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Environmental Assessment

for

Issuance of 10-Year Term Grazing Permits With Adaptive Management Pine Valley Ranger District Cattle Allotments

ENVIRONMENTAL ASSESSMENT

ISSUANCE OF 10-YEAR TERM GRAZING PERMITS WITH ADAPTIVE MANAGEMENT
PINE VALLEY RANGER DISTRICT
CATTLE ALLOTMENTS

DIXIE NATIONAL FOREST
WASHINGTON COUNTY

Responsible Agency:	USDA, Forest Service
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ABSTRACT

The Pine Valley Ranger District is proposing to issue 10 year permits to authorize the grazing of cattle on the following allotments beginning in the 1996 grazing season and terminating December 31, 2005.

Bull Valley
Gunlock
Magotsu
Terry Shoal Creek

In addition to the General Terms and Conditions which are standard to Part 2 of the Grazing Permit, term grazing permits proposed for issuance will include these additional terms and conditions: 1) Forest Plan standards and guidelines for utilization, 2) Structural and non-structural range improvement maintenance assignments, 3) Requirements for livestock distribution, 4) Allotment Management Plans and Annual Operating Plans, and 5) Requirements for Cultural Resource clearances for any proposed range projects.

This Environmental Assessment documents the analysis of the Proposed Action and one alternative to the Proposed Action--the No Action alternative, which would result in not issuing permits to graze cattle on the above allotments.

Adaptive Management and the NEPA Decision

Adaptive management practices will be used in the decision making process for the issuance of these permits to assist in expediting implementation of the Terms and Conditions of the Grazing Permit. In past decisions the agency has relied on exhaustive pre-decisional information collected to serve as a foundation for informed decision making. This often delayed project implementation to the point where the purpose and need were jeopardized. Adaptive management offers an opportunity to make timely decisions and still ensure environmental protection and compliance with Land and Resource Standards and Guidelines.

The principles of adaptive management applied to this project include the following (described within the EA and/or the decision document):

(a) A clear description of the desired outcome to be achieved by implementation of the decision.

(b) A clear description of monitoring to be used to evaluate if implementation is leading to the desired outcomes.

(c) If prescribed management fails to result in the desired outcome, alternative strategies will be developed by the IDT, and management will be "adapted" until the desired outcome is achieved.

The EA and/or the decision document will clearly describe where adaptive management procedures have been used in the decision making process for this project.

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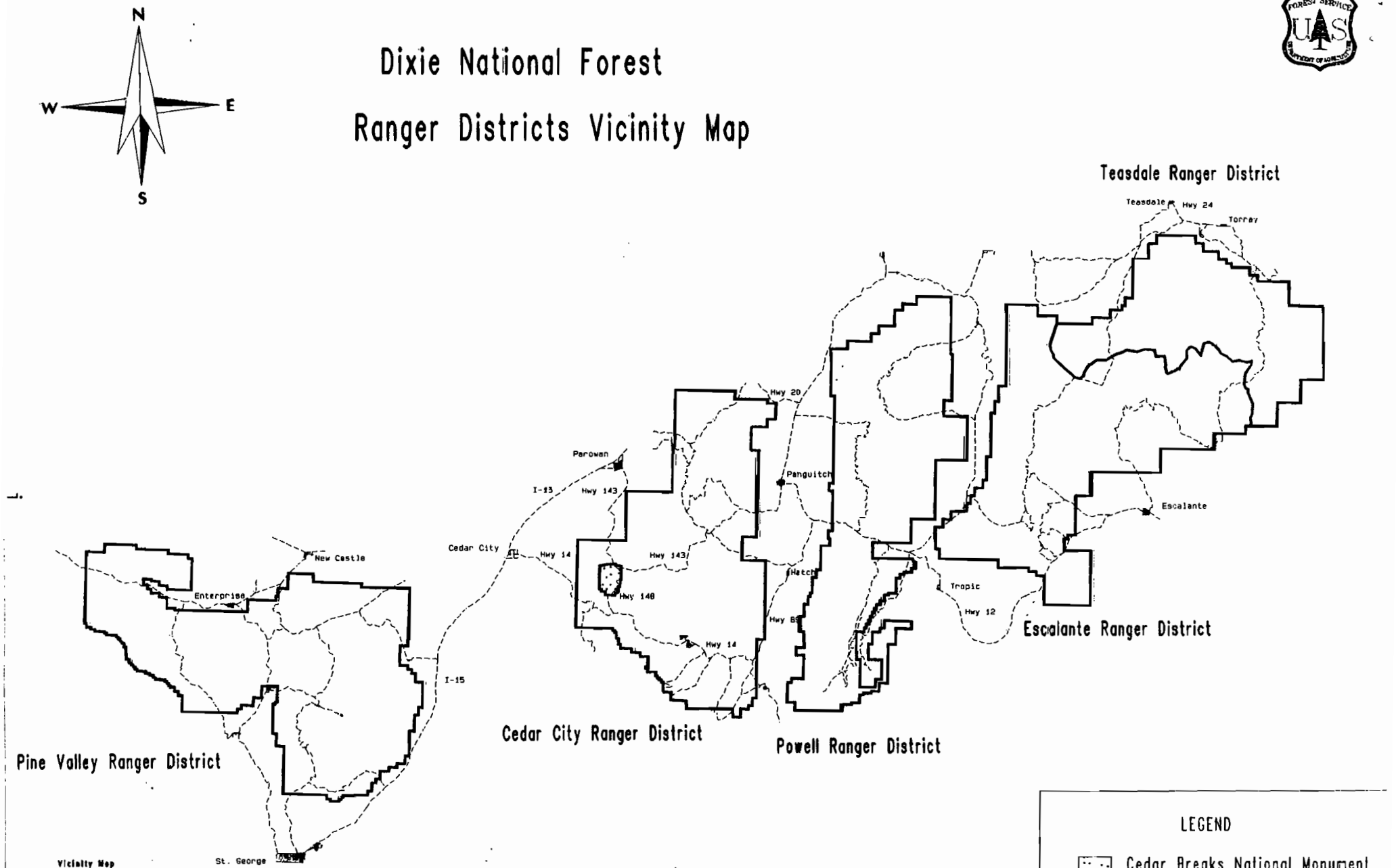

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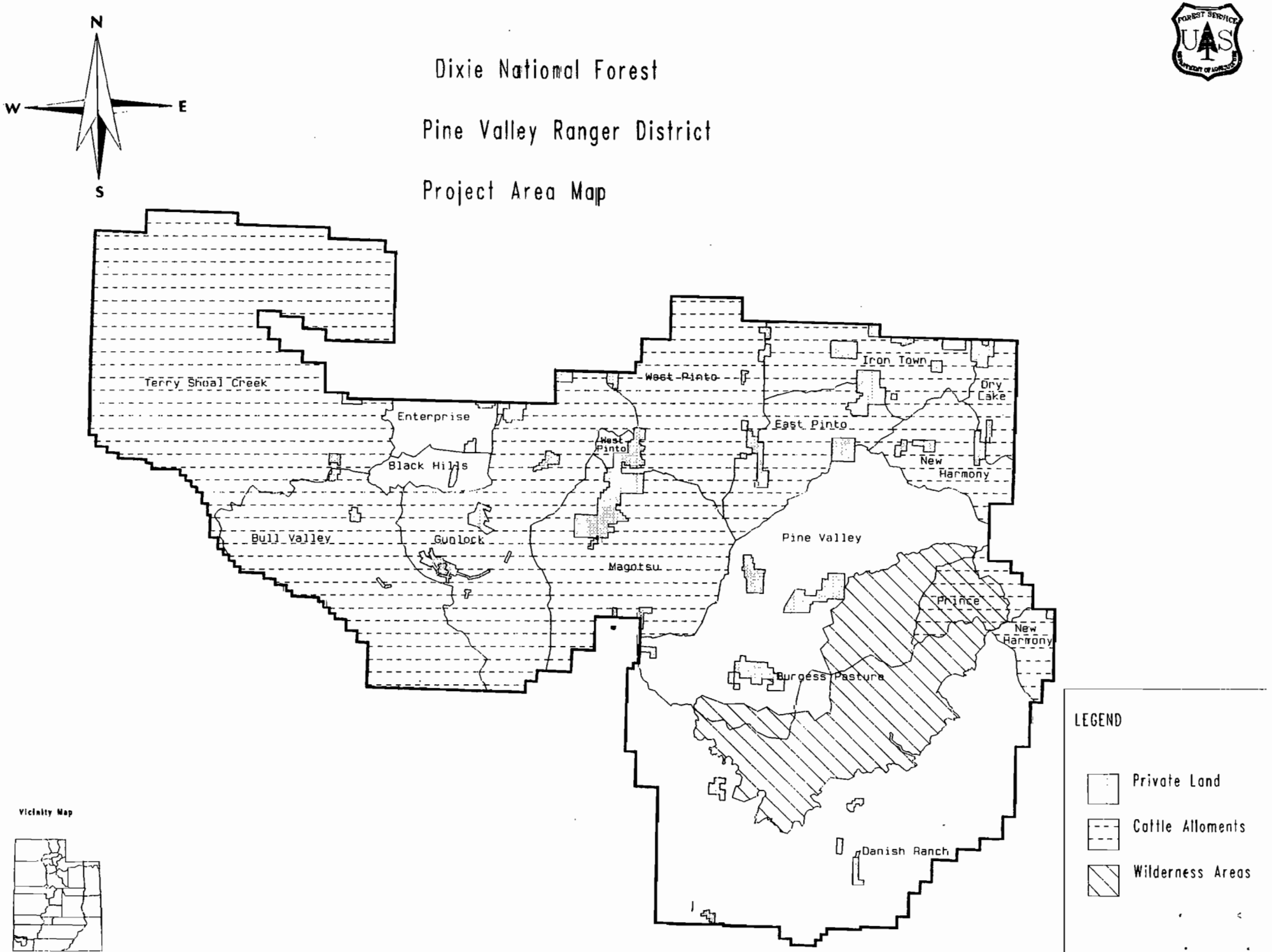

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CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

This chapter outlines the Proposed Action, and the Purpose and Need that drove its development. It also discusses the relationship of this document to the Dixie National Forest Land and Resource Management Plan (LRMP, 1986) along with other laws and regulations.

INTRODUCTION

This Environmental Assessment (EA) discloses the environmental effects of continued livestock grazing under term permits on the Pine Valley Ranger District, Dixie National Forest. The allotments on the Pine Valley Ranger District are located in Washington County in southern Utah (see enclosed map.) The proposed permits contained in this analysis authorize grazing on approximately 196,000 acres of National Forest land, as determined by the Dixie National Forest Land and Resource Management Plan, 1986 (LRMP).

PROPOSED ACTION

TABLE 1

Allotment Name	Total Acres	Proposed Use No.	Season of Use	Grazing System
Bull Valley	37,368	471	6/01 - 9/30	Deferred-Rotation
Gunlock	39,442	621	5/21 - 10/15	Deferred-Rotation
Magotsu	31,586	251	5/21 - 10/15	Deferred-Rotation
Terry Shoal Creek	87,786	732	5/16 - 11/15	Deferred-Rotation

The Pine Valley Ranger District is proposing to issue 10 year permits to authorize the grazing of cattle on the grazing allotments listed (Table 1) beginning in the 1996 grazing season and terminating December 31, 2005. In addition to the General terms and conditions which are standard to Part 2 of the Term Grazing Permit, Part 3 of the permits will include the following additional terms and conditions:

Land and Resource Management Plan Standards and Guidelines (S&G's) for utilization, streambanks and channel restoration, riparian area management, Threatened & Endangered Species, wildlife, plant and fish habitat.

Structural range improvement maintenance assignments.

Non-structural range improvement maintenance assignments.

Requirements for livestock distribution, including herding and salting.

Allotment Management Plans and Annual Operating Plans.

Requirements for cultural resource and Threatened, Endangered, Proposed and Sensitive plants, wildlife and fish clearances for any proposed range projects.

PURPOSE AND NEED

The purpose of the proposed action is to allow grazing of cattle on National Forest land of the Pine Valley Ranger District by issuing a ten-year term grazing permit in compliance with the Dixie National Forest Land and Resource Management Plan (LRMP).

In addition, the purpose of this action is to incorporate and implement applicable standards and guidelines of the LRMP (including compliance with applicable laws, regulations and policies) in the grazing permit authorizing livestock use on the Pine Valley Ranger District allotments.

A third purpose is to meet Forest Service multiple use objectives for obtaining proper utilization of available forage on suitable rangelands.

A comparison of the desired future condition for the range lands of these allotment(s) and the existing range condition indicated that for all of the allotments under this analysis there is a need to develop and implement a vegetation management program including prescribed fire. In addition the following needs were identified:

Bull Valley

Utilization in Moody Wash exceeds Forest Plan S&G's. Riparian condition is poor. The range vegetation and soils condition in Moody Wash near the Moody Creek bridge is unsatisfactory. There is a need to initiate recovery in the Moody Wash riparian area. There is a need to construct a fence around Lost Spring to protect the spring source.

Magotsu

Utilization in Spring Creek exceeds Forest Plan S&G's. There is a need to remove cattle from the riparian area while still allowing access to water.

Terry-Shoal Creek

Utilization in Pine Park Canyon exceeds Forest Plan S&G's. Grazing activities are impacting the riparian area's recovery from a fire in the late 1980's. There is a need to protect the riparian area while providing livestock access to the water source. Light utilization is occurring in parts of the Stud Horse unit. There is a need to improve distribution of cattle in the unit by developing an alternative water source.

Gunlock Allotment

Utilization on Shinbone and Spring Creek exceeds LRMP standards and guidelines. There is a need to improve the distribution of cattle in the Twin Springs Pasture.

FOREST PLAN (LRMP) DIRECTION

Development of this document follows the implementing regulations of the National Forest Management Act of 1976 (NFMA), Title 36: Code of Federal Regulations Part 219 (36 CFR 219); National Environmental Policy Act of 1969 (NEPA), Title 40; Code of Federal Regulations, Parts 1500-1508. This Environmental Assessment (EA) is tiered to the Dixie National Forest Land and Resource Management Plan (LRMP) - Final Environmental Impact Statement (1986).

This analysis incorporates direction provided in the LRMP (1986). The LRMP guides natural resource management activities and has established management direction and Standards and Guidelines for management of the Dixie National Forest.

The Forest-wide Standards and Guidelines (S&G's) describe environmental protection measures to be applied to all lands on the Dixie National Forest unless superseded by the specific management area S&G's (LRMP, pages IV-24 to IV-55). Management Area Standards and Guidelines describe measures to be applied to geographic subdivisions of the Forest, each with a different resource management emphasis. There are 19 Management areas on the Dixie National Forest, detailed in Chapter IV of the LRMP. Each includes specific management direction and S&G's. Implementation of the Forest-wide and specific management Area direction and S&G's would move the project area towards the "Desired Future Condition" described in the LRMP (LRMP, pages IV-19 to IV-23).

INCORPORATION BY REFERENCE

Regulations to implement the National Environmental Policy Act (NEPA) provide for the reduction of bulk and redundancy in environmental impact statements and environmental assessments (40 CFR 1502.21), through incorporation by reference when the effect will reduce the size of the document without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described.

Documents incorporated by reference in this environmental assessment include:

1. A Comprehensive Literature Review of the Effects of Livestock Grazing on Natural Resources
2. NFMA analysis notes of existing condition, desired future condition, and prescriptive actions maintained in the project file
3. Dixie National Forest Land and Resource Management Plan
4. Riparian Inventory Reports for the Pine Valley Ranger District
5. National Historic Preservation Act (NHPA) Memorandum of Understanding
6. Programmatic BA of the Effects of Grazing on the Mexican Spotted Owl

DECISION TO BE MADE

The Responsible Official is the District Ranger of the Pine Valley Ranger District. This document will provide the Responsible Official with the basis upon which to make an informed decision. Following a review of this document, for each allotment, the Responsible Official will decide to do one of the following:

1. Issue term grazing permit as proposed.
2. Issue term grazing permit under conditions other than proposed.
3. Not issue term grazing permit.

