abundances, and habitat affinities of species of greatest conservation need, and examine possible causes of suspected population declines.
- Conduct field studies of species of greatest conservation need to establish baseline population data/information.
- Conduct studies to verify existing data.
- Use surveys, workshops and data acquisition to update the Comprehensive Wildlife Conservation Strategy.
- Develop and maintain databases to store and analyze distributional and ecological data for species of greatest conservation need.
- Identify/prioritize core areas of habitat and corridors to connect.

Conservation Issue: Black-tailed Prairie Dog habitat related issues:

3. Prairie Dog control practices often impact non-target species.
4. Land conversion has resulted in the loss of large Prairie Dog complexes (i.e., those in excess of 5,000 acres) thought to be critical to the long-term sustainability of Black-tailed Prairie Dogs and symbiotic species.
5. Conversion of large blocks of land to other land uses has resulted in fragmentation of Prairie Dog complexes.

Conservation Actions:

- Encourage and facilitate the development of programs to provide incentives for landowners to practice Black-tailed Prairie Dog colony/complex enhancement and restoration.
- Encourage ecotourism, lease hunting and lease fishing as a supplemental economic benefit to landowners in order that they can manage large complexes of Black-tailed Prairie Dogs and symbiotic species.
- Develop and distribute information to landowners on several topics including grazing ecology, natural systems and exotic invasive species.
- Maintain or possibly expand programs like the Landowner Incentive Program for the conservation of Black-tailed Prairie Dogs and other species, focusing on restoration and enhancement.
- Support and encourage inheritance legislation to enable large ranches to remain in single family ownership.
- Consider land acquisition and conservation easements (e.g., by land trusts and non-governmental organizations such as The Nature Conservancy) for conserving important tracts of this habitat in the Shortgrass Prairie Region.
- Increase funding for the Conservation Reserve and Grassland Reserve Programs from the subsidy side of the Farm Bill.
- Encourage and facilitate the development and updating of Best Management Practices for grazing practices, fire management and other subjects.
- Develop and modify as needed the existing Prairie Dog control regulations to minimize undesirable impacts on species of greatest conservation need in this habitat.
- Identify and prioritize core areas of Black-tailed Prairie Dog colonies to enhance complex development.
- Employ the natural areas registry.

Conservation Issue: Habitat loss and fragmentation from land management practices:

6. Fragmentation of the habitat has occurred for a variety of reasons, including that which is caused by smaller land ownership sizes due to inheritance tax laws.
7. Conversion of this habitat to cropland has resulted in diminished capacity of the habitat to support species of greatest conservation need.
8. In some areas, heavy grazing has reduced both the quantity and the quality of this habitat in the Shortgrass Prairie Region; this is especially true of the reduction in bluestem cover.
9. Heavy applications of herbicides to reduce sand sagebrush reduce the amount of cover and the abundance of native forbs.
10. Unneeded or abandoned fences produce obstacles for Lesser Prairie Chickens.
11. Areas that have been cleared for road construction or pipeline/well construction are especially susceptible to wind erosion.
12. Energy exploration and development can produce impacts that include the loss of habitat quantity and quality in this habitat in the Shortgrass Prairie Region.
13. Fire suppression can result in a local over-abundance of Sand Sagebrush or Eastern Redcedar.

Conservation Actions:

- Encourage and facilitate the production and distribution of information materials for landowners that increase landowner knowledge of, access to and use of Farm Bill programs.
- Identify/prioritize core areas of habitat and corridors to connect to get the most efficient use of funds.
- Consider land acquisition or conservation easements to conserve important tracts of this habitat in the Shortgrass Prairie Region.

- Support and encourage inheritance legislation to enable large ranches to remain in single family ownership.
- Encourage and promote alternative grazing practices that use patch burning and mineral blocks to control the movement of cattle rather than relying entirely on fencing.
- Support increasing funding from the subsidy side of the Farm Bill for the Conservation Reserve and Grassland Reserve Programs.
- Encourage the development and use of tax incentives and tax relief for landowners who maintain good quality habitat.
- Encourage or cost share the development of demonstration areas that show and describe grazing and fire regimes that benefit species of greatest conservation need in the Shortgrass Prairie Region.
- Encourage and support ranch diversification for lower grazing and off set by lease hunting, fishing access, and ecotourism viewing.
- Encourage an economic study for profitability and nutrition of diverse forbs pasture.
- Encourage the development and updating of Best Management Practices for grazing and pesticide/herbicide usage in this habitat.
- Encourage and support the development and distribution of information that increases landowner knowledge of, access to and use of Farm Bill programs.
- Facilitate prescribed burning as a tool to control Eastern Redcedar.
- Facilitate the development of controlled burn cooperatives.
- Support increasing the cost share for tree clipping (i.e., Eastern Redcedar) and changing ranking factors in the Conservation Reserve Program.
- Support efforts to develop or update fire-related Best Management Practices.
- Subsidize burn schools for cooperatives and contractors in the Shortgrass Prairie Region.
- Encourage fire management contractors and laws that reduce the liability for fire contractors.

