

Part 3: Management Area-Specific Management Direction

Black Kettle and McClellan Creek Management Area

The following plan components (desired conditions, objectives, guidelines, standards), management approaches and other sources of information that apply only to the Black Kettle and McClellan Creek National Grasslands, hereinafter referred to collectively as the Black Kettle and McClellan Creek Management Area (See Appendix A). The plan components and other strategic direction given below that address the ecological resources and social and economic goods and services unique to these two Grasslands are in addition to the Grasslands-wide direction presented in part two of this document.

The reader is reminded that:

where there is no desired condition given for a social or economic good or service or ecological resource related to this management area, refer to the Grasslands-wide desired condition for the same topic in part two;

where there are no explicitly stated, unique or additive objectives, management approaches, guidelines, standards, or other sources of information given, then none exist for this management area beyond those at the Grasslands-wide scale presented in part two.

Scenery

Background and Description

On the Black Kettle and McClellan Creek Management Area, the many lakes, ponds, wetlands, and riparian vegetation are wonderful surprises to prairie visitors and add to the rich scenic diversity of the rolling red hills, patches of oaks and shrubs, and other vegetation interspersed with the cultivated fields on surrounding private lands.

This Management Area provides views that are distinctive in the surrounding area or are unique to the southern plains grasslands, including the lakes and riparian areas, which primarily occur on Grasslands units rather than adjacent private lands. Areas of High Scenic Integrity are displayed in Appendix A.

Desired Condition

There are landscape types that are highly valued for their scenic quality. The redbed plains are valued for their distinctive dark reddish-orange mounds and hills covered by contrasting light green grass during spring and summer, turning to gold in the fall and winter. Streams and rivers flow through the landscape, bounded by cottonwoods and other hardwoods. These areas are predominantly rural and agricultural, and the patches of mown fields and agricultural home sites on private lands contribute to the scenic quality. Also unique to this landscape are the shinnery oak motts, and patchy forested lowlands.

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Figure 9: Redbed Plains of the Black Kettle National Grassland

Caption: The redbed plains are valued for their distinctive dark reddish-orange mounds and hills covered by contrasting light green grass during spring and summer, turning to gold in the fall and winter.

The area lakes are highly valued by the public and support recreation opportunities. While the landscape is natural in appearance, recreation developments are common and are valued by grasslands visitors. Recreation developments are in harmony with the scenic quality of the lakes.

Scenic integrity is maintained on the units managed by the Black Kettle and McClellan Creek National Grasslands. Local interpretive and tourism marketing efforts, such as the Great Plains Trail of Oklahoma and the Oklahoma High Plains Bird Trail, attract visitors to area roads for the scenic quality of areas that surround them. Corridors along marketed tour routes that pass through Grassland units emphasize the scenic quality of the landscape through interpretive and recreation sites.

Developed Recreation

Background and Description

The Grasslands feature two major recreation complexes in Texas: McClellan Creek and Lake Marvin Recreation Areas, designed around highly scenic reservoirs. There is a high-level of community interest in Pampa and Canadian, TX in improving tourism to these areas. The Black Kettle National Grassland features three other popular and significant lake-based recreation areas that add to the diversity of the terrain and provide public recreational opportunities not usually found in the Grasslands region. The lakes attract high numbers of visitors year-round, with the highest use during spring and fall hunting seasons as well as during the hot summer months.

Desired Condition

The Black Kettle District's recreation sites are predominantly used for family outings, large social or group events, and camping for hunting trips. The more highly developed and larger group sites, McClellan Creek and Lake Marvin Recreation Areas, attract substantial numbers of local residents and out of area visitors that contribute to the local economy. Large gatherings allow for social interaction around a wide range of water-based activities. Activities include fishing, boating, and swimming, which often occur in conjunction with other site activities including camping, hiking, and/or picnicking.

