



UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Colorado River Valley Field Office
2300 River Frontage Road
Silt, CO 81652

ENVIRONMENTAL ASSESSMENT for the Sutey Ranch Land Exchange



BLM-CO-040-2013-0061-EA
COC-074812
COC-076371

June 2014



United States Department of the Interior



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www.co.blm.gov

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NUMBER: BLM-CO-040-2013-0061-EA

LAND EXCHANGE CASEFILE NUMBER: COC-074812

LAND DONATION CASEFILE NUMBER: COC-076371

PROJECT NAME: Sutey Ranch Land Exchange

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LIST OF ACRONYMS

%PL	Percent Public Lands
ACEC	Areas of Critical Concern
ADT	Average Daily Traffic
AMP	Asset Management Plan
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act of 1979
ATI	Agreement to Initiate
ATV	All-terrain vehicle
AUM	Animal Unit Months
AVLT	Aspen Valley Land Trust
BLM	Bureau of Land Management
BMPs	Best Management Practices
BOCC	Board of County Commissioners
CDOT	Colorado Department of Transportation
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CPW	Colorado Parks and Wildlife
CR	County Road
CRVFO	Colorado River Valley Field Office
DAU	Data Analysis Unit
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ERMA	Extensive Recreation Management Areas
ESA	Endangered Species Act
ESA	Environmental Site Assessment
EVLT	Eagle Valley Land Trust
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management Act of 1976
FONSI	Finding of No Significant Impacts
FY	Fiscal Year
GMQS	Growth Management Quota System
ID	Interdisciplinary
LWCF	Land and Water Conservation Fund

MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MPH	miles per hour
N/A	not applicable
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOEP	Notice of Exchange Proposal
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NTMB	Neotropical migratory landbirds
OVS	Office of Valuation Services
PFYC	Potential Fossil Yield Classification
PILT	Payment in Lieu of Taxes
PL	Public Law
PV	Prospectively Valuable
R&PP	Recreation and Public Purposes Act
RMP	Resource Management Plan
ROS	Recreation Opportunity Spectrum
RS	Revised Statute
SCS	Soil Conservation Service
SRMA	Special Recreation Management Area
TES	Threatened, Endangered and Sensitive
U.S.	United States
USGS	U.S. Geological Survey
USPAP	Uniform Standards of Professional Appraisal Practice
VPD	Vehicles Per Day
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WLC	Windstar Land Conservancy
WRNF	White River National Forest
WSA	Wilderness Study Areas

1. INTRODUCTION

A. BACKGROUND AND SUMMARY OF THE PROPOSED ACTION

On April 29, 2013 an Environmental Assessment (EA) was released for public comment, analyzing the environmental effects of a proposed land exchange between the Bureau of Land Management (BLM) Colorado River Valley Field Office (CRVFO) and the Proponents (Leslie and Abigail Wexner).¹ The proposed land exchange involves six Federal Parcels in Eagle and Pitkin Counties and two Non-Federal Parcels in Garfield and Pitkin Counties. Together, the eight non-contiguous exchange parcels (which total approximately 2,138 acres) make up the “Project Area.”

The intermingled public and private land ownership patterns across the Project Area complicate land management by both the BLM and private land owners. The six Federal Parcels have been identified as suitable for exchange by the BLM, and the two Non-Federal Parcels meet the acquisition criteria specified in the 1988 Glenwood Springs Resource Management Plan (RMP). The exchange proposal is in conformance with the BLM’s existing land use plan for the CRVFO resource management area.

Refer to Chapter 1 Section B – Project Location and Legal Description for a project location and legal descriptions of all eight exchange parcels. Refer to Figure 1 for a project location map. The Federal Parcels are identified as Parcels A through E (including Parcel B-1), and the Non-Federal Parcels are identified as Parcel 1 (the Sutey Ranch Parcel) and Parcel 2 (the West Crown Parcel). Figures 2 through 4 provide more detailed information on the eight exchange parcels, by county.

The lands included in the exchange proposal have been appraised in accordance with federal regulations and federal appraisal standards. The values of the federal and non-federal lands must be equal, or capable of being equalized, in order for the exchange to be approved. This is discussed in more detail in Chapter 1 Section C – BLM Land Exchange Policies.

B. CHANGES TO THE ENVIRONMENTAL ASSESSMENT

Since the publication of the EA on April 29, 2013 for public comment, this EA has not been substantively changed. Minor corrections/updates have been made; however, in most cases only a few words or phrases were added or deleted for clarification and accuracy. Changes were based on internal (BLM) comments, public comments and comments from the Proponents. The following sections have not been changed: Chapter 3 Section A – Realty Authorizations; Chapter 3 Section H – Paleontology; Chapter 3 Section I – Native American Religious Concerns; Chapter 3 Section J – Environmental Justice; Chapter 3 Section K – Wastes; Chapter 3 Section N – Geology and Minerals; Chapter 3 Section O – Water Rights; and Chapter 5.

¹ Leslie and Abigail Wexner own the Two Shoes Ranch – proximate/adjacent to Federal Parcels A, B and B-1. Lady Belle Partnership, LLLP owns the Lady Belle Ranch – proximate/adjacent to Federal Parcels C, D and E.

C. PROJECT LOCATION AND LEGAL DESCRIPTION

FEDERAL PARCELS A, B AND B-1 – PITKIN COUNTY

Federal Parcels A, B and B-1 are located in Pitkin County south of Carbondale. Parcels A, B and B-1 are used mainly for livestock grazing and wildlife habitat and are mostly or entirely surrounded by private land (the Two Shoes Ranch). Access to these parcels is circuitous around adjacent private land and a long distance from a public road. Therefore, they are difficult for the public to legally access and, as a result, Parcels A, B and B-1 receive little to no public use.

FEDERAL PARCELS C, D AND E – EAGLE COUNTY

Federal Parcels C, D and E are located in Eagle County near Horse Mountain and have little public access. Parcels C, D and E are used mainly for livestock grazing and wildlife habitat and are proximate to land owned by the Proponents (Lady Belle Partnership, LLLP).

NON-FEDERAL PARCEL 1 – GARFIELD COUNTY

Non-Federal Parcel 1 (Figure 2; the Sutey Ranch—named for the family who lived, ranched and farmed the parcel from 1930 through 2005) contains approximately 557 acres of private land adjacent to the Red Hill Special Recreation Management Area (SRMA), which is managed by the BLM. It is roughly 2 miles north of Carbondale in Garfield County. Physical access to this parcel is from Highway 82 via Cattle Creek Road (CR 113) and Crystal Springs Mountain Road (CR 112) which crosses the northeast corner of the parcel.

Non-Federal Parcel 1 includes ditch water rights in the form of 12 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 051, and 1.33 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 055 for approximately 2.25 cubic feet per second (cfs), decreed to the Park Ditch and Reservoir Company, and 50 acre feet of water storage rights. The water right (including storage) associated with Parcel 1 would be transferred to the United States via the proposed land exchange.

Non-Federal Parcel 1 has been a land conservation priority in the Roaring Fork Valley since 2002 and is currently the Aspen Valley Land Trust's highest priority parcel for conservation.² It has critical big game winter habitat in an area where large blocks of undeveloped habitat are rapidly disappearing due to development pressures in the Roaring Fork Valley. The ranch was for sale as a development parcel until it was purchased by the Proponents in two separate transactions from the same owner. The first purchase occurred in 2008 and included the majority of the parcel except for 37 acres on the eastern side next to County Road (CR) 112. The second purchase occurred in 2010 and included the remaining 37 acres of the ranch that was not acquired in 2008. In addition to its natural resource values, Non-Federal Parcel 1 has high dispersed recreation values because it is adjacent to a popular non-motorized trail network on BLM

² Aspen Valley Land Trust, 2012

lands in the Red Hill SRMA (refer to Chapter 3 Section C – Recreation). The BLM manages the SRMA in partnership with the local Red Hill Council. The Red Hill SRMA receives over 55,000 visitors per year.³

NON-FEDERAL PARCEL 2 – PITKIN COUNTY

Non-Federal Parcel 2 (Figure 3; West Crown) consists of approximately 112 acres located 5 miles southeast of Carbondale on the west side of an area known as The Crown. Parcel 2 is bordered by BLM lands to the east with private land to the north. Prince Creek Road (CR 111) and Two Shoes Ranch lie to the south and west.

Non-Federal Parcel 2 currently serves as one of four recreational access points on Prince Creek Road for the BLM’s popular Crown area and contains user-created trail segments used primarily for mountain biking, including the locally known Monte Carlo trail, that lead into The Crown. Although public use of this private parcel has historically been high, legal public access has never been formalized. As no public access easement is secured on Parcel 2, public use of the parcel to reach The Crown is provided at the option of the private landowner (the Proponents) and could be rescinded at any time. In order to secure continued public access, the BLM would like to acquire this parcel.

**Table 1-1:
Federal and Non-Federal Parcels Involved in the Exchange**

Parcel	County	Legal Description	Acres
Federal Parcels			
A	Pitkin	T. 8 S., R. 88 W., Sixth Principal Meridian, sec. 23, N½NE¼ and SE¼NE¼; sec. 24, W½; sec. 25, NW¼, N½SW¼, and SW¼SW¼; sec. 26, S½S½; sec. 35, W½, and sec. 36, NW¼NW¼	1,240
B	Pitkin	T. 8 S., R. 87 W., Sixth Principal Meridian, sec. 31, Tract 86, lots 10, 11, and 12, and sec. 31, lots 9 and 13	28.37
B-1	Pitkin	T. 8 S., R. 87 W., Sixth Principal Meridian, sec. 31, lots 5 and 8	1.0
C	Eagle	T. 5 S., R. 83 W., Sixth Principal Meridian, sec. 30, lots 5 to 8, inclusive, lot 10, lot 13, and SE¼NW¼. T. 5 S., R. 84 W., sec. 25, lot 10	171.26
D	Eagle	T. 5 S., R. 83 W., Sixth Principal Meridian, sec. 30, lot 9	17.41
E	Eagle	T. 5 S., R. 84 W., Sixth Principal Meridian, sec. 36, lots 2, 3, and 4	11.97
<i>Total Acreage of Federal Parcels A through E</i>			<i>1,470</i>

³ USDO I BLM, 2012a

**Table 1-1:
Federal and Non-Federal Parcels Involved in the Exchange**

Parcel	County	Legal Description	Acres
Non-Federal Parcels			
1	Garfield	T. 7 S., R. 88 W., Sixth Principal Meridian, sec. 14, a tract of land in lots 1 and 2 described by metes and bounds; sec. 15, lots 1, 2, 6 through 12, inclusive, 15, and 16, and sec. 16, lot 8 <i>Parcel 1 includes approximately 2.25 cubic feet per second (cfs) of ditch water rights, in the form of 12 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 051, and 1.33 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 055 decreed to the Park Ditch and Reservoir Company, and 50 acre feet of water storage rights.</i>	556.6
2	Pitkin	T. 8 S., R. 88 W., Sixth Principal Meridian, sec. 24, a parcel in the E½NE¼, E½W½NE¼, and NE¼SE¼ lying northeast of the centerline of Prince Creek Road as described by metes and bounds	111.8
<i>Total Acreage of Non-Federal Parcels 1 and 2</i>			668.4

D. BLM LAND EXCHANGE POLICIES

The BLM is authorized to complete land exchanges under Section 206 of the Federal Land Policy and Management Act of 1976 (FLPMA), as amended, after a determination is made that the public interest would be served. When considering the public interest, the authorized BLM 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) securing important resource management objectives including, but not limited to, protection of fish and wildlife habitat, riparian habitat, river frontage, cultural resources, recreation opportunities, watersheds, open space, and consolidation of lands for more logical and efficient management.⁴

The BLM follows a detailed process for configuring, analyzing and deciding upon proposed land exchanges, defined by the BLM Land Exchange Handbook H-2200-1. Per handbook direction, the exchange process can be divided into five phases, each of which is regulated by law:

- **Phase 1 – development of a land exchange proposal.** The BLM and potential exchange parties meet to discuss land exchange processing requirements and capabilities, the potential lands to be included, and potential benefits and issues, as well as to informally share ideas about proposed land exchanges. This informal discussion and initial screening helps identify proposals that have fatal flaws, or those that would be otherwise unworkable.
- **Phase 2 – feasibility evaluation.** In consultation with the Non-Federal party, the BLM prepares a report assessing the feasibility of the land exchange proposal, estimates processing costs, and completes the required State Office and Washington Office reviews. At the end of this period, if

⁴ USDOJ BLM and Office of the Solicitor, 2001 p. 69

the parties agree to proceed with the exchange proposal, a nonbinding agreement to initiate a land exchange (ATI) is signed by the parties. The ATI outlines the property and interests to be transferred, assigns responsibility for various actions and costs, and sets a schedule for completing various actions.

- **Phase 3 – processing and documentation.** This phase begins with public notification of the proposed exchange and an invitation to interested parties and the public to submit written comments or concerns regarding the proposed exchange (i.e., public scoping). During this phase, the National Environmental Policy Act (NEPA) process is begun, resource analysis occurs, title is reviewed, appraisals prepared and reviewed, and environmental issues identified. At the end of this period, the parties may reach an agreement on value.⁵
- **Phase 4 – decision analysis and approval.** This phase involves the remainder of the NEPA process, which includes the public interest determination, development of the exchange decision documents, completion of State Office and Washington Office reviews, decision signing, and public notification of the decision on the exchange.
- **Phase 5 – title transfer.** This phase involves finalization of the exchange including receiving and reviewing the title evidence and land status, issuing the federal patent and the non-federal deed, and closing the transaction.

VALUATION PROCESS FOR BLM LAND EXCHANGES

FLPMA requires the value of exchanged federal and non-federal lands be equal; however, adjustments for any difference in value by cash equalization payments may be made up to 25 percent of the value of the federal lands to be disposed.⁶ As directed by the BLM Land Exchange Handbook (H-2200-1), the administrative process for equalizing values in land exchanges could also involve adding or deleting lands from the exchange proposal or allowing the non-federal party to donate portions of the non-federal lands to account for the difference owed by the United States. Neither the BLM nor the Proponents wish to delete non-federal lands from the exchange proposal and the Proponents have stated that they will donate any excess land value to the United States. The Department of Interior’s Office of Valuation Services (OVS) is responsible for all of BLM’s real estate valuation functions including management, oversight, and valuation policy. The valuation process is a separate administrative process that is conducted concurrently with the NEPA process, both of which will culminate in the final Decision Record issued by the BLM.

Federal regulations require that the exchange parcels be appraised to determine their fair market value. The appraisal regulations define “market value” as:

⁵ During Phase 3 the appropriate level of NEPA documentation is prepared.

⁶ Because all acres are not equal in terms of public use/resources or financial value, FLPMA requires that dollar values be equal so that no party benefits financially.

“The amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing, but not obligated to sell, to a knowledgeable purchaser who desired, but is not obligated to buy.”

Federal and Non-Federal exchange parcels are to be valued as if they are available for sale on the open market (versus sold to a neighbor); zoned consistent with other private lands (if the parcel is in federal ownership); and in their existing condition, including access (unless otherwise instructed).

Once BLM officials have entered into an ATI, an appraisal request is sent to OVS. The OVS review appraiser assigned to the case prepares appraisal instructions. These instructions are the basis for the appraisal reports, which may be completed by other OVS appraisers or contractors. Upon completion, the appraisal reports are submitted to the OVS review appraiser for review and approval. The review appraiser is responsible for ensuring that the appraisal report and its conclusions are reasonably supported by market information and comply with the Uniform Appraisal Standards for Federal Land Acquisitions (commonly referred to as the Yellowbook) and the Uniform Standards of Professional Appraisal Practice (USPAP) as well as other agency regulations.

The appraisal process is a method by which the facts that bear upon the value of real estate are systematically analyzed and interpreted into an opinion of value. In determining an opinion of market value, typically three approaches to value are considered. They are the Direct Sales Comparison Approach, the Cost Approach, and the Income Approach.

- The Direct Sales Comparison Approach to value is based primarily upon the principle of substitution. This principle implies no prudent and informed person will pay more for a property than it would cost to acquire an equally desirable substitute property. In the application of this approach, a property’s “highest and best use” must be determined prior to identifying comparable properties. Once the highest and best use is determined, actual sales of similar properties are analyzed, and the value is estimated based upon the similarities and dissimilarities which the market has been recognizing in the subject’s neighborhood. The reliability of this approach is directly related to the quantity and quality of available data, and the application of this approach requires analysis of similar properties which have sold in the marketplace. An indicated value for the subject property is based upon the values given for the various land types.
- The Cost Approach is an appraisal technique by which the value of a property is derived by estimating the current replacement cost of the improvements, and then deducting the estimated accrued depreciation from all sources, and finally adding the value of the land as determined from comparable sales value allocation analysis.
- The Income Approach estimates the subject’s value based on the income that the property will likely produce under typical management. The income-producing ability of the subject property will be analyzed to arrive at an estimate of net operating income before income taxes, debt

services, or cash flow to the owner. The property's estimated net income under typical management is converted into an estimate of value by using a market-derived capitalization rate. This rate reflects an acceptable return to owners of similar income-producing properties.

In some cases, one or more of these approaches are deemed unnecessary and consequently not used in the appraisal process. Only the Direct Sales Comparison Approach was used in the proposed Sutey Ranch Land Exchange: the Cost Approach was not necessary because there are no improvements on the subject parcels and the Income Approach was not used because the income which might be generated has no correlation to the potential land value. The appraisals are contained in the administrative record.

Two conservation easements are included in the Proposed Action. However, when determining the market value of the Federal Parcels, no consideration was given to the proposed conservation easements the Proponents would grant to the third parties upon completion of the exchange. For more information regarding the conservation easements the reader is referred to Chapter 2, in which the Proposed Action is defined.

RESERVATION OF FEDERAL RIGHTS OR INTERESTS

The BLM has the authority to reserve rights and restrict activities in land exchanges. As explained in the BLM Land Exchange Handbook (H-2200-1), "The regulations under 43 CFR 2200.0-6(i) provide that the public interest may be protected through the use of reserved rights or interests in the Federal land. In general, mitigation in the form of deed restrictions on Federal land conveyed into non-Federal ownership should only be used where required by law or executive order, clearly supported by the environmental documentation and closely coordinated with the Field or Regional Solicitor. It is the BLM's policy to limit reservations to those supported by the environmental documentation, public benefit determination process and fully considered in the appraisal process. Environmental mitigation in the form of reserved Federal rights or interests should be evaluated for appropriateness as part of analysis of alternatives in the environmental documentation." The BLM has determined that mitigation in the form of reserved Federal rights is not appropriate in this case as it is not necessary for the public benefit determination and was not considered in the appraisal process.

E. PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose and need for the proposed Sutey Ranch Land Exchange is two-fold:

- 1. Consolidate land ownership boundaries (private and BLM) in the Red Hill (Garfield County), Crown (Pitkin County) and Horse Mountain (Eagle County) areas.**
- 2. Improve management of, and public access to, public lands under the jurisdiction of the BLM while minimizing public trespass on adjacent private lands.**

By consolidating land ownership boundaries in the Project Area and improving management of public lands, there is potential to benefit the public, BLM and the Proponents through increased land management efficiency, especially in terms of protection and enhancement of wildlife and recreation resources. Furthermore, through a mix of federal management (BLM lands) and conservation easements (private lands), there is an opportunity to protect portions of the Project Area with high resource and social values from the potential for future development.

F. SCOPE OF ANALYSIS

Per the BLM's NEPA Handbook (H-1790-1), whether an action must be analyzed in an EA or Environmental Impact Statement (EIS) depends upon a determination of the significance of effects. "Significance" has a specific meaning in NEPA context, and is defined as "effects of sufficient context and intensity that an EIS is required."⁷ The Council on Environmental Quality (CEQ) defines both context and intensity at 40 CFR 1508.27.

In conjunction with public and BLM internal scoping of the proposed Sutey Ranch Land Exchange, a *preliminary review* of context and intensity factors identified at 40 CFR 1508.27 was conducted. This exercise was performed to assist the BLM in determining the most appropriate level of analysis for which to comply with the requirements of NEPA—either an EA or EIS. Conducting a preliminary review of context and intensity factors at that early stage in the process in no way implies that analysis had been completed, nor that determinations were made.

Based on the results of the preliminary review of context and intensity factors, the BLM is confident that an EA is the appropriate mechanism for analyzing and disclosing the potential effects of the proposed land exchange. If, following public comments on this EA, it is determined that no significant impacts are likely to result from approval of this project, a Finding of No Significant Impacts (FONSI) may be prepared in accordance with 40 CFR 1508.27. Should any significant impacts be identified throughout this analysis that cannot be mitigated or otherwise addressed through project re-design, the BLM will cease preparation of this EA and reinitiate the analysis after a Notice of Intent to Prepare an EIS is published in the Federal Register.

PROJECT AREA

As discussed previously, the Project Area includes six Federal Parcels in Eagle and Pitkin Counties and two Non-Federal Parcels in Garfield and Pitkin Counties. For the purposes of this EA, it is noted that the Project Area and the "Analysis Area" are not necessarily the same, depending on the resource being considered. For example, the Analysis Area for botany and wetlands is the same as the Project Area. However, the Analysis Area for social and economic resources is much larger than the Project Area—to include Eagle, Pitkin and Garfield Counties.

⁷ USDOJ BLM, 2008a p. 70

PROPONENT-DRIVEN NEPA

The CEQ provides guidance for contracting NEPA documentation at 40 CFR 1506.5(b) and (c). “Third party contract” refers to the preparation of an EIS or EA by contractors paid by the applicant. Because the proposed land exchange was proposed by a non-federal party (i.e., the Proponents), the BLM determined that it is appropriate for a third-party contractor to be used for preparation of this EA. Contracting an environmental document does not in any way reduce or eliminate the BLM’s active role in the NEPA process; the BLM is responsible for all content within the EA document and the supporting materials, which must be included in the administrative record. Additionally, the findings in this analysis are those of the BLM, not of the contractor, and the decision must reflect a review of this NEPA document.⁸

A Memorandum of Understanding (MOU) was executed between the BLM and the Proponent, establishing the roles and responsibilities of each party, including the contractor. Among other things, the MOU specifies that all costs of using a contractor to prepare environmental documents will be borne by the Proponent. The MOU describes the responsibilities of the BLM and the Proponent in the administration of the MOU and in oversight of, and communication with, the contractor and the Proponent. The MOU is contained in the administrative record.

G. DECISION TO BE MADE

The BLM will decide whether to approve the proposed land exchange based on the analysis contained in this EA. The BLM may choose to: a) proceed with the exchange as proposed, b) proceed with the proposed exchange with modifications/mitigation, or c) not proceed with the exchange. The proposal would not be modified to change the total acreage of lands transferred between federal and non-federal ownership as discussed under the Proposed Action throughout this EA; however, the configuration of the proposal may be modified in the Decision Record to allow the Proponents to donate, rather than exchange, portions of the Non-Federal Parcels in order to equalize appraised values, as provided by the BLM Land Exchange Handbook (H-2200-1). All environmental effects determinations would remain unchanged under such a modification, as the effects are based on a change in ownership, *rather than the specific method of transfer* (i.e., exchange or donation).

H. SCOPING AND PUBLIC INVOLVEMENT

NEPA regulations (40 CFR §1500-1508) require that the BLM use a scoping process to identify potential substantive issues in preparation for impact analysis. The principal goals of scoping are to allow public participation to identify issues, concerns, and potential impacts that require detailed analysis.

The public was formally notified of the proposed land exchange through a Notice of Exchange Proposal (NOEP) published in the Aspen Times, Aspen Daily News, Glenwood Post Independent and Vail Daily newspapers for four consecutive Mondays beginning May 7, 2012. This public notice invited interested

⁸ USDOJ BLM, 2008a

parties to submit comments to the BLM for a period of 45 days. In the two years preceding the formal public notification there were numerous articles in local newspapers related to the proposed land exchange.

The BLM received 269 comment letters from individuals, non-governmental entities and other public agencies during the public comment period. The majority of comment submittals (66 percent) were generally supportive of the proposed exchange, while 28 percent were generally opposed and 6 percent were neutral. The Eagle and Garfield County Board of Commissioners, Colorado Parks and Wildlife, and government and non-profit agencies submitted letters in support of the exchange. The Pitkin County Board of Commissioners also submitted a letter opposing the exchange. Through discussions between Pitkin County and the Proponents, Pitkin County's initial concerns with the proposed land exchange were alleviated and the County submitted a letter of support for the proposal to the BLM dated January 22, 2013 (refer to Chapter 2 Section C – Agreement Between Two Shoes and the Pitkin County Board of County Commissioners [BOCC] for more information).⁹

On May 31, 2012, the BLM hosted a public open house meeting at the Carbondale Town Hall to hear additional comments and answer questions from the public regarding the proposed land exchange. At the request of the Pitkin County Commissioners, the BLM held an additional public open house on June 13, 2012 at the Aspen City Hall.

News releases were issued on May 8, May 29, and June 6, 2012, providing notification of the public comment period and the open houses. The project was also posted on the CRVFO and CRVFO NEPA websites to notify and solicit comments from other interested parties.

The EA was released for public review/comment on April 29, 2013. A total of 65 comment letters were received. Approximately 67 percent of the comments were supportive, with 24 percent oppositional and 9 percent neutral.

I. ISSUES

The following is a summary of the substantive issues identified through the internal and public scoping process. Analytical indicators are identified for each issue statement. Together, issue statements and indicators provide the foundation for the analysis that is documented in this EA for each alternative. Comments or issues that will not be analyzed are summarized in Chapter 1 Section I – Non-Issues.

⁹ Pitkin County, 2013

HUMAN ENVIRONMENT

Realty Authorizations

***Issue:** The proposed land exchange would alter the ownership of Federal and Non-Federal Parcels throughout the Project Area.*

Analytical Indicators & Requirements:

- Identification and legal description of all Federal and Non-Federal Parcels considered for exchange.
- Discussion of the consistency of the proposed land exchange with the 1988 Glenwood Springs Resource Area Resource Management Plan (i.e., retention vs. disposal).

Access and Transportation

***Issue:** The proposed land exchange, and future land uses of public and private parcels, may alter traffic patterns in the Analysis Area.*

***Issue:** The extent of existing access to Federal Parcels in the Analysis Area is not clearly understood, or agreed upon, by the public.*

***Issue:** The proposed land exchange involves the potential addition of public lands to existing recreation areas that are managed by the BLM (Red Hill SRMA, The Crown) that currently experience parking issues. The proposed land exchange may affect parking in the Analysis Area.*

Analytical Indicators & Requirements:

- Narrative discussion of anticipated changes to traffic volumes and the design capacities of roadway networks accessing Federal and Non-Federal Parcels.
- Disclosure of existing and historical legal access to Federal and Non-Federal Parcels, including all travelways—motorized and non-motorized, including stock driveways.
- Discussion of the potential for development of a public trailhead off Prince Creek Road.

Recreation

***Issue:** BLM lands in the Analysis Area are used throughout the year for various recreational activities, including, but not limited to: hiking, cycling and hunting. The proposed land exchange has the potential to alter recreational resources, trail connections, and the recreation management requirements on BLM lands within the jurisdiction of the CRVFO.*

***Issue:** The proposed land exchange would alter the availability of, and access to, public lands throughout the Analysis Area.*

Analytical Indicators & Requirements:

- Analysis of projected population growth and demand for public lands.

- Discussion of the type of existing recreational opportunities and use patterns (level of use, location of recreation, dispersal of use) in the Analysis Area—existing and proposed.
- Discussion of impacts to trail connections on public lands (e.g., BLM and U.S. Forest Service) throughout the Analysis Area.
- Discussion of BLM management requirements, and changes to recreational management of the Federal and Non-Federal exchange parcels.
- Discussion of impacts to legal recreational access to public lands.

Social and Economic Factors

***Issue:** The economy of the Analysis Area is connected to the use and availability of public lands for recreational, scenic, and other ecological values. The proposed land exchange has the potential to alter the use and availability of public lands for these purposes with associated impacts to the regional economy.*

Analytical Indicators & Requirements:

- Qualitative discussion of the correlation between the availability of public lands in the Roaring Fork Valley and the local economy and the potential economic impacts that may result from the proposed land exchange.

Visual Resources

***Issue:** The proposed land exchange would change private land ownership and management of public lands, with potential to affect the visual quality throughout the Analysis Area.*

Analytical Indicators & Requirements:

- Discussion of the BLM Visual Resource Management (VRM) System and Management Objectives for the Analysis Area, as defined by the 1988 Glenwood Springs Resource Area RMP.
- Discussion of potential changes to the scenic qualities of the Federal and Non-Federal Parcels.

Livestock Grazing Management

***Issue:** The proposed land exchange could affect grazing allotments and activities on the Federal and Non-Federal Parcels throughout the Project Area.*

Analytical Indicators & Requirements:

- Discussion of existing and proposed range management on both Federal and Non-Federal Parcels throughout the Project Area.
- Discussion of existing grazing rights allotted on the Federal Parcels in the Project Area.
- Identification of fences, wells, and other range improvements present on Federal and Non-Federal Parcels throughout the Project Area.

Cultural

***Issue:** The proposed land exchange may affect how known/unknown cultural resources are managed/protected throughout the Analysis Area.*

Analytical Indicators & Requirements:

- Discussion of cultural surveys completed to date in the vicinity of the Project Area.
- Description of known archaeological/cultural resources in the Project Area.

Paleontology

***Issue:** The proposed land exchange could affect how known/unknown paleontological resources are managed/protected throughout the Analysis Area.*

Analytical Indicators & Requirements:

- Discussion of paleontological surveys completed to date in the vicinity of the Project Area.
- Description of known paleontological resources in the Project Area.
- Identification of paleontological resources through inventory of areas previously not surveyed.

Native American Religious Concerns

***Issue:** The proposed land exchange would change the ownership and management of resources that may be valued by Native Americans for religious or cultural reasons.*

Analytical Indicators & Requirements:

- Documentation of the Native American Tribes consulted in relation to the proposed land exchange.
- Discussion of concerns raised by Native Americans through the consultation process.

Environmental Justice

***Issue:** Executive Order 12898, Environmental Justice, requires that all federal agencies disclose any disproportionately high and adverse human health or environmental effects on minority and low-income populations that could result from a proposed action.*

Analytical Indicators & Requirements:

- Identification of minority and low-income populations in the Analysis Area.
- Disclosure of any adverse human health or environmental effects on minority and low-income populations in the Analysis Area as a result of the Proposed Action.

Wastes, Hazardous or Solid

***Issue:** Federal and Non-Federal Parcels in the Project Area may contain hazardous or solid wastes.*

Analytical Indicators & Requirements:

- Completion of a Phase 1 Environmental Assessment.
- Documentation of any hazardous or solid wastes that may be present on the parcels evaluated for exchange.

PHYSICAL/BIOLOGICAL RESOURCES

Wildlife

***Issue:** The future management of aquatic/fisheries resources across the Analysis Area may be impacted as a result of the transfer of ownership of Federal and Non-Federal Parcels.*

Analytical Indicators & Requirements:

- Discussion of how a change in ownership and management may affect aquatic species/fisheries and their habitat in the Analysis Area.
- Discussion of the effectiveness of conservation easements that would be placed on private lands.

***Issue:** The future protection of migratory birds throughout the Analysis Area may be impacted as a result of the transfer of ownership of Federal and Non-Federal Parcels.*

Analytical Indicators & Requirements:

- Discussion of how a change in ownership and management may affect migratory birds and their habitat in the Analysis Area.
- Discussion of the effectiveness of conservation easements that would be placed on private lands.

***Issue:** Threatened, Endangered and Sensitive (TES) wildlife and aquatic species may be impacted as a result of the transfer of ownership of Federal and Non-Federal Parcels in the Analysis Area.*

Analytical Indicators & Requirements:

- Identification of threatened and endangered wildlife and aquatic species, and habitat, present in the Analysis Area.
- Identification of CRVFO sensitive wildlife and aquatic species, and habitat, present in the Analysis Area.
- Discussion of how a change in ownership and management may affect any TES species and their habitat in the Analysis Area.
- Discussion of the effectiveness of conservation easements that would be placed on private lands.
- Discussion of Land Health Standards and their applicability to TES wildlife and aquatic species in relation to the proposed land exchange.

Issue: *The management of terrestrial habitat (including caves) and habitat connectivity throughout the Analysis Area may be impacted as a result of the transfer of ownership of Federal and Non-Federal Parcels.*

Analytical Indicators & Requirements:

- Quantification of terrestrial wildlife habitats across the Analysis Area.
- Discussion of how a change in ownership and management may affect terrestrial species and their habitat in the Analysis Area.
- Discussion of the effectiveness of conservation easements that would be placed on private lands.

Plants

Issue: *The future management of plant communities in the Analysis Area may be impacted as a result of the transfer of ownership of Federal and Non-Federal Parcels.*

Analytical Indicators & Requirements:

- Discussion of plant communities/habitats in the Analysis Area.
- Discussion of the effectiveness of conservation easements that would be placed on private lands.

Issue: *The future management of invasive and non-native plant communities throughout the Analysis Area may be impacted as a result of the transfer of ownership of Federal and Non-Federal Parcels.*

Analytical Indicators & Requirements:

- Identification of invasive, non-native species the Analysis Area.
- Discussion of how a change in ownership and management may affect the spread of invasive species and their habitat in the Analysis Area.
- Discussion of the effectiveness of conservation easements that would be placed on private lands.

Issue: *Threatened, Endangered, and Sensitive (TES) plant communities may be impacted as a result of the transfer of ownership of Federal and Non-Federal Parcels in the Analysis Area.*

Analytical Indicators & Requirements:

- Identification of federally-listed threatened and endangered plant species, and habitat, present in the Analysis Area.
- Identification of CRVFO sensitive plant species, and habitat, present in the Analysis Area.
- Discussion of how a change in ownership and management may affect any TES species and their habitat in the Analysis Area, including the effectiveness of conservation easements that would be placed on private lands.
- Discussion of Land Health Standards and their applicability to TES plant species in relation to the proposed land exchange.

Geology and Minerals

***Issue:** The Federal Government owns the mineral estate underlying the Federal Parcels. Transfer of ownership between public and private interests would affect the lands availability for mineral development or extraction.*

Analytical Indicators & Requirements:

- Quantification of the Leasable, Locatable and Salable minerals that may be present on the Federal Parcels, as identified and described in the Mineral Report.
- Discussion of the change in mineral rights that would occur under the proposed land exchange.

Water Rights

***Issue:** The proposed land exchange includes the transfer of historic water rights associated with the Sutey Ranch parcel from private ownership to BLM management.*

Analytical Indicators & Requirements:

- Quantification of water rights included in the proposed land exchange.
- Discussion of the potential impacts resulting from the change in ownership of these water rights.

Water Quality, Surface and Ground

***Issue:** The proposed land exchange entails transferring public and private lands, which could affect water quality depending on how federal and non-federal lands are managed/developed in the future.*

Analytical Indicators & Requirements:

- Discussion of the effectiveness of conservation easements that would be placed on private lands.
- Discussion of compliance with Colorado Public Land Health Standard 5.

Wetlands and Riparian Zones

***Issue:** The proposed land exchange entails a change in ownership of waters of the U.S., including wetlands, contained on Federal and Non-Federal Parcels in the Analysis Area.*

Analytical Indicators & Requirements:

- Identification/quantification of waters of the U.S., including wetlands in the vicinity of the Analysis Area.
- Discussion of the consistency of the proposed land exchange with Executive Order 11990, Protection of Wetlands.
- Discussion of Land Health Standards and their applicability to wetlands and riparian zones in relation to the proposed land exchange.

Fire/Fuels Management

Issue: *The proposed land exchange would affect the management of fuels and wildfire on Federal and Non-Federal Parcels in the Analysis Area.*

Analytical Indicators & Requirements:

- Disclosure of the existing condition of fuels and wildfire risk on Federal and Non-Federal Parcels.
- Discussion of the potential impacts resulting from the change in management of fuels and wildfire.

Floodplains

Issue: *The proposed land exchange may affect management of floodplains on Federal and Non-Federal Parcels in the Analysis Area.*

Analytical Indicators & Requirements:

- Identification of any Federal Emergency Management Agency (FEMA) designated flood zones in the Project Area, and their flood risk.
- Discussion of the potential impacts resulting from the change in management of any identified floodplain.
- Preparation of a floodplain and wetland assessment in accordance with Title 10 Code of Federal Regulations (CFR) Part 1022, Compliance with Floodplain and Wetland Environmental Review Requirements under Executive Order 11988, Floodplain Management and Executive Order 11990, Wetlands Protection.

Soils

Issue: *The proposed land exchange involves both Federal and Non-Federal Parcels containing varied soil types and characteristics.*

Analytical Indicators & Requirements:

- Describe and quantify the soil types on the exchange parcels using existing data available from the Natural Resource Conservation Service (NRCS).
- Document the change in federal ownership of these soil resources as a result of the land exchange.

J. NON-ISSUES

After reviewing all comments raised during both internal and external scoping, the ID Team determined that the following are non-issues, and thus will not require further discussion, consideration or analysis in the EA:

- Air Quality – The Proposed Action does not involve any activity/management action that would measurably affect air quality.
- Areas of Critical Environmental Concern (ACEC) – No ACECs were identified within the Analysis Area.
- Cadastral Survey – Cadastral Surveys are the surveys that create, mark, define, retrace, or reestablish the boundaries and subdivisions of the public lands of the United States. All cadastral surveys in the Analysis Area are accurate and up to date. The movement and/or placement of land ownership markers are not included in the Proposed Action.
- Farmlands, Prime or Unique – Although Non-Federal Parcel 1 contains Deep Loamy Farmland Soils (112.6 acres), which are considered to be either prime farmland if irrigated or farmland of statewide importance, the BLM would gain management of these soils. Farmlands, Prime or Unique were determined to be a non-issue because these are the only Prime or Unique Farmlands involved in the exchange and the BLM would be able to protect these resources if they came into BLM management under the proposed exchange.
- Forests – The Proposed Action does not include any vegetation removal or other actions which would affect forest resources.
- Noise – The Proposed Action does not involve any activity/management action that would measurably affect noise within the Analysis Area.
- Wild and Scenic Rivers – No Wild and Scenic Rivers exist within the Analysis Area.
- Wilderness/WSAs/Wilderness Characteristics – No Wilderness Areas or Wilderness Study Areas (WSA) exist within the Analysis Area and the parcels evaluated for exchange are not identified as having wilderness characteristics.
- Law Enforcement – The Proposed Action does not involve any activity/management action that would noticeably affect law enforcement within the Analysis Area. Should the Proposed Action be approved, law enforcement on the Non-Federal Parcels would be considered in the site-specific management plan for these parcels.
- CRVFO Draft Resource Management Plan – The BLM is currently in the process of revising the existing Resource Management Plan (RMP) covering the CRVFO (a draft EIS was released in September of 2011 and included analysis of four alternatives). Although it was suggested that the BLM delay a decision on the current land exchange proposal until the completion of the draft

RMP, the BLM has determined it is not reasonable to do so because the proposed land exchange would not preclude any actions/management activities contemplated in any of the alternatives that are currently being analyzed in the draft EIS. The draft RMP would allow for disposal of retention lands through exchange where “such disposal is consistent with management efficiency and effectiveness under multiple use principles for the specific area.”¹⁰

¹⁰ USDOJ BLM, 2011 p. 4-483

2. PROPOSED ACTION AND ALTERNATIVES

A. INTRODUCTION

Chapter 2 describes the alternatives considered within this environmental analysis. As required by the CEQ, the alternatives considered are presented in comparative form.¹¹

NEPA requires that an EA examine a range of alternatives, which are reasonably related to the purpose of the project.¹² Both CEQ Regulations and BLM direction emphasize that alternatives must meet the “reasonableness” criteria in order to warrant detailed analysis. Alternatives that were considered within the analysis process, but were determined not reasonable, were eliminated from detailed study with a brief discussion of the rationale for their elimination.¹³

The issues raised during the scoping process (detailed in Chapter 1) were utilized as the basis for determining the need for alternatives to the Proposed Action. As a result, no additional alternatives were deemed necessary, and this EA will only analyze the (required) No Action and Proposed Action alternatives.

B. ALTERNATIVES CONSIDERED IN DETAIL

ALTERNATIVE 1 – NO ACTION

A No Action Alternative is analyzed alongside the Proposed Action.¹⁴ By definition, the No Action Alternative represents a continuation of existing management practices without changes, additions, or upgrades to existing conditions. As a result, the No Action Alternative provides a baseline for comparing the effects of the Proposed Action.

Under this alternative the proposed land exchange would not occur and ownership and management of the Federal Parcels would not change. The Non-Federal Parcels would remain in private ownership and could potentially be sold and/or developed consistent with relevant county zoning regulations.

BLM management of the Federal Parcels currently focuses on livestock grazing, wildlife habitat and meeting the BLM Colorado Public Land Health Standards (discussed further below); however, some management actions and allowable use decisions are completed for other resource areas, such as recreation. Under the No Action Alternative, current land uses on the Federal Parcels would likely continue, including livestock grazing. The Federal Parcels could be leased for mineral and/or energy development, although this is unlikely to occur. Under the No Action Alternative, the BLM would

¹¹ 40 CFR 1502

¹² USDOJ BLM, 2008a Chapter 6, Section 6.6.1

¹³ 40 CFR 1502.14(a)

¹⁴ 40 CFR 1502.14(d)

continue to periodically inspect the Federal Parcels and grazing allotments to achieve the Public Land Health Standards.

As private land, the approximately 557-acre Non-Federal Parcel 1 (Sutey Ranch) could be developed using Colorado's use-by-right development statutes at one home per 35 acres—equating to 15 homes on the parcel—without any further county approval or restriction. If the parcel were to be subdivided through the Garfield County Subdivision Review Process, the Rural Zone requires a minimum lot size of 2 acres, potentially allowing Parcel 1 to be subdivided into as many as 278 buildable lots. However, the Garfield County Comprehensive Plan suggests a maximum density of 6 to 10 acres per dwelling unit in this area, primarily due to the lack of public water and sewer service. It is more likely that a subdivision with a maximum gross density of 6 to 10 acres per dwelling unit, or 55 to 92 total homesites (which would comply with the comprehensive plan) would receive a recommendation of approval from the planning staff.¹⁵

Non-Federal Parcel 2 (West Crown) is zoned as RS-30 (Resource-30 Acre) by Pitkin County. Minimum lot area for subdivision purposes in the RS-30 district is 30 acres. Only one single-family dwelling unit is permitted per buildable lot, with a maximum allowable floor area of 15,000 square feet. Hence, either Colorado's use-by-right development statutes or the RS-30 zoning regulations could provide for three homesites to be developed on this 111.8-acre parcel under the No Action Alternative.¹⁶

The recreation area known as The Crown can be legally accessed from the east; however, Parcel 2 serves as a popular public access point from Prince Creek Road. As no public access easement is secured on Parcel 2, public use of the parcel to reach The Crown is provided at the option of the private landowner (the Proponents). Under the No Action Alternative, Parcel 2 would remain in private ownership and the land could be blocked from public access at any time at the option of the landowner.

ALTERNATIVE 2 – PROPOSED ACTION

The Proposed Action is to complete a land exchange pursuant to Section 206 of the FLPMA, 43 U.S.C. 1716. Under the Proposed Action, the Proponents would convey to the United States approximately 668 acres of non-federal land consisting of two parcels (identified as Parcels 1 and 2). In exchange, the BLM would convey to the Proponents six parcels of federal land (identified as Parcels A through E) totaling approximately 1,470 acres. The Federal and Non-Federal Parcels are identified on Figures 1 through 4.

The Proposed Action includes conveyance of the surface and mineral estates of the Federal and Non-Federal Parcels, subject to valid existing rights. The exception is Non-Federal Parcel 2 in which only the surface estate would be conveyed because the Federal Government currently owns the mineral estate on this parcel.

¹⁵ Garfield County, 2012a

¹⁶ Pitkin County, 2012a

Federal Lands

Under the Proposed Action, six Federal Parcels managed by the BLM—ranging in size from 1 to 1,240 acres—would be transferred to private ownership. The six Federal Parcels are identified in Table 2-1.

**Table 2-1:
Federal Parcels Involved in the Exchange**

Parcel	County	Acres
A	Pitkin	1,240
B	Pitkin	28.37
B-1	Pitkin	1.0
C	Eagle	171.26
D	Eagle	17.41
E	Eagle	11.97
<i>Total Acreage of Federal Parcels A through E</i>		<i>1,470</i>

The future use of the Federal Parcels, if they are transferred to private ownership, would not be development, but rather to utilize the land for a mix of ranching, conservation (e.g., wildlife habitat) and recreation, similar to current uses of private lands in the Analysis Area.

Non-Federal Lands

Under the Proposed Action, two Non-Federal Parcels—totaling 668.4 acres—would be transferred to the BLM for management by the CRVFO. The two Non-Federal Parcels are identified in Table 2-2.

**Table 2-2:
Non-Federal Parcels Involved in the Exchange**

Parcel	County	Acres
1	Garfield	556.6
2	Pitkin	111.8
<i>Total Acreage of Federal Parcels A through E</i>		<i>668.4</i>

Both Non-Federal Parcels (Parcels 1 and 2) are inholdings adjacent to two popular blocks of public (BLM) land commonly known as Red Hill and The Crown.

Conservation Easements

The Proponents have coordinated with the Aspen Valley Land Trust (AVLT) and the Eagle Valley Land Trust (EVLTL) to prepare conservation easements for the Federal Parcels. Should the Proposed Action be approved by the BLM, permanent conservation easements on Parcels A and B (in Pitkin County) would

be donated to the AVLТ.¹⁷ Likewise, a permanent conservation easement on Parcels C, D and E (in Eagle County) would be donated to the EVLT. Leslie and Abigail Wexner have publicly stated they will forgo any tax benefits associated with their conservation easement donations.

At the foundation of the conservation easements is the premise that the Federal Parcels would not be developed in the future. A brief summary of the conservation easements is provided below. The conservation easements—in their entirety—are contained in the administrative record. Further details on each conservation easement—according to parcel—are included in Appendix A of this EA.

Each of the conservation easements would allow the land trusts to preserve and protect the “Conservation Values” of the parcels in perpetuity. The conservation easements would “run with the land” and would be fully enforced regardless of any (potential) future sale or transfer of ownership of the parcels. The conservation easements would extinguish the Proponents’ development rights on the parcels, prevent any future subdivision of the parcels and restrict the improvements allowed. Only low impact improvements such as wildlife-friendly fencing and fence-mounted solar panels would be allowed. Resource management and use is also regulated by the easements. Although low impact agriculture and livestock grazing would be allowed to continue, intensive, impactful practices, such as feed lots, are specifically prohibited. Mineral development would be precluded and stipulations to protect water resources would be enforced. Commercial and industrial activities are prohibited, aside from guided hunting for youth, veterans and disabled individuals that may be approved by Colorado Parks and Wildlife (CPW) on Parcel A and the leasing of hunting rights. Disposal of trash, garbage, or other hazardous materials on the parcels is also prohibited by the easements. *Private*, low-impact recreational uses such as hiking, horseback riding, cross-country skiing, hunting, fishing and short-term camping would be permitted on the parcels. The Proponents’ private use of vehicles off roads is permitted only in a manner that does not result in erosion of or compaction to the parcels’ soils, harassment of wildlife, or damage to the natural vegetation, ecosystems or scenic values of the parcels.

The conservation easements for Federal Parcels A and B requires the development of a grazing management plan prepared by a resource professional acceptable to the AVLТ. This grazing management plan must be approved by CPW and may be periodically amended upon approval by the AVLТ in consultation with CPW. The conservation easements on the Federal Parcels also include provisions for management of big game, habitat and vegetation. Finally, the conservation easements include control of noxious weeds and invasive plant species.

Monetary Donation for Future Management of the Non-Federal Parcels

As a component of the Proposed Action, the Proponents have committed to donating \$1.1 million for the long-term management of the Non-Federal Parcels—\$100,000 to cover the BLM’s cost to develop a site-

¹⁷ The size and configuration of Parcel B-1 (a narrow strip of land totaling approximately 1 acre) does not lend to it being placed into a conservation easement.

specific management plan for the Non-Federal Parcels, and \$1 million for their long-term management. The concept behind the \$1 million donation is to provide a permanent endowment, which would provide funds for the management of acquired Non-Federal Parcels into the future.

C. CONNECTED ACTIONS

As defined by 40 CFR §1508.25, “connected actions” are closely related and therefore should be discussed in the same impact statement. Actions are connected if they:

1. Automatically trigger other actions which may require environmental impact statements.
2. Cannot or will not proceed unless other actions are taken previously or simultaneously.
3. Are interdependent parts of a larger action and depend on the larger action for their justification.

There are two connected actions analyzed in this EA (i.e., they would not take place unless the proposed land exchange is approved): the site-specific management plan for the Non-Federal Parcels and a separate agreement resulting from discussions/negotiations between the Proponents and Pitkin County subsequent to scoping. This separate agreement regards future activities on private lands within the Pitkin County portion of the Project Area. All connected actions are analyzed as indirect effects in this EA. Individual resource analyses only discuss components of the connected actions relevant to the resource being analyzed.

SITE-SPECIFIC MANAGEMENT PLAN FOR THE NON-FEDERAL PARCELS

As discussed in the Proposed Action, should the land exchange be approved, the Proponents have agreed to donate \$1.1 million to cover the costs of developing a site-specific management plan for the Non-Federal Parcels as well as for their long-term management. The future, site-specific management plan that would result from the donation is only a concept at this time and therefore it cannot, and will not, be analyzed in detail in this EA. Instead, the site-specific management plan is discussed and analyzed conceptually as a connected action to the Proposed Action.

At this time, it is reasonable to assume that the following resources/topics would be addressed in a future, site-specific management plan for the Non-Federal Parcels should these lands become federally managed:¹⁸

- human presence
- recreational use
- continued grazing

¹⁸ The Red Hill SRMA Management Plan is adjacent to Non-Federal Parcels 1 and provides a justifiable template for how these lands might be managed should the land exchange be approved.

- wildlife habitat
- consistency with Resource Management Plan Land Health Standards

Should the proposed land exchange be approved, public input and collaboration with municipal agencies, such as local governments and CPW, would be a key part of developing a site-specific management plan that would address all BLM planning concerns such as recreation, trail building, public access, wildlife, water rights and usage, among others. The site-specific management plan would be developed within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's strategic plan.

AGREEMENT BETWEEN TWO SHOES AND THE PITKIN COUNTY BOCC

During the scoping period for this EA (which extended from May 7, 2012 to June, 20, 2012), the Pitkin County Board of County Commissioners (BOCC) expressed reservations about whether sufficient public benefit existed to support the proposed exchange. In August 2012, the Pitkin County BOCC directed the Pitkin County Manager to continue discussions with the Proponents. The goal of these ongoing discussions was to improve the public benefits of the proposed land exchange. After several months of productive discussions, the Pitkin County BOCC reached an agreement with the Proponents that meets both parties' goals. As a result of this agreement, Pitkin County's initial concerns with the proposed land exchange have been alleviated; the County formalized its support in a letter to the BLM dated January 22, 2013.

There are three primary components of the agreement between the Proponents and the Pitkin County BOCC:

- Upon approval of the exchange the Proponents have agreed to voluntarily place a conservation easement on two parcels of the existing Two Shoes Ranch within the area known as Potato Bill. These parcels, totaling 365 acres, are owned by the Proponents and are immediately adjacent to Federal Parcel A on the east and west sides. These parcels were identified by the CPW as important winter range for deer and elk, and important cliff habitat for big horn sheep. The conservation easements will recognize the important wildlife values of the land, and will protect the private property from future development.
- The Proponents have ten vested single family development rights acquired during the Crystal Valley Ranch subdivision and approval for an indoor riding arena which, if developed, would have a noticeable visual impact from the Highway 133 visual corridor. Should the proposed land exchange be approved, the Proponents have voluntarily agreed to extinguish the ten vested single family development rights, totaling 50,000 square feet of potential development, which would result in substantial amounts of land remaining undisturbed and undeveloped. The Proponents have also agreed to move the approved indoor riding arena to a less visually prominent location.
- Should the proposed land exchange be approved, Pitkin County would receive a contribution of \$700,000 from the Proponents. This is intended to cover the costs of property acquisition and trail

construction including approximately 10 acres of land needed to create a 1-mile long trail parallel to Prince Creek Road within what is now the Tybar Ranch. Recreational use on Prince Creek Road by bicycles and pedestrians has dramatically increased in the last decade as residents and visitors seek to access The Crown and Hay Park. This trail would improve safety on the Tybar reach of this road (above the bend at the Flying Dog Barn) and would provide safer, managed and legal access for the public to The Crown (via Non-Federal Parcel 2) from the Prince Creek area. Should the County not be successful in obtaining the trail corridor adjacent to Prince Creek Road, the money could be used to improve the Rio Grande Trail connecting the Crystal River Valley with the Roaring Fork Valley or for other open space opportunities in the Crystal River Valley area.

Note that this agreement is separate from, but related to, the exchange application with the CRVFO (i.e., it is not a part of the Proposed Action). The BLM has no involvement with the private agreement between the Pitkin County BOCC and the Proponents, but it is acknowledged that this agreement would not be enforced without BLM approval of the land exchange (the Proposed Action).

D. ALTERNATIVES AND CONCEPTS CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

The following section summarizes suggested alternatives and concepts which were considered but eliminated from detailed analysis, and the rationale for their elimination. Note that alternatives in quotes are repeated verbatim from the scoping comments; all other suggested alternatives are paraphrased.

1) *Transfer BLM parcels to management by the White River National Forest.*

Elimination Rationale: This alternative is beyond the scope of analysis and does not meet the Purpose and Need for Action. Additionally, the parcels are beyond the boundaries of the WRNF and the Forest has stated it has no intention of accepting management of the parcels in official comments submitted on the proposal.

2) *Acquire the Sutey Parcel through a Garfield County open space program.*

Elimination Rationale: This alternative is beyond the scope of analysis and does not meet the stated Purpose and Need for Action. Additionally, no Garfield County open space program currently exists and a recent attempt at creating one was defeated in the most recent local election.

3) *Pitkin County should purchase land for creating parking at The Crown in lieu of the exchange.*

Elimination Rationale: This alternative is beyond the scope of analysis and does not meet the stated Purpose and Need for Action.

- 4) *“Use some of the money to demolish the El Jebel/Eagle county building, so the road can be relocated there instead of through Sopris Village and the Park. Use some of the money to put Marble and the rest of the valley into Garfield County, and move the Eagle County stuff to Pitkin and Garfield from eagle counties.”*

Elimination Rationale: This alternative is beyond the scope of analysis.

- 5) *The land exchange should include preservation of the Windstar Land Conservancy (WLC) Parcel in Snowmass to increase public benefit. “If necessary the 201 acres on Horse Mountain in Eagle (With little public access) could be eliminated from this proposal so the WLC could be included. Including the WLC in the proposal vs. Horse Mountain would therefore make more sense for the WLG in relation to its current land holdings. It would have BLM land (that it purchased) neighboring its ranch—all in Pitkin County.”*

Elimination Rationale: The WLC lands are already protected under conservation easement, and do not adjoin other BLM lands. This alternative is beyond the scope of analysis.

- 6) *“Mr. Wexner would allow a narrow public easement through the parcel so the potential of a trail bisecting it in the future is preserved. Secure that access easement from Prince Creek Road.”*

Elimination Rationale: Numerous concepts for addressing the public’s concerns and minimizing potential resource impacts were explored by the Proponent and BLM. This concept was not acceptable to the Proponent. Furthermore, the BLM does not hold access easements on private land that do not connect to BLM Land.

- 7) *“Give Parcel C to Co. State!”*

Elimination Rationale: This alternative is beyond the scope of analysis and does not meet the stated Purpose and Need for Action.

- 8) *“This underutilized piece of land (Parcel A) could be part of a unique trail loop branching off from the Dinkle Lake trailhead area, going through National Forest land, and descending through the BLM land to Prince Creek. I think the possibility of this trail needs to be considered as it would provide for a varied and unique trail experience close to Carbondale. It would encompass alpine forests and lower scrub oak- creating a loop that is different from anything else nearby. Carbondale has very little high alpine riding nearby. Hay Park is excellent, but does not provide a very good ‘loop’. A new trail in the subject land swap could be incredible.”*

Elimination Rationale: The WRNF Travel Management Plan decommissioned the only trails in this area and the BLM has no plans to add any trails in this area; therefore, this is not a reasonable concept/alternative.

- 9) *“If it is ultimately determined that there is an overriding public benefit to conveyance of the land, we recommend that the land first be offered to all other public agencies through the Recreation and Public Purposes Act (R&PP), or for sale at fair market value if R&PP is not applicable, or for land exchange amongst public agencies to consolidate administration.”*

Elimination Rationale: The R&PP authorizes the sale or lease of BLM managed lands for recreational or public purposes to State and local governments and to qualified nonprofit organizations.

None of the other federal or local agencies (WRNF, Pitkin County, etc.) have expressed interest in securing a R&PP lease for any of the Federal Parcels.

Finally, this concept does not meet the Purpose and Need for Action, as it would not provide for funds to purchase Non-Federal Parcels 1 or 2.

- 10) *Avenues, such as acquisition of an access easement or eminent domain, may be available to the BLM to provide public access to Parcel “A.”*

Elimination Rationale: This alternative is beyond the scope of analysis as the BLM does not have the authority to invoke eminent domain at the level of decision on this project.

- 11) *Inclusion of a trail easement along the former route of the Crystal River Railroad (on the “Dodd parcel” recently acquired by the Wexner family) for the purpose of developing an extension of the Crystal River trail.*

In specific, one comment suggested: “We would like to support Pitkin County Open Space and Trails request for a trail easement on the east banks of the Crystal River from Nettle Creek Bridge to the former BLM parcel #79. This easement was identified as the priority route in the Crested Butte to Carbondale Trail Feasibility Study by Tom Newland in 2004. This trail is a legacy project of both the Gunnison County Trails Commission and Pitkin County Open Space and Trails.

“The alternative to sending trail users along the Highway 133 right-of-way is unacceptable for a safe route. The intension of this trail experience is to provide users a safe and pleasurable route that showcases their surroundings and encourages use.”

Elimination Rationale: This alternative is beyond the scope of analysis and does not meet the Purpose and Need for Action. Additionally, the Newland Trail Feasibility Study explicitly states “None of the various alignments described in the plan are preferred or favored over another. Alignments shown as crossing private lands rely on the willingness of the landowners as a requisite to be considered.”¹⁹

¹⁹ Newland Project Resources, 2004 p. 3

12) Acquire the parcels through Land and Water Conservation Fund appropriations or other public/private financing options.

Elimination Rationale: The Land and Water Conservation Fund (LWCF), passed in September 1964, allowed Congress to appropriate funding to acquire lands within specifically designated units managed by the BLM, National Park Service, U.S. Fish and Wildlife Service, and U.S. Forest Service. Within the BLM, these funds are primarily targeted to units of the National Landscape Conservation System, ACECs, and special recreation management areas.²⁰ In an attempt to address a growing backlog of LWCF projects, the BLM has limited the fiscal year (FY) 2014 process (the next available funding cycle for LWCF) to 48 eligible projects. Acquisition of the Non-Federal Parcels included in the Sutey Ranch Land Exchange was not included in the eligible projects.²¹ In addition, the typical BLM LWCF projects are generally much larger in scale (7,500 to 272,000 acres) than these acquisitions would be and it is unlikely they would rank high enough on a national scale to receive LWCF funding. Even with the maximum amount of all available grants (including LWCF), the only way to purchase the Non-Federal Parcels 1 or 2 for public benefit would be to raise millions of dollars from local governments and private individuals. The BLM has determined that this approach is unrealistic.

13) “The BLM should fully consider the reservation of public rights in the exchange parcels, including hiking, hunting and other recreation.”

Elimination Rationale: Maintaining public recreational opportunities, including hiking and hunting, on the Federal Parcels would interfere with the private ranch management of these parcels, is not an acceptable term of exchange for the Proponents, and would not meet the Purpose and Need of the Proposed Action. Hence, this stipulation would cause the BLM to lose the opportunity to acquire the Non-Federal Parcels. For this reason, the retention of recreational rights on these parcels is not included as part of the Proposed Action. In addition, the land exchange has been designed to compensate for the loss of public rights on the Federal Parcels with two Non-Federal Parcels, which would be open to public use and include numerous recreational opportunities.

E. PLAN CONFORMANCE REVIEW

The Proposed Action is subject to, and has been reviewed for conformance with, the Glenwood Springs RMP, which was originally approved in 1984 and revised in 1988. A revision and update of the 25-year-old RMP is in progress with the revised/draft RMP and EIS released in September 2011.

²⁰ USDOJ BLM, 2012b

²¹ USDOJ BLM, 2012c

Both the 1988 and revised/draft RMPs provide management direction in the form of “Decisions.” Decisions in RMPs guide future land management actions and subsequent site-specific implementation decisions. These Decisions fall into two categories:

1. Desired outcomes (goals and objectives)
2. Management actions and allowable uses to achieve outcomes

Although both the 1988 and revised/draft RMPs provide management direction for the full range of resources and activities on BLM lands managed out of the CRVFO, only Decisions as related to land tenure adjustments are reviewed in the following section. Conformance with the Colorado Standards for Public Land Health (discussed below), which amended the RMP for each field office in the state, is also reviewed below.

GLENWOOD SPRINGS RESOURCE MANAGEMENT PLAN, AS REVISED IN 1988

The original Glenwood Springs RMP was approved in January 1984 and revised in June of 1988. Decisions related to land tenure adjustments are found on pages 39 and 40 of the Record of Decision and 1988 RMP. The decision language for land tenure adjustments is as follows:

Objective: To increase overall efficiency and effectiveness of public land management by identifying public land suitable for disposal through public sale (Category I lands) and suitable for continued management under multiple use concepts (Category II lands).²²

Planned Management Actions:

- Manage 15,500 acres as Category I lands suitable for disposal through sale, exchange, State selections, and Recreation and Public Purpose Act purchases.
- Manage 550,542 acres as Category II lands, the land base to be managed under multiple use principles, which is not suitable for disposal through public sale. On a case-by-case basis, disposal of category II lands would be considered through exchange, boundary adjustment, State selection, Recreation and, Public Purpose Act purchase, or other appropriate statutory authority, providing such disposal is consistent with management efficiency and effectiveness under multiple use principles for the specific area.
- Manage 62,780 acres of Category II lands as cooperative management areas where multiple use principles are influenced by other adjacent or interested governmental agencies. Cooperative management areas can be managed through cooperative agreements, memorandums of

²² USDOJ BLM, 1988 p. 39

understanding, or withdrawals. They can also be exchanged with other government agencies if exchange best meets management objectives and public needs.²³

Priorities of Implementation: Appendix D of the 1988 RMP outlines management considerations to be used in retention zones. Following are the priorities for disposal.

Priority 1. Parcels within or adjacent to existing or approved residential development on private land.

Priority 2. Parcels with the fewest encumbrances- grazing leases, mining claims, and the like.

Priority 3. Parcels where an offering would result in other public benefits.

Priority 4. Parcels where disposal would result in resolution of existing trespass.

Priority 5. Parcels where interest has been expressed and those most likely to result in a consummated sale.²⁴

Conformance of the Proposed Land Exchange with the 1988 RMP

The BLM has determined that the Proposed Action is consistent with the land tenure adjustment Decision set forth in the 1988 RMP Record of Decision. The Federal Parcels have been identified as suitable for exchange, and the Non-Federal Parcels meet the acquisition criteria specified in the 1988 RMP. The proposed exchange would accomplish one of the 1988 RMP's objectives (discussed previously) of increasing the overall efficiency and effectiveness of public land management.

Federal Parcels B, B-1, C, D and E are listed as Category I (disposal) lands. Therefore, the exchange of these parcels is consistent with the 1988 RMP. While Parcel A is not identified as a Category I land, disposal of it is consistent with the exceptions outlined in Appendix D of the 1988 RMP that allows the disposal of federal land in a retention zone (Class II) through land exchanges where the public value of the land that is acquired meets or exceeds the public value of the land that is disposed of. The Non-Federal Parcels have non-monetary resource values (i.e., recreation, habitat, watershed etc.) that are of *public value*, as discussed throughout this EA. Furthermore, Parcel A meets both the suitability and priority criteria set forth by the 1988 RMP for public lands in designated disposal zones:²⁵

- It is an isolated land parcel;
- It is difficult to manage such as having no access;
- It is adjacent to residential development on private land;²⁶

²³ Ibid.

²⁴ Ibid. p. 40

²⁵ USDOJ BLM, 1988 pp. 55–56

²⁶ Parcel A is immediately adjacent to the Prince Creek Subdivision (20 homes) on the northern boundary.

- It has few encumbrances;
- The exchange is expected to result in substantial public benefit;
- Existing trespass on Non-Federal Parcel 2 would be resolved; and
- Interest has been expressed and a consummated exchange is likely.

Conformance of the Proposed Land Exchange with the CRVFO Draft RMP

The BLM is currently in the process of revising the existing RMP covering the CRVFO (a draft EIS was released in September of 2011 and included analysis of four alternatives). Although the draft RMP is not currently in effect, the BLM has determined the proposed land exchange would not preclude any actions/management activities contemplated in any of the alternatives that are currently being analyzed in the draft EIS. The draft RMP would allow for disposal of retention lands through exchange where “such disposal is consistent with management efficiency and effectiveness under multiple use principles for the specific area.”²⁷ This concept is further explored in Chapter 1 Section I – Non-Issues.

BLM COLORADO PUBLIC LAND HEALTH STANDARDS

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands. The Colorado Standards for Public Land Health are as follows:²⁸

Standard 1: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.

Standard 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods.

Standard 3: Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat’s potential.

Standard 4: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Standard 5: The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado.

²⁷ USDO I BLM, 2011 p. 4-483

²⁸ USDO I BLM, 1997 pp. 6–7

Conformance of the Proposed Land Exchange with Public Land Health Standards

Standard 1

The Federal Parcels are currently meeting Standard 1. As private lands, the Non-Federal Parcels have not been a part of the Land Health Assessments, but as a whole, Parcels 1 and 2 are likely meeting the intent of Standard 1. The conservation easements and site-specific management plan that would be implemented with the Proposed Action are expected to maintain or improve conformance with the standard. Standard 1 is discussed in greater detail in Chapter 3 Section S – Soils.

Standard 2

On the whole, the Federal Parcels are currently meeting Standard 2. However, portions of Thomas Creek within Federal Parcels A and B was found not to be meeting Standard 2. Through both voluntary and required actions on behalf of the BLM and grazing permittees the creek is moving towards meeting Standard 2.²⁹ As private lands, the Non-Federal Parcels were not included in the Land Health Assessments. However, based on the heavy livestock grazing that eliminated nearly all of the vegetation around the spring/seep discharge that drains to the Tributary to Cattle Creek, Standard 2 is not being met for this portion of the riparian/wetland habitat on Parcel 1. The remainder of the riparian habitat along the ephemeral stream channel is likely meeting the standard. The only riparian/wetland habitat present on Parcel 2 is associated with the Prince Ditch. Standard 2 does not apply to irrigation ditches. The acquisition of the Non-Federal Parcels by the BLM would provide the opportunity to manage livestock grazing and other activities in a manner that promotes the achievement of Standard 2. Standard 2 is discussed in greater detail in Chapter 3 Sections L – Wildlife and Q – Wetlands, Floodplains and Riparian Zones.

Standard 3

The Federal Parcels are currently meeting Standard 3. As private lands, the Non-Federal Parcels have not been a part of the Land Health Assessments, but as a whole, Parcels 1 and 2 are likely meeting the intent of Standard 3. The conservation easements and site-specific management plan that would be implemented under the Proposed Action are expected to maintain or improve conformance with the standard. Standard 3 is discussed in greater detail in Chapter 3 Sections L – Wildlife and M – Plants.

Standard 4

The Federal Parcels are currently meeting Standard 4 for special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities. As private lands, the Non-Federal Parcels have not been a part of the Land Health Assessments, but as a whole, Parcels 1 and 2 are likely meeting Standard 4. The conservation easements and site-specific management plan that would be implemented under the Proposed Action are expected to maintain or

²⁹ BLM, 2012d

improve conformance with the standard. Standard 4 is discussed in greater detail in Chapter 3 Sections L – Wildlife and M – Plants.

Standard 5

The Federal Parcels are currently meeting Standard 5. As private lands, the Non-Federal Parcels have not been a part of the Land Health Assessments, but as a whole, Parcels 1 and 2 are likely meeting the intent of Standard 5. The conservation easements and site-specific management plan that would be implemented under the Proposed Action are expected to maintain or improve conformance with the standard. Standard 5 is discussed in greater detail in Chapter 3 Section P – Water Quality.

F. RELATIONSHIP TO STATUTES, REGULATIONS, OTHER PLANS

COUNTY LAND USE AND ZONING

The Non-Federal Parcels (Parcels 1 and 2) are subject to county land use and zoning regulations, as appropriate. Parcel 1 is subject to Garfield County land use and zoning regulations and Parcel 2 is subject to Pitkin County land use and zoning regulations.

Parcel 1 has a zoning designation of Rural. Uses allowed by right include agriculture (farms/ranches/nursery), recreation (hunting/fishing/outfitters), pipelines, and rural residential (single-family/accessory) dwelling units. As private land, the approximately 557-acre Parcel 1 could be developed using Colorado’s use-by-right development statutes at one home per 35 acres, equating to 15 homes on the parcel without any further County approval or restriction. If the parcel were to be subdivided through the Garfield County Subdivision Review Process, the Rural zone requires a minimum lot size of 2 acres, potentially allowing Parcel 1 to be subdivided into as many as 278 buildable lots. However, the Garfield County Comprehensive Plan suggests a maximum density of 6 to 10 acres per dwelling unit in this area, primarily due to the lack of public water and sewer service. It is more likely that a subdivision with a maximum gross density of 6 to 10 acres per dwelling unit, or 55 to 92 total homesites, which would comply with the comprehensive plan would receive a recommendation of approval from the planning staff.³⁰

Parcel 2 is zoned as RS-30 (Resource-30 Acre) by Pitkin County. The intent of this zone is to protect natural resources and agriculture while allowing some low density residential development. Uses allowed by right include ranching, farming, single-family dwellings, accessory structures, farm buildings, trails, silviculture, horse boarding, bed-and-breakfasts, bus stops, home day care, minor public utilities, home occupation, and camping areas. Minimum lot area for subdivision purposes in the RS-30 district is 30 acres. Only one single-family dwelling unit is permitted per buildable lot, with a maximum allowable floor area of 15,000 square feet. Hence, either Colorado’s use-by-right development statutes or the RS-30 zoning regulations could provide for three homesites to be developed on this 111.8-acre parcel. Since

³⁰ Garfield County, 2012a

Parcel 2 was created prior to January 10, 2000 and is privately owned, it qualifies for one residential exemption to the Pitkin County Growth Management Quota System (GMQS). The parcel would have to compete in the Pitkin County GMQS to obtain additional allotments (beyond one vested unit).³¹ It is important to note that Pitkin County does not recognize a development right for lands leaving federal ownership.

If the proposed land exchange were to be approved, the six Federal Parcels would be subject to Pitkin and Eagle county land use and zoning regulations. Parcels A, B and B-1 would be governed by Pitkin County land use and zoning regulation; however, all residential, commercial and mineral development on the parcels would be precluded by the conservation easements, discussed above. Similarly, Parcels C, D and E would be governed by Eagle County land use and zoning regulation and development would also be restricted by conservation easements.

