

Chapter 2 Alternatives

2.1 INTRODUCTION

This chapter describes and compares the alternatives considered by the Forest Service for the **Sioux 2003 Range Analysis** project. It includes a discussion of how alternatives were developed, a description and map, including specific mitigation measures of each alternative considered in detail, an overview of design criteria, and other features common to all alternatives and a comparison of these alternatives, focusing on the issues. Chapter 2 is intended to present the alternatives in comparative form, sharply defining the issues and providing a clear basis for choice among options by the responsible official and the public (40 CFR 1502.14).

Some of the information used to compare alternatives at the end of Chapter 2 is summarized from Chapter 3-Environmental Consequences. Chapter 3 contains the detailed scientific basis for establishing baselines and measuring the potential environmental consequences of each of the alternatives. For a full understanding of the effects of the alternatives, readers will need to consult Chapter 3.

2.2 ALTERNATIVE DEVELOPMENT PROCESS

Many options exist for developing livestock grazing practices in the Sioux 2003 Range Analysis Project Area. The purpose and need for this project (*see Chapter 1*) helped define the alternatives that would help meet Forest Plan standards and guidelines. The alternatives were developed for the project area that would consider the following:

- At a minimum, analyze (1) the continuation of current management (40 CFR 1502.14[d]), (2) the proposal (40 CFR 1502), and (3) no grazing by domestic livestock (FSH ID 2209.13, 93.34).
- Analyze the level of grazing intensity, or permitted stocking rates. Allotments have been managed within season long, rotational and deferred rotation grazing systems for the past 15 to 30 years. These grazing systems have also been refined with changes in water development, allowable use guidelines, and stocking rates. Monitoring across the Sioux Ranger District indicates that historic stocking rates have shown a large influence on ecological condition.

The Forest Service Interdisciplinary Team (IDT) used information from scoping, including the significant issues identified for the project (*See Chapter 1*), in conjunction with the field-related resource information, to formulate alternatives to the proposed action. The proposed action and each action alternative presented in this EA provide a different response to the key issues; one alternative may respond to more than one issue. Each action alternative is also designed to meet the stated purpose and need for the **Sioux 2003 Range Analysis** project, and the project-specific desired conditions. The alternatives analyzed in detail constitute the range of alternatives for this analysis.

2 Alternatives

Each alternative studied in detail represents a site-specific proposal developed through intensive interdisciplinary evaluation of current and desired conditions, based on field verification. Project area identification and design also made use of high-resolution topographic maps and a large quantity of resource data available in geographic information system (GIS) format.

2.3 ALTERNATIVES CONSIDERED IN DETAIL

There are three (3) alternatives considered in detail for this analysis:

Table II-1: List of Alternatives

1. Alternative 1 (No Action) is continuation of the existing, ongoing livestock management for the allotments.
2. Alternative 2 (No Grazing) is the alternative developed in response to the issues raised about livestock grazing on public lands. No grazing would be reauthorized and all allotments would be retired.
3. Alternative 3 (Proposed Action) is the proposed action for the allotments in the analysis area, developed to meet the Purpose and Need for action and accomplish the project objectives.

CEQ regulations direct agencies to explore and evaluate all reasonable alternatives (40 CFR 1502.14[a]). Alternatives 1, 2, and 3 provide a “reasonable array of alternatives”. The reasonable array determination was based on the following criteria (1) A reasonable alternative is one that achieves, in large part, the agency’s defined purpose and need (see Chapter 1) while not violating any minimum environmental standards, and (2) alternatives considered in detail should be issue-driven and provide a clear basis of choice for the decision maker. Maps of the alternatives considered in detail are in [Appendix A](#).

2.3.1 ALTERNATIVE 1: NO ACTION (MAINTAIN EXISTING LIVESTOCK MANAGEMENT)

This alternative would continue current management practices through the issuance of new grazing permits for a ten-year period. The new grazing permits for the eleven allotments would authorize the existing number, types/kinds of livestock, season of use, and location of use. The management changes that are proposed would not occur; however, the existing range allotments and their use would continue and it does not preclude other ongoing activities in this or other areas, or management proposals for the area at some time in the future. The map for Alternative 1 shows the current allotment boundaries and any range improvements (See [Appendix A](#)). [Appendices B-1 and B-2](#) have detailed information for each allotment showing past management, current allotment management (Alternative 1), and proposed allotment management (Alternative 3). [Table II-2](#) shows the current allotment management summary by Land Unit, then by allotment.