The recreation sites in this Management Area have facilities and amenities that serve to create a user experience that includes an equal probability of interaction with or isolation from other users and a high degree of interaction with the natural environment. Water-based recreation facilities meet standards for visitor safety. New or renovated facilities incorporate changes in technology and vehicle types while being responsive to their natural setting. This includes accommodation for modern trailers and motor homes at larger campgrounds: electric hook-ups and dump stations at a few spurs and some individual sites and turnarounds to accommodate changes in vehicle sizes where necessary. Facilities such as boat ramps, fishing docks, fish-cleaning stations, and swimming sites accommodate lake-based recreation where appropriate. Trails in these recreation sites are mostly short walking trails around water bodies and provide for fishing access and/or interpretive purposes.

[Click here to view photo A](#)

[Click here to view photo B](#)

Figure 10: Water-Based Recreation Facilities

Caption: Boating facilities on the Black Kettle National Grassland allows for fishing and boating opportunities.

Visitors are informed about proper treatment of the natural surroundings and rules and restrictions of each site and act accordingly. High use that exceeds design capacities is accepted during hunting season and holidays, but does not lead to substantial resource impacts. Hunting camps serve as temporary staging sites that are acceptable during times of high use and occur within or near developed recreation sites for offsite activities. Higher intensity use is mitigated. With larger numbers of visitors, official presence increases safety, civility and security, particularly at fee sites.

Fishing opportunities occur on the lakes of the Black Kettle and McClellan Creek Management Area.

Objectives

Maintain one-third of trail miles annually and according to development level and managed use.

Guidelines

Boating speeds should be limited to no-wake boating only (with the exception of McClellan Creek Recreation Area).

Management Approach

Coordination and meetings with the Texas Parks and Wildlife Department and Oklahoma Department of Wildlife Conservation may be ongoing to discuss fisheries management and occurs at least annually.

Dispersed Recreation

Background and Description

On the Black Kettle National Grassland, there are 32 designated-dispersed sites that are accessed from public roads. These sites require hunters and other recreationists to camp and park in a confined area which reduces the impacts of dispersed camping and recreation to the rest of the unit.

The Black Kettle National Grassland units in Oklahoma is a nationally recognized public hunting areas in the nation for Rio Grande Turkey and Northern Bobwhite Quail, and attracts hunters from across the nation during the spring turkey season (UNM-BBER 2005).

Desired Condition

Designated-dispersed recreation sites (dispersed parking areas) provide safe off-road access for meeting public camping needs near popular hunting units. These designated-dispersed sites occur near public and Grassland-managed roads and concentrate use while minimizing resource damage outside of these areas, and provide parking for access to non-motorized Grassland units for hunters. These sites are available as hunting camps during hunting seasons. These sites provide a safe place to park and access the Grasslands for other activities such as viewing scenic features and wildlife and birds. Trespass upon or other conflict with private landowners is minimal and mitigated.

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Figure 11: Designated-Dispersed Sites

Caption: Designated-dispersed sites on the Black Kettle National Grasslands provide an area where hunters can safely pull off of the road while protecting wildlife habitat for Rio Grande Turkey and other game species.

Hunting opportunities are available throughout the Grasslands, and particularly for the Black Kettle National Grassland. Habitat and recreation improvements enhance experiences for hunting small and large game species both by providing for camping in developed and dispersed sites, providing information specific to hunting, and improving wildlife habitat. Dispersed campsites and transportation systems occur in areas where limited environmental impact occurs in order to protect the resources, provide a quality hunting experience, and improve wildlife habitat. These areas include sites traditionally used for dispersed camping or related activities.

Some of the Black Kettle District's ponds are enjoyed by visitors as a recreational fishing alternative to the larger developed lake sites. Coordination occurs with partner agencies to occasionally stock these ponds with fish.

Management Approach

The District may continue working with partners, other jurisdictions, and surrounding communities. The District may coordinate and communicate with state wildlife agencies to manage habitat and impacts associated with hunting and will actively engage in partnerships with wildlife and hunting organizations to meet agency wildlife habitat and hunting management goals.

Motorized Recreation

Desired Conditions

[See Grassland-wide Desired Condition](#)

Objectives

Replace all gates in areas of high public use with cattle guards over the next 15 years. Where gates are in use, install appropriate signs for closing them upon entering or exiting.