RED HILL SPECIAL RECREATION MANAGEMENT AREA

The Red Hill SRMA lies immediately west and south of Non-Federal Parcel 1. It was designated by the BLM in 1999 and is managed through a partnership with a local non-profit organization, the Red Hill Council, under the 1999 Red Hill SRMA Implementation Plan. This area is managed to preserve the scenery surrounding Carbondale and to allow for recreation, primarily biking, hiking and horseback riding, while addressing the associated resource impacts of recreational use.³² The area is managed primarily for local use and is not marketed regionally or nationally.³³

The Red Hill SRMA contains 12 trails totaling approximately 19 miles. Although it is primarily local use, the area receives over 55,000 visitor days per year.³⁴ The 1999 SRMA Implementation Plan provides for the following prescriptions:³⁵

- Establishment of the area for non-motorized use.
- Winter closure of large sections of Red Hill to bicycle use for wildlife protection.
- A prohibition of surface occupancy for mineral extraction.
- A restriction for bicycles to stay on designated routes.
- Execution of a Memorandum of Understanding between BLM and the Red Hill Council.
- Protection of wildlife by requiring all dogs to be leashed.
- A prohibition of parking on County Road 107.
- A prohibition on crossing adjacent private property.

³¹ Pitkin County, 2012a

³² USDOJ BLM, 1999 p. ii

³³ Red Hill Council, 2012

³⁴ USDOJ BLM, 2012a

³⁵ USDOJ BLM, 1999 pp. 1–9

- Installation of interpretive signage at/near trailheads.
- Initiation of educational efforts to keep visitors on designated routes and away from private property.
- Utilization of regular law enforcement patrols at access points, infrequent patrolling of interior areas.
- Retention of the existing characteristic landscape.

The 1999 SRMA Implementation Plan specifically identifies the following management action relevant to the proposed land exchange: “Investigate and attempt to secure alternative access points to the Red Hill SRMA. Partners will work together as opportunities arise. Communications with landowners critical, grant funding and matching funds critical. Partners will coordinate on negotiations to acquire access.”³⁶ The proposed land exchange could provide the opportunity to create an alternative access point to the Red Hill SRMA.

³⁶ Ibid. p.7

3. AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Chapter 3 provides a description of the existing human, physical and biological resources throughout the Analysis Area, and presents comparative analyses of the direct, indirect and cumulative effects on those resources.

Each section in Chapter 3 is organized according to the following headings:

SCOPE OF ANALYSIS

For each resource analyzed in detail in Chapter 3, the Scope of Analysis is defined. The Scope of Analysis varies by resource (e.g., it is not the same for recreation resources and wildlife), and in some cases, is larger than the Project Area. Background information regarding the resources analyzed or the nature of the analysis is also provided under the Scope of Analysis heading.

AFFECTED ENVIRONMENT

The Affected Environment defines the existing conditions for a particular resource. The Affected Environment provides the baseline conditions for which the effects of the No Action and Proposed Action alternatives are analyzed and disclosed.

ENVIRONMENTAL EFFECTS

An environmental effect is defined as a modification of, or change in, the Affected Environment brought about by an action. Effects can vary in degree, ranging from only a slightly discernible change to a drastic alteration in the environment. Effects can be direct, indirect, or cumulative in nature. For this environmental analysis, the following definitions of direct, indirect and cumulative effects are used:

- *Direct effects* are caused by the action and occur at the same time and place.³⁷ *For the purposes of this analysis, direct effects are related to the change in ownership of federal and private lands (and subsequent management) and the \$1.1 million donation that is included in the Proposed Action for the future management of the Non-Federal Parcels.*
- *Indirect effects* are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the patterns of land use, population density, or growth rate, and related effects on water and air and other natural systems, including ecosystems.³⁸ *For the purposes of this analysis, indirect effects are disclosed for the conservation easements that would*

³⁷ 40 CFR 1508.8(a)

³⁸ 40 CFR 1508.8(b)

be placed on the Federal Parcels included in the Proposed Action and for two connected actions to the Proposed Action: 1) the future, site-specific management plan that would be prepared for the Non-Federal Parcels as a result of the \$1.1 million donation; and 2) the agreement between the Proponent and Pitkin County for future activities on existing private lands in the Project Area. Individual resource analyses only discuss components of the connected actions relevant to the resource being analyzed.

- *Cumulative effects* are the impacts to the environment that result from the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.³⁹ Reasonably foreseeable future actions include activities, developments, or events that have the potential to change the physical, social, economic, and/or biological nature of a specified area. Existing activities, projected activities directly associated with a proposed action, and other reasonably foreseeable future actions provide the basis for defining and analyzing cumulative impacts. To be a cumulative effect, it must overlap in space and time with the direct and indirect effects of the action.

Chapter 3 Section T – Cumulative Effects includes discussions of cumulative effects on a resource-by-resource basis as well as additional information on past, present and reasonably-foreseeable future land exchanges in the three-county Analysis Area.

The cumulative effects analysis in Chapter 3 Section T considers the direct and indirect effects of the Proposed Action in the context of 41 other land exchanges identified in the cumulative effects Analysis Area. National direction regarding land exchanges (i.e., FLMPA), requirements and resource protections placed on lands entering federal ownership in the 41 identified exchanges, the effects of an exchange on lands leaving federal ownership in the 41 identified exchanges and the overall effect of the 41 identified exchanges on public land ownership/management is considered. Specific details of the cumulative effects to each resource analyzed in this EA are also discussed.

³⁹ 40 CFR 1508.7

A. REALTY AUTHORIZATIONS

SCOPE OF ANALYSIS

The 1988 Glenwood Springs RMP provides direction related to realty authorizations on BLM lands. The objective for managing the BLM's lands and realty is "To increase overall efficiency and effectiveness of public land management by identifying public land suitable for disposal through public sale (Category I lands) and suitable for continued management under multiple use concepts (Category II lands)."⁴⁰

The planned management actions identified in the RMP for realty authorizations are as follows:⁴¹

- Manage 15,500 acres as Category I lands suitable for disposal through sale, exchange, State selections, and Recreation and Public Purpose Act purchases.
- Manage 550,542 acres as Category II lands, the land base to be managed under multiple use principles, which is not suitable for disposal through public sale. On a case-by-case basis, disposal of Category II lands would be considered through exchange, boundary adjustment, State selection, Recreation and, Public Purpose Act purchase, or other appropriate statutory authority, providing such disposal is consistent with management efficiency and effectiveness under multiple use principles for the specific area.
- Manage 62,780 acres of Category II lands as cooperative management areas where multiple use principles are influenced by other adjacent or interested governmental agencies. Cooperative management areas can be managed through cooperative agreements, memorandums of understanding, or withdrawals. They can also be exchanged with other government agencies if exchange best meets management objectives and public needs.

The priorities for disposal, as identified in the RMP, are as follows:⁴²

Priority 1. Parcels within or adjacent to existing or approved residential development on private land.

Priority 2. Parcels with the fewest encumbrances- grazing leases, mining claims, and the like.

Priority 3. Parcels where an offering would result in other public benefits.

Priority 4. Parcels where disposal would result in resolution of existing trespass.

Priority 5. Parcels where interest has been expressed and those most likely to result in a consummated sale.⁴³

⁴⁰ USDO I BLM, 1988

⁴¹ Ibid.

⁴² Ibid.

⁴³ Ibid.

The Analysis Area for this realty authorization analysis includes both the Federal and Non-Federal Parcels.

AFFECTED ENVIRONMENT

Federal Parcels

The legal description of each Federal Parcel is provided in Table 3A-1, below. Refer to Figure 1 for parcel locations. Figures 3 and 4 provide additional detail of the Federal Parcels.

**Table 3A-1:
Legal Description of Federal Parcels Involved in the Exchange**

Parcel	County	Legal Description	Acres
Federal Parcels			
A	Pitkin	T. 8 S., R. 88 W., Sixth Principal Meridian, sec. 23, N½NE¼ and SE¼NE¼; sec. 24, W½; sec. 25, NW¼, N½SW¼, and SW¼SW¼; sec. 26, S½S½; sec. 35, W½, and sec. 36, NW¼NW¼	1,240
B	Pitkin	T. 8 S., R. 87 W., Sixth Principal Meridian, sec. 31, Tract 86, lots 10, 11, and 12, and sec. 31, lots 9 and 13	28.37
B-1	Pitkin	T. 8 S., R. 87 W., Sixth Principal Meridian, sec. 31, lots 5 and 8	1.0
C	Eagle	T. 5 S., R. 83 W., Sixth Principal Meridian, sec. 30, lots 5 to 8, inclusive, lot 10, lot 13, and SE¼NW¼. T. 5 S., R. 84 W., sec. 25, lot 10	171.26
D	Eagle	T. 5 S., R. 83 W., Sixth Principal Meridian, sec. 30, lot 9	17.41
E	Eagle	T. 5 S., R. 84 W., Sixth Principal Meridian, sec. 36, lots 2, 3, and 4	11.97

Federal Parcel A is identified in the 1988 RMP as Category II (retention) lands. Federal Parcels B, B-1, C, D and E are shown on the Land Tenure Adjustments Map (RMP Map 14) as Category I (disposal) parcels (parcel numbers 81, 82, 117, and 118 respectively; parcels C and D are both counted as parcel number 117).

As of 2012, the CRVFO manages approximately 11,100 acres of Category I (disposal) lands and approximately 494,000 acres of Category II (retention) lands. This is a result of land tenure adjustments since the drafting of the 1988 Glenwood Springs RMP.

Non-Federal Parcels

The legal description of each Non-Federal Parcel is provided in Table 3A-2, below. Refer to Figure 1 for parcel locations. Figures 2 and 3 provide additional detail of the Non-Federal Parcels. The Non-Federal Parcels are not specifically identified in the Glenwood Springs RMP for acquisition by the BLM.

**Table 3A-2:
Legal Description of Non-Federal Parcels Involved in the Exchange**

Parcel	County	Legal Description	Acres
Non-Federal Parcels			
1	Garfield	T. 7 S., R. 88 W., Sixth Principal Meridian, sec. 14, a tract of land in lots 1 and 2 described by metes and bounds; sec. 15, lots 1, 2, 6 through 12, inclusive, 15, and 16, and sec. 16, lot 8 <i>Parcel 1 includes approximately 2.25 cfs of ditch water rights, in the form of 12 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 051, and 1.33 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 055 decreed to the Park Ditch and Reservoir Company, and 50 acre feet of water storage rights.</i>	556.6
2	Pitkin	T. 8 S., R. 88 W., Sixth Principal Meridian, sec. 24, a parcel in the E $\frac{1}{2}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ W $\frac{1}{2}$ NE $\frac{1}{4}$, and NE $\frac{1}{4}$ SE $\frac{1}{4}$ lying northeast of the centerline of Prince Creek Road as described by metes and bounds	111.8

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Selection of the No Action Alternative would maintain the current land management/ownership of the Federal and Non-Federal Parcels.

Direct and Indirect Effects

Federal Parcels

As Category II lands, retention of Parcel A through the selection of the No Action Alternative would be consistent with direction from the RMP. Federal Parcels B, B-1, C, D and E are designated as Category I (disposal) lands by the Glenwood Springs RMP, and selection of the No Action Alternative not preclude them from disposal in future land tenure adjustment proposals (e.g., sales, land exchanges, etc.), contingent upon future site-specific NEPA analysis and approval.

Non-Federal Parcels

The Non-Federal Parcels are not specifically identified in the 1988 Glenwood Springs RMP for acquisition.

Alternative 2: Proposed Action

The Proposed Action is consistent with the land tenure adjustment direction set forth in the 1988 RMP.

Direct Effects

The Proposed Action would exchange approximately 1,470 acres of federal land for approximately 668 acres of non-federal land. In Eagle County, 200 acres of BLM lands would be transferred into private ownership. In Garfield County, 557 acres of private lands would be transferred into federal ownership. In Pitkin County, 1,269 acres of BLM lands would become private and 112 acres of private land would come under BLM management, providing a net loss of public lands in the county of 1,157 acres.

Federal Parcels

Federal Parcels B, B-1, C, D and E are listed as Category I (disposal) lands and are therefore suitable for exchange. The Proposed Action would accomplish the RMP's objective (discussed previously) of increasing the overall efficiency and effectiveness of public land management. Disposal of Parcel A is consistent with the exceptions outlined in Appendix D of the RMP that allows for the disposal of federal land in a retention zone (Category II) through land exchanges where the public value of the land that is acquired meets or exceeds the public value of the land that is disposed of. The Non-Federal Parcels have non-monetary resource values (i.e., recreation, habitat, watershed etc.) that are of *public value*, as discussed throughout this EA.

Parcel A meets both the suitability and priority criteria set forth by the 1988 RMP for public lands in designated disposal zones:⁴⁴

- It is an isolated land parcel;
- It is difficult to manage such as having no access;
- It is adjacent to residential development on private land;
- It has few encumbrances;
- The exchange is expected to result in substantial public benefit;
- Existing trespass on Non-Federal Parcel 2 (West Crown) would be resolved; and
- Interest has been expressed and a consummated exchange is likely.

The Proposed Action would remove 1,240 acres (Parcel A) and add 668.4 acres (Parcels 1 and 2) of Category II (retention) lands to the CRVFO, resulting in a 0.12 percent decrease in Category II lands. Approximately 230 acres of Category I (disposal) lands (Parcels B, B-1, C, D and E) would be exchanged, reducing the amount of Category I lands in the CRVFO by 2.1 percent.

Non-Federal Parcels

Although the 1988 RMP does not directly address land acquisitions, the two Non-Federal Parcels are surrounded by BLM lands that are identified as retention zones (Category II). Both Non-Federal Parcels 1 and 2 would increase manageability of adjacent public lands. Both parcels meet several of the

⁴⁴ Ibid.

considerations for determining land tenure adjustments that are outlined in Appendix D of the RMP, including consolidating public lands, providing better access to other public lands, and having valuable resources for BLM programs.

The costs of creating a management plan for the Non-Federal Parcels would be offset by the \$1.1 million dollar donation for their long-term management that is included in the Proposed Action. This is further discussed below under Indirect Effects.

Indirect Effects

Conservation Easements on the Federal Parcels

The conservation easements that would cover the Federal Parcels A, B, C, D and E under the Proposed Action limit development on the parcels, but do not indirectly affect realty authorizations on the CRVFO.

Site-Specific Management Plan for the Non-Federal Parcels

As an indirect effect of the proposed land exchange, future management of the Non-Federal Parcels by the BLM would be determined through the development of a site-specific management plan within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's current RMP.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between the Proponents and the Pitkin County BOCC does not indirectly affect realty authorizations on the CRVFO.

B. ACCESS AND TRANSPORTATION

SCOPE OF ANALYSIS

As the West was developed and settled, some federal land held in the public domain was transferred to private ownership through homesteading, mining claims, railroad grants and numerous other means. In many cases, this has created an intermingled mosaic of public and private land ownership. In addition, public lands are managed by several federal and state agencies and local governments, further complicating ownership and access issues. Under Colorado law, it is unlawful to enter private lands without permission of the landowner. Colorado law does not require private lands to be marked, fenced or posted in any manner. Depending on the circumstances, trespass in Colorado may be prosecuted as a misdemeanor or as a felony. Legal access to federal land is provided by a system of public and agency roads and trails. Public roads are intended to meet the transportation needs of the public user. Generally, a public road is any federal or state highway or county road administered by the state or county. BLM and USFS roads and trails are maintained for the administration and use of federal lands.

It is important to note that land management agencies do not always have legal rights-of-way on all access roads or trails entering federal lands. As the proposed land exchange involves the transfer of ownership between the BLM and private entities, it is important to understand the implications of the proposal in the context of access to public lands, potential impacts to the surrounding transportation systems and parking in and around federal lands.

The Analysis Area for this access and transportation assessment is limited to the Federal and Non-Federal Parcels (and adjacent land managed by the BLM and Forest Service) and the transportation systems that provide access to them.

AFFECTED ENVIRONMENT

Existing and Historical Legal Access

Federal Parcels

Parcel A

Federal Parcel A is surrounded by the Proponents' Two Shoes Ranch on the east and west sides, private land (the Prince Creek Subdivision) to the north and the White River National Forest (WRNF) to the south. The private Two Shoes Ranch lies between Colorado State Highway 133 on the west and Prince Creek Road (CR 5) on the east (refer to Figure 3). Federal Parcel A is approximately 350 feet from Prince Creek Road, but there is no legal, motorized public access to this parcel. The only legal public access to the parcel is from the WRNF on the southern border of the parcel where the topography is steep. There are no designated Forest Service or BLM roads or trails in the vicinity.

Although some user-created trails (unsanctioned trails that have been built, and used by, the public) have been cleared and marked leading into Parcel A from the south in the WRNF, these trails are not part of the WRNF or CRVFO long-term trail system and are not included in the WRNF or CRVFO Travel Management Plan. The BLM has no existing or proposed roads or trails on Parcel A or within the vicinity.

Thomas Road/Lewis Lake Road (branching off of Colorado Highway 133 south of the intersection with Prince Creek Road) and an internal access road (originating at the intersection of Prince Creek Road and West Sopris Creek Road [CR 6] leading to St. Johns Reservoir) are also within the vicinity of Parcel A (refer to Figure 3). Although unofficial sources (e.g., Google Maps) show these roads as active, they are private roads that are not open to the public. Neither road is listed in the BLM or WRNF travel management planning, nor are they listed as county roads by Pitkin County. No Revised Statute (RS) 2477 claims on Thomas Road/Lewis Lake Road or the internal access road have been asserted by Pitkin County.⁴⁵

The private Thomas Road/Lewis Lake Road leads into approximately 18 miles of motorized routes on Parcel A, including ATV trails, two-tracks and unimproved dirt ranch roads. These routes are open for motorized use by the BLM and the grazing permittee for administrative, management and grazing purposes only. (Note: motorized access to these routes requires crossing private lands owned by the Proponent, and using roads that are part of a private ranching system.) These routes are not part of the BLM's travel management system; however, if Parcel A is accessed by foot (the only legal public access to Parcel A is a circuitous, non-motorized route from the WRNF on the more remote southern border of the parcel, where the topography is steep and involves off trail travel and the use of game trails and user-created trails) these routes may be used by the public for non-motorized and non-mechanized use. These routes are primarily used for cattle and range management. The condition and use level of these routes varies greatly, with some receiving somewhat regular use during the grazing season while others are rarely used and are barely discernible in the field. There are no County roads with legal public access on the parcel.⁴⁶ Although some user-created trails (unsanctioned trails that have been built, and used by, the public) have been cleared and marked leading into Parcel A from the south in the WRNF, these trails are not part of the WRNF or CRVFO long term trail system and are not included in the WRNF or CRVFO Travel Management Plan. The BLM has no official (i.e., part of the travel management system) existing or proposed roads or trails on Parcel A or within the vicinity.

In 1917, the Secretary of the Interior signed Stock Driveway Withdrawal No. 5, which reserved portions of Parcel A for use by the general public as a stock driveway. However, Public land Order 6218 revoked all stock driveways in the State of Colorado in 1982, thus terminating stock driveway No. 5.⁴⁷

⁴⁵ Pitkin County, 2012b

⁴⁶ Ibid.

⁴⁷ 47 Federal Register 53 (18 March 1982) p. 11670

Public use of Parcel A is relatively low given the difficult access and lack of trails and established recreation activities.

Parcels B and B-1

Parcels B and B-1 are isolated federal lands comprised of 28 acres and 1 acre, respectively. The Two Shoes Ranch borders Parcel B on its north and west sides while Parcel B-1 is completely surrounded by the ranch (refer to Figure 3). Neither parcel is legally accessible by road although the southern and eastern boundaries of Parcel B adjoin the WRNF. Thomas Creek Ditch Road (FSR 311W.1A) crosses National Forest System land and terminates at the southern border of Parcel B. However, Thomas Creek Ditch Road is managed by the WRNF under a Special Use Permit and is closed to public motorized and mechanized use. No other BLM or Forest Service roads or trails are located within the vicinity of Parcels B and B-1. Parcel B-1 is completely surrounded by private lands and there is no public access to the parcel.

Public use of Parcels B and B-1 is low given the difficult access and lack of trails and established recreation activities.

Access to Mount Sopris

Although Parcels A, B and B-1 lie at the foot of the iconic backdrop Mount Sopris, they do not currently provide access to the summit because each of the Parcels is bordered by private land north and/or south of them. The primary legal public access to Mount Sopris is provided via the Mount Sopris Trail on the WRNF. The trailhead for this trail is located at Dinkle Lake (refer to Figure 3). Access to Mount Sopris is also provided off of Avalanche Creek Road.

Parcels C, D and E

Parcel C is located on the western side of Horse Mountain about 6 miles southeast of the Town of Eagle. Although a four-wheel drive road originates at the base of the mountain on private land along Bruce Creek Road and crosses back and forth between Parcel C and adjacent patented mining claims, the parcel has no legal access (refer to Figure 4).

Parcel D comprises 17 acres on the southwest toe of Horse Mountain. It is separated from Parcel C by a group of patented mining claims. Bruce Creek Road provides legal public access to this parcel (refer to Figure 4), but public use appears to be limited due to its small size. A network of old, decommissioned mine-related roads is present on Parcels C and D.

Located about a quarter mile south of Parcel D along the township boundary, Parcel E is a 12-acre, narrow three-quarter-mile wide sliver of federal land. The private Lady Belle Ranch lies on its east and north sides with State Land Board property on its west, and the WRNF adjacent to its 150-foot wide southern boundary. Porphyry Road (FSR 435.1) crosses Parcel E (refer to Figure 4), but this portion of the road is decommissioned and does not allow public access.

Public use of Parcels C, D and E is relatively low given the difficult access and lack of trails and established recreation activities.

Non-Federal Parcels

Non-Federal Parcel 1 (Sutey Ranch) is adjacent to BLM's Red Hill SRMA about 2 miles north of Carbondale. Access to Parcel 1 is provided from Highway 82 via Cattle Creek Road (CR 113) and Crystal Springs Mountain Road (CR 112) which crosses the northeast corner of the parcel (refer to Figure 2). Parcel 1 also has foot and horse access to the Red Hill SRMA on the southern and western borders.

Non-Federal Parcel 2 (West Crown) is located 5 miles southeast of Carbondale on the west side of BLM lands known as The Crown. Prince Creek Road (discussed above) provides direct motorized access to Parcel 2 (refer to Figure 3). User-created trails exist on the parcel and lead into The Crown's trail network, providing extensive, non-motorized access to BLM lands.

Although The Crown can be accessed from the east, a popular public access point is through Parcel 2 and Prince Creek Road. As no public access easement is secured on Parcel 2, public use of the parcel to reach The Crown is provided at the option of the private landowner (the Proponents) and could legally be rescinded at any time."

Parking

There are currently no public parking areas on or adjacent to the Federal Parcels and no known parking issues exist in relation to these parcels. Both of the Non-Federal Parcels, however, are adjacent to BLM recreation areas that are currently experiencing some parking issues. Parcel 1 is adjacent to the Red Hill SRMA, which receives over 55,000 visitor use days per year. Parking is provided in a lot near the junction of Garfield County Road 107 (Red Hill Road) and Highway 82 (refer to Figure 2). Users of the Red Hill SRMA trail system must traverse County Road 107 for approximately 0.3 mile to reach the developed trail system, which is creating conflicts between trail users and motorists. Although the BLM and County prohibit parking along County Road 107, some illegal parking is occurring. In addition, the easier trails in the northern portion of the SRMA are more than 2 trail miles from the parking area, requiring the use of more advanced trails to reach them.

The 1999 SRMA Implementation Plan specifically identifies the following management action: "Investigate and attempt to secure alternative access points to the Red Hill SRMA. Partners will work together as opportunities arise. Communications with landowners critical, grant funding and matching funds critical. Partners will coordinate on negotiations to acquire access."⁴⁸

Parcel 2 is adjacent to the popular Crown recreation area with miles of user-created trails on the parcel leading into The Crown's trail network. Although The Crown can be accessed from the east through

⁴⁸ USDO I BLM, 1999 p. 7

routes such as Nancy's Path beginning at the corner of Emma Road and Hooks Lane in Basalt, Parcel 2 serves as a popular non-motorized public access point through Prince Creek Road on the west. There are three small parking areas further south along Prince Creek Road; however, users often park along the Prince Creek Road near the popular start of the trails on Parcel 2 rather than utilizing these parking areas, which can cause conflicts with local residents in the Prince Creek Subdivision. On the weekends, dozens of vehicles often line Prince Creek Road, creating potentially unsafe conditions.⁴⁹

Traffic Volumes and Design Capacities

Federal Parcels

As previously discussed, there is no legal, motorized public access to Parcel A. However, Parcel A is approximately 350 feet from Prince Creek Road, separated by private lands owned by the Proponents. Prince Creek Road (also known as Pitkin County Road 5) is listed as a "Low Service Area" road by the Pitkin County Asset Management Plan (AMP). According to the AMP, "The low service area includes roads that allow access to low-density residential, agricultural and public uses but are removed from high travel corridors and population centers. Roads in this service area are usually built to Class 4 specifications or better. These roads typically access low-density developments or popular recreational destinations. Maintenance of the roads in the low service area will attempt to provide access to specified areas, but not necessarily comfortable travel."⁵⁰ Class 4 specifications provide for a design capacity between 250 and 750 vehicles per day (VPD) and suggest speeds of 25 miles per hour (mph). Traffic counts per day for Prince Creek Road are between 250 and 749 north of the Prince Creek Subdivision (where the road is maintained in the winter) and between 1 and 249 south of the subdivision, where the road is closed in the winter.⁵¹

As previously discussed, there is no legal, motorized public access to Parcels B and B-1. The closest public road to these parcels is Dinkle Lake Road (also known as Pitkin CR 6A/FSR 311), which branches off of Prince Creek Road south of Parcel A. Dinkle Lake Road is listed as a "Limited Service Area" road by the Pitkin County AMP. According to the AMP, "these roads provide access to outlying and backcountry areas of the County and are usually located within the Rural and Remote Zoned portions of the County. Roads in this service area are usually built to Class 5-A or 5-B specifications and are not surfaced. Very low design speeds are necessitated by harsh alpine or topographic conditions. These roads can be a part of the Pitkin County/USFS Joint Road System. Roads with this designation access several of the recreational opportunities in the County, and are often considered to be recreational opportunities themselves. Roads within the limited service area will receive the least amount of maintenance. Road users can expect a vigorous experience that requires an additional amount of attention and awareness when traveling."⁵² Class 5-A specifications provide for a design capacity between 25 and 300 VPD and

⁴⁹ The Valley Journal, 2010

⁵⁰ Pitkin County, 2008 p. 12

⁵¹ Ibid. p. 15

⁵² Ibid. p. 13

suggested speeds of 20 mph. Class 5-B specifications provide for a design capacity of less than 25 VPD and suggested speeds of 15 mph. Dinkle Lake Road (FSR 311) is designated as a road open to licensed motorized only (highway legal) by the WRNF Travel Management Plan.⁵³ Traffic counts per day for Dinkle Lake Road are between 1 and 249 VPD.⁵⁴

Bruce Creek Road is the closest public road to Federal Parcels C, D and E. The gravel road is designated as a “rural minor collector” road by Eagle County and has a design capacity between 50 and 399 VPD and a design speed of 30 mph.⁵⁵ In 2011 Bruce Creek Road had a maximum count daily traffic volume of 65 vehicles recorded 50 feet south of the intersection with Salt Creek Road.⁵⁶

Non-Federal Parcels

Access to Parcel 1 is provided from Highway 82 via Cattle Creek Road (CR 113) and Crystal Springs Mountain Road (CR 112) which crosses the northeast corner of the parcel. Cattle Creek Road has an Average Daily Traffic (ADT) volume of 812 VPD and Crystal Springs Mountain Road has an ADT volume of 459 VPD.⁵⁷ Both roads are paved. Cattle Creek Road has functional classification as a “Major Collector” and Crystal Springs Mountain Road has a functional classification as a “Local” road. Both Roads have an administrative classification of “arterial service.”⁵⁸ Cattle Creek Road has a design capacity of 2,501+ ADT while Crystal Springs Mountain Road has a design capacity between 401 and 2,500 ADT.⁵⁹

Prince Creek Road (discussed above) provides direct motorized access to Parcel 2. Prince Creek road is listed as a “Low Service Area” road with Class 4 specifications by the Pitkin County AMP.⁶⁰ Class 4 specifications provide for a design capacity between 250 and 750 VPD and suggest speeds of 25 mph. Traffic counts per day for Prince Creek Road are between 250 and 749 VPD north of the Prince Creek Subdivision (where the road is maintained in the winter) and between 1 and 249 VPD south of the subdivision, where the road is closed in the winter.⁶¹

Garfield County Road 107 (Red Hill Road) does not provide access to any of the Federal or Non-Federal Parcels considered in the exchange, but is the location of the current parking area and provides access for the Red Hill SRMA adjacent to Parcel 1. County Road 107 has a function classification as a “Local” road and an administrative class as a “future segment of the National Highway System (Colorado Department

⁵³ UDSA Forest Service, 2011 p. A2-21

⁵⁴ Pitkin County, 2008 p. 15

⁵⁵ Eagle County, 2011a

⁵⁶ Eagle County, 2011b

⁵⁷ Garfield County, 2002

⁵⁸ Garfield County, 2012b

⁵⁹ Garfield County, 2008 p. 7-27

⁶⁰ Pitkin County, 2008 p. 21

⁶¹ Ibid. p. 15

of Transportation [CDOT] only).”⁶² County Road 107 has an ADT volume of 250 VPD.⁶³ The design capacity of County Road 107 is between 401 and 2,500 ADT.⁶⁴

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

Under the No Action Alternative, access to federal lands in the Analysis Area would be expected to resemble the current condition (presented in the Affected Environment section). The exception is access to, and use of, BLM lands in The Crown. While The Crown can technically and legally be accessed from the east (via Nancy’s Path beginning in Basalt), a popular public access to it has historically been through Non-Federal Parcel 2 and Prince Creek Road via informal consent from the private landowner. There are also three BLM access points to The Crown along Prince Creek Road. If the No Action Alternative is selected and Parcel 2 remains in private ownership, numerous scenarios could result—all of which are purely speculative at this time, including:

- The status quo,
- Public access through Parcel 2 could be restricted, thereby inhibiting a popular access to The Crown,
- Parcel 2 could be developed according to land use regulations, likely limiting or restricting access to The Crown. Parcel 2 could potentially be subdivided into three lots under current zoning; however approval of more than one homesite would be difficult and would have to compete in Pitkin County’s GMQS (Growth Management Quota System),
- Parcel 2 could be sold on the open market, with unknown consequences (e.g., it could be developed, placed into a conservation easement or open space, or acquired by a local or federal entity).

Parking conditions at the Red Hill SRMA and The Crown and traffic volumes on roadway networks accessing Federal and Non-Federal Parcels would remain unchanged.

Existing and Historical Legal Access

Federal Parcels

Under the No Action Alternative the existing limited access to the Federal Parcels would be maintained. Use of the Federal Parcels would continue to be limited due to difficult access and topographic constraints.

Access to Mount Sopris

Legal public access to Mount Sopris would also remain unchanged under the No Action Alternative.

⁶² Garfield County, 2012b

⁶³ Garfield County, 2002

⁶⁴ Garfield County, 2008 p. 7-27

Non-Federal Parcels

Under the No Action Alternative, any scenario beyond the status quo could potentially result in restricted public access to The Crown.

Parking

Under the No Action Alternative historic parking issues at these areas would be anticipated to continue in the future.

Traffic Volumes and Design Capacities

The No Action Alternative would not alter the current traffic volumes on roadway networks accessing Federal and Non-Federal Parcels.

Alternative 2: Proposed Action

The Proposed Action would be expected to improve legal access to public lands. Likewise, it would be expected to create options to substantially improve parking at the Red Hill SRMA and The Crown. Traffic volumes would not be expected to increase on roadway networks accessing Federal and Non-Federal Parcels beyond their design capacities.

Direct Effects

Existing and Historical Legal Access

Under the Proposed Action, legal access to public lands would be improved. This determination supports the Purpose and Need for Action #2, which is to improve management of, and public access to, public lands. Through the proposed land exchange, the BLM would dispose of lands with limited public access and gain lands with existing vehicular access (refer to Figures 2 and 3). Options to substantially improve public access to the Red Hill SRMA and The Crown would also be gained.

Federal Parcels

Under the Proposed Action, the limited legal public access associated with each of the Federal Parcels would be lost. The impact of this loss of public access is expected to be minimal due to the relatively low level of public use of the Federal Parcels.

Access to Mount Sopris

Legal public access to Mount Sopris would remain unchanged under the Proposed Action.

Non-Federal Parcels

Under the Proposed Action, the public would gain legal access to Parcels 1 and 2. The Proposed Action would also substantially improve access options for the Red Hill SRMA and The Crown. Parcel 1 would be accessible from Cattle Creek Road (CR 113) and Crystal Springs Mountain Road (CR 112). Parcel 2 would be accessible from Prince Creek Road (refer to Figure 3). Parcel 1 would create an option for an alternative access point to the Red Hill SRMA, which would be addressed in a subsequent site-specific

management plan that would be prepared as a result of the \$1.1 million dollar donation that is included in the Proposed Action. This is explored further under Indirect Effects.

Federal acquisition of Parcel 2 would protect existing trail connections the public uses to access The Crown and would provide an opportunity to develop a public trailhead at The Crown's popular access point off Prince Creek Road. This determination supports the Purpose and Need for Action #2, which is to improve management of, and public access to, public lands while minimizing public trespass on adjacent private lands.

Indirect Effects

Conservation Easements on the Federal Parcels

Through a private agreement the conservation easements (Appendix A) that would cover the Federal Parcels under the Proposed Action would allow for continued recreational access for neighboring landowners on Federal Parcels A and C. The conservation easements would not otherwise affect access and transportation in the Analysis Area.

Site-Specific Management Plan for the Non-Federal Parcels

As an indirect effect of the proposed land exchange, future management of the Non-Federal Parcels by the BLM would be determined through the development of a site-specific management plan within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's current RMP.

Parking

An indirect effect of the Proposed Action is future options to substantially improve public access and parking at the Red Hill SRMA and The Crown. The creation of additional parking for the Red Hill SRMA on Parcel 1, which would be addressed in a subsequent site-specific management plan and associated NEPA analyses, could alleviate parking issues on County Road 107. In addition, the new parking area could make the trail system more accessible to novice/beginner mountain bikers and trail users by providing direct access to green trails without requiring the use of more advanced trails to access them.

Acquisition of Parcel 2 through the Proposed Action would provide an opportunity to develop an additional public trailhead and parking off Prince Creek Road to access The Crown. As this parcel is already a popular public access point for The Crown, and there is no established parking area at the start of the trails, a public trailhead off Prince Creek Road would alleviate conflicts between The Crown users who currently park along Prince Creek Road and local residents in the Prince Creek Subdivision. An established trailhead and parking area on Parcel 2 could prevent dozens of vehicles from parking along Prince Creek Road on busy weekends, improving potentially unsafe conditions.

Traffic Volumes and Design Capacities

As discussed in more detail below, the Proposed Action is not expected to increase traffic volumes on roadway networks accessing Federal and Non-Federal Parcels beyond their design capacities.

Federal Parcels

As public use of the Federal Parcels is currently very low, disposal of the Federal Parcels through the land exchange is not expected to noticeably (indirectly) affect traffic volumes on the public roads nearest to/accessing the parcels. Traffic volumes on Prince Creek Road, Dinkle Lake Road and Bruce Creek Road would be expected to remain in the range of current levels and well within the design capacity of these roads.

Non-Federal Parcels

It is reasonable to assume that BLM's acquisition of Non-Federal Parcel 1, through the proposed land exchange, would increase recreational use and human presence on the parcel, which in turn is likely to increase traffic volumes on Cattle Creek Road and Crystal Springs Road. Cattle Creek Road has a current ADT volume of 812 VPD and a design capacity of 2,501+. Increased traffic volumes would be expected to be moderate and well within the design capacity of the road. Crystal Springs Road has a current ADT volume of 459 VPD and a design capacity of up to 2,500 VPD. Increased traffic volumes would be expected to be moderate and well within the design capacity of the road.

As Parcel 2 already serves as a popular public access point for The Crown, the BLM's acquisition of this parcel through the proposed land exchange would not be expected to noticeably increase traffic volumes on Prince Creek Road. Traffic volumes would remain in the range of current levels and well within the design capacity of this road.

Acquisition of Parcel 1 may increase the recreational use of the Red Hill SRMA, which may increase traffic on Garfield County Road 107 (Red Hill Road), where parking for the SRMA is located. The road currently has an ADT volume of 250 VPD and a design capacity between 401 and 2,500 VPD. Increased traffic volumes would be expected to be moderate and well within the design capacity of the road.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between the Proponents and the Pitkin County BOCC is expected to enhance access and transportation in the Analysis Area. The contribution of \$700,000 from the Proponents to Pitkin County is intended to cover the costs of property acquisition and trail construction including approximately 10 acres of land needed to create a 1-mile long trail parallel to Prince Creek Road within what is now the Tybar Ranch. Recreational use on Prince Creek Road by bicycles and pedestrians has increased in the last decade as residents and visitors seek to access The Crown and Hay Park. This trail would improve safety on the Tybar reach of this road (above the bend at the Flying Dog Barn) and would provide safer, managed and legal access for the public to The Crown (via Non-Federal Parcel 2) from the Prince Creek area. Should the County not be successful in obtaining the trail corridor adjacent to Prince Creek Road, the money could be used to improve the Rio Grande Trail connecting the Crystal River Valley with the Roaring Fork Valley or for other open space opportunities in the Crystal River Valley area.

C. RECREATION

SCOPE OF ANALYSIS

The CRVFO manages over 600,000 acres of public land for many uses, including recreation, in Colorado. Numerous forms of outdoor activities are provided, including camping, hunting, fishing, hiking, horseback riding, boating, whitewater rafting, off-highway vehicle driving, mountain biking, birding and wildlife viewing, photography, climbing, all types of winter sports, and visiting natural and cultural heritage sites. In an increasingly urbanized West, these recreational opportunities and the landscape settings where they take place are vital to the quality of life enjoyed by residents of western states, as well as national and international visitors.

Based on ID Team and public scoping comments, the recreational analysis is focused on the following five concepts, each of which is addressed under a separate heading:

1. Recreation Management
2. Recreational Opportunities
3. Recreational Access
4. Trail Connections
5. Recreational Demand for Public Lands

This recreation analysis extends across the CRVFO, and focuses on the Federal and Non-Federal Parcels and the public lands surrounding them—the Red Hill SRMA and The Crown (refer to Figures 1 through 4). Adjacent Forest Service lands are also considered, where appropriate.

AFFECTED ENVIRONMENT

Recreation Management

Federal Parcels

Each of the Federal Parcels requires minimal management actions and allowable use decisions due to their low level of accessibility and public use. Recreation is not emphasized on these lands; however, management actions and allowable use decisions may still be necessary to address basic recreation and visitor service and resource stewardship needs.⁶⁵ While BLM management requirements are relatively low for these parcels, difficult access and the isolated nature of these parcels create management challenges for the CRVFO.

⁶⁵ USDOJ BLM, 2012a

Non-Federal Parcels

As currently private lands, Parcels 1 and 2 (Sutey Ranch and West Crown, respectively) are not managed by the BLM.

Adjacent BLM Lands in the Analysis Area

The BLM uses SRMAs to manage established areas where BLM public lands experience heavy recreation use or where the CRVFO plans on making large investments in staff, funding, facilities, or time.

Extensive Recreation Management Areas (ERMAs) represent all remaining BLM lands where SRMAs are not specifically designated. A wide variety of recreation-tourism issues and activities are custodially managed in the ERMAs.

Red Hill Special Recreation Management Area

The Red Hill SRMA lies immediately west and south of Parcel 1 (refer to Figure 2). The Red Hill SRMA was designated by the BLM in 1999 and is managed through a partnership with a local non-profit organization—the Red Hill Council—under the 1999 Red Hill Special Recreation Management Area Implementation Plan. This area is managed to preserve the scenery surrounding Carbondale and to allow for recreation, primarily biking, hiking and horseback riding, while addressing the associated resource impacts of recreational use.⁶⁶ The area is managed primarily for local use and is not marketed regionally or nationally.⁶⁷ The 1999 SRMA Implementation Plan provides for the following prescriptions:⁶⁸

- Establishment of the area for non-motorized use.
- Winter closure of large sections of Red Hill to bicycle use for wildlife protection.
- A prohibition of surface occupancy for mineral extraction.
- A restriction for bicycles to stay on designated routes.
- Execution of a Memorandum of Understanding between BLM and the Red Hill Council.
- Protection of wildlife by requiring all dogs to be leashed.
- A prohibition of parking on County Road 107.
- A prohibition on crossing adjacent private property.
- Installation of interpretive signage at/near trailheads.
- Initiation of educational efforts to keep visitors on designated routes and away from private property.
- Utilize regular law enforcement patrols at access points, patrol infrequently to interior areas.
- Retention of the existing characteristic landscape.

⁶⁶ USDOJ BLM, 1999

⁶⁷ Red Hill Council, 2012

⁶⁸ USDOJ BLM, 1999

Fischer Creek

The Fischer Creek area is part of the Glenwood Springs ERMA. The area includes roughly 1,040 acres of land acquired by the BLM from the Crystal River Ranch Company through a land exchange. The area offers motorized and non-motorized use on designated routes. Mechanized use is prohibited from December 1 to April 30. Uses and activities allowed include hiking, horseback riding, mountain biking, and hunting.

The Crown

The Crown is a highly popular recreation area managed by the BLM that lies immediately east of Parcel 2 (refer to Figure 3). The Crown is not managed as a SRMA, but rather as part of the larger Glenwood Springs ERMA. In The Crown, recreation management focuses on interdisciplinary travel management and providing information while maintaining a naturally-appearing landscape that supports participation in a variety of established recreation activities (e.g., motorsports, mountain biking, hiking, hunting and scenic driving).⁶⁹

Recreational Opportunities

Federal Parcels

Parcels A, B and B-1

Parcels A, B and B-1 are located within the Glenwood Springs ERMA. Although the BLM does not have actual use numbers for Parcels A and B, anecdotal data and personal observations suggest that these parcels are mostly used by recreationists between August and November. Current uses primarily involve limited hunting, with low levels of other activities such as off-trail hiking and horseback travel. Recreational opportunities and recreational use on these parcels are relatively low given the difficult access and lack of trails and established recreation activities. As there is no way for the public to access Parcel B-1, the parcel provides no public recreational opportunities.

Parcel A is difficult to access by foot or mountain bike and involves 1,000 feet of vertical gain just to reach it from the Crystal River. Once on Parcel A, it is mostly 0.25- to 0.5-mile wide, with very rugged areas. In addition, there is no exit on the north (Prince Creek), west or east sides.

Parcels C, D, and E

Current public recreational use of the parcels primarily involves hunting, with some low levels of other recreational activities, but public use appears to be limited due to the accessibility and small size of the parcels.

Non-Federal Parcels

As private land Non-Federal Parcels 1 and 2 provide no formal public recreational opportunities.

⁶⁹ USDOJ BLM, 2012a

Non-Federal Parcel 1 has access from both the Red Hill SMRA on the south and west, and the paved County Road 112 on the east. This parcel also provides a tie-in to nearby BLM lands in Fischer Creek (refer to Figure 2).

Non-Federal Parcel 2 provides substantial, informal public recreational opportunities, and serves as a popular recreational access point for The Crown (discussed further under “Recreational Access,” below, refer to Figure 3). Parcel 2 contains trail segments used primarily for mountain biking, including the locally known Monte Carlo trail, which lead into The Crown. Although the Proponents and previous private landowners have historically allowed this use, the parcel could legally be closed to public recreational use at any time.

Adjacent BLM Lands

Red Hill Special Recreation Management Area

The Red Hill SRMA is a concentrated recreational use area primarily providing biking, hiking and horseback riding opportunities. The Red Hill SRMA contains 12 trails of varying difficulty (easier – green, more difficult – blue, and most difficult – black) totaling approximately 19 miles.⁷⁰ Although it is primarily local use, the area is very popular and receives over 55,000 visitor days per year.⁷¹

Fischer Creek

The Fischer Creek area offers motorized and non-motorized use on designated routes. Recreational activities primarily involve hiking, horseback riding, mountain biking, and hunting.

The Crown

The Crown is part of the Glenwood Springs ERMA. A number of established recreation activities occur in this area, including motorsports, mountain biking, hiking, hunting and scenic driving.⁷²

Recreational Access

Refer to Figures 2 through 4 for a map of parcels and access roads, which are discussed below.

Federal Parcels

Parcels A, B and B-1

Although Federal Parcel A is approximately 350 feet from Prince Creek Road, there is no legal, motorized public access to this parcel (refer to Figure 3). The only legal public access to the parcel is a circuitous, non-motorized route from the WRNF on the more remote southern border of the parcel, where the topography is steep. There are no designated Forest Service or BLM roads or trails in the vicinity, so this access route involves off trail travel and the use of game trails and user-created trails, which are unsanctioned trails that have been built, and used by, the public.

⁷⁰ USDOI BLM, 1999

⁷¹ USDOI BLM, 2012a

⁷² Ibid.

Neither Parcel B nor Parcel B-1 is legally accessible by road, although the southern and eastern boundaries of Parcel B adjoin the WRNF (refer to Figure 3). Thomas Creek Ditch Road (Forest Service Road 311W.1A) crosses National Forest System land and terminates at the southern border of Parcel B. However, Thomas Creek Ditch Road is managed by the WRNF under a special use permit and is closed to motorized and mechanized public use. No other BLM or Forest Service roads or trails are located within the vicinity of Parcels B and B-1. Parcel B-1 is completely surrounded by private lands and is inaccessible to the public.

Parcels C, D, and E

Parcel C is located on the western side of Horse Mountain about 6 miles southeast of the Town of Eagle (refer to Figure 4). Although a four-wheel drive road originates at the base of Horse Mountain on private land along Bruce Creek Road and crosses back and forth between Parcel C and adjacent patented mining claims, the parcel has no legal recreational access.

Parcel D comprises 17 acres on the southwest toe of Horse Mountain (refer to Figure 4). It is separated from Parcel C by a group of patented mining claims. Bruce Creek Road provides legal public access to this parcel, but public use appears to be limited due to its small size. A network of old, decommissioned mine-related roads is present on Parcels C and D.

Located about a quarter mile south of Parcel D along the township boundary, Parcel E is a 12-acre, narrow 0.75-mile vertical sliver of federal land managed by the BLM (refer to Figure 4). The private Lady Belle Ranch lies on its east and north sides with Colorado State Land Board property on its west, and the WRNF is adjacent to its 150-foot long southern boundary. Porphyry Road (Forest Service Road 435.1) crosses Parcel E, but this portion of the road is decommissioned and does not allow public access. Foot access to Parcel E from the WRNF is available, but there are no roads or trails open to the public in this area.

Non-Federal Parcels

Access to Parcel 1 is provided from Highway 82 via Cattle Creek Road (CR 113) and Crystal Springs Mountain Road (CR 112) which crosses the northeast corner of the parcel. Parcel 1 also provides non-motorized access to the Red Hill SRMA on the southern and western borders. Prince Creek Road provides direct motorized access to Parcel 2. User-created trails exist on the parcel and lead into The Crown's trail network, providing extensive, non-motorized access to BLM lands. Although The Crown can be accessed from the east, a popular public access point is through Parcel 2 and Prince Creek Road. As no public access easement is secured on Parcel 2, public use of the parcel to reach The Crown is provided at the option of the private landowner (the Proponents) and could legally be rescinded at any time.

Adjacent BLM Lands

Red Hill Special Recreation Management Area

Access to the Red Hill SRMA is provided in a parking area near the junction of Highway 82 and Garfield County Road 107 (Red Hill Road). Users of the Red Hill SRMA trail system must traverse County Road 107 for approximately 0.3 mile to reach the developed trail system, which can create conflicts between trail users and motorists as recreational users are often in the roadway during this 0.3-mile stretch.

Although the BLM and County prohibit parking along County Road 107, some illegal parking does occur. In addition, the easier (green) trails in the northern portion of the SRMA are more than 2 trail miles from the parking area, requiring the use of blue (more difficult) and black (most difficult) trails to reach the beginner trails.

The 1999 SRMA Implementation Plan specifically identifies the following management action relevant to accessing the Red Hill SRMA: “Investigate and attempt to secure alternative access points to the Red Hill Area. Partners will work together as opportunities arise. Communications with landowners critical, grant funding and matching funds critical. Partners will coordinate on negotiations to acquire access.”⁷³

The Crown

The BLM maintains three access points and parking areas for The Crown along Prince Creek Road. These areas have limited parking and provide connections to existing routes in The Crown. The Crown can also be accessed from the east through routes such as the non-motorized, non-mechanized Nancy’s Path beginning at the corner of Emma Road and Hooks Lane in Basalt. In addition to these BLM access points, Non-Federal Parcel 2 currently serves as a popular non-motorized public access point to The Crown through Prince Creek Road. This access point is popular because it is the first access point users come to from Highway 133 and because of the additional trail opportunities on Parcel 2 that connect to The Crown trails. As this access through Parcel 2 is popular and there is no established parking area, Crown users parking along Prince Creek Road can cause conflicts with residents in the Prince Creek Subdivision. On the weekends, dozens of vehicles often line Prince Creek Road.⁷⁴ As no public access easement is secured on Parcel 2, public use of the parcel to reach The Crown is provided at the option of the private landowner (the Proponents) and could legally be rescinded at any time.

Trail Connections

Federal Parcels

Parcels A, B and B-1

No BLM or National Forest System roads or trails exist on Parcels A, B and B-1, or within the vicinity. Although some game and user-created trails (unsanctioned trails that have been built, and used by, the public) have been cleared and marked leading into Parcel A from the south in the WRNF, these trails are not part of the WRNF or CRVFO long-term trail system and are not included in the WRNF or CRVFO

⁷³ USDOJ BLM, 1999

⁷⁴ The Valley Journal, 2010

Travel Management Plan. Due to wildlife concerns and the protection of wildlife habitat, the Forest has no plans to add any trails or maintain existing user-created trails in this area.

Parcels C, D, and E

No BLM or National Forest System trails exist on Parcels C, D and E or within the vicinity.

Non-Federal Parcels

No recreational trails currently exist on Non-Federal Parcel 1, despite the parcel's high dispersed recreation values due to its proximity to the popular non-motorized trail network in the Red Hill SRMA. Parcel 2 contains user-created trails leading into The Crown's trail network, including the popular Monte Carlo Trail.

Recreational Demand for Public Lands

The population of the three-county Analysis Area (Eagle, Garfield and Pitkin Counties) surrounding the Federal and Non-Federal Parcels, which includes Eagle, Garfield and Pitkin Counties, has nearly doubled since 1990—growing from 64,563 persons in 1990 to 125,734 persons in 2010.⁷⁵ This growing population has been placing increasing recreational demands on BLM lands for a diversity of recreational opportunities characterized by the mountain resort or outdoor lifestyle.⁷⁶ In particular, a considerable and growing recreation demand is found on BLM lands around and between communities in wildland-urban interface areas with trail/road networks and aesthetic amenities.⁷⁷ In addition, the availability of public lands for recreation plays an important role in the local economies within and adjacent to the CRVFO lands. Thus, it is important to consider the current and projected recreational demand for public lands. As the population grows in any region, recreational demand can be expected to grow commensurate with the population. By 2040 population of the three-county Analysis Area is expected to increase by 93 percent, growing from 125,734 in 2010 to 242,704 in 2040.⁷⁸ Recreational demand is expected to grow commensurate with this population growth. Population totals and projections from 1980 through 2040 are provided in the following table.

⁷⁵ Colorado State Demography Office, 2012

⁷⁶ USDOJ BLM, 2011 pp. 3-143 and 3-144

⁷⁷ Ibid.

⁷⁸ Colorado State Demography Office, 2012

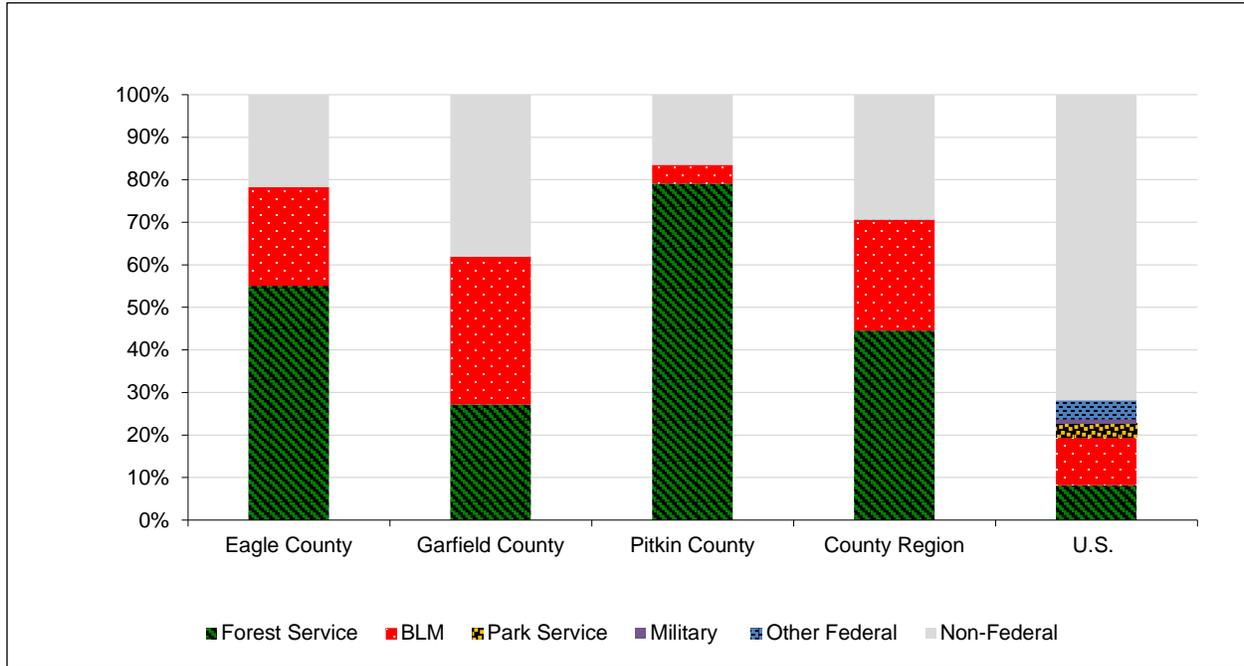
**Table 3C-1:
Population Totals and Projections 1980-2040**

County	1980	1990	2000	2010	2020	2030	2040	% Change 2010-2040
Eagle	13,320	21,928	41,659	52,197	68,350	82,362	102,472	96%
Garfield	22,514	29,974	43,791	56,389	72,691	92,608	109,887	95%
Pitkin	10,338	12,661	14,872	17,148	20,585	25,517	30,344	77%
County Region	46,172	64,563	100,322	125,734	161,626	200,486	242,704	93%

Source: Colorado State Demography Office, 2012

For the three counties in the Analysis Area, Pitkin County currently contains the highest proportion of land under federal management, with 84 percent of land in the county being public lands. Pitkin County, however, also has the lowest percentage of public lands managed by the CRVFO, at 4.4 percent.⁷⁹ The proportion of federal land as a percent of the total land area in each county is presented in Graph 3C-1, below. With the exception of Garfield County, the majority of public lands in the analysis are National Forest Service lands (managed by the WRNF). The existing acres of federal land managed by the BLM, Forest Service, and Bureau of Reclamation in each county are presented in Table 3C-2.

**Chart 3C-1:
Federal and Non-Federal Land, Percent of Total Land Area**



Source: Headwaters Economics, 2012

⁷⁹ Headwaters Economics, 2012

**Table 3C-2:
 Total Acres of Federal Land by County**

County	BLM	Forest Service	Bureau of Reclamation	Total Federal Lands	Total Acres of Federal Land Per Capita (2010)	Total Acres of BLM Land Per Capita (2010)
Eagle County	235,479	596,026	18,604	850,109	16	5
Garfield County	669,862	515,917	2,193	1,187,972	21	12
Pitkin County	27,023	495,364	43,874	566,261	33	2
County Region	932,364	1,607,307	64,671	2,604,342	21	7

Source: Headwaters Economics, 2012

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

Under the No Action Alternative, access to, management of, and recreational opportunities on federal lands in the Analysis Area would be expected to resemble the current condition (presented in the Affected Environment section). The exception is access to, and use of, BLM lands in The Crown. While The Crown can technically and legally be accessed from the east (via Nancy’s Path beginning in Basalt) and from the west (via three BLM managed access points along Prince Creek Road), Non-Federal Parcel 2 currently serves as a popular public access point to the area. If the No Action Alternative is selected and Parcel 2 remains in private ownership, numerous scenarios could result—all of which are purely speculative at this time, including:

- The status quo,
- Public access through Parcel 2 could be restricted, thereby inhibiting popular access to The Crown,
- Parcel 2 could be developed according to land use regulations, likely limiting or restricting access to The Crown. Parcel 2 could potentially be subdivided into three lots under current zoning; however approval of more than one homesite would be difficult and would have to compete in Pitkin County’s GMQS (Growth Management Quota System),
- Parcel 2 could be sold on the open market, with unknown consequences (e.g., it could be developed, placed into a conservation easement or open space, or acquired by a local or federal entity).

Recreational Opportunities

Under Alternative 1, the Federal Parcels would remain available to the public, but the land would remain difficult to access and hence recreational opportunities would continue to be limited. Limited hunting and

low levels of other activities such as off-trail hiking and horseback travel would continue to occur on the parcels. Regarding recreational opportunities on the public lands administered by the CRVFO, selection of the No Action Alternative could result in the status quo. Or, in the event that Parcel 2 is sold, developed or otherwise restricted, popular access to The Crown would be diminished, with resulting impacts to the recreational setting and opportunities.

Recreational Access

Under the No Action Alternative, use of the Federal Parcels would continue to be limited due to difficult access and topographic constraints. There is currently informal access through private land onto The Crown which could change under the No Action Alternative, based on landowner action. In the event that the popular public access through Non-Federal Parcel 2 is restricted for any reason, recreational access to The Crown would be maintained through the three BLM access points from Prince Creek Road and from the east (Basalt).

Trail Connections

Under the No Action Alternative, Parcel 2 would remain in private ownership. Although the landowner currently allows the public to use this land to access adjacent BLM lands in The Crown, this land could be blocked from public access at any time, removing the potential for legitimizing the existing trail connections on Parcel 2 with the existing BLM trails in The Crown.

Recreation Management

With selection of the No Action Alternative, BLM management options would continue to be limited for these parcels, and difficult access and the isolated nature of these parcels would continue to create management challenges for the CRVFO.

Recreational Demand for Public Lands

As demonstrated in the Affected Environment section, recreation demand for public lands is expected to continue to grow in the three-county Analysis Area commensurate with population increases. Under the No Action Alternative, limited additional opportunities for recreation on public lands would be accommodated.

Alternative 2: The Proposed Action

The Proposed Action is expected to produce beneficial effects for recreational resources within the Analysis Area. Despite a reduction in acreage of BLM lands in the Analysis Area as a result of the Proposed Action, the addition of the Non-Federal Parcels to public lands managed by the CRVFO is expected to better accommodate future recreational demand than the Federal Parcels. The proposed land exchange would be expected to enhance recreational opportunities for the public and legal recreational access to public lands would be improved under the Proposed Action. Selection of the Proposed Action could have a beneficial effect on trail connections within the CRVFO and adjacent lands. Finally, the

Proposed Action is expected to have a beneficial effect on recreation management within the CRVFO due to additional funds donated for management. Each of these determinations is explained in detail, below.

Direct Effects

Recreational Opportunities

Under the Proposed Action, the recreational opportunities currently provided on the Federal Parcels would be extinguished and new public recreation opportunities would be provided on the Non-Federal Parcels. The change in ownership and management of these lands would be expected to create a net improvement for recreation opportunities on public lands compared to the No Action Alternative, as the Non-Federal Parcels are more accessible than the Federal Parcels.

Federal Parcels

Under the Proposed Action the limited recreational opportunities provided on the Federal Parcels would no longer be available to the public. Users most impacted by the exchange of the Federal Parcels would be a limited number of hunters who use the lands during the hunting season. A small number of other recreationalists using the parcels for other activities such as off-trail hiking and horseback travel would also be impacted. This is expected to have a minor impact because public use of these parcels appears to be limited due to the inaccessibility of the parcels.

Non-Federal Parcels

Under the Proposed Action, the approximately 557-acre Non-Federal Parcel 1 would come under the management of the CRVFO. The recreation value of this Parcel is considered to be very high due to its proximity to the popular non-motorized trail network in the Red Hill SRMA, which is immediately adjacent to Parcel 1. No final decision has been made as to how Parcel 1 would be managed in the future as this would be determined as a result of a site-specific management plan that would be possible through a \$1.1 million donation, should the land exchange be approved. However, should it ultimately be managed commensurate with the Red Hill SRMA, it would provide an opportunity to complement and enhance the recreation associated with the adjoining Red Hill SRMA.

Under the Proposed Action, the 111.8-acre Non-Federal Parcel 2 would come under the management of the CRVFO. The popular access to The Crown from the west through Parcel 2 would be managed by the BLM and public recreational opportunities provided on the parcel, such as mountain biking, hiking, hunting, motorsports and scenic driving, would be maintained. Although a site-specific management plan would be developed for the long-term management of this parcel within a framework of applicable laws, BLM policies, NEPA analysis, public participation, and BLM's current RMP, it is reasonable to assume that recreational use would receive a high priority. Should Parcel 2 be managed commensurate with The Crown, it would increase recreational opportunities on the CRVFO.

As private land, Parcel 2 is already receiving more public use, and hence providing more public recreational opportunities, than the Federal Parcels. BLM acquisition of this parcel would legitimize this use and allow for its continuance.

Recreational Access

Under the Proposed Action recreational access to public lands managed by the CRVFO would be improved. This determination supports Purpose and Need for Action #2, which is to improve management of, and public access to, public lands under the jurisdiction of the BLM while minimizing public trespass on adjacent private lands. The BLM would dispose of lands with limited access and gain lands with existing vehicular access. Options to substantially improve access to the Red Hill SRMA and The Crown would also be gained.

Federal Parcels

Under the Proposed Action, the public would lose the limited access to, and use of, the six Federal Parcels (totaling approximately 1,470 acres). A private recreational agreement with neighboring landowners would allow for continued recreational access to Parcels A and C for these owners.

Non-Federal Parcels

Under the Proposed Action, Parcels 1 and 2 would fall under BLM management, and the public would gain legal access to, and use of, these lands. The Proposed Action would also substantially improve access options for the Red Hill SRMA and The Crown. Parcel 1 would be accessible from Cattle Creek Road (CR 113) and Crystal Springs Mountain Road (CR 112) and Parcel 2 would be accessible from Prince Creek Road (refer to Figures 2 and 3). Parcel 1 would create an option for an alternative access point to the Red Hill SRMA, which would be decided upon in a subsequent site-specific management plan and associated NEPA analyses. Federal acquisition of Parcel 2 could protect existing trail connections the public uses to access The Crown and would provide an opportunity to develop an additional public trailhead off Prince Creek Road.

Trail Connections

The Proposed Action would have a beneficial effect on trail connections within the CRVFO and adjacent lands.

Federal Parcels

No BLM or National Forest System trails exist on any of the Federal Parcels or within the immediate vicinity. Hence, no trail connections on the Federal Parcels would be impacted as a result of the Proposed Action.

Non-Federal Parcels

Although no recreational trails currently exist on Parcel 1, opportunities to create additional trail connections between Parcel 1 and the Red Hill SRMA would be created as a result of the Proposed Action. Any future trail construction would be completed following the development of a future site-

specific management plan and associated NEPA analyses (as a result of the \$1.1 million donation included in the Proposed Action). Miles of trail connections between Parcel 2 and The Crown could be maintained through selection of the Proposed Action.

Recreation Management

The Proposed Action is expected to have a beneficial effect on recreation management within the CRVFO by improving access to the parcels and creating a site-specific management plan (refer to the discussion of Non-Federal Parcels, below). This determination supports Purpose and Need for Action #2, which is to improve management of, and public access to, public lands under the jurisdiction of the BLM while minimizing public trespass on adjacent private lands.

Federal Parcels

Under the Proposed Action, Federal Parcels A, B, B-1, C, D and E would no longer be managed by the CRVFO. Recreation is not emphasized on these parcels, and the parcels currently require minimal management actions and allowable use decisions. Therefore transferring them to private ownership would have little to no effect on BLM management efforts.

Non-Federal Parcels

It is reasonable to assume additional recreation and human presence on the Non-Federal Parcels as a direct effect of the proposed land exchange would increase the management responsibilities for the CRVFO. However, the amount of increased management responsibilities would be addressed in the subsequent, site-specific management plan for the Non-Federal Parcels should the land exchange be approved.⁸⁰ The \$1.1 million dollar donation included in the Proposed Action would offset the costs of any increased managerial responsibilities as the funds would be dedicated to covering the cost of developing a site-specific management plan for the Non-Federal Parcels as well as for the costs of their long-term management. In effect, the BLM would be managing *less* public lands that are *more* consolidated/accessible as a direct result of the land exchange. This determination supports both components of the Purpose and Need for Action: 1) Consolidate land ownership boundaries (private and BLM) in the Red Hill (Garfield County), Crown (Pitkin County) and Horse Mountain (Eagle County) areas; and 2) Improve management of, and public access to, public lands under the jurisdiction of the BLM while minimizing public trespass on adjacent private lands.

Recreational Demand for Public Lands

Recreational demand for public lands is expected to increase throughout the CRVFO as the surrounding population continues to grow. By 2040, population of the three-county Analysis Area (Eagle, Garfield and Pitkin Counties) is expected to increase by 93 percent, growing from 125,734 in 2010 to 242,704 in 2040.⁸¹ In particular, a considerable and growing recreation demand is expected on BLM lands around

⁸⁰ USDOJ BLM, 2012a

⁸¹ Colorado State Demography Office, 2012

and between communities in wildland-urban interface areas with trail/road networks and aesthetic amenities.⁸²

The Proposed Action would result in a net loss of 802 acres of public land managed by the BLM. As displayed in Table 3C-3, this translates to 0.03 percent decrease in federal land acreage across the three-county Analysis Area. The loss of federal lands is most pronounced in Pitkin County, with a 0.2 percent loss of total federal lands in the county. Eagle County would see a 0.02 percent loss of federal land and Garfield County would experience a 0.05 percent increase in federal land acreage.

**Table 3C-3:
Total Acres of Federal Land by County Under the Proposed Action**

County	BLM	Total Federal Lands	Total Acres of Federal Land Per Capita (2010)	Total Acres of BLM Land Per Capita (2010)	% Change of BLM Land Acreage Resulting from Proposed Action	% Change of Federal Land Acreage Resulting from Proposed Action
Eagle County	235,278	849,908	16	5	-0.09%	-0.02%
Garfield County	670,419	1,188,529	21	12	0.08%	0.05%
Pitkin County	25,866	565,104	33	2	-4.28%	-0.20%
Combined Total	931,563	2,603,541	21	7	-0.09%	-0.03%

Source: Headwaters Economics, 2012.

While the Proposed Action would result in a net loss of land acreage managed by the BLM, and of public lands in general, the public would gain access to BLM lands with greater recreational opportunities and access, trail/road networks and aesthetic amenities, than those that are lost. The Non-Federal Parcels that would be incorporated into the CRVFO as a result of the land exchange are adjacent to highly popular recreation areas used by the community and could better accommodate future recreational demand than the difficult-to-access Federal Parcels currently managed by the BLM, despite a loss in acreage.

Indirect Effects

Conservation Easements on the Federal Parcels

If the proposed land exchange is approved, conservation easements would be placed on all BLM lands that become private (Appendix A), except the 1-acre Federal Parcel B-1. These conservation easements include provisions that would preclude public recreation on the Federal Parcels.

The conservation easements that would be placed on the Federal Parcels (upon their conversion to private ownership) would allow for *private*, low-impact recreational uses such as hiking, horseback riding, cross-country skiing, hunting, fishing and short-term camping. Hunting and the leasing of hunting rights on Parcels A and B would be permitted under the conservation easements, and may include guided hunting

⁸² USDOJ BLM, 2011 pp. 3-143 and 3-144

for youth, veterans and disabled individuals per an agreement with CPW. Other than this guided hunting, no commercial recreational activity would be allowed. A private recreational agreement with neighboring landowners would also be in effect that allows for continued recreational access for these owners.

Site-Specific Management Plan for the Non-Federal Parcels

A site-specific management plan would be developed for the long-term management of this parcel within a framework of applicable laws, BLM policies, NEPA analysis, public participation, and BLM's current RMP. Through this process, Parcel 1's recreational and resource attributes would be identified and appropriately managed. As BLM lands that are adjacent to Non-Federal Parcels 1 and 2 are valued for recreation in the Analysis Area, it is reasonable to assume that a site-specific management plan for the Non-Federal Parcels would consider recreation management as a high priority.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between the Proponents and the Pitkin County BOCC is expected to enhance recreational resources in the Analysis Area. As a connected action to the Proposed Action, Pitkin County would receive a contribution of \$700,000 from the Proponents. This agreement is separate from, but related to, the exchange in that it is not part of the proposal but would be expected to occur, if the land exchange is approved. This is intended to cover the costs of property acquisition and trail construction including approximately 10 acres of land needed to create a 1-mile-long trail parallel to Prince Creek Road within what is now the Tybar Ranch. This trail would improve safety on the Tybar reach of this road (above the bend at the Flying Dog Barn) and would provide safer, managed and legal access for the public to The Crown from the Prince Creek area. Should the County not be successful in obtaining the trail corridor adjacent to Prince Creek Road, the money could be used to improve the Rio Grande Trail connecting the Crystal River Valley with the Roaring Fork Valley or for other open space opportunities in the Crystal River Valley area.

D. SOCIAL AND ECONOMIC RESOURCES

SCOPE OF ANALYSIS

Social and economic resources are those features of the human environment that form the social and economic fabric of a county, community or region. Population, economy, public lands and tax revenues and “Payments in Lieu of Taxes” (PILT) are considered in this socioeconomic analysis, as these are the most relevant social and economic resources to the proposed land exchange. The Analysis Area for social and economic resources includes all of the three counties (Eagle, Garfield and Pitkin) that encompass the Project Area.

AFFECTED ENVIRONMENT

Population

The population of Eagle, Garfield and Pitkin counties has been steadily growing for the past thirty years. The combined population total for the three-county area increased by 172 percent between 1980 and 2010, growing from 46,172 to 125,734. The Colorado State Demography Office has projected a strong growth trend for the next thirty years, but not as substantial as has been observed since 1980. Between 2010 and 2040 population in the three-county area is projected to increase by 93 percent, growing from 125,734 in 2010 to 242,704 in 2040. Population growth in the 2010–2040 period is expected to be strongest in Eagle County and weakest in Pitkin County.⁸³ The population totals and projections for each county are presented in Table 3D-1.

