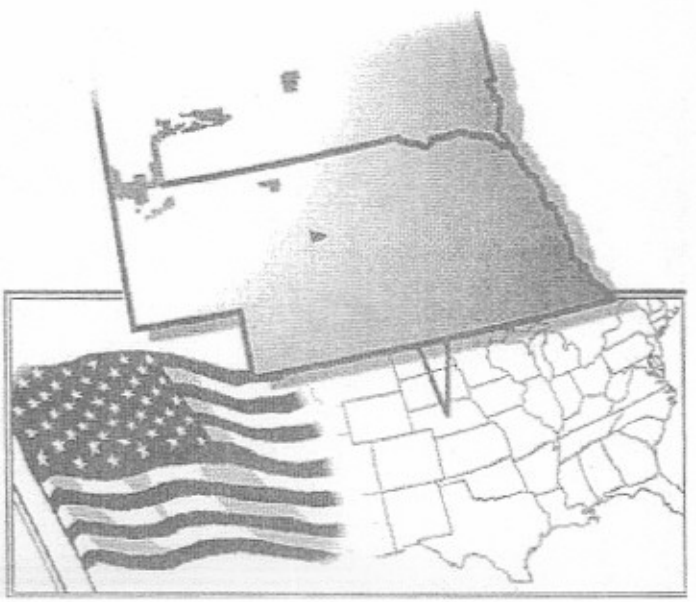
Chapter 2
Geographic Area Direction



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CHAPTER 2 GEOGRAPHIC AREA DIRECTION (INCLUDES AMENDMENTS 1, 2, AND 3)

INTRODUCTION

Geographic areas include management direction that is too specific to apply across all Nebraska National Forest units (NNF). For example, desired vegetation conditions need to be tailored to the vegetation types, climate, and productivity of a specific area. The Geographic Area direction found in this chapter complements the general Grassland and Forest-wide direction in Chapter 1 and the more specific Management Area direction in Chapter 3.

This chapter contains a brief section on each geographic area and includes the following:

- Description of the physical setting and important features.
- Direction to achieve the desired conditions and management emphases.

The size, location, climate, major drainages, and topographic and vegetation features are described in the "Setting" section. This section also includes the area's unique or unusual features. The management direction for each area is listed in the following sections: Geographic Area Direction – *Objectives*, and Geographic Area Direction – *Standards and Guidelines*. Maps at the back of this chapter also display direction for the geographic areas. They include the following information:

- Recreation Opportunity Spectrum (ROS) settings
- Scenic Integrity Objectives (SIOs)
- Travel management direction

GEOGRAPHIC AREAS

Geographic areas are delineated on the enclosed Alternative 3 map. The Nebraska National Forest and associated units contain 11 geographic areas, as follows:

Bessey Ranger District

The Bessey Ranger District, which includes two units--the Bessey Unit of central Nebraska, and the Samuel R. McKelvie National Forest of north central Nebraska, is located in the sandhills of Nebraska, the largest grass-stabilized dune region in the Western Hemisphere. The Bessey Ranger District encompasses about 207,000 acres. The district office is located near Halsey, Nebraska along with the Charles E. Bessey Tree Nursery. Portions of the Bessey Ranger District include plantation stands of ponderosa pine and eastern redcedar. The 25,000 acres of hand-planted forests are distinguished as the largest plantation forest in United States. Two geographic areas are included for the Bessey Ranger District:

- Bessey Unit
- Samuel R. McKelvie National Forest.

Buffalo Gap National Grassland: Fall River Ranger District

The Fall River Ranger District encompasses about 322,000 acres of the 595,000-acre Buffalo Gap National Grassland of southwestern South Dakota. The district constitutes the western and southern reaches of the national grassland. It extends from the Cheyenne River on the east to the Wyoming and Nebraska borders on the west and south, respectively. The district office is located in Hot Springs, South Dakota.

The Fall River Ranger District is divided into three distinct geographic areas:

- Fall River Northeast,
- Fall River Southeast,
- Fall River West.

Buffalo Gap National Grassland: Wall Ranger District

The Wall Ranger District encompasses about 273,000 acres of the 595,000-acre Buffalo Gap National Grassland of southwestern South Dakota. The district constitutes the northern and eastern reaches of the national grassland. It extends east from the Cheyenne River through the White River Badlands, wrapping around Badlands National Park, to just south of Kadoka, South Dakota. The Wall Ranger District also shares common boundary with the Pine Ridge Indian Reservation and the Fall River Ranger District of the Buffalo Gap National Grassland. The district office is located in Wall, South Dakota, and is adjacent to the National Grassland Visitors Center, the only Forest Service visitor center in the country devoted entirely to interpreting the country's 20 national grasslands.

The Wall Ranger District is divided into three distinct geographic areas:

- Wall North,
- Wall Southeast,
- Wall Southwest.

Fort Pierre National Grassland

The Fort Pierre National Grassland encompasses 116,000 acres of National Forest System lands in central South Dakota beginning five miles south of Fort Pierre, SD and extending southward to within five miles of I-90. This grassland is contained in one geographic area: the Fort Pierre Geographic Area. The Fort Pierre National Grassland shares a common boundary with the Lower Brule Indian Reservation on six miles of its northeastern boundary, and lies within two miles of the Missouri River on its northeastern corner. All of the drainages on the Fort Pierre National Grassland eventually flow to the Missouri River. The Grassland adjoins no other National Forest System lands and is some 75 miles from the nearest National Forest System land on the Buffalo Gap National Grassland to the southwest. The Fort Pierre Ranger District's administrative office is located in Pierre, South Dakota.

Pine Ridge Ranger District, Nebraska National Forest

The Pine Ridge Ranger District office is located three miles south of Chadron, Nebraska. The district manages both the Pine Ridge portion of the Nebraska National Forest, as well as the Oglala National Grassland. The Pine Ridge area includes about 50,500 acres of National Forest System lands in northwestern Nebraska. The Oglala National Grassland encompasses about 94,000 acres of National Forest System lands in Nebraska's northwest corner. The district is divided into two geographic areas:

- Oglala National Grassland
- Pine Ridge Unit.

BESSEY GEOGRAPHIC AREA

Bessey Ranger District

Setting

The Bessey Geographic Area encompasses ~~about 90,170~~ 90,465 acres (ref. FS-383 Land Areas of the National Forest System 9/30/2008 and Middle Loop Land Exchange) of National Forest System lands in central Nebraska's 12 million acre sandhills region. The Bessey Ranger District, Halsey, Nebraska, administers this geographic area.

The climate of the Bessey Geographic Area can be classified as semi-arid Continental. In general, the weather of the sandhills is highly variable. Precipitation arrives mostly from the Gulf of Mexico, with 75 percent of it falling between April and September. Precipitation varies widely, from around 17 inches to 23 inches per year. Summer temperatures average from the 60s to the mid-70 degrees Fahrenheit, while average winter temperatures are near freezing at 32-degrees Fahrenheit. Still, summer temperatures can rise well above 100 degrees, while winter temperatures can fall below zero degrees. Spring blizzards are common. The wind tends to blow frequently.

The topography of the area is characterized by large vegetated sand masses created by blowing sand as recently as 1500 years ago. A number of dune types are found in the sandhills. In the Bessey Geographic Area, dune types include crescentic-ridge and linear dune types. Dunes in the Nebraska sandhills can rise to more than 400 feet, can be as long as 20 miles, and can display slopes as steep as 25 percent. Elevation in the Bessey Geographic Area ranges from around 2,225 to 2,700 feet above sea level.

The rivers and streams of the Nebraska sandhills are unusual in several respects. Sandhills rivers have few tributaries. They seldom flood, despite low banks, and because the flow is derived from steady groundwater seepage, they flow at a nearly constant rate. Nearly all sandhills rivers rise within the sandhills. The Niobrara River, which begins in eastern Wyoming, being the one exception. Sandhills rivers are relatively low in dissolved solids, but do contain silica. Two important rivers are associated with the Bessey Geographic Area. The Middle Loup River lies just touches the northern boundary, while the Dismal River intermittently breaches the southern boundary.

Also of note is the High Plains Aquifer, which lies beneath the sandhills. Within the Bessey Geographic Area, this aquifer has a saturated thickness of more than 500 feet.

The dominant vegetation consists of several sandhills communities. They include 1) bunchgrass communities of little bluestem, junegrass, needleandthread, prairie sandreed and switchgrass, 2) sand muhly communities of sand muhly, sand bluestem, needleandthread, prairie sandreed and hairy grama, 3) blowout communities of blowout grass, prairie sandreed, sand muhly, ricegrass, sand lovegrass and the endangered species blowout penstemon. The Bessey Geographic Area also has a limited floodplain prairie and hardwood forest community. In addition, hand-planted plantation stands of jack pine, Austrian pine, Scotch pine, ponderosa pine and Eastern redcedar are found in this geographic area.

Desired Conditions

The desired condition is to perpetuate diverse and healthy sandhills prairie communities, representing both cool season and warm season species such as needleandthread, porcupinegrass, little bluestem,, sand bluestem, prairie sandreed, blue grama, hairy grama and Indiangrass. Shrub thickets will be managed to perpetuate multiple layers and age classes of herbaceous plants and shrubs. Shrub species found in the thickets include chokecherry, snowberry, and American plum. Streams and riparian areas will maintain soil moisture to perpetuate riparian plant communities with strong root masses. Some of the plant species common in the riparian zones include prairie cordgrass, bulrushes, spikerushes, cottonwoods, and willows.

The streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

To provide habitat for viable populations of all wildlife species, a mixture of vegetation composition and structure will be provided. Herbaceous structure (grasses and forbs), especially, plays a very important role in determining habitat suitability for many grassland wildlife species.

A few small areas, where suitable soils provide habitat, will be maintained in low vegetation structure to support viable black-tailed prairie dog populations. Prairie dog colonies serve as important habitat for other species of wildlife, some of which have low region-wide populations.

Grasses and forbs of moderate height and density will provide adequate habitat for many birds, mammals and other classes of wildlife. Over a significant area high, dense, cover will be left after the grazing season for birds that require more cover and nest on the ground early in the spring, such as sharp-tailed grouse, prairie chickens, and some species of ducks.

Tall and dense grass cover also improves the hunting experience by acting as "holding cover" for sharp-tailed grouse and prairie chickens. Upland game birds find security in such cover and will be less apt to flush beyond shooting range. Upland bird hunting is an important and growing activity in this geographic area. A significant percent of the area should display these conditions, in which bird hunters will perceive that their efforts can be successful.

The tree plantations will be maintained for their recreational, aesthetic, wildlife and historic values. They will be managed to exhibit open park-like characteristics with multi-aged stands of regenerating ponderosa and jack pine where possible. Historic redcedar stands will be maintained with some areas being thinned to open up the canopy. Redcedar numbers will be reduced in open pine stands and where they are spreading into native grassland areas.

The Signal Hill RNA will be managed to maintain the vegetation in a relatively undisturbed state for research values. Manipulation through grazing or prescribed fire may be used to meet management objectives.

Wildlife exclosures will be managed to maintain their wildlife and research values. Desired vegetation conditions are variable depending on the individual exclosure.

The prairie landscape desired condition is to maintain the open and scenic plains and vast prairie landscapes. Recreationists should perceive that they are visiting an expansive native prairie. In

the forest plantations, recreationists should perceive a natural forest setting. Small areas of cattle grazing impacts will exist but will be minimized. Visitors should have little trouble traveling designated roads and trails, except in extreme weather conditions, and should have no difficulty opening and closing gates.

Developed recreation areas including the Bessey Recreation Complex, Whitetail Campground and Natick Campground are to be maintained to provide a variety of services and experiences to visitors.

Timber stands around the administrative site, nursery, 4-H Camp and Bessey Recreation Complex will be managed to reduce fire hazard.

Important Attributes

- Part of the largest grass-stabilized dune region in the Western Hemisphere
- Part of the largest hand-planted forest in the United States
- Habitat for blowout penstemon, an endangered plant species
- The Bessey Recreation Complex, with camping, horseback and picnic facilities and a swimming pool
- Scott Fire Tower, the only active fire tower on the Nebraska National Forest
- Charles E. Bessey Nursery, the nation's oldest federal tree nursery
- Hunting and wildlife viewing opportunities.

Management Area Prescription Allocation

Number	Prescription	Acres
2.1	Special Interest Areas	19,540
2.2	Research Natural Areas	500
3.64	Special Plant and Animal Habitat	400
6.1	Rangeland with Broad Resource Emphasis	69,480 (ref. Middle Loop LX)
8.5	Nursery (Charles E. Bessey Nursery)	70
8.6	Administrative Sites	150

Geographic Area Direction – Objectives

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a "shifting mosaic" of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass-like species across a majority of the Geographic Area. This mix provides opportunity for meeting vegetation structure objectives and providing for floristic diversity.

The following section describes the specific vegetative composition and structure objectives for

the Bessey Geographic Area:

Composition

1. The desired plant species composition objective across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
30-50%	30-50%	1-20%	1-20%

In the late seral stage the sands and choppy sands ecological type will be dominated by sand bluestem while switchgrass will be the codominant species. Sand lovegrass, sedges, little bluestem, prairie sandreed, and blue grama are also important species in the early seral stage of this ecological type. On the more productive dry valley ecological type switchgrass will be the dominant species while sand bluestem will be the codominant species. Little bluestem, prairie sandreed, needleandthread, blue grama, and sedges are also important species on dry valley sites in the late seral stage.

In the late intermediate seral stage the sands and choppy sands ecological type will be dominated by little bluestem, and sand lovegrass will be the codominant species. Sand bluestem, sedges, prairie sandreed, hairy grama, and switchgrass, are also important grasses in the late intermediate seral stage of the sands and choppy sands ecological type. On the more productive dry valley ecological type, little bluestem will be the dominant species while sedges will be the codominant species. Switchgrass, blue grama, sand bluestem, hairy grama, and needleandthread are also important grasses on dry valley sites in the late intermediate seral stage.

In the early intermediate seral stage the sands and choppy sands ecological type will be dominated by hairy grama while little bluestem will be the codominant species. Sand bluestem, sedges, prairie sandreed, switchgrass, and sand lovegrass, are also important species in the early intermediate seral stage of the sands and choppy sands ecological type. On the more productive dry valley ecological type, sedges will be the dominant species while blue grama will be the codominant species. Little bluestem, switchgrass, prairie sandreed, sand bluestem, and hairy grama are also important grasses on dry valley sites in the early intermediate seral stage.

In the early seral stage the sands and choppy sands ecological type will be dominated by sand bluestem and little bluestem will be the codominant species. Prairie sandreed, hairy grama, switchgrass, sedges and sand lovegrass are also important grasses in the late seral stage on this ecological type. On the more productive dry valley ecological type blue grama will be the dominant species while sedges will be the codominant species. Prairie sandreed, sand bluestem, switchgrass, sand lovegrass, and little bluestem are also important grasses on dry valley sites in the early seral stage.

Smooth Goosefoot

- Prioritize and initiate target surveys for smooth goosefoot. **Objective**

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
40 to 60%	40 to 60%	0 to 5%

High vegetation structure can be achieved on moderate and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderate to highly productive soils but dominated by short grass species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderate to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands dominated by short grass species will not achieve moderate structure regardless of grazing levels.

Minimally productive soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Plantations

Within the next 15 years, reduce redcedar to create open pine stands in 20 percent of the plantations. **Objective**

Fire

Prescribe burn a minimum of 500-2,500 acres per decade. **Objective**

Rest

Rest 1-10 percent of the suitable rangeland each year. **Objective**

Infrastructure

1. Increase average pasture size over the decade by 15 percent. **Objective**
2. Allow no net increase in water developments. **Objective**

Wildlife, Fish and Rare Plants

1. Management Indicator Species:

Greater Prairie Chicken

- Provide diverse and quality grassland habitat across the larger valleys and adjoining hills in this geographic area at levels that will help support stable to increasing populations of greater prairie chicken and other wildlife over the next 10 to 15 years. **Objective**
- Establish and maintain quality nesting, brooding and roosting habitat for greater prairie chicken (see Appendix H) and associated wildlife by meeting vegetation objectives for high structure over the next 10 to 15 years. **Objective**

Plains Sharp-tailed Grouse

- Provide diverse and quality grassland habitat at levels that will support stable to increasing populations of sharp-tailed grouse and other wildlife with similar habitat needs over the next 10 to 15 years. **Objective**
- Establish and maintain quality nesting, brooding and roosting habitat for sharp-tailed grouse (see Appendix H) and associated wildlife by meeting vegetation objectives for 40-60% of the area in high structure grasslands over the next 10 to 15 years. **Objective**

2. Threatened, Endangered and Sensitive Species:

Blowout Penstemon (Endangered Species)

- Coordinate with appropriate state and federal agencies to provide a continued propagation source for blowout penstemon (re-establishment of a greenhouse facility may be critical to achieving recovery goals for this species). **Objective**
- Reintroduce populations in suitable habitat and in area of historic occurrence in the species range within the planning area. **Objective**
- Design and implement strategies to create or maintain suitable blowout penstemon habitat on National Forest System lands within the range of the species in the planning area. **Objective**

Recreation

1. Develop site management plans including vegetation plans for the Bessey Recreation Complex, Whitetail, and Natick Campgrounds within 10 years. **Objective**

2. Develop one additional group campground facility (Well site 25) within 10 years. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use existing monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help develop and implement range management strategies for meeting desired vegetation objectives. **Standard**

Smooth Goosefoot

- Conduct target surveys in priority areas to determine if smooth goosefoot or suitable habitat occurs in the geographic area. Protect populations that are found in the geographic area and maintain suitable habitat for these populations. **Standard**
- Prioritize control of noxious weeds in habitat occupied by smooth goosefoot. Restrict activities that contribute to invasive and non-native plant species into occupied habitat. **Standard**
- Monitor ORV use in occupied habitat and implement travel management restrictions if smooth goosefoot populations are at risk. **Standard**

Wildlife, Fish and Rare Plants

1. Management Indicator Species:

Greater Prairie Chicken

- Forty to sixty percent of this geographic area is to be managed for high structure grasslands. A substantial amount of this should be located in the larger valleys and adjoining hills where it will optimize habitat for greater prairie chicken and associated species. **Guideline**
- Establish and maintain quality foraging habitat for greater prairie chicken and associated species by enhancing and/or maintaining a diversity of forb species. **Guideline**

Plains Sharp-tailed Grouse

- Establish and maintain quality foraging habitat for sharp-tailed grouse and associated species by enhancing and/or maintaining a diversity of forb species and regeneration of sandhill shrub thickets. **Guideline**

2. Threatened, Endangered and Sensitive Species:

Blowout Penstemon (Endangered Species)

- To help meet national recovery plan objectives for blowout penstemon, cooperate with other agencies or organizations in transplanting blowout penstemon into suitable habitat with the objective of establishing at least two self-sustaining populations in this geographic area. **Standard**
- Identify suitable blowouts for future blowout penstemon transplants and manage disturbance processes in these areas to maintain suitable habitat. **Standard**
- Protect naturally occurring, introduced, and re-introduced populations and their habitats within the geographic area. **Standard**
- Conduct target surveys for additional naturally occurring populations within the range of distribution of the species in the geographic area. **Standard**
- Monitor transplanted blowout penstemon populations to assess success of reintroduction methods and efforts. **Standard**
- Monitor ORV use in sand dunes and implement travel management restriction if blowout penstemon populations are at risk. **Standard**
- As needed to help meet the recovery objectives identified in the national recovery plan for this species, create new blowouts as reintroduction habitat by applying appropriate disturbance processes. **Standard**
- Prioritize noxious weed control in blowouts occupied by blowout penstemon populations or in blowouts identified for future transplants. Restrict activities that contribute to invasive and non-native plant species into blowout penstemon habitat. **Standard**

Western Prairie Fringed Orchid (Threatened Species)

- In consultation and coordination with the U.S. Fish and Wildlife Service, evaluate opportunities for establishing Western Prairie Fringed Orchid populations on Nebraska National Forest units and implement if suitable habitat exists. **Standard**

Plantations

1. In the tree plantations, the desired condition is to maintain them for their recreational, aesthetic, wildlife and historic values by maintaining present stands for multi-age classes and promote regeneration of ponderosa pine and jack pine wherever possible. Stands should be managed to exhibit open park-like characteristics. **Guideline**

2. Historic redcedar stands will be maintained with some areas being thinned to open up the closed canopy. **Guideline**

McKelvie Geographic Area

Samuel R. McKelvie National Forest - Bessey Ranger District

Setting

The McKelvie Geographic Area encompasses ~~about 116,060~~ 116,079 acres (ref. FS-383 Land Areas of the National Forest System 9/30/2008) of National Forest System lands in the north central portion of Nebraska's 12 million acre sandhills region. The Bessey Ranger District headquartered near Halsey, Nebraska administers this geographic area.

The climate of the McKelvie Geographic Area can be classified as semi-arid Continental. In general, the weather of the sandhills is highly variable. Precipitation arrives mostly from the Gulf of Mexico, with 75 percent of it falling between April and September. Precipitation varies widely, from around 17 inches to 23 inches per year. Summer temperatures average from the 60s to the mid-70 degrees Fahrenheit, while average winter temperatures are near freezing at 32-degrees Fahrenheit. Still, summer temperatures can rise well above 100 degrees, while winter temperatures can fall below zero degrees. Spring blizzards are common. The wind tends to blow frequently.

The topography of the area is characterized by large vegetated sand masses created by blowing sand as recently as 1500 years ago. A number of dune types are found in the sandhills. In the McKelvie Geographic Area, dune types include the crescentic-ridge, the moderate-relief sand sheet, the wide-spaced crescentric and the linear dune types. Dunes in the Nebraska sandhills can rise to more than 400 feet, can be as long as 20 miles and can display slopes as steep as 25 percent. Elevation in the McKelvie Geographic Area ranges from around 2,625 to 3,175 feet above sea level.

