

ENVIRONMENTAL ASSESSMENT

PROPOSED

BEAR CANYON-TRAIL CREEK LAND EXCHANGE

**Bear Canyon and Trail Creek Areas
Gallatin National Forest
Gallatin County and Park County Montana**

Between

DePuy Enterprises, Inc.

and the

USDA Forest Service

**Northern Region
Gallatin National Forest
Bozeman and Yellowstone Ranger Districts**

Responsible Official:

Mary Erickson, Forest Supervisor
Gallatin National Forest
P.O. Box 130, Federal Building
Bozeman, MT 59771

For further information, and send comments to:

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Bozeman Ranger District
ATTN: Bear Canyon-Trail Creek Land Exchange
3710 Fallon Street, Suite C
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406-522-2520

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Chapter 1

Purpose and Need

Introduction

This chapter discusses the purpose and need for this proposal. It also defines the proposed action, discusses the scope of action and describes the decision to be made.

The Forest Service and DePuy Enterprises, Inc., a Montana Corporation, (“**DePuy**”) are proposing to exchange lands of approximately equal value in the Bear Canyon area southeast of Bozeman and in the Trail Creek area southwest of Livingston. As part of the land exchange, the Forest Service and DePuy also propose to grant, assign and reserve permanent road and trail easements to ensure legal access to the consolidated National Forest System lands and to the consolidated DePuy lands following the exchange.

The maps enclosed in this EA illustrate this exchange proposal:

- The **Vicinity Map** shows the general location of the proposed **Bear Canyon – Trail Creek Land Exchange**.
- **Map A** depicts the current land ownership and road and trail access routes in the area.
- **Map B** depicts the proposed exchange of lands and the road and trail easements which would be created to ensure appropriate access to the lands following the exchange.

The Forest Service has prepared this Environmental Assessment (“**EA**”) to address potential environmental effects of the proposal. This EA complies with the National Environmental Policy Act (NEPA), the National Forest Management Act (NFMA), Council on Environmental Quality (CEQ) regulations, and Forest Service regulations to implement NEPA.

The project file is available for review at the Forest Supervisor’s Office, located in the Federal Building at 10 East Babcock, Bozeman, MT 59715. To review the project file, to request additional information, and to submit comments on this EA, contact the District Ranger, Bozeman Ranger District, Attention: Bear Canyon-Trail Creek Land Exchange, 3710 Fallon, Suite C, Bozeman, MT 59718, Phone 406-522-2520.

This EA is organized into five chapters.

Chapter 1 describes the purpose and need for action and the proposed action.

Chapter 2 identified issues and alternatives.

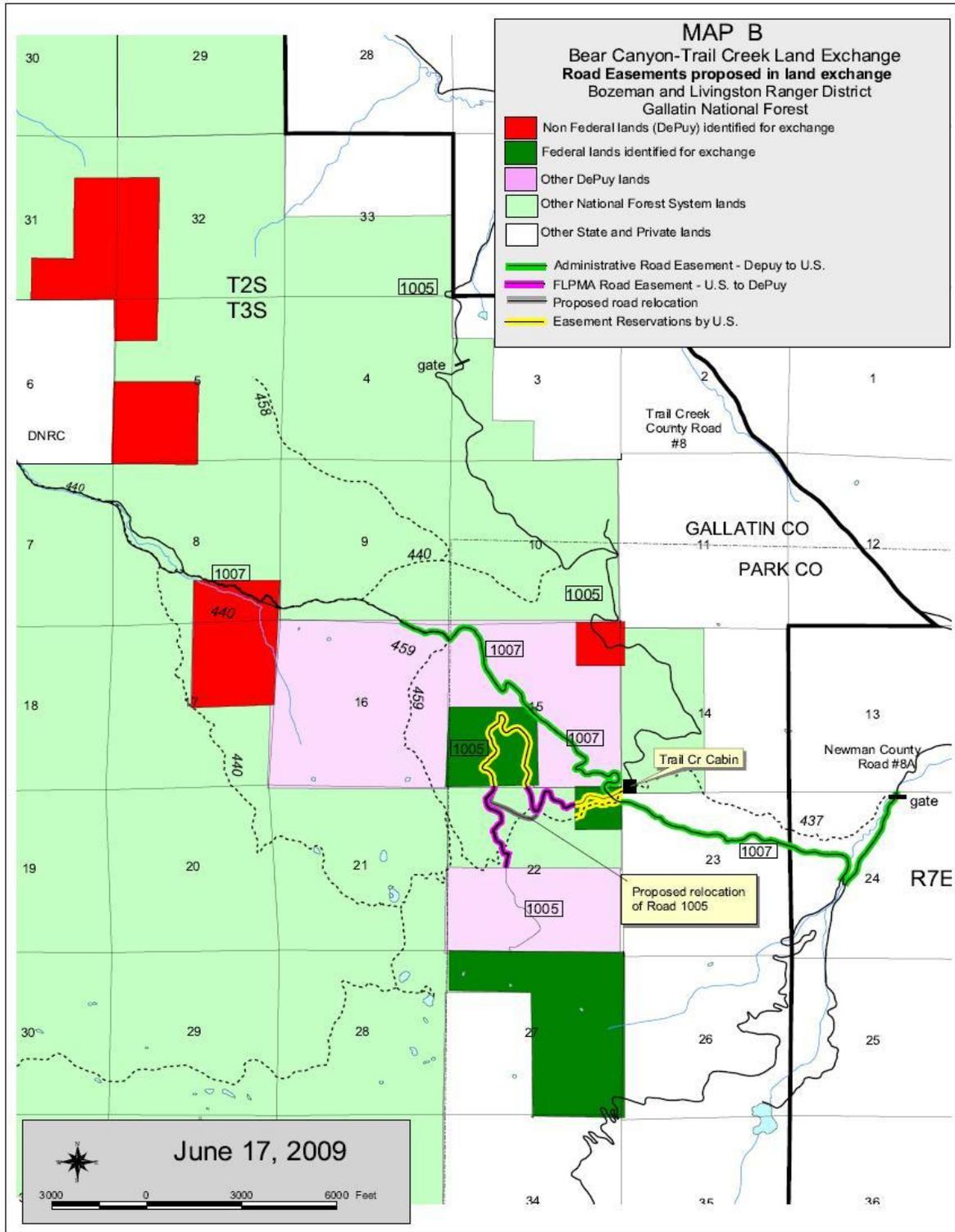
Chapter 3 describes the affected environment.

Chapter 4 analyzes the environmental consequences of the alternative actions.

Chapter 5 documents the consultation and coordination in compliance with NEPA.



Map B: Proposed Bear Canyon - Trail Creek Land Exchange.



1.1 Terminology

Within this EA, the following terminology will be consistently used:

- **“Federal lands”** will refer to the specific parcels of National Forest System land in the Trail Creek area proposed for conveyance from the U.S. to DePuy.
- **“Non-federal lands”** will refer to the specific parcels of private land in the Bear Canyon and Trail Creek areas proposed for conveyance from DePuy to the U.S.
- **“National Forest System” (“NFS”) lands** will refer to the other NFS lands located in the vicinity of Bear Canyon and Trail Creek.
- **“Private lands”** and **“DePuy lands”** will refer to other private lands in the vicinity of Bear Canyon and Trail Creek.

1.2 Purpose and Need for Action

The overall purpose and need for the proposed Bear Canyon – Trail Creek Land Exchange is to consolidate public and private land ownership in order to:

- Improve long-term land management effectiveness;
- Eliminate the potential for new roads and development in the Bear Canyon watershed, an area containing erosive soils and landside hazards;
- Enable public acquisition of private in-holdings with high wildlife and recreation values;
- Avoid future development of private lands that are highly visible from Bozeman and Interstate 90 in the Bear Canyon watershed and Chestnut Mountain area.

Intermingled public and private lands are difficult and costly to manage effectively. Both parties desire to consolidate ownership to better manage the respective NFS lands and private lands in the future (see Section 1.3.2, Goals of Proposed Action, for a more thorough discussion).

1.3 Proposed Action

The proposed Bear Canyon-Trail Creek (aka “DePuy”) Land Exchange involves several small parcels of Federal and Non-federal lands located southwest of Livingston in the Trail Creek area on the Yellowstone Ranger District, and several small parcels of Non-federal land located southeast of Bozeman in the Bear Canyon – Chestnut Mountain area on the Bozeman Ranger District. All lands considered for exchange are within the Gallatin National Forest.

1.3.1 Non-federal lands proposed for exchange:

In this proposal, DePuy would convey approximately **766** total acres of Non-federal lands to the United States (“U.S.”) for inclusion in the Gallatin National Forest. These lands are located south of Interstate 90 and east of Bear Canyon Creek. The lands are shown in red on **Map B**.

The Non-federal lands consist of six separate parcels, which total approximately 721.3 acres located in the Bear Canyon watershed in Gallatin County. The lands are within Sections 31 and 32, T2S, R7E, and Sections 5, 8, and 17, T3S, R7E. These lands are surrounded by NFS lands and State DNRC lands. If needed to balance the appraised values, an additional 44.24-acre parcel of DePuy land located within Section 15, T3S, R7E, in the Trail Creek drainage in Park County would be exchanged. Existing Goose Creek Road No.1005 extends through this parcel. The legal descriptions of the Non-federal lands considered for exchange follow:

County: GALLATIN	
<u>Township 2 South, Range 7 East</u>	<u>Acres</u>
Section 31: S½ SE¼, NE¼ SE¼, SE¼ NE¼	160
Section 32: W½ SW¼, SW¼ NW¼	120
<u>Township 3 South, Range 7 East</u>	
Section 5: Lot 4, SW¼	201.30
Section 8: S½ SE¼	80
Section 17: NE¼	160
County: PARK	
<u>Township 3 South, Range 7 East</u>	
Section 15: Lot 1	44.24
TOTAL Non-Federal lands:	765.54 acres, more or less

1.3.2 Federal Lands proposed for exchange:

The U.S. would convey approximately **645** total acres of **Federal lands** to DePuy. The Federal lands consist of three parcels, shown in dark green on **Map B**. The Federal lands are located south of I-90, in the Trail Creek drainage in Park County. The lands are within Sections 15, 22 and 27, T3S, R7E, adjacent to other private lands owned by DePuy and Trail Creek Ranch LLC. The legal descriptions of the Federal lands considered for exchange follow:

County: PARK	
<u>Township 3 South, Range 7 East</u>	<u>Acres</u>
Section 15: SW¼	160.00
Section 22: Lot 1	46.68
Section 27: Lots 1 – 4, W ½ E ½, N½ NW¼	438.28
TOTAL Federal lands:	644.96 acres, more or less

1.3.3 Deed restriction - Federal Land in Lot 1 of Section 22:

In the proposal, the patent (deed) issued for the parcel of Federal land in Lot 1 of Section 22 would contain a permanent deed restriction. (On Map B, Lot 1 is the dark green parcel in the northeast portion of Section 22.) The purpose of the deed restriction is to protect scenic and other natural resource values, particularly because Lot 1 is visible from the Trail Creek cabin and from Bear Canyon Loop Trail No. 440 as that trail crosses Lot 1. No buildings could be constructed or placed within this restricted area. The Forest Service would reserve the right to inspect for violations of the deed restriction.

1.3.4 Administrative Site Withdrawal - Federal Land in Lot 1 of Section 22:

Lot 1 of Section 22, T3S, R7E was “withdrawn” by Secretary’s Order on October 8, 1907, for use as an Administrative Site (Trail Creek Ranger Station). (On Map B, Lot 1 is the dark green parcel in the northeast portion of Section 22.) There are no structures related to the Ranger Station in Lot 1 of Section 22. The old Trail Creek cabin is located in the adjoining Section 14 on NFS land. The Forest Service uses that cabin mainly as a recreation rental cabin. The proposed land exchange would not affect the cabin. The Forest Service is preparing a Withdrawal Revocation Report and will submit it to the BLM. The Withdrawal must be revoked by BLM prior to the exchange of Lot 1 of Section 22.

1.3.5 Water Rights:

Any and all water rights held by DePuy appurtenant to the Non-federal lands would transfer to the U.S. in the exchange. Water Right No. 41H 138997-00 is co-owned by DePuy. The U.S. received a portion of this water right in 1987, through a prior exchange with DePuy. The U.S. would receive a split water right for stock water with a 1945 priority date. The remainder of this right, with the exception of stock use in Section 16, T3S, R7E, would be transferred to the U.S.

The U.S. holds no water rights or claims on the Federal lands identified for exchange.

1.3.6 Mineral Rights:

Federal Lands:

All mineral rights associated with the Federal lands are owned by the U.S. and would be conveyed to DePuy in the land exchange, with the following two exceptions:

- In Section 27, T3S, R7E, the oil, gas and other hydrocarbons are severed and held by Conoco-Phillips, Inc. Efforts by the Forest Service to acquire these outstanding rights were not successful. The U.S. holds partial surface occupancy rights associated with these severed interests, and would convey those rights to DePuy in this exchange.
- Federal oil and gas leases currently exist on the Federal lands in SW ¼ of Section 15, T3S, R7E and Lot 1 of Section 22, T3S, R7E. All oil and gas leases on the Gallatin

National Forest were suspended by the BLM following a Ninth Circuit Court (“Conner v. Burford”) ruling in 1985. The Federal oil and gas leases are held by Chevron USA Holdings, Inc. (32.20% interest) and Unit Petro Co. (67.80% interest). The U.S. would reserve these Federal oil and gas rights until these leases terminate or are relinquished. Upon termination or relinquishment, all oil and gas rights in the involved lands would automatically vest in DePuy, its successors and assigns.

Non-federal lands:

DePuy owns all mineral rights associated with the Non-federal lands, and would convey those rights to the U.S. in the exchange, with two exceptions:

- The mineral estate affecting the Non-federal land in Lot 1 of Section 15, T3S, R7E is outstanding and severed from the surface estate, and evidently held by Conoco-Phillips. Efforts by the Forest Service and DePuy to acquire these outstanding rights were not successful.
- DePuy would reserve oil and gas rights affecting the Non-federal lands in NE¼ of Section 17, T3S, R7E, and in S½ SE¼ of Section 8, T3S, R7E. This reservation would remain in effect until the two oil and gas leases affecting the Federal lands (described above) terminate or are relinquished. Upon termination or relinquishment of the Federal oil and gas leases, all reserved oil and gas rights in the Non-federal lands would automatically terminate and vest in the United States, its successors and assigns.

1.3.7 Road and Trail Access:

In developing the proposed action, the Forest Service made a concerted effort to provide reasonable, uncontested public and administrative access to the consolidated NFS lands in the area. Also DePuy and the Forest Service worked to assure that DePuy would have private road access to its consolidated lands in the Trail Creek area.

To accomplish these goals, as part of the proposed action, the Forest Service and DePuy would grant, assign and reserve the following road and trail easements to ensure that legal access exists to all of the consolidated NFS lands and the consolidated DePuy lands after the land exchange.

Forest Service Easement Reservations: (Refer to Map B, roads and trail shown in yellow):

The Forest Service would reserve permanent road easements for future access as follows:

1. Road easement for Goose Creek Road No. 1005 across Lot 1 of Section 22 and across the SW ¼ of Section 15. This reservation is subject to the right of DePuy in the future to relocate the existing road and easement to the mutual satisfaction of DePuy and the Forest Service, so that it lies solely within Section 22, T3S, R7E, in which case the Forest Service would terminate the easement reserved across Section 15.

2. Road easement for West Fork Trail Creek Road No. 1007 across Section 15 and Section 22, for Forest Service administrative purposes.
3. Trail easement for Bear Canyon Loop Trail No. 440 across Section 22.

Forest Service Road Easement Grant to DePuy: (Refer to Map B, road shown in purple)

The Forest Service would grant an easement to DePuy for portions of Goose Creek Road No. 1005 across the north half of Section 22, T3S, R7E. The easement would authorize DePuy's continued non-exclusive use of Road No. 1005, an existing National Forest System road. In addition, DePuy would have the right, in the future, to relocate the existing road and easement to the mutual satisfaction of DePuy and the Forest Service, so that it would lie solely within Section 22, T3S, R7E, and not cross the Southwestern quarter of Section 15, T3S, R7E.

DePuy Road Easement Grant and Assignment to U.S.: (Refer to Map B, road shown in green)

DePuy would grant an easement to the U.S. for portions of **West Fork Trail Creek Road No. 1007** across Section 15 and Section 16, T3S, R7E. This easement would authorize the Forest Service to use and maintain Road No. 1007 for administrative purposes.

DePuy would also assign an easement to the U.S. for portions of **West Fork Trail Creek Road No. 1007** across Sections 23 and 24, T3S, R7E. This assignment of easement would authorize the Forest Service to use and maintain Road No. 1007 for administrative purposes.

1.3.8 Options to Balance Appraised Values

Based on the approved appraisal reports, the estimated total market value of the Federal lands is **\$1,437,000**, and the estimated total market value of the Non-federal lands is **\$1,721,000**. Therefore, based on the approved appraisals, the overall value of the Non-federal lands exceeds the value of the Federal lands by approximately **\$284,000**. Chapter 3 provides more details.

Consistent with federal law and regulations, agency policy for land exchanges and the agreement reached between the parties ("Agreement to Initiate"), the proposed Bear Canyon-Trail Creek land exchange will be completed on the basis of equal market values.

The parties agree to consider the following options to equalize the overall exchange values:

Option 1: The Forest Service may make a cash equalization payment to DePuy to help equalize exchange values.

Option 2: DePuy may drop one or more parcels of Non-federal land from the exchange to help equalize values. In this option, by agreement between the parties, the first choice of parcels to consider deleting from the land exchange would be Lot 1 of Section 15, T3S, R7E.

Option 3: DePuy may reserve timber harvest rights. This option is not favored by

either party, and would only be considered if options 1 and 2 are determined not feasible.

Option 4: DePuy may donate a portion of Non-federal land value, in lieu of or in addition to Option 1, Option 2 and/or Option 3. DePuy does not favor this option.

1.4 Background

The lands in the Bear Canyon watershed, southeast of Bozeman and in the Trail Creek area southwest of Livingston provide important wildlife habitat, watershed, recreation, scenic, timber, livestock grazing and other resource values. Land ownership in these areas consists of intermingled NFS lands and private lands, along with a block of State of Montana (DNRC) lands lower in Bear Canyon. The private land “inholdings” in this area were established as checkerboard railroad grants and homesteads. Refer to **Map 1** – Current ownership.

In the early to mid-1900’s, Warren and Eva DePuy, a pioneer ranching family headquartered south of Livingston, acquired most of the private lands in the Bear Canyon - Trail Creek area. The DePuy family managed these lands primarily for cattle ranching and timber. The DePuy family has tolerated public recreational use on most their lands inside the Forest boundary, and the public has enjoyed use of these private lands along with the NFS and State lands.

Through the years, a system of low-standard roads and trails has been developed across the intermingled NFS, State and DePuy lands. The trail system is managed and maintained primarily by the Forest Service. But until recently, the Forest Service had not perfected access rights for trail segments across the DePuy and State lands. Most of the road system was developed by the DePuy family in conjunction with management of their private lands. Until recently, DePuy had not acquired road access rights across intermingled NFS lands. One key objective of the proposed land exchange is to consolidate the NFS and DePuy lands in Bear Canyon and Trail Creek, and provide legal road and trail access to the consolidated lands.