**Table 3D-1:
Population Totals and Projections 1980–2040**

County	1980	1990	2000	2010	2020	2030	2040	% Change 2010–2040
Eagle	13,320	21,928	41,659	52,197	68,350	82,362	102,472	96%
Garfield	22,514	29,974	43,791	56,389	72,691	92,608	109,887	95%
Pitkin	10,338	12,661	14,872	17,148	20,585	25,517	30,344	77%
County Region	46,172	64,563	100,322	125,734	161,626	200,486	242,704	93%

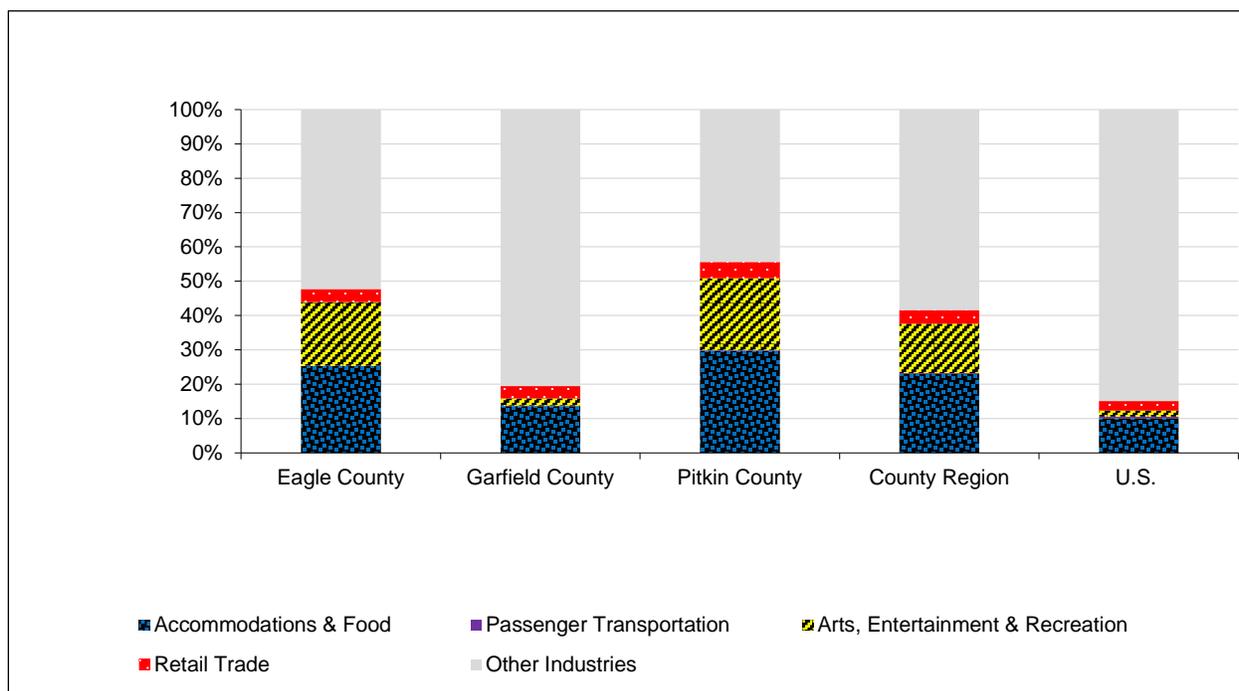
Source: Colorado State Demography Office, 2012

⁸³ Colorado State Demography Office, 2012

Economy

Travel and tourism is a major economic component of each county involved in the proposed land exchange. In this context, travel and tourism consists of sectors that provide goods and services to visitors to the local economy, as well as to the local population.⁸⁴ For the purposes of this analysis these sectors include: retail trade; passenger transportation; arts, entertainment and recreation; and accommodation and food services. Nationally, travel and tourism account for about 15 percent of total employment. When the national average is compared with 56 percent in Pitkin County, 48 percent in Eagle County and 20 percent in Garfield County, the extent of each county economy’s reliance on tourism becomes evident: Pitkin and Eagle Counties are heavily dependent on tourism and Garfield County is moderately dependent on tourism.⁸⁵ This comparison is depicted in Chart 3D-1. It should also be noted that the percentage of employment related to travel and tourism in the three-county area is likely higher than presented, as second home construction and some other tourism related activities are not included in this calculation.

**Chart 3D-1:
Industries that include Travel & Tourism, Percent of Total Private Employment, 2010**



Source: Headwaters Economics, 2012

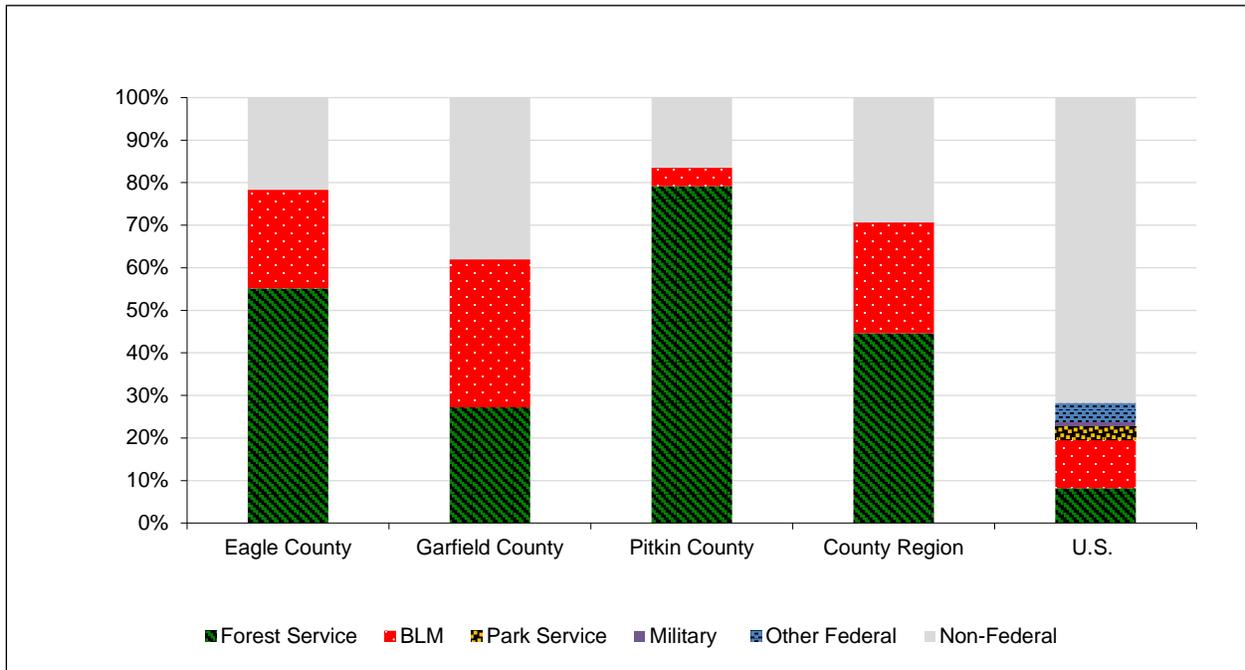
⁸⁴ Without additional research such as surveys, it is not known what exact proportion of the jobs in these sectors is attributable to expenditures by visitors, including business and pleasure travelers, versus by local residents. Some researchers refer to these sectors as “tourism-sensitive.” They could also be called “travel and tourism-potential sectors” because they have the potential of being influenced by expenditures by non-locals. In this report, they are referred to as “travel and tourism.”

⁸⁵ U.S. Department of Commerce, 2012

Public Lands

Public lands play an important role in stimulating local employment in the three-county area by providing opportunities for recreation. Communities adjacent to public lands can benefit economically from visitors who spend money in hotels, restaurants, ski resorts, gift shops, and elsewhere. In the three-county Analysis Area, Pitkin County contains the highest proportion of land in federal ownership, with 84 percent of land in the county being public lands. Pitkin County, however, also has the lowest percentage of public lands managed by the BLM, at only 4.4 percent.⁸⁶ The proportion of federal land as a percent of the total land area in each county is presented in Chart 3D-2. The existing acreage of federal land managed by the BLM, Forest Service and Bureau of Reclamation in each county is presented in Table 3D-2.

**Chart 3D-2:
Federal and Non-Federal Land, Percent of Total Land Area**



Source: Headwaters Economics, 2012

⁸⁶ Headwaters Economics, 2012

**Table 3D-2:
Total Acres of Federal Land by County**

County	BLM	Forest Service	Bureau of Reclamation	Total Federal Lands
Eagle County	235,479	596,026	18,604	850,109
Garfield County	669,862	515,917	2,193	1,187,972
Pitkin County	27,023	495,364	43,874	566,261
County Region	932,364	1,607,307	64,671	2,604,342

Source: Headwaters Economics, 2012

Tax revenues and PILT

Public revenues are sources of funding for governments that allow them to operate and provide public services to their constituency. Public revenues in the three-county area are generated primarily through property taxes, although sales taxes, federal and state payments (a.k.a. PILT), and other local sources of revenue are also important for the operation of the county governments. PILT payments are federal payments to local governments that help offset losses in property taxes due to nontaxable federal lands within their boundaries. PILT payments help local governments carry out such vital services as firefighting and police protection, construction of public schools and roads, and search-and-rescue operations. These county payments are an important component of local government fiscal health for rural counties with a large share of land in federal ownership. For counties with fewer public lands and larger economies, federal land payments are a small piece of a much broader revenue stream.

In each county, property and sales taxes are the largest sources of public revenues, ranging from 38 percent in Eagle County to 55 percent in Garfield County. PILT payments have a relatively small impact in each of the three counties, contributing between 1.3 and 3.1 percent of total general revenue.⁸⁷ The breakdown of total general revenue by source for each county is presented in Table 3D-3.

**Table 3D-3:
Breakdown of Total General Revenue by Source in FY 2007 in Thousands of Dollars**

	Eagle County	Garfield County	Pitkin County	County Region
Total General Revenue	115,871	73,795	82,264	271,929
Taxes	44,377	40,292	41,240	125,909
Intergovernmental Revenue	27,703	22,093	13,640	63,437
Total Charges	32,727	2,766	18,839	54,332
All Other (Miscellaneous)	11,064	8,643	8,544	28,251
Federal Land Payments (FY 2006)	1,573	2,261	1,076	4,911

⁸⁷ Ibid.

**Table 3D-3:
Breakdown of Total General Revenue by Source in FY 2007 in Thousands of Dollars**

	Eagle County	Garfield County	Pitkin County	County Region
Percent of Total				
Taxes	38.30%	54.60%	50.10%	46.30%
Intergovernmental Revenue	23.90%	29.90%	16.60%	23.30%
Total Charges	28.20%	3.70%	22.90%	20.00%
All Other (Miscellaneous)	9.50%	11.70%	10.40%	10.40%
Federal Land Payments (FY 2006)	1.40%	3.10%	1.30%	1.80%

Source: Headwaters Economics, 2012

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct Effects

Under the No Action Alternative, no changes or modifications would be approved that would directly or indirectly affect the social or economic resources in the three-county area and the baseline socioeconomic conditions presented in the Affected Environment section above would be expected to continue into the future. The Federal Parcels would remain under BLM management. The Non-Federal Parcels would remain private lands.

Indirect Effects

The Non-Federal Parcels could be sold and/or developed for residential or commercial purposes in the future, consistent with county zoning and land use regulations. However, the social and economic impacts of future sale and/or development of the Non-Federal Parcels are beyond the scope of this analysis.

Alternative 2: Proposed Action

Direct Effects

The Proposed Action would exchange approximately 1,470 acres of federal land for approximately 668 acres of non-federal land. In Eagle County, 200 acres of BLM lands would be transferred into private ownership. In Garfield County, 557 acres of private lands would be transferred into federal ownership. In Pitkin County, 1,269 acres of BLM lands would become private and 112 acres of private land would come under BLM management, providing a net loss of public lands in the county of 1,157 acres.

The proposed exchange is not expected to noticeably affect the population projections for the three-county area made by the Colorado State Demography Office.

Although the Proposed Action would produce a net loss of public land acreage in the three-county area, the provision of recreational opportunities, which is one of the most important economic features of

public lands, would increase. This is a result of the increased access to public lands and an increase of recreational opportunities that could be provided on the Non-Federal Parcels if they were to be managed by the BLM (discussed further in Chapter 3 Section C – Recreation). The increase in recreational opportunities under the Proposed Action would be expected to better support the travel and tourism component of the economy of each county involved in the proposed land exchange, which could generate new job opportunities and economic activity in the Analysis Area.

As a result of the transfer of BLM and private lands across the Project Area, property tax revenues would increase in Pitkin and Eagle Counties and decrease in Garfield County. PILT would be decreased in Pitkin and Eagle Counties and increased in Garfield County. None of these minor changes to public revenue sources are expected to noticeably affect the operation of any of the counties or their ability to provide public services to their constituencies.

Finally, as a component of the Proposed Action, the Proponent has committed to donating \$1.1 million—\$100,000 to cover BLM’s cost to develop a site-specific management plan for the Non-Federal Parcels, and \$1 million for their long-term management. The concept behind the \$1 million donation is to provide a permanent endowment for management of the Non-Federal Parcels into the future. This is a direct and beneficial economic effect of the Proposed Action, as the BLM would be managing less public lands (and more consolidated land) with more funds, as a result of the Proposed Action. This determination supports both components of the Purpose and Need for Action: 1) Consolidate land ownership boundaries (private and BLM) in the Red Hill (Garfield County), The Crown (Pitkin County) and Horse Mountain (Eagle County) areas; and 2) Improve management of, and public access to, public lands under the jurisdiction of the BLM while minimizing public trespass on adjacent private lands.

Indirect Effects

Conservation Easements on the Federal Parcels

At the foundation of each conservation easement is the premise that the Federal Parcels would not/could not be developed in the future. This would have economic benefits to Pitkin and Eagle Counties in the form of preserving the landscape that supports the tourism economy. A summary of the conservation easements is provided in Appendix A.

Site-Specific Management Plan for the Non-Federal Parcels

The \$1.1 million donation for development of a site-specific management plan and long-term management of the Non-Federal Parcels is considered a direct beneficial economic effect. Preparation, and implementation, of the site-specific management plan would have indirect effects on a range of resources, to be determined on a resource-by-resource basis in the future.

Agreement Between Two Shoes and the Pitkin County BOCC

Two of the three primary components of the agreement between the Proponents and the Pitkin County BOCC would affect (i.e., benefit) visual resources on private lands currently owned by the Proponent,

which would have economic benefits to Pitkin County in the form of preserving the landscape that supports the tourism economy. These include:

1. Upon approval of the exchange the Proponents have agreed to place a conservation easement on two parcels of the existing Two Shoes Ranch within the area known as Potato Bill. These parcels, totaling 365 acres, are owned by the Proponents and are immediately adjacent to Federal Exchange Parcel A on the east and west sides. These parcels were identified by the Colorado Division of Parks and Wildlife as important winter range for deer and elk, and important cliff habitat for big horn sheep. The conservation easements will recognize the important wildlife values of the land, and will protect the private property from future development and recreation uses.
2. The Proponents have ten vested single family development rights acquired during the Crystal Valley Ranch subdivision and approval for an indoor riding arena which, if developed, would have a noticeable visual impact from the Highway 133 visual corridor. Should the proposed land exchange be approved, the Proponents have agreed to extinguish the ten vested single family development rights, totaling 50,000 square feet of potential development, which would result in substantial amounts of land remaining undisturbed and undeveloped. The Proponents have also agreed to move the approved indoor riding arena to a less visually prominent location.

The contribution of \$700,000 from the Proponents to Pitkin County would also enhance recreational resources in the Analysis Area, which would further support the tourism economy of Pitkin County. The funds are intended to cover the costs of property acquisition and trail construction including approximately 10 acres of land needed to create a 1-mile-long trail parallel to Prince Creek Road within what is now the Tybar Ranch. This trail would improve safety on the Tybar reach of this road (above the bend at the Flying Dog Barn) and would provide safer, managed and legal access for the public to The Crown from the Prince Creek area. Should the County not be successful in obtaining the trail corridor adjacent to Prince Creek Road, the money could be used to improve the Rio Grande Trail connecting the Crystal River Valley with the Roaring Fork Valley or for other open space opportunities in the Crystal River Valley area.

E. VISUAL RESOURCES

SCOPE OF ANALYSIS

The BLM ensures that the scenic values of the public lands managed by the agency are considered before allowing uses that may have negative visual impacts. The BLM accomplishes this through its Visual Resource Management (VRM) system. The VRM system involves inventorying scenic values and establishing management objectives for those values through the resource management planning process. The inventorying process involves rating the scenic values of an area by evaluating the scenic quality, analyzing the public's concern for that scenic quality (visual sensitivity levels), and determining the visibility of the tract of land (distance zones). Proposed projects and activities are evaluated to determine whether they conform to the VRM objectives and to identify mitigating measures that can be taken to minimize adverse visual impacts. The VRM system helps to ensure that proposed actions on BLM lands today will benefit the landscape and adjacent communities in the future.

The visual resource Analysis Area includes both the Federal and Non-Federal Parcels and the surrounding areas from which these parcels can be viewed, including the WRNF, Colorado State Land Board lands, private lands, Interstate 70, and Colorado Highways 82 and 133.

AFFECTED ENVIRONMENT

Federal Parcels

The Federal Parcels are located in Pitkin and Eagle Counties. Federal Parcels A, B and B-1 lie in Pitkin County, just south of the Garfield/Pitkin County border and north of Mt. Sopris. These parcels are visible from the adjacent Prince Creek Subdivision as well as from Mt. Sopris and surrounding National Forest System lands. Parcels A, B and B-1 are within VRM Class II. The description of Class II scenic lands as defined in the BLM's Manual H-8410-1 – Visual Resource Inventory is as follows:

“The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the landscape.”⁸⁸

Parcel A lies on the northwestern flanks of Mount Sopris, and as such is a large part of the scenic rural landscape surrounding Mount Sopris from the Crystal River Valley and the Town of Carbondale. The characteristic landscape of Parcel A consists of rolling and steep hillsides and open terrain dominated by gambel oak shrublands, pinyon-juniper forests, and sagebrush shrublands and interspersed with rocky knolls. A canyon also surrounds Potato Bill Creek. Colors on Parcel A are predominantly mottled shades of dark green created by the pinyon-juniper-oak vegetation, along with lighter shades of green, tan and

⁸⁸ USDOJ BLM, 1986 p.6

grey, creating a medium mottled texture on the landscape. Parcel A is visible to the general public from the West Elk Loop Scenic Byway (State Highway 133) and Prince Creek Road (County Road 5), as well as from the public land on and surrounding Mount Sopris managed by the BLM and US Forest Service (refer to Figure 3). These roads and natural areas are all open to, and actively used by, residents of, and visitors to, Pitkin and Garfield counties. Parcel A and surrounding areas are notable for a striking geographic feature known as the “Lion’s Mane” that rises up from the north side of Potato Bill Creek, and is visible from Highway 133.

**Photo 3E-1:
Parcel A**



**Looking west across Parcel A from the eastern border of the parcel with Two Shoes Ranch.
(Source: Colorado Wildlife Science)**

Parcels B and B-1 lie adjacent to National Forest System lands on the northwestern flanks of Mount Sopris, and as such are part of the scenic rural landscape surrounding Mount Sopris. The parcels are visible from Forest Road 310, which is the road that provides public access to Dinkle Lake in the WRNF and to Forest System trails most frequently used by the public to climb Mount Sopris (refer to Figure 3). It is also visible from the Prince Creek Road and the BLM recreation area known as The Crown, both of which lie southeast of the Town of Carbondale, Colorado, and are open to, and actively used by, the general public. The characteristic landscape of Parcels B and B-1 is a predominately forested landscape containing aspen and lodgepole pine.

Federal Parcels C, D and E are located in Eagle County west of Horse Mountain. All three parcels are within VRM Class IV. The description of Class IV scenic lands as defined in the BLM's Manual H-8410-1 – Visual Resource Inventory is as follows:

“The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.”⁸⁹

Federal Parcels C, D and E possess excellent scenic characteristics, generally exceeding the VRM Class IV description above. Forests, woodlands, shrublands, geologic features, and dramatic topography create an aesthetically-pleasing array of shapes and textures. These parcels currently provide scenic enjoyment to the general public and contribute to the openness and variety of the overall landscape in the region. Most of these parcels, especially Parcel C which lies almost entirely on the prominent local landmark Horse Mountain, is highly visible to the public from surrounding and adjoining public lands administered by BLM, the U.S. Forest Service, and State Land Board lands; and to people traveling on County Road 8 (a major access way to the popular Sylvan Lake State Park), on Salt Creek and Bruce Creek Roads; and on Interstate 70 (particularly the eastbound lanes, which look directly across the Brush Creek valley at Horse Mountain).

⁸⁹ Ibid.

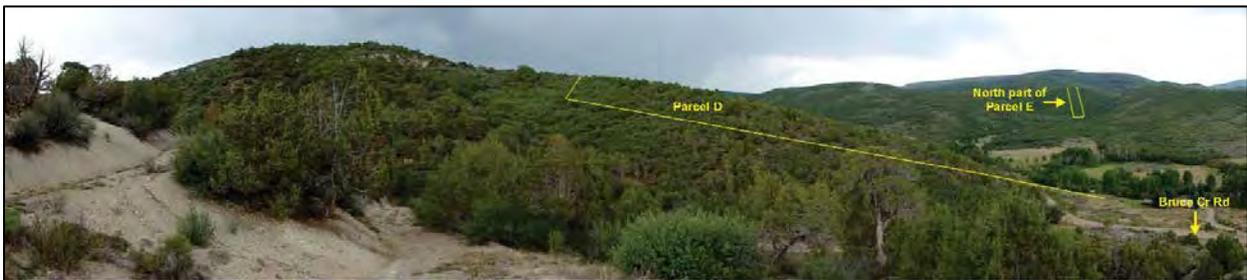
**Photo 3E-2:
Parcel C**



View of Parcel C from Salt Creek Road to the northwest. (Source: Rare Earth Science)

Parcels C and D rise steeply toward the summit of Horse Mountain and are dominated by pinyon/juniper forest and dense gambel oak shrublands. These areas of dense oakbrush, which are common across the parcels, severely limit ground visibility from within the parcels. The parcels include a handful of mine adits left over from early mining activity in the area. Small riparian areas may be viewed where Salt Creek crosses the northern tip of Parcel C and along Bruce Creek in the southwest corner of Parcel D. Parcel E is predominantly oak brush and contains no wetlands or riparian areas.

**Photo 3E-3:
Parcels D and E**



Views of Parcels D and E from the southwest portion of Parcel C. (Source: Rare Earth Science)

Each of the Federal Parcels (A, B, B-1, C, D and E) receives very little public use. Therefore, local ranchers, adjacent private landowners and hunters would constitute the typical casual observer. Travelers on the surrounding roads and Interstate 70 also would constitute a typical casual observer.

Non-Federal Parcels

Non-Federal Parcel 1 (Sutey Ranch) is a 557-acre ranch adjacent to BLM's Red Hill SRMA about 2 miles north of Carbondale. Parcel 1 ranges in elevation from a high of approximately 7,240 feet in the south, to a low of 6,520 feet along an ephemeral tributary of Cattle Creek that parallels Garfield County Road 112 in the northeast. The parcel has an agricultural land use and a number of large irrigated pastures created by sagebrush removal, as well as some areas of sagebrush shrubland where the native understory has been eliminated and replaced with introduced pasture grasses. In addition, there are areas of juniper woodland and three stock ponds. The topography of the Parcel 1 is characterized by rolling hills separated by small, gentle valleys. The topography of the parcel and the surrounding area provide limited views of the parcel. Parcel 1 is not visible from the Town of Carbondale because it is blocked by the summit of Red Hill and the topography within the exiting Red Hill SRMA. Portions of the parcel are visible from within the Red Hill SRMA, specifically the trails in the northern portion of the SRMA, such as the Elk Traverse, the Northside Loop and the Sage Loop. Portions of Parcel 1 are also visible from Cattle Creek Road (CR 112) and CR 113.

**Photo 3E-4:
Parcel 1**



View of Parcel 1 from within the parcel. (Source: Aspen Valley Land Trust)

Due to its scenic and wildlife habitat resources, Parcel 1 is a land conservation priority to the Aspen Valley Land Trust. Parcel 1 is in an area where large blocks of undeveloped open space are rapidly disappearing due to development pressures in the valley. The ranch was for sale as a development parcel until it was purchased by the Proponents.

Although Parcel 1 is currently private land and therefore does not have a BLM VRM Class, the adjacent BLM lands (including the Red Hill SRMA) are within VRM Class IV. The description of Class IV scenic lands as defined in the 1988 RMP is as follows:

“The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.”⁹⁰

Non-Federal Parcel 2 (West Crown) is 112 acres located approximately 4 miles southeast of the town of Carbondale in Garfield County, Colorado, and is just east of Federal Parcel A. The parcel is immediately adjacent to the west of The Crown. Parcel 2 is bordered by federal lands to the east with private land to the north. Prince Creek Road (CR 111) and Two Shoes Ranch lie to the south and west. Vegetation on this parcel is primarily sagebrush and pinyon-juniper. The topography includes flat-topped ridges and steep, deeply eroded drainages that slope to the west towards Prince Creek. The western portion of the parcel includes flatter topography along the valley bottom near Prince Creek. Elevations range from a high of approximately 7,240 feet on the flat ridge top in the east, to a low of 6,880 feet along Prince Creek Road in the northwestern corner. An irrigation ditch diverts water from Prince Creek across the parcel, flowing in a generally north direction through the northwestern portion of the parcel. The dominant vegetation type on the parcel is mountain shrubland dominated by Gambel oak, mountain mahogany, mountain big sagebrush, Utah serviceberry, Utah juniper, pinyon pine, and antelope bitterbrush. In addition, there is a narrow band of riparian and wetland habitat along the Prince Ditch vegetated by sandbar willow (*Salix exigua*) and narrowleaf cottonwood (*Populus angustifolia*). User-created trails exist on the parcel and lead into The Crown’s trail network. Parcel 2 is visible from the Prince Creek Subdivision and Prince Creek Road. Much of the parcel is visible from the summit of Mount Sopris. Portions of Parcel 2 are also visible from the western areas of The Crown.

⁹⁰ Ibid.

**Photo 3E-5:
Parcel 2**



View of The Crown from Parcel 2. (Source: SE Group)

Although Parcel 2 is currently private land and therefore does not have a BLM VRM Class, the adjacent BLM lands (including The Crown) are within VRI Class II. As mentioned above for Federal Parcels A, B and B-1, Class II scenic lands are defined as follows:

“The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the landscape.”⁹¹

Visitors to adjacent public lands, local ranchers and adjacent private landowners constitute the typical casual observer to each of the Non-Federal Parcels.

⁹¹ Ibid.

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Under the No Action Alternative, the Federal Parcels would remain under BLM management. The Federal Parcels could be leased for mineral and/or energy development, which could affect visual resources, although this is unlikely to occur since the Federal Parcels are mapped as having: 1) low potential for oil and gas development, 2) minimal values of locatable minerals, and 3) low potential for salable minerals development. The Non-Federal Parcels would remain private lands and could remain as they currently exist or they could be sold and/or developed for residential or commercial purposes, consistent with county zoning and land use regulations.

Direct and Indirect Effects

Federal Parcels

Under the No Action Alternative the Federal Parcels would remain under BLM management and little change would be expected to occur to visual resources on the parcels. Any mineral and/or energy development that may occur on the Federal Parcels would impact visual resources, but this is unlikely to occur given the low mineral development potential. The Federal Parcels would continue to be managed under their current VRM classes. Parcel A would remain in Category II (retention) as per the 1988 RMP. Parcels B, B-1, C, D and E would remain Category I (disposal) lands and could be exchanged or sold and subsequently developed, without provisions for conservation easements, which could potentially impact visual resources.

Non-Federal Parcels

If the No Action Alternative is selected, the Non-Federal Parcels would remain private lands. They could remain as they currently exist, or could feasibly be sold and/or developed for residential or commercial purposes, consistent with county zoning and land use regulations.

As private land, Parcel 1 could be developed using Colorado's use-by-right development statutes at one home per 35 acres, equating to fifteen homes on the parcel without any further approval or restriction from Garfield County. If Parcel 1 were to be subdivided through the Garfield County Subdivision Review Process, the Rural zone requires a minimum lot size of 2 acres, potentially allowing Parcel 1 to be subdivided into as many as 278 buildable lots. However, the Garfield County Comprehensive Plan suggests a maximum density of 6 to 10 acres per dwelling unit in this area, primarily due to the lack of public water and sewer service. It is more likely that a subdivision with a maximum gross density of 6 to 10 acres per dwelling unit, or 55 to 92 total homesites, which would comply with the County's comprehensive plan would receive a recommendation of approval from the planning staff.⁹² The future residential development of Parcel 1 could introduce undetermined visual contrast to the landscape.

⁹² Garfield County, 2012a

As private land, Parcel 2 could be developed into three homesites, with one single-family dwelling per buildable lot and a maximum allowable floor area of 15,000 square feet. The future residential development of Parcel 2 could introduce undetermined visual contrast to the landscape.

Alternative 2: Proposed Action

Direct Effects

Federal Parcels

The proposed land exchange would not directly affect the visual values of the Federal Parcels. Future uses of the Federal Parcels, should they become private land, would be dictated by one of three conservation easements, as discussed below under Indirect Effects.

Non-Federal Parcels

If the proposed land exchange is approved, the Non-Federal Parcels would be transferred to the BLM for management, which would preclude residential or commercial development. Under BLM management, visual resources on the Non-Federal Parcels would fall under the BLM's VRM system. This would ensure that the scenic values of the Non-Federal Parcels would be considered before allowing uses that may have negative visual impacts. Proposed projects and activities would be analyzed in subsequent NEPA analysis. At this time, the future management assumptions (detailed in Chapter 2) would not prevent the Non-Federal Parcels from achieving the VRM designation of Class IV or II, which is the VRM Class of the BLM lands surrounding Non-Federal Parcels 1 and 2, respectively.

The costs of creating a management plan for the Non-Federal Parcels would be offset by the \$1.1 million dollar donation for their long-term management that is included in the Proposed Action. This is further discussed below under Indirect Effects.

Indirect Effects

Conservation Easements on the Federal Parcels

If the proposed land exchange is approved, conservation easements would be placed on all federal lands that become private lands, except the 1-acre Federal Parcel B-1 (Appendix A). These conservation easements include provisions that would preclude development and activities that would otherwise interfere with the existing scenic quality of the Federal Parcels as seen from within the parcels and surrounding areas. The construction, improvement, placement, or replacement of any improvements (defined as buildings, structures, mobile homes or other physical, human-introduced development of, or on, the Federal Parcels, including landscaping, fences, wells, roads, septic systems, utilities, etc.) would be prohibited on Parcels A through E, with some minor, low-impact exceptions to be approved by the Aspen Valley or Eagle Valley Land Trusts. Mineral and/or energy development, which is currently allowed under BLM management and could alter visual resources on the Federal Parcels, would be prohibited by the conservation easements.

These conservation easements would ensure that views of Parcels A and B from the Prince Creek Subdivision, Mt. Sopris and surrounding National Forest System lands would continue to meet VRM Class II, despite the lands becoming private property. The conservation easements would also protect views of Parcels A and B from the West Elk Loop Scenic and Historic Byway (State Highway 133). The easements would also ensure that views of Parcels C, D, and E on Horse Mountain meet, and exceed, VRI Class IV from surrounding and adjoining public lands administered by BLM, the U.S. Forest Service, and State Land Board lands; and to people traveling on County Road 8, on Salt Creek and Bruce Creek Roads; and on Interstate 70.

Site-Specific Management Plan for the Non-Federal Parcels

Following a land exchange, the specific management of the Non-Federal Parcels would be determined through the subsequent development of a site-specific management plan within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's current RMP. Public input and collaboration with municipal agencies would be a key part of developing a site-specific management plan. Visual resources would likely be a component of this site-specific management plan.

Agreement Between Two Shoes and the Pitkin County BOCC

Two of the three primary components of the agreement between the Proponents and the Pitkin County BOCC would indirectly affect (i.e., benefit) visual resources on private lands currently owned by the Proponent. These include:

1. Upon approval of the exchange the Proponents have agreed to place a conservation easement on two parcels of the existing Two Shoes Ranch within the area known as Potato Bill. These parcels, totaling 365 acres, are owned by the Proponents and are immediately adjacent to Federal Exchange Parcel A on the east and west sides. These parcels were identified by the Colorado Division of Parks and Wildlife as important winter range for deer and elk, and important cliff habitat for big horn sheep. The conservation easements will recognize the important wildlife values of the land, and will protect the private property from future development and recreation uses.
2. The Proponents have ten vested single family development rights acquired during the Crystal Valley Ranch subdivision and approval for an indoor riding arena which, if developed, would have a noticeable visual impact from the Highway 133 visual corridor. Should the proposed land exchange be approved, the Proponents have agreed to extinguish the ten vested single family development rights, totaling 50,000 square feet of potential development, which would result in substantial amounts of land remaining undisturbed and undeveloped. The Proponents have also agreed to move the approved indoor riding arena to a less visually prominent location.

Both of these components of the agreement between the Proponents and the Pitkin County BOCC would help preserve the scenic integrity of the West Elk Loop Scenic and Historic Byway (State Highway 133).

F. LIVESTOCK GRAZING MANAGEMENT

SCOPE OF ANALYSIS

The BLM administers public land ranching in accordance with the Taylor Grazing Act of 1934, and in so doing provides livestock-based economic opportunities in rural communities while contributing to America's, and the West's, social fabric and identity. Together, public lands and the adjacent private ranches maintain open spaces in the fast-growing West, provide habitat for wildlife, offer a myriad of recreational opportunities for public land users, and help preserve the character of the rural West.

In managing livestock grazing on public rangelands, the BLM's overall objective is to ensure the long-term health and productivity of these lands and to create multiple environmental benefits that result from healthy watersheds. The terms and conditions for grazing on BLM-managed lands (such as stipulations on forage use and season of use) are set forth in the permits and leases issued to ranchers on public lands.

In order to address the potential effects of the proposed land exchange on grazing allotments and activities on both the Federal and Non-Federal Parcels, this analysis considers the existing conditions and the proposed uses under the conservation easements. The scope of analysis for livestock grazing management includes all Federal and Non-Federal Parcels included in the proposed land exchange.

AFFECTED ENVIRONMENT

Federal Parcels

Grazing Rights

Grazing permits have been issued by the BLM on Federal Parcels A, C, D and E. The BLM completed an EA on the renewal of a grazing permit on the Thomas Allotment (Allotment No. 08346) and an Appropriations Act Renewal for Potato Bill Allotment (Allotment No. 08347) on Parcel A in 2012. The entirety of Parcel A was approved for a grazing permit through these two grazing allotments.

The Thomas Allotment encompasses the area of Parcel A north of Potato Bill Creek. The Potato Bill Allotment includes the BLM land south of Potato Bill Creek and another small section of the southern portion of Parcel A. The Potato Bill grazing allotment is approximately 200 acres within BLM land, but also extends to nearby private and National Forest System lands managed by the WRNF.

BLM's permittee on the Thomas and Potato Bill allotments, Turnbull Land and Livestock, LLLP, also holds a grazing lease from the Proponents for the private land in Two Shoes Ranch. Parcels B and B-1, are not part of any existing grazing permits due to their relatively small size. However, some incidental grazing is occurring on Parcel B from adjacent allotments. No evidence of any grazing is present on Parcel B-1.

The Horse Mountain Allotment (Allotment No. 08719) in Eagle County includes 286 acres of public lands encompassing Federal Parcels C, D and E, but the vast majority (4,016 acres) of the allotment is comprised of the surrounding private lands. This area was also reviewed by the BLM in an EA before approving the grazing permit. The permit holder of the Horse Mountain Allotment is Foot Creek Corporation of Arizona, which owns land adjacent to, and east of, Parcel C.

The current grazing permit for the Thomas Allotment allows grazing for a three-year period from November 15, 2011 to the same date in 2014. The Potato Bill Allotment went into effect on May 30, 2008 and expires February 17, 2014. The Horse Mountain Allotment permits grazing from February 21, 2004 until February 20, 2014. The current use of the Federal Parcels as agricultural range land is compatible with other land use in the vicinity, as adjacent properties are also used for ranching and other agricultural production.

Livestock Grazing Management

Rangeland on the Federal Parcels is currently managed by the BLM. The use of Parcels A, C, D and E for grazing is consistent with past uses of the land and includes stipulations for the protection of native vegetation, riparian areas, artifacts, and other cultural items. There are also conditions for permission to complete maintenance and improvements, and the mitigation of any impacts these activities might cause.

Permits for all parcels in grazing allotments have a limit imposed on the period of use and the Animal Unit Months (AUM) that will be allowed during those times. The current Thomas Allotment allows 49 AUMs, the current Potato Bill Allotment allows 16 AUMs and the current Horse Mountain Allotment allows 40 AUMs. Additionally, the area made available for grazing is limited to 20 percent of public lands (%PL) for each of the periods of use on the Thomas Allotment and 19%PL for the Potato Bill Allotment. The Horse Mountain grazing allotment is limited to use of 8%PL for the approved period of use.

Incidental grazing occurring on Parcel B is difficult for the BLM to manage, given the intermingled nature of land ownership in the area and the relatively small size of the parcel. Fencing of the parcel to prevent such grazing is not considered a practical solution, given the scale of grazing and the size of the parcel.

Range Improvements

Parcel A includes over 7 miles of six-strand barbed-wire fence for cattle management. These fences are in good to excellent condition. The Durfee Ditch runs northeast across the northwest corner of Parcel A, but is not used to maintain or irrigate the parcel. There are no wells or other such range improvements on Parcel A, but the most recent approval for the Thomas allotment EA included permission for the construction of four stock ponds. Due to drought and concerns with starting a wildfire these ponds were not constructed in 2012. Parcel B is intermittently fenced. There are no range improvements on Parcel B-1.

Improvements on Parcels C, D and E include limited fencing, dirt roads, and Bemis Ditch. Intact fencing on these parcels exists on Parcel D along the west side of Bruce Creek Road and along the west and south boundaries of Parcel E. The west boundary of Parcel C is discontinuously fenced (the fence is dilapidated). None of these fences are thought to impede the passage of wildlife. The only irrigation infrastructure on these parcels is approximately 60 feet of Bemis Ditch, which crosses the north end of Parcel C. No part of these parcels is irrigated, except for a 0.25-acre area in the southwest corner of Parcel D (the part of Parcel D lying west of Bruce Creek), which is irrigated and hayed along with adjoining property to the west. There are no wells or other such range improvements on Parcels C, D and E.

Non-Federal Parcels

Grazing Rights

All grazing permits require a private “base property” that has been legally recognized by the BLM as having preference for the use of public land grazing privileges. Livestock grazing on public lands that are adjacent to private base properties is encouraged by the BLM in order to maintain private ranches that, in turn, preserve the open spaces and rangeland for the BLM. Parcel 1 (Sutey Ranch) currently serves as the base property for the Sutey Allotment (Allotment No. 08320). The permit for this allotment is held by the Proponents. Parcel 2 (West Crown), does not serve as a base property for any BLM grazing allotment.

Livestock Grazing Management

As currently private land, livestock grazing management on the Non-Federal Parcels is completed by the Two Shoes Ranch Manager. Although there is not a grazing management plan, efforts are currently focused on revegetation and improvements to the ranch. Grazing is managed by rotation and is dependent upon the amount of precipitation and ability to grow hay. Grazing is limited to the pastures that do not receive adequate water for a hay crop in any given year. Approximately forty cow-calf pairs are grazed six-plus months per year.⁹³

Range Improvements

Non-Federal Parcel 1 (Sutey Ranch) contains a system of irrigation ditches and laterals, which irrigate approximately 115 acres of the parcel. Much of this irrigated pasture is seeded for hay crop. In addition, there are three stock ponds, which have recently been rebuilt and re-lined with bentonite. The maximum water surface of these three stock ponds is estimated to cover approximately 0.2 acre. There is also a well and a 500-gallon storage tank. There are five barns/agricultural buildings on the parcel. A large portion of Parcel A is fenced. Four pastures in the higher eastern valley are unfenced. An irrigation ditch diverts water from Prince Creek across the parcel, flowing in a generally north direction through the northwestern portion; however, this ditch does not provide irrigation for the parcel. Non-Federal Parcel 2 (West Crown)

⁹³ Carney, 2013

contains no buildings or agricultural facilities and no seedings. There is some older, intermittent fencing on the parcel.⁹⁴

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Under the No Action Alternative, the Federal Parcels that currently allow grazing would not be exchanged thus there would be no changes to the grazing schedule or livestock management as a result of this decision.

Direct and Indirect Effects

The No Action Alternative would not directly or indirectly alter the current grazing permit arrangement based on historical use and the similar land use of adjacent parcels. However, Federal Parcels C, D and E would remain Category I (disposal) parcels and could be disposed in subsequent land tenure adjustment proposals (e.g., sales, land exchanges, etc.), thus terminating existing grazing rights.

Alternative 2: The Proposed Action

The Proposed Action would not substantially impact range management or existing grazing rights on Federal or Non-Federal Parcels considered in the exchange.

Direct Effects

Federal Parcels

Under the Proposed Action, the BLM would cancel in whole the grazing lease and preferences provided under the Thomas and Potato Bill allotments and part of the Horse Mountain Allotments arising from the conveyance of public lands supporting this preference. This is in accordance with Section 206 of the Federal Land Policy and Management Act of 1976. Turnbull Land and Livestock, LLLP, who holds the grazing lease and preferences on the Thomas and Potato Bill Allotments also currently holds a grazing lease on the Proponent's private lands of Two Shoes Ranch, which surrounds Parcel A. Under the Proposed Action, the BLM grazing lease would be cancelled and Parcel A would be incorporated into the Two Shoes Ranch. It is expected that grazing would continue on these lands through another private grazing lease.

Selection of the Proposed Action is expected to resolve the incidental grazing currently occurring on Parcel B because the parcel would be incorporated into the adjacent Two Shoes ranchlands, where such grazing would be allowed. Management of the rangeland of Federal Parcels A and B would be dictated by the conservation easements included in the Proposed Action. This is discussed further under Indirect Effects.

⁹⁴ Ibid.

The grazing lease and preferences provided under the Horse Mountain Allotment to Foot Creek Corporation of Arizona would be canceled in part as a result of the Proposed Action, removing approximately 200 acres of public land from the total 4,942 acres included in the allotment—a 4 percent decrease. Approximately 86 acres of public land, 640 acres of State land and 4,016 acres of private land would remain in the allotment and within the existing grazing rights of Foot Creek Corporation of Arizona. Provisions for the cancelling in part of this allotment are provided in the terms and conditions of the grazing permit as well as in 43 CFR 4100. As the terms and conditions for BLM grazing permits state: “They (grazing permits) are subject to cancellation, in whole or in part, at any time because of...A decrease in the lands administered by the BLM within the allotment(s) described.”⁹⁵ In addition, the BLM has discussed the proposed land exchange with representatives of the Foot Creek Corporation of Arizona and the corporation has signed a waiver to allow the Proponents to take the lands without being subject to the existing grazing authorizations. The waiver also allows the BLM to cancel, in whole or in part, the grazing permit without the two-year notice prior to the BLM canceling provided by 43 CFR 4110.4-2(b).

Management of the rangeland of Parcels C, D and E would also be dictated by the conservation easements included in the Proposed Action. This is further discussed under Indirect Effects.

Non-Federal Parcels

Under the Proposed Action, Non-Federal Parcels 1 and 2 would come under BLM management and Parcel 1 would no longer serve as a base property for the Sutey Allotment (the grazing permit for which is held by the Proponent). Livestock grazing on the Non-Federal Parcels would be managed under a future site-specific management plan, the costs of which would be offset by the \$1.1 million dollar donation for the long-term management of the Non-Federal Parcels included in the Proposed Action. This is discussed further under Indirect Effects.

Indirect Effects

Conservation Easements on the Federal Parcels

Under the terms of the conservation easements, range on Federal Parcels A and B would be managed in accordance with a grazing management plan prepared by a competent professional acceptable to the Aspen Valley Land Trust (who would hold the conservation easements). This grazing management plan must be approved by CPW and may be periodically amended upon approval by the AVLTL in consultation with CPW. The conservation easements would allow for the grazing of horses and livestock and leasing of grazing rights on Parcels A and B in a manner that does not result in degradation of wildlife habitat, or significant soil erosion or low soil quality as determined by the Natural Resource Conservation Service (NRCS) or its successor organization. In order to prevent adverse impacts on soils, vegetation, cultural resources, water quality, possible paleontological resources, and other resources the conservation easements on the Federal Parcels A and B prohibit the following animal husbandry practices:

⁹⁵ 43 CFR 4100

- Intensive growth livestock farms or commercial feed lots, defined as confined areas or facilities on the Property, within which the land is not grazed or cropped annually, for purposes of extended feeding and finishing of large numbers of livestock for commercial purposes;
- Grazing or keeping of domestic sheep on the Property without CPW consent;
- Clearing or conversion of native rangeland or habitat to create new pastures without approval of the AVLT in consultation with CPW;
- Tilled cultivation of crops, including tree farms or sod farms;
- Fish hatcheries or other aquaculture; and
- Commercial horse boarding.

Likewise, under the conservation easements, all agricultural uses on Parcels C, D and E would be conducted using stewardship and management methods that preserve the natural resources upon which the agriculture is based. Long-term stewardship and management goals include preserving soil productivity, maintaining natural stream channels, preventing soil erosion, minimizing invasive species, and avoiding unsustainable livestock grazing practices. Grazing and agricultural activities would be conducted in a manner that does not result in soil erosion or low soil quality as determined by the NRCS or any successor agency. “Feed lots,” or permanently constructed confined area or facilities which are used and maintained continuously and exclusively for the purposes of warm-up or fattening large numbers of livestock for market, are prohibited, although seasonally confining livestock into an area, corral or other facility for warm-up or feeding is allowed. Leasing pasture for the grazing of livestock owned by others is also allowed. The Proponents are also allowed to construct or place three minor agricultural improvements (such as loafing sheds), each with a Floor Area of less than 300 square feet, or other minor agricultural improvements such as agricultural water wells, pumps, corrals, stock tanks, ponds and wildlife water guzzlers, anywhere on the parcels.

Site-Specific Management Plan for the Non-Federal Parcels

Following a land exchange, the specific management of the Non-Federal Parcels would be determined through the subsequent development of a site-specific management plan within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM’s current RMP. Public input and collaboration with municipal agencies would be a key part of developing a site-specific management plan. It is likely this site-specific management plan would address livestock and grazing on the Non-Federal Parcels.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between Two Shoes and the Pitkin County BOCC (pertaining only to existing private property in the Two Shoes Ranch) does not address livestock and grazing; however, the conservation easements (totaling 365 acres) placed upon two parcels of the existing Two Shoes Ranch within the area known as Potato Bill would require grazing management on these parcels in a similar fashion to what is discussed for the conservation easements on Federal Parcels A and B above.

G. CULTURAL RESOURCES

SCOPE OF ANALYSIS

Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires that federal agencies take into account the effects of a federal undertaking on any cultural resource that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). Cultural resources are features with valued archaeological, historic, and socio-cultural properties as outlined by NHPA.

The cultural resources assessment performed for the proposed Sutey Ranch Land Exchange is based on a Class III cultural resources inventory, which included file searches of previous inventories and new surveys conducted on approximately 517 acres of the Federal Parcels. In separate technical reports—one prepared for the Federal Parcels in Eagle County and one for Federal Parcels in Pitkin County—ERO Resources Corporation performed a complete cultural resource inventory.

The cultural resources inventory entails intensive field surveys of the Federal Parcels by professional archaeologists walking the area of potential effect (APE) with the intent of locating and recording all historic items and sites. The APE, which includes the acreage of all Federal Parcels, defines the scope of the cultural resources analysis for this EA. The following analysis is a summary of the full cultural resource inventories, which are contained in their entirety in the project file.

Note that no official cultural resources inventory was completed on the Non-Federal Parcels being traded to BLM as part of the exchange. The proposed land exchange would not affect any cultural resources that may be present on these parcels and if the proposed exchange is approved the BLM would complete the resource inventories on these parcels prior to the completion of the site-specific management plan (discussed further below).

AFFECTED ENVIRONMENT

A Class III cultural resources inventory, completed in 2011, included three Federal Parcels (A, B, and B-1) located in Pitkin County, and three parcels (C, D, and E) in Eagle County—all of which are managed by the BLM's CRVFO. The land proposed to be transferred to the Two Shoes Ranch (Parcels A, B and B-1) totals approximately 1,269 acres, with 453 acres of the total determined to have never been previously surveyed for cultural resources. Of the total 201 acres of land in the proposed exchange with Lady Belle Partnership, LLLP, 64 acres were determined to require new inventory.

Twelve cultural resources were previously recorded within 1 mile of the Federal Parcels in Pitkin County (A, B, and B-1), but only nine are within the APE. The most recent survey located four new cultural resources, three were isolated finds and one stone pile and alignment (likely modern). Six cultural resources were located near Federal Parcels C, D and E in past inventories; each of which were reevaluated in the context of the current project. No new cultural resources were located during the new surveys of Federal Parcels C, D and E. None of the previously recorded or new sites within the project

area, or within 1 mile of the project area, were found to be eligible for the NRHP. As no eligible cultural resources were located in either of the Class III inventories, a determination of “no historic properties affected” was recommended by the cultural resource inventory reports.⁹⁶

ENVIRONMENTAL EFFECTS

Alternative 1: No Action

Direct and Indirect Effects

Under the No Action Alternative, the lands would not be exchanged and cultural resources on the Federal Parcels would remain protected through BLM management and NHPA. No cultural resource inventories have been completed on the Non-Federal Parcels that are part of the proposed exchange. Any unidentified cultural resources on Non-Federal Parcels would remain unprotected by NHPA.

The Class III cultural resources inventory found no NRHP qualifying cultural resources on the Federal Parcels and a determination of “no historic properties affected” was recommended. Although there are no NRHP-qualifying resources, any non-qualifying cultural resources that are present on the Federal Parcels may be susceptible to vandalism and unauthorized collection under the No Action Alternative, but this is limited by the currently difficult public access to the Federal Parcels.

Alternative 2: The Proposed Action

Under the Proposed Action, the land exchange would not have any direct, indirect, or cumulative effects on identified cultural resources in the APE. None of the few cultural resources that have been identified on the Federal Parcels have been determined to be NRHP eligible. As no eligible cultural resources were located in either of the Class III inventories on the Federal Parcels, a determination of “no historic properties affected” was recommended by the cultural resource inventory reports.⁹⁷

Direct Effects

Federal Parcels

Under the Proposed Action, cultural resources that are present on the current Federal Parcels would no longer be protected by federal cultural resource laws as a direct result of the exchange. The private ownership of the Federal Parcels, however, would eliminate the already limited public access, thereby increasing protections from vandalism and unauthorized collection of known or unidentified cultural resources.

Non-Federal Parcels

The potential cultural resources that would be transferred from private ownership to public management on the Non-Federal Parcels would become more accessible to the public as a result of this exchange, but would also receive protection from federal cultural resource laws that are not present on private lands.

⁹⁶ 36 CFR 800.5 of NHPA – 1966, as amended

⁹⁷ Ibid.

The costs of creating a management plan for the Non-Federal Parcels would be offset by the \$1.1 million dollar donation for their long-term management that is included in the Proposed Action. This is further discussed under Indirect Effects.

Indirect Effects

Conservation Easements on the Federal Parcels

The conservation easements (Appendix A) that would cover the Federal Parcels (except the 1-acre Parcel B-1) under the Proposed Action limit development, grazing, recreation, mineral extraction, and other ground-disturbing activities. This limitation would help protect cultural resources.

Site-Specific Management Plan for the Non-Federal Parcels

Following a land exchange, the specific management of the Non-Federal Parcels would be determined through the subsequent development of a site-specific management plan within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's current RMP. Public input and collaboration with municipal agencies would be a key part of developing a site-specific management plan. This site-specific management plan would address cultural resources on the Non-Federal Parcels. The BLM would complete cultural resource inventories on these parcels prior to the completion of the site-specific management plan.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between the Proponents and the Pitkin County BOCC does not pertain to cultural resources; however, the conservation easements (totaling 365 acres) placed upon two parcels of the existing Two Shoes Ranch within the area known as Potato Bill would limit development, grazing, recreation, mineral extraction, and other ground-disturbing activities. This limitation would help protect cultural resources.

H. PALEONTOLOGY

SCOPE OF ANALYSIS

The BLM manages, preserves, and protects paleontological resources on public land using scientific principles and expertise. Paleontological resources are any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth. Paleontological resources do not include any materials associated with an archaeological resource or any cultural item.⁹⁸ Paleontological resources are managed so as to safeguard their scientific and educational values as well as to promote public benefit and enjoyment.

The current classification system utilized by the BLM for assessing impacts to fossil resources is the Potential Fossil Yield Classification (PFYC) System. This system classifies geologic units based on the relative abundance of vertebrate fossils or scientifically important invertebrate and plant fossils and their sensitivity to adverse impacts. This classification is applied to a geologic formation, member, or other distinguishable unit. This classification system recognizes that although significant fossil localities may occasionally occur in a geologic unit, a few widely spaced localities do not necessarily indicate a higher class. The primary purpose of the PFYC is to assess the possible impacts from surface disturbing activities and help determine the need for pre-disturbance surveys and monitoring during construction.

The APE, which includes the acreage of all Federal Parcels, defines the scope of the paleontology analysis. This paleontological assessment is based on a mineral report conducted on parcels A, B, B-1, C, D, and E, which indicated the geologic formations present and the BLM's PFYC.

Note that no official assessment of potential paleontological resources was completed on the Non-Federal Parcels being traded to BLM as part of the exchange. The proposed land exchange would not affect any paleontological resources that may be present on these parcels and if the proposed exchange is approved the BLM would complete an assessment on these parcels prior to the completion of the site-specific management plan (discussed further below).

AFFECTED ENVIRONMENT

All parcels involved in the land exchange are situated geographically on the Western Slope of Colorado, between the western edge of the Rocky Mountains and the Colorado Plateau. Structural features that contribute to the unique geology in the area of Parcels A, B and B-1 include the Grand Hogback Monocline to the North, the Piceance Basin to the west, and the Eagle Valley to the east. Structures contributing to the geology in the area of Parcels C, D, and E include the Rocky Mountains to the East, the Piceance Basin to the west, and the Eagle Valley Evaporite in the surrounding area. The Federal

⁹⁸ 16 U.S.C. 470aaa(4)

Parcels (A, B, B-1, C, D, and E) are underlain by rocks ranging in age from Precambrian to Upper Tertiary.

Pitkin County Parcels A, B, and B-1

Federal Parcels A, B, and B-1 are situated near the base of Mt. Sopris, an igneous plutonic stock of quartz monzonite and granodiorite, located south of the Two-Shoes Ranch. Geology in this portion of the Project Area consists of alluvial deposits of Devonian to Quaternary-aged rocks, mainly Leadville limestones, Maroon Formation sandstones and conglomerates, Dakota sandstones, and younger Pleistocene gravel deposits. The geologic formations within the Two Shoes Area include:

- Old Gravels and alluvium (Class 3) from the Pleistocene age, which is unconsolidated, varying in size and shape, and includes sand, gravels, cobbles, and boulders. The outcrop is terrace, outwash, and pediment gravels.
- High-Level alluvium (Class 2) from the Pliocene age with fine-grained to boulder alluvial deposits and gravels. The outcrop is preserved mainly on ridge tops, but may not all be of the same age.
- Mancos Shale (Class 2) from the Cretaceous age with grey to dark-gray marine shale. The outcrop thickness ranges from 5,000 to 6,000 feet.
- Dakota Sandstone (Class 3) from the Lower Cretaceous age with light gray and tan sandstone or quartzite, and some inter-bedded dark shale and shaley sandstone. The out crop is a resistant, widely exposed unit with thickness of 125 to 225 feet, approximately.

Class 3 geologic units are fossiliferous sedimentary units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential. Management considerations for Class 3 geologic units, like Dakota Sandstone and Old Gravels and alluvium, cover a broad range of options and could include pre-disturbance surveys, monitoring, or avoidance. Surface-disturbing activities would require sufficient assessment to determine whether important paleontological resources occur in the area of a proposed action, and whether the action could affect the paleontological resources.

For the Class 2 geologic units—Mancos Shale and Dakota Sandstone—the probability for impacting vertebrate fossils, scientifically important invertebrate, or plant fossils is low. Assessment or mitigation of paleontological resources is usually unnecessary. Localities containing important resources may exist, but would be rare and would not influence the classification. These important localities would be managed on a case-by-case basis.

Eagle County Parcels C, D, and E

The surface and bedrock geology of Federal Parcels C, D and E are concealed in most of the area by thick oak brush, vegetation and soils. The bedrock formations consist of, in ascending order, the Eagle Valley

Evaporite, the Eagle Valley Formation, the Chinle Formation, the Entrada Sandstone, the Morrison Formation, and the Dakota Sandstone. This area falls within the Brush Creek Mining District and is notable due to mineral extraction in the early 1900s. The silver-copper ores of the Brush Creek District are found only in the vicinity of Horse Mountain where Jurassic Entrada Sandstone is folded up against the Lady Bell thrust fault. The fault served as a barrier to the ore solutions which then spread out and impregnated the lower part of the Entrada just above its contact with the underlying Triassic red beds. This is the only favorable horizon for ore deposition in the district.⁹⁹ The geologic formations in Federal Parcels C, D, and E include:

- Dakota Sandstone (Class 3) from the Lower Cretaceous age with light gray and tan sandstone or quartzite, and some inter-bedded dark shale and shaley sandstone. The out crop is a resistant, widely exposed unit with thickness of 125 to 225 feet, approximately.
- The Morrison Formation (Class 5b) is from the Upper Jurassic age with variegated shale and mudstone, light-gray sandstone, and local beds of green-gray limestone. The outcrop is locally conglomeratic near the base with a thickness of about 500 feet along Grand Hogback and the Colorado River.
- Entrada Sandstone (Class 3) from the Upper Jurassic age is light-gray to orange cross-bedded sandstone with an outcrop thickness of about 75 to 150 feet in the northwest and central quadrangle.
- The Chinle Formation (Class 5b) is from the Upper Triassic age with brownish to purplish-red calcareous siltstone, mudstone, and sandstone and an outcrop thickness of about 1,200 feet south of Eagle that thins in all directions.
- Eagle Valley Formation (Class 2) is of the Pennsylvanian age with gray and reddish-gray siltstone, shale, sandstone, and carbonate rocks. The outcrop unit is transitional between clastic and evaporitic with varying thickness.
- The Eagle Valley Evaporite (Class 2) from the Pennsylvanian age with gypsum, anhydrite, and inter-bedded siltstone and minor dolomite with some salt at depth. The outcrop is diapiric in structural configuration in many places; thickness is indeterminate.

The Morrison and Chinle Formations are both ranked Class 5 formations under the PFYC system. This classification is used to identify highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation. The Morrison formation is known as a significant source of dinosaur fossils including: *Camarasaurus*, *Diplodocus*, *Barosaurus* and *Allosaurus*; while the Chinle formation has been known to yield dinosaur tracks, lungfish burrows and various small crocodile-like reptiles.

⁹⁹ Bureau of Mines, 1993

Paleontological field visits and review of U.S. Geological Survey (USGS) geologic and topographic quadrangle maps revealed that the Morrison and Chinle Formations in the Project Area are covered in dense vegetation and overlain by land flow and pediment deposits. This ultimately relegates the classification of the formations to PFYC 5b. These are areas underlain by geologic units with very high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has very high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent impacts to the bedrock resulting from the activity. Additionally, examination of the BLM paleontology database indicates no known fossil deposits in this area.

Class 3 geologic units are fossiliferous sedimentary units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential. Management of Class 3 geologic units, like Dakota Sandstone and Entrada Sandstone, cover a broad range of options and could include pre-disturbance surveys, monitoring, or avoidance. Surface-disturbing activities would require sufficient assessment to determine whether important paleontological resources occur in the area of a proposed action, and whether the action could affect the paleontological resources.

For the Class 2 geologic units—Eagle Valley Formation and Eagle Valley Evaporite—the probability for impacting vertebrate fossils, scientifically important invertebrate, or plant fossils is low. Assessment or mitigation of paleontological resources is usually unnecessary. Localities containing important resources may exist, but would be rare and would not influence the classification. These important localities would be managed on a case-by-case basis.

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

Under the No Action Alternative the lands would not be exchanged and unknown paleontological resources that may be on federal lands would remain protected, but similar resources on private lands would remain unprotected.

Alternative 2: The Proposed Action

The Proposed Action has little to no potential to adversely affect scientifically important fossils. Both surface and subsurface fossils would in most cases be protected. Although vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area, the greatest potential for impacts is associated with excavation of surficial materials and shallow bedrock. Any surface disturbing activities increases the probability of impacting significant fossils, but there are no surface disturbing activities included in the Proposed Action.

Direct Effects

Under the Proposed Action there would be no direct effects to paleontological resources that may be present on Federal and Non-Federal Parcels.

Federal Parcels

Paleontological resources that are transferred from federal to private ownership would lose BLM management and federal protection, but would be continue to be protected by conservation easement that limits, among other things, surface disturbance (discussed further below).

Non-Federal Parcels

Under the Proposed Action, currently unprotected paleontological resources on private lands in the exchange would become federally protected and managed by the BLM.

The costs of creating a management plan for the Non-Federal Parcels would be offset by the \$1.1 million dollar donation for their long-term management that is included in the Proposed Action. This is further discussed below under Indirect Effects.

Indirect Effects

Conservation Easements on the Federal Parcels

Although no fossils or paleontological resources have been identified on parcels A, B, C, D, and E, any resources that are present and undiscovered would be protected through limitations on development and uses by the conservation easement held on the land by either the Aspen Valley Land Trust or the Eagle Valley Land Trust (Appendix A). The conservation easements place limitations on surface-disturbing activities, thus limiting negative impacts to possible paleontological resources.

Site-Specific Management Plan for the Non-Federal Parcels

Following a land exchange, the specific management of the Non-Federal Parcels would be determined through the subsequent development of a site-specific management plan within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's current RMP. Public input and collaboration with municipal agencies would be a key part of developing a site-specific management plan. It is likely this site-specific management plan would address paleontological resources on the Non-Federal Parcels. On-the-ground surveys prior to authorizing any surface disturbing activities will likely be necessary. On-site monitoring may be necessary during any construction activities.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between the Proponents and the Pitkin County BOCC does not pertain to paleontological resources; however, the conservation easements (totaling 365 acres) placed upon two parcels of the existing Two Shoes Ranch within the area known as Potato Bill would limit surface-disturbing activities, thus limiting negative impacts to possible paleontological resources on these private parcels.

I. NATIVE AMERICAN RELIGIOUS CONCERNS

SCOPE OF ANALYSIS

Native American religious concerns are legislatively considered under several acts and Executive Orders, namely the American Indian Religious Freedom Act of 1978 (PL 95-341), the Native American Graves EA Protection and Repatriation Act of 1990 (PL 101-601), and Executive Order 13007 (1996; Indian Sacred Sites). In concert with other provisions such as those found in NHPA and Archaeological Resources Protection Act of 1979 (ARPA), these regulations require that the Federal Government carefully and proactively take into consideration traditional and religious Native American culture and life. This ensures, to the degree possible, that access to sacred sites, the treatment of human remains, the possession of sacred items, the conduct of traditional religious practices, and the preservation of important cultural properties are considered and not unduly infringed upon. In some cases, these concerns are directly related to “historic properties” and “archaeological resources.” In other cases, elements of the landscape without archaeological or other human material remains may be involved. Identification of these concerns is normally completed during the land use planning efforts, reference to existing studies, or via direct consultation.

An important consideration in the fulfillment of the BLM’s mission is the trust relationship the agency has with American Indians and the potential impact BLM policies, programs, and project decisions may have on tribes. The CRVFO manages lands that contain the traditional territory of a number of American Indian peoples, including the Southern Ute Tribe, the Ute Tribe of the Uinta and Ouray Bands and the Ute Mountain Ute Tribe.

The scope for this analysis of Native American Religious Concerns includes all of the BLM lands managed by the CRVFO, including the Federal Parcels. It also includes the Non-Federal Parcels.

AFFECTED ENVIRONMENT

The Ute have a generalized concept of spiritual significance that is not easily transferred to Euro-American models or definitions. The BLM recognizes that the Ute have identified sites that are of concern because of their association with Ute occupation of the area as part of their traditional lands. Notice of the land exchange was sent to the Southern Ute Tribe, Ute Mountain Ute Tribe, and the Ute Tribe of the Uinta and Ouray Bands on May 9, 2012. The letter requested the tribes to identify issues and areas of concern within the proposal. No comments were received.

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

No comments were received from any tribal government nor was any request for additional information or consultation received. Thus, no Native American religious concerns were raised in relation to the No

Action Alternative, and the BLM is not aware of any issues related to the Federal and Non-Federal Parcels.

Alternative 2: Proposed Action

Direct and Indirect Effects

No comments were received from any tribal government during scoping, nor was any request for additional information or consultation received. Thus, no Native American religious concerns were raised in relation to the Proposed Action, and the BLM is not aware of any issues related to the Federal and Non-Federal Parcels. Therefore, there are no direct or indirect effects to Native American religious concerns.

J. ENVIRONMENTAL JUSTICE

SCOPE OF ANALYSIS

Environmental justice speaks to concerns that federal decisions could disproportionately impact people of a particular ethnic or cultural heritage group, or people with low incomes. Environmental Justice is an executive order (EO 12898) that requires, in brief, that each Federal Agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

The CEQ provides the following definitions in order to provide guidance for compliance with environmental justice requirements in NEPA:

- “*Minority populations* should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.”¹⁰⁰
- “*Low-income populations* in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census’ Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.”¹⁰¹

The Analysis Area for this Environmental Justice analysis includes the three-county area: Eagle, Garfield and Pitkin counties.

AFFECTED ENVIRONMENT

Minority Populations

No minority populations, as defined by CEQ above, have been identified in the three-county area.¹⁰² The racial makeup of each county is presented in Table 3J-1.

¹⁰⁰ CEQ, 1997

¹⁰¹ Ibid.

¹⁰² U.S. Census Bureau, 2010

**Table 3J-1:
 Racial Makeup of the Three-County Area, 2010**

County	White		Black or African American		American Indian and Alaska Native		Asian		Native Hawaiian and Other Pacific Islander		Some Other Race		Two or More Races	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Eagle County	43,402	83.2	359	0.7	343	0.7	528	1	15	0	6,443	12.3	1,107	2.1
Garfield County	46,367	82.2	385	0.7	639	1.1	370	0.7	46	0.1	7,122	12.6	1,460	2.6
Pitkin County	16,028	93.5	93	0.5	45	0.3	207	1.2	12	0.1	522	3	241	1.4
County Region	105,797	86.3	837	0.6	1,027	0.7	1,105	1.0	73	0.1	14,087	9.3	2,808	2.0

Source: U.S. Census Bureau, 2010

Low-Income Populations

Low-income populations, as defined above, are identified in Table 3J-2.¹⁰³

**Table 3J-2:
Percentage of Population Below the Poverty Level, 2010**

County	Percentage of people below the poverty level
Eagle County	9.4%
Garfield County	9.2%
Pitkin County	8.4%
County Region	9.0%

Source: U.S. Census Bureau, 2010

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

Under the No Action Alternative, no changes or modifications would be approved that would directly or indirectly affect minority or low-income populations in the three-county area and the baseline conditions presented in the Affected Environment section above would be expected to continue into the future.

Alternative 2: the Proposed Action

Direct and Indirect Effects

The Proposed Action is not expected to directly or indirectly create disproportionately high and adverse human health or environmental effects on minority and low-income populations. This conclusion is based on the following:

- No minority populations were identified in the three-county area where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.
- The proposed land exchange would not have a disproportionate effect on any minority or low-income communities as the effects of the exchange would be spread throughout the three-county Analysis Area and would not disproportionately affect any particular group or community in a negative way.

¹⁰³ Ibid.

K. WASTES, HAZARDOUS OR SOLID

SCOPE OF ANALYSIS

Wastes, both hazardous and solid, can have adverse effects on soil, ground water, and surface water. A Phase I Environmental Site Assessment (ESA) is used to inspect a site for indications of current or past uses that could have caused contamination of the land with hazardous materials or petroleum products. Historical photographs and documents, interviews with persons knowledgeable of the site, reviews of past reports, and working with local and federal agencies are all used to assess environmental issues present on the site. In the context of an ESA, environmental issues are classified as Recognized Environmental Conditions if the presence or likely presence of any hazardous substances or petroleum products is identified on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.¹⁰⁴

Two Phase I ESAs were completed in connection with proposed exchange: one for Federal Parcels A, B and B-1 and one for Federal Parcels C, D and E. While a Phase I ESA was completed for Non-Federal Parcel 1 (Sutey Ranch) in 2008, this assessment is no longer current as ESAs are only valid for one year. The BLM has completed extensive on-the-ground inspections as well as database research on the Non-Federal Parcels and has determined there is little risk to the BLM should they come into federal management. Should the proposed land exchange be approved, Phase I ESAs for the Non-Federal Parcels would be completed.

The Analysis Area for wastes includes both the Federal and Non-Federal Parcels.

AFFECTED ENVIRONMENT

Federal Parcels

No hazardous conditions and no sites or facilities were identified in the vicinity that would negatively impact the Federal Parcels. Although illegal solid waste disposal is known to occur occasionally on public land, current waste disposal on the Federal Parcels is minimal due to the difficult public access and low levels of use on these parcels. Most waste left on BLM land in the Analysis Area is incidental recreational litter or sometimes household trash; no large-scale, hazardous materials type dumping has been known to occur.

¹⁰⁴ American Society for Testing and Materials (ASTM), 2012

The Phase 1 ESAs that were completed for Federal Parcels A, B and B-1 and C, D and E (respectively) found no indication that any hazardous substance was stored for one year or more, known to have been released, or disposed of on any of the parcels. A review of government records and the site examination revealed no indication of the existence of Recognized Environmental Conditions and no conditions which would require a notice in the patent as required by Section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).¹⁰⁵ In addition, no hazardous conditions on the parcels and no sites or facilities nearby were identified that would negatively impact the parcels. The Phase 1 ESAs for Federal Parcels A, B and B-1 and C, D and E recommended no further inquiry on the parcels is needed and that the parcels have been determined to be suitable for disposal.

Non-Federal Parcels

Although a Phase 1 ESA that was completed for Non-Federal Parcel 1 in 2008 is no longer valid (ESAs expire after one year), it found no evidence of a Recognized Environmental Condition.

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

The No Action Alternative would result in a continuation of the current land uses and management on the Federal and Non-Federal Parcels. There would be no change in the likelihood that solid or hazardous wastes would be left on the properties. Solid waste disposal is known to occur occasionally on public land and would be addressed in the event that it occurs on the Federal Parcels. No other environmental effects would be expected.

Alternative 2: The Proposed Action

Direct Effects

Under the Proposed Action, there would be no change in the likelihood that solid or hazardous wastes would be left on the Federal Parcels. The transfer of the Non-Federal Parcels from private ownership to BLM management could increase the likelihood that refuse could be left on the parcels; however, most waste left on BLM land in the area is incidental recreational litter or sometimes household trash; no large-scale, hazardous materials type dumping has been known to occur. Prior to closing, a comprehensive hazardous waste inspection will be required for the Non-Federal Parcels.