CHAPTER 2
PUBLIC INVOLVEMENT, ISSUES AND ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes the Proposed Action and alternatives to the Proposed Action which were designed to respond to key issues while still addressing the Purpose and Need identified in Chapter 1. As required by law, a "No Action Alternative" is considered.

A public involvement process was initiated to identify relevant public concerns about the proposed action and to identify significant issues to be addressed in the environmental analysis. Interested and affected parties were contacted by the following public involvement activities:

- Annual correspondence to permittees and annual operating meetings with permittees about their permit.

- A formal scoping letter detailing the proposed action was sent to 418 interested parties, seeking public comments for a 30 day period between July 11, 1995 and August 11, 1995.

- An update letter that was sent to permittees, elected officials, and interested members of the public to inform them of recent legislative developments and to provide clarification of the proposed action, proper utilization and to better describe the needs for the connected actions.

- Correspondence and discussions with interested parties from March of 1995 to present.

The Forest Service Interdisciplinary Team (IDT) thoroughly reviewed comments received from people interested in the proposal. All concerns raised by the public were addressed by 1) mitigation measures, 2) features of the proposed action, and/or 3) the no action alternative--which would not permit cattle grazing.

ISSUES

During the existing condition phase of the National Forest Management Act (NFMA) analysis the Interdisciplinary Team (IDT) developed a preliminary list of issues. These issues were directly related to the issuing of term grazing permits, including grazing in riparian areas, grazing in threatened, endangered and sensitive species habitat and soil and water quality within the allotments, and the affects of these activities on the natural resources and local economy of the area. The Dixie National Forest LRMP allows for the grazing of livestock in compliance with Forest-wide and Management Area Standards and Guidelines. Part of the focus of the NFMA Analysis is to assess how well existing conditions comply with S&G's.

Information and concerns from the public responses to scoping, from resource specialist in the USDA Forest Service, and from other public agencies were used to identify significant issues. The Interdisciplinary Team evaluated the initial public and agency information and confirmed there were no significant

NEPA issues that would drive the development and evaluation of additional alternatives.

Scoping was used to identify issues that are of significance to drive the formulation of additional alternatives to the proposed action. A process of issue sorting was used to analyze and sort comments to determine if a significant issue was expressed in the comment. The five criteria listed below were used to evaluate comments:

1. Non-significant issue identification--the issue is recorded but not included in further documentation. (A non-significant issue is an issue where the issue is outside the scope of the proposed action, the issue is already decided by law, regulation, forest plan or other higher level decision, the issue is irrelevant to the decision to be made, the issue is conjectural and not supported by scientific evidence, the issue has limited extent, duration and intensity.)

2. A measurement indicator--if the indicator is valid, it is adopted, if not, it is recorded but not included in further documentation.

3. Additional affected environment--if the additional affected environment is valid, it is adopted, if not, it is recorded but not included in further documentation.

4. An additional alternative--if the additional alternative is valid it is adopted; if not, it is recorded but not included in further documentation.

5. The identification of a "significant issue"--significant issues are carried forward in the analysis process. (A "significant issue" is a dispute with the environmental effects of the proposed action.)

NONSIGNIFICANT ISSUES

Some respondents indicated concern that livestock grazing may cause degradation of the environment-- soil and water quality, wildlife and plant species and recreational experiences. Most of these comments are associated with situations of overgrazing, which is a conflict with the Proposed Action. However, the Proposed Action prescribes grazing at proper use which is consistent with providing for the needs of the environment. Overgrazing is not carried forward as a formal issue because the LRMP allows livestock grazing at proper use as part of its multiple use mandate. Additionally, the NO ACTION alternative, which will be analyzed in detail, effectively displays the effects of no grazing.

ALTERNATIVE DEVELOPMENT

A reasonable range of alternatives to the proposed action was developed to:

1. Meet the purpose and need for the project, which includes meeting Standards and Guidelines of the LRMP.

2. Consider a reasonable range of solutions for the issues.

The Term Grazing Permit Issuance ID Team developed a set of grazing strategies to address each issue. Intensive data analysis and field trips to critical allotments were made by the team to jointly verify on-the-ground conditions and how initial strategies should be adjusted. Complimentary strategies including connected actions for resolving issues were combined to form single alternatives.

In order to consider a reasonable range of solutions to the issues, the ID Team developed eight potential alternatives and a No Action Alternative. Seven of these alternatives were "considered, but not studied in detail". These alternatives were listed first, including the reasons why they were not carried forward for "detailed consideration". Following this discussion is the description of the two alternatives, Proposed action and No Action that are "considered in detail".

ALTERNATIVES CONSIDERED, BUT NOT STUDIED IN DETAIL (including discussion of rationale for not considering the alternative further)

Alternative 1

This alternative would continue to allow cattle grazing under the Terms and Conditions of the expiring permit. While this alternative would allow cattle grazing on existing allotments, the current prescribed utilization standards will not meet the purpose and need as described in Chapter 1. In some instances riparian communities that meet or are moving towards the desired future condition could be moved away from the desired future condition without changes in the Terms and Conditions of the Grazing Permit. For this reason this alternative will not receive further detailed study in this analysis.

Alternative 2

This alternative would issue Term Grazing Permits for less than 10 years. While this alternative would allow cattle grazing on existing allotments it would not comply with Section 504 of Public Law 104-19 requiring that all grazing permits be issued for a full 10-year term. For this reason this alternative will not receive further detailed study in this analysis.

Alternative 3

This alternative would renew the grazing permit, but with different levels of stocking. While this alternative would allow cattle grazing on existing allotments it would not comply with Section 504 of Public Law 104-19 requiring that all grazing permits be issued for current numbers. NFMA analyses indicated that these allotments are currently stocked within indicated capacities. For this reason this alternative will not receive further detailed study in this analysis.

Alternative 4

This alternative allows the use of different grazing systems at various levels of stocking. While this alternative would allow cattle grazing at various levels on the existing allotments, it was not studied in detail because

appropriate changes in grazing strategies were considered and/or made in the Proposed Action, which does not preclude future administrative changes in grazing strategies. For this reason this alternative will not receive further detailed study in this analysis.

Alternative 5

This alternative would allow no grazing within riparian areas. While this alternative would allow cattle grazing on upland areas of the existing allotments, it is impractical to exclude all riparian areas from grazing, and would reduce or restrict other uses of riparian systems. Although some studies indicate that exclusion of grazing by fencing is the quickest method to improve deteriorated riparian areas, studies also show that proper grazing by cattle has acceptable effects on riparian resources. Recognizing that riparian areas are integral components of the affected environment, Management Area Direction and Standards and Guidelines have been incorporated in the LRMP to protect and enhance riparian systems. For this reason this alternative will not receive further detailed study in this analysis.

Alternative 6

This alternative would provide protection of wildlife habitat. Both alternatives considered in detail provide for wildlife habitat. This is because the alternatives considered in detail comply with applicable laws, regulations, management direction and LRMP Standards and Guidelines. For this reason this alternative will not receive further detailed study in this analysis.

Alternative 7

This alternative would prescribe changing kind and class of livestock on existing allotments. This alternative would allow grazing of livestock on existing allotments but would require additional site-specific analysis to determine the suitability of range conditions to effect such a change. This alternative does not meet the purpose and need described in Chapter One which is to allow cattle grazing on National Forest land. Additionally, Section 504 of Public Law 104-19 specifically legislates the issuance of a grazing permit be accomplished under the the same terms and conditions as the expired permit. For these reasons this alternative will not receive further detailed study in this analysis.

ALTERNATIVES CONSIDERED IN DETAIL

This environmental assessment describes two alternatives in detail. They are the Proposed Action - issue 10 year permits to authorize grazing and the No Action - where grazing permits are not issued.

In addition to the General Terms and Conditions which are standard to Part 2 of the Term Grazing Permit, Part 3 of Term Grazing Permits will include terms and conditions relative to:

- Structural range improvement maintenance assignments.

- Non-structural improvement maintenance assignments. Rangeland areas which have been mechanically treated to manipulate vegetation conversions from either pinyon-juniper or sagebrush vegetation types (with or without reseeding), for the specific purpose of providing livestock forage will be assigned for permittee maintenance in Part 3 of the Grazing Permit. Portions of livestock grazing capacities are based on the production of these treated areas. If, during the tenure of this permit, forage production in these areas declines, substantially affecting grazing capacity, adjustment of livestock numbers or season of use will be administratively made.

- Requirements for livestock distribution, including herding and salting.

- Allotment Management Plans and Annual Operating Plans.

- Requirements for cultural resource clearances for any proposed range projects.

- Forest Plan standards and guidelines for utilization, streambank and channel restoration, riparian area management, Threatened, Endangered and Sensitive Species, plant, wildlife and fish habitat.

  The following standards, in Table 2, define proper use criteria incorporated in Part 3 of the permit. These standards are within the parameters prescribed in the Dixie National Forest Land and Resource Management Plan (LRMP) but provide more definitive criteria. This is not an all-inclusive listing of proper use criteria. Proper use criteria are determined by application of limiting factors such as presence of Threatened, Endangered or Proposed and Sensitive fish, wildlife, or plant species or critical/sensitive resource areas. Therefore, some utilization prescriptions may be less than these maximum standards. Any one of these standards will indicate the proper time to remove livestock from that pasture or allotment:

Table 2
Proper Use Criteria

	Utilization By Seral Stage				
Vegetation Type	Very Early	Early	Mid	Late	Comments
Hydric species in riparian areas	6" SH*	6" SH	4" SH	4" SH	Remaining at end of growing season
Riparian Management Area 9B	6" SH	6" SH	6" SH	6" SH	Remaining at end of growing season.
Hydric species in wet meadows not influenced by streams	6" SH	6" SH	4" SH	4" SH	Remaining at end of growing season
Non-hydric species in riparian areas	2" SH	2" SH	2" SH	2" SH	Remaining at end of growing season.
Streambanks	---------- <20% disturbance----------				Sloughing, trampling, dislodged stones, animal tracks.
Riparian browse	----------≤50%----------				New leader production.
Upland	50%	50%	50%	50%	Varying in specific unit from 40-60%.
Crested wheatgrass	60%	60%	60%	60%	Mgmt option to intensively graze at higher level to maintain healthy seeding.

Goshawk post-fledgling family areas (PFAs)
Ponderosa Pine/Mixed species--use criteria applies in up to 2-acre openings in 600-acre area:
Spruce-Fir--use criteria applies in up to 1-acre openings in 600-acre area:

Grass,Forb	---------average 20% by weight----------	Not exceed 40%.
Shrub	---------average 40% by weight----------	Not exceed 50%.

Goshawk foraging areas
Ponderosa Pine/Mixed Species--use criteria applies in up to 4-acre openings in 6000-acre area:
Spruce-Fir--use criteria applies in up to 1-acre openings in 6000-acre area:

Grass,Forb	---------average 20% by weight----------	Not exceed 40%.
Shrub	---------average 40% by weight----------	Not exceed 50%.

*SH= Stubble Height

DESCRIPTION OF ALTERNATIVES

PROPOSED ACTION

The Pine Valley Ranger District is proposing to issue 10 year permits to authorize the grazing of cattle on the grazing allotments listed in Chapter 1, beginning in the 1996 grazing season and terminating December 31, 2005. In addition to the General Terms and Conditions which are standard for Part 2 of the Term Grazing Permit, term grazing permits proposed for issuance will include the additional terms and conditions added to Part 3 of the respective permits.

CONNECTED ACTIONS

Connected actions are those actions required to be implemented in order to permit livestock grazing. No needs were identified, for any allotments, during analysis which required implementation of connected actions.

IMPROVEMENTS NEEDED FOR BETTER LIVESTOCK DISTRIBUTION AND FORAGE UTILIZATION

BULL VALLEY

1. Replace fence around Lost Spring in NE1/4 Sec 19 T.38S. R.18W. SLBM.

MAGOTSU

1. Construct 1 mile of fence with lanes along 1/4 mile of Spring Creek to exclude cattle in N1/2 Sec 8 T.38S. R.15W. SLBM.

2. Install two water developments in the Horse Valley unit uplands. One on the east side of Spring Creek in W1/2 Sec 21 T.38S. R15W. SLBM. The other one on the West side of Spring Creek in SW1/4 Sec 7 T.38S. R15W. SLBM.

TERRY SHOAL CREEK

1. Fence Pine Park campground in area of the Pine Park Canyon. The legal description is the W1/2 Sec 31 T.37S. R.19W. SLBM.

2. Develop a well in Stud Horse Unit. The legal description is S1/2 Sec 17 T.36S. R.19W. SLBM.

NO ACTION

The grazing permit would not be issued. The No Action alternative would not permit grazing on the allotments described in Chapter 1.

MITIGATION MEASURES

Report and record any sightings of threatened, endangered, proposed or sensitive species and implement appropriate protection measures as stated in

recovery plans, habitat conservation plans, LRMP or other approved plans or in compliance with direction given by the forest, zone or district wildlife biologist, fish biologist or botanist.

Cultural resource sites known within these allotments shall be protected. If a site is located during management improvement operations, operations would cease until the site is evaluated by the forest archeologist (or qualified designate). Prior to activities and operations to effect range improvement activities such as water developments or fencing, the appropriate archeological inventories and consultation under the supervision of the forest archeologist (or qualified designate) shall occur.

COMPARISON OF ALTERNATIVES

TABLE 3
COMPARISON OF ALTERNATIVES BY PURPOSE AND NEED, FOREST PLAN CONSISTENCY AND LAW

ALTERNATIVE	ADDRESSES PURPOSE AND NEED	FOREST PLAN CONSISTENCY
Proposed Action	Yes- The proposed action authorizes cattle grazing and incorporates standards and guidelines from the LRMP. It also requires proper utilization of available forage.	Yes- This action would gradually move the allotments towards the desired future condition in the Plan and identified during the NFMA analysis.
No Action	No-This alternative would not authorize cattle grazing. It would not meet multiple use objectives.	No- This alternative does not meet the desired future condition in the Plan. It does not comply with PL-104-19.

CHAPTER 3: AFFECTED ENVIRONMENT

PROJECT AREA

These four (4) cattle allotments on the Pine Valley Ranger District which are proposed for permit issuance under "adaptive management" cover over 195,000 acres on the Bull Valley landform region in Iron and Washington Counties in southwestern Utah (see location and vicinity map). Communities located adjacent to this region include, Enterprise, Newcastle, Central and Veyo.

Elevations range from approximately 5,300 feet in the southern valleys and 6,000 feet in the northern valleys to 7,500 feet on Cove Mountain in the Bull Valley Allotment. Vegetation types range from pinyon-juniper and sagebrush to ponderosa pine and aspen. These allotments slope to the north and south and watersheds drain northward to Escalante Desert, primarily a closed basin, and southward, tributary to the Virgin River.

The Pine Valley Mountain Wilderness covers 50,000 acres of the Pine Mountain Range in the higher elevations southeast of the allotments under analysis. The south and east boundaries of the Magotsu and the south boundary of the East Pinto Allotment are about five miles north of the Wilderness.

EXISTING CONDITIONS

The following tables describe the existing condition of only those components of the affected environment within the respective allotments which may be affected by the proposed management activities. The resources described are: vegetation, threatened, endangered, proposed and sensitive plants and animals, soil, water, fish, recreation, and critical wildlife habitat for management indicator species. Critical wildlife habitat is defined by Utah Division of Wildlife Resources or the Forest Service and has no relationship to critical habitat designated by the U.S. Fish and Wildlife Service or National Marine Fisheries for threatened or endangered species. Critical habitat has not been designated on the Dixie National Forest for any Federally listed threatened or endangered species.

The information presented in Chapter 3 is based on information contained in the Project File, located at the Dixie National Forest. The existing terms of the respective permits with regard to numbers, season of use and grazing system is listed at the top of each table.