The rivers and streams of the Nebraska sandhills are unusual in several respects. Sandhills rivers have few tributaries. They seldom flood, despite low banks, and primarily because the flow is derived almost exclusively from steady groundwater seepage, they flow at a nearly constant rate. Nearly all sandhills rivers rise within the sandhills. The Niobrara River, which begins in eastern Wyoming, is the only exception. Sandhills rivers are relatively low in dissolved solids, but do contain silica. Two rivers of importance are associated with the McKelvie Geographic Area. The Niobrara River touches or crosses the northern boundary, while the Snake River touches the southern boundary. In addition, Merritt Reservoir, on the Snake River, lies adjacent to the McKelvie Geographic Area on the southeastern corner. A portion of the reservoir lies within the boundary of the forest and is managed through agreements with the Bureau of Reclamation and Nebraska Game and Parks Commission.

Also of note is the High Plains Aquifer, which lies beneath the sandhills. Within the McKelvie Geographic Area, this aquifer has a saturated thickness of more than 500 feet. The High Plains Aquifer feeds numerous wetlands and marshes.

The dominant vegetation consists of several sandhills plant communities. They include 1) bunchgrass communities of little bluestem, junegrass, needleandthread, prairie sandreed and switchgrass, 2) sand muhly communities of sand muhly, sand bluestem, needleandthread, prairie sandreed and hairy grama, 3) blowout communities of blowout grass, prairie sandreed, sand muhly, ricegrass, sand lovegrass and the blowout penstemon, a state and federally listed

endangered species. In addition, approximately 2200 acres of the geographic area consists of hand-planted ponderosa pine stands.

Desired Conditions

The desired condition is to perpetuate diverse and healthy sandhills prairie communities, representing both cool season and warm season species such as needleandthread, porcupinegrass, little bluestem, sand bluestem, prairie sandreed, blue grama, hairy grama and Indiangrass. Shrub patches will be managed to perpetuate multiple layers and age classes of herbaceous plants and shrubs. Species included in the patches are chokecherry, snowberry, and American plum. Streams and riparian areas will maintain soil moisture to perpetuate riparian plant communities with strong root masses. Plant species include prairie cordgrass, bulrushes, spikerushes, cottonwoods, and willows.

The streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

To provide habitat for viable populations of all wildlife species, a mixture of vegetation composition and structure will be provided. Herbaceous structure (grasses and forbs), especially, plays a very important role in determining habitat suitability for various species.

If populations of prairie dogs become established in suitable habitats, these areas will be maintained in low structure to support viable black-tailed prairie dog populations. Prairie dog colonies serve as important habitat for other species of wildlife, some of which have low region-wide populations.

Grass of moderate height and density will provide adequate habitat for many birds, mammals and other classes of wildlife. Over a significant area, high, dense cover will be left after the grazing season for birds that require higher structure and nest on the ground early in the spring, such as sharp-tailed grouse, prairie chickens, and some species of ducks.

Tall, dense grass cover will also improve the hunting experience by acting as "hiding cover" for sharp-tailed grouse and prairie chickens. Game birds find security in such cover and will be less apt to flush beyond shooting range. Upland bird hunting is an important and growing activity in this geographic area. A significant percent of the area should display these conditions, in which bird hunters will perceive that their efforts can be successful.

The tree plantations will be maintained for their recreational, aesthetic, wildlife and historic values. They will be managed to exhibit open park-like characteristics with multi-aged stands of regenerating ponderosa and jack pine where possible. Historic redcedar stands will be maintained with some areas being thinned to open up the canopy. Redcedar numbers will be reduced in open pine stands and where they are spreading into native grasslands.

The Steer Creek Research Natural Area will be managed to maintain the vegetation in a natural state. Grazing will continue in the area. Emphasis will be placed on management of the riparian corridor. Vegetation composition will be managed with an emphasis on late seral conditions and high structure.

The Steer Creek special plant and animal area will be managed to maintain the upland and riparian vegetation for native plant communities including sandhills prairie and riparian habitats. Vegetation composition will be managed with an emphasis on late seral conditions and high structure.

Wildlife exclosures will be managed to maintain their wildlife and research values. Desired vegetation conditions are variable depending on the individual exclosure.

The area around Merritt Reservoir will be managed to maintain healthy plant communities while managing for high recreational use near Merritt Reservoir. The reservoir is currently managed through an MOU with the Bureau of Reclamation and Nebraska Game and Parks Commission.

The landscape desired condition is to maintain open and scenic plains and vast prairie landscapes. Recreationists should perceive that they are visiting an expansive native prairie. In the forest plantations, recreationists should perceive a natural forest setting. Small areas of cattle grazing impacts will exist but will be minimized. Visitors should have little trouble traveling designated roads and trails, except in extreme weather conditions, and should have no difficulty opening and closing gates.

No new road construction will be authorized in the area north of County Road 5 and east of State Spur 16F.

Steer Creek campground will be maintained to provide a variety of recreation experiences and services to visitors.

Areas around the administrative site and Steer Creek Campground will be managed to reduce fire hazard.

Important Attributes

- Part of the largest grass-stabilized dune region in the Western Hemisphere
- Hand-planted timber stands
- Habitat for blowout penstemon, a federally listed endangered plant species
- Hunting and viewing opportunities for sharp-tailed grouse and waterfowl, numerous neotropical grassland birds
- Merritt Reservoir, adjoining the Forest, provides a significant sports fishery and recreational complex

Management Area Prescription Allocation

Number	Prescription	Acres
2.1	Special Interest Areas	2,850
2.2	Research Natural Areas	2,620
3.64	Special Plant and Animal Habitat	4,470
4.32	Dispersed Recreation High Use	1,110
6.1	Rangeland with Broad Resource Emphasis	104,870
8.6	Administrative Sites	20

Geographic Area Direction - Objectives

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a "shifting mosaic" of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass-like species across a majority of the Geographic Area. This mix provides opportunity for meeting vegetation structure objectives and providing for floristic diversity.

The following section describes the specific vegetative compositional and structural objectives for the McKelvie Geographic Area:

Composition

1. The desired plant species composition objective across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
30 to 50%	30 to 50%	1 to 20%	1 to 20%

In the late seral stage, on the more productive dry valley ecological type, switchgrass will be the dominant species while sand bluestem will be the codominant species. Little bluestem, prairie sandreed, needleandthread, blue grama, and sedges are also important species on dry valley sites in the early seral stage. The sands and choppy sands ecological type will be dominated by sand bluestem while switchgrass will be the codominant species. Sand lovegrass, sedges, little bluestem, prairie sandreed, and blue grama are also important species in the late seral stage of this ecological type.

In the late intermediate seral stage, on the more productive dry valley ecological type, little bluestem will be the dominant species while sedges will be the codominant species. Switchgrass, blue grama, sand bluestem, hairy grama, and needleandthread are also important grasses on dry valley sites in the late intermediate seral stage. The sands and choppy sands ecological type will be dominated by little bluestem while sand lovegrass will be the codominant species. Sand bluestem, sedges, prairie sandreed, hairy grama, and switchgrass, are also important grasses in the late intermediate seral stage of the sands and choppy sands ecological type.

In the early intermediate seral stage, on the more productive dry valley ecological type, sedges will be the dominant species while blue grama will be the codominant species. Little bluestem, switchgrass, prairie sandreed, sand bluestem, and hairy grama are also important grasses on dry valley sites in the early intermediate seral stage. The sands and choppy sands ecological type will be dominated by hairy grama while little bluestem will be the codominant species. Sand bluestem, sedges, prairie sandreed, switchgrass, and sand lovegrass, are also important species in the early intermediate seral stage of the sands and choppy sands ecological type.

In the early seral stage, on the more productive dry valley ecological type, blue grama will be the dominant species while sedges will be the codominant species. Prairie sandreed, sand bluestem, switchgrass, sand lovegrass, and little bluestem are also important grasses on dry valley sites in

the late seral stage. The sands and choppy sands ecological type will be dominated by sand bluestem while little bluestem will be the codominant species. Prairie sandreed, hairy grama, switchgrass, sedges and sand lovegrass are also important grasses in the early seral stage on this ecological type.

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
40 to 60%	40 to 60%	0 to 5%

High vegetation structure can be achieved on moderate and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderate to highly productive soils but dominated by short grass species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderate to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands dominated by short grass species in the late intermediate or late seral stage will not achieve moderate structure regardless of grazing levels.

Low productivity soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Smooth Goosefoot

1. Prioritize and initiate target surveys for smooth goosefoot. **Objective**

Plantations

1. Within the life of the plan, remove encroaching redcedar in 20 percent of the pine plantations to maintain open pine stands. **Objective**

Fire

1. Prescribe burn a minimum of 500 to 2,500 acres per decade. **Objective**

Rest

1. Rest 1-10 percent of the suitable rangeland each year. **Objective**

Infrastructure

1. Maintain average pasture size over the life of the plan. **Objective**

2. Allow no net increase in water developments. **Objective**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Greater Prairie Chicken

- Provide diverse and quality grassland habitat across the larger valleys and adjoining hills in this geographic area at levels that will help establish a viable population of at least 100 adult male prairie chicken over the next 10 to 15 years. **Objective**
- Establish and maintain quality nesting, brooding and roosting habitat for greater prairie chicken (see Appendix H) and associated wildlife by meeting vegetation objectives for high structure over the next 10 to 15 years. **Objective**

Plains Sharp-tailed Grouse

- Provide diverse and quality grassland habitat at levels that will support stable to increasing populations of sharp-tailed grouse and other wildlife with similar habitat needs over the next 10 to 15 years. **Objective**
- Establish and maintain quality nesting, brooding and roosting habitat for sharp-tailed grouse (see Appendix H) and associated wildlife by meeting vegetation objectives for 40-60% of the area in high structure grasslands over the next 10 to 15 years. **Objective**

2. Threatened, Endangered and Sensitive Species:

Blowout Penstemon (Endangered Species)

- Coordinate with appropriate state and federal agencies to provide a continued propagation source for blowout penstemon (re-establishment of a greenhouse facility may be critical to achieving recovery goals for this species). **Objective**
- Reintroduce populations in suitable habitat and in areas of historic occurrence in the species range within the planning area. **Objective**
- Design and implement strategies to create or maintain suitable blowout penstemon habitat on National Forest System lands within the range of the species in the planning area. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use existing monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help develop and implement range management strategies for meeting desired vegetation objectives. **Standard**

Smooth Goosefoot

- Conduct target surveys in priority areas to determine if smooth goosefoot or suitable habitat occurs in the geographic area. Protect populations that are found in the geographic area and maintain suitable habitat for these populations. **Standard**
- Prioritize control of noxious weeds in habitat occupied by smooth goosefoot. Restrict activities that contribute to invasive and non-native plant species into occupied habitat. **Standard**

- Monitor ORV use in occupied habitat and implement travel management restrictions if smooth goosefoot populations are at risk. **Standard**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Greater Prairie Chicken

- Forty to sixty percent of this geographic area is to be managed for high structure. A substantial amount of this should be located in the larger valleys and adjoining hills where it would optimize habitat for greater prairie chicken and associated species. **Guideline**
- Establish and maintain quality foraging habitat for greater prairie chicken and associated species by enhancing and/or maintaining a diversity of forb species. **Guideline**

Plains Sharp-tailed Grouse

- Establish and maintain quality foraging habitat for sharp-tailed grouse and associated species by enhancing and/or maintaining a diversity of forb species and regeneration of sandhill shrub thickets. **Guideline**

2. Threatened, Endangered, and Sensitive Species:

Blowout Penstemon (Endangered Species)

- To help meet national recovery plan objectives for blowout penstemon, cooperate with other agencies or organizations in transplanting blowout penstemon into suitable habitat with the objective of establishing at least 2 populations in this geographic area. **Standard**
- Identify suitable blowouts for future blowout penstemon transplants and manage disturbance processes in these areas to maintain suitable habitat. **Standard**
- Protect naturally occurring, introduced, and re-introduced populations and their habitats within the geographic area. **Standard**
- Conduct target surveys for additional naturally occurring populations within the range of distribution of the species in the geographic area. **Standard**
- Monitor transplanted blowout penstemon populations to assess success of reintroduction methods and efforts. **Standard**
- Monitor ORV use in sand dunes and implement travel management restriction if blowout penstemon populations are at risk. **Standard**
- As needed to help meet the recovery objectives identified in the national recovery plan for this species, create new blowouts as reintroduction habitat by applying appropriate disturbance processes. **Standard**
- Prioritize noxious weed control in blowouts occupied by blowout penstemon populations or in blowouts identified for future transplants. Restrict activities that contribute to invasive and non-native plant species into blowout penstemon habitat. **Standard**

Western Prairie Fringed Orchid (Threatened Species)

- In consultation and coordination with the U.S. Fish and Wildlife Service, evaluate opportunities for establishing Western Prairie Fringed Orchid populations on the Nebraska National Forest and implement if suitable habitat exists. **Standard**

Plantations

1. In the tree plantations, the desired condition is to maintain them for their recreational, aesthetic, wildlife and historic values by maintaining present stands for multi-age classes and promoting regeneration of ponderosa pine and jack pine wherever possible. Stands should be managed to exhibit open park-like characteristics. **Guideline**

2. Historic redcedar stands will be maintained with some areas being thinned to open up the closed canopy. **Guideline**

FALL RIVER NORTHEAST GEOGRAPHIC AREA

Buffalo Gap National Grassland - Fall River Ranger District

Setting

The Fall River Northeast Geographic Area includes ~~about 91,908~~ 91,423 acres (ref. Cole Draw Land Exchange 2005 and Sanders Land Exchange 2004) of National Forest System lands on the northeastern portion of the Fall River Ranger District. The Wall Ranger District of the Buffalo Gap National Grassland borders this area on the east.

The climate of the Fall River Northeast Geographic Area can be classified as semi-arid Continental. Local weather can be highly variable and unpredictable. Temperatures can range from -40 degrees below zero Fahrenheit in the winter to more than 110-degrees Fahrenheit in the summer. Precipitation levels average a little above 16 inches per year with the majority falling as rain from about May through July.

The topography of this area is a blend of rolling hills and plains, rugged badlands formations, and Cheyenne River breaks. The major distinguishing landmarks and features include, from north to south, Rapid Creek, Railroad Buttes, Red Shirt Canyon and the Chalk Hills. Drainages flow primarily to the east into the Cheyenne River, which forms the eastern boundary of the Fall River Ranger District and is a significant feature in this geographic area. Elevations range from about 2,450 feet above sea level in the northwestern corner of the district along the Cheyenne River to 3,100 feet above sea level in the Red Shirt Canyon area.

The primary tributaries of the Cheyenne River in this geographic area include, from north to south, Rapid Creek, Spring Creek, Battle Creek and French Creek. All of these streams originate in the interior of the Black Hills more than 50 miles from their confluence with the Cheyenne River.

The dominant vegetation types include: western wheatgrass in the uplands with green ash, American elm, snowberry, and chokecherry, in the draws. Cottonwood trees are common along the Cheyenne River, but also appear, to a lesser extent, along the major tributary streams. Rocky Mountain juniper also provides a significant woody component on many of the north-facing slopes.

Currently, there are two developed recreation facilities in this geographic area. They are the Railroad Buttes OHV Area and French Creek Campground. The primary dispersed recreational opportunities within this geographic area include big game hunting, upland game hunting, waterfowl hunting, wildlife viewing, rockhounding, mountain biking, hiking, fishing, and camping.

Desired Condition

The desired condition is perpetuate diverse and healthy mixed grass communities, representing both cool season and warm season species such as western wheatgrass, green needlegrass, needleandthread grass, little bluestem, threadleaf sedge, prairie sandreed, sideoats grama, buffalo grass, and blue grama. Hardwood draws will be managed to perpetuate multiple layers and age classes of herbaceous plants, shrubs and trees. Species included in the draws are green ash, American elm, chokecherry and snowberry. Streams and riparian areas will maintain soil

moisture to perpetuate riparian plant communities with strong root masses. Plant species include prairie cordgrass, bulrushes, spikerushes, inland saltgrass, cottonwoods, and willows.

The landscape desired condition is to maintain open, scenic plains and vast prairie landscapes. The streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

The desired condition for the upland grassland is to perpetuate diverse and healthy mixed grass communities that provide primarily moderate to high structure levels. Upland grassland habitat associated with sharp-tailed grouse will be managed to provide sufficient residual cover to meet nesting, brooding, and hiding cover requirements. Woody draws/riparian woodlands/cedar breaks will be managed to perpetuate multiple layers and age classes of vegetation including herbaceous plants, shrubs, and trees. Wetlands/aquatic areas will emphasize healthy submergent and emergent vegetative cover along the shorelines, while reducing sediment levels to maintain high quality aquatic habitat. Although small and isolated, prairie dog colonies will maintain some low structure grassland habitat scattered throughout this geographic area.

The desired recreation condition includes the development of a picnic area and trailhead at the Railroad Buttes OHV Area, and the development of trailheads and trails for the Red Shirt Area. The Red Shirt area, which is being recommended for Wilderness designation, will be managed to protect its rugged, unroaded character, and motorized travel will be restricted. Dispersed recreation activities will continue to be emphasized across this geographic area.

Important Attributes

- Significant fossil resources from the Tertiary Period.
- Significant gemstone and agate beds.
- Railroad Buttes Off-Highway Vehicle (OHV) Motorized Recreation Area.
- Scenic Red Shirt Canyon.
- Picturesque Rapid Creek and Cheyenne River Valleys.
- French Creek Campground & Trailhead
- Populations of Barr's milkvetch.

Management Area Prescription Allocation

Number	Prescription	Acres
1.2	Recommended for Wilderness	14,800
2.2	Research Natural Areas	1,600
3.64	Special Plant and Animal Habitat: Sharp-tailed Grouse	~~15,710~~ 17,457 (ref. Sanders Land Exchange 2004)
	Special Plant and Animal Habitat: Creston Pit	150
4.32	Dispersed Recreation High Use	5,410
6.1	Rangeland with Broad Resource Emphasis	~~54,280~~ 52,006 (ref. Cole Draw Land Exchange 2005 and Sanders Land Exchange 2004)

Geographic Area Direction - Objectives

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs. The focus in the Fall River Northeast Geographic Area is on grass and grass-like plants.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will have a "shifting mosaic" of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass-like species across a majority of the Geographic Area. This mix provides suitable opportunity for meeting vegetation structure objectives and providing for floristic diversity.

The following section describes the specific vegetative compositional and structural objectives for the Fall River Northeast Geographic Area:

Composition

1. The desired plant species composition objective across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
20 to 40%	40 to 60%	5 to 15%	5 to 15%

In the late seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent tall grasses. On clayey, silty, and thin upland range sites western wheatgrass, green needlegrass, porcupine grass, sideoats grama, and little bluestem are the primary mid grasses and big bluestem should make up the majority of the tall grasses. Tall grasses such as big bluestem, switchgrass, and prairie sandreed should be expressed in the overflow or run-in sites.

In the late intermediate seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent short grasses. The dominant grass species in the late intermediate seral stage should be western wheatgrass with the codominance made up of needleandthread, porcupine grass, blue grama, and sedges. The mix of grasses making up the codominance in late intermediate seral stages will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses, mainly western wheatgrass and green needlegrass.

In the early intermediate seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses and to a lesser extent mid grasses. Dominant grass species in the early intermediate seral stage should be blue grama, buffalo grass, western wheatgrass, needleandthread, and sedges. The mix of grasses making up the codominance in early intermediate seral stages will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses and short grasses; mainly western wheatgrass, needleandthread, and blue grama.

In the early seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses with little if any presence of mid grasses. The early seral stage will be dominated by sedges, and short grasses such as blue grama and buffalograss on all range sites. Overflow sites will be dominated by short grasses and to a lesser extent mid grasses. The early seral stage should be emphasized on the less productive claypan soil types, in and around prairie dog towns, and in isolated areas of high livestock use.

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
25 to 45%	45 to 65%	1 to 20%

High vegetation structure can be achieved on moderate and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderate to highly productive soils but dominated by short-statured species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderate to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within this geographic area receiving light to moderate levels of livestock use should be in the late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in early intermediate or early seral stages will not achieve moderate structure under even light grazing levels.

