

# **ENVIRONMENTAL ASSESSMENT**

## **Rio Grande National Forest**

### **PROPOSED**

### **RIO OXBOW LAND EXCHANGE**

**Lead Agency:**

United States Department of Agriculture  
Rocky Mountain Region  
Rio Grande National Forest  
Monte Vista, Colorado

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# **CHAPTER 1.0.**

## **PURPOSE AND NEED FOR ACTION**

### **1.1. INTRODUCTION**

The purpose of this Environmental Assessment is to describe the environmental effects of an exchange of National Forest System lands (Federal lands) administered by the Rio Grande National Forest (RGNF) in Mineral County, Colorado for private lands (Non-Federal lands) located in Mineral, Hinsdale and Rio Grande Counties, Colorado as proposed by S. Alan Lisenby and Charles Nearburg (the Non-Federal Parties).

This Environmental Assessment is not a decision document. It is a document disclosing the environmental consequences of implementing the proposed action and alternatives to that action. It does not describe the decision to be made by the responsible official with regard to the proposed project. That decision will be documented in a Decision Notice signed by the Forest Supervisor, USDA Forest Service (Forest Service), Rio Grande National Forest.

This action is proposed under the authority of the General Exchange Act of March 20, 1922, as amended, the Federal Land Policy and Management Act (FLPMA) of October 21, 1976, and the Federal Land Exchange Facilitation Act of August 20, 1988. This proposal is consistent with the Forest-wide standards and guidelines presented in Section 6, III-31 of the RGNF Revised Land and Resource Management Plan (Forest Plan), as amended.

### **1.2. PROPOSED ACTION AND SCOPE OF PROPOSAL**

Implementation of this proposal would result in the conveyance to the United States of approximately 1,134.63 acres currently owned by the Non-Federal Parties. In exchange, approximately 468.78 acres of National Forest System lands would be conveyed to the Non-Federal Parties. The specific tracts involved in this exchange are presented in Tables 1 and 2 (pages 4-5) and shown in Maps 1, 2, and 3 on pages 6-11. A full description of the proposed action is provided in Chapter 2.4, pg. 15 under Alternative 1.

### **1.3. PURPOSE AND NEED FOR THE PROPOSED ACTION**

The Forest Service is authorized to complete land exchanges after a determination has been made that the exchange will serve the overall public interest. When considering the public interest, the authorized officer shall give full consideration to: 1) the opportunity to achieve better management of federal lands; 2) the needs of the state and local residents and their economies; and 3) achieving important resource management objectives

including protection of fish and wildlife habitat, riparian habitat, cultural resources, recreational opportunities and watersheds.

Due to the juxtaposition of private and Federal lands on both the Non-Federal lands and Federal lands, a high potential for administration conflicts exists between users of the National Forest and associated private landowners. On the Federal lands irregular or complicated boundaries, bisecting highways, and lack of public access makes land management difficult or impractical for many of the subject properties. The Non-Federal lands, all of which are partially or completely surrounded by public lands, are at risk of becoming future administrative problems due to differing land management goals and objectives of the Forest Service and the private landowners. The development potential on many of the Non-Federal tracts represents risks to resource values (i.e. wildlife, visual, recreation) present on the adjacent public lands. The right of access to private inholdings through Federal lands also creates a potential resource risk to Federal lands through the potential construction or reconstruction of access road systems. Additionally, there is currently no legally substantiated public access through the road systems passing through the privately owned Carson or Bonafacio properties. The purpose of and need for this exchange is to simplify current boundaries, reduce the amount of private inholdings within the National Forest boundaries, secure public access, reduce the overall administrative issues arising from the management of Federal lands adjacent to private lands, and protect resource values, such as wildlife, recreation and wetlands, on the Non-Federal parcels by placing them under the administrative control of the Forest Service. The proposed action is consistent with the guidelines and criteria for land adjustments presented in the Forest Plan-Section 6, III-31, as it pertains to land adjustments on the Rio Grande National Forest.

#### **1.4. DECISION TO BE MADE**

The Forest Supervisor will decide if the land exchange should take place as proposed, should take place with modifications, or not at all.

#### **1.5 CHANGES FROM THE ENVIRONMENTAL ASSESSMENT FOR COMMENT**

Several changes have been made in this document when compared with the Environmental Assessment for Comment released on May 7, 2003. Primarily, these changes have been made for the purpose of clarification. None of these changes altered the original analysis or the conclusions presented in the Environmental Assessment for Comment. Changes in text found in this document as compared to the original document are listed below with a brief description of the nature of the altered content.

- **Chapter 2.2.1. Scoping and Public Involvement**-Text was added to describe the release of the Environmental Assessment for Comment and the solicitation for public comment.

- **Chapter 2.4. Proposed Action And Alternatives**-The last sentence in the first paragraph under Proposed Action (“The Non-Federal Long Ridge properties were subsequently added to the exchange package in late 2001.” was removed as being unnecessary and redundant.
- **Chapter 3.2.4. Range**-An addition was made to clarify the status of the grazing permit as it pertains to Parcel N6.
- **Chapter 3.2.8. Scenic Resources**-Additional language was added to better describe the scenic resource as it pertains to the Federal parcels along the Silver Thread corridor.
- **Chapter 4.2.6. Wildlife**-Under the Management Indicator Species section, a statement was added regarding the Forest Supervisor’s issuance of a Finding of No Significant Effect to MIS and the availability of this document for review.
- **Chapter 4.2.7. Scenic Resources**-Additional language was added to better describe the potential effects to the scenic resource through the proposed exchange of the Federal parcels.
- **Chapter 5.2.7. Scenic Resources**-This section was edited to better describe potential cumulative effects to the scenic resource through the proposed exchange of the Federal parcels.
- **Appendix 3-Biological Evaluation**-A statement was added to the introduction to provide the rationale for not basing the evaluation on the revised sensitive species list. Additionally, in Chapter IV. Pre-field Review, two additional plant species were addressed and a statement added that there would be no impact to Altai cotton-grass.
- **Appendix 6-Public Comments on the Environmental Assessment And USFS Response To Comments**-This section was added to provide a summary of the public comments on the document released on May 7, 2003 and the Forest Service’s response to those comments.

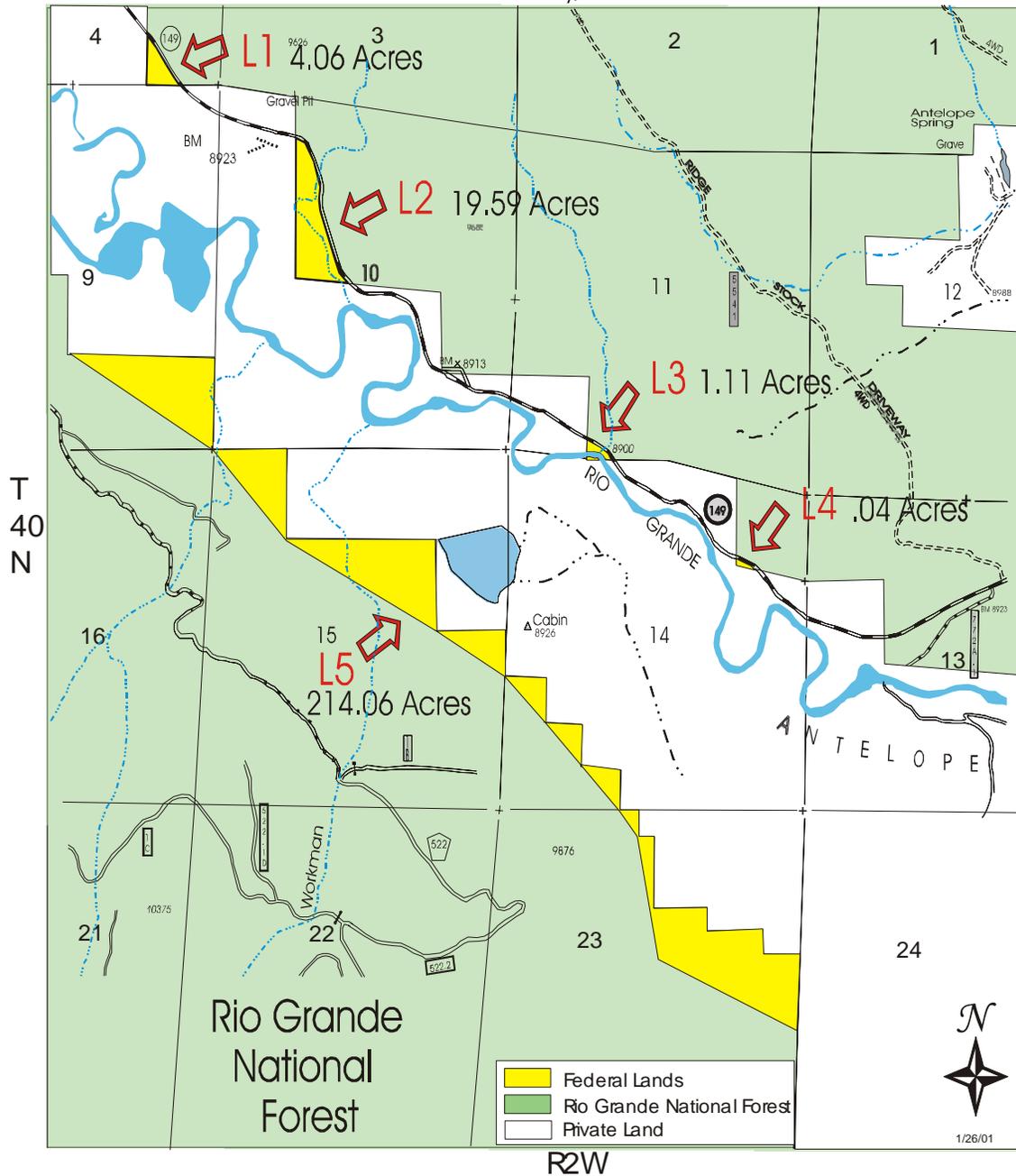
**TABLE 1.**  
**GENERAL DESCRIPTION**  
**OF**  
**FEDERAL LANDS**

<b>TRACT #</b>	<b>ACRES</b>	<b>TOWNSHIP/ RANGE</b>	<b>SECTION #</b>	<b>DESCRIPTION</b>
<b>N1</b>	37.82	T41NR1W	SEC. 3	SW <sup>1</sup> / <sub>4</sub> SE <sup>1</sup> / <sub>4</sub>
<b>N2</b>	80.00	T41NR1W	SEC. 10	W <sup>1</sup> / <sub>2</sub> NW <sup>1</sup> / <sub>4</sub>
<b>N3</b>	*Removed			
<b>N4</b>	84.60	T40NR2W	SEC. 25	Portions W <sup>1</sup> / <sub>2</sub> NW <sup>1</sup> / <sub>4</sub>
<b>N5</b>	15.00	T40NR2W	SEC. 36	Portions NW <sup>1</sup> / <sub>4</sub> NW <sup>1</sup> / <sub>4</sub>
<b>N6</b>	12.50	T40NR2W	SEC.35	Portions SE <sup>1</sup> / <sub>4</sub> NE <sup>1</sup> / <sub>4</sub>
			SEC. 36	Portions SW <sup>1</sup> / <sub>2</sub> NW <sup>1</sup> / <sub>4</sub>
<b>L1</b>	4.06	T40NR2W	SEC. 14	Portions SW <sup>1</sup> / <sub>4</sub> NE <sup>1</sup> / <sub>4</sub>
<b>L2</b>	19.59	T40NR2W	SEC. 11	Portions SE <sup>1</sup> / <sub>4</sub> SW <sup>1</sup> / <sub>4</sub>
<b>L3</b>	1.11	T40NR2W	SEC. 10	Portions E <sup>1</sup> / <sub>2</sub> NW <sup>1</sup> / <sub>4</sub>
<b>L4</b>	0.04	T40NR2W	SEC. 4	Portions SE <sup>1</sup> / <sub>4</sub> SE <sup>1</sup> / <sub>4</sub>
<b>L5</b>	214.06	T40NR2W	SEC. 9	Portions S <sup>1</sup> / <sub>2</sub> SE <sup>1</sup> / <sub>4</sub>
			SEC. 14	Portions SW <sup>1</sup> / <sub>4</sub>
			SEC. 15	Portions NE <sup>1</sup> / <sub>4</sub> , SE <sup>1</sup> / <sub>4</sub> , NW <sup>1</sup> / <sub>4</sub>
			SEC. 16	Portions NE <sup>1</sup> / <sub>4</sub> NE <sup>1</sup> / <sub>4</sub>
			SEC. 23	Portions N <sup>1</sup> / <sub>2</sub>
<b>TOTAL FEDERAL LANDS 468.78 ACRES</b>				

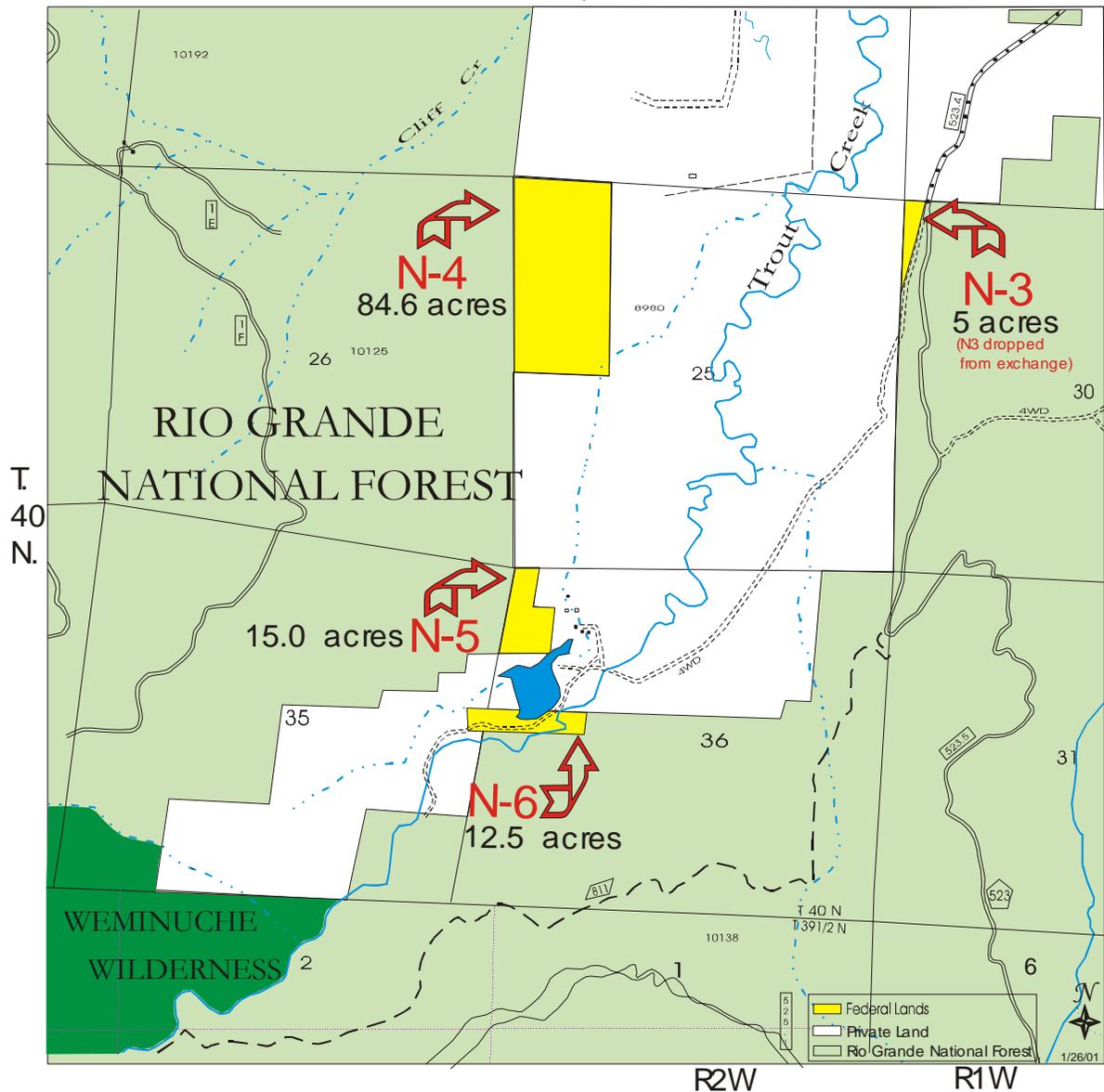
**TABLE 2.**  
**GENERAL DESCRIPTION**  
**OF**  
**NON-FEDERAL LANDS**

<b>TRACT</b>	<b>APPROX .ACRES</b>	<b>TOWNSHIP/ RANGE</b>	<b>SECTION #</b>	<b>DESCRIPTION</b>
<b><u>Long Ridge</u></b>				
<b>LR1</b>	1.95	T40NR2W	SEC. 4	Portions SW <sup>1</sup> / <sub>4</sub> SE <sup>1</sup> / <sub>4</sub>
<b>LR2</b>	11.44	T40NR2W	SEC. 10	Portions NW <sup>1</sup> / <sub>4</sub> SE <sup>1</sup> / <sub>4</sub> , NE <sup>1</sup> / <sub>4</sub> SW <sup>1</sup> / <sub>4</sub>
<b>LR3</b>	15.11	T40NR2W	SEC. 10	Portions N <sup>1</sup> / <sub>2</sub> SE <sup>1</sup> / <sub>4</sub> SE <sup>1</sup> / <sub>4</sub>
		T40NR2W	SEC. 11	Portions SW <sup>1</sup> / <sub>4</sub> SW <sup>1</sup> / <sub>4</sub>
<b>LR4</b>	30.38	T40NR2W	SEC.14	Portions NW <sup>1</sup> / <sub>4</sub> NE <sup>1</sup> / <sub>4</sub> , Portions NE <sup>1</sup> / <sub>4</sub> NW <sup>1</sup> / <sub>4</sub>
<b>LR5</b>	32.91	T40NR2W	SEC. 13	Portions SW <sup>1</sup> / <sub>4</sub> NW <sup>1</sup> / <sub>4</sub>
		T40NR2W	SEC. 14	Portions SE <sup>1</sup> / <sub>4</sub> NE <sup>1</sup> / <sub>4</sub>
<b><u>Total Long Ridge</u></b>		<b>91.79 Acres</b>		
<b><u>Bonafacio</u></b>				
<b>B1</b>	153.96	T38NR6E	SEC. 4	SW <sup>1</sup> / <sub>4</sub> NW <sup>1</sup> / <sub>4</sub>
		T38NR6E	SEC. 5	SE <sup>1</sup> / <sub>4</sub> NE <sup>1</sup> / <sub>4</sub> , N <sup>1</sup> / <sub>2</sub> SE <sup>1</sup> / <sub>4</sub>
<b>B2</b>	155.44	T38NR6E	SEC. 9	W <sup>1</sup> / <sub>2</sub> W <sup>1</sup> / <sub>2</sub>
<b>B3</b>	153.15	T38NR6E	SEC. 8	W <sup>1</sup> / <sub>2</sub> NE <sup>1</sup> / <sub>4</sub> , NW <sup>1</sup> / <sub>4</sub> SE <sup>1</sup> / <sub>4</sub> , N <sup>1</sup> / <sub>2</sub> SW <sup>1</sup> / <sub>4</sub>
<b>B4</b>	215.81	T38NR6E	SEC. 18	S <sup>1</sup> / <sub>2</sub> N <sup>1</sup> / <sub>2</sub> , W <sup>1</sup> / <sub>2</sub> SE <sup>1</sup> / <sub>4</sub>
<b><u>Total Bonafacio:</u></b>		<b>678.36 Acres</b>		
<b><u>Carson</u></b>				
<b>Hays Pl.</b>	133.87	T42NR5W	SEC. 24	Portions S <sup>1</sup> / <sub>2</sub>
			SEC. 25	Portions N <sup>1</sup> / <sub>2</sub>
<b>Continental Divide Claims</b>	230.61	T41NR4W	SEC. 6	Portions
		T41NR5W	SEC. 1, 2	Portions
		T42NR4W	35	Portions
		T42NR5W	SEC. 35, 36	Portions
<b><u>Total Carson:</u></b>		<b>364.48 Acres</b>		
<b>TOTAL NON-FEDERAL LANDS: 1,134.63 ACRES</b>				