Several components of the affected environment that may be present on the allotment were not analyzed in detail because the interdisciplinary team and the consultation process with regulatory agencies determined that there would be little or no effects from livestock grazing to these components and connected actions such that further analysis would not be needed. These components are:

Wildlife: During the informal consultation process the Dixie National Forest and the U.S. Fish and Wildlife Service concurred that the following threatened, endangered, and sensitive species are not affected by grazing

and that further analysis would not be needed. These species and the rationale for this determination are shown below. (T indicates threatened species, E for endangered and S for Regional Forester designated sensitive species.)

Bald eagle (T) (Haliaeetus leucocephalus)	There are no nests or roosts on the Dixie National Forest. Occurrences are in fall or spring before or after grazing has occurred. The most limiting habitat component for bald eagles is large diameter trees which are not affected by grazing.
Peregrine Falcon(E) (Falco peregrinus anatum)	Peregrines forage within one mile of a nest for 80% of their foraging. Therefore only allotments that graze within this distance are analyzed in Chapter 4.
Three-toed Woodpecker(S) (Picoides tridactylus)	The limiting habitat component for this species is snags, which are not affected by grazing.

Bat species considered under Species of Concern in Chapter 4 are: California myotis (Myotis californicus), Western small-footed bat (Myotis ciliolabrum), Long-eared myotis (Myotis evotis), Fringed myotis (Myotis thysanodes), Long-legged myotis (Myotis volans), Yuma myotis (Myotis yumanensis), Allen's big-eared bat (Idionycteris phyllotis), and Brazilian free-tailed bat (Tadarida brasiliensis). See Grazing Literature Review for further discussions regarding the effects of grazing on these species.

The Management Indicator Specie that is not affected by grazing and requires no further analysis is:

Northern Flicker (Colaptes auratus)	The limiting habitat component is snags, which are not affected by grazing.

The Brian Head Recovery Project Environmental Impact Statement and Record of Decision has described replacing the yellow-breasted chat with habitat conditions to indicate health of riparian habitats. These conditions include:

1. Dominant late seral plant community stages
2. All age classes represented
3. Shrubs having multiple stems and canopy layers in continuous patches with limited openings throughout
4. Native species dominant with grasses forbs, shrubs, and litter present
5. Natural dynamic processes functioning throughout the system.

Cultural Resources: A Memorandum of Understanding has been prepared that identified sites needing to be addressed with this analysis. None of these sites are present on the allotments under analysis.

Under "Soil/Water" on Table 4, reference is made to 303(d) water bodies. 303(d) water bodies are those that the State of Utah Division of Water Quality has identified as not meeting State standards for designated beneficial uses. Also listed under this resource is a listing of High Priority Watersheds that have been identified by the State of Utah for non-point source pollution control. The specific pollutant parameters abbreviated are: DO, dissolved oxygen; Nut, Nutrients; TSS, total suspended solids; TDS, total dissolved solids; temp, temperature; pH and Iron .

Following, in Table 4, is a summary of existing resource conditions on the affected allotments (summarized from Project File NFMA analysis record).

TABLE 4
EXISTING RESOURCE CONDITIONS

ALLOTMENT: Bull Valley (cattle)

Numbers:471 Season of Use: 6/1-9/30 Grazing System: Deferred-Rotation.

RESOURCE	FEATURE	CONDITION	LOCATION
Vegetation	Riparian-Alpine	- - -	Not present.
	Riparian-Other	Unsatisfactory.	Moody Wash, Maple Springs.
		Satisfactory.	Little Grassy, Lower Lost Ck.
	Reseeded, sagebrush	Satisfactory.	Dutchman Unit
	Upland	Satisfactory.	Allotment wide
TEPS Plants	Aquarius Paintbrush	- - -	Not present.
	Tushar Paintbrush	- - -	Not present.
	Paria Breadroot	- - -	Not present.
	Parodox Moonwart	- - -	No known locations.
	Arizona Willow	- - -	No known locations.
Soils/Water	Streambanks	Unstable.	Moody Wash
		Stable.	Remainder of allotment.
	Riparian Size	Decreasing.	Moody Wash.
		Unknown.	Remainder of riparian.
	Soil Productivity	Adverse impacts.	Moody Wash, Jeep road erosion.
		No adverse impacts.	Remainder of allotment.
	Sediment Delivery to streams	Elevated sediment levels.	Moody Wash, Jeep roads.
		Within acceptable limits.	Remainder of allotment.
	303(d) Water Bodies	Nutrients, DO.	Enterprise Reservoir.
	High Priority H2O-sheds	Nutrients, TDS.	Gunlock.
		Nutrients.	Shoal Creek.
Fish MIS	Viable Populations	Virgin spinedace	Moody Wash.
	Streamside Cover	Not measured.	Moody Wash.
	Macroinvertebrates	Not measured.	Moody Wash.
	TEPS	Virgin spinedace	Moody Wash
Recreation	Developed Sites	- - -	Not present.
	Dispersed Sites	No known conflicts.	Heavy hunting use, OHV impacts, adjacent to Honeycomb Rocks Campground and Enterprise Reservoir.
	Wilderness	- - -	Not present.
Wildlife TEPS Habitat	Mexican Spotted Owl	Potential habitat.	Not present/surveyed.
	Northern Goshawk	- - -	Not present.
	SW Willow Flycatcher	- - -	Not present.
	Peregrine Falcon	- - -	Not present.
	Utah Prairie Dog	- - -	Not present.
	Spotted Bat	Potential foraging.	Throughout allotment.
	Western Big-eared bat	Potential foraging.	Throughout allotment.
	Flammulated Owl	- - -	Not present.
Other Species of Concern	Sage Grouse	- - -	Not present.
	Western Burrowing Owl	- - -	Not present.
	Bats	Potential foraging.	Throughout allotment.
	Brian Head Mountainsnail	- - -	Not present.
Wildlife MIS Critical Habitat	Mule deer	Fawning.	Lost and Dutchman Pastures.
		Summer Range.	Lost and Dutchman Pastures.
	Rocky Mountain Elk	- - -	Not present.
	Wild Turkey	- - -	Not present.
	Yellow-Breasted Chat	Potential habitat.	Low elevation perennial streams.
Cultural Resources	Historic Properties	Not susceptible	All surveyed sites

ALLOTMENT: Gunlock (Cattle)

Numbers: 621 | Season of Use: 6/1-9/30 | Grazing System: Deferred-Rotation.

RESOURCE	FEATURE	CONDITION	LOCATION
Vegetation	Riparian-Alpine	- - -	Not present.
	Riparian-Other	Unsatisfactory	Spring Creek, Shinbone Spring.
		Satisfactory	All other riparian areas.
	Reseeded	Satisfactory	Gum Hill, Spring Ck, Twin Spg.
	Upland	Satisfactory	Allotment-wide
TEPS Plants	Aquarius Paintbrush	- - -	Not present.
	Tushar Paintbrush	- - -	Not present.
	Paria Breadroot	- - -	Not present.
	Parodox Moonwart	- - -	Not present.
	Arizona Willow	- - -	Not present.
Soils/Water	Streambanks	Stable	Spring Creek, Shinbone Cr.
	Riparian Size	Stable or increasing.	Throughout allotment.
	Soil Productivity	Adverse impacts.	Spring Creek.
		No adverse impacts.	Remainder of allotment.
	Sediment Delivery	Within acceptable limits.	Throughout allotment.
	303(d) Water Bodies	- - -	Not present.
	High Priority H2O-sheds	Nutrients, TDS	Gunlock.
Fish MIS	Viable Populations	- - -	Not present on allotment.
		Spinedace	Moody Wash off allotment.
	Streamside Cover	Not measured.	Moody Wash.
	Macroinvertebrates	Not measured.	Moody Wash.
Recreation	Developed Sites	- - -	Not present.
	Dispersed Sites	Conflicts known.	OHV problems near Enterprise, problems with open gates and impacts to roads.
	Wilderness	- - -	Not present.
Wildlife TEPS Habitat	Mexican Spotted Owl	- - -	Not present.
	Northern Goshawk	- - -	Not present.
	SW Willow Flycatcher	Marginal habitat.	Magotsu Creek at pond.
	Peregrine Falcon	Within 10 miles of nest.	Small corner, south end of allotment.
	Utah Prairie Dog	- - -	Not present.
	Spotted Bat	Possible potential habitat.	Cliff areas along Moody Wash.
	Western Big-eared bat	Possible potential habitat.	Cliff areas.
	Flammulated Owl	- - -	Not present.
Wildlife MIS Critical Habitat	Mule deer	Fawning	Ox Valley.
	Rocky Mountain Elk	- - -	Not present.
	Wild Turkey	Active nesting/foraging.	Lower Moody Wash area.
	Yellow-Breasted Chat	Potential habitat.	Upper tributaries of Magotsu Creek.
Other Species of Concern	Sage Grouse	- - -	Not present.
	Western Burrowing Owl	- - -	Not present.
	Bats	Possible habitat.	Cliff areas.
	Brian Head Mountainsnail	- - -	Not present.
Cultural Resources	Historic Properties	Not susceptible	All surveyed sites

ALLOTMENT: **Magotsu (cattle)**

Numbers: 251 Season of Use: 5/21-10/15 Grazing System: Deferred-Rotation.

RESOURCE	FEATURE	CONDITION	LOCATION
Vegetation	Riparian-Alpine	- - -	Not present.
	Riparian-Other	Unsatisfactory.	Middle of Spring Ck.
		Satisfactory.	Upper Spring Ck
	Reseeded P/J/Sagebrush	Satisfactory.	8 Mile/Red Butte
	Upland	Satisfactory	Allotment wide
TEPS Plants	Aquarius Paintbrush	- - -	Not present.
	Tushar Paintbrush	- - -	Not present.
	Paria Breadroot	- - -	Not present.
	Parodox Moonwart	- - -	No known locations.
	Arizona Willow	- - -	No known locations.
Soils/Water	Streambanks	Stable.	Throughout Allotment.
	Riparian Size	Stable.	Throughout allotment.
	Soil Productivity	Adverse impacts.	Spring Creek.
		No adverse impacts.	Remainder of Allotment.
	Sediment Delivery to streams	Elevated sediment levels.	Spring Creek.
		Within acceptable limits.	Remainder of Allotment.
	303(d) Water Bodies	DO, Temp, TSS, TDS.	Santa Clara River.
	High Priority H2O-sheds	Nutrients, TDS.	Gunlock.
Fish MIS	Viable Populations	Brown trout.	Santa Clara River.
		Virgin spinedace	Moody Wash.
	Streamside Cover	less than 40%	Santa Clara River, Moody Wash.
	Macroinvertebrates	Not measured.	Santa Clara River in this allotment, Moody Wash.
Recreation	Developed Sites	- - -	Not present.
	Dispersed Sites	No known conflicts.	Camping on Santa Clara River, hunters, travel corridor to Mtn. Meadows, system trail.
	Wilderness	- - -	Not present.
Wildlife TEPS Habitat	Mexican Spotted Owl	Potential.	Not present/surveyed.
	Northern Goshawk	- - -	No habitat present.
	SW Willow Flycatcher	Potential habitat.	Magotsu Creek, at pond.
	Peregrine Falcon	- - -	Not present.
	Utah Prairie Dog	- - -	Not present.
	Spotted Bat	Potential foraging.	Throughout allotment.
	Western Big-eared bat	Potential foraging.	Throughout allotment.
	Flammulated Owl	- - -	Not present.
Other Species of Concern	Sage Grouse	- - -	Not present.
	Western Burrowing Owl	- - -	Not present.
	Bats	Potential foraging; western small-footed and long-legged myotis.	Horse Valley and Eight Mile pastures; documented in Water Canyon.
	Brian Head Mountainsnail	- - -	Not present.
Wildlife MIS Critical Habitat	Mule deer	Fawning.	Red Butte, Eight Mile, Horse Valley, Hardscrabble and small amount in Monument Pastures.
		Summer Range.	Red Butte, Eight Mile, Horse Valley, Hardscrabble and small amount in Monument Pastures.
	Rocky Mountain Elk	- - -	Not present.
	Wild Turkey	Turkeys present.	Throughout allotment.
	Yellow-Breasted Chat	Present.	Kane Springs Draw.
Cultural Resources	Historic Properties	Not susceptible	All surveyed sites

ALLOTMENT: Terry-Shoal Creek (cattle)

Numbers: 732 Season of Use: 5/16-11/15 Grazing System: Deferred-Rotatation.

RESOURCE	FEATURE	CONDITION	LOCATION
Vegetation	Riparian-Alpine	- - -	Not present.
	Riparian-Other	Unsatisfactory.	Pine Park.
		Satisfactory.	Other riparian in allotment.
	Reseeded	Satisfactory.	Allotment wide
	Upland	Satisfactory.	Allotment wide
TEPS Plants	Aquarius Paintbrush	- - -	Not present.
	Tushar Paintbrush	- - -	Not present.
	Paria Breadroot	- - -	Not present.
	Parodox Moonwart	- - -	No known locations.
	Arizona Willow	- - -	No known locations.
Soils/Water	Streambanks	Stable	Pine Park Canyon, Water Canyon, Rattlesnake Creek.
	Riparian Size	Decreasing	Pine Park Canyon, PP 6 and PP 7 Inventory areas.
		Stable or increasing.	All other riparian.
	Soil Productivity	Adverse impacts.	Pine Park Canyon.
		No adverse impacts.	Remainder of allotment.
	Sediment Delivery to streams	Elevated sediment levels.	Pine Park Canyon.
		Within acceptable limits.	Remainder of allotment.
	303(d) Water Bodies	Nutrients, DO.	Enterprise Reservoir.
	High Priority H2O-sheds	Nutrients.	Shoal Creek.
Fish MIS	Viable Populations	Healthy rainbow trout.	Pine Park Canyon.
		Some impacts.	Pine Park Canyon PP 3 and PP 6 Inventory areas.
	Streamside Cover	Less than 40%.	Pine Park Canyon PP 6 and PP 7.
		Greater than 40%.	Remainder of Pine Park Canyon.
	Macroinvertebrates	Not measured	Pine Park Canyon
Recreation	Developed Sites	No reported conflicts.	Pine Park Campground, Enterprise Campground.
	Dispersed Sites	Gates left open.	Dispersed hunting, OHV, Post-cutters, camping.
	Wilderness	- - -	Not present.
Wildlife TEPS Habitat	Mexican Spotted Owl	Potential habitat.	Not present/surveyed.
	Northern Goshawk	- - -	Not present.
	SW Willow Flycatcher	Potential habitat.	Pine Park Canyon.
	Peregrine Falcon	- - -	Not present.
	Utah Prairie Dog	- - -	Not present.
	Spotted Bat	Potential foraging.	Throughout allotment.
	Western Big-eared bat	Potential foraging.	Throughout allotment.
	Flammulated Owl	Potential habitat.	Pine Park Campground area.
Other Species of Concern	Sage Grouse	- - -	Not present.
	Western Burrowing Owl	- - -	Not present.
	Bats	Potential foraging.	Throughout allotment.
	Brian Head Mountainsnail	- - -	Not present.
Wildlife MIS Critical Habitat	Mule deer	Fawning.	Mountain Big Bench Pasture.
		Summer Range.	Mountain Big Bench.
	Rocky Mountain Elk	- - -	Not present.
	Wild Turkey	- - -	Not present.
	Yellow-Breasted Chat	1/4 mi. off Forest.	Little Pine Creek.
Cultural Resources	Historic Properties	Not susceptible	All surveyed sites

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

The environmental effects provide the scientific and analytical basis for the comparison of the Proposed Action with the alternatives described in Chapter 2. They include direct, indirect, and cumulative effects on the resources described in Chapter 3, Affected Environment.

Direct, indirect, and cumulative effects of livestock grazing on the resources and activities summarized in this chapter are discussed in detail in their respective chapters of the paper entitled "A Comprehensive Literature Review of the Effects of Livestock Grazing on Natural Resources" and the NFMA analysis notes contained in the Project File, located at the Dixie National Forest. Both records are incorporated here by reference (40 CFR 1502.21). Site-specific resources identified in Chapter 3 are the basis for discussion in this chapter.

