

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Westside Fir Engraver Salvage
Proposed Implementation Date	December 1, 2014
Proponent:	Montana Department of Natural Resources (DNRC), Northwestern Land Office
Location:	Swan River State Forest – Sections 1, 2, & 12; Township 23 North; Range 18 West and Sections 34 and 35; Township 24 North; Range 18 West.
County:	Lake

I. TYPE AND PURPOSE OF ACTION

MT DNRC, as manager of the Swan River State Forest, proposes to harvest an estimated 300 thousand board feet (Mbf) of dead and dying timber on approximately 118 acres located in Sections 1,2 and 12; Township 23 North; Range 18 West and Sections 34 and 35; Township 24 North; Range 18 West of the Swan River State Forest. The project would require the use of restricted roads and minor traffic increases would occur on 9.4 miles of existing forest roads for the duration of project activities. There will be no construction or use of temporary roads. The proposed activities would occur across a 5 – month time period from December 1- March 31 and possibly for an additional 30 operational days from June 16 - August 31. The proposed harvest would remove trees that have been attacked by fir engraver beetles, Douglas-fir bark beetles, and mountain pine beetles; as well as trees that are stressed and at high risk of being attacked by the fir engraver. Grand fir is the primary species of tree being salvaged, with a smaller component of Douglas-fir, lodgepole, and western white pines being selected for removal. Harvesting dead and dying trees quickly will ensure that the most value will be captured. The project would produce an estimated \$ 11,414.64 in revenue for the Common Schools Trust.

PROJECT AREA

The proposed salvage is located on 118 acres of state trust lands on the west side of Swan River State Forest in Sections 1, 2, and 12; Township 23 North; Range 18 West and Sections 34 and 35; Township 24 North; Range 18 West. The units are accessed by the Woodward Point Road (a restricted road) that runs through and adjacent to all the units. The elevation ranges from 3,300- 4,600 feet. The Project Area is not directly adjacent to any other land owners.

The lands involved in the proposed project are held in trust by the State of Montana for the support of specific beneficiary institutions (*Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11*). The *Montana State Board of Land Commissioners* (Land Board) and DNRC are legally required to administer these trust lands to produce the largest measure of reasonable and legitimate long-term return for the trust beneficiaries (*Montana Code Annotated [MCA], Section 77-1-202*). The State is required by law to establish a salvage timber program that provides for the timely harvesting of dead and dying timber that has been threatened by insects, diseases, wildfires, or wind on State

forests. Under this requirement, DNRC shall, to the extent practicable, harvest dead and dying timber before there is substantial wood decay and value loss (*Section 77-5-207, MCA*).

This project was developed in compliance with the *State Forest Land Management Plan (SFLMP)*, the *Administrative Rules for Forest Management (Forest Management Rules; ARM 36.11.401 through 471)*, and conservation commitments contained in the selected alternative in the Final Environmental Impact Statement (FEIS) of the Montana DNRC *Forested State Trust Lands Habitat Conservation Plan (HCP)* and associated *Record of Decision (ROD)*, 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.

DNRC solicited public participation on the Westside Fir Engraver Project through an initial scoping which included the project information sheet, cover letter, and maps signed by Clay Stephenson, Management Forester. The packet was mailed August 14, 2014 to neighboring landowners, individuals, agency and industry representatives, and other organizations that have expressed interest in DNRC's management activities. The mailing list of parties receiving the Initial Proposal, and the comments received, are located in the project file at the Swan River State Forest headquarters. DNRC received 3 comments from 1) Neil Meyer, Swan Valley Ad Hoc Committee; 2) Francis Auld, Confederated Salish and Kootenai Tribes Council Chairman; and 3) Alan Wood, Fish, Wildlife & Parks Wildlife Mitigation Coordinator. One comment was in favor of the project, one comment expressed minor concerns relating to the Project Area regarding the potential of undocumented cultural resources, and the final comment questioned the creation of new temporary roads in relation to a Montana Fish, Wildlife & Parks conservation easement held on Project Area lands. This document will address those concerns. (See *APPENDIX C, SCOPING COMMENTS*.)

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.

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS (DFWP)

DFWP has jurisdiction over the management of fisheries and wildlife populations in the project area. Additionally, lands in Section 35, Township 23 North, Range 18 West are within the *West Swan Valley Conservation Easement* between DNRC and DFWP. This easement requires DNRC to provide DFWP with prior notice of all forest-management activities on lands under the easement as well as submitting a project-level timber management plan to DFWP. DFWP is on the mailing list and was sent the scoping letter.

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

The DNRC is classified as a major open burner by the Montana Department of Environmental Quality (DEQ), and currently holds a major open burning permit issued by the DEQ to conduct burning activities on State lands managed by the DNRC. As a major open burning permittee, 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 coordinates prescribed burning, including both slash and broadcast burning related to forest management activities done by DNRC, among major open burning permittees in order to minimize adverse impacts from smoke associated with those activities. 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.

SWAN VALLEY GRIZZLY BEAR CONSERVATION AGREEMENT (SVGBCA)

The SVGBCA is a cooperative agreement between DNRC, Flathead National Forest, and USFWS. The SVGBCA contains agreed-upon mitigations that are designed to reduce impacts to grizzly bears in the Swan Valley while allowing the cooperating parties to manage timber. As a cooperator, DNRC must abide by the terms and mitigations contained in the SVGBCA.

U.S. FISH AND WILDLIFE SERVICE

In December 2011, the USFWS issued DNRC an *Incidental Take Permit* (Permit) under Section 10 of the *Endangered Species Act*. The Permit applies to select forest-management activities affecting the habitat of grizzly bear, Canada lynx, and 3 fish species (bull trout, westslope cutthroat trout, and Columbia redband trout) on Project Area lands covered under the HCP. DNRC and the USFWS will coordinate monitoring of certain aspects of the conservation commitments to ensure program compliance with the HCP.

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.

