



Montana Fish, Wildlife & Parks

Region 2 Headquarters
3201 Spurgin Road
Missoula, MT 59804-3101
Phone 406-542-5500
April 22, 2010

Dear Interested Citizen:

Enclosed you will find for your review the Draft Environmental Assessment (EA) for a Montana Fish, Wildlife & Parks (FWP) proposal to direct federal funds toward the purchase of two Conservations Easements (CEs) to protect 16,864 acres of fisheries and wildlife habitat in the Blackfoot River watershed southwest of Ovando, Montana (Missoula and Powell counties). The North Chamberlain CE on 13,424 acres would be purchased by FWP from The Nature Conservancy, and financial support would be given to the Five Valleys Land Trust for its purchase of the Sunset Hill CE on the remaining 3,440 acres.

FWP will hold a public hearing in Ovando on Monday, May 10, 2010 at 6:30 p.m. at the Blackfoot Community Church (basement) to discuss the proposed acquisition and take public comment.

The EA may also be obtained by mail from Region 2 FWP, 3201 Spurgin Rd., Missoula 59804; by phoning 406-542-5540; by emailing shrose@mt.gov; or by viewing FWP's Internet website <http://fwp.mt.gov> ("Recent Public Notices," beginning April 22).

Comments should be directed by: mail to Pat Saffel, Attn: Chamberlain EA, 3201 Spurgin Road, Missoula 59804; phone to 406-542-5507; or email to psaffel@mt.gov. Comments must be received by FWP no later than 5 p.m. on May 21, 2010.

As part of the decision making process under MEPA, I expect to issue the Decision Notice for this EA soon after the end of the comment period. The Montana Fish, Wildlife & Parks Commission has the final decision-making authority for FWP conservation easement proposals, and the Commission will be asked to render its decision on this proposal at its June or July meeting in Helena. Approval will also be necessary from the Montana Board of Land Commissioners.

Sincerely,

A handwritten signature in black ink, appearing to read "Mack Long". The signature is fluid and cursive, with the first name "Mack" being more prominent than the last name "Long".

Mack Long
Regional Supervisor

ML/sr

DRAFT Environmental Assessment

North Chamberlain Conservation Project

Montana Fish, Wildlife and Parks

Region 2 – Missoula

April 2010



***Montana Fish,
Wildlife & Parks***

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PREFACE

The Blackfoot River watershed in western Montana is located at the southern terminus of the Northern Continental Divide Ecosystem. Land and waters here afford crucial habitat and connectivity for several fish species, including bull trout, westslope cutthroat trout, and mountain whitefish. The Blackfoot is also home to regionally important populations of grizzly bear, gray wolf, Canada lynx, wolverine, trumpeter swan, and bald eagle.

Sixty percent of the Blackfoot watershed is in public ownership; historically industrial forest corporations have also been major land owners within the drainage. Most recently, Plum Creek Timber Company (PCT) had been the major private landowner with over 200,000 acres (20% of the watershed). Since 2003, The Nature Conservancy (TNC) has purchased 136,000 acres from PCT in the watershed and has transferred 47,000 acres of this land to public agencies and under protected status to public and private entities. TNC does not intend to hold any of these lands for the long term. In addition, there are presently more than 110,000 acres protected by state and private conservation easements in the watershed. In total, more than 280,000 acres have been acquired for conservation purposes in the Blackfoot since 1976.

The Montana Department of Fish, Wildlife and Parks (FWP) has been a long-term partner with the Blackfoot Challenge, a nationally recognized partnership of agencies, non-governmental organizations, landowners, and private industry dedicated to promoting land conservation and wise resource use in the Blackfoot River watershed.

The North Chamberlain Conservation Project, as described in this environmental assessment, would further contribute to the success of this conservation initiative by securing long-term protection of a landscape that supports fisheries populations and habitat of national importance, is home to several state and federally threatened species, and provides tens of thousands of public recreational days annually.

1.0 PURPOSE OF AND NEED FOR ACTION

1.1. Proposed Action and Need

FWP proposes to protect 16,864 acres of fisheries and wildlife habitat in the Blackfoot River watershed southwest of Ovando, Montana (portions of Missoula and Powell counties) through the purchase of the North Chamberlain Conservation Easement on 13,424 acres from TNC and financial support to the Five Valleys Land Trust (FVLT) for the purchase of the Sunset Hill Conservation Easement on the remaining 3,440 acres. See Appendix A for a map of the conservation properties.

FWP's purchase of the North Chamberlain Conservation Easement would establish permanent land-use restrictions intended to preserve and protect the watersheds and riparian areas adjacent to Chamberlain, Bear, and Pearson Creeks. These creeks are important habitat for westslope cutthroat trout, a Species of Concern in Montana and an important contributor to recreational angling in the Blackfoot River. The project would also establish forested wildlife corridors adjacent to these perennial creeks for the benefit of terrestrial species, such as gray wolf, lynx,

bear, and a variety of ungulates and nongame species. The property would continue to be available for commercial timber harvest, with forest management activities modified to comply with the habitat conservation provisions of the conservation easement and the Standards for Forest Management (see Appendix B).

The funding source of the proposed actions is a U.S. Fish and Wildlife Service Habitat Conservation Plan (HCP) grant provided to FWP for the protection of native fish populations and habitat. The grant is intended to:

- Protect cold, clean, complex, and connected native salmonid habitat critical to bull trout, westslope cutthroat trout, and mountain whitefish;
- Provide managed public access; and
- Ensure habitat that supports imperiled plant and animal species is sustained in perpetuity.

The second component of this project is FWP's proposal to grant to Five Valleys Land Trust (FVLT) a portion of FWP's HCP funds to be used by FVLT to acquire a conservation easement from TNC on the Sunset Hill property that is adjacent to the North Chamberlain property. The Sunset Hill Conservation Easement would conserve important habitat for native fish and wildlife, and a portion of the value of this easement would be used to meet the matching-fund requirements of the federal HCP grant. FWP would retain a "third-party" right of enforcement, meaning that FWP would have the right to enforce the terms of the conservation easements if, for some future reason, FVLT can no longer serve as the responsible party. FWP would remain interested in the ongoing protection and restoration efforts of the existing natural resources and implementation of a grazing monitoring plan within the Sunset Hill property.

Once subject to a conservation easement, the majority (13,424 acres) of the North Chamberlain land is expected to be purchased from The Nature Conservancy by Montana Department of Natural Resources and Conservation (DNRC), thus keeping it available for public recreation. TNC may sell the remaining 3,440 acres, subject to the Sunset Hill Conservation Easement, to a neighboring ranch that is already managed under a separate TNC conservation easement.

The opportunity for FWP to acquire the North Chamberlain Conservation Easement would be realized through the following sequence of agency and landowner interests and actions:

- TNC is seeking to sell the North Chamberlain property in order to recover funds that the organization spent in purchasing the land from Plum Creek Timber Company. The Conservancy's preference is that the land be sold to a public agency, to achieve the conservation values and public recreational opportunities sought through the Blackfoot Community Project.
- FWP seeks to conserve the crucial biological values of the North Chamberlain property for fish and wildlife habitat. FWP was awarded the federal HCP grant for this specific purpose, and can now use that grant to purchase a conservation easement that would provide these permanent habitat conservation benefits, especially in the crucial riparian corridor. TNC is willing to donate the necessary land value by selling these conservation

easements at well below market value in order to meet the HCP grant program's requirement of providing 45% non-federal match in project costs.

- DNRC desires to purchase the 13,424-acre North Chamberlain property for long-term timber management, consistent with its mission of managing land to generate revenue for the support of trust beneficiaries in Montana. The property is located in the vicinity of other significant DNRC land holdings, and would fit well into DNRC's ownership portfolio.
- FWP's purchase of the conservation easement from The Nature Conservancy (TNC) would, in turn, reduce the property value and thus reduce the price that DNRC would have to pay to acquire the land. DNRC ownership and management of the North Chamberlain property, subject to the terms of the conservation easement, would meet FWP habitat conservation objectives.
- DNRC has expressed a willingness to forego some management rights (and related potential economic return), provided DNRC is able to acquire the property for a reduced capital cost.

Coordination of Proposed Action with Sale of Property

DNRC, a partner agency in the Blackfoot Challenge, has a mission to manage State School Trust properties to "produce revenues for the beneficiaries (schools) while considering environmental factors and protecting the future income-generating capacity of the land." DNRC's mission, while based on sustainable resource management, differs from FWP's mission to "maintain the long-term viability of Montana's natural, cultural and recreational resources and manage fish and wildlife resources."

Because of these differing missions, FWP negotiated conservation easement terms with DNRC and The Nature Conservancy that both protect the area's natural resource values and ensure DNRC's ability to manage the property long term to generate revenue for its Trust beneficiaries. The primary economic resource of the North Chamberlain parcel is timber, and DNRC's interest in acquiring these lands is primarily to secure additional land for commercial timber harvest.

DNRC has expressed a willingness to relinquish some property-management rights (and their related potential economic return), provided that DNRC is able to acquire the property for a reduced capital cost. The federal funding through the HCP grant helps achieve these goals by allowing FWP to purchase the North Chamberlain Conservation Easement, thus removing the potential for certain land uses that would be adverse to fish and wildlife habitat (such as residential subdivision or activities that would damage stream corridors) and making the land more affordable for DNRC.

Long-term forest management of the North Chamberlain property would be guided by the practices defined in the Standards for Forest Management (Appendix B) that was cooperatively developed by FWP and DNRC staff. The Standards for Forest Management clarify operational management of the property consistent with both agencies' missions.

FWP's participation in the North Chamberlain Conservation Project is based on an assumption that DNRC would purchase the majority of the land subject to conservation easement

protections. However, it is important to make clear that DNRC is an independent agency that will make its own determination on whether to participate in the North Chamberlain project. Additionally, any proposed land acquisition by DNRC is subject to approval by the State Board of Land Commissioners, which must find that the land acquisition is to the benefit of the State School Trust.

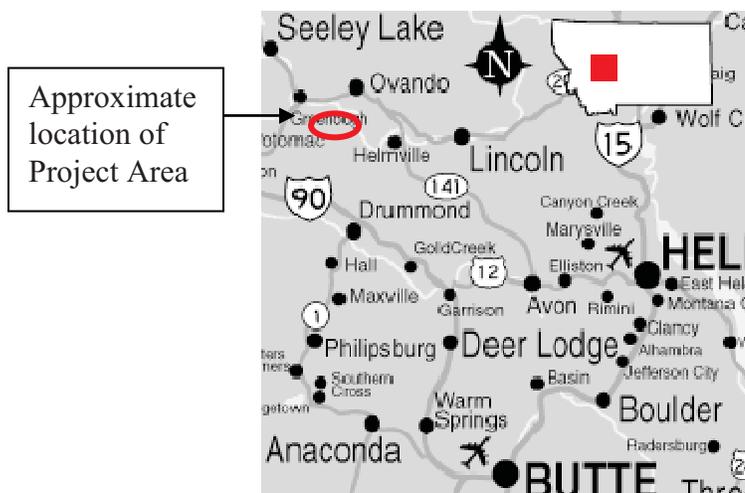
If DNRC determines not to move forward with acquisition of the easement-restricted land, then FWP would only be in a position to move forward with its role in the HCP-funded purchase of the two conservation easements if TNC is willing to continue to offer the conservation easement for sale and another suitable partner steps forward and can effectively take on the range of land purchases and habitat-protection obligations outlined as DNRC's role in the North Chamberlain Conservation Project.

1.2 Objectives of the Proposed Action

- To permanently protect portions of the Blackfoot watershed;
- To maintain and improve important habitat for westslope cutthroat trout and possibly bull trout and mountain whitefish;
- To preserve terrestrial wildlife habitat and movement corridors in the Garnet Mountains for the benefit of game and nongame species; and
- To provide public access in the Garnet Mountains for hunting, angling, and other recreational activities.

1.3. Location

The property is located in the Blackfoot Valley, south of the Blackfoot River, stretching from the junction of Montana Highways 83 and 200 (Clearwater Junction) on the west to Ovando on the east. See Appendix A for a map showing all properties to be protected.



Legal Description of the entire Conservation Project:

FWP North Chamberlain Property:

Missoula County: 2,690.76 acres

Township 14 North, Range 14 West:

Section 1, Lots 1&2, S1/2NE1/4, SE1/4

Section 12, E1/2, SE1/4NW1/4, E1/2SW1/2

Section 13, All

Section 24, All

Section 25, All

Powell County: 10,733.24 acres

Township 14 North, Range 13 West:

Section 2, SW1/4, less Tract A COS 541RB

Section 3, S1/2 less Tract A COS 541RB

Section 4, Lots 1-4, S1/2N1/2, S1/2 less Tract A COS 541RB

Section 5, Lots 1-3, S1/2NE1/4, SE1/4NW1/4, S1/2

Section 6, Lots 5-7, E1/2SW1/4, W1/2SE1/4, SE1/4SE1/4

Section 7, Lots 1-4, E1/2W1/2, E1/2

Section 8, All

Section 9, All

Section 10, All

Section 11, All less Tract B-2 COS 541RB

Section 12, All less Tract B-2 COS 541RB

Section 13, All

Section 14, All

Section 15, All

Section 17, All

Section 18, Lots 1-4, E1/2W1/2, E1/2

Township 14 North, Range 12 West:

Section 7, Lots 1-4, E1/2W1/2, E1/2 less Tracts C-1& C-2 COS 541RB

Section 17, All south of Tract D-2 COS 541RB

Section 18, Lots 1-4, E1/2W1/2, E1/2

Section 19, Lots 1-4, E1/2W1/2, E1/2

Section 20, All

Sunset Hill Property:

Missoula County: 3,440 acres

Township 14 North, Range 14 West

Section 15, E1/2E1/2, W1/2W1/2NW1/4

Section 23, All

Section 26, All

Section 27, All but W1/2, NW1/2

Section 33, W1/2, NW1/4SW1/4

Section 34, NW1/4, N1/2 NE1/4, SE1/4 NE1/4, NE1/4 SE1/4

Section 35, All

1.4 Application to FWP Comprehensive Fish & Wildlife Conservation Strategy

There are three community types within the property that have been identified in the Comprehensive Fish & Wildlife Conservation Strategy (CFWCS, FWP 2005), as Community Types of Greatest Conservation Need. Riparian/wetland and grasslands (primarily intermountain grasslands) are terrestrial community types, and mountain streams are an aquatic community type of greatest conservation need.