Conservation Issue: Invasive and exotic plants and animals that are detrimental to species of greatest conservation need:

14. Much of the Conservation Reserve Program within or adjacent to this habitat type has been planted to exotic invasive species such as Old World Bluestem.
15. The quality and quantity of this habitat has been decreased by invasive species - particularly the native Eastern Redcedar and the exotic Old World Bluestem and Russian Thistle.

Conservation Actions:

- Encourage and support the development and distribution of informational materials to increase landowner knowledge of, access to and use of Farm Bill programs.
- Support increase funding from the subsidy side of the Farm Bill for the Conservation Reserve and Grassland Reserve Programs.
- Encourage increasing the cost share for tree clipping (i.e., Eastern Redcedar) and support changing ranking factors in the Conservation Reserve Program.
- Encourage and facilitate the development or updating of Best Management Practices for dealing with invasive species.

Potential indicators for monitoring the effectiveness of the conservation actions:

- Acres of native plant communities restored.
- Changes in acreage/coverage of exotic vegetation.
- Develop GIS datasets to monitor changes in land cover.
- Numbers of acres burned/treated.
- Numbers of acres enrolled in conservation programs, including Landowner Incentive Program.

- Relative condition (populations/trends) of species of greatest conservation need and key indicator species.
- Relative condition and quantity of habitat.

Conservation Landscape: Mixed-grass Prairie

The relative condition of Mixed-grass Prairie habitat in the Shortgrass Prairie Region is currently good with an increasing trend. This is a relatively uncommon habitat type found in the eastern portion of the Shortgrass Prairie Region. Mixed-grass Prairies in this Region are dominated by Little Bluestem (*Schizachyrium scoparium*), Sideoats Grama (*Bouteloua curtipendula*) and Blue Grama (*Bouteloua gracilis*). Silver Bluestem (*Bothriochloa saccharoides*) and Prairie Threeawn (*Aristida oligantha*) occur in disturbed sites. Other common grasses and forbs include Sneezeweed (*Helenium anarum*), Heath Aster (*Aster ericoides*), Roundleaf Bladderpod (*Lesquerella ovalifolia*), and Foxtail Barley (*Hordeum jubatum*). This habitat type seems more common today than is was historically in the region because of the large acreage which has been enrolled into the Conservation Reserve Program and planted to bluestem grasses. These fields resemble Mixed-grass Prairie in structure but most of these are dominated by exotic grasses such as Yellow (i.e., Old World) Bluestem and have been planted in areas that were historically Shortgrass Prairie.

Recognized vegetation associations within this habitat type include:

Little Bluestem – Blue Grama Grassland
Little Bluestem – Sideoats Grama – Blue Grama Grassland
Silver Bluestem Grassland
Vine Mesquite – Buffalograss Grassland

The species of greatest conservation need found in this habitat are listed in the following table. The population abundance (status and trend) of each species is described in relative terms. The best professional judgment of the advisory group and technical experts was used to identify each species status and trend. Species are sorted alphabetically within groups of amphibians (Amph), birds, fish, invertebrates (Inve), mammals (Mamm), and reptiles (Rept) for easy reference.

Species status definitions:
Low – species is rare, has a small population size, and/or occurs in only a small portion of the Region.
Medium – species is uncommon and occurs over a large portion of the Region or species is common but occurs in only a small part of the Region.
Abundant – species is common and widespread within the Region in appropriate habitat.
Unknown – the status of this species is not known.