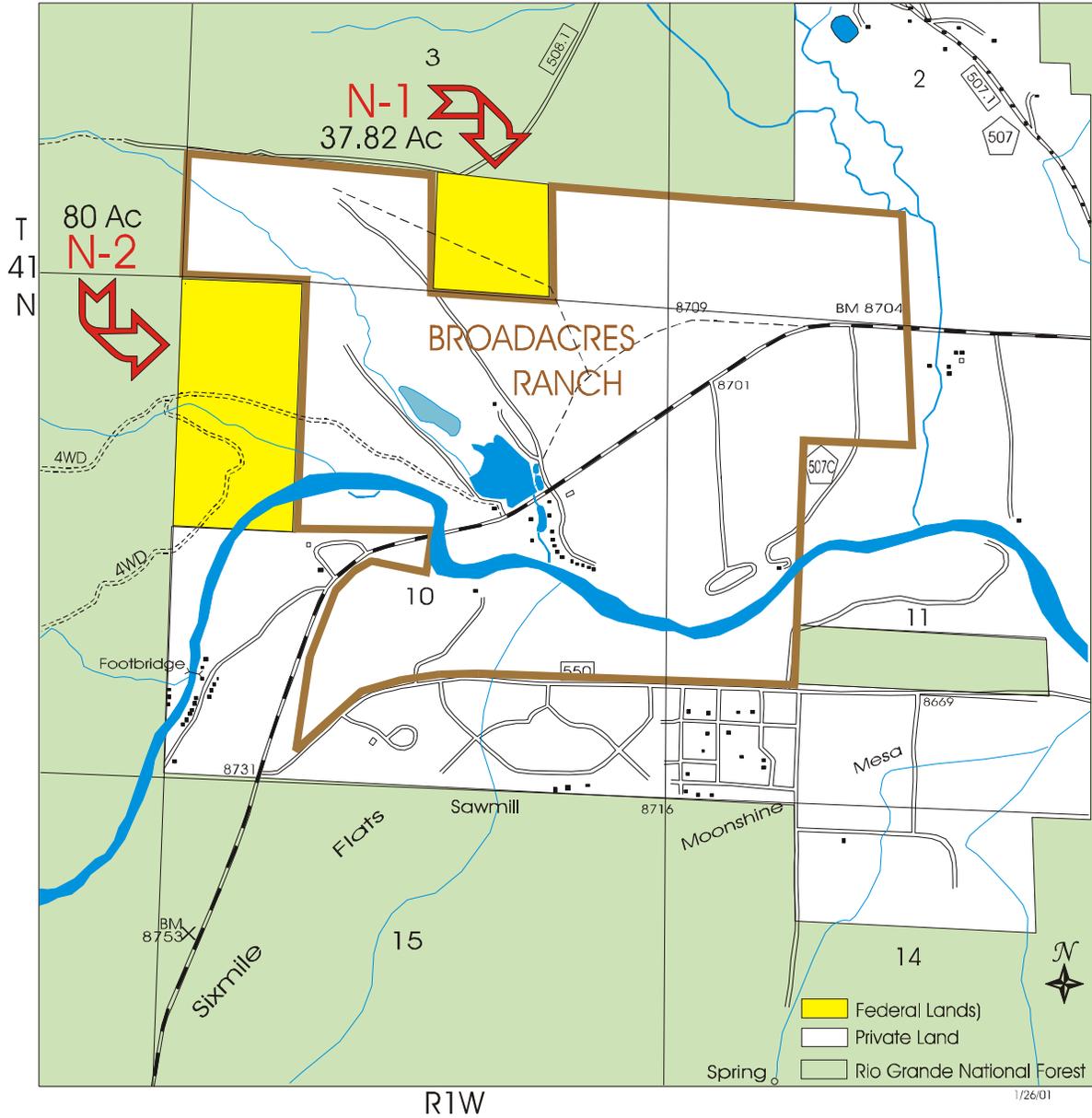
**MAP 1**  
**LOCATION MAP**  
**RIO OXBOW LAND EXCHANGE**  
**FEDERAL LANDS (238.86 Acres)**  
 Sections 4, 9, 10, 11, 14, 15, 23, T40 N, R2W, N.M.P.M.  
 Mineral County, Colorado



MAP 2  
LOCATION MAP  
**RIO OXBOW LAND EXCHANGE**  
FEDERAL LANDS (112.1 Acres w/o N3)  
Sections 25, 35, & 36, T40N., R2W  
Section 30, T40N, R1W  
Mineral County, Colorado

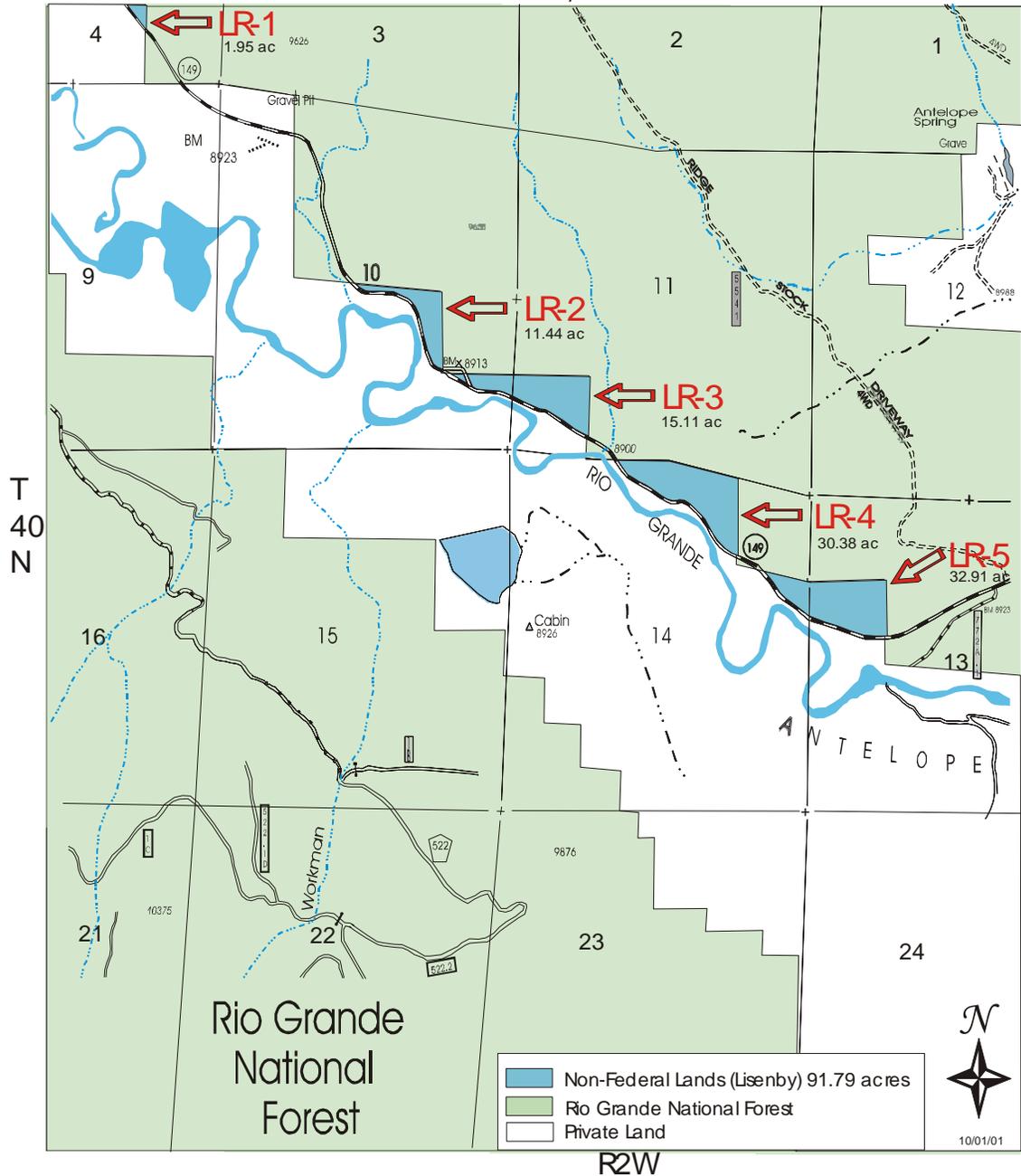


MAP 3  
 LOCATION MAP  
**RIO OXBOW LAND EXCHANGE**  
 FEDERAL LANDS (117.82 Acres)  
 Sections 3 & 10, T41N, R1W N.M.P.M.  
 Mineral County, Colorado



**MAP 4**  
**AMENDED LOCATION MAP**  
**RIO OXBOW EXCHANGE (NON-FEDERAL LAND)**

Longridge (91.79 Acres)  
 Sections 4, 10, 11, 13, & 14, T40 N, R2W, N.M.P.M.  
 Mineral County, Colorado



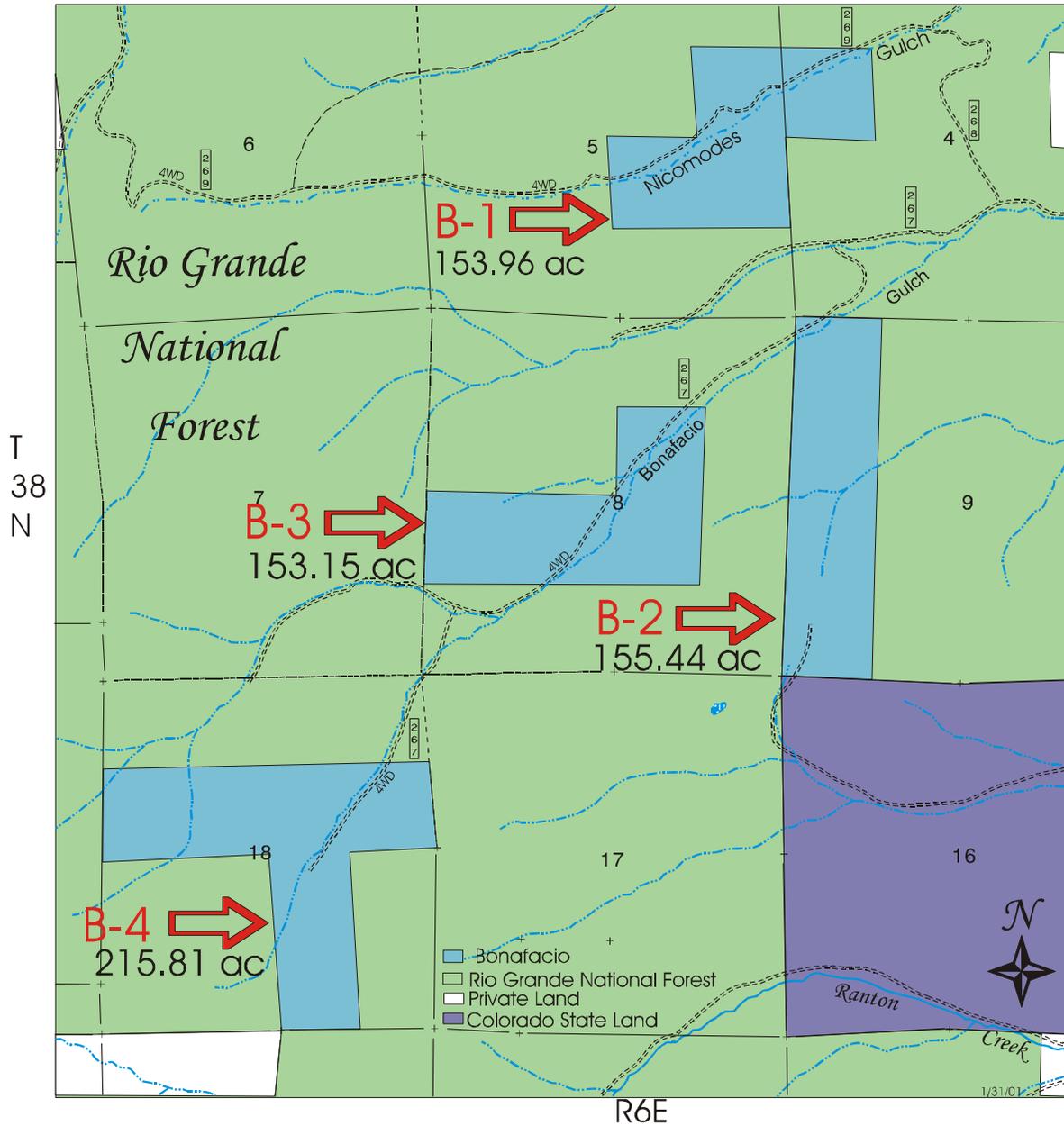
MAP 5  
LOCATION MAP

# RIO OXBOW EXCHANGE (NON FEDERAL LANDS)

Bonafacio - Approx. 678.36 Acres

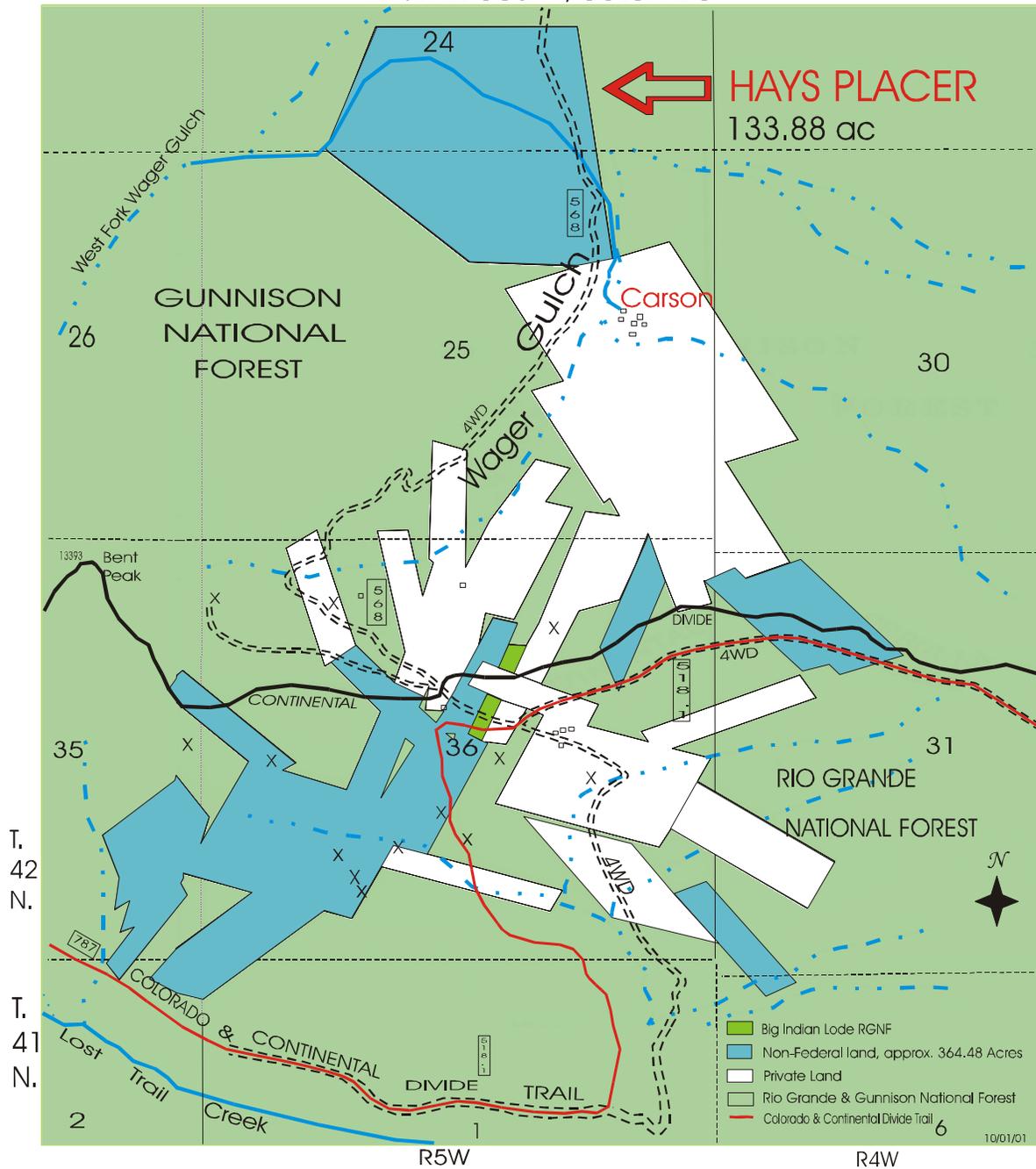
Sections 4, 5, 8, 9, 18, T38N, R6E, NMPM

Rio Grande County, Colorado



MAP 6  
 AMENDED LOCATION MAP  
**RIO OXBOW EXCHANGE (NON FEDERAL LAND)**

Carson MINING CLAIMS - APPROX. 364.48 ACRES  
 T42N, R5W - T41N, R5W - T42N, 4W - T41N, R4W  
 HINSDALE COUNTY, COLORADO



## **CHAPTER 2:**

### **ALTERNATIVES INCLUDING THE PROPOSED ACTION**

#### **2.1. INTRODUCTION**

This chapter describes the public involvement process, the issues, and the alternatives considered during the analysis process.

#### **2.2. DEVELOPMENT OF ALTERNATIVES**

##### **2.2.1. SCOPING AND PUBLIC INVOLVEMENT**

The public was initially informed of the proposed exchange through legal notices published in local newspapers. These public notices invited interested parties to submit comments to the Rio Grande National Forest for a period of 45 days. Notification of the proposed land exchange was sent on to interested parties, including state and local agencies and elected officials. The Publication Notices were published in the following newspapers on the dates indicated:

Monte Vista Journal-April 25, May 2, 9 and 16, 2001

Mineral County Miner-April 26, May 3, 10 and 17, 2001

The Silver World-April 26, May 3, 10 and 17, 2001

Representatives of the Forest Service also met with the Mineral and Hinsdale County Commissioners to explain the exchange proposal as part of those entities normal, regularly scheduled, public meetings. In addition, the Mineral County Board of County Commissioners sponsored a public meeting on the proposed land exchange on June 5, 2001 in Creede, Colorado.

The Forest Service received 95 written responses from individuals, non-governmental entities and other public agencies following publication of the legal notices

Subsequent to the above scoping activities, additional Non-Federal lands were identified by the Non-Federal Parties for possible conveyance to the United States. These included the Non-Federal lands known collectively as the Long Ridge Properties located approximately 10 miles southwest of Creede (Map 4, pg.8). Public notices identifying these additional Non-Federal lands for possible acquisition by the United States appeared in the Mineral County Miner on November 1, 8, 15, 22, 2001. In addition, the Forest Service sent letters notifying interested parties of these additions to the proposed exchange on October 24, 2001.

In response to this subsequent public notification the Forest Service received a number of additional letters from interested members of the public.

The Rio Grande National Forest released the Environmental Assessment for Comment on May 7, 2003. The Notice of Availability for the Environmental Assessment was printed in the Valley Courier (Alamosa) on May 9, 2003, Daily Sentinel (Grand Junction) on May 13, Monte Vista Journal on May 14, and the Mineral County Miner, Gunnison Times and Silver World (Lake City) on May 15. Copies and summaries of the document were distributed by mail to parties that had previously expressed interest in the proposed action. Additionally, the entire document was made available for public review on the Rio Grande National Forest web site. During the 30-day comment period the Forest Service received 23 comments from public agencies and private individuals and organizations. A summary of these comments and the Forest Service response to those comments is found in Appendix-Exhibit 6.