Riparian and wetland communities support the highest concentration of plants and animals in Montana, including the highest density and diversity of breeding birds relative to other habitats. This property contains approximately 19 miles (75 acres) of high quality riparian habitat along the Chamberlain, Bear, and Pearson Creeks, bordered by dogwood, alder, and willows. Conifers, with a streamside understory of broadleaf shrubs, and scattered cottonwood and aspen, dominate most of the riparian habitat in the project area. These conifer riparian habitats may be narrow compared to the broad riparian habitats along the Blackfoot River, but they are critical to maintaining species diversity in the project area, as well as overall water quality in the Blackfoot watershed.

The Blackfoot Valley Important Bird Area is located 1 mile to the east of the Chamberlain Creek project area. The Important Bird Area program is a global initiative to identify a network of sites that are critical for the conservation of birds. The Blackfoot Valley is used by significant numbers of migrating birds, especially waterfowl and other waterbirds.

The project area lies along a major raptor migration route. Forest and riparian areas on the project area provide important foraging and roosting habitat for migrating forest hawks, including northern goshawks, Cooper's hawks, and sharp-shinned hawks.

The unique diversity of these three community types provides habitats potentially supporting over two hundred wildlife species within the boundary of a single property. The table below lists the CFWCS Tier1 species and Species of Concern that are predicted to occur in the vicinity of the property. Evaluation of current habitat conditions within the North Chamberlain property and the possibility of sensitive species are noted under comments.

Common Name	Scientific Name	Tier Rank/SOC	Comments
Bald Eagle	<i>Haliaeetus leucocephalus</i>	1, SOC	Three nesting pairs on the Blackfoot River within a mile project area boundary
Long-billed Curlew	<i>Numenius americanus</i>	1, SOC	Little or no habitat on the project area, primary habitat found in the Ovando Valley to the west.
Northern Goshawk	<i>Accipiter gentiles</i>	2, PSOC	Patches of potential nesting habitat in project area
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	2, SOC	Grassland meadows on high ridges in project area may provide some nesting habitat
Black Tern	<i>Chlidonias niger</i>	1, SOC	No habitat for this species on project area
Common Loon	<i>Gavia immer</i>	1, SOC	No habitat for this species on project area

Black-backed Woodpecker	<i>Picoides articus</i>	1, SOC	Inhabits burned forest, potential for future burns in this area
Olive-sided Flycatcher	<i>Contopus cooperi</i>	1, SOC	Potential habitat for this species in project area
Brewer's Sparrow	<i>Spizella breweri</i>	2, SOC	No habitat for this species on project area
Columbian Sharp-tailed Grouse	<i>Tympanuchus phasianellus columbianus</i>	1, SOC	Extirpated in Blackfoot Valley, little habitat in project area
Great Gray Owl	<i>Strix nebulosa</i>	2, SOC	Forest and riparian habitat potentially used for nesting by this species is found on the project area
Flammulated Owl	<i>Otus flammeolus</i>	1, SOC	Potential nesting areas in remnant forest patches
Peregrine Falcon	<i>Falco peregrinus</i>	2, SOC	Nesting area located in cliffs just to the north of the project area, potential foraging areas along riparian habitats within project area
Clark's Nutcracker	<i>Nucifraga Columbiana</i>	3, SOC	Critical species for whitebark pine regeneration, uses forested habitat in the project area
Western Toad	<i>Bufo boreas</i>	1, SOC	Potential habitat in project area, especially along Chamberlain Creek
Harlequin Duck	<i>Histrionicus histrionicus</i>	1, SOC	Observed on the Blackfoot River near the project area, streams in project area are too small
Townsend's Big-eared bat	<i>Corynorhinus townsendii</i>	1, SOC	Potential foraging habitat in project area, may be some limited roosting habitat for non-breeding bats in some rock outcrops
Fringed Myotis	<i>Myotis thysanodes</i>	2, SOC	Likely to forage in riparian habitats, possibly using rock outcrops and large snags for roosting
Hoary Bat	<i>Lasiurus cinereus</i>	2, SOC	Tree bat, roosts in large trees, forages over riparian habitat
Gray Wolf	<i>Canis lupus</i>	1, T/E	
Grizzly Bear	<i>Ursus arctos horribilis</i>	3, T	Frequently seen within the project area
Wolverine	<i>Gulo gulo</i>	2, SOC	
Canada Lynx	<i>Lynx Canadensis</i>	1, T/E	Documented consistent presence within project area
Fisher	<i>Martes pennanti</i>	2, SOC	
Westslope Cutthroat Trout	<i>Oncorhynchus clarkii lewisi</i>	1, SOC	Present in all streams within the project area
Bull Trout	<i>Salvelinus confluentus</i>	1, T/E	Documented in Chamberlain Creek

(P)SOC = MT (Potential) Species of Concern; T/E = Threatened or Endangered under Federal Endangered Species Act

1.5 Authority

FWP has the authority to purchase lands that are suitable for game, bird, fish or fur-bearing animal restoration, propagation or protection; for public hunting, fishing, or trapping areas; and for state parks and outdoor recreation, per Montana statute Section 87-1-209, Montana Code Annotated (MCA).

Sections 76-6-201, et seq., MCA, authorize the application of conservation easements to protect a variety of resource values of “significant open-space land and/or the preservation of native plants or animals, biotic communities, or geological or geographical formations of scientific, aesthetic, or educational interest,” including wildlife, fisheries, scenic, open space, and historical and cultural resources. Section 76-6-206, MCA, also provides for review of proposed conservation easements by local planning authorities for purposes of determining compliance with local growth policies. The proposed conservation easement would be submitted to Missoula and Powell Counties in accordance with this requirement.

2.0 ALTERNATIVES

2.1. Alternative A – Proposed Action: For FWP to Purchase a Conservation Easement from The Nature Conservancy for the North Chamberlain Property and Provide Financial Support to Five Valleys Land Trust for the Acquisition of the Sunset Hill Conservation Easement

FWP proposes to purchase a permanent conservation easement on approximately 13,424 acres and provide support for FVLT to acquire a conservation easement covering an additional 3,440 adjacent acres in the Garnet Mountains south of the Blackfoot River, including the Chamberlain Creek, Pearson Creek, and Bear Creek drainages, for the protection of habitat for fluvial westslope cutthroat trout. In addition to the aquatic habitat, the Garnet Mountains support numerous ungulates, lynx, wolverine, gray wolf, grizzly bear, and a variety of nongame species.

Funding for the conservation easement would be from a U.S. Fish and Wildlife Service HCP grant for the permanent preservation of important habitat for bull trout, westslope cutthroat trout, and mountain whitefish. Expected cost to FWP for the North Chamberlain Conservation Easement is between \$4 and \$5 million. The anticipated funding allocation to Five Valleys Land Trust for the Sunset Hill Conservation Easement is \$1.2 million. The donation to be provided by The Nature Conservancy to meet the HCP grant match requirements is expected to be between \$4 and \$5 million. These estimates of costs, funding, and match amounts are based upon preliminary appraisal values and would be finalized prior to the closing of the transaction.

Under the terms of the North Chamberlain Conservation Easement, the anticipated landowner (DNRC) would retain the right to:

- Conduct forest management and improvement activities, including commercial timber harvest, per the Standards for Forest Management (Appendix B).
- Conduct habitat enhancement or restoration activities.
- Construct or permit utility lines, communication towers, power transmission lines, and pipelines on or across the property, but only if such activities do not significantly harm the conservation values of the property.
- Construct, remove, maintain, replace, and repair roads per the Standards for Forest Management.
- Extract sand, rock, or gravel for use on the property, provided the disturbed area is not greater than 2 acres, the sites are not within the Riparian Management Zone, and reclamation is accomplished according to listed reclamation standards.

- Split the property into no more than 3 ownerships, provided that the 11,000-acre core area must remain intact and the area outside the core area could be split into 2 parcels. The provisions of the conservation easement would continue to apply to the entire property, even if it is split into different ownerships.
- In the core area, manage access; sell the land intact; and lease commercial, non-exclusive outfitting. (“Non-exclusive outfitting” means that the public would still be able to hunt free of charge in any area that allows outfitted hunting.)

The easement would restrict or limit the landowner’s right to:

- Construct or place any residential building on the property, except for temporary housing associated with land management activities. Specifically, no residences or other permanent buildings would be allowed in the North Chamberlain property.
- Remove, control or manipulate vegetation per the Standards for Forest Management.
- Drain, fill, dredge, or destroy any wetland area.
- Conduct mining activities, except for the limited gravel rights noted above. (The conservation easement, however, cannot affect mineral rights owned by third parties.)
- Permanently sell timber harvest rights on the property.
- Use the land for any alternative livestock operation, shooting preserve, fur farm, zoo/ menagerie, or feedlot.
- Dispose of toxic or hazardous wastes on land.
- Graze livestock, except with prior FWP approval and only for habitat restoration or enhancement.
- Restrict access outside the core area.

The easement would give FWP the right to:

- Inspect, preserve, and protect in perpetuity the fish and wildlife habitat, particularly the montane forest, riparian vegetation communities and stream habitat.
- Enter land to monitor landowner’s compliance and make scientific observations of the property’s wildlife habitat and to establish vegetation monitoring transects.
- Prevent inconsistent activities as defined in the conservation easement.
- Provide for public access and noncommercial recreation consistent with FWP policies on portions of the land outside of the core area to be purchased by DNRC.

As the second component of this project, FWP proposes to grant to Five Valleys Land Trust a portion of the HCP funds to be used by Five Valleys to acquire a conservation easement on the Sunset Hill property adjacent to the North Chamberlain property. This conservation easement would conserve approximately 3,440 acres of additional habitat for native fish and wildlife. Additionally, the easement provides for public recreational use of this acreage, including

hunting, hiking and wildlife viewing. The easement does not provide for overnight camping or public motor-vehicle use on the property.

Under the terms of the Sunset Hill Conservation Easement, Five Valleys would have the right to assign management of public recreational use to FWP. FWP proposes to accept that assignment as part of the North Chamberlain Conservation Project.

Because the Sunset Hill Conservation Easement will be sold by the Nature Conservancy to the Five Valleys Land Trust for less than its fair market value, the conservation easement helps meet the federal matching fund requirements for the overall North Chamberlain Conservation Project. FWP would retain a “third-party” right of enforcement, meaning that FWP will have the right to enforce the terms of the conservation easement if, for some future reason, Five Valleys can no longer serve as the responsible party. FWP is providing technical assistance to Five Valleys in drafting the terms of their conservation easements to ensure the terms of those agreements are compatible with the terms of the North Chamberlain conservation easement for the benefit of native wildlife and landscape management. FWP would remain interested in the ongoing protection and restoration efforts of the existing natural resources and implementation of a grazing monitoring plan within the Sunset Hill property.

2.2 Alternative B – No Action: FWP would not purchase the North Chamberlain Conservation Easement nor provide HCP Funding to Five Valleys Land Trust

Under the No Action Alternative, FWP would not purchase the permanent conservation easement on the North Chamberlain property from The Nature Conservancy (TNC). The protection of the resources values on the property is an important component of TNC’s plans. Having not secured the conservation easement, DNRC would likely not purchase the acreage via fee title because the total purchase price would be too high without the conservation easement in place. Thus, TNC would be required to explore other land-sale options that may jeopardize their desire to protect the entire habitat community as one unit through conservation easements.

Without FWP support, FVLT would not be able to purchase a conservation easement on the Sunset Hill property, which could potentially put the existing resource values at risk of commercial activities or residential development. Furthermore, without the Sunset Hill easement, FWP would not be able to spend the HCP grant funds on the North Chamberlain easement, because there would not be enough matching moneys to meet the HCP program requirements.

2.3 Alternatives Considered but Eliminated from Further Analysis

FWP considered the possibility of purchasing just the designated riparian buffer zones within the North Chamberlain property. This alternative is less attractive to TNC and FWP because only a limited portion of the whole property would be protected in perpetuity, while the rest would be vulnerable to activities that might diminish the present resources values.

Under this scenario, DNRC might consider purchasing the remaining acres and would manage those acres consistent with its mission and regulations. This would create an exceedingly complex management framework and would limit both parties’ ability to manage the property for the benefit of fish and wildlife habitat within the Garnet Mountain ecosystem. Non-

encumbered upland acres could still be developed and/or sold at some future time. Public access to the majority of the property would not be ensured.

FWP also considered buying fee title on a portion of the targeted acres. However, DNRC would not acquire the remaining lands because of increased cost and limited income potential. TNC would be required to seek acquisition funds and a buyer elsewhere. This could reduce the acres of habitat protected and open to public access.

Because TNC and FWP are interested in protecting all the habitat communities and species within the North Chamberlain property, and the ownership patterns would limit the parties' ability to manage the property as a whole for the benefit of fish and wildlife, these alternatives were eliminated from further consideration.

3.0 AFFECTED ENVIRONMENT

In September 2008, a survey was completed by Ecological Solutions Group to establish a baseline assessment of the resources within the acres to be included in the proposed North Chamberlain Conservation Easement. A separate report was completed in October 2009 for the Sunset Hill conservation easement area. Much of the following information is from those surveys.

3.1 LAND USE

North Chamberlain

These properties have long been used for forest resource (timber) production; although no active timber harvest is currently in progress within the proposed conservation easement boundary. Timber harvest has occurred in two main phases. The first was conducted by the Anaconda Company around the turn of the last century (1900). Evidence of this phase remains, most noticeably along the larger creek valley bottoms, as very large and old stumps bearing springboard notches. The latter phase occurred mostly in the later decades of the twentieth century by Plum Creek Timber Company and its predecessor, Champion International. It was during this latter phase that accelerated logging led to the removal of forest canopy, and the dense network of access roads was constructed across the Easement property.

There is a total of 152.4 miles of road within this property; the majority lie behind locked gates or barriers and are not open to public motor vehicle access. The vast majority of roads are abandoned logging roads, with only 14.3 miles (9.4 percent) open to motorized use by the public. Of the remaining 148 miles of road within the proposed easement boundary, many are obstructed by fallen trees and are now becoming overgrown. Road density is about 6.5 miles per square mile across the entire proposed easement property.

Sunset Hill

Like the North Chamberlain property, the Sunset Hill property was historically used for timber harvest and was owned by the same two timber companies. Timber management on the property was almost continuous since the 1880s but ceased in the late 1990s. The property was purchased by TNC in 2007 from Plum Creek Timber for habitat conservation purposes.

Similar to North Chamberlain, numerous miles of roads cross this area. Presently, there are 31 miles of improved and unimproved two-track roads providing access on and across portions of this property. In addition to those roads, there are some unmaintained logging roads that are available to non-motorized traffic.