The No-Action and Action alternatives are described in this section. The decision maker may select a modification or combination of these alternatives.

Alternatives Considered

- *No-Action Alternative*

The No-Action Alternative is used as a baseline for comparing the effects that the Action Alternative would have on the environment and is considered a possible alternative for selection. Under this alternative, the proposed salvage would not take place and, therefore, no revenue would be generated for the Common Schools Trust. Mitigation of the impacts that would occur from the fir engraver and other tree attacking insects would also not occur. Firewood permits, recreational use, fire suppression, noxious-weed control, and other management activities may still occur. Natural events, such as windthrow and down fuel accumulation would continue to occur.

- *Action Alternative*

Under the Action Alternative, the proposed salvage would take place as described in Section 1, TYPE AND PURPOSE OF ACTION. Approximately 300 Mbf of dead and dying timber would be harvested. An appropriate amount of snags and down woody debris would be maintained for wildlife needs.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT
<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>

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.

The potential impacts to geology and soil quality in the Project Area are addressed in APPENDIX A - HYDROLOGICAL ANALYSIS at the end of the document.

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 potential impacts to water and fisheries resources in the Project Area are addressed in *APPENDIX A - HYDROLOGICAL ANALYSIS* at the end of the document.

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.

BACKGROUND

The project is within Montana Airshed 2 and is not within a Class 1 Airshed. Air quality within this airshed is considered good. Temporary, local reductions in air quality currently occur from wildfires, prescribed broadcast burning, slash burning, and road dust.

DIRECT, INDIRECT, AND CUMULATIVE EFFECTS

- *No-Action Alternative*

The existing condition would not change.

- *Action Alternative*

Post-harvest burning would produce smoke emissions. Due to the relatively small size of the project, no increases are expected to exceed standards or impact local population centers if burning is completed within the requirements imposed by the Montana/Idaho Airshed Group.

Additional smoke produced from prescribed burning on adjacent USFS, The Nature Conservancy, private, and state trust forestland would remain within the standards for air quality, but cumulative effects during peak burning periods could affect individuals at local population centers with respiratory illnesses for short durations. All known major burners operate under the requirements of the Montana/Idaho Airshed Group, which regulates the amount of emissions produced cumulatively by major burners.

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.

Background

The units to be salvaged are located up the Woodward Point Road in Sections 1, 2, and 12, T 23N, R18W and sections 35 and 34, T24N, R18W are directly adjacent to units from the White Porcupine

Timber Sale that was conducted from 2010-2012. The salvage units consist of an overstory of western larch, Douglas-fir, grand fir, western white pine, and lodgepole pine. There have been minimal previous treatments in the salvage stands. Fir engraver beetles moved into the stand and began attacking scattered grand firs in the summer of 2013. They then emerged in the summer of 2014 to attack standing live grand fir in clumps across the stands. The most heavily affected areas were in the unit in Section 2, T23N, R18W.

Existing Environment

The affected stands consist of a mature, dominant overstory of western larch, Douglas-fir, grand fir, and western white pine. The current cover types include approximately 77 acres of mixed conifer cover type and 41 acres of western white pine cover type. The predominant forest habitat type described by Pfister et al. (1977) is western red cedar/queencup beadlily (THPL/CLUN), which occurs on warm and moist low-elevation sites. Forest productivity (growth potential) for that habitat type is rated high to very high. Conifer regeneration in the affected stands is limited, with the greatest component being grand fir. The current age classes for the stand overstory within the proposed salvage units is approximately 31 acres of 40-99 years, 29 acres of 100-149 years, 29 acres of 150-199 years and 29 acres of old growth.

Conditions of the trees in the salvage units were assessed in the summer of 2014 to determine the amount of beetle and decay damage within the stands. Insect damage is present throughout the stands, with merchantable windfall scattered among portions of the stands. Approximately 50% of the grand fir are affected by fir engraver beetles and <10% of the Douglas-fir are affected by Douglas-fir bark beetle. The mature trees in the affected stands show varying stages of stem decay, primarily from Indian paint fungus and pini rot. Indian paint fungus was present in about 25% of the live standing grand fir. Crowns of recently attacked grand fir are beginning to fade with more advanced signs of mortality showing up in trees that are damaged by both fir engraver beetles and Indian paint fungus.

No sensitive, threatened, or endangered plant species have been documented within the Project Area according to the Montana Natural Heritage Program.

DIRECT AND INDIRECT EFFECTS

- *No-Action Alternative*

Timber harvesting would not occur at this time. The Project Area has moderate to severe damage from fir engraver, bark beetles, and stem decay, and mortality is scattered throughout. Fir engraver may continue to attack susceptible trees. Shade tolerant trees, such as grand fir, may naturally regenerate where canopy gaps are created by dead trees. Thus, where western white pine cover types occur, there could be a shift to mixed conifer cover type barring a disturbance that would favor shade intolerant trees (such as western white pine or western larch). No change in age class would be expected and snags created by mortality in the stands would increase the overall fuel loading as they remain and ultimately fall on-site.

- *Action Alternative*

Harvesting would focus on dead and dying grand fir, and Douglas-fir as well as a minor component of beetle hit western white pine and lodgepole pine. Harvesting all or most of the dead, and/or dying timber with a diameter at breast height (dbh) greater than 7.5 inches would result in scattered and grouped trees being removed from the stands either singly or in groups that could create up to ¼ to 5 acre sized openings. Spacing between leave trees would be increased from the current spacing. However, there would be adequate snags retained for wildlife and down woody debris purposes. Scarification during harvesting may encourage early seral species development. The stand is expected to remain a mixed-conifer/ western white pine covertime following harvest and would remain so if regeneration occurs. The stand would retain the characteristics of a mixed age, multistoried stand, and no changes in age class would be expected. Twenty nine acres of old growth would remain in old growth status post-harvest. Minor decreases in the insect activity within the area may occur with the removal of potential brood trees and the overall future fuel loading within the stand would decrease as the dead and dying are removed rather than falling on-site.