The Proposed Action includes a donation of \$1.1 million for the long-term management of the Non-Federal Parcels in the future. This would presumably include management of any waste left on the parcels.

¹⁰⁵ 42 USC Chapter 103

Indirect Effects

Conservation Easements on the Federal Parcels

Conversion of the Federal Parcels to private ownership would not likely change the land use as the properties would be placed under a conservation easement, which would prevent dumping or accumulation of refuse. The conservation easements on Parcels A and B prevents dumping, permanently accumulating, or disposing of trash, garbage, or other hazardous refuse on the parcels and prohibits improvements such as storage tanks, septic systems, hazardous waste sites and landfills. The conservation easement on Parcels C, D and E prevents dumping or accumulating any kind of trash, sludge, or refuse on the parcels and prohibits improvements such as storage tanks, septic systems, hazardous waste sites and landfills. In addition, the treatment, permanent storage, disposal or release of hazardous materials on, from or under the parcels is prohibited by the easement on Parcels C, D and E.

Site-Specific Management Plan for the Non-Federal Parcels

As an indirect effect of the proposed land exchange, wastes on the Non-Federal Parcels would be managed under a future, site-specific management plan, which would fall under a separate NEPA analysis. This site specific management plan would likely include stipulations for the prompt removal of any waste that is discovered to mitigate or prevent any future impacts to soils or water.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between the Proponents and the Pitkin County BOCC (pertaining only to existing private property in the Two Shoes Ranch) does not address wastes.

L. WILDLIFE

SCOPE OF ANALYSIS

This section provides a general discussion of common terrestrial wildlife species known to occur on BLM lands in the area, and includes a more detailed analysis of the Proposed Action and the No Action Alternative in terms of the effects on American elk (*Cervus elaphus nelsonii*), mule deer (*Odocoileus hemionus*) and Rocky Mountain bighorn sheep (*Ovis canadensis canadensis*). This section also addresses the potential effects of the proposed land exchange and the No Action Alternative on aquatic species, migratory birds and special status species present on the Federal and Non-Federal Parcels. In addition, Public Land Health Standards 3 and 4 are discussed, and some information regarding Standard 2 for Riparian Systems is provided; however, Standard 2 is discussed in greater detail in Chapter 3 Section Q – Wetlands, Floodplains and Riparian Zones. The Analysis Area for all forms of wildlife includes both the Federal and Non-Federal Parcels.

Note: This analysis summarizes findings contained in a more detailed wildlife specialist report in the project file.

Terrestrial and Aquatic Wildlife Species

The BLM administers public lands for the purpose of providing habitat for native and other desirable terrestrial and aquatic wildlife species. In the process of maintaining healthy and productive communities of native and other desirable species, the BLM provides wildlife-based recreation and economic benefits to local communities that are part of the local and regional cultural traditions and identity. In managing wildlife habitat on BLM lands, the bureau's overall objective is to ensure the long-term health and productivity of these lands and the wildlife that are dependent upon them to create multiple environmental and recreational benefits that result from well managed landscapes and habitats.

Migratory Bird Treaty Act (MBTA)

Neotropical migratory landbirds (NTMB) are those avian species that breed in the U.S. and winter south of the border in Mexico, Central and South America. The BLM is required to address impacts to migratory bird species per the Migratory Bird Treaty Act (MBTA) of 1918 and Executive Order 13186. The MBTA was passed to enforce a treaty between the United States, Mexico and Canada for the protection of migratory birds. Except as authorized by permit, it is unlawful under the MBTA to pursue, hunt, export, import, transport, or carry any migratory bird. Executive Order 13186, entitled "Responsibilities of Federal Agencies to Protect Migratory Birds" states that "environmental analysis of Federal actions, required by NEPA or other established environmental review processes, shall evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of special concern." BLM Instruction Memorandum No. 2008-050 provides guidance toward meeting the BLM's responsibilities under the MBTA and E.O. 13186, and it directs the Field Offices to promote the maintenance and improvement of habitat quantity and quality; and to avoid, reduce or mitigate adverse

impacts to the habitats of migratory bird species of concern to the extent feasible, and in a manner consistent with regional or statewide bird conservation priorities.

Special Status Species

The BLM is mandated under sections 7(a)(1) and 7(a)(2) of the Endangered Species Act (ESA) to carry out programs for the conservation of listed species and to ensure that any action the BLM authorizes, funds, or carries out is not likely to jeopardize the continued existence of any listed species, or result in the destruction or adverse modification of designated critical habitat.¹⁰⁶ Additionally, the BLM is required to analyze potential impacts to BLM sensitive species, as identified by the State Director, per the Colorado Public Land Health Standard 4, Special Status Species and their Habitats.

AFFECTED ENVIRONMENT

Terrestrial Wildlife

The terrestrial wildlife in the Analysis Area includes a diversity of species and groups. However, due to the number that are likely present, this assessment of terrestrial wildlife species was accomplished by using species of the highest interest as a general indicator of habitat condition. Specifically, mule deer, American elk, and Rocky Mountain bighorn sheep were analyzed because: 1) these species have high social and economic value, 2) these species offer general indicators of habitat condition and 3) the health and size of their populations are regularly assessed by Colorado Parks and Wildlife (CPW). By monitoring population trends for each of these species, the health of the wildlife community can be extrapolated, and the impact and effectiveness of management actions can be assessed and modified as needed.

To conduct this analysis, important habitat types for American elk, mule deer, and Rocky Mountain Bighorn sheep were evaluated based on CPW mapping in the Analysis Area. These include Critical Winter Range, Severe Winter Range, Winter Concentration Areas, Winter Range, and Production Areas used for calving.

Major Terrestrial Wildlife Groups in the Analysis Area

The Federal and Non-Federal Parcels provide habitat for a variety of wildlife species that summer, winter, and migrate through the region. As described in Chapter 3 Section M – Plants, the parcels provide a mosaic of terrestrial wildlife habitat types that include coniferous and deciduous forests, shrublands, wetlands, riparian habitats, and pastures. When evaluating wildlife habitats, it is important to note that wildlife have large home ranges that may encompass many acres. The parcels are a part of the greater landscape, and although they are important on their own, they are really a component of the habitats and home ranges that extend beyond the parcel boundaries, across the greater landscape. Figures 5 through 12 depict wildlife habitat identified on the Federal and Non-Federal Parcels. For the purposes of this

¹⁰⁶ USFWS, 1998

analysis, only habitat within the exchange parcels is depicted, but they are really a component of the habitats and home ranges that extend beyond the parcel boundaries.

Small Mammals & Carnivores

Examples of small mammals expected to occur within the parcels include the golden-mantled ground squirrel (*Callospermophilus lateralis*), least chipmunk (*Neotamias minimus*), pine squirrel (*Tamiasciurus hudsonicus*), pocket gopher (*Thomomys talpoides*), deer mouse (*Peromyscus maniculatus*), mountain cottontail (*Sylvilagus nuttallii*), and the water shrew (*Sorex palustris*). Most of these small mammal species occur in all habitats found within the parcels; the water shrew is restricted to moist areas along streams and tributaries. Carnivores expected to occur within the parcels include the mountain lion (*Felis concolor*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), American black bear (*Ursus americanus*), long-tailed weasel (*Mustela frenata*), and striped skunk (*Mephitis mephitis*). Black bears utilize the Gambel oak, chokecherries, and serviceberries commonly found in the Analysis Area for food and cover. Mountain lion tracks were observed on Parcel A during field reconnaissance in 2011. Mountain lions are most likely to occur when mule deer are also present.

Reptiles and Amphibians

Reptile species that could potentially occur in the Analysis Area include the western fence lizard (*Sceloporus undulatus*) in drier upland habitats, the gopher snake (*Pituophis catenifer*) within xeric shrublands and grassy clearings, and the western terrestrial garter snake (*Thamnophis elegans*) near creeks and riparian areas. In addition, the sagebrush lizard (*Sceloporus graciosus*), prairie and plateau lizard (*Sceloporus undulates*), and smooth green snake (*Liochlorophis vernalis*) likely occur in appropriate habitat types within the parcels. The chorus frog (*Pseudacris triseriata*) could occur in wetland habitats on the parcels.

Raptors and other Birds

Raptors (eagles, falcons, hawks, and owls) may migrate through the area or nest in suitable structures (e.g., trees, cliff faces, etc) within the parcels. Common raptor species in the area include the red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), great horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperi*), and sharp-shinned hawk (*A. striatus*). During field reconnaissance on Parcel A, a red-tailed hawk, a great-horned owl and a Cooper's hawk were observed, in addition to several raptor nests. Some of the common passerine birds in the area include the American robin (*Turdus migratorius*), black-capped and mountain chickadee (*Poecile atricapilla*, *P. gambeli*), cedar waxwing (*Bombycilla cedorum*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), and black-billed magpie (*Pica pica*). Migratory birds are discussed in detail below.

Big Game Species

American elk and mule deer, both economically important species, are the most common large mammals found within the parcels. Rocky Mountain bighorn sheep are known to occur on Parcel A in open, steep, rocky areas. These three species can occur in all habitats found within the parcels during the summer

months and then migrate to lower elevations and south-facing slopes during the winter months. Colorado Parks and Wildlife has mapped important habitat types for these three big game species on all of the Federal and Non-Federal Parcels, with the exception of Parcel B-1. For American elk and mule deer, important habitat types have been mapped on all of the parcels. In addition, important habitat for bighorn sheep has been mapped on Parcel A.

Specifically, five important habitat types identified by CPW for big game species were included in this analysis:

- Winter Range is defined as that part of the overall range where 90 percent of the individuals are located during the average five winters out of ten from the first heavy snowfall to spring green-up, or during a site specific period of winter as defined for each Data Analysis Unit (DAU).
- Severe Winter Range is defined as that part of the overall range where 90 percent of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten.
- Winter Concentration Area is defined as that part of the winter range where densities are at least 200 percent greater than the surrounding winter range density during the same period used to define winter range in the average five winters out of ten.
- Critical Winter Range is a delineation of those parts of Winter Range that CPW considers being of highest priority for protection from disturbance from development. It is created by combining subsets of Winter Concentration Areas, Severe Winter Range, and DAUs.
- Production Area is defined as that part of the overall range of elk occupied by the females from May 15 to June 15 for calving.

Federal Parcels

Parcel A

As shown in Table 3L-1, Federal Parcel A provides important habitat types for all three of the big game species included in this analysis (Figures 5, 6 and 7).

**Table 3L-1:
 Important Habitat Types for Big Game Species on Parcel A (acres)**

AMERICAN ELK	
Winter Range	1,240
MULE DEER	
Winter Range	1,113.3
Critical Winter Range	269.5
Winter Concentration Area	269.5
BIGHORN SHEEP	
Severe Winter Range	37.2
Winter Range	47.6
Winter Concentration Area	37.2

Parcel B

Approximately 3.9 acres of aspen forest located along the southern boundary of Federal Parcel B are identified as an elk production area (Figure 8).

Parcel B-1

CPW has not mapped any important habitats for big game species identified on Federal Parcel B-1.

Parcel C

As shown in Table 3L-2, Federal Parcel C provides important habitats for American elk and mule deer (Figures 9 and 10).

**Table 3L-2:
 Important Habitat Types for Big Game Species on Parcel C (acres)**

AMERICAN ELK	
Winter Range	171.2
Winter Concentration Area	151.7
Severe Winter Range	171.2
MULE DEER	
Winter Range	171.2
Critical Winter Range	14.7
Severe Winter Range	14.7
Winter Concentration Area	14.7

Parcel D

As shown in Table 3L-3, Federal Parcel D is identified as important habitat for American elk and mule deer (Figures 9 and 10).

**Table 3L-3:
Important Habitat Types for Big Game Species on Parcel D (acres)**

AMERICAN ELK	
Winter Range	17.4
Winter Concentration Area	1.7
Severe Winter Range	17.4
MULE DEER	
Winter Range	17.4
Critical Winter Range	17.4
Severe Winter Range	17.4
Winter Concentration Area	17.4

Parcel E

As shown in Table 3L-4, Federal Parcel E contains important habitat for American elk and mule deer (Figures 9 and 10).

**Table 3L-4:
Important Habitat Types for Big Game Species on Parcel E (acres)**

AMERICAN ELK	
Winter Range	11.9
Winter Concentration Area	9.7
Severe Winter Range	11.1
MULE DEER	
Winter Range	11.9

Non-Federal Parcels

Parcel 1

As shown in Table 3L-5, Non-Federal Parcel 1 (the Sutey Ranch) contains important habitat for both American elk and mule deer (Figures 11 and 12).

**Table 3L-5:
Important Habitat Types for Big Game Species on Parcel 1 (acres)**

AMERICAN ELK	
Production Areas	357.1
Winter Range	556.6
Winter Concentration Area	1.9
Severe Winter Range	556.6
MULE DEER	
Winter Range	556.6

Parcel 2

As shown in Table 3L-6, Non-Federal Parcel 2 (the West Crown) contains important habitat for American elk and mule deer (Figures 5 and 6).

**Table 3L-6:
Important Habitat Types for Big Game Species on Parcel 2 (acres)**

AMERICAN ELK	
Winter Range	111.8
Winter Concentration Area	37.1
MULE DEER	
Winter Range	111.8

Aquatic Wildlife

Federal Parcels

Parcel A

Aquatic habitat within Federal Parcel A is limited to Thomas and Potato Bill Creeks. Thomas Creek is a perennial stream, and flows for approximately 3,877 linear feet across the central portion of Parcel A. Within Parcel A, portions of Thomas Creek have been impacted by livestock grazing and other disturbances, which have affected the channel morphology as well as the adjacent riparian plant community.

The channel has a variable width that ranges from 6 to 7 feet in some of the narrower and more incised areas, to 15 to 20 feet in wider areas that are shallow and braided. Vegetation cover is low in many areas of the riparian habitat due to heavy grazing and noxious and undesirable weeds are present. The BLM evaluated Land Health Standards 2 and 3 for Thomas Creek on Parcel A as a part of the Roaring Fork Land Health Assessment.¹⁰⁷ The report identified Thomas Creek as containing rainbow trout (*Oncorhynchus mykiss*) and stated that rainbow trout densities within Thomas Creek were low, but that multiple age classes were present.¹⁰⁸ The habitat within Thomas Creek was generally reported as *good*, but the upper portion of Thomas Creek on Parcel A was rated as *poor* due concentrated livestock grazing in that area. Thomas Creek was determined to be limited by the flow and volume of water, water diversion, and non-native species. This section of Thomas Creek provides poor fish habitat.¹⁰⁹

Potato Bill Creek is located south of The Lion's Mane on Parcel A and flows for approximately 2,817 linear feet across the parcel. In this area, the creek averages 2 to 3 feet wide and there is a good cover of native wetland vegetation in the riparian habitat, with an overstory dominated by aspen. Potato Bill Creek was not specifically evaluated as a part of the Roaring Fork Land Health Assessment.

¹⁰⁷ USDO I BLM, 2010

¹⁰⁸ Ibid.

¹⁰⁹ USDO I BLM, 2012d

Parcels B and B-1

The aquatic habitat on Federal Parcel B includes Thomas Creek, Prince Creek and a few smaller tributary drainages. Thomas Creek is a perennial stream that crosses the parcel in two locations, and the riparian plant community has been degraded by cattle grazing, particularly in the upper area where the stream first enters the parcel. Although there are fewer grazing impacts along the lower portion of Thomas Creek, where it crosses the northwestern part of Parcel B, some impacts are still evident. The Roaring Fork Land Health Assessment states that Thomas Creek supports rainbow trout but does not provide specific details on this reach of the stream or the small tributary drainages on Parcel B.

Prince Creek, a perennial stream, crosses through the central portion of Parcel B for approximately 305 linear feet. As noted in the Roaring Fork Land Health Assessment, Prince Creek contains brook trout (*Salvelinus fontinalis*) and an occasional rainbow trout. In addition, the stream contains adequate year-round flow to sustain resident fish species. The BLM further stated that the fish densities within Prince Creek appear relatively good, and that the riparian habitat is in good condition; however there is no specific reference to Prince Creek within Parcel B in the Roaring Fork Land Health Assessment.

An unnamed tributary to Prince Creek crosses Federal Parcels B and B-1. The stream is about 2 to 3 feet wide on Parcel B, however it reaches 6 to 10 feet wide on Parcel B-1. This stream was not evaluated as a part of the Roaring Fork Land Health Assessment and it does not address fish presence in this stream.

Parcel C

The aquatic habitat within Federal Parcel C is limited to Salt Creek, a perennial stream. Salt Creek flows for approximately 147 linear feet across a narrow area near the northern parcel boundary. Upstream of Parcel C, Salt Creek was evaluated by BLM staff as a part of the Eagle River South Watershed Land Health Assessment in 2003. It was found to be in proper functioning condition and meeting Standard 2 for riparian systems; however the reach within Parcel C was not evaluated. The BLM states that Salt Creek appears to have limited fisheries potential due to a lack of sufficient water flows and the absence of suitable winter habitat. Water quality and riparian conditions were not identified as being limiting factors regarding fisheries potential.¹¹⁰

Parcel D

The aquatic habitat within Parcel D is limited to Bruce Creek, which flows for approximately 388 linear feet within the parcel. However, Bruce Creek is an ephemeral stream, and flows observed during field reconnaissance appeared to originate from irrigation return flow. Bruce Creek within Parcel D is unlikely to support fish.

Parcel E

Parcel E does not contain aquatic habitat and will not be discussed further regarding aquatic habitat.

¹¹⁰ USDOJ BLM, 2003

Non-Federal Parcels

Parcel 1

Non-Federal Parcel 1 contains three small, seasonal stock ponds that are unlikely to support fish. The unnamed tributary to Cattle Creek, which crosses the northeastern corner of the parcel in a roadside ditch, is an ephemeral stream that is unlikely to support fish.

Parcel 2

Non-Federal Parcel 2 does not contain aquatic habitat and will not be discussed further regarding aquatic habitat.

Migratory Birds

The migratory bird species included in this analysis are taken from the 2008 Birds of Conservation Concern list produced by the USFWS. The list is organized by Bird Conservation Regions (BCRs). There are four BCRs in Colorado, and the exchange parcels occur within the Southern Rockies Colorado Plateau BCR (BCR 16). Table 3L-7 lists the Birds of Conservation Concern (BCC) for BCR 16 and their potential for occurrence within the parcels.

**Table 3L-7:
USFWS Birds of Conservation Concern for BCR 16**

Species	General Habitat	Potential for Occurrence on the Parcels
American Bittern	Wetlands	No*
Bald Eagle	Lakes and rivers	Yes
Ferruginous Hawk	Grassland, Mountain Shrub, Semi-Desert Shrubland, Sagebrush Shrublands	No*
Golden Eagle	Agricultural, Grassland, Cliff/Rock/Talus	Yes
Peregrine Falcon	Agricultural, Pinyon-Juniper, Spruce-Fir, Ponderosa Pine, Cliff/Rock/Talus, Wetlands	Yes
Prairie Falcon	Agricultural, Grassland, Semi-Desert Shrubland, Cliff/Rock/Talus	No*
Gunnison's Sage-grouse	Mountain Shrub, Sagebrush Shrubland, Low Elevation Riparian	No*
Snowy Plover	Wetlands	No*
Mountain Plover	Agricultural, Grassland, Semi-Desert Shrubland, Sagebrush Shrubland	No*
Long-billed Curlew	Shorelines	No*
Southwestern Willow Flycatcher	Willow-Riparian	No*
Juniper Titmouse	Pinyon-Juniper Woodlands	Yes
Yellow-billed Cuckoo	Low Elevation Riparian, Wetlands	No*
Flammulated Owl	Aspen, Ponderosa Pine, Mixed-Conifer, Spruce-Fir	Yes
Burrowing Owl	Grassland, Semi-Desert Shrubland, Sagebrush Shrubland	No*

**Table 3L-7:
USFWS Birds of Conservation Concern for BCR 16**

Species	General Habitat	Potential for Occurrence on the Parcels
Veery	Dense riparian thickets, willow-riparian	No*
Lewis's Woodpecker	Ponderosa Pine, Low Elevation Riparian	No*
Gray Vireo	Oak woodlands/scrub	Yes
Pinyon Jay	Pinyon-Juniper, Ponderosa Pine	Yes
Bendire's Thrasher	Semi-Desert Shrubland	No*
Black Rosy Finch	Spruce-fir forest; alpine	No*
Brown-capped Rosy Finch	Nests above timberline in alpine zone in cliffs, crevices; also uses spruce-fir forest	No*
Cassin's Finch	Primarily spruce-fir, but also mixed-conifer forest	No*
Grace's Warbler	Ponderosa pine	No*
Brewer's Sparrow	Sagebrush Shrubland	Yes
Grasshopper Sparrow	Grasslands	No*
Chestnut-collared Longspur	Shortgrass Prairie	No*

* Excluded from analysis because the species does not occur, suitable habitat is not present, the project site is above the species altitudinal range, or has very rare migratory occurrence near the parcels.

Source: USFWS, 2008

Federal Parcels

Parcel A

The mosaic of mountain shrublands, big sagebrush shrublands, pinyon-juniper woodlands, and Douglas fir and aspen forests found within Federal Parcel A provide suitable potential nesting and foraging habitat for the peregrine falcon (*Falco peregrinus*), juniper titmouse (*Baeolophus ridgwayi*), flammulated owl (*Otus flammeolus*), gray vireo (*Vireo vicinior*), pinyon jay (*Gymnorhinus cyanocephalus*), and Brewer's sparrow (*Spizella breweri*). Specifically, the Gambel oak shrublands, which dominate the parcel, are potential habitat for the gray vireo, and the sagebrush shrublands are potential habitat for Brewer's sparrow. Approximately 50 acres of pinyon-juniper woodlands occur on Parcel A, and these are potential habitat for the juniper titmouse, pinyon jay, and peregrine falcon. In addition, peregrine falcons could potentially utilize the mountain mahogany shrublands mapped on the rock outcrop known as The Lion's Mane, as well as wetlands and riparian habitats. Nearly 40 acres of Douglas-fir forest on Parcel A could provide potential habitat for the flammulated owl. Parcel A also provides winter range and winter foraging areas for the bald eagle, however there is no suitable nesting habitat.

Parcels B and B-1

Aspen forests and mountain shrublands are the dominant vegetation types on Federal Parcels B and B-1. The aspen forests provide potential suitable nesting and foraging habitat for the flammulated owl, and the mountain shrublands dominated by Gambel oak are potential habitat for the gray vireo. Both parcels are potential winter range and winter foraging areas for the bald eagle.

Parcel C

The mountain shrublands, pinyon-juniper forests, and Douglas-fir forests found within Federal Parcel C provide potential suitable nesting and foraging habitat for the peregrine falcon, flammulated owl, juniper titmouse, and gray vireo. Specifically, peregrine falcons and the juniper titmouse could potentially utilize the pinyon-juniper woodlands which cover approximately 56 acres of the parcel. In addition, the mountain shrublands and Gambel oak shrublands are potential habitat for the gray vireo. Flammulated owls could occur in the Douglas-fir forests on the northern slopes of Horse Mountain. Bald eagles could also occur over Parcel C in winter and this parcel is mapped as a winter foraging area.

Parcel D

The pinyon-juniper woodlands that occupy approximately 13 acres of Federal Parcel D provide potential suitable nesting and foraging habitat for the peregrine falcon, juniper titmouse, and pinyon jay. The parcel is a part of the mapped winter range for bald eagles, and is a potential winter foraging area.

Parcel E

Aspen forests, big sagebrush shrublands, and Gambel oak shrublands are the dominant vegetation types of Federal Parcel E. The Gambel oak shrublands are potential suitable nesting and foraging habitat for the gray vireo. Sagebrush shrublands are potential habitat for Brewer's sparrow. In addition, the parcel is within the winter range and winter foraging areas mapped for the bald eagle.

Non-Federal Parcels

Parcel 1

The pinyon-juniper forests, big sagebrush shrublands, Gambel oak shrublands, and pastures found within Non-Federal Parcel 1 provide potential suitable nesting and foraging habitat for the golden eagle (*Aquila chrysaetos*), peregrine falcon, juniper titmouse, gray vireo, pinyon jay, and Brewer's sparrow. Golden eagles may be found in agricultural and grassland habitats, which cover approximately 148 acres of Non-Federal Parcel 1. These habitats may also be used by the peregrine falcon, in addition to the pinyon-juniper woodlands and wetlands. Pinyon-juniper woodlands also provide potential habitat for the pinyon jay and the juniper titmouse. Approximately 91 acres of sagebrush shrublands on the parcel could provide habitat to Brewer's sparrow. In addition, bald eagles could occur over the parcel in winter and it is mapped as a winter foraging area.

Parcel 2

The mosaic of Gambel oak shrublands, big sagebrush shrublands, and pinyon-juniper woodlands found within Non-Federal Parcel 2 provide potential suitable nesting and foraging habitat for the peregrine falcon, juniper titmouse, gray vireo, pinyon jay, and Brewer's sparrow. Peregrine falcons, as well as the juniper titmouse and pinyon jay, could have potential habitat in the pinyon-juniper woodlands. Gambel oak shrublands, which cover 64 percent of the parcel, are potential habitat for the gray vireo. Finally, Brewer's sparrow has potential habitat in the sagebrush shrublands of Parcel 2. The parcel is within the

mapped winter range and winter foraging areas identified by Colorado Parks and Wildlife for the bald eagle.

Threatened, Endangered and Sensitive species

Federally Listed Species

Table 3L-8 identifies the wildlife species listed as threatened, endangered or candidates for listing under the ESA that are known to occur or that potentially occur within Eagle, Garfield and Pitkin Counties. As summarized below, there is no habitat within any of the parcels for any federally-listed species and no designated critical habitat is present within or near any of the parcels; therefore these species will not be addressed further in this document.

**Table 3L-8:
USFWS Listed Wildlife Species Potentially Occurring in Eagle, Garfield and
Pitkin Counties, Colorado**

Common Name	Scientific Name	Federal Status	Potentially Present?
MAMMALS			
Canada Lynx	<i>Lynx canadensis</i>	Threatened	No
North American Wolverine	<i>Gulo gulo luscus</i>	Proposed	No
BIRDS			
Greater Sage-grouse	<i>Centrocercus urophasianus</i>	Candidate	No
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	Threatened	No
Yellow-billed Cuckoo	<i>Coccyzus americanus americanus</i>	Candidate	No
FISH			
Greenback Cutthroat Trout	<i>Oncorhynchus clarki stomias</i>	Threatened	No
Bonytail	<i>Gila elegans</i>	Endangered	No
Colorado Pikeminnow	<i>Ptychocheilus lucius</i>	Endangered	No
Humpback Chub	<i>Gila cypha</i>	Endangered	No
Razorback Sucker	<i>Xyrauchen texanus</i>	Endangered	No
INVERTEBRATES			
Uncompahgre fritillary butterfly	<i>Boloria acrocneema</i>	Endangered	No

Source: USFWS, 2013a

BLM Sensitive Species

Table 3L-9 identifies the BLM sensitive terrestrial and aquatic wildlife species considered and evaluated herein. Species identified as not being potentially present within any of the parcels will not be addressed further in this document.

**Table 3L-9:
BLM Colorado State Director's Sensitive Wildlife Species List**

Common Name	Species	Habitat	Potentially Present?
MAMMALS			
Fringed Myotis	<i>Myotis thysanodes</i>	Primarily at middle elevations of 1,200 to 2,150 m in desert, grassland, and woodland habitats; has been recorded at 2,850 m in spruce-fir habitat in New Mexico	No
Spotted Bat	<i>Euderma maculatum</i>	Open habitat for foraging, rocky cliffs for roosting.	No
Townsend's Big-Eared Bat	<i>Plecotus townsendii</i>	Semidesert shrublands, pinyon-juniper woodlands and open montane forests up to 9,860 ft. Requires caves or abandoned mines for roost sites during all seasons and stages of its life cycle, and its distribution is strongly correlated with the availability of these features.	Yes. Potentially forages over all the Parcels and could roost in the Lady Belle Mine on Federal Parcel D.
Big Free-Tailed Bat	<i>Nyctinomops macrotis</i>	Roost in crevices on cliff faces or in buildings. Little known of their natural history. No occurrences for Pitkin County.	No
White-Tailed Prairie Dog	<i>Cynomys leucurus</i>	In Colorado often encountered in desert scrublands; most records are below 2,600m (8,500 ft).	No
Kit Fox	<i>Vulpes macrotis</i>	Found in desert scrublands in extreme Western Colorado.	No
Desert Bighorn Sheep	<i>Ovis canadensis nelsoni</i>	Found in desert lands near Colorado National Monument.	No
BIRDS			
American White Pelican	<i>Pelecanus erythrorhynchos</i>	Large bodies of water (e.g., lakes, reservoirs).	No
Northern Goshawk	<i>Accipiter gentilis</i>	Predominantly uses ponderosa pine, but will also use Douglas fir, various pines and aspens.	Yes. Potentially forage on all the Parcels. Potentially suitable nesting habitat is present on Federal Parcel A.
Ferruginous Hawk	<i>Buteo regalis</i>	Flat and rolling terrain in grassland or shrubsteppe regions.	No
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Nest in mature cottonwoods or pines near water.	Yes. Winter Range and Winter Foraging Areas on all the Parcels.
Greater Sage-grouse	<i>Centrocercus urophasianus</i>	Associated with sagebrush ecosystems.	No
Gunnison Sage-grouse	<i>Centrocercus minimus</i>	Tall dense stands of sagebrush near wet meadows with tall grasses for hiding; occurring primarily in SW & W CO, but also including Saguache & S Chaffee County.	No

**Table 3L-9:
BLM Colorado State Director's Sensitive Wildlife Species List**

Common Name	Species	Habitat	Potentially Present?
White-faced Ibis	<i>Plegadis chihi</i>	Feed in wet hay meadows and flooded agricultural croplands, favor tall emergent for nesting.	No
Western Snowy Plover	<i>Charadrius lexandrinus nivosus</i>	Breed in sandy areas, dry salt beds, reservoir shores.	No
Long-billed Curlew	<i>Numenius americanus</i>	Breed on shortgrass prairies.	No
Burrowing Owl	<i>Athene cunicularia</i>	Open grasslands with available small mammal burrows.	No
Brewer's Sparrow	<i>Spizella breweri</i>	Sagebrush and other shrub species with similar stand characteristics including greasewood, hopsage, and saltbush.	Yes. Non-Federal Parcel 1. The habitat is small and fragmented but likely capable of supporting a small number of territories. Also Parcels A, C, E, and 2.
AMPHIBIANS/REPTILES			
Great Basin Spadefoot	<i>Spea intermontana</i>	Found in western Colorado at elevations below 7,000 ft.	Yes Federal Parcels A, and Non-Federal Parcels 1 & 2.
Canyon Treefrog	<i>Hyla arenicolor</i>	Found in extreme western and southeastern Colorado.	No
Northern Leopard Frog	<i>Rana pipiens</i>	Wet meadows and the banks and shallows of marshes, ponds, glacial kettle ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches.	Yes. Federal Parcels A and B, B-1, C, D and Non-Federal Parcels 1 & 2. Potentially present in creeks and ditches.
Longnose Leopard Lizard	<i>Gambelia wislizenii</i>	Occurs in west-central Colorado and extreme southwestern Colorado at elevations below 5,200 ft.	No
Milk Snake	<i>Lampropeltis triangulum taylori</i>	Occurs throughout most of eastern, southern, and western Colorado at elevations primarily below 8,000 ft.	Yes Federal Parcels A, D, E, and Non-Federal Parcels 1 & 2
Midget Faded Rattlesnake	<i>Crotalus oreganus concolor</i>	Occurs in desert and semidesert habitats. Records for Colorado restricted to Garfield, Mesa, and San Miguel Counties.	No

**Table 3L-9:
BLM Colorado State Director’s Sensitive Wildlife Species List**

Common Name	Species	Habitat	Potentially Present?
FISH			
Bluehead Sucker	<i>Catostamus discobolus</i>	Variety of areas from headwater streams to large rivers. These native and BLM sensitive fish species reside in low numbers in the lowest portions of the Roaring Fork River near Glenwood Springs on non-federal lands (BLM 2011).	No
Flannelmouth Sucker	<i>Catostomus latipinnis</i>	Restricted to larger streams and rivers.	No
Roundtail Chub	<i>Gila robusta</i>	Restricted to larger streams and rivers.	No
Colorado River Cutthroat Trout	<i>Oncorhynchus clarki pleuriticus</i>	Clear, cold water, naturally-fluctuating flows, low levels of fine sediment in channel bottoms, well-distributed pools, stable stream banks, and abundant stream cover.	No
INSECTS			
Great Basin Silverspot	<i>Speyeria nokomiis apacheana</i>	Spring-fed and/or subirrigated wetlands below 7,500 ft.	No

The proposed land exchange parcels provide potential suitable habitat for seven BLM sensitive species. These sensitive species include the Townsend’s big-eared bat (*Plecotus townsendii*), northern goshawk (*Accipiter gentilis*), Bald eagle (*Haliaeetus leucocephalus*), Brewer’s sparrow (*Spizella breweri*), Great Basin spadefoot (*Spea intermontana*), northern leopard frog (*Rana pipiens*), and milk snake (*Lampropeltis triangulum taylori*). A brief discussion of each species and the parcels on which they potentially occur is provided below.

Townsend’s Big-eared Bat

Townsend’s is widely distributed in Colorado except on the eastern plains.¹¹¹ Habitat includes open montane forests, semidesert shrublands, and pinyon/juniper shrublands. These bats are generally solitary or gather in small groups; during summer females may form larger maternity colonies located in mines, caves, abandoned structures, and crevices in rock cliffs, in woodlands and forests to elevations up to 9,860 feet.¹¹² They are relatively sedentary and do not move long distances from hibernacula to summer roosts.¹¹³ Foraging occurs over water, along the margins of vegetation and over sagebrush. Townsend’s feed chiefly on small caddis flies and moths, but will take beetles, flies and wasps.

¹¹¹ Armstrong et al., 2011 p. 123

¹¹² Ibid.

¹¹³ Ibid.

Northern Goshawk

The northern goshawk is a forest habitat generalist, utilizing a variety of forest types, forest ages, structural conditions, and successional stages. The principal forest types occupied by the goshawk are ponderosa pine, aspen, mixed-conifer, and spruce-fir. Studies of nesting habitat show that goshawks nest in older-aged forests with variable tree species. The most consistent vegetation characteristic of goshawk nest sites is a high percent of canopy closure. Stand structure ranges from dense canopy mixed conifer with an open understory to aspen groves with trees exhibiting heavy upper branching to provide nest platforms and protection. Because of its large body size and wingspan, the goshawk seldom uses young, dense forests. Nest habitat can occupy up to 200 acres and may include two to three scattered large nest trees.¹¹⁴ Nest sites may be revisited from year to year and are generally within 0.25 mile of water.¹¹⁵ Fledgling areas contain a mix of large trees with a canopy cover greater than 50 percent and young trees for hiding cover near the ground.¹¹⁶

Suitable foraging areas can be as large as 6,000 acres and include a variety of forest cover types and vegetation structural stages. Limited radio-telemetry evidence suggests that goshawks prefer mature forests for foraging. However, forest edges, openings and underneath forest canopies of all timber types are used for hunting. Snags, downed logs, woody debris, small openings, large trees, and herbaceous and shrubby understories are important features to many goshawk prey populations. Downed logs (>12 inch dbh and 8 feet long) provide cover, feeding and nest sites for a great variety of species, including several woodpeckers, chipmunks, ground squirrels, rabbits, squirrels, and dusky grouse (*Dendragapus obscurus*).

Bald Eagle

Bald eagles on the Western Slope of Colorado typically select cottonwoods for nest sites along the Yampa, Little Snake, White, and Colorado Rivers, but are also found along other rivers with suitable habitat.¹¹⁷ Human disturbance creates stress for bald eagles; therefore, most nest sites are located away from human activity centers. In the winter the number of bald eagles increases in Colorado, most of which occur on the plains, along western rivers, and in mountain parks. Bald eagles forage on fish and small mammals, in the winter prairie dogs and crippled waterfowl are important food sources.

Brewer's Sparrow

The Brewer's sparrow is most often associated with big sagebrush shrublands (*Artemisia tridentata*) but also is found in lesser densities in greasewood (*Sarcobatus vermiculatus*), hopsage (*Grayia spinosa*), and saltbush (*Atriplex* spp.) shrublands in low country, or mountain mahogany (*Cercocarpus montanus*) and snowberry (*Symphoricarpos rotundifolius*) at higher elevations.¹¹⁸

¹¹⁴ Reynolds et al., 1992

¹¹⁵ Finch, 1992

¹¹⁶ Ibid.

¹¹⁷ Kingery, 1998 p. 108

¹¹⁸ Ibid.

Great Basin Spadefoot

This species is found in pinyon-juniper woodlands, sagebrush, and semi-desert shrublands at elevations below 7,000 feet.¹¹⁹ It is inactive most of the year, emerging from the substrate of seasonal ponds or ephemeral streams to breed and feed during periods of protracted surface moisture.¹²⁰ Individuals have been located in both Garfield and Mesa Counties.

Northern Leopard Frog

The northern leopard frog is distributed throughout Colorado from an elevation of below 3,500 feet on the plains of the northeastern corner of the state to over 11,000 feet in the San Juan Mountains in the southwestern corner.¹²¹ Although formerly abundant throughout its range, the northern leopard frog has become rare or been extirpated from many areas, especially high elevation populations due to changes in habitat conditions.¹²²

Milk Snake

The milk snake occurs in a wide variety of habitats in Colorado, including shortgrass prairie, sand prairie, shrubby hillsides, canyons, open stands of ponderosa pine, pinyon-juniper woodland, and arid river valleys at elevations below 8,000 feet.¹²³

Federal Parcels

Parcel A

Potentially suitable foraging habitat for the Townsend's big-eared bat is likely present on Federal Parcel A. In addition, the parcel is potentially suitable nesting and foraging habitat for the northern goshawk. Bald eagles could forage over Parcel A in winter. The great basin spadefoot toad could occur on Parcel A at elevations below 7,000 feet, and the northern leopard frog could occur along Thomas Creek, Potato Bill Creek, and the unnamed perennial tributaries. The sagebrush shrublands are potential habitat for Brewer's sparrow. Finally, the milk snake could use appropriate habitat types on Parcel A at elevations below 8,000 feet.

Parcels B & B-1

These parcels provide potentially suitable foraging habitat for the Townsend's big-eared bat and the Northern goshawk. In addition, the northern leopard frog could potentially occur along Thomas Creek, Prince Creek, and their perennial tributaries. During winter, bald eagles could forage over these two parcels.

¹¹⁹ Hammerson, 1999 p. 82

¹²⁰ Ibid.

¹²¹ Ibid.

¹²² Hammerson, 1999 p. 146; CPW, 2013

¹²³ Hammerson, 1999 p. 318

Parcel C

Federal Parcel C provides potentially suitable foraging habitat for the Townsend's big-eared bat and it is in close proximity to the Lady Belle Mine on Parcel D, which is appropriate habitat for use as a maternity site or hibernacula. The proximity of the Lady Belle Mine increases the potential that Townsend's big-eared bat would utilize the habitats on Parcel C. In addition, Parcel C is potentially suitable foraging habitat for the northern goshawk, and is mapped as winter range and a winter foraging area for the bald eagle. The sagebrush shrublands are potential habitat for the Brewer's sparrow. The northern leopard frog could potentially occur along Salt Creek or the Bemis Ditch in the northern part of Parcel C. In addition, the milk snake could occur in areas below 8,000 feet.

Parcel D

The Lady Belle Mine on Federal Parcel D could be an appropriate habitat for use by the Townsend's big-eared bat as a maternity site or as hibernacula. In addition, the parcel is potentially suitable foraging habitat for the bat. The northern goshawk could also forage over Parcel D, and bald eagles could use the parcel for foraging during the winter months.

Parcel E

Federal Parcel E is potentially suitable foraging habitat for the northern goshawk and the Townsend's big-eared bat. Areas below 8,000 feet are also potential habitat for the milk snake, and the sagebrush shrublands are potentially suitable for Brewer's sparrow. The parcel is mapped as winter range and a winter foraging area for the bald eagle.

Non-Federal Parcels

Parcel 1

Non-Federal Parcel 1 provides potentially suitable foraging habitat for the northern goshawk. In addition, it contains potentially suitable habitat for the Brewer's sparrow, and the Great Basin spadefoot could potentially occur on the parcel in areas below 7,000 feet. The northern leopard frog could occur in riparian/wetland areas and the stock ponds. Finally, Parcel 1 provides potential habitat for the milk snake, and it is mapped as winter range and a winter foraging area for the bald eagle.

Parcel 2

Non-Federal Parcel 2 is potentially suitable foraging habitat for the northern goshawk. In addition, there is potentially suitable habitat for the Brewer's sparrow in sagebrush shrublands, and the Northern leopard frog could occur along the Prince Ditch. The parcel is mapped as winter range and a winter foraging area for the bald eagle. Finally the milk snake could occur on Parcel 2.

Land Health Standard 3 for Terrestrial Wildlife and Migratory Birds

Federal Parcels

For terrestrial wildlife and migratory birds, all of the Federal Parcels, excluding Parcels B and B-1, have been assessed by the BLM as part of either the Eagle River South or the Roaring Fork Land Health Assessments.¹²⁴ The BLM determined that most sites assessed seem to provide healthy and productive habitat for a diversity and density of terrestrial wildlife species, which includes migratory birds, commensurate with the habitat's potential. Parcel A was evaluated as a part of the Roaring Fork Land Health Assessment, and was found to be meeting Standard 3 based on field reconnaissance conducted in 2011. Parcels B and B-1 also appear to be meeting Standard 3. Parcels C, D and E are identified as meeting Standard 3 in the Eagle River South Land Health Assessment.

Non-Federal Parcels

As private lands, the Non-Federal Parcels have not been a part of the Land Health Assessments described above. However, Standard 3 is being evaluated for these parcels based on field reconnaissance conducted in 2011. The remaining areas of native vegetation on Parcel 1 are similar in appearance and age to habitats found within the assessed Federal Parcels. Thus, these areas of native vegetation are likely biologically functioning in a similar manner to the Federal Parcels, and are therefore meeting Standard 3. Non-Federal Parcel 2 also appears to be meeting Standard 3.

Land Health Standard 2 and 3 for Aquatic Species

Federal Parcels

The BLM (2010) concluded that Standards 2 and 3 were being met on Prince Creek, but the portion of Thomas Creek located on Parcel A was not meeting Standard 2 for healthy riparian systems or Standard 3 for aquatic wildlife. The rest of Thomas Creek was meeting Standards 2 and 3. To rectify the problem of livestock concentration within Thomas Creek, which is causing Standards 2 and 3 to not be met, the ranch manager with the support of the BLM identified the need for four new ponds on uplands away from the creek to draw cattle away from the riparian habitat. Subsequent to the field reconnaissance conducted in 2011, the number of AUMs permitted for grazing in the Thomas Allotment was voluntarily reduced from 80 to 49.

Non-Federal Parcels

There are no aquatic habitats that support fish on the Non-Federal Parcels. Therefore Standards 2 and 3 for aquatic species does not apply.

¹²⁴ USDO I BLM, 2003; USDO I BLM, 2010

Land Health Standard 4 for TES Wildlife Species

Federal Parcels

Land Health Standard 4 for TES wildlife was evaluated for most of the parcels as a part of the Eagle River South Watershed Land Health Assessment or the Roaring Fork Land Health Assessment.¹²⁵ As noted in the Roaring Fork Land Health Assessment, all of the special status species that potentially occur on the area are a part of populations that occupy much larger ranges than the area of the assessment. Because these special status species are rare, uncommon, or occur in scattered populations, the assessment of Standard 4 is based on the overall habitat condition and habitat connectivity. Parcel A was evaluated as a part of the Roaring Fork Land Health Assessment. Although the specific details of the parcel are not discussed in the report, two of the assessment sites were located on Parcel A. The report concludes that based on the overall condition of upland and riparian habitats located on BLM lands, suitable habitat and connectivity of habitats is currently available for BLM special status wildlife species, and therefore Standard 4 is being met. Based on the field reconnaissance conducted on Parcels B and B-1 in 2011, they also appear to be meeting Standard 4. Parcels C, D and E in Eagle County were evaluated in the Eagle River South Watershed Land Health Assessment.¹²⁶ There is no specific discussion of these parcels in the document, however they are identified as meeting Standard 4.

Non-Federal Parcels

As private lands, the Non-Federal Parcels have not been a part of the Land Health Assessments described above. However, Standard 4 is being evaluated for these parcels based on field reconnaissance conducted in 2011. The remaining areas of native vegetation on Parcel 1 are similar in appearance and age to habitats found within the assessed Federal Parcels. Thus, these areas of native vegetation are likely biologically functioning in a similar manner to the Federal Parcels, and are therefore meeting Standard 4.

Non-Federal Parcel 2 also appears to be meeting Standard 4, although livestock grazing has affected approximately 21 acres of sagebrush shrublands located on the flat ridge top in the northern corner of the parcel. Because of the large home range sizes necessary to support most of the identified BLM sensitive species discussed herein, the Non-Federal Parcels likely are part of and do not represent all of the areas necessary to meet these species life history requirements. Based on habitat within these parcels, the two Non-Federal Parcels are likely meeting Standard 4.

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Under the No Action Alternative, the land exchange would not occur. The Federal Parcels would continue to be owned/managed by the BLM and the Non-Federal Parcels would remain in private ownership. The Federal Parcels could be leased for mineral and/or energy development, which could affect wildlife

¹²⁵ USDOJ BLM, 2003; USDOJ BLM, 2010

¹²⁶ USDOJ BLM, 2003

species and their habitat, although this is unlikely to occur since the Federal Parcels are mapped as having: 1) low potential for oil and gas development, 2) minimal values of locatable minerals, and 3) low potential for salable minerals development. The Federal Parcels would remain open for livestock grazing. In terms of livestock grazing management on Parcel A, it should be noted that when the grazing permit for the Thomas Allotment was renewed, the number of AUMs was voluntarily reduced from 80 to 49. Under the No Action Alternative the reduction in AUMs and other planned actions would reduce the chance of forage issues developing between big game and livestock, as well as benefit migratory birds, aquatic species and sensitive species. The Non-Federal Parcels could remain as they currently exist, or they could potentially be sold and/or developed for residential or commercial purposes, with associated habitat loss and habitat fragmentation.

Direct and Indirect Effects

Federal Parcels

Under the No Action Alternative little change is expected to occur to terrestrial, aquatic, migratory bird or sensitive species habitat on the Federal Parcels. Any mineral and/or energy development that may occur on the Federal Parcels would remove wildlife habitat and increase habitat fragmentation, but this is unlikely to occur given the low mineral development potential. Under the No Action Alternative, the reduction in AUMs discussed above could benefit aquatic species if it allows the riparian habitat along Thomas Creek to return to a healthier condition.

Non-Federal Parcels

Under the No Action Alternative, the Non-Federal Parcels would remain private lands without protection from development. If additional areas of native vegetation are converted to pastures or developed for residential or commercial purposes, this would decrease the habitat for wildlife species. Likewise, if livestock grazing is not properly managed, it has the potential to decrease or degrade habitat for the wildlife species with home ranges that overlap the parcels.

Public Land Health Standards 2, 3 and 4

Federal Parcels

Under the No Action Alternative, the Federal Parcels would remain under BLM management. The BLM would be required to consider compliance with Land Health Standards 2, 3 and 4 for all actions on the Federal Parcels.

Non-Federal Parcels

Under the No Action Alternative, the Non-Federal Parcels would remain private lands. The Non-Federal Parcels would not be required to comply with the BLM Land Health Standards.

Alternative 2: Proposed Action

Direct Effects

The direct effect of the proposed land exchange would be a change in ownership/management of the wildlife habitats on the Federal and Non-Federal Parcels. Although there would be a reduction of some types of habitat for wildlife species on BLM lands, the change in management would not have a substantive impact on the wildlife species that occur on the Federal and Non-Federal Parcels. These habitat types are common and extensive within the general landscape of the Project Area, the acres entering federal ownership would be protected by BLM management and the acres removed from federal management would be protected in perpetuity through the conservation easements, as discussed below under Indirect Effects. The changes in habitat types under BLM management are provided in Table 3L-10.

**Table 3L-10:
Change in BLM Management of Habitat Under the Proposed Action (acres)**

Habitat Type	Federal Parcels	Non-Federal Parcels	Change in BLM Management
AMERICAN ELK			
Production Area	3.9	357.1	353.2
Severe Winter Range	199.7	556.6	356.9
Winter Concentration Area	163.1	39	-124.1
Winter Range	1,440.50	668.4	-772.1
MULE DEER			
Critical Winter Range	301.6	0	-301.6
Severe Winter Range	32.1	0	-32.1
Winter Concentration Area	301.6	0	-301.6
Winter Range	1,313.80	668.4	-645.4
BIGHORN SHEEP			
Severe Winter Range	37.2	0	-37.2
Winter Range	47.6	0	-47.6
Winter Concentration Area	37.2	0	-37.2
AQUATIC SPECIES			
Aquatic habitat (perennial streams)	9,286 (linear feet)	0	-9,286 (linear feet)
Aquatic habitat (stock ponds)	0	0.2 (in 3 stock ponds)	0.2 (in 3 stock ponds)
MIGRATORY BIRDS			
Gambel oak shrublands	534.8	74.4	-460.4
Gambel oak/Sagebrush mosaic	443.7	0	-443.7
Sagebrush shrublands	141.4	200.8	59.4
Pinyon-Juniper woodlands	119.3	325.7	206.4
Mountain shrublands	115.8	0	-115.8
Douglas-fir forest	62.3	0	-62.3
Aspen forest	27.3	0	-27.3

**Table 3L-10:
Change in BLM Management of Habitat Under the Proposed Action (acres)**

Habitat Type	Federal Parcels	Non-Federal Parcels	Change in BLM Management
Irrigated pasture	0	59.5	59.5
TOWNSEND'S BIG-EARED BAT			
Maternity site or hibernacula	Lady Belle Mine	None	Loss of site
Foraging habitat	1,470	668.4	-801.6
NORTHERN GOSHAWK			
Foraging habitat	1,470	668.4	-801.6
Nesting habitat	87.3	0	-87.3
BALD EAGLE			
Winter range	1,470	668.4	-801.6
Winter foraging areas	1,470	668.4	-801.6
BREWER'S SPARROW			
Suitable habitat	145.7	112.2	-33.5
GREAT BASIN SPADEFOOT TOAD			
Suitable habitat	112.6	449.2	336.6
NORTHERN LEOPARD FROG			
Wetlands and aquatic habitat	16.6	1.0	-15.6
MILK SNAKE			
Suitable habitat	1,346.4	668.4	-677.0

Acquisition of the Non-Federal Parcels under the Proposed Action would provide the BLM with the ability to manage a larger, more continuous area for the benefit of wildlife (especially big game winter ranges), as Non-Federal Parcel 1 connects Red Hill to Fischer Creek and Non-Federal Parcel 2 connects to The Crown. Although the BLM would not be acquiring fish habitat, the senior water rights that would be acquired with Parcel 1 would provide the opportunity to improve the aquatic and riparian habitats of Cattle Creek, which is known to support good populations of brown trout, mottled sculpin, and low densities of brook trout.¹²⁷ The Roaring Fork Land Health Assessment states that Cattle Creek experiences low seasonal flows due to upstream diversions, which likely impair fish productivity. By releasing water into the unnamed tributary to Cattle Creek, which crosses Parcel 1, the effects of low seasonal flows on fish productivity could potentially be reduced.

Indirect Effects

If the proposed land exchange is approved, conservation easements would be placed on all BLM lands that become private (except the 1-acre Federal Parcel B-1), a site-specific management plan for the Non-Federal Parcels would be developed and implemented and the Proponents would place a conservation easement on two parcels of the existing Two Shoes Ranch within the area known as Potato Bill, per an agreement between the Proponents and the Pitkin County BOCC. Each of these actions could have an

¹²⁷ USDOJ BLM, 2010

indirect impact on terrestrial and aquatic wildlife, migratory birds and sensitive species as discussed below. Overall, the conservation easements along with the future, site-specific management plan would provide for more efficient and improved protections of/management on the Federal and Non-Federal Parcels.

Conservation Easements on the Federal Parcels

If the proposed land exchange is approved, conservation easements would be established on Federal Parcels A, B, C, D and E. Federal Parcels A and B would be placed under conservation easements to be granted to the AVLT. Similarly, Parcels C, D and E would be placed in a conservation easement to be granted to the EVLT. These conservation easements include provisions that would preclude development and other activities, including energy and mineral prospecting and development, which have the potential to negatively impact habitats for wildlife species with home ranges and habitat that overlap the parcels. Habitat on the parcels would be protected from direct loss, modification, and fragmentation in perpetuity. Additional details of the conservation easements are summarized in Chapter 2 and in Appendix A. Specific consideration of the effectiveness of the conservation easements for protecting each wildlife species considered in this analysis is contained in a more detailed wildlife specialist report in the project file.

Site-Specific Management Plan for the Non-Federal Parcels

As a part of the Proposed Action, the Proponents have agreed to donate \$1.1 million to provide for the cost of developing and implementing a site-specific management plan for the Non-Federal Parcels. This plan would be developed within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's strategic plan. Public input and collaboration with municipal agencies would likely be a key part of developing a site-specific management plan. Specifically, CPW would be consulted and recommendations from the counties would be considered in the process. Although the plan is only conceptual at this time, it is reasonable to assume it would address protection and management of habitats for wildlife species and facilitate management of these lands in a manner that will promote the achievement of the Public Land Health Standards.

Agreement Between Two Shoes and the Pitkin County BOCC

Upon approval of the proposed land exchange, the Proponents and Pitkin County BOCC have reached an agreement that includes placing a conservation easement on two parcels of the existing Two Shoes Ranch within the area known as Potato Bill. These parcels, totaling 365 acres, abut Federal Parcel A on the east and west sides. These parcels were identified by the CPW as important winter range for deer and elk, and important cliff habitat for bighorn sheep. The conservation easements would recognize the important wildlife values of the land, and would protect these parcels from future development. Although the details of the conservation easements are not a part of this analysis, their basic structure is similar to the conservation easements for Parcels A and B, which would benefit wildlife and their habitats.

Public Land Health Standards 2, 3 and 4

Federal Parcels

If the land exchange is approved, conservation easements would be in place for all of the Federal Parcels (except the 1-acre Parcel B-1). As described above, the easements have been structured to protect the existing Conservation Values of the parcels and would be subject to oversight by the AVLТ and the EVLT. Moreover, management plans would be developed in conjunction with professionals approved by the trusts, and CPW may assist in the review and/or development of these plans to ensure important habitats are protected. Given these considerations, it is likely that Standards 2, 3 and 4 would continue to be met on all of the Federal Parcels following the land exchange.

Non-Federal Parcels

If the proposed land exchange is approved, the Non-Federal Parcels would be transferred to the BLM for management, eliminating the possibility of habitat loss and fragmentation from residential or commercial development. Acquisition of the Non-Federal Parcels by the BLM provides an opportunity to protect and enhance wildlife habitat. The funds provided to develop and implement a site-specific management plan as a part of the proposed land exchange would facilitate management of these lands in a manner that promotes the achievement of Standards 2, 3 and 4.

M. PLANTS

SCOPE OF ANALYSIS

The future management of plant communities, including threatened, endangered, and sensitive (TES) plants, and invasive and non-native plant species (including noxious weeds) in the Analysis Area may be impacted as a result of the transfer of ownership of Federal and Non-Federal Parcels. This analysis is divided into three categories: dominant vegetation, TES plant communities and invasive and non-native plant species. The Analysis Area for all three types of vegetation resources encompasses the six Federal and two Non-Federal Parcels—the Project Area.

This section documents the primary vegetation communities, TES plants, and noxious weeds present on the Federal and Non-Federal Parcels. In addition, it discusses the potential effects to those plants, communities and noxious weeds under the Proposed Action as well as the No Action Alternative. Specifically, it discusses the direct effects to plants, communities and noxious weeds in terms of a change in ownership, as well as the indirect effects that would result from management of vegetation resources under the proposed conservation easements (for the Federal Parcels except the 1-acre Federal Parcel B-1) and the site-specific management plan (for the two Non-Federal Parcels) if the land exchange is selected. Finally, it discusses Public Land Health Standard 3 for Plant Communities and Public Land Health Standard 4 for TES Plants.

BLM Standards for Public Land Health

The BLM administers public lands to maintain healthy and productive communities of native and other desirable vegetation species. BLM utilizes the Standards for Public Land Health as the basis for determining what constitutes healthy BLM lands. Sustaining healthy and productive native plant communities provides habitat for terrestrial and aquatic wildlife species, maintains or enhances special status, threatened and endangered species, and provides scenic and recreational values for the public.

Threatened, Endangered, and Sensitive Plants

The BLM is mandated under sections 7(a)(1) and 7(a)(2) of the Endangered Species Act (ESA) to carry out programs for the conservation of listed species and to ensure that any action the BLM authorizes, funds, or carries out is not likely to jeopardize the continued existence of any listed species, or result in the destruction or adverse modification of designated critical habitat.¹²⁸ Additionally, it is BLM's policy to initiate proactive conservation measures that reduce or eliminate threats to BLM sensitive species to minimize the likelihood of and need for listing of those species under the ESA.

¹²⁸ USFWS, 1998

AFFECTED ENVIRONMENT

Dominant Vegetation

Federal Parcels

Parcel A

The dominant vegetation types of Federal Parcel A include Gambel oak (*Quercus gambelii*) shrublands, sagebrush (*Artemisia tridentata* var. *vaseyana*) shrublands, pinyon pine-Utah juniper (*Pinus edulis-Juniperus osteosperma*) woodlands, mountain mahogany (*Cercocarpus montanus*) shrublands, Douglas-fir (*Pseudotsuga menziesii*) forests, and riparian/wetland habitats (Table 3M-1; Figure 13).

**Table 3M-1:
Parcel A Vegetation Types**

Vegetation Type	Acres
Gambel oak shrublands	522.2
Gambel oak/Sagebrush mosaic	443.7
Sagebrush shrublands	131.5
Pinyon-Juniper woodlands	50.0
Mountain mahogany shrublands	40.7
Douglas-fir forest	37.3
Riparian/Wetland habitats	14.6
TOTAL	1,240.0

Extensive stands of Gambel oak shrubland cover approximately 42 percent of the parcel, and are dominated by Gambel oak growing with snowberry (*Symphoricarpos rotundifolius*), Utah serviceberry (*Amelanchier utahensis*), mountain mahogany (*Cercocarpus montanus*), and mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*). The BLM has been actively managing the vegetation on Parcel A to reduce the height and density of Gambel oak and create variability that will enhance wildlife habitat. Vegetation treatments were also designed to reduce hazardous fuel loading adjacent to private lands to minimize the risk of a large, destructive wildfire. Management has included mechanically removing and burning woody vegetation in areas of dense Gambel oak vegetation. Vegetation treatments completed in the northern portion of the parcel in 2007 and 2008 have resulted in a mosaic of Gambel oak and sagebrush habitats with a variety of age classes.

The rolling topography in the northern part of the parcel creates a natural mosaic of sagebrush, Gambel oak, Utah serviceberry, pinyon pine, and Utah juniper. This mosaic is the second most common vegetation type on the parcel, and covers approximately 444 acres. Sagebrush-dominated shrublands are also abundant on the parcel, covering approximately 131.5 acres; however pinyon-juniper encroachment is common. Utah juniper and pinyon pine woodlands cover about 50 acres of rocky knolls and eroded south-facing slopes north of Thomas Creek. Just north of Potato Bill Creek, the steep, eroded rock outcrop known as “The Lion’s Mane” supports a sparse cover of mountain mahogany shrublands. South of The Lion’s Mane, there are stands of Douglas-fir (*Pseudotsuga menziesii*) and aspen (*Populus*

tremuloides) forest, as well as extensive areas of Gambel oak shrublands. Wetland and riparian habitats occur along Thomas Creek, Potato Bill Creek, and their tributary drainages, as described below in Chapter 3 Section Q – Wetlands, Floodplains and Riparian Areas.

Photo 3M-1: Parcel A



Mosaic of sagebrush, Gambel oak, and pinyon-juniper habitats on the rolling topography of Parcel A.

Photo 3M-2: Parcel A



Gambel oak, pinyon pine, Utah juniper, Utah serviceberry, and mountain big sagebrush on Parcel A.

Photo 3M-3: Parcel A



Regenerating Gambel oak in an area that was mechanically treated.

Photo 3M-4: Parcel A



Douglas-fir forest and Gambel oak shrublands south of Potato Bill Creek, with The Lion's Mane pictured at left.

Parcel B

Aspen forests dominate Federal Parcel B, covering approximately 78 percent of the parcel. The aspen forests also include scattered conifers such as Douglas-fir and Engelmann spruce (*Picea engelmannii*) (Table 3M-2; Figure 14). Approximately 3 acres of mountain shrublands on the parcel are dominated by Gambel oak growing with Utah serviceberry and snowberry. In addition, clearings in the aspen forest are vegetated by snowberry shrublands with an overstory of snowberry, serviceberry and Woods' rose (*Rosa woodsii*), and an herbaceous understory that includes introduced pasture grasses and both native and weedy forbs.

**Table 3M-2:
Parcel B Vegetation Types**

Vegetation Type	Acres
Aspen forest	22.2
Mountain shrublands	3.0
Snowberry shrublands	2.1
Riparian/Wetland habitats	0.8
Disturbed	0.3
TOTAL	28.37

Photo 3M-5: Parcel B



Aspen forest on Parcel B.

Parcel B-1

This small, narrow parcel is dominated by aspen forest with a few clearings vegetated by snowberry shrublands (Table 3M-3; Figure 14). A narrow riparian/wetland corridor is located along a tributary to Prince Creek.

**Table 3M-3:
Parcel B-1 Vegetation Types**

Vegetation Type	Acres
Aspen forest	0.9
Snowberry shrublands	0.1
Riparian/Wetland habitats	~330 ft ²
TOTAL	1.0

Photo 3M-6: Parcel B-1



Aspen forest on Parcel B-1.

Parcel C

The most abundant vegetation types on Federal Parcel C are mesic mountain shrublands, pinyon-juniper woodlands, and Douglas-fir forest (Table 3M-4; Figure 15).

**Table 3M-4:
Parcel C Vegetation Types**

Vegetation Type	Acres
Mesic mountain shrublands	59.4
Pinyon-juniper woodlands	56.4
Douglas-fir forest	25.0
Mountain mahogany shrublands	10.5
Sagebrush shrublands	9.9
Gambel oak shrublands	9.1
Disturbed	0.7
Riparian/Wetland habitats	0.3
TOTAL	171.26

The mountain shrublands cover approximately 35 percent of the parcel, and occur primarily on the steep north to northwest slopes of Horse Mountain, where they are interspersed with areas of Douglas-fir forest. These mountain shrublands support a diversity of shrub species that includes Gambel oak, serviceberry, snowberry, chokecherry (*Prunus virginiana* var. *melanocarpa*), mountain big sagebrush, mountain mahogany, Woods' rose, rabbitbrush, and mountain maple (*Acer glabrum*). The pinyon-juniper woodlands occupy the south-facing slopes, primarily in the southern portion of the parcel, and cover about 33 percent of the parcel area. A steep, eroded south-facing slope in the northwestern portion supports an area of mountain mahogany shrubland, with scattered pinyon pine and Utah juniper, as well as mountain big sagebrush. At lower elevations on the west side of Horse Mountain, the mountain shrublands are replaced by sagebrush shrublands, with some pinyon pine and juniper encroachment. The small area of sagebrush shrubland on the floodplain of Salt Creek is vegetated by basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*), however most of the sagebrush shrublands on the parcel are dominated by mountain big sagebrush. In addition, there are Gambel oak shrublands near the summit of Horse Mountain in the eastern portion of the parcel. Disturbed habitats vegetated by rabbitbrush (*Chrysothamnus* spp.) and introduced grasses are located in the southwest near Bruce Creek Road. Wetland and riparian habitats occur along Salt Creek and the adjacent floodplain, and line the Bemis irrigation ditch.

Photo 3M-7: Parcel C



Mountain shrubland & Douglas-fir on Parcel C.

Photo 3M-8: Parcel C



**Sagebrush shrublands and Gambel oak shrublands near the summit of
Horse Mountain on Parcel C.**

Photo 3M-9: Parcel C



Sagebrush shrublands and pinyon-juniper woodlands on Parcel C.

Parcel D

Pinyon-juniper woodlands cover approximately 74 percent of Federal Parcel D, located on the south to southwest slopes at the base of Horse Mountain (Table 3M-5; Figure 15). In addition, there is an area of disturbed habitat located along Bruce Creek Road, which is vegetated by rabbitbrush and primarily introduced grasses. Wetland and riparian habitats occur along Bruce Creek, and there is a small area of irrigated pasture in the southwestern corner of the parcel.

**Table 3M-5:
Parcel D Vegetation Types**

Vegetation Type	Acres
Pinyon-Juniper woodlands	12.9
Disturbed	2.9
Riparian/Wetland habitats	0.9
Paved roadway	0.4
Irrigated pasture	0.3
TOTAL	17.41

Photo 3M-10: Parcel D



Disturbed area dominated by rabbitbrush and pinyon-juniper woodlands on Parcel D.

Parcel E

Federal Parcel E is dominated by aspen forest in the south, with mountain big sagebrush shrublands in the central portion and Gambel oak shrublands in the north (Table 3M-6; Figure 15).

**Table 3M-6:
Parcel E Vegetation Types**

Vegetation Type	Acres
Sagebrush shrublands	4.3
Aspen forest	4.2
Gambel oak shrublands	3.5
TOTAL	11.97

Photo 3M-11: Parcel E



Sagebrush, Gambel oak, and aspen forests on Parcel E.

Non-Federal Parcels

Parcel 1

Non-Federal Parcel 1 (Sutey Ranch) is dominated by pinyon-juniper woodlands, which cover approximately 55 percent of the parcel (Table 3M-7; Figure 16). Sagebrush shrublands are also common, and in many areas the sagebrush has been cleared to create pastures. Over time, some sagebrush has re-established in most of these pasture areas, resulting in sagebrush shrublands with a non-native understory dominated by smooth brome (*Bromus inermis*). The actively irrigated pastures in the northern portion of the parcel lack sagebrush and are dominated by smooth brome. Disturbed habitats include areas surrounding existing ranch buildings in the north-central part of the parcel. Gambel oak shrublands occur near the southern parcel boundary, and there is one paved roadway, Garfield County Road 112, which crosses the parcel in the northeast. Riparian/wetland habitats occur along the tributary to Cattle Creek in a roadside ditch that parallels County Road 112, and there are three seasonal stock ponds that lack wetlands.

**Table 3M-7:
Parcel 1 Vegetation Types**

Vegetation Type	Acres
Pinyon-Juniper woodlands	308.5
Sagebrush shrublands	91.3
Pasture with sagebrush encroachment	88.6
Irrigated pasture	59.5
Disturbed	4.5
Gambel oak shrublands	2.9
Paved roadway	0.9
Riparian/Wetland habitats	0.2
Aquatic habitats (3 stock ponds)	0.2
TOTAL	556.6

Photo 3M-12: Parcel 1



Pasture with sagebrush encroachment on Parcel 1.

Photo 3M-13: Parcel 1



Pinyon-juniper woodlands and sagebrush shrublands at the margin of a pasture on Parcel 1.

Photo 3M-14: Parcel 1



Pinyon-juniper woodland on Parcel 1.

Parcel 2

Gambel oak shrublands are the most abundant vegetation type on Non-Federal Parcel 2 (West Crown), where they occupy most of the steep, eroded slopes and drainages that extend west toward Prince Creek (Table 3M-8; Figure 13). Sagebrush shrublands dominate the flat-topped ridges, and pinyon-juniper woodlands are on the steep south to southwest slopes. A disturbed area is located just east of Prince Creek Road and is crossed by several mountain bike trails. Riparian/wetland habitats are limited to the banks of the Prince Ditch, and include stands of sandbar willow (*Salix exigua*) and narrowleaf cottonwood (*Populus angustifolia*).

**Table 3M-8:
Parcel 2 Vegetation Types**

Vegetation Type	Acres
Gambel oak shrublands	71.5
Sagebrush shrublands	20.9
Pinyon-Juniper woodlands	17.2
Disturbed	1.6
Riparian/Wetland habitats	0.6
TOTAL	111.8

Photo 3M-15: Parcel 2



Eroded slopes of Parcel 2.

Photo 3M-16: Parcel 2



Sagebrush shrubland with pinyon-juniper encroachment on Parcel 2.

Land Health Standard 3 for Plant Communities

Federal Parcels

Parcel A includes two grazing allotments that were evaluated by BLM personnel in 2010 as a part of the Roaring Fork Land Health Assessment: the Thomas allotment (997 acres), which encompasses the majority of the parcel, and the Potato Bill allotment (243 acres), located on the portion of the parcel south of Potato Bill Creek.¹²⁹ Based on an analysis of nine Biotic Integrity Indicators, the BLM concluded that both allotments were meeting Standard 3 for Plant Communities. However, as noted in the EA for the Thomas Allotment grazing permit renewal, pinyon-juniper encroachment is in an intermediate stage in some of the Rolling Loam sagebrush parks in the west and southwest portions of the parcel.¹³⁰ Pinyon-juniper encroachment is expected to continue and the condition of the sagebrush parks is not likely to substantially improve without additional management actions such as removal of the pinyon-juniper encroachment or mechanical reduction of sagebrush density.¹³¹ Although noxious weeds and some undesirable plant species are present on the parcel, as described below, they are minimal in the overall plant community.

None of the Roaring Fork Land Health Assessment sample sites were located on Parcels B and B-1, however as a whole, these parcels are also meeting Standard 3 for Plant Communities. On Parcel B, some

¹²⁹ USDOJ BLM, 2010

¹³⁰ USDOJ BLM, 2012d

¹³¹ Ibid.

problem areas exist along Thomas Creek, where grazing has negatively impacted the riparian plant community and resulted in sparse vegetation cover in the herbaceous understory. Thomas Creek crosses Parcel B in two locations, and the grazing impacts are less severe along the lower portion where it crosses the northwestern corner of the parcel. Noxious weeds are limited to a few of the more heavily grazed areas on Parcel B, but do not form any large, dense stands. As a whole, the plant communities are dominated by native species and they contain mixed age classes that provide resiliency and diversity.

Parcels C, D and E were included in the Eagle River South Watershed Land Health Assessment completed by the BLM in 2003.¹³² Parcels C, D and E are part of the Horse Mountain Allotment which was mapped as meeting Standard 3 for Plant Communities. Based on field reconnaissance conducted in 2010, Standard 3 is still being met.

Non-Federal Parcels

As private lands, the Non-Federal Parcels have not been a part of the land health assessments described above. However, Standard 3 is being evaluated for these parcels based on field reconnaissance conducted by Western Ecological Resource in 2010. Parcel 1 has had an agricultural land use and nearly 150 acres of sagebrush shrubland have been cleared and seeded to smooth brome, a non-native grass, to create pastures. Sagebrush is regenerating in the areas that are not actively irrigated, however the native understory has been largely eliminated. In addition, a wetland surrounding a spring/seep discharge that drains to the unnamed tributary of Cattle Creek has been heavily grazed by cattle and horses, eliminating nearly all of the vegetation; however this is a small area estimated at less than a quarter acre. Noxious weeds are not problematic on the parcel, although some Canada thistle is present in the riparian habitat. Standard 3 for Plant Communities is being met for the areas of native vegetation that remain: the pinyon-juniper woodlands, remaining areas of sagebrush shrublands, and the Gambel oak shrublands; about 72 percent of the parcel area, and is not being met for the remainder of the parcel.