Beyond historic logging activities, the Sunset Hill property has been used for grazing of horses since the 1930s and cattle over the years prior to 1970s by a neighboring ranch. Additionally, the property was used to graze sheep from 1900 to 1930s.

3.2 Vegetation

North Chamberlain

These properties are primarily forested land with a mixture of forest age classes and stand structure. The area has been historically a working forest and is currently comprised of second growth stands of Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), western larch (*Larix occidentalis*), lodgepole pine (*Pinus contorta*), subalpine fir (*Abies lasiocarpa*), and Engelmann spruce (*Picea engelmannii*).

The uplands are dominated by the Douglas-fir (*Pseudotsuga menziesii*) series in which Douglas-fir is the indicated climax tree species. The series is associated with well-drained mountain slopes and valleys. Elevation in the easement varies from approximately 4,000 feet along Chamberlain Creek at the north end to approximately 6,000 feet at Dunigan Mountain in the southeastern portion of the easement property. Some portions of the property contain park-like savannahs with widely scattered trees over a grassland understory. These sites are typically very dry on south exposures and were harvested a number of years ago by clearcutting. Clearcutting of these harsh, dry sites has set back succession a number of decades and re-establishment of trees has been extremely slow.

The largest portion (56%) of the woodland areas is classified as open canopy forest with trees taller than 15 feet and providing 25-60% coverage. Smaller portions are classified as closed canopy (28%), which is defined as stands of trees with interlocking crown branches, and intensely harvested (16%) where nearly all the trees of 15 feet or greater have been removed.

The riparian corridors are generally narrow and laterally contained within valley alluvium and colluvial hill slopes. Historical logging and channel alterations are extensive within the riparian areas and steep adjoining hill slopes, many of which also contain logging access roads that contribute sediment to riparian areas. The riparian zones are dominated by the Douglas-fir/red-osier dogwood (*Pseudotsuga menziesii/Cornus stolonifera*) habitat type at lower elevations and the Engelmann spruce/red-osier dogwood (*Picea/Cornus stolonifera*) habitat type at mid to upper elevations. Mountain alder (*Alnus incana*) is a dominant understory shrub in many of the sites. The proposed conservation easement would include approximately 51 miles of riparian area, covering 1,064 acres.

Sunset Hill

Sunset Hill contains a diverse assemblage of habitat types, including upland coniferous forest types, grassland, small herbaceous wetlands, and riparian corridors. Elevations on the property

range from 3,900 feet in the southwest to 5,500 feet along its eastern boundary with the North Chamberlain property and the Garnet Mountains.

Douglas-fir habitat types (Pfister et al. 1977) dominate over 90% of the property, with the Douglas-fir/snowberry habitat - pinegrass phase being the largest on the landscape. Ponderosa pine and western larch most often share the upper canopy. Cover ranges from 15%-60% depending upon the habitat type. Douglas-fir ranges from 2-15 inches diameter at breast height (dbh) with heights ranging from 20-50 feet. Seedlings and saplings of Douglas-fir, larch, and pine were found in some of the stands. Ponderosa pine trees, ranging from 3-30 inches dbh and 20-70 feet in height, are generally more scattered and tend to have lower cover than Douglas-fir. Black cottonwood can be found scattered on the property in limited areas.

Riparian and wetland vegetation covers approximately 100 acres, of which 95 acres consists of riparian zones along streams. Engelmann spruce/twinflower habitat type comprises the largest portion wetland vegetation areas with mountain alder and Engelmann spruce/red-osier dogwood habitats in lesser quantities.

Both Properties

In general, the understory in riparian areas is dominated by tall riparian shrubs such as red-osier dogwood (*Cornus sericea*), mountain alder, and Rocky Mountain maple (*Acer glabrum*). Common riparian herbaceous species include snowberry (*Symphoricarpos albus*), thimbleberry (*Rubus parviflorus*), swamp gooseberry (*Ribes inerme*), twinflower (*Linnaea borealis*), arrow-leaf groundsel (*Senecio triangularis*), and stream violet (*Viola palustris*). Other wetland species present include red raspberry (*Rubus idaeus*), field horsetail (*Equisetum arvense*), sharptooth angelica (*Angelica arguta*), baneberry (*Actaea rubra*), American false-hellebore (*Veratrum viride*), cow parsnip (*Heracleum lanatum*), large-leaved avens (*Leum macrophyllum*), star-flowered false Solomon's seal (*Smilacina stellata*), stinging nettle (*Urtica dioica*), one-sided wintergreen (*Pyrola chlorantha*), rattlesnake plantain (*Goodyera repens*), sweet-scented bedstraw (*Gallium triflorum*), lady fern (*Athyrium filix-fernina*), mountain woodfern (*Dryopteris campyloptera*), oak fern (*Gymnocarpium dryopteris*), bracken fern (*Pteridium aquilinum*), heartleaf arnica (*Arnica cordifolia*), enchanter's nightshade (*Circaea alpina*), mountain sweet cicely (*Osmorhiza occidentalis*), twisted stalk (*Streptopus amplexifolius*), purple-leaved willowherb (*Epilobium ciliatum*), common miterwort (*Mitella nuda*), northern black currant (*Ribes hudsonianum*), tall mannagrass (*Glyceria elata*), and blue-joint reedgrass (*Calamagrostis canadensis*).

Species typical of uplands are spiraea (*Spiraea betulifolia*), Oregon grape (*Berberis repens*), Wood's rose (*Rosa woodsii*), western serviceberry (*Amelanchier alnifolia*), woodland strawberry (*Fragaria vesca*), meadowrue (*Thalictrum occidentale*), and round-leaved violet. Grassland grasses are occasionally found in forest openings, which include spreading and stiff needlegrass (*Stipa occidentalis*), downy oatgrass (*Avenula pubescens*), and Idaho (*Festuca idahoensis*) and rough fescue (*Festuca scabrella*). Occasional other forest grasses are found in denser canopy, including blue wildrye (*Elymus glaucus*) and northwestern sedge (*Carex concinnoides*).

Invasive weed species are present throughout the proposed easement properties. Invasive weeds are especially concentrated along both active and abandoned roadways, and at other sites that

have been disturbed by human activities, such as timber harvest sites and livestock grazing areas. A total of ten invasive weed species were recorded during the study that includes Yellow toadflax (*Linaria vulgaris*), Canada thistle (*Cirsium arvense*), Common houndstongue (*Cynoglossum officinale* L.), Common tansy (*Tanacetum vulgare*), Oxeye daisy (*Chrysanthemum leucanthemum* L.), Spotted knapweed (*Centaurea maculosa*), St. Johnswort (*Hypericum perforatum*), and Sulphur cinquefoil (*Potentilla recta*). At the time of the baseline surveys, the riparian areas within the targeted acres remain relatively free of weeds.

3.3 Wildlife Species

Both Properties

Approximately 300 elk use the targeted conservation easement properties all or part of the year. The property contains more than 4,000 acres of mapped elk winter range, most of which has been formally classified as “crucial elk winter range” by FWP. Similarly, more than half the property is FWP-designated mule deer winter range, and both mule deer and white-tailed deer are abundant on project lands throughout the year. Moose are also commonly observed and occasionally harvested. All the properties are heavily used and highly valued by big game hunters each fall.

Canada lynx habitat is present on the property and researchers have documented consistent lynx presence there; the core of the Garnet Mountains lynx population lies just south of the conservation easement boundary. Up to 20 lynx use higher elevation subalpine habitats within the Garnets year round and are likely the most southerly, naturally occurring lynx population in the US. The subject property provides critical connectivity between these lynx and the larger Clearwater watershed population just to the north. Maintaining this connectivity would be critical to both sustain lynx in the Garnets and, hopefully, to contribute to the re-colonization and recovery of historic populations in southwest Montana.

FWP routinely documents grizzly bear presence on or immediately adjacent to the subject lands. Grizzly use of the property is expected to continue to increase with the bear’s expanding southern range. The project lands provide important connectivity between the Northern Continental Divide Ecosystem and currently unoccupied habitat to the south.

There are several active bald eagle nests adjacent to the property, some within a few hundred yards of the easement boundary. Black bear, mountain lion, marten, bobcat, and a host of other wildlife species are common. Track surveys routinely detect wolverine presence on or adjacent to the subject lands.

Additional game species that use the property are ruffed grouse, dusky (blue) grouse, and less common, wild turkeys. The riparian vegetation community may provide nesting, resting, and foraging habitat for up to 134 native species of birds. The rocky outcrops along the river provide unique and finite habitat resources for several species of bats, birds and reptiles, including Townsend’s big-eared bat, small-footed myotis, little brown bat, and big brown bat. Forested areas are likely used by hoary bats, silver-haired bats, long-eared myotis, and fringed myotis. Full inventory and monitoring efforts have yet to be undertaken to identify the presence of other potentially unidentified species. The riparian area has documented use by boreal toads and spotted frogs.

See section 1.4 for information regarding sensitive species within the conservation easement project area.

3.4 Fisheries Species and Water Resources

North Chamberlain

The proposed easement areas include approximately 17.9 miles of perennial streams including portions of several small (1st- 2nd order) fish-bearing streams. The conservation easement parcel has a long history of intensive stream, riparian and upland forest management activities known to have influenced aquatic resources. In the Chamberlain Creek watershed, these activities include riparian timber harvest and loss of instream wood, excessive riparian grazing, channelization, dewatering, and sediment runoff from roads and barriers to the movement of aquatic species (Peters 1990, Pierce 1991). The primary streams on the parcel are Chamberlain Creek, Pearson Creek and Bear Creek; however headwater segments of several smaller streams including Warren Creek (suspected fish bearing), Little Fish Creek, Fish Creek and the North Fork of Frazier Creek also fall within the conservation parcel.

All fish-bearing streams within these properties are occupied by westslope cutthroat trout (WSCT). Among the various streams, WSCT life history traits present include stream-resident and migratory (fluvial) fish. Resident WSCT spend their entire life in tributaries; whereas fluvial fish hatch and rear within tributaries, then migrate to the Blackfoot River to mature and later return as adults to spawn. The larger tributaries--Bear, Pearson and Chamberlain Creeks--are all naturally connected to the Blackfoot River and support spawning runs of fluvial WSCT. However, lower reaches of the smaller tributaries, such as North Fork of Frazier Creek, are anthropogenically altered in a manner that either prevents or greatly inhibits upstream fish passage from the Blackfoot River. These streams thereby support primarily stream-resident WSCT (Pierce et al. 2006). The “genetic purity” of WSCT stocks ranges from 96% to 100% depending on location and downstream relationships with rainbow trout. Bull trout have been documented in Chamberlain Creek (Pierce et al 2008). Non-native salmonids (brook, brown and rainbow trout and hybrids) are also variously present in low densities in lower Chamberlain Creek watershed.

Bear Creek enters the Blackfoot River at river-mile 37.5, and Chamberlain Creek enters the Blackfoot River at river-mile 43.9 with a base-flow of about 2-3 cubic feet per second (cfs). The only fish-bearing stream within the eastern portion of the conservation parcel is the headwaters of the North Fork of Frazier Creek. The North Fork of Frazier Creek enters Frazier Creek, a tributary to the Blackfoot River, at river-mile 59.4. Lower reaches of the smaller tributaries--Fish Creek, Little Fish Creek and the North Fork of Frazier Creek--have been altered by landowners in a manner that either prevents or greatly inhibits upstream fish passage from the Blackfoot River.

With the exception of Bear Creek, downstream private landowners hold water rights to all other perennial fish-bearing streams within the conservation parcel. Additionally, the lower reaches of most streams located on private lands have been negatively impacted by stream alterations. As the primary stream within the conservation parcel, Chamberlain Creek has also been the focus of past restoration actions. Previous restorative actions involved livestock grazing changes, road

upgrades emphasizing sediment reduction, channel reconstruction, the placement of instream wood, and water leases with downstream landowners. Remaining fisheries impairments and/or influences include road drainage (sediments), livestock grazing, road crossings, and reduction in riparian vegetation.

In 2008, FWP completed a fisheries baseline report for fisheries resources within the proposed North Chamberlain easement property. Data were collected on fish populations, stream discharge, water temperature, channel migration zones, and instream wood counts in order to evaluate the health of the aquatic resources.

Westslope Cutthroat Trout

Westslope cutthroat trout (WSCT), a Species of Concern in Montana and petitioned for listing under the Endangered Species Act (ESA), have declined over much of their historic range within the last century. Reasons for this decline include habitat loss and degradation, genetic introgression with introduced rainbow trout and Yellowstone cutthroat trout, over-harvest, and competition with introduced brook trout and brown trout. In the Blackfoot watershed, WSCT occupy about 93% of their historical range. Although hybridization is present in the lower Blackfoot Basin, the upper Blackfoot River basin supports one of the larger fluvial meta-populations of genetically unaltered westslope cutthroat in Montana, although populations are generally in low abundance compared to historical conditions.

WSCT stocks include migratory (*fluvial, adfluvial*) and non-migratory (*resident*) fish. Both rely on high quality tributary habitats for spawning, rearing, and over-wintering and often inhabit the same stream. Fluvial WSCT spend their early life stages in small streams, and then migrate to rivers where they mature and grow much larger than resident fish before returning to natal tributaries to spawn. Adfluvial WSCT migrate to lakes to mature before they return to their natal tributaries to spawn. In the Blackfoot Basin, fluvial WSCT occupy the river system, whereas adfluvial fish occupy primary the Clearwater chain of Lakes. Resident WSCT trout generally inhabit small headwater streams across the basin, including some physically isolated from the river.

In the rest of Montana, genetically unaltered WSCT only occupy 8-20% of the WSCT's historical range. In contrast, WSCT in the Blackfoot watershed show a high degree of genetic purity across the upper watershed upstream of the North Fork confluence. FWP identified seven tributaries in the upper Blackfoot watershed supporting fluvial WSCT spawning, all of which have tested as genetically unaltered. WSCT migration corridors, spawning, and rearing areas were located primarily on private lands at the lower tributary elevations, but often extend to mid-to-upper stream reaches located on public lands.

Recovery of WSCT began in 1990 with the adoption of catch-and-release angling regulations, and expanded with habitat restoration. In conjunction with fluvial bull trout recovery, the focus of westslope cutthroat recovery is re-establishing the fluvial life-history form by: 1) reducing or eliminating controllable sources of anthropogenic mortality; 2) maintaining and restoring existing spawning and rearing habitats; 3) restoring damaged habitats; and 4) improving connectivity from the Blackfoot River to tributary spawning areas. Most of the current westslope cutthroat work occurs in core area watersheds or other streams containing bull trout.