Table II-2: Alternative 1: Summary of Current Management for Permitted Allotments

Land Unit	Allotment	AMP Date	Class of Livestock	Total Allotment Acres All ownerships ¹	Total Allotment Acres FS ownership	Total Allotment Acres FS Capable ²	Total FS Permitted AUMs
North Cave Hills	Pelham-Juberg	1994	Cattle Cow/Calf	2,390	2,390	1,715	1171
	Schleichart	1980	Cattle Cow/Calf	13,175	6,070	4,070	1337
	Davis Draw	None	Cattle Cow/Calf	1,145	1,145	650	845
	Jenkins	None	Cattle Cows	2,990	835	500	153
South Cave Hills	John Brown	None	Cattle Cow/Calf	2,160	2,160	1,560	863
	JA Clarkson	1977	Cattle Yearlings	2,455	1,965	1,410	477
	JB Clarkson	1995	Cattle Cow/Calf	2,710	2,700	1,995	1050
	Van Offern	1995	Cattle Cow/Calf	1,365	1,330	700	392
East Short Pines	Box Springs	1981	Cattle Cows	2,200	2,200	1,500	932
	Dunn	1969	Cattle Cow/Calf	1,800	1,800	1,165	597
	Lone Mountain	1983	Cattle Cow/Calf	1,055	875	490	199
Totals				33,445	23,470	15,755	8016

¹ Includes FS and Private acres. Acreage figures are rounded. Source is information in Appendix B

² Includes all FS acres considered to be "capable" or "suitable" for livestock grazing only. Acreage figures are rounded. Source is information in Appendix B

2.3.2 ALTERNATIVE 2: NO GRAZING

This alternative was developed in response to public concerns that livestock grazing should be eliminated from public lands due to potential impacts on soil, water, TES species, vegetation and economics. Term grazing permits for the eleven allotments would not be issued and no livestock grazing would occur on these allotments in the future. This alternative would eliminate all of the eleven (11) grazing allotments considered in this analysis area. Livestock grazing would be phased out over 10-years and all allotments would be retired at that time. Existing water improvements and interior grazing unit fences would be removed; however exterior boundary fences would remain. New fence would be constructed in some areas to separate private land from NFS land. Other ongoing activities would still occur, such as firewood gathering, hunting, and other recreation. See [Appendix A](#).

2.3.3 ALTERNATIVE 3: PROPOSED ACTION

The proposed action was designed to respond to the purpose and need for management and the project objectives to bring existing allotments into compliance with the Custer NF Plan and the 1995 Rescission Bill. Two allotments (Davis Draw and John Brown) would have significant stocking rate decreases to bring these two allotments into compliance with the Custer NF Plan. Analysis indicates that a stocking rate reduction of 511 AUMs (60%) is needed in Davis Draw Allotment, 282 AUMs

2 Alternatives

(33%) is needed in John Brown Allotment in order to bring the allotments in line with the estimated carrying capacity. However, the total of 793 AUMs reduction in these two allotments is proposed to be offset by incorporating private lands associated with the Jenkins Allotment. The same permit holder grazes livestock on all three of these allotments and owns the private land being offered for this arrangement. All other allotments would retain the same stocking rates. In addition, approximately nine (9) water developments would undergo reconstruction or relocation. There would be some new range improvements constructed including one segment of new fence and 3 water pipeline segments (See [Appendix A](#)). [Appendices B-1 and B-2](#) have complete detailed information for each allotment showing past management, current allotment management (Alternative 1), and proposed allotment management (Alternative 3) including grazing pasture rotations and time of use. [Table II-3](#) shows the proposed allotment AUM prescriptions by Land Units and allotments.

Table II-3: Alternative 3: Summary of Proposed AUM Prescriptions

Land Unit	Allotment	Class of Livestock	Current AUMs	Proposed AUMs	% Change
North Cave Hills	Pelham-Juberg	Cattle Cow/Calf	1171	1171	0
	Schleichart	Cattle Cow/Calf	1337	1337	0
	Davis Draw	Cattle Cow/Calf	845	345	60% decrease
	Jenkins	Cattle Cows	153	145	0
South Cave Hills	John Brown	Cattle Cow/Calf	863	581	33% decrease
	JA Clarkson	Cattle Yearlings	477	477	0
	JB Clarkson	Cattle Cow/Calf	1050	1050	0
	Van Offern	Cattle Cow/Calf	392	392	0
East Short Pines	Box Springs	Cattle Cows	932	932	0
	Dunn	Cattle Cow/Calf	597	597	0
	Lone Mountain	Cattle Cow/Calf	199	199	0
Totals			8,016	7,226	

2.3.3.1 DETAILED PROPOSED ALLOTMENT PRESCRIPTIONS AND RANGE IMPROVEMENTS

The following tables are a summary list of additional specific allotment prescriptions and the range improvements that would be constructed, reconstructed, moved, or otherwise changed. A complete detailed list of all current and proposed management changes, including pasture rotation and time of use, is found in [Appendices B-1 and B-2](#).

