

CHECKLIST ENVIRONMENTAL ASSESSMENT

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| Project Name: | McKay Creek DF Root Rot Permit |
| Proposed Implementation Date: | July, 2010 |
| Proponent: | Tony Bierwagen and Shawn Allen Department of Natural Resources and Conservation. |
| Location: | Section 36, Township 26 North, Range 32 West |
| County: | Sanders County |

I. TYPE AND PURPOSE OF ACTION

The Department of Natural Resources and Conservation (DNRC) proposes to sell approximately 1,300 tons (200 MBF) of sawlogs from Section 36, T20N, R25W, 6 air miles west of Noxon, Montana. This action would produce estimated revenue of \$31,000.00 for the Common Schools (C.S.) Trust Grant and an additional \$8,000.00 in Forest Improvement (FI) fees. Under the proposed action, the DNRC harvest activities would maintain and improve forest health, reduce fuel loadings, and increase forest productivity beneficial to future Trust actions. Approximately 40 acres would be treated under this proposed project (See Area Maps pages 9 - 11). The Silvicultural prescriptions (See Harvest Prescriptions pages 12 & 13) are designed to promote timber types historically found in the area, improve forest health and promote regeneration of the project area. No new roads would be built or reconstructed. If the Action Alternative is selected, activities would begin July, 2010.

Lands involved in this proposed project are held by the State of Montana in trust for the support of specific beneficiary institutions such as the public buildings trust, public schools, state colleges, universities, and other state institutions (Enabling Act of February 22, 1889:1972 Montana Constitution, Article 1 Section 11). The Board of Land Commissioners and the Department of Natural Resources and Conservation are required, by law, to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for these beneficiary institutions (Section 77-1-202, MCA). DNRC would manage lands involved in this project in accordance with the State Forest Land Management Plan (DNRC 1996) and the Administrative Rules for Forest Management (ARM 36.11.401 through 456) as well as other applicable state and federal laws.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project. List number of individuals contacted, number of responses received, and newspapers in which notices were placed and for how long. Briefly summarize issues received from the public.

Hydrological, soils, wildlife, archaeological, and vegetative concerns were identified by DNRC specialists and field foresters for both the No-Action and the Action Alternatives. Issues and concerns have been resolved or mitigated through project design and/or would be included as specific contractual requirements of the project. Recommendations to minimize direct, indirect, and cumulative impacts have been incorporated in the project design (See Individuals Consulted page 14).

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Examples: cost-share agreement with U.S. Forest Service, 124 Permit, 3A Authorization, Air Quality Major Open Burning Permit.

Reciprocal road use agreements with the USFS and Stimson Lumber Company.

Montana Department of Environmental Quality (DEQ)

DNRC is classified as a major open burner by the Montana Department of Environmental Quality (DEQ), and is issued a permit from the DEQ to conduct burning activities on State lands managed by the DNRC. As a major open burning permit holder, DNRC agrees to comply with all of the limitations and conditions of the permit.

Montana/Idaho Airshed Group

DNRC is a member of the Montana/Idaho Airshed Group, which regulates prescribed burning, including both slash and broadcast burning, related to forest management activities done by DNRC. As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit in Missoula, MT.

3. ALTERNATIVE DEVELOPMENT:

Describe alternatives considered and, if applicable, provide brief description of how the alternatives were developed. List alternatives that were considered but eliminated from further analysis and why.

Action: The Action Alternative is described in Section 1, Type and Purpose of Action. No other action alternatives were identified during project scoping or analysis; therefore only forest product removal and sale are analyzed in the EA Checklist. Recommended actions to reduce environmental effects would be incorporated into the proposed action.

No Action: Under the No Action Alternative, no activity would be undertaken. No timber would be harvested. The No Action alternative would result in decreased growth rates, continued decline of stand conditions and increased fuel loading within the timber stands. This alternative would not produce revenue for the Common Schools Trust grant.

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| III. IMPACTS ON THE PHYSICAL ENVIRONMENT |
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| <ul style="list-style-type: none">• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i>• <i>Enter "NONE" if no impacts are identified or the resource is not present.</i> |
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4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify direct, indirect, and cumulative effects to soils.

Soils in the project area were mapped in the *Soil Survey of Sanders and Parts of Lincoln and Flathead Counties, Montana* and were reviewed using the Natural Resources Conservation Service's Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>).