In the mid-1980’s, the Forest Service and the DePuy family completed a land-for-land exchange in the Trail Creek area, consolidating only some of the intermingled lands. At that time, the Forest Service acquired an easement from Warren and Eva DePuy for a segment of Goose Creek Road No. 1005, a National Forest road. Review of Forest Service records does not explain why the two parties did not pursue a larger land exchange in the 1980’s, to consolidate the intermingled lands in Bear Canyon, and exchange more road and trail easements. Regardless, the 1980’s exchange was considered a step in the right direction. However, it left more land consolidation and access work to be done at the present time.

In 1999, as part of a legislated land exchange (P.L.105-267 - Gallatin Land Consolidation Act of 1998) between the U.S. and Big Sky Lumber Co. (BSL), the U.S. acquired a 438-acre parcel of BSL land in Trail Creek (in Section 27, T3S, R7E). This parcel had previously been owned by Plum Creek Timber (PCTC), and most of the commercial timber was harvested. The NFS land in Section 27 adjoins DePuy and other private lands on three sides. The Forest Service has no legal road access to it. The Federal land in Section 27 is included in the proposed land exchange.

In the past decade, Warren and Eva DePuy both passed, leaving the DePuy family estate to three children. Settling the estate took several years. To pay estate taxes, the three heirs decided to sell some of their lands outside the Forest boundary, including a block of lands in Trail Creek, which was sold to Trail Creek Ranch (“TCR”) as a recreational retreat and real estate investment.

The DePuy lands located inside the Forest boundary were in a corporation, DePuy Enterprises, Inc. (“DePuy”). All stock in the corporation is now held by a daughter, Betty Jo Smith. Daryl Smith, Betty’s son, is the President of the corporation and manager of the DePuy lands. Bill Madden, a veteran Bozeman attorney, represents DePuy in discussions with the Forest Service regarding the proposed land exchange and exchange of access rights.

In 2005-2009, the Forest Service, working with the Trust for Public Land (TPL) and other conservation partners and agencies, made a concerted effort to acquire and conserve private lands in the Bozeman Pass area (immediately north of Bear Canyon) and in the Bear Canyon watershed itself. The shared goal is to protect the recreation, wildlife and watershed values, and to reduce the imminent risk of re-sale and development.

In 2008, the Forest Service, working closely with the MSU Foundation, TPL, and heirs to the Trent family in Washington, were able to acquire the 80-acre “Trent-Osborne” inholding in upper Bear Canyon, through a complex, bargain sale arrangement.

In 2007-2009, the Forest Service, TPL, Gallatin Valley Land Trust (GVLT), Gallatin County and other partners completed the Bozeman Pass Land Conservation Project. The community-driven Bozeman Pass Project conserved 2,055 acres of land in a combination of land purchases, land donation and a conservation easement. The Forest Service purchased 640 acres (Section 29, T2S, R7E), and acquired 147 acres of land along I-90 by donation (in Sections 19 and 20, T2S, R7E). Also, two new donated trail easements and one road easement were acquired by the U.S.

With the completion of the Trent-Osborne purchase and the Bozeman Pass project, the DePuy lands are now the only remaining private lands in the upper Bear Canyon watershed.

During this same timeframe, the Forest Service initiated discussions with Daryl and Betty Jo Smith, and attorney Bill Madden. Initially, those discussions focused on potential fee purchase of the DePuy inholdings in the Bear Canyon watershed, potentially in conjunction with the Bozeman Pass project cited above. However, DePuy representatives expressed strong concerns about avoiding more capital gains taxes, and indicated a preference for a land-for-land exchange with the Forest Service. Also, TPL expressed concerns about securing more LWCF funding in this area, since it was proving to be difficult to obtain LWCF funding for Bozeman Pass.

In 2007, 2008 and 2009, numerous discussions took place between the Forest Service, Bill Madden and Daryl Smith aimed at developing a specific exchange proposal, with an exchange of road and trail easements in the Bear Canyon – Trail Creek area.

In these exchange discussions, the Forest Service stated two objectives: (1) to acquire and consolidate lands in the Bear Canyon watershed, and (2) to secure trail and road easements across DePuy lands to the consolidated NFS lands.

The stated objectives for DePuy were: (1) to acquire a more manageable block of private lands in the Trail Creek area, and (2) to secure legal road access rights to its lands. In addition, DePuy expressed a strong desire to secure road access rights to its lands, with or without an exchange.

The Forest Service and DePuy reached agreement on the current exchange proposal in 2009.

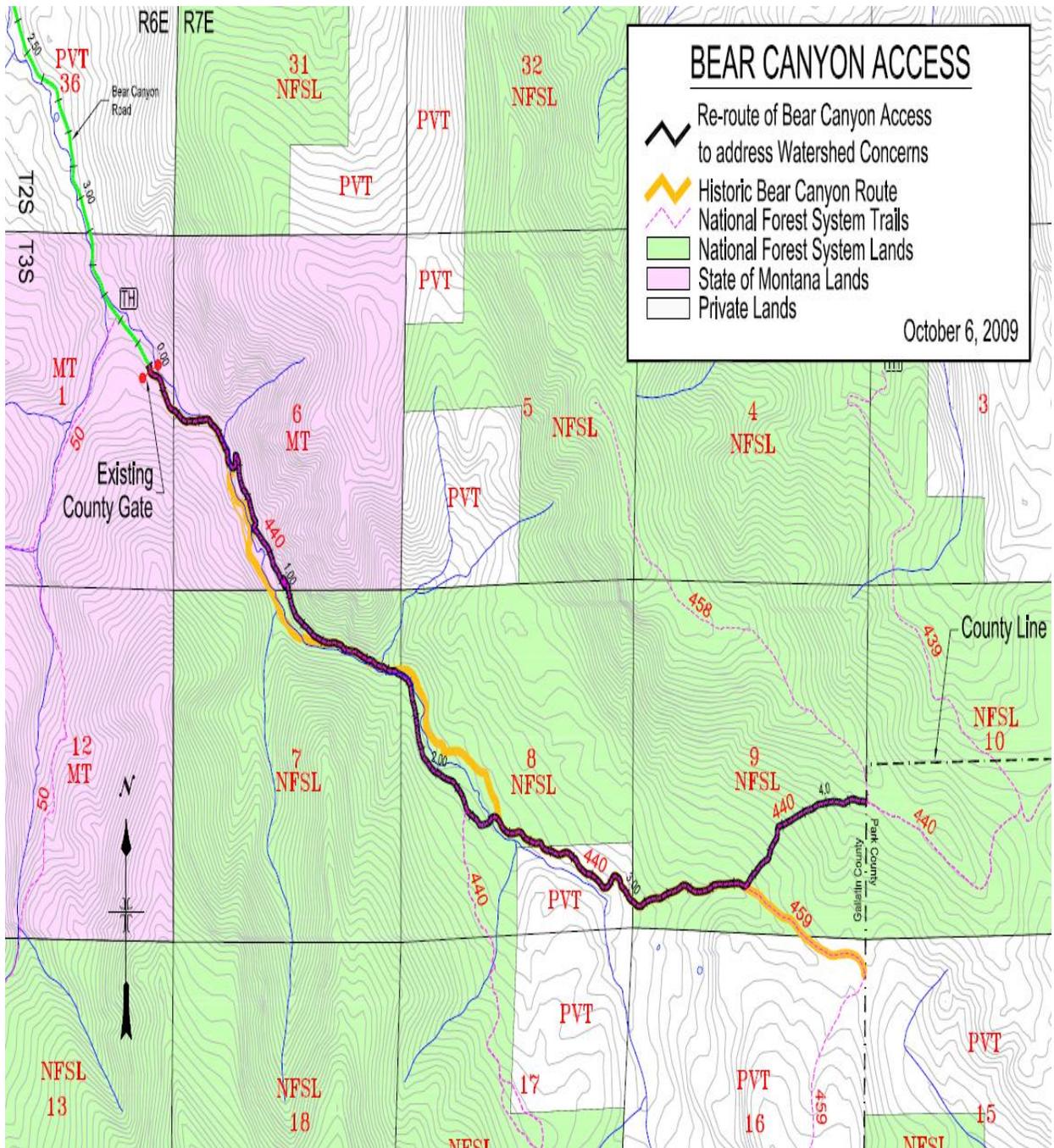
Bear Canyon contains extremely erosive soils and serious water quality issues. The Forest Service is continuing to work cooperatively with Gallatin County and the State of Montana (DNRC and Department of Environmental Quality) and others to address these issues through a watershed restoration strategy. If the DePuy lands in the upper Bear Canyon watershed were to be sold, the new owner(s) would likely want to develop a new road system into upper Bear Canyon, threatening the watershed restoration work to date and potentially re-establishing the water quality complaints that have been resolved through restoration. For these reasons, acquisition of the private lands in the watershed is very high priority for the Forest Service, and is strongly supported by the State of Montana, Gallatin County and local residents.

Also, Gallatin County has taken a position that the “Bear Canyon Road”, a low-standard, highly erosive, road that is not maintained inside the Forest boundary, is a legally-established county or “public” road extending through the watershed across intermingled State, NFS and private (DePuy) lands to the Gallatin/Park County line. The Forest Service and Montana DNRC do not accept the County’s position regarding the status of this road.

The Forest Service, DNRC and County are continuing their efforts to resolve this dispute. The parties entered into an “Interim Settlement Agreement” in 2010, and are working to finalize that agreement at this time. One of the key objectives of the proposed settlement is to re-locate the public access route away from very erosive, land-slide prone soils on the west side of the Bear Creek, onto much more stable, rocky soils on the east side of the creek. Refer to **Figure 1 – Bear Canyon Access** map, on the next page.

The proposed exchange would consolidate NFS lands in the Bear Canyon area and consolidate DePuy lands in the Trail Creek area. As further described in Chapter 4, this exchange would greatly reduce the risk of new roads and development in the Bear Canyon watershed, and reduce the associated costs and environmental impacts of developing road access to private land inholdings within the Gallatin National Forest.

Figure 1: Bear Canyon Access – Proposed Settlement Agreement



1.5 Desired Outcomes of Proposed Action

The following are desired outcomes of the proposed Bear Canyon – Trail Creek Land Exchange:

A. Improve long-term management effectiveness.

The Bear Canyon area once consisted of intermingled (“checkerboard”) parcels of NFS and private lands. Intermingled public and private lands are difficult for either party to manage effectively. Forest Service goals, which involve managing NFS lands for watershed protection, healthy forests, timber, wildlife habitat and recreation, are difficult to achieve in a checkerboard ownership pattern.

This proposed exchange, together with the recent public acquisitions of private lands in the Bear Canyon watershed (Trent-Osborne) and in the Bozeman Pass –Chestnut Mountain area, would essentially complete the consolidation of NFS lands within the Bear Canyon watershed of the Gallatin National Forest.

This proposed exchange would also consolidate the DePuy holdings in the Trail Creek area, enabling more effective management of its private lands in the future.

This proposed exchange would also provide legal road and trail access to the consolidated NFS lands and to the consolidated DePuy lands.

The 1987 Forest Plan for the Gallatin National Forest calls for acquisition of lands from willing owners when those lands are: “Tracts which improve National Forest access, resolve administrative concerns and/or reduce administrative costs” (II-25)

B. Eliminate potential need for new roads in the Bear Canyon watershed.

The proposed land exchange would transfer ownership of the DePuy lands in the Bear Canyon watershed, an area containing erosive soils and landslide hazards, to the U.S.

C. Enable public acquisition of lands with high wildlife habitat and recreation values.

The lands offered for exchange by DePuy in the Bear Canyon drainage have potential to provide important public recreation opportunities. Additionally, these lands provide wildlife habitat in the northern Gallatin Mountain Range.

D. Avoid future development of private land inholdings in the Bear Canyon-Stinger Basin areas that are highly visible from Bozeman and Interstate 90.

Most of the lands identified for public acquisition are very visible from the community of Bozeman and Interstate 90 as part of Chestnut Mountain, a prominent landmark. Public acquisition of these lands would avoid their future development that could adversely impact the existing viewshed.

1.6 Cumulative Actions

A variety of past, present, and reasonably foreseeable future actions may combine with the

Proposed Action to be cumulative actions. Individually, they could have incremental effects, and when combined with the Proposed Action, could result in cumulative environmental impacts (see discussion in Chapter 4).

The Forest Service conducted an environmental analysis of the Proposed Action using a team of resource specialists involved with management of NFS lands and resources in the Bear Canyon and Trail Creek areas.

The interdisciplinary team (ID Team) identified other past, present and reasonably foreseeable future actions that could combine with the Proposed Action to result in cumulative environmental impacts. In Chapter 4, the analysis of environmental consequences identifies these actions, as applicable for specific issues and resources. Other projects that affected public lands in Bear Canyon and Trail Creek since 1995 are considered as cumulative actions.

1.7 Management Direction in the Forest Plan

The Forest Plan for the Gallatin National Forest (1987) provides direction for management activities through identified goals, standards, guidelines, and designations of management areas. Goals and objectives that apply to the lands in the proposed Bear Canyon – Trail Creek Land Exchange include:

- *Manage national forest lands in the present ownership patterns except where opportunities arise to accomplish specific objectives (II-2, A(19)).*
- *Land adjustments will be made when analysis shows them to be advantageous to the public (II-6, k).*
- *Exchange, donation, purchase and easement authority will be used to improve National Forest access, resolve administrative concerns or reduce administrative costs.(II-25,12).*

1.8 Scope of the Proposed Action

This EA discloses environmental impacts that would occur from the entire scope of the decision to be made. Scope is defined at 40 CFR 1508.25 as the range of actions, alternatives and impacts to be considered in an EA. The scope of actions is limited to the proposed land exchange and the associated reservation and granting of road and trail easements. The analysis herein is relevant to those actions (including No Action) for direct, indirect and cumulative environmental impacts. This EA is not a general land and resource management plan for the Gallatin National Forest.

This EA is tiered to the Gallatin Forest Plan Final Environmental Impact Statement and Record of Decision (signed 9/23/87). This EA does not re-analyze Management Area (MA) allocations specified in the Forest Plan, nor does it seek to re-examine Federal regulations or Forest Service policy regarding land exchanges or land use actions.

Implementation of the Proposed Action would not specifically address future management of the lands to be acquired by the U.S. Those decisions would be made in amendments of the Forest Plan, other Forest Plan revision procedures, or in other project-level decision procedures. In the interim, the Gallatin National Forest would manage the acquired lands consistent with Forest Plan direction for management of surrounding NFS lands. Implementation of the proposal would not establish new MAs or change travel management.

Implementation of the Proposed Action would also not specifically address future management of the Federal lands to be exchanged to DePuy. If development is proposed for any of those lands in the future, all appropriate permitting and public review will occur at that time. There are no known current plans for development of any lands considered for exchange to DePuy.

In consultation with the U.S. Fish and Wildlife Service (USFWS), the Forest Service has completed a biological assessment (BA) for effects on federally-listed threatened or endangered species. USFWS has concurred with the findings in the BA for this land exchange proposal.

1.9 Decision to be made

The Forest Supervisor, Gallatin National Forest, is the Deciding Official. This EA is not a decision document. Rather, this EA discloses the environmental consequences of implementing the Proposed Action and the “No Action” alternative to that action. It does not identify the alternative to be selected by the Deciding Official. The EA serves to:

- (a) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) (40 CFR 1508.9(a)).
- (b) Aid in informing the decision process and in complying with NEPA should it be found that an EIS is not necessary.

The decision will include all elements of the Proposed Action:

- Parcels of land to be included in the exchange;
- Road and Trail easements to be reserved or granted;
- Mineral rights to be exchanged and reserved;
- Federal patent restriction for Lot1 of Section 22;
- Withdrawal revocation for Lot 1 of Section 22;
- Other mitigation and monitoring measures, including avoidance, minimization, restoration, elimination or compensation; and
- Whether to implement the proposed land exchange.

A decision to implement the Proposed Action will require the Deciding Official to issue a Finding of No Significant Impact. The Decision and the rationale for that decision will be stated in the Decision Notice.

1.10 Documents Incorporated by Reference

This EA incorporates by reference the following specialist reports and NEPA documents with information for relevant programs, plans and projects. These documents are available in the project file:

- Specialist Reports for the Bear Canyon – Trail Creek Land Exchange Environmental Assessment, February 2008 through September 2009. Specialist reports completed for major issues and relevant Forest resources.
- Planning Documents for the Canyon – Trail Creek Land Exchange Environmental Assessment, December 2008 through July 2009.

Chapter 2 Alternatives

Introduction

This chapter discusses the results of agency scoping and the public involvements process. It identifies the issues and alternatives evaluated in this EA, and it discusses mitigation measures.

Section 102(2)(e) of the National Environmental Policy Act (NEPA) requires Federal agencies to study, develop, and describe appropriate issues and alternatives for proposed courses of action. Issues may be expressed as interests, concerns, disputes or debates about potential effects of an action. NEPA requires Federal agencies to identify and assess a range of reasonable alternatives to recommended courses of action, including taking no action (Sec. 102 [42 USC 4332]; 40 CFR 1502.14).

Alternatives in this EA were developed in response to issues that scoping determined to be import to the decision. Scoping also identified other issues that are not important or have been covered adequately in other environmental documents. Documents related to public scoping and development of issues and alternatives are available in the project file.

2.1 Public Involvement

On June 16, 2009, the Forest Service mailed a letter providing information about the project and soliciting comment to 52 interested and/or affected individuals and organizations. This outreach generated four substantive public or agency comments.

The Interdisciplinary Team (ID Team) identified five important areas of concern and several minor areas of concern. Topics identified as important to the interested and affected public and/or to the Gallatin National Forest include:

- (1) Assurance of continued public access to Forest land, including motorized access;
- (2) Development on private lands within the National Forest;
- (3) Wildlife;
- (4) Status of Bear Canyon Road;
- (5) Water quality in Bear Canyon Creek.

2.2 Significant Issues

The ID team determined that two alternatives, No Action and the Proposed Action, would adequately identify and resolve any conflicts associated with the significant issues:

Alternative 1 – No Action, *Do not implement the land exchange*

Alternative 2 – Proposed Action, *Implement the land exchange*

The comparison of these alternatives led to identification of the following four significant issues:

Issue 1 – Water Quality-Stream Sedimentation

Issue 2 – Wildlife-Maintenance or Loss of Habitat

Issue 3 – Visual Quality

Issue 4 – Public, private, and administrative Access

Issue 1 – Water Quality

Ground disturbing activities such as timber harvest, residential development, and road construction can increase sediment runoff. Increased runoff can deliver higher levels of fine sediment to stream channels, diminishing water quality and overall stream habitat quality.

Sediment runoff in Bear Canyon was the subject of a water quality complaint by Montana DEQ. Although this complaint has been resolved, any development of private lands and associated road development that could occur in absence of the proposed land exchange could increase runoff and stream sedimentation, which could in turn diminish water quality in Bear Canyon.

Issue 2 – Wildlife Habitat

Montana Department of Fish Wildlife and Parks (MFWP) identified the wildlife habitat in the project area as important to maintaining populations of elk, deer, black bear and other species. The lands in the Bear Canyon area are within an important wildlife migration corridor link between the Gallatin Range and the Bridger Mountains to the north. Consolidation of NFS lands near a wildlife migration link would allow long-term protection of the migration corridor.