Heritage Resources

Desired Conditions

[See Grassland-wide Desired Condition](#)

Objectives

Establish a historic homestead interpretive site on the Black Kettle National Grasslands in the next five years. This objective relates to the Grasslands-wide desired condition for heritage resources but is specific to this management area only.

Management Approach

The Ranger District staff may continue to collaborate with the National Park Service in providing interpretive services and facilities for the Washita Battlefield National Historic Site Visitor Center.

Minerals and Energy Development

Desired Conditions

[See Grassland-wide Desired Condition](#)

Stipulations for Oil and Gas Leasing¹⁷

Standards

No Surface Occupancy of Lake McClellan, within 500 feet of the high water level and Lake Marvin, within 500 feet of the high water mark.

Timing Limitation for Bald Eagle, within 0.25 mile of known roosting sites during November 1 through March 31.

No Surface Occupancy within a minimum of 500 feet from the segment of the historic military trail between Fort Supply and Fort Elliot that traverses the Lake Marvin Unit. Distance will be determined during site specific analysis.

No Surface Occupancy on slopes over 30%. An exception, modification or waiver may be granted if on-site inspection shows that unstable or steep slopes do not exist on a specific site, or if the operator can demonstrate in a Surface Use Plan of Operations that adverse effects can be minimized and activities safely conducted without loss of long-term site productivity.

Wildlife Habitat Improvement

Desired Conditions

Constructed pond and lake habitats support recreational fisheries. Stocking of game fish, such as the largemouth bass, and desirable nonnative fish species occurs where appropriate, for habitat enhancement and to support recreational fishing.

Existing and new wildlife habitat structural improvements such as: rainfall catchments; fenced grazing enclosures; constructed fishing lakes; windmill overflow pits; and constructed ponds/dirt tanks, are functional. Water developments, such as drink tanks, provide access and escape avenues for wildlife and are accessible all year long.

Objectives

Two to four fenced enclosures or wildlife habitat improvement plots are inventoried annually, evaluated for effectiveness and ecological functionality, and those determined viable are maintained.

Guidelines

Fenced enclosures that are associated with water should be evaluated and maintained, modified, or removed.

¹⁷ These stipulations only apply to leases issued after August 26, 2008. Leases issued prior to that date will use the stipulations in their lease. These standards set the sideboards for reaching the desired condition for Grasslands-wide minerals and energy development but should only be applied within this management area.

Developed water sources should be equipped with wildlife escape structures.

Where possible, windmills should be kept running all year long for wildlife benefit.

Fences should be constructed to minimize barriers that restrict the free movement of wildlife.

At least one structural improvement for fish habitat is put in every five years in each lake.

Management Approach

Black Kettle and McClellan Creek Management Areas places strong emphasis on managing habitat and assessing opportunities to create wildlife habitat improvement plots to meet the high public use demand for important game species that occur on the grasslands.

While Lesser Prairie-Chickens, a candidate species under the Endangered Species Act, historically did but currently do not occur on the Grasslands, there is potential habitat in the shinnery oak PNVT on the Black Kettle National Grassland. However, research suggests that Lesser Prairie-Chickens are sensitive to and tend to avoid tall vegetation and manmade structures that can provide roosting areas for predators such as hawks and eagles. Forest Service biologists will continue to collaborate with other federal and state biologists and researchers in determining if the species could be expected to return to the Grasslands and successfully fledge young and what management activities would benefit their recovery if they returned.

Tees and tall human-made structures will be evaluated for removal in areas important for recovery of Lesser Prairie-Chicken habitat and where windbreaks and erosion control shelterbelts are no longer needed for soil stability.

Other Sources of Information

Management guidelines for Lesser Prairie-Chicken populations and their habitats. Hagen et al. 2004. Wildlife Society Bulletin 32:69-82;

Habitat Evaluation Guide for the Lesser Prairie-Chicken, Pub. # E-1014, from Oklahoma State University Extension, by OSU , TNC and Sutton Avian Research.

Ecology and Management of the Lesser Prairie-Chicken in Oklahoma, Oklahoma Cooperative Extension Service Division of Agricultural Sciences and Natural Resources, Oklahoma State University.