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	American Golden Plover		X						X
Bird	Baird's Sparrow	X							X
Bird	Barn Owl	X							X
Bird	Buff-breasted Sandpiper	X				X			
Bird	Burrowing Owl	X							X
Bird	Cassin's Sparrow		X						X
Bird	Chestnut-collared Longspur	X							X
Bird	Ferruginous Hawk	X							X
Bird	Harris's Sparrow		X						X
Bird	LeConte's Sparrow		X						X
Bird	Lesser Prairie Chicken	X				X			
Bird	Loggerhead Shrike		X			X			

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	Long-billed Curlew	X							X
Bird	McCown's Longspur				X				X
Bird	Northern Bobwhite		X			X			
Bird	Peregrine Falcon	X							X
Bird	Prairie Falcon	X							X
Bird	Red-headed Woodpecker		X			X			
Bird	Sandhill Crane		X				X		
Bird	Scaled Quail		X			X			
Bird	Short-eared Owl				X				X
Bird	Smith's Longspur	X							X
Bird	Sprague's Pipit				X				X
Bird	Swainson's Hawk		X						X
Bird	Upland Sandpiper				X		X		
Bird	Whooping Crane	X						X	
Mamm	Black-tailed Prairie Dog		X					X	
Mamm	Brazilian (Mexican) Free-tailed Bat				X				X
Mamm	Desert Shrew				X				X
Mamm	Long-tailed Weasel				X				X
Mamm	Swift Fox		X				X		
Rept	Texas Gartersnake				X				X
Rept	Texas Horned Lizard				X				X
Rept	Texas Long-nosed Snake				X				X
Rept	Western Massasauga				X				X

The following conservation issues and actions are listed in general priority order.

Conservation Issue: Inadequate data concerning species of greatest conservation need (refer to the matrix above) and habitat, an impediment for effective conservation planning and implementation:

1. Data are incomplete for species of greatest conservation need (particularly those whose populations are low or unknown and for those whose status and trends of are declining or unknown) thus making it difficult to identify management issues and establish effective corrective strategies.
2. Baseline knowledge about flora/fauna and both the historic and current distribution and condition of this habitat type is incomplete.

Conservation Actions:

- Conduct research to determine why species of greatest conservation need are low and/or declining.
- Conduct surveys of existing literature, reports, and museum records to evaluate historic distributions, abundances, and habitat affinities of species of greatest conservation need, and examine possible causes of suspected population declines.
- Conduct field studies to determine baseline conditions for distributions, abundances, and habitat affinities of species of greatest conservation need, to verify the accuracy of existing data, and to assess changes over time.

- Develop and maintain databases to store and analyze distributional and ecological data for species of greatest conservation need.
- Use surveys, workshops, and data acquisition to update the Comprehensive Wildlife Conservation Strategy.
- Conduct studies to identify and prioritize core areas of habitat and corridors to connect.

Conservation Issue: Habitat loss and fragmentation from land management practices:

3. Fragmentation in this habitat is frequently caused by smaller land ownership sizes due to inheritance tax laws.
4. Heavy grazing in some areas has reduced the quantity and quality of this habitat.
5. Some herbicide treatments reduce the abundance of native forbs, reducing the quality of this habitat.
6. Prairie Chicken collisions with fences can be substantial in some areas.
7. Conversion of native prairie to crop fields has reduced the quantity of this habitat in some areas.
8. Energy exploration and development, including wind power development, can reduce the suitability of this habitat for species of greatest conservation need.

Conservation Actions:

- Consider land acquisition and conservation easements for acquiring some of the most important tracts of this habitat.
- Encourage and support private land acquisition to protect important tracts in this habitat (e.g., by land trusts and non-governmental organizations such as The Nature Conservancy).
- Encourage and support inheritance legislation to enable large ranches to remain in single family ownership.
- Encourage and support the development or updating of Best Management Practices for fire use and management.
- Encourage and support modification of existing laws and regulations increase the cost share for tree clipping (e.g., Eastern Redcedar) and changing ranking factors.
- Encourage or cost share the development of demonstration areas that show and describe grazing and fire regimes in the Region that benefit species of greatest conservation need.
- Encourage and facilitate burn schools for fire cooperatives and contractors.
- Develop and distribute informational materials that increase landowner knowledge of, access to and use of Farm Bill programs.
- Encourage and assist with the development and updating of Best Management Practices for practices including grazing management, crop selection, and herbicide application.
- Encourage the conversion of cropland to Grassland Reserve or Conservation Reserve Programs planted to native grasses.
- Increase funding from the subsidy portion of the Farm Bill for practices that maintain or improve this habitat.
- Support adjustments in the Grassland Reserve and Conservation Reserve Programs which make it more favorable to maintain and enhance this habitat.
- Encourage the removal of residual fences.
- Encourage and promote alternative grazing practices that use patch burning and mineral blocks to control the movement of cattle rather than using fencing.
- Encourage and support ranch diversification for lower grazing off set by lease hunting, fishing access, and ecotourism viewing.
- Cooperate with appropriate entities (e.g., energy companies, federal and state agencies, and individual landowners) to site energy developments in a way that will minimize restrictions on species of greatest conservation need use of this habitat.
- Encourage both on-site and off-site mitigation for energy development.