As a whole, Standard 3 for Plant Communities is being met on Non-Federal Parcel 2; however there are some problem areas. Specifically, livestock grazing has affected the sagebrush shrublands by reducing the herbaceous plant cover and creating areas of bare ground. In addition, pinyon-juniper encroachment is common in the sagebrush shrublands on Parcel 2.

Threatened, Endangered, and Sensitive Plants

Table 3M-9 includes the species list from the U.S. Fish and Wildlife Service for federally listed, proposed or candidate plants that could occur on BLM lands in the Analysis Area, as well as the Colorado BLM State Director's Sensitive Species List for BLM sensitive plants that may occur on BLM lands in the Eagle River South and Roaring Fork landscapes, which include the Analysis Area.¹³³

¹³² USDO I BLM, 2003

¹³³ USFWS, 2013a; USDO I BLM, 2009a

**Table 3M-9:
Special Status Plant Species in the Analysis Area**

Scientific Name	Common Name	Status
<i>Spiranthes diluvialis</i>	Ute ladies'-tresses orchid	Federally Listed Threatened
<i>Penstemon harringtonii</i>	Harrington's penstemon	BLM Sensitive

Source: USFWS, 2013a; USDOJ BLM, 2009a

Ute Ladies'-tresses orchid

The Ute ladies'-tresses orchid (*Spiranthes diluvialis*) is a federally-listed threatened orchid, endemic to moist soils in mesic or wet meadows, near springs, lakes, or perennial streams.¹³⁴ In Colorado, the elevation range of known orchid populations is between 4,500 and 6,800 feet.¹³⁵ The orchid prefers sites with permanent sub-irrigation such as floodplains where the water table is near the surface throughout the early growing season and into the late summer or early autumn.¹³⁶ In addition, it is known to occur on seasonally flooded river terraces, sub-irrigated or spring-fed abandoned stream channels and valleys, and lakeshores. Several populations have also been identified along irrigation canals, berms, levees, irrigated meadows, gravel pits, roadside borrow pits, reservoirs, and other human-modified wetlands.¹³⁷

Harrington's Penstemon

Harrington's penstemon (*Penstemon harringtonii*) is listed as a sensitive species by the BLM. This herbaceous perennial plant occurs primarily in open stands of big sagebrush (*Artemisia tridentata*), or occasionally in pinyon-juniper (*Pinus edulis-Juniperus scopulorum*) woodlands or mountain mahogany (*Cercocarpus montanus*) shrublands at elevations between 6,800 and 10,000 feet. Within these habitats, Harrington's penstemon is most often observed on windswept ridgetops and near the top of exposed slopes with an open shrub layer and reduced vegetation cover. Harrington's penstemon is known to occur in the Eagle River Valley from Avon westward and in the Roaring Fork River Valley. There are known populations in Eagle, Garfield, Grand, Pitkin, Routt, and Summit Counties.¹³⁸

Surveys for the Ute ladies'-tresses orchid and Harrington's penstemon were conducted during the 2010 growing season. No individuals or populations of Ute ladies'-tresses orchid were identified on any of the exchange parcels, and none of the wetlands provide suitable habitat for this federally threatened plant. Populations of Harrington's penstemon were identified on two of the Federal Parcels and one of the Non-Federal Parcels, as summarized below.

¹³⁴ USFWS, 1995; Jennings, 1990 p. 2

¹³⁵ Spackman et al., 1997

¹³⁶ USFWS, 1995; Jennings, 1990 p. 2

¹³⁷ USFWS, 2013b

¹³⁸ Spackman et al., 1997

Federal Parcels

Parcel A

Federal Parcel A contains extensive habitat for Harrington's penstemon, which has been enhanced by vegetation management procedures designed to reduce the density of Gambel oak. More than 830 individual Harrington's penstemon plants were identified within an area of at least 51.5 acres of occupied habitat (Figure 17; Photos 3M-17, 3M-18). Additional occupied habitat for Harrington's penstemon is likely present on Parcel A, however a more detailed inventory would be required to effectively map it. To quantify this additional potential habitat, the areas with the highest probability of containing Harrington's penstemon were mapped in ArcGIS, and they have a combined area of approximately 4.7 acres. However, this is an approximation and the total area of occupied habitat on the Parcel A is potentially greater than 57 acres.

Harrington's penstemon on Federal Parcel A occurs primarily on small hilltops or ridgetops, and extends down onto the west-facing slopes in areas of lower vegetation cover. In particular, hilltops where Gambel oak has been roller-chopped commonly support Harrington's penstemon, as well as areas of sagebrush shrubland with wide crown spacing. Some common associates of Harrington's penstemon in these areas include Utah serviceberry (*Amelanchier utahensis*), snowberry (*Symphoricarpos rotundifolius*), mountain mahogany (*Cercocarpus montanus*), antelope bitterbrush (*Purshia tridentata*), and scattered Utah juniper (*Juniperus osteosperma*) and pinyon pine (*Pinus edulis*), in addition to grasses and forbs including junegrass (*Koeleria macrantha*), squirreltail (*Elymus elymoides*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Indian ricegrass (*Achnatherum hymenoides*), hairy golden aster (*Heterotheca villosa*), purple locoweed (*Oxytropis lambertii*), lupine (*Lupinus* sp.), potato cactus (*Opuntia fragilis*), pricklypear (*Opuntia polyacantha*) and a diversity of other native species. In addition, the noxious weed cheatgrass (*Bromus tectorum*) occurs in several areas, although it does not form large, dense stands. Grazing impacts are evident on this parcel by the majority of the inflorescences (flowering stalks) of Harrington's penstemon having been removed in the most heavily grazed areas.

Photo 3M-17: Parcel A



Harrington's penstemon on Parcel A.

Photo 3M-18: Parcel A



Harrington's penstemon habitat on Parcel A.

Parcel C

Harrington's penstemon was also identified on Federal Parcel C, on an east-to-west trending ridgetop, and just below the top of the ridge on a steep west-facing slope (Figure 18; Photos 3M-19, 3M-20). In this area, an estimated 0.9 acre of occupied habitat was identified, containing approximately 75 plants. This ridgetop habitat and the steep slope below are dominated by mountain mahogany with scattered pinyon pine and Utah juniper, as well as mountain big sagebrush. Some of the common herbaceous species in this area include bluebunch wheatgrass, junegrass, Watson's penstemon (*Penstemon watsonii*), phlox (*Phlox hoodii*), mat penstemon (*Penstemon caespitosus*), and lobeleaf groundsel (*Packera multilobata*).

Photo 3M-19: Parcel C



Harrington's penstemon on Parcel C.

Photo 3M-20: Parcel C



Harrington's penstemon habitat on Parcel C.

Non-Federal Parcels

Parcel 2

On Non-Federal Parcel 2, approximately 1.5 acres of occupied habitat was identified, containing more than 131 plants (Figure 17; Photos 3M-21, 3M-22). This population is located on the flat ridgetop habitat in the northwestern portion of the parcel, which has been heavily grazed and is characterized by low herbaceous cover. The woody overstory is dominated by mountain big sagebrush, mountain mahogany, serviceberry, antelope bitterbrush, and snowberry, with scattered Utah junipers and pinyon pine. Some of the common herbaceous species include squirreltail, needle and thread (*Hesperostipa comata*), Kentucky bluegrass (*Poa pratensis*), and silvery lupine (*Lupinus argenteus*).

Photo 3M-21: Parcel C



Harrington's penstemon habitat on Parcel 2.

Photo 3M-22: Parcel C



Harrington's penstemon habitat on Parcel 2.

Land Health Standard 4 for TES Plants

Federal Parcels

The BLM evaluated Standard 4 for Harrington's penstemon populations on Parcel A as a part of the Environmental Assessment for the Thomas Allotment grazing permit renewal.¹³⁹ As discussed in the report, Harrington's penstemon is abundant on the parcel but it has been affected by livestock grazing in that nearly all of the flowering stalks had been bitten off in the most heavily grazed areas. The interdisciplinary team that visited the parcel did not identify any issues with Harrington's penstemon, but the report notes that a thorough inventory of the parcel was not completed and only two upland sites were visited. At the time the grazing permit renewal was being evaluated, a new grazing system was being proposed to improve land health conditions for the riparian areas. If this system is implemented, conditions for Harrington's penstemon also would likely be improved and would trend toward meeting Standard 4 in areas where the standard is not currently being met.

Federal Parcel C, the other Federal Parcel that supports Harrington's penstemon, is within the area of the Eagle River South Watershed Land Health Assessment. The report states that Standard 4 for Harrington's penstemon was evaluated based on whether the general habitat conditions would continue to support healthy, viable populations of the plant or whether certain management activities might be creating risks to the populations. The report does not include the Horse Mountain Allotment in the list of areas known to support Harrington's penstemon, however based on the definition provided in the report, the standard is being met.

Non-Federal Parcels

As private lands, the Non-Federal Parcels have not been a part of the Land Health Assessments. However, Standard 4 is being evaluated for Harrington's penstemon on Parcel 2 based on field reconnaissance conducted in 2010. As described above, the sagebrush shrubland on Parcel 2 has been impacted by livestock grazing, resulting in low herbaceous cover in some areas, and some of the penstemon inflorescences had been bitten off. Pinyon-juniper encroachment was also occurring in this area of sagebrush. Standard 4 is likely being met for Harrington's penstemon on Parcel 2; however changes to the current system of livestock grazing would likely benefit the sagebrush habitat that supports Harrington's penstemon on Parcel 2.

Invasive, Non-Native Plants

Federal Parcels

No large stands of noxious weeds were observed on any of the exchange parcels during field reconnaissance. However, small stands of noxious weeds are common in some areas. On Parcel A, portions of the riparian/wetland habitat along Thomas Creek have been impacted by livestock use, which has reduced the cover of native vegetation and allowed the establishment of noxious weeds including

¹³⁹ USDOJ BLM, 2012d

Canada thistle (*Cirsium arvense*), houndstongue (*Cynoglossum officinale*), plumeless thistle (*Carduus acanthoides*), and common mullein (*Verbascum thapsus*). Houndstongue is also present in the riparian/wetland habitats along Potato Bill Creek and its tributaries. Cheatgrass (*Bromus tectorum*) and common mullein occur in upland areas where grazing is heavier. On Parcel B, the riparian habitat along a tributary of Prince Creek and adjacent snowberry shrubland support small stands of Canada thistle, plumeless thistle, musk thistle (*Carduus nutans*), and oxeye daisy (*Leucanthemum vulgare*). Noxious weeds on Parcel C are present in the riparian habitat of Salt Creek, including Canada thistle, musk thistle, plumeless thistle, and oxeye daisy. Houndstongue also occurs along the bed and bank drainage in the northwestern corner of Parcel C. The riparian habitat along Bruce Creek in Parcel D contains Canada thistle, which forms small stands in several areas. Houndstongue also occurs in the aspen forest at the southern end of Parcel E.

Non-Federal Parcels

Noxious weeds occur on Parcel 1; however, they do not form any large, dense stands. Some bulbous bluegrass (*Poa bulbosa*) is present along drainage swales through the pastures, and Canada thistle forms small stands outside the fence line in the riparian/wetland habitat along the tributary to Cattle Creek. Scattered Russian olive (*Eleagnus angustifolia*) trees occur on Parcel 2 in the steep, eroded drainages. In addition, houndstongue occurs in the riparian habitat near the Prince Ditch. Smooth brome, an aggressive, non-native grass was planted in the cultivated pastures on Non-Federal Parcel 1. This species inhibits the regeneration of native species and continues to dominate the herbaceous cover in the dryland and irrigated pastures which comprise approximately 30 percent of the parcel.

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Under the No Action Alternative, the land exchange would not occur. The Federal Parcels would continue to be owned and managed by the BLM and the Non-Federal Parcels would remain in private ownership. The Federal Parcels could be leased for mineral and/or energy development, which could affect vegetation resources, although this is unlikely to occur since the Federal Parcels are mapped as having: 1) low potential for oil and gas development, 2) minimal values of locatable minerals and 3) low potential for salable minerals development. The Federal Parcels would remain open for livestock grazing. In terms of livestock grazing management on Parcel A, it should be noted that when the grazing permit for the Thomas Allotment was renewed, the number of Animal Use Months (AUMs) was voluntarily reduced from 80 to 49 and the number of days of summer grazing use was voluntarily reduced from 56 days to 15 days. Under the No Action Alternative the reduction in AUMs and other planned actions are expected to improve vegetation resources and maintain or move the parcels towards meeting the Public Land Health Standards. The Non-Federal Parcels could remain as they currently exist, or they could potentially be sold and/or developed for residential or commercial purposes, with associated loss of vegetation resources.

Direct and Indirect Effects

Federal Parcels

Under the No Action Alternative little change is expected to occur to vegetation resources on the Federal Parcels. Any mineral and/or energy development that may occur on the Federal Parcels would remove vegetation, but this is unlikely to occur given the low mineral and/or energy development potential. If the Federal Parcels were to be leased for mineral and/or energy development, surface disturbing activities would be constrained by a controlled surface use stipulation on BLM sensitive plants which would allow the BLM to relocate activities to protect sensitive plants and their habitats.

Under the No Action Alternative, current land uses would likely continue, including livestock grazing. During field reconnaissance, livestock grazing was observed to have a negative impact on Harrington's penstemon reproduction, as this species is highly palatable and nearly all of the inflorescences were removed in the most heavily grazed areas of Parcel A. The reduction in AUMs discussed above and the construction of additional water developments would help vegetation resources on the Federal Parcels, including Harrington's penstemon and noxious weed management, achieve or move towards meeting the Public Land Health Standards. The BLM would continue to periodically inspect allotments and monitor utilization levels to achieve the Public Land Health Standards.

Non-Federal Parcels

Under the No Action Alternative, the Non-Federal Parcels would remain private lands without protection from development. If additional areas of native vegetation are converted to pastures or developed for residential or commercial purposes, this could decrease the diversity and continuity of native rangeland and negatively impact vegetation resources. New surface disturbances would provide a niche for the invasion of noxious weeds which would further degrade the condition of the vegetative resource if weeds were not actively controlled. Likewise, if livestock grazing is not properly managed, it has the potential to decrease or degrade vegetation resources. For example, livestock grazing, which was evident in the sagebrush shrublands that support Harrington's penstemon on Parcel 2, could affect populations of this rare plant if not properly managed.

Public Land Health Standards 3 and 4

Federal Parcels

Under the No Action Alternative, the Federal Parcels would remain under BLM management. The current land uses, including livestock grazing, would likely continue. As a result of the land health assessment on Parcel A, grazing management has been changed through a voluntary reduction of AUMs and the construction of additional upland water sources to improve livestock distribution. These actions would likely improve overall vegetation condition to maintain land health standards. In addition, conditions for Harrington's penstemon would likely be improved by the new grazing system and would trend toward meeting Standard 4 in areas where the standard is not currently being met.

Non-Federal Parcels

Under the No Action Alternative, the Non-Federal Parcels would remain private lands. They could remain as they currently exist, or could feasibly be sold and/or developed for residential or commercial purposes (resulting in a loss of vegetation and changes in species composition, including the potential for increases in weed infestations). The Non-Federal Parcels would not be required to comply with the BLM Public Land Health Standards.

Alternative 2: The Proposed Action

Direct Effects

The direct effect of the proposed land exchange would be a change in ownership of the vegetation communities present on the Federal and Non-Federal Parcels. As summarized below in Table 3M-10, the exchange would result in a net loss of approximately 801.6 acres of vegetation resources for the BLM. Although there would be a reduction of some vegetation communities on BLM lands, the change in management would not have a significant impact on the communities that occur on the Federal and Non-Federal Parcels, as the acres entering federal ownership would be protected by BLM management and the acres removed from federal management would be protected in perpetuity through the conservation easements, as discussed below under Indirect Effects.

**Table 3M-10:
Change in Ownership of Vegetation Resources Under the Proposed Action**

Vegetation Type	Acres on Federal Parcels	Acres on Non-Federal Parcels	Change in BLM Ownership (acres)
Aquatic Habitats (Ponds)	0	0.2	+ 0.2
Aspen Forest	27.3	0	- 27.3
Disturbed Habitats	3.9	6.1	+ 2.2
Douglas-Fir Forest	62.3	0	- 62.3
Gambel Oak Shrublands	534.8	74.4	- 460.4
Gambel Oak/Sagebrush Mosaic	443.7	0	- 443.7
Mountain Mahogany Shrublands	51.2	0	- 51.2
Mountain Shrublands	62.4	0	- 62.4
Pastures	0.3	59.5	+ 59.2
Pastures with Sagebrush Encroachment	0	88.6	+ 88.6
Pinyon-Juniper Woodlands	119.3	325.7	+ 206.4
Riparian/Wetland Habitats	16.6	0.8	- 15.8
Sagebrush Shrublands	145.7	112.2	- 33.5
Snowberry Shrublands	2.2	0	- 2.2
Paved Roadways	0.4	0.9	+ 0.5
TOTAL	1470.0	668.4	- 801.6

Threatened, Endangered, and Sensitive Plants

As summarized below, the exchange would result in a net loss of Harrington’s penstemon habitat for the BLM. Approximately 52.4 acres of occupied habitat on Parcels A and C, as well as 4.7 acres of potential, likely occupied habitat on Parcel A would be exchanged for 1.5 acres of occupied habitat on the Non-Federal Parcel 2. Thus, the exchange would result in a net loss of approximately 55.6 acres of Harrington’s penstemon habitat for the BLM.

As noted above, a new grazing system for the Thomas Allotment has been implemented which reduces the number of AUMs and the number of days of summer grazing in order to reduce grazing impacts to Harrington’s penstemon. If these parcels and the adjacent lands are all under the same ownership, this would enable greater flexibility to implement rotational grazing as well as for potential changes in fence alignment that would improve livestock distribution and reduce areas of overutilization.

**Table 3M-11:
Change in Ownership of Harrington’s Penstemon Populations Under the Proposed Action**

Federal Parcels		Non-Federal Parcels	
Occupied Habitat (acres)	Potential Habitat (acres)	Occupied Habitat (acres)	Change in BLM Ownership (acres)
52.4	4.7	1.5	-55.6

Invasive, Non-Native Plants

Under the Proposed Action, there would be a change in ownership of the Federal and Non-Federal Parcels, including populations of noxious weeds on those parcels. Small populations of noxious weeds on the Federal Parcels would be transferred to private ownership, and the BLM would acquire the noxious weeds present on Parcels 1 and 2. Specifically, the BLM would acquire areas of Canada thistle along a tributary to Cattle Creek, and swales that have a low abundance of bulbous bluegrass on Parcel 1. Likewise, on Parcel 2 the BLM would acquire some eroded drainages with Russian olive trees, and areas of houndstongue along the Prince Ditch. Under the Proposed Action, similar levels of noxious weed infestations would be transferred into and out of federal ownership, resulting in no increased burden on the Federal Government for control of noxious weeds.

Indirect Effects

If the proposed land exchange is approved, conservation easements would be placed on all BLM lands that become private (except the 1-acre Federal Parcel B-1), a site-specific management plan for the Non-Federal Parcels would be developed and implemented and the Proponents would place a conservation easement on two parcels of the existing Two Shoes Ranch within the area known as Potato Bill, per an agreement between the Proponents and the Pitkin County BOCC. Each of these actions could have an indirect impact on vegetation resources, including TES plants and noxious weeds, as discussed below.

Overall, the conservation easements along with the future, site-specific management plan would provide for more efficient and improved protections of/management on the Federal and Non-Federal Parcels.

Conservation Easements on the Federal Parcels

If the proposed land exchange is approved, conservation easements would be established on Federal Parcels A, B, C, D and E. Federal Parcels A and B and would be placed under conservation easements to be granted to the AVLТ. Similarly, Parcels C, D and E would be placed in a conservation easement to be granted to the EVLT. These conservation easements include provisions that would preclude development and other activities, including energy and mineral prospecting and development, and would therefore protect the existing vegetation resources and the species they support. Vegetation communities on the parcels would be protected from direct loss, modification, and fragmentation in perpetuity. Additional details of the conservation easements are summarized in Chapter 2 and in Appendix A. Specific consideration of the effectiveness of the conservation easements for protecting each vegetation type considered in this analysis is contained in a more detailed vegetation specialist report in the project file.

Site-Specific Management Plan for the Non-Federal Parcels

As a part of the Proposed Action, the Proponents have agreed to donate \$1.1 million to provide for the cost of developing and implementing a site-specific management plan for the Non-Federal Parcels. This plan would be developed within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's strategic plan. Public input and collaboration with municipal agencies would likely be a key part of developing a site-specific management plan. Specifically, CPW would be consulted and recommendations from the counties would be considered in the process. Although the plan is only conceptual at this time, it is reasonable to assume it would address protection of vegetation resources and management of noxious weeds and facilitate management of these lands in a manner that would promote the achievement of the Public Land Health Standards.

Agreement Between Two Shoes and the Pitkin County BOCC

Upon approval of the proposed land exchange, the Proponents and Pitkin County BOCC have reached an agreement that includes placing a conservation easement on two parcels of the existing Two Shoes Ranch within the area known as Potato Bill. These parcels, totaling 365 acres, abut Federal Parcel A on the east and west sides. The conservation easements would recognize the important Conservation Values of the land, including vegetation communities, and would protect these parcels from future development. Although the details of the conservation easements are not a part of this analysis, their basic structure is similar to the conservation easements for Parcels A and B, which would benefit vegetation resources.

Public Land Health Standards 3 and 4

Federal Parcels

If the land exchange is approved, conservation easements would be in place for all of the Federal Parcels (except the 1-acre Federal Parcel B-1). As described above, the easements have been structured to protect the existing Conservation Values of the parcels and would be subject to oversight by the AVLТ and the

EVLTL. Moreover, management plans would be developed in conjunction with professionals approved by the trusts. Given these considerations, it is likely that Standards 3 and 4 would continue to be met on the Federal Parcels following the land exchange. Improvement in areas not currently meeting Standard 3 would depend upon their management under the terms of the conservation easements to be granted to the AVLT and EVLTL, and the enforcement of those easements, but it is likely they would trend towards meeting the standard. The change in grazing management and the construction of additional upland water sources approved in the 2010 Thomas Allotment for Parcel A is expected improve overall livestock distribution and the condition of the riparian areas. If this system is implemented or a new grazing system is developed that provides more rotational grazing, conditions for Harrington's penstemon would likely be improved and would trend toward meeting Standard 4 in areas where the standard is not currently being met. Under Alternative 2, Standard 4 for TES species on Federal Parcel C would continue being met.

Non-Federal Parcels

If the proposed land exchange is approved, the Non-Federal Parcels would be transferred to the BLM for management, eliminating the possibility of vegetation degradation/destruction from residential or commercial development. Acquisition of the Non-Federal Parcels by the BLM provides an opportunity to protect and enhance the vegetation resources on these parcels. The funds provided to develop and implement a site-specific management plan as a part of the proposed land exchange would facilitate management of these lands in a manner that would promote the maintenance or achievement of Standards 3 and 4.

N. GEOLOGY AND MINERALS

SCOPE OF ANALYSIS

The BLM recognizes that public lands are an important source of the nation's geologic and mineral resources. The BLM makes public lands available for orderly and efficient development of these resources under the principles of multiple use management. In the case of a land exchange, the BLM monitors locatable, salable and leasable minerals to ensure proper resource recovery and evaluation, production verification, diligence, and enforcement of terms and conditions. In order to monitor these resources the BLM produces minerals reports in response to specific actions or applications.¹⁴⁰

In December 2012, the BLM prepared a Minerals Report (contained in the project file) specifically for the Federal Parcels (A, B, B-1, C, D, and E) to document the mineral resources present. The following geology and minerals analysis is based on the Mineral Report, which indicated the geologic formations and leasable, locatable and salable minerals that may be present.

While the Analysis Area for geology and minerals includes both the six Federal and two Non-Federal Parcels, the Minerals Report excluded the Non-Federal Parcels. The Federal Government currently owns the mineral estate on Non-Federal Parcel 2 (West Crown), so no change to current management of this mineral estate would occur under the proposed land exchange. In addition, the proposed land exchange would not affect any mineral resources that may be present on the Non-Federal Parcels. If the proposed exchange is approved, the BLM would complete the Minerals Reports on these parcels in conjunction with a future site-specific management plan (discussed further below).

AFFECTED ENVIRONMENT

Federal Parcels A, B and B-1

Local Geology

Federal Parcels A, B and B-1 are situated near the base of Mt. Sopris, an igneous plutonic stock of quartz monzonite and granodiorite. The geology here consists of alluvial deposits of Devonian to Quaternary-aged rocks, mainly Leadville limestones, Maroon Formation sandstones and conglomerates, Dakota sandstones, and younger Pleistocene gravel deposits.

Leasable Minerals

Federal Parcels A, B and B-1 are classified as prospectively valuable (PV) for oil and gas development, but not for coal or any other leasable minerals. However, development potential of oil and gas resources is severely limited due to the highly stressed and fractured nature of the geologic environment, the shallow depth of recoverable resources, and the nearly inaccessible terrain. Furthermore, no coal beds exist in the sedimentary formations underlying the bedrock exposures at surface. The parcels have no

¹⁴⁰ USDO I BLM, 2008b

development potential for coal, and negligible development potential (speculative only) for oil and gas. However, current BLM management allows for mineral and/or energy development. Retention of minimal value coal, oil and gas was not recommended in the Mineral Report.

Locatable Minerals

Federal Parcels A, B and B-1 do not contain any known locatable minerals in the form of lode or placer deposits, and there are no geologic features indicative of such mineralization. The area is not identified as a mining district by the 1993 Bureau of Mines Regional Mineral Appraisal. Furthermore, there are no known historic or current locatable prospecting or mining activities in the vicinity, and none were observed during the field check. Overall, the parcels have a low resource occurrence potential and a low development potential (mostly speculative development) for locatable minerals. However, current BLM management allows for mineral and/or energy development. Retention of minimal value locatable minerals was not recommended in the Mineral Report.

Salable Minerals

The surface and bedrock geology of Federal Parcels A, B and B-1 is concealed in most of the area by sage brush, pinion, juniper and unconsolidated alluvium. The steep slopes do not appear to contain notable amounts of rock suitable for rip rap or other uses. However, on the ridge tops and low hills, there are vast quantities of sand, gravel cobbles and some boulders. Lithics span from sub-angular to rounded, are igneous-based and range from less than 1 mm to 24 cm in size, with some anomalous larger boulders. Some of the rock may have potential for decorative and landscape uses. There is no physical and legal access to most of this area; however. There are large, more accessible exposures of similar material on other public lands in the area. Current demand for this material is low, and in all parcels only small amounts of mineral materials are present. Therefore, the parcels have a low development potential for landscape or construction aggregate materials. However, current BLM management allows for mineral and/or energy development. Based on the low development potential, retention of minimal value mineral materials was not recommended in the Mineral Report.

Federal Parcels C, D and E

Local Geology

The surface and bedrock geology of Federal Parcels C, D and E are concealed in most of the area by thick oak brush, vegetation and soils. The bedrock formations consist of, in ascending order, the Eagle Valley Evaporite, the Eagle Valley Formation, the Chinle Formation, the Entrada Sandstone, the Morrison Formation, and the Dakota Sandstone. This area falls within the Brush Creek Mining District and is notable due to mineral extraction in the early 1900s. The silver-copper ores of the Brush Creek District are found only in the vicinity of Horse Mountain where Jurassic Entrada Sandstone is folded up against the Lady Bell thrust fault. The fault served as a barrier to the ore solutions which then spread out and

impregnated the lower part of the Entrada just above its contact with the underlying Triassic red beds. This is the only favorable horizon for ore deposition in the district.¹⁴¹

Leasable Minerals

Federal Parcels C, D and E are classified as low potential for oil and gas development and no development potential for coal. The area is characterized by a few exposures of Mesozoic and Paleozoic rock formations identified as predominantly clastic, although anhydritic rocks are also exposed in a few locations. The parcels have no development potential for coal, and negligible development potential (speculative only) for oil and gas. However, current BLM management allows for mineral and/or energy development. Retention of minimal value coal, oil and gas was not recommended in the Mineral Report.

Locatable Minerals

Mineralization in the Brush Creek district may be associated with a northwest extension of a belt of extensive Laramide-age intrusions that extend from New York Mountain southeast to the Homestake Mine area. A major fault trends northwest from the Fulford Stock, quartz monzonite porphyry, through the Horse Mountain area and intersects the northeast-trending Lady Bell thrust fault. This northwest-trending fault may have served as a conduit for the ore-bearing solutions originating from the Fulford Stock.

Copper and silver ores in the Brush Creek district occur mainly as small bodies of disseminated ore in the Entrada Sandstone and also along fracture zones and faults. The silver ore is a black, friable, fine-grained material that coats the sand grains and forms the matrix of the sandstone. Ceragyrite is the only silver mineral identified. Azurite and malachite impregnate the sandstone; however, the malachite occurs mainly as veinlets in fracture zones. Analyses of the mineralized sandstone showed about 0.2 to 0.3 percent vanadium and a trace of uranium.

The Brush Creek mining district is a relatively small district that produced mostly silver and some copper. Because very little of the mineralized parts of the workings were accessible, it is difficult to determine if additional, similar resources remain. However, it is possible that additional silver-copper deposits, similar to those mined in the past, could be discovered within the Entrada Sandstone down dip from the mined deposits.

It has been surmised that most, if not all, of the economically viable ore has been mined from the area. However, current BLM management allows for mineral and/or energy development. There are currently no active claims in the area. Retention of minimal value locatable minerals was not recommended in the Mineral Report.

¹⁴¹ Bureau of Mines, 1993

Salable Minerals

Most of the surface geology in these parcels is covered in dense vegetation comprised of scrub oak, sage, and pinion-juniper stands. The few areas clear of vegetation are covered by soils and regolith; remnants of the surrounding bedrock exposures. There are a few localities, such as drainages, in which small amounts of regolith and scree have accumulated. These locations are characterized by highly angular lithics ranging from 2 cm to 36 cm in size, and from light pink to grey in color. The majority of the material has potential to be used as construction aggregate or landscaping fill. Current demand for this material is low, and in all parcels only small amounts of mineral materials are present. Therefore, the parcels have a low development potential for landscape or construction aggregate materials. However, current BLM management allows for mineral and/or energy development. Based on the low development potential, retention of minimal value mineral materials was not recommended in the Mineral Report.

Non-Federal Parcels

Local Geology

Non-Federal Parcel 1

Non-Federal Parcel 1 (Sutey Ranch) lies to the north of the summit of Red Hill, which is part of the Maroon Formation of Pennsylvanian and Permian age. The geology of Non-Federal Parcel 1 consists of basalt flows and associated tuff, breccia, and conglomerate of late-volcanic bimodal suite.¹⁴²

Non-Federal Parcel 2

Non-Federal Parcel 2 is situated near Federal Parcels A, B and B-1 at the base of Mt. Sopris, an igneous plutonic stock of quartz monzonite and granodiorite. The geology of this parcel consists of ancient alluvium of the Phanerozoic, Cenozoic and Tertiary Quaternary geologic ages.¹⁴³

Leasable, Locatable and Salable Minerals

No leasable, locatable or salable minerals were identified on the Non-Federal Parcels because the Minerals Report did not include them. The Federal Government currently owns the mineral estate on Non-Federal Parcel 2, so no change to current management of this mineral estate would occur. If the proposed exchange is approved the BLM would complete the Minerals Reports to identify leasable, locatable or salable minerals on these parcels in conjunction with the site-specific management plan (discussed further below).

¹⁴² Green, 1992

¹⁴³ Ibid.

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

The No Action Alternative would not alter the existing mineral rights on the Federal and Non-Federal Parcels. Under the No Action Alternative, the lands would not be exchanged and mineral resources on the Federal Parcels would remain open to mineral and/or energy development, which are currently allowed under BLM management. The Federal Parcels are unlikely to be leased for mineral and/or energy development, however, since they are mapped as having: 1) low potential for oil and gas development, 2) minimal values of locatable minerals, and 3) low potential for salable minerals development. The Federal Government would continue to own the mineral estate on Non-Federal Parcel 2.

Alternative 2: The Proposed Action

Under the Proposed Action, mineral resources on the Federal Parcels would be transferred to private ownership and resources on the Non-Federal Parcels would be transferred to BLM management.

Direct Effects

Federal Parcels

Under the Proposed Action, mineral resources, and mineral rights, on the Federal Parcels would be transferred to private ownership. These parcels would no longer be open to mineral and/or energy development, which are currently allowed under BLM management. Given the low development potential for leasable, locatable and salable minerals on each of the Federal Parcels, the loss of these mineral rights represent a negligible effect.

Non-Federal Parcels

Under the Proposed Action, mineral resources, and mineral rights, on Non-Federal Parcel 1 would be transferred to BLM management. No change to mineral rights on Non-Federal Parcel 2 would occur because the Federal Government already owns the mineral estate associated with this parcel.

The costs of creating a management plan for the Non-Federal Parcels, which would include mineral resources and mineral rights, would be offset by the \$1.1 million dollar donation for their long-term management that is included in the Proposed Action. This is further discussed below under Indirect Effects.

Indirect Effects

Conservation Easements on the Federal Parcels

If the land exchange is approved, conservation easements (Appendix A) would be established on all BLM lands that become private (except the 1-acre Parcel B-1), which would preclude any mineral or energy development. Federal Parcels A and B would be placed under conservation easements to be granted to the

AVLT. Similarly, Parcels C, D, and E would be placed in a conservation easement to be granted to the EVLT. Below, the specifics of these easements are summarized with respect to geology and minerals.

Federal Parcels A and B

Under the conservation easements placed on Federal Parcels A and B, the Proponents would be prohibited from leasing, severing or separating the ownership of mineral rights from the parcels. The Proponents would be prohibited from the exploration for; development or mining of or other extraction of any minerals, coal, peat, sand, gravel, rock, soil, geo-thermal resources, oil, oil shale, natural gas or other hydrocarbons from, on or below the surface of the parcels.

Federal Parcels C, D and E

Under the conservation easements placed on Federal Parcels C, D and E, the Proponents would be prohibited from transferring, leasing or otherwise separating ownership of any mineral rights, currently owned or later acquired, from ownership of the parcels. The Proponents are also prohibited from any filling, excavating, dredging, mining, drilling, or exploration for or extraction of, any minerals, including oil and natural gas, coalbed methane, soils, sand, gravel, rock or other materials on, under, or in the parcels by any method.

Site-Specific Management Plan for the Non-Federal Parcels

Following a land exchange, the specific management of the Non-Federal Parcels would be determined through the subsequent development of a site-specific management plan within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's current RMP. Public input and collaboration with municipal agencies would be a key part of developing a site-specific management plan. It is likely this site-specific management plan would address mineral resources and development on the Non-Federal Parcels. If the proposed exchange is approved the BLM would complete the Minerals Reports to identify leasable, locatable or salable minerals on these parcels in conjunction with the site-specific management plan.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between the Proponents and the Pitkin County BOCC does not pertain to mineral resources; however, the conservation easements (totaling 365 acres) placed upon two parcels of the existing Two Shoes Ranch within the area known as Potato Bill would prohibit transferring, leasing or otherwise separating ownership of any mineral rights, currently owned or later acquired, from ownership of the parcels. The Proponents would also be prohibited from any filling, excavating, dredging, mining, drilling, or exploration for or extraction of, any minerals, including oil and natural gas, coalbed methane, soils, sand, gravel, rock or other materials on, under, or in the parcels by any method.

O. WATER RIGHTS

SCOPE OF ANALYSIS

Colorado water law is based upon the doctrine of prior appropriation or “first in time – first in right,” and the priority date is established by the date the water was first put to a beneficial use. No single state agency in Colorado is responsible for issuing water rights; water rights in Colorado are established through a water court system. There are seven water courts, one for each major river basin, which adjudicate water rights throughout the state.

The water policy of the BLM is that the states have the primary authority and responsibility for the allocation and management of water resources within their own boundaries, except as otherwise specified by Congress. The objectives of the BLM water rights program are to:¹⁴⁴

1. Cooperate with State Governments – Cooperate with state governments under the umbrella of state law to protect all water uses identified for public land management purposes.
2. Conform to Applicable State Water Rights Laws – Conform to applicable state water laws and administrative claims procedures in managing and administering all BLM programs and projects, except as otherwise specifically mandated by Congress.
3. Protect Water Rights – Protect the existing federal reserved water rights and State appropriative water rights of the United States.
4. Acquire and/or Perfect Water Rights – Acquire and perfect the water rights necessary to carry out public land management purposes through state law and administrative claims procedures unless a federal reserved water right is otherwise available, and a determination is made that the primary purpose of the reservation can be served more effectively through assertion of the available federal reserved water right.

The Analysis Area for this water rights assessment includes the Federal and Non-Federal Parcels.

AFFECTED ENVIRONMENT

Federal Parcels

No water rights are associated with the Federal Parcels. Although Thomas Creek and Potato Bill Creek pass through Federal Parcel A, water rights for these creeks are owned by the Proponents from their adjacent private lands.

Non-Federal Parcels

Approximately 2.25 cfs of ditch water rights, decreed to the Park Ditch and Reservoir Company, and 50 acre feet of water storage rights are associated with Non-Federal Parcel 1 (Sutey Ranch). The water

¹⁴⁴ USDOJ BLM, 1984

associated with these rights flows through irrigation ditches on the parcel and ultimately into Cattle Creek, which has historically been impacted by upstream diversions. Historically, approximately 92 acres of Parcel 1 were irrigated to grow potatoes, hay, and other crops. The Proponents are currently irrigating the parcel to grow hay, provide forage for wildlife, and fill ponds that provide water for wildlife.

No water rights are associated with Non-Federal Parcel 2 (West Crown).

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

Federal Parcels

No water rights are associated with the Federal Parcels; therefore, the No Action Alternative would have no impact them.

Non-Federal Parcels

Under the No Action Alternative, water rights, in the form of 12 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 051, and 1.33 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 055 and 50 acre feet of water storage rights associated with Parcel 1 would remain in private ownership. If Alternative 1 is selected, the Proponents may choose to continue or discontinue irrigating the parcel to grow hay, provide forage for wildlife, and fill ponds that provide water for wildlife.

The water rights associated with Parcel 1 could be sold and used for residential, agricultural or other purposes at any time.

Alternative 2: Proposed Action

Direct Effects

Federal Parcels

Because no water rights are associated with the Federal Parcels, no change in ownership of (or direct effects to) water rights on these parcels would occur if the proposed land exchange were approved.

Non-Federal Parcels

Under the Proposed Action, water rights, in the form of 12 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 051, and 1.33 shares of the capital stock of The Park Ditch and Reservoir Company, Certificate No. 055 and 50 acre feet of water storage rights, associated with Parcel 1 would be directly transferred to the BLM.

The use of these water rights would be decided upon in a future site-specific management plan. The costs of creating this site-specific management plan for the Non-Federal Parcels would be offset by the

\$1.1 million dollar donation for their long-term management that is included in the Proposed Action. This is further discussed under Indirect Effects.

Indirect Effects

Conservation Easements on the Federal Parcels

None of the three conservation easements that would be established on the Federal Parcels as a result of the proposed land exchange address water rights.

Site-Specific Management Plan for the Non-Federal Parcels

As an indirect effect of the proposed land exchange future management of the Non-Federal Parcels by the BLM, and the transferred water rights, would be determined through the development of a site-specific management plan within a framework of applicable laws, policies, NEPA analysis, public participation, and BLM's current RMP. It is reasonable to assume that the acquired water rights would be used for fish and/or wildlife/habitat improvements.

Parcel 1's senior water rights, along with its associated water distribution infrastructure, would also provide the BLM with options to enhance water-dependent natural resource values and riparian habitat along Cattle Creek, which historically have been impacted by upstream diversions.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between the Proponents and the Pitkin County BOCC (pertaining only to existing private property in the Two Shoes Ranch) does not address water rights.

P. WATER QUALITY, SURFACE AND GROUND

SCOPE OF ANALYSIS

The Federal Lands Policy and Management Act (FLPMA) sets forth the fundamental policy of managing the land for multiple-use while preserving the sustainable yield of its renewable resources. To achieve this goal, it is necessary for the BLM to adopt a strategic approach to protecting water resources. This approach addresses current water quality issues and proactively prevents future issues resulting from authorized land management decisions through the use of best management practices (BMPs) and stipulations (preventative measures) and through the implementation of the RMP objectives for water quality and Public Land Health Standards.

The Analysis Area for this water quality assessment includes both the Federal and Non-Federal Parcels and the water resources present on these parcels.

RMP Water quality Objectives

The 1988 RMP provides current water quality management direction for the CRVFO. The water quality objective for the field office is, “To maintain or improve existing water quality in the resource area where possible.”¹⁴⁵ Aside from identified problem areas, which the project area is outside of, the planned management actions for water quality from the RMP states:

Maintain or improve water quality on remaining public land outside these water quality management areas by including site-specific mitigation measures in other resource projects having the potential to affect water quality.

*Comply with water quality guidelines developed in 208 region plans and with state water quality standards.*¹⁴⁶

Colorado Public land health standard 5

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands. Standard 5 of the Colorado Standards for Public Land Health applies to water quality. The language of the standard is as follows:

The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and

¹⁴⁵ USDO I BLM, 1988

¹⁴⁶ Ibid.

anti-degradation requirements set forth under State law as found in (5 CCR 1002-81, as required by Section 303(c) of the Clean Water Act).

Indicators:

- *Appropriate populations of macroinvertebrates, vertebrates, and algae are present.*
- *Surface and ground waters only contain substances (e.g., sediment, scum, floating debris, odor, heavy metal precipitates on channel substrate) attributable to humans within the amounts, concentrations, or combinations as directed by the Water Quality Standards established by the State of Colorado (5 CCR 1002-8).¹⁴⁷*

AFFECTED ENVIRONMENT

Federal Parcels

Parcels A, B and B-1

Thomas Creek and Potato Bill Creek, 2nd order perennial streams and tributaries of the Crystal River, meander across Parcel A. Thomas Creek flows northwest through the center of the parcel and Potato Bill Creek flows west across the southern part of the parcel. Within Parcels A and B, Thomas Creek is identified as Upper Colorado River – Roaring Fork Segment 8. This stream, including its tributaries and associated wetlands, is classified based on the beneficial uses as Class I – Cold Water Aquatic Life, Class E – Recreation, Water Supply, and Agriculture. The smaller tributary drainages on Parcels A and B, including Prince Creek, Potato Bill Creek, and the other unnamed drainages and wetlands, are not mapped but are a part of the Roaring Fork Segment 8 and they have the same beneficial use classifications and water quality standards as Thomas Creek. The 0.7-mile reach of Thomas Creek and its associated riparian wetland complex is in poor to good condition. While some areas are in excellent condition others have been degraded. Factors contributing to the degradation are likely a combination of activities including wildlife and cattle grazing impacts and irrigation diversions. Due to recent efforts by the Two Shoes Ranch, some of the degraded areas are recovering with woody vegetation growing on some of the formerly barren banks. Thomas Creek and Prince Creek flow through Parcel B. An unnamed tributary of Prince Creek bisects Parcel B-1.

Parcels C, D and E

The principal surface water features on these parcels are an approximately 80-foot reach of Salt Creek and its riparian corridor on Parcel C, and an approximately 250-foot reach of Bruce Creek and its riparian corridor on Parcel D. Salt Creek is a perennial stream with a moderately broad floodplain supporting primarily a willow shrub riparian corridor. Salt Creek is designated as Upper Colorado River – Eagle River Segment 10a. This stream, including its tributaries and associated wetlands, is classified based on the beneficial uses as Class I – Cold Water Aquatic Life, Class E – Recreation, Water Supply, and

¹⁴⁷ USDOJ BLM, 1997

Agriculture. Bruce Creek is a seasonal stream with a relatively narrow floodplain supporting a wooded montane riparian corridor augmented by irrigation runoff. Bruce Creek has the same stream segment designation and beneficial uses listed above for Salt Creek. Other surface water features on the parcels include Bemis Ditch (an irrigation ditch crossing approximately 60 linear feet in the north part of Parcel C), and two ephemeral drainages, all on Parcel C.

Colorado Public Land Health Standard 5

Based on the Roaring Fork and Eagle River South Watershed Land Health Assessments, BLM staff concluded that water quality is meeting Standard 5.¹⁴⁸ The State of Colorado's Section 303(D) List of Impaired Waters and Monitoring and Evaluation List identifies Colorado's water-quality-limited stream segments, and none of the surface water features present on the Federal Parcels are included on this list, suggesting water quality standards are currently being met.¹⁴⁹

Non-Federal Parcels

Non-Federal Parcel 1 contains a tributary of Cattle Creek located in a roadside ditch that parallels County Road 112. The unnamed tributary does not have a stream segment designation; however it would be included with the designation for Cattle Creek, Upper Colorado – Roaring Fork Segment 03a. The beneficial uses of this stream segment which would be applied to the tributary on Parcel 1 include Class I – Cold Water Aquatic Life, Class E – Recreation, Water Supply, and Agriculture. This tributary is fed in part by a spring or flowing seep in the pasture to the south. There is no water in the stream channel upstream of the spring/seep discharge. The riparian habitat along the ephemeral stream channel supports junipers and pinyon pine, gambel oak, snowberry, serviceberry, chokecherry, and a few broadleaf cattails in the channel bottom. Canada thistle is also present. In addition, there are three stock ponds which are seasonal aquatic sites surrounded by crested wheatgrass (*Agropyron cristatum*) and other upland pasture grasses. The maximum water surface of these three stock ponds is estimated to cover approximately 0.16 acre. Surface water features on Parcel 2 are limited to the Prince Irrigation Ditch running north/south in the eastern portion of the parcel.

Colorado Public Land Health Standard 5

As private lands, the Non-Federal Parcels have not been a part of the Land Health Assessments, but as a whole, Parcels 1 and 2 are likely meeting Standard 5. However it should be noted that the State of Colorado's Section 303(D) List of Impaired Waters and Monitoring and Evaluation List identifies Cattle Creek downstream of Parcel 1 as being an impaired water.¹⁵⁰ The impairment listed is for Aquatic Life, and this is a provisional listing based on the failure to attain the aquatic life use standard. The tributary to Cattle Creek within Parcel 1 is not mapped as an impaired water, but is tributary to the impaired segment of Cattle Creek.

¹⁴⁸ USDOJ BLM, 2010; USDOJ BLM, 2003

¹⁴⁹ CDPHE WQCD, 2012

¹⁵⁰ Ibid.

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

Federal Parcels

Under the No Action Alternative water quality on the Federal Parcels would continue to be managed by the BLM under the direction of the RMP and the Public Land Health Standards.

Non-Federal Parcels

Surface and ground water resources on the Non-Federal Parcels would remain the responsibility of the private land owners (the Proponents or their assigns) under all applicable local, state and federal laws. No direct or indirect impacts to water quality would be expected as a result of selection of the No Action Alternative.

Colorado Public Land Health Standard 5

The No Action Alternative is not anticipated to degrade water quality from current conditions.

Alternative 2: Proposed Action

Direct Effects

Federal Parcels

No direct impacts to water quality on the Federal Parcels would be expected as a result of the proposed land exchange.

Non-Federal Parcels

The Proposed Action includes a donation of \$1.1 million for the long-term management of the Non-Federal Parcels in the future. This would presumably include management of water resources.

Colorado Public Land Health Standard 5

Implementation of the Proposed Action is not anticipated to degrade water quality from current conditions.

Indirect Effects

Conservation Easements on the Federal Parcels

As an indirect effect of the Proposed Action, the stipulations of the conservation easements (Appendix A) on the Federal Parcels (except the 1-acre Parcel B-1) would effectively protect the water quality of surface and ground water resources.

Federal Parcels A and B

The conservation easements on Federal Parcels A and B (held by the AVLT) specifically prohibit the diversion, damming, polluting, dredging, intentional destabilization or degradation of natural banks or

shorelines, and other alterations to Potato Bill Creek, Thomas Creek, or other naturally-occurring streams, springs, lakes, ponds, designated wetlands or other surface or subsurface water features that may occur on the parcels, except to enhance, restore or control erosion or siltation of water resources on the parcels in consultation with CPW or other agency qualified at the time to oversee such work. The construction, installation, maintenance, improvement and replacement of ponds, wetlands, and irrigation structures (including ditches, pipelines, headgates and related equipment) are permitted for agricultural purposes or the enhancement of wildlife habitat under the conservation easements.

Groundwater contamination would be prevented by the conservation easements through the prohibition of dumping, permanently accumulating, or disposing of trash, garbage, or other hazardous refuse on the parcels and through the prohibition of improvements such as storage tanks, septic systems, hazardous waste sites and landfills. In addition, the Proponents would be required to manage habitat, including surface water, according to a management plan prepared by a qualified expert satisfactory to the AVLT and CPW under the conservation easements. These stipulations of the conservation easements are expected to effectively protect the water quality of surface and ground water resources on the parcels.

Federal Parcels C, D and E

The conservation easement on Federal Parcels C, D and E (held by the EVLT) specifically prohibit the alteration, impairment, modification or any adverse changes to existing ponds, wetlands or stream channels. The construction of minor agricultural improvements such as agricultural water wells, pumps, ponds and wildlife water guzzlers is permitted under the conservation easement. The alteration of the surface of the land, including moving, excavating or removing soil, sand, gravel, rock, peat or sod in a manner that is inconsistent with the preservation and protection of the water resources on the parcels is also prohibited by the conservation easement. In addition, all agricultural uses would be conducted using stewardship and management methods that preserve the natural resources upon which agriculture is based under the conservation easement. Long term stewardship and management goals include preserving soil productivity, maintaining natural stream channels, preventing soil erosion, minimizing invasive species, and avoiding unsustainable livestock grazing practices.

Groundwater contamination would be prevented by the conservation easement through the prohibition of dumping or accumulating any kind of trash, sludge, or refuse on the parcels and through the prohibition of improvements such as storage tanks, septic systems, hazardous waste sites and landfills. In addition, the treatment, permanent storage, disposal or release of hazardous materials on, from or under the parcels is prohibited by the easement. These stipulations of the conservation easement would effectively protect the quality of surface and ground water resources on the parcels.

Site-Specific Management Plan for the Non-Federal Parcels

As an indirect effect of the proposed land exchange, surface and ground water resources on the Non-Federal Parcels would be managed under a future, site-specific management plan, which would fall under a separate NEPA analysis. This site specific management plan would likely employ water quality-related

BMPs in order to ensure compliance with the RMP objectives for water quality and the Public Land Health Standards.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between Two Shoes and the Pitkin County BOCC (pertaining only to existing private property in the Two Shoes Ranch) does not address water quality; however, the conservation easements (totaling 365 acres) placed upon two parcels of the existing Two Shoes Ranch within the area known as Potato Bill would protect water quality on these parcels in a similar fashion to what is discussed for the conservation easements on Federal Parcels A and B above.

Q. WETLANDS, FLOODPLAINS, AND RIPARIAN ZONES

SCOPE OF ANALYSIS

Executive Order (EO) 11988, *Floodplain Management*, directs federal agencies to evaluate the potential effects of any actions that may be taken in a floodplain. When conducting activities in a floodplain, federal agencies are required to take actions to reduce the risk of flood damage; minimize the impact of floods on human safety, health and welfare; and restore and preserve the natural and beneficial values served by floodplains. Executive Order 11990, *Protection of Wetlands*, directs federal agencies to ensure consideration of wetlands protection in decision making and to evaluate the potential impacts of any new construction proposed in a wetland. Federal agencies are directed avoid the destruction or modification of wetlands, and avoid direct or indirect support of new construction in wetlands if a practicable alternative exists.

These regulations and EOs encourage measures to preserve and enhance the natural and beneficial functions of floodplains and wetlands and also require federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and the occupancy and modification of floodplains.

In accordance with these EOs, this report documents the presence of riparian/wetland habitats, streams and ponds, as well as the FEMA floodplain mapping for the Analysis Area. It discusses the direct and indirect effects of the Proposed Action and the No Action Alternative on riparian/wetland habitats, streams, ponds and floodplains; and discusses the BLM's Public Land Health Standard 2 for Riparian Systems. The Analysis Area for riparian/wetland habitats and floodplains includes the Federal and Non-Federal Parcels.

Field reconnaissance on the exchange parcels was conducted in June and August, 2011. No formal wetland delineations or investigations to determine the extent of hydric (wetland) soils were conducted; hence the wetland areas reported here are only estimates. The area of riparian/wetland habitats includes the aquatic habitat of streams, which is often partially vegetated. For the floodplain analysis, FEMA floodplain mapping for the state of Colorado was obtained from the FEMA Map Service Center. These data were imported into ArcGIS to determine if any 100-year floodplains or other special flood hazard areas have been identified on the Federal and Non-Federal Parcels.

AFFECTED ENVIRONMENT

Federal Parcels

Parcel A

Federal Parcel A, the largest of the Federal Parcels, is located approximately 5 miles southeast of the Town of Carbondale in Pitkin County, Colorado (Figure 19). This 1,240-acre parcel ranges in elevation from a high of approximately 8,040 feet in the extreme southeastern corner to a low of 6,720 feet in the

northwest corner. Most of the parcel is characterized by a rolling topography with numerous southeast to northwest trending ridges and valleys. In the south, there is an important cliff habitat known as The Lion’s Mane just north of Potato Bill Creek, a perennial stream. There are three small wetland drainages in the southern portion of the parcel which are tributaries to Potato Bill Creek. In addition, Thomas Creek, another perennial stream, bisects the central portion of the parcel and there is an unpaved ranch road known as Thomas Road that runs approximately parallel to the creek. Thomas Creek and Potato Bill Creek are both tributaries of the Crystal River, which is located less than a half-mile west of the parcel. Numerous unpaved ranch roads and all-terrain vehicle (ATV) trails are present on the parcel north of Potato Bill Creek, and it is grazed by cattle.

Wetlands and Riparian Habitats

Federal Parcel A contains an estimated 14.6 acres of riparian/wetland habitat, located in the southern portion of the parcel, lining Potato Bill Creek and three tributary drainages, and along Thomas Creek which bisects the central portion of the parcel (Figure 19). Within the mapped riparian/wetland habitat, the potential wetland area is estimated to be approximately 4.3 acres. Most of the riparian habitat has an upland understory that would not meet the legal definition of a wetland, based on the vegetation, soils, and hydrology criteria of the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual.

**Table 3Q-1:
Parcel A Riparian/Wetland Habitats**

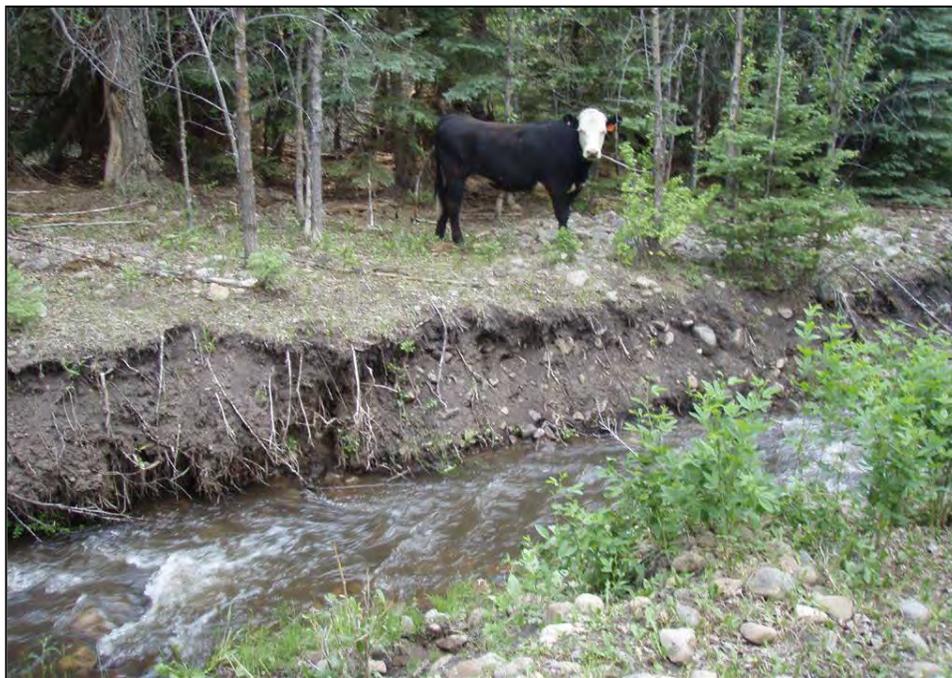
Location	Comments	Estimated Riparian/Wetland Habitat (Acres)	Potential Wetland Area (Acres)
Thomas Creek	Impacted by grazing, channel is incised by several feet in places, other areas are shallow and braided. The area mapped is primarily upland riparian habitat; the level of disturbance has likely caused some areas of wetlands to become weedy uplands.	~11.7 acres of riparian habitat; wetlands likely account for less than 25% of this area.	~2.9
Potato Bill Creek	2 to 3 feet wide channel lined by a narrow band of riparian wetlands. No evidence of heavy grazing.	~1.28 acres along Potato Bill Creek, wetlands and aquatic habitat may account for 50% of this area	~.6
Three tributary wetland drainages to Potato Bill Creek	Good vegetation cover and dominated by native plants	~1.61 acres, 50% wetlands and aquatic habitat	~.8
TOTAL		~14.6	~4.3

The riparian corridor that lines Thomas Creek, which encompasses approximately 11.7 acres, includes both wetland and upland habitats. The channel has a variable width that ranges from 6 to 7 feet wide in some of the narrower, incised areas, to 15 to 20 feet wide in other areas where it is shallow and braided. Portions of the riparian/wetland habitat as well as the channel morphology have been impacted by cattle

grazing (Figure 19, Photo 3Q-1). In addition, the riparian corridor along the creek has been affected by variable flows associated with irrigation use. The riparian overstory along Thomas Creek is dominated by narrowleaf cottonwood (*Populus angustifolia*) trees, with some aspen (*Populus tremuloides*) and a few blue spruces (*Picea pungens*). In the shrub layer, some of the common species include chokecherry (*Prunus virginiana* var. *melanocarpa*), Woods' rose (*Rosa woodsii*), serviceberry (*Amelanchier* sp.), snowberry (*Symphoricarpos rotundifolius*), and mountain maple (*Acer glabrum*). A narrow band of wetlands lines the creek and there are some larger stands of wetland vegetation in low areas adjacent to the creek where water pools and the groundwater is likely shallow. Some of the most abundant wetland species in these areas include Nebraska sedge (*Carex nebrascensis*), Baltic rush (*Juncus balticus* ssp. *ater*), smallwing sedge (*Carex microptera*), creeping spikerush (*Eleocharis palustris*), slimstem reedgrass (*Calamagrostis inexpansa*), redtop (*Agrostis gigantea*), and shortawn foxtail (*Alopecurus aequalis*). However, as a result of grazing and other disturbances, most of the forbs are weedy species such as common plantain (*Plantago major*), willow-leaved dock (*Rumex triangulivalvis*), and the noxious weeds plumeless thistle (*Carduus acanthoides*) and houndstongue (*Cynoglossum officinale*). In the adjacent upland portions of the riparian habitat, vegetation cover is low in many areas and there is a high cover of weeds. Some of the common plants in these areas include dandelion (*Taraxacum officinale*), the noxious weeds houndstongue and common mullein (*Verbascum thapsus*), common plantain, Canada bluegrass (*Poa compressa*), and yarrow (*Achillea lanulosa*).

Since these observations were made in 2011, a new grazing system was implemented for the Thomas Allotment on Parcel A. When the grazing permit was renewed, the number of AUMs was voluntarily reduced from 80 to 49, and the number of days of summer grazing use was reduced from 56 to 15. In addition, the permit authorized the construction of four proposed ponds with the goal of improving grazing distribution in the allotment to alleviate some of the concentrated livestock grazing along portions of Thomas Creek. This new grazing system should benefit the riparian/wetland habitat along Thomas Creek by increasing total vegetation cover, and hopefully it will allow recovery of the native riparian and wetland vegetation.

Photo 3Q-1: Parcel A



Portions of the riparian habitat along Thomas Creek have been degraded by livestock grazing.

Potato Bill Creek and the three tributary wetland drainages in the southern portion of the parcel are characterized by similar vegetation (Photo 3Q-2). These wetlands have excellent cover, are dominated by native species, and do not show evidence of cattle grazing. The riparian corridor along Potato Bill Creek, as illustrated by Figure 19, includes approximately 1.23 acres of wetland and upland habitats. The three tributary riparian/wetland drainages have a combined area of approximately 1.61 acres. The overstory of these drainages is dominated by aspen, with a diverse shrub layer that includes chokecherry, serviceberry, Woods' rose, Bebb and mountain willows (*Salix bebbiana*; *S. monticola*), snowberry, Gambel oak, bush honeysuckle (*Distegia involucrata*), and hawthorn (*Crataegus rivularis*). Douglas-fir (*Pseudotsuga menziesii*) trees are occasionally present. The wetland understory is dominated by native graminoids and forbs. Some of the most common graminoids include fowl mannagrass (*Glyceria striata*), swordleaf rush (*Juncus ensifolius*), smallwing sedge, fowl bluegrass (*Poa palustris*), and beaked sedge (*Carex utriculata*), which occur in the shallow water and saturated soil habitats lining the drainages. The forb diversity is somewhat higher, and includes species such as heartleaf bittercress (*Cardamine cordifolia*) and water speedwell (*Veronica catenata*) in the shallow water, as well as shore buttercup (*Halerpestes cymbalaria*), largeleaf avens (*Geum macrophyllum*), common monkeyflower (*Mimulus guttatus*), sweet cicely (*Osmorrhiza depauperata*, *O. occidentalis*), golden glow (*Rudbeckia ampla*), monkshood (*Aconitum columbianum*), and Rocky Mountain iris (*Iris missouriensis*). Field horsetail (*Equisetum arvense*) is also common and forms dense stands in some areas. In some of the drier soils near the wetland margin, species such as timothy (*Phleum pretense*), blue wildrye (*Elymus glaucus*), orchardgrass (*Dactylis glomerata*), Richardson's geranium (*Geranium richardsonii*), dandelion, nettle leaf hyssop

(*Agastache urticifolia*), and American vetch (*Vicia americana*) also occur. There is a low cover of noxious weeds including Canada thistle (*Cirsium arvense*) and houndstongue.

Photo 3Q-2: Parcel A



Herbaceous wetlands along Potato Bill Creek.

Floodplains

Federal Parcel A is not covered by current FEMA mapping of special flood hazard areas. Therefore, no 100-year floodplains have been identified on this parcel. However, the perennial streams on the parcels do have associated floodplains that would be inundated during a 100-year storm event. Thomas Creek flows for approximately 3,870 linear feet across the parcel, and is detached from the floodplain in places due to downcutting of several feet; however, in other areas it has an attached floodplain. Potato Bill Creek, a small drainage with an attached floodplain, flows for approximately 2,820 linear feet across the parcel. In addition, there are small floodplains associated with three perennial tributaries of Potato Bill Creek with a combined distance of approximately 2,570 linear feet on Parcel A.

Parcel B

Federal Parcel B is located approximately 6.5 miles southeast of the Town of Carbondale in Pitkin County, Colorado (Figure 20), and includes approximately 28.37 acres. Elevations of Parcel B range from a high of 8,450 feet in the southeastern corner to a low of approximately 8,240 feet in the northwest. Parcel B is grazed by cows and this is evident in the degraded riparian plant community that occurs along Thomas Creek, a perennial stream that flows north across the parcel. Other perennial streams on the

parcel include Prince Creek, an unnamed tributary of Prince Creek, and an unnamed tributary of Thomas Creek.

Wetlands and Riparian Habitats

On Parcel B, an estimated 0.8 acre of riparian/wetland habitat occurs where Thomas Creek crosses the parcel in two locations, along a perennial tributary drainage to Thomas Creek, along Prince Creek in the central portion of the parcel, and along three unnamed tributaries of Prince Creek in the eastern portion of the parcel (Figure 20). Within the mapped riparian/wetland habitat, the potential wetland area is estimated to be approximately 0.6 acre.

**Table 3Q-2:
Parcel B Riparian/Wetland Habitats**

Location	Comments	Estimated Riparian/Wetland Habitat (Acres)	Potential Wetland Area (Acres)
Thomas Creek	Thomas Creek riparian/wetland; crosses parcel in two locations; grazing impacts to herbaceous plant community in some areas	~0.12 acre of mostly riparian habitat	~0.04
Tributary to Thomas Creek	Perennial stream, channel averages 2½ ft. wide	~0.25 acre; approximately 50% wetlands	~0.1
Ephemeral Stream	Wetland-lined drainage joins perennial tributary to Thomas Creek	~0.04 acre; primarily wetlands	~0.04
Prince Creek	There are a large number of seeps along this portion of the channel that create a broad wetland zone below the aspen forest	~0.36 acre, most of this area is likely wetlands	~0.3
Tributary to Prince Creek	Tributary just east of Prince Creek with many seeps that create a broad zone of wetlands	~0.07 acre, primarily wetlands	~0.07
East Tributary to Prince Creek	Perennial stream averages 2 to 3 feet wide, lined by wetlands with some noxious weeds	~0.02 acre, primarily wetlands	~0.02
TOTAL		~0.8	~0.6

Portions of the wetland and riparian habitats along Thomas Creek have been degraded by cattle grazing, which has resulted in sparse vegetation cover in the herbaceous understory. Photos 3Q-3 and 3Q-4 illustrate the differences in the grazed and ungrazed portions of the Thomas Creek riparian corridor that occur along the southern fence line of the parcel. The stream leaves the parcel for about 1,000 linear feet and then crosses through the northwestern portion of the parcel. Although there are fewer grazing impacts along the lower portion of Thomas Creek, where it crosses the northwestern part of Parcel B, some impacts are still evident. These two riparian/wetland habitats have a combined area of approximately 0.12 acre. The overstory along Thomas Creek is dominated by narrowleaf cottonwood and aspen, with mountain willow, Bebb willow, whiplash willow (*Salix lasiandra*), thinleaf alder (*Alnus incana* ssp. *tenuifolia*), and serviceberry in the shrub layer. In addition, young Douglas-fir and Engelmann spruce (*Picea engelmannii*) are occasional along the stream. In the understory near the south fence line, the sparse herbaceous vegetation includes dandelion, redtop, Kentucky bluegrass (*Poa pratensis*),

Richardson's geranium, cow parsnip (*Heracleum sphondylium*), field horsetail, and largeleaf avens, with heartleaf bittercress in the shallow flowing water of the channel, which averages 4 to 8 feet wide. Where Thomas Creek flows back onto Parcel B in the northwestern corner, the understory is more diverse, although it has also been grazed. In this area, native wetland species such as beaked sedge, fowl bluegrass, fowl mannagrass, and Nebraska sedge occur with introduced grasses such as timothy and Kentucky bluegrass. Some of the common forbs include heartleaf bittercress, largeleaf avens, sweet cicely, false hellebore (*Veratrum tenuipetalum*), and alsike clover (*Trifolium hybridum*).

Photo 3Q-3: Parcel B



**The sparse vegetation on the right side of the fence is evidence the area has been grazed.
The area on the left side of the fence has not been grazed.**

Photo 3Q-4: Parcel B



Livestock grazing has impacted the riparian and wetland habitats along some reaches of Thomas Creek on Parcel B.

The perennial tributary to Thomas Creek has a stream channel averaging approximately 2.5 feet wide, and the riparian/wetland habitat is an estimated 0.25 acre. The vegetation along this drainage is similar to the lower portion of Thomas Creek in the northwestern portion of the parcel. An ephemeral drainage that joins this perennial stream has approximately 0.04 acre of riparian/wetland habitat.

The riparian/wetland habitat along Prince Creek has an estimated area of 0.36 acre. It has been grazed but there is fairly good vegetation cover in most areas, although weedy species are present in the understory (Photo 3Q-5). The riparian overstory in this area is dominated by spruce trees with abundant thinleaf alder and scattered aspen. In addition, mountain willow and Bebb willow are very common. Seeps are extensive along Prince Creek, creating a broad wetland zone adjacent to the channel which averages between 10 to 15 feet wide within the parcel. Some of the most abundant species in the herbaceous understory include beaked sedge and arrowleaf groundsel (*Senecio triangularis*). The small tributary drainages located just east of Prince Creek are characterized by similar vegetation, however the stream channels are only approximately 2.5 to 3 feet wide. Similar to the Prince Creek wetland, there are many seeps adjacent to the channel which create a broad zone of wetlands that extends 15 feet or more from the channel in some areas. The estimated riparian/wetland habitat along these tributaries is 0.07 acre.

Photo 3Q-5: Parcel B



Riparian/wetland habitat along Prince Creek in Parcel B.

The unnamed perennial tributary of Prince Creek located near the eastern parcel boundary has a channel that averages approximately 2 to 3 feet wide. The riparian/wetland corridor, as mapped on Figure 20, covers approximately 0.02 acre. Stands of aspen form a discontinuous riparian overstory, with Bebb and mountain willows in the shrub layer. The grazed wetland understory includes both native and introduced weedy species. Some of the most common graminoids include beaked sedge, redtop, longstyle rush (*Juncus longistylis*), swordleaf rush, smallwing sedge, and the introduced pasture grasses timothy and Kentucky bluegrass. Native forbs such as false hellebore, willowherb (*Epilobium* sp.), and Siskiyou aster (*Aster lanceolatus* ssp. *hesperius*) occur, however weedy forbs such as the noxious weeds plumeless thistle and oxeye daisy (*Chrysanthemum leucanthemum*) are more common.

Floodplains

Federal Parcel B is not covered by current FEMA mapping of special flood hazard areas. Therefore, no 100-year floodplains have been identified on this parcel. However, there are small floodplains associated with the perennial streams that would be inundated during a 100-year flood event. Specifically, Thomas Creek crosses the parcel in two locations with a combined distance of approximately 340 linear feet. The perennial tributary to Thomas Creek flows for approximately 990 linear feet, and there is an ephemeral stream that flows for approximately 200 linear feet to join this drainage. In addition, Prince Creek flows for approximately 300 linear feet across the parcel. The three perennial tributaries to Prince Creek located on Parcel B have a combined length of approximately 785 linear feet. All of these streams have small, attached floodplains.

Parcel B-1

Parcel B-1 is a narrow, 1-acre tract located approximately 1,300 feet north of the northeastern corner of Parcel B, and about 6.5 miles southeast of the Town of Carbondale (Figure 20). The parcel ranges in elevation from a high of 8,280 feet in the south to a low of approximately 8,040 feet on the northern boundary. It is bisected by a perennial tributary of Prince Creek that also flows through Parcel B.

Wetlands and Riparian Habitats

Within this parcel, the unnamed perennial tributary to Prince Creek is larger and has a channel bed averaging approximately 6 to 10 feet wide (Figure 20; Photo 3Q-6).

Photo 3Q-6: Parcel B-1



Perennial Tributary to Prince Creek on Parcel B-1.