Low productivity soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Smooth Goosefoot

1. Prioritize and initiate target surveys for smooth goosefoot. **Objective**

Fire

1. Prescribe burn a minimum of 1,500 acres per decade to achieve one or more of the following desired condition objectives:

- Promote vegetative diversity,
- Improve wildlife habitat,
- Stimulate riparian/woody draw regeneration,
- Control or reduce invasive plants/noxious weeds,
- Improve plant vigor and health, and/or
- Reduce fuel loading. **Objective**

Rest

1. Rest 1-10 percent of the suitable rangeland each year. **Objective**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- Provide diverse and quality grassland habitat across this geographic area at levels that, in combination with habitat on adjoining lands, helps support stable to increasing sharp-tailed grouse populations (long-term trends) and viable populations of other wildlife species with similar habitat needs. **Objective**
- Establish and maintain quality nesting and brooding habitat for sharp-tailed grouse (Appendix H) and associated wildlife by meeting vegetation objectives for high structure within 10 years. **Objective**
- Establish and maintain quality winter foraging habitat for sharp-tailed grouse and associated wildlife by enhancing and/or maintaining a diversity of forb species in grassland communities and regeneration of shrub patches and the shrub component of wooded draws and riparian habitats. **Objective**

Black-tailed Prairie Dog (Amendment 3)

- Apply adaptive management strategies to provide objectives for 1,000 minimum and 2,700 maximum acres of active prairie dog colonies within the interior-colony management zones. If maximum acreage objective is exceeded, refer to Chapter 1, H. Animal Damage Control for management direction. **Objective**
- Increase black-tailed prairie dog populations over the next 10-to 15 years. **Objective**
- Maintain or expand the current distribution of black-tailed prairie dogs across the geographic area over the next 10 to 15 years. **Objective**

2. Threatened, Endangered and Sensitive Species:

Sturgeon Chub (Candidate Species)

- In cooperation with other conservation agencies and organizations, continue inventories as needed in the Cheyenne River and selected tributaries to establish baseline population and distribution information so that appropriate population trend and habitat objectives can be established for these drainages. **Objective**
- In cooperation with other conservation agencies and organizations, assess the potential impacts of the construction of additional small impoundments in upper watersheds on hydrologic flow and patterns on downstream sturgeon chub habitat. **Objective**

3. Special Plant and Wildlife (3.64) Area: Special Wetland/Aquatic Habitat (Creston Pit). The Creston Pit Area is a special wetland/aquatic habitat area in this geographic area. The area will be managed to enhance and maintain the habitat for waterfowl and shorebirds as follows:

- Provide diverse and quality wetland/aquatic habitat in this special management area at levels that help support stable to increasing populations of waterfowl and other wildlife with similar habitat needs. **Objective**

4. Enhance warm-water fisheries in suitable water impoundments. **Objective**

Recreation

Railroad Buttes Off-Highway Vehicles (OHV) Recreation Area (4.32)

1. Develop a trailhead, parking, and picnic area for this area. **Objective**

Red Shirt Recommended for Wilderness Area (1.2)

2. Within the life of the plan develop trailheads near the French Creek Campground/Agate Beds and near the Red Shirt Bridge off of Highway #40. **Objective**

3. Within the life of the plan develop hiking/horseback trails in the area to accommodate public use and need. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use existing monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help develop and implement range management strategies for meeting desired vegetation objectives. **Standard**

Smooth Goosefoot

- Conduct target surveys in priority areas to determine if smooth goosefoot or suitable habitat occurs in the geographic area. Protect populations that are found in the geographic area and maintain suitable habitat for these populations. **Standard**
- Prioritize control of noxious weeds in habitat occupied by smooth goosefoot. Restrict activities that contribute to invasive and non-native plant species into occupied habitat. **Standard**
- Monitor ORV use in occupied habitat and implement travel management restrictions if smooth goosefoot populations are at risk. **Standard**

Infrastructure

1. New structural improvements (fences and water developments) may be constructed as needed to achieve desired condition objectives. **Guideline**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- The following criteria will be considered during site-specific project level planning to help determine the best locations to manage for high structure grasslands:
  - Presence of moderate to highly productive soils and range sites,
  - Proximity to sharp-tailed grouse display grounds,
  - Proximity to shrub habitats, private croplands and other sharp-tailed grouse foraging habitats. **Guideline**

Black-tailed Prairie Dog (Amendment 3)

- Refer to Chapter 1 (Sections F and/or H) for standards and guidelines.

2. Threatened, Endangered and Sensitive Species:

Sturgeon Chub

- To assist in maintaining the current quantity and quality of aquatic habitat for this species, do not authorize land uses or developments that would measurably and cumulatively further degrade sturgeon chub habitat, including reducing downstream flows. **Guideline**
- Conduct project-level biological evaluations assessing potential downstream risks to this species from proposed projects that may have the potential to significantly alter sturgeon chub habitat or reduce downstream flows. This includes sand and gravel dredging and small impoundment construction in upper watersheds. **Guideline**

3. Special Plant and Wildlife (3.64) Areas: Sharp-tailed Grouse. These areas will be managed to emphasize high structure for sharp-tailed grouse habitat. **Guideline**

- The following criteria will be considered during site-specific project level planning to help determine the best locations to manage for high structure grasslands:
  - Presence of moderate to highly productive soils and range sites,
  - Proximity to wetland/aquatic habitat. **Guideline**
- This area may be grazed or burned periodically to meet management objectives. **Guideline**

Recreation

Railroad Buttes Off-Highway Vehicles (OHV) Recreation Area (4.32)

1. Prohibit target shooting within this area. **Standard**

2. This area will be open to motorized travel. However, some areas shall have travel restrictions (Seasonal Closures, Area Closures, and/or designated routes) to mitigate impacts to sensitive areas. These areas could include archeological sites, paleontological sites, wetlands, critical wildlife and plant areas, and areas with high visual sensitivity (along County Road). **Standard**

FALL RIVER SOUTHEAST GEOGRAPHIC AREA

Buffalo Gap National Grassland - Fall River Ranger District

Setting

The Fall River Southeast Geographic Area encompasses ~~about 111,621~~ 111,590 acres (ref. Cortney Creek Land Exchange 2008) of National Forest System lands on the central portion of Fall River Ranger District. The Pine Ridge Sioux Indian Reservation borders this area on the east.

The climate of the Fall River Southeast Geographic Area can be classified as semi-arid Continental. Local weather can be highly variable and unpredictable. Temperatures can range from –40 degrees below zero Fahrenheit in the winter to more than 110-degrees Fahrenheit in the summer. Precipitation levels average around 16 inches per year with the majority falling as rain from about May through July.

The topography of this area is a blend of gently rolling hills and semi-flat plains. Distinguishing features include, from north to south, the Jim Wilson and First Black Canyons, Limestone Butte and Lone Butte. Drainages generally flow to the west into the Cheyenne River or southeast into the White River. Elevations range from about 2,900 feet above sea level along the Cheyenne River in the northern portion of this geographic area to about 3,530 feet above sea level atop Limestone Butte in the central portion of this geographic area.

The primary tributaries flowing into the Cheyenne River are Horsehead Creek and Hay Canyon Creek and the primary tributary flowing into White River is Blacktail Creek.

Dominant vegetation includes western wheatgrass in the uplands and some chokecherry, snowberry, green ash, willow, and cottonwood in the draws.

Currently, the only developed recreational facility within this geographic area is the Pioneer Picnic Area. The primary dispersed recreational opportunities within this geographic area include big game hunting, upland game hunting, waterfowl hunting, wildlife viewing, rockhounding, mountain biking, hiking, fishing, and camping.

Desired Conditions

The desired condition is to perpetuate diverse and healthy mixed grass and short grass communities, representing both cool season and warm season species such as western wheatgrass, green needlegrass, needleandthread grass, little bluestem, threadleaf sedge, prairie sandreed, sideoats grama, buffalo grass, and blue grama. Hardwood draws will be managed to perpetuate multiple layers and age classes of herbaceous plants, shrubs and trees. Species in the draws are green ash, American elm, chokecherry and snowberry. Streams and riparian areas will maintain soil moisture to perpetuate riparian plant communities with strong root masses. Plant species include prairie cordgrass, bulrushes, spikerushes, inland saltgrass, cottonwood, and willows.

The landscape desired condition is to maintain open, scenic plains and vast prairie landscapes. Streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

The desired condition for the upland grassland is to perpetuate diverse and healthy mixed grass communities that provide a mixture of grassland structure levels. Upland grassland habitat associated with sharp-tailed grouse will be managed to provide sufficient residual cover to meet nesting, brooding, and hiding cover requirements. Woody draws/riparian woodlands/cedar breaks will be managed to perpetuate multiple layers and age classes of vegetation including herbaceous plants, shrubs, and trees. Wetlands/aquatic areas will be managed to emphasize healthy submergent and emergent vegetative cover along the shorelines, while reducing sediment levels to maintain high quality aquatic habitat. Grassland structure will be managed to promote prairie dog expansion within the proposed ferret reintroduction area (MA 3.63). Prairie dog colonies outside the ferret reintroduction area and scattered throughout the geographic area will maintain some low structure grassland habitat.

The desired recreation condition includes an interpretive trail around the wetlands at the Pioneer Picnic Area. Dispersed recreation activities will continue to be emphasized in this geographic area.

Important Attributes

- Semi-precious rock and agate beds
- Pioneer Picnic Area
- Vast, rolling plains and open landscape
- Limestone Butte wetland area
- Limited populations of Barr's milkvetch

Management Area Prescription Allocation

Number	Prescription	Acres
3.63	Black-footed Ferret Reintroduction Habitat	~~25,300~~ 25,940 (ref. Cortney Creek Land Exchange 2008)
3.64	Special Plant and Wildlife Habitat: Sharp-tailed Grouse	~~26,190~~ 25,531 (ref. Cortney Creek Land Exchange 2008)
	Special Plant and Wildlife Habitat: Limestone Butte Reservoir Area	260
6.1	Rangeland with Broad Resource Emphasis	59,860

Geographic Area Direction - Objectives

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs. The focus in the Fall River Southeast Geographic Area is on grass and grass-like life plants.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a shifting mosaic of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass-like species across a majority of the Geographic Area. This mix provides suitable opportunity for meeting structure objectives and providing for floristic diversity.

The following section describes the specific vegetative composition and structure objectives for the Fall River Southeast Geographic Area:

Composition

1. The desired plant species composition objective across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
20 to 30%	40 to 60%	15 to 25%	1 to 10%

In the late seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent tall grasses. On clayey, silty, and thin upland range sites western wheatgrass, green needlegrass, porcupinegrass, sideoats grama, and little bluestem are the primary mid grasses and big bluestem should make up the majority of the tall grass. Tall grasses such as big bluestem, switchgrass, and prairie sandreed should be expressed in the overflow or run-in sites.

In the late intermediate seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent short grasses. The dominant grass species in the late intermediate seral stage should be western wheatgrass with the codominance made up of needleandthread, porcupine grass, blue grama, and sedges. The mix of grasses making up the codominance in the late intermediate seral stages will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses, mainly western wheatgrass and green needlegrass.

In the early intermediate seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses and to a lesser extent mid grasses. Dominant grass species in the early intermediate seral stage should be blue grama, buffalo grass, western wheatgrass, needleandthread, and sedges. The mix of grasses making up the codominance in early intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses and short grasses; mainly western wheatgrass, needleandthread, and blue grama.

In the early seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses with little if any presence of mid grasses. The early seral stage will be dominated by sedges, and short grasses such as blue grama and buffalograss on all range sites. Overflow sites will be dominated by short grasses and to a lesser extent mid grasses. Early seral stage should be emphasized on less productive claypan soil types, in and around prairie dog towns, and in isolated areas of high livestock use.

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
15 to 35%	40 to 60%	15 to 35%

High vegetation structure can be achieved on moderate and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderate to highly productive soils but dominated by short statured species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderate to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within this geographic area receiving light to moderate levels of livestock use should be in late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in early intermediate or early seral stages will not achieve moderate structure under even light grazing levels.

Minimally productive soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Fire

1. Prescribe burn a minimum of 1,500 acres per decade to achieve one or more of the following desired condition objectives:

- Promote vegetative diversity,
- Improve wildlife habitat,
- Stimulate riparian/woody draw regeneration,
- Control or reduce invasive plants/noxious weeds,
- Improve plant vigor and health, and/or
- Reduce fuel loading. **Objective**

Rest

1. Rest 1-10 percent of the suitable rangeland each year. **Objective**

Wildlife, Fish and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- Provide diverse and quality grassland habitat across this geographic area at levels that, in combination with habitat on adjoining lands, helps support stable to increasing sharp-tailed grouse populations (long-term trends) and viable populations of other wildlife species with similar habitat needs. **Objective**

- Establish and maintain quality nesting and brooding habitat for sharp-tailed grouse (Appendix H) and associated wildlife by meeting vegetation objectives for high structure within 10 years. **Objective**
- Establish and maintain quality winter foraging habitat for sharp-tailed grouse and associated wildlife by enhancing and/or maintaining diverse forb species in grassland communities and regenerating shrub patches and the shrub component of wooded draws and riparian habitats. **Objective**

Black-tailed Prairie Dog

- Increase black-tailed prairie dog populations over the next 10 to 15 years. **Objective**
- Maintain or expand the current distribution of black-tailed prairie dogs across the geographic area over the next 10 to15 years. **Objective**
- Develop a prairie dog colony complex in the northeastern part of this geographic area over the next 10 to 15 years. This area has been designated as MA 3.63 (see Chapter 3). **Objective**

2. Special Plant and Wildlife (3.64) Area: Special Wetland/Aquatic Habitat (Limestone Butte). The Limestone Butte Reservoir area is a special wetland/aquatic habitat area in this geographic area. The area will be managed to enhance and maintain the habitat for waterfowl and shorebirds as follows:

- Provide diverse and quality wetland/aquatic habitat in this special management area at levels that help support stable to increasing populations of waterfowl and other wildlife with similar habitat needs. **Objective**

Recreation

1. Within the life of the plan develop an interpretive trail at the Pioneer Picnic Area. **Objective**

2. Within the life of the plan develop an interpretive sign and/or display for the Limestone Butte Special Wetland/Aquatic Area. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use existing monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help design and implement range management strategies for meeting desired vegetation objectives. **Standard**

Infrastructure

1. New structural improvements (fences and water developments) may be constructed as needed to achieve desired condition objectives. **Guideline**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- The following criteria will be considered during site-specific project level planning to help determine the best locations to manage for high structure grasslands:
  - Presence of moderate to highly productive soils and range sites,
  - Proximity to sharp-tailed grouse display grounds,
  - Proximity to shrub habitats, private croplands and other sharp-tailed grouse foraging habitats. **Guideline**

Black-tailed Prairie Dog

- Refer to Chapter 1 (Sections F and H) and Chapter 3 (Management Area 3.63) for standards and guidelines.

2. Threatened, Endangered, and Sensitive Species:

Mountain Plover (Sensitive Species, Proposed Species)

- Prescribe burn selected large flats (a section or more in size) to evaluate the effectiveness of burns in attracting and inventorying mountain plover. Prescribed burns should be timed to provide large blackened areas in the spring. **Standard**
- In cooperation with the U.S. Fish and Wildlife Service and the state wildlife agency, evaluate the desirability and feasibility of trying to establish a nesting population with reintroduced birds. **Standard**

(The following mountain plover direction will apply if plover are eventually found or established in this geographic area.)

- To help maintain suitable nesting habitat for mountain plover, prohibit development of new facilities within 0.25 miles of known mountain plover nests or nesting areas. This does not apply to pipelines, fences, and underground utilities. **Standard**

  For lands identified in the DM&E final environmental impact statement and only for project decisions on those lands, this standard is waived entirely to allow for construction, installation, and operation of the DM&E Railroad under a construction permit and an authorization. Site-specific direction from the project mitigation plan, where it applies, will be used instead. See Amendment 2003-01 for specific mitigation. (Amendment 1)

- Any net loss of suitable and occupied mountain plover habitat as a result of prairie dog poisoning or development of new facilities within prairie dog colonies will be replaced within the year by concurrent expansion of suitable plover habitat or in some cases, by enhanced management and protection of occupied plover habitat elsewhere on or near the national grassland. The amount of habitat loss is based on the amount of suitable and occupied habitat available prior to prairie dog dispersal in the year of the poisoning or development. **Guideline**

- To help reduce disturbances and risks to nesting mountain plover, prohibit the following activities in plover nesting areas or within 0.25 miles of plover nests from March 15 through July 31:
  - Construction (e.g., roads, water impoundments),
  - Reclamation,
  - Drilling of water wells,
  - Prescribed burning. **Standard**
- To help reduce disturbances and risks to nesting mountain plover, do not authorize the following activities in plover nesting areas or within 0.25 miles of plover nests from March 15 through July 31:
  - Construction (e.g., pipelines, utilities, fencing),
  - Permitted recreation events involving large groups of people,
  - Grasshopper spraying,
  - Prairie dog shooting (in consultation with state wildlife agencies and U.S. Fish and Wildlife Service). **Guideline**

  For lands identified in the DM&E final environmental impact statement and only for project decisions on those lands, this standard is waived entirely to allow for construction, installation, and operation of the DM&E Railroad under a construction permit and an authorization. Site-specific direction from the project mitigation plan, where it applies, will be used instead. See Amendment 2003-01 for specific mitigation. (Amendment 1)
- To help reduce risks to mountain plovers from traffic, limit vehicle speeds in occupied mountain plover habitat to 25 mph on resource roads and 35 mph on local roads. **Standard**
- Vegetation management projects in suitable mountain plover habitat will be designed to maintain or improve mountain plover habitat. **Standard**
- To avoid attracting avian predators, new structures and facilities in occupied mountain plover habitat will be designed with low profiles and/or perch-inhibitors. This does not apply to structures and facilities less than 4 feet in height or those expected to be used as hunting perches by raptors. **Guideline**
- Use the following criteria at the project level to help determine where to use prescribed burning and high livestock grazing intensities (Appendix I) to provide low grassland structure and enhanced mountain plover nesting and brooding habitat:
  - Proximity to existing mountain plover nesting areas,
  - Proximity to prairie dog colonies,
  - Presence of expansive and flat grassland areas. **Guideline**

Swift Fox (Sensitive Species)

- This geographic area is near an area on the Buffalo Gap National Grassland that supports swift fox, and there's a high probability that this area is occasionally used by swift fox. USDA predator (primarily coyote) control activities to reduce livestock losses will be limited in this area to methods that do not pose a significant and direct mortality risk to swift fox. **Standard**

3. Special Plant and Wildlife (3.64) Areas: Sharp-tailed Grouse. Vegetation in these areas will be managed to emphasize high structure for sharp-tailed grouse habitat. This area may be grazed or burned periodically to meet management objectives. **Guideline**

4. The following criteria will be considered during site-specific project level planning to help determine the best locations to manage for high structure grasslands:

- Presence of moderate to highly productive soils and range sites,
- Proximity to wetland/aquatic habitat. **Guideline**

5. Enhance warm-water fisheries in suitable water impoundments. **Guideline**

FALL RIVER WEST GEOGRAPHIC AREA

Buffalo Gap National Grassland - Fall River Ranger District

Setting

The Fall River West Geographic Area encompasses about ~~119,749~~ 119,856 acres (ref. Hunter Land Exchange 2003) of National Forest System lands on the southwestern portion of the Fall River Ranger District. The Oglala National Grassland borders this area on the south.

The climate of the Fall River West Geographic Area can be classified as semi-arid Continental. Local weather can be highly variable and unpredictable. Temperatures can range from in excess of 40-degrees below zero Fahrenheit in the winter to more than 110-degrees above zero Fahrenheit in the summer. Precipitation levels average around 14 to 15 inches per year with the majority falling as rain from about May through July.

The topography of this geographic area is a blend of rolling hills, plateaus, and flat bottomlands that drain into the Cheyenne River and its' tributaries. Soils are generally thin. The southern portion of this area includes exposed clays and hardpan. Distinguishing features include, from north to south, the Cheyenne River and the former Black Hills Army Ordnance Depot. Drainages generally flow north into the Cheyenne River. Elevations range from about 3,600 feet above sea level along the northern stretches of the Cheyenne River in this geographic area to about 4,200 feet above sea level south of the former Black Hills Army Ordnance Depot - the highest point on the Fall River Ranger District.

Primary tributaries flowing into the Cheyenne River in this geographic area include, from north to south: Moss Agate Creek, Dry Creek, Fiddle Creek, Cottonwood Creek, Coal Creek, Alkali Creek, Indian Creek and Hat Creek.

The dominant vegetation includes western wheatgrass in the uplands, with scattered cottonwood and chokecherry communities. A few ponderosa pine can be found along the escarpment of Fiddle Creek.

A significant sagebrush community lies north of the Black Hills Army Ordnance Depot. Scattered greasewood communities can be found along creek bottoms throughout the geographic area.

Currently, there are no developed recreational facilities within this geographic area. The primary dispersed recreational opportunities within this geographic area include big game hunting, upland game hunting, waterfowl hunting, wildlife viewing, mountain biking, hiking, fishing, and camping.

Desired Conditions

The desired condition is to perpetuate diverse and healthy mixed grass and short grass communities, representing both cool season and warm season species such as western wheatgrass, green needlegrass, needleandthread, little bluestem, threadleaf sedge, prairie sandreed, sideoats grama, buffalo grass, and blue grama. Hardwood draws will be managed to perpetuate multiple layers and age classes of herbaceous plants, shrubs, and trees. Species in the draws are green ash, American elm, chokecherry and snowberry. Streams and riparian areas will

maintain soil moisture to perpetuate riparian plant communities with strong root masses. Plant species include prairie cordgrass, bulrushes, spikerushes, inland saltgrass, cottonwood, and willows.

The desired landscape condition is to maintain open, scenic plains and vast prairie landscapes. The streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows..

Desired condition for the upland grassland is to perpetuate diverse and healthy mixed grass communities that provide a mixture of grassland structure levels. Sagebrush habitat associated with sage grouse will be managed to provide an abundance of residual herbaceous cover for nesting. Grassland structure associated with swift fox will be managed to provide moderate to low grassland structure levels. Woody draws/riparian woodlands/cedar breaks will be managed to perpetuate multiple layers and age classes of vegetation including herbaceous plants, shrubs, and trees. Wetlands/aquatic areas will be managed to emphasize healthy submergent and emergent vegetative cover along the shorelines, while reducing sediment levels to maintain high quality aquatic habitat. Prairie dog colonies scattered throughout the geographic area will be managed to maintain low structure to encourage prairie dog expansion.

The desired recreation condition includes the development of interpretive signs and/or displays for the Special Interest Areas and the Crowe Dam Special Wetland/Aquatic Area. Dispersed recreation activities will continue to be emphasized in this geographic area.

Important Attributes

- Swift fox population (Forest Service listed sensitive species)
- Significant marine fossil resources from the Late Cretaceous Period
- Site of the former Black Hills Army Ordnance Depot
- Sagebrush/greasewood communities, providing habitat for sage grouse and big game
- Huntable populations of pronghorn

Management Area Prescription Allocation

Number	Prescription	Acres
2.1	Special Interest Area	2,260
3.64	Special Plant and Wildlife Habitat: Sage Grouse	45,760
	Special Plant and Wildlife Habitat: Swift Fox	~~9,540~~12,175 (ref. Hunter Land Exchange2003)
	Special Plant and Wildlife Habitat: Crowe Dam	250
6.1	Rangeland with Broad Resource Emphasis	~~61,940~~ 59,412 (ref. Hunter Land Exchange2003)

Geographic Area Direction - Objectives

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs. The focus in the Fall River West Geographic Area is on grass and grass like plants.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a "shifting mosaic" of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass-like species across a majority of the Geographic Area. This mix provides suitable opportunity for meeting vegetation structure objectives and providing for floristic diversity.