Issue 3 – Visual Quality

Any development or other disturbance of forested lands that are visible from a populated area and a heavily traveled highway has the potential to greatly alter prominent views. Additionally, such disturbance to lands immediately adjacent to heavily used recreation areas has the potential to affect valued visual resources.

Lands proposed for exchange in this project include forested lands that visible from Interstate 90, from the community of Bozeman, and from the Trail Creek cabin, a popular recreation facility on NFS lands. Development or timber harvest on any of these lands would impact visual quality.

Issue 4 – Public, Private and Administrative Access

Changes in land ownership patterns can alter longstanding access patterns, resulting in potential conflict between private landowners and people using the National Forest. Access to NFS lands in the project area serves diverse uses, including livestock grazing, timber management, dispersed recreation, wild land fire protection and other management needs. Access to private lands also serves diverse uses, including timber management, livestock grazing and potential residential or commercial development.

The Federal and Non-federal lands considered for exchange contain several existing trails and roads. In some cases, legal access rights currently exist on these facilities, but in other cases, legal access rights may not presently exist. Public agencies and local governments have expressed concern during scoping that existing levels of public access must not change.

2.3 Other Issues

Agency and public scoping also identified other interests and concerns. This EA does not analyze these other issues in detail, because implementing either of the alternatives would either have no effect or only minor effects related to these other issues.

Fire Management

There would be no substantial change in fire management and fire suppression efforts with either action. Whether in public or private ownership, the lands proposed for exchange would still be accessible for responding to wildfires and other emergency and health and safety purposes.

Noxious Weeds

The NFS and DePuy lands in the Bear Canyon -Trail Creek area have historically been used for a variety of purposes including timber, livestock grazing and recreation. All of these uses have the potential to introduce noxious weeds. The proposed land exchange would not change this risk.

Noxious weeds found in the Bear Canyon and Trail Creek areas include hounds tongue, musk thistle, tansy, yellow toadflax, and sulfur cinquefoil. These weeds occur mostly along road and trails. These weeds tend to occur and spread with ground-disturbing activities such as road use and development, timber harvest, livestock grazing and recreation.

The Gallatin National Forest has an ongoing monitoring program to identify and treat infestations of noxious weeds. A weed inventory is conducted on all newly-acquired NFS land. The weed species, location, and density would be recorded.

After the weed inventory, a treatment strategy is developed based on the weed species, size of infestation and location. For example: if the weed species is a new invader on the Forest, then the management goal is “eradication”. These high priority sites are treated and monitored at least twice a year, to ensure treatment is successful and the weeds do not reproduce. On the other hand, if the species is fairly common and the patch is less than five acres, then the management goal is “control” (*limit the spread and reduce density, usually through herbicide applications*). However, if the species is abundant then the goal is “containment” (*spray weeds along roadsides, release biological control agents, and treat small satellite patches with herbicides*).

Sensitive Plants

Forest Service staff identified potential habitat of four plant species considered sensitive (federally listed as threatened or endangered, special forest products, or other species of

concern), but did not find any occurrences of such species on the lands considered for exchange.

Wetlands and Floodplains

Approximately 3.9 acres of wetlands and floodplains occur on the Non-federal lands, while approximately 2.4 acres of wetlands and floodplains occur on the Federal lands. Thus, the amount of wetlands and floodplains potentially affected by an exchange is small. The proposed exchange would result in a net increase in amount of wetland and floodplain on NFS lands. As such, the exchange would comply with the two Executive Orders for wetlands and floodplains.

Livestock Grazing

Federal Lands: The Bear Canyon-Trail Creek areas contain four livestock grazing allotments: Bear Canyon, Goose Creek, Trail Creek and Bald Knob. Currently four permit holders (DePuy, Trail Creek Ranch LLC, Roy Metcalf and Darrell Kurk) hold six different grazing permits.

In this proposed land exchange, three of the six permits would be affected. The Kurk and Metcalf grazing permits would not be affected. The three affected permits would be as follows:

- Within the Bear Canyon Allotment, the grazing permits held by DePuy would need to be modified to reflect the change in ownership. Since the Non-federal lands are within the Bear Canyon Allotment, the total permitted numbers would not change.
- Within the Trail Creek Allotment, the term grazing permit held by DePuy would change to a Term On/Off Grazing Permit, since NFS acreage would be less than 1/3 of the total acres in the allotment.
- The Bald Knob Allotment would be located entirely on private land. Therefore, the allotment would no longer be suitable as a National Forest allotment, and the Forest Service would take appropriate steps to close it in the future. The permit for this allotment is currently held by Trail Creek Ranch LLC (“TCR”).

On January 5, 2010, the Forest Service sent letters to TCR and to DePuy regarding the proposed land exchange. On January 20, 2010, Andy O’Hair responded for TCR, and he indicated in writing that TCR will retain its grazing permit for two years, i.e. for the 2010 and 2011 grazing seasons. On January 14, 2010, Daryl Smith responded for DePuy, and indicated in writing that DePuy will retain its grazing permits for two years, i.e. for the 2010 and 2011 grazing seasons.

Non-Federal Lands: DePuy currently allows O’Hair Ranch to graze cattle on the Non-federal lands under a year-to-year lease. After the exchange, the Forest Service would determine whether or not to continue livestock grazing on the acquired lands.

Timber Resources

In the fall of 2007, a qualified private timber consultant, Craig Kamps, conducted an analysis of merchantable timber volumes and estimated market values for the Federal lands and Non-federal lands considered for exchange. In 2008, Forest Service timber specialists (Nate Motzko and Steve Martell) reviewed the timber report prepared by Mr. Kamps and conducted a check cruise.

The Forest Service staff determined that the timber volume estimates were reasonably accurate.

Following are the 2007 estimated merchantable timber volumes on the Federal and Non-federal lands identified for exchange:

	<u>Merchantable Timber Data</u> <i>(Volume in thousand board feet (MBF))</i>	
	<u>Timber Acres</u>	<u>Volume</u>
<u>Township 3 South, Range 7 East</u>		
Section 15:	57	570
Section 22:	22	220
Section 27:	382	1,864
TOTALS, <i>Federal lands</i>:	461	2,654
<u>Township 2 South, Range 7 East, Sections 31 and 32</u> -and- <u>Township 3 South, Range 7 East, Section 5</u>	417	3,858
<u>Township 3 South, Range 7 East, Sections 8 and 17</u>	37	303
<u>Township 3 South, Range 7 East, Section 15</u>	40	173
TOTALS, <i>Non-federal lands</i>:	494	4,334

In summary, the acreage of merchantable timber on the Federal lands is very similar to the acreage of merchantable timber on the Non-federal lands. The volume of timber on the Non-federal lands exceeds the volume on the Federal lands by approximately 1, 680 MBF. Most of the timber on the Non-federal lands is within Sections 31, 32 and 5, in the upper Bear Canyon area. These private parcels currently do not have permitted legal access across NFS lands.

Cultural Resources

The Forest Service conducted an archeological survey of the Federal lands considered for exchange. Three historic or archeological sites were located in the general vicinity, but none were located on the lands proposed for exchange and none would be affected by the exchange.

Mineral Potential and Risk of Development

The Forest Service found low mineral potential and low risk for development for lands in the proposed exchange. This finding is based on a lack of evidence, both physical and documented, of past mineral development in the area and unfavorable site geology (Werner 2009).

Hazardous Materials

Forest Service staff completed hazardous materials screening and inspections for all lands proposed for exchange. No evidence of hazardous materials or petroleum products was identified, and no further investigations were recommended (White 2009 and 2010).

2.4 Alternatives Considered in Detail

The ID Team determined that two alternatives, No Action and the Proposed Action, would adequately identify the effects associated with significant issues:

- **Alternative 1 – No Action**
Do not implement proposed land exchange.
- **Alternative 2 – Proposed Action**
Implement proposed land exchange.

These two alternatives were determined to be adequate because: (a) the importance of environmental issues could be minimized through application of mitigation and design features to the Proposed Action; and (b) the effects can be adequately understood through comparison of the Proposed Action and No Action Alternatives.

2.4.1 Alternative 1 – No Action *Do Not Implement Proposed Land Exchange*

This alternative is required by NEPA (40 CFR 1500-1508). It represents reasonably foreseeable conditions that would be expected to occur in the absence of the proposed land exchange. Alternative 1 would not change the existing land ownership in the Bear Canyon and Trail Creek areas, or alter public, private, or administrative access routes in those areas.

2.4.2 Alternative 2 – Proposed Action *Implement Proposed Land Exchange and Reserve/exchange Easements*

Alternative 2 would implement the Proposed Action, which was developed to meet the purpose and need for action, described in Chapter 1. This alternative implements an exchange of lands to consolidate NFS lands in Bear Canyon and DePuy lands in Trail Creek. This alternative includes the grant, assignment and reservation of road and trail easements as described in Chapter 1.

The Forest Service presented this alternative as the Proposed Action during public scoping in June of 2009. The Proposed Action includes the following components:

Lands Considered for Exchange:

Non-federal lands: DePuy would exchange to the U.S., for inclusion in the Gallatin National Forest, approximately 765.54 acres of land, as shown in red on Map B, and described as follows:

- Six parcels of land, approximately 721.3 acres in total, in the Bear Canyon watershed in Gallatin County. The lands are within Sections 31 and 32, T2S, R7E, and within Sections 5, 8 and 17, T3S, R7E. These lands are surrounded by NFS and State lands.

- An additional 44.24-acre parcel of private (DePuy) land located within Section 15, T3S, R7E, in the Trail Creek drainage in Park County is also included if needed to balance the appraised values. Existing Goose Creek Road No. 1005 extends through this parcel.

Federal lands: In exchange, the U.S. would convey to DePuy a total of approximately 644.96 acres of lands in three separate parcels, as shown in dark green on Map B.

The Federal lands are located in the Trail Creek drainage in Park County, within Sections 15, 22 and 27, T3S, R7E, adjacent to other private lands owned by DePuy and by Trail Creek Ranch.

Deed restriction for Lot 1 of Section 22:

In this exchange proposal, the patent for the parcel of Federal land in Section 22, T3S, R7E would contain a permanent deed restriction to protect scenic and other natural resource values. No buildings could be constructed or placed within this restricted area. The Forest Service would reserve the right to inspect for violations of the deed restriction. (On Map B, Lot 1 is the dark green parcel in the northeast portion of Section 22.)

Administrative Site Withdrawal:

Lot 1 of Section 22, T3S, R7E was “withdrawn” by Secretary’s Order on October 8, 1907, for use as an Administrative Site (Trail Creek Ranger Station). There are no structures related to the Ranger Station in Lot 1 of Section 22. The Forest Service is currently preparing a Withdrawal Revocation Report and will submit it to the BLM. The Withdrawal must be revoked by BLM prior to the exchange of Lot 1 of Section 22. (On Map B, Lot 1 is the dark green parcel in the northeast portion of Section 22.)

Water Rights:

Water Right No. 41H 138997-00 is co-owned by DePuy. The U.S. received a portion of this water right in 1987, through a prior exchange with DePuy. The U.S. would receive a split water right for stock water with a 1945 priority date. The remainder of this right, with the exception of stock use in Section 16, T3S, R7E, would transfer to the U.S. The U.S. holds no water rights or claims on the Federal lands identified for exchange.

Mineral Rights:

Federal Lands:

All mineral rights associated with the Federal lands are owned by the U.S. and would be conveyed to DePuy in the land exchange, with the following two exceptions:

- In Section 27, T3S, R7E, the oil, gas and other hydrocarbons are severed and held by Conoco-Phillips. Efforts by the Forest Service and DePuy to acquire these outstanding rights were not successful. The U.S. holds partial surface occupancy rights associated with these severed interests, and would convey those rights to DePuy in this exchange.

- Federal oil and gas leases currently exist on the Federal lands in SW ¼ of Section 15, T3S, R7E and Lot 1 of Section 22, T3S, R7E. All oil and gas leases on the Gallatin National Forest were suspended by the BLM following a Ninth Circuit Court (“Conner v. Burford”) ruling in 1985. The Federal oil and gas leases are held by Chevron USA Holdings, Inc. (32.20% interest) and Unit Petro Co. (67.80% interest). The U.S. would reserve these Federal oil and gas rights until these leases terminate or are relinquished. Upon termination or relinquishment, all oil and gas rights in the involved lands would automatically vest in DePuy, its successors and assigns.

Non-federal Lands:

DePuy owns all mineral rights associated with the Non-federal lands, and would convey those rights to the U.S. in the exchange, with two exceptions:

- The mineral estate associated with the Non-federal land in Lot 1 Section 15, T3S, R7E is outstanding and severed from the surface estate, and held by Conoco-Phillips. Efforts by the Forest Service and DePuy to acquire these outstanding rights were not successful.
- DePuy would reserve oil and gas rights affecting the Non-federal lands in NE¼ of Section 17, T3S, R7E, and in S½ SE¼ of Section 8, T3S, R7E. This reservation would remain in effect until the two oil and gas leases affecting the Federal lands (described above) terminate or are relinquished. Upon termination or relinquishment of the Federal oil and gas leases, all reserved oil and gas rights in the Non-federal lands would automatically terminate and vest in the United States, its successors and assigns.

Road and Trail Access:

As part of the Proposed Action, the Forest Service and DePuy would grant, assign and reserve the following road and trail easements to ensure that legal access exists to the consolidated NFS lands and the consolidated DePuy lands after the land exchange.

Forest Service Easement Reservations: (Refer to Map B, roads and trail shown in yellow.)

The Forest Service would reserve permanent road easements for future access as follows:

1. Road easement for Goose Creek Road No. 1005 across Section 22 and Section 15. This reservation is subject to the right of DePuy in the future to relocate the existing road and easement to the mutual satisfaction of DePuy and the Forest Service, so that it lies solely within Section 22, T3S, R7E.
2. Road easement for West Fork Trail Creek Road No. 1007 across Section 15 and Section 22, for Forest Service administrative purposes.
3. Trail easement for Bear Canyon Loop Trail No. 440 across Section 22.

Forest Service Road Easement Grant to DePuy:

The Forest Service would grant an easement to DePuy for portions of Goose Creek Road No. 1005 across the north half of Section 22, T3S, R7E. The easement would authorize DePuy's continued non-exclusive use of Road No. 1005, an existing NFS road. DePuy would have the right, in the future, to relocate the existing road and easement to the mutual satisfaction of DePuy and the Forest Service, so that the road would lie entirely within Section 22, T3S, R7E, and not cross Section 15, T3S, R7E. (Refer to Map B, road shown in purple)

DePuy Road Easement Grant to U.S.:

DePuy would grant an easement to the U.S. for portions of **West Fork Trail Creek Road No. 1007** across Section 15 and Section 16, T3S, R7E. This easement would authorize the Forest Service to use and maintain Road No. 1007 for administrative purposes.

DePuy Road Easement Assignment to U.S.:

DePuy would also assign an easement to the U.S. for portions of **West Fork Trail Creek Road No. 1007** across Sections 23 and 24, T3S, R7E. This assignment of easement would authorize the Forest Service to use and maintain Road No. 1007 for administrative purposes. (Refer to Map B, road shown in green)

Options to Balance Appraised Values:

Based on the approved appraisal reports, the estimated total market value of the Federal lands is **\$1,437,000**, and the estimated total market value of the Non-federal lands is **\$1,721,000**. Therefore, based on the approved appraisals, the overall value of the Non-federal lands exceeds the value of the Federal lands by approximately **\$284,000**. Chapter 3 provides more details.

The Proposed Action would be completed on the basis of equal market values. The parties to the exchange would consider the following options to equalize the overall exchange values:

Option 1: The Forest Service may make a cash equalization payment to DePuy.

Option 2: DePuy may drop one or more parcels of Non-federal land from the exchange to help equalize values. In this option, by agreement between the parties, the first choice of parcels to consider deleting from the land exchange would be Lot 1 of Section 15, T3S, R7E.

Option 3: DePuy may elect to reserve timber harvest rights. This option is not favored by either party, and it would only be considered if options 1 and 2 are determined not feasible.

Option 4: DePuy may elect to donate a portion of Non-federal land value, in lieu of or in addition to Option 1, Option 2 and/or Option 3. DePuy does not favor this option.

2.5 Alternatives Considered and Eliminated from Detailed Analysis

Forest Service policy on land exchanges requires consideration of a direct purchase alternative (FSH 5409.13). This alternative was considered, but not evaluated in detail for the Bear Canyon – Trail Creek Land Exchange. Except for cash equalization funds that may be needed to balance the appraised values, DePuy is not interested in selling its lands to the U.S., only exchanging those lands for NFS lands of equal value. No other alternatives were considered, since the Proposed Action fully addresses the purpose and need for action, and no other action is available.

2.6 Mitigation Measures

Forest resource specialists have identified mitigation measures to provide appropriate avoidance, minimization, restoration, elimination, or compensation for impacts (40CFR 1508.2). Mitigation measures are presented below for relevant issues and National Forest resources:

2.6.1 Mitigation for Issue 3 – Visual Quality

To mitigate future changes in visual quality from the Trail Creek Cabin, a popular recreation amenity, a patent restriction would be placed on the Federal land in Lot 1, Section 22, T3S, R7E. This restriction would prohibit construction of any buildings on the parcel and allow periodic compliance inspections by the Forest Service.

2.6.2 Mitigation for Issue 4 – Public, Private, and Administrative Access

The Forest Service would reserve trail and road easements on the Federal lands identified for exchange, to mitigate any potential loss of public or administrative access rights.

By reserving easements, Goose Creek Road No. 1005 would remain available for public access across Lot 1 of Section 22, T3S, R7E and across the SW ¼ of Section 15, T3S, R7E. However users would not be able to leave the road without trespassing onto private lands.

Similarly, by reserving an easement, Bear Loop Trail No. 440 would also be available for continued public trail use across Lot 1, Section 22, T3S, R7E. Private land directly adjacent to these transportation routes are not highly sought after for recreation use. Users would continue to use these roads and trails to reach NFS lands more valued for recreation activities.

By reserving easements, Forest Service administrative road access would be ensured on Road No. 1007 through Section 15 and Section 22, T3S, R7E.

In addition, in 2008 the Forest Service secured valuable public trail easements on portions of Bear Loop Trail No. 440 across DePuy land in Section 8, T3S, R7E, as well as on portions of Trail No. 459 across DePuy land in Section 16, T3S, R7E.

Chapter 3

Affected Environment

Introduction

Chapter 3 begins with a general description of the lands being considered for exchange in this project. A more detailed description of the biological, physical, social, economic, and regulatory conditions specific to each of the four significant issues raised by implementation of the alternative actions described in Chapter 2 follows. Existing conditions related to the minor issues identified in Chapter 2 are then described in less detail.

3.1 Analysis Area

The analysis area includes the lands considered for exchange and the lands adjacent to all trail, and road easements to be reserved, granted or assigned as part of the Proposed Action.

3.2 Location

The lands considered for exchange are located in the Upper Bear Canyon – Chestnut Mountain area, southeast of Bozeman, Montana and in the Trail Creek area, southeast of Livingston, Montana. The lands range from two to seven miles south of Interstate 90.