Conservation Issue: Invasive and exotic plants and animals that are detrimental to species of greatest conservation need:

9. Introduced species (particularly Old World Bluestem) and invasive species (particularly the native Eastern Redcedar and the exotic Russian Thistle), along with conversion to cropland or to Conservation Reserve Program which has been planted to exotic or invasive species such as old world bluestems, have reduced the quantity and quality of this habitat.

Conservation Actions:

- Encourage and facilitate conversion of cropland or Conservation Reserve Program dominated by Old World Bluestem to native prairie species.
- Support the development and use of tax incentives and tax relief for maintaining good quality prairie.

Conservation Issue: Black-tailed Prairie Dog habitat related issues:

10. Black-tailed Prairie Dog colonies have been reduced and their habitat has been fragmented.

Conservation Actions:

- Encourage and support economic incentives for landowners who preserve and restore Black-tailed Prairie Dog colonies.
- Encourage and support ranch diversification for lower grazing and off set by lease hunting, fishing access, and ecotourism viewing.
- Develop and distribute informational materials for landowners on grazing ecology that minimizes reduction in species of greatest conservation need.
- Encourage programs like the Landowner Incentive Program for the conservation of Black-tailed Prairie Dog habitat.
- Encourage and support inheritance legislation to enable large ranches to remain in single family ownership.
- Encourage private land acquisition and conservation easements (e.g., by land trusts and non-governmental organizations such as The Nature Conservancy) to maintain or enhance the quality of this habitat.
- Increase funding from the subsidy portion of the Farm Bill for the Conservation Reserve and Grassland Reserve Programs.
- Identify and prioritize core areas of habitat and corridors to connect to get the efficient use of funds.

Potential indicators for monitoring the effectiveness of the conservation actions:

- Acres burned/treated.
- Acres of native plant communities (species composition) restored.
- Acres of wind farms occupied and impacted.
- Acres under easements or enrolled in conservation programs, including Landowner Incentive Program.
- Changes in acreage/coverage of exotic vegetation.
- Develop GIS datasets to measure/calculate an index of habitat fragmentation and land cover changes.
- Relative condition (populations/trends) of species of greatest conservation need and key indicator species.
- Relative condition and quantity of habitat.

Conservation Landscape: Sandy-bottom Streams and Associated Riparian Forest

The relative condition of Sandy-bottom Streams and Associated Riparian Forest habitat is currently poor with a declining trend in the Shortgrass Prairie Region. Only a small number of streams are found in this relatively arid Region of the state. Most streams have a sandy or silty substrate except for a few locations in the Black Mesa area where streams may have a rocky or gravel substrate. Many streams are not perennial and water may cease to flow above ground during the driest periods in the summer. Many stream channels are lined with semi-aquatic vegetation such as Cattails (*Typha angustifolia*), Three-square Bulrush (*Schoenoplectus pungens*) and Spikerushes (*Eleocharis sp*.). The riparian areas along these streams are often open woodlands dominated by Eastern Cottonwood (*Populus deltoides*), Sandbar Willow (*Salix exigua*), Peachleaf Willow (*Salix amygdaloides*), and Sand Plum (*Prunus angustifolia*). Herbaceous plants include Switchgrass (*Panicum virgatum*), Sweetscent (*Pluchea odorata*), and Germander (*Teucrium canadense*).

Recognized vegetation associations in this habitat type include:

Eastern Cottonwood – Black Willow Woodland
Eastern Cottonwood – Sandbar Willow Woodland
Sandbar Willow/Switchgrass Shrubland

The species of greatest conservation need found in this habitat are listed in the following table. The population abundance (status and trend) of each species is described in relative terms. The best professional judgment of the advisory group and technical experts was used to identify each species status and trend. Species are sorted alphabetically within groups of amphibians (Amph), birds, fish, invertebrates (Inve), mammals (Mamm), and reptiles (Rept) for easy reference.