VEGETATION

PROPOSED ACTION

DIRECT/INDIRECT EFFECTS
The standards and guidelines in this alternative have been established to manage the vegetation with proper livestock grazing and will ensure that any adverse impacts on the resources in the Gunlock, Magotsu, Terry-Shoal Creek and Bull Valley allotments are within acceptable standards. In the NFMA analysis areas of overutilization were found to exceed current standards. To correct this, Range Improvements will be applied to the Gunlock, Magotsu, Terry Shoal Creek and Bull Valley allotments to provide for proper distribution and utilization of available forage.

CUMULATIVE EFFECTS
The cumulative effects area (CEA) for vegetation is the Pine Valley Ranger District. This area was selected based on continuity of vegetation types throughout the District and the adjacency of the allotments.

The cumulative effects of past and present livestock grazing, trail/road building, fire, chainings, recreation, special uses and timber harvest have influenced the vegetation resource on the Pine Valley Ranger District. Road and trail construction allowed livestock to distribute into areas that previously were not accessed easily. Many trails and roads have grown over with woody vegetation making them impassible for livestock. Past chainings have converted pinyon/juniper rangeland within the CEA to crested wheatgrass stands. This is considered suitable range. An increase in native plant species is expected within these chainings and may result in a decrease in forage production. Many chainings had stock watering ponds constructed in various locations throughout the project area. Spring development and water pipeline

construction has provided additional permanent water sources. The water improvements have resulted in better distribution of water for livestock use. Past fires average less than 10 acres in size and cumulatively have had a minimal effect on the vegetation. However, fire suppression has altered species composition and structure throughout the District. Future watershed treatment activities within the pinyon/juniper/sagebrush areas are likely to have the same effects as past chainings. Conflicts between grazing and recreation activities may increase in the future. A vegetation analysis on National Forest System land, by watersheds west of State Highway 18, has been initiated. This ecosystem management approach to vegetation management is called the "West Side Vegetation Management Project". Diversity in age, size class and composition of vigorous vegetation will create a mosaic of vegetative plant types across the landscape.

The effects of implementing the proposed action, when combined with previously described effects of past, present and foreseeable future actions within the CEA, will result in a net increase in diversity of perennial plant species and productivity within the CEA.

NO ACTION

DIRECT/INDIRECT EFFECTS
The effects of no action on the vegetation will be a general increase in plant biomass.

CUMULATIVE EFFECTS
The cumulative effects area (CEA) for vegetation is the Pine Valley Ranger District. This area was selected based on continuity of vegetation types throughout the District and the adjacency of the allotments.

The cumulative effects of no grazing with the cumulative effects of the LRMP on the vegetation will be within the standards and guidelines as proposed with this alternative. The cumulative effects of the current resource management plan will result in the increasing of mature decadent Pinyon / Juniper woodlands. Without treatment this could result in the decrease of vegetative biodiversity.

THREATENED, ENDANGERED, PROPOSED AND SENSITIVE PLANTS

This section describes the direct, indirect and cumulative effects of the Proposed Action and the No Action Alternative on Federally listed Threatened, Endangered and Proposed plants as well as Sensitive plant species as designated by the Regional Forester of the Intermountain Region.

A more detailed description of the effects of the No Action and Proposed Action Alternatives can be found in the Grazing Literature Review for sensitive plants. The Biological Assessment for Threatened, Endangered and Proposed Species for Grazing Permit Issuance on the Dixie National Forest (BA) describes the effects of the Proposed Action on the one threatened plant that occurs on the Dixie National Forest. In addition, the effects of the No Action Alternative on this threatened plant can be found in the Grazing Literature Review.

The cumulative effects area for the plant species discussed below is the Pine Valley Ranger District. The rationale for identifying this CEA is that grazing occurs on nearly all parts of the District, the allotments under analysis are spread over much of the District, suitable habitats are scattered over the District and the Pine Valley Ranger District is somewhat geographically isolated from other mountains and similar plant communities such that the District may be considered as a meta-population for these species.

Past, present and future foreseeable activities considered in the cumulative effects analysis includes past grazing, present and future grazing, (many allotments will have proper use as described in this document), road construction, fencing, and water developments. It also considered a timber harvest/vegetation management treatment in the Pine Valley Recreation Area and surrounding pine community types in order to treat a beetle infestation. Planning is also under way for a vegetation management treatment, principally prescribed fire, to bring more of the sage, juniper, pinyon/juniper and oakbrush plant communities into early seral stages.

THREATENED, ENDANGERED, AND PROPOSED PLANT SPECIES

The Ute Ladies' Tresses (Spiranthes diluvialis), a Federally Listed Threatened species, was historically found in riparian areas in Colorado, Utah, and Nevada. It is presently found in relatively undisturbed riparian areas in Colorado, in wetlands in northern Utah, and in the Colorado River drainage in Eastern Utah. It is not known to occur on the Pine Valley Ranger District. Since no populations of this plant are known to occur on the District, this species will not be discussed further in this document.

SENSITIVE PLANT SPECIES

The following sensitive plant species do not occur on the Pine Valley Ranger District, principally because they are endemic to areas outside this area:

Dana Milkvetch (Astragalus henrimontanensis)
Navajo Lake Milkvetch (Astragalus limnocharis, var. limnocharis)
Table Cliff Milkvetch (Astragalus limnocharis, var. tabulaeus)
Aquarius Paintbrush (Castilleja aquariensis)
Tushar Paintbrush (Castilleja parvula, var. parvula)
Reveal Paintbrush (Catilleja parvula, var. revealii)
Yellow-white Catseye (Cryptantha ochroleuca)
Cedar Breaks Biscuitroot (Cymopterus minimus)
Creeping Draba (Draba sobolifera)
Widstoe buckwheat (Eriogonum aretioides)
Rabbit Valley Gilia (Gilia caespitosa)
Jones Goldenaster (Heterotheca jonesii)
Neeses' Peppergrass (Pediomelum pariense)
Red Canyon Beardtongue (Penstemon bracteatus)
Little Penstemon (Penstemon parvus)
Angelll cinquefoil (Potentilla angelliae)
Podunk groundsel (Senecio malmstenii)
Maguire campion (Silene petersonii)

Rock-tansy (Sphaeromeria capitata)
Bicknell Thelesperma (Thesesperma subnudum, var. alpinum)

Suitable habitat for Arizona willow (Salix arizonica) (riparian coridors above 8,500 feet with less than 5% gradient) occurs on the Pine Valley Mountains but not within these allotments. Zion Jamesia (Jamesia americana zionus) grows only on steep or exposed soil, generally hanging gardens, where livestock do not, or seldom, graze. Paradox moonwort, (Botrychium paradoxum) has been found at elevations in meadow habitats and snowfields at approximately 9,800 feet, which is generally higher than these allotments. Suitable habitat on these allotments is not likely. There have been no documented occurrences of these species on the Pine Valley Ranger District. Therefore, grazing would have no effects to Arizona willow, Zion Jamesia, Paradox moonwort, and the plants listed above that are endemic to other areas, therefore, they will not be analyzed further in this document.

PROPOSED ACTION

Guard Milkvetch (Astragalus zionus vigilus)
and Pine Valley Goldenbush (Haplopappus crispus)

DIRECT/INDIRECT EFFECTS
Guard milkvetch and Pine Valley Goldenbush are not known to be palatable to livestock, therefore would not be grazed. However, presence of livestock could cause inadvertent trampling of individual plants. The Proposed Action, therefore, would maintain habitat for Guard Milkvetch and Pine Valley Goldenbush.

CUMULATIVE EFFECTS
Little is known about these plants other than they are not palatable to livestock. Past activities such as road construction may have affected plants in the past, but no evidence of this exists. Future activities will include plant surveys to avoid adverse effects to populations of this species and to individuals. Proper use grazing District-wide combined with the Proposed Action would likely maintain habitat for these species.

Pinyon Penstemon (Penstemon pinorum)

DIRECT/INDIRECT EFFECTS
Pinyon penstemon would not likely be affected by grazing since it grows areas where little forage for livestock is available, (dry shallow soils in pinyon juniper habitats). Individual plant mortality could occur during fuelwoof removal, Christmas tree cutting, or livestock trampling.

CUMULATIVE EFFECTS
Proper use grazing would maintain habitat for this plant. It is not known if past activities affected individual plants, but there is no evidence to show that this occurred. Future activities will include the Biological Evaluation process to assure that proper analysis is given to this plant. Therefore, habitat for viable populations would be expected to be maintained.

NO ACTION

Guard Milkvetch (Astragalus zionus vigilus)
and Pine Valley Goldenbush (Haplopappus crispus)

DIRECT/INDIRECT EFFECTS
No grazing would not affect these plants and may allow more growth of all plant species. No Action, therefore, would likely maintain habitat for Guard Milkvetch and Pine Valley Goldenbush.

CUMULATIVE EFFECTS
Little is known about these plants other than that are not known to be palatable to livestock. It is not known if past activities have affected this plant, but there is no evidence that this occurred. Future activities will include the Biological Evaluation process which would adequately address these plants. Proper use grazing District-wide combined with the No Action Alternative would likely maintain habitat for this species.

Pinyon Penstemon (Penstemon pinorum)

DIRECT/INDIRECT EFFECTS
Pinyon penstemon would only be affected slightly, if any at all, by the No Action Alternative. All plants would be expected to increase with no grazing. The No Action Alternative, therefore, would likely maintain habitat for viable populations of Pinyon penstemon, meeting Forest Service NFMA requirements.

CUMULATIVE EFFECTS
Proper use grazing would maintain habitat for this plant. It is not known if past activities affected individual plants, but there is no evidence to show that this occurred. Future activities will include the Biological Evaluation process to assure that proper analysis is given to this plant. Therefore, habitat for viable populations would be expected to be maintained.

WILDLIFE

INTRODUCTION

Refer to Chapter 3 and Chapter 2 for site specific information regarding locations of suitable habitat, critical habitat as defined by the UDWR and Forest Service, and documented occurrences of species listed below. Species groups such as neotropical migratory birds and passerines are assumed to be present in all allotments and all pastures since their habitats may vary depending on species.

This section describes the effects of the Proposed Action and No Action Alternatives on wildlife resources. For a more detailed description of the effects of these alternatives on vegetation and hydrology (which comprise wildlife habitat components for many of these species) and on wildlife, see the Grazing Literature Review. The effects of the the Proposed Action on Federally Listed threatened, endangered and proposed species are described in more detail in the Biological Assessment for Threatened, Endangered and Proposed Species

for Grazing Permit Issuances on the Dixie National Forest, unless otherwise noted.

Analysis of wildlife habitats for this process is focused on critical wildlife habitats (as defined by Utah Division of Wildlife Resources and the Forest Service), on and key wildlife habitat components that can be influences by grazing for each species or specie groups.

The Brian Head Mountainsnail (Oreohelix parowanensis) does not occur within any of these allotments. There are no known Utah prairie dog (Cynomys parvidens) colonies, western burrowing owls (Athene cunicularia hypugaea) or suitable habitat areas on these allotments. There are no Rocky Mountain elk (Cervus elaphus nelsoni) herds presently under management on the Pine Valley Ranger District. No known sage grouse (Centrocercus urophasianus) or critical sage grouse ranges occur on these allotments. These allotments are not within one mile of any known peregrine falcon (Falco peregrinus anatum) nest. Therefore, these species will not be discussed further in this document.

Although no southwestern willow flycatchers or Mexican spotted owls have been found on the Pine Valley Ranger District they are discussed here using habitat as a surrogate (that is, treating them as though they occur) as agreed upon with the U.S. Fish and Wildlife Service.

Generally, cattle grazing affects grasses, forbs and shrubs on uplands and has greater effects to grasses, forbs, shrubs and tree seedlings in riparian zones. The following analysis of each species or group is based on the determination that with the Proposed Action and the No Action Alternatives grasses, forbs, shrubs and tree seedlings on uplands and particularly in riparian areas would improve where past grazing has exceeded Forest Plan Standards and Guidelines and/or conditions are unsatisfactory. The No Action Alternative would leave much more grasses, forbs, and shrubs, would allow tree seedlings to grow and provide more vertical vegetative structure. These improvements would be faster than with the Proposed Action. Some areas in "satisfactory condition" would improve because even though they may be defined as satisfactory by having adequate forage for livestock, have streambank stability, greenline vegetative cover and other satisfactory hydrologic conditions, they may not have the shrub or tree component (particularly willows or cottonwoods) necessary for some species of wildlife.

The range improvements proposed (principally fencing) would improve riparian areas. (See the Vegetation and Hydrology sections of this document.) Improved riparian areas would benefit many species of wildlife. Construction of the improvements would cause short term disturbances to wildlife. Following mitigation measures described in Chapter 2 would ensure that disturbances would not adversely affect the northern goshawk.

The cumulative effects area (CEA) for the species discussed below is the Pine Valley Ranger District. The rationale for this CEA is that grazing occurs on nearly all parts of the District, the allotments under analysis are spread over much of the District, these species have habitat or ranges over the whole district (sometimes scattered habitats), and the Pine Valley Ranger District is somewhat geographically isolated from other mountains and forests such that the District could be considered a meta-populations for these species. Additional rationale for specific species or groups is outlined where appropriate.

Past, present and future foreseeable activities considered in cumulative effects analysis includes fuelwood cutting, past grazing, present and future grazing elsewhere on the District, fencing, and water developments. Fuelwood cutting has occurred principally in juniper habitats. Fencing generally improves distribution of livestock and improves riparian areas. Water developments increase water availability and habitat effectiveness for many species of wildlife. Past wildfire suppression has increased juniper and sage plant communities and generally degraded watershed conditions, which has indirectly affected riparian areas.

In addition, planning is under way for a vegetation management harvest in the Pine Valley Recreation area and surrounding pine community types in order to treat a beetle infestation. This treatment would remove some large trees and snags would be expected to decrease. Standards and guidelines to maintain at least minimum snag densities would be followed except where safety is a concern. Vegetation management treatments, principally to reduce juniper and sage, are also proposed on the west side of the district; no locations have been identified. This project would be expected to improve water availability in springs and streams by improving overall watershed conditions. This would improve riparian areas.

THREATENED, ENDANGERED, AND PROPOSED WILDLIFE

PROPOSED ACTION

Mexican Spotted Owl (Strix occidentalis lucida)

DIRECT/INDIRECT EFFECTS
The direct and indirect effects of livestock grazing are described in the Programmatic Biological Assessment of the Effects of Grazing on the Mexican Spotted Owl for Region 4 Southern Utah Forests: Dixie, Fishlake, and Manti-LaSal National Forests (BA-MSO) (Grandison 1994) and is incorporated here by reference. The Proposed Action, including the range improvements, would comply with the Mitigation Measures in this BA and with the Recovery Plan for the Mexican Spotted Owl. No critical habitat has been designated on the Dixie National Forest by the USFWS for the spotted owl. Therefore, Mexican spotted owl habitat would be maintained for viable populations, meeting Forest Service NFMA requirements.

CUMULATIVE EFFECTS
Grazing at proper use District-wide would follow the measures outlined in the BA-MSO and therefore would maintain habitat for Mexican spotted owls. Therefore, viable populations of Mexican Spotted owls would be maintained, thereby meeting the Forest Service NFMA requirements and the LRMP.

Southwestern Willow Flycatcher (Empidonax traillii extimus)

DIRECT/INDIRECT EFFECTS
Very little is known about this species' habitat, potential habitat and occurrence on the Dixie National Forest. It has not yet been determined whether the willow flycatcher that occurs in this part of southern Utah is the southwestern willow flycatcher.

If willow flycatchers occur in these allotments, cattle grazed during the nesting season would inadvertently bump nests or young onto the ground, curtailing reproduction of that pair of birds. Grazing with proper use in combination with range improvements would increase willows and potentially suitable habitat for willow flycatchers in areas that are presently lacking willows or with low numbers of willows.