The identified lands are located on the Bozeman and Yellowstone Ranger Districts of the Gallatin National Forest. Refer to the Vicinity Map, Map A and Map B in Chapter 1.

The primary route of travel to the lands in the Trail Creek area is via Trail Creek County Road to Goose Creek Road No. 1005 from the northeast. The primary route of travel to lands in the Bear Canyon area is via Bear Canyon County Road to Bear Loop Trail No. 440 from the northwest.

The general physical setting consists of timbered slopes, interspersed meadows and stream bottoms. The lands are in the northern Gallatin mountain range and contain relatively wet, productive soils. Elevations range from about 6,000 to 7,100 feet. Slopes range from steep to moderately steep, with little level ground on any lands considered for exchange.

3.2.1 Federal Lands

The Federal lands consist of a total of approximately 644.96 acres in three separate parcels, as shown in dark green on Map B. The Federal lands are located in the Trail Creek drainage in Park County, within Sections 15, 22 and 27, T3S, R7E. Two existing roads (Goose Creek Road No. 1005 and West Fork Trail Creek Road No. 1007) cross the Federal lands. In an exchange, the Forest Service would reserve a full rights easement for Road No. 1005 and an administrative use easement for Road No. 1007.

One segment of Bear Loop Trail No. 440 also crosses the Federal lands in Lot 1 of Section 22. In an exchange, the Forest Service would reserve a full rights easement for Trail No. 440.

The Federal lands adjoin private lands owned by DePuy and Trail Creek Ranch LLC (TCR). The Federal parcel in the SW ¼ of Section 15 adjoins DePuy lands on three sides. The Federal parcel in Lot 1 of Section 22 adjoins DePuy lands to the north and TCR land to the east. The Federal parcel in Section 27 adjoins DePuy lands to the north and TCR lands on three sides.

Trail Creek Cabin, a popular public recreation facility of the Gallatin National Forest, is close to the northeast corner of Lot 1 of Section 22. To protect the visual quality of this resource, a deed restriction prohibiting any construction of buildings would be placed on Lot 1 prior to transfer.

3.2.2 Non-federal Lands

In consideration for the Federal lands described above, DePuy would exchange to the U.S., for inclusion in the Gallatin National Forest, a total of approximately 765.54 acres in seven separate parcels, as shown in red on Map B. Six of the DePuy parcels, totaling approximately 721.3 acres, are located in the Bear Canyon watershed in Gallatin County. The lands are within Sections 31 and 32, T2S, R7E, and within Sections 5, 8, and 17, T3S, R7E. An additional 44.24-acre parcel, located within Section 15, T3S, R7E, in the Trail Creek drainage in Park County would be included in the exchange if needed to balance values. The existing Goose Creek Road No. 1005 extends through this parcel.

Other than the land in Section 17, which abuts other private lands of DePuy to the east, the Bear Canyon watershed lands of DePuy proposed for exchange into the Gallatin National Forest are fully surrounded by NFS lands or State DNRC lands or both. The parcel of DePuy land located in the Trail Creek drainage abuts NFS lands to the north and east and abuts private lands to be retained by DePuy to the west and south.

3.3 Forest Plan Direction

The Forest Plan (1987) provides direction for management of the Gallatin National Forest. The Forest Plan is available in the project file. The Plan sets forest-wide goals and objectives, standards and guidelines. Goals and objectives that apply to the lands in the proposed Bear Canyon – Trail Creek Land Exchange include:

- *Manage national forest lands in the present ownership patterns except where opportunities arise to accomplish specific objectives (II-2, A(19)).*
- *Land adjustments will be made when analysis shows them to be advantageous to the public (II-6, k).*
- *Exchange, donation, purchase and easement authority will be used to improve National Forest access, resolve administrative concerns or reduce administrative costs.(II-25,12).*

The Forest Plan also provides guidance for management of specific land areas, referred to as management areas (MAs). Forest Plan MA direction for the Federal lands, and for the NFS lands adjacent to the Non-federal lands considered for exchange, is summarized below.

3.2.3 Federal Lands

The Forest Plan designates these five MA's for the Federal lands considered for exchange:

- 7 – Riparian areas, includes areas bordering lakes, streams or springs that support moisture-loving vegetation. The vegetation in riparian areas is distinctly different from vegetation growing in drier areas nearby.*
- 9 – Lands with high dispersed recreation value, especially for roaded types of recreation and often with high visual quality. These lands either are roaded or will be roaded. Management will be for a variety of dispersed recreation uses with regulated timber harvest on suitable timberlands.*
- 10 – Areas of suitable timberlands in a mosaic pattern, interspersed with open grassland that provides forage for livestock grazing. These lands are generally of less than 40 percent slopes, and are often valley bottoms.*
- 12 – Big game summer and winter range and other key wildlife areas in a variety of settings. These lands also offer dispersed recreation opportunities.*
- 17 – Areas consisting of nonforested or nonproductive forest with slope less than 40 percent which are suitable for both livestock grazing and wildlife. These areas contain important big game summer and winter range, security areas, and calving areas.*

3.2.4 Non-Federal lands

The Forest Plan designates four MAs on the NFS lands immediately adjacent to the Non-federal lands. Until a Forest Plan review is conducted and these lands are assigned to one or more MAs, the lands would be managed according to MAs of adjacent NFS lands. The NFS lands in the upper Bear Canyon drainage are MA 9, 12, and 17. MA10 has been designated on NFS lands adjacent to the Federal parcel in Lot 1, Section 22 in the Trail Creek area.

3.3 Water Quality (Issue 1)

3.4.1 Laws, Regulations, Policy, and Direction

Protection of water quality through maintenance of forested headwaters and watershed conservation is central to the purposes of the national forests. The *Organic Administration Act of 1897* states the purpose of the national forests, and directs their control and administration to be in accord with such purpose, that is, “[n]o national forest shall be established, except to improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens

of the United States” (16 U.S.C. 475, 551).

The Clean Water Act of 1977 amends the Federal Water Pollution Control Act of 1972. Section 313 emphasizes Federal agency compliance with Federal, State, and local substantive and procedural requirements related to the control and abatement of pollution to the same extent as required of non-governmental entities. Section 303d requires watershed improvement of impaired streams. (33 U.S.C. 1251, 1254, 1323, 1324, 1329, 1342, 1344; 91 Stat. 1566).

The regulations implementing the NFMA require identification in forest plans of lands not suitable for timber harvest, and includes among such lands: “*Lands where technology is not available for conducting timber harvesting without causing irreversible damage to soil, slope, or other watershed conditions. . .*” (36CFR219.28 (a)(2)).

The Forest Service Manual states that best management practices will be applied to all management activities to control non-point sources of water pollution (Section 2532.03). The Forest Plan documents the high quality of water from the Gallatin National Forest (V-18), and states that forest management activities should be planned and executed to avoid accelerated stream channel erosion or other adverse effects to water quality (V-19).

3.4.2 Federal Lands

Other than the extreme northwestern portion of the Federal parcel in Section 27, T3S, R7E, all the Federal lands considered for exchange are in the Trail Creek drainage, part of the upper Yellowstone River watershed. Two intermittent streams and Brown’s Gulch, a perennial stream, cross these lands. No existing water quality problems are known to exist in any of these streams.

3.4.3 Non-Federal Lands

Six of the seven Non-federal parcels are in the Bear Creek watershed, a tributary to the upper Missouri River drainage. The remaining parcel, Lot 1 of Section 15, T3S, R7E, is within the Trail Creek/Yellowstone River watershed. The parcels in the upper Missouri River are traversed by Bear Creek (in adjacent Sections 8 and 17, T3S, R7E), and the North and South Forks of Dean Gulch (in Section 5, T3S, R7E). Bear Creek is a perennial stream, and Dean Gulch is an intermittent stream. An intermittent stream crosses the parcel in Section 15 T3S, R7E.

As discussed in Section 1.2.1, Bear Creek has been the subject of a water quality complaint from Montana DEQ, due to in-stream deposition of sediments eroded from Bear Canyon Road.

3.4 Wildlife Habitat (Issue 2)

3.4.1 Laws, Regulations, Policy, and Direction

The NFMA requires Federal agencies to provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives (16 USC 1604(g)(3)(B)). The Endangered Species Act (ESA) mandates that

Federal Agencies ensure that any action is not likely to jeopardize the continued existence of Federally-listed threatened or endangered species (50 CFR 402 Section 7).

FSM 2670.32 directs the Forest Service to avoid or minimize impacts to Sensitive Species. If impacts cannot be avoided, the agency must analyze the significance of potential adverse effects on sensitive species populations or habitat within the area of concern. The Migratory Bird Treaty Act (16 USC 703-712) implements various treaties and conventions for the protection of migratory birds. Presidential Executive Order 13186 requires agencies to ensure that environmental analyses evaluate the effects of Federal actions and agency plans on migratory birds, with emphasis on species of concern.

The Forest Plan contains goals to provide habitat for viable populations of all indigenous wildlife species, provide sufficient habitat for recovered populations of threatened and endangered species, strive to prevent any human-caused grizzly bear losses, and maintain or improve forage resources (II-1). Forest Plan objectives include management of wildlife habitat to emphasize forage and cover needs on big game winter range, providing for vegetative diversity to meet the needs of non-game and small game species, and maintenance of adequate security habitat for big game through management of hiding cover and roads (II-4).

Forest-wide standards include coordinating management of wildlife resources with private landowners; managing big game winter range to meet forage and cover needs and to provide for increases in elk and deer populations; emphasizing management of special and unique wildlife habitat features such as wallows, licks, and riparian areas; maintaining essential habitat for sensitive species; evaluating potential impacts to threatened and endangered species; and consulting with the US Fish and Wildlife Service when necessary (II-18).

A Forest Plan Amendment provides specific direction based on a conservation strategy for the Canada lynx. The Lynx Amendment (Number 46) incorporates conservation measures from the Northern Rockies Lynx Management Direction (NRLMD) FEIS into the Forest Plan. Direction contained in the NRLMD pertinent to this land exchange proposal includes the following:

- Objective ALL O1: Maintain or restore lynx habitat connectivity within and between Lynx Administrative Units (LAU) and in linkage areas.
- Guideline HU G7: New permanent roads should not be built on ridge tops or saddles, or in areas identified as important for lynx habitat connectivity.
- Objective LINK O1: In areas of intermingled land ownership, work with landowners to pursue conservation easements, habitat conservation plans, land exchanges, or other solutions to reduce the potential of adverse impacts on lynx and lynx habitat.
- Guideline LINK G1: NFS lands should be retained in public ownership.

3.4.2 Affected Environment

The lands identified for exchange are located in the Bear Canyon and Trail Creek areas at the north end of the Gallatin Mountain Range. This area provides habitat for a wide range of wildlife species, including ungulates, carnivores, and numerous bird and small mammal species. The north end of the Gallatin Range has been identified as a linkage area for wide-ranging

species such as bear, wolf, lynx, wolverine, and wild ungulates. Linkage areas provide habitat connectivity between mountain ranges that are separated by basins, valleys, agricultural and/or private land. The north Gallatin linkage area facilitates north-south wildlife movement patterns, which allows for greater genetic exchange, and thus promotes biodiversity. The proposed land exchange involves primarily forested habitat dominated by subalpine fir and lodgepole pine, with inclusions of spruce and Douglas-fir, open meadows and riparian areas.

Threatened and Endangered Species

The Grizzly Bear had been listed as threatened in the Greater Yellowstone Area, but was delisted in 2007 due to steady increases in population. On September 21, 2009, however, a ruling of the Federal District Court in Missoula, Montana, vacated that delisting and restored the Grizzly Bear to threatened status throughout the Greater Yellowstone Area (*Greater Yellowstone Coalition v. Servheen, 07-CV-134-DWM (D. Mt.)*). This order responded to a petition that claimed the bear's status is uncertain for a range of reasons, including decimation of whitebark pine.

All the lands considered for exchange are within an area considered occupied by grizzly bears, although the involved lands are outside of the Greater Yellowstone Ecosystem Grizzly Bear Recovery Zone. There are no recent verified grizzly bear sightings in the far north end of the Gallatin Range, where the proposed land exchange would occur.

The Canada lynx is listed as threatened in the conterminous United States. Lynx are considered forest carnivores due to their strong association with dense boreal forest habitats. On the Gallatin National Forest, primary lynx habitat is mapped as cool, moist, coniferous forest types dominated by subalpine fir, spruce and lodgepole pine, generally within the elevation range between 6,000 and 8,800 feet. However, it is also recognized that secondary habitat types such as moist Douglas-fir, small meadows, shrub lands and riparian corridors adjacent to and intermixed with forested lynx habitat may provide habitat for alternate lynx prey species.

The proposed exchange is located within the North Gallatin Lynx Analysis Unit. All involved parcels contain suitable lynx habitat of various seral stages, including habitat suitable for denning, foraging and travel/resting. The proposed exchange is within designated critical habitat for lynx (Federal Register, Feb. 2009) and will need to be managed according to NRLMD.

Forest Service Sensitive Species

The gray wolf, bald eagle and peregrine falcon were all previously protected under the Endangered Species Act. As populations recovered, these species were removed from the Endangered Species List ("delisted") and automatically added to the Forest Service Sensitive Species List. Other sensitive species are those identified by the Regional Forester for which population viability is of concern, as evidenced by current or predicted downward population trends, or decline in habitat capability.

Gray wolves are habitat generalists, and make use of a wide variety of habitat types throughout the course of their lives. Management emphasis for gray wolves is directed at maintaining sustainable populations of wolf prey species, primarily ungulates. Maintaining the health and

productivity of big game winter range is key to managing for wolves. There is some winter range for elk, moose and deer in the vicinity of the proposed exchange, but individual parcels involved in the exchange contain mostly spring, summer, and fall range, as well as providing transitional habitat between summer and winter range. Wolves are present in the Gallatin Range, but have not established occupied pack territories in the areas of the proposed exchange.

Bald eagles are typically associated with large lakes and major river courses (USDI 1994: 2), and feed primarily on fish and carrion. There are no known bald eagle nests, and no suitable nesting habitat within any of the land parcels identified for exchange.

The peregrine falcon is a predatory bird that feeds almost exclusively on other avian species. Peregrines nest in cliff and rock formations typically associated with hydrographic features such as rivers and lakes. Riparian habitat and open meadows are preferred hunting areas. There are no known peregrine nest sites in the vicinity of the proposed exchange, and suitable habitat is limited in the area.

The wolverine is a mid-sized forest carnivore, which tends to occupy habitat at higher elevations in relatively secluded areas. Wolverines occur at naturally low densities throughout their range, and are known to occur in the Gallatin mountain range. Although they typically prefer to stay at higher elevations year round, wolverines are capable of long range movements, and will traverse lower elevation areas during long range dispersals. Reproductive habitat for wolverines occurs at relatively high elevations, in mature and old growth forest as well as large boulder talus fields and high mountain cirques (Copeland 1996: 94-95). The lands proposed for exchange are in lower elevation habitat, most likely to be used by wolverines during dispersal movements. None of the parcels identified for exchange contain high quality reproductive habitat for wolverines.

The western big-eared bat occurs in a variety of habitats, although its distribution is strongly correlated with the availability of suitable roost sites. Caves, rocky outcrops and abandoned mine shafts serve as daytime roosts and winter hibernacula (Kunz and Martin 1982). Bats will also occasionally occupy buildings, but high temperatures and low humidity limit the utility of buildings as long term roost sites (Genter 1989: 103). Female bats congregate in the warmer areas of the roost to form maternal colonies in spring (Finch 1992: 17). Moths make up the primary prey of the western big-eared bat, and forest edges are often used as foraging habitat (Streubel 1989: 73). There are no known caves, rocky outcrops or abandoned mine shafts that could serve as bat roosts on any of the parcels identified for exchange.

Flammulated owls show a strong preference for yellow pines, particularly Ponderosa, for nesting habitat, although dry, open Douglas-fir may be used as well. Flammulated owls feed primarily on invertebrate species gleaned from vegetation, and often select open forested stands with low stem density, as well as forest-grassland ecotones as foraging habitat (McCallum 1994: 22, 24). No Ponderosa or other yellow pine species occur on any of the lands involved in the proposed exchange. The Federal lands are mixed conifer forest, primarily dominated by subalpine fir, spruce, lodgepole pine, and some Douglas-fir. These forest types do not provide flammulated owl nesting habitat. Some of the Non-federal land has drier, Douglas-fir forest types that could provide nesting habitat for flammulated owls, but forest structure on these lands currently consists of younger, denser forest than that typically selected by flammulated owls for nesting.

Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead or dying trees, which provide an insect prey base. Black-backed woodpeckers are typically found in three types of forested habitat: post fire areas that have burned within one to six years, areas with extensive insect outbreaks causing widespread tree mortality, and natural disturbance areas such as wind throw, ice damage or other occurrences that produce patches of dead trees. Of these potential habitat types, recent burns contain the highest concentrations of black-backed woodpecker prey for the longest period of time (USDA 2007).

None of the lands identified for exchange contain recently burned forest habitat. The only recent burn in the vicinity is the Harrison Meadows fire, which burned approximately 16 acres of forest in 2007. This fire may provide a small amount of black-backed woodpecker habitat, but only a minute proportion relative to other large fires, which burned over 200,000 acres on the Forest since 2003. There are numerous pockets of insect-infested trees throughout the parcels identified for exchange. Insect infestations can also provide nesting and foraging opportunities for black-backed woodpeckers. However, such infestations are widespread across the entire Forest, coupled with large amounts of recently burned forest habitat available, so lands in the proposed exchange are marginal in terms of providing habitat for black-backed woodpeckers.

Harlequin ducks nest along remote, swift-moving, clear mountain streams with dense shrub habitat along the stream banks. Breeding habitat is typically located away from concentrated human use areas (Clark et al. 1989: 61). There is no suitable nesting habitat for harlequin ducks within any of the lands identified for exchange.

The trumpeter swan is the largest waterfowl species in the world. Its nesting habitat includes marshes, shallow lake waters, beaver ponds, and occasionally oxbows or slow-moving river backwaters. Breeding habitat is typically secluded, and must provide a large enough open water body for take-off and landings. Wintering habitat includes slow-moving rivers and streams that remain ice-free and provide emergent vegetation year-round (USDA 1995: 15-17). There is no suitable trumpeter swan habitat within or near any of the parcels identified for exchange.

Federal parcels proposed for exchange contain potential habitat for small yellow lady's slipper, small-flowered columbine, musk root and rattlesnake plantain.

Management Indicator Species (MIS)

Note: Grizzly bear and bald eagle are designated MIS, but are addressed as Threatened and Endangered Species and Forest Service Sensitive Species, respectively, above. MIS serve as surrogates to assess impacts to a suite of species with similar habitat needs.