To date, restoration projects in WSCT habitat have involved 40 streams, focusing on improving habitat conditions. In response to these actions, densities of WSCT have increased from about 10 per mile in 1990 to about 100 per mile in 2006 in a section of the middle Blackfoot River influenced by restoration actions.

Streams on the proposed conservation easement property are very important for WSCT conservation and angling opportunity in the Blackfoot River drainage. In particular, Chamberlain Creek is a primary spawning and rearing stream for fluvial WSCT in the Blackfoot.

The Chamberlain Creek surveys showed a WSCT-dominated community with densities that decrease in the downstream direction from about 30 fish/100-feet below the mouth of the West Fork (mile 3.9) to about 13 fish/100-feet near the mouth (mile 0.1). Young-of-the-year (YOY) WSCT were common at all three sampling locations. Brook trout in low numbers were also found at mile 1.9, increasing slightly at the upstream location (mile 3.8). Low numbers of YOY brown trout were only found at the mile-0.1 survey location. Low numbers of WSCT were found in Bear Creek at stream mile 1.4. No other fish species were observed in upper Bear Creek.

Bull Trout

Bull trout exhibit wide-ranging migratory behavior that includes residence in the main stem Blackfoot River and spawning in discrete sections of only a few of the larger, colder tributaries. Recovery goals and objectives identified in the USFWS Draft Bull Trout Recovery Plan include maintaining current fish distribution, maintaining stable or increasing population trends, restoring and maintaining suitable habitat, conserving genetic diversity, and providing connectivity for genetic exchange. This proposal would contribute to all of these recovery goals. The Draft Recovery Plan also encourages using all available conservation programs, supporting watershed group restoration efforts, integrating watershed restoration efforts on public and private lands, and using existing federal authorities. Bull trout presence has been documented in Chamberlain Creek. This proposal would address habitat protection and improvement needs that would promote habitat suitable for bull trout.

Critical habitat for the bull trout was designated in September 2005, including both private and public lands. Historically when Plum Creek Timber (PCT) owned the property, the watershed's natural values were covered under the Native Fish Habitat Conservation Plan (NFHCP), which is an agreement between PCT and U.S. Fish and Wildlife Service to be able to conduct activities that may negatively impact a species listed as threatened or endangered under the Endangered Species Act, as long as the activities would not appreciably reduce the chances of survival and recovery of the species in the wild. With the ownership now changed, that plan and its conservation goals are moot unless another mechanism was in place, such as a conservation easement. Conservation easements placed on these lands with HCP Land Conservation funds would ensure continued protection consistent with the Draft Recovery Plan.

Mountain Whitefish

Mountain whitefish are also a critical species within the native fish community of the Blackfoot River and the lower reaches of larger tributaries. They play a critical role in the ecosystem and serve as a very important forage fish for larger trout, such as bull trout.

Both adult and juvenile mountain whitefish are found throughout the lower reaches of the medium-sized streams of the upper Blackfoot watershed. Like other species in the salmonid family, mountain whitefish require clear, cold streams where schools feed in riffles. The species is one of our most important native species from an ecological perspective due to its high forage value for aquatic and terrestrial predators. HCP-protected properties are expected to help protect habitat and allow future opportunities for habitat restoration to benefit mountain whitefish. Mountain whitefish are not currently found in streams on the conservation easement property.

Sunset Hill

The Sunset Hill property contains approximately 15.6 miles of streams (Calypso 2009). According to survey data, only westslope cutthroat trout are present in Fish Creek and Little Fish Creek. Samples from Fish Creek on the property found the westslope cutthroat trout to be 98% genetically pure based on genetic analysis, while samples from Little Fish Creek found the westslope cutthroat trout to be 100% genetically pure determined by genetic analysis (Pierce et. al. 2004).

Previous and Future FWP Watershed Restoration Efforts

Chamberlain Creek is a small Garnet Mountain tributary to the middle Blackfoot River, entering near river mile 43.9 with a base-flow of 2-3 cfs. Prior to 1990, sections of lower Chamberlain Creek were dewatered severely and physically altered (grazing and channelization), leading to sharp declines in WSCT densities (Peters 1990). During the early 1990s, Chamberlain Creek was one of the first comprehensive restoration projects within the Blackfoot Basin. Restoration emphasized road drainage repairs, riparian livestock management changes, fish habitat restoration, irrigation upgrades (consolidation of ditches, water conservation, elimination of fish entrainment, and fish ladder installation on a diversion), conservation easements and improved stream flows through water leasing. Restoration occurred throughout the drainage, including Pearson Creek, with emphasis in the lower basin.

FWP and DNRC are seeking funding to remove about 5.5 miles of road in the riparian areas of Chamberlain and Bear Creeks. This project would further enhance riparian protections via the easement by removing gravel roads and allowing trees to reestablish. A \$100,000 Future Fisheries grant was approved in 2009. Other sources of funding are being pursued to complete the required amount to implement the project. This project would provide a capstone to past efforts by removing road and stream bank erosion; increasing tree recruitment to the streams that, in turn, increase cover and pool habitat; and alleviate warming water temperatures by providing shade trees.

3.5 Recreation Opportunities

Current public recreation opportunities within both properties primarily consist of hunting, hiking, and horseback riding. The majority of the North Chamberlain project property lies within Hunting District (HD) 292, although roughly 2,500 acres on its eastern edge lies within HD 298. The area is highly valued and heavily used by hunters each fall. HD 292 hosted 14,800 deer hunter-days and 15,300 elk hunter-days in 2008. In addition, the property has been an integral part of the Blackfoot Block Management Area (BMA) for many years; this BMA is one of the most heavily used in region and hosted nearly 2,700 hunter days in 2007.

The Sunset Hill property is closed to motorized vehicles but hunters currently may use all of the property for walk-in hunting. TNC has maintained Plum Creek Timber's previous open access policy and currently manages the property for unrestricted walk-in hunting. Furthermore, the Sunset Hill property has been used for horse-led trail rides, horseback riding, and mountain biking by visitors to the nearby Paws Up and E bar guest ranches.

4.0 ENVIRONMENT CONSEQUENCES

4.1 Land Resources

Proposed Action: Under the Proposed Action, the conservation easement would restrict disturbances to the riparian areas and associated buffer zones. This protection would decrease negative impacts to aquatic and terrestrial resources within these areas.

The provisions outlined in the Standards for Forest Management (Appendix B) specify that existing roads within the property be inventoried within the first five years of DNRC ownership to define the classification of each road based on criteria described in the Standards. Based on these classifications, some roads may be left open to motorized use, restricted for DNRC-authorized use, closed and reclaimed, or left open for temporary use. Those roads reclaimed would be done so that the introduced vegetation meets surrounding vegetation environment. Total open-road densities would be capped at levels similar to those existing at the time the easement is purchased, with a goal to reduce road density over time.

In addition to classifying existing roads, the Standards also define levels and methods of timber harvest management, especially in Riparian Management Zones (RMZs). The width of the RMZ is defined by stream class and can range from the stream's channel migration zone plus 120 feet on both sides of the waterway to 50 feet beyond the high water mark on both sides of the stream. Within the RMZ, timber harvest can be conducted but no more than 16% of RMZ acres can be harvested within a 50-year period. In addition, and depending on stream class, no timber harvest could ever be done in channel migration zones plus 25 feet. This restriction is for most perennial streams and for stream sections important for fishery protection. These limitations seek to allow for some timber harvest while maintaining fisheries and wildlife habitat values by leaving much of the RMZ unharvested and trending towards old growth.

Providing funding to Five Valley Lands Trust for the Sunset Hill conservation easement would serve to prohibit competing land uses that could negatively affect soils, geographic features, and wildlife habitats in those primitive areas.

No Action: Under the No Action Alternative, TNC would attempt to find another buyer for this property if DNRC should retract its offer. It is TNC's preference to sell the North Chamberlain property as a single unit in order to preserve the aquatic and terrestrial habitats present there. However if a suitable buyer cannot be found, TNC may consider splitting the property into smaller units that may make them more vulnerable to residential development pressures and other habitat disturbing activities.

Without FWP's support of FVLT's conservation proposal, FVLT would not be able to secure conservation easements on either properties, thus leaving the habitat values potentially vulnerable to development activities, such as timber harvesting or residential subdivision.

4.2 Air Quality

Proposed Action: Under the Proposed Action, there would be net benefit to the ambient air quality because activities on the property would be regulated by the guidance described in the Standard for Forest Management, and DNRC management would be less intense than historic Plum Creek Timber/Champion management. However, a potential indirect impact of FWP obtaining the conservation easement and subsequently DNRC's purchase of fee title would be the increase of traffic on the roads accessing and those within the property. DNRC's future plan for the forested area does include timber extraction and with such action, logging equipment could generate moderate amounts of dust. Ambient air quality could be negatively affected for the duration of logging activities.

The financial support to FVLT for its conservation efforts would not affect the ambient air quality of the Sunset Hill property. There is the potential that the conservation easement terms negotiated by FVLT with the landowner could improve overall air quality.

No Action: Under the No Action Alternative, TNC would retain ownership of the property and no conservation easements would be purchased by FWP or FVLT. Current air quality conditions would remain unchanged. Depending upon whom TNC sold the property to in the future, air quality conditions could change but there is no proof they would under new ownership.

4.3 Water Resources

Proposed Action: Under the Proposed Action, water resources within the North Chamberlain property would be maintained or enhanced by protecting riparian areas, not allowing grazing-related degradation, and eliminating residential development and subsequent water demand. There are no proposed changes that would result in increased discharge, changes in drainage patterns, alteration of the creeks' course (including flooding), changes in the quality or quantity of groundwater, and/or changes in water rights or other water users. Protection of existing cold, clean, complex, and connected native salmonid habitat would be maintained. Furthermore, FWP would have the ability to improve habitat for the benefit of aquatic species.

The Standards for Forest Management define criteria for evaluating levels of sediment delivery from road segments and stream crossings and corrective actions that would take place to mitigate impacts. The Standards noted that DNRC would complete any corrective actions within the first fifteen years of owning the property. Corrective actions could include installation or removal of culverts, realignment of roadbed, or revegetation of nearby areas to reduce runoff into streams.

With DNRC interest in the land, a cooperative effort to remove 5.5 miles of road from the riparian area is being planned. Removal of roads would improve water quality by decreasing sediment supply and allowing vegetation to grow.

By FWP providing HCP funding to FVLT for the purchase of a conservation easement on the Sunset Hill property, the likely result of such action would be a net reduction in potential future

risks to water quality on the subject lands compared to the No Action alternative. The easement terms include protection to riparian corridors to ensure quality habitat for aquatic species and vegetation and prohibition of the manipulation or alteration of natural water courses.

No Action Alternative: If FWP decides not to exercise a conservation easement on the North Chamberlain property or support FVLT's conservation easement activities, it is unknown if any of the water resources (riparian areas, wetlands) would be affected by another buyer's plans if TNC sold the property in the future.

4.4 Vegetation

Proposed Action: If FWP were to purchase the North Chamberlain Creek conservation easement vegetation within the riparian corridors would be protected and enhanced. In addition, agreed upon Standards for Forest Management, statutes guiding DNRC timber harvest practices and prohibitions on livestock grazing are expected to significantly improve upland vegetative cover and habitat condition. FWP would have the ability to manage vegetation for the benefit of aquatic and terrestrial wildlife within the RMZs.

By state law, DNRC is required to manage noxious weeds on its properties. As a responsibility of purchasing the North Chamberlain property, DNRC would implement its Trust Land Management Division Weed Management Plan. Through the implementation of that plan, it is likely there would be a decrease in noxious weeds on the property and overall habitat health would improve.

The Standards for Forest Management defines timber harvest management within the conservation easement area, especially in Riparian Management Zones (RMZ). Within the RMZ, timber harvest can be conducted but no more than 16% of RMZ acres can be harvested within a 50-year period. Best Management Practices that would be employed by DNRC to mitigated impacted areas include use of water bars, mulch, and grass seeding to reduce new erosion pattern from becoming established.

Through FWP's financial support of FVLT's purchase of conservation easement on Sunset Hill, existing vegetation quality and quantity may increase for the benefit of wildlife species depending up on the final terms of that agreement with landowner and the implementation of site-specific grazing plans to allow for the continuing presence of livestock on the landscape.

No Action: If FWP does not purchase a conservation easement on the property, it would be unable to protect important aquatic habitat for westslope cutthroat trout. Additionally, DNRC would be unlikely to purchase the North Chamberlain property and would thus forego future revenue they might have generated for the Trust beneficiaries. If TNC is forced to sell the property to another buyer, future vegetative management would be unfettered and have unknown impacts to fish and wildlife habitat.

Without FWP's support of FVLT's conservation proposal, FVLT would not be able to secure conservation easement on the Sunset Hill property thus leaving the habitat values potentially vulnerable to activities, such as timber harvesting or excessive livestock grazing that could diminish the quality and quantity wildlife habitat and forge.

4.5 Fish and Wildlife Resources

Proposed Action: If FWP acquires the North Chamberlain conservation easement, future management of the property would be guided by agreements designed to the benefit aquatic and terrestrial species. Fisheries and wildlife habitat, and the public's ability to enjoy them, would be permanently protected.

Under the proposed action, more vegetation would be protected along the streams than is normally afforded by statutory streamside management zone protections. Vegetation in these larger buffer zones is expected to recover and flourish, even if more intensive timber management continues in the uplands. Riparian areas are some of the most productive and important of all wildlife habitat types in the Blackfoot; up to a third of all wildlife species rely on these corridors for some part of their life cycle.

The RMZs on the project area run generally north-south and would assure that wide ranging, forest-dependent species are able to traverse the property through these unmanaged linear corridors. They are important for maintaining aquatic resources as well. Riparian areas help maintain late-season flows, keep streams cool, provide wood for instream habitat, and control streambank erosion. The RMZ width would range from 50 feet to about 150 feet (when considering channel migration zone widths) on each side of the stream. Fifty-foot buffer widths would be on non-fish bearing streams. One hundred twenty to about 150 foot buffers would be for fish-bearing streams.

The Standards for Forest Management describes the guiding principles for wildlife and upland habitat protection within the easement area. These principles outline the need for limiting timber harvest activities that would remove visual screening that provides protection for wildlife species. Additionally, the Standards limit forest management activities (timber harvest, slash treatment, etc.) during the spring within grizzly bear habitat, in order to reduce the likelihood of potential conflicts with bears. Spring period is defined as April 1st through June 15th. However, some limited low-intensity forest management activities, such as tree planting, noxious weed management, and prescribed burning, are allowed and may interrupt normal wildlife movements and activities within those localities.