The following section describes the specific vegetative composition and structure objectives for the Fall River West Geographic Area:

Composition

1. The desired plant species composition objective across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
10 to 30%	50 to 70%	10 to 20%	1 to 10%

Grasslands: In the late seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent tall grasses. On clayey, silty, and thin upland range sites western wheatgrass, green needlegrass, porcupine grass, sideoats grama, and little bluestem are the primary mid grasses and big bluestem should make up the majority of the tall grass. Tall grasses such as big bluestem, switchgrass, and prairie sandreed should be expressed in the overflow or run-in sites.

In the late intermediate seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent short grasses. The dominant grass species in the late intermediate seral stage should be western wheatgrass with the codominance made up of needleandthread, porcupine grass, blue grama, and sedges. The mix of grasses making up the codominance in the late intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses, mainly western wheatgrass and green needlegrass.

In the early intermediate seral, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses and to a lesser extent mid grasses. The dominant grass species in the early intermediate seral stage should be blue grama, buffalo grass, western wheatgrass, needleandthread, and sedges. The mix of grasses making up the codominance in the early intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses and short grasses; mainly western wheatgrass, needleandthread, and blue grama.

In the early seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses with little if any presence of mid grasses. The early seral stage will be dominated by sedges, and short grasses such as blue grama and buffalograss on all range sites. Overflow sites will be dominated by short grasses and to a lesser extent mid grasses. The early seral stage should be emphasized on the less productive claypan soil types, in and around prairie dog towns, and in isolated areas of high livestock use.

Sagebrush Stands: The understory of big sagebrush stands in late seral stage is dominated by mid grasses such as western wheatgrass, green needlegrass, and needleandthread with short grasses, especially blue grama and buffalograss, being a minor part of the understory component.

The understory of big sagebrush stands in the late intermediate seral stage is dominated by western wheatgrass, with blue grama and buffalograss being the two codominant species.

The dominant native plant species in the understory of big sagebrush stands in early intermediate seral stage are blue grama and buffalo grass while western wheatgrass is a lesser component of the understory.

The dominant native plant species in the understory of big sagebrush stands in early seral stage are buffalograss and blue grama. There are also several annual forbs as well as broom snakeweed, and plains cactus making up the understory of the sagebrush communities in early seral stage.

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
10 to 30%	50 to 70%	10 to 30%

High vegetation structure can be achieved on moderate and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderate to highly productive soils but dominated by short statured species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderate to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within this geographic area receiving light to moderate levels of livestock use should be in the late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in the early intermediate or early seral stage will not achieve moderate structure under even light grazing levels.

Minimally productive soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Fire

1. Prescribe burn a minimum of 1,500 acres per decade to achieve one or more of the following desired condition objectives:

- Promote vegetative diversity,
- Improve wildlife habitat,
- Stimulate riparian/woody draw regeneration,
- Control or reduce invasive plants/noxious weeds,
- Improve plant vigor and health, and/or
- Reduce fuel loading. **Objective**

Rest

1. Rest 1-10 percent of the suitable rangeland each year. **Objective**

Wildlife, Fish and Rare Plants

1. Management Indicator Species:

Sage Grouse

- Provide habitat conditions that, in combination with sagebrush habitat on adjoining lands, helps support stable to increasing sage grouse populations (long-term trends) in the western part of this geographic area. **Objective**
- Establish and maintain quality nesting and brooding habitat for sage grouse (Appendix H) and associated wildlife across most of the sagebrush habitat in this geographic area within 10 to 15 years. **Objective**

Black-tailed Prairie Dog

- Increase black-tailed prairie dog populations across the geographic area over the next 10 to 15 years. **Objective**
- Maintain or expand the current distribution of black-tailed prairie dogs across the geographic area over the next 10 to15 years. **Objective**
- Apply adaptive management strategies to provide objectives for 1,000 minimum and 3,600 maximum acres of active prairie dog colonies within the interior-colony management zones. If maximum acreage objective is exceeded, refer to Chapter 1, H. Animal Damage Control for management direction. **Objective** (Amendment 3)

2. Special Plant and Wildlife (3.64) Area: Special Wetland/Aquatic Habitat (Crowe Dam). Crowe Dam area is a special wetland/aquatic habitat area in this geographic area. The area will be managed to maintain and enhance habitat for waterfowl and shorebirds as follows:

- Provide diverse and quality wetland/aquatic habitat at levels that help support stable to increasing populations of waterfowl and other wildlife with similar habitat needs. **Objective**

Recreation

1. Within the life of the plan develop interpretive media for Special Interest Areas in this Geographic Area and the Crowe Dam Special Wetland/Aquatic Area. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use existing monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help design and implement range management strategies to meet desired vegetation objectives. **Standard**

Infrastructure

1. New structural improvements (fences and water developments) may be constructed as needed to achieve desired condition objectives. **Guideline**

Wildlife, Fish and Rare Plants

1. Management Indicator Species:

Sage Grouse

- To help reduce adverse impacts to breeding sage grouse and their display grounds, prohibit construction of new oil and gas facilities within 0.25 miles of active display grounds. A display ground is no longer considered active if it's known to have been unoccupied during the past 5 breeding seasons. This does not apply to pipelines and underground utilities. **Standard**
- To reduce disturbances to nesting sage grouse, prohibit the following activities within 2.0 miles of active display grounds from March 1 to June 15:
  - Construction (e.g., roads, water impoundments, oil and gas facilities),
  - Reclamation,
  - Gravel mining operations,
  - Drilling of water wells,
  - Oil and gas drilling,
  - Training of hunting dogs. **Standard**
- To reduce disturbances to nesting sage grouse, do not authorize the following activities within 2.0 miles of active display grounds from March 1 to June 15:
  - Construction (e.g., pipelines, utilities, fencing),
  - Seismic exploration,
  - Workover operations for maintenance of oil and gas wells,
  - Permitted recreation events. **Guideline**
- To help prevent reproductive failure, limit noise on sage grouse display grounds from nearby facilities and activities to 49 decibels (10 dBA above background noise) from March 1 to June 15. **Guideline**

- Pastures will be managed for sage grouse/big sagebrush only if they contain 5% or more canopy cover of big sagebrush. **Guideline**
- When constructing facilities or structures within 2 miles of a sage grouse active display ground, design them to discourage raptor perching by maintaining a low profile or using perch inhibitors. **Guideline**
- Prohibit development or operations of facilities within 2 miles of a sage grouse display ground if these activities would exceed a noise level of more than 10 decibels above the background noise level (39 db), at 800 feet from the noise source, from March 1 to June 15. **Guideline**.
- Manage display ground viewing activities to reduce disturbances and adverse impacts to birds on display grounds. **Guideline**
- During the AMP process or as other opportunities arise, design and implement livestock grazing strategies to provide quality nesting cover in all sagebrush stands (>15% canopy cover of sagebrush) within at least 3.0 miles of active display grounds (consistent with GA vegetation objectives) where sagebrush is irregularly distributed around the display ground. This minimum distance can be reduced to 2.0 miles where sagebrush is uniformly distributed around display grounds. Consult Appendix H for a description of quality nesting habitat for sage grouse. **Standard**
- In big sagebrush and sage grouse wintering habitat, do not prescribe burn or treat with herbicides unless it can be demonstrated to be beneficial for local sage grouse populations. Treatments should not be conducted where the canopy cover of sagebrush averages less than 15%. Limit treatments to less than 80-acre patches and no more than 20% of the sagebrush stands in the wintering habitat. Big sagebrush within 100 yards of meadows, riparian areas, and other foraging habitats should not be burned or sprayed. **Guideline**
- Maintain or enhance wet and sub-irrigated meadows, seeps, riparian habitats, and other wetland areas that occur in or adjacent to sage grouse habitat as quality sage grouse foraging areas during the spring, summer, and fall. Consult Appendix H for a description of quality foraging habitat for sage grouse broods. **Standard**
- Maintain or increase the size of big sagebrush patches in sage grouse habitat. **Guideline**
- When conducting vegetation management projects, maintain small openings within sagebrush and greasewood stands at a ratio of no more than 25% openings and at lease 75% shrub canopy (e.g., 1 acre of opening for every 3 acres of shrub within the discrete stand). **Standard**
- At the onset of drought, evaluate the need to adjust land uses to reduce impacts on sage grouse nesting and brooding habitat. **Standard**
- Manage for high vegetative structure in areas where it would enhance sage grouse nesting habitat. Emphasize areas characterized by:
  - Presence of moderate to highly productive soils and range sites,
  - Plant composition dominated by mid and/or tall grasses, with sagebrush canopy cover of 15-25%,
  - Proximity to sage grouse display grounds. **Guideline**

Black-tailed Prairie Dog

- Refer to Chapter 1 (Sections F and H) for standards and guidelines.

2. Threatened, Endangered and Sensitive Species:

Mountain Plover (Candidate Species)

- Prescribe burn selected large flats (a section or more in size) to evaluate the effectiveness of burns in attracting and inventorying mountain plover. Prescribed burns should be timed to provide large blackened areas in the spring. **Standard**
- In cooperation with the U.S. Fish and Wildlife Service and South Dakota Department of Game, Fish and Parks evaluate the desirability and feasibility of trying to establish a nesting population with reintroduced birds. **Standard**

(The following mountain plover direction will apply if plover are eventually found or established in this geographic area.)

- To help maintain suitable nesting habitat for mountain plover, prohibit development of new facilities within 0.25 miles of known mountain plover nests or nesting areas. This does not apply to pipelines, fences and underground utilities. **Standard**
- To help maintain occupied nesting and brooding habitat on black-tailed prairie dog colonies, new oil and gas development will be limited to one well per 80 acres within occupied habitat. Cumulatively, structure and facility development will not occur on more than 2 percent of the occupied mountain plover nesting habitat in each prairie dog colony. **Standard**
- Any net loss of suitable and occupied mountain plover habitat as a result of prairie dog poisoning or development of new facilities within prairie dog colonies will be replaced within the year by concurrent expansion of suitable plover habitat or in some cases, by enhanced management and protection of occupied plover habitat elsewhere on or near the national grassland. The amount of habitat loss is based on the amount of suitable and occupied habitat available prior to prairie dog dispersal in the year of the poisoning or development. **Guideline**
- To help reduce disturbances and risks to nesting mountain plover, prohibit the following activities in plover nesting areas or within 0.25 miles of plover nests from March 15 through July 31:
  - Construction (e.g., roads, water impoundments, oil and gas facilities),
  - Reclamation,
  - Seismic exploration,
  - Gravel mining operations,
  - Oil and gas drilling,
  - Drilling of water wells,
  - Prescribed burning. **Standard**

- To help reduce disturbances and risks to nesting mountain plover, do not authorize the following activities in plover nesting areas or within 0.25 miles of plover nests from March 15 through July 31:
  - Construction (e.g., pipelines, utilities, fencing),
  - Workover operations for maintenance of oil and gas wells,
  - Permitted recreation events involving large groups of people,
  - Grasshopper spraying,
  - Prairie dog shooting (in consultation with state wildlife agencies and U.S. Fish and Wildlife Service). **Guideline**
- To help reduce risks to mountain plover, access to oil and gas facilities in occupied mountain plover habitat for routine maintenance should be limited to once per 24 hour period and occur between 9 am and 5 pm. Duration of maintenance activities should not extend beyond 1 hour when possible. This does not apply to travel for emergency repairs. **Guideline**
- To help reduce risks to mountain plovers from traffic, limit vehicle speeds in occupied mountain plover habitat to 25 mph on resource roads and 35 mph on local roads. **Standard**
- Vegetation management projects in suitable mountain plover habitat will be designed to maintain or improve mountain plover habitat. **Standard**
- To avoid attracting avian predators, new structures and facilities in occupied mountain plover habitat will be designed with low profiles and/or perch-inhibitors. This does not apply to structures and facilities less than 4 feet in height or those expected to be used as hunting perches by raptors. **Guideline**
- Use the following criteria at the project level to help determine where to use prescribed burning and high livestock grazing intensities (Appendix I) to provide low grassland structure and enhanced mountain plover nesting and brooding habitat:
  - Proximity to existing mountain plover nesting areas.
  - Proximity to prairie dog colonies.
  - Presence of expansive and flat grassland areas. **Guideline**

Swift Fox (Sensitive Species)

- This geographic area supports swift fox. USDA predator (primarily coyote) control activities to reduce livestock losses will be limited in this area to methods that do not pose a significant and direct mortality risk to swift fox. **Standard**
- Special Plant and Wildlife (3.64) Areas: Swift Fox. This area will be managed to emphasize moderate to low structure for swift fox habitat. **Guideline**

3. Special Plant and Wildlife (3.64) Area: Special Wetland/Aquatic Habitat (Crowe Dam). The Crowe Dam area is a special wetland/aquatic habitat area in this geographic area. Vegetation in this area will be managed to enhance and maintain the habitat for waterfowl and shorebirds as follows:

- Establish and maintain quality nesting and brooding habitat on adjacent upland grasslands for waterfowl and associated wildlife within 10 years. A substantial amount of this acreage should be located where it would optimize habitat for waterfowl and associated species. The following criteria will be considered during site-specific, project level planning to help determine the best locations to manage for high structure grasslands:
  - Presence of moderate to highly productive soils and range sites.
  - Proximity to wetland/aquatic habitat.
  - Area may be grazed or burned periodically to meet management objectives. **Guideline**

WALL NORTH GEOGRAPHIC AREA

Buffalo Gap National Grassland - Wall Ranger District

Setting

The Wall North Geographic Area includes approximately 69,600 acres of National Forest System lands in the northern portions of the Wall Ranger District.

The climate of the Wall North Geographic Area can be classified as semi-arid Continental. Local weather can be highly variable and unpredictable. Temperatures can range from minus 20 degrees below zero Fahrenheit in the winter to more than 100 degrees Fahrenheit in the summer. Precipitation levels average 16.5 inches per year with the majority falling as rain from about April to July.

The topography of the area consists of typical rolling grasslands, above the "Wall" badlands landscape feature. The "Wall" is more than 40 miles in length, beginning near Wall, South Dakota, and tapering out south of Kadoka. This landscape features drops vertically an average of about 600 feet. The major distinguishing landmarks and features include the Upper Bad River Drainage to the northeast, and the Wall, which typically provides the southern boundary. Drainages flow primarily to the north and east into the Cheyenne River and Bad River. Elevations range from approximately 2,400 feet above sea level at the east end of the geographic area to 3,300 feet near the Pinnacles Ranger Station at Badlands National Park.

Upland grassland is the primary vegetation/habitat type covering about 92% of the geographic area. The soils are the most productive in the geographic area, providing a range of forage production annually from 1,200 to 2,200 pounds per acre. Over 55 percent of this upland grassland habitat consists of highly productive range sites and nearly 20 percent are minimally productive range sites. The native vegetation is dominated by mid grasses and a variety of forbs. This mixed grass prairie is made up of cool-season and warm-season plants that provide diverse habitat for a variety of wildlife species and forage for livestock. The principle grass species are western wheatgrass, green needlegrass, needleandthread, sideoats grama, blue grama, buffalograss, little bluestem, and big bluestem.

The balance of the geographic area is comprised of a variety of vegetation/habitat types: Badlands (1%) are barren, highly eroded lands with little or no vegetation. Badlands provide unique habitat for some plants and animals that are suited to open, barren soils. Juniper breaks (2%) are a unique habitat type that occurs primarily along the Cheyenne River. These areas have moderate to dense cover of juniper with an understory of sideoats grama and little bluestem. This habitat type provides critical hiding cover and thermal cover for a number of wildlife species. Prairie dog colonies (2%) are a unique component of upland grasslands and provide habitat for a number of TES species. Prairie dog colonies are fairly small and scattered across this geographic area. Although the woody draw/riparian woodland habitat (1%) comprises a very small portion of the geographic area, this habitat type is critical for many wildlife species. The woody draw/riparian woodlands provide the highest diversity of both plant and animal life in the geographic area. Principle woody species include green ash, chokecherry, buffaloberry, snowberry, cottonwood, and willow. Primary creeks and drainages include Little Buffalo Creek, the South Fork of the Bad River, Whitewater Creek, Crooked Creek, Sage Creek, Big Buffalo

Creek and Cottonwood Creek. Wetland/aquatic habitats are unusual in this geographic area (1%) and the majority are constructed water impoundments that have improved waterfowl production. A number of these impoundments have been developed into warm-water fisheries and provide additional recreational experiences. The sagebrush habitat type (<1%) is very limited and found along several of the major floodplain areas scattered throughout this geographic area.

Currently, the only developed recreational facility within this geographic area is the National Grasslands Visitor Center. The primary dispersed recreational opportunities within this geographic area include big game hunting, upland game hunting, waterfowl hunting, wildlife viewing, mountain biking, hiking, fishing, and camping

Desired Conditions

The desired landscape condition is to maintain the vast and scenic nature of open rolling prairie landscapes.

The streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

Grazing management and prescribed fire will be used as tools to enhance grass and forb diversity, stimulate woody plant regeneration and reduce invasive or noxious weeds. R

Recreational opportunities will continue to emphasize dispersed recreation activities on the majority of the geographic area. However, public interest has indicated a need to develop a primitive campground south of Wall, SD.

The desired condition for the upland grassland is to perpetuate diverse and healthy mixed grass communities that provide primarily high to moderate structure levels. Upland grassland habitat will be managed to provide sufficient residual cover for those wildlife species requiring higher grassland structure levels. Woody draws/riparian woodlands/cedar breaks will be managed to perpetuate multiple layers and age classes of vegetation including herbaceous plants, shrubs, and trees. Wetlands/aquatic areas will be managed to emphasize healthy shoreline and emergent vegetative cover along the shorelines, while reducing sediment levels to maintain high quality aquatic habitat. Although small and isolated, prairie dog colonies will be managed to maintain low structure grassland habitat scattered throughout this geographic area.

Important Attributes

- National Grasslands Visitor Center
- Best sharp-tailed grouse habitat on the Wall Ranger District
- Abundant bird watching opportunities
- Numerous scenic viewpoints highlighting vast rolling grasslands and badlands
- High-quality woody draw/riparian wildlife habitat

Management Area Prescription Allocation

Number	Prescription	Acres
2.2	Research Natural Areas	1,030
6.1	Rangeland with Broad Resource Emphasis	68,500

Geographic Area Direction -- Objectives

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs. The focus in the Wall North Geographic Area is on grass and grass-like plants.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a "shifting mosaic" of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass like species across a majority of the Geographic Area. This mix provides suitable opportunity for meeting vegetation structure objectives and providing for floristic diversity.

The following section describes the specific vegetative compositional and structural objectives for the Wall North Geographic Area:

Composition

1. The desired plant species composition objective across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
20 to 40%	30 to 50%	10 to 30%	1 to 20%

In late seral stage, the more productive soils (clayey and silty range sites) should be comprised mainly of mid grasses and to a lesser extent tall grasses, the moderately productive soils (dense clay and shallow clay range sites) should be comprised of mid grasses, while the less productive thin claypan and claypan range sites should be comprised of mid grasses and short grasses. On clayey and silty range sites western wheatgrass, green needlegrass, needleandthread, sideoats grama, and little bluestem are the primary mid grasses and big bluestem should make up the majority of the tall grass. The dense clay range sites are comprised of mainly western wheatgrass and green needlegrass to a lesser extent. On shallow clay range sites, found primarily on the slopes, western wheatgrass, and green needlegrass occur in amounts approximately equal to big bluestem, little bluestem, and sideoats grama. Western wheatgrass, blue grama, and buffalograss should dominate the less productive thin claypan and claypan range sites. The mix of grasses making up the codominance on all range sites in late seral stage will fluctuate according to precipitation and/or grazing intensities. Tall grasses such as big bluestem, switchgrass, and prairie sandreed should be expressed in the overflow or run-in sites.

In late intermediate seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of mid grasses and to a lesser extent short grasses and tall grasses, the moderately productive soils (dense clay and shallow clay range sites) should be comprised of mid grasses and short grasses, while the less productive thin claypan and claypan range sites should be comprised of short grasses and to a lesser extent mid grasses. The dominant grass species on clayey and silty range sites in the late intermediate seral stage should be western

wheatgrass with the codominance made up of needleandthread, blue grama, and sedges. The dense clay range sites are comprised of mainly western wheatgrass. On shallow clay range sites little bluestem, western wheatgrass, and sideoats grama are the dominant species while blue grama and sedges become more abundant. Blue grama, buffalograss and to a lesser extent western wheatgrass will dominate the less productive thin claypan and claypan range sites. The mix of grasses making up the codominance on all range sites in late intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses, mainly western wheatgrass and green needlegrass.

In early intermediate seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of short grasses and to a lesser extent mid grasses, the moderately productive soils (dense clay and shallow clay range sites) should be comprised of mid grasses and short grasses, while the less productive thin claypan and claypan range sites should be comprised of short grasses. The dominant grass species on clayey and silty range sites in early intermediate seral stage should be blue grama, buffalograss, western wheatgrass, needleandthread, and sedges. The dense clay range sites are comprised of mainly western wheatgrass and an increasing number of forbs. On shallow clay range sites blue grama and threadleaf sedge dominate the site while little bluestem is the remaining mid grass component. Less productive thin claypan and claypan range sites will be dominated by annual grasses and cactus. The mix of grasses making up the codominance in early intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses and short grasses; mainly western wheatgrass, needleandthread, and blue grama.