Northern goshawks are the Forest Plan indicator species for lower elevation, relatively warm, dry mature and old growth forest types (USDA 1987: II-18). Goshawks use large landscapes, integrating a diversity of vegetation types over several spatial scales to meet life cycle needs. Nest areas are typically characterized by mature forest with large trees, high canopy closure, and open understory. The goshawk is considered a generalist, opportunistic predator; therefore foraging areas are heterogeneous and may include mature forest components as well as a mix of

other forest and non-forest components such as sagebrush, grasslands, riparian and agricultural areas (Squires and Kennedy 2006: 21, 23, 31). The Federal lands identified for exchange have some dense, mature timber that could provide nesting habitat for goshawks. However, these lands generally contain cooler, moister habitat types, and younger stand structure on average than those preferred by goshawks for nesting. The Non-federal lands tend to be moist forest types as well, but contain some of the warmer, drier habitat conditions, and generally have more of the mature forest structure typically selected by goshawks for nesting. All lands considered for exchange provide potential foraging habitat for goshawks. However, there are currently no known occupied goshawk nests within foraging distance of any proposed exchange parcels.

American martens (also called pine marten) are the Forest Plan indicator species for higher elevation, relatively cool, moist mature and old growth forest types (USDA 1987: II-18). Martens are found in coniferous habitat throughout the Gallatin Forest, although they tend to be more abundant in cool, moist types. Martens show a strong preference for late-successional forest types with complex structure and ample coarse, woody debris on and near the ground (Coffin et al. 2002). Although their diet is varied, the marten's primary prey species, red-backed vole and red squirrel, are most abundant in mature and old growth mesic forest habitat (Buskirk and Ruggiero 1994: 21). All lands identified for exchange contain suitable habitat for martens. The Federal parcels have a more consistent north-east aspect, which produces the cooler, moist habitat types frequented by martens. However, the Non-federal parcels also primarily contain cool, moist forest types, with small inclusions of drier, warmer micro-sites. The Non-federal parcels also tend to have more of the older, complex forest structure preferred by martens for reproductive, security and foraging habitat.

Elk are identified in the Forest Plan as indicator species for big game (USDA 1987: II-18) under the premise that managing habitat for elk will provide suitable habitat for multiple big game species. Moose, deer and elk are native big game species that are likely to occur in the areas proposed for exchange. The project area, including all lands identified for exchange, provide year-round habitat for big game. This area is most suitable as spring, summer and fall range for big game, but is proximate to winter range, and it is possible that a few deer, elk and/or moose may spend time in the exchange area during winter as well. Lands proposed for exchange provide transitory range that big game may use as a travel corridor when moving from one seasonal range to another.

Migratory Bird Species

Migratory bird species are an extremely diverse group and as such, occupy all types of habitat available across the Gallatin National Forest. Many migratory bird species use habitat within the Forest as breeding grounds, while others breed in more northern climes and winter on the Forest. Some species are habitat specialists and are relatively restricted to certain cover types such as grass, shrub, riparian, or forest interior habitat. Others are habitat generalists and can occupy a wide variety of cover types. Some bird species are extremely sensitive to habitat modification and human disturbance, particularly in breeding areas, while others are much more tolerant of human activities and might even benefit from habitat modifications resulting from human use. Migratory bird species of concern include Threatened and Endangered species, Forest Service sensitive species, and other species that warrant concern based on declining habitat and/or

populations. Other than sensitive species and management indicator species addressed separately, species of concern that could be present on lands proposed for exchange include: olive-sided flycatcher, Cassin's finch, Clark's nutcracker, and great gray owl. Species of concern were determined by consulting MTFWP and Montana Natural Heritage Program lists.

Olive-sided flycatchers and Cassin's finch are both associated with recently-burned forest, but are also relatively common in logged areas, including partial harvest treatments (Hutto and Young 1999: 25, 66). A small recent burn (Harrison Meadows, 16 acres, 2007) in the vicinity did not affect any of the lands identified for exchange. However, areas of past timber harvest activity on the Non-federal parcels could be used by olive-sided flycatchers and Cassin's finch. Clark's nutcracker is associated with higher elevation, dry, rocky forest types (USDA 1991: 305), although it is commonly detected throughout most coniferous forest types on the Forest.

None of the lands identified for exchange provide high quality nesting or foraging habitat for Clark's nutcrackers. Great gray owls nest in the more open structure associated with drier, montane coniferous or deciduous forest. Nest sites are generally located close to open areas used for hunting. Foraging habitat consists of relatively open, grassy areas including natural meadows, logged areas, and open forests (Duncan and Hayward 1994: 164). Lands identified for exchange contain mosaic habitat (forested types with natural and created openings) that could provide nesting and foraging opportunities for great gray owls. However, these lands generally consist of cooler, moister habitat types than those typically occupied by great gray owls.

3.5 Visual Quality (Issue 3)

3.6.1 Laws, Regulations, Policy, and Direction

The National Environmental Policy Act of 1969 codified the United States' responsibility to use all practicable means to "*assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings*" (Section 101 (b) 2).

In 2003, Forest Service Manual Amendment No. 2300-2003-1 established direction for inventory and management of aesthetic and scenic resources. The FSM established this objective for scenic resources: "*To manage National Forest System lands to attain the highest possible quality of landscape aesthetics and scenery commensurate with other appropriate public uses, costs, and benefits*" (2380.20). *The FSM also makes it Forest Service policy to: "[e]nsure scenery is treated equally with other resources"* (2380.3).

The Forest Plan is the local guidance document for management of visual resources. The Forest Plan established a Visual Quality Objective (VQO) for each MA (II-16). VQO is defined as:

"A desired level of scenic quality and diversity of natural features based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations of the characteristic landscape".

Preservation: *Only ecological changes are allowed to alter the natural landscape.*

Retention: Human activities are not evident to the casual Forest visitor.

Partial Retention: Human activities may be evident, but must remain subordinate to the characteristic landscape.

Modification: Human activity may dominate the characteristic landscape but must, at the same time, utilize naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in middle-ground or background.

Maximum Modification: Human activity may dominate the characteristic landscape, but should appear as natural when viewed as background.

Enhancement: A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists (VI-43-VI-44).

3.6.2 Federal Lands

The Federal lands considered for exchange include five MA's: MA 7, 9, 10, 12, and 17. Table 3.1 summarizes the ranges of VQO established in the Forest Plan for these MA.

Management Area	Visual Quality Objective
7	Retention to Modification
9	Retention to Partial Retention
10	Partial Retention to Modification
12	Retention to Partial Retention
17	Retention

Beyond the considerations of visual quality objectives, another consideration of visual quality is the site's prominence from viewing areas. The three Federal parcels considered for exchange are all screened from viewers in Bozeman or at the nearest points of Interstate 90 by higher terrain such as Chestnut Mountain. The parcels in Sections 27 and 15, T3S, R7E are visible primarily from the Trail Creek County Road, as part of the overall forest background to the west of the road. Lot 1 of Section 22 is adjacent to, and generally upslope of, the Trail Creek Cabin. This parcel is an important component of the view from this popular cabin. As described in Section 2.6 above, a permanent deed restriction would prohibit development to protect scenic character.

3.6.3 Non-Federal lands

The Non-federal lands considered for exchange include four MA's: MA 9, 10, 12, and 17. With the exception of MA 7, these are the same management areas applicable to the Federal lands.

Four of the seven Non-federal parcels are not prominently visible from Bozeman or I-90. Lot 1 of Section 15, T3S, R7, is shielded from view by higher terrain. The parcel in the SW ¼ of Section 5, T3S, R7E mostly occupies a gulch visible only from the south. The two adjacent parcels in Sections 17 and 8, T3S, R7E, are mostly shielded from view by higher terrain of

Francham and Chestnut Mountains, as well as a ridge forming the rim of Bear Canyon.

The three contiguous Non-federal parcels in Sections 31 and 32, T2S, R7E and Section 5, T3S, R7E (approximately 380 total acres) are highly visible from Bozeman and Interstate 90. These lands occupy a mid slope position on Chestnut Mountain, a major landmark east of Bozeman, and only a few miles south of I-90.

3.6 Public, private, and administrative Access (Issue 4)

3.6.1 Laws, Regulations, Policy, and Direction

Under Section 1323(a) of the Alaska National Interest Lands Conservation Act (P.L. 96-487, “**ANILCA**”), the Secretary of Agriculture shall provide access to non-federal land within the boundaries of the National Forest System adequate for the reasonable use and enjoyment thereof, subject to terms and conditions as the Secretary may prescribe.

The Federal Land Policy and Management Act of 1976 (“**FLPMA**”) authorizes the Secretary of Agriculture to grant road easements within the National Forest System, if it is in the public interest to do so (Sec. 501 (a)(6)), and to acquire easements outside of the NFS if necessary to provide public and administrative access to the NFS (Sec. 205 (a)). “FLPMA Roads” created by such easements are widely used within the NFS to provide access to private in-holdings.

In 2005, the Forest Service implemented a travel rule (36 CFR Parts 212, 251, 261, and 295) closing NFS lands to motorized travel except on designated routes, and requiring each national forest and grassland to prepare a Travel Management Plan designating such routes. This new regulation responded to an increase in the use of motorized vehicles in National Forests and the resulting need to regulate such use to provide adequate access and vehicle use opportunities, while preserving the health of the forests (70 *Federal Register* 216:68265).

In 2006, the Gallatin National Forest issued its Travel Management Plan. This plan identifies roads and trails on the Forest designated as available for public or administrative use.

3.6.2 Roads and Trails Providing Recreational and Administrative Access

Figure 2 displays current land ownership patterns, existing roads and existing trails that provide access to NFS lands in the Bear Canyon and Trail Creek areas.

Interstate 90 is the major surface transportation link in the vicinity of the project. This limited access, high speed, separated highway trends east-west and crosses slightly more than one mile north of the northernmost of the Non-federal lands proposed for exchange.

Trail Creek County Road No. 8, a county road in Gallatin and Park Counties, runs northwest – southeast to the east of the project area. Forest roads and trails accessing the Trail Creek portion of the project area are reached from Interstate 90 via Trail Creek Road.

Newman County Road No. 8A, a county road in Park County, runs east-west to the east of the project area. Trail Creek Trail No. 437 begins at a trailhead along Newman County Road. Trail No. 437 extends northwesterly and provides legal trail access to the Gallatin National Forest.

West Fork Trail Creek Road No. 1007, currently a private road, begins at the Newman County Road and continues northwesterly to access the private lands. This road currently does not provide public or administrative access without landowner permission.

Trail Creek Trail No. 437 begins at a trailhead along Newman County Road and it extends northwesterly approximately two miles where it joins Road No. 1005 and Trail No. 440 in the vicinity of the Trail Creek cabin. Trail No. 437 is restricted to non-motorized travel yearlong.

Bear Canyon Road, a Gallatin County road, runs north – south on the northwest side of the project area. The road is maintained by Gallatin County from Interstate 90 south to a gate located on Montana DNRC land. Beyond the gate, the road is closed and not maintained.

Bear Loop Trail No. 440, a National Forest trail, begins at the New World Gulch trailhead on the Bear Canyon County Road and continues southeast to the junction with Road No. 1005. It then runs south along Road No. 1005 to the junction of Trail No. 437 near the Trail Creek cabin. Trail No. 440 then continues southwesterly past the junction of Trail No. 459 to the junction of Trail No. 508. From there, the trail turns northwesterly to complete the loop. The U.S. holds an easement for this trail across DePuy land in Section 8.

Bear Trail Divide Trail No. 459, a National Forest trail, creates a short cut across the Trail No. 440 loop system. The U.S. holds an easement for this trail across DePuy land in Section 16.

Goose Creek Road No. 1005, a National Forest road, extends southwest from the Trail Creek County Road into the Gallatin National Forest.

3.8 Roadless and Wilderness Areas

3.8.1 Laws, Regulations, Policy and Direction

Wilderness

The Wilderness Act of 1964 (P.L. 88-577) established the National Wilderness Preservation System, a network of public lands set aside in their natural condition as an “*area where the earth and its community of life are untrammelled by man...*”; wilderness retains “*its primeval character and influence, without permanent improvements*”, which is to be “*managed so as to preserve its natural conditions...*”; wilderness “*generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable...*”. It also has outstanding opportunities for solitude. The Congress can designate a suitable area of public land as Wilderness, in response to a Presidential or administrative nomination.

The Forest Service Manual gives guidance on managing lands adjacent to wilderness.

Because wilderness does not exist in a vacuum, consider activities on both sides of wilderness boundaries during planning and articulate management goals and the blending of diverse resources in forest plans. Do not maintain buffer strips of undeveloped wildland to provide an informal extension of wilderness. Do not maintain internal buffer zones that degrade wilderness values. Use the Recreation Opportunity Spectrum (FSM 2310) as a tool to plan adjacent land management FSM 2320.3(5).

The Forest Plan includes this goal: “*Manage existing and recommended wilderness resource to maintain its wilderness character and provide for its use and protection*” (1987:II-1).

Roadless Areas

The Gallatin National Forest has maintained an inventory of roadless lands since the early 1970s. The current inventory was displayed in the Roadless Final Rule (36 CFR 294, USDA 2001) and is also found in Appendix C of the Gallatin Forest Plan EIS (USDA 1987).

Roadless areas are to be analyzed to determine the effects of any proposed activity that would substantially alter their characteristics so as to render them unsuitable for future designation as wilderness. Roadless qualities and characteristics to be evaluated under this mandate include:

1. High quality or undisturbed soil, water and air,
2. Sources of public drinking water,
3. Diversity of plant and animal communities,
4. Habitat for threatened and endangered species,
5. Primitive, semi-primitive non-motorized, and semi-primitive motorized classes of dispersed recreation,
6. Reference landscapes,
7. Natural-appearing landscapes with high scenic quality,
8. Traditional cultural properties and sacred sites and,
9. Other locally defined unique characteristics.

Wilderness qualities and characteristics to be evaluated to determine potential for future wilderness designation include:

Remoteness: Remoteness is a perceived condition of being secluded, inaccessible, and out of the way. Physical factors that can create a “remote” setting include topography, vegetative screening, difficulty of travel, and distance from human impacts such as roads and structures. A user’s sense of remoteness in an area is also influenced by the presence of roads, their condition, and whether they are open to motorized vehicles.

Solitude: Solitude is a personal, subjective value defined as isolation from the sights, sounds, and presence of others and human development. Common indicators of solitude are the number of individuals or parties one may expect to encounter in an area during the day, or the number of parties camped within sight and sound of other visitors. Solitude is directly related to remoteness of an area and primitive, unconfined recreational opportunities.

Natural Integrity: Natural integrity of an area is related to its physical setting and the extent to which long-term ecological processes are intact and operating. Impacts to natural integrity are measured by the

presence and magnitude of human-induced change to the area. Possible impacts include physical developments (e.g. roads, utility rights-of-way, fences, lookouts, cabins), recreation developments, domestic livestock grazing, mineral developments, wildlife and fisheries management activities, vegetative manipulation, and fire suppression activities.

Apparent Naturalness: The apparent naturalness of an area means the environment looks natural to most people using the area. It is a measure of importance of visitors' perceptions of human impacts to the area.

Special Features: Special features are those unique geological, biological, ecological, cultural, or scenic features that may be located in the roadless portion of the project area.

Manageability of Boundaries: This relates to the ability of the Forest Service to manage an area to meet the size criteria (minimum size of 5,000 acres for wilderness) and the five elements discussed above.

3.8.2 Existing Conditions

The Federal and Non-federal lands are not located within any Inventoried Roadless Areas. Roadless Area 1-548 lies to the west of the project area by approximately 0.25 to 1 mile.

The lands are also not located within, or adjacent to any designated Wilderness Area or Wilderness Study Area. The northern limit of Hyalite Porcupine Buffalo Horn Wilderness Study Area (HBPH WSA) is located 2 to 3 miles south the project area.

3.9 Geology and Minerals

3.9.1 Laws, Regulations, Policy, and Direction

The Bureau of Land Management (BLM Manual 3060.11) requires completion of a minerals assessment and report for all lands identified for acquisition or conveyance by the U.S. The minerals report should document the mineral potential of the land, evaluate surface uses that would interfere with potential development of the mineral estate, and recommend actions that should be taken regarding the mineral estate.

The Forest Service Handbook guidance on land exchanges advises that creation of “split estates” in which different entities own the surface land and the underlying mineral rights, is discouraged. Split estates may be created in land exchanges if the Forest Service determines whether it is in the public interest to acquire the property without the mineral estate. This determination shall be documented in the mineral report and disclosed in the NEPA analysis and decision document (FSH5409.13 chapter 33.43f 2).

3.9.1 Affected Environment

Based upon the Mineral Report prepared for the Bear Canyon – Trail Creek Land Exchange (Werner 2009), all the lands proposed for exchange have low potential for the presence of locatable, leasable or salable minerals. This is based upon the lack of any record of such minerals having been found on the lands and unfavorable geology.

3.10 Wetlands, Floodplains, and Riparian Areas

3.10.1 Laws, Regulations, Policy, and Direction

The regulations implementing *Section 404 of the Clean Water Act* define wetlands as:

Those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328.3).

Executive Order 11990 directs Federal agencies to minimize destruction, loss or, degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.

Forest Service policy states that, in situations where wetland/floodplain values are not equal, the exchange can proceed provided it clearly benefits the National Forest System and potential adverse impacts to floodplains/wetlands on Federal lands are protected and mitigated so that floodplain/wetland functions are not reduced by the exchange (FSH 5409.13, 33.43c).

The regulations implementing *Section 404 of the Clean Water Act* define Riparian Areas as:

Lands adjacent to streams, rivers, lakes, and estuarine-marine shorelines. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality (33CFR 332.2).

The Forest Plan (1987) contains forest-wide standards to carefully manage key migratory bird habitat components such as snags and down woody debris, cliffs, caves and riparian areas, and habitat for waterfowl, shorebirds and wading birds. The Travel Management Plan (2006) contains forest-wide direction (goals, objectives, standards and guidelines) including specific measures designed to minimize impacts on wildlife and rare habitats, including riparian habitats. The following summary of wetland, floodplain, and riparian resources of the land is based upon the Bear Canyon – Trail Creek Land Exchange Wetland-Floodplain Report (Story 2009).

3.10.2 Non-Federal lands

The Non-Federal lands include approximately 3.9 acres of wetlands or floodplains, as follows:

- Approximately 2.5 acres associated with Bear Creek;
- Approximately 0.7 acre associated with North Fork Dean Gulch;
- Approximately 0.5 acre associated with South Fork Dean Gulch; and
- Approximately 0.2 acre associated with an unnamed tributary to Trail Creek.

3.10.3 Federal Lands

The Federal lands include a total of 2.4 acres of wetlands and floodplains, as follows:

- Approximately 0.7 acre associated with unnamed tributaries to Trail Creek;
- Approximately 0.5 acre of unnamed pond; and
- Approximately 1.2 acres associated with Brown's Gulch.

3.11 Fisheries

3.11.1 Laws, Regulations, Policy, and Direction

The NFMA requires Federal agencies to provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives (16 USC 1604(g)(3)(B)). The Endangered Species Act (ESA) mandates that Federal Agencies such as the Forest Service ensure that any action authorized is not likely to jeopardize the continued existence of Federally listed threatened or endangered species (50 CFR 402 Section 7). FSM 2670.32 requires that the Forest Service avoid or minimize impacts to Sensitive Species. If impacts cannot be avoided, the agency must analyze the significance of potential adverse effects on sensitive species populations or habitat within the area of concern.

The Forest Plan includes these goals: “*Maintain and enhance fish habitat to provide for increased fish population,*” and “*Provide for a broad spectrum of recreation opportunities in a variety of Forest settings*” (1987:II-1).