Three soils are listed in the 40-acre project area. All of these soils are ashy silt loams and gravelly ashy silt loams on slopes up to 45%. The erosion hazard for the soils that would be affected as part of the Action Alternative is considered low to moderate. No unique or fragile soils were identified during office or field review. No previous timber harvest has been recorded in the project area however firewood harvest has occurred over the last several decades and a hiking trail bisects the project area.

Direct, Indirect and Cumulative Effects of the No Action Alternative

No additional direct, indirect or cumulative effects would result from this alternative beyond the existing condition and natural changes.

Direct, Indirect and Cumulative Effects of the Action Alternative

Under the action alternative, approximately 6 acres may be affected with moderate or higher impacts due to skid trails and landings. This equates to approximately 15% of the project area and represents a 'worst case' scenario. Because the proponents of the permit would employ a conventional ground-based yarding system with winchlines, skid trail frequency would likely be less than that of grapple skidders and therefore would have

less impact. Site preparation would scarify up to 30% of the area. Proper scarification would only remove the duff layer to provide a site for natural regeneration would not substantially increase the erosion potential.

Cumulative effects of this project would be acceptable under the DNRC Forest Management Rules and the State Forest Land Management Plan because cumulative impacts would be kept to 15% of the harvest area. In addition, Best Management Practices would be required by the Timber Sale Contract to further reduce the potential for soil impacts. Applicable BMPs include but *would not be limited to*:

- harvest activities must be limited to periods of dry, frozen or snow-covered ground. Dry conditions are defined as less than 20% soil moisture at a depth of 4 inches below the mineral soil surface.
- skidding would be limited to slopes less than 40% unless the operation can occur without causing excessive displacement, compaction and/or erosion
- skid trails and landings must be sited in locations that allow for adequate drainage.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify direct, indirect, and cumulative effects to water resources.

The project area is in the McKay Creek watershed. This portion of the Clark Fork River basin is classified as B-1 by the State of Montana Department of Environmental Quality (DEQ), as stated in the Administrative Rules of Montana (ARM 17.30.607). The water quality standards for protecting beneficial uses in B-1 classified watersheds are located in ARM 17.30.623. Water in B-1 classified waterways is suitable for drinking, culinary and food processing purposes after conventional treatment, bathing, swimming and recreation, growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers, and agricultural and industrial water supply. State water quality regulations prohibit any increase in sediment above naturally occurring concentration in water classified B-1. Naturally occurring means condition or materials present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil and water conservation practices have been applied. Reasonable land, soil and water conservation practices include methods, measures or practices that protect present and reasonably anticipated beneficial uses. The State of Montana has adopted Best Management Practices (BMPs) through its non-point source management plan as the principle means of meeting the Water Quality Standards.

According to Montana Fish, Wildlife and Parks Montana Fisheries Information System (MFISH), McKay Creek contains slimy sculpin and abundant westslope cutthroat trout. The westslope cutthroat trout are considered to be genetically pure.

The project area is at least 300 feet from McKay Creek at the closest point and no tributaries to McKay Creek or streams were identified during field review. During field reviews in previous years, McKay Creek has been observed dry during much of the year with the exception of some pools.

Direct, Indirect and Cumulative Effects of the No Action Alternative

No additional direct, indirect or cumulative effects would result from this alternative beyond the existing condition and natural changes.

Direct, Indirect and Cumulative Effects of the Action Alternative

Due to the small area of harvest, the distance of the project area from surface water and gentle terrain that would serve to substantially restrict sediment transport, the risk of measurable direct, indirect or cumulative effects to water quality or quantity would be low.

6. AIR QUALITY:

What pollutants or particulate would be produced (i.e. particulate matter from road use or harvesting, slash pile burning, prescribed burning, etc)? Identify the Airshed and Impact Zone (if any) according to the Montana/Idaho Airshed Group. Identify direct, indirect, and cumulative effects to air quality.

The project is located in Montana State Airshed 1; it is not within a Class 1 Airshed, approximately 3 miles west of the Cabinet Mountain Wilderness Airshed and approximately 15 miles southwest of the Libby, MT Airshed.

Some particulate matter may be introduced into the Airshed from the burning of logging slash. Impacts are expected to be minor and temporary with slash burning to be conducted when conditions favor good to excellent smoke dispersion. All burning would be conducted during times of adequate ventilation within the existing rules and regulations. Thus direct, indirect, and cumulative effects to air quality are expected to be minimal.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify direct, indirect, and cumulative effects to vegetation.