Grazing, even at proper use levels, would promote presence of brown-headed cowbirds which are known to parasitize willow flycatchers, decreasing reproductive success. Brown-headed cowbirds lay eggs in other bird's nests. The cowbird hatchlings are larger and more aggressive than the host's young and either obtain all the food from the adult host or push the host's young out of the nest. Since riparian habitats would be maintained or improved with proper use, the LRMP goal to maintain or enhance the terrestrial habitat for all wildlife species would be met.

CUMULATIVE EFFECTS
Past grazing has deteriorated riparian conditions and reduced or eliminated willow habitats in many areas in the CEA. Some have begun a slow recovery. Proper use grazing District-wide could increase willow habitat and improve habitat for willow flycatchers. With improved habitat conditions, more cover from brown-headed cowbird parasitism would be present, however, with continued grazing on adjacent land, parasitism would still occur. If grazing on private land is high, and willows are very low or lacking, habitat for willow flycatchers would be fragmented along a streamcourse, which could create smaller patches on Forest Service land, decreasing suitable habitat for flycatchers, or more vegetative edge for cowbirds to find flycatcher nests easily. In general, private lands within the Dixie National Forest boundary are grazed more heavily than on the Forest.

Because so little is known about the taxonomy, abundance and distribution of southwestern willow flycatchers on the Dixie National Forest, cumulative effects of the Proposed Action with proper use grazing is unknown. However, improved habitat conditions would be moving toward the desired riparian habitat conditions for maintaining habitat for willow flycatchers with the Proposed Action.

NO ACTION

Mexican Spotted Owl (Strix occidentalis lucida)

DIRECT/INDIRECT EFFECTS
The No Action Alternative would increase foods used by the owl's prey by increased vegetation and seed production (Grandison 1994). No grazing would

comply with the Recovery Plan Strategy for the Mexican Spotted Owl. Therefore, Mexican spotted owl habitat would be maintained for viable populations, meeting Forest Service NFMA requirements.

CUMULATIVE EFFECTS
No grazing combined with other past, present and future foreseeable activities would meet the Recovery Plan, Forest Plan Standards and guidelines and Forest Service NFMA requirements.

Southwestern Willow Flycatcher (Empidonax traillii extimus)

DIRECT/INDIRECT EFFECTS
No grazing would improve riparian areas, particularly the willow component, and increase suitable habitat for willow flycatchers. This would occur faster and would result in more vegetation than with proper use. No grazing would increase cover from and possibly reduce brown-headed cowbird parasitism. However, grazing would continue on adjacent land, brown-headed cowbirds would still parasitize flycatcher nests. Since riparian habitats would be maintained or improved with no grazing, the LRMP goal to maintain or enhance the terrestrial habitat for all wildlife species that presently occur on the Forest would be met.

CUMULATIVE EFFECTS
The cumulative effects of the No Action Alternative are similar to those described in the Proposed Action except that the areas not grazed would provide more suitable habitat and attain suitability faster than with the Proposed Action. Because so little is known about the taxonomy, abundance and distribution of southwestern willow flycatcher on the Dixie National Forest, cumulative effects are unknown. However, improved habitat conditions would toward the desired conditions faster and with more potentially suitable habitat resulting than the Proposed Action. This would be beneficial for willow flycatchers.

SENSITIVE WILDLIFE SPECIES

PROPOSED ACTION

Northern Goshawk (Accipiter gentilis)

DIRECT/INDIRECT EFFECTS
Grazing would have no effects to the large tree, snag or down wood habitat components for northern goshawk. Grazing at proper use would maintain suitable grasses, shrubs and forbs neccessary for prey species and thereby maintain foraging habitat. None of the range improvements would occur in potential goshawk habitat and therefore no effects would occur. Therefore, the Proposed Action would not affect goshawks or goshawk viability, meeting the Management Recommendations for the Northern Goshawk in the Southwestern United States, Forest Service NFMA requirements and the LRMP.

CUMULATIVE EFFECTS
Past fuelwood cutting has had no effect on goshawk habitat since it has been primarily juniper. Planned timber harvests would reduce numbers of large trees, snags and down wood abundance and would increase grasses, forbs and shrubs. Prescribed fire would also increase grasses, forbs and shrubs. The cumulative effects would maintain habitat for goshawks and maintain viable populations of goshawks, meeting Forest Service NFMA requirements.

Spotted Bat (Euderma maculatum) and Western big-eared bat (Plecotus townsendii)

DIRECT/INDIRECT EFFECTS
The limiting factors for bats are hibernacula, roosts, and maternity sites which are not affected by grazing. Grazing would remove vegetation available to support insects on which bats prey. However, grazing at proper use is expected to improve conditions on uplands and principally riparian areas. This would increase habitat for bat prey (insects) and improve foraging. The water development would increase habitat effectiveness for these bats. Therefore, population viability would be maintained meeting Forest Service NFMA requirements.

CUMULATIVE EFFECTS
Past grazing has degraded riparian areas and possibly decreased water availability for bats. Planned timber harvests would reduce numbers of snags available for roosting. Water developments would increase water availability. Prescribed fire and timber harvests would increase grasses, shrubs and forbs which are bat prey habitat. The overall effects would tend to ameliorate one another. Therefore, the Proposed Action would maintain habitat to support viable populations of these bats, thereby meeting Forest Service NFMA requirements.

Flammulated Owl (Otus flammeolus)

DIRECT/INDIRECT EFFECTS
There would be no effects of the Proposed Action on, snags for nesting, which is the most limiting habitat component for flammulated owls. Vegetation that supports insects on which flammulated owls prey would be affected by grazing, but grazing at proper use would increase vegetation, particularly in riparian areas, which would benefit the owl. Therefore, viable populations of flammulated owls would be maintained, meeting Forest Service NFMA requirements.

CUMULATIVE EFFECTS
Grazing at proper use District-wide would increase vegetation for insects and therefore flammulated owl prey. Fuelwood cutting would not affect flammulated owls since this occurs principally in juniper. The timber harvest planned in the Pine Valley Recreation Area would decrease snags for nesting. Improved riparian conditions would increase insect numbers overall, benefiting these owls. Therefore, habitat would be maintained, which would support viable populations of flammulated owls, meeting NFMA requirements.

NO ACTION

Northern goshawk (Accipiter gentilis)

DIRECT/INDIRECT EFFECTS
The large tree, snag and down wood habitat components for goshawks would not be affected with this alternative. Foraging habitats, including grasses and forbs for prey species would be improved faster and result in more vegetation than with the Proposed Action, thereby providing potential increased prey base. Therefore, the No Action Alternative would maintain goshawk viability, meeting Forest Service NFMA requirements and LRMP goals.

CUMULATIVE EFFECTS
The cumulative effects for the No Action Alternative would be the same as described in the Proposed Action except that there would be more vegetation biomass and improved riparian conditions with the No Action Alternative. This would overall be beneficial to this species' habitat. Therefore, the cumulative effect of these activities combined with the No Action Alternative would maintain this habitat component for goshawks and would meet Forest Service NFMA requirements.

Spotted Bat (Euderma maculatum)
and Western big-eared bat (Plecotus townsendii)

DIRECT/INDIRECT EFFECTS
Hibernacula, roosts, and maternity sites would not be affected with this alternative. The No Action Alternative would provide increased vegetation biomass and structure which supports insects on which bats prey. This would occur faster and result in more vegetation than with the Proposed Action. Therefore, the No Action Alternative would improve spotted and western big-eared bat population viability, which meets Forest Service NFMA requirements.

CUMULATIVE EFFECTS
The cumulative effects for the No Action Alternative would be the same as described in the Proposed Action except that there would be more vegetation biomass and vertical and horizontal structure with the No Action Alternative. Therefore, the cumulative effects would tend to offset one another and overall be beneficial to bats, more than with the Proposed Action. This alternative would maintain habitat to support viable populations of spotted and western big-eared bats, thereby meeting Forest Service NFMA requirements.

Flammulated Owl (Otus flammeolus)

DIRECT/INDIRECT EFFECTS
The limiting factor for flammulated owls, snags for nesting, would not be affected with this alternative. Vegetation that supports insects on which flammulated owls prey would increase more with this alternative than with the Proposed Action. This alternative, therefore, would provide habitat to maintain viable populations of flammulated owls, meeting Forest Service NFMA requirements.

CUMULATIVE EFFECTS
The cumulative effects for the No Action Alternative would be the same as described in the Proposed Action except that there would be more vegetation biomass and vertical and horizontal structure with the No Action Alternative. This would overall be beneficial to this species' habitat. Improved conditions District-wide would maintain viable populations of flammulated owls, meeting NFMA requirements.

WILDLIFE MANAGEMENT INDICATOR SPECIES

PROPOSED ACTION

Mule Deer (Odocoileus hemionus)

DIRECT/INDIRECT EFFECTS
Grazing with proper use would maintain shrubs, grasses and forbs available for use by deer. Adequate forage and cover to meet Forest Plan standards and guidelines would be provided on critical deer ranges (see Chapter 3). The reseedings or vegetation treatments would continue to provide forage for livestock, deer with the Proposed Action.

The proposed range improvements (principally fencing) would improve riparian areas and would thereby improve deer habitat in general. Deer can sometimes get hung up on barbed wire fences, causing mortality.

CUMULATIVE EFFECTS
Although summer and winter ranges and fawning areas on the District may be for different herds, they give a good representation of habitats in the cumulative effects area.

Past grazing has degraded riparian areas which can affect fawning habitat. Increased juniper habitats from past fire suppression has decreased grasses and forbs for forage. The planned timber sale and prescribed burns would follow Forest Plan standards and guidelines regarding forage and cover for big game. Proper use District-wide would improve forage on uplands and particularly in riparian areas where conditions are presently less than the desired condition. Therefore, the cumulative effects on mule deer would tend to moderate one another and generally be beneficial for maintaining habitat for population viability. Thus, this alternative would meet Forest Service NFMA requirements.

Wild Turkey

DIRECT/INDIRECT EFFECTS
The subspecies that occurs on these allotments is the Rio Grande Turkey (Meleagris gallopavo intermedia). Although turkeys occur in these allotments, no critical or "key" habitat has been identified by the Utah Division of Wildlife Resources or the Forest Service.

Inadvertent trampling of nest or eggs could occur with grazing during the nesting season (April 15 through July 1). Vegetation for forage and/or supporting insects for forage would increase in areas previously overgrazed. With proper use, grasses, forbs and shrubs would be maintained to support viable populations of wild turkey. Fenced areas would improve overall habitat for turkeys. Therefore, the Proposed Action would maintain viable populations of wild turkey.

CUMULATIVE EFFECTS
The planned timber harvest would remove large trees that can be used for roosting. Timber harvest and prescribed burns increase grasses, shrubs and forbs for foraging. Proposed grazing elsewhere on the District would remove vegetation but overall improve conditions, particularly in riparian areas. The cumulative effects would be a mosaic of vegetation for roosting and forage for turkeys. This is expected to maintain viable populations of turkeys, meeting Forest Service NFMA requirements.

Yellow-breasted chat (Icteria virens) - Riparian Habitat Conditions

DIRECT/INDIRECT EFFECTS
Cattle grazing during the nesting season could cause inadvertent bumping of nests or young to the ground. Proper use grazing would improve riparian habitat conditions, including species composition and vegetative structure which would improve habitat for the yellow-breasted chat. Brown-headed cowbirds would be expected to be present and parasitize chat nests. The proposed fencing would improve riparian habitat conditions.

Therefore, the Proposed Action would meet Forest Service NFMA requirements and LRMP standards and guidelines by moving toward the desired riparian conditions and moving toward maintaining habitat for this species.

CUMULATIVE EFFECTS
Knowledge of the distribution of suitable habitat and occupied habitat for this species on the Dixie National Forest is limited.

Past grazing has deteriorated riparian habitat conditions in the CEA. Some areas have begun a slow recovery. Proper use grazing proposed District-wide would improve riparian conditions and shrub habitat for the yellow-breasted chat. Increased vegetation and improved riparian habitat conditions would provide better cover from brown-headed cowbird parasitism which may lessen this effect, but with continued grazing, brown-headed cowbird parasitism would still occur. If grazing on private land is high, and willows are very low or lacking, habitat for yellow-breasted chats would be fragmented along a streamcourse, which could create smaller patches on Forest Service land, decreasing suitable habitat for chats, or more vegetative edge for cowbirds to find chat nests easily. In general, private lands within the Dixie National Forest boundary are grazed more heavily than on the Forest.

Because so little is known about the abundance and distribution of yellow-breasted chats on the Dixie National Forest, the cumulative effects of the Proposed Action with proper use grazing is unknown. However, the cumulative effects of improved riparian conditions would tend to ameliorate the effects of past overgrazing to some degree. The Proposed Action would be

Inadvertent trampling of nest or eggs could occur with grazing during the nesting season (April 15 through July 1). Vegetation for forage and/or supporting insects for forage would increase in areas previously overgrazed. With proper use, grasses, forbs and shrubs would be maintained to support viable populations of wild turkey. Fenced areas would improve overall habitat for turkeys. Therefore, the Proposed Action would maintain viable populations of wild turkey.

CUMULATIVE EFFECTS
The planned timber harvest would remove large trees that can be used for roosting. Timber harvest and prescribed burns increase grasses, shrubs and forbs for foraging. Proposed grazing elsewhere on the District would remove vegetation but overall improve conditions, particularly in riparian areas. The cumulative effects would be a mosaic of vegetation for roosting and forage for turkeys. This is expected to maintain viable populations of turkeys, meeting Forest Service NFMA requirements.

Yellow-breasted chat (Icteria virens) - Riparian Habitat Conditions

DIRECT/INDIRECT EFFECTS
Cattle grazing during the nesting season could cause inadvertent bumping of nests or young to the ground. Proper use grazing would improve riparian habitat conditions, including species composition and vegetative structure which would improve habitat for the yellow-breasted chat. Brown-headed cowbirds would be expected to be present and parasitize chat nests. The proposed fencing would improve riparian habitat conditions.

Therefore, the Proposed Action would meet Forest Service NFMA requirements and LRMP standards and guidelines by moving toward the desired riparian conditions and moving toward maintaining habitat for this species.

CUMULATIVE EFFECTS
Knowledge of the distribution of suitable habitat and occupied habitat for this species on the Dixie National Forest is limited.

Past grazing has deteriorated riparian habitat conditions in the CEA. Some areas have begun a slow recovery. Proper use grazing proposed District-wide would improve riparian conditions and shrub habitat for the yellow-breasted chat. Increased vegetation and improved riparian habitat conditions would provide better cover from brown-headed cowbird parasitism which may lessen this effect, but with continued grazing, brown-headed cowbird parasitism would still occur. If grazing on private land is high, and willows are very low or lacking, habitat for yellow-breasted chats would be fragmented along a streamcourse, which could create smaller patches on Forest Service land, decreasing suitable habitat for chats, or more vegetative edge for cowbirds to find chat nests easily. In general, private lands within the Dixie National Forest boundary are grazed more heavily than on the Forest.

Because so little is known about the abundance and distribution of yellow-breasted chats on the Dixie National Forest, the cumulative effects of the Proposed Action with proper use grazing is unknown. However, the cumulative effects of improved riparian conditions would tend to ameliorate the effects of past overgrazing to some degree. The Proposed Action would be

moving toward improved riparian habitat conditions and improving habitat for yellow-breasted chats. Therefore, Forest Plan standards and guidelines would be met.

NO ACTION

Mule Deer (Odocoileus hemionus_

DIRECT/INDIRECT EFFECTS
The No Action Alternative would increase shrubs, grasses and forbs available for use by deer in the short term but grasses may become less palatable in the long term. The critical deer ranges would acquire greater vegetative biomass in grasses, forbs and shrubs. Riparian areas would improve more than with the Proposed Action, thereby providing improved deer habitat in general, especially fawning habitat. With increased shrubs, cover would be expected to increase in localized areas.

The "reseedings" or vegetation treatments, would provide increased forage for mule deer in the short term but may decrease in the long term with the No Action Alternative.