3.11.2 Non-Federal lands

The following summary of fisheries resources is based upon the report, Aquatic Input for the proposed Bear Canyon – Trail Creek Land Exchange Final Aquatics Specialist’s Report (Roberts 2009). The fisheries resource also includes recreational access to fishable waters.

Bear Creek is the only perennial, likely fish-bearing stream crossing the Non-federal lands. Approximately 3,823 feet of this stream cross the lands proposed for exchange. Bear Creek is a second order stream, and supports populations of hybridized rainbow x cutthroat trout, rainbow trout, eastern brook trout, and brown trout (Barndt and Bay 2004). Because of external morphological characteristics depicting such hybridization, hybrids within Bear Creek have never been genetically tested. As a result of such hybridization, the population of hybrid cutthroat trout is not considered a conservation population (Shepard et. al., 2003). All trout species are considered as MIS on the Gallatin National Forest. Because of the proximity of Bear Creek to Bozeman, along with a trailhead and trail, Bear Creek is used for recreational fishing.

3.11.3 Federal lands

Trail Creek at the National Forest boundary is a third order stream. Yellowstone cutthroat trout inhabit the main Trail Creek and larger perennial tributaries (May and Albeke, 2007). The Trail Creek population of Yellowstone cutthroat trout is considered as a Conservation Population. The Federal lands within this sub-watershed are located within the extreme headwaters of the Trail Creek drainage. These streams are not known to be occupied by Yellowstone cutthroat trout. These small, mostly intermittent streams are not considered a recreational fishing resource.

The Federal lands include three ponds. Two of the three are located within the Upper Trail Creek sub-watershed. Ponds and wetlands have not been surveyed for amphibians. Like most

ponds and wetlands within the area, they are most likely occupied by Columbian spotted frogs and possibly western toads (Sensitive Species).

3.12 Recreation

3.12.1 Laws, Regulation, Policy and Direction

The Forest Plan includes direction to provide for a broad spectrum of recreation opportunities in a variety of Forest settings (USDA Forest Service 1987: II-1). The Forest Plan recognizes objectives for recreation settings by incorporating the Recreation Opportunity Spectrum (ROS), which provides a framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities (USDA Forest Service 1987: II-2).

Further, the Forest Plan specifically identifies these recreation management objectives:

- 1) To provide for users' safety;
- 2) That existing recreational hunting opportunities would be maintained;
- 3) That recreation trails would provide safe public access; and
- 4) To continue the cabin rental program (USDA Forest Service 1987: II-2-3).

The Forest Travel Plan (USDA Forest Service 2007) contains language updating and further defining the forest-wide goals, objectives and standards for recreation. The Travel Plan recognizes the goal of *“providing for a variety of recreation opportunities on the road and trail system that allows for the enjoyment of the Forest’s backcountry, wilderness, rivers, lakes, topography, wildlife, snow and historical assets”* (USDA Forest Service 2007: I-1).

Goals, objectives and standards are further defined in the Travel Plan by Travel Planning Area. The Bear Canyon – Trail Creek Land Exchange is included in the Bear Canyon Planning Area.

The summer recreation use goals for this area are: *“Provide, opportunities for summer recreation use with an emphasis on ATV, motorcycle and mountain bike use.”* (USDA Forest Service 2007: II-20).

The winter recreation use goals for this area are: *“Provide opportunities for winter recreation use emphasizing snowmobile use.”*(USDA Forest Service 2007: II-20).

Refer to the Travel Plan, Detailed Description of the Decision, pages II-20 through II-23 for route-by-route decisions for the Bear Canyon Travel Planning Area.

3.12.1 Non-Federal lands

No developed recreation facilities exist on the Non-Federal lands. As detailed in Section 3.7; permanent road and trail easements would be reserved and granted to ensure continued public recreational access through the area after the proposed land exchange.

3.12.3 Federal lands

The Federal lands in the proposed exchange provide a predominately Semi-Primitive Motorized setting where there is a natural appearing environment in which there is often evidence of others and offers a moderate probability of solitude. Motorized uses are present. Vegetation alterations are generally small in size and visually subordinate.

The principal users of this area are engaged in hiking, hunting, horseback riding, all-terrain vehicle riding, motorcycling, and mountain biking during the summer and fall; with cross-country skiing and snowmobiling during the winter. Most users are from the local communities, and typically are engaged in day trips within the area. Overnight use increases during the fall hunting season. Some overnight use also occurs at the Forest Service Trail Creek rental cabin.

The National Forest roads and trails described in Section 3.7 support and provide access for these recreational uses. Should the Federal lands be exchanged, permanent easements would be reserved and obtained to ensure continued recreational access.

There are no outfitters operating on the Federal lands. In the past, there have been no recreation event permits issued in this area. There are no developed campgrounds or organizational camps within the analysis area.

The Trail Creek Cabin, a rental cabin, is located on NFS lands in Section 14, T3S, R7E, near the adjacent private land. The cabin is rented for public use from June 1 through March 31 annually. The cabin is not located on the Federal lands identified for exchange.

3.13 Threatened, Endangered, or Sensitive Plant Species

3.13.1 Laws, Regulations, Policy, and Direction

The ESA mandates that Federal agencies ensure that any action authorized is not likely to jeopardize the continued existence of Federally-listed threatened or endangered species (50 CFR 402 Section 7). FSM 2670.32 requires that the Forest Service avoid or minimize impacts to Sensitive Species.

3.13.2 Affected Environment

Federal lands proposed for exchange were surveyed for sensitive plant species in June 2008. The lands surveyed contain potential habitat for small yellow lady's slipper, small-flowered columbine, musk root and rattlesnake plantain. No individuals or populations of sensitive plant species were found during the surveys (Senger and Martell 2008).

3.14 Invasive Weeds

3.14.1 Laws, Regulations, Policy, and Direction

The Executive Order for Invasive Species directs agencies to prevent and control the spread of noxious weeds (EO13112, 1999). Forest Service Manual 2080 requires that an invasive weeds risk assessment be completed for all projects. The Forest Plan provides direction to confine present invasive weed infestations and prevent establishment of new populations (II-28).

3.14.2 Existing Condition

The intermingled NFS and private lands in the Bear Canyon -Trail Creek area have long been managed for a variety of purposes including timber management, livestock grazing and recreation. Any of these uses has the potential to introduce noxious weeds. The proposed exchange does not affect this risk.

Noxious weeds in Bear Canyon and Trail Creek areas include hounds tongue, musk thistle, tansy, yellow toadflax, and sulfur cinquefoil. These weeds occur mostly along road and trails. They tend to occur and spread with ground disturbing activities such as road use and development, timber harvest, livestock grazing and recreation (Rock 2010).

3.14 Livestock Grazing

3.15.1 Laws, Regulation, Policy, and Direction

Livestock grazing is a long-established use of the national forests. The first formal regulation of grazing on the National Forests began in 1906 with the imposition of grazing fees by Secretary of Agriculture James Wilson as Regulation 25 (Dutton 1953). The Forest Service Manual establishes guidelines for grazing on National Forests and Grasslands (FSM 2232).

The Forest Plan established following objectives for range management:

- Improved management will be used to maintain or enhance the range environmental and to provide for increased AUMs.
- Development and use of available forage will depend upon the livestock industry's ability and desire to make the necessary investments.
- Continue to administer about 15,000 AUMs of grazing use on private lands that are intermingled with National Forest lands within grazing allotments (II-4).

The Forest Plan includes provisions for grazing in 21 of the 26 management areas.

3.15.2 Existing Conditions

The following description is taken from the Range and Weeds Report, Bear Canyon – Trail Creek Land Exchange (Rock 2010).

The Bear Canyon – Trail Creek Land Exchange area encompasses four grazing allotments on the Bozeman and Yellowstone Ranger Districts: Bear Canyon, Goose Creek, Trail Creek and Bald Knob. Combined, these allotments consist of approximately 13,958 acres. Currently four permit holders hold six different permits.

The permits include:

- Term Grazing Permit (issued for grazing on NFS lands for up to 10 years),
- Term On/Off Grazing Permit (issued when less than one-third of the grazing area is controlled by the Forest Service), and
- Private Land Grazing Permit (issued to a qualified applicant who owns or controls at least one-third of the land within the grazing permit. The applicant waives exclusive grazing use of the private lands to the Forest Service).

The permits are as follows:

- DePuy Term Grazing Permit: 21 cow/calf pairs for a three month period on the Bear Canyon Allotment, 34 cow/calf pairs for a three month period on the Trail Creek Allotment and 9 cow/calf pairs for a three month period on the Goose Creek Allotment.
- DePuy Private Land Grazing Permit: 55 cow/calf pairs for a three month period on the Bear Canyon Allotment and 34 cow/calf pairs for a three month period on the Trail Creek Allotment.
- Kurk Term Grazing Permit: 25 cow/calf pairs for a three month period on the Bear Canyon Allotment.
- Kurk Private Land Grazing Permit (State Lands): 8 cow/calf pairs for a three month period on the Bear Canyon Allotment.
- Metcalf Term Grazing Permit: 27 cow/calf pairs for a three month period on the Bear Canyon Allotment.
- Trail Creek Ranch LLC Term On/Off Grazing Permit: 10 cow/calf pairs for a three month period on the Bald Knob Allotment. This permit also allows for 150 head on a natural unit, with 12 percent suitable NFS lands and a capacity of 30 head months.

3.16 Timber Resources

3.16.1 Laws, Regulations, Policy and Direction

Numerous federal laws, regulations and directives apply to Forest Service management of timber resources on the Federal lands. Chief among those laws and implementing regulations are:

- The Organic Administration Act (1897) created the Forest Reserves for the purposes of

securing favorable conditions of water flows and furnishing a continuous supply of timber.

- The Multiple-Use Sustained Yield Act of 1960 directs the Forest Service to manage NFS lands for all the various renewable surface resources, including range, timber, watershed and wildlife and fish purposes.
- The Forest and Rangeland Renewable Resources Planning Act of 1974 (“RPA”), as amended by the National Forest Management Act of 1976 (“NFMA”) established specific policies and procedures for timber sale planning and implementation, reforestation and other forest management activities.

The Forest Plan (1987) established the following goals and objectives for timber management:

- Timber harvest will be used as a tool to carry out vegetative management activities.
- Emphasis will be placed on the harvest of lodgepole pine stands infested or with the potential for infestation by the mountain pine beetle.
- Emphasis will be placed on distributing timber harvest over the entire suitable timber base.

The Federal lands are primarily located in Management Area 10 – Areas of suitable timberlands in a mosaic pattern, interspersed with open grassland that provides forage for livestock grazing. These lands are generally less than 40 percent slopes, and are often valley bottoms.

Timber resources on private lands are managed under the laws and practices of the State of Montana. Montana does not have a comprehensive “Forest Practices” law. The State uses a set of Forestry Best Management Practices” (BMPs) for management of timber and roads along stream zones and riparian areas. Montana also relies on several laws regarding streams and water quality.

3.16.2 Existing Conditions

The Federal lands proposed for exchange contain subalpine fir, lodgepole pine, Engelmann spruce, Douglas-fir and interspersed meadows. Most of the Federal lands have been logged in the past and contain low-standard roads. Relatively little merchantable timber remains.

The Non-federal lands consist of timbered lands supporting subalpine fir, lodgepole pine, Engelmann spruce, Douglas-fir and interspersed meadows. Terrain varies from steep slopes to gentle benches and stream bottoms. DePuy has historically managed these lands for timber and cattle grazing purposes. The three southern parcels (in Sections 8, 15 and 17) contain low-standard roads and much of the commercial timber has been harvested. The three northern parcels in the upper Bear Canyon/Chestnut Mountain area (in Sections 31, 32 and 5) also contain

old low-standard roads. The northern parcels of land have been harvested in the past, and they currently contain more merchantable stands of timber.

In 2007, a private timber consultant, Craig Kamps, conducted an analysis of merchantable timber volumes and estimated market values for the Federal lands and Non-federal lands considered for exchange. In 2008, Forest Service timber specialists (Nate Motzko and Steve Martell) reviewed the timber report prepared by Mr. Kamps and conducted a check cruise. The Forest Service staff determined that the timber volume estimates were reasonably accurate. Following are the estimated merchantable timber volumes on the lands identified for exchange:

<u>Merchantable Timber Data</u>		
<i>(Volume in thousand board feet (MBF))</i>		
<u>Township 3 South, Range 7 East</u>	<u>Timber Acres</u>	<u>Volume</u>
Section 15:	57	570
Section 22:	22	220
Section 27:	382	1,864
TOTALS, <i>Federal lands</i>:	461	2,654
<u>Township 2 South, Range 7 East, Sections 31 and 32, AND</u> <u>Township 3 South, Range 7 East, Section 5</u>	417	3,858
<u>Township 3 South, Range 7 East, Sections 8 and 17</u>	37	303
<u>Township 3 South, Range 7 East, Section 15</u>	40	173
TOTALS, <i>Non-federal lands</i>:	494	4,334

In summary, the acreage of merchantable timber on the Federal lands closely approximates the acreage of merchantable timber on the Non-federal lands. The volume of timber on the Non-federal lands exceeds the volume on the Federal lands by approximately 1, 680 MBF. Most of the timber on the Non-federal lands is within Sections 31, 32 and 5, in the upper Bear Canyon area. These parcels currently do not have legally-permitted road access across NFS lands.

3.17 Cultural Resources

3.17.1 Laws, Regulations, Policy and Direction

Section 106 of the Natural Historic Preservation Act requires Federal agencies to consider the potential effects of the action upon historic resources. The Forest Service Handbook for Land Exchanges requires identification of any cultural resources that may potentially be affected prior to executing a land exchange (FSH5409.13, 31).

3.17.2 Existing Conditions

A cultural resources investigation of the lands in the proposed exchange found no cultural

resources (Allen 2008).

3.18 Park and Gallatin County Revenues

3.18.1 Laws, Regulation, Policy, and Direction

Section 102 of NEPA requires that Federal agencies consider the potential impacts of their proposed actions upon the human environment. The regulations implementing NEPA define “human environment” to include social and economic impacts when such impacts are interrelated with the environmental impacts of the proposed action (40CFR1508.14).

3.18.2 Existing Conditions

The potential impact on county revenues is of public and agency concern. The proposed land exchange would affect two sources of county revenue: property tax revenues associated with the Non-federal lands, and Federal Secure Rural Schools (SRS) payments to the counties associated with the Federal lands. SRS payments were created by the Secure Rural Schools and Community Self Determination Act of 2000. This law established a funding program to provide transitional assistance to rural counties affected by the decline in revenues from timber sales. Rural counties traditionally relied upon receipts from timber sales to supplement local funding of schools and roads. The original SRS program was scheduled to expire in 2006, but has twice been extended by Congress, most recently through 2011.

In analyzing this concern, the property taxes assessed on the Non-federal lands, and the annual SRS payments made to Park County and Gallatin County on the Federal lands, were studied.

Park County property taxes on forest/grazing lands in the Trail Creek area were approximately \$1.30/acre in 2008. The total property tax on the Non-federal lands in Sections 15 and 22, T3S, R7E was reported as \$989. (Refer to <http://www.parkcounty.org/parkwebtax/list.aspx>).

Gallatin County property taxes on forest/grazing lands in Bear Canyon were approximately \$1.15/acre. The total 2008 property tax on the Non-federal lands in the Bear Canyon area in Gallatin County was \$1,572. (Refer to <http://webapps.gallatin.mt.gov/proptax/list.aspx>).

SRS payments to Park County in 2008 totaled \$968,645 from 842,082 total acres of Federal lands in Park County, or \$1.15/ acre. In 2008, Gallatin County received total SRS payments of \$537,499 from total 635,287 acres of Federal lands in Gallatin County, or \$0.85/acre.

In summary, annual property taxes somewhat exceed federal SRS payments in both counties. The proposed land exchange would slightly increase estimated annual revenues to Park County, because the exchange would slightly increase the amount of private land in Park County.

The proposed land exchange would slightly decrease estimated annual revenues to Gallatin County, because it would slightly increase the amount of Federal land in Gallatin County.

3.19 Results of Appraisals

3.19.1 Laws, Regulation, Policy, and Direction

A set of federal laws, regulations and policy directives govern the Forest Service appraisal process. Among these laws and directives, the “Uniform Appraisal Standards for Federal Land Acquisitions” (*aka* “*yellow book*”) and the “Uniform Standards of Professional Appraisal Practice” (USPAP) are the two references most relied upon for land exchange appraisals.

3.18.2 Existing Conditions

The Federal and Non-federal lands have been appraised in accordance with federal standards. The appraisal reports were prepared by Kim Colvin and Katie Ricketts of Terra Western & Associates. The date of value is October 1, 2010. The appraisal reports were approved on March 21, 2011 by Kimball Frome, RPRA, a Forest Service Senior Review Appraiser. These appraisal reports are valid for one year, or until **October 1, 2011**.

Based on the approved appraisal reports, the estimated total market value of the Federal lands is **\$1,437,000**, and the estimated total market value of the Non-federal lands is **\$1,721,000**. Therefore, based on the approved appraisals, the overall value of the Non-federal lands exceeds the value of the Federal lands by approximately **\$284,000**.

The appraisal reports also determined that no separate value should be assigned to the timber resource, because comparable sales data indicates that rural-recreational buyers are not paying additional amounts of money for property with higher merchantable timber volumes.

Consistent with federal law and regulations, agency policy for land exchanges, and the agreement reached between the parties (Agreement to Initiate or “ATI”), the proposed Bear Canyon-Trail Creek land exchange will be completed on the basis of equal market values. The parties agree to consider the following options to equalize the overall exchange values:

Option 1: The Forest Service may make a cash equalization payment to DePuy to help equalize exchange values.

Option 2: DePuy may drop one or more parcels of Non-federal land from the exchange to help equalize values. In this option, by agreement between the parties, the first choice of parcels to consider deleting from the land exchange would be Lot 1 of Section 15, T3S, R7E.

Option 3: DePuy may reserve timber harvest rights. This option is not favored by either party, and would only be considered if options 1 and 2 are determined not feasible.

Option 4: DePuy may donate a portion of Non-federal land value, in lieu of or in addition to Option 1, Option 2 and/or Option 3. DePuy does not favor this option.

Chapter 4

Environmental Consequences

Introduction

Chapter 4 provides an analysis of the environmental consequences that would result from implementing either alternative. The analysis of impacts considers direct, indirect and cumulative effects of implementing each of the two alternatives (No Action and Proposed Alternative, *see also Section 2.4*). Direct effects would be caused by and occur at the same time and place as the initial cause of action (40 CFR 1508.25). Indirect effects (or secondary effects) also would be caused by the action, but occur later in time or are farther removed in distance. Cumulative effects would arise from incremental impacts of the Proposed Action in conjunction with effects of other past, present, and reasonably foreseeable future actions.

4.1 Common Aspects of the Analysis

The analysis of impacts in this section is organized similarly to Chapter 3, discussing impacts to each element of the affected environment in the same order as described in Chapter 3. Chapter 4 focuses in greatest detail on those effects related to the significant issues identified in Section 2.2. Other environmental effects are described briefly. Table 4.1 provides a summary comparison of the alternatives relative to the significant issues. These issues address water quality, wildlife and habitat, visual resources, and access.