CUMULATIVE EFFECTS

Due to the relatively small size of the proposed project, cumulative effects to covertime, age class, and other vegetation-related topics are expected to be negligible.

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.

Impacts to fisheries resources are addressed in *APPENDIX A - HYDROLOGICAL ANALYSIS* at the end of the document.

Impacts to terrestrial wildlife resources are addressed in *APPENDIX B- TERRESTRIAL WILDLIFE RESOURCES* at the end of the document.

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.

Potential impacts to aquatic species of concern are addressed in *APPENDIX A - HYDROLOGICAL ANALYSIS* at the end of the document.

Impacts to terrestrial threatened and endangered species are addressed in *APPENDIX B – TERRESTRIAL WILDLIFE RESOURCES* at the end of the document.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

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

Scoping letters were sent to those Tribes that requested to be notified of DNRC timber sales. No response was returned that identified a specific cultural resource issue. A Class I (literature review) level review was conducted by the DNRC staff archaeologist for the area of potential effect (APE). This entailed inspection of project maps, DNRC's sites/site leads database, land use records, General Land Office Survey Plats, and control cards. The Class I search results revealed that no cultural or paleontological resources have been identified in the APE, but it should be noted that Class III level inventory work has not been conducted there to date. If previously unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.

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.

Due to the number of trees being retained and the small size of openings being created, no measurable direct, indirect, or cumulative effects to aesthetics would occur.

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.

None

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.

Other environmental documents that pertain to the Project Area include:

- Swan Valley Grizzly Bear Conservation Agreement
- Montana DNRC Forested Trust Lands Habitat Conservation Plan
- White Porcupine Multiple Timber Sales EIS
- Westside Blowdown Salvage CEA

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

None

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

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

Approximately 300 Mbf of sawlog timber would be made available to the wood products industry.

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.

Due to the small size of the proposed timber harvest, no measurable direct, indirect, or cumulative effects to the employment market would be likely.

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.

Due to the relatively small size of this salvage project, the proposed action would result in no measurable cumulative impact 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

The demand for government services would not be directly, indirectly, or cumulatively impacted as a result of this proposal.

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.

In 1996, the Montana Board of Land Commissioners (Land Board) approved the Record of Decision for the SFLMP. The SFLMP provides philosophical basis, consistent policy, technical rationale, and guidance for the management of forested state trust lands. In 2003, DNRC adopted the *Forest Management Rules (ARM 36.11.401 through 456)*. The *Forest Management Rules* are the specific legal resource management standards and measures under which DNRC implements the SFLMP and subsequently its forest-management program.

In December 2011, the Land Board approved the Record of Decision for the Montana DNRC HCP. Approval of the Record of Decision was followed by the issuance of a Permit by the USFWS. The HCP is a required component of an application for a Permit which may be issued by the USFWS to state agencies or private citizens in situations where otherwise lawful activities might result in the incidental take of federally-listed species. The HCP is the plan under which DNRC intends to conduct forest-management activities on select forested state trust lands while implementing specific mitigation requirements for managing the habitats of grizzly bear, Canada lynx, and 3 fish species (bull trout, westslope cutthroat trout, and Columbia redband trout). The project would adhere to the agreements made in the SVGBCA.

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.

EXISTING CONDITIONS

The 2014 Westside Fir Engraver Salvage Project Area is primarily used for hunting, mountain biking, and hiking, and receives recreational use throughout the year.

DIRECT, INDIRECT, AND CUMULATIVE EFFECTS

- *No-Action Alternative*

Recreational use is not expected to change.

- *Action Alternative*

The haul routes would include Woodward Point, Lower Whitetail, and Fatty Creek roads. Short delays due to log hauling from December of 2014 to March of 2015 along the open road during the work week may inconvenience some recreationists; however, recreational use in the Project Area is not expected to change with the implementation of this project. Only traffic related to logging and administrative use would be allowed on any restricted access roads needed during the period of harvest operations.

The status of the closed roads used to access this project would not change with project implementation.

All levels of existing recreational use on Swan River State Forest and adjacent ownerships are expected to continue.

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.

Due to the relatively small size of this project and the fact that people are already employed in the region, no measurable direct, indirect, or cumulative impacts related to population and housing would be expected.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

None

23. CULTURAL UNIQUENESS AND DIVERSITY:

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

None

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.

DIRECT, INDIRECT, AND CUMULATIVE EFFECTS

- *No-Action Alternative*

No revenue would be generated for the Common Schools Trust at this time.

- *Action Alternative*

The proposed salvage project would maintain jobs in the private sector. Harvest would provide a monetary return to the Common Schools Trust.

EA Checklist Prepared By:	Name: Clay Stephenson	Date: October 14, 2014
	Title: Management Forester	

V. FINDING

25. ALTERNATIVE SELECTED:

Two alternatives are present and fully analyzed in the CEA:

- The No-Action Alternative includes existing activities, but does not include the salvage of dead and dying timber.
- The Action Alternative includes removal of 300 Mbf of dead and dying timber on approximately 118 acres on the west side of Swan River State Forest. The proposed harvest would remove trees that have been attacked by fir engraver beetles, Douglas-fir bark beetles, and mountain pine beetles; as well as trees that are stressed and at high risk of being attacked by the fir engraver.

I have reviewed the correspondence from the public and information presented in the CEA. I have selected the Action Alternative without additional modifications. I feel the Action Alternative best meets the purpose and need for action for the following reasons:

- The selected Action Alternative meets the goals and objectives listed in this CEA.
- The analysis of identified issues did not reveal information to persuade me to select the No-Action Alternative.
- The Project Area is located on state-managed lands that are principally valuable for the timber that is on them (77-1-402 MCA). DNRC manages these lands according to the standards adopted by the Administrative Rules for Forest Management (ARM 36.11.401 through 450) and the philosophy within the SFLMP, 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...in the future; timber management will continue to be our primary source of revenue and our primary tool for achieving biodiversity objectives.