CUMULATIVE EFFECTS
The cumulative effects of the No Action Alternative would be similar to the Proposed Action except more vegetation biomass would be present, with more vertical and horizontal structure in the ungrazed areas. Riparian conditions would be much more improved in the ungrazed areas with the No Action Alternative. Therefore, the cumulative effects would be generally be beneficial to mule deer and would maintain population viability, thereby meeting Forest Service NFMA requirements.

Wild Turkey

DIRECT/INDIRECT EFFECTS
With no grazing, vegetation for forage and/or supporting insects for forage would increase. Therefore, the Proposed Action would maintain viable populations of wild turkey, meeting Forest Service NFMA requirements and Forest Plan standards and guidelines.

CUMULATIVE EFFECTS
The effects of the No Action Alternative is similar to the Proposed Action except that more vegetative biomass would be present and riparian areas would improve more and faster with the No Action Alternative. The overall effect would be a mosaic of vegetation for roosting, cover and forage for turkeys. The cumulative effects overall would benefit turkeys and maintain viable populations of turkeys, meeting Forest Service NFMA requirements.

Yellow-breasted chat (Icteria virens) - Riparian Habitat Conditions

DIRECT/INDIRECT EFFECTS
The No Action Alternative could decrease success of brown-headed cowbird parasitism by providing increased cover to hide yellow-breasted chats or other riparian dependent bird nests.

With the No Action Alternative riparian would acquire more grasses, shrubs, trees and forbs than with the Proposed Action. The desired conditions for riparian areas would be met faster than with the Proposed Action. Improved shrub habitats would increase yellow-breasted chat habitat. This would meet Forest Service NFMA requirements and LRMP standards and guidelines.

CUMULATIVE EFFECTS
The cumulative effects of the No Action Alternative would be similar to the Proposed Action except that the riparian areas not grazed would attain desired riparian habitat conditions faster and more riparian vegetation would result with the No Action Alternative. The cumulative effects overall would be beneficial and tend to ameliorate the adverse effects of past grazing in the long term.

OTHER SPECIES OF CONCERN

PROPOSED ACTION

Passerine and Neotropical Migratory Birds

DIRECT/INDIRECT EFFECTS
Cattle grazed during the nesting season could cause inadvertent bumping of young or nests to the ground, causing nesting failure. Proper use grazing would improve or maintain food distribution and abundance (seeds, flowers) and cover (grasses and forbs) for these nesting birds. The proposed fencing would improve habitat conditions in riparian areas.

CUMULATIVE EFFECTS
Proper use grazing proposed District-wide could increase amounts and quality upland and riparian habitat thereby providing increased food and cover for these birds. Brown-headed cowbird presence would be expected to continue to parasitize birds that are susceptible, particularly those associated with riparian areas.

Timber harvests and prescribed burns would reduce habitat in the short term for those species needing a more closed canopy and increase habitats for those needing openings. Openings, and fragmentation, would increase edges and openings where brown-headed cowbirds could parasitize nesting birds. Grasses and forbs, would increase from these activities. Past grazing has deteriorated riparian habitats. Past fire suppression has created increased juniper and sage habitats, beneficial for some wintering birds, but have decreased ground cover needed for other species. The overall cumulative effects effect would be a variety of seral stages in different plant communities which can increase bird species richness.

Bats

DIRECT/INDIRECT EFFECTS
The direct and indirect effects of the Proposed Action is identical to those described for spotted and western big-eared bats because their foods are much the same and principle threats to their populations are also very similar (and not affected by grazing). Therefore, no grazing would be expected to maintain viable populations of these bats.

CUMULATIVE EFFECTS
The cumulative effects of the Proposed Action is identical to those described for spotted and western big-eared bats because their foods are much the same and principle threats to their populations are also very similar (and not affected by grazing). Therefore, no grazing would be expected to maintain viable populations of these bats.

NO ACTION

Passerine and Neotropical Migratory Birds

DIRECT/INDIRECT EFFECTS
No grazing would improve food distribution and abundance (seeds, flowers) and cover (grasses and forbs) for passerine and neotropical migratory birds in uplands and riparian areas. This would occur faster and result in more vegetation overall, especially in riparian areas, than with the Proposed Action. This would benefit birds dependent upon riparian areas. Although No Action would provide increased cover from and discourage brown-headed cowbird parasitism, adjacent land that is grazed would still promote cowbird occurrences on the District. The cumulative effects would therefore benefit most habitats for these passerine and neotropical migratory birds meeting Forest Service NFMA requirements and LRMP standards and guidelines.

CUMULATIVE EFFECTS
The cumulative effects for the No Action Alternative is similar to the Proposed Action except that more vegetative biomass would be present and riparian habitat conditions would improve more quickly in the areas not grazed with the No Action Alternative. Birds depending upon riparian areas would be greatly benefited. The overall effect would be an increased variety of seral stages in different plant communities which would increase bird species richness.

Bats

DIRECT/INDIRECT EFFECTS
The direct and indirect effects of the Proposed Action are identical to those described for spotted and western big-eared bats because their foods are much the same and threats to their populations are also very similar (and not affected by grazing). Therefore, grazing at proper use would be expected to maintain viable populations of these bats.

CUMULATIVE EFFECTS

The cumulative effects of the Proposed Action is identical to those described for spotted and western big-eared bats because their foods are much the same and threats to their populations are also very similar (and not affected by grazing). Therefore, the cumulative effects overall would benefit bats and would maintain viable populations of these bats.

SOILS

PROPOSED ACTION

DIRECT/INDIRECT EFFECTS
During the analysis of the Gunlock, Magotsu, Terry-Shoal Creek and Bull Valley allotments it was found that, on some portions of some of these allotments, livestock grazing was causing impacts to streambanks, riparian areas and soil productivity beyond Forest Plan standards and guidelines (see Chapter 3, and NFMA analysis notes and Riparian Inventory Reports in the Project File).

Based on the findings of the analysis, and on the latest research concerning impacts associated with livestock grazing, additional proper use guidelines were identified. Proper use criterion prescribed under this alternative will provide for protection of the soil resource in all pastures of the allotments. Grazing at proper use by the livestock numbers, season of use, and grazing system proposed for each allotment should ensure that any adverse impacts caused by livestock grazing on uplands and in riparian areas are within acceptable thresholds established in the Regional Soil Quality Guidelines for maintenance of long-term soil productivity and hydrologic function .

In addition to the proper use guidelines, range improvements for the Gunlock, Magotsu, Terry-Shoal Creek and Bull Valley allotments have been proposed to help provide better livestock distribution and provide for proper forage utilization (See Range Improvements, Chapter 2).

Implementation of the proposed range improvements and the proper use criterion should result in moving these allotments towards the Desired Future Condition described for the soil resource in the Dixie NF LRMP.

CUMULATIVE EFFECTS
The cumulative effects area (CEA) for soils is the portion of the Pine Valley RD that is covered by the Bull Valley, Gunlock, Magotsu and Terry-Shoal Creek allotments (basically the western half of the Ranger District).

A multitude of multiple use management actions occur on these lands. These include such things as watershed rehabilitation projects; wildlife and fisheries habitat improvement projects; recreational developments such as campgrounds, trails for hiking, biking, ATV's; mining and oil and gas development; utility corridors; roads; fire control; range improvement projects such as chainings, water developments; firewood and post and pole sales, and Christmas tree sales.

The cumulative impacts of livestock grazing in addition to all the other management activities occurring on the Pine Valley RD are well within the

threshold of having at least 85 percent of the land with soil in satisfactory condition. Detrimental soil disturbance associated with grazing occurs on less than 1 percent of the land area.

Aggressive fire control since the turn of the century has resulted in some upland area vegetative cover types progressing to mature/decadent stages of succession. Areas with these decadent cover types now have reduced ground cover compared to pre-settlement times which is resulting in reduced soil protection and increased runoff and erosion. Without treatment, the ground cover threshold for soil protection will be reached which could result in exceeding the soil loss tolerance thresholds for soil protection.

A forseeable future management activity for the CEA is an aggressive prescribed fire program to move these decadent cover types towards the desired future condition of various successional stages which would improve watershed conditions.

NO ACTION

DIRECT/INDIRECT EFFECTS
Ground cover (vegetation and litter) would increase over current conditions, particularly in riparian areas. With no livestock grazing there would be less soil displacement, compaction and puddling .

CUMULATIVE EFFECTS
Aggressive fire control since the turn of the century has resulted in some upland area vegetative cover types progressing to mature/decadent stages of succession. Areas with these decadent cover types now have reduced ground cover compared to pre-settlement times which is resulting in reduced soil protection and increased runoff and erosion. Without treatment, the ground cover threshold for soil protection will be reached which could result in exceeding the soil loss tolerance thresholds for soil protection.

A forseeable future management activity for the CEA is an aggressive prescribed fire program to move these decadent cover types towards the desired future condition of various successional stages which would improve watershed conditions.

HYDROLOGY AND WATER QUALITY

PROPOSED ACTION

DIRECT/INDIRECT EFFECTS
Proper use criterion prescribed under this alternative will provide for protection of the hydrology and water quality in all pastures of the Bull Valley, Gunlock, Magotsu, and Terry-Shoal Creek cattle allotments. Grazing at proper use by the livestock numbers, season of use, and grazing system proposed for each allotment should ensure that any impacts caused by livestock grazing on uplands and in riparian areas are within acceptable limits.

The proper use criterion are the Intermountain Region's recommended Best Management Practices to maintain riparian areas in desired condition (mid to

late seral greenline), and improve riparian areas not in desired condition (very early to early seral greenline).

On the Bull Valley cattle allotment, fencing Lost Springs would allow that area to rapidly improve in species composition and vigor. Recovery of Moody Wash near the Road #006 bridge will be slow because the species necessary to colonize and develop into communities stable enough to hold streambanks are not well represented, but they are found upstream. Recovery can and should take place with proper management.

On the Magotsu cattle allotment, fencing part of Spring Creek will allow that area to improve in species composition and vigor and streambank stability. Water developments in the Horse Valley unit will help distribute cattle and reduce use on key riparian areas.

On the Terry Shoal Creek cattle allotment, fencing Pine Park Canyon will allow that area to rapidly improve in species composition and vigor. Developing a well in the Stud Horse unit would help distribute livestock and keep them in that pasture longer, taking the grazing pressure away from other key riparian areas.

This alternative would not contribute to the further impairment of 303(d) listed waters, except for Enterprise Reservoir where Terry-Shoal allotment cattle have direct access below the high water mark which does not meet state standards for nutrients and dissolved oxygen. Shoal Creek Watershed #16030006-024 has been identified as a Utah High Priority Watersheds for Nonpoint Source Pollution Control for nutrients. Gunlock Watershed #15010008-080 has been identified as a Utah High Priority Watershed for Nonpoint Source Pollution Control for nutrients and total dissolved solids. Nutrients and total dissolved solids coming from the watershed from grazing would be within acceptable limits due to maintaining or moving towards desired riparian conditions.

By maintaining or moving towards desired conditions, the Proposed Action meets the management area direction of the LRMP. Since current erosion and sedimentation rates would continue due to other activities, it is expected that the 25% instream sediment LRMP S&G would not be met on some streams. By maintaining the Beneficial Uses of water, using Best Management Practices, and sharing implementation monitoring results with Utah Division of Water Quality, the Proposed Action would be in compliance with the Utah Antidegradation Policy and the Clean Water Act (see monitoring form in Appendix A). The Proposed Action would also be in compliance with Executive Order 11990 in minimizing the degradation of wetlands, and Executive Order 11998 in restoring and preserving the natural and beneficial values served by flood plains.

CUMULATIVE EFFECTS

The cumulative effects area for hydrology and water quality is the Pine Valley Ranger District. Allotments and effects are spread across the district. Effects would be difficult to detect off the forest because of the complexity of watershed and stream systems.

Activities considered in the cumulative effects analysis are road construction/maintenance, special uses, vegetation management, watershed restoration, and recreation activities.

The cumulative effects of past and present livestock grazing in addition to all the other management activities occurring on the Pine Valley Ranger District have caused impacts to the hydrology and water quality of the riparian and aquatic systems . Since livestock grazing occurs in many of the uplands and riparian areas across the district, and improvement is anticipated in unsatisfactory condition riparian areas, the cumulative effects of the proposed action when added to other past, present, and reasonable action of the agency and others is expected to maintain or improve the hydrology and water quality on these allotments. Since current erosion and sedimentation rates would continue, it is expected that the 25% instream sediment LRMP S&G would not be met on some streams. However, compliance with applicable laws and Executive Orders will be maintained.

NO ACTION

DIRECT/INDIRECT EFFECTS
No grazing would result in maintenance of riparian areas in desired condition, and improvement of riparian areas not in desired condition. Improvement would happen faster than with proper use. Infiltration rates would increase by generally 25-50% on previously livestock compacted uplands and riparian areas, resulting in less runoff and erosion. Riparian plants would be expected to progress in vigor and seral stage toward potential natural community .

This alternative would not contribute to the further impairment of 303(d) listed waters or Utah High Priority Watersheds for Nonpoint Source Pollution Control.

By maintaining or moving towards desired conditions, the Proposed Action meets the management area direction of the LRMP. Since current erosion and sedimentation rates would continue due to other activities, it is expected that the 25% instream sediment LRMP S&G would not be met on some streams. By maintaining the Beneficial Uses of water we would be in compliance with the Utah Antidegradation Policy and the Clean Water Act. The Proposed Action would also be in compliance with Executive Order 11990 in minimizing the degradation of wetlands, and Executive Order 11998 in restoring and preserving the natural and beneficial values served by flood plains.

CUMULATIVE EFFECTS
Riparian and stream conditions would be expected to improve district-wide where grazing has occurred as described under direct and indirect effects faster than with proper use.

Since livestock grazing has occurred on many of the uplands and riparian areas across the district, and improvement is anticipated in infiltration and unsatisfactory condition riparian areas, the cumulative effects of the no grazing alternative when added to other past, present, and reasonably foreseeable actions of the agency and others is expected to improve the hydrology and water quality on these allotments. Since current erosion and sedimentation rates would continue, it is expected that the 25% instream sediment LRMP S&G would not be met on some streams. However, compliance with applicable laws and Executive Orders will be maintained.

FISHERIES AND AQUATIC MACROINVERTEBRATES

PROPOSED ACTION

DIRECT/INDIRECT EFFECTS
This analysis is for the Bull Valley, Gunlock, Magotsu, and Terry-Shoal Creek cattle allotments.

Grazing at proper use by the livestock numbers, season of use, and grazing system proposed for each allotment should provide adequate protection to ensure that any impacts caused by livestock grazing on the uplands and riparian areas are within the acceptable limits.

The proper use criterion will maintain those riparian areas that are in mid to late seral greenline in a desired condition and improve riparian areas that are not in a desired condition (very early to early seral greenline). Additionally, range improvements have been proposed for the Bull Valley, Gunlock, Magotsu, and Terry Shoal allotments which should result in better livestock distribution or exclusion and proper forage utilization.

The overall direct and indirect effects to the aquatic fauna should result in (1) slightly lower water temperatures as overhead cover increases, (2) less sediment entering the stream, (3) improved spawning habitat, (4) increased macroinvertebrate diversity and abundance, (5) deeper and narrower stream channels, and (6) increased instream and overhead cover for trout. Together, these improved conditions could result in the streams capability to produce increased numbers of fish and healthier aquatic macroinvertebrate communities. The rate at which improvement occurs is dependent upon several variables but the rate of recovery would be slower under this alternative than the No Action alternative.

CUMULATIVE EFFECTS
The cumulative effects area for fisheries and aquatic macroinvertebrates is the Pine Valley Ranger District. Since the cattle allotments are distributed throughout the district, the effects would be difficult to detect off forest due to the dynamic and natural variability of aquatic systems.

Activities considered in the cumulative effects analysis include road construction and maintenance, vegetation management, watershed restoration, recreation activities, special uses and livestock grazing.