In early seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of short grasses with little if any presence of mid grasses, the moderately productive soils (dense clay and shallow clay range sites) should be comprised of short grasses with little presence of mid grasses, while the less productive thin claypan and claypan range sites should be comprised of short grasses. The early seral stage will be dominated by sedges, and short grasses such as blue grama, buffalograss and annual grasses on all range sites. The mix of grasses making up the codominance in early seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be dominated by short grasses and to a lesser extent mid grasses.

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
35 to 45%	35 to 45%	15 to 25%

High vegetation structure can be achieved on moderately and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderately to highly productive soils but dominated by short statured species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderately to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within this geographic area receiving light to moderate levels of livestock use should be in the late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in the early

intermediate or early seral stages will probably not achieve moderate structure under even light grazing levels.

Low productivity soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Smooth Goosefoot

1. Prioritize and initiate target surveys for smooth goosefoot. **Objective**

Fire

1. Prescribe burn a minimum of 500 acres per decade to achieve the following desired condition objectives:

- Promote vegetative diversity.
- Improve wildlife habitat.
- Stimulate riparian/woody draw regeneration.
- Control or reduce invasive plants/noxious weeds. **Objective**

Rest

1. Rest 1-10 percent of the suitable rangeland each year. **Objective**

Wildlife, Fish and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- Provide diverse and quality grassland habitat across the geographic area at levels that, in combination with habitat on adjoining lands, helps support stable to increasing populations of sharp-tailed grouse and other wildlife with similar habitat needs. **Objective**
- Establish and maintain quality nesting and brooding habitat for sharp-tailed grouse (see Appendix H) and associated wildlife by meeting vegetation objectives for high structure within 10 years. **Objective**

Black-tailed Prairie Dog (Amendment 3)

- Apply adaptive management strategies to provide objectives for 1,000 minimum and 2,100 maximum acres of active prairie dog colonies within the interior-colony management zones. If maximum acreage objective is exceeded, refer to Chapter 1, H. Animal Damage Control for management direction. **Objective**
- Increase black-tailed prairie dog populations over the next 10-to 15 years. **Objective**
- Maintain or expand the current distribution of black-tailed prairie dogs across the geographic area over the next 10 to 15 years. **Objective**

2. Threatened, Endangered and Sensitive Species:

Sturgeon Chub

- In cooperation with other conservation agencies and organizations, conduct inventories as needed in the Cheyenne and White Rivers and tributaries to establish baseline population and distribution information so that appropriate population trend objectives can be established. **Objective**
- In cooperation with other conservation agencies and organizations, assess the potential impacts of the construction of additional small impoundments in upper watersheds on hydrologic flow and patterns on downstream sturgeon chub habitat. **Objective**

Recreation

1. Develop primitive campground southwest of Wall near Badlands National Park. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use current monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help design and implement vegetation management strategies for meeting desired vegetation objectives. **Standard**

Smooth Goosefoot

1. Conduct target surveys in priority areas to determine if smooth goosefoot or suitable habitat occurs in the geographic area. Protect populations that are found in the geographic area and maintain suitable habitat for these populations. **Standard**

2. Prioritize control of noxious weeds in habitat occupied by smooth goosefoot. Restrict activities that contribute to invasive and non-native plant species into occupied habitat. **Standard**

3. Monitor ORV use in occupied habitat and implement travel management restrictions if smooth goosefoot populations are at risk. **Standard**

Livestock Grazing

1. Continue to emphasize combining pastures and allotments to achieve desired condition objectives (wildlife habitat, botanical, range management, visual quality, and recreation). **Guideline**

2. In areas where sharp-tailed grouse and waterfowl production are emphasized, utilize light to moderate stocking levels on allotments with large pastures to achieve a mosaic of vegetation structure that provides high structure intermittently across the allotment. Utilize skim or rest on allotments with small pastures that fail to provide sufficient high cover levels. **Guideline**

Infrastructure

1. New structural improvements (fences and water developments) may be constructed as needed to achieve desired condition objectives (wildlife habitat, botanical, range management, visual quality, and recreation. **Guideline**

Wildlife, Fish and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- A range of 35 to 45% of the acres is prescribed for high structure grasslands in this geographic area. A substantial amount of this acreage should be located where it would optimize habitat for sharp-tailed grouse and associated species. The following criteria will be considered during site-specific project level planning to help determine the best locations to manage for high structure grasslands:
  - Presence of moderate to highly productive soils and range sites,
  - Proximity to sharp-tailed grouse display grounds,
  - Proximity to shrub habitats and private croplands. **Guideline**
- Establish and maintain quality foraging habitat for sharp-tailed grouse and associated species by enhancing and/or maintaining diverse forb species and promoting regeneration of shrub patches and the shrub component of wooded draws and riparian habitats. **Guideline**

Black-tailed Prairie Dog (Amendment 3)

- Refer to Chapter 1 (Sections F and/or H) for standards and guidelines.

2. Threatened, Endangered and Sensitive Species:

Sturgeon Chub

- To assist in maintaining the current quantity and quality of aquatic habitat for this species, do not authorize land uses or developments that would measurably and cumulatively further degrade sturgeon chub habitat, including reducing downstream flows. **Guideline**
- Conduct project-level biological evaluations assessing potential downstream risks to this species from proposed projects that may have the potential to significantly alter sturgeon chub habitat or reduce downstream flows. This includes sand and gravel dredging and small impoundment construction in upper watersheds. **Guideline**

WALL SOUTHEAST GEOGRAPHIC AREA

Buffalo Gap National Grassland - Wall Ranger District

Setting

The Wall Southeast Geographic Area includes approximately 94,300 acres of National Forest System lands in the southeastern and parts of the north central portions of the Wall Ranger District.

The climate of the Wall Southeast Geographic Area can be classified as semi-arid Continental. Local weather can be highly variable and unpredictable. Temperatures can range from minus 20 degrees below zero Fahrenheit in the winter to more than 100 degrees Fahrenheit in the summer. Precipitation levels average 16.5 inches per year with the majority falling as rain from about April to July.

The topography of the area consists of badlands features and flat clay hardpan with sparse vegetation, generally located below the "Wall" badlands landscape feature. The "Wall" is more than 40 miles in length, beginning near Wall, South Dakota, and tapering out south of Kadoka, South Dakota. This landscape feature drops vertically an average of about 600 feet. The major distinguishing landmarks and features include the "Wall," and the badlands overflow drainages, which are typically narrow and deep. Drainages flow primarily to the south and east into the White River, or the north and east into the Cheyenne River. Elevations range from approximately 2,200 feet above sea level along the White River to 2,600 feet above sea level at the top of the "Wall."

Upland grassland is the primary vegetation/habitat type covering about 81% of the geographic area. The soils are moderately productive in this geographic area, providing a range of forage production annually from 800 to 1,600 pounds per acre. Over 60 percent of the upland grassland habitat consists of highly productive range sites and nearly 25 percent consists of minimally productive range sites. Native vegetation is dominated by mid grasses and short grasses with a variety of forbs. This mixed grass prairie is made up of cool-season and warm-season plants that provide diverse habitat for a variety of wildlife species and forage for livestock. The principle grass species are western wheatgrass, green needlegrass, needleandthread, sideoats grama, blue grama, buffalograss, little bluestem, and big bluestem. The next largest vegetation/habitat type is badlands, which comprises about 13% of the geographic area. Badlands are barren, highly eroded lands with little or no vegetation. Badlands provide unique habitat for some plants and animals that are suited to open, barren soils.

Prairie dog colonies (2%) are a unique component of the upland grasslands and provide habitat for a number of TES species. Prairie dog colonies are fairly small and scattered across this geographic area. The sagebrush habitat type (2%) is limited and found along several of the major floodplain areas scattered throughout this geographic area. This habitat type is dominated by silver sagebrush with a variety of interspersed grass species. Although the woody draw/riparian woodland habitat (1%) comprises a very small portion of the geographic area, it is critical for many wildlife species. The woody draw/riparian woodlands provide the highest diversity of both plant and animal life in the geographic area. Principle woody species include green ash, chokecherry, buffaloberry, snowberry, cottonwood, and willow. The primary creeks and

drainages flowing toward White River include Fifteen Creek, Cut Creek, Rake Creek, and Sixteen Mile Creek. White River flows along the south boundary of this geographic area. Wetland/aquatic habitat is unusual in this geographic area (1%) Most are constructed water impoundments that provide significant benefits for waterfowl production. Ducks Unlimited, in partnership with the Forest Service, has constructed three wetland impoundments within this geographic area to improve habitat for waterfowl. Kadoka Lake is the second largest wetland specifically managed for waterfowl production in western South Dakota. A number of these impoundments have been developed into warm-water fisheries and provide additional recreational experiences.

Currently, the only developed recreational facility within this geographic area is the fourteen mile long Prairie Bike Trail. The primary dispersed recreational opportunities within this geographic area include big game hunting, upland game hunting, waterfowl hunting, rockhounding, wildlife viewing, mountain biking, hiking, fishing, and camping

Desired Conditions

The desired landscape condition is to maintain the open and scenic nature of the rolling prairie landscapes and intermingled badlands.

Streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

Grazing management and prescribed fire will be used as tools to enhance grass and forb diversity, stimulate woody plant regeneration, and reduce invasive or noxious weeds.

Recreational opportunities will continue to emphasize dispersed recreation activities on the majority of the geographic area. Rake Creek area will be managed to protect its rugged, unroaded character and motorized travel is restricted. Based on public interest, the development of a trailhead and trails in the Rake Creek backcountry nonmotorized area is desired, as is a Watchable Wildlife interpretive trail around Kadoka Lake.

The desired condition for upland grassland is to perpetuate diverse and healthy mixed grass communities that provide a mosaic grassland structure levels. Woody draws/riparian woodlands will be managed to perpetuate multiple layers and age classes of vegetation including herbaceous plants, shrubs, and trees. Principle woody species include green ash, chokecherry, buffaloberry, snowberry, cottonwood, and willow. Wetlands/aquatic areas will emphasize healthy submergent and emergent vegetative cover along the shorelines, while reducing sediment levels to maintain high quality aquatic habitat. Special plant and wildlife habitat areas around Kadoka Lake and Weta Dam will provide high grassland structure levels for waterfowl nesting. Prairie dog colonies will be managed to maintain low structure grassland habitat in management area 3.63 within this geographic area.

Important Attributes

- Kadoka Lake wetland and waterfowl production area
- Abundant agate/rock beds
- Scenic badlands terrain
- Fourteen mile long Prairie Bike Trail
- Rake Creek backcountry nonmotorized recreation area

Management Area Prescription Allocation

Number	Prescription	Acres		
1.31	Backcountry Recreation Nonmotorized	12,030		
3.63	Black-footed Ferret Reintroduction Habitat	~~5,130~~	~~0~~	3,283
3.64	Special Plant and Wildlife Habitat	1,160		
6.1	Rangeland with Broad Resource Emphasis	~~76,170~~	~~81,300~~	78,012

See Appendix A FEIS – Maps, Proposed change to management area prescription 3.63 Black-footed ferret Reintroduction Habitat. (Amendment 2)

Geographic Area Direction -- Objectives

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs. The focus in the Wall Southeast Geographic Area is on grass and grass-like plants.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a "shifting mosaic" of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass-like species across a majority of the Geographic Area. This mix provides suitable opportunity to meet vegetation structure objectives and provide for floristic diversity.

The following section describes the specific vegetative composition and structure objectives for the Wall Southeast Geographic Area:

Composition

1. The desired plant species composition objective across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
20 to 40%	30 to 50%	10 to 30%	1 to 20%

In late seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of mid grasses and to a lesser extent tall grasses, the moderately productive soils (dense clay and shallow clay range sites) should be comprised of mid grasses, while the less productive thin claypan and claypan range sites should be comprised of mid grasses and short grasses. On clayey and silty range sites western wheatgrass, green needlegrass, needleandthread, sideoats grama, and little bluestem are the primary mid grasses and big bluestem should make up the majority of the tall grass. The dense clay range sites are comprised of mainly western wheatgrass and green needlegrass to a lesser extent. On shallow clay range sites, found primarily on the slopes, western wheatgrass, and green needlegrass occur in amounts

approximately equal to big bluestem, little bluestem, and sideoats grama. Western wheatgrass, blue grama, and buffalograss should dominate the less productive thin claypan and claypan range sites. The mix of grasses making up the codominance on all range sites in late seral stage will fluctuate according to precipitation and/or grazing intensities. Tall grasses such as big bluestem, switchgrass, and prairie sandreed should be expressed in the overflow or run-in sites.

In late intermediate seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of mid grasses and to a lesser extent short grasses and tall grasses. The moderately productive soils (dense clay and shallow clay range sites) should be comprised of mid grasses and short grasses, while the less productive thin claypan and claypan range sites should be comprised of short grasses and to a lesser extent mid grasses. The dominant grass species on clayey and silty range sites in ate intermediate seral stage should be western wheatgrass with the codominance made up of needleandthread, blue grama, and sedges. Dense clay range sites are comprised mainly of western wheatgrass. On shallow clay range sites little bluestem, western wheatgrass, and sideoats grama are the dominant species while blue grama and sedges become more abundant. Blue grama, buffalograss and to a lesser extent western wheatgrass will dominate the less productive thin claypan and claypan range sites. The mix of grasses making up the codominance on all range sites in late intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses, mainly western wheatgrass and green needlegrass.

In early intermediate seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of short grasses and to a lesser extent mid grasses, the moderately productive soils (dense clay and shallow clay range sites) should be comprised of mid grasses and short grasses, while the less productive thin claypan and claypan range sites should be comprised of short grasses. The dominant grass species on clayey and silty range sites in the early intermediate seral stage should be blue grama, buffalograss, western wheatgrass, needleandthread, and sedges. Dense clay range sites are comprised mainly of western wheatgrass and an increasing number of forbs. On shallow clay range sites blue grama and threadleaf sedge dominate the sites, while little bluestem is the remaining mid grass component. Less productive thin claypan and claypan range sites will be dominated by annual grasses and cactus. The mix of grasses making up the codominance in early intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses and short grasses; mainly western wheatgrass, needleandthread, and blue grama.

In early seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of short grasses with few, if any, mid grasses. The moderately productive soils (dense clay and shallow clay range sites) should be comprised of short grasses with few mid grasses, while the less productive thin claypan and claypan range sites should be comprised of short grasses. The early seral stage will be dominated by sedges, and short grasses such as blue grama, buffalograss and annual grasses on all range sites. The mix of grasses making up the codominance in early seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be dominated by short grasses and to a lesser extent mid grasses.

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
30 to 40%	35 to 45%	20 to 30%

High vegetation structure can be achieved on moderately and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderately to highly productive soils but dominated by short statured species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderately to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within this geographic area receiving light to moderate levels of livestock use should be in the late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in the early intermediate or early seral stages will not achieve moderate structure under even light grazing levels.

Minimally productive soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Smooth Goosefoot

1. Prioritize and initiate target surveys for smooth goosefoot. **Objective**

Fire

1. Prescribe burn a minimum of 500 acres per decade to achieve the following desired condition objectives:

- Promote vegetative diversity
- Improve wildlife habitat
- Stimulate riparian/woody draw regeneration
- Control or reduce invasive plants/noxious weeds. **Objective**

Rest

1. Rest 1-10 percent of the suitable rangeland each year. **Objective**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- Provide diverse and quality grassland habitat across the geographic area at levels that, in combination with habitat on adjoining lands, helps support stable to increasing populations of sharp-tailed grouse and other wildlife with similar habitat needs. **Objective**
- Establish and maintain quality nesting and brooding habitat for sharp-tailed grouse (see Appendix H) and associated wildlife by meeting vegetation objectives for high structure within 10 years. **Objective**

Black-tailed Prairie Dog (Amendment 3)

- Apply adaptive management strategies to provide objectives for 1,000 minimum and 2,700 maximum acres of active prairie dog colonies within the interior-colony management zones. If maximum acreage objective is exceeded, refer to Chapter 1, H. Animal Damage Control for management direction. **Objective**
- Increase black-tailed prairie dog populations over the next 10-to 15 years. **Objective**
- Maintain or expand the current distribution of black-tailed prairie dogs across the geographic area over the next 10 to 15 years. **Objective**

2. Threatened, Endangered and Sensitive Species:

Sturgeon Chub

- In cooperation with other conservation agencies and organizations, conduct inventories as needed in the Cheyenne and White Rivers and tributaries to establish baseline population and distribution information so that appropriate population trend objectives can be established. **Objective**
- In cooperation with other conservation agencies and organizations, assess the potential impacts of the construction of additional small impoundments in upper watersheds on hydrologic flow and patterns on downstream sturgeon chub habitat. **Objective**

3. Kadoka Lake and Weta Dam are special wetland/aquatic habitat areas in this geographic area (3.64 Special Plant and Wildlife Habitat Management Area). These areas will be managed to enhance and maintain their special plant and wildlife habitat for waterfowl and shorebirds as follows:

- Provide diverse and quality wetland/aquatic habitat in these special management areas at levels that help support stable to increasing populations of waterfowl and other associated wildlife with similar habitat needs. **Objective**
- Establish and maintain quality nesting and brooding habitat on adjacent upland grasslands for waterfowl and associated wildlife within 10 years. **Objective**

Recreation

1. Develop trailhead and hiking/horseback trails for the Rake Creek backcountry nonmotorized area. **Objective**

2. Develop Watchable Wildlife interpretive trail around Kadoka Lake. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use current monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help design and implement range management strategies for meeting desired vegetation objectives. **Standard**

Smooth Goosefoot

1. Conduct target surveys in priority areas to determine if smooth goosefoot or suitable habitat occurs in the geographic area. Protect populations that are found in the geographic area and maintain suitable habitat for these populations. **Standard**

2. Prioritize control of noxious weeds in habitat occupied by smooth goosefoot. Restrict activities that contribute to invasive and non-native plant species into occupied habitat. **Standard**

3. Monitor ORV use in occupied habitat and implement travel management restrictions if smooth goosefoot populations are at risk. **Standard**

Livestock Grazing

1. Continue to emphasize combining pastures and allotments to achieve desired condition objectives (wildlife habitat, botanical, range management, visual quality, and recreation). **Guideline**

2. In areas where sharp-tailed grouse and waterfowl production to are emphasized, utilize light to moderate stocking levels on allotments with large pastures to achieve a mosaic of vegetation structure that provides high structure intermittently across the allotment. Utilize skim or rest on allotments with small pastures that fail to provide sufficient high cover levels. **Guideline**

Infrastructure

1. New structural improvements (fences and water developments) may be constructed as needed to achieve desired condition objectives (wildlife habitat, botanical, range management, visual quality, and recreation. **Guideline**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- A range of 30 to 40% of the acres is prescribed for high structure grasslands in this geographic area. A substantial amount of this acreage should be located where it would optimize habitat for sharp-tailed grouse and associated species. The following criteria will be considered during site-specific project level planning to help determine the best locations to manage for high structure grasslands:
  - Presence of moderately to highly productive soils and range sites,
  - Proximity to sharp-tailed grouse display grounds,
  - Proximity to shrub habitats, private croplands and other sharp-tailed grouse foraging habitats. **Guideline**
- Establish and maintain quality foraging habitat for sharp-tailed grouse and associated species by enhancing and/or maintaining diverse forb species and regenerating shrub patches and the shrub component of wooded draws and riparian habitats. **Guideline**

Black-tailed Prairie Dog (Amendment 3)

- Refer to Chapter 1 (Sections F and/or H) for standards and guidelines.

2. Threatened, Endangered and Sensitive Species:

Sturgeon Chub

- To assist in maintaining the current quantity and quality of aquatic habitat for this species, do not authorize land uses or developments that would measurably and cumulatively further degrade sturgeon chub habitat, including reducing downstream flows. **Guideline**
- Conduct project-level biological evaluations assessing potential downstream risks to this species from proposed projects that may have the potential to significantly alter sturgeon chub habitat or reduce downstream flows. This includes sand and gravel dredging and small impoundment construction in upper watersheds. **Guideline**

3. Kadoka Lake and Weta Dam are special wetland/aquatic habitat areas in this geographic area. Collectively, these areas will be managed to maintain 500-600 acres of high structure grassland vegetation to enhance their special habitat for waterfowl and shorebirds. **Guideline**

WALL SOUTHWEST GEOGRAPHIC AREA

Buffalo Gap National Grassland - Wall Ranger District

Setting

The Wall Southwest Geographic Area includes ~~approximately 102,500~~ 102,580 acres (ref. Cole Draw Land Exchange 2008) of National Forest System lands in the southwestern and south central portions of the Wall Ranger District.

The climate of the Wall Southeast Geographic Area can be classified as semi-arid Continental. Local weather can be highly variable and unpredictable. Temperatures can range from 20 degrees below zero Fahrenheit in the winter to more than 100 degrees Fahrenheit in the summer. Precipitation levels average 16.5 inches per year with the majority falling as rain from about April to July.

The topography of the area can be divided into two distinct areas. The flat-bottomed Conata Basin includes small inclusions of badlands features, and the "Wall," a steep badlands escarpment that rises 800 feet to the north. The Indian Creek area consists of very steep juniper breaks with large intermingled badland formations, located toward the western portion of this geographic area. Major distinguishing features include the extensive prairie dog complex of Conata Basin and the rugged, fossil-rich badlands and juniper breaks of the Indian Creek country. Drainages flow primarily to the northwest into the Cheyenne River, or southeast toward White River. Elevations range from approximately 2,200 feet above sea level along White River to about 2,600 feet above sea level at the top of the "Wall."

Upland grassland is the primary vegetation/habitat type covering nearly 63% of the geographic area. The soils are moderately productive on this geographic area, providing a range of forage production annually from 1,000 to 1,800 pounds per acre. Nearly 60 percent of the upland grassland habitat consists of highly productive range sites and only 6 percent consists of minimally productive range sites. Native vegetation is dominated by mid grasses and short grasses with a variety of forbs. This mixed grass prairie is made up of cool-season and warm-season plants that provide diverse habitat for a variety of wildlife species and forage for livestock. Principle grass species are western wheatgrass, green needlegrass, needleandthread, sideoats grama, blue grama, buffalograss, little bluestem, and big bluestem. The next largest habitat type in the geographic area is badlands (22%). Badlands are barren, highly eroded lands with little or no vegetation. Badlands provide unique habitat for some plants and animals that are suited to open, barren soils.