Table II- 4: Detailed Allotment Management Prescriptions: North Cave Hills Land Unit Allotments

Land Unit	Allotment	Detailed Allotment Prescription
North Cave Hills	Pelham-Juberg	<ul style="list-style-type: none"> • Improve condition of Swamp Spring by adding barriers, gravel, and a wildlife ramp. • To minimize trailing impacts to the watershed and to archeological resources, rock and shrub around the top of Ketchum Draw to deflect current livestock trailing activity. • To minimize trailing impacts on archeological sites near K&R Well area, improve distribution patterns by opening up existing roadbed to the top of the unit for livestock access between these two areas. To minimize impacts to K&R well area during early season treatment, turn off water when the area is wet. • Do not salt within K&R well area. • Complete implementation of 1994 AMP by developing water via pipeline via Ketchum source. • To minimize trailing impacts to the watershed and to archeological resources, rock and shrub around the trail that goes southwest from Riley Spring and place erosion controls (i.e. dips and seeding with natives) on remainder of active trails near Riley Spring to deflect current trailing activity. • Relocate Riley Spring away from the lower end of the woody draw to improve woody draw function.
	Schleichart	<ul style="list-style-type: none"> • Replace Alice Springs wooden tank with fiberglass tank. • Reconstruct or move Craig Pass Spring development. • Relocate Schleichart Springs Tank away from dam structure to reduce impact to dam and riparian area. • Replace tank at Travers Spring #1. • Use salting practices in the Plateau Pasture to distribute cattle to north end and reduce heavy grazing around water improvements. • Extend Riley Pass Pipeline to the west and place a tank in section 21 and another in section 28. • Shut down lower tanks and move salt away once use is reached in that area. • Improve salting practices. • Split the Prairie pasture into two pastures to allow better utilization control • Monitor Plateau Pasture and woody draws after 1-2 rotations for vegetation composition changes. • Monitor archeological resources near ponds, Alice Spring, and Travers #1& #2 springs.
	Jenkins	<ul style="list-style-type: none"> • Add in Jenkins West and Middle pastures (West 125 cm; Middle 137 cm) with Davis Draw and John Brown for a four-unit rotation. Approximately 150 acres from Browns purchase is added into West pasture of Jenkins Allotment as a distribution unit to be grazed under the direction of the USFS for hazard fuels control. • Jenkins East pasture will remain winter use from Nov 1 to Feb 28 (14 cows for 64hm). • Improve Salting practices. Do not salt within ¼ mile of water sources. Do not salt on National Forest portion of the allotment due to archeological considerations. Monitor salting practices. • FS portion of Jenkins currently meets desired conditions. Monitor the allotment for potential effects on vegetation, soils, and archeological resources to watch impacts of change of use from winter to summer.
	Davis Draw	<ul style="list-style-type: none"> • Adjust stocking levels to be within allotment capacity. • Add in Jenkins Middle and West pastures (see description under Jenkins Allotments) with Davis Draw and John Brown for a four-unit rotation. John Brown to be used alternately early and late every other year, with the remaining 3 pastures under a deferred rotation in sequence of early-late-mid treatments. • Do not salt within 1/8 mile of West boundary fence. • Move into upper part of pasture after 6/1 – move salt and control water to aid in distribution away from lower crested wheat portion. • Reconstruct Jenkins Spring. • Fix and maintain Dave Draw Well. • Monitor hardwoods near Davis Draw Reservoir, ground cover near West boundary fence, vegetation, and soil conditions in Davis lower half, monitor archeological considerations, and salting practices.

2 Alternatives

Table II- 5: Detailed Allotment Management Prescriptions: South Cave Hills Land Unit Allotments