The cumulative effects of all other past and present management activities occurring on the Pine Valley Ranger District have resulted in adverse impacts to some uplands and riparian areas. These adverse effects are often reflected in degraded fish and aquatic macroinvertebrate habitat. Under this alternative improvement is expected in upland and riparian areas in unsatisfactory

condition. The cumulative effects of the proposed action when added to other past, present and reasonably forseeable actions within the cumulative effects analysis area is expected to maintain or improve uplands and riparian areas. This, in turn, should result in improved habitat conditions for fish and aquatic macroinvertebrates. The proposed action, therefore, would be in compliance with the goals and objectives in the Forest Plan (LRMP IV-5).

NO ACTION

DIRECT/INDIRECT EFFECTS
No grazing would result in the maintenance of mid to late seral greenline riparian areas in a desired condition, and improvement of riparian areas in very early to early seral greenline. The effects of the No Action alternative would be similar to those described for proper use except that the rate of improvement would be faster under the No Action alternative. Habitat for Virgin spinedace in Moody Wash will also improve under this alternative.

CUMULATIVE EFFECTS
Activities considered in the cumulative effects analysis include road construction and maintenance, vegetation management, watershed restoration, recreation activities, special uses and livestock grazing.

The cumulative effects of all other past and present management activities occurring on the Pine Valley Ranger District have resulted in adverse impacts to some uplands and riparian areas. These adverse effects are often reflected in degraded fish and aquatic macroinvertebrate habitat. Under the No Action alternative, improvement is expected in upland and riparian areas in unsatisfactory condition. The cumulative effects of the No Action alternative, when added to other past, present and reasonably forseeable actions within the cumulative effects analysis area is expected to maintain or improve uplands and riparian areas. This, in turn, should result in improved habitat conditions for fish and aquatic macroinvertebrates. This alternative would be in compliance with the goals and objectives in the Forest Plan (DNFLRMP IV-5).

PROPOSED FISH SPECIES

PROPOSED ACTION

DIRECT/INDIRECT EFFECTS
The proposed action alternative will result in habitat slowly improving over time for the Virgin spinedace (a species proposed for listing as threatened) in Moody Wash within the Bull Valley allotment. The effects to the habitat will be similar to those described for other fisheries in the direct/indirect effects section of the proposed action (see BA).

CUMULATIVE EFFECTS
The cumulative effects area for this species is the Moody Wash watershed. Habitat for the Virgin spinedace will slowly improve over time. The effects to the habitat will be similar to those described for other fisheries in the cumulative effects section of the proposed action (See BA).

NO ACTION

DIRECT/INDIRECT EFFECTS
The no action alternative will result in habitat slowly improving over time for the Virgin spinedace in Moody Wash within the Bull Valley allotment. The effects to the habitat will be similar to those described for other fisheries in the direct/indirect effects section of the no action alternative (See BA).

CUMULATIVE EFFECTS
The cumulative effects area for this species is the Moody Wash watershed. Habitat for the Virgin spinedace will slowly improve over time. The effects to the habitat will be similar to those described for other fisheries in the cumulative effects section of the no action alternative (See BA).

RECREATION/VISUALS

PROPOSED ACTION

DIRECT/INDIRECT EFFECTS
Under the Proposed Action, livestock would have access to all suitable rangelands within permitted allotments, but use would be rotated through confined pastures for specified periods of time. Conflicts between recreation use and livestock grazing occurs where livestock concentration areas are common with popular recreation sites, such as Pine Park Campground and Enterprise Reservoir. Grazing at proper use and appropriate livestock distribution will moderate those impacts. Fencing Pine Park Campground will eliminate the conflict with recreationists and improve riparian area management for camping, fishing, sight-seeing, and wildlife viewing. The Dixie National Forest LRMP objective of managing livestock grazing to be compatible with recreation activities would be met under the Proposed Action. Landscape management and visual objectives of preservation, retention, partial retention, modification, and maximum modification would be met under the Proposed Action

CUMULATIVE EFFECTS
The area which will be considered in the cumulative effects analysis for recreation is the Pine Valley Ranger District. This area was selected on the basis of use patterns of the area by recreationists, and similarity of recreation activities on the Pine Valley Ranger District.

Many multiple-use management actions, occurring within the allotments under analysis, have combined cumulative effects on recreation opportunities and visual experiences; i.e. timber sales, watershed rehabilitation projects, wildlife and fisheries habitat improvement projects, recreation developments, trails, ski areas, mining and oil and gas development, utility corridors, roads, etc. The construction of new roads is the greatest single impact on the recreation resource--since there is a limited land base, the opportunities for non-motorized recreation are disappearing. Range activities rarely change the acres of recreation opportunities. Visual landscapes are impacted to a greater extent by the construction of roads and the removal of trees than by livestock grazing.

NO ACTION

DIRECT/INDIRECT EFFECTS
With the removal of livestock from National Forest allotments, conflicts between recreationists, private landowners, and livestock would be eliminated. Vegetation would increase in areas of common concentration. Picturesque scenes of livestock grazing in the open meadows would no longer occur on the Forest. The presence of fine fuels to carry fire would be more predominant, and wildfire would potentially play more of a role in the landscape. Visual quality objectives could be met. Forest Plan recreation goals and objectives would be met.

CUMULATIVE EFFECTS
There would be no adverse cumulative impacts to the recreation and visual resources resulting from the No Action alternative.

SOCIAL/ECONOMICS

The effects of implementing the Proposed Action and the No Action Alternatives are relative to permittee's cost/benefits from grazing livestock on the allotments, the benefits to rural and county economies from livestock grazing, and revenues/costs to the government.

PROPOSED ACTION

DIRECT/INDIRECT EFFECTS
Permitting livestock grazing would sustain the existing National Forest System-dependent ranching industry in south-central Utah. Although grazing fees would continue to be charged, and permittees would remain responsible for improvement maintenance and cooperative construction of new improvements, the net economic benefit is positive. Under the Proposed Action there would not be adverse social or economic effects to either permittees or rural community economies. Under the Proposed Action there would not be adverse effects to rural lifestyles. The Proposed Action meets the intent of the Dixie National Forest Land and Resource Management Plan and is in compliance with laws permitting the grazing of livestock on National Forest System lands.

CUMULATIVE EFFECTS
The area which will be considered in the cumulative effects analysis for social/economics impacts is the five-county area of southern Utah consisting of Garfield, Iron, Kane, Washington, and Wayne Counties. Piute County is also within the Dixie zone of influence, but includes only an extremely small part of the Dixie National Forest and will not be included in impact analysis. This area was selected on the basis of adjacency with rural communities dependent upon National Forest resources for an economic base. The five-county area, rather than isolation by county, was selected because of the regional inter-dependency upon the livestock industry as an economic base. Past, present, and forseeable future economic activities considered relevant to this analysis of cumulative effects are the timber, recreation, and tourism industries.

Under the Proposed Action, along with a sustainable timber supply and emerging recreation and tourism, cumulative effects of sustained, permitted grazing would be positive.

NO ACTION

DIRECT/INDIRECT EFFECTS
Loss of permits on National Forest allotments would directly affect local residents and permittees. In order to maintain a viable ranching enterprise, permittees would have to replace the forage lost on National Forest land with other purchased or leased forage at a comparable cost/benefit ratio. Eliminating livestock grazing on the National Forest would have significant adverse effects on rural communities should the loss of grazing on the Forest induce family or commercial ranching enterprises to go out of business. The No Action Alternative would have adverse effects on maintaining way-of-life and quality-of-life for permittees and local residents dependent on an agriculture-based economy. The No Action alternative would not be consistent with the Dixie National Forest LRMP which allocates suitable rangelands for forage utilization and establishes a desired future condition of managing these lands for livestock grazing. Not permitting livestock grazing does not comply with a number of laws, including the Multiple Use-Sustained Yield Act of 1960, the Granger-Thye Act, the Federal Land Policy and Management Act of 1976, and the 1995 Rescission Bill.

CUMULATIVE EFFECTS
There would be an adverse cumulative effect to the area economy from a loss of permitted grazing. The degree of adversity would depend on the availability of substitute forage, substitute timber supplies should timber sales decline, and ability of local communities to diversify and benefit from increased tourism and recreation income opportunities. Economic decline for a sustained period could result from the No Action alternative.

CULTURAL RESOURCES

PROPOSED ACTION

DIRECT/INDIRECT EFFECTS
Within the project analysis areas of the following allotments cultural resource surveys have been conducted as outlined. Only those Historic Properties considered to be susceptible as described in the Comprehensive Literature Review of the Effects of Livestock Grazing on Natural Resources will need further consideration and the mitigation is outlined below. Ground disturbing activities associated with new development projects such as fences and water development etc. will require surveys prior to construction.

ALLOTMENT	ACRES SURVEYED	TOTAL SITES	HISTORIC PROPERTIES	SUSCEPTIBLE SITES
Gunlock	4468	79	50	0
Magotsu	2998	103	49	0
Terry-Shoal Creek	11178	211	113	0
Bull Valley	1221	37	26	0

No effects from grazing will occur to any sites within the above outlined area.

CUMULATIVE EFFECTS
Archeological surveys are conducted prior to ground-disturbing activities, and any sites which are determined to be eligible for the National Register of Historic Places are avoided in project/design construction. Because of this, there will be no cumulative effects analysis on heritage resources in this Environmental Assessment.

MONITORING

Implementation and effectiveness monitoring will be conducted to measure the effects of the selected management practices on resources within the respective allotments.

Implementation monitoring determines if the project was implemented as described in the EA and in the terms and conditions of the respective permits; e.g., actual livestock use does not exceed proper use guidelines in riparian areas.

Effectiveness monitoring determines if the management actions accomplished what was intended; e.g., proper use maintains or improves vegetation condition.

Monitoring practices have been developed for each of the resources identified as issues in this EA. Appendix A contains the monitoring forms which fully describe the objective of monitoring, the item to monitor, the type of monitoring, the methods and parameters that will be used, the frequency and duration of monitoring, the project costs associated with the monitoring, the procedures used to report results, and who will be responsible for implementing the monitoring practices.

Key areas have been identified for monitoring on each grazing allotment. They are listed below in Table 5.

TABLE 5
KEY AREAS BY ALLOTMENT

ALLOTMENT	KEY AREAS
Bull Valley	Lost Creek, Cove Wash, Burnt Canyon, Moody Creek.
Gunlock	Mud Spring Pipeline trough, West of Twin Springs Ranch, Willow Mountain, Spring Creek, Shinbone Creek.
Magotsu	Kane Spring trough, California Hollow, Maple Spring, Spring Creek.
Terry-Shoal Creek	Northwest of Panaca Pond, East of Roundup exclosure, Little Pine Creek riparian, Rattlesnake Creek, Northwest of Stud Horse exclosure.

CHAPTER 5: LIST OF PREPARERS

The following individuals were members of the Interdisciplinary Team or provided technical support.

INTERDISCIPLINARY TEAM MEMBERS

NAME	TITLE	SUBJECT AREA
Ric Rine	NFMA IDT Leader	NEPA/Planning Socio/Economics
Joe Reddan	NEPA IDT Leader	NEPA Coordination
Dave Grider	Forest Range Staff Officer Permit Issuance Team Leader	Range
Randy Russell	District Range Conservationist	Range
Vail Kelly	District Range Technician	Range
James Bayer	Soil Scientist	Soils
Janice Staats	Hydrologist	Watersheds
Steve Robertson	Fisheries Biologist	Fisheries
Priscilla Summers	West Zone Biologist	Wildlife
Ron Rodriguez	Forest Biologist	Wildlife
Max Molyneux	Landscape Architect	Recreation
Marian Jacklin	Archeologist	Cultural Resources

APPENDIX A

MONITORING FORM

PROPER USE CRITERIA COMPLIANCE MONITORING

OBJECTIVE: Determine degree and distribution of livestock use. This would include monitoring use on both uplands and riparian areas.

ITEM TO MONITOR: Percent utilization, by weight, of forage plants in upland key areas; stubble height on hydric species in riparian key areas; use patterns on suitable range; streambank stability; and woody species utilization.

TYPE OF MONITORING: Implementation monitoring

METHODS/PARAMETERS: Utilization measurements on key upland forage species and shrub/browse species, and stubble height measurements on hydric species in riparian areas; ocular estimates, utilization cages (paired plot method), utilization gauge, and may or may not include utilization mapping.

Grazing effects on other limiting factors (stream bank disturbance, riparian condition, wildlife habitat, and TES), will be recorded. Proper use monitoring may be allotment-wide or key-area-specific, as determined by needs assessment, and may determine the need to initiate comprehensive utilization studies to revise stocking capacity.

FREQUENCY/DURATION: 15% of allotments would be surveyed annually.

PROJECTED COSTS: $7,500/annually

REPORTING PROCEDURES: Inspection notes and/or Unit Examination record and utilization maps filed in 2210/2220 Section of the Allotment Folder.

RESPONSIBILITY: Funding: Forest Management Team
Monitoring: IDT

MONITORING FORM

INTERDISCIPLINARY (IDT) MONITORING

OBJECTIVE: Interdisciplinary Team measurement of the effects of implementation of proper use grazing prescriptions on forest resources.

ITEM TO MONITOR: Monitor vegetation utilization, streambank stability, riparian condition, wildlife and fisheries habitat condition, soils and watershed condition, impacts on cultural resource sites, and conflicts with recreational use.

TYPE OF MONITORING: Effectiveness monitoring.

METHODS/PARAMETERS: Field review/inspection on riparian and upland key areas--multiple key areas and multiple allotments, pending intensity and complexity of review.

FREQUENCY/DURATION: Annual field review per Ranger District (allotments/key areas scheduled by needs assessment). Some allotments may not be reviewed in a 10-year cycle; others may be reviewed more than once, depending on needs assessment.

PROJECTED COSTS: $16,000.

REPORTING PROCEDURES: Field inspection notes, photo documentaries, IDT report of findings. File located in 2210/2220 Section of Allotment Folder, respective Ranger District.

RESPONSIBILITY:
Funding: Forest Management Team
Scheduling: Forest Range Staff
Monitoring: IDT

MONITORING FORM

ALLOTMENT INSPECTION

OBJECTIVE: Determine degree of compliance with terms and conditions of the grazing permit, construction of needed range improvements, and compliance with law (Clean Water Act, Endangered Species Act, National Forest Management Act).

ITEM TO MONITOR: Livestock distribution, trampling/trailing damage, construction/maintenance of improvements, vegetation utilization, salting compliance, control of livestock while on allotment, and overall compliance with annual plan of use. Assess if proper use grazing is maintaining water quality standards in compliance with the existing Memorandum of Understanding with the Utah Department of Environmental Quality. Assess if proper use grazing is maintaining utilization standards to provide habitat for TES plants, wildlife, and fish.

TYPE OF MONITORING: Effectiveness monitoring

METHODS/PARAMETERS: Annual plan of use, structural improvement standards, grazing permit, location map, and livestock brand book. Methods used may include: occular reconnaisance, field checking, transects and/or plot sampling, photo points, and office review.

FREQUENCY/DURATION: 15% of allotments would be inspected annually.