- The Action Alternative meets all requirements of the Administrative Rules for Forest Management (ARM 36.11.401 through 450), the Montana DNRC Forested State Trust Lands Habitat Conservation Plan, and the SVGBCA, in that, impacts are minimal, mitigated, and minor in scope.
- The Action Alternative provides an important mechanism to manage intensively for a healthy and biologically diverse forest in a way that harvests dead, dying, or damaged timber before a substantial value loss occurs, while limiting environmental impacts.
- As mandated by State statute (77-5-222 MCA), the Action Alternative will contribute to DNRC's sustained yield.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

I find that the Action Alternative will not have significant impacts on the human environment for the following reasons:

- The Action Alternative conforms to the management philosophies of DNRC and is in compliance with existing laws, rules, policies, and standards applicable to this type of proposed action.
- The proposed salvage project remains within operating windows allowed under the SVGBCA for the Porcupine Woodward Subunit.
- DNRC will not be precluded from analyzing future actions on State trust lands.
- The Action Alternative is similar to past projects on State trust lands using common practices in the industry and activities are not being conducted on unique or fragile sites.
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27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

Based on the following, I find that a more detailed EA or an EIS does not need to be prepared:

- The CEA adequately addressed the issues identified during project development and has displayed the information needed to make a decision.
- Evaluation of the potential impacts of the proposed Westside Fir Engraver Salvage Project indicates that no significant impacts would occur.

The ID Team provided adequate opportunities for public review and comment. Public concerns were incorporated into the project design and the analysis of impacts as displayed on page 2: *Public Involvement, Agencies, Groups or Individuals Contacted*, and Appendix C: *Response to Comments*.

EIS More Detailed EA No Further Analysis

EA Checklist	Name: Dan Roberson
Approved By:	Title: Swan Unit Manager
Signature: /s/ Dan Roberson	Date: 12/11/14

APPENDIX A
WATERSHED AND HYDROLOGY ANALYSIS
FOR THE
WESTSIDE FIR ENGRAVER SALVAGE

INTRODUCTION

Project Area and Project Activities

The gross Project Area includes portions of 5 sections of Common Schools Trust Lands near Swan Lake, Montana. Affected watersheds include Whitetail Creek and unnamed tributaries to the Swan River. Proposed project activities would include ground based methods to harvest timber on approximately 118 acres within the Project Area.

Resource Description

Resources potentially at risk in the Project Area include increased water yield and increased sediment delivery. Water yield increases (WYI) can affect channel stability if dramatically altered, and sediment delivery from both in-channel and introduced sources is a primary component of overall water quality in a watershed.

Issues and Measurement Criteria

The following issues encompass the specific issues and concerns raised through public comment and scoping of the proposed project. For a specific list of individual comments and concerns, please refer to the project file.

Sediment Delivery

Sediment delivery and subsequent water-quality impacts can occur as a result of timber harvesting and related activities, such as road construction and log yarding to landings. Construction of roads, skid trails and landings can generate and transfer substantial amounts of sediment through the removal of vegetation and exposure of bare soil. In addition, removal of vegetation near stream channels reduces the sediment-filtering capacity and may reduce channel stability and the amounts of large woody material. Large woody debris is a very important component of stream dynamics, creating natural sediment traps and energy dissipaters to reduce the velocity and erosive power of stream flows.

Measurement Criteria: Sediment from roads, harvesting activities and vegetative removal will be analyzed qualitatively through data collected during past statewide and DNRC internal Best Management Practices (BMP) field reviews.

Water Yield

Water yield can be affected by timber harvesting and associated activities by affecting the timing, distribution and amount of water yield in a harvested watershed. Water yields increase proportionately to the percentage of canopy removal (*Haupt 1976*), because removal of live trees reduces the amount of water transpired, leaving more water available for soil saturation and runoff. Water yield is further affected because canopy removal also decreases interception of rain and snow and alters snowpack distribution and snowmelt. Water yield impacts are ameliorated as new trees begin to grow and use water. New growth also begins to return snowpack distribution to pre-harvest levels as stands grow. Higher water yields may lead to increases in peak flows and peak-flow duration, which can result in accelerated streambank erosion and sediment deposition. Vegetation removal can also reduce peak flows by changing the timing of snowmelt. Openings will melt earlier in the spring with solar radiation and have less snow available in late spring when temperatures are warm. This effect can reduce the synchronization of snowmelt runoff and lower peak flows.

Measurement criteria: The water yield increase for the Project Area streams was determined using field review and aerial photo interpretation. Visual inspection of the runoff patterns and stream channel stability within the Project Area were used to assess the impacts of past management to water yield. Aerial photo interpretation was used to determine the extent of past management in these watersheds.

Fish Habitat

Fish habitat can be affected in three primary ways by timber harvesting through the following: 1) introduction of fine sediment to spawning habitat as a result of road construction and use, and ground-based equipment operation, 2) stream temperature can be increased if trees that provide shade to a stream are removed, and 3) large woody debris in streams can be reduced if trees are removed that have the potential to fall into or across a stream.

Measurement criteria: Qualitative discussion of potential risks to sediment delivery, stream shading and large woody debris.

Analysis Area

Sediment Delivery

Analysis area for direct, indirect and cumulative effects to sediment delivery will be analyzed on all existing roads in and leading to the proposed Project Area. Sediment delivery will be analyzed qualitatively where stream crossings exist within the proposed Project Area using visual inspection and lineal measurement to determine the road surface area delivering to a stream. Additional sites on proposed haul routes located outside the Project Area will be assessed qualitatively for their potential to affect downstream water.