Revised Regional Forester's Sensitive Species List of Plants and Animals, October 1, 2007, Cibola National Forest and Grasslands Sensitive Species Evaluations.

U.S. Fish and Wildlife Service National Bald Eagle Management Guidelines, May 07.

Water, Watershed, Perennial Streams, Reservoirs, Lakes, and Ponds

Desired Conditions

[See Grassland- wide Desired Condition](#)

Objectives

All woody vegetation is removed from dams on lakes or impoundments 30 acres or larger, over the next 15 years of plan approval.

Guidelines

Largemouth bass habitat should be maintained to provide quantities of submerged aquatic plants comprising up to 20 percent of the total lake area.

Boat wakes should be restricted in shallow water (<4' deep) where largemouth bass spawning areas are likely to occur.

Invasive Plants and Animal Species (Native and Nonnative)

Background and Description

The Dust Bowl Era resulted in a landscape with erosion and deposition conditions that required conservation measures to be implemented in order to stabilize the soil. One conservation measure was to divert the wind to reduce erosion. Windbreaks and soil erosion control shelter belts were created by planting trees and shrubs in highly erodible areas. Windbreaks and erosion control shelter belt areas tree species include: black locust; Osage orange; and Eastern red cedar, green ash, cottonwood, pine species, Siberian elm, and honey locust.

Several of the species chosen for the windbreaks and shelterbelt areas are prolific and have dispersed over the landscape. In some areas, species composition and site potential have been altered significantly by black locust, Eastern red cedar and Siberian elm encroachment.

There are some areas where the introduced or planted species are desirable and provide beneficial wildlife habitat. Conversely, there are areas where the encroachment is detrimental for certain wildlife species and further limits structure and composition objectives for mixed grass prairie and shinnery oak areas.

Desired Condition

Black locust and Eastern red cedar are not expanding out of the original shelterbelt plantings.

Introduction of undesirable predatory invasive and/or nonnative fish and amphibians is minimized (except where they are already present in the Black Kettle and McClellan Creek lakes) through information and awareness efforts.

Guidelines

Suitable habitat determination (based on best available science for life history of Lesser Prairie-Chicken) should be made on all Black Kettle Grasslands PNVTs, prior to removal of black locust tree encroachment.

Other Sources of Information

To determine suitable habitat, The Oklahoma Lesser Prairie-Chicken Spatial Planning Tool (OLEPCSPT 2009) is a useful spatially explicit model designed to assist development planning by avoiding, minimizing and mitigating negative effects of development on the Lesser Prairie-Chicken in Oklahoma. The model and all associated products are specific to the Lesser Prairie-Chicken and Oklahoma.

Lesser Prairie Chicken Development Planning webpage, December 10, 2009
<http://www.wildlifedepartment.com/lepcdevelopmentplanning.htm>

Mixed Grass Prairie PNVT and Shortgrass Inclusion in Unstable Areas of Shallow Soils

Mixed Grass Prairie

Background and Description

Mixed grass prairie covers approximately 11,300 acres or 35% of the Black Kettle and McClellan Creek National Grasslands. The mixed grass prairie is a variable landscape determined by elevation, landforms, soil depth and erosion where these characteristics determine species composition. Perennial grasses on the red-shale soils are primarily blue grama, hairy grama, little bluestem, and purple threeawn. Forbs make up about 10% and woody species another 10% of the species composition of mixed grass prairie. Prescribed fire and livestock grazing are used to resemble natural processes.

The mixed grass prairie PNVT has an inclusion of shortgrass prairie type species that occur on unstable areas of red shale, with shallow soils on steep slopes. The unstable areas comprise 20-35% of the total mixed grass prairie PNVT (See Appendix A).

Desired Condition

The mixed grass prairie PNVT on the Black Kettle and McClellan Creek National Grasslands is a warm season grass dominated ecosystem. The co-dominant grasses include: little bluestem; sideoats grama; smaller proportions of big bluestem; and blue grama. Forbs are present but are less abundant than grasses and include western ragweed, annual broom weed, tarragon and baby aster, all providing food for wildlife species.