Due to the narrowness of the parcel, only about 330 square feet of riparian/wetland habitat are estimated to occur on the parcel, and wetlands potentially cover 100 square feet of this area (Table 3Q-3). The riparian community has an overstory dominated by aspen trees, with a few Engelmann spruce as well as snowberry and Woods' rose shrubs. There is very little wetland development along this portion of the stream, with only a narrow band of redbud growing with the introduced grasses timothy and orchard grass, and the native forbs checkermallow (*Sidalcea* sp.) and largeleaf avens.

**Table 3Q-3:
Parcel B-1 Riparian/Wetland Habitats**

Location	Comments	Estimated Riparian/Wetland Habitat (Acres)	Potential Wetland Area (Acres)
Perennial Tributary to Prince Creek	6 to 10 ft. wide channel, no evidence of grazing	~330 ft ² of mostly riparian habitat	~100 ft ²
TOTAL		~330 ft²	~100 ft²

Floodplains

Parcel B-1 is not covered by current FEMA mapping of special flood hazard areas. Therefore, no 100-year floodplains have been identified on this parcel. However, the unnamed perennial tributary to Prince Creek flows across the narrow parcel for approximately 30 linear feet, and it is lined by a small floodplain that would be inundated during a 100-year storm event.

Parcel C

Parcel C is located in Eagle County, approximately 7 miles southeast of the Town of Eagle (Figure 21). Parcel C encompasses approximately 171.26 acres of the northern, western and southern slopes of Horse Mountain. The irregularly shaped parcel ranges in elevation from a high of approximately 8,600 feet in the west near the summit of Horse Mountain to a low of approximately 7,320 feet in the north near Salt Creek, a perennial stream. The Bemis irrigation ditch also crosses the northern portion of the parcel approximately 450 feet south of Salt Creek. In addition, there are two deeply eroded ephemeral drainages; one drains the northwestern face of Horse Mountain and flows out of the northwestern corner of the parcel, and the second drains west-southwest from near the center of the parcel and leaves the western parcel boundary. The northern of these two drainages has a defined bed and bank, whereas the southern drainage supports discontinuous stands of upland vegetation within the channel. An unpaved access road extends upslope into Parcel D to the site of the Lady Belle Mine, then crosses private land and continues upslope onto Parcel C, where it traverses the steep slopes of Horse Mountain.

Wetlands and Riparian Habitat

Parcel C contains riparian/wetland habitats along Salt Creek and adjacent low-lying areas of the floodplain, and along the Bemis Ditch, a man-made feature (Figure 21). The riparian/wetland habitat covers an estimated 0.3 acre, including approximately 0.25 acre of potential wetlands (Table 3Q-4).

**Table 3Q-4:
 Parcel C Riparian/Wetland Habitats**

Location	Comments	Estimated Riparian/Wetland Habitat (Acres)	Potential Wetland Area (Acres)
Salt Creek	Alkaline riparian/wetland community with abundant sandbar willows and a weedy understory	~0.23 acre, primarily wetlands	~0.2
Wetland Seep	Floodplain of Salt Creek	~0.04 acre of wetlands	~0.04
Bemis Ditch	Very narrow band of wetland vegetation	~0.03 acre; primarily riparian	<0.01
TOTAL		~0.3	~0.25

The Salt Creek Wetland is an alkaline community that supports extensive stands of sandbar willow (*Salix exigua*) and a few whiplash willows, with a somewhat weedy wetland understory (Photo 3Q-7). Due to the high groundwater along the creek, the wetland forms a broad band that extends onto the floodplain. The riparian/wetland corridor, as illustrated by Figure 21, covers approximately 0.23 acre. The introduced perennial reed canarygrass (*Phalaris arundinacea*) is very common, forming dense stands with Canada goldenrod (*Solidago canadensis*) and willow-leaved dock (*Rumex triangulivalvis*). In addition, there are some areas of broadleaf cattails (*Typha latifolia*). Other common species include the noxious weeds Canada thistle, plumeless thistle, musk thistle (*Carduus nutans*), oxeye daisy; flixweed (*Descurainia sophia*); the native forb goldenglow (*Rudbeckia ampla*); and the graminoids swordleaf rush and Canada bluegrass.

Photo 3Q-7: Parcel C



Riparian/wetland habitat along Salt Creek.

Just south of Salt Creek, a berm vegetated by basin big sagebrush (*Artemisia tridentata*) separates the Salt Creek Wetland from a second smaller, flowing channel lined by wetland seeps at the toe of the north slope of Horse Mountain. This wetland measures approximately 0.04 acre. It is likely that this wetland connects to Salt Creek off of the project site. This herbaceous wetland is dominated by Baltic rush, with arrowgrass (*Triglochin maritima*), hardstem bulrush (*Scirpus acutus*), alkali bulrush (*Scirpus maritimus*), foxtail barley (*Hordeum jubatum*), redtop, and the forbs Siskiyou aster, a native, yellow sweet clover (*Melilotus officinalis*), and the noxious weed oxeye daisy.

The Bemis irrigation ditch, which crosses the northern portion of Parcel C approximately 450 feet south of Salt Creek, is lined by a narrow band of redtop. The man-made riparian/wetland habitat along the Bemis Ditch is estimated at 0.03 acre.

The ephemeral drainage that flows out of the northwestern corner of the project site is steep and narrow, with a discontinuous bed and bank that averages 2 to 4 feet wide, and sparse upland vegetation in the channel. This drainage is not a wetland but would likely be regulated by the U.S. Army Corps of Engineers as a bed and bank ephemeral stream. The other ephemeral drainage, which originates near the center of the parcel and extends to the west, is a vegetated swale 2 to 4 feet wide dominated by upland plants. Because it lacks the characteristics of a bed and bank, this drainage is unlikely to be regulated by the U.S. Army Corps of Engineers.

Floodplains

Salt Creek, a perennial stream, flows across Parcel C for approximately 75 linear feet. However, no 100-year flood elevations have been identified on the parcel. FEMA has classified Parcel C as Zone X, an area of low to moderate flood hazard. Zone X contains areas between the limits of the 100-year and 500-year floods, base floodplains of lesser hazards (such as areas protected by levees from the 100-year flood), and areas of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as above the 500-year flood level.¹⁵¹

Parcel D

Parcel D is located in Eagle County, approximately 7 miles southeast of the Town of Eagle (Figure 21), near the base of Horse Mountain. The approximately 17.41-acre Parcel D is separated from Parcel C by a tract of private land. Elevations of the parcel range from a high of approximately 7,800 feet in the north to a low of 7,560 feet in the southwestern corner along Bruce Creek, an ephemeral stream. Bruce Creek Road also crosses the southwestern corner, and an unpaved access road extends upslope into Parcel D to the site of the Lady Belle Mine, which is no longer active.

¹⁵¹ FEMA, 2013

Wetlands and Riparian Habitat

Bruce Creek, an ephemeral stream, flows across the southwestern corner of Parcel D (Photo 3Q-8). During field reconnaissance, the creek was flowing northwest through the parcel (Figure 21). The channel was dry just upstream of the parcel boundary but water, likely irrigation return flow, was entering the channel near the southern parcel boundary. The densely vegetated riparian/wetland habitat along Bruce Creek is dominated by river hawthorn, with aspen and narrowleaf cottonwood trees, as well as mountain willow, Woods' rose, snowberry, chokecherry, whitestem gooseberry (*Ribes inerme*), and serviceberry shrubs.

Photo 3Q-8: Parcel D



Bruce Creek Riparian/Wetland Habitat.

Due to the steepness of the banks, wetland development is limited along this portion of the creek, however the riparian habitat covers approximately 0.87 acre. The potential wetland area is estimated at 0.2 acre (Table 3Q-5). Some of the common herbaceous species in this area include redtop, cow parsnip, Siskiyou aster, goldenglow, and the introduced pasture grasses timothy, smooth brome (*Bromus inermis*), orchard grass, and Kentucky bluegrass. The noxious weed Canada thistle is problematic in some areas.

**Table 3Q-5:
Parcel D Riparian/Wetland Habitats**

Location	Comments	Estimated Riparian/Wetland Habitat (Acres)	Potential Wetland Area (Acres)
Bruce Creek	Riparian/wetland habitat along this ephemeral stream is partially supported by irrigation return flow	~0.87 acre of riparian habitat, wetlands likely account for less than 25% of this area	~0.2
TOTAL		~0.9	~0.2

Floodplains

Parcel D is located in Zone X, an area of low to moderate flood hazard. There are no perennial streams on Parcel D, however Bruce Creek, an ephemeral stream, flows for approximately 375 linear feet across the parcel with limited floodplain development due to the steepness of the banks.

Parcel E

Parcel E is located approximately 1,300 feet south of Parcel D in Eagle County (Figure 4). This approximately 11.97 acre, rectangular-shaped parcel ranges in elevation from a high of approximately 8,400 feet in the south to a low of 7,720 feet in the north. A four-wheel-drive road bisects the parcel. There are no streams on this parcel; an ephemeral drainage illustrated on the USGS quadrangle map is a vegetated upland swale.

Wetlands and Riparian Habitats

Parcel E does not support any wetlands or riparian habitats, and there are no streams, ponds, or other water bodies on the parcel.

Floodplains

Parcel E is located in Zone X, an area of low to moderate flood hazard. However, there are no perennial streams present on Parcel E.

Non-Federal Parcels

Parcel 1

Non-Federal Parcel 1 (Sutey Ranch) is located approximately 2.25 miles north of the Town of Carbondale in Garfield County, Colorado (Figure 22). This approximate 557-acre parcel ranges in elevation from a high of approximately 7,240 feet in the south to a low of 6,520 feet along an ephemeral tributary of Cattle Creek that parallels Garfield County Road 112 in the northeast. The parcel has an agricultural land use and nearly 150 acres of sagebrush shrubland have been cleared to create pastures. In addition, there are areas of juniper woodland and three stock ponds. The topography of Non-Federal Parcel 1 is characterized by rolling hills separated by small, gentle valleys. The parcel is adjacent to the BLM Red

Hill Special Recreation Management Area, which abuts the western and southern boundaries of the parcel.

Wetlands and Riparian Habitats

Non-Federal Parcel 1 contains riparian/wetland habitat along a tributary to Cattle Creek, which is partially fed by a spring or flowing seep in the pasture to the south (Figure 22). Grazing from cattle and horses has eliminated the wetland vegetation from the groundwater discharge area (Photos 3Q-9 and 3Q-10). The ground has been trampled, making it difficult to determine if the discharge would have a defined channel, which is a characteristic used to identify springs.

Photo 3Q-9: Parcel 1 Spring/Seep



Trampled spring/seep discharge.

Photo 3Q-10: Parcel 1 Riparian Habitat



Riparian habitat of the tributary to Cattle Creek.

The water discharged drains north to an ephemeral stream channel that parallels County Road 112 and drains into Cattle Creek. There is no water in the stream channel upstream of the spring/seep discharge. The riparian habitat along the ephemeral stream channel supports junipers and pinyon pine, Gambel oak, snowberry, serviceberry, chokecherry, and a few broadleaf cattails in the channel bottom. Canada thistle is also present. This riparian/wetland habitat covers approximately 0.18 acre, including an estimated 0.02 acre of potential wetlands. In addition, there are three stock ponds which are seasonal aquatic sites surrounded by crested wheatgrass (*Agropyron cristatum*) and other upland pasture grasses. The maximum water surface of these three stock ponds is estimated to cover approximately 0.2 acre (Table 3Q-6).

**Table 3Q-6:
 Parcel 1 Riparian/Wetland Habitats**

Location	Comments	Estimated Riparian/Wetland Habitat (Acres)	Potential Wetland Area (Acres)
Tributary to Cattle Creek	Ephemeral stream in a roadside ditch. Fed by a spring/seep with little vegetation due to grazing; stream not flowing above the spring/seep	~0.18 acre of primarily riparian habitat	~0.02
Three Seasonal Stock Ponds	Ponds lack wetland vegetation	~0.2 acre of aquatic habitat when ponds are full	--
TOTAL		~0.4	~0.02

Floodplains

Parcel 1 is located outside the FEMA Flood Insurance Rate Maps completed for the area. Therefore, no 100-year floodplains have been identified on the parcel. The parcel does not contain any perennial streams, but an unnamed ephemeral tributary of Cattle Creek crosses the parcel for approximately 1,290 linear feet. This stream is contained in a roadside drainage ditch that lacks a developed floodplain.

Parcel 2

Non-Federal Parcel 2 (West Crown) is located approximately 4 miles southeast of the Town of Carbondale in Garfield County, Colorado (Figure 19), and is just east of Federal Parcel A. This 111.8-acre parcel is located east of Prince Creek and includes flat-topped ridges and steep, deeply eroded drainages that slope to the west towards Prince Creek. The western portion of the parcel includes flatter topography along the valley bottom near Prince Creek. Several unpaved roads and recreational mountain bike and ATV trails are located on the parcel. Elevations range from a high of approximately 7,240 feet on the flat ridge top in the east, to a low of 6,880 feet along Prince Creek Road in the northwestern corner. An irrigation ditch diverts water from Prince Creek across the parcel, flowing in a generally north direction through the northwestern portion. There is a narrow band of riparian and wetland habitats along the Prince Ditch, an irrigation ditch vegetated by sandbar willow and narrowleaf cottonwood.

Wetlands and Riparian Habitats

Wetlands on Non-Federal Parcel 2 are limited to the banks of the Prince Ditch (Figure 19). The riparian/wetland habitat is estimated to cover 0.6 acre; wetlands potentially account for 0.06 acre of this area (Table 3Q-7). Two drainages mapped as ephemeral streams on the USGS quadrangle are discontinuous vegetated swales dominated by upland plants.

**Table 3Q-7:
Parcel 2 Riparian/Wetland Habitats**

Location	Comments	Estimated Riparian/Wetland Habitat (Acres)	Potential Wetland Area (Acres)
Prince Ditch	Riparian/wetland habitat lining the irrigation ditch	~0.63 acre; wetlands are likely less than 10% of this area	~0.06
TOTAL		~0.6	~0.06

Floodplains

Parcel 2 is located outside the FEMA Flood Insurance Rate Maps completed for the area. Therefore, no 100-year floodplains have been identified on the parcel. There are no perennial or ephemeral streams on Parcel 2.

Public Land Health Standard 2 for Riparian Systems

Federal Parcels

Parcel A

Standard 2 for Riparian Systems was evaluated on Parcel A as a part of the EA for the Thomas Grazing Allotment.¹⁵² Thomas Creek within the parcel was found not to be meeting Standard 2. As stated in the EA, this reach is functioning at risk with a downward trend. The primary indicators that led to this determination included the following: the width to depth ratio was out of balance for this stream type, the channel was too wide and shallow in areas, the riparian zone was not widening, the riparian vegetative cover was insufficient to protect the streambanks during high flow events, and the riparian vegetation had poor vigor. Livestock grazing was considered a factor in the failure to meet the standard. However, changes to the livestock grazing system, specifically the changes in grazing season, the reduced number of AUMs, and the proposal to construct four ponds are all actions designed to move the allotment towards meeting Standard 2.¹⁵³

Parcel B

The Roaring Fork Land Health Assessment indicates that the upper reach of Thomas Creek within Parcel B is not meeting Standard 2, and is functioning at risk with a downward trend.¹⁵⁴ Although there is no specific discussion of Thomas Creek within Parcel B, the grazing impacts observed in the riparian/wetland plant community on this parcel may be contributing to this assessment. The other streams on Parcel B are not addressed, but they are likely meeting the standard.

Parcel B-1

A short section of the Tributary to Prince Creek crosses Parcel B-1. The riparian habitat in this area is well vegetated and does not show evidence of livestock grazing impacts. The channel morphology and vegetation structure indicate Standard 2 is being met.

Parcel C

Salt Creek within Parcel C was not evaluated as a part of the Eagle River South Watershed Land Health Assessment. However, upstream of the parcel, it was found to be in Proper Functioning Condition and is mapped as meeting Standard 2. It is likely that the standard is also being met within Parcel C.

Parcel D

Bruce Creek is an ephemeral stream and it was not evaluated as a part of the Land Health Assessments. Although the BLM does not conduct PFC assessments on ephemeral streams, it is likely meeting the standard.

¹⁵² BLM, 2012d

¹⁵³ Ibid.

¹⁵⁴ BLM, 2010

Parcel E

There are no perennial streams or riparian/wetland habitats on Parcel E.

Non-Federal Parcels

Parcel 1

As private lands, the Non-Federal Parcels were not included in the Land Health Assessments. However, based on the livestock grazing that has impacted the vegetation around the spring/seep discharge that drains to the Tributary to Cattle Creek, Standard 2 is not being met for this portion of the riparian/wetland habitat on Parcel 1. The remainder of the riparian habitat along the ephemeral stream channel is likely meeting the standard. The acquisition of the Non-Federal Parcels by the BLM provides the opportunity to manage livestock grazing and other activities in a manner that promotes the achievement of Standard 2.

Parcel 2

The only riparian/wetland habitat present on Parcel 2 is associated with the Prince Ditch. Standard 2 does not apply to irrigation ditches.

ENVIRONMENTAL EFFECTS

Alternative 1: No Action

Under the No Action Alternative, the land exchange would not occur. The BLM would continue to own and manage the riparian/wetland habitats, streams, and floodplains on the six Federal Parcels. The two Non-Federal Parcels would remain in private ownership. The Federal Parcels could be leased for mineral and/or energy development, which could affect riparian/wetland habitats, streams, although this is unlikely to occur since the Federal Parcels are mapped as having: 1) low potential for oil and gas development, 2) minimal values of locatable minerals and 3) low potential for salable minerals development. The Federal Parcels would remain open for livestock grazing. The current land uses of the Non-Federal Parcels could be maintained, or they could potentially be sold and/or developed for residential or commercial purposes, consistent with county zoning and land use regulations.

Direct and Indirect Effects

Federal Parcels

Under the No Action Alternative, the Federal Parcels would remain under BLM management. Any mineral and/or energy development that may occur on the Federal Parcels could potentially impact the riparian/wetland habitats and streams identified on the parcels, but this is unlikely to occur given the low mineral development potential. In addition, current land uses would likely continue, including livestock grazing. During field reconnaissance, livestock grazing was observed to have a negative impact on the riparian/wetland habitat located along Thomas Creek on Parcel A and farther upstream where the creek crosses Parcel B. However, since these observations were made in 2011, a new grazing system was implemented for the Thomas Allotment on Parcel A. When the grazing permit was renewed, the number

of AUMs was voluntarily reduced from 80 to 49, and the number of days of summer grazing use was reduced from 56 to 15. In addition, the permit authorized the construction of four proposed ponds with the goal of improving grazing distribution in the allotment to alleviate some of the concentrated livestock grazing along Thomas Creek. This new grazing system should benefit the riparian/wetland habitat along Thomas Creek by increasing total vegetation cover, and hopefully it will allow recovery of the native riparian and wetland vegetation. Similar changes to the system of livestock grazing have not been made for Parcel B. Grazing impacts were not observed in riparian/wetland habitats on the other Federal Parcels. However, it appears that irrigation water is an important water source for the riparian/wetland habitat along Bruce Creek on Parcel D. Maintenance of this irrigation return flow could be important for the long-term persistence of the riparian/wetland habitat.

Non-Federal Parcels

If the No-Action Alternative is selected, the Non-Federal Parcels would remain in private ownership. They could remain in their current condition, or could feasibly be sold and/or developed for residential or commercial purposes, which has the potential to impact riparian/wetland habitats. Parcel 1 currently has an agricultural land use, and livestock grazing has impacted wetlands on the parcel by eliminating herbaceous vegetation associated with a spring/seep discharge. If the current system of grazing management continues, the wetland vegetation in this area is unlikely to recover. Additional riparian/wetland impacts from grazing are not anticipated on Parcel 1 due to the presence of fencing along CR 112 that prevents livestock from accessing the stream channel, and the lack of wetland vegetation at the perimeter of the three stock ponds. The existing riparian/wetland habitat on Parcel 2 is dependent upon the maintenance of annual irrigation flows in the Prince Ditch.

Public Land Health Standard 2 for Riparian Systems

The No Action Alternative is not anticipated to affect stream functionality or the capacity of streams in the Analysis Area to meet the Public Land Health Standard 2 for Riparian Systems.

Floodplain Management

The No Action Alternative would not result in any development within identified 100-year floodplains and no impacts to the natural and beneficial values served by floodplains are anticipated.

Alternative 2: The Proposed Action

Direct Effects

Federal Parcels and Non-Federal Parcels

The direct effect of the proposed land exchange would be a change in ownership of the riparian/wetland habitats located along streams, aquatic habitats in three stock ponds, and floodplains present on the Federal and Non-Federal Parcels. As summarized below, the exchange would result in a reduction of riparian/wetland habitats, streams, and potential wetland areas under BLM management. The BLM would

gain three seasonal stock ponds with a combined surface area of approximately 0.2 acre, and one spring/seep discharge (Table 3Q-8).

**Table 3Q-8:
Change in Ownership of Riparian/Wetland Habitats and Aquatic Resources**

Resources	Federal Parcel Total (acres)	Non-Federal Parcel Total (acres)	Change in BLM Ownership
Aquatic Habitats (Ponds)	0	0.2	+ 0.2
Riparian/Wetland Habitats*	16.6	0.8	- 15.8
Spring/Seep Discharges	0	1	+1

*Riparian/wetland areas reported include the aquatic habitat of the stream channels, which is often partially vegetated.

Indirect Effects

If the proposed land exchange is approved, conservation easements would be placed on all BLM lands that become private (except the 1-acre Federal Parcel B-1). A site-specific management plan for the Non-Federal Parcels would be developed and implemented and the Proponents would place a conservation easement on two parcels of the existing Two Shoes Ranch within the area known as Potato Bill, per an agreement between the Proponents and the Pitkin County BOCC. Each of these actions could have an indirect impact on riparian/wetland habitats, streams and floodplains as discussed below. Overall, the conservation easements along with the future, site-specific management plan provide for increased/improved protections of/management on the Federal and Non-Federal Parcels.

Conservation Easements on the Federal Parcels

If the land exchange is approved, Federal Parcels A and B would be placed under conservation easements to be granted to the AVL T. Similarly, Parcels C, D and E would be placed in a conservation easement to be granted to the EVLT. These conservation easements include provisions that would preclude development and other activities, including energy and mineral prospecting and development, which have the potential to negatively impact riparian/wetland habitats, streams, and ponds. Below, the specifics of these easements are summarized with respect to the management of and impacts to riparian/wetland habitats, streams, and floodplains.

Federal Parcels A and B

The conservation easements for Federal Parcels A and B are designed to protect the Conservation Values of these parcels, including riparian/wetland habitats, streams, and ponds. The easements would prohibit development of the parcels and they include special provisions to protect water resources. Specifically, they state that the Grantor shall not divert, dam, pollute, dredge, intentionally destabilize or degrade natural banks and shorelines, or otherwise alter Potato Bill Creek, Thomas Creek, or other naturally-occurring streams, springs, lakes, ponds, designated wetlands, or other surface or subsurface water features that may occur on the parcels without approval of the AVL T. The improvement and replacement of ponds, wetlands, and irrigation structures is permitted for agricultural purposes or the enhancement of

wildlife habitat. In addition, the easements would require that a Grazing Management Plan (to be approved by CPW) be developed by a natural resource professional. Proper grazing management will be an important aspect of managing the riparian/wetland habitats on Parcels A and B. As described above, portions of the riparian/wetland habitats along Thomas Creek have been impacted by livestock grazing on these two parcels. Subsequent to the field reconnaissance conducted in 2011, which is the basis for the descriptions included in this report, a new grazing system was implemented for the Thomas Allotment on Parcel A. Specifically, the level and duration of grazing were reduced, and the construction of new ponds was authorized to reduce the effects of concentrated livestock grazing along Thomas Creek. When the Grazing Management Plan for the conservation easements is developed, the new grazing system would likely be evaluated to determine if it is allowing some recovery of the riparian/wetland habitat along Thomas Creek on Parcel A or if additional changes are necessary. If effective, similar changes to grazing management could be incorporated into the management plan for Parcel B.

Federal Parcels C, D and E

Federal Parcels C, D and E would be placed in a conservation easement to be granted to the EVLT. The easement has been structured to protect the Conservation Values present on the three parcels, including riparian/wetland habitats and streams. Development of the parcels would be prohibited, and only minor agricultural improvements would be permitted. In particular, the easement states that the Grantor shall not alter, impair, modify, or adversely change existing ponds, wetlands, or stream channels in a manner that is inconsistent with the preservation and protection of the Conservation Values. Although impacts from livestock grazing are not evident in the riparian/wetland habitats on Parcels C and D, proper livestock grazing will be an important aspect of resource management, and if EVLT believes it is being conducted in a manner that is inconsistent with the preservation and protection of the Conservation Values of the parcels, including the riparian/wetland habitats, a resource management professional would provide recommendations for sustainable livestock grazing. In addition, restrictions on timber harvest, mineral and energy development and exploration, off-road vehicle use, and surface disturbances, as well as the requirement to control noxious weeds would protect and preserve the Conservation Values of the Parcels, including riparian/wetland habitats.

Site-Specific Management Plan for the Non-Federal Parcels

As a part of the Proposed Action, the Proponents have agreed to donate \$1.1 million to provide for the cost of developing and implementing a site-specific management plan for the Non-Federal Parcels. Although the plan is only conceptual at this time, it would likely address vegetation management and livestock grazing, with particular emphasis on protecting the riparian/wetland habitats including the spring/seep discharge on Parcel 1. Because senior water rights would be acquired with Parcel 1, the plan could also specify that irrigation water should be released into the Tributary to Cattle Creek. This would

benefit the riparian/wetland habitat in Parcel 1 and downstream along Cattle Creek, a larger stream which experiences low seasonal flows due to upstream diversions.¹⁵⁵

Agreement Between Two Shoes and the Pitkin County BOCC

Upon approval of the proposed land exchange, the Proponents have agreed to place conservation easements on two parcels of the existing Two Shoes Ranch within the area known as Potato Bill. These parcels, totaling 365 acres, abut Federal Parcel A on the east and west sides and include a portion of Potato Bill Creek immediately downstream of Parcel A. The conservation easements will recognize the important Conservation Values of the land, and would protect these parcels from future development. Although the details of the conservation easements are not a part of this analysis, they have a similar structure to the easements for Parcels A and B, and it is reasonable to assume they would benefit the riparian/wetland habitats associated with Potato Bill Creek.

Public Land Health Standard 2 for Riparian Systems

The Proposed Action is not anticipated to affect stream functionality or the capacity of streams in the Analysis Area to meet the Public Land Health Standard 2 for Riparian Systems.

Floodplain Management

Federal and Non-Federal Parcels

As described above, most of the parcels are crossed by perennial streams with some level of floodplain development. However, due to the locations of the parcels, they are outside the areas currently mapped by FEMA and therefore no 100-year floodplains have been identified. FEMA has designated that Parcels C, D and E are within Zone X.

Despite the presence of perennial streams on the Federal and Non-Federal Parcels, the Proposed Action would not result in any development within 100-year floodplains, and would facilitate the preservation and protection of the floodplains, wetlands, and aquatic habitats associated with these streams. Under the Proposed Action, the Federal Parcels (except the 1-acre Parcel B-1) would be placed under conservation easements that would protect the parcels from development. In addition, the easements contain provisions that protect the streams and wetlands from alterations, such as prohibiting diversions, dams, dredging, intentional destabilization or degradation of natural banks and shorelines, or other alterations without prior approval. Given the purpose of the conservation easements to protect the natural habitats and Conservation Values of the parcels, and the prohibition of future development of these parcels, the Proposed Action would not violate Executive Order 11988, Floodplain Management. There are no perennial streams located on the two Non-Federal Parcels. However, these parcels that would be acquired by the BLM would be managed in accordance with Executive Order 11988, and they would not be developed.

¹⁵⁵ Ibid.

R. FIRE AND FUELS MANAGEMENT

SCOPE OF ANALYSIS

In the arid climate of the Mountain West, fire and fuels management is of great importance to private land holders and government agencies because of the potential for impacts that wildfires have on properties, resources and the landscape. The proposed land exchange would result in the change of land ownership from federally managed land to privately managed and vice-versa, which would alter the management of fire and fuels in the Analysis Area.

This analysis for fire and fuels management focuses on the Federal and Non-Federal Parcels, but the Analysis Area also includes the surrounding counties and BLM fire management zones.

AFFECTED ENVIRONMENT

Community Wildfire Protection Plans

Eagle, Garfield and Pitkin counties have adopted Community Wildfire Protection Plans (CWPP) per State law to identify the roles and responsibilities of local, regional, and federal agencies in coordinating efforts in wildland fire management actions and programs. Each CWPP works to address the concerns of local residents and agencies for public safety, community sustainability, and natural resources through prevention, preparedness, mitigation, suppression, reclamation, and rehabilitation practices. CWPPs allow each jurisdiction, in this case Eagle, Garfield and Pitkin counties, to address the challenges of the wildland-urban interface (WUI) such that solutions are comprehensive and locally supported.¹⁵⁶

Headwaters Economics is an independent, nonprofit research group that works with community leaders, landowners, public land managers, elected officials, business owners, and other nonprofit organizations to provide credible information they can use to identify and solve problems. Headwaters Economics, with financial and intellectual contributions from the BLM and USFS, has provided an Economic Profile System-Human Dimensions Toolkit (EPS-HDT) that produces socioeconomic reports including custom aggregations. Using this tool, communities can evaluate the wildland-urban interface, how much of the WUI has been developed and how much remains to be developed.

According to Headwaters Economics Data, Eagle County has a total WUI area of 55 square miles, 34.1 percent of which already has homes developed on it. Garfield County has a total WUI area of 129 square miles, 6.3 percent of which already has homes developed on it. Pitkin County has a total WUI area of 44 square miles, with 32.9 percent of the area already developed with homes. Almost 10,000 of Eagle County's over 22,000 homes are located in the WUI (44.3 percent), approximately 2,500 of

¹⁵⁶ The wildland-urban interface is defined as the line, area, or zone where structures and other human development meet or intermingle with undeveloped lands or vegetative fuel. WUI zones can be a combination of public and privately owned properties, and include lands within town boundaries and intermixed communities in unincorporated areas.

Garfield County's 17,500 homes are in the WUI (14.3 percent) and almost 5,000 of Pitkin County's over 10,000 homes are built in the WUI (46.2 percent).¹⁵⁷

State-wide, Eagle County ranked 9th, Garfield County ranked 18th and Pitkin County ranked 10th out of 63 counties for *existing* wildfire risk. Regarding *potential* wildfire risk, Eagle County ranked 16th, Garfield County ranked 1st and Pitkin County ranked 23rd. Existing risk was measured by the number of acres of forested land where homes have already been built next to public lands and potential risk was calculated by the number of acres of undeveloped private land bordering fire-prone public lands.¹⁵⁸

Fire and Fuels Management on the Federal Parcels

The CRVFO manages fire and fuels under the Glenwood Springs Field Office Fire Management Plan (GSFMP). Per the GSFMP, all federal land included as part of the land exchange has "Category B" fire management unit designation. Category B includes all areas where unplanned wildland fire is not desired because of current conditions. Other categories (A, C and D) either encourage or strongly discourage wildland fires for various reasons. Category B also defines areas where an unplanned ignition could have negative effects unless some form of mitigation takes place, but fire is recognized as having a role in the function of the ecosystem. Sagebrush ecosystems, for example, can fall into this category because of encroachment of cheatgrass or a prolonged lack of fire which leads to large monotypic stands of sagebrush that will not burn as they would have historically.

All Federal Parcels in the Analysis Area are in BLM fire management zones, designated by the GSFMP. Parcels A, B, and B-1 (surrounding Two Shoes Ranch in Pitkin County) are located in the BLM's Roaring Fork Valley Fire Management Unit (B-140-03), which is the same unit as the Red Hill SRMA that is adjacent to Non-Federal Parcel 1 (Sutey Ranch). The Roaring Fork Valley Fire Management Unit encompasses roughly 46,171 acres between Glenwood Springs and Aspen with many non-contiguous blocks of public lands mixed with private lands. In this unit, mountain shrublands are the dominant vegetation community. Gambel's oak, mountain mahogany, serviceberry, chokecherry, snowberry, and mountain sagebrush are common. In the driest areas sagebrush, rabbit brush, and grasses are prevalent, while at lower elevations the vegetation is made up of pinyon-juniper woodlands that can include sagebrush, mountain mahogany, and serviceberry mixed with grasses and forbs. The composition and structure of the mountain shrub and pinyon/juniper communities are generally in a mid- to late-seral stage, but within the Natural Range of Variability (NRV).¹⁵⁹ The sage/grass community is considered to be moderately departed from the NRV. The GSFMP identified an outbreak of Ips beetle (also known as the engraver beetle) that is occurring within the pinyon pine stands of this management unit. Although the

¹⁵⁷ Headwaters Economics, 2012

¹⁵⁸ Ibid.

¹⁵⁹ NRV refers to the naturally occurring variation over time of the composition and structure found in an ecosystem representing the range of conditions occurring over hundreds of years prior to industrial-scale society.

long-term effect of the beetle outbreak is unknown at this time, it is a condition that will be monitored into the future.¹⁶⁰

The federal lands in Eagle County (Parcels C, D, and E), in proximity to Lady Belle Ranch, are also in BLM fire management zones and located in the Eagle Valley Fire Management Unit (B-140-05). This unit includes a total of 81,074 acres in various sized blocks of public lands in the Eagle and upper Colorado River drainages in close proximity to residential development and ranch lands. Higher elevations have spruce-fir-lodgepole forest intermingled with aspen stands. Middle elevations of this Fire Management Unit consist of Gambel's oak, mountain mahogany, serviceberry, chokecherry, and snowberry with sagebrush, rabbit brush, and grasses found in dryer sites. At lower elevations of this Unit pinyon-juniper woodlands are prominent and can include sagebrush, oak, mountain mahogany, and serviceberry mixed with grasses and forbs. Generally, the plant communities within this unit are in a late seral stage. Typically, the sage/grass community is either decadent, or being severely encroached upon by pinyon/juniper or Rocky Mountain juniper.

Fire and Fuels Management on the Non-Federal Parcels

Parcel 1 and Parcel 2 (Sutey Ranch and West Crown parcels, respectively) are privately held and therefore not currently categorized under any BLM Fire Management Zone.

The Non-Federal Parcels are managed utilizing common best practices for managing wildfire and fuels on private ranches, including selective grazing to reduce fuels and irrigation to introduce moisture into the system. The Non-Federal Parcels are incorporated into CWPPs for Garfield and Pitkin County for Parcel 1 and 2, respectively.

Fuel Potential

Fuel potential is an essential component of determining the wildfire hazard risk for a given parcel. Fuel potential considers the vegetation types present, their species composition, the height and density of shrubs, and the condition of forested stands. Along with topography, fuel potential is used to develop a preliminary wildfire hazard rating. For the purposes of this analysis, the vegetation types present on the parcels are classified into three major fuel potential categories: Low Density, Medium Density, and Heavy Fuels. The ratings are based on the Wildfire Hazard Rating worksheet adopted by Eagle County which categorizes the major plant community types found within the Analysis Area.¹⁶¹ Detailed wildfire hazard ratings are beyond the scope of this analysis, however Fuel Potential is a helpful baseline for determining the general wildfire risk. Based on the characteristics of each vegetation type, differing point values are assigned for the Low Density, Medium Density and Heavy Fuels. Low density fuels are assigned 0 to 25 points; medium density fuels range from 30 to 45 points; and heavy fuels are assigned 50 to 70 points. To determine the preliminary wildfire hazard rating, 5 to 40 additional points are added

¹⁶⁰ USDOJ BLM, 2009b

¹⁶¹ Eagle County, 2003

based on the average slope, with 40 points being added for slopes of 31 percent or greater. Total point scores of 60 or more indicate an extreme wildfire hazard; 41 to 60 points are assigned a high wildfire hazard; 21 to 40 points results in a moderate rating; and scores below 20 points are a low wildfire hazard. Thus, areas with heavy fuels would be rated as a high to extreme wildfire risk, depending upon the average slope. Areas of medium density fuels on steeper slopes could also result in a high to extreme wildfire hazard rating.

Federal Parcels

Parcel A

Approximately 49 percent of Parcel A is vegetated by Gambel oak shrublands, pinyon-juniper woodlands and Douglas-fir forests with a heavy combustion potential. However, some of the regenerating Gambel oak in mechanically treated areas could be classified as a medium density fuel due to reduced shrub height and spacing. Another 615.9 acres of the parcel, including the Gambel oak/sagebrush mosaic habitat, the sagebrush shrublands, and the mountain mahogany shrublands, is classified as a medium density fuel. Finally, the riparian/wetland habitats, which comprise about 1 percent of the parcel, have a variable fuel potential rating of low to medium that increases when conifers are present. The varied topography of Parcel A includes some steeper slopes that would result in areas of an extreme wildfire hazard rating, including some stands of pinyon-juniper woodlands, Gambel oak shrublands, and the mountain mahogany shrublands.

**Table 3R-1:
Parcel A Fuel Potential**

Vegetation Type & Fuel Potential	Acres
HEAVY FUELS	
Gambel oak shrublands	522.2
Pinyon-Juniper woodlands	50.0
Douglas-fir forest	37.3
<i>Subtotal</i>	<i>609.5</i>
MEDIUM DENSITY FUELS	
Gambel oak/Sagebrush mosaic	443.7
Sagebrush shrublands	131.5
Mountain mahogany shrublands	40.7
<i>Subtotal</i>	<i>615.9</i>
LOW TO MEDIUM DENSITY FUELS	
Riparian/Wetland habitats	14.6
<i>Subtotal</i>	<i>14.6</i>
TOTAL	1,240.0

Parcel B

The majority of Parcel B, approximately 78 percent, is vegetated by aspen forest, which is a medium density fuel. Only a small area of mountain shrubland, approximately 3 acres, is a heavy fuel. The riparian/wetland habitats have a variable rating that ranges from low to medium based the presence of conifers. The remainder of the parcel is characterized by low density fuels in the snowberry shrublands and disturbed areas. Most of Parcel B has a gently sloping topography, however some areas in the northwest have slopes approaching 20 percent which would result in some areas with a high wildfire hazard rating.

**Table 3R-2:
Parcel B Fuel Potential**

Vegetation Type & Fuel Potential	Acres
HEAVY FUELS	
Mountain shrublands	3.0
<i>Subtotal</i>	<i>3.0</i>
MEDIUM DENSITY FUELS	
Aspen forest	22.2
<i>Subtotal</i>	<i>22.2</i>
LOW TO MEDIUM DENSITY FUELS	
Riparian/Wetland habitats	0.8
<i>Subtotal</i>	<i>0.8</i>
LOW DENSITY FUELS	
Snowberry shrublands	2.1
Disturbed	0.3
<i>Subtotal</i>	<i>2.4</i>
TOTAL	28.37

Parcel B-1

Parcel B-1 is characterized by low to medium density fuels. The parcel is dominated by aspen forest, which has a medium fuel potential rating. The riparian/wetland habitat is rated as low to medium based on the presence of some conifers. Finally, the small area of snowberry shrubland, which occupies about 10 percent of the parcel, is a low density fuel. The parcel has a gentle slope to the northeast that would slightly increase the fuel potential scores and could result in some areas with a high wildfire hazard rating.

**Table 3R-3:
Parcel B-1 Fuel Potential**

Vegetation Type & Fuel Potential	Acres
MEDIUM DENSITY FUELS	
Aspen forest	0.9
<i>Subtotal</i>	<i>0.9</i>
LOW TO MEDIUM DENSITY FUELS	
Riparian/Wetland habitats	~330 ft ²
<i>Subtotal</i>	<i>~330 ft²</i>
LOW DENSITY FUELS	
Snowberry shrublands	0.1
<i>Subtotal</i>	<i>0.1</i>
TOTAL	1.0

Parcel C

Parcel C is dominated by heavy fuels that cover nearly 88 percent of the parcel. These include the mountain shrublands, pinyon-juniper woodlands, Douglas-fir forest, and Gambel oak shrublands. In addition, another 12 percent of the parcel is vegetated by medium density fuels including mountain mahogany shrublands and sagebrush shrublands. Only 1 acre of the parcel is rated as having low density fuels. Due to the steep slopes that occur throughout most of the parcel and the heavy fuels, much of the parcel has an extreme wildfire hazard rating.

**Table 3R-4:
Parcel C Fuel Potential**

Vegetation Type & Fuel Potential	Acres
HEAVY FUELS	
Mountain shrublands	59.4
Pinyon-juniper woodlands	56.4
Douglas-fir forest	25.0
Gambel oak shrublands	9.1
<i>Subtotal</i>	<i>149.9</i>
MEDIUM DENSITY FUELS	
Mountain mahogany shrublands	10.5
Sagebrush shrublands	9.9
<i>Subtotal</i>	<i>20.4</i>
LOW DENSITY FUELS	
Disturbed	0.7
Riparian/Wetland habitats	0.3
<i>Subtotal</i>	<i>1.0</i>
TOTAL	171.26

Parcel D

The pinyon-juniper woodlands that dominate Parcel D are a heavy fuel, and they cover nearly 75 percent of the parcel. The remainder of the parcel, approximately 4.5 acres, contains low density fuels including the disturbed area along Bruce Creek Road, the riparian/wetland habitat of Bruce Creek, the paved roadway, and the irrigated pasture. Areas of pinyon-juniper woodland on the slope at the base of Horse Mountain create an extreme wildfire hazard rating.

**Table 3R-5:
Parcel D Fuel Potential**

Vegetation Type & Fuel Potential	Acres
HEAVY FUELS	
Pinyon-juniper woodlands	12.9
<i>Subtotal</i>	<i>12.9</i>
LOW DENSITY FUELS	
Disturbed	2.9
Riparian/Wetland habitats	0.9
Paved roadway	0.4
Irrigated pasture	0.3
<i>Subtotal</i>	<i>4.5</i>
TOTAL	17.41

Parcel E

The majority of Parcel E is vegetated by sagebrush shrublands and aspen forests that are classified as medium density fuels. The Gambel oak shrublands, which cover approximately 3.5 acres of the parcel, are a heavy fuel. Due to steeper slopes in the Gambel oak shrublands and the aspen forest, portions of Parcel E would likely have an extreme wildfire hazard rating.

**Table 3R-6:
Parcel E Fuel Potential**

Vegetation Type & Fuel Potential	Acres
HEAVY FUELS	
Gambel oak shrublands	3.5
<i>Subtotal</i>	<i>3.5</i>
MEDIUM DENSITY FUELS	
Sagebrush shrublands	4.3
Aspen forest	4.2
<i>Subtotal</i>	<i>8.5</i>
TOTAL	11.97

Non-Federal Parcels

Parcel 1

Heavy fuels, primarily pinyon-juniper woodlands, cover approximately 56 percent of Parcel 1. In addition, another 180.1 acres, or about 32 percent of the parcel, contains medium density fuels in the sagebrush shrublands, pastures with sagebrush encroachment, and riparian/wetland habitats along the tributary to Cattle Creek. In addition, there are about 65 acres of low density fuels that include the irrigated pastures, the disturbed habitats, the paved roadway, and the aquatic habitats of the three stock ponds. Due to the prevalence of pinyon-juniper woodlands on slopes, much of Parcel 1 would be rated as having an extreme wildfire hazard.

**Table 3R-7:
Parcel 1 Fuel Potential**

Vegetation Type & Fuel Potential	Acres
HEAVY FUELS	
Pinyon-juniper woodlands	308.5
Gambel oak shrublands	2.9
<i>Subtotal</i>	<i>311.4</i>
MEDIUM DENSITY FUELS	
Sagebrush shrublands	91.3
Pasture with sagebrush encroachment	88.6
Riparian/Wetland habitats	0.2
<i>Subtotal</i>	<i>180.1</i>
LOW DENSITY FUELS	
Irrigated pasture	59.5
Disturbed	4.5
Paved roadway	0.9
Aquatic habitats (3 stock ponds)	0.2
<i>Subtotal</i>	<i>65.1</i>
TOTAL	556.6

Parcel 2

Approximately 80 percent of the Non-Federal Parcel 2 (West Crown) is vegetated by heavy fuels, specifically in the Gambel oak shrublands and the pinyon-juniper woodlands. In addition, approximately 19 percent is covered by medium density fuels, including the sagebrush shrublands and the riparian/wetland habitat located along the Prince Ditch. A disturbed area that covers approximately 1.6 acres of the parcel is classified as a low density fuel. The pinyon-juniper woodlands and Gambel oak shrublands occur on steep slopes that would cause much of the parcel to have an extreme wildfire hazard rating.

**Table 3R-8:
Parcel 2 Fuel Potential**

Vegetation Type & Fuel Potential	Acres
HEAVY FUELS	
Gambel oak shrublands	71.5
Pinyon-juniper woodlands	17.2
<i>Subtotal</i>	88.7
MEDIUM DENSITY FUELS	
Sagebrush shrublands	20.9
Riparian/Wetland habitats	0.6
<i>Subtotal</i>	21.5
LOW DENSITY FUELS	
Disturbed	1.6
<i>Subtotal</i>	1.6
TOTAL	111.8

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Direct and Indirect Effects

The No Action Alternative would result in the continuation of existing fire and fuel management practices on the respective Federal and Non-Federal Parcels.

Federal Parcels

Under the No Action Alternative, the Federal Parcels would continue to be managed per the protocols of Category B per the GSFMP.

Non-Federal Parcels

Private land in the Analysis Area would continue to be managed consistent with the best practices currently employed on Non-Federal Parcels 1 and 2. State law would require private properties to continue management of big game, habitat, and vegetation.

Alternative 2: Proposed Action

Direct Effects

Federal Parcels

Under the proposed land exchange, Federal Parcels A, B, B-1, C, D and E would come under private fire and fuel management practices. The fire and fuel management currently in place on the Two Shoes and Lady Belle Ranches would likely be extended to the Federal Parcels.

Non-Federal Parcels

Under the Proposed Action, Non-Federal Parcels 1 and 2 would be transferred to the BLM for management, including fire and fuel management efforts. Non-Federal Parcel 1 would likely be managed for fire and fuels in the same way as the surrounding Red Hill SRMA, while the Parcel 2 would likely be managed similar to the nearby BLM lands. Both Parcel 1 and Parcel 2 are likely to be in Fire Management Unit B, which is the same as Parcels A, B, B-1, C, D, and E. This management unit contains areas where unplanned wildland fire is not desired because of the potential negative effects to life, property, natural and cultural resources.

The mitigation, suppression, and treatment considerations on Parcel 1 would likely mirror those of the surrounding Red Hill SRMA, which is also Category B. Similarly, Parcel 2 would become supervised by BLM fire and fuel management efforts and would likely have similar designation and management as the nearby Fire Management Unit B lands.

Indirect Effects

Conservation Easements on the Federal Parcels

The conservation easements placed on Federal Parcels A and B as a component of the Proposed Action would require the development of a vegetation management plan (VMP) prepared by a qualified expert satisfactory to the land trusts holding the easements and Colorado Parks and Wildlife (CPW). This VMP will be designed to protect wildlife habitat on the Parcels through the management of vegetation, including fuels. Although the conservation easement that would be placed on Federal Parcels C, D and E does not require the creation of a VMP, all resource management practices, including vegetation and fuels management, must be consistent with the preservation and protection of the Conservation Values of the parcels, which includes preservation of the habitat on the parcels. The EVLT will monitor and enforce requirements to ensure fire and fuels are adequately managed and habitat is maintained. Additional details of the conservation easements are summarized in Chapter 2 Section C and in Appendix A.

Site-Specific Management Plan for the Non-Federal Parcels

As an indirect effect of the proposed land exchange, fire and fuels on the Non-Federal Parcels would be managed under a future, site-specific management plan, which would fall under a separate NEPA analysis. This site specific management plan would likely employ fire and fuels-related management practices.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between Two Shoes and the Pitkin County BOCC (pertaining only to existing private property in the Two Shoes Ranch) does not address fire and fuels management; however, the conservation easements (totaling 365 acres) placed upon two parcels of the existing Two Shoes Ranch within the area known as Potato Bill would require fire and fuels management on these parcels in a similar fashion to what is discussed for the conservation easements on Federal Parcels A and B above.

S. SOILS

SCOPE OF ANALYSIS

This analysis describes the soil resources present on the Federal and Non-Federal Parcels, and documents the potential environmental effects to soil resources under the proposed land exchange and the No Action Alternative. In addition, it addresses the Colorado Public Land Health Standard 1 for Soils. The Analysis Area for soil resources includes the six Federal and two Non-Federal Parcels.

AFFECTED ENVIRONMENT

Soils within the exchange parcels vary greatly in soil texture, rockiness, thickness, and parent material. The information on soil resources presented below was summarized from data included in the *Soil Survey of Aspen-Gypsum Area, Colorado: Parts of Eagle, Garfield, and Pitkin Counties*.¹⁶² This is a general Order 3 soil survey, therefore smaller-sized features such as small drainages and wetlands were not mapped separately and were included with larger soil/geomorphic features. Many of the parcels likely contain hydric soils, which commonly support wetland plant communities. Hydric soils are not discussed further, however the wetlands present on the exchange parcels are identified in Chapter 3 Section Q – Wetlands and Riparian Zones.

The Soil Conservation Service (SCS) identified 32 soil map units within the exchange parcels.¹⁶³ For comparative purposes and to simplify the discussion in this report, these soil map units are grouped into six generalized units, as identified in Table 3S-1. These units were assembled based on similar soil depth, soil texture, rockiness, parent material, and suitable land use. The six generalized soil units are described below. It is important to note that the soil unit descriptions represent the entire soil survey area of parts of Eagle, Garfield, and Pitkin counties, and are not site-specific descriptions.

**Table 3S-1:
 Soil Map Units on the Federal and Non-Federal Parcels**

Map Unit	Soil Type	Slope Percentage
1. DEEP LOAMY FARMLAND SOILS		
6	Almy Loam	1 to 12%
34	Empedrado Loam	2 to 6%
2. DEEP LOAMY SHRUBLAND SOILS		
35	Empedrado Loam	6 to 12%
39	Evanston Loam	6 to 25%
40	Evanston Loam	25 to 45%
41	Evanston Loam	45 to 65%
43	Forelle-Brownsto Complex	6 to 12%
44	Forelle-Brownsto Complex	12 to 25%

¹⁶² USDA-SCS, 1992

¹⁶³ Ibid.

**Table 3S-1:
 Soil Map Units on the Federal and Non-Federal Parcels**

Map Unit	Soil Type	Slope Percentage
64	Jerry Loam	25 to 65%
66	Jerry-Millerlake Loams	6 to 25%
67	Jerry-Millerlake Loams	25 to 45%
71	Kobar Silty Clay Loam	6 to 12%
85	Moval Loam	6 to 25%
87	Morval-Tridell Complex	12 to 50%
3. DEEP ROCKY SHRUBLAND SOILS		
14	Callings-Yeljack Complex	25 to 65%
47	Forsey Cobbly Loam	25 to 65%
56	Ipson Cobbly Loam	3 to 25%
57	Ipson Cobbly Loam	25 to 50%
94	Showalter-Morval Complex	5 to 15%
95	Showalter-Morval Complex	15 to 25%
98	Southace Cobbly Sandy Loam	12 to 25%
106	Tridell-Brownsto Stony Sandy Loams	12 to 50%, extremely stony
108	Uracca, Moist-Mergel Complex	6 to 12%, extremely stony
110	Uracca, Moist-Mergel Complex	25 to 65%, extremely stony
4. DEEP LOAMY FORESTED SOILS		
9	Ansel-Anvik Association	25 to 45%
11	Anvik-Skylick-Sligting Association	25 to 50%
5. DEEP ROCKY FLOODPLAIN SOILS		
42	Fluvaquents	0 to 10%
6. SHALLOW ROCKY WOODLAND SOILS		
12	Arle-Ansari-Rock Outcrop Complex	12 to 50%
25	Cushool-Rentsac Complex	15 to 65%
33	Earsman-Rock Outcrop Complex	12 to 65%
104	Torriorthents-Rock Outcrop Complex	6 to 65%
105	Torriorthents-Rock Outcrop Complex	45 to 95%

Source: USDA-SCS, 1992

Deep Loamy Farmland Soils

These soils are deep (greater than 40 inches to bedrock), well drained, have a loamy texture with very few rock fragments, and formed in alluvium derived from sandstone and shale and in eolian material. The soils have a moderate permeability, high available water holding capacity, and a moderate hazard of water erosion. They occur on fans and hills in mountains with slopes ranging from 1 to 12 percent. These soils are considered to be either prime farmland if irrigated or farmland of statewide importance by the Natural Resource Conservation Service (NRCS). Prime farmland soils have the best combination of physical and chemical characteristics for producing food, feed and forage, and the NRCS is committed to the management and maintenance of the soil resource that supports the productive capacity of American

agriculture.¹⁶⁴ This unit supports grasses and shrubs and is well suited for hay, pasture, and small grain crops.

Deep Loamy Shrub Land Soils

These soils are deep, well drained, have a loamy texture with few rock fragments, and formed in alluvium derived from sedimentary rocks and basalt. The soils have a moderate permeability, generally high to moderate available water holding capacity, and generally moderate hazard of water erosion but severe hazard on the steeper slopes. They occur on fans, valley sides, terraces, hills, and mountainsides with slopes ranging from 6 to 65 percent. Included in this unit are some soils with a high content of rock fragments. These soils generally support grasses and shrubs, some areas have scattered pinyon pine and juniper trees, and areas have scattered Douglas-fir and aspen. This unit is suited for rangeland and wildlife habitat.

Deep Rocky Shrub Land Soils

These soils are deep, well drained, have a loamy or clayey texture, have a high amount of rock fragments, and formed in alluvium and colluvium derived from sedimentary rocks and basalt, and some soils formed in rocky glacial outwash. The soils have slow to moderate permeability, low to high available water holding capacity, and generally slight to moderate hazard of water erosion. They occur on ridges, mountainsides, fans, terraces, and valley sides with slopes ranging from 3 to 65 percent. Included in this unit are some soils containing few rock fragments. This unit supports grasses and shrubs and is suited for rangeland and wildlife habitat.

Deep Loamy Forested Soils

These soils are deep, well drained, have a loamy texture with few rock fragments, and formed generally in alluvium and colluvium of mixed sources. The soils have slow to moderate permeability, generally high to moderate available water holding capacity, and moderate hazard of water erosion but severe hazard on the steeper slopes. They occur on fans, foot slopes, and mountainsides with slopes ranging from 25 to 50 percent. Included in this unit are some clay-rich rocky soils. This unit supports spruce/fir forest or aspen forest. They are suited for wood production and wildlife habitat.

Deep Rocky Floodplain Soils

These soils are deep, somewhat poorly drained, stratified with a wide variety of textures, commonly contain many alluvial gravels and cobbles, and formed in mixed alluvium. They occur on floodplains and valley floors with slopes ranging from 0 to 10 percent and are occasionally flooded for brief periods in late spring and early summer. This unit supports cottonwoods, willows, grasses, sedges, and rushes, and is suited for wildlife habitat and grazing.

¹⁶⁴ USDA-NRCS, 1993

Shallow Rocky Woodland Soils

These soils are generally shallow (less than 20 inches to bedrock), well drained, have a loamy texture with a high amount of rock fragments, and formed in residuum and colluvium derived from sandstone, shale and basalt. The soils have moderate to rapid permeability, low to very low available water holding capacity, and slight to severe hazard of water erosion. They occur on ridges, mesa side slopes, foot slopes, and mountainsides with slopes ranging from 12 to 95 percent. In places rock outcrops of sandstone, shale and/or basalt are common. There are some moderately deep soils (20 to 40 inches to bedrock) and some soils with few rock fragments included in this unit. This unit supports pinyon pine and juniper trees, grasses and shrubs, and is suited for wildlife habitat and firewood production.

Federal Parcels

Parcel A

Parcel A consists predominately of *Deep Loamy Shrub Land Soils*, which make up most of the southern half of the parcel, and *Deep Rocky Shrub Land Soils*, which make up most of the northern half of the parcel (Table 3S-2). These two units encompass about 91 percent (1,125.7 acres) of the parcel. It also contains *Shallow Rocky Woodland Soils*, which make up about 9 percent (114 acres) of the parcel, and *Deep Loamy Farmland Soils* that make up only a third of an acre.

Parcels B and B-1

Parcel B is made up predominately of *Deep Loamy Forested Soils*, which occur on the west half of the parcel. It also contains *Deep Loamy Shrub Land Soils* and *Deep Rocky Shrub Land Soils*. Parcel B-1 contains *Deep Loamy Shrub Land Soils* and *Deep Rocky Shrub Land Soils* (Table 3S-2).

Parcels C and D

Parcel C is dominated by *Shallow Rocky Woodland Soils*, which make up about 74 percent (127.3 acres) of the parcel (Table 3S-2). *Deep Loamy Forested Soils* occur on the north slope of Horse Mountain, and *Deep Rocky Floodplain Soils* occur along Salt Creek. It also contains *Deep Loamy Shrub Land Soils*, and *Deep Rocky Shrub Land Soils*. Parcel D is also dominated by *Shallow Rocky Woodland Soils*, which make up about 68 percent (11.9 acres) of the parcel. It also contains *Deep Loamy Shrub Land Soils* and *Deep Rocky Shrub Land Soils*.

Parcel E

Parcel E is composed predominately of *Deep Loamy Shrub Land Soils*, which make up about 76 percent of the parcel (Table 3S-2). The rest of the parcel consists of *Shallow Rocky Woodland Soils*. This unit, however, is atypical for this unit, because it contains very few woodland trees and consists primarily of shrubs.

**Table 3S-2:
Federal Parcel Soil Types (acres)**

Soil Type	Parcel A	Parcel B-1	Parcel B	Parcel C	Parcel D	Parcel E
1. Deep Loamy Farmland Soils	0.3	0	0	0	0	0
2. Deep Loamy Shrub Land Soils	670.4	0.7	4.2	11.3	1.0	9.5
3. Deep Rocky Shrub Land Soils	455.3	0.3	8.0	17.8	4.5	0
4. Deep Loamy Forested Soils	0	0	16.2	14.5	0	0
5. Deep Rocky Floodplain Soils	0	0	0	0.3	0	0
6. Shallow Rocky Woodland Soils	114	0	0	127.3	11.9	2.5
TOTAL	1,240	1.0	28.4	171.2	17.4	12.0

Source: USDA-SCS, 1992

Non-Federal Parcels

Parcel 1

Non-Federal Parcel 1 (Sutey Ranch) contains a substantial amount of *Deep Loamy Farmland Soils* (112.6 acres), some of which are utilized as pastures under irrigation. These soils are considered to be either prime farmland if irrigated or farmland of statewide importance. The dominant soil is *Deep Loamy Shrub Land Soils*, which make up about 44 percent (243 acres) of the parcel (Table 3S-3). These soils occur in the eastern and southern portions of the parcel. *Shallow Rocky Woodland Soils* occur in the western and northern portions of the parcel and make up about 22 percent of the parcel (121 acres). *Deep Rocky Shrub Land Soils* make up the remaining portion of the parcel.

Parcel 2

Non-Federal Parcel 2 (West Crown) is composed of *Deep Rocky Shrub Land Soils*, which make up the majority of the parcel (52.7 acres), about 47 percent (Table 3S-3). These soils occur on the west side of Prince Creek. The remaining portions of the parcel are made up of *Deep Loamy Shrub Land Soils* and *Shallow Rocky Woodland Soils*.

**Table 3S-3:
Non-Federal Parcel Soil Types**

Soil Types	Parcel 1 (acres)	Parcel 2 (acres)
1. Deep Loamy Farmland Soils	112.6	0
2. Deep Loamy Shrub Land Soils	243	19.8
3. Deep Rocky Shrub Land Soils	80	52.7
4. Deep Loamy Forested Soils	0	0
5. Deep Rocky Floodplain Soils	0	0
6. Shallow Rocky Woodland Soils	121	39.3
TOTAL	556.6	111.8

Source: USDA-SCS, 1992

Land Health Standard 1 for Upland Soils

This standard evaluates a set of indicators that are used to assess the existing conditions of soil permeability and infiltration to allow for the accumulation of soil moisture necessary for optimal plant growth and vigor, and to minimize surface runoff.¹⁶⁵

ENVIRONMENTAL EFFECTS

Alternative 1: No Action Alternative

Under the No Action Alternative, the land exchange would not occur. The BLM would continue to own and manage the soil resources of the Federal Parcels under multiple use principles in accordance with the 1988 RMP. Similarly, the owners of the Non-Federal Parcels would continue to own and manage the soil resources of their parcels.

Soil compaction and soil loss would likely continue at current rates on all exchange parcels under existing land management practices. The Federal Parcels could be leased for mineral and/or energy development, which could impact soil resources and increase the potential for erosion, soil compaction, and sedimentation; however, this is unlikely to occur since the Federal Parcels are mapped as having: 1) low potential for oil and gas development, 2) minimal values of locatable minerals, and 3) low potential for salable minerals development. As described in Chapter 2, the Non-Federal Parcels could be subdivided and developed, with corresponding impacts to soil resources. Under the No Action Alternative, the degree of impacts to soil resources would be dependent upon the scale, intensity, duration, location, and timing of these activities.

Alternative 2: Proposed Action

Direct Effects

The change in ownership of soil resources under the Proposed Action is summarized in Table 3S-4. As a result of the land exchange, the BLM would have a net loss of approximately 801.6 acres of soil resources under their management. Most of these acres are *Deep Loamy Shrub Land Soils*, *Deep Rocky Shrub Land Soils*, and *Shallow Rocky Woodland Soils*. However, the BLM would have a net gain of approximately 112.6 acres of the more productive *Deep Loamy Farmland Soils*, which are considered to be either prime farmland if irrigated or farmland of statewide importance.

¹⁶⁵ USDO I BLM, 1997

**Table 3S-4:
Change in Ownership of Soil Resources under the Proposed Action**

Soil Types	Federal Parcel Total (acres)	Non-Federal Parcel Total (acres)	Change in BLM Ownership (acres)
1. Deep Loamy Farmland Soils	0.3	112.6	+112.3
2. Deep Loamy Shrub Land Soils	697.1	262.8	-434.3
3. Deep Rocky Shrub Land Soils	485.9	132.7	-353.2
4. Deep Loamy Forested Soils	30.7	0	-30.7
5. Deep Rocky Floodplain Soils	0.3	0	-0.3
6. Shallow Rocky Woodland Soils	255.7	160.3	-95.4
TOTAL	1,470	668.4	-801.6

Indirect Effects

Conservation Easements on the Federal Parcels

If the land exchange is approved, conservation easements would be established on all BLM lands that become private (except the 1-acre Parcel B-1). Federal Parcels A and B would be placed under conservation easements to be granted to the AVLTL. Similarly, Parcels C, D, and E would be placed in a conservation easement to be granted to the EVLTL. Given the objectives of the conservation easements to preserve and protect the Conservation Values of the properties in perpetuity, if grazing is properly managed, and all other activities are approved, overseen, and monitored by the trusts, the adverse impacts to soil resources on the Federal Parcels would be minimized under the conservation easements. Below, the specifics of these easements are summarized with respect to the management of and impacts to soil resources.

Federal Parcels A and B

The conservation easements for Federal Parcels A and B are designed to protect the Conservation Values of these parcels. The easements will be granted to the AVLTL, who will be permitted to enter the properties at least annually to monitor the Proponent’s compliance with the terms of the easement. The easements will prohibit development of the parcels. Mining and energy development and exploration will not be permitted, and the topography of the parcels may not be altered through the placement or removal of soil. Grazing will be managed in accordance with a grazing management plan (to be approved by CPW) and will be conducted at levels that would not lead to significant soil erosion or degradation of soil quality. In addition, the conservation easements include restrictions on the use of off-road vehicles, and prohibit the construction of new roadways. Additional details of the conservation easements are summarized in Chapter 2 Section C and in Appendix A.

Federal Parcels C, D and E

Federal Parcels C, D and E would be placed in a conservation easement to be granted to the EVLTL. The easement has been structured to protect the Conservation Values present on the three parcels and would permit EVLTL to enter the properties at reasonable times to monitor the Proponent’s compliance with the

terms of the easement. Development of the parcels would be prohibited, and only minor agricultural improvements would be permitted. The existing roadways may be utilized; however, they may not be used to provide access to any adjacent lands. All agricultural land uses would be conducted using stewardship and management methods that preserve the natural resources upon which agriculture is based; long term stewardship and management goals could include preserving soil productivity and preventing soil erosion. If EVLT believes that any resource management practices are inconsistent with the preservation and protection of the Conservation Values of the three parcels, a resource management professional acceptable to both parties will provide written recommendations for resource management. In addition, restrictions on timber harvest, mineral and energy development and exploration, off-road vehicle use, and surface disturbances would protect soil resources on the parcels. Additional details of the conservation easements are summarized in Chapter 2 Section C and in Appendix A.

Site-Specific Management Plan for the Non-Federal Parcels

As a part of the Proposed Action, the Proponents have agreed to donate \$1.1 million to provide for the cost of developing and implementing a site-specific management plan for the Non-Federal Parcels. Although the plan is only conceptual at this time, it is reasonable to assume it would address management of soil resources and consistency with the RMP and the Standards for Public Land Health. If the future management of the parcels results in increased human presence due to recreational use, impacts to soil resources could potentially include increased soil compaction and soil loss by wind and water erosion, leading to a reduction in soil productivity and quality. However, the degree of impacts to soil resources would be dependent upon the scale, intensity, duration, location, and timing of these activities. The RMP for the acquired parcels would be designed to limit these impacts to remain consistent with the 1988 RMP.

Agreement Between Two Shoes and the Pitkin County BOCC

The agreement between the Proponents and the Pitkin County BOCC (pertaining only to existing private property in the Two Shoes Ranch) does not address soils; however, the conservation easements (totaling 365 acres) placed upon two parcels of the existing Two Shoes Ranch within the area known as Potato Bill would protect soil resources on these parcels in a similar fashion to what is discussed for the conservation easements on Federal Parcels A and B above.

Land Health Standard 1 for Upland Soils

Federal Parcels

Parcel A includes two grazing allotments that were evaluated by BLM personnel in 2010 as a part of the Roaring Fork Land Health Assessment. Based on the Roaring Fork Land Health Assessment, BLM staff concluded that soils are meeting Standard 1 throughout Parcel A with only slight departures from expected conditions.¹⁶⁶

¹⁶⁶ USDOJ BLM, 2010

Parcels B and B-1 were not included in the Roaring Fork Land Health Assessment; however, as a whole they are meeting Standard 1. Areas of low vegetation cover are limited to the riparian habitat along Thomas Creek which is further discussed in regards to Standard 2 for Riparian Systems.

Parcels C, D and E were included in the Eagle River South Watershed Land Health Assessment completed by the BLM in 2003.¹⁶⁷ Parcels C, D and E are part of the Horse Mountain Allotment and are mapped as meeting Standard 1 for Upland Soils.

Implementation of the Proposed Action is not expected to degrade soil health from current conditions on any of the Federal Parcels.

Non-Federal Parcels

As private lands, the Non-Federal Parcels have not been a part of the Land Health Assessments described above. As a whole, Parcels 1 and 2 are likely meeting Standard 1; however there are some problem areas. Deep erosional ravines and gullies in Parcel 2 above Prince Creek and some livestock trampling of wet soils at a spring/seep discharge on Parcel 1 were noted during field reconnaissance. If the Non-Federal Parcels become federally owned, these lands would be managed to be consistent with Standard 1, in accordance with a site-specific management plan to be developed and implemented with a \$1.1 million contribution from the Proponents.

¹⁶⁷ USDOJ BLM, 2003

T. CUMULATIVE EFFECTS

SCOPE OF ANALYSIS

As discussed in the Introduction to Chapter 3, cumulative effects are the impacts to the environment that result from the incremental effects of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.¹⁶⁸ Reasonably foreseeable future actions include activities, developments, or events that have the potential to change the physical, social, economic, and/or biological nature of a specified area. Existing activities, projected activities directly associated with a proposed action, and other reasonably foreseeable future actions provide the basis for defining and analyzing cumulative impacts. To be a cumulative effect, it must overlap in space and time with the direct and indirect effects of the action.

For the Proposed Action, the Analysis Area for cumulative effects includes three counties (Eagle, Garfield and Pitkin) that encompass the Project Area, as well as BLM and Forest Service lands within the three-county area. The temporal scope of analysis for cumulative effects dates back to 1984, the date of approval for the RMP currently in effect on the CRVFO (the current Glenwood Springs RMP was approved in January 1984 and revised in June of 1988).

AFFECTED ENVIRONMENT

Table 3T-1 provides a list of past land exchanges that have occurred throughout the Analysis Area since 1984. This information is based off of a database query for Case Recordation Reports for authorized Forest Service and BLM land exchanges within Eagle County, Pitkin County, and those portions of Garfield County administered by the BLM CRVFO.

No land exchanges are reasonably foreseeable in the Analysis Area.

Note:

- Some rows do not contain acreages for both “Non-Federal Lands Acquired by USA” and “Federal Lands Conveyed to Non-Federal Ownership.” In these cases, lands were either conveyed or acquired outside of the cumulative effects Analysis Area for this project.
- Consecutive, *italicized* rows identify the same land exchange project that includes federal/non-federal lands conveyed or acquired in multiple counties.