Year round walk-in public recreational access is currently allowed on the property. DNRC would continue to permit public access under the proposed action.

Providing funding to Five Valleys Land Trust for the Sunset Hill Conservation Easement would serve to protect and preserve a large ecosystem that is used by a variety of sensitive species and that supports healthy populations of game and nongame species. The addition of this conservation easement to the North Chamberlain Conservation Easement would help to ensure cold, clean, and connected waterways for aquatic species and connected migration corridors for terrestrial species, as well as management practices that would protect existing habitat values.

No Action: These parcels are threatened by residential and other development. If this should occur, aquatic and wildlife resources would be negatively impacted, but at what level is unknown since it is unknown who The Nature Conservancy might sell the property to and what the new

owner would have planned for it. If the parcel sold to a private party and were to be developed, public recreational access to it would almost certainly be limited.

4.6 Noise and Electrical Effects

Proposed Action: The proposed conservation easement may likely result in more people using the property, primarily DNRC staff or contractors on site for timber management activities. Timber harvest and other management activities could locally increase noise levels on the property. However, timber management and harvesting techniques would likely be similar to those practiced under timber company ownership, so noise levels should not increase significantly over past levels. DNRC would retain the authority to provide utility easements with the caveat that FWP would provide consultation services as to the location of such easements to ensure wildlife and their habitat are not adversely affected.

The transfer of HCP funds to FVLT for the purchase of the Sunset Hill conservation easement would not influence existing noise levels or utility easements.

No Action: The potential for another buyer purchasing the North Chamberlain property could result in development of the property, which could permanently increase noise and electrical effects in the area. If FWP does not provide financial support to FVLT for the conservation easement, changes in land use activities could possibly affect existing noise levels in the local area in the future.

4.7 Land Use

Proposed Action: Plum Creek Timber Company and other previous owners logged roughly 80% of the North Chamberlain property over the last century. In addition to logging, portions of the property were historically leased for livestock grazing. Logging and grazing have not been conducted since the property was bought by TNC in 2006.

If FWP were to purchase the conservation easement, timber management activities by DNRC would begin once again under the guidance of the Standards for Forest Management that both agencies prepared. Commercial grazing of livestock is prohibited throughout the property; however it could be employed as a tool to enhance wildlife habitat if both FWP and DNRC were in agreement.

Providing funding to FVLT, the Sunset Hill conservation easement would serve to protect and preserve the natural habitat required at a landscape scale to support wildlife populations and communities, and by prohibiting competing land uses and developments that could diminish habitat quality.

No Action: If FWP did not purchase the North Chamberlain conservation easement, DNRC would not be able to purchase the North Chamberlain property from TNC. If TNC were forced to find another buyer to purchase the land, the land's natural resource values would not be protected by the conservation easement, Standards for Forest Management, or DNRC Best Management Practices and regulatory statutes. The property could be sold to a private party who might choose to divide and/or develop it for residential or commercial uses. Fisheries, wildlife, and native vegetative resources would be diminished if that occurred but when and at what level

are unknown. Several subdivisions have been proposed or are ongoing near the project area; subdivision and residential development of the property is possible without the protections an easement would afford. Access to lands for recreational use would be unknown.

Similar issues would continue to threaten natural resources and public access at the Sunset Hill property if FWP did not provide HCP funding to FVLT for this conservation easement of those acres.

4.8 Risk and Health Hazards

Proposed Action: The proposed purchase of the conservation easement by FWP would not increase health hazards or risks to the public.

As a direct consequence of FWP's action, DNRC would obtain ownership of the North Chamberlain property, which would then be subject to that agencies land management practices, including timber extraction. Logging activities have inherent risks. When such operations are taking place, public access to the local area may be temporarily restricted to DNRC staff or logging contractors in order to reduce the risk of accidents.

Additionally, under DNRC management, herbicides would be used to reduce or eradicate noxious weeds on the property, as per the DNRC's Trust Land Management Division Weed Management Plan. Trained, licensed professionals would conduct any weed treatment and storage/use of chemicals in accordance with proper operating procedures and label instructions to minimize potential unintended consequences to wildlife, vegetation, and visitors to the property.

No Action: If this alternative were chosen, it unknown if any new risk or health hazards might occur within the conservation project areas.

4.9 Aesthetics, Community Impact, and Recreation

Proposed Action: The proposed FWP conservation easement on the North Chamberlain acres would protect the aesthetic values and vegetative communities that would otherwise be threatened by residential or commercial development. In addition, by ensuring perpetual public access to the property, the public's ability to enjoy these values would also be protected. DNRC intends to continue to manage timber on the property and some of these harvest units may be visible from adjacent roadways. Furthermore, FVLT's conservation easements on the Sunset Hill property would provide the same benefits to aesthetic values and public access.

FWP anticipates that nearby ranches and communities (Ovando and Clearwater Junction) would benefit from the proposal. Recreation and timber management are primary economic drivers in these communities; those opportunities would be maintained by the proposal.

Opportunities for recreational activities on the property would be preserved under the conservation easement. Hunting, hiking, mountain biking, fishing, snowmobiling, and dispersed camping would be allowed. Some recreational activities would likely be restricted in areas where active DNRC timber management projects are taking place for public safety reasons.

No Action: If FWP does not purchase the proposed conservation easement and support FVLT's conservation easement, TNC may be forced to sell the property on the open market. Recreational access to the property could be limited or eliminated. A short-term economic benefit from housing construction and real estate sales might benefit a few local contractors and additional property tax revenue might be generated. The costs to communities and counties of providing services to these new residences would be significant.

4.10 Public Services, Taxes, and Utilities

Proposed Action: If the proposed conservation easement were approved, it would not affect existing public services, property taxes, or utility easements. The conservation easement would not restrict the DNRC's ability to approve additional utility easements (cell towers, power lines, etc.) in the future. However, the easement would define criteria to be followed if new utilities needed to be placed in Riparian Management Zones.

No Action: If none of the proposed conservation easements are secured and the property is sold and developed, Missoula and/or Powell Counties may receive increased property tax revenues. The costs to the counties for increased providing public and utility services to these new residences would increase.

4.11 Cultural and Historical Resources

Proposed Action: FWP's proposed action would not directly affect any cultural or historical resources. However, by Montana law (22-3-433 MCA), all state agencies are required to consult with the State Historic Preservation Office on the identification and location of heritage properties on lands owned by the state that may be adversely impacted by a proposed action, e.g., timber harvest.

No Action: It is uncertain if unrecorded historic sites would be affected if the proposed conservation easement is not purchased by FWP and subsequently, DNRC does not purchase the North Chamberlain property. FWP's decision not to provide funding to FVLT would not affect existing cultural or historic resources.

4.12 Cumulative Impacts

If FWP purchases the proposed conservation easement and provides HCP funds to support FVLT's conservation easements, long term effects on fisheries and wildlife habitat, especially within riparian corridors, are expected to be positive. Protection of riparian areas and retention of vegetation for visual wildlife screening would provide resident and transient wildlife with forage and cover throughout the property. Protection of riparian corridors would also shield streams from sediments generated from vehicle traffic on nearby access roads and upslope timber management activities that could affect important aquatic habitat westslope cutthroat trout.

Although the North Chamberlain conservation easement does place some restrictions on activities within the North Chamberlain property to preserve and protect wildlife habitat, the easement and the guidance provided in the Standards for Forest Practice does not prohibit timber management activities consistent with DNRC's mission. This future timber management would

alter game and nongame species' habitat to varying degrees. These effects can be both positive and negative and vary in duration and degree.

The conservation easements would assure that critically important fisheries and wildlife habitat is protected from subdivision and development in perpetuity. In addition, it would assure that it is forever managed in ways consistent with the easement's stated conservation values. Unlike in the past, the easement would require that timber harvest, road building, and riparian management be conducted in a manner that contributes the conservation and restoration of fish and wildlife habitat. The placement of the conservation easement and the subsequent change of ownership from TNC to DNRC would not affect the public's access to the property for recreation activities, since the property would remain in public ownership.

FVLT's conservation easements would protect the existing fisheries, wildlife, and vegetation resources in a similar way FWP's North Chamberlain conservation easement does, which would help to ensure the future health of the entire 16,864-acre ecosystem.

5.0 NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT

Based on the significance criteria evaluated in this EA, FWP does not believe an EIS is required. Because this EA has identified a very limited number of minor impacts from the proposed purchase of a conservation easement and financial support to Five Valleys Land Trust for FVLT's conservation efforts, an environmental assessment is the appropriate level of review. Terms of the conservation easement and the cooperatively developed Standards for Forest Management (Appendix B) are expected to mitigate any resources impacts below significance.

6.0 PUBLIC PARTICIPATION

6.1 Public Involvement

The public would be notified in the following manners to comment on this current EA, the proposed action and alternatives:

- One statewide press release;
- Two legal notices in each of these newspapers: *Blackfoot Valley Dispatch* (Lincoln), *Independent Record* (Helena), *Missoulian*, *Seeley Swan Pathfinder*, *Silver State Post* (Deer Lodge);
- Direct mailing to adjacent landowners and interested parties;
- Public notice on the Fish, Wildlife & Parks web page <http://fwp.mt.gov> (under "Recent Public Notices").

Copies of this EA would be available for public review at FWP Region 2 Headquarters in Missoula, at the FWP headquarters in Helena, and on the FWP web site (under "Recent Public Notices").

A public meeting has been scheduled in Ovando for Monday, May 10, 2010 at 6:30 p.m. at the Blackfoot Community Church (basement) to provide the public a venue to submit comments and

have questions answered by FWP staff. This level of public notice and participation is appropriate for a project of this scope having few limited physical and human impacts.

6.2 Offices/Programs contacted or contributing to this document:

Ecological Solutions Group, LLC.

Five Valleys Land Trust

Montana Department of Natural Resources and Conservation

Montana Fish, Wildlife & Parks:

Wildlife and Fisheries Division

Lands Bureau

Legal Bureau

Montana Natural Heritage Program

Montana State Historic Preservation Office

The Nature Conservancy

U.S.D.A Natural Resources Conservation Service

6.3 Duration of Comment Period

The public comment period will extend for (30) thirty days beginning April 22, 2010. Comments must be received by FWP no later than 5:00 p.m. on May 21, 2010 and can be mailed to the address below:

North Chamberlain Conservation Easement

Montana Fish, Wildlife & Parks

Region 2 Headquarters

3201 Spurgin Rd.

Missoula, MT 59804

or email comments to: psaffel@mt.gov

or phone comments to Pat Saffel at 406-542-5507.

7.0 EA PREPARATION

Rebecca Cooper, MEPA Coordinator, FWP, Helena, MT

Becky Jakes-Docktor, FWP Attorney, Helena, MT

Jay Kolbe, FWP Regional Wildlife Biologist, Seeley Lake, MT

Ron Pierce, FWP Regional Fisheries Biologist, Missoula, MT

Pat Saffel, FWP Regional Fisheries Manager, Missoula, MT

REFERENCES

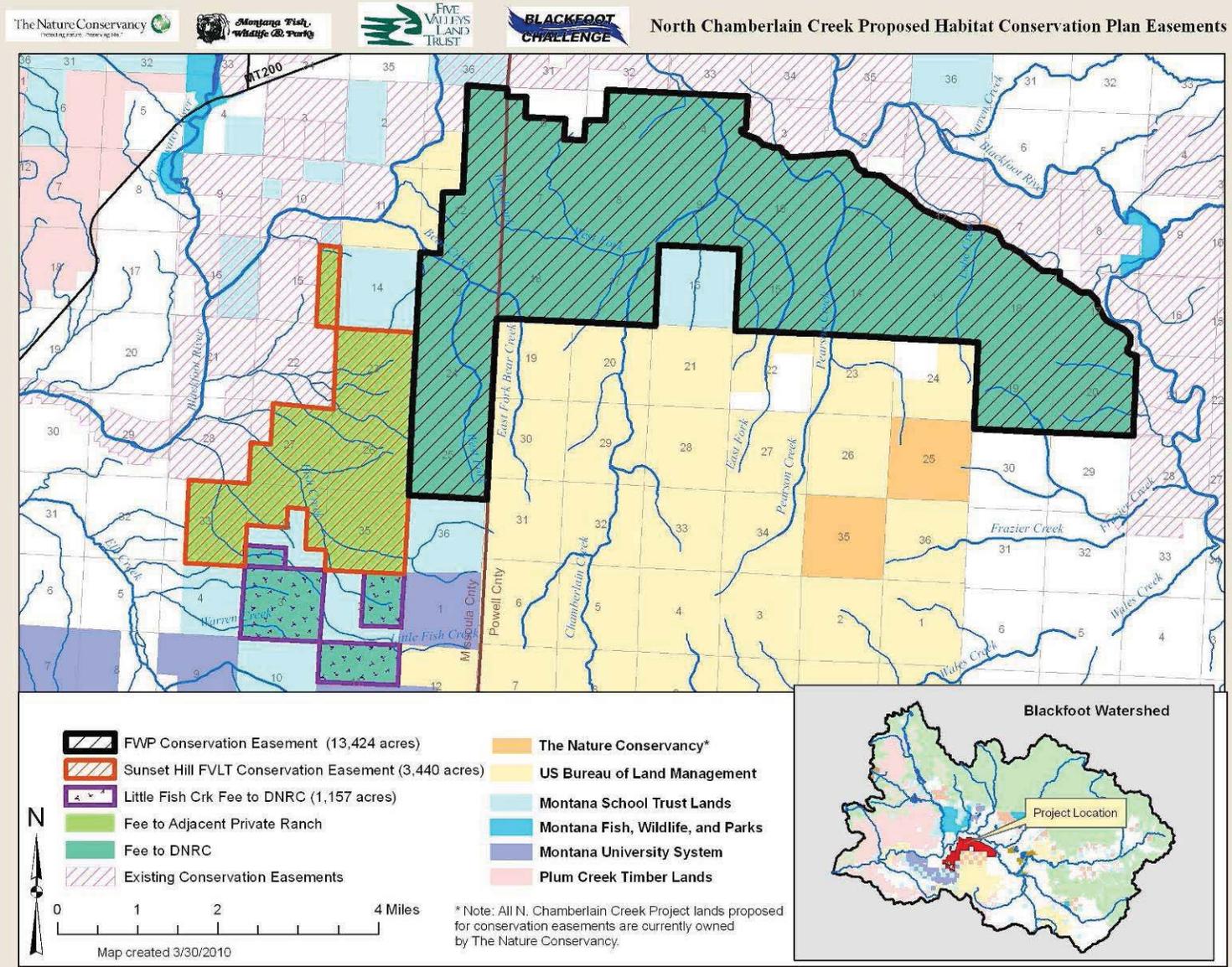
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APPENDICES

- A. Map of the Conservation Easement Property
- B. Standards for Forest Management, North Chamberlain Conservation Easement
(a separate document)

APPENDIX A

Map of the Conservation Easement Properties



APPENDIX B

Standards for Forest Management, North Chamberlain Conservation Easement

ROAD MANAGEMENT

1. The initial baseline for roads and their location will be North Chamberlain Conservation Easement Baseline Map as exists on July 1, 2009 (See attached Figure 1). For the purposes of this agreement, road density will be calculated as the miles of road by road class (i.e., open, restricted and total) divided by the total area of the subject lands. For roads located within Riparian Management Zones (RMZ), road amounts will be tracked and reported in linear miles of road located within an RMZ.
2. DNRC will complete an inventory of roads within the first five years that lands are under their ownership to update the initial baseline map. Roads inventoried will be those that DNRC has legal access to and sole ownership of, or has entered into cost-share or reciprocal access agreements.
3. The information collected during the initial road inventory will be used to:
 - a. Verify the location and class of each road segment included in the initial road baseline;
 - b. Identify the location of additional road segments that were not included on the initial road baseline;
 - c. Determine the class, condition, and sediment delivery status of each road segment;
 - d. Verify the location, type, and effectiveness of closure structures included in the initial baseline;
 - e. Identify the location and determine the effectiveness of additional closure structures that were not included in the initial baseline;
 - f. Revise the initial baseline map used for the commitments contained in this conservation easement;
 - g. Recalculate the open, restricted and total road densities, and the total linear miles of road located in RMZ that were used in the initial road baseline. Road densities will be calculated for the entire area covered by this agreement and linear miles of road will be calculated for the total miles of road located within all Riparian Management Zone (RMZ) area covered by this agreement.
4. Class of road is defined by the following:
 - a. Open roads – Administratively open to the public for wheeled motorized use during any portion of the year.
 - b. Restricted roads – Managed to limit the manner in which motorized vehicles may be used (except as provided for in #5, below). Restricted roads will have a physical barrier that restricts the general use of motorized vehicles. Administrative uses by the landowner or their agent(s) that are consistent with other measures in this document are allowed.