Tree removal would cause changes in the vegetative structure of the project area. Silvicultural prescriptions (see Harvest Prescriptions pages 12 & 13), have been developed to keep stands moving towards historical conditions, while maintaining good tree growth and vigor. Harvest prescriptions also aim to remove diseased and insect infested timber. Recommendations to minimize direct, indirect and cumulative impacts have been incorporated in the project design. Measures to minimize noxious weeds, insects and disease are included in the project design. Change to cover type distribution across the Plains unit and age class distribution would move only slightly towards a historic condition.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify direct, indirect, and cumulative effects to fish and wildlife.

Mature conifer stands make up the dominant vegetation within the project area; the project area provides habitats for a variety of wildlife resources requiring those habitat conditions. Snags and coarse woody debris exist across the project area; dead-wood habitats exist for those species that rely on those resources. Connectivity of forested habitats within the project area is intact and at the landscape level, the project area provides forested habitat connectivity to surrounding areas of forested habitats. The project area includes white-tailed deer (233 acres), mule deer (234 acres), and elk (227 acres) winter range, but does not include moose winter range. Use of the area by big game during the non-winter period is likely. Much of the project area is providing snow intercept and thermal cover attributes for big game. Hiding cover is common across much of the project area.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No appreciable changes in existing habitats would occur in the project area.

Direct, Indirect, and Cumulative Effects of the Action Alternative

The proposed harvesting would create more open stands on the 40 acres proposed for treatment. Habitats for species that rely on dense, mature stands would be slightly reduced, while species favoring more open stands would see an increase in available habitats. Landscape connectivity would not be appreciably altered with the proposed harvesting. A reduction in available snags would be anticipated with the removal of existing snags; retention of snags to meet ARM 36.11.411, where feasible, would retain some habitats for species relying on snags. Overall, negligible changes in wildlife use would be anticipated with the proposed harvesting activities.

The proposed harvesting would remove thermal cover and snow intercept from approximately 13 acres of white-tailed deer and mule deer winter range, as well as 4 acres of elk winter range. Winter range attributes in the proposed units are declining somewhat with the ongoing mortality. Proposed harvesting could alter non-winter habitats on approximately 40 acres. Reductions in hiding cover and visual screening would be expected with the removal of these trees. Retention of visual screening along the open road would reduce disturbance to big game. Overall negligible direct, indirect, and cumulative effects would be anticipated to big game species.

Due to the distance to surface water in the project area, it is unlikely that aquatic habitat would be measurably affected.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify direct, indirect, and cumulative effects to these species and their habitat.

The project area is in the Wanless subunit of the Cabinet/Yaak Grizzly Bear Recovery Zone. Some hiding cover exists in the project area; however the existing open road likely limits habitat effectiveness of the hiding cover in portions of the project area. The project area occurs between 2,680-4,080 feet, which is largely outside of the elevation range where lynx are commonly found in Montana. One 82-acre polygon was identified as mature foraging habitats for Canada lynx. The project area is in the vicinity of the suspected McKay gray wolf pack. Potential gray wolf, pileated woodpecker, and fisher habitats exist in the project area.

Direct, Indirect, and Cumulative Effects of the No-Action Alternative

No appreciable changes in existing habitats would occur in the project area.

Direct, Indirect, and Cumulative Effects of the Action Alternative

The proposed harvesting would reduce grizzly bear hiding cover should a bear be in the area; however the existing open road and associated disturbance has likely reduced the effectiveness of this small area. None of the proposed units are in this mature foraging habitat. Given the existing stand composition (ponderosa pine, western larch, Douglas-fir, Engelmann spruce, grand-fir, and lodgepole pine) and the lack of identified habitats within the proposed units, limited lynx use would be anticipated. Overall, negligible direct, indirect, or cumulative effects would be anticipated to the threatened or endangered species.

The proposed harvesting would create approximately 40 acres that are too open to be considered potential pileated woodpecker habitats. Retention of a few large trees could continue to provide for some limited use by pileated woodpeckers into the future. Forested stands in the state sections outside of the project area, as well as those in the surrounding landscape could still provide pileated woodpecker habitats. Some negligible shifts in wolf prey use may be possible; however no appreciable changes to wolves or their prey would be anticipated with the proposed harvesting. Approximately 5 acres of upland fisher habitats would be harvested, with much of those acres likely being too open for appreciable fisher use following proposed treatments. No changes in open roads would be anticipated, which would not likely alter trapping pressure and the potential for fisher mortality. Minor reductions in landscape connectivity would be expected, but activities would avoid riparian areas frequently used by fisher. Overall negligible direct, indirect, or cumulative effects would be anticipated to pileated woodpeckers, fisher, and gray wolves. Habitats for other sensitive species are either not present and or would not be affected with the proposed activities.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine direct, indirect, and cumulative effects to historical, archaeological or paleontological resources.