The analysis area is the Bear Canyon and Trail Creek watersheds, within the Gallatin National Forest. The analysis area may extend beyond the National Forest boundary; particularly the analysis of cumulative effects. Forest Service resource specialists have identified other projects or programs to consider as cumulative actions with this proposal. The general project area and specific analysis areas include Federal, state and private lands. The cumulative effects analyses consider projects or activities completed or proposed for the period 1995 through 2009.

This EA complies with management direction in the Forest Plan. Forest resource specialists have prepared specialist reports to analyze the important issues and alternatives. The specialist reports are available in the project file.

4.2 Water Quality (Issue 1)

4.2.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

Under this alternative, no lands would be exchanged. Lands in the upper Bear Canyon watershed would remain in private ownership and potential development pressures upon those lands would remain. NFS lands in the Trail Creek watershed would remain. This alternative would not result in any measurable direct effects on water quality.

DePuy representatives have consistently stated that, if the proposed land exchange is not completed, DePuy would request road access across NFS lands to reach its lands within Sections 31 and 32, T2S, R7E and Section 5, T3S, R7E for timber management and for possible future development (Dixon 2008). Refer to **Map C**. Under ANILCA law, DePuy would be entitled to reasonable access to its private lands, subject to such terms and conditions as the Secretary of Agriculture may prescribe.

As discussed in Section 1.2.1, the Bear Canyon watershed includes areas of erosion prone and landslide hazard soils. Development of roads in the Bear Canyon watershed would likely contribute additional sources of eroded sediment in area streams, thus degrading water quality.

Direct and Indirect Effects of Proposed Action

Under this alternative, six Non-federal parcels in the Bear Canyon watershed and one parcel in the Trail Creek watershed would be conveyed to the U.S. and three Federal parcels in the Trail Creek watershed would be conveyed to DePuy. This action would result in consolidation of NFS lands in the upper Bear Canyon watershed. Development pressure in Bear Canyon would thus be greatly reduced, while acreage of private lands in Trail Creek would be increased. This alternative would not result in any measurable direct adverse effects on water quality.

DePuy has not expressed an interest in constructing new roads on the Federal lands considered for exchange. However, DePuy has expressed an interest in re-locating one segment of existing Road No. 1007 from Section 15 to Section 22, T3S, R7E. Refer to Map B. The proposed location of this road segment is along a hydrologic divide away from any water bodies. This alternative would not result in any measureable indirect effects on water quality.

4.2.2 Cumulative Effects

Past, Present and Reasonably Foreseeable Actions and Effects

Use of motor vehicles on Bear Canyon Road, above the end of the maintained county road, resulted in sediment loading in Bear Creek that triggered a water quality complaint from the Montana DEQ in 2002. In response to this complaint, the road was closed to vehicles, and portions of the old roadway were decommissioned, restored, and relocated to more stable soil areas. As a result of this work, the water quality complaint was resolved in 2007. Gallatin County considers Bear Canyon Road to be a county or public road through the Gallatin National Forest to the Park County line. Gallatin County, the Montana DNRC and the Forest Service are working toward a mutually-agreeable solution and settlement that will continue to provide reasonable public motorized and non-motorized access to the public lands in upper Bear Canyon.

Cumulative Effects of No Action

Under this alternative, private lands with no practical road access would remain in the Bear Canyon area. If DePuy, or subsequent owners of private lands in Bear Canyon, sought to develop new road access to their lands, the reopening of Bear Canyon Road to motorized vehicles could result. New access roads to the DePuy lands in Sections 31, 32 and 5 might also

be built. Refer to **Map C**. Under ANILCA law, DePuy would be entitled to reasonable access to its lands, subject to such terms and conditions as the Secretary of Agriculture may prescribe. Reopening Bear Canyon Road, and building new roads to the DePuy lands, could reverse the water quality improvement work done in response to the DEQ complaint in 2002, and could lead to issuance of a new complaint.

Cumulative Effects of Proposed Action

This alternative consolidates NFS lands in Bear Canyon and private land ownership in the Trail Creek area. The reasonably foreseeable results of such consolidation include reduced pressure for private access roads in Bear Canyon and potential new development concentrated in the Trail Creek area, where there is an existing transportation network. Instream sediment levels should continue to improve along Bear Creek as a result of past road decommissioning activities along the Bear Canyon County Road in 2007 (see discussion under Sections 1.2.1 and 4.2.1) and any future road decommissioning activities that would occur along existing roads within acquired parcels in Sections 8 and 17, T3S, R7E.

4.3 Wildlife Habitat (Issue 2)

4.3.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

Under this alternative, no change in land ownership or management would occur. There would be no direct or indirect effects to wildlife habitat from this alternative.

Direct and Indirect Effects of Proposed Action

This alternative would result in transfer of approximately 645 acres of Federal land to private ownership. All Federal lands are adjacent to private lands that currently contain roads or residences or both. In exchange, approximately 766 acres of Non-federal lands would be acquired by the U.S., including both “roaded” and “unroaded” parcels. The Non-federal lands to be acquired by the U.S. are generally more remote from developed areas than the Federal lands. Remote habitats are favorable for forest interior songbirds and large predatory species with potential for conflict with humans.

4.3.2 Cumulative Effects

Past, Present, and Reasonably Foreseeable Actions and Effects

In 2007, the Forest Service, working in partnership with the Trust for Public Land (TPL), Gallatin Valley Land Trust (GVLT) and other cooperators, acquired approximately 815 acres of private land and a conservation easement on approximately 1,240 acres of lands in Sections 19, 20 and 29, T2S, R7E. The Bozeman Pass Land Conservation Project secured an important wildlife travel linkage between the Gallatin Mountains and the Bridger Mountains to the north.

This linkage facilitates movement of grizzly bear, Canada lynx, elk and other large mammals from the Bridger Mountains south the Gallatin Range and into Yellowstone Park.

Other recent actions in the project area that affect wildlife and habitat include timber management, with its associated road building and alteration of forest structure; residential development, which involved road building and permanent removal of small amounts of forest structure; livestock grazing, which has slightly altered matrix habitat including riparian vegetation and some grassland areas; and recreation, which has influenced the development of roads and trails in the area. In addition, the linkage area has been influenced by residential and agricultural development, plus the construction, maintenance and associated use of an interstate highway, a railroad and a frontage road all adjacent to each other and bisecting the wildlife travel corridor between the Gallatin Range and the Bridger Mountain Range to the north.

The Travel Plan (2007) includes relocation and reconstruction of a number of trails in the North Gallatin LAU, some in the vicinity of the proposed land exchange. These changes were initiated in the Travel Plan to reduce soil erosion and riparian habitat degradation, and to provide habitat security within an important wildlife travel corridor. The Travel Plan also restricts motorized recreation to designated routes. These changes will result in a net reduction in motorized use and associated disturbance factors in the vicinity of the north Gallatin linkage area.

Cumulative effects of No Action

DePuy representatives have stated that, if the proposed land exchange is not completed, DePuy would seek road access to its undeveloped parcels in Sections 31 and 32, T2S, R7E, and Section 5, T3S, R7E. Refer to **Map C**. Under ANILCA, DePuy would be entitled to reasonable access to its lands, subject to such terms and conditions as the Secretary of Agriculture may prescribe.

A reasonably foreseeable outcome of such road access would be future residential or other development in these parcels. The private parcels involved in the proposed exchange are proximate to a key linkage area identified for dispersal of terrestrial wildlife between the Gallatin Mountain Range and the Bridger Mountain Range to the north.

The threatened grizzly bear and Canada lynx, as well as other species of concern such as the gray wolf, wolverine, marten and elk, benefit from the habitat connectivity provided by linkages. Maintenance or restoration of lynx habitat in linkage areas is a primary objective for lynx of the NRLMD. Private land development near key linkage area, as would be facilitated by the permanent roads likely to be requested under the No Action Alternative, would not meet the stated objective to maintain habitat connectivity.

Under the No Action alternative, it is anticipated that DePuy would seek to develop road access to its remote parcels in the Bear Canyon/Chestnut Mountain area. The NRLMD provides guidance that new permanent roads should not be built in areas identified as important for lynx habitat connectivity. While this direction pertains only to Federal lands, the biological basis applies to assessment of this alternative, in that roads and potential for subsequent development would have adverse effects on lynx habitat connectivity in the vicinity of a key linkage area.

Cumulative Effects of Proposed Action

In the Proposed Action, consolidation of NFS lands near the north Gallatin linkage area complements the recent acquisition of private lands and conservation easements on additional lands near the linkage (Bozeman Pass project), as cited above in this section.

4.4 Visual Quality (Issue 3)

4.4.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

This alternative would not result in any changes in land ownership or management, thus there would be no direct or indirect effects to visual quality.

Direct and Indirect Effects of Proposed Action

In this alternative, the U.S. would convey approximately 645 acres of Federal lands to DePuy and the U.S. would acquire approximately 766 acres of Non-federal lands. One of the Federal parcels - Lot 1 of Section 15, T3S, R7E, would include a deed restriction prohibiting construction of buildings. Other than Lot 1 of Section 15, the Federal lands are not visually prominent, while approximately 320 acres of Non-federal lands in Sections 31 and 32, T2S, R7E and Section 5, T3S, R7E are prominently visible from Bozeman and Interstate 90. Overall, this action would provide additional long-term protection of visual resources.

4.4.2 Cumulative Effects

Past, Present, and Reasonably Foreseeable Actions and Effects

Chestnut Mountain and Frog Rock are important landmarks visible from Bozeman, and Interstate 90. Recent public acquisition of lands in Sections 20, and 29, T2S, R7E, (described in Section 4.3.2 as the Bozeman Pass Project) added the northern portion of Chestnut Mountain and Frog Rock into the Gallatin National Forest, thus affording protection of these scenic resources.

Cumulative Effects of No Action

The Non-federal lands in Sections 31 and 32 T2S, R7E, and Section 5, T3S, R7E, are the only remaining private lands in the Bear Canyon - Chestnut Mountain area that are visible from Bozeman and I-90. Given DePuy's stated intention to request road access to these parcels if the proposed land exchange is not completed, and DePuy's entitlement to reasonable access under ANILCA, some future development of the Non-federal parcels would be reasonably foreseeable. Any such development would greatly alter a prominent scenic resource, thus diminishing regional visual quality.

Cumulative Effects of Proposed Action

This alternative's protection of visual resources on Chestnut Mountain would complement prior efforts by the Forest Service and other partners to protect the visual quality of that landmark.

4.5 Public, private, and administrative Access (Issue 4)

4.5.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

Representatives of DePuy have stated that they would request road access to undeveloped parcels in Sections 31 and 32, T2S, R7E, and Section 5, T3S, R7E, should the proposed land exchange not be completed. Refer to **Map C**. Under ANILCA, DePuy would be entitled to reasonable access to its lands, subject to such terms and conditions as the Secretary of Agriculture may prescribe. Given the steep terrain, and unstable soils in the area, the proposal for new roads in this area would generate considerable impacts and expense.

Direct and Indirect Effects of Proposed Action

The Proposed Action includes creation of road and trail easements to assure continued access to lands in the Bear Canyon and Trail Creek areas. This alternative would cause no direct effects on access. Consolidation of private lands within the Trail Creek area, and consolidation of NFS lands in Bear Canyon should ultimately result in fewer requests for new access roads.

4.5.2 Cumulative Effects

Past, Present and Reasonably Foreseeable Actions and Effects

The closure and decommissioning of the un-maintained portion of Bear Canyon Road to vehicle traffic between the ski area and the Park County line is a recent activity related to access in the project area. This activity responded to a water quality complaint by the Montana DEQ against the Forest Service and the Montana DNRC. The Forest Service, Montana DNRC and Gallatin County are continuing to work to resolve this issue, in a manner that will provide reasonable motorized and non-motorized public access to the public lands in the upper Bear Canyon area.

Cumulative Effects of No Action

Under the No Action Alternative, it is foreseeable that the parties would pursue road easements to ensure access to intermingled private and NFS lands, as depicted on Map C, on the next page.

Potential Road Easements, DePuy to U.S.:

Administrative Easement for Road No.1007 across the S ½ of SE ¼ of Section 8, T3S R7E
Easement for Goose Creek Road No.1005 across the S ½ of Section 22, T3S R7E

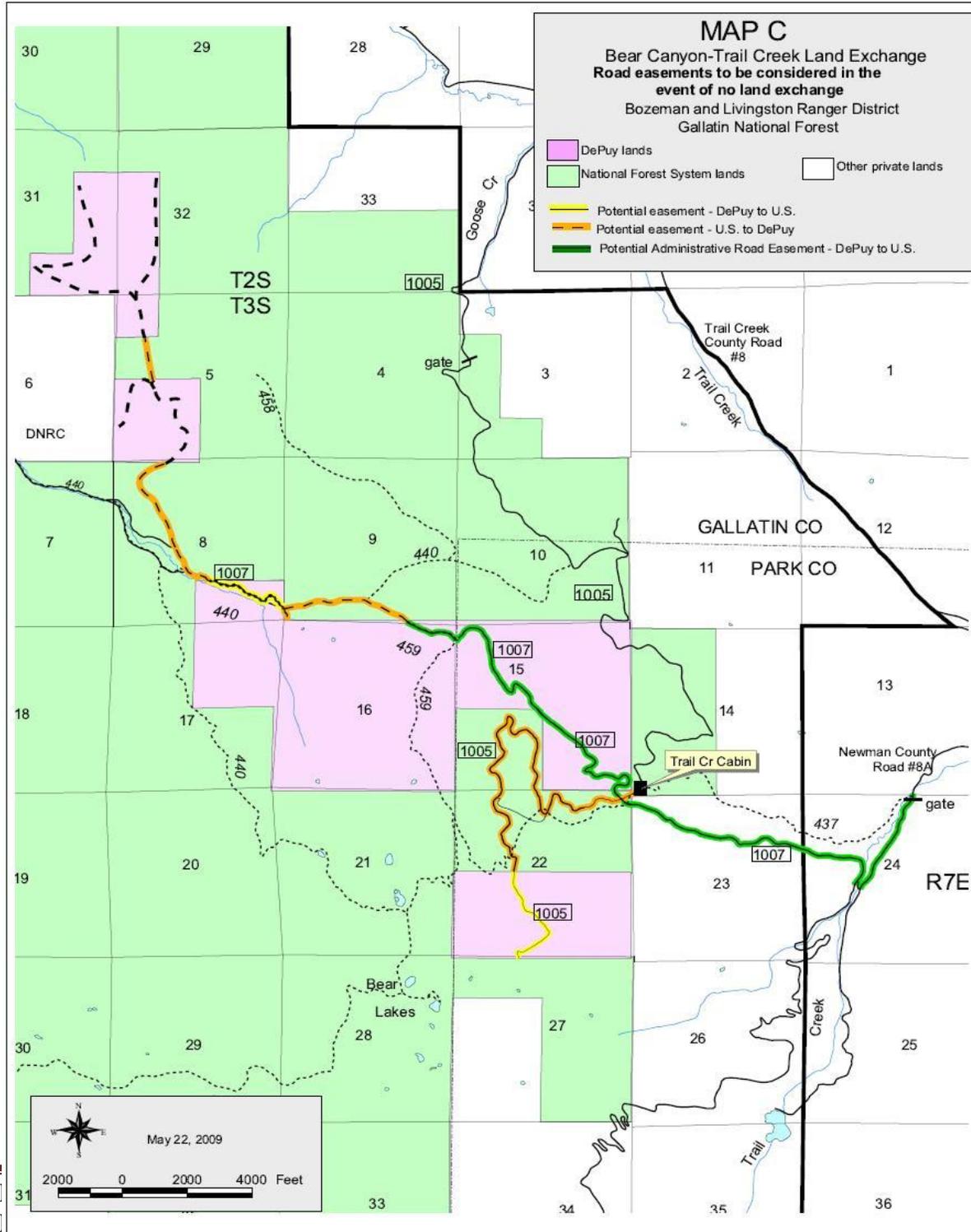
Potential Road Easements, U.S. to DePuy:

Easement from existing Road No. 1007 across NFS lands in Sections 9, 8 and 5, T3S R7E, to DePuy land in Section 5 T3S R7E, and Sections 31 and 32, T2S, R7E

Easement for Road No. 1005 across SW ¼ of Section 15 and N ½ of Section 22, T3S, R7E

Map C: No Action Alternative.

Road easements likely to be requested for access to private and NFS lands.



Cumulative Effects of Proposed Action

Consolidating NFS lands in the upper Bear Canyon watershed would likely result in fewer requests for new road access into Bear Canyon than in the No Action alternative.

4.6 Roadless and Wilderness Areas

4.6.1 Direct and Indirect Effects

No direct or indirect effects to Inventoried Roadless Areas or designated Wilderness areas should result from either alternative. All lands considered for exchange are located outside of Inventoried Roadless areas and designated Wilderness.

4.6.2 Cumulative Effects

No cumulative effects upon Wilderness or Roadless areas should result from implementation of either alternative.

4.7 Geology and Minerals

4.7.1 Direct and Indirect Effects

Due to the low potential of finding and developing commercial mineral resources on any of the lands involved in the proposed exchange, there is little potential for impact to geological and mineral resources under either the No Action or Proposed Action alternative.

4.7.2 Cumulative Effects

Past, Present, and Reasonably Foreseeable Actions and Effects

No mining activity or other mineral development has occurred in the recent past, and none is anticipated to occur on or adjacent to any of the lands involved in the proposed exchange.

Cumulative effects

No cumulative effects of either alternative upon geological or mineral resources are anticipated.

4.8 Wetlands, Floodplains, and Riparian Areas

4.8.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

Under the No Action alternative, no land exchange would occur. Approximately 3.9 acres of wetlands or floodplain associated with streams would remain in private ownership and approximately 2.4 acres of wetlands (including approximately 0.5 acre of ponds) would remain in Federal jurisdiction. Although Federal, State and local regulations restrict development in wetlands, private wetlands are often at greater risk than those in Federal jurisdiction.

Direct and Indirect Effects of Proposed Action

The Proposed Action would result in an increase of approximately 1.5 acres of wetlands and floodplain under Federal jurisdiction.

4.8.2 Cumulative Effects

Past, Present, and Reasonably Foreseeable Actions and Effects

As described in Section 4.2.2, past operation of motor vehicles on the upper, un-maintained portion of Bear Canyon Road resulted in sedimentation of Bear Creek. In response to this problem, the road was closed. Portions of the old roadway were decommissioned, restored, and relocated to more stable soil areas. This has also benefited wetlands associated with Bear Creek.

Cumulative Effects of No Action

Potential future requests for access to the private parcels in the upper Bear Creek drainage would lead to construction of new roads in the area. This could potentially result in direct impacts to wetlands, floodplains and riparian areas at stream crossings and could also result in renewed sedimentation from development of roadways in erosion prone areas.

Cumulative Effects of Proposed Action

The proposed action would reduce pressure for private access with Bear Canyon, complementing earlier efforts to address erosion problems associated with Bear Canyon Road. Although focused on water quality protection, erosion and sedimentation reduction would also benefit wetlands.

4.9 Fisheries

4.9.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

Under the No Action alternative, all stream banks would remain in current ownership. There would be no direct or indirect effects upon public recreational fishing or fisheries habitat.