Species status definitions:
Low – species is rare, has a small population size, and/or occurs in only a small portion of the Region.
Medium – species is uncommon and occurs over a large portion of the Region or species is common but occurs in only a small part of the Region.
Abundant – species is common and widespread within the Region in appropriate habitat.
Unknown – the status of this species is not known.

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	Bald Eagle	X						X	
Bird	Barn Owl	X							X
Bird	Bell's Vireo		X			X			
Bird	Bullock's Oriole		X						X
Bird	Interior Least Tern	X							X
Bird	Lesser Scaup		X			X			
Bird	Little Blue Heron		X						X
Bird	Loggerhead Shrike		X			X			
Bird	Northern Bobwhite		X			X			
Bird	Northern Pintail		X			X			
Bird	Painted Bunting		X						X
Bird	Peregrine Falcon	X							X
Bird	Red-headed Woodpecker		X			X			

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	Sandhill Crane		X				X		
Fish	Arkansas Darter	X							X
Fish	Plains Minnow			X		X			
Fish	Red River Shiner			X			X		
Mamm	Brazilian (Mexican) Free-tailed Bat				X				X
Mamm	Long-tailed Weasel				X				X
Mamm	Mountain Lion	X						X	
Mamm	Western Big-eared Bat	X							X
Rept	Spiny Softshell Turtle				X				X
Rept	Western Massasauga				X				X

The following conservation issues and actions are listed in general priority order.

Conservation Issue: Inadequate data concerning species of greatest conservation need (refer to the matrix above) and habitat, an impediment for effective conservation planning and implementation:

1. Data are incomplete for species of greatest conservation need (particularly those whose populations are low or unknown and for those whose status and trends of are declining or unknown) thus making it difficult to identify management issues and establish effective corrective strategies.
2. Information is incomplete to help determine and to evaluate the best management strategies for riparian flora and fauna.

Conservation Actions:

- Conduct research to determine why species of greatest conservation need are low and/or declining.
- Conduct field studies of species of greatest conservation need to establish baseline conditions for the current distributions, abundances and habitat affinities, and examine possible causes of suspected population declines.
- Conduct studies to verify existing data.
- Use surveys, workshops and data acquisition to update the Comprehensive Wildlife Conservation Strategy.
- Develop and maintain databases to store and analyze distributional and ecological data for species of greatest conservation need.
- Identify and prioritize core areas of habitat and corridors to connect them.
- Work with the agriculture community and other stakeholders to develop descriptions of what a quality example of this habitat is.
- Conduct field studies to determine beaver impacts on this habitat.

Conservation Issue: Altered patterns of water flow that negatively affect both habitat and species:

3. Irrigation practices that involve groundwater pumping and lowering of the water table have reduced the quantity and quality of this habitat.
4. Dams and water diversions which reduce flows and scouring have diminished the quantity and quality of this habitat.
5. Upstream impoundments have modified the rivers' hydrology (Stinnett, Smith, and Conrady, 1987).

Conservation Actions:

- Encourage the adoption of minimum stream flow requirements to include flushing flows (Stinnett, Smith, and Conrady, 1987).
- Encourage increased access to and participation in Farm Bill programs including those providing economic incentives to landowners for habitat management.
- Develop and distribute informational materials to landowners and others concerning water conservation practices.
- Encourage no-till and low-till farming practices that help keep water on the land and curb soil erosion.

Conservation Issue: Invasive and exotic plants and animals that are detrimental to species of greatest conservation need:

6. Cottonwood regeneration has been reduced or eliminated in some areas of this habitat.
7. There is widespread woody vegetation encroachment within this habitat.
8. Because of the exclusion of fire there has been encroachment by Eastern Redcedar and Salt Cedar.

Conservation Actions:

- Conduct field studies to determine the factors responsible for the lack of Cottonwood regeneration within this habitat.
- Develop and distribute informational materials to landowners and others concerning mechanisms for managing fire and for invasive species control.
- Encourage and facilitate the creation of burn cooperatives.
- Encourage practices that control invasive species.
- Conduct field studies to determine the most efficient and effective methods of controlling Salt Cedar.
- Encourage and facilitate the establishment of demonstration plots showing successful techniques for the removal of Salt Cedar and Redcedar.
- Encourage the control of Redcedar through prescribed burning.