No cultural resources have been identified within the area of potential effect. Considering the nature of the proposed action, the potential for encountering Heritage Properties is low. No additional cultural resource work is recommended for the McKay Creek Douglas Fir Root Rot Timber sale.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify direct, indirect, and cumulative effects to aesthetics.

Topography is mountainous with the project area located near the valley bottom, 3 miles from the Lower Clark Fork River corridor. The project would be visible from a portion of the USFS McKay Creek Road # 1022. Openings or disturbance from harvest operations, with large diameter overstory western larch and ponderosa pine, retained throughout most of the project area, would be visible upon completion of the project. Prescriptions are designed to mimic historic stand conditions and would not have an adverse visual impact on the area.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify direct, indirect, and cumulative effects to environmental resources.

No direct, indirect, or cumulative impacts would likely occur under either alternative.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

Two Land Use Licenses have been issued in the past for the exploration of metalliferous material. These Licenses have never been developed and have expired; the most recent expiration occurring 6_/15/2000.

| IV. IMPACTS ON THE HUMAN POPULATION |
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| <ul style="list-style-type: none">• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i>• <i>Enter "NONE" if no impacts are identified or the resource is not present.</i> |

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

Human health would not be impacted by the proposed timber sale or associated activity. There are no unusual safety considerations associated with the proposed timber sale.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

Timber harvest would provide continuing industrial production in Sanders County.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify direct, indirect, and cumulative effects to the employment market.

People are currently employed in the wood products industry in the region. Due to the relatively small size of the timber sale program, there would be no measurable direct, indirect, or cumulative impacts from this proposed action.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify direct, indirect, and cumulative effects to taxes and revenue.

People are currently paying taxes from the wood products industry in the region. Due to the relatively small size of the timber sale, there would be no measurable direct, indirect, or cumulative impacts from this proposed action on tax revenues.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify direct, indirect, and cumulative effects of this and other projects on government services

Log trucks hauling to the purchasing mill would result in temporary increases in traffic on the designated haul route (See Area Maps pages 9 - 11). This increase is a normal contributor to the activities of the local community and industrial base and cannot be considered a new or increased source. No changes to the level

of government services would be needed as a result of this project, therefore it would not contribute to cumulative effects on government services.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

On June 17, 1996, the Land Board approved the State Forest Land Management Plan (SFLMP). The SFLMP provides the philosophy adopted by DNRC through programmatic review (DNRC, 1996). The DNRC will manage the lands in this project according to this philosophy, which states:

Our premise is that the best way to produce long term income for the trust is to manage intensively for healthy and biologically diverse forests. Our understanding is that a diverse forest is a stable forest that will produce the most reliable and highest long term revenue stream... In the foreseeable future, timber management will continue to be our primary source of revenue and our primary tool for achieving biodiversity objectives.

On March 12, 2003, the DNRC adopted Administrative Rules for Forest Management (Rules)(Administrative Rules of Montana [ARM] 36.11.401 through 450). The Rules provide DNRC personnel with consistent policy, direction, and guidance for the management of forested trust lands. Together, the SFLMP and Rules define the programmatic framework for this project.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify direct, indirect, and cumulative effects to recreational and wilderness activities.

This area is hunted frequently. USFS McKay Creek Road # 1022 is an open road that serves as an access point to the Cabinet Mountain Wilderness. The trailhead and associated parking area, of the USFS Engle Peak Trail # 926, is located within the proposed project area. Measures to protect this trail and ensure unimpeded access to trail and road have been incorporated in the project design.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify direct, indirect, and cumulative effects to population and housing.

There would be no measurable direct, indirect, or cumulative impacts related to population and housing due to the relatively small size of the timber sale, and the fact that people are already employed in this occupation in the region.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

No direct, indirect, and cumulative impacts related to social structures and mores would be expected under either alternative.

23. CULTURAL UNIQUENESS AND DIVERSITY:

How would the action affect any unique quality of the area?

No direct, indirect, and cumulative impacts related to cultural uniqueness and diversity would be expected under either alternative.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify direct, indirect, and cumulative economic and social effects likely to occur as a result of the proposed action.