This geographic area contains one of the largest complexes of prairie dog colonies on public lands and comprises nearly 9% of the geographic area. There are over 75 individual colonies varying in size from a few acres to over one thousand acres. The vegetation is dominated by a mixture of short grasses and forbs. Prairie dog colonies are a unique component of the upland grasslands and provide habitat for a number of TES species. Currently (2000), this geographic area hosts the world's most successful black-footed ferret reintroduction program. Over 140 adult ferrets, many of which were born in the wild, are repopulating the area's prairie dog colonies.

The balance of the geographic area is comprised of a variety of vegetation/habitat types,

including the sagebrush habitat type (3%), which is found along several of the major floodplain areas scattered throughout this geographic area. This habitat type is dominated by silver sagebrush with a variety of interspersed grass species. Juniper breaks (1%) are a unique habitat type that occurs primarily along the Cheyenne River west of Scenic. This habitat type provides critical hiding cover and thermal cover for a number of wildlife species. The woody draw/riparian woodlands habitat type (1%) provides the highest diversity of both plant and animal life in the geographic area.

The primary creeks and drainages flowing northward toward the Cheyenne River include Spring Draw, Indian Creek, Little Corral Draw, Big Corral Draw, Nevis Draw and Bear Creek. The Cheyenne River also flows through this geographic area. Primary creeks and drainages flowing southward toward White River include Cain Creek and Big Hollow Creek. Wetland/aquatic habitat is unusual in this geographic area (1%). Most are constructed water impoundments that significantly benefit waterfowl production.

Currently, there are no developed recreational facilities within this geographic area. Motorized travel has been restricted in the Indian Creek area since 1984. The primary dispersed recreational opportunities within this geographic area include big game hunting, upland game hunting, waterfowl hunting, rockhounding, wildlife viewing, mountain biking, hiking, fishing, and camping

Desired Conditions

The desired landscape condition is to maintain the undeveloped character and scenic integrity of the grasslands, intermingled prairie dog colonies, and rugged badlands.

The streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

Grazing management and prescribed fire will be used as tools to enhance the grass and forb vegetative diversity, stimulate woody plant regeneration and reduce invasive or noxious weeds. Recreational opportunities will continue to emphasize dispersed recreation activities on the majority of the geographic area. Indian Creek area will be managed to protect its rugged, unroaded character and is recommended for Wilderness designation. Based upon public interest, a primitive campground/trailhead and trails in the Indian Creek proposed wilderness area are desired.

The desired condition for the upland grassland is to perpetuate diverse and healthy mixed grass communities that provide a mixture of grassland structure levels. Grassland structure will be managed to promote prairie dog expansion, primarily adjacent to Badlands National Park and the core ferret reintroduction areas. Higher structure levels will be maintained adjacent to private lands to discourage prairie dog encroachment.

The woody draws/riparian woodlands/cedar breaks will be managed to perpetuate multiple layers and age classes of vegetation including herbaceous plants, shrubs, and trees. Wetlands/aquatic areas will emphasize healthy submergent and emergent vegetative cover along the shorelines, while reducing sediment levels to maintain high quality aquatic habitat.

Important Attributes

- Significant Cretaceous Period and Oligocene Epoch fossil resources
- Agate/rock beds
- The world's most successful black-footed ferret recovery program
- Vast black-tailed prairie dog complex
- Wilderness quality badlands backcountry

Management Area Prescription Allocation

Number	Prescription	Acres
1.2/2.1	Recommended for Wilderness/Special Interest Areas	27,600
3.63	Black-footed Ferret Reintroduction Habitat	73,590
6.1	Rangeland with Broad Resource Emphasis	~~2,690~~ 2,770 (ref. Cole Draw Land Exchange 2008)

Geographic Area Direction -- Objective

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs. The focus in the Wall Southwest Geographic Area is on grass and grass-like plants.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a "shifting mosaic" of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass like species across a majority of the Geographic Area. This mix provides suitable opportunity for meeting vegetation structure objectives and providing for floristic diversity.

The following section describes the specific vegetative composition and structure objectives for the Wall Southwest Geographic Area:

Composition

1. The desired plant species composition objective across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
20 to 40%	20 to 40%	10 to 30%	10 to 30%

In late seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of mid grasses and to a lesser extent tall grasses. Moderately productive soils (dense clay and shallow clay range sites) should be comprised of mid grasses, while the less productive thin claypan and claypan range sites should be comprised of mid grasses and short grasses. On clayey and silty range sites western wheatgrass, green needlegrass, needleandthread, sideoats grama, and little bluestem are the primary mid grasses and big bluestem should make up the majority of the tall grass. Dense clay range sites are comprised mainly of western wheatgrass and green needlegrass to a lesser extent. On shallow clay range sites, found primarily on the slopes, western wheatgrass, and green needlegrass occur in amounts approximately equal to big

bluestem, little bluestem, and sideoats grama. Western wheatgrass, blue grama, and buffalograss should dominate the less productive thin claypan and claypan range site. The mix of grasses making up the codominance on all range sites in late seral stage will fluctuate according to precipitation and/or grazing intensities. Tall grasses such as big bluestem, switchgrass, and prairie sandreed should be expressed in the overflow or run-in sites.

In late intermediate seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of mid grasses and to a lesser extent short grasses and tall grasses. Moderately productive soils (dense clay and shallow clay range sites) should be comprised of mid grasses and short grasses, while the less productive thin claypan and claypan range sites should be comprised of short grasses and to a lesser extent mid grasses. The dominant grass species on clayey and silty range sites in late intermediate seral stage should be western wheatgrass with the codominance made up of needleandthread, blue grama, and sedges. Dense clay range sites are comprised mainly of western wheatgrass. On shallow clay range sites little bluestem, western wheatgrass, and sideoats grama are the dominant species while blue grama and sedges become more abundant. Blue grama, buffalograss and to a lesser extent western wheatgrass will dominate the less productive thin claypan and claypan range sites. The mix of grasses making up the codominance on all range sites in late intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses, mainly western wheatgrass and green needlegrass.

In early intermediate seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of short grasses and to a lesser extent mid grasses. Moderately productive soils (dense clay and shallow clay range sites) should be comprised of mid grasses and short grasses, while the less productive thin claypan and claypan range sites should be comprised of short grasses. The dominant grass species on clayey and silty range sites in early intermediate seral stage should be blue grama, buffalograss, western wheatgrass, needleandthread, and sedges. The dense clay range sites are comprised of mainly western wheatgrass and an increasing number of forbs. On shallow clay range sites, blue grama and threadleaf sedge dominate while little bluestem is the remaining mid grass component. Less productive thin claypan and claypan range sites will be dominated by annual grasses and cactus. The mix of grasses making up the codominance in early intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses and short grasses; mainly western wheatgrass, needleandthread, and blue grama.

In early seral stage, more productive soils (clayey and silty range sites) should be comprised mainly of short grasses with little if any presence of mid grasses. Moderately productive soils (dense clay and shallow clay range sites) should be comprised of short grasses with little presence of mid grasses, while the less productive thin claypan and claypan range sites should be comprised of short grasses. Early seral stage will be dominated by sedges, short grasses such as blue grama, buffalograss, and annual grasses on all range sites. The mix of grasses making up the codominance in early seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be dominated by short grasses and to a lesser extent mid grasses.

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
25 to 35%	35 to 45%	25 to 35%

High vegetation structure can be achieved on moderately and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderately to highly productive soils but dominated by short statured species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderately to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within this geographic area receiving light to moderate levels of livestock use should be in the late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in the early intermediate or early seral stage will not achieve moderate structure under even light grazing levels.

Minimally productive soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Smooth Goosefoot

1. Prioritize and initiate target surveys for smooth goosefoot. **Objective**

Fire

1. Prescribe burn a minimum of 500 acres per decade to achieve the following desired condition objectives:

- Promote vegetative diversity
- Improve wildlife habitat
- Stimulate riparian/woody draw regeneration
- Control or reduce invasive plants/noxious weeds. **Objective**

Rest

1. Rest 1-10 percent of the suitable rangeland each year. **Objective**

Wildlife, Fish and Rare Plants

1. Management Indicator Species:

Black-tailed Prairie Dog

- To help increase prairie dog populations and habitat for associated species, enhance and maintain three or more prairie dog colony complexes in this geographic area. Colonies protected by conservation agreements or easements on adjoining land jurisdictions, including private, shall be considered part of a complex. **Objective**

2. Threatened, Endangered and Sensitive Species:

Sturgeon Chub

- In cooperation with other conservation agencies and organizations, conduct inventories as needed in the Cheyenne and White Rivers and tributaries to establish baseline population and distribution information so that appropriate population trend objectives can be established. **Objective**
- In cooperation with other conservation agencies and organizations, assess the potential impacts of the construction of additional small impoundments in upper watersheds on hydrologic flow and patterns on downstream sturgeon chub habitat. **Objective**

Recreation

1. Develop primitive campground/trailhead and hiking/horseback trails in Indian Creek area. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use current monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help design and implement range management strategies for meeting desired vegetation objectives. **Standard**

Smooth Goosefoot

1. Conduct target surveys in priority areas to determine if smooth goosefoot or suitable habitat occurs in the geographic area. Protect populations that are found in the geographic area and maintain suitable habitat for these populations. **Standard**

2. Prioritize control of noxious weeds in habitat occupied by smooth goosefoot. Restrict activities that contribute to invasive and non-native plant species into occupied habitat. **Standard**

3. Monitor ORV use in occupied habitat and implement travel management restrictions if smooth goosefoot populations are at risk. **Standard**

Livestock Grazing

1. Continue to emphasize combining pastures and allotments to achieve desired condition objectives (wildlife habitat, botanical, range management, visual quality, and recreation). **Guideline**

2. In areas where sharp-tailed grouse and waterfowl production are emphasized, utilize light to moderate stocking levels on allotments with large pastures to achieve a mosaic of vegetation structure that provides high structure intermittently across the allotment. Utilize skim or rest on allotments with small pastures that fail to provide sufficient high cover levels. **Guideline**

Infrastructure

1. New structural improvements (fences and water developments) may be constructed as needed to achieve desired condition objectives (wildlife habitat, botanical, range management, visual quality, and recreation. **Guideline**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Black-tailed Prairie Dog

- Continue to emphasize an active landownership adjustment program in this geographic area in an attempt to reduce private land conflicts over prairie dog management and to enhance long-term management opportunities for expanding prairie dog populations in this area. **Guideline**
- In cooperation and coordination with the state wildlife agency, relocate prairie dogs as needed to establish new colonies or re-establish past colonies in this geographic area. **Guideline**
- Refer to Chapter 1 (Sections F and H) and Chapter 3 (Management Area 3.63) for additional standards and guidelines.

2. Threatened, Endangered, and Sensitive Species:

Sturgeon Chub

- To assist in maintaining the current quantity and quality of aquatic habitat for this species, do not authorize land uses or developments that would measurably and cumulatively further degrade sturgeon chub habitat, including reducing downstream flows. **Guideline**
- Conduct project-level biological evaluations assessing potential downstream risks to this species from proposed projects that may have the potential to significantly alter sturgeon chub habitat or reduce downstream flows. This includes sand and gravel dredging and small impoundment construction in upper watersheds. **Guideline**

FORT PIERRE GEOGRAPHIC AREA

Fort Pierre National Grassland

Setting

The Fort Pierre Geographic Area includes about ~~116,080~~ 115,890 acres (ref. FS-383 Land Areas of the National Forest System 9/30/2008)of National Forest System lands that are administered as Fort Pierre National Grassland. The office is in Pierre, South Dakota.

The area's climate is semi-arid Continental. Warm summers have frequent hot spells. Winters can be very cold, when arctic winds penetrate from the north. Average temperatures are 72 degrees Fahrenheit in summer and 19 degrees in winter. Average annual precipitation is about 18 inches, with most occurring between April and September. Blizzards and thunderstorms with hail occur seasonally.

The area is a gently rolling plain with few trees. Elevation ranges from about 1,550 to 2,238 feet above sea level. Drainages include Sand Creek, Timber Creek, Cedar Creek, Antelope Creek, Gray Blanket Creek, Stony Butte Creek, Porcupine Creek, and East Branch of War Creek. These intermittent streams flow mainly east and north to the Missouri River.

Upland mixed-grass prairie is the vegetation/habitat type over most of the national grassland. Western wheatgrass is the most prevalent grass species, growing on diverse sites. Green needlegrass and buffalograss also grow on the deep clays of ridge tops and flats. Side-oats grama, big bluestem, little bluestem, and blue grama grow on more shallow, sloping clays. Woody vegetation growing along drainages includes cottonwood, wild plum, willow, and western snowberry. Much flat or gently sloping private land in the area has been plowed to produce wheat, sunflowers, sorghum, corn, or alfalfa hay.

Prairie dog colonies occupy about 600 acres on the national grassland.

Over 150 ponds, ranging in size from less than an acre to over 20 acres, have been constructed in intermittent drainages. All provide waterfowl habitat. Some offer fishing for large-mouthed bass and panfish, such as bluegill, crappie or yellow perch.

There are no developed recreation sites in this geographic area.

Desired Conditions

The desired condition is to perpetuate diverse and healthy mixed-grass communities. This includes both cool-season and warm-season species, such as western wheatgrass, green needlegrass, buffalograss, side-oats grama, big bluestem, little bluestem, and blue grama. Hardwood draws will be managed to perpetuate multiple layers and age classes of herbaceous plants, shrubs, and trees. Cottonwood, wild plum, chokecherry, willow, and western snowberry will grow in suitable draws. Streams and riparian areas will maintain soil moisture to perpetuate riparian plant communities with strong root masses. Prairie cordgrass, bulrush, spikerush, and cattail will line suitable drainages. Streams and riparian areas should function properly or be in an upward trend.

Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

To provide habitat for viable populations of all wildlife species, a mixture of vegetation composition and structure will be provided. Vegetation structure plays a very important role in determining habitat suitability for various species.

A relatively small percent of the area will be maintained in low composition and structure to support viable black-tailed prairie dog populations. Prairie dog colonies serve as important habitat for other species of wildlife, some of whose low region-wide populations are of concern.

Grass of moderate height and density will provide adequate habitat for many birds, mammals and other classes of wildlife. Over a significant area, high, dense cover will be left after the grazing season for birds that require more cover and nest on the ground early in the spring, such as sharp-tailed grouse, prairie chickens, and some species of ducks. Controlled livestock grazing will provide a variety of different grass structures for various wildlife species that depend on both tall and short grass structure.

Tall and dense grass cover also improves the hunting experience by acting as "holding cover" for sharp-tailed grouse and prairie chickens. Upland game birds find security in such cover and will be less apt to flush beyond shooting range. Upland bird hunting is an important and growing activity in this geographic area. A significant percent of the area should display these conditions, in which bird hunters will perceive that their efforts can be successful.

The desired landscape condition is to maintain open, scenic plains. Recreationists should perceive that they are visiting an expansive native mixed-grass prairie. Small areas of excessive cattle grazing impacts will exist, such as around water sources, but will be minimized. During fair weather, visitors should have little trouble traveling designated roads and trails, and no difficulty opening and closing gates. A significant percent of the area should display the desired landscape conditions to provide recreationists an opportunity to view or hunt wildlife.

Important Attributes

- Nationally known sharp-tailed grouse and greater prairie chicken habitat and populations
- Abundant birdwatching opportunities in a natural setting
- Plentiful warm-water fishing opportunities in a grassland setting
- Abundant opportunities to view open, scenic mixed-tall grass prairie landscapes

Management Area Prescription Allocation

Number	Prescription	Acres
2.2	Research Natural Areas (Mallard South)	1,030
3.64	Special Plant and Animal Habitats include:	895 combined
	Richland Wildlife Area	540
	Sheriff Dam area	120
	Mallard D.U. Dam	80
	Bower D. U. Dam	42
	Reservation Rd. Triangle	65
	Highway 83 Triangle	32

Number	Prescription	Acres
	Alkali West Exclosure	5
	Smith Dam Exclosure	4
	Reed Ranch Shelterbelt	5
	Cookstove Shelterbelt	2
6.1	Rangeland with Broad Resource Emphasis	114,160

Geographic Area Direction – Objectives

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs. The focus in the Fort Pierre Geographic Area is on grass and grass-like plants.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a shifting mosaic of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass like species across a majority of the Geographic Area. This mix provides suitable opportunity for meeting vegetation structure objectives and providing for floristic diversity.

The following section describes the specific vegetative composition and structure objectives for the Fort Pierre Geographic Area:

Composition

1. The desired plant species composition objective across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
20 to 40%	30 to 50%	10 to 30%	1 to 20%

In late seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent tall grasses. On clayey, silty, and thin upland soils western wheatgrass, green needlegrass, porcupinegrass, sideoats grama, and little bluestem are the primary mid grasses and big bluestem should make up the majority of the tall grass. Western wheatgrass, blue grama, and buffalograss should dominate the less productive claypan soil types. Tall grasses such as big bluestem, switchgrass, and prairie sandreed should be expressed in the overflow or run-in sites.

In late intermediate seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of mid grasses and to a lesser extent short grasses. Less productive claypan soils should be comprised of short grasses and to a lesser extent mid grasses. The dominant grass species in late intermediate seral should be western wheatgrass with the codominance made up of needleandthread, porcupinegrass, blue grama, and sedges. The mix of grasses making up the codominance in late intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses, mainly western wheatgrass and green needlegrass.

In early intermediate seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses and to a lesser extent mid grasses. Less productive claypan soils should be comprised of short grasses. The dominant grass species in early

intermediate seral stage should be blue grama, buffalo grass, western wheatgrass, needleandthread, and sedges The mix of grasses making up the codominance in early intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses and short grasses; mainly western wheatgrass, needleandthread, and blue grama.

In early seral stage, more productive soils (clayey, silty, and thin upland soils) should be comprised mainly of short grasses with few, if any, mid grasses. Less productive claypan soils should be comprised of short grasses. The early seral stage will be dominated by sedges, clubmoss, and short grasses such as blue grama and buffalograss on all soil types. Overflow sites will be dominated by short grasses and to a lesser extent mid grasses. The early seral stage should be emphasized on less productive claypan soil types, in and around prairie dog towns, and in isolated areas of high livestock use.

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
30 to 50%	30 to 50%	10 to 30%

High vegetation structure can be achieved on moderately and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderately to highly productive soils but dominated by short statured species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderately to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within this geographic area receiving light to moderate levels of livestock use should be in the late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in early intermediate or early seral stages will not achieve moderate structure under even light grazing levels.

Minimally productive soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Fire

1. Prescribe burn a minimum of 1,000-5,000 acres per decade. **Objective**

Infrastructure

1. Increase the average pasture size by 25 percent over the decade. **Objective**

Rest

1. Maintain at least 10 percent of the suitable rangeland in rest each year. **Objective**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- Provide diverse and quality grassland habitat across this geographic area at levels that, in combination with habitat on adjoining lands, help support stable to increasing sharp-tailed grouse populations (long-term trends) and viable populations of other wildlife species with similar habitat needs. **Objective**
  - Establish and maintain quality nesting and brooding habitat for sharp-tailed grouse (Appendix H) and associated wildlife by meeting vegetation objectives for high structure within 10 years. **Objective**

Greater Prairie Chicken

- Provide diverse and quality grassland habitat across the geographic area at levels that, in combination with habitat on adjoining lands, helps support stable to increasing prairie chicken populations (long-term trends) across this national grassland. **Objective**
- Establish and maintain quality nesting and brooding habitat for prairie chickens (Appendix H) and associated wildlife by meeting vegetation objectives for high structure within 10 years. **Objective**

Black-tailed Prairie Dog

- To increase prairie dog populations and habitat for associated species, establish one or more prairie dog colony complexes in the northeast portion (Sand and Timber Creek drainages) of this geographic area over the next 10 to 15 years. Colonies protected by conservation agreements or easements on adjoining land jurisdictions, including private and tribal, may be considered part of a complex. **Objective**
- Apply adaptive management strategies to provide objectives for 1,000 minimum and 3,500 maximum acres of active prairie dog colonies within the interior-colony management zones. If maximum acreage objective is exceeded, refer to Chapter 1, H. Animal Damage Control for management direction. **Objective** (Amendment 3)

Recreation

1. Within the life of the plan develop a trailhead facility and horse/hiking trail (Burnt Thigh) on the east half of the Fort Pierre National Grassland. **Objective**

2. Continue with the current travel restrictions for recreation travel between the dates or September 1 and November 30 that requires motorized vehicles to stay within 30 feet of the designated roads on the Fort Pierre National Grassland. **Standard**

3. Provide for an interpretive site along highway 83 in conjunction with the new construction scheduled within the next five years. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use current monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help design and implement range management strategies for meeting desired vegetation objectives. **Standard**

Infrastructure

1. Allow no net decrease in the average pasture size. **Guideline**

2. Allow no net gain in the number of water developments, while maintaining or increasing the surface area covered by ponds providing brood habitat for waterfowl and fisheries. **Guideline**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- A range of 30-50% of this geographic area is prescribed for high structure grasslands. A substantial amount of this acreage should be located where it would optimize habitat for sharp-tailed grouse and associated species. The following criteria will be considered during site-specific project level planning to help determine the best locations to provide high-structure grasslands:
  - Presence of moderate to highly productive soils and range sites
  - Proximity to sharp-tailed grouse display grounds
  - Proximity to shrub habitats and private croplands. **Guideline**
- Establish and maintain quality winter foraging habitat for sharp-tailed grouse and associated wildlife by enhancing and/or maintaining diverse forb species in grassland communities and regenerating shrub patches and the shrub component of wooded draws and riparian habitats. **Guideline**

Greater Prairie Chicken

- A range of 30-50% of this geographic area is prescribed for high structure grasslands. A substantial amount of this acreage should be located where it would optimize habitat for sharp-tailed grouse and associated species. The following criteria will be considered during site-specific project level planning to help determine the best locations to manage for high structure grasslands:
  - Presence of moderate to highly productive soils and range sites,
  - Proximity to prairie chicken display grounds,
  - Proximity to shrub habitats, private croplands and other prairie chicken habitats. **Guideline**
- Establish and maintain quality foraging habitat for greater prairie chicken and associated species by enhancing and/or maintaining a diversity of forb species in grassland communities and regeneration of shrubs in thickets and wooded draws. **Guideline**

Black-tailed Prairie Dog

- Encourage land exchanges in the northeast portion of this geographic area to reduce conflicts over prairie dog management and to enhance long-term management opportunities for expanding prairie dog populations in this area. Land exchanges may need to be completed in some locations before some of the following guidelines may be fully implemented. **Guideline**
- Manage livestock grazing in the northeast portion of this geographic area to encourage prairie dog colony expansion in interior areas and to slow expansion along property boundaries. The appropriate livestock grazing strategies for individual areas will be identified as site-specific management plans are revised. **Guideline**
- In cooperation and coordination with the state wildlife agency, restrict prairie dog shooting in the northeast part of this geographic area as needed to encourage prairie dog population expansion. **Guideline**
- In cooperation and coordination with the state wildlife agency, relocate prairie dogs as needed to establish new colonies or to re-establish past colonies in the northeast part of this geographic area. **Guideline**
- Refer to Chapter 1 (Sections F and H) for additional standards and guidelines.