Conservation Issue: Habitat loss from land management practices:

9. Heavy grazing within riparian areas during the growing season reduces understory vegetation and hinders cottonwood regeneration.

Conservation Actions:

- Develop and distribute informational materials to landowners and others concerning ways to successfully preserve, protect, and enhance this valuable habitat.
- Encourage increased access to and participation in Farm Bill programs including use of those provisions that provide economic incentives to landowners.
- Encourage use of erosion control incentives such as the stream buffer program provided by the Natural Resources Conservation Service through the Farm Bill.
- Encourage and support programs that provide tax relief for riparian owners who engage in practices that protect and enhance this habitat (Stinnett, Smith, and Conrady, 1987).
- Encourage practices that protect riparian areas from grazing.
- Encourage fencing of riparian corridors to control access by cattle during the summer months.
- Encourage use of alternative shading for livestock to reduce impacts to riparian habitat.
- Encourage replacing of livestock ponds with alternative water sources.

Conservation Issue: Water quality changes which negatively affect both habitat and species of greatest conservation need:

10. In some situations large concfined animal feeding operations/hog farms increase nutrients in waterways and increase the potential for ammonia or algae-related fish kills.

Conservation Actions:

- Develop and distribute informational materials to landowners and others concerning ways to minimize or eliminate environmental problems in this habitat related to confined animal feeding operations.
- Encourage and support strengthening the regulations dealing with limits on the amount of animal waste that can be applied on the land.
- Encourage making limits more restrictive and managing phosphorous at the watershed level.

Potential indicators for monitoring the effectiveness of the conservation actions:

- Analysis of change in land use cover measured by aerial photography or remote imaging.
- Maturing component; numbers of acres and distribution can be monitored using GIS.
- National Wild Turkey Federation GIS data sets.
- Partnerships with local governments.
- Periodically assess the number of acres and distribution of wetlands using GIS datasets.
- Relative condition (populations/trends) of species of greatest conservation need and key indicator species.
- Relative condition and quantity of habitat.
- U.S. Geological Survey monitoring stations.
- Water quality monitoring.

Conservation Landscape: Sand Plum/Sumac Shrubland

The relative condition of Sand Plum/Sumac Shrubland habitat is currently poor with a declining trend in the Shortgrass Prairie Region. This shrub-dominated habitat is uncommon and occurs locally in the eastern portion of the Region on deep sandy soils and stabilized dunes associated with the Beaver/North Canadian and Cimarron rivers. This habitat type is dominated by Skunkbrush (*Rhus aromatic*) and smaller numbers of Sand Plum (*Prunus angustifolia*). Other woody plants that occur in small numbers include Sand Sagebrush (*Artemesia filifolia*), and Netleaf Hackberry (*Celtis reticulata*). Common grasses and forbs include Little Bluestem (*Schizachyrium scoparium*), Indian Blanket (*Gaillardia pulchellum*), Sideoats Grama (*Bouteloua curtipendula*) and Switchgrass (*Panicum virgatum*). The historic and current acreages for this habitat type have not been measured, but neither is likely to exceed more than a few 10,000s of acres.

Recognized vegetation associations within this habitat type include:

Sand Plum/Little Bluestem Shrubland
Skunkbrush (Aromatic Sumac) Shrubland

The species of greatest conservation need found in this habitat are listed in the following table. The population abundance (status and trend) of each species is described in relative terms. The best professional judgment of the advisory group and technical experts was used to identify each species status and trend. Species are sorted alphabetically within groups of amphibians (Amph), birds, fish, invertebrates (Inve), mammals (Mamm), and reptiles (Rept) for easy reference.

Species status definitions:
Low – species is rare, has a small population size, and/or occurs in only a small portion of the Region.
Medium – species is uncommon and occurs over a large portion of the Region or species is common but occurs in only a small part of the Region.
Abundant – species is common and widespread within the Region in appropriate habitat.
Unknown – the status of this species is not known.