Land Unit	Allotment	Detailed Allotment Prescription
South Cave Hills	John Brown	<ul style="list-style-type: none"> John Brown to be used alternately early and late every other year, with the remaining 3 newly created pastures under a deferred rotation in sequence of early-late-mid treatments. Adjust stocking levels to be within allotment capacity (See table above). Add in Jenkins Middle and West pastures (see description under Jenkins Allotments) with Davis Draw and John Brown for a four-unit rotation. John Brown to be used alternately early and late every other year, with the remaining 3 units under a deferred rotation in sequence of early-late-mid treatments. Monitor ground cover conditions with photo points. Monitoring salting practices. Fix and maintain John Brown Spring #1 and install wildlife ramp. Reconstruct John Brown # 2 and Johnson Spring.
	JA Clarkson	<ul style="list-style-type: none"> Continue two pasture deferred rotation with same stocking, season of use, and class of livestock. In order to increase ground cover in South pasture, turn off water in tanks 1 and 2 until around June 21 and do not salt in the area west of FDR 3113. Reconstruct JB Clarkson Spring. Repair barrier and overflow and install a wildlife ramp. Monitor for increased ground cover in area west of FDR 3113. Monitor to determine the trend of the riparian segment determined to be at risk. Monitor soil and vegetation trends to ensure objectives for grassland and big sagebrush types are met.
	JB Clarkson	<ul style="list-style-type: none"> Turn off water in tank #1 until mid June and no salting in the area. Extend overflow of tank #1 to the east. Extend overflow of Johnson #2 away from the tank. Reconstruct Johnny Pocket #2. Reset tire tank, replace spring box, and install a wildlife ramp. Abandon and remove Lane Canyon Spring water development. Maintain 7-UP spring with gravel base and install wildlife ramp. Replace stock water tanks as needed on existing springs. Monitor West pasture for increased ground cover and improved composition. Monitor areas with heritage concerns.
	Van Offern	<ul style="list-style-type: none"> Include JB Clarkson allotment to this allotment rotation. Rotate McKenzie pasture and JB Clarkson's West and East pastures while using Casper Gulch either early or late for short time periods due to Casper Gulch being a smaller capacity pasture Reconstruct McKenzie Spring, repair tire tank, install gravel base, and add a wildlife ramp. Monitor hardwoods; potential for more intensive treatment

Table II- 6: Detailed Allotment Management Prescriptions: East Short Pines Land Unit Allotments

Land Unit	Allotment	Detailed Allotment Prescription
East Short Pines	Box Springs	<ul style="list-style-type: none"> Remove old tank at Box Springs #3 and relocate to minimize trampling effects in riparian area. Construct ½ mile of pipeline from Box Spring #2 to the east and remove old tank. Add two more tanks to the new pipeline. Reconstruct Fox Spring. Replace wood tank. Fox Well is abandoned; plug well Monitor at risk hardwoods
	Dunn	<ul style="list-style-type: none"> To improve the hardwood conditions, change season of rotation so that two late treatments in sequential years do not occur. Place another tank in sequence to existing Adams Spring tank to increase water storage if necessary, due to increased number of head; remove old tank Assure distribution is away from SW corner during spring turnout and fall take off To decrease erosion, treat gullies created from trailing (filter treatment possibly) Remove ponderosa from hardwood stands Construct Dunn Well Pipeline Replace tank at Box Springs #4. Due to lack of water, abandon and remove Dunn Ranch Spring. Monitor two areas with heritage concerns.
	Lone Mountain	<ul style="list-style-type: none"> Monitor at risk hardwood stands to determine cause Replace fiberglass tank at Lone Mt. Spring. Monitor Lone Mt. Spring heritage site. Monitor other heritage sites of concern

2.3.3.2 MANAGEMENT PRESCRIPTIONS AND OBJECTIVES COMMON TO ALL ALLOTMENTS

- Manage ground cover to maintain 10% or less bare soil. Cover includes vegetative matter, both dead and alive, rocks, and woody debris.
- Manage woody draws to stimulate regeneration and restore or maintain multiple age and size classes in the vegetation.
- Improve livestock distribution to reduce the amount of high use areas subject to soil damage and to move conditions toward desired conditions.
- Manage the grassland habitat type to maintain or restore mid-grass dominated plant communities (where capable) to provide forage value and ecological integrity.
- Manage the big sagebrush habitat type to maintain or restore an overstory capability of big sagebrush and an understory of mid-grass dominated species.
- Manage riparian areas to dissipate energies associated with overland flow to reduce erosion and improve water quality, filter sediment, aid floodplain development, improve floodwater retention and improve ground water recharge.
- Improve grouse habitat by maintaining or restoring high structure grasslands composed of mid-grass species.
- Maintain riparian areas for riparian dependent species.
- Reduce or eliminate grazing effects on heritage resources.

2.3.3.3 PROJECT DESIGN CRITERIA FOR ALTERNATIVE 3

The analysis documented in this EA discloses the possible negative and beneficial impacts that may occur from implementing the actions proposed under each alternative. Project design criteria have been incorporated into the alternative design to reduce impacts on resources. Project design criteria are an integral part of the alternative activities. These design criteria were guided by direction from the Custer National Forest Plan, Montana Streamside Management Zone BMP's, Montana Forestry BMP's, Soil and Water Conservation Practices BMP's, Region 1 Noxious Weed BMP's, Scenery Management System Handbook and applicable Forest Service Manuals and Handbooks.

IDT specialists used on-the-ground inventories, computer (GIS) data, and various studies to prepare their reports. Resource reports show the cause and effect relationships between the alternatives and their specific effects, and indicate design criteria to reduce negative effects in the alternatives. These reports are summarized and referenced in this EA and may be found in the project record. [Table II-7](#) includes a complete list of the specific design criteria.