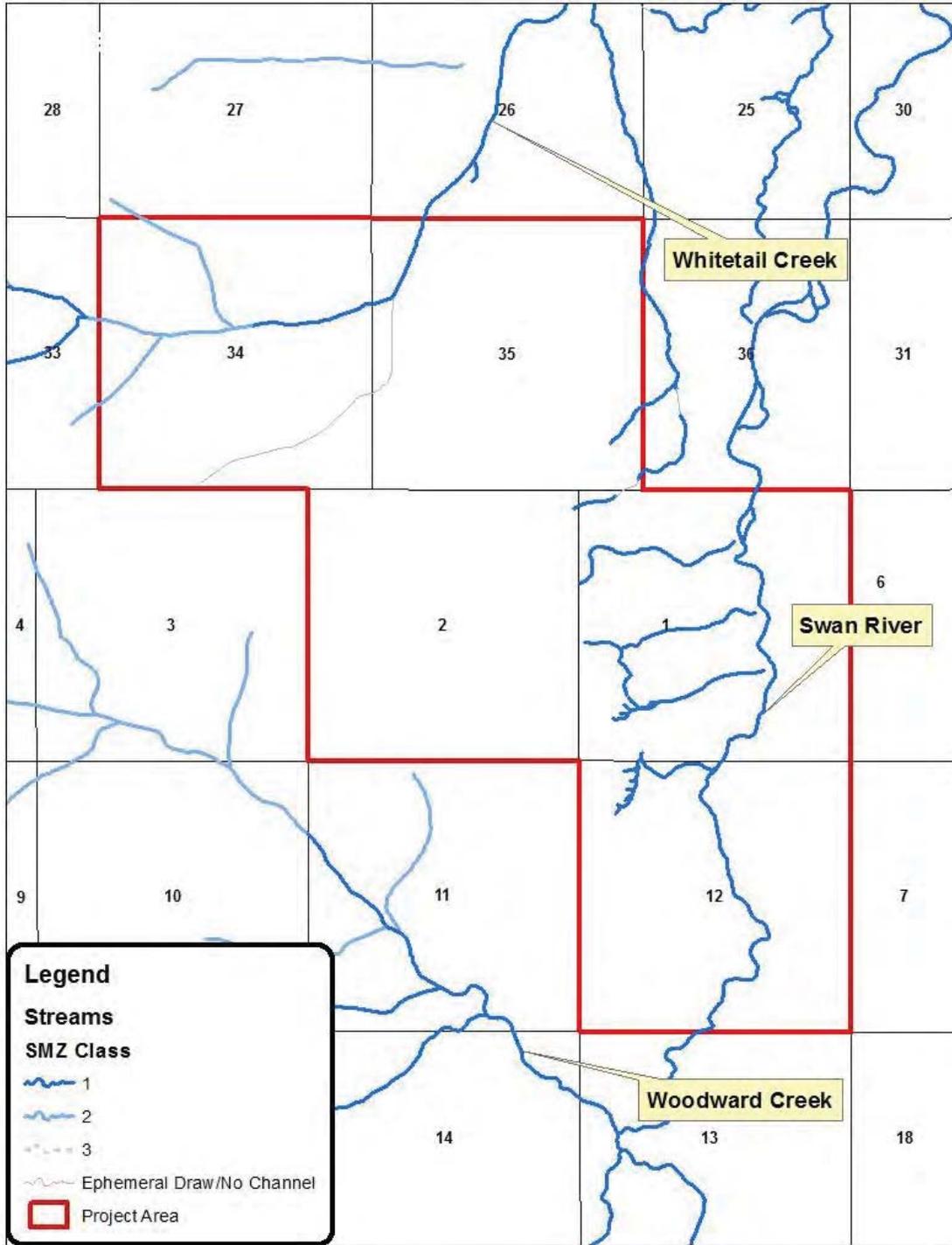
Water Yield

Direct, indirect and cumulative effects to water yield increases will not be analyzed for the proposed project. The project proposal involves the salvage of trees killed, or in imminent danger of being killed by forest insects and diseases. As a result, water yield increases have already occurred or will occur through natural processes, and the proposed project would not contribute to removal of live vegetation or subsequent water yield increases.

Fish Habitat

Direct, indirect and cumulative effects to fish habitat will not be analyzed in the proposed Project Area since no salvage activities are proposed within a riparian area or streamside management zone. As a result, no impacts from the proposed salvage harvesting are anticipated to affect fish habitat.

Figure H-1 – Westside Fir Engraver Salvage Project Area Streams



EXISTING CONDITIONS

Regulatory Framework

Montana Surface Water Quality Standards: According to ARM 17.30.607 (1)(a), this portion of the Swan River drainage including Woodward and Whitetail Creeks, is classified as B-1. Among other criteria for B-1 waters, no increases are allowed above naturally occurring levels of sediment, and minimal increases in turbidity. "Naturally occurring," as defined by ARM 17.30.602 (19), includes conditions or materials present during runoff from developed land where all reasonable land, soil and water conservation practices (commonly called BMPs) have been applied. Reasonable practices include methods, measures or practices that protect present and reasonably anticipated beneficial uses. These practices include but are not limited to structural and non-structural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after completion of activities that may impact the resource.

No surface water rights were identified within the proposed Project Area.

Designated beneficial uses in the proposed Project Area may include cold water fisheries and recreation on the Swan River.

Water Quality Limited Waterbodies:

None of the streams in the proposed Project Area are currently listed as water-quality-limited waterbodies in the 2006 Montana 303(d) list. Swan Lake is currently listed on the 2006 Montana 303(d) list. Each of the Project Area watersheds is a tributary to the Swan River, which is the primary inflow to Swan Lake. The 303(d) list is compiled by the Montana Department of Environmental Quality (DEQ) as required by Section 303(d) of the Federal Clean Water Act and the Environmental Protection Agency (EPA) Water Quality Planning and Management Regulations (40 CFR, Part 130). Under these laws, DEQ is required to identify waterbodies that do not fully meet water-quality standards, or where beneficial uses are threatened or impaired. These waterbodies are then characterized as "water quality limited" and thus targeted for Total Maximum Daily Load (TMDL) development. The TMDL process is used to determine the total allowable amount of pollutants in a waterbody of a watershed. Each contributing source is allocated a portion of the allowable limit. These allocations are designed to achieve water-quality standards.