## **2.2.2. ISSUES AND CONCERNS**

The Council on Environmental Quality's "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" encourages agencies to limit the issues to be addressed in environmental assessments to those significant issues identified as a result of the public notification and scoping process. A broad range of issues and management concerns were identified during the scoping process and internal agency review. These issues were evaluated to ascertain which were "key" issues in the National Environmental Policy Act (NEPA) context, as they relate to the proposed action. NEPA regulations state that lead agencies shall determine significant issues to be analyzed in depth (40 CFR 1508.25) through the analysis process. Other issues identified during the scoping process that were not considered key issues, were also evaluated and, based on their relevance to the proposed action, are addressed in this analysis.

### **2.2.2.1. Key Issues:**

The following issues were identified from the internal and external scoping process as Key Issues. These items serve as a basis for the development of the alternatives presented in Section 2.4 and associated mitigation measures presented in Section 2.5.

#### **(1) River Access and Access to Public Lands Along the River**

Issue: Two of the Federal parcels are bisected by the Rio Grande (Parcels N2 and L3). Through this proposal public access to and from the river would be lost on these two parcels. A more comprehensive description of the existing recreational resource and potential effects to that resource is found in the Chapter 3.2.3 and Chapter 4.2.2.

#### **(2) Wildlife**

Issues: Approximately 112 acres of elk winter range could be adversely affected through the exchange of Parcels N1 and N2. Approximately 222 acres of suitable lynx habitat could be potentially affected by the exchange of Parcels N4, N5, N6 and L5.

The wildlife resource is described in Chapter 3.2.7 (pg. 32) and potential effects and impacts are discussed in Chapter 4.2.6 (pg. 49).

(3) Loss of Other Recreational Opportunities in Mineral County

Issue: The exchange would result in the loss of hiking, hunting, fishing and other recreational values currently offered on several of the Federal tracts, particularly Parcels N2, L3, N4 and L5. The current unrestricted access to the geologic formation in Parcel N2 would also be eliminated through the exchange of this Federal parcel. The recreational resource found on the Federal lands is described in Chapters 3.2.3 (pg. 25) and 3.2.11 (pg. 41) and potential effects and impacts to these resources are discussed in Chapters 4.2.2 (pg. 44) and 4.2.10 (pg. 55).

(4) Impact on Visual Quality

Issue: Private development on the exchanged Federal parcels (particularly Parcels N2 and L5) could negatively impact visual quality within this portion of the Rio Grande Valley viewshed. Sensitive visual resources are described in Chapter 3.2.8 and potential effects to those resources are discussed in Chapter 4.2.7.

(5) Potential Loss of Wetlands and Floodplains and Potential Increase in Flood Hazard Risks

Issue: Wetlands and floodplains occur on several of the Federal parcels (N2, N4, N6, L2, L3, L4 and L5). Potential development could occur in these areas through this exchange that could result in the loss of wetlands or an alteration of floodplains, potentially creating increased flood hazard risks. The wetlands and floodplains related to this proposal are described in Chapter 3.2.6 and in the Wetlands and Floodplains Report, Appendix-Exhibit 1, and potential impacts to these features are addressed in Chapter 4.2.5.

#### **2.2.2.2. Non-Key Issues**

A number of other issues and comments were identified during the scoping process for this analysis. Although many of these comments and issues were considered important, they were not considered key issues. Where appropriate, these issues have been addressed in the analysis and considered during the decision-making process. The non-key issues identified during scoping and comments are presented in Appendix-Exhibit 2.

### **2.3. FOREST PLAN DIRECTION**

The Forest Plan (Section 6, III-31) presents guidelines describing conditions under which the Forest Service would consider land adjustments to meet the plan's stated goals and objectives. Under these guidelines conveyance or acquisition should be considered when:

- The conveyance or acquisition would reduce Forest Service administrative costs and improve management efficiency.

- The conveyance would reduce conflicts between the Forest Service and private landowner objectives.
- Lands for acquisition would enhance Forest Service purposes, including access.
- Lands for acquisition would improve administration and reduce trespass.
- Lands for acquisition would add significantly to available Forest Service goods and services.

These guidelines served as a basis for the Forest Service review of the initial proposal presented to the Forest by the Non-Federal Entities, as well as the development of alternatives to this proposal.

Table 3 indicates the specific management prescription as presented in the Forest Plan for each of the Federal parcels involved in the exchange proposal.

Table 3.  
**FOREST PLAN MANAGEMENT PRESCRIPTIONS  
FOR THE FEDERAL PARCELS**

<b>Management Prescription</b>	<b>Parcels</b>	<b>Prescription Theme</b>
<b>3.3-Backcountry</b>	N4, N5, L5 (all except extreme northern portion)	These areas are managed to maintain plant and animal habitats that are shaped primarily through natural process, and to provide backcountry experiences to the public in area where there is little evidence of human activities.
<b>5.13-Forest Products</b>	N6, L5 (only the extreme northern portion of the area)	This prescription allows for a full range of activities, with an emphasis on the production of commercial wood products.
<b>5.41-Deer and Elk Winter Range</b>	N1, N2	These areas are managed to supply adequate amounts of quality forage, cover, and solitude for deer, elk, and other wildlife species while on winter range.
<b>5.42-Special Wildlife Areas-Bighorn Sheep</b>	L1, L2, L3, L4	These areas are managed to maintain or enhance habitat for big-horned sheep.

## **2.4. PROPOSED ACTION AND ALTERNATIVES**

This section describes the proposed action and alternatives to the proposed action including the No-Action alternative. Alternatives considered but eliminated from detailed analysis are also described.

### **ALTERNATIVES ANALYZED IN DETAIL**

#### **Alternative 1 – Proposed Action**

The potential for a land exchange between Rio Oxbow Ranch and the United States was first raised in 1997 by Alan Lisenby, one of the Non-Federal Parties. In early 1999 the Non-Federal Parties submitted a comprehensive exchange proposal to the Rio Grande National Forest. The Forest Service carefully reviewed all aspects of this proposal. This process resulted in a number of modifications to the original proposal, including the elimination of some parcels associated with the Carson properties (See Alternative 6), the addition of the Bonafacio and Long Ridge properties, and a substantial reduction in the size of the L5 parcel. Following this preliminary review of the land exchange proposal, the Forest Service concluded that the proposed exchange was feasible and entered into an Amended Agreement to Initiate with the Non-Federal Parties, dated October 16, 2002.

Under the exchange proposal that emerged from this collaborative process, the Non-Federal Parties proposed to convey 35 parcels of Non-Federal land totaling approximately 1,134.63 acres in exchange for 10 parcels of Federal land totaling approximately 468.78 acres. These Federal and Non-Federal parcels are further described in Tables 1 and 2 (pgs. 4 & 5) and Maps 1-6 (pgs. 6-11). A detailed description of each of these parcels is presented in the Biological Evaluation, (Appendix-Exhibit 3).

This alternative addresses the issues and opportunities outlined in Chapter 1.3, Purpose and Need for the Proposed Action. These include simplifying current land boundaries between National Forest and private lands, reducing the risks of future administrative problems arising from differing land management direction on public and adjacent private lands, protecting wildlife resources on the lands that would move into public ownership, as well as those on the adjacent public lands, and resolving potential conflicts regarding access. Under Alternative 1 the Forest Service would:

- Realize a net gain in public lands of 666.85 acres
- Gain jurisdictional control of a net 555.54 acres of elk winter range through its acquisition of 678.36 acres of elk winter range on the Bonafacio properties and its loss of jurisdictional control of 112.82 acres of winter range in Parcels N1 and N2.
- Gain jurisdictional control of a net 29.19 acres of wetland through the acquisition of 43.8 acres of wetland on the Non-Federal lands and the conveyance of 14.61 acres of wetland on the Federal lands.

- Lose jurisdictional control of a net 27.01 acres of floodplain, through conveyance of 36.01 acres of floodplain on the Federal lands and acquisition of 9.0 acres of floodplain on the Non-Federal lands.
- Lose jurisdictional control of a net 48 acres of identified suitable lynx habitat through its conveyance of approximately 222 acres of suitable habitat on the Federal lands and the acquisition of 174 acres on the Non-Federal lands.
- Lose jurisdictional control and public recreational opportunities on approximately 1616 lineal feet of the Rio Grande and associated stream banks through the conveyance of Parcels N2 and L3 and lose one potential river access point found at Parcel L3.
- Lose jurisdictional control allowing public access to recreational trails in Parcel N2.
- Lose jurisdictional control allowing unrestricted public access to the unique geologic features in Parcel N2.

### **Alternative 2-No Action**

Under this alternative the proposed land exchange would not occur. The National Environmental Policy Act (NEPA, 40 CFR 1502.14) requires that the “No Action” alternative be included as a viable option for the decision maker. This alternative is also used as a baseline against which action alternatives can be compared. This alternative would address all of the key issues identified in Section 2.2.2.1. However, the issues and opportunities described in Chapter 1.3, Purpose and Need for the Proposed Action (pg. 1) would remain unresolved.

### **Alternative 3- Proposed Action Modified by Eliminating Parcel L3 and the Southeast Corner of Parcel N2**

Under this alternative Parcel L3 (1.11 acres) and the extreme southeast corner of Parcel N2 (that portion including the river and lands on the south side of the river, roughly 5 acres) would be eliminated from the proposal. This alternative would address the recreational issues concerning the loss of river and shore access that would occur through the conveyance of these properties from Federal to private ownership. It would also address floodplains issues as they pertain to these parcels. Modifications under this alternative would reduce the total acreage moving from Federal to private ownership to approximately 462.67 acres. Under Alternative 3 the Forest Service would:

- Realize a net gain in public lands of 671.96 acres, assuming that the elimination of in Federal lands from the exchange would not result in a change in the Non-Federal lands moving to public ownership as a result of changes in appraisal values between the Federal and Non-Federal lands.
- Gain jurisdictional control of a net 555.54 acres of elk winter range through its acquisition of 678.36 acres of elk winter range on the Bonafacio properties and its loss of jurisdictional control of 112.82 acres of winter range in Parcels N1 and N2.
- Gain jurisdictional control of a net 29.29 acres of wetland through the acquisition of 43.8 acres of wetland on the Non-Federal lands and the conveyance of 14.51 acres of wetland on the Federal lands.

- Lose jurisdictional control of a net 23.51 acres of floodplain, through conveyance of 32.51 acres of floodplain on the Federal lands and acquisition of 9.0 acres of floodplain on the Non-Federal lands.
- Lose jurisdictional control of a net 48 acres of identified suitable lynx habitat through its conveyance of approximately 222 acres of suitable habitat on the Federal lands and the acquisition of 174 acres on the Non-Federal lands.
- Lose jurisdictional control allowing public access to recreational trails in Parcel N2.
- Lose jurisdictional control allowing unrestricted public access to the unique geologic features in Parcel N2.

#### **Alternative 4- Proposed Action Modified by Eliminating Parcel L3 and Parcel N2**

Under this alternative Parcels L3 and N2 would be removed from the exchange in their entirety. This alternative would address all of the river access concerns regarding the N2 and L3 parcels and would address floodplain issues as they pertain to these two parcels. It would also address wildlife concerns regarding elk migration and winter range in Parcel N2, the potential loss of access to the unique geologic features present in Parcel N2, the off-river recreational issues concerning the trail system in western portion of that parcel, and issues related to the potential loss of visual quality in Parcel N2. This alternative would reduce the total acreage moving from Federal to private ownership to approximately 387.67 acres. Under Alternative 4 the Forest Service would:

- Realize a net gain in public lands of 746.96 acres, assuming that the reduction in Federal lands would not result in a reduction in Non-Federal lands moving to public ownership as a result of changing appraisal values.
- Gain jurisdictional control of a net 640.54 acres of elk winter range through its acquisition of 678.36 acres of elk winter range on the Bonafacio properties and its loss of jurisdictional control of 37.82 acres of winter range in Parcel N1.
- Gain jurisdictional control of a net 29.29 acres of wetland through the acquisition of 43.8 acres of wetland on the Non-Federal lands and the conveyance of 14.51 acres of wetland on the Federal lands.
- Lose jurisdictional control of a net 23.51 acres of floodplain, through conveyance of 32.51 acres of floodplain on the Federal lands and acquisition of 9.0 acres of floodplain on the Non-Federal lands.
- Lose jurisdictional control of a net 48 acres of identified suitable lynx habitat through its conveyance of approximately 222 acres of suitable habitat on the Federal lands and the acquisition of 174 acres on the Non-Federal lands.

#### **Alternatives Considered but Eliminated From Detailed Analysis**

##### **Alternative 5- Acquire Non-Federal Lands Through Direct Purchase**

The Forest Service considered the alternative of acquiring the Non-Federal parcels through a congressional appropriation from the Land and Water Conservation Fund (LWCF). However, this alternative was dropped from further consideration because the proposed appropriation would have competed against other such requests nationwide and, given

higher priority requests both within the Region and nationwide, it is unlikely the acquisition would have been appropriated. Therefore, the Forest Service concluded that the land exchange process offered a more viable and expedient means of acquiring these properties. Additionally, the Non-Federal properties are owned or under option to the Non-Federal Parties who have informed the Forest Service that the Non-Federal parcels are not available for purchase by the United States.

### **Alternative 6- Acquire Entire Carson Townsite**

The entire group of mining claims comprising the Carson property totaled approximately 600 acres. All of these parcels were originally proposed for conveyance to the United States as part of the Rio Oxbow Land Exchange. However, following analyses of these claims including extensive soil and water sampling, a number of the mining claims were not found to be suitable for acquisition by the United States. Those specific mining claims were subsequently removed from the exchange proposal.

## **2.5. PROPOSED DESIGN CRITERIA FOR THE ALTERNATIVES TO ADDRESS KEY AND NON-KEY ISSUES**

The following mitigation measures have been offered by the Non-Federal Parties to minimize potential effects to the resources occurring on and adjacent to the Federal parcels. The proposed mitigation measures would be imposed through covenants recorded in the official records of Mineral County upon completion of the land exchange. These covenants would run with the land. Under the Proposed Action (Alternative 1) all of these mitigation measures would apply. Under Alternatives 3 and 4 only mitigation measures pertinent to the remaining parcels or portions of parcels would apply.

### ***Wildlife***

A covenant would prohibit development, including commercial timber harvest, on approximately 70 acres of designated lynx habitat within Parcels N4, 5 and 6. This covenant would also apply to most of Parcel L5, with the exception of a small portion of this tract at the current boundary between Parcel L5 and the western boundary of the Rio Oxbow Ranch. The owner of the Ranch, one of the Non-Federal Parties, would be allowed to construct a maximum of five residential dwellings and associated access roads within the portion of the parcel. The owner of Rio Oxbow Ranch has stated his intent to construct up to five dwellings for his family on his entire ranch. To protect the visual integrity of the entire property, especially as viewed from Highway 149, the Ranch owner has expressed a desire to locate one or more of these dwellings within the forest edge associated with Parcel L5. (There are limited options to screen potential home sites within the current Ranch boundaries.) Each site would result in a surface disturbance of less than one acre. The exact location of these potential development sites has not been determined at this time, but all may occur in what is currently the L5 parcel or some may include sites on land currently owned by the Ranch. It is estimated that each development site would result in a surface disturbance of approximately one acre and may include sites on lands currently owned by the Ranch.

### ***Wetlands and Floodplains***

Upon closing the exchange, the Non-Federal Parties would record covenants restricting development in wetland and 100 year floodplain areas identified within the Federal parcels (Parcels L1-5, N2 and N6). Such restrictions would protect the identified wetland areas, the visual qualities associated with such areas and the wildlife and plant species habitat associated with such areas.

### ***Recreation and Unique Geologic Features***

- The recreational trail, which extends through a portion of Parcel N2 would be relocated by the Non-Federal Parties to the National Forest System lands west of this parcel to maintain the recreational access through the general area and linkages to other area trails.
- A covenant would specify that access to the unique geologic feature found within Parcel N2 would be available for scientific, geologic and educational purposes by permission of the landowner, provided such requests are made by qualified individuals and are accompanied by a waiver of liability.
- To enhance public access to and egress from the Rio Grande, the river access point at the Rio Grande Campground (Rio Grande Fisherman's Area) would be improved (at the expense of the Non-Federal Parties) by reconstructing and enlarging the existing parking area and identifying a specific location for entering and leaving the river.

Table 4.  
**SUMMARY OF ALTERNATIVE EFFECTS**

KEY ISSUES	PROJECT ALTERNATIVES				
	ALTERNATIVE 1 (Proposed Action)	ALTERNATIVE 2 (No Action)	ALTERNATIVE 3 (Eliminate Parcel L3 and Southeast Corner N2)	ALTERNATIVE 4 (Eliminate All of Parcel L3 and N2)	Mitigation That Would Modify Potential Effects on Federal Lands
<b>River Access and Access to Public Lands</b>	-Lose stopover access to riverbanks in Parcel N2 and L3 and put-in and take out point at L3	No Impact	No impact	No Impact	-Under Alternative 1, river access point at Fisherman’s Area would be improved to better accommodate river users.
<b>Wildlife</b>	-Gain jurisdictional control of a net 555.54 acres of elk winter range through its acquisition of 678.36 acres of elk winter range on the Bonafacio properties and its loss of jurisdictional control of 117.82 acres of winter range in Parcels N1 and N2. -Lose jurisdictional control of a net 48 acres of identified suitable lynx habitat through conveyance of 222 acres of habitat on the Federal lands and the acquisition of 174 acres on the Non-Federal lands.	No Impact	-Gain jurisdictional control of a net 555.54 acres of elk winter range through its acquisition of 678.36 acres of elk winter range on the Bonafacio properties and its loss of jurisdictional control of 117.82 acres of winter range in Parcels N1 and N2. -Lose jurisdictional control of a net 48 acres of identified suitable lynx habitat through conveyance of 222 acres of habitat on the Federal lands and the acquisition of 174 acres on the Non-Federal lands.	-Gain jurisdictional control of a net 640.54 acres of elk winter range through its acquisition of 678.36 acres of elk winter range on the Bonafacio properties and its loss of jurisdictional control of 37.82 acres of winter range in Parcels N1 and N2. -Lose jurisdictional control of a net 48 acres of identified suitable lynx habitat through conveyance of 222 acres of habitat on the Federal lands and the acquisition of 174 acres on the Non-Federal lands.	<b>-N4, N5 and N6-A</b> covenant would prohibit development or commercial timber harvest in any designated lynx habitat. <b>-L5-A</b> covenant would prohibit commercial timber harvest and limit development to 5 sites on lower slopes immediately adjacent to current ranch boundary with a potential loss of 3 acres of lynx habitat..
<b>Impact on Visual Quality</b>	-Lose jurisdictional control of lands with high scenic value, particularly on Parcels N2 and L5	No Impact	-Lose jurisdictional control of lands with high scenic value, particularly on Parcels N2 and L5	-Lose jurisdictional control of lands with high scenic value, particularly on Parcel L5	<b>All Parcels-</b> Covenants restrict development or other disturbance to wetlands on Federal parcels and no development in any floodplain of The Rio Grande or Trout Creek <b>N4 &amp; N6-</b> No commercial

					timber harvest or other disruption of forest cover <b>L5</b> -Covenants would limit development to a potential of 5 residential units only on lower slopes of Parcel L5, allowing for screening of structures with existing tree cover.
<b>Potential Loss of Wetlands and Floodplains/ Flood Hazards</b>	-Gain jurisdictional control of a net 29.19 acres of wetland -Lose control of a net 27.01 acres of floodplain	No Impact	-Gain jurisdictional control of a net 29.29 acres of wetland -Lose control of a net 23.51 acres of floodplain	-Gain jurisdictional control of a net 29.29 acres of wetland -Lose control of a net 23.51 acres of floodplain	<b>All Parcels</b> -No development or other disturbance in wetlands on Federal parcels and no development in any floodplain of The Rio Grande or Trout Creek
<b>Loss of Other Recreational Opportunities in Mineral County</b>	-Lose public recreational opportunities on approx. 1616 lineal feet of the Rio Grande through conveyance of Parcels N2 and L3 -Lose public access to trail in N2 -Lose unrestricted access to unique geologic formation in N2 -Lose dispersed recreational opportunities (hunting, hiking, etc. primarily in N2, N4, N5, and N6 but gain substantially more acreage of public recreational access in Rio Grande and Hinsdale Counties	No Impact	-Lose public access to trail in N2 -Lose unrestricted access to unique geologic formation in N2 -Lose dispersed recreational opportunities (hunting, hiking, etc.) primarily in N2, N4, N5, and N6 and L5 but gain substantially more acreage of public recreational access in Rio Grande and Hinsdale Counties	-Lose dispersed recreational opportunities (hunting, hiking, etc.) primarily in N4, N5, and N6 and L5 but gain substantially more acreage of public recreational access in Rio Grande and Hinsdale Counties	<b>N2</b> -Trail would be relocated to allow for access to adjacent public lands. Would allow access to geologic formation for scientific and educational purposes. -Under Alternative 1, river access point at Fisherman's Area would be improved to better accommodate river users.