2 Alternatives

Table II-7: Project Design Criteria

Description of Project Design Criteria By Resource Area
Range
Construct structural range improvements following Forest Service guidelines. These guidelines include installing wildlife escape ramps in tanks, locating tanks to minimize visibility and using earth tone colors and nonreflecting finish.
Follow established Forest Plan guidelines and Forest Service range manual and handbook direction for the construction and reconstruction of all range improvements.
Locate salt grounds generally ¼ mile away from water and lightly grazed areas. They are to be located a minimum of 100 yards away from all roads and dispersed campsites. These locations are to be changed yearly.
Manage springs in as natural a condition as possible by locating tanks away from the water source and out of riparian areas.
Prescribe timing and use annually in consideration of climatic variability and to meet plant phenological and physiological needs for maintaining or enhancing vegetative condition.
When cattle are turned onto allotments, push and scatter them across entire unit as required in the permit.
Noxious Weeds
Noxious weed surveys will be an ongoing during annual range utilization and monitoring activities to ensure that grazing management activities to not contribute to noxious weed spread. New noxious weed populations will be recorded and added to the inventory database.
Cultural Resources
Fields surveys for heritage resources will be completed for any proposed new range improvements, or any relocation or reconstruction of existing range improvements.
Soils and Watershed
Utilize applicable Forest Plan standards and guidelines and the Soil and Water Conservation Practices BMP's.
Wildlife
Sage grouse - If sage grouse leks or nests were detected in the project area, the management practices would be adjusted to follow the guidelines for sage grouse management.

2.3.3.4 MONITORING ACTIVITIES FOR ALTERNATIVE 3 – PROPOSED ACTION

Table II-8 lists the monitoring plan activities that are proposed:

Table II-8: Monitoring Activities

Allotment Area	Issue and Objectives	Priority and Responsible Staff	Possible Protocols	Short vs. Long Term
All Pastures	<i>Permit Compliance Monitoring:</i> Ensure allowable use is not exceeded (45% use in woody draws and 50% use in uplands).	Priority 1 District Range Staff	Annual Monitoring: Livestock to be moved when allowable use is met.	Short Term

Table II-8: Monitoring Activities

Allotment Area	Issue and Objectives	Priority and Responsible Staff	Possible Protocols	Short vs. Long Term
Jenkins – Middle Pasture	<i>Preservation Act:</i> Ensure that changes in distribution due to change in season do not increase heritage site vulnerability to livestock trampling and/or trailing effects.	Priority 1 Forest Archaeologist	Utilization/Distribution mapping 2-3 years after implementation. Utilize methods to address soil erosion, soil compaction, and changes in ground cover if grazing effects appear to be impacting sites.	Short and Long Term
Pelham – Juberg: Lightning Spring; Schliechart, Jenkins, Dunn	<i>Preservation Act:</i> Ensure that changes in distribution due to change in season do not increase heritage site vulnerability to livestock trampling and/or trailing effects.	Priority 1 Forest Archeologist		
Schleichart – Plateau Pasture	<i>Soil Quality– FSM 2500:</i> Soil quality issues-large area of pasture with gravelly bare soil, low ecological condition. Will be slow to recover.	Priority 2 Forest Soil Scientist		
Box Springs – East Pasture, Box Springs #3	<i>Sensitive Species:</i> Ensure functioning lentic condition of habitat for known location of Leopard frog population	Priority 2 Zone Wildlife Biologist	Monitor functionality of seep areas around Box Springs #3 (i.e. PFC – Lentic)	Short and Long Term
Pelham – Juberg: All Pastures.	<i>Questionable Stocking Rate:</i> Firm up stocking rates	Priority 3 District Range Staff	Three year Production/Utilization Study	Short Term
Pelham – Juberg and JA Clarkson	<i>Woody Draws:</i> Ensure that effects of “twice over” grazing systems are not promoting downward trend	Priority 4 District Range Staff	Establish baseline photo plots (best with GPS location) within 1 st three years in identified draws as a minimum. Re-read photo plots years 3, 5 and/or 10; include walk through monitoring for presence and establishment of chokecherry, (i.e. Uresk Method)	Long Term
Schleichart: Schleichart Draw Pasture	<i>Woody Draws:</i> Ensure that effects of grazing are not promoting downward trend	Priority 5 District Range Staff		
Box Springs	<i>Woody Draws:</i> Ensure that effects of grazing are not promoting downward trend	Priority 6 District Range Staff		
JB Clarkson	<i>Woody Draws:</i> maintain good condition and monitor effect of change especially with “twice over” and new riparian pasture	Priority 7 District Range Staff		
John Brown	<i>Uplands:</i> Brown will be slow to show change because of the droughty conditions.	Priority 8 Forest Ecologist	At a minimum, establish photo points on allotments within the 1 st three years as resources allow. Utilize method for addressing long-term trend (photos plots, parker re-reads, nested rooted frequency transects, i.e.)	Long Term
John Brown	<i>Woody Draws:</i> Ensure that effects of “twice over” grazing systems are not promoting downward trend	Priority 9 District Range Staff		