¹⁶⁸ 40 CFR 1508.7

**Table 3T-1:
Land Exchanges in the Project Area from 1984 to 2013**

Name of Land Exchange	Year Closed	Federal Agency	Non-Federal Party	Non-Federal Lands Acquired by USA (acres)	County: Acquired Lands	Federal Lands Conveyed to non-Federal Ownership (acres)	County: Conveyed Lands
Wolftone Corp	1985	USFS	Wolftone Corp	124	Pitkin	--	--
Bair	1987	BLM	Bair	1,080	Garfield	1,037	Eagle
The Crown	1987	BLM	Sheppard & Assoc	678	Pitkin	--	--
Hoffman	1988	BLM	Hoffman	--	--	57	Eagle
Savage	1988	BLM	Savage	610	Garfield	627	Garfield
Sheppard & Assoc. 1988	1988	BLM	Sheppard & Assoc.	23	Garfield	--	--
Lodge at Vail	1989	USFS	Lodge Properties LLC	386	Eagle	2	Eagle
<i>Sheppard & Assoc 1990</i>	<i>1990</i>	<i>BLM</i>	<i>Various</i>	<i>11</i>	<i>Eagle</i>	<i>--</i>	<i>--</i>
<i>Sheppard & Assoc 1990</i>	<i>1990</i>	<i>BLM</i>	<i>Various</i>	<i>56</i>	<i>Pitkin</i>	<i>--</i>	<i>--</i>
<i>Sheppard & Assoc 1990</i>	<i>1990</i>	<i>BLM</i>	<i>Various</i>	<i>40</i>	<i>Garfield</i>	<i>--</i>	<i>--</i>
Woodward	1992	BLM	Woodward	--	--	560	Garfield
Town of Vail	1993	USFS	Town of Vail	--	--	2	Eagle
Mt. Sopris Tree Nursery	1994	USFS	Pitkin/Eagle Counties	1,312	Pitkin	128	Eagle
Morrow	1994	BLM	Morrow	--	--	6	Pitkin
Wildcat/Mid-Continent	1995	USFS	Wildcat/Mid-Continent	1,030	Pitkin	38	Pitkin
Becket/Mid-Continent	1995	USFS	Becket/Mid-Continent	1,880	Pitkin	--	--
Crystal River Ranch	1995	BLM	Rodgers	1,125	Garfield	2,748	Garfield
Mountain Star	1995	USFS	Mountain Star	184	Eagle	618	Eagle
Mountain Star	1995	USFS	Mountain Star	10	Pitkin	--	--
Scudder	1995	USFS	Scudder	152	Eagle	35	Eagle
Lindner/Mid-Continent	1996	USFS	Lindner/Mid-Continent	425	Pitkin	380	Eagle
Electra Lake/Mid-Continent	1996	USFS	Electra Lake/Mid-Continent	645	Pitkin	--	--
Telco/Mid-Continent	1996	USFS	Telco/Mid-Continent	1,290	Pitkin	--	--
King Mountain	1996	BLM	Wildcat Ranch	--		178	Pitkin
WHI	1996	BLM	WHI, Inc.	341	Garfield	--	--

Chapter 3: Affected Environment & Environmental Consequences
T. Cumulative Effects

Table 3T-1:
Land Exchanges in the Project Area from 1984 to 2013

Name of Land Exchange	Year Closed	Federal Agency	Non-Federal Party	Non-Federal Lands Acquired by USA (acres)	County: Acquired Lands	Federal Lands Conveyed to non-Federal Ownership (acres)	County: Conveyed Lands
Deacon/Mid-Continent	1997	USFS	Deacon/Mid-Continent	120	Pitkin	--	--
Mtn. Coal/Mid-Continent	1997	USFS	Mtn. Coal/Mid-Continent	360	Pitkin	--	--
Timroth/Mid-Continent	1997	USFS	Timroth/Mid-Continent	55	Pitkin	--	--
Town of Vail	1997	USFS	Town of Vail	76	Eagle	62	Eagle
Raintree/Mid-Continent	1998	USFS	Raintree/Mid-Continent	85	Pitkin	--	--
Ocmulgee	1998	BLM	Ocmulgee Properties Inc.	--	--	447	Garfield
Tucker	1998	BLM	Tucker	55	Garfield	--	--
Davis/Mid-Continent	2000	USFS	Davis/Mid-Continent	43	Pitkin	7	Pitkin
Marvelle Couey	2000	USFS	Marvelle Couey	159	Garfield	179	Garfield
Eagle Ranch	2002	BLM	West Eagle Ranch LLC	493	Eagle	357	Eagle
West Lake Creek/Levine	2003	USFS	West Lake Creek/Levine	148	Pitkin	119	Eagle
Vassar Meadows II	2003	USFS	Eagle-Vail Metro Dist.	154	Eagle	23	Eagle
Sylvan Lake	2003	USFS	CO State Land Board	--	Eagle	120	Eagle
<i>Vassar Meadows I</i>	<i>2004</i>	<i>USFS</i>	<i>Multiple Parties</i>	<i>43</i>	<i>Eagle</i>	<i>11</i>	<i>Eagle</i>
<i>Vassar Meadows I</i>	<i>2004</i>	<i>USFS</i>	<i>Multiple Parties</i>	<i>--</i>	<i>--</i>	<i>8</i>	<i>Pitkin</i>
<i>Independence</i>	<i>2004</i>	<i>USFS</i>	<i>Levine</i>	<i>120</i>	<i>Eagle</i>	<i>119</i>	<i>Eagle</i>
<i>Independence</i>	<i>2004</i>	<i>USFS</i>	<i>Levine</i>	<i>148</i>	<i>Pitkin</i>	<i>--</i>	<i>--</i>
Vail Front Door/Game Creek	2005	USFS	Vail Resorts	493	Eagle	5	Eagle
Diamond S Ranch	2008	BLM	Diamond S Ranch	727	Eagle	160	Eagle
<i>Pitkin County/Ryan</i>	<i>2009</i>	<i>USFS</i>	<i>Pitkin County</i>	<i>56</i>	<i>Pitkin</i>	<i>--</i>	<i>--</i>
<i>Pitkin County/Ryan</i>	<i>2009</i>	<i>BLM</i>	<i>Pitkin County</i>	<i>--</i>	<i>--</i>	<i>46</i>	<i>Pitkin</i>
Eagle Valley	2012	USFS	Multiple Parties	828	Eagle	759	Eagle
TOTAL				15,565		8,838	

Source: Bureau of Land Management's Land & Mineral Legacy Rehost 2000 System – LR2000 Database

As evidenced in Table 3T-1, since 1984 the Federal Government has acquired a total of approximately 15,565 acres, and conveyed approximately 8,838 acres to non-federal ownership, in 41 land exchanges throughout the Analysis Area. *This has resulted in a net gain of approximately 6,727 acres of public lands.*

More than half (54 percent) of all public lands acquired in the three-county Analysis Area were in Pitkin County. Conversely, Pitkin County accounts for 3 percent of all public lands conveyed to non-federal ownership. Eagle County acquired approximately 24 percent of the public lands and conveyed 45 percent of the public lands to non-federal ownership. Garfield County acquired approximately 22 percent of the public lands and conveyed 52 percent of the public lands to non-federal ownership. Both Eagle and Garfield counties have conveyed slightly more public lands to non-federal ownership than they have acquired since 1984 (0.92 acre and 0.75 acre of non-federal, respectively, for every acre of federal lands). Pitkin County, on the other hand, has acquired substantially more public lands than have been conveyed out of federal ownership in the county (acquired 30 acres for every acre conveyed out federal management).

Table 3T-2 provides a summary of historic land exchanges in Analysis Area.

**Table 3T-2:
Summary of Land Exchanges in the Analysis Area from 1984 to 2013**

County	Non-Federal Lands Acquired by USA (in acres)	Percentage of Non-Federal Lands Acquired by USA among the 3 Counties	Federal Lands Conveyed to non-Federal Ownership (acres)	Percentage of Non-Federal Lands Conveyed to Non-Federal Parties Within 3 Counties	Ratio of Non-Federal Lands Acquired to Federal Lands Conveyed
Eagle	3,667	24%	3,993	45%	0.92:1
Garfield	3,432	22%	4,562	52%	0.75:1
Pitkin	8,466	54%	283	3%	30:1
TOTAL	15,565	100%	8,838	100%	--

ENVIRONMENTAL EFFECTS

The proposed land exchange would increase the total non-federal lands acquired by the United States Government in the Analysis Area from 15,565 acres to 16,233 acres, a 4.3 percent increase. The proposed exchange would increase the total federal lands conveyed to non-federal ownership from 8,838 acres to 10,308 acres, a 16.6 percent increase. Under the proposed land exchange, both Eagle and Garfield Counties would continue to have conveyed slightly more public lands to non-federal ownership than they have acquired since 1984. Although Pitkin County's ratio of non-federal lands acquired to federal lands conveyed to private ownership would be reduced from 30:1 to 5.5:1 under the proposed land exchange, the County would have still acquired substantially more public lands than have been conveyed out of

federal ownership. The effect of the proposed land exchange on past and present land exchanges is summarized in Table 3T-3.

**Table 3T-3:
 Summary of Past and Present Land Exchanges in the Analysis Area, Including the Proposed Exchange**

County	Non-Federal Lands Acquired by USA (acres)	Percentage of Non-Federal Lands Acquired among 3 Counties	Federal Lands Conveyed to non-Federal Ownership (in acres)	Percentage of Non-Federal Lands Acquired among 3 Counties	Ratio of Non-Federal Lands Acquired to Federal Lands Conveyed
Eagle	3,667	23%	4,194	41%	0.87:1
Garfield	3,989	24%	4,562	44%	0.87:1
Pitkin	8,578	53%	1,552	15%	5.5:1
TOTAL	16,234	100%	10,308	100%	--

The Proposed Action would exchange approximately 1,470 acres of federal land for approximately 668 acres of non-federal land. In Eagle County, 200 acres of BLM lands would be transferred into private ownership. In Garfield County, approximately 557 acres of private lands would be transferred into federal ownership. In Pitkin County, 1,269 acres of BLM lands would become private and 112 acres of private land would come under BLM management, providing a net loss of public lands in the County of 1,157 acres.

Although the Proposed Action would produce a net loss of public land acreage in the three-county area, the cumulative impact of the proposed land exchange on federal and non-federal land ownership in the Analysis Area would be expected to be negligible.

Section 206 of the Federal Land Policy and Management Act (FLPMA) allows for the exchange of public lands (BLM and USFS), provided “the Secretary concerned determines that the public interest will be well served by making that exchange.” As such, the agencies require demonstration of net positive public benefit to conclude a land exchange. Dating back to 1984, all lands acquired by the United States Government through land exchanges in the cumulative effects Analysis Area have been incorporated into either BLM or USFS management plans, as appropriate. These management plans provide direction to the agency on a resource-by-resource basis, commensurate with law, regulation and policy. Sustainable use requirements and resource protections are placed on lands entering federal ownership, as defined in laws such as the FLPMA and the National Forest Management Act (NFMA). The effects of an exchange on lands leaving federal ownership are also considered as part of the exchange analysis. As noted above, the 41 land exchanges considered throughout the cumulative effects Analysis Area have resulted in a net gain of approximately 6,727 acres of public lands. The public benefit requirement for each of the 41 land exchanges, in conjunction with the management requirements and protections afforded acquired federal lands, and the net increase in federal land holdings in the Analysis Area indicate an overall (cumulative) benefit to the public estate.

Specific details of the cumulative effects to each resource analyzed in this EA are discussed below. An underlying premise of this cumulative effects analysis is that unless there are direct and/or indirect effects to any given resource specifically related to a proposed project, there cannot, by definition, be cumulative effects. Because the direct and indirect effects associated with the Proposed Action are in most cases minimal, and in some cases nonexistent, cumulative effects associated with the proposed Sutey Ranch Land Exchange are negligible.

Realty Authorizations

Per the 1988 Glenwood Springs RMP, the BLM managed 15,500 acres of land as Category I (disposal) lands and 550,542 acres as Category II (retention) lands. However, as of 2012, the CRVFO manages approximately 11,100 acres of Category I lands and approximately 494,000 acres of Category II lands. This is a result of land tenure adjustments since the drafting of the 1988 Glenwood Springs RMP.

The direct and indirect effects of the proposed Sutey Ranch Land Exchange on realty authorizations have been identified previously in Chapter 3 Section A. These effects considered along with other identified land exchanges are not expected to cumulatively affect realty authorizations on the CRVFO.

Access and Transportation

In general, lands acquired by the United States Government through the 41 land exchanges identified in the cumulative effects Analysis Area have been made accessible to the public. Conversely, federal lands that were conveyed to private ownership as a result of these land exchanges were generally closed to public access. Because the Proposed Action would improve legal access to public lands in the Analysis Area (refer to Chapter 3 Section B), the cumulative effects to access and transportation are considered beneficial to helping meet recreational demand in the three-county area.

Recreation

Despite a reduction of BLM lands in the cumulative effects Analysis Area (approximately 802 acres), the non-federal lands that would be acquired by the BLM are expected to produce beneficial effects to recreational resources for the public and improved management by the CRVFO for future recreational demand (refer to Chapter 3 Section C). The proposed land exchange would be expected to enhance recreational opportunities for the public and legal recreational access to public lands would be improved under the Proposed Action. Therefore, the Proposed Action is anticipated to have a cumulatively beneficial impact to recreational resources in the cumulative effects Analysis Area.

Social and Economic Resources

Although the Proposed Action would produce a loss of public land acreage in the cumulative effects Analysis Area, the provision of recreational opportunities, which one of the most important economic feature of public lands, would increase. In conjunction with other past, present and reasonably-foreseeable

future land exchanges in the three-county Analysis Area, the effect of the proposed Sutey Ranch Land Exchange is anticipated to be beneficial.

Visual Resources

The direct effects of the proposed Sutey Ranch Land Exchange to visual resources have been identified previously (refer to Chapter 3 Section E), as have the indirect effects (related to conservation easements and a future, site-specific management plan). Together, the conservation easements and the future, site-specific management plan would retain, and in some cases benefit, the scenic quality on the Federal and Non-Federal Parcels. Therefore, there are no cumulative effects to visual resources in the Analysis Area.

Livestock Grazing Management

The direct effects of the proposed Sutey Ranch Land Exchange have been identified previously (refer to Chapter 3 Section F), as have the indirect effects (related to conservation easements and a future, site-specific management plan). Together, the conservation easements and the future, site-specific management plan provide for managed livestock grazing on the Federal and Non-Federal Parcels and the Proposed Action would not substantially impact range management or existing grazing rights on Federal or Non-Federal Parcels considered in the exchange. Thus, the Proposed Action is not anticipated to cumulatively impact range management or existing grazing rights in the cumulative effects Analysis Area.

Cultural Resources

The direct effects of the proposed Sutey Ranch Land Exchange have been identified previously (refer to Chapter 3 Section G), as have the indirect effects (related to conservation easements and a future, site-specific management plan). There are no anticipated cumulative effects to cultural resources stemming from the direct and indirect effects of the Proposed Action.

Paleontology

The direct effects of the proposed Sutey Ranch Land Exchange have been identified previously (refer to Chapter 3 Section H), as have the indirect effects (related to conservation easements and a future, site-specific management plan). Together, the conservation easements and the future, site-specific management plan provide for protection of paleontological resources on the Federal and Non-Federal Parcels. Thus, the Proposed Action is not anticipated to cumulatively impact paleontological resources in the cumulative effects Analysis Area.

Native American Religious Concerns

No comments were received from any tribal government during scoping, nor was any request for additional information or consultation received. Thus, no Native American religious concerns were raised

in relation to the Proposed Action, and the BLM is not aware of any issues related to the Federal and Non-Federal Parcels. There are therefore no cumulative effects to Native American religious concerns.

Environmental Justice

The Proposed Action is not expected to cumulatively create disproportionately high and adverse human health or environmental effects on minority and low-income populations. This conclusion is based on the following:

- No minority populations were identified in the three-county area where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.
- The proposed land exchange would not have a disproportionate effect on any minority or low-income communities as the effects of the exchange would be spread throughout the three-county Analysis Area and would not disproportionately affect any particular group or community in a negative way.

Wastes, Hazardous or Solid

The direct effects of the proposed Sutey Ranch Land Exchange have been identified previously (refer to Chapter 3 Section K), as have the indirect effects (related to conservation easements and a future, site-specific management plan). There are no anticipated cumulative effects to hazardous or solid wastes stemming from the direct and indirect effects of the Proposed Action.

Wildlife

The direct effects of the proposed Sutey Ranch Land Exchange have been identified previously (refer to Chapter 3 Section L), as have the indirect effects (related to conservation easements and a future, site-specific management plan). Together, the conservation easements and the future, site-specific management plan provide for increased/improved protections of/management on the Federal and Non-Federal Parcels. The result is that management of, and protection for, wildlife and aquatic resources in the cumulative effects Analysis Area would be improved.

Plants

The direct effects of the proposed Sutey Ranch Land Exchange have been identified previously (refer to Chapter 3 Section M), as have the indirect effects (related to conservation easements and a future, site-specific management plan). Together, the conservation easements and the future, site-specific management plan provide for improved protections/management on the Federal and Non-Federal Parcels. The result is that management of, and protection for, special status plant species in the cumulative effects Analysis Area would be improved, and the cumulative effects of the Proposed Action are considered negligible.

Geology and Minerals

As a result of past, present and reasonably foreseeable future projects in the cumulative effects Analysis Area, mineral resources and rights from federal parcels were transferred to private ownership are no longer open to mineral and/or energy development. The same is true for the Federal Parcels included in the proposed Sutey Ranch Land Exchange. However, given the low development potential for leasable, locatable and salable minerals on each of the Federal Parcels, the loss of these mineral rights represent a negligible cumulative effect.

Water Rights

As discussed previously (refer to Chapter 3 Section O), under the Proposed Action, approximately 2.25 cfs of ditch water rights, and 50 acre feet of water storage rights, associated with Parcel 1 would be directly transferred to the BLM—the use of which would be decided upon in a future site-specific management plan. The cumulative effects to water rights as a result of the proposed Sutey Ranch Land Exchange are considered negligible because the Proposed Action would result in a net gain of water rights for the BLM, which is a beneficial effect.

Water Quality, Surface and Ground

As previously disclosed (refer to Chapter 3 Section P), no direct effects to water quality have been identified. Furthermore, a future site-specific management plan, combined with conservation easements, for the Federal and Non-Federal Parcels would manage/protect water quality in the future. Therefore, no cumulative effects to water quality in the cumulative effects Analysis Area have been identified in conjunction with the proposed land exchange.

Wetlands, Floodplains and Riparian Zones

As discussed previously (refer to Chapter 3 Section Q), the direct effect of the proposed Sutey Ranch Land Exchange would be a change in ownership of the riparian/wetland habitats located along streams, aquatic habitats in three stock ponds, and floodplains present on the Federal and Non-Federal Parcels. This would result in a net loss of riparian/wetland habitats, streams, and potential wetland areas under BLM management. There would be a gain of three seasonal stock ponds with a combined surface area of approximately 0.2 acre, and one spring/seep discharge. However, the net loss of wetlands on public lands managed by the BLM would be offset by the conservation easement, which precludes any future wetland impacts on the Federal Parcels. Therefore, the net *loss* of wetlands under BLM management in the cumulative effects Analysis Area is negated by the establishment of the conservation easements, which prevents future *impacts* to wetlands.

It is important to note that dredging and filling impacts to wetlands—whether they are located on federal or non-federal lands—are regulated by the U.S. Army Corps of Engineers. A Corps-issued wetland permit

is required for dredging and filling of jurisdictional wetlands, and the Corps would have required appropriate mitigation for impacts to wetlands within the cumulative effects Analysis Area.

Fire and Fuels Management

In relation to past, present and reasonably-foreseeable future projects, the proposed Sutey Ranch Land Exchange would have a minimal/discountable risk to fire and fuels management in the cumulative effects Analysis Area.

Soils

As discussed previously (refer to Chapter 3 Section S), as a result of the proposed Sutey Ranch Land Exchange, the BLM would have a net loss of approximately 801.6 acres of soil resources under their management. Most of these acres are *Deep Loamy Shrub Land Soils*, *Deep Rocky Shrub Land Soils*, and *Shallow Rocky Woodland Soils*. However, the BLM would have a net gain of approximately 112.6 acres of the more productive *Deep Loamy Farmland Soils*, which are considered to be either prime farmland if irrigated or farmland of statewide importance. Therefore, the cumulative effects to soils resources are considered minimal and discountable.

It is important to note that all lands acquired by the United States Government through land exchanges in the cumulative effects Analysis Area have been incorporated into either BLM or USFS management plans, as appropriate. These management plans include management of, and protection for, soils commensurate with law, regulation and policy.

4. CONSULTATION AND COORDINATION

A. PREPARERS

Members of the project team who participated in the impact analysis and preparation of this EA are listed below, along with their areas of responsibility.

BLM INTERDISCIPLINARY TEAM REVIEWERS

Matt Thorburn, Natural Resource Specialist	ID Team Leader
Erin Leifeld, Archaeologist	Cultural and Native American Concerns
Greg Wolfgang, Outdoor Recreation Planner	Recreation, Travel Management, VRM
Carla DeYoung, Ecologist	Areas of Critical Environmental Concern, T/E/S Plants, Vegetation
Pauline Adams, Hydrologist	Soil, Air, Water
Monte Senior, Realty Specialist	Lands and Realty
Rusty Stark, Fuels Specialist	Fuels
Everett Bartz, Rangeland Management Specialist	Riparian
Ike Pittman, Rangeland Management Specialist	Range
Brian Hopkins, Wildlife Biologist	Terrestrial and Aquatic Wildlife
Anthony Sieber, Fluids Geologist	Geology, Minerals, Paleontology

CONSULTANT TEAM

The CEQ provides guidance for contracting NEPA documentation at 40 CFR 1506.5(b) and (c). “Third party contract” refers to the preparation of an EIS or EA by contractors paid by the applicant. Because the proposed land exchange was proposed by a Non-Federal party (i.e., the Proponents), the BLM determined that it is appropriate for a third-party contractor to be used for preparation of this EA. Contracting an environmental document does not in any way reduce or eliminate the BLM’s active role in the NEPA process; the BLM is responsible for all content within the EA document and the supporting materials, which must be included in the administrative record. Additionally, the findings in this analysis are those of the BLM, not of the contractor, and the decision must reflect a review of this NEPA document.¹⁶⁹

A Memorandum of Understanding (MOU) was executed between the BLM and the Proponent, establishing the roles and responsibilities of each party, including the contractor. Among other things, the MOU specifies that all costs of using a contractor to prepare environmental documents will be borne by

¹⁶⁹ USDOJ BLM, 2008a

the Proponent. The MOU describes the responsibilities of the BLM and the Proponent in the administration of the MOU and in oversight of, and communication with, the contractor and the Proponent. The MOU is contained in the administrative record.

SE Group

Jason Marks, Project Manager

Andrew Pollak-Bruce, Environmental Planner

Kelly Owens, Biologist

Paula Samuelson, Production Specialist

ERO Resource Corp.

Clive Briggs, Supervisory Archaeologist

Kathy Croll, Senior Archaeologist

Sean Larmore, Principal Investigator

Western Ecological Resource, Inc.

David Johnson, Principal

Heather Houston, Ecologist

Wildlife Specialties, LLC.

Jerry Powell, Wildlife Biologist

Buscher Soil and Environmental, Inc.

David Busher, Soil Scientist

B. TRIBES

The CRVFO manages lands that contain the traditional territory of a number of American Indian peoples. Notice of the land exchange was sent to those tribes with potential to be affected:

- Southern Ute Tribe
- Ute Mountain Ute Tribe
- The Ute Tribe of the Uinta and Ouray Bands

No comments were received from any tribal government during scoping or during the comment period on the preliminary EA, nor was any request for additional information or consultation received. Thus, no

Native American religious concerns were raised in relation to the proposed land exchange, and the BLM is not aware of any issues related to the Federal and Non-Federal Parcels.

C. INDIVIDUALS, ORGANIZATIONS OR AGENCIES

The public was formally notified of the proposed land exchange through a Notice of Exchange Proposal (NOEP) published in the Aspen Times, Aspen Daily News, Glenwood Post Independent and Vail Daily newspapers. The BLM received 269 comment letters from individuals, non-governmental entities and other public agencies during the public comment period. Scoping comments were processed and categorized in order to effectively identify issues within the scope of the analysis. Specific responses to scoping comments are available in the administrative record. Throughout the scoping period, comments were received from the following individuals, agencies and organizations:

A Carbondale Resident	Chelsea Brundige
Arthur A. Abplanalp, Jr.	Heath Bullock
Jessica Adams	Shelley Burke, Roaring Fork Valley Horse
Doug Allen	Council
Jacky Amichaux	Art Burrows
Paul Andersen	Bob Campbell
Clark Anderson, Sonoran Institute	Trevor Cannon
Jim Aresty	Tom Cardamone
John B. Armstrong	Helen Carlsen
Glenn Auerbacher	Penney Evans Carruth
Tim Barca	Steve Carter, Aspen Valley Land Trust
Dawn Barton	Beth Cashdan
Patricia Batchelder	Chris Casper
Lara S. Beaulieu	Cassie Cerise
Michael Behrendt	Michael and Michele Chandler
Dave Bellack	Steve Child
John Bender	Chelsea Clark
Stacey Bernot, Town of Carbondale	Martha Cochran, Aspen Valley Land Trust
Susan Bird	Bob Colby
Lisa Biro	Kellergh Condon
Joy Blong	Russ Criswell
Ben Bohmfalk	Deb Curtis
George Bohmfalk	Paul D'Amato
James Breasted	Dana Darien
Randall Breeden	Larry Darien
Randy Brimm	Louis Dawson
Dan Brumbaugh	Richard de Campo

G Dean Derosier	Lauren Garity
Linda Deters	James Gilliam
Mary Dominick	Julie Goldstein
Ben and Mary Dorman	Bruce Gordon
John Doyle	Bill Gray
Anthony Durrett	Hawk Greenway
Gregory Durrett	Fritz Grueter
Charlie Eckart, Roaring Fork Mtn. Bike Association	Laurie Guevara-Stone
Tom Edwards, Eagle County Open Space Committee	Kay Hagman
Annie Egan	Bill Hanks
Jen Engel	Paxton Hanner
Karin J. Evans, The Wilderness Land Trust	Connie Harvey
Craig Farnum	Reid Haughey
Davis Farrar, Red Hill Council	Rick Heede
Hanna Farrar	Kara Heide, Eagle Valley Land Trust
Matt Farrar	Victoria Heinrich
Dorothea Farris	John Hoffmann
Laura Featherston	Trési Houpt
Alan Feder	Bayard Hovdeven
John Feldman	Elyse Howard
Mike Ferguson	Taggart H. Howard
John Fiedler	Janis Lindsey Huggins
Mary Lou Fite Zordel	Aaron Humphrey
Scott Fitzwilliams, USDA Forest Service - WRNF	Myrna Humphrey
Joellen Fonken, Gunnison County Trails Commission	Tom Issac
Piper Foster, Sopris Foundation	Ed Jenkins
Charlotte Fox	Dan Jervis
Mary Fox	Bart Johnson
Chuck Frias	Patti Kay-Clapper
Franz Froelicher	Karen Kean-Hines
Linda Singer Froning	Michael Kennedy
Todd Fugate	Diane Kenney
Mark Fuller	Richard Kesler
Bruce Gabow	Susie Kincade
John Galvin	June Kirk
	Chuck Knuth
	Joel & Candi Kolen
	Dan Koppel
	Marli Koppel

Christopher J. Krupp, The Western Lands Project	Elizabeth Newman
Kip Kummer	Peggy Nicholls
Kurt Kunkle, Colorado Environmental Coalition	Michael Nooney
Leslie J. Lamont	Joan Northrup
Leonard Lansburgh	Paul Noto
Marian Lansburgh	Phil Nyland
Laurie Lindberg Stevens	Warwick Olney
Jim Lindsay	Siri Olsen
Peter Looram	Adam Olson
Lisa Hershey Lowsky	Ken Olson
Delia Malone, Crystal River Caucus	Gail Otte
Marilyn Manley	Michael M. Owsley, Pitkin County Board of County Commissioners
Austin Marquis	Adam Palmer, Hardscrabble Trails Coalition
John Martin, Garfield County Board of County Commissioners	Kathy & George Palouti
Peter A. Martin	Maggie Pedersen, Roaring Fork Sierra Club Group
Barbara Mason	James Peterson
Maura Masters	William Taylor Phillips
Jeff Maus	Ray Pojman
Johno McBride	Jim Pokrandt
Laurie and John McBride	Cari Potter
David McConaughy	Mike Pritchard, Roaring Fork Mountain Bike Association
John J. McCormick	Joyce Rankin
Barbara McElnea	Chuck Restivo
Andrew McGregor	Anne Rickenbaugh
Heidi McGuire	Margaret R. Rosenquist, Lady Belle Partnership
Robert F McKenzie	Les Rosenstein
Holly McLain	Deloren Ross
Jimmy McManus	Mark Rothman
Michael McVoy	Shellie Roy
Cindy Meyer	Josephine P Ruder
Louis Meyer	Peter F. Runyon, Eagle County Board of Commissioners
James Moss, Recreation Law	Jake Sakson
Jon Mulford	Edward Sandite
Dave Munk	Auden Schendler
Anna Naeser	Sue Schimmenti
John Neiley, Neiley & Alder Attorneys	
Ken Neubecker	

Rachel Schmidt	Paul Sutro
Mark William Schweer	Gary Tennenbaum
Andre Schwegler	Monty Thompson
John Seidel	Nick Thompson
Jill Shae	Bob & Phyllis Throm
Rosalinda Shearwood	Mark Thurber
Bob Shettel, Back Country Hunters and Anglers	Tamara Thurber
Brandon Siegfried	George Trantow
Dave Sipe	Anne Trede
Sheila A. Sitzman	James R. Udall, Prince Creek Homeowner's Association
Nancy Smith	Lindsey Utter
Steve Smith	Ron Velarde, Colorado Parks and Wildlife
Garry Snook	Tom Verry
Bill Spence	Linda Vidal, Roaring Fork Audubon
Jonathan Stauffer	Rebecca Weiss
Suzanne Stephens	Peter Westcott, Crystal Valley Environmental Protection Association
Tom Stevens	Craig Wheelless
John B. Stewart	Dean Whittaker, Whittaker Family Partnership
John Stokes	James A. Wingers
Michael Stranahan	Tom Yoder
Carl T. Stude	Bernard Young
Mark Sumera	Mary Lou Zordel
Melissa Sumera	
Shelley Supplee	

The BLM announced the availability of the preliminary Environmental Assessment for the Sutey Ranch Land Exchange on April 29, 2013. The comment period on the EA extended through May 29, 2013, yielding 65 public and agency comment letters from a total of 55 commenters. Some individuals submitted more than one comment, while some comments were submitted on behalf of more than one unique commenter. For a list of individuals, agencies and organizations who commented on the EA, as well as the specific responses to comments, refer to the Response to Comments.

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6. FIGURES

FIGURE 1: VICINITY MAP

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FIGURE 3: NON-FEDERAL PARCEL 2 – WEST CROWN, FEDERAL PARCELS A, B, AND B1

FIGURE 4: FEDERAL PARCELS C, D, AND E

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FIGURE 6: MULE DEER IMPORTANT HABITATS FEDERAL PARCEL A & NON-FEDERAL PARCEL 2

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FIGURE 13: VEGETATION TYPE MAP FEDERAL PARCEL A & NON-FEDERAL PARCEL 2

FIGURE 14: VEGETATION TYPE MAP FEDERAL PARCELS B AND B-1

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FIGURE 19: RIPARIAN/WETLAND HABITATS FEDERAL PARCEL A & NON-FEDERAL PARCEL 2

FIGURE 20: RIPARIAN/WETLAND HABITATS FEDERAL PARCELS B AND B-1

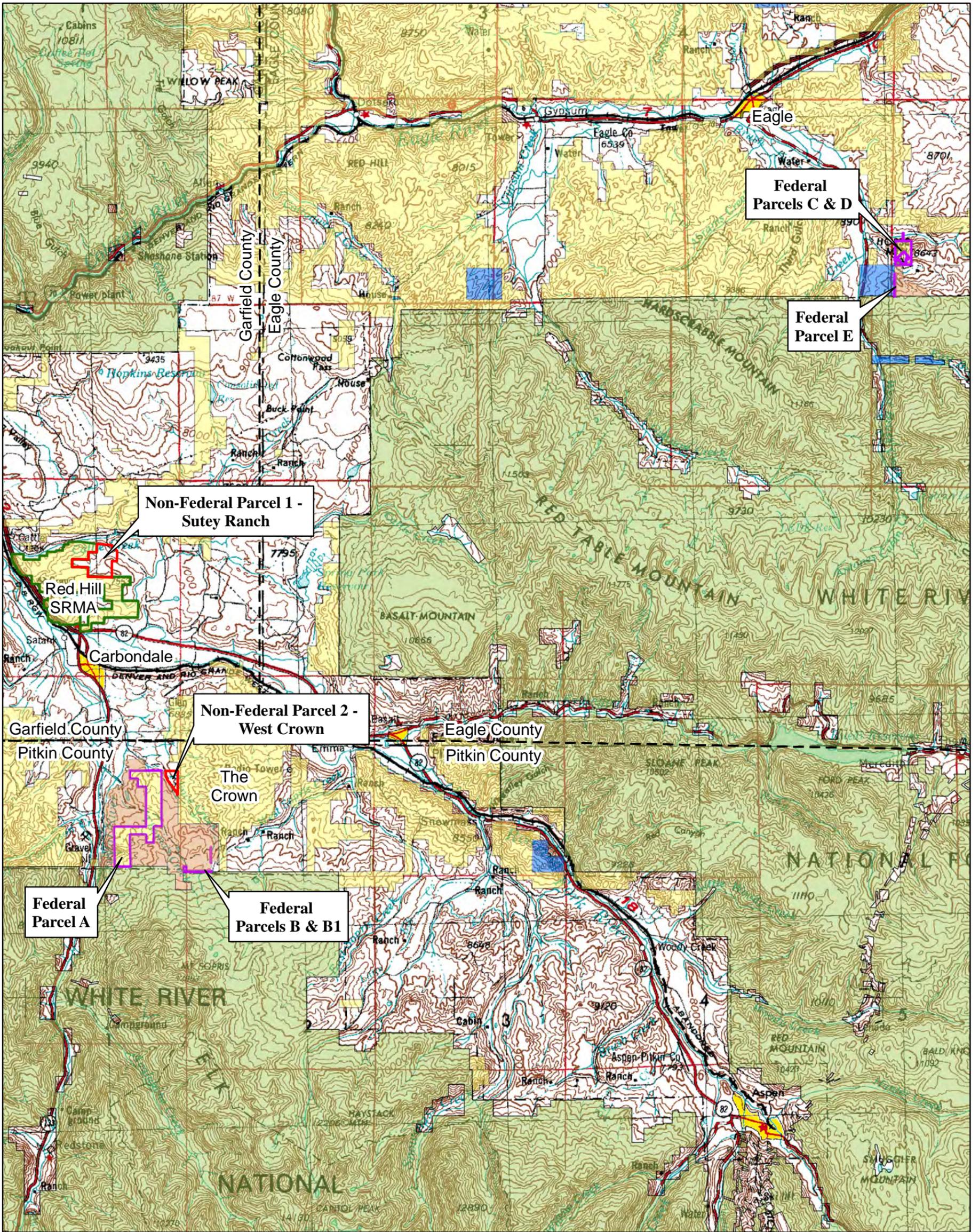
FIGURE 21: RIPARIAN/WETLAND HABITATS FEDERAL PARCELS C AND D

FIGURE 22: RIPARIAN/WETLAND HABITATS NON-FEDERAL PARCEL 1

Figure 1

Sutey Ranch Land Exchange

Figure 1: Vicinity Map
Eagle, Garfield, and Pitkin Counties, Colorado

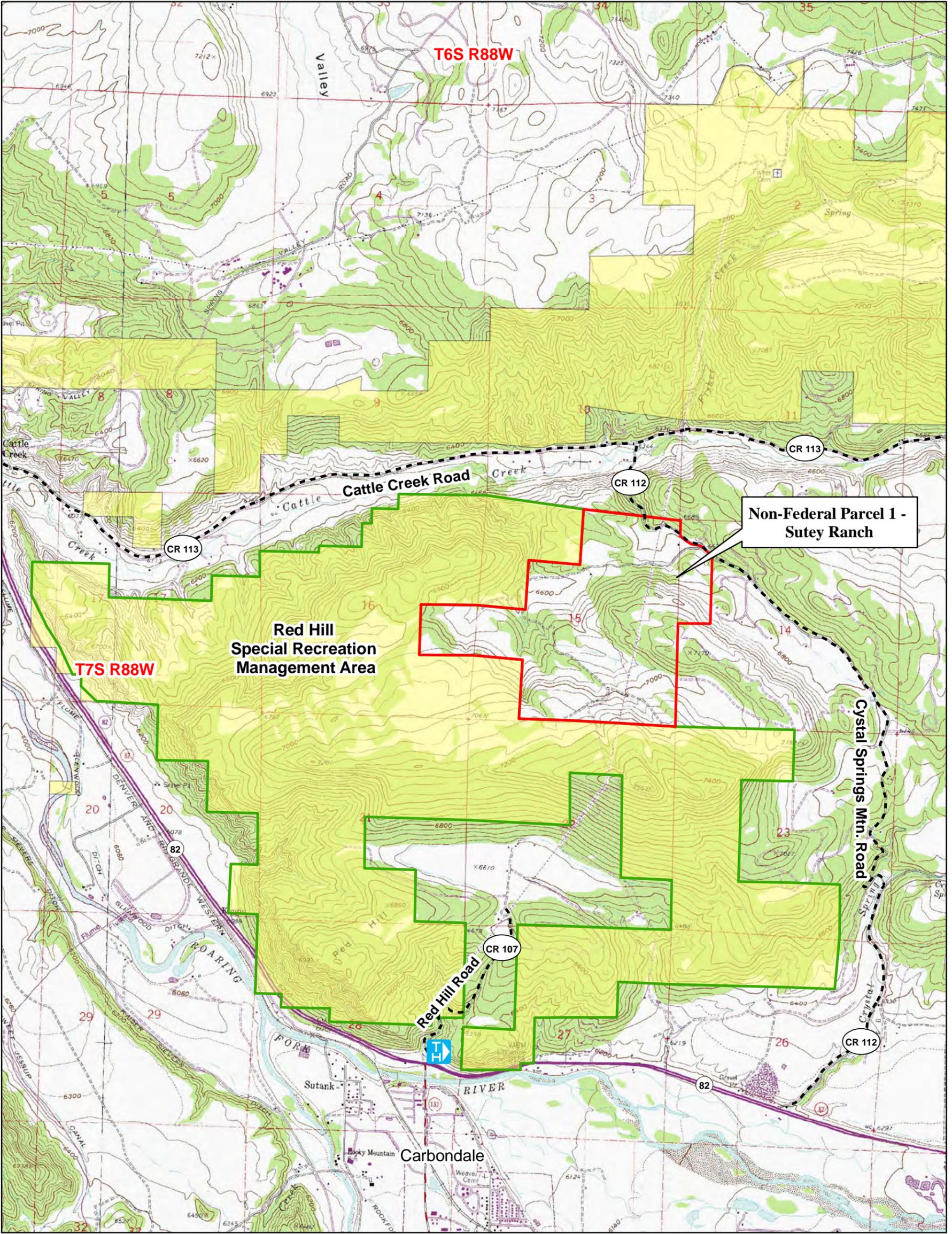


- Non-Federal Parcels
- Federal Parcels
- Two Shoes & Lady Belle Ranches
- Red Hill Special Rec Mgt Area
- BLM
- National Forest
- Colorado State Land Board
- County Boundaries

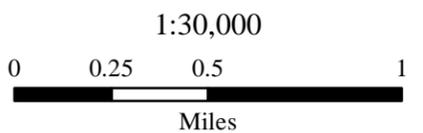
1:250,000

0 1 2 3 4 5
Miles

Sutey Ranch Land Exchange
Figure 2: Non-Federal Parcel 1 - Sutey Ranch
Garfield County, Colorado

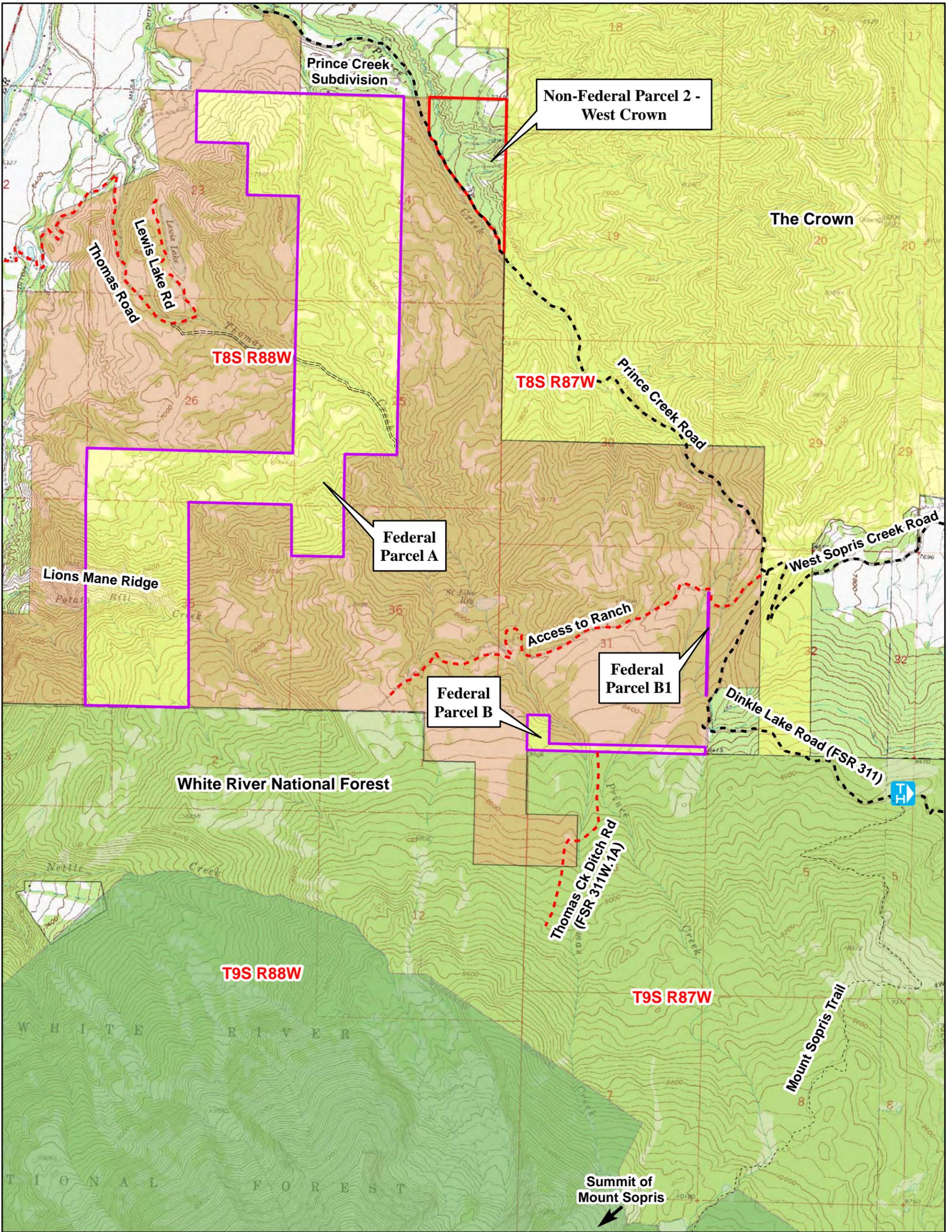


- Non-Federal Parcels
- BLM
- Red Hill Special Recreation Mgt Area
- Private
- Public Roads
- Trailhead - Red Hill SRMA



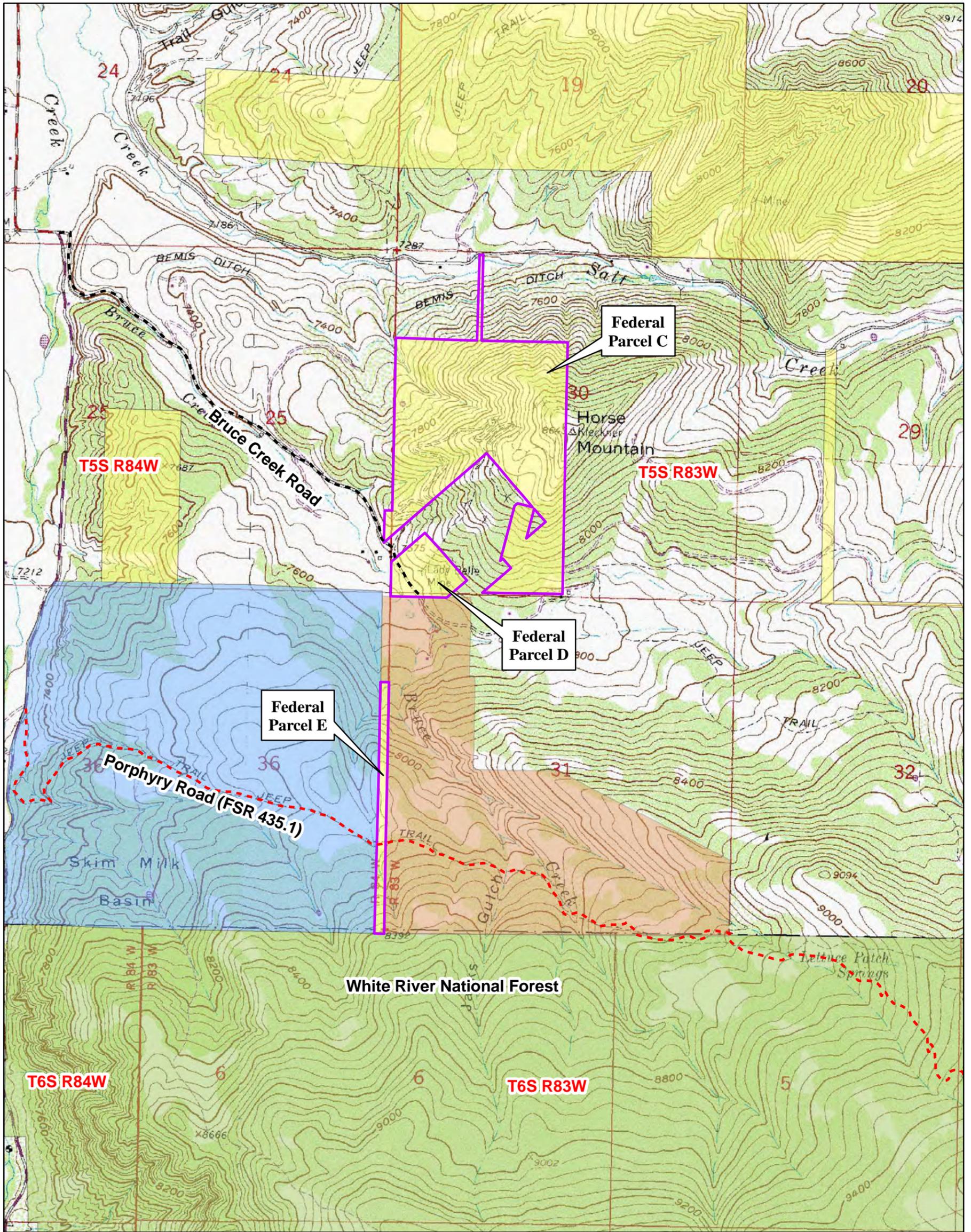
Sutey Ranch Land Exchange

Figure 3: Non-Federal Parcel 2 - West Crown, Federal Parcels A, B, and B1
Pitkin County, Colorado



Sutey Ranch Land Exchange

Figure 4: Federal Parcels C, D, and E
Eagle County, Colorado



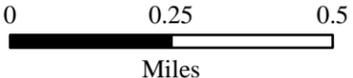
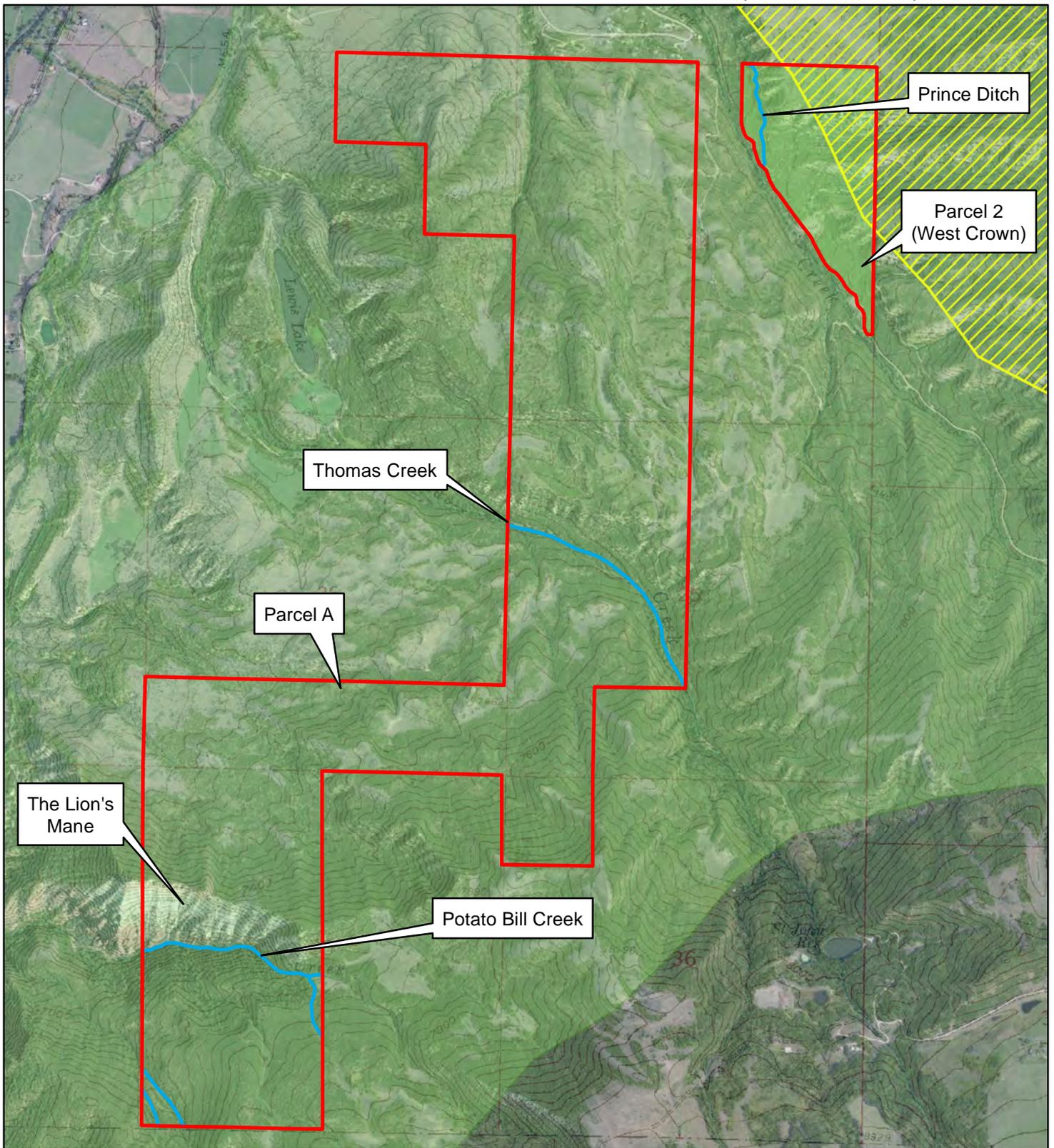
 Federal Parcels	 BLM	 Public Roads	<p>1:18,000</p>  <p>Miles</p> 
 Lady Belle Ranch	 National Forest	 Decommissioned Roads	
 Private	 Colorado State Land Board		

Figure 5: American Elk Important Habitats
Federal Parcel A & Non-Federal Parcel 2 (West Crown)



-  Parcel Boundary
-  Winter Range
-  Winter Concentration Areas

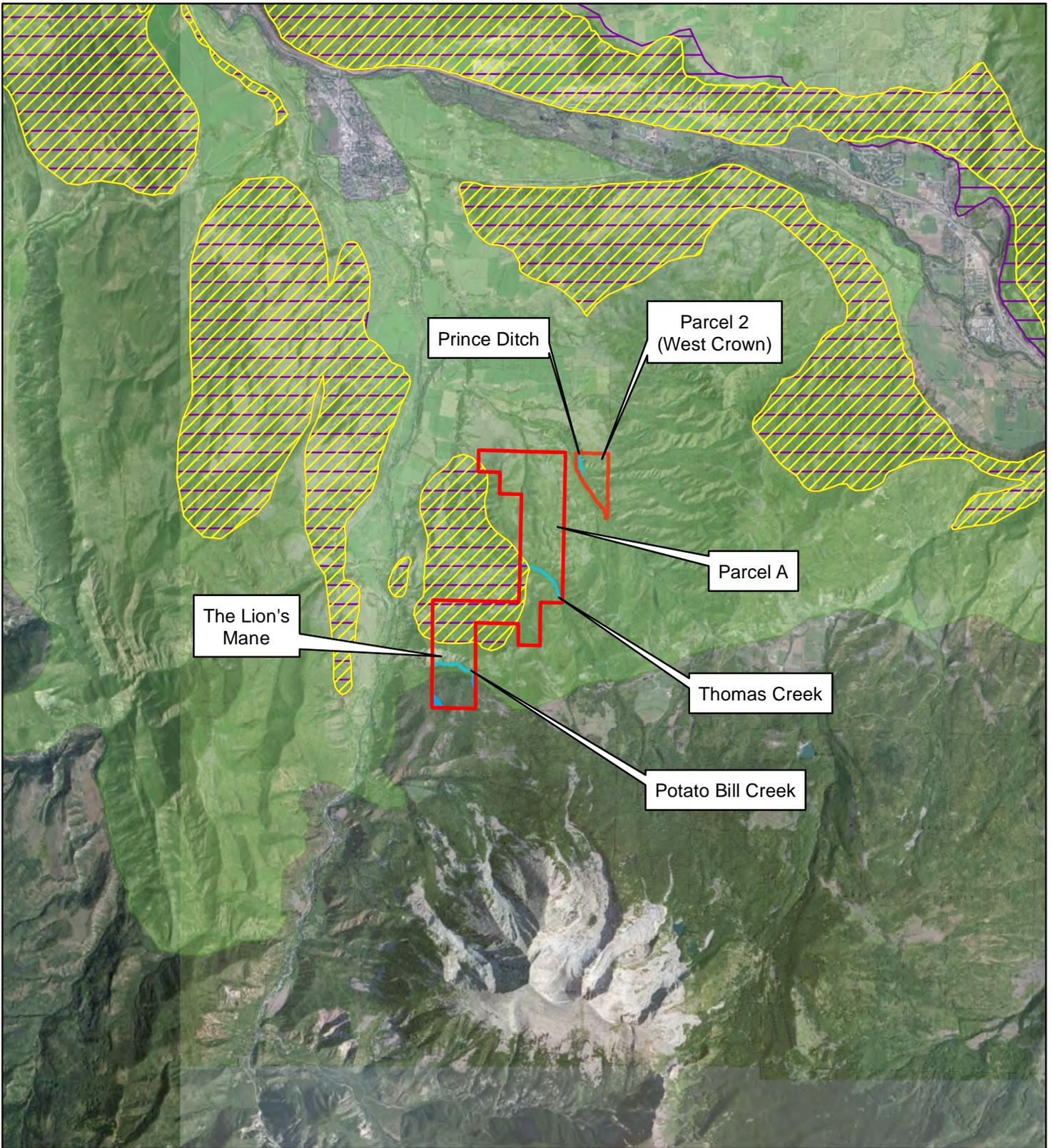
1:24,000



Sutey Ranch Land Exchange

Figure 6

Figure 6: Mule Deer Important Habitats
Federal Parcel A & Non-Federal Parcel 2 (West Crown)



- Parcel Boundary
- Winter Range
- Critical Winter Range
- Winter Concentration Areas

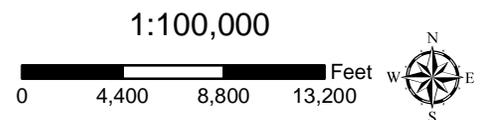
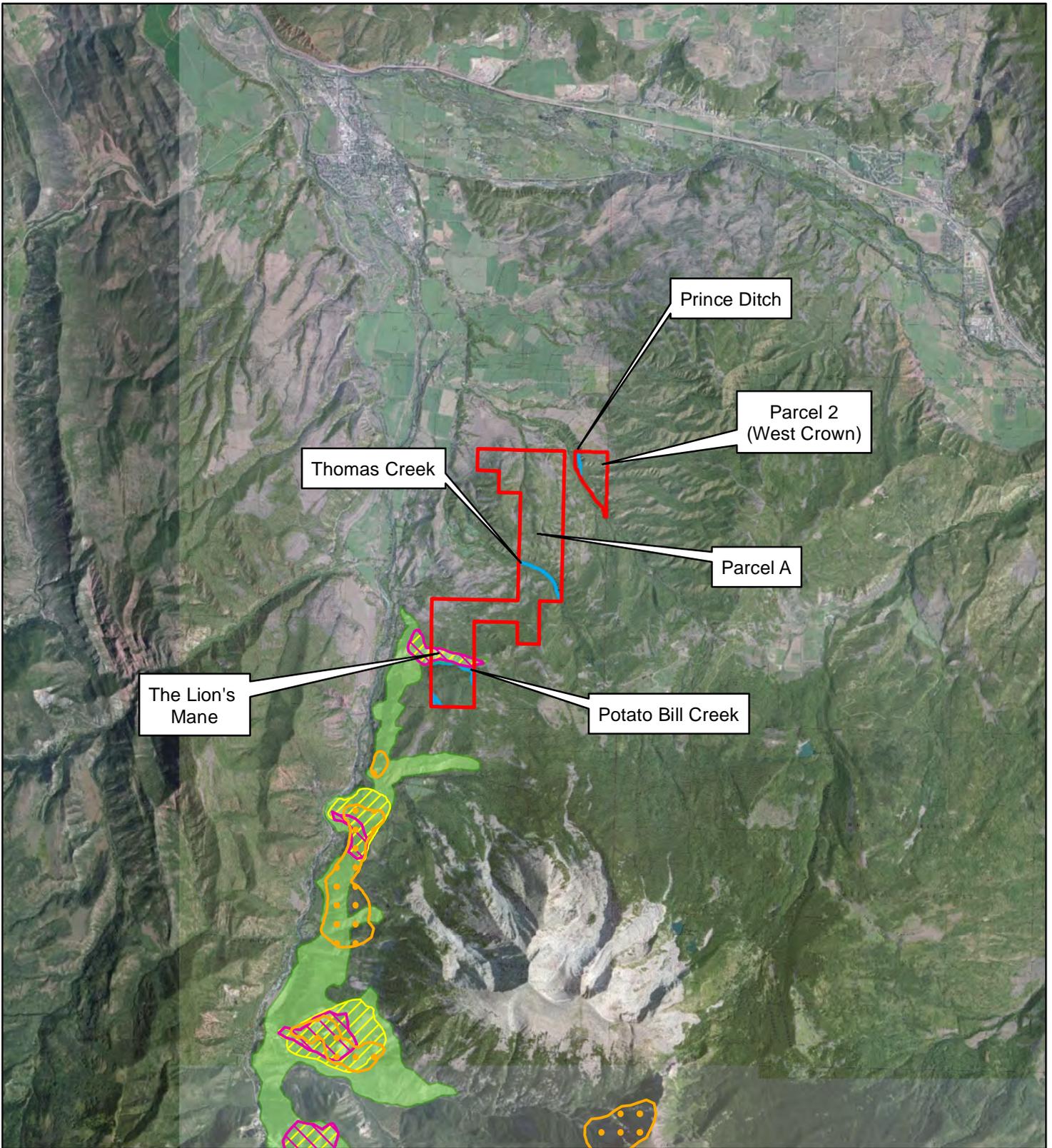


Figure 7: Rocky Mountain Bighorn Sheep Important Habitats
Federal Parcel A & Non-Federal Parcel 2 (West Crown)



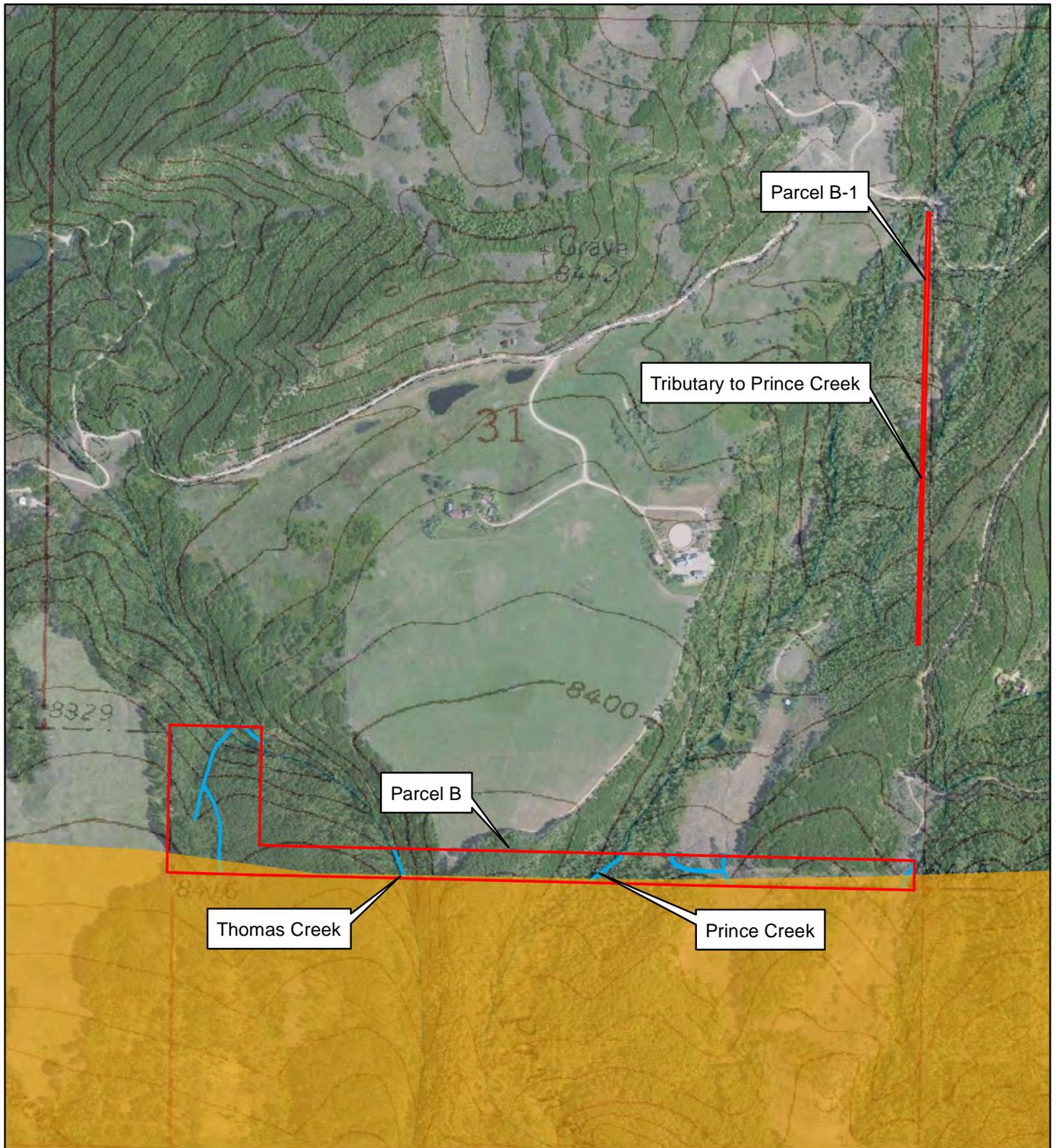
-  Parcel Boundary
-  Winter Range
-  Severe Winter Range
-  Winter Concentration Areas
-  Production Areas

1:100,000

0 4,300 8,600 12,900 Feet



Figure 8: American Elk Important Habitats Federal Parcels B and B-1



-  Parcel Boundary
-  Production Areas

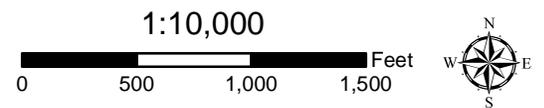
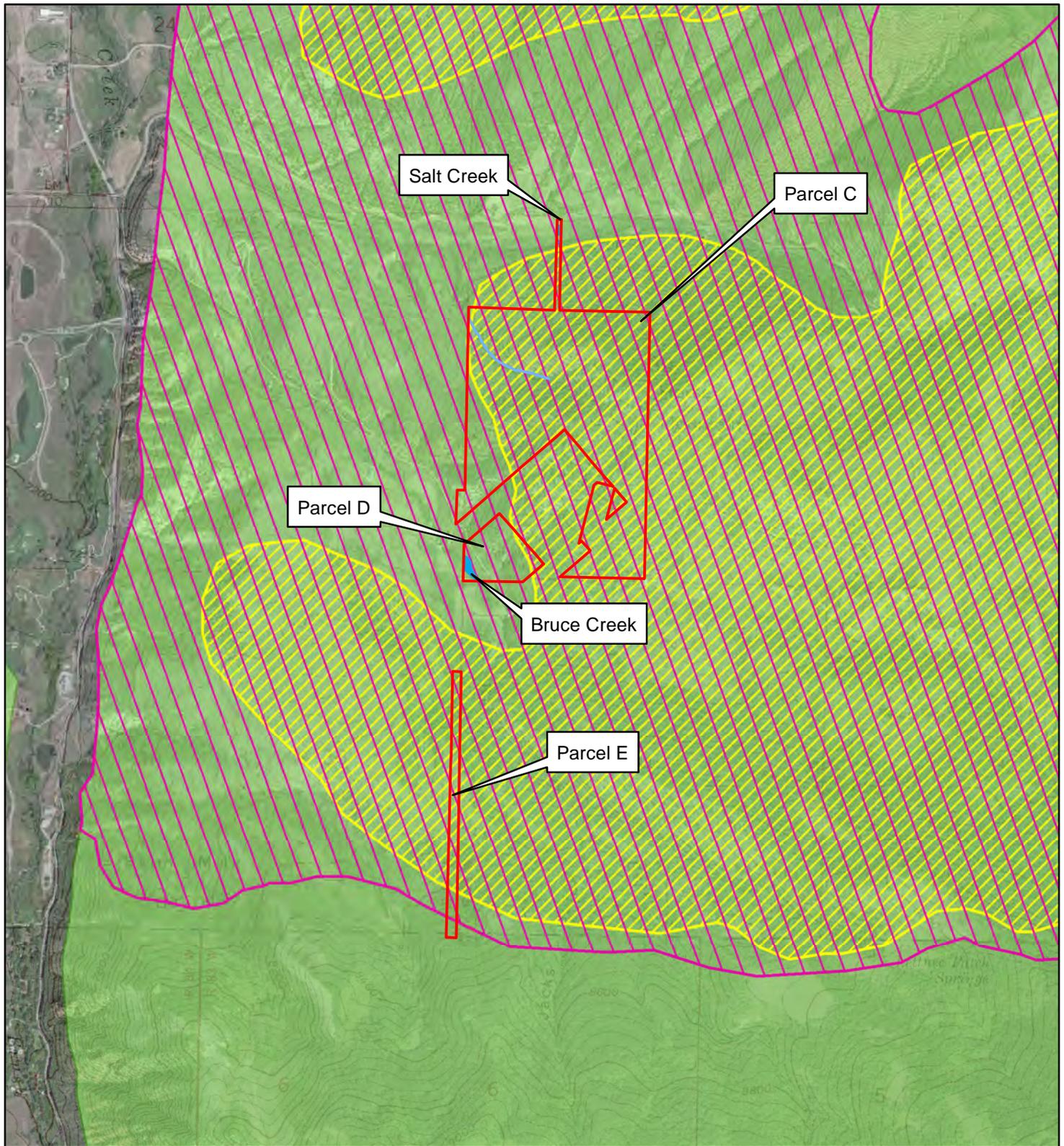


Figure 9: American Elk Important Habitats Federal Parcels C, D, and E

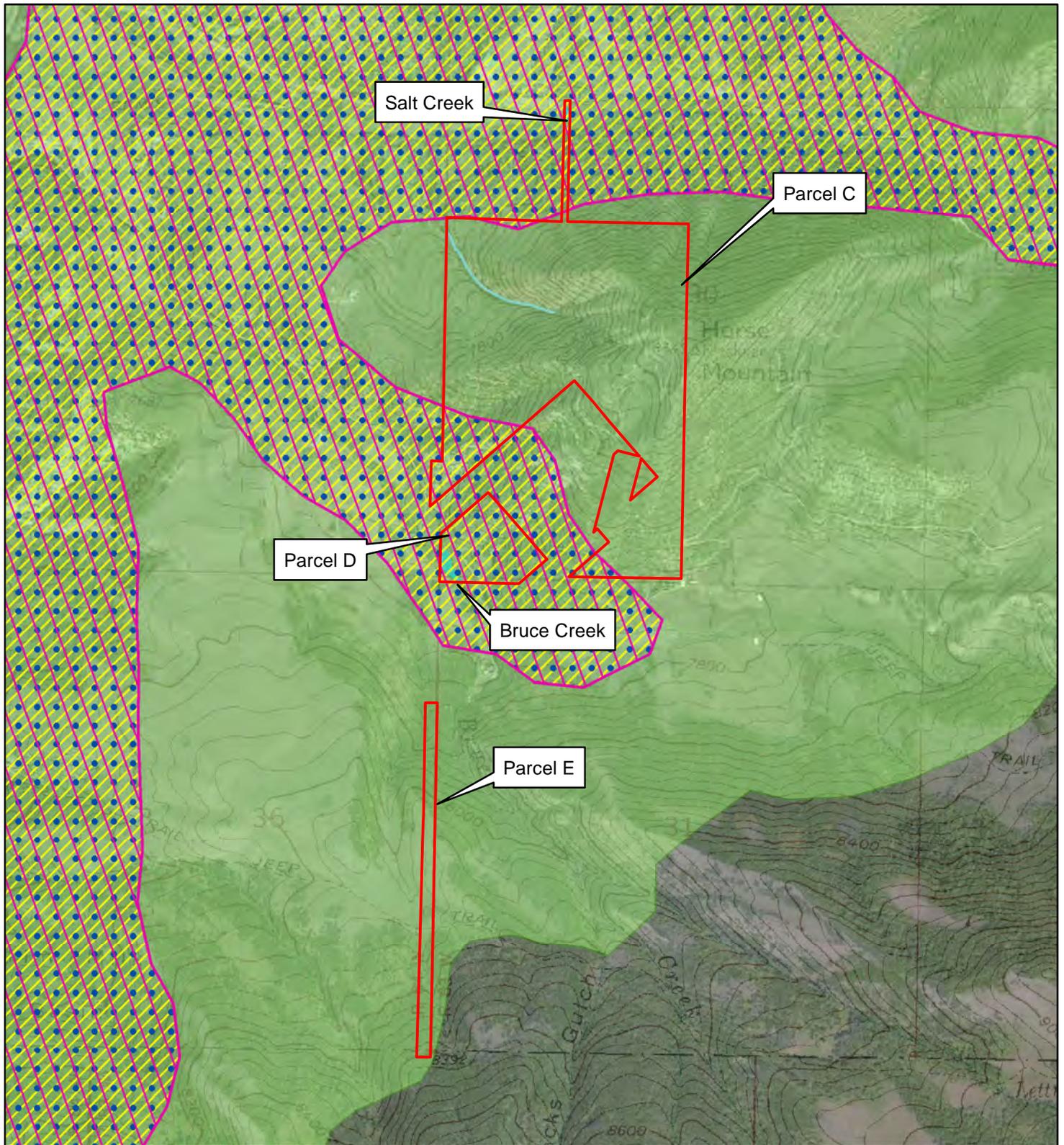


- Parcel Boundary
- Winter Range
- Severe Winter Range
- Winter Concentration Areas

1:24,000
0 1,100 2,200 3,300 Feet



Figure 10: Mule Deer Important Habitats Federal Parcels C, D, and E



-  Parcel Boundary
-  Winter Range
-  Severe Winter Range
-  Critical Winter Range
-  Winter Concentration Areas