## **CHAPTER 3.0.**

### **AFFECTED ENVIRONMENT**

#### **3.1. INTRODUCTION**

This chapter describes the existing condition (affected environment) in the project area. Aspects of the environment, which pertain to the identified issues and concerns, are given an emphasis in this discussion. This section forms the scientific and analytical basis for the comparison of alternatives.

#### **3.2. DESCRIPTION AFFECT ENVIRONMENT**

##### **3.2.1 GENERAL DESCRIPTION OF FEDERAL AND NON-FEDERAL LANDS**

The following is a brief description of the Federal and Non-Federal lands involved in the exchange proposal. A more comprehensive description for each of these parcels is presented in Biological Evaluation, Appendix-Exhibit 3.

##### ***Federal Lands***

These lands are comprised of ten separate parcels that lie at a range of 3 to 11 miles southwest of Creede, Colorado. (Maps 1-6, pgs. 6-11) These parcels range in size from 0.04 to 214.06 acres. The Federal tracts lie along or near the Rio Grande and its tributaries at elevations ranging from 8,800 to 9,200 feet. Private lands, owned by the Non-Federal Parties, surround all of the parcels, either partially or completely, with the exception of Parcels N5 and N6, which are bordered by private lands owned by an associate of the Non-Federal Parties. The approximate size and legal descriptions of the Federal parcels are shown in Table 1 (pg.4). A more comprehensive description of each Federal and Non-Federal Parcel is presented in the Biological Evaluation, Appendix- Exhibit 3. A brief description of each of the Federal parcels is provided below.

**Parcel N1-**This 37.82-acre parcel is comprised of semi-arid grassland/shrubland on gentle slopes located approximately ½-mile north of the Rio Grande. This parcel is surrounded by private lands on its eastern, southern and western boundaries and connected to Federal lands to the north.

**Parcel N2-**This 80-acre parcel is located on the Rio Grande and is bisected by the river through its southeastern corner. Approximately 75 acres lie north of the river on slope gradients varying from gently sloping to extremely steep. A substantial cliff structure rises up from the river on its northern side to the high ground on which most of this parcel is situated. Vegetation in the northern portion of the parcel is comprised primarily of

grassland/shrubland with a small inclusion (<5 acres) of mixed conifer forest cover. The Rio Grande bisects the southeastern corner of this parcel. The south side of the river encompasses approximately 2.5 acres of floodplain dominated by cool season pasture grasses.

**Parcel N3-**This parcel was removed from the exchange proposal after the scoping process.

**Parcel N4-**This 84.6-acre parcel lies on the west side of Trout Creek immediately above its floodplain. Mid-successional mixed conifer forest cover dominates the western two-thirds of the parcel on slopes varying from gentle to moderately steep (>45%). The eastern one-third of this tract is open grassland on gentle slopes. An approximately 3-acre wetland system is situated along the northeastern edge of this parcel.

**Parcel N5-**This approximately 15-acre parcel lies on the upland slopes immediately above the western edge of the Trout Creek floodplain. This tract lies on variable slopes ranging from gentle to moderately steep. The vegetative cover is a mix of open grassland/shrub areas interspersed with clumps of early-mid-successional mixed conifer forest. The southeastern edge of the parcel borders a reservoir, approximately 10 acres in size, located on adjacent private lands.

**Parcel N6-**This 12.50-acre parcel lies along Trout Creek, which bisects the tract from west to east. The northern half of the parcel lies within the floodplain of the creek while the southern half lies on moderately steep upland slopes above the floodplain. The vegetation in the floodplain is a mix of cottonwood-blue spruce/willow riparian intermixed with open moist lowland meadow. Mid-late successional mixed conifer forest cover dominates the upland area on the south side of the creek.

**Parcel L1-**This 4.06-acre triangular parcel lies along Highway 149, which forms its northeastern boundary and separates it from adjacent public lands. With the exception of the highway berm it lies completely within the floodplain of the Rio Grande. The vegetative cover varies from dry to moist site grasses and forbs, with a limited willow shrub component at the base of the berm.

**Parcel L2-**This 19.59-acre triangular parcel lies along Highway 149, forming its eastern boundary and separating the tract from adjacent public lands. With the exception of the road berm the entire parcel lies within the floodplain of the river, and wetlands comprise a substantial portion of the area. The vegetative cover includes meadows dominated by wetland obligate and moist-site grasses and forbs, as well as intermittent dense stands of willow.

**Parcel L3-**This 1.11-acre parcel lies along the highway, which forms its northern boundary and separates it from adjacent public lands. The river intersects the southern edge of the parcel leaving a small portion of land on the river's southern bank. Most of the land within this parcel lies on the northern side of the river. The river is lined with large-diameter rip-rap on the northern bank. The vegetative cover in this parcel is dominated by dense willow shrub on the north side of the river and mesic-site pasture grasses on the south. The entire

area, with the exception of the road berm and the rip-rapped river banks, is located within the floodplain of the river.

**Parcel L4-**This small 0.04-acre parcel lies adjacent to the highway and practically all the area is encompassed by the highway berm. A very small portion of the area extends into the floodplain. The vegetative cover on this parcel is dominated by introduced grasses and noxious weeds (e.g., Canada and musk thistle). The small portion of the parcel in floodplain is dominated by willow shrub.

**Parcel L5-**This 214.06-acre parcel lies immediately above the floodplain of the river and includes the lower slopes of the forested hillside with extensions into the adjacent open pastureland. Roughly 80% of the area is in forested habitat characterized by a diverse mix of mid to late successional mixed conifer and spruce-fir with intermittent young and mature aspen, primarily found on the lower slopes. Two perennial streams, Workman's Creek and Woodfern Creek, bisect this parcel in the northern half. The open areas found intermittently along the lower slopes of this tract vary from wetland marsh to cool season mesic pasture. The topography of this parcel varies from gentle gradients at the lower slopes to steep slopes with occasional cliff structures in the forested cover on the upper hillsides.

### ***Non-Federal Lands***

The private lands offered for exchange to the United States are located in three distinct areas. The 91.79-acre Long Ridge (LR) properties border the north side of Highway 149 immediately above the Federal tracts L1-L5, approximately 11 miles southwest of Creede, Colorado (Map 1, pg. 8). These parcels are comprised of 5 separate, roughly triangular tracts ranging in elevation from approximately 9,000 to 9,200 feet. The general character of these tracts is upland grassland/shrubland on slopes ranging from gentle to moderately steep.

The 678.36-acre Bonafacio properties are located approximately 10 miles southwest of Monte Vista, Colorado (Map 5, pg. 9). They are comprised of 4 separate tracts (B1-B4), which lie within the Bonafacio and Nicomodes drainage systems at elevations ranging from 8,600 to 9,600 feet. The areas are characterized by rolling hills dominated by grassland/shrubland intersected by narrow riparian corridors along the stream systems. With the exception of a pinyon-juniper woodland located on the western slopes of B1 and discontinuous patches of mixed-conifer and aspen in the B4 parcel, there is little tree cover on the Bonafacio tracts. Each of these parcels is completely surrounded by National Forest System lands.

The Carson properties are located near the Continental Divide approximately 24 miles west of Creede and 12 miles south of Lake City (Map 6, pg. 10). These properties are comprised of the 133.87-acre Hays Placer, which lies on the Gunnison National Forest and 25 small patented mining claims ranging in size from 4 to 10.33 acres and totaling 230.61 acres, referred to collectively as the Continental Divide Claims. The Continental Divide Claims lie within the boundaries of the Rio Grande and Gunnison National Forests. The Hays Placer is dominated by mature spruce-fir forests and willow/sedge wetlands on slopes ranging from gentle to moderately steep. The Continental Divide Claims are dominated by subalpine and alpine meadow with little tree cover. These parcels range in elevation from approximately

11,200 to 12,400 feet. The Hays Placer and the mining claims (as a group) are surrounded, either partially or completely by National Forest System lands. The approximate size and legal descriptions of the Non-Federal parcels are presented in Table 2 (pg. 5).

### 3.2.2 SOCIO-ECONOMIC

The project area lies within three counties in southwestern Colorado: Mineral County, Rio Grande County and Hinsdale County. Population centers that would be most directly affected by this proposal are Creede (Mineral County), Monte Vista (Rio Grande County) and Lake City (Hinsdale County). These counties, though relatively large in area have small populations. Based on year 2000 census data the populations in these counties were: Hinsdale-790, Mineral-831, and Rio Grande-12,413. All of these counties have experienced population growth over the last ten years with growth rates of 70, 49, and 15%, respectively. The economy of Rio Grande County is heavily based in agriculture and ranching, while the economies of Hinsdale and Mineral Counties are currently more dependent on real estate sales and development, as well as tourism. As shown in Table 5, each of these counties is comprised of a substantial amount of land in Federal ownership.

**Table 5.  
County Total and Federal Acres**

<b>County</b>	<b>Total Area (AC.)</b>	<b>Federal Lands (AC.)</b>	<b>% Public</b>
Hinsdale	718,946	683,625	95.0
Mineral	562,020	525,344	93.5
Rio Grande	584,382	340,028	58.2

### 3.2.3. RECREATION

#### *Federal Lands*

The Silver Thread is a designated National Forest Scenic Byway and a Colorado Scenic and Historic Byway. Once a toll and stagecoach route, this 75-mile stretch along Highway 149 offers scenic, recreational, archeological, historic and cultural opportunities and includes the quaint historic communities of South Fork, Creede, and Lake City in the San Juan Mountains.

The upper reach of the Rio Grande from Texas Creek to Wagon Wheel Gap has five commercial outfitters under permit by the Rio Grande National Forest. There are 515 service days (SD) authorized to these river users. The river outfitters are required to get approval from private landowners to put-in and take-out, as well as float through private lands. These outfitters offer day long and half-day river trips on the river. The current commercial outfitters on this section of the river include: Mountain Man (200 SD); Scenic

Tours (25 SD); Cannibal Outdoors (90 SD) Duranglers (100 SD) and Durango Fly Goods (100 SD).

Due to restricted access and the inherent character of the Federal parcels, overall recreational opportunities on most of these lands are very limited. Some dispersed recreational pursuits, primarily hunting, may be available on Parcels N4, N5, N6 and L5. It is not known what level of dispersed use actually occurs on these parcels. Due to the private land ownership patterns access requires relatively long traverses over fairly rugged terrain to reach these areas.

Parcel N2 offers a variety of recreational opportunities. However, these opportunities are also limited by access due to the land ownership pattern in the surrounding area. The Rio Grande bisects the southern portion of this parcel, creating approximately 1,000 feet of bank on the inside curve of the river suitable for fishing and limited hiking. The outside curve abuts a cliff for much of its length and has limited recreational use. The riverfront apparently receives a considerable amount of use from individuals and commercial outfitters accessing the area with permission from the adjacent private resort (The Antlers/Rio Grande Lodge) located to the south of the parcel. Most of this use is probably related to fishing or casual hiking, but also provides a rest stop opportunity to commercial outfitters and their clients. This riverfront area allows non-commercial public river users in watercraft an opportunity to exit the river to publicly owned lands. However, due to the land ownership pattern, they cannot access this area or leave this area (other than by river) without crossing private lands. The cliff structures and associated geologic features offer opportunities for hobbyists to search for and collect fossils from the Creede Formation. As with other recreational features on Parcel N2, these activities are limited, to a degree, by access. There is also a trail system that traverses the southwest portion of the parcel on the north side of the river.

Parcel L3, which lies along and is bisected by the Rio Grande, provides opportunities to access the river via Highway 149 and also provides an opportunity to exit the river onto public lands. Commercial outfitters currently float through this parcel of Federal Land. There is a turnout along the highway, on the northern edge of this parcel, that could potentially be used for parking. However, the area has never been improved to facilitate access to and from the river. Currently the banks along the highway are lined with very coarse rip-rap, which would make moving into or out of the river at this point quite difficult. Additionally, due to limited sight distance from the turnout on to the highway, the Colorado Department of Transportation (CDOT), for safety reasons, has not supported the creation of a developed recreational site in this area. The outside curve of the river, on its north side (highway side) would provide some limited access for fishing. However, movement along this stretch would be made difficult by the rip-rap lining much of the river bank.

### ***Non-Federal Lands***

Long Ridge Properties: The current recreational opportunities on these properties are somewhat limited due to the relatively steep nature of the landform. The quality of dispersed recreational pursuits, such as hunting or hiking, would be diminished by the proximity to Highway 149, which defines the lower slope boundary of each of the separate

parcels. However, these private lands limit public access to the greater Long Ridge area that lies to the north. The public currently enters onto Rio Oxbow Ranch land in several locations on the Long Ridge properties to access the National Forest, although no formal agreement to this access exist between the Forest Service and the private landowner. Therefore, acquisition of these parcels would guarantee the right of public access from the highway to an extensive area of Federal lands offering a variety of dispersed recreational opportunities.

Bonafacio Properties: These private properties lie within an area of extensive Federal ownership offering a wide variety of dispersed recreational pursuits, such as hunting, hiking, and travel on 4-wheel drive travel routes. The presence of these private lands juxtaposed against this expanse of Federal lands disrupts the continuity of these recreational pursuits. Access to much of the Federal land in the area is provided by Forest System (4-wheel drive) roads that passes through these Non-Federal parcels. There is currently no formal agreement with the landowner that allows for public use of the roadways across these private lands.

Carson Properties: Forest Road (FR) 568 (Wager Gulch Road) and FR 518 (Carson Road and 518.1b to Heart Lake Road) are well-established routes for summer backcountry motorized travel. Forest Roads 568 and 518 provide access to the Carson town site, which is a popular destination for viewing historic mining structures. These roads also are popular backcountry motorized routes over the Continental Divide, between Lake City and the Rio Grande drainage. These roads pass through the Non-Federal lands included in the Carson properties. There are currently no formal agreements with the private landowners of these parcels that legally allows for access through these parcels. The Hays Placer, on the Gunnison National Forest, lies within an expanse of Federal land that offers hunting, hiking and other forms of dispersed recreational opportunities. This parcel also contains a well-defined, though currently abandoned, historic trail that traverses the area into the West Fork Wager Gulch.

### **3.2.4. RANGE**

#### ***Federal Lands***

Parcels N1 and N2 are currently within the Shallow Creek C&H Allotment permitted to one of the Non-Federal Parties. Parcels N4, N5 and L5 are part of the Texas S&G Allotment, which is a vacant sheep allotment with no permittee. Parcels N6 is a part of the South River C&H Allotment permitted to a non-participant in the exchange proposal. The permittee has been notified of the proposed exchange. The 12 acres of this allotment that are contained within Parcel N-6 were excluded from the Term Grazing Permit when the new permit was reissued in June of 2001. The L1, L2, L3 and L4 parcels are under a special-use permit for pasture issued to one of the Non-Federal parties to this exchange proposal.

#### ***Non-Federal Lands***

The Long Ridge parcels appear to have been used as rangeland in the past and currently offer moderate forage potential. However, the area is not currently grazed due to steep

slope. Additionally, there is no fencing present to manage livestock on these parcels. These tracts lie adjacent to the Park C&H Allotment.

The Bonafacio properties, which are located within the Martinez-Underwood S&G Allotment, have also been used as rangeland in the past but are currently not being actively managed for that purpose. Some fencing is present but is not maintained and sheep from the adjacent allotment graze the area. The livestock forage potential across these properties would be considered fair to moderate.

The Continental Divide claims are surrounded by the Lost Trail–Carson S&G Allotment. This area has no fencing to provide for management or exclusion of livestock. The Hays Placer does not appear to have been used for livestock grazing in the past, nor is it currently being managed for that purpose. Due to the heavy forest cover over much of this parcel and the adjacent dense willow in the northern portion of the area, the forage potential is generally poor.

### **3.2.5. VEGETATION**

#### ***Federal Lands***

The Federal lands are comprised of a variety of vegetative cover types. Parcel N1, the upland portions of Parcels N2, and much of the open areas in Parcels N4 and N5 are characterized by dry mountain meadow dominated by a grass/forb herbaceous cover with a poorly to moderately-well represented shrub cover dominated by currant and rabbitbrush.

Mixed conifer forests dominate the western and northern portions of Parcel N4, the north-facing slopes of Parcels N5 and N6, and most of Parcel L5. These forests are generally characterized by mesic, cool sites with a species mix of Douglas fir, Engelmann spruce, blue spruce and aspen, as well as clumps of mature and immature aspen with conifer understories. Age and size classes are highly variable throughout the forest cover. However, mid-successional stand structures are the dominant condition. The L5 parcel exhibits the most complex forest structure with all age and size classes represented, ranging from early successional aspen with interior forest openings to patches of late successional mixed conifer with high snag densities and substantial accumulations of coarse woody debris. An approximately 5-acre stand of forest comprised predominantly of mature, stunted, blue spruce occurs on the isolated slopes of an incised drainage in the southern half of the N2 parcel.

Wetland/riparian vegetative cover is found on several of the Federal parcels. A very narrow band of poorly developed riparian habitat lines the south side of the river in Parcel N2. Parcel N4 has approximately 2 acres of wetland vegetation associated with a small, natural pond on its eastern edge. This vegetation is dominated by sedges with scattered mature willows along the northern edge of the pond. Parcels L2 and L3 lie predominantly in wetland/riparian habitat associated with the river and side channels to the river. These wetlands are dominated by a mix of mature willows interspersed with wetland obligate and wetland facultative herbaceous cover. Parcel L1 has limited willow cover associated with

wet areas located at the edge of the highway berm. Wetland/riparian habitats, primarily dominated by sedges, are also found in Parcel L5 at the west end of the large reservoir and along Woodfern Creek as it flows into the meadows above the floodplain to the Rio Grande. Forested riparian habitat dominates the vegetative corridor along Trout Creek in Parcel N6. This cover is comprised of mature blue spruce and narrow-leaf cottonwood with intermittent mature willow in the understory.

Moist mountain meadows, dominated by cool season grasses and forbs are found along the south side of the river in Parcel N2, isolated pockets in Parcel N4, and along the lower slopes of Parcel L5.

The Federal lands provide no habitat for any U.S. Fish and Wildlife Service (FWS) listed threatened, endangered, or proposed plant species. However, suitable habitat is present for the Colorado tansy aster (*Machaeranthera coloradoensis*) in Parcels N1, N2, N4, and N5. This plant is classified as an R-2 sensitive species. Field observations detected no occurrence of this species on any of the Federal tracts.

A more comprehensive description of the vegetative cover for each of the federal parcels can be found in the Biological Evaluation, Appendix-Exhibit 3.

### ***Non-Federal Lands***

The Non-Federal lands also possess a broad range of vegetative cover types. Open, dry mountain meadow dominates all of the Long Ridge properties, as well as much of the Bonafacio properties. These areas are characterized by xeric (i.e., dry) grasses and forbs with a poorly-to moderately well-represented shrub component comprised predominantly of currant, in association with various other dry-site shrubs. The B1 parcel also supports an intermittent woodland cover of pinyon and juniper. The vegetation in the B4 parcel changes from a dry to a mesic species composition as a result of increasing elevation. This parcel also supports intermittent patches of mixed conifer forest cover on its less exposed slopes. The B1, B2 and B3 parcels also support riparian/wetland vegetation along drainage systems that bisect these areas. Parcel B1 has the most complex riparian vegetative community within these properties with sedgegrasses and other moist-site graminoids, willows and a wide variety of wetland obligate and wet facultative forb species. Riparian areas in B2 and B3 are dominated by sedges.