Barriers will be man-made or naturally occurring (e.g. gates, barricades, earthen berms, vegetation that makes the road impassable, eroded road prism, rocks, etc.).

- c. Abandoned road – Impassible to motorized vehicles due to effective closure, but has drainage structures that have not been removed.
- d. Reclaimed road – Impassible to motorized vehicles due to effective closure. It has been stabilized and culverts and other drainage structures if present have been removed, but the road prism may remain. Reclaimed roads will be re-vegetated (including soil preparation where necessary) with native vegetation consistent with the site, and made impassible for motorized vehicles through means such as ripping of road prisms, placement of root wads, boulders, slash/debris, and reforestation, etc.
- e. Temporary road – A low-standard road that is used for forest management which, following use, will be reclaimed.
- f. Total road density – Combined road density of both open and restricted road classes.

5. Licensed snowmobile use or use of other tracked over-the snow vehicles will be allowed from December 1 through March 31 on restricted roads within the agreement area (Figure 1). Winter use dates and authorized use areas may be altered upon mutual agreement of both parties.

Individual roads may be temporarily or permanently restricted from winter use by the landowner for the purposes of human safety or resource protection.

6. Road condition – refers to whether a road segment meets Best Management Practices (BMPs) standards or requires improvements to meet BMP standards. These evaluations will also include an assessment of existing and potential sources of sediment delivery from roads to streams, and information necessary to develop site-specific corrections to meet BMP standards. For this agreement BMPs shall refer to those measures contained in Attachment A – Best Management Practices for Forestry in Montana.

7. Sediment delivery status – refers to inventoried road segments and stream crossing sites as being either:

- a. Low risk of sediment delivery (meets BMPs and/or has very low risk of sediment delivery);
- b. Moderate risk of sediment delivery (does not meet BMPs, has moderate risk of sediment delivery, or meets BMPs but is poorly located); or
- c. High risk of sediment delivery (does not meet BMPs, is poorly located, is currently delivering sediment, or has high risk of future sediment delivery).

8. The Landowner will complete subsequent road inventories every 10 years from the completion of the initial inventory. The information collected during these subsequent inventories will be used to verify the class, condition and sediment delivery status of each road segment.

9. Commitments for road densities will be the following:

Time period	Area	
	Property-wide (including RMZ)	RMZ
Prior to the initial road inventory (up to 5 years)	-Allowance of 3 miles of temporary roads. -No increase in open and total road density.	Maintain or reduce open, and total road mileage.
After inventory	- Allowance of 3 miles of temporary roads. - Maintain or reduce open and total road density.	Target decrease in roads by class TBD.

10. The Landowner will provide for prior review of road building proposals by FWP. The purpose of such reviews shall be to help ensure compliance with the easement terms, not for the purpose of formal approval.

11. Landowner may construct and maintain up to 3 miles of temporary roads on the property covered by this easement to facilitate timber management activities. These roads will be built to minimum BMP standards and reclaimed within one year following completion of project-related activity, or within 5 years of construction, whichever comes first. Temporary roads will not be included in total road density calculations and will be closed to public access during their use. Following reclamation, the temporary roads shall not be usable or accessed for commercial, administrative or public motorized use.

12. Within one year following the completion of the road inventory and associated transportation planning, the Landowner will coordinate with FWP to develop a net reduction target for linear miles of roads located within RMZs.

13. The Landowner may change the class of roads through management actions, reclaim roads, or construct new roads only if the net effect of such actions does not increase open or total road densities on the lands covered under this agreement, or increase the total linear distance of open or total roads within RMZs. Reclaiming a road segment removes it from the density and mileage calculations.

14. The Landowner may temporarily close portions of any road(s) on lands covered under this agreement for the purpose of human safety without prior notification of FWP. Activities may include, but are not limited to: timber felling, hauling, road construction, road maintenance, culvert installations, fire management, etc.

15. For the property-wide calculation of road density, density shall be calculated as the miles of road by class (i.e., open, restricted, and total) divided by the total area of the subject lands. For the RMZ, road amounts will be calculated and tracked by the total linear miles of road located within all RMZs covered by this agreement.

ROAD BMP'S

16. Existing roads or newly constructed roads that are no longer needed for forest management will be reclaimed. Decisions made to reclaim roads will be based on the consideration of several

factors, including but not limited to: planned activities, desired future stand conditions, silvicultural objectives, infrastructure needs, cost, available resources, fire protection access needs, contractor availability and risk of sediment delivery to streams.

17. The Landowner shall inspect road closure structures, such as gates, barriers, and earth berms, at least every 5 years for effectiveness in restricting access. Effective closure is accomplished when a road is impassable to motorized vehicles. Landowner shall repair or modify ineffective closures within 1 year of discovering or being informed of their ineffectiveness by the landowner or their agent, the public, or FWP.

18. Project-level, site-specific corrective actions will be developed and implemented on sites identified as having a high risk of sediment delivery where the Landowner has legal access and has sole ownership. These sites would be improved to BMP standards and to reduce the risk of sediment delivery to streams to the extent practicable.

19. Corrective action will be completed on all sites identified as having high risk of sediment delivery within the first 15 years of the initiation of this agreement. The Landowner will provide FWP information regarding the progress toward meeting this timeline upon request. These projects will be contingent upon availability of grant or project level funding from timber sale projects.

20. The Landowner will work with other landowners and cooperators to address road segments with shared ownership that have been identified as having high risk of sediment delivery.

21. Road construction, re-construction and road maintenance activities will meet Forestry BMPs and incorporate site-specific mitigation measures to reduce the risk of sediment delivery to streams.

22. New road locations will avoid high hazard sites prone to mass failure as required in Montana Forestry BMPs (Attachment A-BMP III.A.4). When new road construction or reconstruction cannot be avoided on potentially unstable slopes, the Landowner will design and implement site-specific mitigation measures to reduce the risk of mass failure.

23. The Landowner will use existing roads located in Riparian Management Zones (RMZ) for commercial timber management purposes only if potential impacts to water quality and aquatic habitat can be adequately mitigated and road mileage caps are met. See attached Figure 1 - North Chamberlain Conservation Easement Baseline Map for location of identified roads situated within an RMZ. The Landowner will relocate roads outside of the RMZ when these impacts cannot be adequately mitigated and relocation is economically feasible and practical from a road layout and engineering perspective.

24. The Landowner will evaluate and consider the use of alternative yarding systems that minimize road needs if such systems are practical and economically feasible, and their use will meet immediate and foreseen future management objectives.

25. The Landowner will complete BMP audits and contract administration inspections to monitor the implementation and effectiveness of BMPs and other mitigation measures utilized to reduce risk

of sediment delivery to streams. The Landowner will notify FWP of scheduled BMP audits and other monitoring activities in order to allow for FWP participation in those activities. However, monitoring activities will not necessarily be rescheduled to accommodate FWP participation. The Landowner will provide FWP with updates on the results of all applicable monitoring activities.

TIMBER MANAGEMENT IN THE RIPARIAN MANAGEMENT ZONE

26. A Riparian Management Zone (RMZ) will be delineated whenever the Landowner plans timber harvest activities adjacent to streams located within the North Chamberlain Conservation Easement Area. Landowner will identify the RMZ at the time of the project proposal, and it will be displayed in a prior notice to the Department per the Conservation Easement.

27. The baseline for stream location and stream classification used for RMZ delineation will be the North Chamberlain Conservation Easement Baseline Map (see attached Figure 1). Changes to the baseline map (stream location and classification) may be necessary following field verification and project level assessments. FWP and the Landowner must agree to changes to the baseline map.

28. Timber harvest conducted in RMZs will be limited to the extent that no more than 16% of the RMZ acres within the Conservation Easement would be harvested within any 50-year period. Harvests above these levels would require prior approval from FWP. The amount of RMZ harvest will be calculated by determining the acres of a harvest unit that are located within a RMZ. Only treated RMZ acres are counted towards the cap.

29. All harvest (e.g., commercial, sanitation, for cable yarding corridors, or salvage) conducted in the RMZ will have a minimum 1-acre harvest unit boundary delineated and count towards the cap. All RMZ harvest requires prior review by FWP to assure compliance with the easement terms.

30. Width of the RMZ shall vary by stream class. Stream class definitions and associated RMZ width and no harvest buffers are as follows:

- a. Class I with channel migration zone (CMZ) – Class I streams means a portion of stream that support fish, or a portion of stream that normally has surface flow during six months of the year or more, and that contributes surface flow to another stream, lake or other body of water.
 - i. CMZ is defined as the width of the flood prone area at an elevation twice the maximum bankfull depth, or as identified in baseline surveys.
 - ii. RMZ width – equal to the CMZ plus 120 feet slope distance measured perpendicular on each side of the CMZ.
 - iii. No harvest buffer – equal to CMZ width plus 25 feet slope distance measured perpendicular on either side of the CMZ.
 - iv. Timber harvest and retention – Timber harvest in the RMZ will retain shrubs and sub-merchantable trees to the fullest extent possible, and a minimum of 50% of the trees greater than or equal to 8 inches diameter breast height (dbh) on each side of the

stream or 10 trees per 100 foot segment, whichever is greater. Trees retained must be representative of the species and size of trees in the pre-harvest stand.

b. Class I without CMZ

- i. RMZ width – equal to 120 feet slope on each side of the stream and measured perpendicular from the normal high water mark.
- ii. No harvest buffer – equal to 25 feet on each side of the stream measured from the normal high water mark.
- iii. Timber harvest and retention – Timber harvest in the RMZ will retain shrubs and sub-merchantable tree to the fullest extent possible, and a minimum of 50% of the trees greater than or equal to 8 inches diameter breast height (dbh) on each side of the stream or 10 trees per 100 foot segment, whichever is greater. Trees retained must be representative of the species and size of trees in the pre-harvest stand.

c. Class II Stream – means a portion of a stream that does not support fish (at any time), normally has surface flow less than six months of the year, and contributes surface flow to another stream, lake or other body of water; or a portion of a stream that does not support fish, normally has surface flow during six months of the year or more, and does not contribute surface flow to another stream, lake or other body of water.

- i. RMZ width – equal to 50 feet slope distance on each side of the stream and measured perpendicular from the ordinary high water mark.
- ii. No harvest buffer – none.
- iii. Timber harvest and retention – Timber harvest in the RMZ will retain shrubs and sub-merchantable tree to the fullest extent possible, and a minimum of 50% of the trees greater than or equal to 8 inches diameter breast height (dbh) on each side of the stream or 5 trees per 100 foot segment, whichever is greater. Trees retained must be representative of the species and size of trees in the pre-harvest stand.

d. Class III Stream – means a portion of a stream that does not support fish (at any time), normally has surface flow during less than six months of the year, and rarely contributes surface flow to another stream, lake or other body of water.

- i. RMZ width – equal to 50 feet slope distance on each side of the stream and measured perpendicular from the normal high water mark.
- ii. No harvest buffer – none.
- iii. Timber and retention – Protect and leave shrubs and sub-merchantable trees.

31. Cable harvest systems may require corridors through the RMZ in order to fully suspend logs across a stream. In these situations there would be an exception to the no-harvest buffers that would allow cable corridors with a minimum spacing of 150 feet.

32. Removal of individual hazard trees will not count towards the cap. A hazard tree is any tree that poses a risk to public safety, roads, structures, property and other improvements. Public safety refers to situations that pose foreseeable risk of injury or death to a person.

TIMBER HARVEST BMPs

33. The Landowner will design and implement Forestry BMPs and other site specific mitigation measures to reduce the risk of sediment delivery to streams from timber harvest activities to the extent that is practical.
34. When timber harvests are conducted on potentially unstable slopes, the Landowner will modify harvest prescriptions and/or design and implement mitigation measures to avoid increasing the risk of mass failure.
35. Landowner contracts addressing timber harvest activities will include these standards, BMPs and other site-specific mitigation measures designed to avoid, minimize, or mitigate the risk of sediment delivery to streams.
36. The Landowner will administer actively occurring timber harvest activities on a weekly basis to ensure that contract specifications, BMPs, and other resource protection requirements are met.
37. On sites where practices implemented have resulted in unacceptable levels of impact to soil or water resources, appropriate mitigation and/or rehabilitation measures will be implemented by the Landowner as soon as possible. Examples of unacceptable levels of impact are major departures in BMPs resulting in actual sediment delivery to streams or a high risk of sediment delivery to streams.
38. The Landowner will complete BMP audits and contract administration inspections to monitor the implementation and effectiveness of BMPs and other mitigation measures utilized to reduce risk of sediment delivery to streams. The Landowner will notify FWP of scheduled BMP audits and other monitoring activities in order to allow FWP participation. Scheduling of audits and other monitoring will not necessarily be dependent on accommodating FWP participation. The Landowner will provide FWP with updates on the results of monitoring activities.