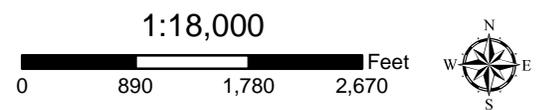
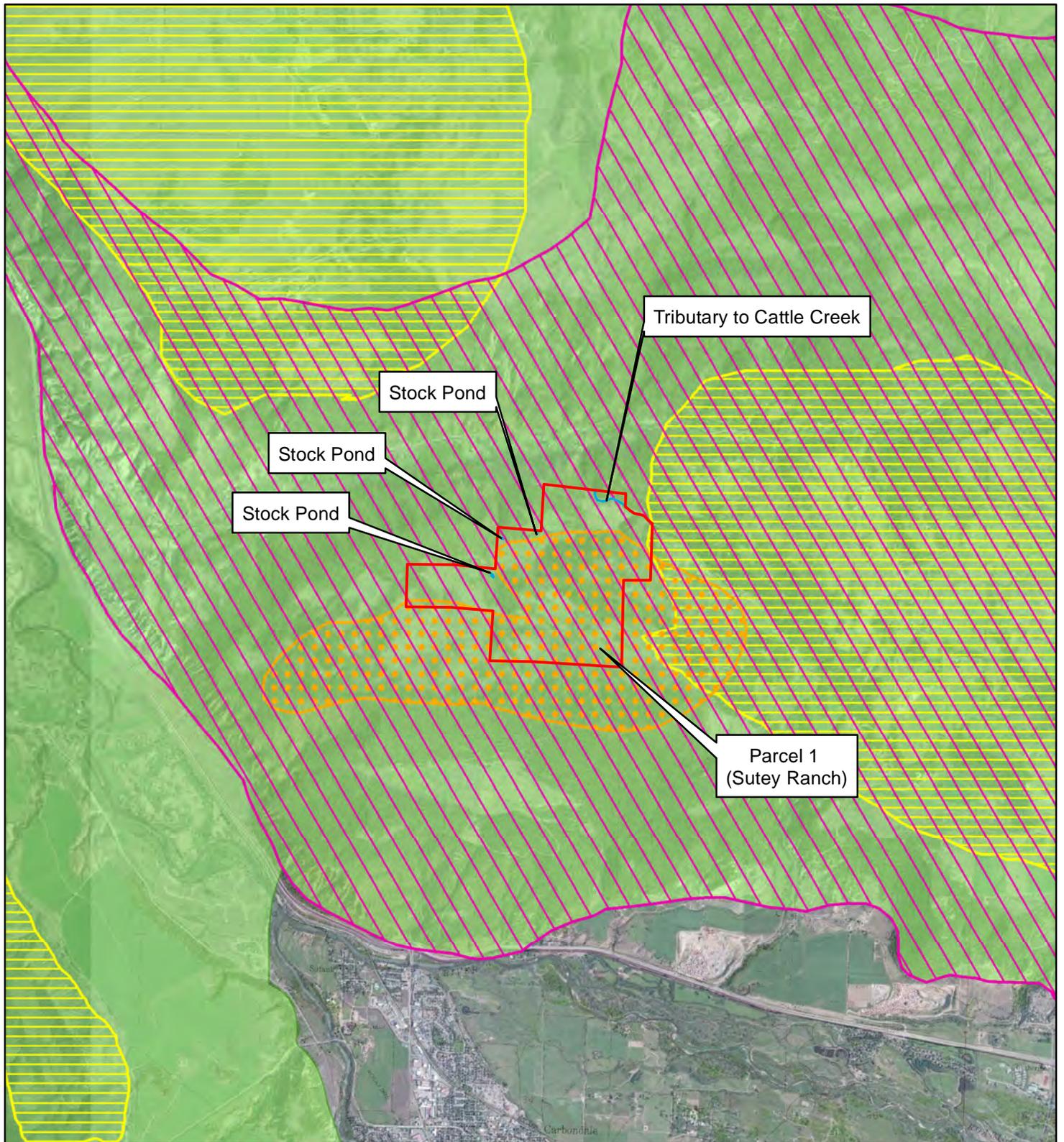


Figure 11: American Elk Important Habitats Non-Federal Parcel 1 (Sutey Ranch)



-  Parcel Boundary
-  Winter Range
-  Severe Winter Range
-  Winter Concentration Areas
-  Production Areas

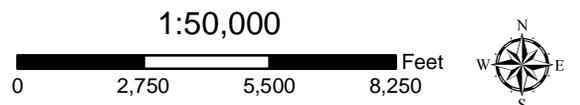
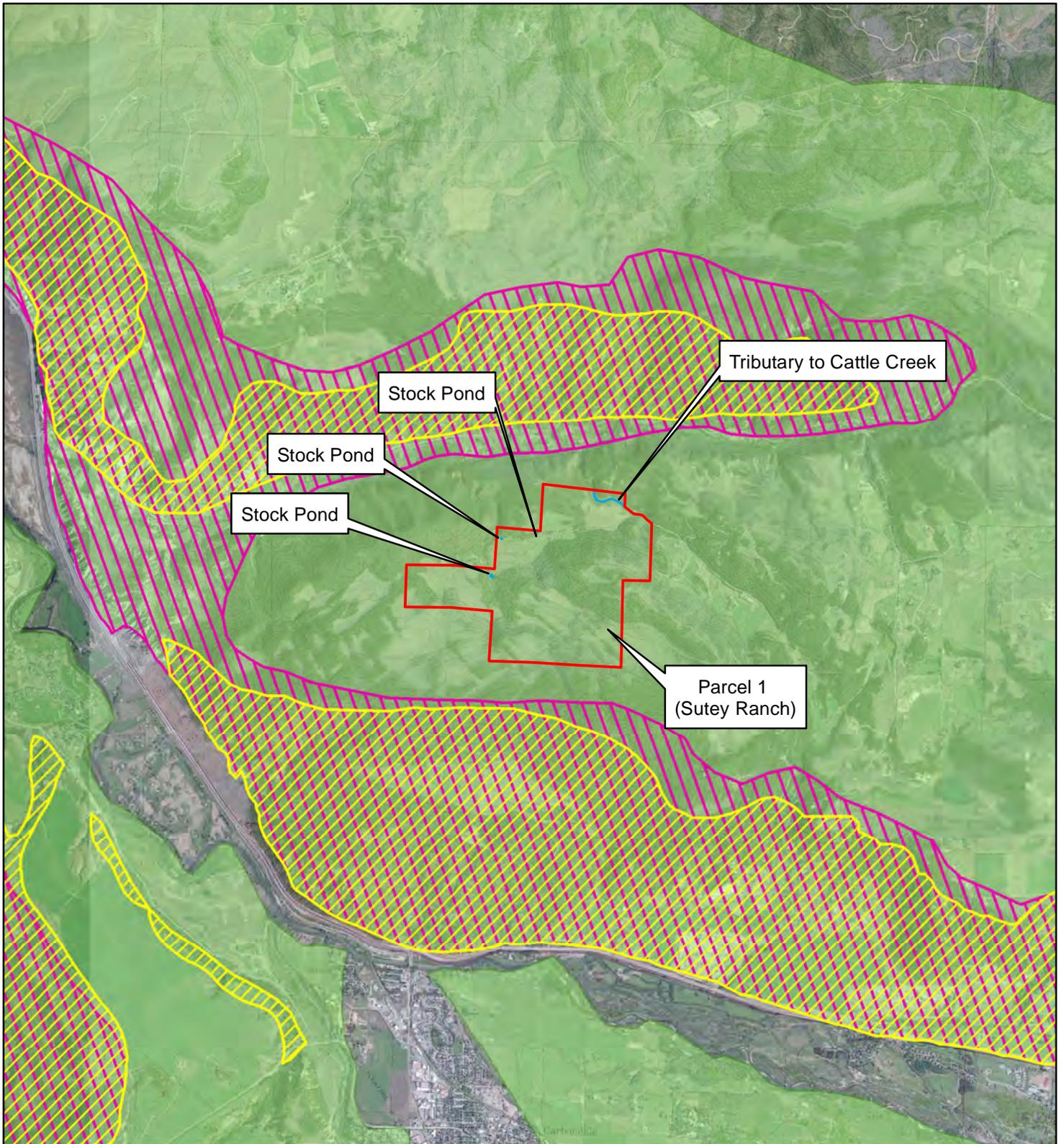


Figure 12: Mule Deer Important Habitats
Non-Federal Parcel 1 (Sutey Ranch)



-  Parcel Boundary
-  Winter Range
-  Severe Winter Range
-  Winter Concentration Areas

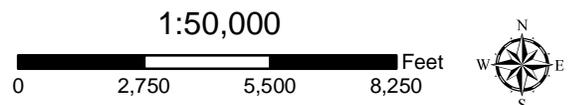
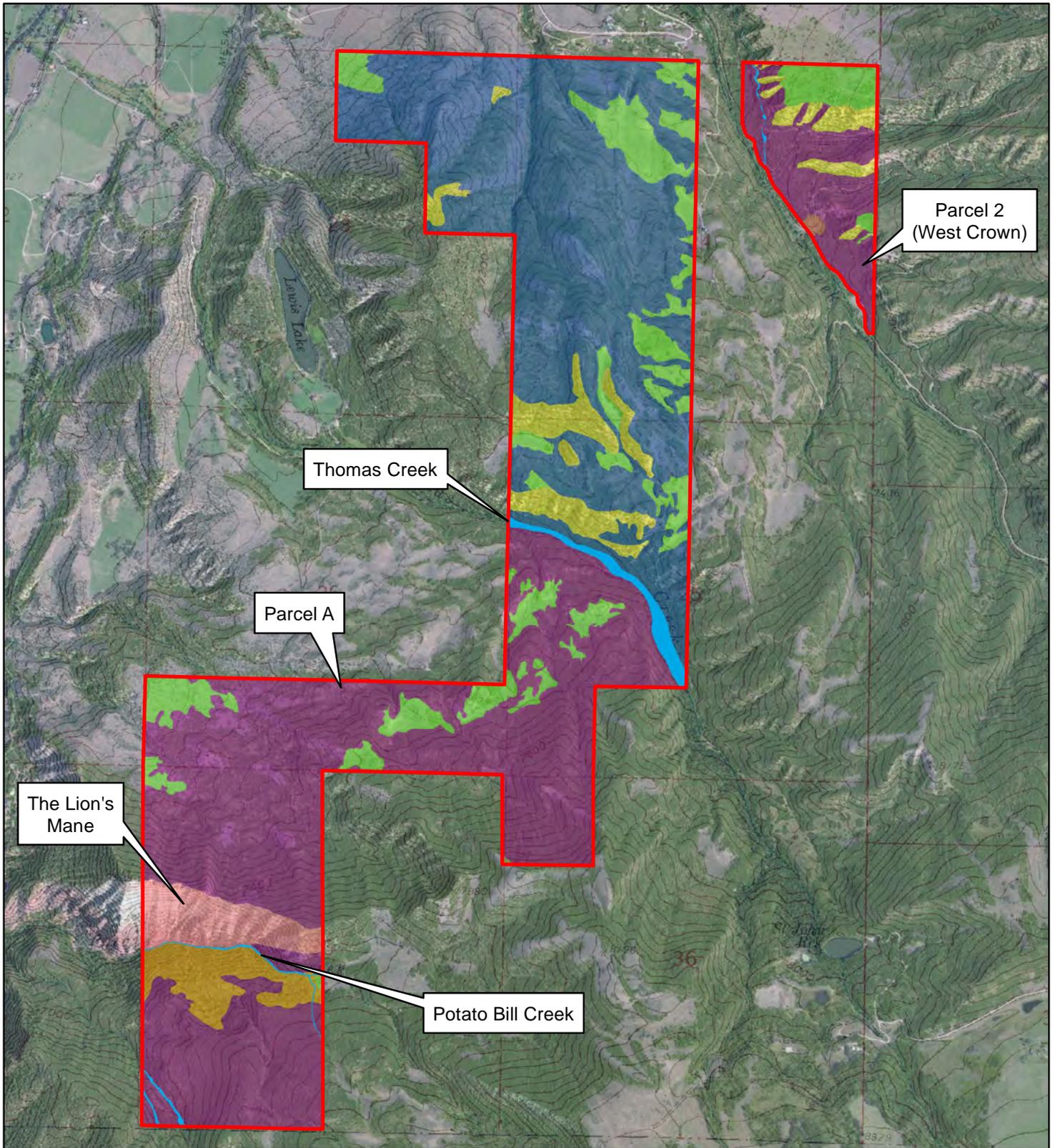


Figure 13: Vegetation Type Map Federal Parcel A & Non-Federal Parcel 2 (West Crown)



- | | |
|--------------------------|-----------------------------|
| Parcel Boundary | Gambel Oak Sagebrush Mosaic |
| Douglas-Fir Forest | Mountain Mahogany Shrubland |
| Pinyon-Juniper Woodlands | Riparian/Wetland Habitats |
| Gambel Oak Shrublands | Disturbed Habitats |
| Sagebrush Shrublands | |

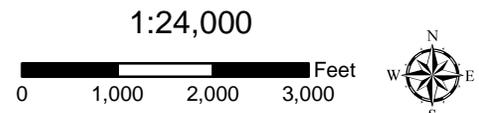
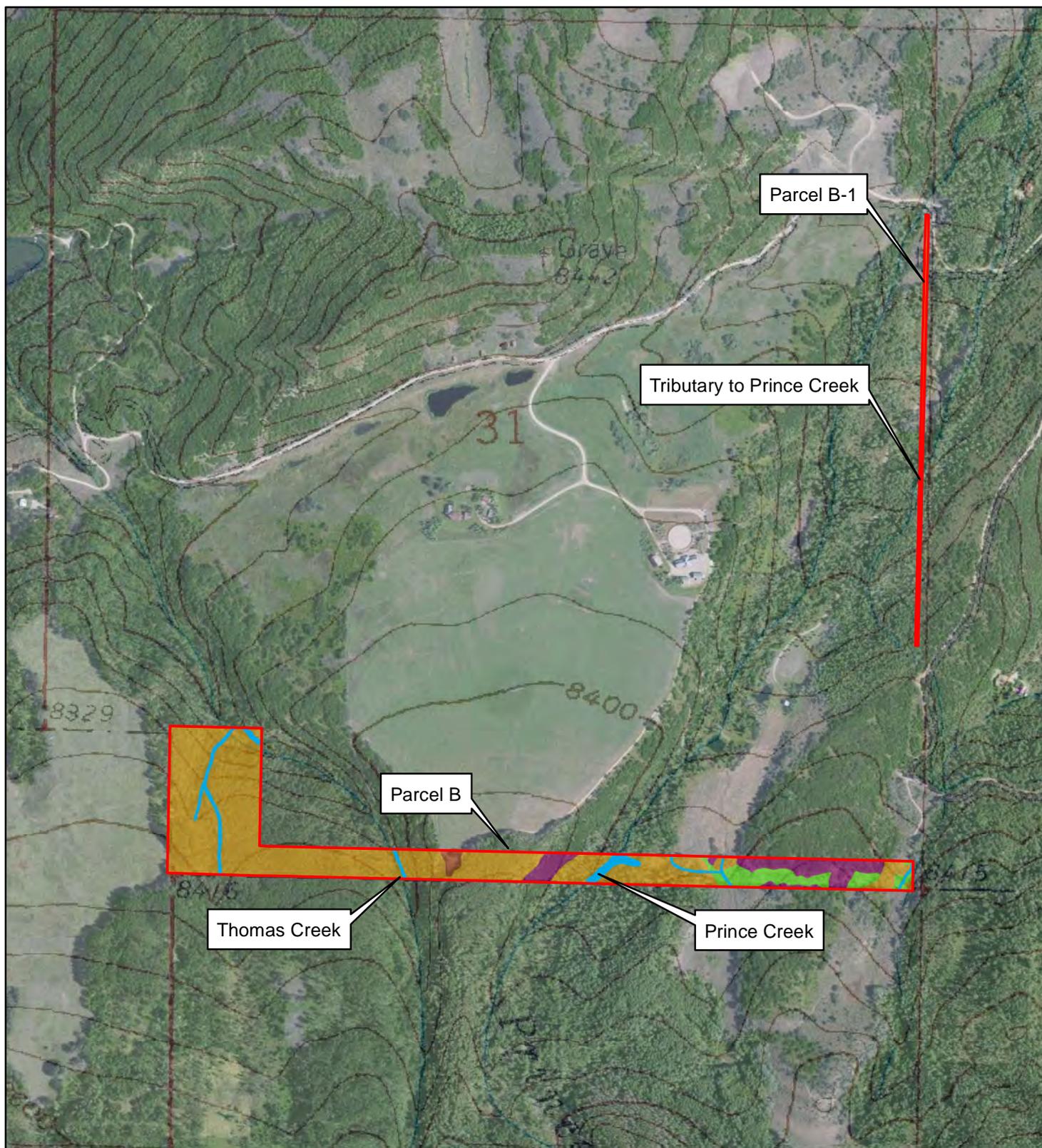


Figure 14: Vegetation Type Map Federal Parcels B and B-1

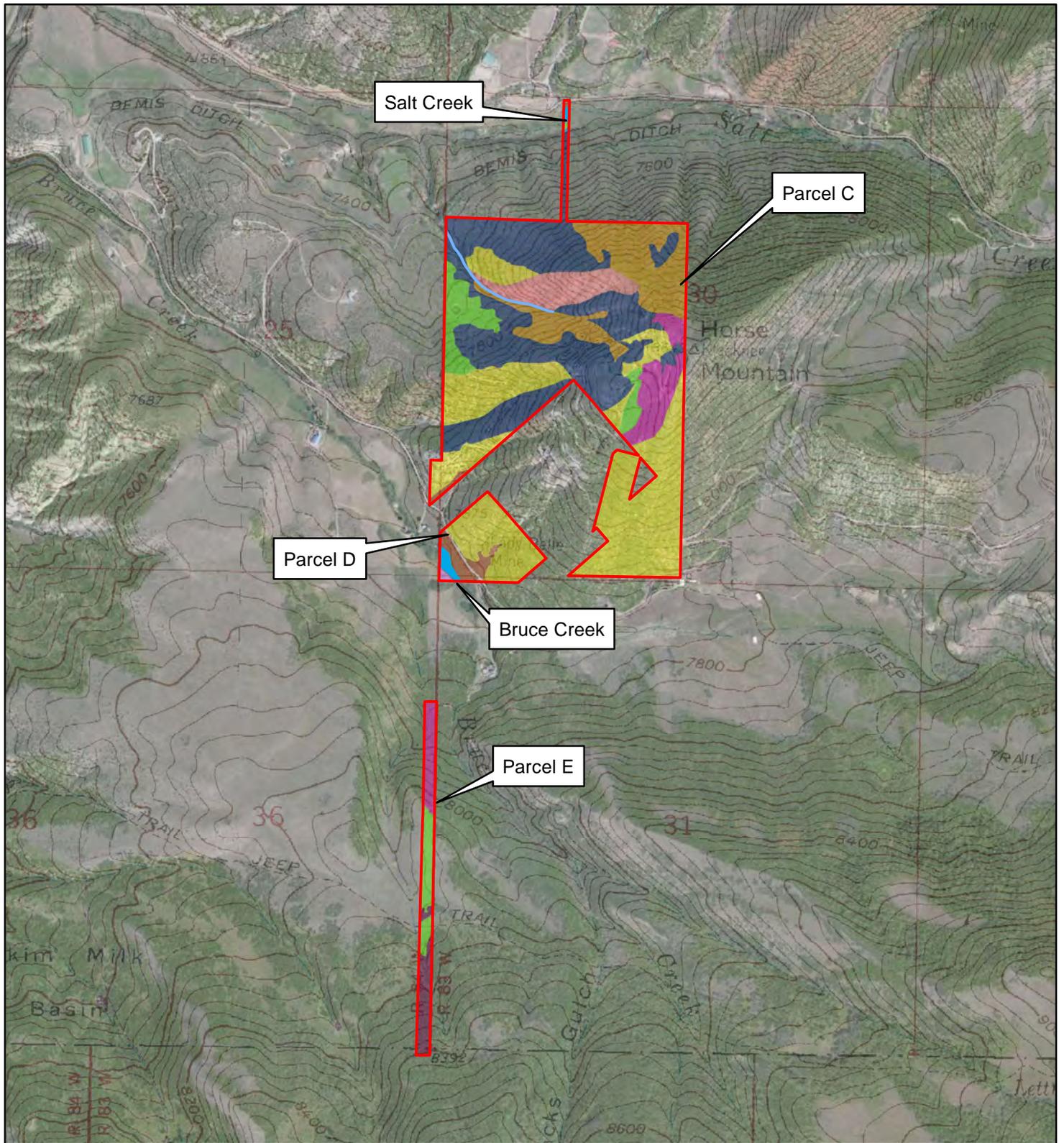


- | | |
|---------------------|---------------------------|
| Parcel Boundary | Snowberry Shrublands |
| Aspen Forest | Riparian/Wetland Habitats |
| Mountain Shrublands | Disturbed Habitats |

1:10,000

0 500 1,000 1,500 Feet

Figure 15: Vegetation Type Map Federal Parcels C, D, and E



- | | |
|---|--|
|  Parcel Boundary |  Gambel Oak Shrublands |
|  Douglas-Fir Forest |  Sagebrush Shrublands |
|  Aspen Forest |  Mountain Mahogany Shrublands |
|  Pinyon-Juniper Woodlands |  Disturbed Habitats |
|  Mountain Shrublands |  Irrigated Pasture |

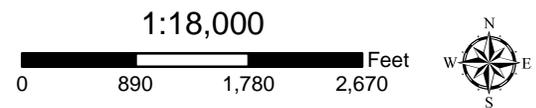
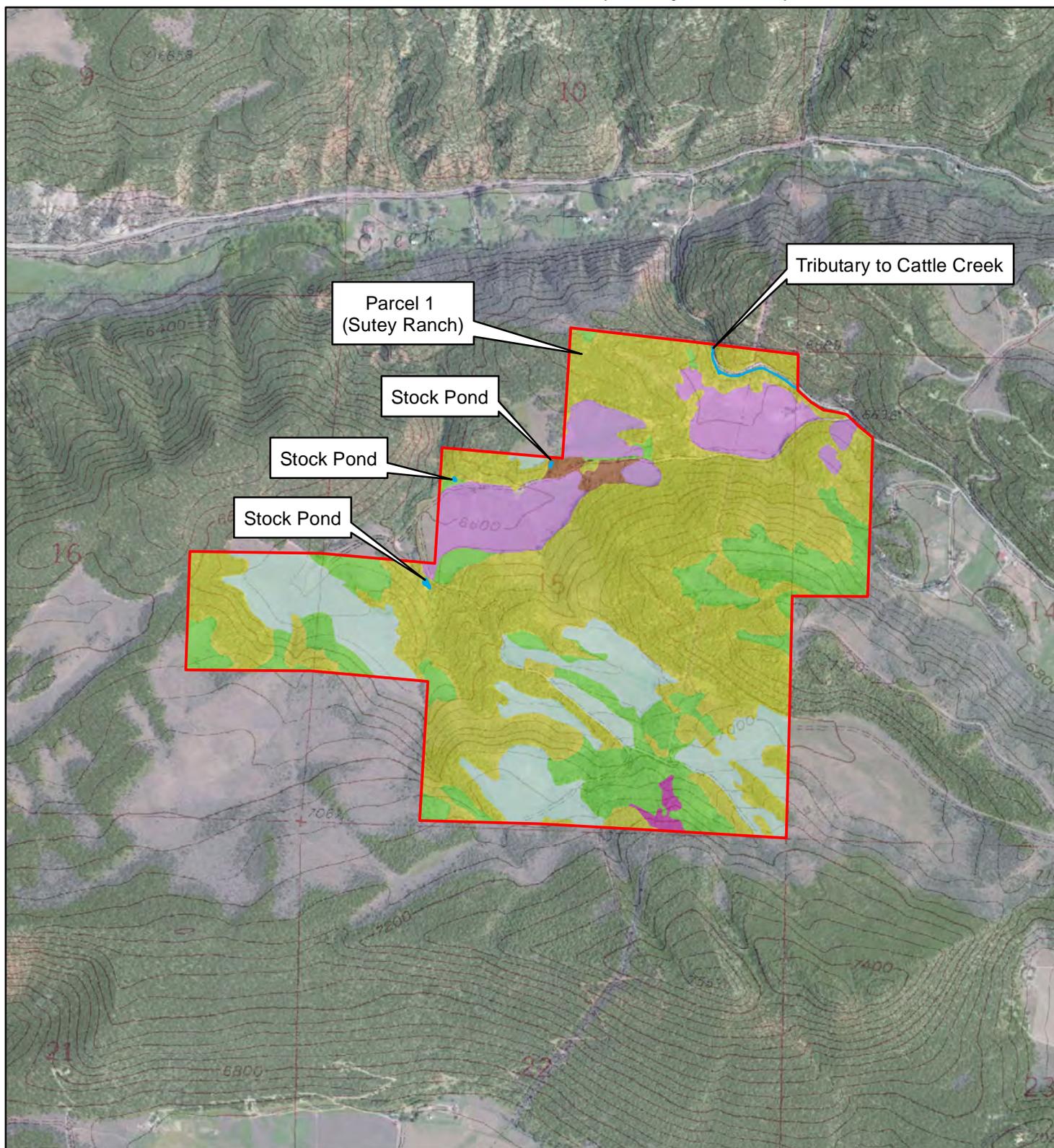


Figure 16: Vegetation Type Map Non-Federal Parcel 1 (Sutey Ranch)

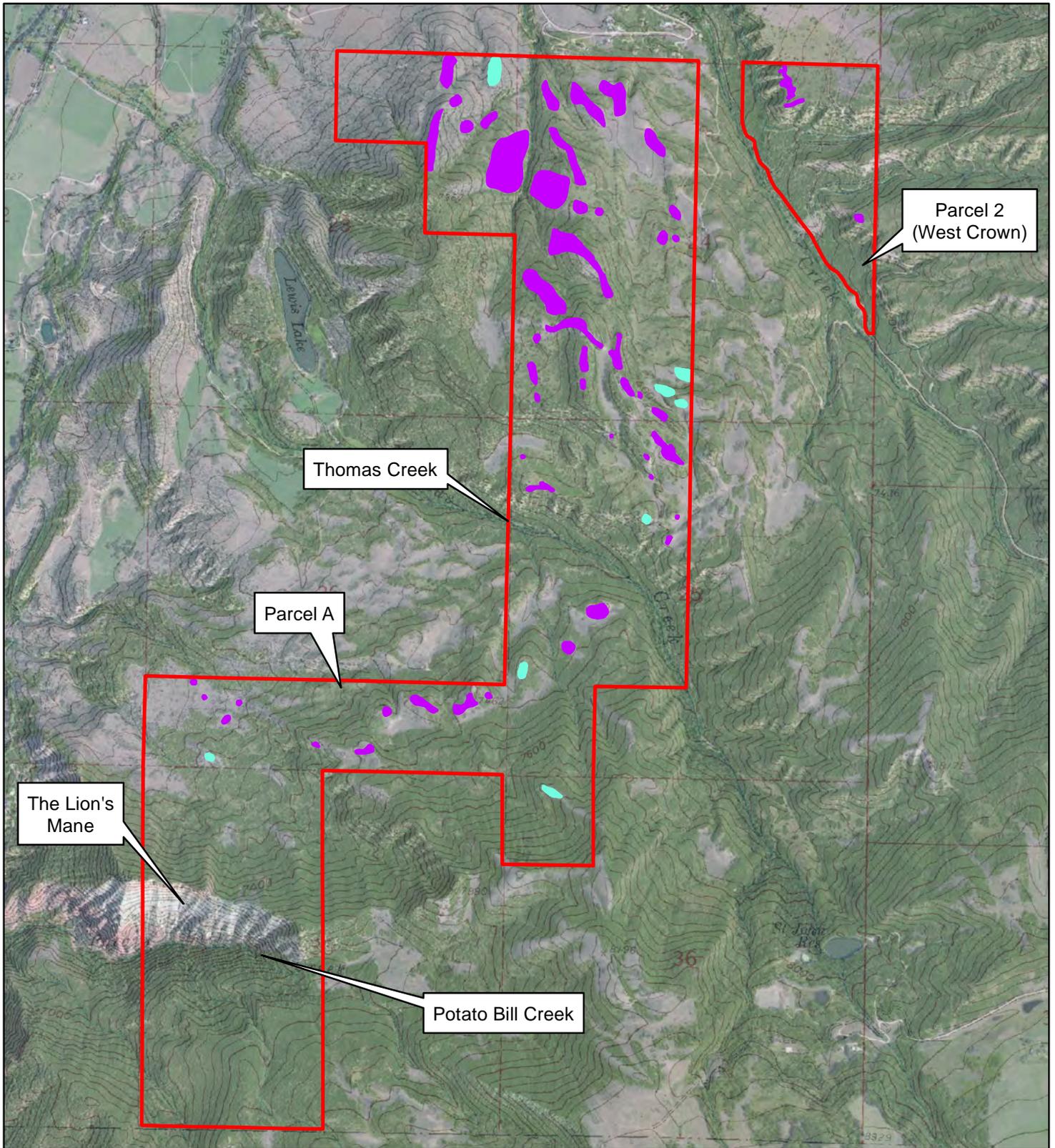


- | | |
|--------------------------|-------------------------------------|
| Parcel Boundary | Pasture with Sagebrush Encroachment |
| Pinyon-Juniper Woodlands | Irrigated Pasture |
| Gambel Oak Shrublands | Riparian/Wetland Habitats |
| Sagebrush Shrublands | Disturbed Habitats |

1:18,000

0 990 1,980 2,970 Feet

Figure 17: Harrington's Penstemon Map
Federal Parcel A & Non-Federal Parcel 2 (West Crown)



-  Parcel Boundary
-  Harrington's Penstemon Populations
-  Potential Harrington's Penstemon Habitat

1:24,000

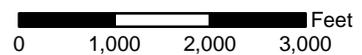
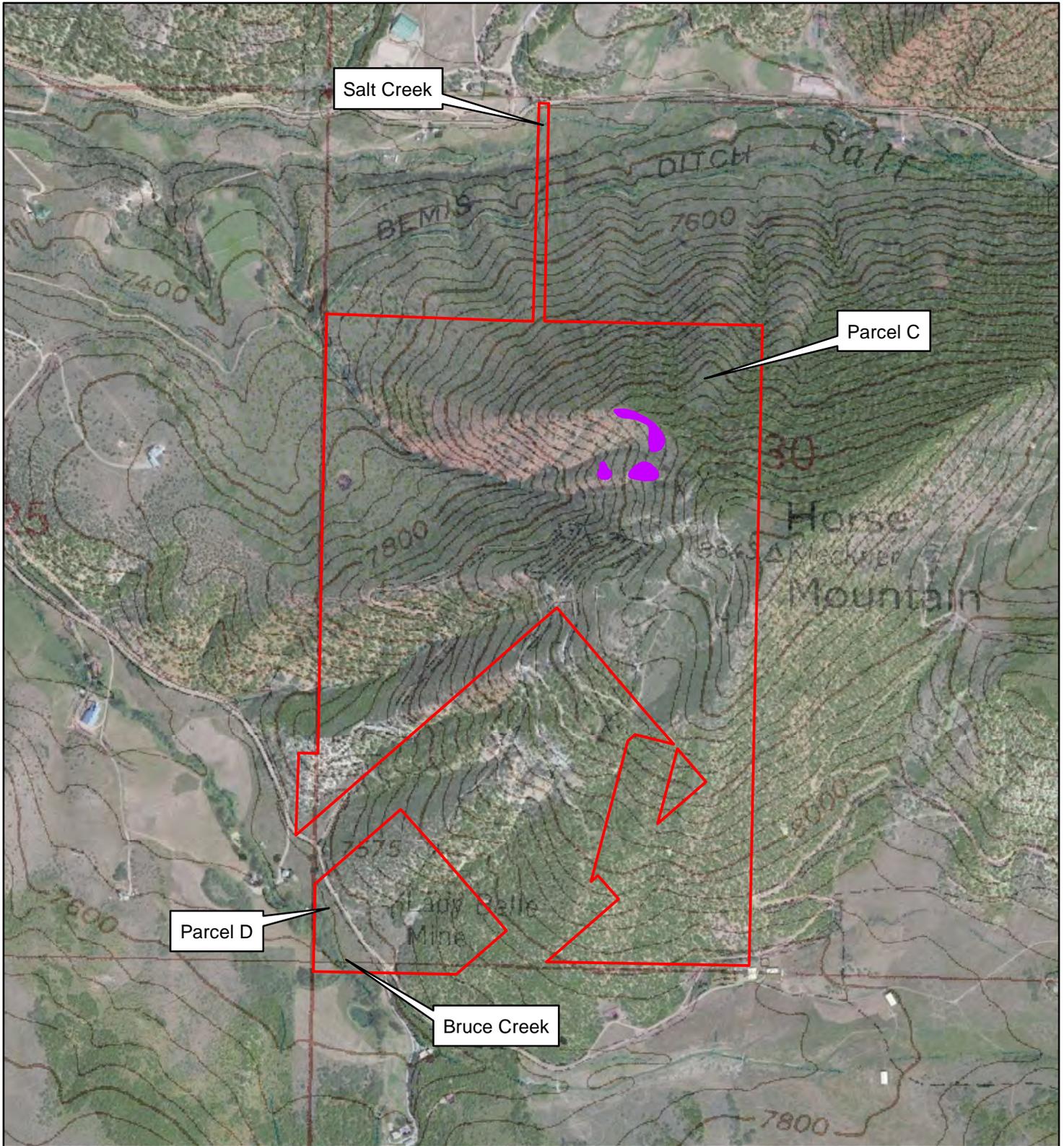


Figure 18: Harrington's Penstemon Map Federal Parcel C



-  Parcel Boundary
-  Harrington's Penstemon Populations

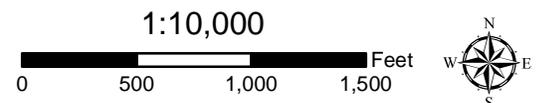
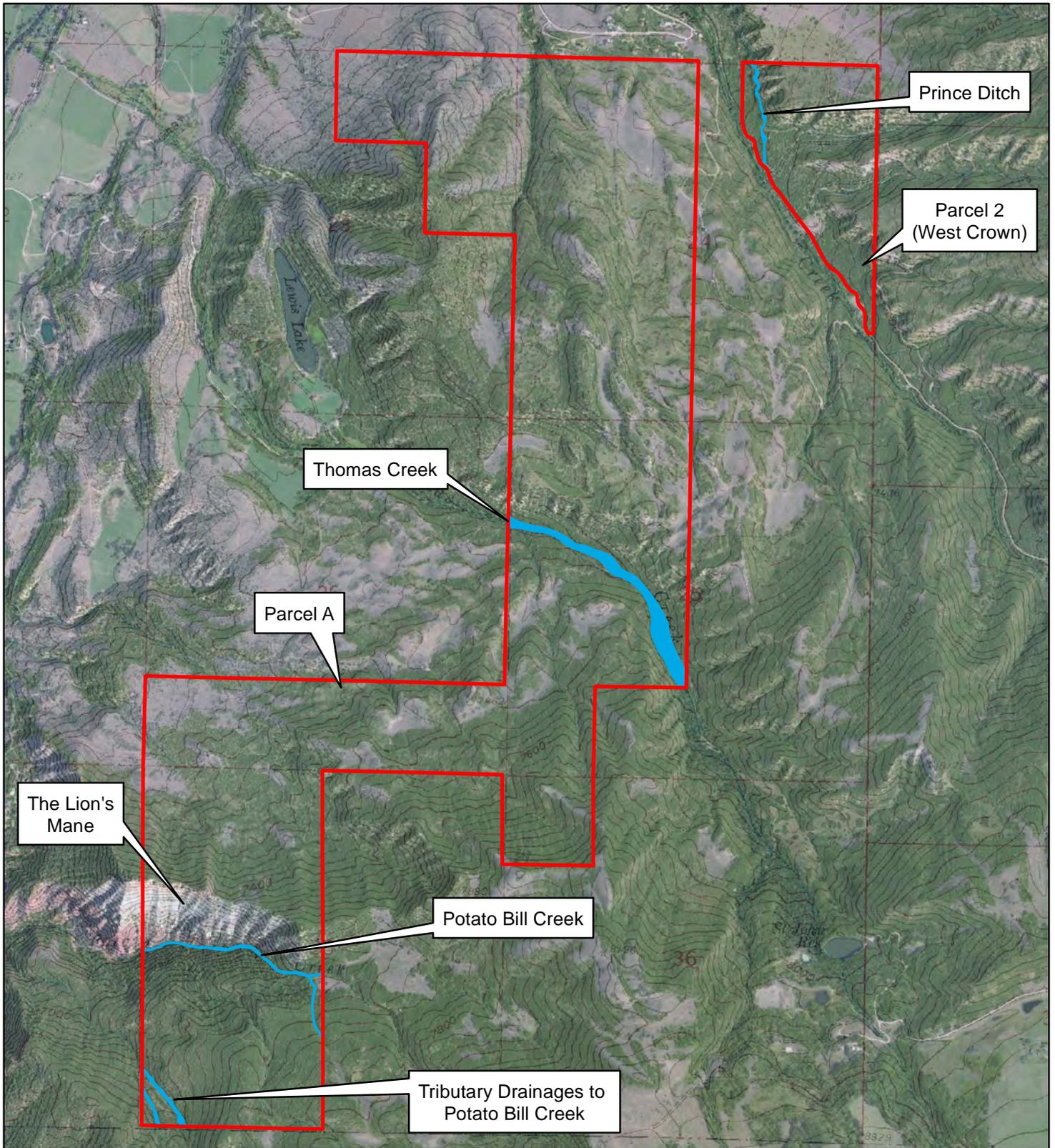


Figure 19: Riparian/Wetland Habitats
Federal Parcel A & Non-Federal Parcel 2 (West Crown)



-  Parcel Boundary
-  Riparian/Wetland Habitats

1:24,000

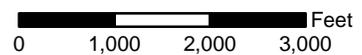
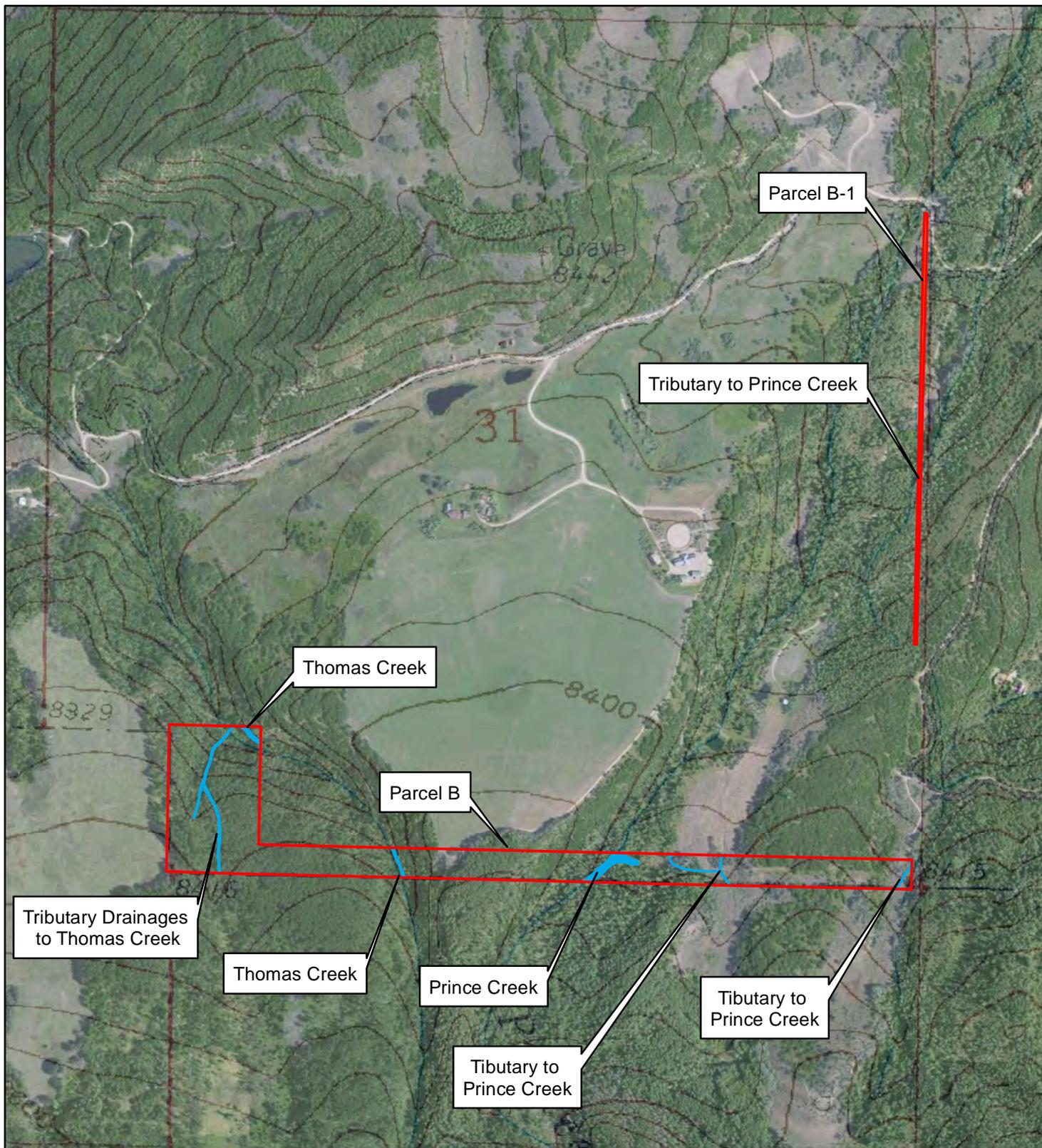


Figure 20: Riparian/Wetland Habitats
Federal Parcels B and B-1



- Parcel Boundary
- Riparian/Wetland Habitats

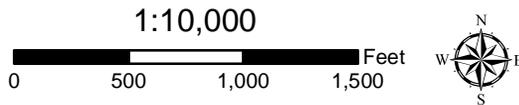
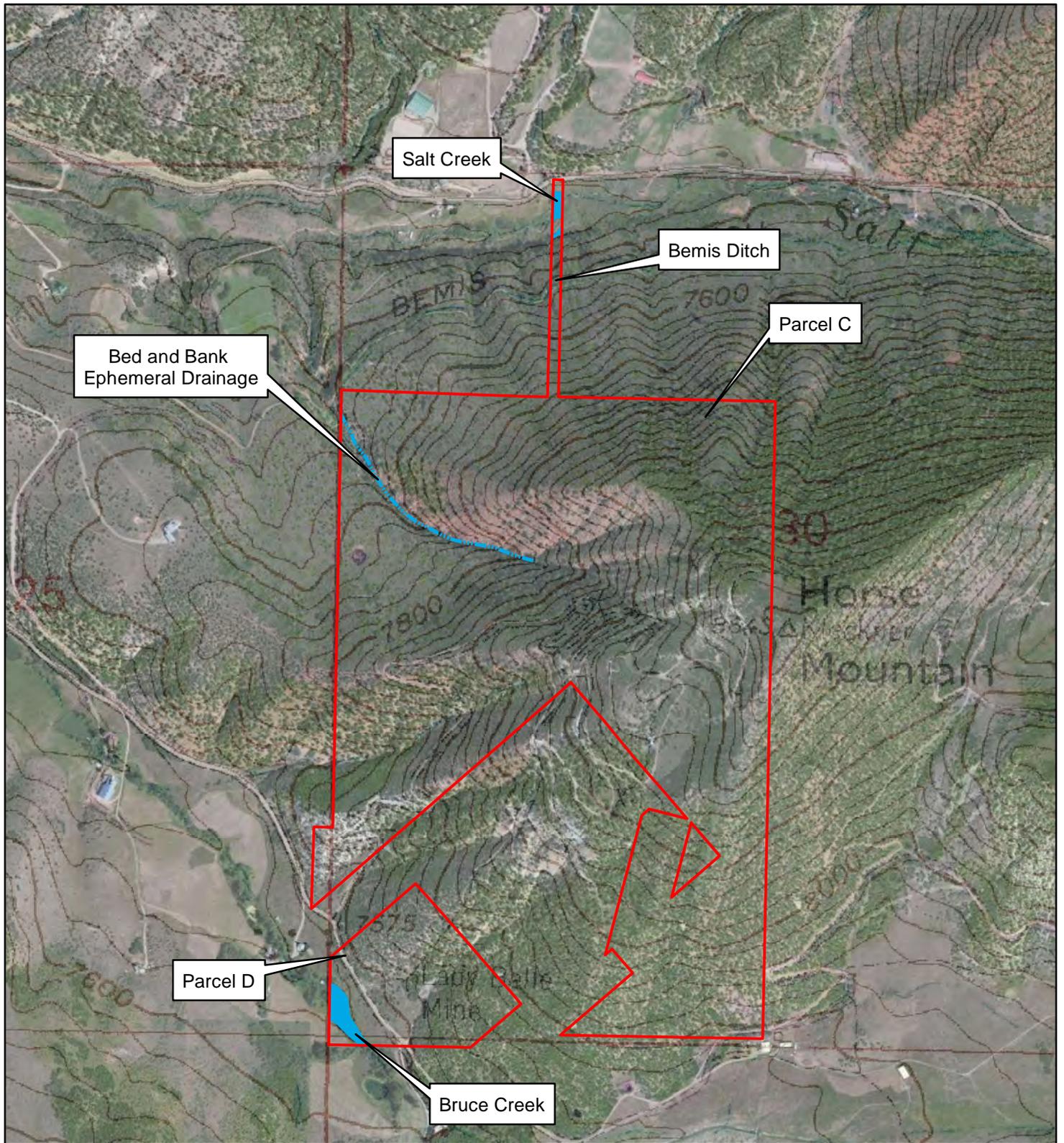


Figure 21: Riparian/Wetland Habitats Federal Parcels C and D



-  Parcel Boundary
-  Riparian/Wetland Habitats
-  Bed and Bank Drainages

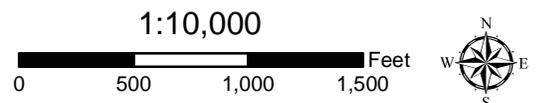
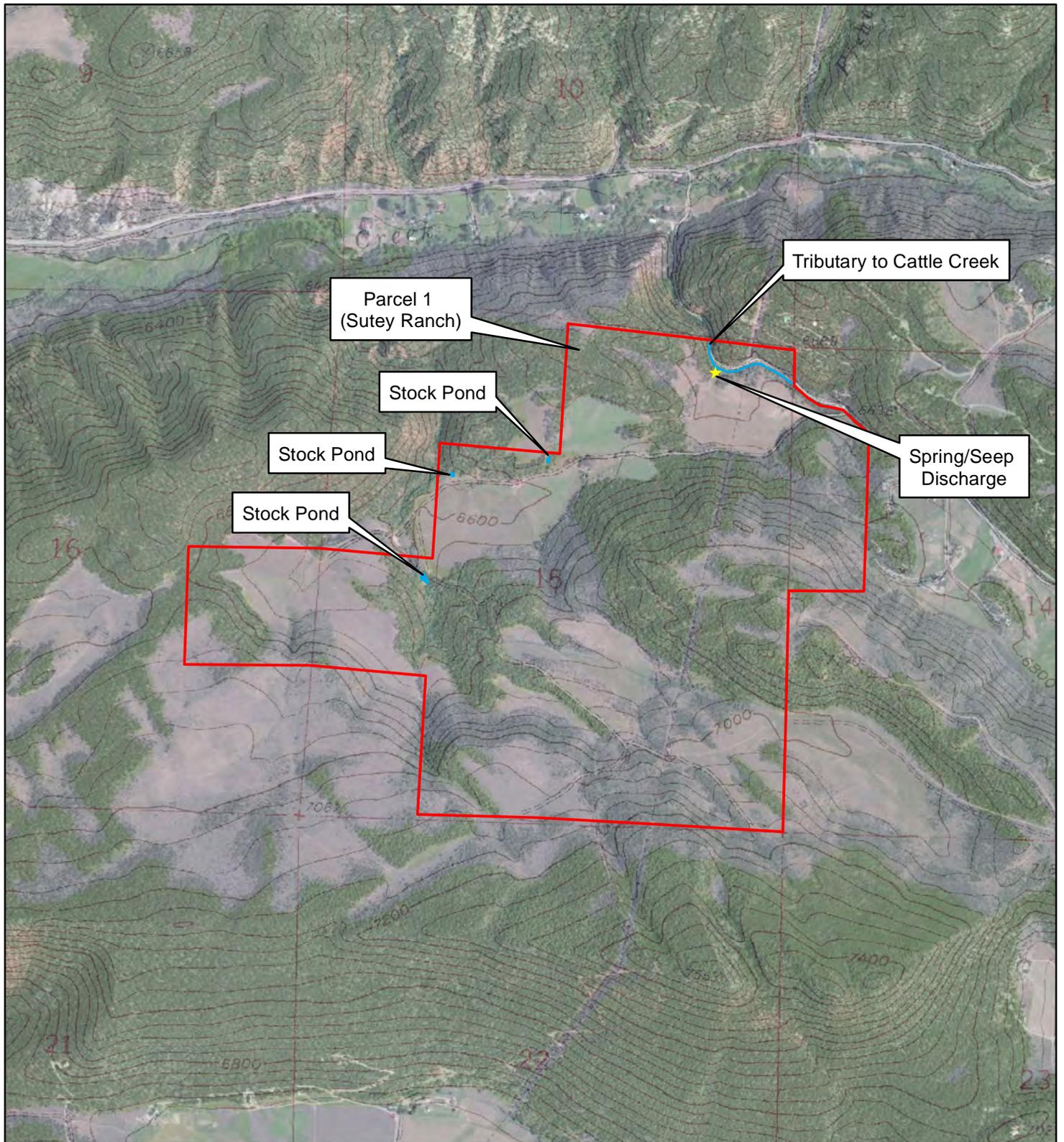
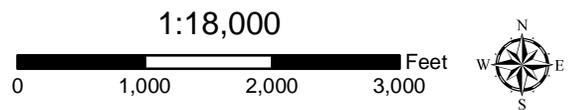


Figure 22: Riparian/Wetland Habitats Non-Federal Parcel 1 (Sutey Ranch)



- Parcel Boundary
- Riparian/Wetland Habitats



APPENDIX A: SUMMARY OF CONSERVATION EASEMENTS

Should the Federal Exchange Parcels be transferred to private ownership as a result of this proposal, Parcels A, B, C, D and E would be placed into one of three conservation easements held by the Aspen Valley Land Trust (Parcels A and B in Pitkin County) and the Eagle Valley Land Trust (Parcels C, D and E in Eagle County). As such, these parcels would not/could not be developed in the future. Federal Parcel B-1 would not be included in a conservation easement as the size and configuration of the parcel (a narrow strip of land totaling approximately 1 acre) does not lend to it being placed into a conservation easement.

The conservation easements are contained in the project file, and summarized, according to parcel, below.

A. FEDERAL PARCELS A AND B

Two conservation easements, one on Parcel A and one on Parcel B, would be held by the Aspen Valley Land Trust (the Trust), allowing the Trust to preserve and protect five stated “Conservation Values” of the Parcels in perpetuity. The conservation easements would “run with the land” and would be fully enforced regardless of any (potential) future sale or transfer of ownership of the Parcels. The Trust would thoroughly inspect the Parcels at least once a year to monitor compliance with, and otherwise enforce the terms of, the conservation easement.

The Conservation Values to be protected include:

1. Relatively Natural Habitat
2. Open Space
3. Scenic Enjoyment
4. Agriculture
5. Public Benefit

PROHIBITED USES

The conservation easements for Parcels A and B specifically prohibit the following uses, with few exceptions discussed under permitted uses below:

- Development Rights and Improvements: The construction, improvement, placement, or replacement of any improvements (defined as buildings, structures, mobile homes or other physical, human-introduced development of or on the Parcels, including landscaping, fences, wells, roads, septic systems, utilities, etc.) are prohibited on the Parcels, except the permitted fencing, roads, bridges, trails and utilities discussed below under permitted uses.

- Resource Management and Use: The Proponents recognize the importance of good resource management and stewardship to preserve and protect the Conservation Values. Accordingly, the Proponents agree not to alter the topography of the Parcels through placement or removal of soil, gravel, land fill, or other materials, nor to impair the relatively natural habitat for native plants (including Harrington’s penstemon habitat), wildlife, or similar ecosystems within and upon the Parcels.
- Agriculture and Livestock Grazing: The following agricultural and livestock husbandry practices are specifically prohibited:
 1. Intensive growth livestock farms or commercial feed lots, defined as confined areas or facilities on the Parcels, within which the land is not grazed or cropped annually, for purposes of extended feeding and finishing of large numbers of livestock for commercial purposes;
 2. Grazing or keeping of domestic sheep on the Parcels without Colorado Parks and Wildlife (CPW) consent;
 3. Clearing or conversion of native rangeland or habitat to create new pastures without approval of the Trust in consultation with CPW;
 4. Tilled cultivation of crops, including tree farms or sod farms;
 5. Fish hatcheries or other aquaculture; and
 6. Commercial horse boarding.
- Minerals: At the time of granting the Easement, the Proponents would own all of the mineral rights associated with the Parcels. The Proponents shall not lease, sever or separate the ownership of such rights from the Parcels, nor permit the exploration for; development or mining of or other extraction of any minerals, coal, peat, sand, gravel, rock, soil, geo-thermal resources, oil, oil shale, natural gas or other hydrocarbons from, on or below the surface of the Parcels.
- Water Resources: The Proponents shall not divert, dam, pollute, dredge, intentionally destabilize or degrade natural banks or shorelines, or otherwise alter Potato Bill Creek, Thomas Creek, or other naturally-occurring streams, springs, lakes, ponds, designated wetlands or other surface or subsurface water features that may occur on the Parcels, except as approved by the Trust, and except for any work or structures deemed necessary by the Proponents to enhance, restore or control erosion or siltation of water resources on the Parcels in compliance with all applicable laws and in consultation with CPW or other agency qualified at the time to oversee such work.
- Subdivision and Ownership: The Parcels shall not be subdivided, and the Proponents shall not undertake any legal proceeding to partition, condominiumize or divide the Parcels in any manner (including de facto subdivision).

- Commercial and Industrial Activities: The Proponents shall not conduct industrial activity or commercial recreational activity on the Parcels, except for guided hunting activities that may be approved by CPW and leasing of hunting rights.

PERMITTED USES

The conservation easement for Parcels A and B specifically permits the following uses:

- Development Rights and Improvements:

Fencing. The Proponents may repair and replace existing fences, provided any replacement fencing in a wildlife migration corridor is consistent with the then current CPW guidelines so as to permit the movement of wildlife across the wildlife migration corridor. The Proponents may construct new fences needed for agricultural purposes (e.g., cattle and range management), provided such new fencing is consistent with CPW fencing guidelines. In addition, the existing fence line on the north end of Parcel A, between the Parcel and the adjacent Prince Creek Subdivision, shall be maintained by the Proponents at their expense.

Roads, Bridges and Trails. Existing primitive roads may be maintained, but shall not be substantially improved, widened or relocated, nor additional roads constructed, without approval of the Trust. Paving of roads on the Parcels is prohibited. In particular, the Proponents may maintain the primitive road that exists along Thomas Creek and make minor or low-impact improvements (improvements whose location, use and construction have little or no impact on the Parcels and do not negatively impact the Conservation Values) to this road to permit safe transit across the Parcels by adding gravel, culverts, or repairing ruts, and may repair and maintain existing single-lane bridges. The construction of new bridges or replacement of existing bridges shall only be done with the approval of the Trust.

The development and use of unimproved, natural-surfaced trails not to exceed 3 feet in width is permitted for agriculture, property maintenance and other approved uses in a manner that minimizes erosion and disturbance to the Parcel's wildlife and scenic values. All new trails within the Lion's Mane/Potato Bill Creek area of the Parcels must be approved by the Trust in consultation with CPW.

Utilities, Wells and Other Technology. Grants of easements and rights-of-way and/or the installation of utilities, utility lines, pipelines, water wells, pumps, communications technologies and all related infrastructure is prohibited without prior approval from the Trust, except that:

- Agricultural water wells, pumps, stock watering tanks, wildlife water guzzlers, and low-impact or portable water storage tanks are permitted as necessary for livestock and wildlife use, and management of the Parcels for such purposes, and any such existing structures or facilities shall be permitted to continue and may be maintained or replaced with similar structures or facilities;

- Low-impact utilities, such as fence-mounted solar panels or network routers may be located on the Parcels without further notice to or approval from the Trust;
- The Parcels may be used by the Proponents for purposes of micro-hydro electric development in the Thomas Creek watershed only, as may be permitted in accordance with all applicable laws and upon prior notice to the Trust;
- The Proponents shall promptly reseed and restore any surface impacts that result from the installation or maintenance of any permitted utilities or related improvements to the Parcels to as close to the Parcel's original condition as possible within three months, weather permitting, or an alternate time period approved by the Trust.
- **Resource Management and Use:** The Proponents agree not to alter the topography of the Parcels except: (a) as necessary in emergencies, including for fire control and prevention; (b) for weed control as described below; (c) as approved by the Trust and any required permitting agencies for habitat enhancement or restoration purposes; (d) as specifically permitted for improvements described above; and (e) as necessary for the uses described below, which shall be conducted in a manner not inconsistent with the preservation and protection of the Conservation Values.
- **Agriculture and Livestock Grazing:** Grazing of horses and livestock and leasing of grazing rights is permitted on the Parcels in a manner that does not result in degradation of wildlife habitat, or significant soil erosion or low soil quality as determined by the Natural Resource Conservation Service (NRCS) or its successor organization. To that effect, grazing shall be managed in accordance with a grazing management plan prepared by a competent professional acceptable to the Trust. This grazing management plan must be approved by CPW and may be periodically amended upon approval by the Trust in consultation with CPW.
- **Water Resources:** The construction, installation, maintenance, improvement and replacement of ponds, wetlands, and irrigation structures (including ditches, pipelines, headgates and related equipment) are permitted for agricultural purposes or the enhancement of wildlife habitat, provided such activities are in compliance with applicable laws. Soil, sand, rock and gravel produced during the excavation or construction of permitted ditches or ponds may be used or relocated on the Parcels in a manner not inconsistent with the preservation and protection of the Conservation Values.
- **Subdivision and Ownership:** The Proponents may sell or otherwise convey the Parcels subject to the terms and conditions of this Easement as a single parcel in the future.
- **Use of Vehicles Off-Road:** The Proponents' private use of vehicles off roads is permitted only in a manner that does not result in erosion of or significant compaction to the Parcels' soils, harassment of wildlife, or damage to the natural vegetation, ecosystems or scenic values of the

Parcels. Commercial or public use of vehicles off roads is prohibited on the Parcels, except for private or guided hunting purposes permitted by the Proponents, as described below.

- Hunting: Hunting and the leasing of hunting rights on the Parcels is permitted in accordance with all applicable laws, and may include guided hunting for youth, veterans and handicapped individuals per agreement with CPW.
- Trash: The Proponents shall not dump, permanently accumulate, or dispose of trash, garbage, or other hazardous or unsightly refuse on the Parcels, except for agricultural by-products and compostable matter (including chipped, diseased or dead wood resulting from habitat improvement or fire control) produced or used on the Parcels.
- Recreation: Private, low-impact recreational uses such as hiking, horseback riding, cross-country skiing, hunting, fishing and short-term camping are permitted on the Parcels, provided that recreational trails are limited pursuant to the permitted trails discussed below, and that any private recreational easements or agreements with neighboring landowners that predate the grant of this Easement shall be permitted.

REQUIRED MANAGEMENT PLANS AND MANAGEMENT DIRECTION

The conservation easements for Parcels A and B require the development of a grazing management plan prepared by a competent professional acceptable to the Trust. This grazing management plan must be approved by CPW and may be periodically amended upon approval by the Trust in consultation with CPW. The easements also require the Proponents to manage big game, habitat and vegetation on the Parcels according to a management plan prepared by a qualified expert satisfactory to the Trust and CPW, which shall be designed to protect critical bighorn sheep and other wildlife habitat on the Parcels. Finally, the easements require the Proponents to control noxious weeds and invasive plant species on the Parcels in accordance with the Colorado Noxious Weed Act (23 January 2006), or as such Act may be amended, and other applicable laws, and shall not intentionally introduce noxious weeds or other invasive species to the Parcels.

B. FEDERAL PARCELS C, D AND E

One conservation easement covering all of Parcels C, D and E would be held by the Eagle Valley Land Trust (the Trust), allowing the Trust to preserve and protect five stated “Conservation Values” of the Parcels in perpetuity. The conservation easements would ‘with the land’ and would be fully enforced regardless of any (potential) future sale or transfer of ownership of the Parcels. The Trust would thoroughly inspect the parcels at unspecified intervals to monitor compliance with, and otherwise enforce the terms of, the conservation easement.

The Conservation Values to be protected include:

1. Relatively Natural Habitat

2. Open Space
3. Scenic Enjoyment
4. Agriculture
5. Public Benefit

PROHIBITED USES

- Property Improvements: The installation, placement or construction of any other improvement is prohibited unless expressly permitted in the permitted uses.
- Utility Lines: The Proponents shall not install, place, construct, or enlarge any new utility lines or relocate any existing utility lines unless the Trust determines the proposed relocation or new Utility Improvement is consistent with the preservation and protection of the Conservation Values.
- Roads and Ways: The Proponents shall not permit any party to utilize existing roads or ways to provide access to any adjacent lands.
- Minerals and Other Deposits: The Proponents shall not transfer, lease or otherwise separate ownership of any mineral rights, currently owned or later acquired, from ownership of the parcels. The Proponents shall not permit any filling, excavating, dredging, mining, drilling, or exploration for or extraction of, any minerals, including oil and natural gas, coalbed methane, soils, sand, gravel, rock or other materials on, under, or in the parcels by any method.
- Off Road Vehicle Use: Commercial or public use of vehicles is prohibited except as may be necessary for any forestry activities.
- Subdivision: The Property consists of three (3) separate parcels (formerly known as Federal Parcels C, D, and E, as shown on Exhibit B [each a “Federal Parcel” and collectively, the “Federal Parcels”]) that are not physically adjacent to each other. The Proponents may sell or convey the Federal Parcels separately, provided, that each Federal Parcel shall remain permanently subject to the terms and conditions of this Easement, and no Federal Parcel shall ever be utilized for the construction of an access road or roads to any adjacent land. Except as set forth in the preceding sentence, The Proponents and the Trust agree that the division, subdivision or de facto subdivision of any Federal Parcel, whether by legal or physical process, into two or more parcels of land or partial or separate interests (including, but not limited to, condominium interests or the partition of undivided interests) is prohibited. The Proponents may own any single Federal Parcel by joint tenancy or tenancy in common; provided, however, that the Proponents shall not undertake any legal proceeding to partition, subdivide or divide in any manner such undivided interests in the single Federal Parcel. Any document conveying any Federal Parcel shall expressly state that the Federal Parcel is subject to all the terms and conditions of this Easement. In the event any Federal Parcel is conveyed separately from the entire Property

(comprised of all Federal Parcels), the conveyance deed shall specifically allocate any of the reserved rights permitted by this Easement to be attributed to such Federal Parcel which is being conveyed. Any reserved rights not specifically allocated to a Federal Parcel in a conveyance document will be deemed not conveyed and will not transfer to such Federal Parcel.

- Surface Disturbance: Except as permitted within the permitted uses, the Proponents shall not alter the surface of the land, including without limitation, moving, excavating or removing soil, sand, gravel, rock, peat or sod, in a manner that is inconsistent with the preservation and protection of the Conservation Values.
- Existing Water Features: Except as permitted within the permitted uses, the Proponents shall not alter, impair, modify or adversely change existing ponds, wetlands or stream channels in a manner that is inconsistent with the preservation and protection of the Conservation Values.
- Commercial or Industrial Activity: The Proponents shall not conduct industrial uses on the parcels. The Proponents shall not conduct commercial uses of the parcels that are inconsistent with the preservation and protection of the Conservation Values.
- Feed Lot: The Proponents shall not establish or maintain a feed lot. For purposes of the conservation easement, “feed lot” means a permanently constructed confined area or facility which is used and maintained continuously and exclusively for purposes of warm-up or fattening large numbers of livestock for market. Nothing in this section shall prevent the Proponents from seasonally confining livestock into an area, corral or other facility for warm-up or feeding, or from leasing pasture for the grazing of livestock owned by others.
- Public Access: Nothing contained herein shall be construed as affording the general public access to any portion of the parcels. The Proponents may permit public access to the parcels on such terms and conditions as it deems appropriate, provided that such access is not inconsistent with the preservation and protection of the Conservation Values. Such access shall be limited to horse, foot, ski, snowshoe or other non-mechanized access to the parcels for hunting and other recreation, shall not be construed to allow motorized or mechanized access, and shall only be exercised in a manner that is not inconsistent with the preservation and protection of the Conservation Values of the parcels.
- Trash: The Proponents may not dump or accumulate any kind of trash, sludge, or refuse on the parcels, except for farm-related trash and refuse produced on the parcels that is disposed of in a manner that is not inconsistent with the preservation and protection of the Conservation Values. The Proponents may store or accumulate agricultural products and by-products on the parcels in accordance with all applicable government laws and regulations.
- Hazardous Materials: The Proponents may use agri-chemicals on the parcels if in accordance with all applicable federal, state or local laws. Otherwise, the treatment, permanent storage, disposal or release of hazardous materials on, from or under the parcels is prohibited. For the

purpose of the conservation easement, hazardous materials shall mean any hazardous or toxic material or waste that is subject to any federal, state, or local law or regulation. Notwithstanding anything in the conservation easement to the contrary, this prohibition does not impose any liability on the Trust for hazardous materials, nor does it make the Trust an owner of the parcels, nor does it permit or require the Trust to control any use of the parcels that may result in the treatment, storage, disposal or release of hazardous materials within the meaning of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (“CERCLA”).

- Other Restricted Uses: The Proponents shall not construct or establish golf courses, sod farms, helicopter pads, airstrips or other similar developed facilities on the parcels.
- Development Rights: The Proponents hereby grant to the Trust all development rights except as specifically reserved herein, and the parties agree that such rights are terminated and extinguished.

PERMITTED USES

- New Minor Agricultural Improvements: The Proponents may construct or place three (3) minor agricultural improvements, each with a Floor Area of less than three hundred (300) square feet, or other minor agricultural improvements such as agricultural water wells, pumps, corrals, stock tanks, ponds and wildlife water guzzlers (collectively, “Minor Agricultural Improvements”), anywhere on the parcels without permission of the Trust. Prior to the construction or placement of any such Minor Agricultural Improvement, the Proponents shall notify the Trust.
- Fences: The Proponents may repair, maintain and replace any existing fences and construct new fences anywhere on the parcels, provided that said fences are not inconsistent with the preservation and protection of the Conservation Values. Any new fencing shall be consistent with then current Colorado Parks and Wildlife (“CPW”) guidelines for fencing in a wildlife migration area.
- Utility Lines: The Proponents or any utility company may repair and replace any existing utility lines in the same location with a similar structure without the Trust’s permission. The Proponents may install low impact utilities such as fence-mounted solar panels or network routers provided such utilities are not inconsistent with the Purpose.
- Signs: The Proponents may place and maintain signs on the parcels for purposes of administration, boundary identification or other informational purposes, provided that no individual sign exceeds twelve (12) square feet in size.
- Roads and Ways: The Proponents may maintain, repair and utilize any existing roads and vehicle ways on the parcels as necessary for agricultural and wildlife conservation purposes, or to manage timber, but the Proponents shall not improve any such roads or ways unless the Trust

determines the proposed improvement is consistent with the Purpose of the conservation easement.

- **Bemis Ditch:** The Proponents and the Trust acknowledge that the Bemis Ditch flows through the northern portion of Parcel C and the Proponents shall have the right to grant access to that area of the parcels for purposes relating to the maintenance, use and preservation of the Bemis Ditch, both for the Proponents and for the owners of rights in and to the Bemis Ditch.
- **Agriculture:** All agricultural uses shall be conducted using stewardship and management methods that preserve the natural resources upon which agriculture is based. Long term stewardship and management goals may include preserving soil productivity, maintaining natural stream channels, preventing soil erosion, minimizing invasive species, and avoiding unsustainable livestock grazing practices. Agricultural activities shall be conducted in a manner that does not result in soil erosion or low soil quality as determined by the Natural Resource Conservation Service (“NRCS”) or any successor agency.
- **Timber:** On a limited and localized basis, the Proponents may cut trees to control insects and disease, to control invasive non-native species, to prevent personal injury and property damage, and for domestic uses on the parcels such as firewood. The Proponents may conduct tree thinning activities to maintain the character and nature of the habitat. The Proponents shall only conduct other timber harvesting activities in accordance with a forest management plan prepared by a professional forester at the Proponents’ expense, provided that the Trust determines that said activities and management plan are not inconsistent with the preservation and protection of the Conservation Values.
- **Recreation:** The Proponents may undertake low-impact recreational uses such as wildlife watching, hiking, cross-country skiing, hunting and fishing, provided they are not inconsistent with the preservation and protection of the Conservation Values.
- **Off Road Vehicle Use:** The Proponents may use off road vehicles on the parcels for agricultural activities, the Proponents’ private access, and property maintenance in a manner that does not result in soil erosion, harassment of wildlife or damage to natural vegetation, ecosystems or scenic values.

REQUIRED MANAGEMENT PLANS AND MANAGEMENT DIRECTION

- **Bat gates, habitat and monitoring:** The Proponents and the Trust acknowledge that the parcels have several historic hard rock mining adits, and that these adits provide valuable roosting habitat for federal and state listed bat species of concern. The adits have been gated by CPW for public safety purposes as well as to provide bat habitat. The Proponents reserve the right to permit officials of CPW to enter upon the parcels annually, or more frequently if determined necessary by CPW, for purposes of monitoring the bat habitat and health of the bat populations and for maintaining, inspecting or securing the gates.

- **Resource Management**: In the event the Trust believes any resource management practice(s) are not consistent with the preservation and protection of the Conservation Values, the Trust may request that the Proponents and the Trust shall, at the Proponents' expense, consult with a mutually agreed upon resource management professional. In the event the parties are unable to agree upon a resource management professional, either party may apply to a court having jurisdiction for the appointment of such a resource professional under the authority of applicable law, such as the Uniform Arbitration Act. This professional will provide written recommendations for said resource management practice(s) not inconsistent with the preservation and protection of the Conservation Values, which recommendations shall be followed by both parties.
- **Timber**: The Proponents shall only conduct other timber harvesting activities (beyond those discussed in permitted uses) in accordance with a forest management plan prepared by a professional forester at the Proponents' expense, provided that the Trust determines that said activities and management plan are not inconsistent with the preservation and protection of the Conservation Values.
- **Weed Control**: The Proponents shall manage the parcels to control noxious weeds to the extent reasonably possible in accordance with Colorado law, and shall not intentionally introduce noxious weeds or other invasive species to the parcels.
- **Enforcement**: If the Trust finds what it believes is a violation of the terms of the conservation easement, the Trust shall immediately notify the Proponents in writing of the nature of the alleged violation ("Notice of Violation"). Upon receipt of the Notice of Violation, the Proponents shall immediately discontinue the activity or use that has caused the alleged violation and shall either: (a) restore the parcels to their condition prior to the violation in accordance with a written restoration plan ("Restoration Plan"); (b) provide a written explanation to the Trust of the reason why the alleged violation should be permitted, or (c) provide a written explanation regarding why the alleged violation is not a violation. If the condition described in clauses (b) or (c) above occurs, both parties agree to meet within thirty (30) days to resolve this difference. If the parties are unable to resolve the dispute at the meeting, the Trust may, at its discretion, take appropriate legal action. If after receipt of the Notice of Violation, the Proponents continue the activity or use that caused the alleged violation or if a court with jurisdiction determines that a violation is imminent, exists, or has occurred, the Trust may apply for an injunction to stop it, temporarily or permanently prior to the parties meeting and prior to completion of the Restoration Plan. A court may also issue an injunction to require the Proponents to restore the parcels to their condition prior to the violation, and may order the Proponents to pay any restoration costs necessitated by the Proponents' violation of the terms of this conservation easement.