The Carson properties are located near or above timberline. The 133.87-acre Hays Placer exhibits a complex vegetative character ranging from mature to late successional spruce forest (> 200 years old) in the southern two-thirds of the parcel and willow/meadow wetlands in its northern one-third. Additionally, high-elevation, willow-dominated riparian habitat lines the main and west forks of Wager Creek as they pass along the eastern and western edges of the parcel. The Continental Divide Claims lie predominantly above timberline and are occupied by drier site alpine grasses and forbs with a sparse shrub component comprised primarily of localized clumps of low-growing willows.

The Non-Federal lands provide no suitable habitat for any threatened, endangered, or proposed plant species. However, suitable habitat is present for the Colorado tansy aster

(*Machaeranthera coloradoensis*) on much of the Long Ridge and Bonafacio properties. This plant is classified as an R-2 sensitive species. Field observations detected no occurrence of this species on any of the Non-Federal tracts. Additionally, the Carson properties would provide suitable habitat, in some areas, for reflected moonwort (*Botrychium echo*) and pale moonwort (*Botrychium pallidum*). These are also sensitive species in Region 2. No evidence of occurrence was observed for these species during field surveys. However, surveys may have occurred outside of the period when these species are most detectable.

A more comprehensive description of the vegetative cover for each of the Non-Federal tracts is presented in the Biological Evaluation, Appendix-Exhibit 3.

### **3.2.6. HYDROLOGY, WETLANDS and FLOODPLAINS**

#### ***Federal Lands***

The Federal lands all lie within the Rio Grande drainage. The river physically bisects two of the parcels (N2 and L3). No wetlands are present within N2 but approximately 5 acres of the parcel are located within the river's floodplain. Parcels L1-L4 are also located wholly or partially within the floodplain of the river. Parcels L1-L3 have wetland soils that have developed in direct association with the river and its side channels. Two perennial tributaries to the river bisect L5: Workman Creek and Woodfern Creek. Workman Creek is completely diverted in a channel that flows into a reservoir located on the Rio Oxbow Ranch. Woodfern Creek is partially diverted into this channel, with the remainder of the flow allowed to follow its natural channel to the river. Wetlands have formed along the lower slopes of Parcel L5 in several locations including the west end of the reservoir; some limited areas associated with the natural channel of Woodfern Creek and a small area of wet meadow in the northern portion of the parcel. All of Parcel L5 is located above the floodplain of the Rio Grande. Parcel N4 is located directly above the floodplain of Trout Creek. Two intermittent drainages bisect the tract, with the northern most contributing to a small naturally formed, shallow pond on the parcel's eastern edge. This feature is surrounded by wetlands, which extend in a narrow band south from the pond. N6 is bisected by Trout Creek, a major tributary to the Rio Grande. Some wetland occurs within the immediate drainage corridor directly associated with the creek, as well as in the western portion of the parcel in association with the diversion to and back waters of the abandoned reservoir located northwest of the parcel. There are no wetlands or floodplains associated with Parcels N1 and N5. The estimated area of wetland and floodplain for each of the federal parcels is presented Table 6 (pg. 32).

Table 6.  
**Wetland and Floodplain Acreage  
of the Federal Lands Proposed For Exchange**

<b>Federal Parcel</b>	<b>Wetland (acres)</b>	<b>Floodplain (acres)</b>
N2	-	2.50
N4	2.00	0.5
N5	-	-
N6	1.00	7.50
L1	0.01	4.00
L2	7.90	19.00
L3	0.10	1.00
L4	-	0.01
L5	3.60	-
Total	14.61	36.01

***Non-Federal Lands***

Long Ridge Properties: There are no wetlands, floodplains or other important hydrologic features associated with the Long Ridge properties.

Bonafacio Properties: Within the Bonafacio properties, Parcel B1 is bisected by Nicomodes Creek, which is a small perennial stream. Bonafacio Creek, another small perennial stream, cuts through the northwest corner of Parcel B2 and through the center of Parcel B3. The channels for both of these streams, as they pass through the subject parcels, are lined by a linear band of wetlands varying in width from 15 to 20 feet. Parcel B2 is also bisected by a well-defined unnamed intermittent drainage pattern. This drainage flows only as a result of snowmelt and significant precipitation events and has no wetlands, floodplains, or significant riparian habitat associated with the drainage corridor. Parcel B4 is also bisected by an intermittent stream tributary to Bonafacio Creek. There are no wetlands or floodplains associated with this drainage feature.

Carson Properties: The Continental Divide Claims lie within the Rio Grande system. There are no significant hydrologic features associated with any of these parcels. The Hays Placer, which lies on the opposite side of the Divide, drains into the Colorado River system. The hydrologic character of this parcel is very complex. The main fork of Wager Creek runs along portions of the eastern edge of the tract and the West Fork Wager Creek along its western edge. Both of these streams are perennial and carry substantial flows, particularly during spring and early summer snowmelt. Wetlands, as well as minor, intermittent floodplains are found along each of these streams. The northern one-third of this tract features a large wetlands system, which extends south into the forest cover and north to the junction of Wager Creek and the West Fork Wager Creek. The hydrologic movement into this area appears to be from both surface and subsurface flows.

Table 7 provides an area estimate of wetlands and floodplains found in the each of the Non-Federal parcels.

Table 7.  
**Wetland and Floodplain Acreage  
of the Non-Federal Lands Proposed For Exchange**

<b>Non-Federal Parcel</b>	<b>Wetland (acres)</b>	<b>Floodplain (acres)</b>
B1	2.50	5.00
B2	0.70	2.00
B3	1.60	2.00
Hays Placer	39.00	-
Mining Claims	-	-
<b>Total</b>	<b>43.80</b>	<b>9.00</b>

A more comprehensive description of the wetlands and floodplains found on the Federal and Non-Federal lands is presented in the Wetlands and Floodplains Report Appendix-Exhibit 1.

### 3.2.7. Wildlife

#### *Federal Lands*

Due to the diverse nature of the vegetative communities found on the Federal parcels they offer habitat opportunities for a wide range of wildlife species. There are generally four primary wildlife habitat types found within these parcels, each of which provides specific requisites for the wildlife communities found there. These include:

- Upland Grass and Shrub (Parcels N1, N2, N5)-Roughly 132.82 acres within the Federal parcels falls within the grassland/shrubland habitat type. This type provides breeding and foraging habitat for a variety of ground and shrub-nesting upland bird species. A number of small mammals species, such as mice, shrews, mountain cottontail and ground squirrel, also use these areas where adequate hiding cover is available. Although little habitat is present for nesting, several raptors, such as red-tail hawk, Swainson’s hawk, American kestrel, great-horned owl and golden eagle may hunt within these areas. These areas also provide summer and winter range for elk and deer, although deer winter use is probably limited. Parcels N1 and N2 have been specifically identified by the Colorado Division of Wildlife as important foraging and transitory range for wintering elk herds.
- Upland Mixed-Conifer Forest (Parcels N2, N4, N5, N6, L5)-Roughly 250 acres within the subject federal lands are in the mixed conifer forest cover type. This habitat type supports the most complex community of wildlife species found within the federal lands involved in the exchange proposal. A large variety of cup and cavity nesting avian species utilize these habitats for breeding and foraging. Goshawk, Cooper’s hawk and sharp-shinned hawks may nest and hunt within the interior forest cover and other raptors, such as red-tail hawk and great-horned owl use the edges of the forest cover for foraging and nesting activities. The numerous small mammals that utilize these habitats include red squirrel, voles, chipmunks,

mice, shrews, porcupine, snowshoe hare, and mountain cottontail. Predators that den and forage in the mixed conifer forest cover include marten, weasel, bobcat, lynx, mountain lion and black bear. Deer, elk and moose use the forest interior for hiding and thermal cover and use the edges for foraging.

- Riparian/Wetland (Parcels N2, N4, N6, L2, L3, L4, L5)-Approximately 23.5 acres within the Federal tracts fall within the riparian/wetland habitat type (Note: Some of the riparian habitat extends beyond the wetlands boundaries.). These areas include wet meadows dominated by sedges, willow-dominated streamside habitat and cottonwood/willow communities (N6). These areas provide potential habitat for amphibians, such as chorus frog, Woodhouse's toad, northern leopard frog and western boreal toad. The shrub and forested riparian corridors provide nesting and foraging habitat for a variety of passerine avian species. These areas also provide foraging habitat for a variety of shore birds and waterfowl, although breeding habitat for these species is somewhat limited. The wetland/riparian areas would also provide some foraging potential for large ungulates, particularly moose.
- Moist Mountain Meadow (Parcels N4, N6, L5)-Approximately 25 acres occur in this habitat type. Within the Federal lands, these areas are found primarily directly adjacent to mixed conifer forest cover at their lower slopes. Due to the general absence of a tree or shrub component, these areas are limited in nesting opportunities for birds and hiding cover for most mammal species. However, they do serve as important foraging areas for a number of species including elk and deer.

### ***Non-Federal Lands***

Due to the diverse nature of the Non-Federal lands, they also provide habitat for a wide range of wildlife. Although specific characteristics differ somewhat from those found on the Federal tracts, the primary habitats types and species that they support are quite similar.

- Upland Grass and Shrub (Parcels LR1-LR5, B1-B4)-Approximately 750 acres of the Non-Federal parcels would be classified as upland grass and shrub habitat. This is the dominant habitat type found on the Long Ridge properties and the Bonafacio properties. With the exception of the drainage corridors found in Parcels B1, B2, and B3 all of these sites tend to be somewhat xeric in nature. The Long Ridge properties lack a substantial tree or shrub component, which would limit overall avian habitat. However, the dense bunch grass ground cover would provide habitat for ground nesting birds and small mammals, as well as winter foraging habitat for elk and deer. The intermittent rock outcrops would also provide habitat opportunities to small mammals. The Bonafacio properties, although dominated by grasslands have a moderately well-distributed shrub component, and in the case of Parcel B1, a moderately well developed pinyon-juniper cover. This provides good foraging and breeding habitat for a number of avian species and security cover for mammals using the area. The CDOW has identified this area as important winter range for elk and deer. The area also supports a resident population of antelope.

- Riparian/Wetland (Parcels B1, B2, B3, Hays Placer)-Approximately 43.8 acres within the Non-Federal tracts are comprised of riparian/wetland habitat. These areas include approximately 4,900 feet of stream corridor of Nicomodes Creek, 4,000 feet of stream corridor of Bonafacio Creek in B2 and B3, approximately 4,100 feet of stream corridor associated with the main and west forks of Wager Creek in the Hays Placer, and approximately 39 acres of other wetlands are also present in that parcel. The riparian corridors found in the Bonafacio properties are narrow and strictly confined to the immediate area surrounding the stream channel. These areas provide potential habitat for amphibians, such as chorus frog, Woodhouse's toad, and northern leopard frog. These areas also provide good habitat for small mammals, and thus provide good foraging habitat for mammalian and avian predators. They also provide a water source for wildlife within a landscape that is dominated by xeric habitat types. The stream corridors and wetlands found in the Hays Placer are dominated by a well-developed willow component interspersed with hydrophytic herbaceous plant species. These areas provide breeding habitat for amphibians including northern leopard frog and boreal toad, nesting habitat for a variety of bird species, and foraging habitat for both large and small mammals.
- Spruce-Fir Forest (Hays Placer)-Roughly 95 acres within the Hays Placer is comprised of late successional spruce-fir forest cover. This habitat is very diverse and includes both dense forest and small openings. Snag densities are high and accumulations of coarse woody debris are well distributed across the forested portion of the parcel. This area provides good nesting and foraging habitat for both cup and cavity nesting birds, as well as a variety of small mammals. It also provides good foraging and denning habitat for forest interior predators such as mountain lion, American marten, lynx and bobcat. The forested area is surrounded by more open wetland and moist mountain meadow, which creates an edge effect favored by many wildlife species. Deer, elk and moose use these forest interiors for hiding and thermal cover and use the edges for foraging.
- Subalpine/Alpine Meadow (Continental Divide Claims)-Approximately 230 acres occur in this habitat type. Most of this area lies on the south-southeast facing slopes of the Continental Divide. Inhabitants of this habitat would include small mammals, such as marmot and pika, ground nesting avian species, such as ptarmigan, and occasional summer foraging habitat for big-game species including elk and deer. These areas would also provide foraging habitat for golden eagle and other raptors.

Three separate analyses were performed to determine the potential effects to wildlife species that could be expected from the proposed action. An analysis of proposed management indicator species was performed to predict potential planning area effects to wildlife populations in general in relation to the habitats found on the Federal and Non-Federal lands. A Biological Assessment was performed to determine the potential effects to U.S. Fish and Wildlife Services' (FWS) listed threatened and endangered species and a Biological Evaluation was conducted to determine potential effects to Forest Sensitive and

FWS candidate wildlife species. The following is a general description of the species examined in these analyses and their habitat occurrence within the project area.

**Management Indicator Species**

Forest Service Handbook (FSH) 1909.219 directs that National Forest System lands “shall be managed to maintain viable populations of existing native and desired non-native species in the planning area<sup>1</sup>. A viable population shall be regarded as one, which has the estimated numbers and distribution of reproductive individuals to ensure its continued existence is well distributed in the planning area.” Given the large number of species that occupy or could potentially occupy the habitats within the analysis area, it would be very difficult to analyze the effects from one, or a combination of management actions on each individual species. An analysis of potential changes in management indicator species’ (MIS) populations, resulting from management actions, are believed to be indicative of the effects to other wildlife species that use similar habitats or that have similar sensitivities to potential habitat disruption. The Rio Grande National Forest has developed a proposed list of MIS, which includes 12 wildlife species. Potential habitat for each of these species is present on Federal or Non-Federal Lands. Table 8 lists the MIS that could be potentially affected by the proposed action, provides a brief description of habitat characteristics and rationale for species selection, and indicates those exchange parcels that may provide potential habitat for each species.

Table 8.  
**General Description and Habitat Occurrence  
of Proposed Management Indicator Species**

<b>SPECIES</b>	<b>GENERAL HABITAT DESCRIPTION AND RATIONALE FOR SPECIES SELECTION</b>	<b>EXCHANGE PARCELS W/ SUITABLE HABITAT OR SPECIES INFLUENCE</b>
<b>Rio Grande Cutthroat Trout</b>	Small, first and second order high elevation headwater streams above natural or manmade barriers that prevent invasion by downstream populations of nonnative salmonids. Selected as MIS as indicator of health of stream habitats and is a Colorado species of concern.	<b>Federal:</b> L5 <b>Non-Federal:</b> Hays Placer
<b>Brook, Rainbow, and Brown Trout</b>	Introduced species that now occupy a variety of mid to high elevation streams and lakes. Selected MIS as indicator of health of stream habitat and have high economic and recreational interest.	<b>Federal:</b> N2, N6, L2, L3, L5 <b>Non-Federal:</b> Hays Placer
<b>Mule Deer</b>	Uses almost all habitats in Colorado that provide adequate cover and forage. Move to variety of lower elevational sites during winter to habitats offering adequate forage. Selected MIS because of high economic and recreational interest, as well as concerns regarding range-wide population declines.	<b>Federal:</b> N1, N2, N4, N5, N6, L5 <b>Non-Federal:</b> Long Ridge, Bonafacio, Hays Placer

<sup>1</sup> For the purposes of this analysis, the planning area is the Rio Grande National Forest.

<b>Rocky Mountain Elk</b>	Variety of mid to upper elevational habitats in summer with adequate cover and forage. Move to variety of lower elevational sites during winter offering forage and low human presence. Selected as a MIS because of high economic and recreational interest.	<b>Federal:</b> N1, N2, N4, N5, N6, L5 <b>Non-Federal:</b> Long Ridge, Bonafacio, Hays Placer
<b>Wilson's Warbler</b>	Breeding areas strongly associated with mid to high elevation willow carr communities. Found in a variety of shrubby communities during migration. Selected as a MIS to represent conditions in upper elevational wetland/riparian shrub communities.	<b>Federal:</b> N6, L1, L2, L3, L4, L5 <b>Non-Federal:</b> Hays Placer
<b>Lincoln's Sparrow</b>	Prefer dense riparian shrub cover and saturated floodplains. Tall grass and sedge structure in and around willow thickets is also an important component of the nesting habitat. Selected as a MIS to represent conditions in mid-upper elevational wetland/riparian shrub and sedge communities.	<b>Federal:</b> N6, L1, L2, L3, L4, L5 <b>Non-Federal:</b> Hays Placer
<b>Hermit Thrush</b>	Considered a common breeder in late successional spruce-fir forests although other habitats are also used. Selected as a MIS to represent conditions in mid-upper elevational late successional conifer communities.	<b>Federal:</b> N4, N6, L5 <b>Non-Federal:</b> Hays Placer
<b>Brown Creeper</b>	Closely associated with dense, older forest conditions throughout their range regardless of the forest type although most common in spruce-fir in Colorado. Selected as a MIS to represent conditions in mid-upper elevational late successional conifer communities.	<b>Federal:</b> N4, N6, L5 <b>Non-Federal:</b> Hays Placer
<b>Pygmy Nuthatch</b>	Prefer mature ponderosa pine with decaying snags for cavities. Occasionally found in other coniferous forest types. Selected as a MIS primarily to represent conditions in late successional ponderosa pine communities.	<b>Federal:</b> N4, N6, L5 <b>Non-Federal:</b> None
<b>Vesper Sparrow</b>	Closely associated with mountain grasslands and shrubland habitat in Colorado. The densest nesting populations occur in mid-high elevation sagebrush. Selected as a MIS to represent conditions in higher elevational grassland/shrubland plant communities.	<b>Federal:</b> N1, N2, L1 <b>Non-Federal:</b> Long Ridge, Bonafacio

A summary of the potential effects to proposed MIS is presented in Chapter 4.2.6 (pg. 51). A comprehensive description of the biology and habitat requirements, as well as a description of project area habitat for each of these species, is presented in Management Indicator Species Report, on file and available for review at the Rio Grande National Forest Supervisor's Office.

**Threatened and Endangered Wildlife Species**

Suitable habitat for two threatened species, bald eagle and Canada lynx, is present on the federal lands involved in the exchange proposal and suitable lynx habitat is present on the Non-Federal lands. The U.S. Fish and Wildlife Service currently lists both of these species as threatened.

**Bald Eagle:** Some limited winter roosting and nesting habitat is found along Trout Creek as it passes through Parcel N6 and on the forest edge found in Parcels N4, N5 and L5. However, no breeding or winter use by this species has been documented within any of these parcels or in the general vicinity of the Federal lands. There is no potential habitat for the bald eagle on the Non-Federal lands.

**Canada Lynx:** RGNF wildlife biologists have identified suitable lynx habitat on the Federal lands in Parcels N4, N5, N6, and L5. These parcels lie within the Hogback Lynx Analysis Unit (LAU). Most of the identified suitable habitat lies within the forested portions of these parcels. The following is an approximate acreage breakdown of the suitable lynx habitat within these parcels:

Parcel	Denning	Winter Foraging	Other Habitat	Currently Unsuitable	Non-Habitat
N4	58				29
N5		1			
N6	5	3			4
L5	104	33	18	7	32
Total	167	37	18	7	65
Grand Total of Suitable Habitat (denning, winter and other foraging habitat) Within the Federal Tracts – 222 Acres					

Lynx habitat has been identified on the Non-Federal lands in B4 of the Bonafacio properties (Pinos Rock LAU) and in the Hays Placer (Slumgullion South LAU), which lies within the Gunnison National Forest. The following is a breakdown of the lynx habitat found on the Non-Federal lands.