WILDLIFE PROTECTION

39. The Landowner shall limit forest management activities during the spring period in spring grizzly bear habitat as described below:
 - a. Spring grizzly bear habitat is defined as all habitat located below 4,900 feet elevation (see attached Figure 2 – North Chamberlain Conservation Easement Spring Grizzly Bear Habitat Map).
 - b. Spring period is defined as April 1 through June 15.
 - c. Forest management activities, including but not limited to timber harvest, salvage harvests, pre-commercial thinning, heavy equipment slash treatment, and road building are prohibited. Exception: forest management activities (including salvage harvests and pre-commercial thinning are allowed within 100 feet of an open road.

- d. A total of 10 days of activity are allowed within the entirety of the subject lands during the spring period in spring habitat for the purposes of mechanical site preparation, road maintenance, and bridge replacement. Any combination of these three activities, in aggregate, counts toward the 10-day limit.
- e. Landowner may use motorized vehicles to conduct the following low-intensity forest management activities during the spring period:
 - i. site preparation,
 - ii. road location,
 - iii. tree planting,
 - iv. prescribed burning,
 - v. data collection (including monitoring),
 - vi. non-heavy-equipment slash treatment (chainsaws allowed),
 - vii. patrol of fall/winter slash burns,
 - viii. noxious weed management.

40. The Landowner will design and implement timber harvest units in a manner that provides effective visual screening for wildlife by utilizing topographic features or by retaining forest vegetation. This shall be done in a manner that ensures that no point within the unit is further than 600 feet from vegetation or topographic breaks that provide effective visual screening.

41. Effective visual screening is defined as a topographic feature, or vegetation patch or strip of sufficient size and density to effectively hide 90% of an animal the size of an adult grizzly bear from view.

42. The Landowner will leave effective visual screening, or a minimum of 100 feet of vegetation that provides visual screening, between open roads, and timber harvest units. Retention of vegetation beyond 100 feet of open roads for this purpose may be desirable, but is not required under the terms of this agreement. Commercial harvest of trees out of the visual screening retention area is allowable if screening effectiveness is not compromised. In cases, where maintaining visual screening along open roads is not possible, or breaks in visual screening are necessary to facilitate forest management activities, or protect public safety, landowner may seek a variance to this provision from FWP.

43. The Landowner will retain a minimum of one snag and one live snag recruitment tree of greater than 21 inches diameter at breast height (dbh) per acre in all harvest and salvage units. If snags or snag recruitment trees greater than 21 inches dbh are not present, then the largest snags or snag recruitment trees available will be retained. Retained snags and recruits may be evenly distributed or clumped. Landowner will retain 10 to 15 tons of downed logs greater than 3 inches in diameter within harvest units following harvest or salvage activities. Where available, two non-merchantable logs per acre will be retained that are greater than 15 inches in diameter and 20 feet long. If logs of this size are not available, the largest non-merchantable logs of this type shall be retained.

AQUATIC CONNECTIVITY BMPs

44. Within the Conservation Easement area, the Landowner will provide connectivity for adult and juvenile native fish species during low to bankfull flows by emulating streambed form and function. This will be accomplished using the best available design while considering site conditions and cost efficiencies.

45. On roads the Landowner has access to, and sole ownership of, the Landowner will ensure that all road crossings on stream segments supporting native cold-water fisheries provide connectivity for adult and juvenile fish during low to bank full flows. This will be accomplished for all road crossings on streams supporting bull trout and/or westslope cutthroat trout within the first 15 years of this agreement.

46. The Landowner will prioritize road-stream crossing improvements based on existing levels of connectivity, as well as species status and population goals established while taking into consideration other regulatory agencies' or cooperative organizations' activities and goals. Genetic data used for a coarse filter will be obtained primarily from FWP data sets. Where practicable and where time permits, the Landowner will collaborate with FWP to collect genetic information for target species to supplement those data sets.

47. Fish passage structures in streams will be designed to pass a minimum of the 50-year flood event.

48. Road-stream crossings that provide connectivity to limited or marginal fisheries habitat may not be required to emulate streambed form and function when approved by FWP.

SMZ LAW AND BMP FORESTRY PRACTICES

49. Where forest practices are not specifically addressed in these Standards, the Montana SMZ Law and Rules and Best Management Practices for Forestry in Montana will apply.

Figure 1. North Chamberlain Conservation Easement Baseline Map

Figure 2. North Chamberlain Conservation Easement, Spring Grizzly Bear Habitat Map

Attachment A. Best Management Practices for Forestry in Montana

Figure 1
North Chamberlain Conservation Easement Baseline Map

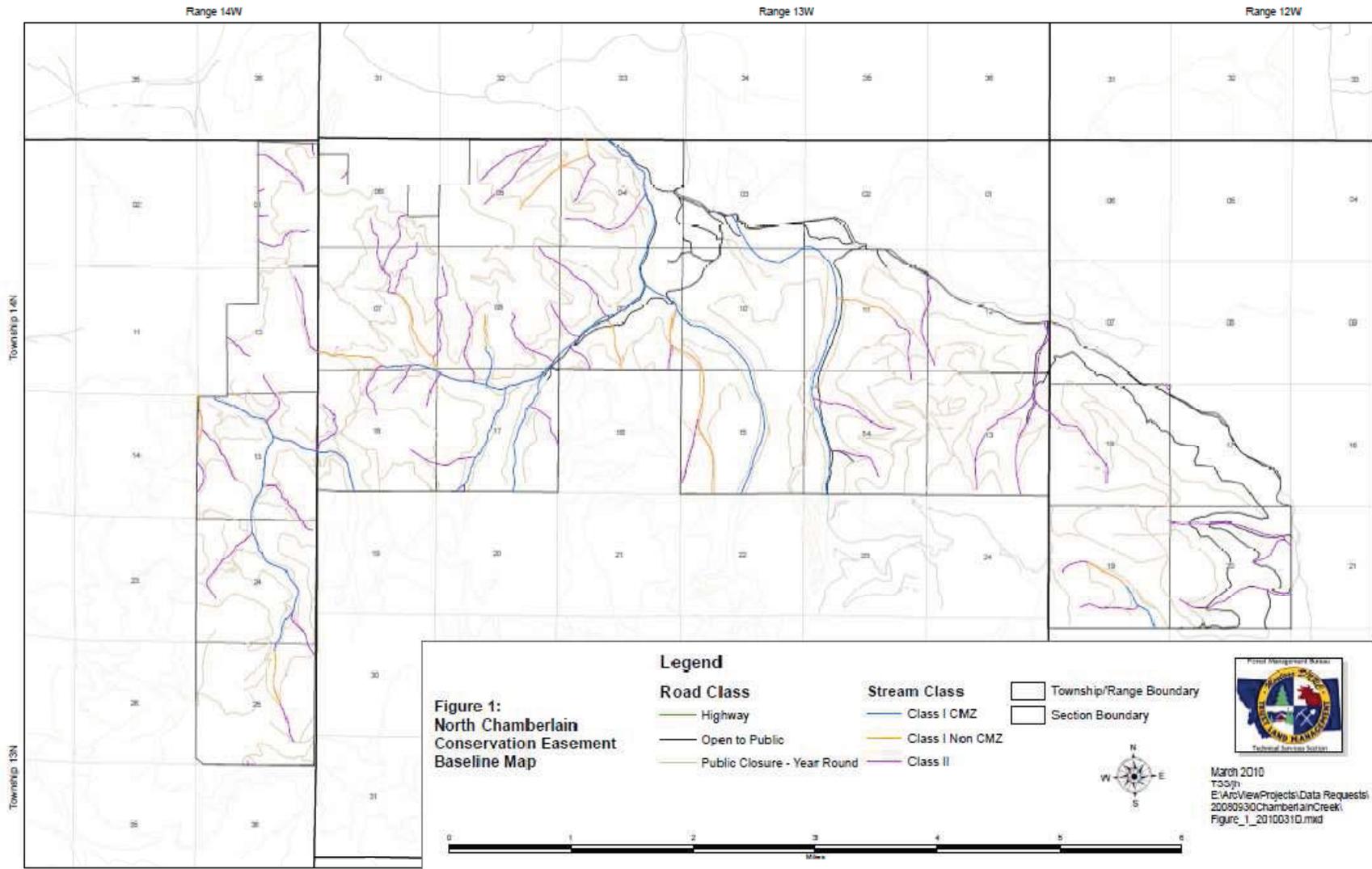
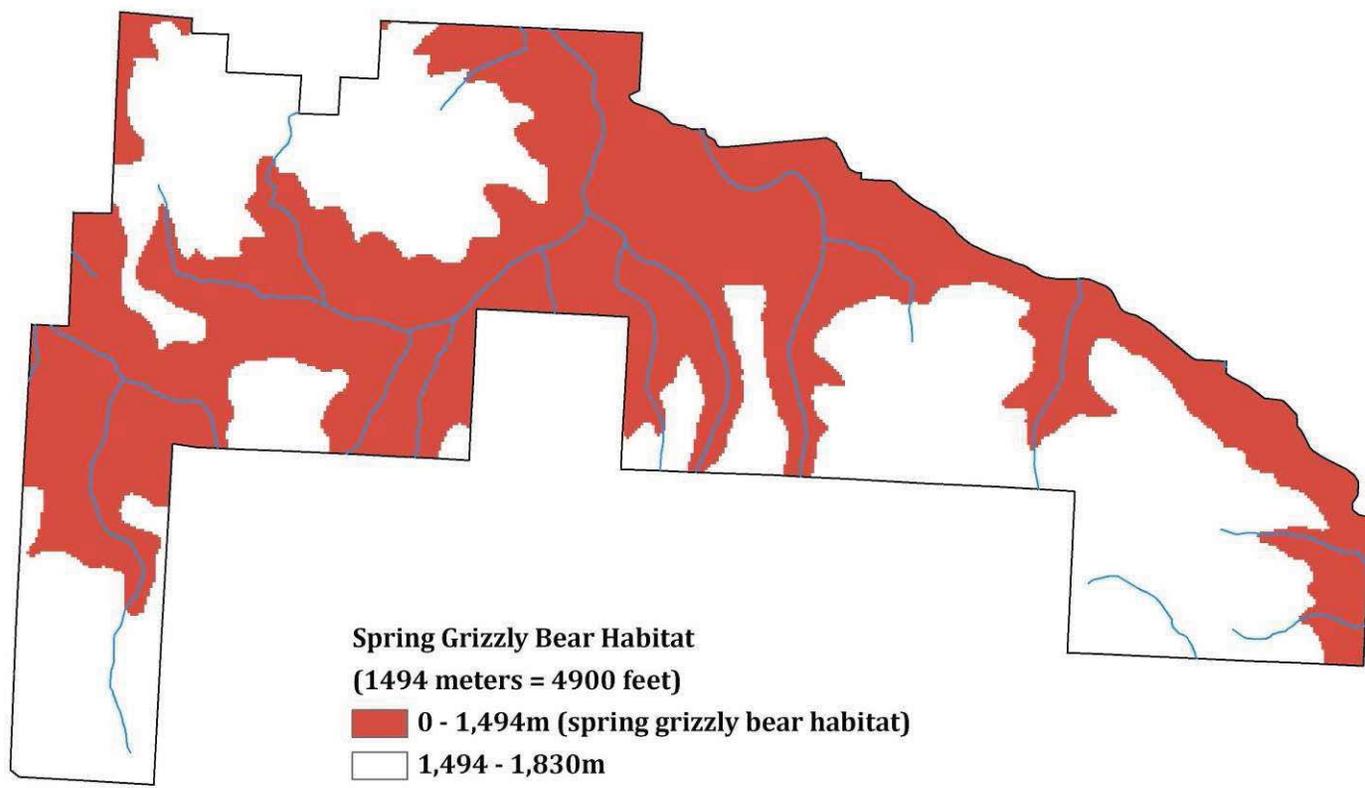


Figure 2

North Chamberlain Conservation Easement Spring Grizzly Bear Habitat



Attachment A

BEST MANAGEMENT PRACTICES FOR FORESTRY IN MONTANA

January 2006

* BMPs Not Monitored During Audits

I. DEFINITIONS

1. "Hazardous or toxic material" means substances which by their nature are dangerous to handle or dispose of, or a potential environmental contaminant, and includes petroleum products, pesticides, herbicides, chemicals, and biological wastes.
2. "Stream," as defined in 77-5-302(7), MCA, means a natural water course of perceptible extent that has a generally sandy or rocky bottom or definite banks and that confines and conducts continuously or intermittently flowing water.
3. "Streamside Management Zone (SMZ)" or "zone" as defined at 77-5-302(8), MCA means "the stream, lake, or other body of water and an adjacent area of varying width where management practices that might affect wildlife habitat or water quality, fish, or other aquatic resources need to be modified."
The streamside management zone encompasses a strip at least 50 feet wide on each side of a stream, lake, or other body of water, measured from the ordinary high water mark, and extends beyond the high water mark to include wetlands and areas that provide additional protection in zones with steep slopes or erosive soils.
4. "Wetlands" mean those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include marshes, swamps, bogs, and similar areas.
5. Adjacent wetlands are wetlands within or adjoining the SMZ boundary. They are regulated under the SMZ law.
6. Isolated wetlands lie within the area of operation, outside of the SMZ boundary, and are not regulated under the SMZ law.

II. STREAMSIDE MANAGEMENT

The Streamside Management Law (77-5-301 through 307 MCA) provides minimum regulatory standards for forest practices in streamside management zones (SMZ). The "Montana Guide to the Streamside Management Zone & Rules" is an excellent information source describing management opportunities and limitations within SMZs.