The Montana Water Quality Act (MCA 75-5-701 through 705) also directs DEQ to assess the quality of state waters, ensure that sufficient and credible data exists to support a 303(d) listing, and develop TMDL for those waters identified as threatened or impaired. Under the Montana TMDL Law, new or expanded nonpoint source activities affecting a listed waterbody may commence and continue provided they are conducted in accordance with all reasonable land, soil, and water conservation practices. DNRC will comply with the TMDL Law and interim guidance developed by DEQ through

implementation of all reasonable soil and water conservation practices, including BMPs and Forest Management Rules (ARM 36.11.401 through 450).

Swan Lake is currently listed as threatened for aquatic life support and for cold-water fisheries. The current listed cause of impairment in Swan Lake is sedimentation/siltation; the probable sources include forest roads (road construction and use), highways, roads, bridges, and infrastructure (new construction). Through the Swan Lake Watershed Group and its associated Swan Lake Technical Advisory Group, a water-quality restoration plan was developed for Swan Lake in June 2004. The Swan Lake Watershed Group and Technical Advisory Group are comprised of local stakeholders and include: the Swan Ecosystem Center, Flathead Lake Biological Station at Yellow Bay, and Friends of the Wild Swan; landowners, including the USDA Forest Service, Montana DNRC, Plum Creek Timber Company; and regulatory agencies, including DEQ and the U.S. EPA.

The Water Quality Restoration Plan was approved by EPA in August 2004, and activities are ongoing to correct current sources and causes of sediment to Swan Lake and its tributaries. DNRC is an active partner and participant in this process. All proposed activities within the Project Area would implement activities to alleviate identified sources of sediment and comply fully with all TMDL requirements.

Montana Streamside Management Zone (SMZ) Law:

Streamside Management Zone classifications for streams within the proposed Project Area are found in *Figure H-1*. By the definition in ARM 36.11.312(3), Whitetail Creek and the perennial tributaries to the Swan River are class 1 streams since they flow more than 6 months per year and contribute flow to another body of water. All other drainage features found within the proposed Project Area did not meet the definition of a stream in ARM 36.11.312(20), and are classified as ephemeral draws and swales with no defined channel.

Forest Management Rules

Forest Management Rules were developed by the DNRC in 2003. The portion of those rules applicable to watershed and hydrology resources include ARM 36.11.422 through 426. All applicable rules will be implemented if they are relevant to activities proposed with this project.

Sediment Delivery

Sediment delivery on this parcel was reviewed by a DNRC hydrologist in 1998, 2007 and 2012; and by PBS&J Consulting in association with the development of the *Swan Lake Water Quality Protection Plan* and TMDL (DEQ 2005). No stream channels were identified within or adjacent to proposed salvage areas. No evidence of past SMZ harvesting was found. No areas of channel instability or active down-cut channels were found during field review.

No sediment delivery from the existing road system was identified on any of the proposed haul routes within or leading to the Project Area. The existing road system in the proposed Project Area is low to moderate standard native-surfaced road, and most reaches meet applicable best management practices for surface drainage and erosion control. Most road grades are generally under 8%, and no areas were identified as causing active erosion or sediment delivery to streams.

DIRECT AND INDIRECT EFFECTS

No-Action Alternative

Direct and indirect effects to sediment delivery from the No-Action alternative would be similar to those described under the existing conditions. Sediment delivery would be unaffected by the No-Action alternative, and streams and ephemeral draws in the proposed Project Area would continue to be affected by natural and pre-existing conditions.

Action Alternative

The proposed action alternative would harvest timber from approximately 118 acres, and no new road construction is proposed. The following are the anticipated direct and indirect impacts:

Sediment Delivery

Sediment delivery is expected to be maintained or reduced with the action alternative. This alternative would maintain and improve erosion control and surface drainage on all roads proposed for haul. No new road construction or stream crossings are proposed. Overall, there is a low risk of short-term low-level increases in erosion and sediment delivery for about 2-3 years at existing stream crossings. However, water quality standards are expected to be met and there is a low risk of impacts to downstream beneficial uses.

Proposed timber harvesting activities would pose a low risk of sediment delivery to streams since they are located away from streams and do not propose harvesting within the SMZ, riparian management zone (RMZ) or within the channel migration zone (CMZ). The SMZ law, Administrative Rules for Forest Management, DNRC Habitat Conservation Plan and applicable BMPs would be applied to all harvesting activities, which would minimize the risk of sediment delivery to draws and streams. The Montana BMP audit process has been used to evaluate the application and effectiveness of forest-management BMPs since 1990; this process has also been used to evaluate the application and effectiveness of the SMZ Law since 1996. During that time, evaluation of ground-based-skidding practices near riparian areas has been rated 92-percent effective, and these same practices have been found effective over 99 percent of the time from 1998 to present (*DNRC 1990 through 2012*). Since 1996, effectiveness of the SMZ width has been rated over 99 percent (*DNRC 1990 through 2012*). As a result, with the

application of BMPs and the SMZ Law, proposed activities are expected to have a low risk of low impacts to sediment delivery.

CUMULATIVE EFFECTS

No-Action Alternative

Cumulative effects of the No-Action alternative on sediment delivery would be similar to the situations described in the existing conditions. The sediment delivery would be unaffected by the No-Action alternative, and the streams and ephemeral draws in the proposed Project Area would continue to be affected by natural and pre-existing conditions.

Action Alternative

Past activity in and around the proposed Project Area has mainly consisted of timber management. On sites where timber was harvested, bare soil from old skid trails has re-vegetated and sediment delivery risk is reduced. The anticipated cumulative effects of the proposed action alternative are summarized below.