PROJECTED COSTS: $7,500 annually

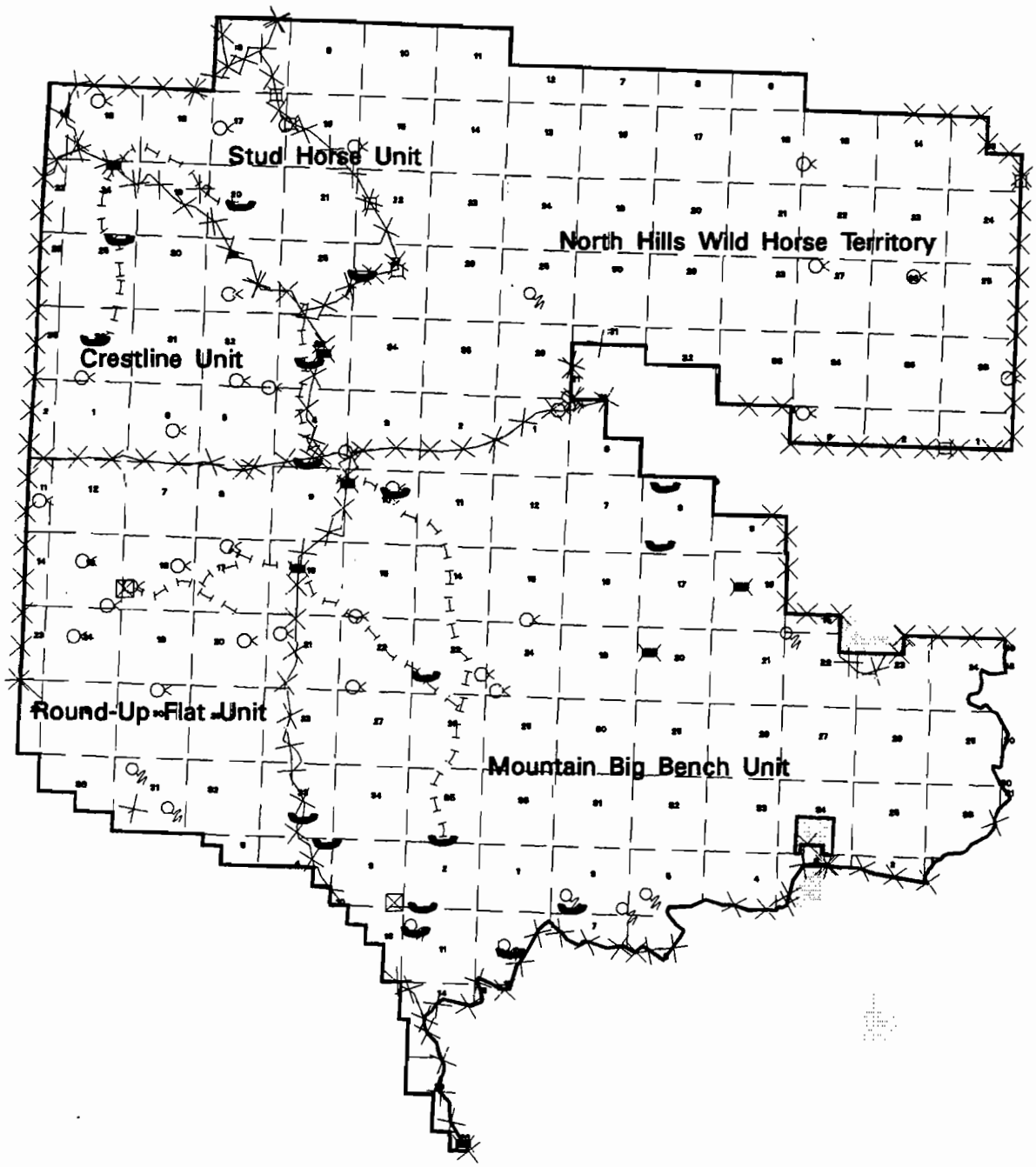
REPORTING PROCEDURES: Inspection notes and/or Unit Examination record (R4-2200-15) completed and filed in 2210/2220 Section of the Allotment Folder. Reports, transect summaries, photo documentntion, and finding evaluations will be duplicated in the appropriate 2670 Wildlife files and the 2520-5 Watershed Monitoring Plans files. Monitoring results will be shared with the Utah Division of Water Quality in compliance with the existing MOU.

RESPONSIBILITY: IDT

APPENDIX B

Pine Valley Ranger District
Terry Shoal Creek Range Allotment

(Existing Range Improvements)

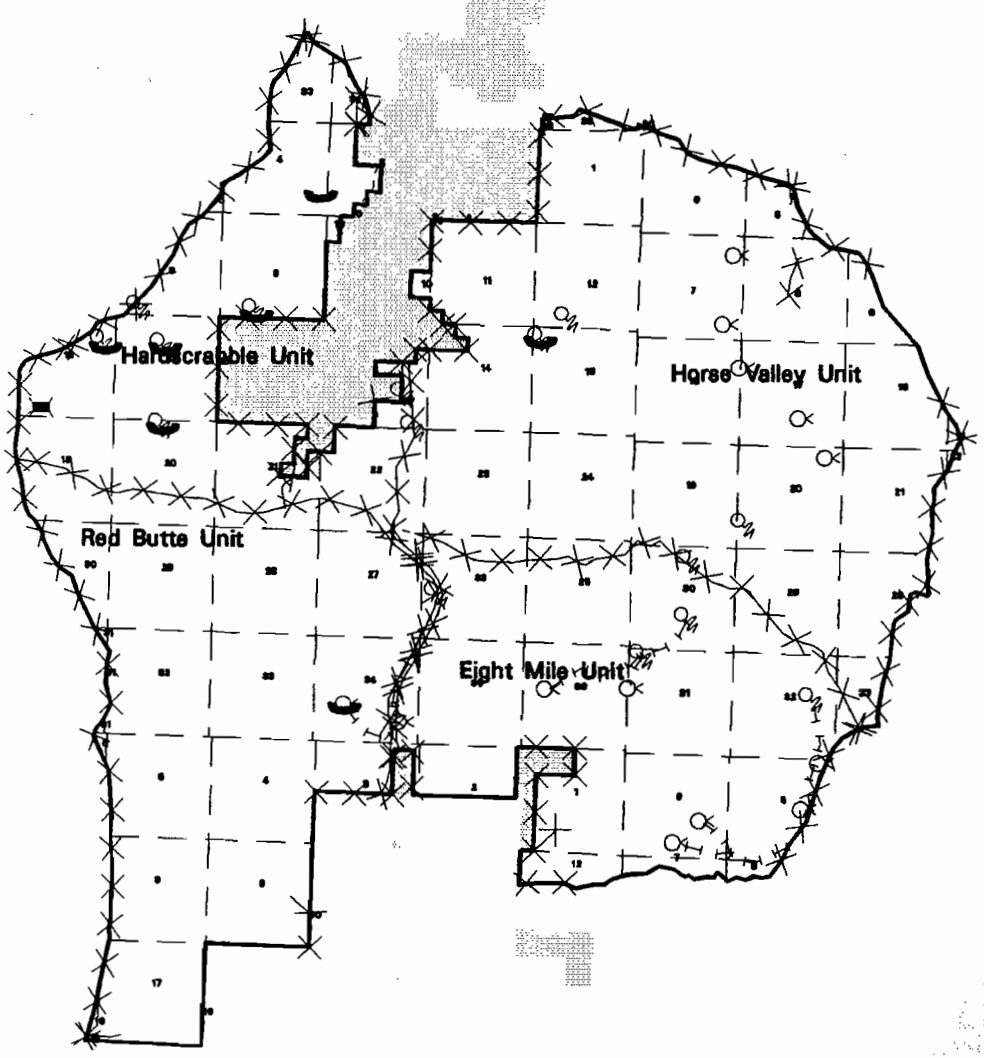


LEGEND

- Allotment Boundary
- Unit Boundary
- Private Land
- Fence
- Pipeline
- Cattle Guard
- Springs
- Exclosure
- Guzzler
- Stock Pond
- Trough
- Gate

Vicinity Map

Pine Valley Ranger District
Magotsu Range Allotment
(Existing Range Improvements)



LEGEND

- Allotment Boundary
- Unit Boundary
- Private Land
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- Pipeline
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- Springs
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- Guzzler
- Stock Pond
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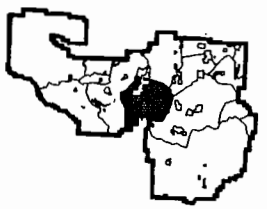
- Gate

Vicinity Map



pared by USDA Forest Service
th National Forest GIS Staff
ng ARC/INFO GIS
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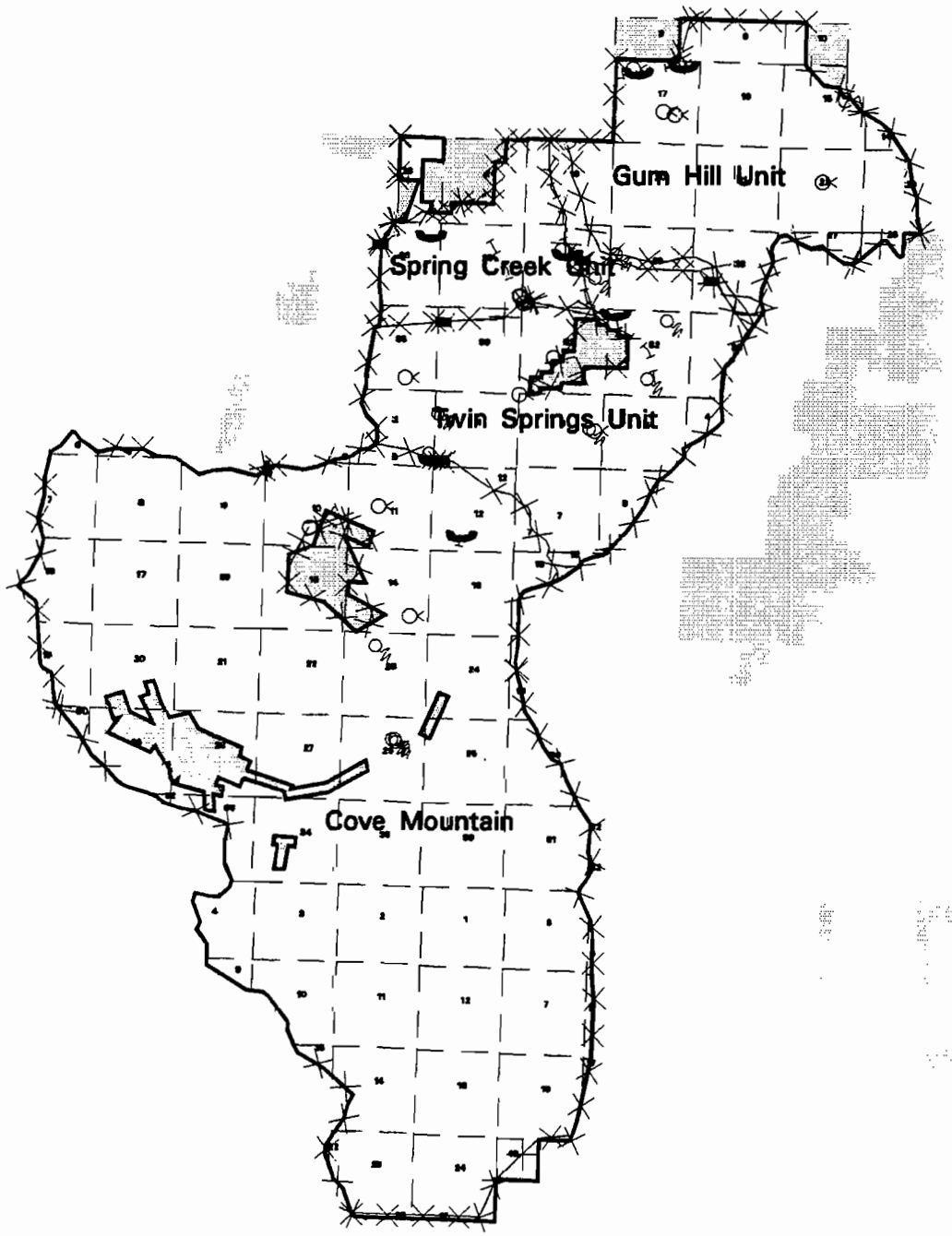
ping Accuracy Standard. For specific data source dates and/or additional digital data
ct the Forest Supervisor, Dixie NF, Cedar City Utah. This map has no warranties
to its contents or accuracy.

Pine Valley Ranger District
Gunlock Range Allotment

(Existing Range Improvements)



LEGEND

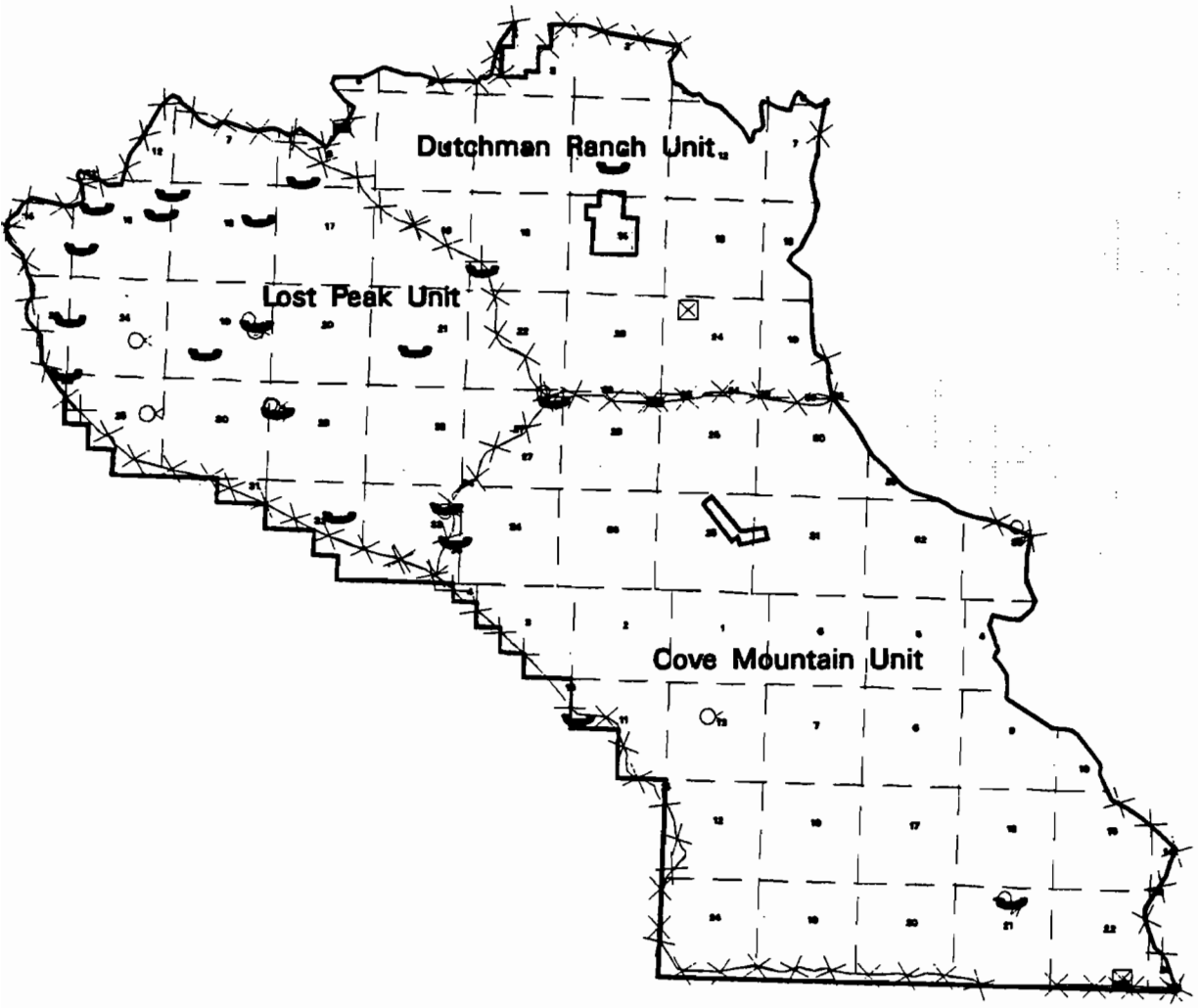
- Allotment Boundary
- Unit Boundary
- Private Land
- Fence
- Pipeline
- Cattle Guard
- Springs
- Exclosure
- Guzzler
- Stock Pond
- Trough
- Gate

Vicinity Map

Original data was compiled from multiple sources and may not meet the US National Mapping Accuracy Standard. For specific data source data and/or additional digital info contact the Forest Supervisor, Dixie NF, Cedar City, Utah. This map has no warranties as to its contents or accuracy.

Pine Valley Ranger District
Bull Valley Range Allotment

(Existing Range Improvements)



LEGEND

- Allotment Boundary
- Unit Boundary
- Private Land
- Fence
- Pipeline
- Cattle Guard
- Springs
- Exclosure
- Guzzler
- Stock Pond
- Trough
- Gate

Vicinity Map