III. ROADS

A. Planning and Location

1. Minimize the number of roads constructed in a watershed through comprehensive road planning, recognizing intermingled ownership and foreseeable future uses. Use existing roads, unless use of such roads would cause or aggravate an erosion problem.
2. Review available information and consult with professionals as necessary to help identify erodible soils and unstable areas, and to locate appropriate road surface materials.*
3. Fit the road to the topography by locating roads on natural benches and following natural contours. Avoid long, steep road grades and narrow canyons.
4. Locate roads on stable geology, including well-drained soils and rock formations that tend to dip into the slope. Avoid slumps and slide-prone areas characterized by steep slopes, highly weathered bedrock, clay beds, concave slopes, hummocky topography, and rock layers that dip parallel to the slope. Avoid wet areas, including moisture-laden or unstable toe slopes, seeps, wetlands, wet meadows, and natural drainage channels.
5. Minimize the number of stream crossings and choose stable stream crossing sites.
6. Locate roads to provide access to suitable (relatively flat and well-drained) log landing areas to reduce soil disturbance.*

B. Design

1. Properly design roads and drainage facilities to prevent potential water quality problems from road construction.*
2. Design roads to the minimum standard necessary to accommodate anticipated use and equipment. The need for higher engineering standards can be alleviated through proper road-use management.
3. Design roads to balance cuts and fills or use full bench construction (no fill slope) where stable fill construction is not possible.*
4. Design roads to minimize disruption of natural drainage patterns. Vary road grades to reduce concentrated flow in road drainage ditches, culverts, and on fill slopes and road surfaces.

- C. Road Drainage** Road Drainage is defined as all applied mechanisms for managing water in a non-stream crossing setting, road surface drainage, and overland flow; ditch relief, cross drains and drain dips)
1. Provide adequate drainage from the surface of all permanent and temporary roads. Use outsloped, insloped or crowned roads, and install proper drainage features. Space road drainage features so peak flow on road surfaces or in ditches will not exceed capacity.
 - a. Outsloped roads provide a means of dispersing water in a low-energy flow from the road surface. Outsloped roads are appropriate when fill slopes are stable, drainage will not flow directly into stream channels, and transportation safety can be met.
 - b. For in-sloped roads, plan ditch gradients steep enough, generally greater than 2% but less than 8%, to prevent sediment deposition and ditch erosion. The steeper gradients may be suitable for more stable soils; use the lower gradients for less stable soils.
 - c. Design and install road surface drainage features at adequate spacing to control erosion; steeper gradients require more frequent drainage features. Properly constructed drain dips can be an economical method of road surface drainage. Construct drain dips deep enough into the subgrade so that traffic will not obliterate them.
 2. Design all ephemeral draw culverts with adequate length to allow for road fill width. Minimum culvert size is 15 inch. Install culverts to prevent erosion of fill, seepage and failure as described in V.C.4 and maintain cover for culverts as described in V.C.6.
 3. Design all relief culverts with adequate length to allow for road fill width. Protect the inflow end of all relief culverts from plugging and armor if in erodible soil. When necessary construct catch basins with stable side slopes. Unless water flows from two directions, skew ditch relief culverts 20 to 30 degrees toward the inflow from the ditch to help maintain proper function.
 4. Where possible, install culverts at the gradient of the original ground slope; otherwise, armor outlets with rock or anchor downspouts to carry water safely across the fill slope.

5. Provide energy dissipaters (rock piles, slash, log chunks, etc.) where necessary to reduce erosion at outlet of drainage features. Crossdrains, culverts, water bars, dips, and other drainage structures should not discharge onto erodible soils or fill slopes without outfall protection.
6. Prevent downslope movement of sediment by using sediment catch basins, drop inlets, changes in road grade, headwalls, or recessed cut slopes.*
7. Route road drainage through adequate filtration zones or other sediment-settling structures to ensure sediment doesn't reach surface water. Install road drainage features above stream crossings to route discharge into filtration zones before entering a stream.

D. Construction (see also Section IV on stream crossings)

1. Keep slope stabilization, erosion and sediment control work current with road construction. Install drainage features as part of the construction process, ensuring that drainage structures are fully functional. Complete or stabilize road sections within same operating season.*
2. Stabilize erodible, exposed soils by seeding, compacting, riprapping, benching, mulching, or other suitable means.
3. At the toe of potentially erodible fill slopes, particularly near stream channels, pile slash in a row parallel to the road to trap sediment (example, slash filter windrow). When done concurrently with road construction, this is one method that can effectively control sediment movement, and it can also provide an economical way of disposing of roadway slash. Limit the height, width and length of "slash filter windrows" so wildlife movement is not impeded. Sediment fabric fences or other methods may be used if effective.
4. Minimize earthmoving activities when soils appear excessively wet. Do not disturb roadside vegetation more than necessary to maintain slope stability and to serve traffic needs.*
5. Construct cut and fill slopes at stable angles to prevent sloughing and other subsequent erosion.
6. Avoid incorporating potentially unstable woody debris in the fill portion of the road prism. Where possible, leave existing rooted trees or shrubs at the toe of the fill slope to stabilize the fill.

7. Consider road surfacing to minimize erosion.*
8. Place debris, overburden, and other waste materials associated with construction and maintenance activities in a location to avoid entry into streams. Include these waste areas in soil stabilization planning for the road.
9. Minimize sediment production from borrow pits and gravel sources through proper location, development and reclamation.
10. When using existing roads, reconstruct only to the extent necessary to provide adequate drainage and safety; avoid disturbing stable road surfaces. Prior to reconstruction of existing roads within the SMZ, refer to the SMZ law. Consider abandoning existing roads when their use would aggravate erosion.

E. Maintenance

1. Grade road surfaces only as often as necessary to maintain a stable running surface and adequate surface drainage.
2. Maintain erosion control features through periodic inspection and maintenance, including cleaning dips and crossdrains, repairing ditches, marking culvert inlets to aid in location, and clearing debris from culverts.
3. Avoid cutting the toe of cut slopes when grading roads, pulling ditches, or plowing snow.
4. When plowing snow, provide breaks in snow berm to allow road drainage.*
5. Haul all excess material removed by maintenance operations to safe disposal sites and stabilize these sites to prevent erosion. Avoid sidecasting in locations where erosion will carry materials into a stream.*
6. Avoid using roads during wet periods if such use would likely damage the road drainage features. Consider gates, barricades or signs to limit use of roads during spring break up or other wet periods.
7. Upon completion of seasonal operations, ensure that drainage features are fully functional. The road surface should be crowned, outsloped, insloped, or water-barred. Remove berms from the outside edge where runoff is channeled.*

8. Leave abandoned roads in a condition that provides adequate drainage without further maintenance. Close these roads to traffic; reseed and/or scarify; and, if necessary, recontour and provide water bars or drain dips.

IV. TIMBER HARVESTING, AND SITE PREPARATION

A. Harvest Design

1. Plan timber harvest in consideration of your management objectives and the following*:
 - a. Soils and erosion hazard identification.
 - b. Rainfall.
 - c. Topography.
 - d. Silvicultural objectives.
 - e. Critical components (aspect, water courses, landform, etc.).
 - f. Habitat types.
 - g. Potential effects on water quality and beneficial water uses.
 - h. Watershed condition and cumulative effects of multiple timber management activities on water yield and sediment production.
 - i. Wildlife habitat.
2. Use the logging system that best fits the topography, soil type, and season, while minimizing soil disturbance and economically accomplishing silvicultural objectives.
3. Use the economically feasible yarding system that will minimize road densities.*
4. Design and locate skid trails and skidding operations to minimize soil disturbance. Using designated skid trails is one means of limiting site disturbance and soil compaction. Consider the potential for erosion and possible alternative yarding systems prior to planning tractor skidding on steep or unstable slopes.*
5. Locate skid trails to avoid concentrating runoff and provide breaks in grade. Locate skid trails and landings away from natural drainage systems and divert runoff to stable areas. Limit the grade of constructed skid trails on geologically unstable, saturated, highly erosive, or easily compacted soils to a maximum of 30%. Use mitigating measures, such as water bars and grass seeding, to reduce erosion on skid trails.

6. Minimize the size and number of landings to accommodate safe, economical operation. Avoid locating landings that require skidding across drainage bottoms.

B. Other Harvesting Activities

1. Tractor skid where compaction, displacement, and erosion will be minimized. Avoid tractor or wheeled skidding on unstable, wet, or easily compacted soils and on slopes that exceed 40% unless operation can be conducted without causing excessive erosion. Avoid skidding with the blade lowered. Suspend leading ends of logs during skidding whenever possible.
2. Avoid operation of wheeled or tracked equipment within isolated wetlands, except when the ground is frozen (see Section VI on winter logging).
3. Use directional felling or alternative skidding systems for harvest operations in isolated wetlands.*
4. For each landing, provide and maintain a drainage system to control the dispersal of water and to prevent sediment from entering streams.
5. Insure adequate drainage on skid trails to prevent erosion. On gentle slopes with slight disturbance, a light ground cover of slash, mulch or seed may be sufficient. Appropriate spacing between water bars is dependent on the soil type and slope of the skid trails. Timely implementation is important.
6. When existing vegetation is inadequate to prevent accelerated erosion, apply seed or construct water bars before the next growing season on skid trails, landings and fire trails. A light ground cover of slash or mulch will retard erosion.*

C. Slash Treatment and Site Preparation

1. Rapid reforestation of harvested areas is encouraged to reestablish protective vegetation.*
2. When treating slash, care should be taken to preserve the surface soil horizon by using appropriate techniques and equipment. Avoid use of dozers with angle blades.
3. Minimize or eliminate elongated exposure of soils up and down the slope during mechanical scarification.*

4. Scarify the soil only to the extent necessary to meet the resource management objectives. Some slash and small brush should be left to slow surface runoff, return soil nutrients, and provide shade for seedlings.
5. Carry out brush piling and scarification when soils are frozen or dry enough to minimize compaction and displacement.
6. Carry out scarification on steep slopes in a manner that minimizes erosion. Broadcast burning and/or herbicide application is preferred means for site preparation, especially on slopes greater than 40%.
7. Remove all logging machinery debris to proper disposal site.*
8. Limit water quality impacts of prescribed fire by constructing water bars in firelines; not placing slash in drainage features and avoiding intense fires unless needed to meet silvicultural goals. Avoid slash piles in the SMZ when using existing roads for landings.

V. STREAM CROSSINGS

A. Legal Requirements

1. Under the Natural Streambed and Land Preservation Act of 1975 (the "310 law"), any activity that would result in physical alteration or modification of a perennial stream, its bed or immediate banks must be approved in advance by the supervisors of the local conservation district. Permanent or temporary stream crossing structures, fords, riprapping or other bank stabilization measures, and culvert installations on perennial streams are some of the forestry-related projects subject to 310 permits.

Before beginning such a project, the operator must submit a permit application to the conservation district indicating the location, description, and project plans. The evaluation generally includes on-site review, and the permitting process may take up to 60 days.

2. Stream-crossing projects initiated by federal, state or local agencies are subject to approval under the "124 permit" process (administered by the Department of Fish, Wildlife and Parks), rather than the 310 permit.
3. A short-term exemption (3a authorization) from water quality standards is necessary unless waived by the Department of Fish, Wildlife and Parks as a condition of a 310 or 124 permit. Contact the

Department of Environmental Quality in Helena at 444-2406 for additional information.

B. Design Considerations (Note: 310 permit required for perennial streams)

1. Cross streams at right angles to the main channel if practical. Adjust the road grade to avoid the concentration of road drainage to stream crossings. Direct drainage flows away from the stream crossing site or into an adequate filter.
2. Avoid unimproved stream crossings. Depending on location, culverts, bridges and stable/reinforced fords may be used.

C. Installation of Stream Crossings (Note: 310 permit required for perennial streams)

1. Minimize stream channel disturbances and related sediment problems during construction of road and installation of stream crossing structures. Do not place erodible material into stream channels. Remove stockpiled material from high water zones. Locate temporary construction bypass roads in locations where the stream course will have minimal disturbance. Time construction activities to protect fisheries and water quality.
2. Design stream-crossings for adequate passage of fish (if present) with minimum impact on water quality. When using culverts to cross small streams, install those culverts to conform to the natural stream bed and slope on all perennial streams and on intermittent streams that support fish or that provides seasonal fish passage. Ensure fish movement is not impeded. Place culverts slightly below normal stream grade to avoid outfall barriers.
3. Do not alter stream channels upstream from culverts, unless necessary to protect fill or to prevent culvert blockage. On stream crossings, design for, at a minimum, the 25-year frequency runoff. Consider oversized pipe when debris loading may pose problems. Ensure sizing provides adequate length to allow for depth of road fill.
4. Install stream-crossing culverts to prevent erosion of fill. Compact the fill material to prevent seepage and failure. Armor the inlet and/or outlet with rock or other suitable material where feasible.
5. Consider dewatering stream crossing sites during culvert installation.*
6. Maintain a 1-foot minimum cover for stream-crossing culverts 15 to 36 inches in diameter, and a cover of one-third diameter for larger

culverts, to prevent crushing by traffic.

7. Use culverts with a minimum diameter of 15 inches for permanent stream crossings.*

D. Existing Stream Crossing

1. Ensure stream crossing culverts have adequate length to allow for road fill width and are maintained to preserve their hydrologic capacity. To prevent erosion of fill, provide or maintain armoring at inlet and/or outlet with rock or other suitable material where feasible. Maintain fill over culvert as described in V.C. 6.

VI. Winter Logging

A. General

1. Consider snow-road construction and winter harvesting in isolated wetlands and other areas with high water tables or soil erosion and compaction hazards.*
2. Conduct winter logging operations when the ground is frozen or snow cover is adequate (generally more than one foot) to prevent rutting or displacement of soil. Be prepared to suspend operations if conditions change rapidly, and when the erosion hazard becomes high.*
3. Consult with operators experienced in winter logging techniques.*

B. Road Construction and Harvesting Considerations

1. For road systems across areas of poor bearing capacity, consider hauling only during frozen periods. During cold weather, plow any snow cover off of the roadway to facilitate deep freezing of the road grade prior to hauling.*
2. Before logging, mark existing culvert locations. During and after logging, make sure that all culverts and ditches are open and functional.*
3. Use compacted snow for road beds in unroaded, wet or sensitive sites. Construct snow roads for single-entry harvests or for temporary roads.*
4. In wet, unfrozen soil areas, use tractors or skidders to compact the snow for skid road locations only when adequate snow depth exists.

Avoid steeper areas where frozen skid trails may be subject to erosion the next spring.*

5. Return the following summer and build erosion barriers on any trails that are steep enough to erode.*

VII. HAZARDOUS SUBSTANCES

A. General

1. Know and comply with regulations governing the storage, handling, application (including licensing of applicators), and disposal of hazardous substances. Follow all label instructions.
2. Develop a contingency plan for hazardous substance spills, including cleanup procedures and notification of the State Department of Environmental Quality.*

B. Pesticides and Herbicides

1. Use an integrated approach to weed and pest control, including manual, biological, mechanical, preventive and chemical means.*
2. To enhance effectiveness and prevent transport into streams, apply chemicals during appropriate weather conditions (generally calm and dry) and during the optimum time for control of the target pest or weed.*