Costs, revenues and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return. The estimated stumpage is based on comparable sales analysis for limited access sales. This method compares recent sales to find a market value for stumpage. These sales have similar species, quality, average diameter, product mix, terrain, date of sale, distance from mills, road building and logging systems, terms of sale, or anything that could affect a buyer's willingness to pay for the timber. The effect of the proposed project would produce an estimated return to the Common Schools (C.S.) Trust Grant of \$31,000.00 and \$8,000.00 in Forest Improvement (FI) fees under the alternative action. The No Action Alternative does not generate any return to the trust at this time.

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| EA Checklist Prepared By: | Name: Dale Peters | Date: 7/21/10 |
| | Title: Management Forester | |

V. FINDING

25. ALTERNATIVE SELECTED:

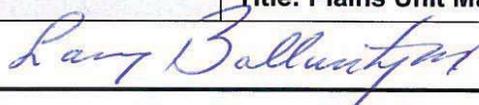
The Action Alternative is selected for implementation

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

No significant impacts have been identified to occur as a result of implementing the Action Alternative

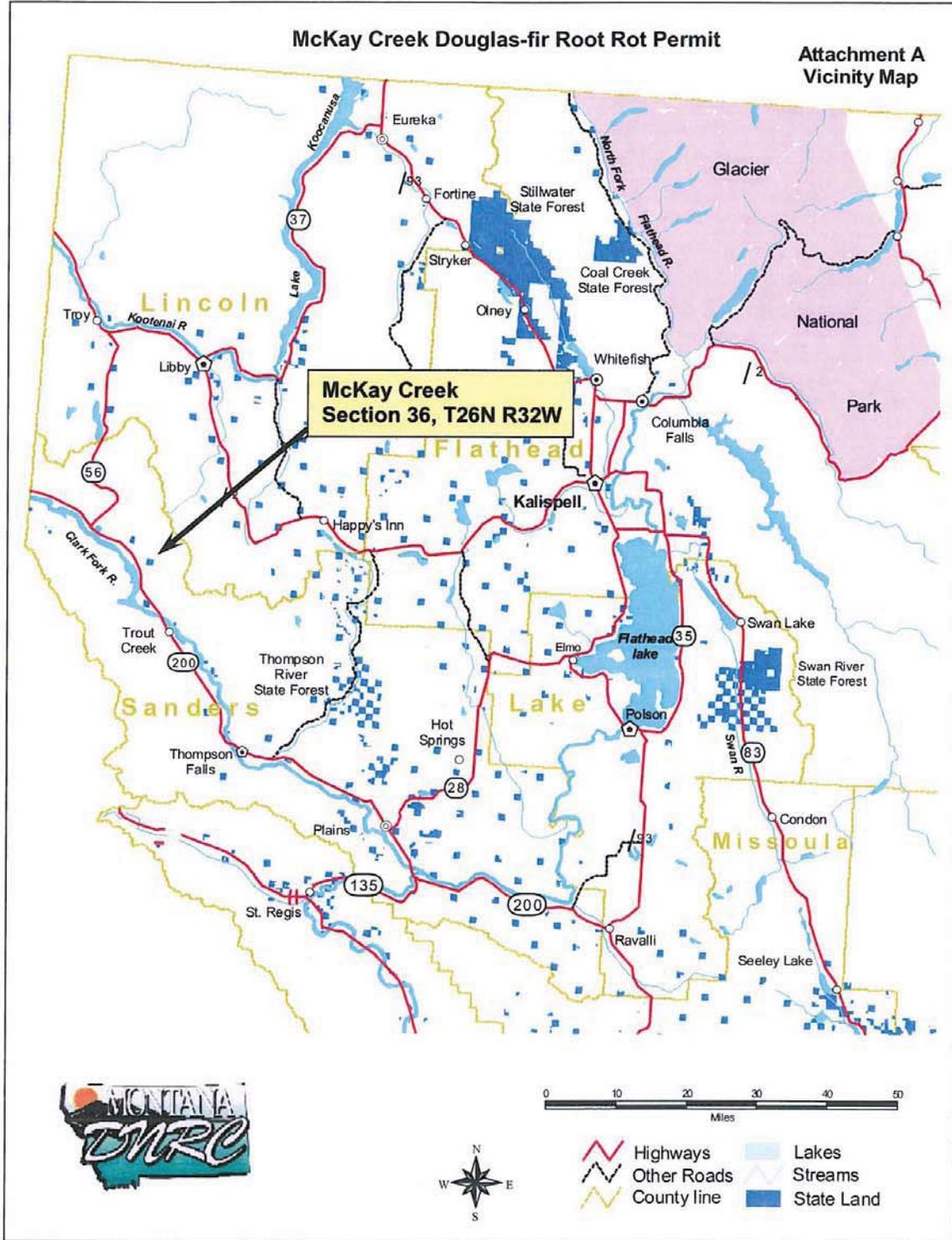
27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