Parcel	Denning	Winter Foraging	Other Habitat	Currently Unsuitable	Non-Habitat
Hays Placer	109	7	7	-	29
B4	-	50	-	-	-
Total	109	57	7	-	-
Grand Total of Suitable Habitat (denning, winter and other foraging habitat) Within the Non-Federal Tracts – 173 Acres					

A comprehensive description of the biology of each of these species, their habitat characteristics and the characteristics of suitable habitat found on the Federal and Non-

Federal parcels is presented in the Biological Assessment, Appendix-Exhibit 4 and a summary of effects is presented in Chapter 4.2.6 (pg. 53).

### **Forest Sensitive Wildlife Species**

Habitat is present for a number of Forest sensitive species on both the Federal and Non-Federal tracts involved in this exchange. The following is a list of these sensitive species and the parcels in which suitable habitat may occur.

Tiger Salamander	<b>Federal:</b> N4, N6, L2, L5 <b>Non-Federal:</b> Hays, B1, B2, B3
Western Boreal Toad	<b>Federal:</b> N4, N6, L2, L5 <b>Non-Federal:</b> Hays, B1, B2, B3
Northern Leopard Frog	<b>Federal:</b> N4, N6, L2, L5 <b>Non-Federal:</b> Hays, B1, B2, B3
Rio Grande Cutthroat Trout	<b>Federal:</b> L5 <b>Non-Federal:</b> Hays (CO. cutthroat)
Wolverine	<b>Federal:</b> N4, N5, N6, L5 <b>Non-Federal:</b> Hays, C.D. Claims, B1, B2, B3, B4
American Marten	<b>Federal:</b> N4, N6, L5 <b>Non-Federal:</b> Hays
Dwarf Shrew	<b>Federal:</b> All <b>Non-Federal:</b> All
Townsend's Big-Eared Bat	<b>Federal:</b> N2, N4, N5, N6, L5 <b>Non-Federal:</b> Hays, Continental Divide Claims
Peregrine Falcon	<b>Federal:</b> N2 <b>Non-Federal:</b> None
Ferruginous Hawk	<b>Federal:</b> None <b>Non-Federal:</b> B1, B2, B3, B4
Osprey	<b>Federal:</b> N2, N5, N6, L5 <b>Non-Federal:</b> None
Northern Goshawk	<b>Federal:</b> N4, N5, N6, L5 <b>Non-Federal:</b> Hays
Olive-sided Flycatcher	<b>Federal:</b> N2, N4, N5, N6, L5 <b>Non-Federal:</b> Hays, LR3, B4
Fox Sparrow	<b>Federal:</b> N4, N6, L1, L2, L3, L4, L5 <b>Non-Federal:</b> Hays, B1, B2
Boreal Owl	<b>Federal:</b> N4, N6, L5 <b>Non-Federal:</b> Hays, B4
Loggerhead Shrike	<b>Federal:</b> N2 <b>Non-Federal:</b> LR2, B1, B2, B3

Three-toed Woodpecker	<b>Federal:</b> N4, N5, N6, L5 <b>Non-Federal:</b> Hays, B4
Golden-crowned Kinglet	<b>Federal:</b> N4, N5, N6, L5 <b>Non-Federal:</b> Hays, B4
Pygmy Nuthatch	<b>Federal:</b> N4, N5, N6, L5 <b>Non-Federal:</b> None
Reflected Moonwort	<b>Federal:</b> None <b>Non-Federal:</b> Hays, C.D. Claims
Pale Moonwort	<b>Federal:</b> None <b>Non-Federal:</b> Hays, C.D. Claims
Colorado Tansy-aster	<b>Federal:</b> N1, N2, N4, N5 <b>Non-Federal:</b> C.D. Claims, B1-B4, LR1-LR5

A comprehensive description of the biology of each of these species, their habitat characteristics and the characteristics of the suitable habitat found on the Federal and Non-Federal parcels is presented in the Biological Evaluation, Appendix-Exhibit 3 and a summary of potential effects is presented in Chapter 4.2.6 (pg. 53).

### **3.2.8. Scenic Resources**

Scenic Resources are measured by determining how visitors feel about the landscape that surrounds them, how close they are viewing it, how diverse the landscape is, including cultural elements, and how the landscape will change over time. Distance Zones, (the distance from which a particular landscape is viewed ranging from immediate foreground to background), Scenic Attractiveness, (with classes ranging from “Distinctive” or landscapes that contain unique or outstanding features to “Indistinctive” or landscapes that provide very little variation), and Scenic Class (the condition of the current landscape), are compiled to help determine the overall scenic quality of a particular landscape.

Together, these elements help to form Scenic Integrity Objectives that determine what level of change to Scenic Resources is acceptable for particular areas of the Rio Grande National Forest. The Objectives fall within a range of “Very High”, “High”, “Moderate”, “Low”, and “Very Low”.

An analysis of scenic quality and determination of Scenic Integrity Objectives was performed for both the Federal and Non-Federal lands involved in this exchange. The results of this analysis and maps describing the scenic resource are compiled in the Rio Oxbow Scenic Resources Report on file in the Rio Grande National Forest Supervisor’s Office.

The following is a general description of the scenic resources found on the Federal Land and Non-Federal Lands.

#### ***Federal Lands***

Scenic Resource values for the general landscape in which the Federal lands occur are rated as “High”. The Rio Grande Valley is a central feature within the Silver Thread Scenic Byway adjacent to the N and L Parcels proposed for exchange. Lands within and adjacent to the valley bottom provide spectacular foreground and middleground views. Components of the viewshed found include the immediate river corridor, the open meadowlands on the valley floor, grasslands and forestlands on the uplands immediately above the valley and occasional rock and cliff structures. The current development pattern within this stretch of the river corridor is of low-density and has not substantially compromised the scenic quality here and would generally be classified as “unaltered” to “slightly altered”. However, development pressure is high within this portion of Mineral County, and, as can be seen a few miles downstream, high-density development can have a substantial adverse effect on the overall scenic resource. Most of the Federal Lands associated with this land exchange are visible, to some degree, from Highway 149, which connects South Fork to Lake City and is along the Silver Thread Scenic Byway, a primary travel route through the Northwest portion of the San Luis Valley. This Scenic Route is heavily traveled by tourists and forest visitors, especially during the summer months, and the scenic resources adds to the overall experience for visitors traveling through the area. The proximity of the parcels to the Scenic Byway, their unaltered condition, and their high visibility, classifies the Federal parcels with a Scenic Integrity Objective of “High”.

### ***Non-Federal Lands***

Non-Federal Lands are not mapped using the Scenery Management System, however, their proximity to Federal lands warrants similar results to the mapped areas located on Federal Lands.

The Long Ridge properties lie directly adjacent to Highway 149 along the Scenic Byway within the same viewshed as the Federal parcels. Due to their proximity to the Scenic Byway, their high visibility, and their unaltered condition, these properties could have a Scenic Integrity Objective of “High”.

The Bonafacio properties, as a group, are more remote and are visible, from a landscape perspective, only from the 4-wheel drive roads that pass through these parcels. However, these properties are a part of a relatively “unaltered” landscape that offers high scenic appeal. The Federal lands surrounding these parcels are classified as having a Scenic Integrity Objective of “Moderate” due to their condition.

The Carson properties lie at or near the Continental Divide along a highly used 4-wheel drive and hiking/backpacking route. This trail has State and National significance. The Continental Divide Claims are highly visible to road users and their location at the top of the Continental Divide is a popular stop for viewing the surrounding landscape. The Hays Placer, on the Gunnison National Forest lies on the northern side of the Continental Divide, and is highly visible to trail users; especially on it’s eastern side. These lands are mapped as a Scenic Integrity Objective of “High”. This is primarily due to the fact that the land exchange falls along the Continental Divide Scenic Trail and most all of the area is considered to have outstanding Scenic Attractiveness.

### **3.2.9. Heritage Resources**

Cultural resource surveys were performed on all of the Federal parcels associated with this exchange proposal. Although several prehistoric sites were identified, they were determined by the Colorado Historical Society (Cultural Resources Report, Appendix-Exhibit 6) to have no intact cultural deposits and would yield no further information important to cultural history. No historic sites were considered likely to be affected by the exchange proposal. A cultural resources inventory was not performed on the Non-Federal lands.

### **3.2.10. Existing Uses and Minerals**

#### ***Federal Lands***

Other than the grazing permits described under 3.2.4 above, there is only one Special Use Permit affecting Federal Parcel L4. This Special Use Permit has been granted to XIC Association, Inc. for maintaining a spring development located under State Highway 149 and a right-of-way for a water transmission line for domestic and livestock use. Prior to completion of the land exchange the Non-Federal Parties will work with XIC Association, Inc., on a replacement easement to be recorded in Mineral County concurrent with closing the land exchange. At the same time, XIC Association, Inc. will be asked to relinquish their Forest Service Special Use Permit.

There are no active minerals operations on any of the Federal lands and no known valuable mineral deposits. The outcropping of the Creede Formation, located in the N2 parcel, does offer some opportunity for recreational collecting of prehistoric fossil materials. This feature is described in 3.2.11.

#### ***Non-Federal Lands***

There are currently no active minerals operations occurring on any of the Non-Federal parcels and there are no known valuable mineral deposits occurring on these lands. However, the Carson properties lie within a historic mining area that did produce extractable materials in the past and it is possible that mineable materials do occur on these lands.

### **3.2.11. Unique Geologic Features**

The cliff structures exposed on the north side of the river and the adjacent uphill areas in the N2 Federal parcel expose a geologic feature known as the Creede Formation. This formation is comprised of sedimentary materials rich in plant and insectivorous fossils up to 24 million-years old. Due to the relative rarity of exposed areas of this formation and the accessibility of the cliffs at Parcel N2, educational groups, and amateur and professional geologists and paleontologist often visit the area.

# **CHAPTER 4.0.**

## **ENVIRONMENTAL CONSEQUENCES**

### **4.1. INTRODUCTION**

This section discusses the potential environmental effects resulting from the implementation of each of the project alternatives. The analysis area includes both the Federal and Non-Federal lands, since the potential effects occurring on the Non-Federal lands would be a central concern in the decision-making process relative to the proposed action.

It is assumed that implementation of Alternative 2 (No Action) would result in no change in the current condition on both the Federal and Non-Federal parcels, as described in Chapter 1.3-Purpose and Need for the Proposed Action and in Chapter 3-Affected Environment. This alternative serves as the baseline from which project effects, resulting through the implementation of “action” alternatives, are measured. Resource and administrative issues that currently exist on both the Federal and Non-Federal parcels would remain unresolved through the implementation of the No Action alternative. Alternatives 3 and 4, which are derivations of Alternative 1 (Proposed Action), were offered for consideration because each addresses certain key issues that could potentially arise through the implementation of Alternative 1. A summary of the potential effects of each alternative, in relation to the key issues is provided in Summary of Alternative Effects, Table 4 (pgs. 21-22).

It should be noted that Alternatives 3 and 4 would involve the elimination of portions of the Federal lands included in the Proposed Alternative (Alternative 1). Elimination of these areas may reduce the overall monetary value (as determined by appraisals of each Federal and Non-Federal parcel’s fair market value) of the Federal lands involved in the exchange proposal, potentially affecting the value balance between the Federal and Non-Federal lands. This could result in the elimination of some of the Non-Federal parcels in order to achieve parity in the values of lands proposed for exchange. The following analysis is based on potential effects that may occur on the Federal parcels as a result of their conveyance to private ownership, as well as the beneficial effects that may occur through the addition of the Non-Federal lands to the National Forest system. Which, if any, of the Non-Federal parcels, might be affected by this potential change in the balance of values will not be known until an alternative is selected by the responsible official. The assumption made in this analysis is that all of the Non-Federal lands would be included in the exchange under Alternatives 1, 3 and 4.

#### **Anticipated Changes in Land Use on the Federal and Non-Federal Lands**

Through the proposed exchange jurisdictional control over the Federal Lands by the Forest Service would be terminated. Management direction and constraints currently prescribed by the Forest Plan would no longer apply to these lands. However, covenants offered by the Non-Federal Parties (described in Chapter 2.5, pg.18), which would go into effect at the time of conveyance, would limit many activities that could potentially occur on these lands under private ownership. The Non-Federal Parties have stated that they intend to use

Parcels L1-L4 and N1-N4 in a manner consistent with their current use as agricultural, wildlife habitat and recreational lands. No change in use is anticipated. Parcel L5 is also expected to be used in a manner consistent with these existing uses, however the owner of the Rio Oxbow Ranch, one of the Non-Federal Parties, may develop up to five cabins for family members on the lower slopes of this parcel where it meets current Rio Oxbow Ranch Lands. Upon completion of the land exchange, it is anticipated that Federal Parcels N5 and N6 will be conveyed to the Karper Family, the landowner adjoining these parcels. Future use of these parcels is not anticipated to change.

The Non-Federal Lands would become part of the National Forest System through this exchange. Past and current management of these lands under private ownership has been very similar to management of the adjacent public lands. Upon their conveyance to public ownership, these lands would be managed under the guidelines prescribed by the Forest Plan. It is anticipated that the future management would be consistent with that currently applied to the surrounding National Forest System lands.

## **4.2. ANALYSIS OF ENVIRONMENTAL CONSEQUENCES**

### **4.2.1. SOCIO-ECONOMIC**

#### ***Federal Lands***

Alternative 1 would result in a net decrease in public lands within Mineral County of approximately 376.99 acres (468.78 acres moving to private ownership and 91.79 acres moving to Federal ownership). It is unlikely that this alternative would substantially affect economic aspects of Mineral County, such as tourism, since most of these parcels are currently not accessible to the public due to landownership patterns.

Use of Parcel N2 by the Antlers Resort would be eliminated following the land exchange. Antlers guests currently fish the Rio Grande as it flows through N2. However, unrestricted public access to fish this reach of the Rio Grande (which is not accessible by foot without crossing private property) would not be lost since such unrestricted access does not exist at the present time. Antler's guests also hike several primitive recreational trails that loop through upper portions of N2. Members of the general public can also access the northern portion of this parcel via the Shallow Creek Road (FR 508). As previously stated, the Non-Federal Parties have agreed to relocate such trails to adjoining National Forest System lands.

Commercial outfitters currently float through Parcels L3 and N2. The right to float through these parcels would not change following the exchange, however the opportunity to use these parcels as rest stops would be eliminated. The potential to access the Rio Grande would be eliminated at Parcel L3. Conveyance of this parcel to the Non-Federal Parties would not result in a substantial loss of river access in Mineral County because, as explained in Section 3.2.3, such access is constrained by the highway right of way, safety concerns and the coarse rip rap along the bank. Improvement of the Rio Grande Fisherman's area, downstream of Parcel L3, would offset any potential lost recreational opportunities that might occur through the exchange of the Parcel L3. Under Alternative 3 and 4, the parcels or portions of parcels directly associated with the river would be removed from the exchange. A further discussion of recreational effects is presented in Chapter 4.2.2 (pg. 45).

### ***Non-Federal Lands***

Approximately 91.79 acres (Long Ridge Properties) in Mineral County would move to Federal ownership as a result of this proposal. This land is currently not being actively managed so current revenues generated from these properties would remain unchanged. Approximately 678.36 acres, currently in private ownership in Rio Grande County, would move to Federal ownership. This would result in a decrease in tax revenues coming to the county. However, this would be partially offset by increased federal payments paid to counties each year for revenues generated on National Forest System lands. This transfer of land could also improve recreational opportunities in the area, indirectly generating revenues to the county from increased tourism. Approximately 364.48 acres in Hinsdale County would move from private to Federal ownership, which would represent a reduction in the tax base in the county. This would partially be offset by increased federal payments to the county. Since these lands are not being actively managed it would not reduce other revenues generated from these lands.

### **4.2.2. Recreation**

#### ***Federal Lands***

As discussed in Chapter 3, the recreational opportunities on much of the federal lands are limited by access, as well as by the physical nature of the land, itself. There are few recreational opportunities, regardless of access, offered by Parcels N1, L1, L2, and L4. Dispersed recreational opportunities, such as hunting or off-trail hiking would be available in Parcels N4, N5, N6 and L5. However, there is no direct access to these areas over Federal lands and off-trail access is over fairly rugged terrain. Although no records are available to substantiate the level of use, public recreational use of these areas is probably very low due to limited access. Therefore, the overall loss of existing recreational opportunities on these parcels would probably not represent a substantial loss to the current recreational resource offered by the RGNF in Mineral County.

The N2 parcel offers recreational opportunities that could be lost through the implementation of Alternative 1. These include the loss of the stopover river access to the southeast corner of the parcel, the loss of trail access to the system of trails accessing adjacent National Forest System lands, and the recreational collection of fossils from the geologic feature found on the property. There are no records substantiating the level of current public use on and along the river in this parcel. Since private lands surround this portion of the parcel, access to the general public is limited to boaters accessing the area from the river. The potential for using this area by the general public and by the private clients of the Antlers Resort would be eliminated through Alternative 1. Under Alternatives 2, 3 and 4 the availability of the river recreational resource in N2 would remain unchanged from its current situation.

Under Alternatives 1 and 3, mitigation offered by the Non-Federal Parties would result in a relocation of the trail system in Parcel N2 to the adjacent National Forest System lands not involved in the exchange. Although hiking opportunities would be lost on this parcel,

current access to other National Forest System lands would be maintained under Alternatives 1 and 3. Under Alternatives 2 and 4, access to the trail in Parcel N2 would not be affected.

The opportunity to examine or collect fossils from the geologic feature in Parcel N2 would be lost to the general public under Alternatives 1 and 3. However, mitigation would allow for access to this feature for research and educational purposes. General public access to this feature would be unaffected under Alternatives 2 and 4.

The L3 parcel currently offers river users a stopover opportunity to a small area of Federal land (1.11 acres) in a stretch of the river dominated by private lands. Since this parcel lies adjacent to Highway 149 it also offers an opportunity to access or leave the river from Federal lands. A turnout on the highway, at this location, provides some limited vehicle parking. However, this area is currently not developed as a river access point and access to the river is difficult due to large boulders and rip-rap lining the river's edge. Due to safety issues concerning the limited sight distance created by curves in the highway, the Colorado Department of Transportation has indicated this area not appropriate for a developed river access point. There are currently no records that substantiate the current level of recreational use at this location. Under Alternative 1 the opportunity to use this site for accessing or leaving the river or for a stopover point would be lost. Improvement of the public river access point at the Rio Grande Fisherman's Area, approximately 2 river-miles downstream, has been offered as mitigation. This location is off the highway and would provide safer access to the river. Commercial outfitters also float through this parcel and could also be affected by the loss of this area as a stopover point. Under Alternative 2, 3 and 4 there would be no change to the recreational opportunities offered by Parcel L3.

### ***Non-Federal Lands***

Under Alternatives 1, 3 and 4 the public would gain a variety of recreational benefits from the acquisition of the Non-Federal parcels.

Recreational opportunities are somewhat limited on the Long Ridge properties. Some dispersed recreational pursuits such as short-distance hiking are available. Acquisition of this area would provide enhanced access to the adjacent National Forest System lands that lie to the north of the Long Ridge properties. In this area, access is now blocked by private land. However, there is currently no developed trail system that would facilitate this access.

The Bonafacio properties are surrounded by Federal lands that offer numerous dispersed recreational opportunities, including hunting, hiking, mountain biking and travel on designated 4-wheel drive routes. The exchange would expand these opportunities in this area to include an additional 678.36 acres. Additionally, public acquisition of these parcels would secure legal public access on designated forest system roads that pass through these parcels to adjacent National Forest System lands.

The Carson properties lie on a highly used and designated 4-wheel drive road between Lake City and the Rio Grande drainage over the Continental Divide. Acquisition of these properties would secure legal right of access through these properties for the Colorado Trail

and the Continental Divide National Scenic Trail. It would also place in Federal ownership, the top of the pass at the Divide, which is a popular stopover point for road users. Other than sightseeing the Continental Divide Claims and the Hays Placer offer other dispersed recreation opportunities, such as hiking and hunting.