The mixed grass species composition provides vegetation structure and height relationships necessary for ground nesting bird cover and brood rearing habitat. Small areas of short structured herbaceous vegetation or patches of bare ground are present for Lesser Prairie-Chicken leks and courtship areas. Small areas or patches of bare ground are present to provide wildlife travel corridors, escape routes and annual plant germination sites for wildlife foraging habitat.

Shrub species component is typically no less than 5% or more than 25% of the total mixed grass PNVT ground cover. Species composition includes: fragrant mimosa; skunkbush sumac; smooth sumac; and inland New Jersey tea, all contributing to retaining or improving foraging and escape habitat for Lesser Prairie-Chicken and Northern Bobwhite.

Disturbance processes including: drought; fire; and grazing, occur on the landscape at varying intervals and intensities, determined by climatic conditions, and vegetative density respectively. Prescribed fire intervals occur on a 3 to 10 year regime.

Invasive and noxious species are minimally present and Eastern red cedar trees are not encroaching onto the mixed grass prairie.

[Click here to view photo A](#)

[Click here to view photo B](#)

Figure 12: Mixed Grass Prairie depicting vertical structure on Unit 93

Caption: The mixed grass prairie shown in this photograph is a fair representation of the structure and composition a mixed grass prairie desired condition would resemble.

Objectives

Using prescribed fire, re-introduce fire to 50 to 75% of the mixed grass over the next 15 years from plan approval.

Mechanically or with prescribed fire, remove all Eastern red cedar on mixed grass over the next 15 years from plan approval.

Over the next 15 years, after plan approval, retain shrubby cover across the landscape, in patches that at no less than 5% or more than 25% of the total mixed grass PNVT.

Guidelines

Prescribed fire should take place before March 15 on a recurrence interval from 5 to 15 years, to encourage forb production and protect ground nesting birds.

Shrubby cover should be retained across the landscape, in patches that are approximately 100 to 400 square feet in size and 3 to 6 feet tall so that distribution is no less than 5% or more than 25% of the total mixed grass PNVT to provide loafing sites for quail.

Shortgrass Inclusion in Unstable Areas of Shallow Soils

Background and Description

The shortgrass inclusions occur as discontinuous fragments distributed across the larger mixed grass prairie landscape.

Desired Condition

Unstable areas of red shale, with shallow soils on steep slopes are dominated by shortgrass types that include Western wheatgrass, buffalograss, blue grama, hairy grama, purple threeawn and to a lesser extent little bluestem and sideoats grama. The dissected surfaces are eroding at natural rates. Shrubs on these sites are scattered and include fragrant mimosa, skunkbush sumac, smooth sumac and inland New Jersey tea. Cryptogams (biological soil crusts) typically found in little bluestem areas, are present.

The red shale soils have inherently little to no litter present in conjunction with bare ground.

Shinnery Oak PNVT and Inclusions of Historically Deep-Plowed Sites

Shinnery Oak

Background and Description

This vegetation type covers approximately 18,900 acres (or 59%), of the Black Kettle and McClellan Creek National Grasslands. About 45% of the shinnery oak PNVT is in the early-mid-open, post-fire to 3 years post-fire regime and dominated by tallgrasses in shallower and more stable sandsheet areas. Grass cover is dominant with rapid recovery of shinnery oak resprouts. The late-closed successional stage structure and composition stage occurs in the 3 to 10 year post-fire time frame. Shinnery cover is mostly dominant although grasses remain co-dominant on about 55% of the PNVT (see Appendix A). Most shinnery oak stands are burned on a 2 to 9 year cycle with the intent to maintain a co-dominant canopy cover of grasses intermixed with shinnery oak for wildlife habitat diversity and to resemble historical

conditions. Current livestock grazing within the shinnery oak system is relatively light, with utilization levels retaining at least 50% of the current year's growth of vegetation, by weight, of forage species.

The wildlife associated with all vegetative stages of shinnery oak includes Rio Grande Turkey, Lesser Prairie-Chicken, Grasshopper Sparrow and Northern Bobwhite.