EIS More Detailed EA No Further Analysis

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| EA Checklist Approved By: | Name: Larry Ballantyne |
| | Title: Plains Unit Manager |
| Signature:  | Date: 21 July, 2010 |

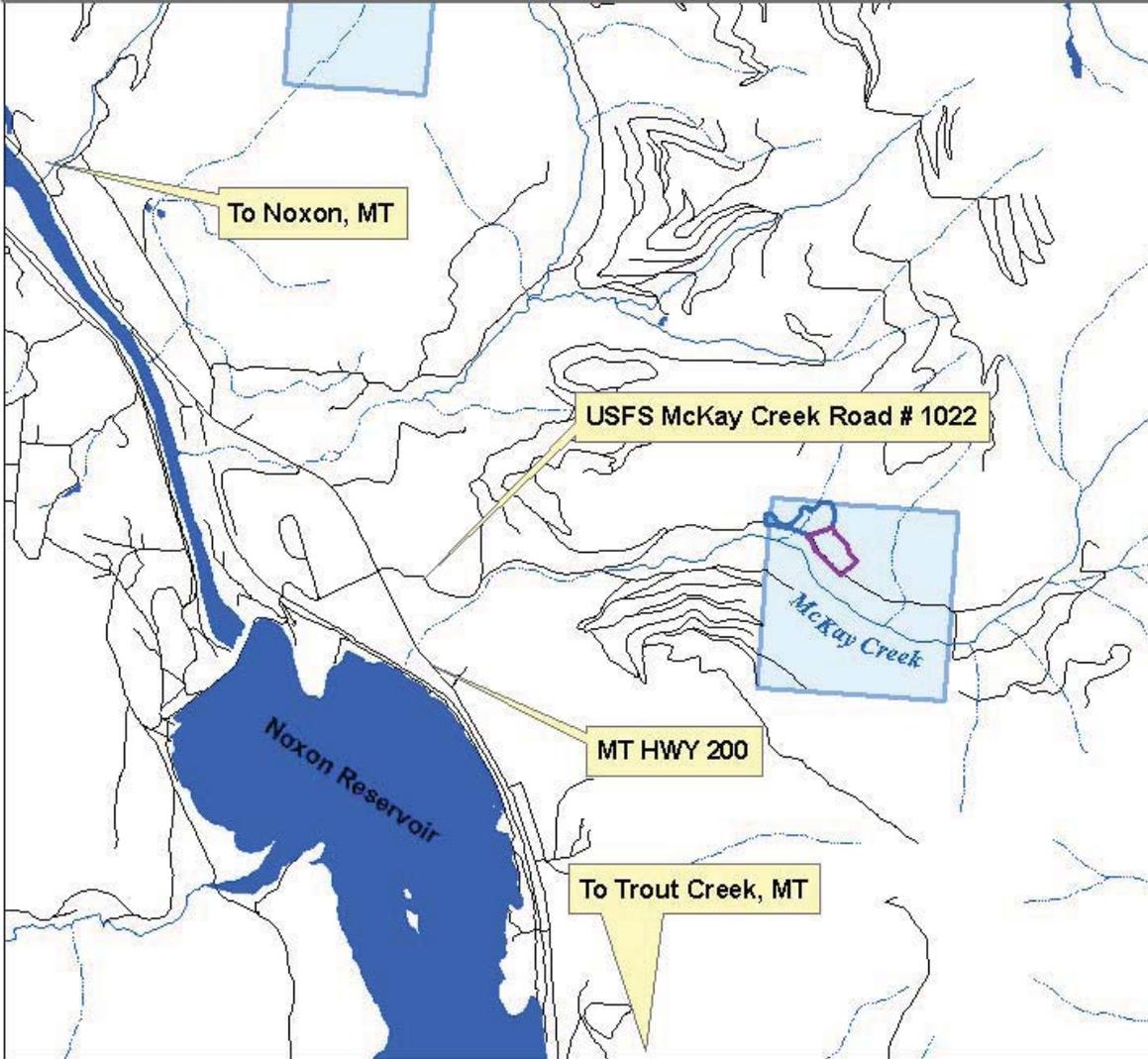
McKay Creek Douglas-fir Root Rot Permit