#### **4.2.3. Range**

##### ***Federal Lands***

The Broadacres Ranch, owned by one of the Non-Federal parties to this exchange proposal, currently holds the grazing permit to the Shallow Creek C&H Allotment, which include Parcels N1 and N2. Therefore, the permittee would not realize an impact through the proposed action. However, the capable acres within the Shallow Creek C&H Allotment would decrease by approximately 118 acres under Alternative 1, by 113 acres under Alternative 3 and 38 acres under Alternative 4.

The South River C&H Allotment would experience a decrease of 5 acres through the exchange of Parcels N6 under Alternatives 1, 3 and 4.

The N4, N5 and L5 parcels are part of an inactive sheep allotment. If the allotment were re-permitted these parcels would not be included in the re-issuance. Therefore, there would be no loss of current grazing capacity through the exchange of these parcels under any of the alternatives.

Parcels L1, L2, L3 and L4 fall outside of allotment boundaries but are authorized under a pasture-special-use permit to Wrights Ranches, and is controlled by one of the Non-Federal parties. Therefore, there would be no loss in permittee benefits through the proposed action through the exchange of these parcels.

##### ***Non-Federal Lands***

The lands surrounding the Bonafacio properties are currently being managed for grazing under the Martinez–Underwood S&G Allotment. Under Alternatives 1, 3 and 4 an additional 678.36 acres for grazing would effectively be added to this allotment since the area is currently unfenced. There would be no increase in the grazing season or livestock numbers allowed for this permit.

The lands surrounding the Long Ridge properties are currently being managed for grazing under the Park C&H Allotment. Under Alternatives 1, 3 and 4 the size of this allotment would effectively increased by approximately 91.79 additional acres, since this area is unfenced. There would be no increase in the grazing season or livestock numbers allowed for this permit.

The National Forest System lands surrounding the Continental Divide Claims are part of a vacant sheep allotment, Carson–Lost Trail S&G Allotment. Under Alternatives 1, 3 and 4 this allotment would effectively increase in size by 230.61 acres since the Non-Federal lands

are not fenced. There would be no increase in the grazing season or livestock numbers permitted under this allotment as a result of this increase.

#### **4.2.4. Vegetation**

##### ***Federal Lands***

The various vegetative cover types found on the Federal lands, as described in Chapter 3.2.5 (pg. 29), are not unique and are well represented across the general landscape on both public and private lands. Therefore, any changes in the vegetative resource on the Federal lands, resulting from changing land uses, would not result in substantial losses to the vegetative communities within the general landscape. However, it is not anticipated that a substantial shift in current land use would occur on the Federal lands as a result of this exchange. Covenants, offered under Alternatives 1, 3 and 4 to protect lynx habitat, would protect most of forest cover (approximately 220 acres) from disturbance, with the exception of some limited areas on the lower slopes of L5 and the discontinuous forested patches in N5. Covenants, under these alternatives would also prohibit development and other disruptions in wetland and floodplain areas, which would protect the vegetative cover on an additional 37.51 acres in portions of Parcels N2 and N4 and all of Parcels N6, L1, L2, L3 and L4.

The owner of the Rio Oxbow Ranch, one of the Non-Federal Parties to this exchange proposal, has indicated a desire to retain the option to develop up to five residential sites on the lower slopes of Parcel L5 at the edge of the forest cover. The estimated potential total disturbance to the vegetative cover from these potential development sites would not likely exceed a total of five acres. Covenants would limit the total number of residential sites to five units and would prohibit additional development on the remainder of the parcel. Therefore, of the approximately 214 acres comprising this parcel, substantial surface disturbance would be limited to approximately 5 acres.

Under Alternatives 1 and 3 approximately 151 acres of upland grassland/shrubland habitats found in Parcels N1, N2, N4 and N5 would have no restrictions to potentially disruptive actions, such as development. Under Alternative 4, this area would be reduced to approximately 92 acres through the elimination of Parcel N2 from the exchange. Approximately 26.7 acres in Parcels N2 (19.4 acres), and N5 (7.3 acres) lie on steep slopes that would generally be considered unsuitable for most surface-disturbing activities. Other than the indication that five sites may be developed in the Parcel L5, no intention to implement broad-scale development or other extensive potentially disruptive activities has been indicated by the Non-Federal Parties. Therefore, it is unlikely that this proposal would result in a substantial alteration to the current vegetation resource under any of the alternatives.

Approximately 125 acres of potentially suitable habitat is present for the Colorado tansy aster (*Machaeranthera coloradoensis*) in Parcels N1, N2, N4, and N5. This plant is classified as an R-2 sensitive species. Field observations detected no occurrence of this species on any of the Federal tracts. However, through exchange, the Forest Service would lose administrative control over suitable habitat and the ability to implement conservation efforts to protect this habitat from potential disruptive activities.

### ***Non-Federal Lands***

Due to the absence of intensive management the current vegetative conditions on all of the Non-Federal lands, as described in Chapter 3.2.5, are similar to those found on the surrounding Federal lands. However, due to the private ownership, the vegetative character could be changed by shifts in management emphasis for these lands. Transfer of these lands to Federal ownership would insure that future vegetative management is consistent with management activities occurring on the adjacent National Forest System lands. Additionally, approximately 750 acres of potential habitat for the Colorado tansy aster would move under the management protection of the Forest Service.

## **4.2.5. Hydrology, Wetlands and Floodplains**

### ***Federal Lands***

As shown in Table 6 (pg. 32) approximately 14.61 acres of wetland and 36.01 acres of floodplain would be conveyed to private ownership under Alternative 1. Under Alternatives 3 and 4 this would be reduced to 14.51 acres of wetland and 33.01 acres of floodplain. Covenants, offered as mitigation under these alternatives, would prohibit development or other disruptive activities in all wetlands and floodplains located on the Federal tracts. Therefore, there would be no anticipated loss of wetland functions or increased flood hazard risks resulting from the exchange. Additionally, the Non-Federal Parties would still have to adhere to guidelines of the Clean Water Act in relation to wetlands and floodplains. No water rights would be transferred with the Federal parcels through the proposed exchange. Therefore, volume and timing of water movement through and from these lands would be unaffected by this action.

A concern was expressed during scoping that increased fecal matter could degrade water quality in the river as a result of increasing the number of cows being grazed along the river corridor. Most of the lands suitable for grazing within the Federal parcels are currently being used for that purpose. The exchange, under any of the alternatives, is unlikely to result in an increase over current levels in grazing activity in proximity to the river. Therefore, it is unlikely that this proposal would result in an overall increase in fecal matter entering the river or in substantial decreases in water quality.

### ***Non-Federal Lands***

Through this exchange, approximately 43.8 acres of wetlands and 9.0 acres of floodplain would move to Federal jurisdiction and would be managed under the direction of the Forest Plan as it pertains to wetlands, floodplains and riparian areas. This would result in a net gain of 29.19 acres of wetland moving to Federal jurisdiction and a net loss of 27.01 acres of floodplain under Alternative 1. Under Alternatives 3 and 4 net gain in wetlands would increase to 29.29 and floodplain loss would decrease to 23.51. Table 7 (pg. 33) provides a quantification of the wetlands and floodplains that occur on each these parcels. The Forest Service would acquire no water rights with the transfer of these lands to National Forest.

#### **4.2.6. Wildlife**

As described in Chapter 3.2.7 (pg. 33), both the Federal and Non-Federal lands provide a diversity of wildlife habitat. Three separate analyses were performed to predict potential effects to wildlife species, which may have suitable habitat within or adjacent to the project area. An analysis of proposed management indicator species (MIS) was conducted to predict general effects to wildlife, based on the range of habitats found on these lands. A Biological Assessment was performed to determine potential effects to listed threatened and endangered species, and a Biological Evaluation was conducted to determine potential impacts to Forest sensitive species. A summary of the results of these analyses is presented below and the complete analysis for each of these assessments is provided in the Biological Evaluation (Exhibit 3), Biological Assessment (Exhibit 4), and the Management Indicator Species Report, which is on file and available for review at the Rio Grande National Forest Supervisor's Office.

Covenants, offered as mitigation in this proposal, would minimize most disruptive activities to wildlife habitats on approximately 215 acres in forested cover and 37.5 acres of wetland and floodplain habitats found on the Federal lands. Covenants would also limit the total development that could occur in L5 to five residential units, with each unit estimated as potentially disturbing approximately one-acre of potential wildlife habitat. Under Alternative 1 and 3, approximately 156 acres of upland grassland/shrubland habitats would have no restrictions to potentially disruptive actions, such as development. Under Alternative 4 the total area of upland wildlife habitat potentially vulnerable to habitat disruption would be reduced to approximately 92 acres. (It should be noted that these acres represent area of surface disturbance. Some species may be sensitive to other factors associated with increased human presence such as noise, traffic, or general human activity. For these species the total area of potential disturbance may be greater than that indicated by surface disturbance, alone.)

Many of the potential effects to wildlife habitat resulting from the conveyance of the Federal lands to private ownership would be offset, to some degree, by the conveyance of similar habitats to public ownership through the acquisition of the Non-Federal lands. Since these parcels are in private ownership, the future quality of wildlife habitats found on these lands is not assured. Activities occurring under private ownership, particularly development, could affect not only wildlife habitat within the private lands, but also the adjacent wildlife habitat occurring on Federal lands. Through acquisition of the Non-Federal lands the Forest Service will be able to manage these areas in a manner consistent with the wildlife management goals and objectives currently applicable to adjacent National Forest System lands.

One of the key issues regarding this proposal is the potential loss of big game winter range located in the shrubland/grassland cover in Parcels N1 and N2. This habitat type, which includes approximately 112 acres of winter range under Alternatives 1 and 3 and 37.82 acres under Alternative 4, could experience some degradation through changes in land use that might result through conveyance of these lands to private ownership. A primary concern would be potential residential development and associated access roads. This area has been identified as critical winter range for elk, which have a high sensitivity to disturbance on

their wintering grounds. Habitat effectiveness for elk declines substantially when disturbance regimes occur within ¼ to ½-mile of wintering areas. Therefore, any development that occurred on or in proximity to these parcels would be likely to adversely affect the usability of this habitat by wintering elk. Since the privately-owned Broadacres Ranch (owned by one of the Non-Federal parties to this exchange proposal) surrounds both of these parcels on three sides, future land use on the adjacent portions of the ranch will be a major determinant in the long-term viability of this winter range. A change in the current land use to residential development on this portion of the ranch would not be contingent on acquisition of these parcels. Therefore, management on the ranch, regardless of the ownership status of these two parcels, will ultimately determine the overall long-term value of the winter range in Parcels N1 and N2. However, the owner has indicated no intention of changing the current land use (livestock management) on this portion of the Broadacres Ranch or on Parcels N1 and N2, should they be conveyed to his ownership through this exchange.

Approximately 770.15 acres of mid-elevational grassland/shrubland found on the Bonafacio and Long Ridge properties would become part of the National Forest System lands system through this exchange. All of this area has been identified as big-game winter range and would gain long-term protection under Forest Service guidelines for management of big-game species. In terms of the total elk population on the Rio Grande National Forest, the acquisition of these properties would increase the net big-game winter range under Forest Service jurisdictional control by 658 acres under Alternatives 1 and 3, and by 732 acres under Alternative 4. A complete description of the potential effects elk at the project and Forest level is presented in the MIS Report.

### **Management Indicator Species-Summary of MIS Report**

The MIS Report examined project level and planning area level effects to populations of 12 proposed management indicator species (Chapter 3.2.7). It was determined that, for all of these species, population viability within the planning area was unlikely to be affected by the proposed land exchange under any of the alternatives. Species utilizing forested habitats and wetland/riparian habitats would be the least likely to experience habitat loss due to covenants that would restrict most habitat disruptive activities in these areas.

Grassland/shrubland species were the most likely to experience some habitat loss. However, the habitat opportunities offered by the grassland/shrubland cover type on the Federal lands are not unique within the local landscape but are well-represented on both National Forest and private lands throughout the general area. Based on current land use patterns on the adjacent private lands and the stated intentions of the Non-Federal Parties, it is unlikely that substantial disruptions in these areas would occur. However, even if these areas were to experience substantial surface disturbance, the small amount of acreage involved, in relation to the total available habitat in the general project area, would not likely represent a substantial loss to populations of any one species at the project level or planning area level. Additionally, the Forest Service would realize a substantial net increase in grassland/shrubland under its jurisdictional control through the acquisition of the Long Ridge, Bonafacio and Carson properties. Therefore, based on these findings the Forest Supervisor issued a Finding of no Significant Effect (FONSI) for MIS in October, 2003.

This document is available for review in the Rio Grande Supervisor's Office and the Divide Ranger District Office.

### **Threatened and Endangered Species-Summary of the Biological Assessment**

A Biological Assessment (Appendix-Exhibit 4) was prepared to examine the potential effects that might occur to threatened or endangered wildlife species, as a result of the proposed action. Through this assessment it was determined that suitable habitat is present on the Federal lands for bald eagle and Canada lynx, both listed as threatened species. In addition, suitable habitat for lynx was identified on the Non-Federal parcels.

A determination was made that the exchange proposal, under Alternatives 1, 3 or 4, may affect but is not likely to adversely affect bald eagle. This determination was based on the following:

- CDOW records do not indicate active or historical nesting sites in proximity to any of these Federal lands.
- Field surveys also did not identify any signs of current or past nesting activity.
- There is no evidence, based on CDOW records, that any of the Federal lands are used as winter concentration roosting areas.
- It is unlikely that this proposal would result in a species shift in the overall use patterns within the general area or otherwise affect individuals utilizing this portion of the river corridor.

A determination was also made that the exchange proposal, under Alternatives 1, 3 or 4, may affect but is not likely to adversely affect Canada lynx. This determination was based on the following rationale:

- The proportion of the of the suitable lynx habitat and foraging habitat found within the Federal tracts proposed for exchange represents a very small proportion of the Hogback Lynx Analysis Unit (LAU) total area quantities for these components (0.34% and 0.46%, respectively).
- With the exception of approximately 3 acres in the L5 parcel, suitable lynx habitat would be protected from future habitat disruptive activities by covenants that would go into effect at the time of conveyance.
- The 3 acres of suitable lynx habitat that may potentially be lost through develop represents a small portion of the total lynx habitat and the total foraging habitat within the Hogback LAU, 0.0047% and 0.0068%, respectively.
- The location of this 3 acres at the interface between lynx habitat and a large expanse of open non-habitat minimizes the risks of fragmentation and reduces the likelihood of disruptions to lynx linkage corridors or overall movement patterns within and adjacent to the affected lands. Additionally, none of the Federal lands contained in this proposal are located within an identified lynx linkage corridor.
- The small amount of suitable lynx habitat on all of the private lands within the Hogback LAU, represents a very small portion (3%) of the total suitable habitat within the LAU. This reduces the potential for substantial cumulative future losses of habitat through habitat disruption on these lands.

- Currently unsuitable habitat will develop suitable habitat characteristics, over time, which will offset potential habitat losses that may occur on private lands.
- Approximately 174 acres of suitable lynx habitat will move to public ownership through the conveyance of the Non-Federal lands in the Hays Placer and Parcel B4, further offsetting potential adverse effects to overall lynx habitat within the local geographical region.
- Over time some of the habitat currently classified as “currently unsuitable” will develop suitable habitat attributes and “other habitat” will improve to provide both winter and summer foraging opportunities for lynx.

The Biological Assessment was submitted to the US Fish and Wildlife Service for review. This agency issued a Biological Opinion on December 10, 2002 (Appendix, Exhibit 4B, which concurred with the findings and determinations presented in the Biological Assessment.

**Forest Sensitive Species-Summary of the Biological Evaluation**

As discussed in Chapter 3.2.7 (pg. 33), suitable habitat for a number of Forest sensitive wildlife species is found within the Federal lands. An analysis of potential impacts to these species and their habitats (Biological Evaluation, Appendix-Exhibit 3), in relation to the proposed action and mitigation measures resulted in the following determinations for these species. These determinations are the same for Alternatives 1, 3, and 4.

<b><u>Species</u></b>	<b><u>Determination</u></b>
Northern leopard frog	May impact individuals but not likely to affect pop. viability <sup>1</sup>
Western boreal toad	May impact individuals but not likely to affect pop. viability
Tiger Salamander	May impact individuals but not like to affect pop. viability
Rio Grande Cutthroat Trout	No Impact, potential benefit to Colorado cutthroat trout
Wolverine	May impact individuals but not likely to affect pop. viability
American Martin	May impact individuals but not likely to affect pop. viability
Dwarf Shrew	May impact individuals but not likely to affect pop. viability
Townsend’s Big-eared Bat	May impact individuals but not likely to affect pop. viability
Peregrine Falcon	No Impact <sup>2</sup>
Ferruginous Hawk	No impact
Osprey	No impact
Northern goshawk	May impact individuals but not likely to affect pop. viability
Olive-side Flycatcher	May impact individuals but not likely to affect pop. viability
Fox Sparrow	No impact
Pygmy Nuthatch	No impact
Boreal Owl	May impact individuals but not likely to affect pop. viability

<sup>1</sup> Implementation of this proposal may result in an adverse impact to individuals of this species but these impacts are not likely to result in a loss of species viability over the Planning area, a trend toward Federal listing, or in a loss of species viability range-wide.

<sup>2</sup> Implementation of this proposal is not likely to result in an impact to this species.

Loggerhead Shrike	No impact
Three-toed Woodpecker	May impact individuals but not like to affect pop. viability
Golden-crowned Kinglet	No Impact

As discussed in Chapter 3.2.7, suitable habitat for a number of sensitive species is present on the Non-Federal parcels. Under private ownership management actions could disrupt habitat on these lands and fragment habitat found on adjacent public lands. Through this exchange this habitat would be managed under Forest Service guidelines for these sensitive species. Sensitive species that would likely experience a long-term beneficial effect through Forest Service acquisition of the Non-Federal parcels include:

- |                       |                        |
|-----------------------|------------------------|
| Tiger Salamander      | Olive-sided Flycatcher |
| Western Boreal Toad   | Fox Sparrow            |
| Northern Leopard Frog | Boreal Owl             |
| Wolverine             | Loggerhead Shrike      |
| American Martin       | Golden-crowned Kinglet |
| Dwarf Shrew           | Three-toed Woodpecker  |
| Northern Goshawk      |                        |

#### 4.2.7. Scenic Resources

##### *Federal Lands*

Many of the Federal parcels have a high scenic value due to their location along the Scenic Byway and upper Rio Grande Valley. Several of these parcels are highly visible to users on Highway 149. This area is mapped as a Sensitivity Level 1 along the Silver Thread Scenic Byway (Highway 149), which means the viewing public and the District has indicated that viewers have a “High Concern” for the Scenic Resources along the highway. On Federal Lands, any activities planned for this area would have to remain subordinate to the characteristic landscape, or managed for a Scenic Integrity Objective of “High”.

Activities that might occur on these lands after moving into private ownership, such as residential development, could have substantial effects on the scenic values within this viewshed, particularly in foreground and middleground views. Specific concerns were expressed for the potential losses in scenic values in the N2 and L5 parcels.

Parcel N2 has at least one suitable building site on an elevated point directly above the Rio Grande on a promontory that would be highly visible to highway users and inhabitants of the surrounding area. Under all Alternatives, there would be no covenants restricting or limiting development activity by the Non-Federal Parties in this portion of Parcel N2. The Scenic Integrity could move from “High” to “none” in this portion of the scenic corridor, thus having a notable effect to the scenic value if these parcels are developed.

The L5 parcel offers foreground and middleground views to highway users looking across the river valley. There is currently very low-density residential development within the meadowlands and forested areas between the Scenic Byway and Forest Service Lands. Some of this development is obscured, to some degree, by vegetation. The owner of Rio Oxbow Ranch, a party to this exchange proposal, has expressed a desire to retain the ability

to build up to five residential structures, between the meadow and forest cover, for his family members. He has also stated that his intention is to develop only five sites on the Rio Oxbow Ranch, regardless of the outcome of this proposal. Although he currently has ample land on the ranch that would allow for five residential sites, he has indicated that he would rather build any new structures within proximity of the trees to obscure their visibility from the highway. There is a potential that development of structures would be screened due to forest canopy found on the lower slopes of the L5 parcel. Covenants would limit development activity to five sites on the L5 parcel, all located on the lower slopes. It is estimated the up to 5 acres of forested area could be removed for any development on this parcel.