Sediment Delivery

Risk of sediment delivery and sediment loading to Project Area streams and downstream to the Swan River would be slightly increased from current levels in the short term and below current levels in the long term. Maintenance and improvement of existing erosion control and surface drainage on the existing road system would yield similar erosion rates to current levels. Overall, there is a low risk of short-term, low-level increases in sediment loading for about 2-3 years. However, water quality standards are expected to be met and there is a low risk of impacts to beneficial uses.

**SOILS ANALYSIS
FOR THE
WESTSIDE FIR ENGRAVER SALVAGE**

INTRODUCTION

Project Area and Project Activities

The gross Project Area includes portions of 5 sections of Common Schools Trust Lands near Swan Lake, Montana. Landforms in the proposed Project Area include alluvial stream bottoms and glaciated mountain slopes. Proposed project activities would include ground based methods to harvest timber on approximately 118 acres within the Project Area.

Resource Description

Resources potentially at risk in the Project Area include landtypes with a volcanic ash-influenced loess surface layer. Changes in the physical properties of these landtypes can affect the ability of these landtypes to grow vegetation.

Issues and Measurement Criteria

The following issues encompass the specific issues and concerns raised through public comment and scoping of the proposed project. For a specific list of individual comments and concerns, please refer to the project file.

Soil Physical Properties

This analysis addresses the issue that timber harvesting and associated activities may affect soil physical properties in the proposed Project Area through ground-based activities, and through repeated entries to previously harvested areas. Operation of ground-based machinery can displace fertile layers of topsoil, which can lead to a decrease in vegetation growth. Ground-based machinery can also lead to compaction of the upper layers of soil. Compaction decreases pore space in soil, reduces its ability to absorb and retain water, and can increase runoff and overland flow. These conditions can also lead to a decrease in vegetation growth.

Measurement criteria: Impacts to soil physical properties were analyzed by evaluating the current levels of soil disturbance in the proposed Project Area based on field review and aerial photo review of existing and proposed harvest units. Percent of area affected is determined through pace transects, measurement, aerial photo interpretation, or GIS to determine skid trail spacing and skid trail width. From this, skid trail density and

percent of area impacted are determined. Estimated effects of proposed activities will be assessed based on findings of DNRC soil monitoring.

Slope Stability

Slope stability can be affected by timber management activities by removing stabilizing vegetation, concentrating runoff, or by increasing the soil moisture. The primary risk areas for slope stability problems include, but are not limited to, landtypes that are prone to soil mass movement, and soils on steep slopes (generally over 60 percent). None of the land types in the proposed Project Area are considered a high risk for instability or mass movement. As a result, slope stability will not be analyzed further in this document.

Analysis Area

Soil Physical Properties

Analysis area for direct, indirect and cumulative effects to soil physical properties will be analyzed on all areas proposed for salvage harvest within the Project Area.