[Click here to view photo](#)

Figure 13: Shinnery Oak on historically unplowed areas on Black Kettle Unit 12

Caption: The shinnery oak shown in this photograph is a fair representation of the structure and composition a shinnery oak desired condition would resemble.

Desired Condition

The shinnery oak PNVT is a grass dominated ecosystem with a shinnery oak shrub understory. The overstory is made up of warm season herbaceous species including big bluestem, little bluestem, sideoats grama, sandlovegrass, Indiangrass and switchgrass. Most of the warm season grass species have a dominant position in regard to canopy vertical structure. In a less dominant vertical structure position are shrubs and woody plants including: shinnery oak; sand sagebrush; Oklahoma plum and yucca. Forbs such as Western ragweed, Hartweg's sundrops, blacksampson echinacea or narrowleaf purple coneflower, wax golden weed and Texas croton are located within this vegetation type and are found in lower quantities than herbaceous grasses or woody shrubs. There are few trees found within this vegetation type, although small clusters or motts of shinnery oak hybrids ranging in height from tall shrub to 20 feet or more may be found scattered throughout the PNVT.

The shinnery oak PNVT species composition provides vegetation structure and height relationships necessary for ground nesting bird cover and brood rearing habitat for the Lesser Prairie-Chicken and other ground nesting birds such as the Rio Grande Turkey and Northern Bobwhite. Small areas of short structured herbaceous vegetation or patches of bare ground are present for Lesser Prairie-Chicken leks and courtship areas, and to provide wildlife travel corridors, escape routes and annual plant germination sites for wildlife foraging habitat. Trees are nonexistent and collision risks from fences etc. are minimal in areas important for recovery of Lesser Prairie-Chicken.

Small thickets of tall oak shrubs, (oak motts) are well distributed across the landscape to provide overhead cover and production of secure forage crops for Rio Grande Turkey and Northern Bobwhite.

Invasive/noxious species are reduced to a minimum presence. Fire occurs on a 2 to 9 year cycle on the landscape at varying intervals and intensities determined by vegetative and climatic conditions. Ground cover provides soil stabilization, water infiltration, and retains fine fuels.

[Click here to view photo](#)

Figure 14: Shinnery Oak and Oak Motts on Black Kettle Unit 12

Caption: The shinnery oak motts shown in this photograph represent the characteristic landscape change that the oak motts bring to the structural height in a shinnery oak PNVT.

Objectives

Within 10 years of plan approval, mark 25 to 50% of fences in suitable Lesser Prairie-Chicken habitat to minimize collisions.

Use prescribed fire twice on 80% of the shinnery oak within 15 years of plan approval.

Mechanically, or chemically, remove all Eastern red cedar in shinnery oak areas within 15 years of plan approval.

Guidelines

Trees in upland settings within landscapes suitable for Lesser Prairie-Chicken habitat should be targeted for eradication.

Prescribed fire should not be conducted from April 15 thru June to protect nesting birds.

Prescribed fire should be used on 35% to 50% of the area so that ground cover is open with 25 to 50% vegetative cover to provide optimal habitat for quail chicks.

Inclusions of Historically Deep Plowed Sites

Background and Description

The shinnery oak areas that were subjected to deep plowing practices prior to the Dust Bowl do not have the shinnery oak component. Where these conditions occur, species composition and site potential have been altered. Windbreaks and erosion control shelter belt areas tree species include: black locust; Osage orange; and Eastern red cedar, green ash, cottonwood, pine species, Siberian elm, and honey locust.

Desired Condition

These sites are structurally close to the shinnery oak PNVT with the composition of plants dominated by warm season herbaceous grasses. In a less dominant vertical structure position are shrubs and woody plants such as sand sagebrush and Oklahoma plum that comprise 15 to 20% of the PNV.

Fire occurs on a 5 to 9 year cycle on the landscape at varying intervals and intensities determined by vegetative and climatic conditions.

[Click here to view photo](#)

Figure 15: Shinnery Oak on Black Kettle in previously plowed areas of Unit 12

Caption: The shinnery oak shown in this photograph is representative of the change brought to the structure and composition of shinnery oak by deep plowing in the past.