Direct and indirect Effects of Proposed Action

Under the Proposed Action, the public would gain bank access to approximately 3,873 feet of Bear Creek, a perennial, fish-bearing stream. This would benefit recreational fishing in close proximity to Bozeman, by providing easier access than the current requirement of accessing the stream at a legal access point and then crossing private land within the stream high water lines.

All streams on Federal lands to be exchanged to DePuy are either perennial non-fish bearing or intermittent. Public loss of lands adjacent to these streams would not result in the loss of trout habitat or would result in the forfeiture of future conservation management options.

DePuy would receive three ponds/wetlands in the exchange. Western toads possibly inhabiting these three ponds/wetlands would be protected as a result of existing wetland protection laws.

4.9.2 Cumulative Effects

Past, Present, and Reasonably Foreseeable Actions and Effects

There are no past, present and reasonably foreseeable future activities that would affect public fishing access in the vicinity of the proposed exchange. No other past, present or reasonably foreseeable future activities would affect Yellowstone cutthroat trout habitat or populations in streams located downstream of the Federal lands proposed for exchange to private ownership.

Cumulative Effects of No Action

No cumulative effects upon recreational fishing access or the fisheries resource are anticipated to result from the No Action alternative.

Cumulative Effects of Proposed Action

No additional effects upon recreational fishing access are anticipated from implementing the Proposed Action. Sediment levels would likely improve along Bear Creek as a result of past restoration activities along the Bear Canyon Road, and future road decommissioning activities that would occur on the Non-federal parcels to be acquired by the U.S.

4.10 Recreation

4.10.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

Under the No Action alternative, there would be no changes in public access or landownership patterns. The DePuy lands would remain open for further development including residential subdivision. If residential use were established on the existing private lands, the ROS setting would shift from Semi-Primitive Motorized to Rural as a result of the increased activities (traffic, home construction and maintenance, dogs, etc) associated with human occupancy. Potentially portions of Trail No. 440 could be impacted to provide access to the parcels of private land.

Direct and Indirect Effects of Proposed Action

Under the Proposed Action, Federal lands containing roads and trails that are used for recreation would be exchanged to DePuy. In each such case, the U.S. would reserve permanent easements, but some effects would occur. Goose Creek Road No. 1005 would remain available for public access through Lot 1 of Section 22 and the SW ¼ of Section 15, T3S, R7E. Travelers would not be able to leave the road, however, without trespassing onto private lands. Trail No. 440 through Lot 1, Section 22, T3S, R7E would also be available for continued public use. Lands adjacent to these transportation routes are not highly sought after for recreational use. Users would continue to use these roads and trails to reach other NFS lands more valued for recreational activities.

Public acquisition of the isolated Non-federal parcels in upper Bear Canyon would directly enhance recreational activities in the Bear Canyon area, because users would no longer need to be concerned about trespassing onto these private lands.

A permanent deed restriction on Lot 1 Section 22, T3S, R7E would protect open space and the views from the Trail Creek rental cabin.

Conveyance of Federal land in Section 27, T3S, R7E would not affect the recreation resources or activities in the area, because there currently is no reasonable access to this land. It is legally possible to access that parcel cross-country, but it is largely surrounded by private lands and there are no NFS roads or trails that connect Section 27 with other NFS lands.

4.10.2 Cumulative Effects

Past, Present, and Reasonable Foreseeable Actions and Effects

The Forest Service and conservation partners have worked to consolidate ownership of lands adjacent to Interstate 90 in the vicinity of Chestnut Mountain and Frog Rock. This has provided greater trail linkages and public access to this part of the Forest. Residential and vacation home development of private lands in and around the Gallatin National Forest is likely to continue.

Cumulative Effects of No Action

Future residential development of private lands would impact on the recreation resources within the analysis area. Public land user and residential landowner conflicts would increase through inadvertent trespass and disputes over shared use of existing road and trail systems.

Cumulative Effects of Proposed Action

The proposed land exchange would further consolidate NFS lands in the vicinity of Chestnut Mountain, thus complementing prior consolidation efforts and providing additional contiguous public lands available for recreation.

4.11 Sensitive Plant Species

4.11.1 Direct and Indirect Effects

No sensitive plant species are known to occur on any of the lands involved in the proposed Bear Canyon – Trail Creek Land Exchange, so there should be no effect on any such species.

4.11.2 Cumulative Effects

No cumulative effects on sensitive plant species are anticipated from implementation of either alternative.

4.12 Invasive Weeds

4.12.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

The No Action alternative would have no direct effect on infestation of noxious weeds in the analysis area. Should additional road development, logging or grazing occur on the Non-federal lands proposed for exchange, indirect effects could result, such as further spread of noxious weeds already established in the area (Rock 2010).

Direct and Indirect Effects of Proposed Action

No direct or indirect effects to noxious weed infestations would be anticipated to result from implementation of the Proposed Action.

4.12.2 Cumulative Effects

No cumulative effects on weed infestations in the analysis area would be anticipated from implementation of either alternative.

4.13 Livestock Grazing

4.13.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

The No Action alternative would not affect ongoing livestock grazing in the analysis area.

Direct and Indirect Effects of Proposed Action

In the Proposed Action, the Non-federal lands with private grazing agreements between DePuy and other parties would be exchanged to the U.S. The private grazing agreements would be terminated prior to the exchange. The Forest Service would then conduct an analysis to determine whether to add the acquired lands to any grazing allotments. That future analysis is not part of the proposed land exchange.

After completing the proposed land exchange, the Bald Knob Allotment would be located entirely within private lands, therefore the allotment would no longer be suitable as a National Forest allotment and the Forest Service would take appropriate steps to close the allotment in the future.

4.13.2 Cumulative Effects

No cumulative effects upon livestock grazing would be anticipated from implementation of either alternative.

4.14 Timber Resources

4.14.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

Under the No Action alternative, no land exchange would occur. A total of approximately 4.334 million board feet of merchantable timber would remain in DePuy ownership, and approximately 2.654 million board feet of merchantable timber would remain on the Federal lands.

Much of the commercial timber has been harvested in the three southern DePuy parcels (in Sections 8, 15 and 17), and less than 0.5 million board feet of timber remains at this time. The three northern parcels in the upper Bear Canyon/Chestnut Mountain area (in Sections 31, 32 and 5) currently contain an estimated 3.858 million board feet of merchantable stands of timber.

DePuy has historically managed its lands for timber and cattle grazing purposes. DePuy representatives have stated that, if the proposed exchange not be completed, they would request road access to the undeveloped parcels in Sections 31 and 32, T2S, R7E, and Section 5, T3S,

R7E, for timber harvest and potentially for long-term development. Refer to **Map C**. Under ANILCA law, DePuy would be entitled to reasonable access to its lands.

Under the No Action alternative, it is anticipated that DePuy would seek to develop road access and harvest timber from the three northern parcels in the upper Bear Canyon/Chestnut Mountain area, within the next few years. In the absence of a land exchange, the Forest Service would not likely plan to harvest timber from the Federal lands in the next few years. Much of the merchantable timber on the Federal lands was harvested in recent decades. In addition, the Forest Service does not have legal road access across private lands to the NFS land in Section 27.

Direct and Indirect Effects of Proposed Action

The Proposed Action would result in a net increase of approximately 1.68 million board feet of merchantable timber on consolidated NFS lands, mostly located in the Bear Canyon/Chestnut Mountain area. If the proposed land exchange is completed, DePuy would not seek to develop road access and harvest timber from the parcels in the Bear Canyon/Chestnut Mountain area.

4.14.2 Cumulative Effects

Cumulative Effects of No Action

Anticipated future requests for access to the DePuy parcels in the upper Bear Canyon/Chestnut Mountain area would likely lead to construction of new roads and timber harvest in that area.

Cumulative Effects of Proposed Action

The Proposed Action would eliminate the need for new private roads in the upper Bear Canyon/Chestnut Mountain area. The Forest Service would be much less likely to develop new roads and harvest timber in upper Canyon, due to significant visual, wildlife and water quality concerns. Also, DePuy would be less likely to harvest timber on its consolidated private lands in the Trail Creek area, because most of those lands have been harvested in the past two decades.

4.15 Cultural Resources

4.15.1 Direct and Indirect Effects

No cultural resources are known to occur on any lands proposed for exchange. No direct or indirect effects to cultural resources are anticipated from implementation of either alternative.

4.15.2 Cumulative Effects

No cumulative effects to cultural resources would be anticipated from implementation of either alternative action.

4.16 County Revenues

4.16.1 Direct and Indirect Effects

Direct and Indirect Effects of No Action

Under the No Action alternative, no change of land ownership status would occur, and no changes in revenues to Park County or Gallatin County would result.

Direct and Indirect Effects of Proposed Action

Under the Proposed Action, approximately 645 acres of Federal lands in Park County would be conveyed into private ownership, and approximately 44 acres of Non-federal lands in Park County would be conveyed to the U.S.

Based on the 2008 tax and SRS figures presented in Section 3.17, property tax payments would be \$0.15/acre more than SRS payments. The Proposed Action would thus result in an increase of an estimated \$90.15/year in revenues to Park County, based on 2008 figures.

The Proposed Action would result in conveyance of approximately 722 acres of Non-federal lands in Gallatin County to the U.S. Based on the 2008 data, SRS payments on these lands would be \$0.30/ acre less than property taxes on the lands while in private ownership. Thus, the Proposed Action would result in a decrease of an estimated \$216.60/year in revenues to Gallatin County, based on 2008 figures.

4.16.2 Cumulative Effects

Past, Present and Reasonably Foreseeable Actions and Effects

Development for residences or vacation homes on private lands near NFS lands are likely to continue. The effect of such development upon county revenues is difficult to quantify. Under the No Action alternative, Park County would retain a smaller private land base than under the Proposed Action, while the situation would be reversed in Gallatin County. Park County would tend to experience more growth in revenue under the Proposed Action, and Gallatin County would tend to experience more growth in revenue under the No Action alternative.

4.17 Other Disclosures

4.17.1 Public Health and Safety

The proposed Bear Canyon – Trail Creek Land Exchange does not include activities that would pose a risk to public health and safety.

4.17.2 Irreversible and Irretrievable Commitment of Resources

An irreversible commitment of resources refers to the use or commitment of a resource that cannot be reversed. For example, nonrenewable resources, such as minerals in ore, would be removed forever during the milling of the ore and would be irreversibly committed. An irretrievable commitment is the short-term loss of resources, resource production, or the use of a renewable resource because of land use allocations, or a scheduling or management decision.

The proposed land exchange does not involve the use of resources so there are no irretrievable commitments. The proposed exchange, however, could be considered an irreversible commitment of the lands involved, as the ownership of lands would change. It would be unlikely that lands conveyed into private status would ever be reincorporated into NFS status.

4.17.3 Possible Conflicts with Other Land Use Plans, Policies, and Controls

Neither of the alternatives discussed in this EA would be inconsistent with the objectives of Federal, regional, state, or local land use plans, policies, or controls in the project area.

4.17.4 Energy Requirements and Conservation Potential of Alternatives

Implementing the Proposed Action should not require any measurable increase in use of petroleum products as compared to the No Action Alternative. Although the total acreage of NFS lands in the Gallatin National Forest would increase slightly under the Proposed Action, the overall pattern of NFS lands would be consolidated, facilitating efficient administration. The lands involved in the proposed exchange have low potential for oil and gas production.

4.17.5 Environmental Justice

By Executive Order 12898, as amended, agencies of the United States are directed, to the greatest extent practicable and permitted by law, to assure the fair treatment of people of all races, cultures, and income, with respect to the development, implementation, and enforcement of environmental laws, regulations, programs, and policies.

The public involvement conducted for this EA is documented in Chapter 2 and the Project File. The environmental consequences resulting from the Proposed Action and the No Action alternative are described above in this chapter. No racial, ethnic, or socioeconomic group would bear a disproportionate share of the consequences of the proposed action or no action alternative.

Table 4-1 on the following page provides a Comparison of Environmental Impacts by Issue and Alternative.

Table 4-1 provides a Comparison of Environmental Impacts by Issue and Alternative.

Table 4-1			
Comparison of Environmental Impacts by Alternative			
Issue #	Issue	Alternative 1 No Action	Alternative 2 Proposed Action
1	Water Quality	No Action would increase likelihood of future stream sedimentation in Bear Creek, due to anticipated construction of new roads to access private lands in upper Bear Canyon watershed. Access roads would likely cross highly erosive soils, steep slopes and landslide hazard areas.	Proposed Action would consolidate NFS lands in the upper Bear Canyon watershed. Federal lands exchanged to DePuy are located in areas with less erosive soils and better existing road access. Overall, Proposed Action would have lower impacts to water quality from stream sedimentation.
2	Wildlife Habitat	No Action would leave NFS and private lands intermingled near an important habitat linkage area. No Action would likely result in the landowner requesting road access across NFS lands, and development of intermingled private lands in upper Bear Canyon. These factors would result in fragmentation of important wildlife habitat.	Proposed Action would maintain habitat connectivity in the linkage area by consolidating NFS lands. The U.S. would acquire lands close to the linkage area and exchange parcels further from the linkage area. Proposed Action would reduce need for new roads to access private lands in Bear Canyon. These factors would be beneficial to wildlife.
3	Visual Quality	The private lands in the Bear Canyon - Chestnut Mountain area are highly visible from Bozeman and I-90. In No Action, some future development of the parcels is foreseeable. Any such development would greatly alter a prominent scenic resource, thus diminishing regional visual quality.	Proposed Action would consolidate NFS lands in upper Bear Canyon/ Chestnut Mountain. Other than Lot 1 of Section 15, the Federal lands are not visually prominent. Overall, the Proposed Action would provide additional long-term protection of visual resources.
4	Access	No Action would create pressure for new roads across NFS lands to access private lands in upper Bear Canyon watershed. Road construction would be costly and would occur in areas with erosive soil and landslide hazard.	Proposed Action would result in consolidation of private lands in an area already served by suitable roads. Reserving, granting and assigning easements on existing routes would assure access to NFS lands and private lands after the exchange.

Chapter 5

Preparation and Consultation

Introduction

This chapter includes a list of Forest Service staff who participated in the environmental analysis and preparation of this EA; a list of agencies, organizations, and individuals consulted in the process; and a list of individuals and organizations receiving the EA.

5.1 Forest Service Participants

The following agency personnel participated on interdisciplinary team for the analysis of this proposed action, or provided technical, procedural, and administrative assistance.

<u>Name/Title</u>	<u>Contribution</u>
Robert Dennee, Leader, East Side Lands Zone	Project Manager
John Slown, Biologist/Planner	Writer/Editor
Ron Archuleta, Yellowstone District	District Ranger
Jose Castro, Bozeman District	Former District Ranger
Lisa Stoeffler, Bozeman District	District Ranger
Pam Brown, staff, Yellowstone District	Lands, Special Uses, Roads
Fred Haas, staff, Bozeman District	Recreation, Wilderness, Roads, Trails
Bev Dixon, Wildlife Biologist	Wildlife and Habitat
Walt Allen, former Forest Archeologist	Cultural Resources
Mark Story, Forest Hydrologist	Wetlands, Floodplains, Riparian Resources
Bruce Roberts, West Zone Fisheries Biologist	Fisheries and Aquatic Resources
Cheryl Taylor, former Water Rights Specialist	Water Rights
Nathan Motzko, Forester	Timber Resources
Chauntelle Rock, District Range Specialist	Livestock Grazing and Weeds
Sally Senger, Forestry Technician	Sensitive Plants
Dale White, Civil Engineer	Environmental Site Assessment, Cabins
Peter Werner, P.E., Mining Engineer	Mineral Resources
MaryBeth Marks, Geologist	Mineral Resources
Susan LaMont, Hegben Lake District	Invasive Weeds
Wendi Urie, Yellowstone District	Recreation, Wilderness, Trails
Jonathan Kempff, Forest Engineer	Roads and Trails
Janet Kempff, Forest Surveyor	Land Descriptions, Road and Trail Surveys
Mark Lodine, USDA Office of General Counsel	Legal advice
Ron Erickson, former Regional Lands staff	Land Exchange advice
Guy Adams, Regional Lands staff	Land Exchange and NEPA advice
Gina Gahagan, former Title Specialist	Title review and assistance
Sally Cifala, Title Specialist	Title review and assistance

John Hickey, Forest Service Regional Appraiser Appraisal advice
Kimball Frome, Forest Service Review Appraiser Appraisal review and approval

5.2 Consultation with Individuals, Organizations, and Other Agencies

The following individuals, organizations, and agencies were consulted in the analysis of this project and in preparation of this EA.

USDI - Bureau of Land Management
Montana Fish, Wildlife and Parks
Park County Commissioners
Gallatin County Commissioners
Kim Colvin and Katie Ricketts, Terra Western Associates, Contract Appraiser
U.S. Fish and Wildlife Service, Helena
Montana Department of Natural Resources and Conservation, Bozeman
Bill Madden, Attorney for DePuy Enterprises, Inc.
Daryl Smith, President, DePuy Enterprises, Inc.
Craig Kamps, Contract Timber Consultant
Andy O’Hair, Trail Creek Ranch LLC
Conoco-Phillips, Inc.
Unit Petroleum Company
Chevron USA Holdings, Inc.
Security Title Company, Bozeman
American Land Title Company, Livingston

5.3 EA Distribution

This EA will be distributed for 30-day public review and comment. Comments received will be considered in selecting the preferred alternative. Copies of this EA are available for review at:

Bozeman Ranger District, 3710 Fallon Street, Suite C, Bozeman, MT 59718
Yellowstone Ranger District, 5242 Highway 89 South, Livingston, MT 59047
Forest Supervisor’s Office, 10 East Babcock Street, Bozeman, MT 59715

The Forest Service will send letters to the following agencies, organizations and individuals, to provide notice that the EA is available for public review and comment.

Senator Max Baucus
Senator John Tester
Congressman Dennis Rehberg
Crow Tribal Council
Shoshone-Bannock Tribes
Eastern Shoshone Tribe
Confederated Salish and Kootenai Tribes
Fort Belknap Community Council

Julie Cunningham, Montana Department of Fish, Wildlife, and Parks, Bozeman
Karen Loveless, Montana Fish, Wildlife, and Parks, Livingston
Park County Commissioners
Gallatin County Commissioners
Chris Gray, Attorney, Gallatin County
Craig Campbell, Montana Department of Natural Resources, Bozeman
Tom Butler, Attorney, Montana Department of Natural Resources, Helena
Mark Kelley and Pete Schade, Montana Department of Environmental Quality

Daryl Smith, President, DePuy Enterprises, Inc.
Bill Madden, Attorney, DePuy Enterprises Inc.

Andy O'Hair, Trail Creek Ranch, LLC
Darrel Kurk
Roy Metcalf
Fran Noel
Shelley Waters
Mary Sadowski
Erma Kurk
James Yocom

Gallatin Valley Land Trust
Alex Diekmann, The Trust for Public Land
Barb Cestero, Greater Yellowstone Coalition
MT Trout Unlimited - Bozeman
Trout Unlimited -Livingston
Defenders of Wildlife
Montana Wildlife Federation - Helena
Gallatin Wildlife Association
Park County Rod & Gun Club
Park Conservation District
Wilderness Society
Citizens for Balanced Use

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