2 Alternatives

Table II-8: Monitoring Activities

Allotment Area	Issue and Objectives	Priority and Responsible Staff	Possible Protocols	Short vs. Long Term
JA South Unit & JB Clarkson – North Pasture	<i>Uplands & Soil Quality:</i> Sage habitat is highly erodible and eroded, just burned, high use but small area and no sage grouse issues. Biophysical environment is very different from badland sagebrush type in East Short Pines.	Priority 10 Forest Ecologist	At a minimum, establish photo points on allotments within the 1 st three years as resources allow. Utilize method for addressing long-term trend (photos plots, parker re-reads, nested rooted frequency transects, i.e.)	
Jenkins	<i>Uplands & Soil Quality:</i> Monitoring should be performed to assure the area vegetation composition, production, and soil quality does not degrade due to the change in rotation or scheduled use. These pastures are proposed in a five-pasture rotation to increase recovery time for Davis Draw and John Brown Allotments.	Priority 11 Forest Ecologist		
JA Clarkson – Near East Clarkson Well	<i>Riparian:</i> Trend is not apparent; possible postponing well water availability until mid to late season and/or monitoring effects of recent livestock management change and new distribution patterns due to change in water availability.	Priority 12 District Range Staff		
Box Springs – East Pasture or Lone Mtn.	<i>Uplands:</i> East Short Pines are very different landscapes vs. Cave Hills. Assume effects and change will occur at different rates.	Priority 13 Forest Ecologist		
Pelham – Juberg	<i>Uplands:</i> potential for change in areas where there is large amount of departure, departure in middle pasture on best/most erodible soils	Priority 14 Forest Ecologist		
Pelham – Juberg	<i>Soil Quality:</i> Though no specific areas of concern were noted, monitoring production and utilization in this allotment is suggested because of sensitive soils	Priority 15 Forest Soil Scientist		
Davis Draw	<i>Uplands:</i> Davis Draw will be slow to show change (droughty).	Priority 16 Forest Ecologist		
Davis Draw	<i>Woody Draws:</i> Ensure that effects of “twice over” grazing systems are not promoting downward trend	Priority 17 District Range Staff	At a minimum, establish photo points on allotments within the 1 st three years as resources allow. Utilize method for addressing long-term trend (photos plots, parker re-reads, nested rooted frequency transects, i.e.)	Long Term
Van Offern	<i>Uplands:</i> Inherently low ground cover and production and low fertility soils suggest long term monitoring of production and trend to detect effects of management on low productivity soils.	Priority 18 Forest Ecologist	Utilize method for addressing long-term trend (photos plots, parker re-reads, nested rooted frequency transects, i.e.)	Long Term

Table II-8: Monitoring Activities

Allotment Area	Issue and Objectives	Priority and Responsible Staff	Possible Protocols	Short vs. Long Term
Other Allotments	As other issues arise	Priority 19 District Range Staff	At a minimum, establish photo points on allotments within the 1 st three years as resources allow. Utilize method for addressing long-term trend (photos plots, parker re-reads, nested rooted frequency transects, i.e.)	Long Term

2.4 COMPARISON OF ALTERNATIVES

This section provides a comparative summary of the key differences between the alternatives. The project activities and outputs, project objectives, and effects of the alternatives on the Key Issues and other resource areas.

The discussions of effects are summarized from Chapter 3, which should be consulted for a full understanding of these and other environmental consequences. The tables below provide a comparison of information from the alternative descriptions and Chapter 3 relevant to the issues.

Table II-9: Comparison of the Alternatives: Project Activities, Objectives and Outputs

Indicator	Alternative 1 No Action	Alternative 2 No Grazing	Alternative 3 Proposed Action
Purpose and Need Indicators			
Project Objectives			
1. Meeting Custer NF Forest Plan Goals and Objectives	No	No	Yes
2. Compliance with 1995 Rescission Bill	No	No	Yes
3. Maintain or Improve range conditions to "Good" or better as noted in Forest Plan	No	Yes, in long term	Yes in long-term at a slower rate
4. Maintain and Improve condition and locations of range improvements	Yes (partial)	No	Yes
5. Maintain or restore riparian areas to desired conditions	No	Yes	Yes
6. Maintain or restore hardwood draws to desired conditions	No	Yes	Yes
7. Maintain or improve wildlife habitats in Management Areas with wildlife emphasis	No	Yes	Yes
8. Protect heritage sites affected by livestock grazing	No	Yes	No
Project Activities and Outputs			
Total Allotment Acres (Pvt and NFS)	33,445	9,975 (pvt. only)	33,445
Total NFS Allotment Acres	23,470	0	23,470
Total NFS Capable Acres grazed	15,755	0	15,755
Authorized AUMs	8,016	0	7,226