Attachment A Vicinity Map



Proposed McKay Creek Permit Vicinity Map

T26N R32W S36



Legend

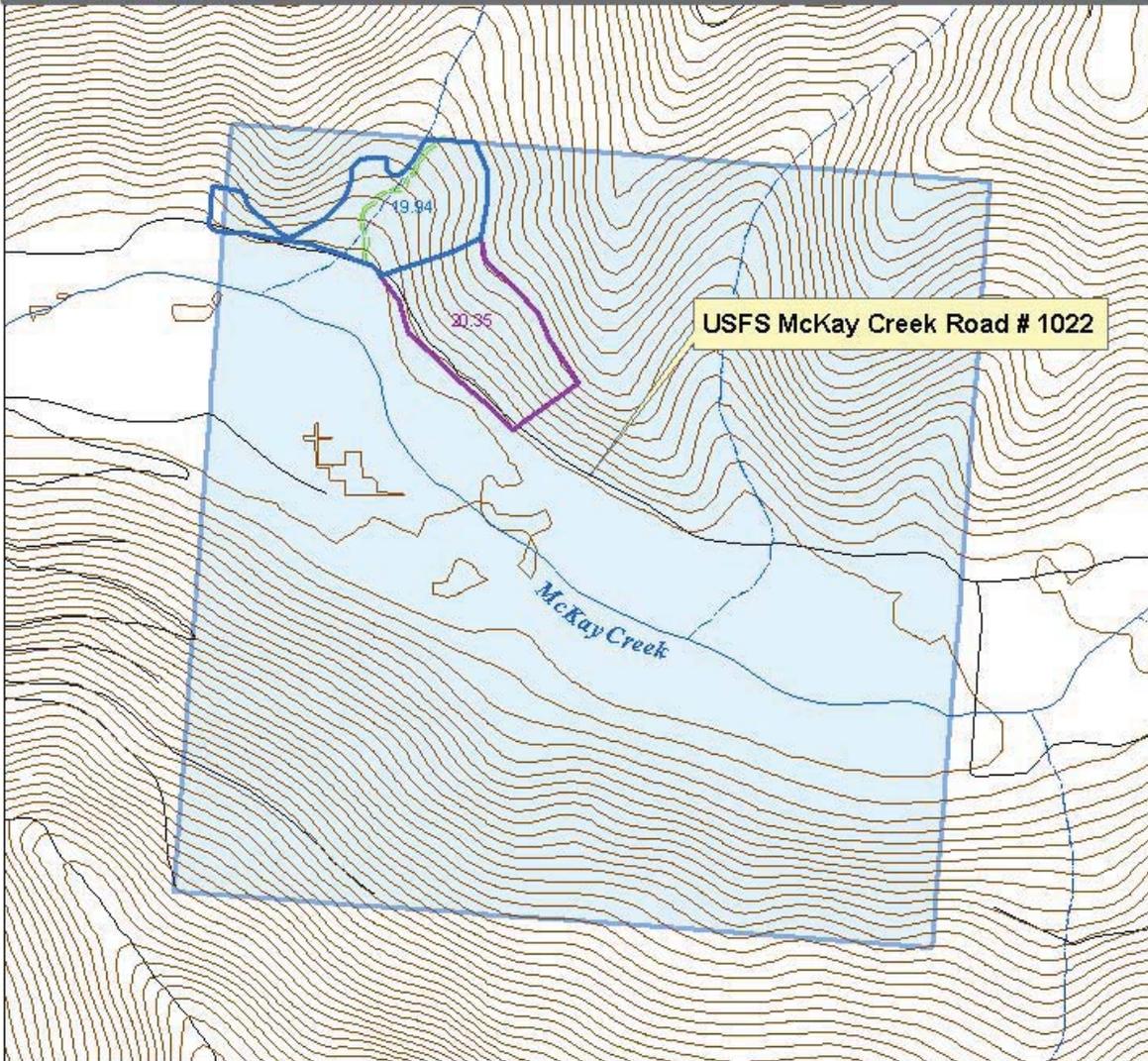
- DNRC Unit Parcels
- Unit #1
- Unit #2

Montana DNRC
Trust Land Management Division
Northwestern Land Office
Plains Unit dmp 7/2010