OGLALA GEOGRAPHIC AREA

Oglala National Grassland - Pine Ridge Ranger District

Setting

The Oglala Geographic Area encompasses 94,174 acres of National Forest System lands in northwestern Nebraska. The Pine Ridge Ranger District of the Nebraska National Forest administers the Oglala Geographic Area. The district office is located south of Chadron, Nebraska. Wyoming borders this area on the west and South Dakota on the north.

The climate of the Oglala Geographic Area can be classified as semi-arid Continental. Warm summers, cold winters, light precipitation, and frequent changes in the weather characterize the climate. Temperature extremes, as recorded at Fort Robinson (near Crawford, Nebraska), range from minus 37 degrees Fahrenheit to 110 degrees Fahrenheit. About 80 percent of precipitation falls between April and September. The average annual precipitation ranges from about 15 inches at Ardmore, South Dakota, located just north of this geographic area, to about 18 inches near Crawford just south of the geographic area. Blizzards generally occur several times each winter, while hail can accompany thunderstorms in the summer.

The topography of the area is a blend of rolling plains and badlands, including highly eroded benches, clay hardpan and bluffs. The major distinguishing landmarks include Toadstool Geologic Park, Roundtop, Wolf Butte and agate beds in the Sugarloaf Butte area.

Drainages flow primarily to the south and east on the southern portions of the geographic area and to the north and east on the northern portions of the geographic area. Elevations range from about 3,600 feet above sea level near Rock Bass Reservoir to about 4,700 feet above sea level at Eagle Eye Rock, about two miles south of Hudson-Meng Bison Bonebed. The White River System drains the southern portions of this geographic area, while the Cheyenne River System drains the northern portions. Primary tributaries in the southern portions of the geographic area include Little Cottonwood, Big Cottonwood and Sand Creeks. Primary tributaries in the northern portions include Whitehead, Antelope, Indian, Hat and Squaw Creeks.

The upland grassland is the primary vegetation/habitat type of the geographic area. Mid grasses dominate the native vegetation, but include short grasses and a variety of forbs. This mixed grass prairie is made up of cool-season and warm-season plants that provide diverse habitat for a variety of wildlife species and forage for livestock. The principle vegetative species are western wheatgrass, green needlegrass, buffalograss, blue grama, sideoats grama, and western snowberry. Other important habitat vegetation includes cottonwood, green ash, boxelder, silver buffaloberry, willow, and silver sage.

Badlands provide a unique habitat for some plants and animals that are suited to open, barren soils. Prairie dog colonies are a unique component of the upland grasslands and provide habitat for a number of TES species. Prairie dog colonies are fairly small and scattered across this geographic area. Although the woody draw/riparian woodland habitat comprises a small portion of the geographic area, this habitat type is critical for many wildlife species. The woody draw/riparian woodlands provide the highest diversity of both plant and animal life in the geographic area. Principle woody species include cottonwood, green ash, boxelder, silver buffaloberry, snowberry, willow and wildrose. The Roundtop area of the Oglala Geographic

Area consists of a ponderosa pine/grassland mix typical of the Pine Ridge Geographic area. The primary creeks and drainages include Sand Creek, Longbranch, Whitehead, Hat Creek, Antelope Creek, Indian and Brush Creeks. Wetland/aquatic habitat is unusual in this geographic area and much of it is located near constructed water impoundments that provide waterfowl habitat and support warm-water fisheries. The sagebrush habitat type is very limited and found along several of the major floodplain areas scattered across this geographic area.

Two developed recreational facilities existing in the Oglala Geographic Area are Hudson-Meng Bison Bonebed and Toadstool Geological Park. The primary dispersed recreational opportunities within this geographic area include big game hunting, limited upland game and waterfowl hunting, wildlife viewing, mountain biking, hiking, fishing, camping, and rock hounding.

Desired Condition

General: The desired landscape condition is to maintain open, scenic plains and vast prairie landscapes.

The streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

Prescribed fire will be used as a management tool to enhance grass and forb vegetative diversity, stimulate woody plant regeneration, and reduce invasive or noxious weeds. Range structures (fences and water developments) will be used to manage livestock to meet vegetative goals and objectives. Recreational opportunities will continue to emphasize dispersed recreation activities on the majority of the geographic area.

Upland Grasslands: These upland areas will be managed perpetuate diverse and healthy mixed grass and forb communities, representing both cool and warm season species such as western wheatgrass, green needlegrass, buffalograss, blue grama, big and little bluestem, threadleaf sedge and forbs. Upland grassland habitat will be managed to provide sufficient residual cover for those wildlife species requiring higher grassland structure levels.

Woody Draws: These draws will be managed to perpetuate multiple layers and age classes of vegetation including herbaceous plants, shrubs, and trees.

Streams and Riparian Areas: These areas will be managed to maintain soil moisture to perpetuate riparian plant communities with strong root masses, emphasize healthy submergent and emergent vegetative cover along streams and shorelines while reducing sediment levels to maintain high quality aquatic habitat. Plant species include sedges, rushes, and willows.

Prairie Dog Colonies: These areas will be managed to maintain and enhance low structure grassland habitat as part of the 10 to 30 percent vegetative structure objective of this geographic area. (Amendment 2)

Important Attributes

- Toadstool Geologic Park Campground, sod house, and badlands scenery
- Hudson-Meng Bison Bonebed archaeology site
- Sugarloaf Agate Beds
- Warbonnet Memorial
- Significant fossil resources, including a prehistoric trackway from the Oligocene Epoch
- Huntable and viewable populations of wildlife, including pronghorn, mule deer, wild turkey, and sharp-tailed grouse
- Sport fisheries in small reservoirs

Management Area Prescription Allocation

Number	Prescription	Acres
2.1	Special Interest Areas	2,040
5.12	General Forest and Rangeland: Range Vegetation Emphasis	2,000
6.1	Rangeland with Broad Resource Emphasis	90,100

Geographic Area Direction - Objectives

Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs. The focus in the Oglala Geographic Area is on grass and grass-like plants.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a "shifting mosaic" of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass like species across a majority of the Geographic Area. This mix provides suitable opportunity for meeting vegetative structure objectives and providing for floristic diversity.

The following section describes the specific vegetative composition and structure objectives for the Oglala Geographic Area:

Composition

1. The desired plant species composition objectives across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
10 to 30%	50 to 70%	10 to 20%	1 to 10%

In the late seral stage, more productive soils (clayey, shallow clay, limy upland, and silty range sites) should be comprised mainly of mid grasses and to a lesser extent tall grasses, while the less productive claypan soils should be comprised of mid grasses and short grasses. On clayey and silty range sites western wheatgrass, green needlegrass, sideoats grama, and little bluestem are the primary mid grasses, and big bluestem should make up the majority of the tall grass. On shallow clay range sites, found primarily on the slopes of the river breaks, western wheatgrass,

ricegrass, and green needlegrass occur in amounts approximately equal to big bluestem, little bluestem, and sideoats grama. Leadplant should also be a common part of the grassland community on the above mentioned range sites in the late seral stage. Western wheatgrass, blue grama, and buffalograss should dominate the less productive claypan range site. Tall grasses such as big bluestem, switchgrass, and prairie sandreed should be expressed in the overflow or run-in sites.

In late intermediate seral stage, more productive soils (clayey, shallow clay, limy upland, and silty range sites) should be comprised mainly of mid grasses and to a lesser extent short grasses, while the less productive claypan soils should be comprised of short grasses and to a lesser extent mid grasses. The dominant grass species on clayey and silty range sites in late intermediate seral stage should be western wheatgrass with the codominance made up of needleandthread, blue grama, and sedges. On shallow clay range sites little bluestem, western wheatgrass, and sideoats grama are the dominant species while blue grama and sedges become more abundant. The mix of grasses making up the codominance on all range sites in late intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses, mainly western wheatgrass and green needlegrass.

In early intermediate seral stage, more productive soils (clayey, shallow clay, limy upland, and silty range sites) should be comprised mainly of short grasses and to a lesser extent mid grasses, while the less productive claypan soils should be comprised of short grasses. The dominant grass species on clayey and silty range sites in early intermediate seral stage should be blue grama, buffalograss, western wheatgrass, needleandthread, and sedges. On shallow clay range sites blue grama and threadleaf sedge dominate the site while little bluestem is the remaining mid grass component. The mix of grasses making up the codominance in early intermediate seral stage will fluctuate according to precipitation and/or grazing intensities. Overflow sites will be made up of mid grasses and short grasses; mainly western wheatgrass, needleandthread, and blue grama.

In early seral stage, more productive soils (clayey, shallow clay, limy upland and silty range sites) should be comprised mainly of short grasses with little if any presence of mid grasses, while the less productive claypan soils should be comprised of short grasses. The early seral stage will be dominated by sedges, and short grasses such as blue grama and buffalograss on all range sites. Overflow sites will be dominated by short grasses and to a lesser extent mid grasses. The early seral stage should be emphasized on less productive claypan range sites, in and around prairie dog towns, and in isolated areas of high livestock use or other persistent disturbances.

Structure

2. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
10 to 30%	50 to 70%	10 to 30%

High vegetation structure can be achieved on moderately and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderately to highly productive soils but dominated by short stature species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderately to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within this geographic area receiving light to moderate levels of livestock use should be in late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in early intermediate or early seral stage will not achieve moderate structure under even light grazing levels.

Minimally productive soils, prairie dog colonies, and grassland areas grazed by livestock at high intensities for an extended season of use provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Fire

1. Prescribe burn a minimum of 1,500 acres per decade to meet objectives based on the following:

- Promote vegetative diversity;
- Improve wildlife habitat;
- Convert exotic vegetation to native vegetation;
- Stimulate riparian/woody draw woody plant regeneration;
- Control or reduce invasive or noxious weeds;
- Stimulate grass and forb growth;
- Reduce fuel loading
- Reduce damaging insect populations. **Objective**

Rest

1. Rest 1-10 percent of the suitable rangeland each year. **Objective**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Black-tailed Prairie Dog

- To help increase prairie dog populations and habitat for associated species, establish a prairie dog colony complex in the geographic area over the next 10 to 15 years. Colonies protected by conservation agreements or easements on adjoining land jurisdictions, including private, may be considered part of a complex. **Objective**
- Apply adaptive management strategies to provide objectives for 1,000 minimum and 2,800 maximum acres of active prairie dog colonies within the interior-colony management zones. If maximum acreage objective is exceeded, refer to Chapter 1, H. Animal Damage Control for management direction. **Objective** (Amendment 3)

Plains Sharp-tailed Grouse

- Over the life of the plan provide diverse and quality grassland habitat across the geographic area at levels that, in combination with habitat on adjoining lands, helps support stable to increasing populations of sharp-tailed grouse and other wildlife with similar habitat needs. **Objective**
- Establish and maintain quality nesting and brooding habitat for sharp-tailed grouse (see Appendix H) and associated wildlife by meeting vegetation objectives for high structure within 10 years. **Objective**
- Establish and maintain quality foraging habitat for sharp-tailed grouse and associated wildlife species by enhancing and/or maintaining a diversity of forb species in grassland communities and regeneration of shrub patches and the shrub component of wooded draws and riparian habitats. **Objective**

Recreation

1. Construct the Prehistoric Prairies Discovery Center and associated trails. **Objective**

Geographic Area Direction – Standards and Guidelines

Vegetation

1. Use current monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help design and implement range management strategies for meeting desired vegetation objectives. **Standard**

General Direction

1. For Management Area Direction 5.12 on the ONG, apply the Pine Ridge Geographic Area wildlife management direction. **Guideline**

Riparian

1. Manage riparian areas to maximize riparian vegetation such as sedges, rushes, willows, cottonwoods and green ash. **Guideline**

Infrastructure

1. New structural range improvements (fences and water developments) may be constructed as needed to achieve desired condition objectives (wildlife habitat, botanical, range management, visual quality and recreation). **Guideline**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Black-tailed Prairie Dog

- Encourage land exchanges in this geographic area to reduce conflicts over prairie dog management and to enhance long-term management opportunities for expanding prairie dog populations. Land exchanges may need to be completed in some locations before some of the following guidelines may be fully implemented. **Guideline**

- Manage livestock grazing to encourage prairie dog colony expansion in interior areas and to slow expansion along property boundaries. The appropriate livestock grazing strategies for individual areas will be identified as site-specific management plans are revised. **Guideline**
- In cooperation and coordination with the state wildlife agency, restrict prairie dog shooting as needed to encourage prairie dog population expansion. **Guideline**
- In cooperation and coordination with the state wildlife agency, relocate prairie dogs as needed to establish new colonies or to re-establish past colonies in this area. **Guideline**
- Refer to Chapter 1 (Sections F and H) and Chapter 3 (Management Area 3.63) for additional standards and guidelines.

Plains Sharp-tailed Grouse

- A range of 10 to 30% of the acres is prescribed for high structure grasslands in this geographic area. A substantial amount of this acreage should be located where it would optimize habitat for sharp-tailed grouse and associated species. The following criteria will be considered during site-specific project level planning to help determine the best locations to manage for high structure grasslands:
  - Presence of moderate to highly productive soils and range sites,
  - Proximity to sharp-tailed grouse display grounds,
  - Proximity to shrub habitats, private croplands and other sharp-tailed grouse foraging habitats. **Guideline**

2. Threatened, Endangered, and Sensitive Species

Mountain Plover (Sensitive Species, Candidate Species)

- Evaluate the effectiveness of large prescribed burns (a section or more in size) in attracting and inventorying mountain plover. Prescribed burns should be timed to provide large blackened areas in the spring. Large flats near prairie dog colonies in the northeast portion of this geographic area should be prioritized for burning. **Standard**
- In cooperation with the U.S. Fish and Wildlife Service and Nebraska Game and Parks Commission, evaluate the desirability and feasibility of trying to establish a nesting population with reintroduced birds. **Standard**
- To help maintain suitable nesting habitat for mountain plover, prohibit development of new facilities within 0.25 miles of known mountain plover nests or nesting areas. This does not apply to pipelines, fences, and underground utilities. **Standard**
- Any net loss of suitable and occupied mountain plover habitat as a result of prairie dog poisoning or development of new facilities within prairie dog colonies will be replaced within the year by concurrent expansion of suitable plover habitat or, in some cases, by enhanced management and protection of occupied plover habitat elsewhere on or near the national grassland. The amount of habitat loss is based on the amount of suitable and occupied habitat available prior to prairie dog dispersal in the year or the poisoning or development. **Guideline**

- To help reduce disturbances and risks to nesting mountain plover, prohibit the following activities in plover nesting areas or within 0.25 miles of plover nests from March 15 through July 31:
    - Construction (e.g., roads water impoundments).
    - Reclamation.
    - Drilling of water wells.
    - Prescribed burning. **Standard**
- To help reduce disturbances and risks to nesting mountain plover, do not authorize the following activities in plover nesting areas or within 0.25 miles of plover nests from March 15 through July 31:
    - Construction (e.g., pipelines, utilities, fencing).
    - Permitted recreation events involving large groups of people.
    - Grasshopper spraying.
    - Prairie dog shooting (in consultation with state wildlife agencies and U.S. Fish and Wildlife Service). **Guideline**
- To help reduce risks to mountain plovers from traffic limit vehicle speeds in occupied mountain plover habitat to 25 mph on resource roads and 35 mph on local roads. **Standard**
- Vegetation management projects in suitable mountain plover habitat will be designed to maintain or improve mountain plover habitat. **Standard**
- To avoid attracting avian predators, new structures and facilities in occupied mountain plover habitat will be designed with low profiles and/or perch-inhibitors. This does not apply to structures and facilities less than 4 feet in height or those not expected to be used as hunting perches by raptors. **Guideline**
- Use the following criteria at the project level to help determine where to use prescribed burning and high livestock grazing intensities (Appendix I) to provide low grassland structure and enhanced mountain plover nesting and brooding habitat:
    - Proximity to existing mountain plover nesting areas.
    - Proximity to prairie dog colonies.
    - Presence of expansive and flat grassland areas. **Guideline**

Swift Fox (Sensitive Species, Candidate Species)

- The northeast portion of this geographic area is near an area on the Buffalo Gap National Grassland that supports swift fox, and there's a high probability that swift fox also uses this part of the Oglala National Grassland. USDA predator (primarily coyote) control activities to reduce livestock losses will be limited in this area to methods that do not pose a significant and direct mortality risk to swift fox. This standard would also apply to any other areas in this geographic area where swift fox are found in the future. **Standard**

PINE RIDGE GEOGRAPHIC AREA

Pine Ridge Ranger District

Setting

The Pine Ridge Geographic Area encompasses ~~about 50,529~~ 50,360 acres (ref. Middle Loop Land Exchange) of National Forest System lands in northwestern Nebraska. The Pine Ridge Ranger District of the Nebraska National Forest manages this geographic area. The district office is located south of Chadron, Nebraska.

The climate of the Pine Ridge Geographic Area can be classified as semi-arid Continental. Warm summers, cold winters, light precipitation, and frequent changes in the weather characterize the climate. Temperature extremes, as recorded near Crawford, Nebraska, range from minus 37-degrees Fahrenheit to 110-degrees Fahrenheit. About 80 percent of precipitation falls between April and September, with annual averages in the 18-inch range.

The topography of the area is dominated by the Pine Ridge, an escarpment of sandstone bluffs that extends just beyond the border in Wyoming, through northwestern Nebraska, then into southwestern South Dakota. The Pine Ridge is characterized by extensive growth of ponderosa pine, with some small inclusions of quaking aspen. Major landmarks and significant areas along the Pine Ridge, west to east, include the Soldier Creek Wilderness, the Pine Ridge National Recreation Area, Coffee Grinder Butte, and Aristocrat Butte. Elevations range between about 3,440 feet above sea level at Bordeaux Creek to 4,600 feet above sea level in the Deadman Creek area.

Drainages flow mainly toward the north (except for South, Middle, and North Forks of Soldier Creek, which flow to the southeast) into the White River and include, west to east, Deadman Creek, Cherry Creek, White Clay Creek, Saw Log Creek, West Ash Creek, East Ash Creek, Indian Creek, Cunningham Creek, Dead Horse Creek, Chadron Creek and Bordeaux Creek.

Vegetation consists of a grass/forest mix dominated by ponderosa pine, cool-season and warm-season grasses, and a variety of forbs. This vegetative mix provides a diverse habitat for a variety of wildlife species and forage for livestock. Principle deciduous tree species are cottonwood, hackberry, boxelder and green ash. Other woody species that can be found locally abundant are snowberry, chokecherry and wild plum. Grass species include western wheatgrass, little bluestem, big bluestem, prairie sandreed, buffalograss and green needlegrass. Sedges include threadleaf and needleleaf sedges.

The geographic area is comprised of a variety of vegetation/habitat types; coniferous forests are dominated by ponderosa pine. Areas of open coniferous forest/grassland (savannah) also make-up this geographic area. Open grassland (parkland) areas are frequently found throughout the forested area. These vegetative mixes provide important loafing, hiding, escape and thermal cover for many wildlife species. The woody draw and riparian woodland habitats comprises a small portion of the geographic area but are considered critical for many wildlife species. The primary creeks and drainages include Bordeaux, Chadron, Dead Horse, Indian, Cunningham, East Ash and West Ash. Soldier Creek Wilderness includes the North, Middle, and South Forks of Soldier Creek. The wetland/aquatic habitat provides a cold-water brown and brook trout recreational fishery. The geographic area has several developed recreational facilities including

Spotted Tail, Outrider, Roberts and Soldier Creek Trailheads. Numerous hiking, horseback riding and mountain bike trails exist across the geographic area. The primary dispersed recreational opportunities within this area include big game hunting, wildlife viewing, horseback riding, mountain biking, hiking, fishing and camping.

Desired Conditions

General: The desired landscape condition is to maintain a mosaic of ponderosa pine and open mixed grass parklands.

The streams and riparian areas are in, or are trending towards, Properly Functioning Condition (PFC-see glossary), which allows them to recover quickly from floods and support diverse native plants and animals. Long-term soil productivity and properly functioning water cycles are maintained. Properly functioning water cycles are characterized by high infiltration rates, low soil compaction, and minimal overland flows.

Livestock management techniques such as proper stocking, season of use, grazing rotation systems as well as fencing and water developments will be used to manage livestock to meet vegetative goals and objectives. Recreational opportunities will continue to emphasize dispersed recreational activities.