2 Alternatives

Table II-9: Comparison of the Alternatives: Project Activities, Objectives and Outputs

Indicator	Alternative 1 No Action	Alternative 2 No Grazing	Alternative 3 Proposed Action
Authorized Head Months	6,064	0	5,462
Total miles existing division (pasture) fence	8.88	Remove 8.88	10.83
Total miles existing allotment boundary fence	22.10	0	13.65*
Total miles existing NFS boundary fence	28.6	28.6	28.6
Miles Fence Construction	0	19.55**	1.95
Miles Fence Removal	0	13.65	0
Total Springs	27	Removal of 27	27
Total Wells	8	Plugging 8	No Change
Total Pipelines	6	Removal of 6	8
Total Reservoirs	7	7***	No Change

*Would not remove all allotment boundary fences, as some are common to allotments not considered in this analysis.

** Would need to construct new NFS boundary fence to separate private land from NFS land

*** Reservoirs would be allowed to grass over and heal naturally.

Table II-10: Comparison of the Alternatives: Key Issues and Indicators

Key Issues	Alternative 1 No Action	Alternative 2 No Grazing	Alternative 3 Proposed Action
Key Issue # 1: Riparian Areas			
• Miles meeting Desired Conditions (DC)	4.75 miles	4.75 miles	4.75 miles
• Miles not meeting Desired Conditions	0.25 miles	0.25 miles short-term, meeting desired conditions in an estimated 5 years without grazing	0.25 miles short-term, meeting DC in an estimated 10 years with improved management
Key Issue # 2: Hardwood Draws (780 of 1270 surveyed)			
	<i>See Chapter III for details</i>	<i>See Chapter III for details</i>	<i>See Chapter III for details</i>
• Acres of Surveyed Draws with Healthy Functioning Condition	.05 acres	.05 acres	.05 acres
• Acres of Surveyed Draws At Risk, or with a Not Healthy Condition	195 acres No long-term recovery expected	195 acres Longest term recovery expected with elimination of grazing	195 acres Long-term recovery expected with changes in grazing seasons
Key Issue # 3: Soils and Uplands			
• Percent Detrimental Soil Disturbance < 15%	R1 Soils guidelines are not being met in one pasture	R1 Soils guidelines are being met	R1 Soils guidelines are being met
• Trend in Acres to DC	<i>See Table II-11 for details</i>	<i>See Table II-11 for details</i>	<i>See Table II-11 for details</i>
Key Issue # 4: Social and Economics			
• Permittee Total Present Value	\$366,193.00	\$0.00	\$384,871.00
• Possible 25% Fund to Counties	\$2,046.00	\$0.00	\$1,843.00
• Present Net Value (PNV)	\$381,136.00	-\$89,064.00)	\$319,704.00
Key Issue # 5: Heritage Sites			
• Heritage Sites Impacted	Nine (9) known heritage sites with potential severe impacts	<ul style="list-style-type: none"> • No heritage sites impacted by livestock grazing. • CCC improvements would be destroyed by removal. 	All heritage and CCC sites protected and monitored for livestock impacts
Key Issue # 6: Noxious Weeds			
• Potential Acre Increase	12 acres Use of Integrated Pest Management (IPM) to control	12 acres Use of IPM to control	12 acres Use of IPM to control
Key Issue # 7: TES Wildlife and Plant Species			
	<i>See Table II-13 for details</i>	<i>See Table II-13 for details</i>	<i>See Table II-13 for details</i>
• Impacts to TES and Key Wildlife Species (Reference Table II-14)	<ul style="list-style-type: none"> • No effect to any T&E • MIIH to 12 Sensitive wildlife species, BI to one species. • Negative impacts to 3 Key species 	<ul style="list-style-type: none"> • No effect to any T&E • No Impact on any Sensitive wildlife species. No BI. • Positive impacts to 13 Key species 	<ul style="list-style-type: none"> • No effect to any T&E • MIIH to 12 Sensitive wildlife species, BI to one species. • Positive impacts to 10 Key species
• Impacts to TES Plants <i>See Table II-14 for details</i>	MIIH to 1 Sensitive plant, NI to 4 Sensitive plant species.	NI to 5 Sensitive plant species	MIIH to 1 Sensitive plant, NI to 4 Sensitive plant species.