Proposed McKay Creek DF Root Rot Permit

T26N R32W S36



Legend

- Unit_#1
- Unit_#2
- Engle_Peak_Trail_926
- DNRC Unit Parcels
- 40'_Contours

Montana DNRC
Trust Land Management Division
Northwestern Land Office
Plains Unit dmp 7/2010



HARVEST UNIT PRESCRIPTIONS
Section 36, T26N, R32W

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|---------------|-------|-------------------|---------------|----------------|-----------|
| Units: | 1 & 2 | Elevation: | 2720' – 3040' | Slope: | 6 - 50% |
| Acres: | 40 | Location: | NW 1/4 | Aspect: | Southwest |

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| Habitat Types: | 30 acres | 591 ABGR/LIBO - LIBO |
| | 6 acres | 571 TSHE/CLUN - CLUN |
| | 4 acres | 262 PSME/PHMA - CARU |

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| Current Cover Type: | 34 acres | Douglas Fir |
| | 6 acres | Western Larch/Douglas Fir |

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| Desired Future Condition: | 37 acres | Ponderosa Pine |
| | 3 acres | Western Larch/Douglas Fir |

Soil Type:

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| 80% | 32F—Mitten gravelly ashy silt loam, 35 to 60 percent slopes |
| 20% | 78B—Fernline ashy silt loam, 0 to 4 percent slopes |

Current Stand Conditions:

These units are comprised of four stands of timber as identified in the Stand Level Inventory. The unit overall stand can be best described as multi-storied with three or more canopy levels. The upper canopy is dominated by Douglas-fir (*pseudotsuga menziesii*), (50-59%) which displays the various stages of root rot. The rest of the upper canopy is comprised of western larch (*larix occidentalis*) with some signs of Dwarf mistletoe and ponderosa pine (*pinus ponderosa*). The dominate tree diameters range from 12 – 24" DBH, heights range from 75 – 110' tall and the average is 110 years old. The middle and lower canopies are primarily Douglas-fir and grand fir (*abies grandis*) that are becoming established in the older root rot pockets. The units are located in the northwest of the section, between the north section line and the McKay Creek Road # 1022.

Treatment Objectives:

- Remove unhealthy trees, as well as those with poor vigor to promote long term forest health, growth and vitality.
- Promote a healthy stand of timber by significantly reducing root rots affecting this stand of timber.
- Move this stand toward the desired future condition classification of ponderosa pine and to a lesser degree western larch/Douglas-fir.
- Scarify the site to make an available seedbed to promote natural regeneration, particularly ponderosa pine and western larch.

Prescribed Treatment:

- Seed tree harvest / Shelterwood: Favor leaving healthy vigorous trees with good crown and bark characteristics, with a variable spacing of 65 - 75 feet, leaving 8 - 10 trees per acre.
- Favor leaving dominant and co-dominant ponderosa pine and western larch that are wind firm and that have the bark characteristics that would withstand a low intensity burn.
- Retain a minimum of two snags per acre, 14" DBH & greater, and two snag recruits per acre, where present, if they are not a safety hazard.

Harvest Method:

- Ground based harvesting with conventional, mechanical, or cut-to-length operations on dry, frozen or snow covered ground are applicable to this unit.

Hazard Reduction:

- Landing piles to be burned and/or ground at landings following harvest.
- Residual submerchantable material would be slashed, piled and burned.

Site Preparation and Regeneration:

- Mechanical scarification to a minimum of 35% exposed mineral seedbed for natural regeneration.
- Leave trees to provide seed source for natural regeneration.

Anticipated Future Treatments:

- Natural regeneration should be evaluated approximately five years from time of site preparation, and the need for supplemental planting determined.
- Stand conditions would be monitored for future salvage opportunities related to insect and disease outbreaks, severe weather events, fire or other unanticipated circumstances on a case-by-case basis.

INDIVIDUALS CONSULTED

Norman Kuennen; ROW Grants Specialist, Northwestern Land Office

Dave Olsen; MT DNRC, Forest Management Supervisor, Plains Unit

Patrick Rennie; MT DNRC, Archaeologist, Trust Land Mgt. Division, Helena, Montana

Garrett Schairer; MT DNRC, Wildlife Biologist, Northwestern Land Office

Doug Shaner; retired USFS Forester, Express Services, Plains, Montana

Marc Vessar; MT DNRC, Hydrologist, Northwestern Land Office

Document Preparation

Dale Peters; MT DNRC, Management Forester, Plains Unit