Objectives

Develop, through artificial planting or natural recruitment, a shrub component to be 15 to 20% of the canopy within 10 years of plan approval, within the deep plowed areas previously occupied by shinnery oak.

Mixed Hardwood Riparian PNVT

Background and Description

This vegetation type covers approximately 1,946 acres or 6% of the Black Kettle and McClellan Creek Management Area. The early successional stage represents approximately 13% of this PNVT with pioneer tree and shrub species of cottonwoods and willows with an herbaceous understory of sedges in wet areas. In this early stage, most of the area is bare sand dominated by a young canopy of tree saplings and shrubs. Species would include false indigo bush and various grass, sedges, and rushes. The mid and

late successional stage covers the remaining 87% of this PNVT. In the mid stage developing stands start to mature. This community tends to be partially open with scattered cottonwoods and willows. The shrub layer is poorly developed and often consists of widely scattered patches of dogwood. The understory vegetation is highly variable with wild rye, and muhly grasses. In wetter, more shaded areas, Virginia creeper, nettles, and poison ivy are present. The late seral stage is a mature, closed canopy cottonwood floodplain forest. The canopy layer is dominated by cottonwood with box elder, hackberry, walnut and elm occurring as well. Understory species include Virginia creeper and poison ivy, both found along the upper terrace that is protected from most flood events (see Appendix A).

Desired Condition

Hardwood tree species such as plains cottonwood, netleaf hackberry, little walnut, American elm and woolly buckthorn or chittimwood characterize the area and are found in scattered groupings allowing for an open canopy mosaic of various age classes and structure. There are lesser quantities of black willow, common persimmon and Western soapberry. Eastern red cedar is a very minor species component and limited to the PNVT.

Shrubs are prevalent and include buckbrush, riverbank grape, Chickasaw plum, Virginia creeper and poison ivy. Also found to a lesser degree on the perimeters are skunkbush sumac and sand sagebrush. Switchgrass, little bluestem, inland saltgrass and sand dropseed are herbaceous warm season grass species interspersed among the understory. A variety of forbs are found in the understory and include Western ragweed, white sage, horehound, stickseed and a variety of others found in lesser quantities. Wetland species include cattails, rushes, sedges and smartweed. Invasive/noxious species are reduced to a rare occurrence.

For both herbaceous and woody riparian areas, stream characteristics including vegetation, geomorphology, and hydrology are sufficient to:

- Dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality,
- Filter sediment, capture bedload, and aid floodplain development,
- Allow flood-water retention and ground water recharge,
- Develop root masses that stabilize streambanks against cutting action.

Shelterbelts are regenerating but not expanding out of the original planting. Fire occurs on 5 to 15 year intervals with varying intensities across the landscape.

[Click here to view photo](#)

Figure 16: Mixed Hardwood Riparian with Cottonwood gallery

Caption: The mixed hardwood riparian area shown in this photograph depicts the linear growth patterns along a watercourse and is a fair representation of the structure and composition a mixed hardwood riparian desired condition would resemble.

Mature hardwoods, shrubby understory or early-successional growth, and woody debris as well as diverse riparian herbaceous vegetation on the margins of lakes or along stream sides are present to provide winter roosts for Bald Eagle, and roost, feeding, and nesting habitat for Rio Grande Turkey and raptors.

Objectives

Re-introduce prescribed fire into mixed hardwood areas once every five to 15 years of plan approval.

Mechanically, or chemically, remove 100% of Eastern red cedar around cottonwood galleries and generally within the mixed hardwood type and 100% of Eastern red cedar around roost trees within 10 years of plan approval.

Guidelines

Grazing should be managed to promote or maintain riparian obligate vegetation.

Prescribed fire should not be conducted from April 15 thru end of July to protect nesting birds.

Bald Eagle roosts should be protected by retaining, developing, or preserving mature trees and old growth cottonwood stands, particularly within ½ mile from lakes.

Habitat should be managed for open forest fragments greater than 4 acres in area with large snags available for cavity nesters and foraging areas.

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