2 Alternatives

Table II-11: Allotments Acres (NFS) moving from moderate departure toward DC.

Area	Allotment	Pasture	NFS Acres	Percent in Moderate departure	Alt 1 No Action		Alt 2 No Grazing		Alt 3 PA		
					Trend	Recovery Rate	Trend	Recovery Rate	Trend	Recovery Rate	
North Cave Hills	Jenkins	787-03 East	190	4-18	0	Moderate		Fast	+	Moderate	
		787-02 Middle	360	6-34							
		787-01 West	290	6-26							
	Davis Draw	772-01	1145	10-36	0-	Slow		Moderate	+	Slow	
	Schleichart	813-04 Prairie	2650	4-7	0	Fast		Fast	+	Fast	
		813-03 Plateau	3080	18-21	-	Slow		Slow	0+	Slow	
	Pehlam-Juberg	808-03 South	630	17-43	0-	Slow		Slow	0+	Slow	
		808-02 Middle	820	40-66							
		808-01 North	870	28-49							
South Cave Hills	John Brown	788-01	2160	11-30	0-	Slow	+	Slow	0+	Slow	
	JA Clarkson	784-01	2460	16-36	0-	Moderate		Moderate	+	Moderate	
	JB Clarkson	786-01 West	1520	15-38	-	Slow			Slow	0+	Slow
		786-02 East	1180	7-28							
	Van Offern	821-01 Casper Gulch	280	4-25	0-	Slow			Moderate	0+	Slow
		821-02 McKenzie	1050	8-48							
East Short Pines	Box Springs	759-01 West	730	2-8	0	Fast		Fast	+	Fast	
		759-02 East	1470	3-26		Slow		Moderate		Moderate	
	Dunn	775-01	1800	15-30		Moderate		Fast	+	Fast	
	Lone Mountain	794-01	870	20-37		Slow		Slow	0+	Slow	

Table II-13: Determination Summary for Wildlife Species

T & E Species	Status	Alt. 1	Alt. 2	Alt. 3
Bald Eagle	T	NE	NE	NE
Black-footed Ferret	E	NE	NE	NE
Sensitive Species	Status	Alt. 1	Alt. 2	Alt. 3
Peregrine Falcon	S	MIIH	NI	MIIH
Northern Goshawk	S	MIIH	NI	MIIH
Burrowing Owl	S	MIIH	NI	MIIH
Sage Grouse	S	MIIH	NI	MIIH
Baird's Sparrow	S	MIIH	NI	MIIH
Sprague's Pipit	S	MIIH	NI	MIIH
Loggerhead Shrike	S	MIIH	NI	MIIH
Townsend's Big-eared Bat	S	MIIH	NI	MIIH
Spotted Bat	S	MIIH	NI	MIIH
Black-tailed Prairie Dog	S	BI	NI	BI
Tawny Crescent Butterfly	S	MIIH	NI	MIIH
Regal Fritillary Butterfly	S	MIIH	NI	MIIH
Northern Leopard Frog	S	MIIH	NI	MIIH
Habitat Indicator KEY Species	Status	Alt. 1	Alt. 2	Alt. 3
Sharp-tailed Grouse	K	0	+	+
Lark Sparrow	K	-	+	+
Northern (Bullock's) Oriole	K	0	+	0
Yellow Warbler	K	0	+	0
Ovenbird	K	0	0	0
Rufous-sided (Spotted) Towhee	K	-	+	0
Brewer's Sparrow	K	-	+	+
White-tailed Deer	K	0	+	+
Largemouth Bass	K	0	0	0
Golden Eagle	K	0	+	+
Prairie Falcon	K	0	+	+
Merlin	K	0	+	+
Elk	K	0	+	+
Mule Deer	K	0	+	+
Pronghorn Antelope	K	0	+	+
Turkey (In MA D only)	OTHER	-	+	+

Wildlife Determinations

Status T = Threatened
 E = Endangered
 P = Proposed
 S = Sensitive
 K = Key

NE = No Effect
 NI = No Impact
 MIIH = May Impact
 Individuals or Habitat, but will not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species
 BI = Beneficial Impact
 O = Neutral Impacts
 + = Positive Impacts
 - = Negative impacts

Table II-14: Sensitive Plant Species - Summary of Conclusion of Effects

Species	Alternative 1 No Action	Alternative 2 No Grazing	Alternative 3 Proposed Action
Dakota buckwheat	NI	NI	NI
Barr's milkvetch	NI	NI	NI
Golden stickleaf	NI	NI	NI
Mountain bluebells	NI	NI	NI
Prairie gentian	MIIH	NI	MIIH

NI = No Impact
 MIIH = May Impact Individuals or Habitat, but will not likely contribute to a trend towards Federal Listing or a loss of population viability.