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Bird	Barn Owl	X							X
Bird	Bell's Vireo		X			X			
Bird	Black-capped Vireo	X				X			
Bird	Cassin's Sparrow		X						X
Bird	Harris's Sparrow		X						X
Bird	Kentucky Warbler		X						X
Bird	Lesser Prairie Chicken	X				X			
Bird	Loggerhead Shrike		X			X			
Bird	Northern Bobwhite		X			X			
Bird	Painted Bunting		X						X
Bird	Prairie Warbler		X						X
Bird	Red-headed Woodpecker		X			X			
Bird	Scaled Quail		X			X			
Bird	Short-eared Owl				X				X
Mamm	Brazilian (Mexican) Free-tailed Bat				X				X

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Mamm	Eastern Spotted Skunk				X				X
Mamm	Mountain Lion	X						X	
Mamm	Western Big-eared Bat	X							X
Rept	Common Lesser Earless Lizard				X				X
Rept	Texas Gartersnake				X				X
Rept	Texas Horned Lizard				X				X
Rept	Texas Long-nosed Snake				X				X
Rept	Western Diamond-backed Rattlesnake				X				X
Rept	Western Massasauga				X				X

The following conservation issues and actions are listed in general priority order.

Conservation Issue: Inadequate data concerning species of greatest conservation need (refer to the matrix above) and habitat, an impediment for effective conservation planning and implementation:

1. Data are incomplete for species of greatest conservation need (particularly those whose populations are low or unknown and for those whose status and trends of are declining or unknown) thus making it difficult to identify management issues and establish effective corrective strategies.
2. Baseline knowledge about flora/fauna and both the historic and current distribution and condition of this habitat type is incomplete.

Conservation Actions:

- Conduct research to determine why species of greatest conservation need are low and/or declining.
- Conduct surveys of existing literature, reports, and museum records to evaluate historic distributions, abundances, and habitat affinities of species of greatest conservation need, and examine possible causes of suspected population declines.
- Conduct field studies to determine baseline conditions for distributions, abundances, and habitat affinities of species of greatest conservation need, to verify the accuracy of existing data, and to assess changes over time.
- Use surveys, workshops, and data acquisition to update the Comprehensive Wildlife Conservation Strategy.

Potential indicators for monitoring the effectiveness of the conservation actions:

- Analysis of change in land use cover measured by aerial photography or remote imaging.
- Maturing component; numbers of acres and distribution can be monitored using GIS.
- Partnerships with local governments.
- Periodically assess the number of acres and distribution of wetlands using GIS datasets.
- Relative condition (populations/trends) of species of greatest conservation need and key indicator species.
- Relative condition and quantity of habitat.

Conservation Landscape: Springs

The relative condition of Springs habitat is currently poor with a declining trend in the Shortgrass Prairie Region. Only a small number of springs and seeps are found in this Region. Most are found in the area around Black Mesa or in proximity of streams. The ground around springs and seeps is often vegetated with herbaceous wetland plants such as Three-square Bulrush, Spikerushes and cattails. From the perspective of species of greatest conservation need, the most biologically significant springs occur in the Cimarron River watershed, where a few springs support populations of the Arkansas Darter (*Etheostoma cragini*) which is a candidate for federal listing under the Endangered Species Act.

The species of greatest conservation need found in this habitat are listed in the following table. The population abundance (status and trend) of each species is described in relative terms. The best professional judgment of the advisory group and technical experts was used to identify each species status and trend. Species are sorted alphabetically within groups of amphibians (Amph), birds, fish, invertebrates (Inve), mammals (Mamm), and reptiles (Rept) for easy reference.

Species status definitions:
Low – species is rare, has a small population size, and/or occurs in only a small portion of the Region.
Medium – species is uncommon and occurs over a large portion of the Region or species is common but occurs in only a small part of the Region.
Abundant – species is common and widespread within the Region in appropriate habitat.
Unknown – the status of this species is not known.

Species of Greatest Conservation Need		Status				Trend			
Group	Common Name	Low	Medium	Abundant	Unknown	Declining	Stable	Increasing	Unknown
Fish	Arkansas Darter	X					X		
Mamm	Western Big-eared Bat	X				X			

The following conservation issues and actions are listed in general priority order.

Conservation Issue: Inadequate data concerning species of greatest conservation need (refer to the matrix above) and habitat, an impediment for effective conservation planning and implementation:

1. Data are incomplete for species of greatest conservation need (particularly those whose populations are low or unknown and for those whose status and trends of are declining or unknown) thus making it difficult to identify management issues and establish effective corrective strategies.
2. Data are incomplete about spring locations.
3. Springs are difficult to monitor because of their small size and because habitat is mostly privately owned.

Conservation Actions:

- Conduct research to determine why species of greatest conservation need are low and/or declining.
- Conduct surveys of existing literature, reports, and museum records to evaluate historic distributions, abundances, and habitat affinities of species of greatest conservation need, and examine possible causes of suspected population declines.