Ponderosa Pine Forest/Parklands: These forested/savannah areas will be managed to maintain or perpetuate a diversity of healthy and vigorous ponderosa pine forest, old growth stands of large old trees with open branches, intermingled standing dead and down trees, and mixed grass and forb communities providing a mosaic of varying grassland structure levels. Principle grass species include western wheatgrass, green needlegrass, little bluestem, needleandthread, blue grama, and big bluestem. Threadleaf sedge and a variety of forbs also exist. Ponderosa pine forests will be managed for healthy, sustainable yields, old growth communities, and standing and down snags across the forested areas.

Wooded Draw Areas: These areas will be managed to perpetuate multiple layers and age classes of vegetation including forbs, shrubs, and trees. Principle woody species include cottonwood, green ash, hackberry, wild plum, chokecherry, and snowberry.

Streams and Riparian Areas: These areas will maintain soil moisture to perpetuate riparian plant communities with strong root masses, emphasize healthy submergent and emergent vegetative cover along streams while reducing sediment levels to maintain high quality aquatic habitat. Plant species include sedges, rushes, willows, green ash, cottonwood, boxelder, and hackberry.

Important Attributes

- The 7,800-acre Soldier Creek Wilderness
- The 6,600-acre Pine Ridge National Recreation Area
- Extensive and scenic native ponderosa pine forest stands with open prairie vistas
- Trout fisheries in forest-lined streams
- Over 80 miles of recreational trails for mountain bikers, hikers and horseback riders
- Significant populations of huntable and viewable wildlife, including wild turkey, mule and white-tailed deer, and elk

Management Area Prescription Allocation

Number	Prescription	Acres
1.1	Wilderness: Soldier Creek	7,800
1.31	Backcountry Recreation Nonmotorized	1,830
1.31a	Backcountry Recreation Nonmotorized: Pine Ridge National Recreation Area	6,540
2.1	Special Interest Areas	100
3.51	Bighorn Sheep	5,650
5.12	General Forest and Rangeland: Range Vegetation Emphasis	25,930
7.1	Residential/Forest Intermix	2,442 (ref. Middle Loop LX)
8.6	Administrative Site	60

Geographic Area Direction - Objectives

Grassland Vegetation

This section deals with vegetation and its relationship to MIS and TES habitat needs. The focus in the Pine Ridge Geographic Area is on grass and grass-like plants.

The resulting vegetation will have a mix of seral stages designed to approximate evolutionary development of the northern Great Plains. The grassland ecosystem will feature a "shifting mosaic" of disturbance processes over space and time.

Composition objectives are based on a mix of grass and grass like species across a majority of the Geographic Area. This mix provides suitable opportunity for meeting vegetation structure objectives and providing for floristic diversity.

The following section describes the specific vegetative composition and structure objectives for the Pine Ridge Geographic Area:

1. Over the life of the plan, manage for 40-60% non-forested cover across the geographic area. **Objective.**

Composition

2. The desired plant species composition objectives across the geographic area is as follows:

Late Seral	Late Intermediate Seral	Early Intermediate Seral	Early Seral
15 to 25%	40 to 70%	5 to 15%	1 to 20%

In late seral stage, more productive soils (silty and savannah range sites) should be comprised mainly of mid grasses and to a lesser extent tall grasses. On silty range sites western wheatgrass, green needlegrass, sideoats grama, and little bluestem are the primary mid grasses and big bluestem and prairie sandreed should make up the majority of the tall grasses. Savannah range sites should be made up of little bluestem, sideoats grama, green needlegrass, and slender wheatgrass for mid grass species and big bluestem, prairie sandreed, and sand bluestem will make up the tall grass species.

In late intermediate seral stage, more productive soils (silty and savannah range sites) should be comprised mainly of mid grasses and to a lesser extent short grasses and tall grasses. The

dominant grass species in late intermediate seral stage on silty range sites should be western wheatgrass with the codominance made up of needleandthread, blue grama, and sedges. The dominant grass species in late intermediate seral stage on savannah range sites should be little bluestem, prairie sandreed, slender wheatgrass, sideoats grama, and blue grama. The mix of grasses making up the codominance in late intermediate seral stages will fluctuate according to precipitation and/or grazing intensities.

In early intermediate seral stage, more productive soils (silty and savannah range sites) should be comprised mainly of short grasses and to a lesser extent mid grasses. The dominant grass species in early intermediate seral stage on silty range sites should be blue grama, buffalo grass, western wheatgrass, needleandthread, and sedges. The dominant grass species in early intermediate seral stage on savannah range sites should be little bluestem, prairie junegrass, prairie sandreed, blue grama, hairy grama, and plains muhly. The mix of grasses making up the codominance in the early intermediate seral stage will fluctuate according to precipitation and/or grazing intensities.

In early seral stage, savannah range sites will be dominated by broadleaf weeds such as annual ragweed, green sagewort, and lupine, sedges, and annual grasses like downy brome. Other species common to the early seral stage on savannah range sites are short stature grass species such as red threeawn, hairy grama, and blue grama. Silty range sites should be comprised mainly of short grasses with little, if any, presence of mid grasses. Sedges will dominate the early seral stage on silty range sites along with short grasses such as blue grama and buffalograss. The early seral stage should be emphasized on less productive saline upland range sites and in isolated areas of high livestock use or other persistent disturbances.

Structure

3. Manage the geographic area to meet the vegetation structure objectives identified below:

High	Moderate	Low
10 to 20%	65 to 85%	5 to 15%

High vegetation structure can be achieved on moderately and highly productive soils dominated by mid and/or tall grasses (late or late intermediate seral stage composition). Grasslands on moderately to highly productive soils but dominated by short stature species generally do not have the capability to provide high vegetation structure unless management is changed to increase the composition of mid to tall grass species over a period of years or decades.

Moderate structure can be achieved on moderately to highly productive soils dominated by mid and/or tall grasses depending on grazing use levels. Grasslands within this geographic area receiving light to moderate levels of livestock use should be in the late or late intermediate seral stage to achieve moderate structure. Grasslands dominated by short grass species in early intermediate or early seral stage will not achieve moderate structure under even light grazing levels.

Minimally productive soils, and grassland areas grazed by livestock at high intensities for an extended season of use provide low structure. Low vegetation structure can result from a dominance of low stature plant species or from heavy utilization of mid and tall grasses.

Forest Vegetation

1. Manage for a 40-60% forest cover (silvicultural structural stages 2-5; see glossary) across the geographic area. **Objective**

2. Over the life of the plan, manage timber stands to do the following:

- Improve forest health
- Prevent potentially damaging forest pest populations
- Reduce fuel loading and risk of catastrophic wildfire
- Enhance wildlife and TES habitats
- Provide national forest timber to support local economies
- Limit ponderosa pine encroachment into rangelands
- Improve riparian habitat
- Enhance recreation experiences and visual quality **Objective**

3. Within 10 to 15 years, manage forest cover to achieve a 20-40 sq. ft. basal area on 10% of the forest cover. Manage to achieve silvicultural structural stages 4 and 5, with emphasis on structural stages 4a (mature open) and 5 (old growth/late successional). **Objective**

4. Over the long term (100 years), manage forest cover to create stands with four structural stages in the forest cover as follows:

- 15-25% in structural stage 2
- 15-25% in structural stage 3
- 40% in structural stage 4
- 20% in structural stage 5 **Objective**

5. Within 10-15 years, achieve forest structural diversity by maintaining or enhancing hardwood trees, shrub inclusions, and other beneficial plant communities and openings. **Objective**

Disturbance Processes

Prescribed Fire

1. Prescribe burn a minimum of 1,000 acres per decade to achieve management objectives based on the following:

- Promote vegetative diversity
- Improve wildlife and TES habitats
- Convert exotic vegetation to native vegetation
- Stimulate riparian and woody draw woody plant regeneration
- Control or reduce invasive or noxious weeds
- Reduce fuel loadings and risk of catastrophic fire
- Restore the ponderosa pine savannah ecosystem
- Stimulate grass and forb growth
- Reduce damaging insect populations. **Objective**

Rest

1. Rest 1-10 percent of the suitable rangeland each year. **Objective**

Wildlife, Fish, and Rare Plants

1. Management Indicator Species:

Plains Sharp-tailed Grouse

- Provide diverse and quality grassland habitat across the geographic area at levels that, in combination with habitat on adjoining lands, helps support stable to increasing populations of sharp-tailed grouse and other wildlife with similar habitat needs. **Objective**
- Establish and maintain quality nesting and brooding habitat for sharp-tailed grouse (see Appendix H) and associated wildlife by meeting vegetation objectives for high structure within 10 years. **Objective**

Pygmy Nuthatch

- Conduct inventories to establish baseline population and distribution information. **Objective**

Riparian

1. Over the life of the plan, manage riparian areas to maximize riparian vegetation such as sedges, rushes, willows, cottonwoods, hackberry, boxelder, and green ash. **Objective**

Perennial Stream Fisheries

1. Maintain or enhance adequate stream-side vegetative cover to promote shading, cooler water temperatures and streambank undercutting for trout fisheries. **Objective**

Recreation

1. Acquire easements and develop partnerships with Nebraska Game and Parks Commission and others, to connect the Pine Ridge Trail from Chadron to Crawford. **Objective**

2. As demand dictates, construct or improve trails and trailheads. **Objective**

Special Designations

1. Within 5 years, revise management plans for the Pine Ridge National Recreation Area to emphasize recreation, aesthetics, and educational experiences consistent with the area and other plan direction. **Objective**

Geographic Area Direction – Standards and Guidelines

Grassland Vegetation

1. Use current monitoring information and stocking rate guidelines for livestock grazing (see Appendix I) to help design and implement range management strategies for meeting desired vegetation objectives. **Standard**

2. New structural range improvements (fences and water developments) may be constructed as needed to achieve desired condition objectives (wildlife habitat, botanical, range management, visual quality and recreation). **Guideline**

3. Emphasize livestock management principles such as, light and heavy grazing intensity techniques (see Appendix I) season of use, number of animals, kind of livestock, and incorporate these principles into the grazing management system to achieve high and low vegetation structure objectives. **Guideline**

Forest Vegetation

1. Management activities should replicate biological processes found in the areas and strive to replicate natural vegetative patterns and patch size. **Guideline**

2. Opening (parkland) Management. The maximum size of openings created by even-aged management will be 40 acres, regardless of forest type, with the following exceptions:

- Where proposals for larger openings are approved by the Regional Forester after a 60-day public review.
- Where larger openings are the result of natural catastrophic conditions of fire, insect or disease attack, or windstorm.
- Where the area is cut does not meet the definition of created openings. **Standard**

3. The size of the uncut forest areas between openings must be based on the management objectives for the unit being analyzed. If these objectives include creating a mix of vegetation types to benefit the kinds wildlife associated with early successional stages and edges, the uncut units can be small. If the objectives include provisions for late successional associated species, the uncut units should be large enough to function as an ecological system not overly influenced by the edge. **Guideline**

4. When developing openings in vegetative communities, simulate naturally shaped edges. **Guideline**

5. Pine encroachment in grass or meadow vegetation may be removed mechanically or using prescribed fire to maintain forage base and landscape diversity. Consider soils that formed under grass or meadow plant communities in determining extent of pine encroachment removal. **Guideline**

Snags and Dead Woody Material Management

1. Design vegetative treatments to maintain an average of four hard snags per conifer forested acre. **Standard**

2. If there are fewer than four hard snags per forested acre, projects to increase snag numbers may be implemented. **Guideline**

3. Snags can be clumped or individual, but should be well distributed throughout the planning unit. **Guideline**

4. In areas not meeting the snag standard, consider snag cutting restrictions and treating live replacement trees to create snags. **Guideline**

5. All soft snags should be retained unless they are a safety hazard. **Guideline**

6. When necessary to meet the minimum snag standard, create snags from live tree replacements. **Guideline**

7. Leave large woody debris on harvested or thinned sites to help retain moisture, prevent soil movement, provide microsites for establishment of forbs, grasses, shrubs, and trees and to provide habitat for wildlife. Locate woody debris concentrations where fuels loading is not a concern. **Guideline.**

8. Prescriptions shall be developed prior to timber harvest to identify the amount, size(s), and distribution of down logs to be left on-site. On conifer-forested sites (ponderosa pine) retain an average of at least 50 linear feet per acre of coarse woody debris with a minimum diameter of 10 inches (where materials are available) or largest woody material found on-site. **Guideline**.

	Hard Snags			**Downed Logs**	
Forest Type	Minimum Diameter	Average per Acre *	Minimum Height	Minimum Diameter	Linear Feet per Acre *
Ponderosa pine	10 inches	4.0	25 feet	10 inches	50 feet

*This does not mean that every acre will have a snag or downed log; these are averages across the geographic area

Silviculture and Timber Harvest Utilization

1. In designing timber sales use the following guidelines:

Type of Product	**Minimum DBH**	**Minimum Top Diameter**	**Length (Feet)**	**Merchantability Factor**
Live Coniferous Trees				
Sawtimber	8"-9"	6"-7"	8'-10'	10.67 (33.3%)
Products Other Than Sawtimber	5"-6"	4"	6.5'-8.3'	Variable
Dead Coniferous Trees				
Sawtimber	7"-12"	6"-10"	8'-16'	10.67 (33.3%)
Products Other Than Sawtimber	5"	4"	Variable	Variable

2. Silvicultural standards and guidelines should be applied at the watershed and landscape level, as well as to individual stands of trees. The standards and guidelines must be applied in such a way as to perpetuate a range of environmental conditions while supplying goods and services to people. **Guideline**.

3. The scientifically defined silvicultural systems, shown by forest cover type, which meet the management objectives for the landscape or individual stands of trees within a landscape setting are acceptable.

- Acceptable Silvicultural Systems

Forest Cover Type	Even-Aged Systems	Uneven-Aged Systems
Ponderosa pine	Shelterwood, Clear-cut and Seed Tree	Group Selection and Single-Tree Selection

  - Both even-aged and uneven-aged management systems can be used and applied at scales ranging from a few acres to many hundreds of acres.
  - These silvicultural systems are to be applied in a manner that will promote natural regeneration.
  - Tree stand vegetation management treatments are to be approved by a certified silviculturalist.
  - The silvicultural systems identified can be used to convert uneven-aged stands to even-aged management and even-aged stands to uneven-aged management.
- For precommercial and commercial thinning:
  - Use thinning practices that consider genetic diversity and competition among trees for water, nutrients and light. The frequency of thinning should depend upon several factors including: tree species, financial efficiency, site growing conditions, fuels management, Management Indicator Species (MIS), and Scenic Integrity Objectives (SIOs) for the area.
  - In general, use stocking charts (FSH 2409.17) to implement intermediate cuttings in even-aged, suitable timberland stands to effectively meet land management direction and as a guideline for individual stand management. **Guideline**

Infrastructure

1. Allow no net decrease in the average pasture size. **Guideline**

2. Allow no net increase in the number of water developments. **Guideline**

Disturbance Processes

Prescribed Fire:

1. Visual effects of prescribed fire will comply with the approved SIO of the area. **Guideline**

2. When feasible and appropriate use burning to dispose of slash in order to return the inorganic and organic chemicals in the foliage and small woody material to the soil, to reduce fire hazard, and to provide seed beds for natural regeneration. Following burning promote revegetation of prescribed burned areas. Apply seed to initiate revegetation if ground cover is 60 percent or less and slopes are 30 percent or more. **Guideline**.

3. If piled and burned fuel creates ash piles deeper than three inches, scatter the ash, scarify and mix it with mineral soil, or bury it. **Guideline**

4. Defer prescribed burned areas from livestock grazing for a portion or all of the following growing season to ensure regrowth of forage species. **Guideline**

Prescribed Fire, cont.

5. Prescribed burn plans will identify acceptable levels of tree mortality for seedling, saplings, poles, and sawtimber. Burning prescriptions will be established to meet these levels. In planning prescribed burns, consider how the potential loss of trees is offset by the beneficial effects of fire, for example, overall stand health, wildlife benefits and fuel reduction. **Guideline**

Wildlife, Fish, and Rare Plants

Management Indicator Species:

Pygmy Nuthatch

- Provide quality nesting and foraging habitat for this management indicator species and other species with similar habitat preferences by meeting the short-term (10 to 15 years) objective of 10% of the ponderosa pine woodlands in structural stages 4 and 5, with emphasis on structural stages 4a (mature open) and 5 (old growth/late successional). **Guideline**
- Within the associated watershed, for each vegetation management project, retain or create at least 4 hard snags at least 25 feet in height and greater than 10 inch DBH per acre. This is an average minimum snag density across the project area. Collectively, 25% of the snags should be greater than 19 inch DBH. If the 25 foot or 19 inch DBH minimum criteria cannot be met, provide the largest and tallest snags available. **Standard**
- Snags can be clustered or individual, but must be well distributed within the watershed. **Guideline**
- During vegetation management activities in ponderosa pine, retain a sufficient number of green trees greater than 19 inch DBH or from the largest diameter class available, to move towards or maintain an average minimum density of one large green tree per acre with the associated watershed, for the purpose of snag recruitment. Retention trees can be clustered or individual. If this guideline cannot be met, leave the largest retention trees available. **Guideline**

Plains Sharp-tailed Grouse

A range of 10 to 20% of the acres is prescribed for high structure grasslands in this geographic area. A substantial amount of this acreage should be located where it would optimize habitat for sharp-tailed grouse and associated species.

- The following criteria will be considered during site-specific project level planning to help determine the best locations to manage for high structure grasslands:
  - Presence of moderate to highly productive soils and range sites,
  - Proximity to sharp-tailed grouse display grounds,
  - Proximity to shrub habitats, private croplands and other sharp-tailed grouse foraging habitats. **Guideline**
- Establish and maintain quality foraging habitat for sharp-tailed grouse and associated wildlife species by enhancing and/or maintaining a diversity of forb species in grassland communities and regeneration of shrub patches and the shrub component of wooded draws and riparian habitats. **Guideline**

2. Where deer and/or elk management is emphasized, livestock grazing, timber harvests, and road use activities shall be scheduled or limited to avoid disturbing elk and deer during the critical calving/fawning season and winter months. **Guideline**

3. When desired, provide security (hiding and thermal) cover capable of hiding 90% of a standing adult elk or deer from human view at a distance of 200 ft. Hiding cover stand size should range from 6.5 to 26 acres. Thermal cover for deer should include saplings or shrubs (evergreen/deciduous for summer and evergreen only for winter) at 5 feet tall and 75% crown closure. Optimum stand size is 2 to 5 acres with a minimum width of 300 feet. Summer thermal cover for elk should contain coniferous and/or deciduous trees 20 – 40 feet in height and >70% canopy closure, and a distance to lowest limb of 5 feet or greater. Optimum stand size is between 30 and 60 acres. **Guideline**

4. Elk calving areas contain forage and security areas. Newborn hiding cover should contain shrubs, downed logs and other large ground concealments at least 28" in height within 0.5 mile of water. Slash should be windrowed or piled. Lop and scatter should be discouraged. Slash depths of 18 inches impede elk movements so a variety of concealments should be available. Deer fawning habitat should include low shrubs and trees between 2 to 6 feet in height and tree canopy closure at about 50%. Optimum stand size is between 1 and 5 acres. **Guideline**

5. Water is most critical during spring and summer for lactating elk and deer. Water shall be located within 0.25 to 0.5 miles from spring and summer use areas. **Guideline**

6. Defer livestock grazing and/or timber harvest operations until after July 1 - 15 or rest pastures annually from grazing in identified calving/fawning and wintering areas. **Guideline**

7. Implement habitat improvement projects, such as prescribed burning, and timber harvest operations, to attract elk and deer during times of the year when depredation activities occur on private land. **Guideline**

8. Limit travel activities between May 15 – July 15 when elk calving habitat management is emphasized. Do not exceed an overall road density of .5 mile/sq. mile on areas emphasized for elk calving habitat. **Guideline**

9. Where wild turkey management is emphasized in ponderosa pine areas, timber harvests and livestock grazing activities shall follow these guidelines:

- Provide mature timber (>9" dbh with a basal area >100 sq ft/acre) on at least 15 percent of the forested area and 15% of forested area with a basal area >120 sq ft/acre. **Guideline**
- To enhance wild turkey nesting habitat, leave and scatter logging slash. Do not pile slash; leave large culls (>9") in place with branches intact. **Guideline**
- Where wild turkey brood cover is desired, maintain a vegetative height of at least 8 inches and 70% ground cover of herbaceous vegetation or a comparable VOR along forest edge openings and along riparian areas. Brood cover should be maintained through at least July 15. **Guideline**
- To enhance wild turkey roosting habitat, retain at least 2-6 roost sites per square mile. All trees within roost sites should be protected regardless of their size. Roost sites with basal areas >80 sq ft/acre that include at least 5 mature trees (>9" dbh) are preferred and these sites shall encompass ¼ acre or more. **Guideline**

Wildlife, Fish, and Rare Plants, #9., cont.

- Avoid timber harvest operations and prescribed burning activities during nesting season between April 15 and mid-June. **Guideline**
- Riparian areas shall be deferred from grazing until July 1 to prevent excessive removal of herbaceous vegetation used as brood habitat. **Guideline**
- Leave dense stands (>100 sq. feet/acre basal area) of woody escape cover within 100 yards of brood habitat openings. **Guideline**

10. Enhance perennial stream fisheries (trout) in suitable streams on National Forest System Lands on the Pine Ridge. Establish gravel-based spawning beds at desired stream locations. Gravel beds should be a minimum of 20' long and 6"deep and use ½"-1 ½" coarse gravel. **Guideline**

11. Construct instream structures (log deflectors, wedge dams, log covers, etc.) at desired stream locations to improve fisheries habitat. **Guideline**

12. Conduct sampling to establish an aquatic macro-invertebrate population baseline for perennial and/or selected streams. **Guideline**