Covenants, offered as mitigation with the exchange proposal, would not allow development or other scenic impacts to L1, L2, L3, and L4, which are situated in low-lying floodplains. Approximately 58.5 acres of forested habitat and wetlands in N4 would be protected from any scenic deviations through deed restrictions. The remaining 26.1 acres would be available to development or other activities. Much of this area is obscured from the highway by landform and distance. However, much of the developable area in Parcel N4 would be visible from Forest Road 523. There are limited development sites in Parcel N5, which would be visible in middleground views from Forest Road 523 but obscured by landform and distance from the highway. Much of this parcel would be considered too steep for development activity; however, this does not preclude other activities from taking place, as there are no covenants. Parcel N6 could not be substantially altered from its current condition due to covenants designed to protect lynx habitat and floodplains.

Under any of the alternatives, there will be no development in the floodplain; however, there are no other legal restrictions that preclude the owner from developing the current private land or areas of parcels not covered by the covenants.

### ***Non-Federal Lands***

Acquisition of the Non-Federal parcels in this land exchange would eliminate the possibility of visually disruptive actions that could currently occur to these areas under private ownership. The Long Ridge properties are located within the Scenic Byway corridor and would be managed as “High”. Although much of the Long Ridge properties would have a low potential for development due to steep slopes, there are suitable building sites located intermittently across the area, particularly on the lower slopes, immediately adjacent to Highway 149 along the Silver Thread Scenic Byway.

The Bonafacio properties lie within a surrounding landscape that has been mapped as “Moderate”, and has very little visual impacts currently. There is potential for development within proximity of this land from surrounding private land.

The Carson properties lie along the Colorado & Continental Divide Trail (and within close proximity of Lost Trail) and are mapped as “High”, due to the State and Nationwide popularity of these trails. This portion of the Continental Divide Trail is a designated forest system road (4-wheel drive) that receives high use during the summer months by both motorized and non-motorized users. This trail provides access to the historic mining

structures and to the backcountry views offered from these travel routes. Any activities, such as residential development or timber harvesting (Hay Placer), on these private lands could substantially affect the scenic resources for backcountry travelers as they pass through this area.

Acquisition of the aforementioned lands to the Forest Service would not preclude activities from taking place on these lands; however, management activities would be required to meet Scenic Integrity Objectives similar to the current Objectives for the surrounding landscape.

#### **4.2.8 Heritage Resources**

The proposed action would result in no significant effect to Heritage Resources. Surveys were performed on all of the federal parcels associated with this exchange proposal. Although several prehistoric sites were identified, they were determined by the Colorado Historical Society to have no intact cultural deposits and would yield no further information important to cultural history. No historic sites were considered likely to be affected by the exchange proposal. No cultural resources inventory was performed on the Non-Federal lands. (See Heritage Resources Report, Appendix-Exhibit 5)

#### **4.2.9. Existing Uses and Minerals**

There are no known valuable mineral deposits present on the Federal lands. Only one special-use permit would be affected by this exchange. There is currently a special-use permit for pasture on Parcels L1, L2, L3 and L4.

Through this exchange existing boundaries between Federal and private lands would be simplified with a substantial reduction in the total interface between Federal and Non-Federal ownerships. This would reduce overall existing and future administrative conflicts that arise through complicated land ownership boundaries. The boundaries at Parcels N1 and N2, both of which are surrounded by private lands on three sides, would be straightened under Alternatives 1 and 3, so that Federal lands would no longer extend into private lands. However, under Alternative 4, which eliminates a portion or all of Parcel N2, irregular boundaries associated with this parcel would continue to exist.

Under Alternatives 1, 3, and 4 all of the Federal lands south of Highway 149 (Parcels L1, L2, L3 and L4) would move to private ownership and all of the lands north of the highway (Long Ridge properties) would enter Federal ownership. This would allow for a much more efficient land management of this area. Parcel L5, which currently has an extremely complicated boundary interfacing with the Rio Oxbow Ranch, would be greatly simplified through a reducing in the total length of boundary by roughly half. Similar effects would occur on the boundaries of the N5 and N6 parcels.

#### **4.2.10. Unique Geological Features**

The unrestricted opportunity for the general public to visit the Creede Formation in Parcel N2 to view or collect fossils would be lost under Alternatives 1 and 3. The current situation would remain unchanged under Alternative 2 and 4. Mitigation, offered under Alternatives 1 and 3 would allow for continued access to this area for scientific and educational purposes. However, no provision has been made to allow access to the general public for recreational activities associated with this feature.

## **CHAPTER 5.0.**

### **CUMULATIVE EFFECTS**

#### **5.1. INTRODUCTION**

Cumulative effects are the impacts on the environment that result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

#### **5.2. SUMMARY OF PAST, PRESENT & FUTURE ACTIONS**

##### ***Federal Lands***

The general historic use for the Federal lands, currently under USFS administration, has been primarily livestock grazing (where topography and forage availability allowed). Some very limited timber harvesting has occurred, primarily in L5. Other uses have included the Silver Thread Scenic Byway Corridor along Highway 149 through parcels L1-L4. Recreational and other travel has been a use in the western portion of N2. Other dispersed forms of recreation such as hunting, fishing and hiking has occurred on the Federal tracts but has been limited by the landownership patterns, which impedes easy access to many of these parcels. Some commercial use in the form of river rafting, as well as historic access to the river has occurred at the L3 parcel and river recreational activities have also been provided along the river in the southern portion of Parcel N2. However, much of this use has probably derived from recreationists having access from the adjacent private lands or from entering the river on upstream public lands. Water management structures (diversions) were constructed on Trout Creek near the western border of Parcel N6 and on Woodfern Creek in Parcel L5 to direct water to reservoirs located primarily on private lands. These historic structures are currently still in use. Present land use on the Federal lands is essentially the same as historic land use. The current management emphasis for the Federal lands as provided by the Forest Plan are presented in Table 3 Chapter 2.3 (pg. 15).

There are no future actions planned by the RGNF for any of these parcels. Future management of these lands is likely to follow past and present management direction, should the exchange proposal not be implemented.

##### ***Non-Federal Lands***

Long Ridge: The primary past use of this property has been grazing. The lower slopes of these parcels provide the right-of-way for the Highway 149 travel corridor. Apparently, little active management has occurred on these lands during recent years. The management emphasis on the surrounding National Forest System lands is big-horned sheep habitat maintenance and improvement, which is consistent with the direction currently being followed on these private parcels. Due to the current development

pressure being experienced in Mineral County, future use on these lands could include development of residential properties on suitable sites along Highway 149.

Bonafacio: Grazing has also constituted the primary past use of these parcels. Dispersed recreational pursuits, such as hunting have also occurred on these parcels although there are no records substantiating the type or level of this use. Designated forest system roads (4-wheel drive) running through each of the tracts have provided public access to the adjacent National Forest System lands. However, there is no legal right of public access through these properties. These parcels are unfenced and are probably currently being grazed, to some degree, by the livestock managed under the Martinez-Underwood S&G Allotment. The area's current primary use is probably wildlife habitat and hunting. The public currently uses the existing road system for access to adjacent National Forest System lands for hunting, mountain biking and other dispersed forms of recreation. Development pressures experienced throughout the county may indicate a future potential for residential development on these lands, should the exchange proposal not be implemented.

Carson Properties: The Carson properties lie within a historic mining district and mining was the primary land use in the general area up until the early 1900's. Evidence of past mining is present on several of the Continental Divide patented mining claims but much of the area was apparently never actively mined. The Hays Placer does not appear to have been mined but the forest cover was lightly logged in some areas to provide materials for mine timbers or other mining-related structures. The remnants of an old structure, apparently a cabin, are situated in the northeast corner of the parcel. An old, low-standard road runs along the eastern edge of the parcel (FR 518), eventually crossing the Continental Divide and intersecting the mining claims. There does not appear to have been any active use of these properties in recent years. The Carson Road (FR 568) and Heart Lake Road (FR 518.1b) now serve as a popular route for 4-wheel drive and ATV users, and for sightseers visiting the historic structures at the Carson town site. However, there is currently no legal right of public access through these properties. The area is probably also being used for some dispersed recreational activities such as hunting and off-trail hiking. Current management of these lands is consistent with management direction being applied to adjacent National Forest System lands. However, with the development occurring throughout Hinsdale County, residential (i.e., summer home) development could be a future use of these properties should the exchange proposal not be implemented.

### **5.3. SUMMARY OF CUMULATIVE EFFECTS**

#### **5.3.1. SOCIO-ECONOMIC**

Due to the relative small size of the projected changes in land ownership that would occur through the implementation of the proposed action, it is unlikely that substantive socio-economic cumulative effects would occur to the local areas involved in this exchange proposal. Under Alternative 1 there would be a permanent net loss of approximately 468.78 acres of Federal lands in Mineral County, a gain of 678.36 acres of

Federal land in Rio Grande County, and a gain of 364.48 acres of Federal land in Hinsdale County. (These acreage figures may change slightly for Alternatives 3 and 4, which eliminate some of the Federal parcels from the exchange proposal.) This would represent a small increase to the tax base in Mineral County and a small decrease in the tax base to Rio Grande and Hinsdale Counties. Tourism, a major component of these local economies, should experience little long term effect, although there may be a long term gain in recreational opportunities in counties experiencing an increase in Federal lands.

### **5.3.2. RECREATION**

Under Alternative 1, there would be a slight long-term decrease in recreational opportunities related to the loss of access to public lands along the river through the exchange of Parcels N2 and L3. Exchange of these parcels may also result in a decrease in opportunities commercial outfitters operating on this stretch of the river. Under all other alternatives, these parcels would be eliminated from the exchange proposal and no loss of river access or use would occur. There would also be some lost dispersed recreational opportunities on other Federal parcels. However, due to the general inaccessibility of many of the areas, a substantial loss, relative to current use, would not be expected. Long-term losses in dispersed recreational opportunities on the Federal lands would be offset by a substantial increase in public recreational access to the Non-Federal lands that would move into public ownership through this exchange.

### **5.3.3. RANGE**

Most of the rangelands currently under permit on the Federal lands in this exchange proposal occur in Parcels N1 and N2. The permit to that allotment is issued to the Non-Federal Parties. Although the permittee will not experience an overall loss of grazing opportunity, this proposal would decrease the capable allotment acreage within the Shallow Creek Allotment by approximately 118 acres. Under Alternative 3, this would decrease to 113 acres and under Alternative 4 to 38 acres. The South River C&H Allotment would experience a decrease in grazing capacity of 5 acres under Alternatives 1, 3, and 4 through the exchange of Parcel N6. The other Federal parcels in this proposal are not currently within active allotments and would result in no long-term decrease in grazing capacity. Overall losses on the Forest resulting from conveyance of the Federal lands to private ownership would be offset by range moving to National Forest ownership. These include: Bonafacio properties-678.36 acres (Martinez-Underwood S&G Allotment), Long Ridge properties-91.79 acres (Park C&H Allotment) and Carson properties-230.61 acres (Carson-Lost Trail S&G Allotment). It is not anticipated that this increase in available range would result in an increase in livestock numbers or increase in the length of the grazing season.

#### **5.3.4. VEGETATION**

Covenants offered as mitigation to the exchange proposal would protect wetland and forest vegetation from most disruptive activities. A small amount of forestland in the L5 parcel could be affected by potential residential development. The grassland/shrubland vegetative types generally have no deed restrictions limiting disturbance to the vegetative cover. However, it is not anticipated that future management activities would change substantially from past and current management strategies. Through acquisition of the Long Ridge and Bonafacio properties there would be a substantial amount of grassland/shrubland (770.15 acres), as well as riparian habitat, that would move to a more protected status under Federal management. This would tend to balance potential long-term effects to vegetative cover on the Federal parcels that would be moving to private ownership. There would also be a substantial net gain in the amount of potentially suitable Colorado tansy aster habitat under federal jurisdiction. In addition, approximately 85 acres of high-elevational, mid-late successional spruce-fir forest, 35 to 40 acres of willow/riparian wetland vegetation and 229 acres of alpine meadow would move to the long-term protective status of federal ownership. Therefore, there would be no adverse cumulative effect and there is likely to be a net beneficial effect to vegetation through implementation of the exchange proposal.

#### **5.3.5. HYDROLOGY, WETLANDS AND FLOODPLAINS**

The Forest Service would realize a net gain of 29.69 acres of wetland moving to Federal jurisdiction and a net loss of 27.01 acres of floodplain under Alternative 1 and 24.01 acres under Alternatives 3 and 4. Mitigation, in the form of covenants, would protect wetlands found on the federal lands from site disturbances that could alter their hydrologic function, such as development, draining or removal of wetland/riparian vegetation. Additionally, covenants would prohibit development in floodplains found on these parcels. With this mitigation substantial losses of function in wetlands and floodplains are unlikely to occur as a result this exchange.

#### **5.3.6. WILDLIFE**

Since all of the Federal and Non-Federal lands are providing wildlife habitat to some degree, this exchange, under Alternative 1, would result in a net increase in wildlife habitat to the RGNF of approximately 661.35 acres. Additionally, covenants would protect most of the wildlife habitat conditions in the forested, wetland and floodplain areas found within the Federal parcels that would be conveyed to private ownership. Under Alternatives 1 and 3 approximately 112 acres of big game winter range (Parcels N1 and N2) would move from the jurisdictional control of the Forest Service to private ownership. Under Alternative 4 this would be reduced to 32 acres. The Non-Federal Party that would gain ownership of N1 and/or N2 has indicated no intentions of developing these areas or otherwise comprising the current suitability of this winter range for big-game. However, the jurisdictional protection under Federal ownership would be lost. Reductions in winter range within the Upper Rio Grande Elk Management Unit have been identified as a key concern, particularly for elk. Any loss in the availability of

winter range within this game management unit would add to cumulative effects of other losses in winter range currently occurring throughout this management unit. Potential losses in winter range within this management unit would be offset, to a degree by the Federal acquisition of the 91.79 acres contained in the Long Ridge properties. However, the overall quality of area as big-game winter range may not be comparable to winter range found in Parcels N1 and N2. In terms of the total big-game population on the RGNF, there would be a substantial net increase in winter range on the Forest with the acquisition of approximately 678.36 acres of suitable deer and elk winter habitat on the Bonafacio properties.

Most of the suitable lynx habitat occurring on the Federal lands would be protected through covenants prohibiting development or substantial alteration of habitat identified by the RGNF. A very small portion (<3.0%) of the total suitable habitat and 3.5% of the total foraging habitat within the LAU occurs on private lands. Since the Forest Service has no jurisdictional control over these areas, this habitat could be subject to disturbances that could reduce their suitability for lynx. However, at this time there are no known proposals for habitat disruptive activities within these areas. Based on current land use patterns it is unlikely that, even if site disruptive activities, such as development or timber harvesting, were to occur on the private ownerships, only a small portion of this area would actually be affected. The majority of the suitable habitat on private lands occurs in remote areas that have poor and difficult access and lie, at least partially, on rugged, steep terrain. These factors would limit the overall potential for complete habitat disruption on this 3-4% of suitable habitat within the LAU.

Through potential residential development activity in Parcel L5, approximately 3 acres of denning and winter foraging habitat could be permanently lost. Approximately 3,743 acres of currently unsuitable and 21,418 acres of other lynx habitat has been identified within the Hogback LAU. It is anticipated that over time a substantial portion of these areas will either develop components consistent with lynx habitat or improve in their current ability to provide foraging and other lynx requisite habitat conditions. This would tend to offset the overall long-term effects of the 3 acres of habitat that would be lost through implementation of this proposal or other habitat losses that may occur within the LAU.

As a result of this proposal, the Slumgullion South LAU on the Gunnison National Forest would gain approximately 125 acres of suitable denning and winter foraging habitat within through the acquisition of the Hays Placer. Additionally, approximately 50 acres of winter foraging habitat would gain long-term protection through the acquisition of Parcel B4 (Bonafacio properties). A more complete analysis of cumulative effects to lynx is found in the Biological Assessment, Appendix-Exhibit 4.

There would be no significant cumulative effects to any Forest sensitive wildlife species found on the federal parcels as a result of this exchange proposal. However, there would likely to be a beneficial cumulative effect to sensitive wildlife species currently or potentially occurring on the Non-Federal lands (See Chapter 3.2.7, pg. 33), as these areas become part of the National Forest System.

### **5.3.7. SCENIC RESOURCES**

Residential development along Highway 149 in the upper Rio Grande Valley has seen an increase in recent years and this trend is expected to continue. Each new development site visible from the highway has a cumulative negative effect on the scenic quality within this viewshed. Potential development that could occur on Federal lands through this exchange would add to the effects of other development activity occurring on the surrounding landscape. A structure built on the high promontory above the Rio Grande and the cliffs in N2 would be of particular concern from a scenic resource perspective and would represent a cumulative negative effect to the scenic resource. Additionally, development in the L5 parcel could result in a decrease in the scenic quality along that stretch of the river valley. The owner of the Rio Oxbow Ranch has expressed an intention to develop up to a maximum of five residential sites on his property, regardless of the outcome of this exchange proposal. He has also stated a desire to minimize the scenic impact from such development by screening with available tree cover, where possible. However, the current availability of buildable lots on the ranch with adequate vegetative screening is limited. Acquisition of L5 would allow more effective options for structures to be screened within the tree cover found on the lower slopes of that parcel. This may help to reduce scenic impacts for this portion of the landscape.

### **5.3.8. HERITAGE RESOURCES**

Surveys performed within the federal parcels did not indicate the presence of any significant archeological or historical resources. Therefore, this proposal is unlikely to result in cumulative impacts to heritage resources.

### **5.3.9. EXISTING USES AND MINERALS**

With the exception of the Parcel N2 there are no known valuable mineral deposits occurring on the Federal parcels in this exchange proposal. The N2 parcel includes a geologic feature containing ancient marine fossils that are collected by amateur fossil collectors. However, It is unknown if these fossils have or could have a commercial value. Transfer of the N2 parcel would represent a change in ownership of this resource. However, access for scientific and research purposes would still be allowed under an agreement with the non-Federal Party.

This exchange proposal would offer a variety of long-term beneficial administrative effects. The boundary lines would become much simpler, making on-the-ground management of the resource much easier for land managers. The potential for future conflicts between users of the National Forest and adjacent private landowners, such as trespass, arising from complicated boundaries would be reduced under the proposed land exchange. Additionally, long-term management conflicts resulting from varying management strategies on National Forest and private inholdings could be avoided. Also avoided would be problems associated with future access to private inholdings, such as

construction on new roads or reconstruction of existing roads, which could have adverse resource effects all along the access route.

## **CHAPTER 6.0. INTERDISCIPLINARY PARTICIPATION**

The following individuals participated in preparation or review of this Environmental Assessment:

Randall Burgess	Creede District Ranger
Wyoma Hansen	Forest Lands Specialist
Mike Hettle	Forest Surveyor
Dale Gomez	Forest Wildlife Specialist
Sue Swift Miller	Forest Wildlife Specialist
Les Dobson	Forest Hydrologist
Kelly Clum	Forest Landscape Architect
Dean Erhard	Forest Biologist
Vince Spero	Forest Archeologist
Laurel Kagan Wiley	Forest Wildlife Program Manager
Greg Thompson	Forest Recreation Specialist
Barry Rhea	Private Consultant, Rhea Environmental Consulting

## **APPENDICES**

- EXHIBIT 1: WETLANDS AND FLOODPLAIN REPORT**
- EXHIBIT 2: NON-KEY ISSUES AND COMMENTS**
- EXHIBIT 3: BIOLOGICAL EVALUATION**
- EXHIBIT 4A: BIOLOGICAL ASSESSMENT**
- EXHIBIT 4B: USFWS BIOLOGICAL OPINION**
- EXHIBIT 5: HERITAGE RESOURCE REPORT**
- EXHIBIT 6: RESPONSES TO COMMENTS**