- Conduct field studies to determine baseline conditions for distributions, abundances, and habitat affinities of species of greatest conservation need, to verify the accuracy of existing data, and to assess changes over time.
- Use surveys, workshops, and data acquisition to update the Comprehensive Wildlife Conservation Strategy.
- Create a springs/stream data base to track location, land ownership, and biological data.
- Work with individual landowners to gain permission to conduct biological inventories of animals (e.g., mussels, fish, amphibians, and crayfish) and plants.

Conservation Issue: Water quality changes which negatively affect both habitat and species of greatest conservation need:

4. Agricultural runoff produces elevated nutrient levels that affect springs by increasing algae.
5. Heavy livestock grazing can degrade spring habitats.
6. Springs are sometimes modified by being made into concrete ponds for watering cattle.

Conservation Actions:

- Support and encourage economic incentives for landowners who protect and restore habitat and water quality.
- Encourage and support restoring vegetation around springs and removing human modifications such as small impoundments.
- Encourage fencing springs to control access by livestock.

Conservation Issue: Invasive and exotic plants and animals that are detrimental to species of greatest conservation need:

7. This is an especially fragile habitat. It is easily disturbed or modified by exotic plant invasion.

Conservation Actions:

- Encourage and support restoring vegetation around springs and removing human modifications such as small impoundments.
- Encourage fencing springs to control access by livestock.
- Encourage and support programs that control or stop introduction of exotic species such as Salt Cedar.

Conservation Issue: Altered patterns of water flow that negatively affect both habitat and species:

8. Groundwater withdrawal is reducing spring and stream flow.

Conservation Actions:

- Encourage and support delineation of recharge areas for springs to protect water quality and quantity.
- Encourage management of water withdrawals to have the least impact on spring flows.

Potential indicators for monitoring the effectiveness of the conservation actions:

- Number of easements obtained.
- Number of protected springs/streams.
- Relative condition (populations/trends) of species of greatest conservation need and key indicator species.
- Relative condition and quantity of habitat.
- Stream and spring flow.
- Water quality.

Potential partnerships to deliver conservation for Shortgrass Prairie Region:

State Government

- Natural Areas Registry Program
- Oklahoma Commissioners of the Land
- Oklahoma Conservation Commission
- Oklahoma Department of Environmental Quality
- Oklahoma Department of Wildlife Conservation
- Oklahoma Energy Resources Board
- Oklahoma Legislature
- Oklahoma Renewable Energy Council
- Oklahoma State University, Cooperative Extension Service
- Oklahoma State University, Department of Forestry
- Oklahoma Tourism and Recreation Department
- Oklahoma Water Resources Board
- Other state universities and departments
- University of Oklahoma, Oklahoma Biological Station
- University of Oklahoma, Oklahoma Natural Heritage Inventory

Federal Government

- Federal Regulation and Oversight of Energy
- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation
- U.S. Department of Agriculture, Farm Service Agency
- U.S. Department of Agriculture, Forest Service
- U.S. Department of Agriculture, Forest Service, Rita Blanca National Grasslands
- U.S. Department of Agriculture, Natural Resources Conservation Service
- U.S. Department of Agriculture, Resource Conservation and Development Councils
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

Local Government

- Conservation Districts
- Municipalities
- Tribal governments

Businesses, Citizens and Citizen Groups

- Black-tailed Prairie Dog Conservation Team
- Chambers of Commerce
- Ducks Unlimited and local Oklahoma chapters
- Electric Utilities
- Farm Bureau
- Farm organizations
- Farmers Union
- High Plains Partnership
- Individual farmers
- International Association of Fish and Wildlife Agencies
- Local citizen's groups
- National and Oklahoma Wind Power Initiative
- National Wild Turkey Federation and local Oklahoma chapters
- North American Grouse Partnership
- Oklahoma Cattlemen's Association
- Oklahoma Wildlife and Prairie Heritage Alliance

- Other sportsmens groups
- Playa Lakes Joint Venture
- Private landowners
- Producer Cooperatives
- Quail Unlimited and local Oklahoma chapters
- Rocky Mountain Bird Observatory
- Sutton Avian Research Center
- Swift Fox Conservation Team
- The Nature Conservancy
- Western Association of Fish and Wildlife Agencies
- Wind energy groups