EXISTING CONDITIONS

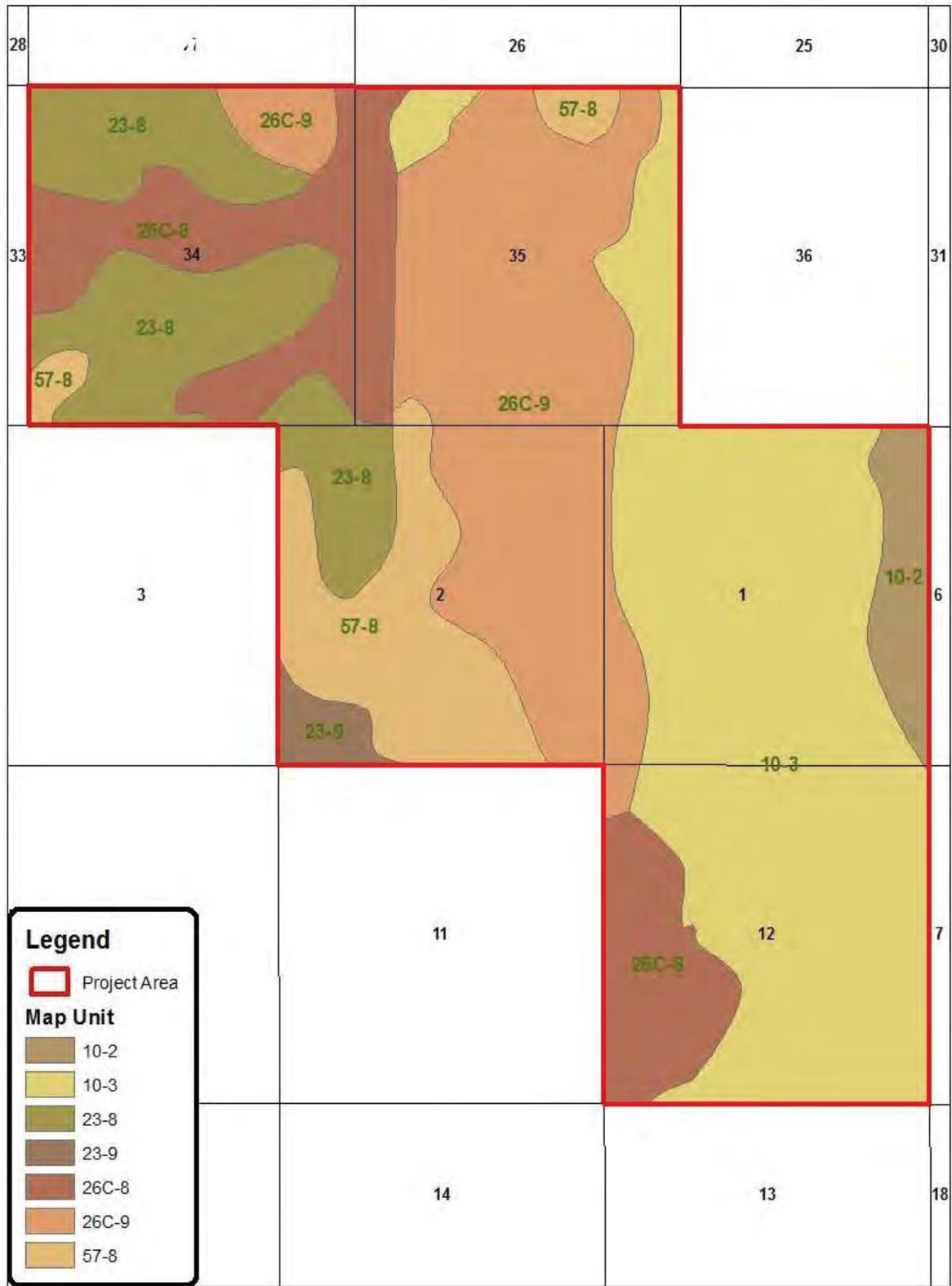
Soil Physical Properties

A list of the landtypes found in the proposed Project Area is found in *Table S-2* at the end of this analysis. This table contains some of the key management implications for the landtypes proposed for operation. A map of the landtypes within the proposed Project Area is found in *Figure S-1* below.

Stands within the proposed Project Area have been managed since the 1960s up through 2013. Stands proposed for salvage with this proposal were last managed in 1960. Approximately 65 acres of the proposed Project Area have been previously entered for commercial harvesting. Skid trails in these units are spaced an average of approximately 70 feet apart based on review of aerial photo interpretation. Based on this trail spacing, it is estimated that past harvesting impacted approximately 17% of the previously harvested areas was trafficked by ground based equipment. Based on knife penetration tests, compaction on old trails is beginning to ameliorate due to root growth and frost action. Trails are located mainly on gentle to moderate slopes and away from streams, are well vegetated and not actively eroding.

Roads within and leading to the proposed Project Area have been brought up to applicable BMP standards during past entries. No active erosion or deposition was identified during inspection of the existing road system proposed for haul.

Figure S-1 – Westside Fir Engraver Salvage Project Area Landtypes



DIRECT AND INDIRECT EFFECTS

No-Action Alternative

Direct and indirect effects to soil physical properties from the No-Action alternative would be similar to those described under the existing conditions. No ground-based activity would take place under this alternative, which would leave the soil in the Project Area unchanged from the description in the Existing Conditions portion of this analysis.

Action Alternative

The proposed action alternative would harvest timber from approximately 118 acres, and no new road construction is proposed. The following are the anticipated direct and indirect impacts:

Soil Physical Properties

Direct and indirect effects to soil physical properties could occur on up to 118 acres with the action alternative. Based on DNRC soil monitoring on soils and sites similar to those found in the Project Area, direct impacts would be expected on up to 11 of the total 118 acres proposed for harvesting. These values are summarized below in *Table S-1*. Soil monitoring conducted on DNRC lands shows that sites harvested on DNRC lands statewide on similar soils with ground-based machinery had a range of impacts from 4.4 to 24.5 percent of the acres treated, with an average disturbance rate of 8.8% (DNRC, 2009). The low range of impacts includes operations on frozen or snow-covered soils, and the high range includes operations on moist soils during non-winter conditions. Based on these monitoring results, the extent of impacts expected would likely be similar to those reported by DNRC (2009), or approximately 4.4 to 24.5 percent of ground-based harvested acres.

TABLE S-1 – SUMMARY OF DIRECT EFFECTS OF ALTERNATIVES ON SOIL PHYSICAL PROPERTIES

Description of Parameter	No-Action	Action Alternative
Acres of Harvest (all ground based)	0	118
Acres of ground based impacts ¹	0	11
Miles of new roads	0	0
Acres of new roads ²	0	0
Total estimated acres of impacts	0	17
Percent of harvest area with impacts	0%	8.8%

¹ 8.8% of tractor units based on average impacts found on similar soils and sites by DNRC soil monitoring

² Assuming an average width of 25 feet, roads are approximately 3 acres per mile

CUMULATIVE EFFECTS

No-Action Alternative

Direct and indirect effects to soil physical properties from the No-Action alternative would be similar to those described under the existing conditions. No soil would be disturbed and no re-entry of past harvest units would occur. All impacts from past management activities would continue to improve or degrade as dictated by natural and pre-existing conditions.

Action Alternative

Past activity in and around the proposed Project Area has mainly consisted of timber management. On sites where timber was harvested, there has been substantial vegetative recovery and impacts to soil physical properties are ameliorating. The anticipated cumulative effects of the proposed action alternative are summarized below.

Soil Physical Properties

Cumulative effects to soil physical properties could occur on up to 118 acres with the action alternative. Approximately 19 acres with previous timber sale operations would be entered with this proposal. Cumulative effects to soils may occur from repeated entries into a forest stand where additional ground is impacted by equipment operations. Existing skid trails where compaction has begun to ameliorate through freeze-thaw cycles and revegetation would return to a higher level of impact if used with the Action Alternative. Additional trails may also be required if existing trails are in undesirable locations. Cumulative impacts to soil physical properties in areas previously managed are still expected to fall below the range analyzed for in the EXPECTED FUTURE CONDITIONS section of the SFLMP and are expected to remain within the 20-percent impacted area established as a level of concern in the SFLMP (DNRC, 1996).

Since no past management activities have occurred within the remaining 99 acres of the Project Area, the cumulative effects to soils in these areas would be identical to those displayed in the Direct and Indirect Effects section of this analysis. Cumulative impacts to soil physical properties under the Action Alternative would fall below the range analyzed for in the EXPECTED FUTURE CONDITIONS section of the SFLMP and are well within the 20-percent impacted area established as a level of concern in the SFLMP (DNRC, 1996).

DNRC would minimize long-term soil impacts and adverse cumulative effects by implementing any or all of the following: 1) existing skid trails from past harvest activities would be used if they are properly located and spaced 2) additional skid trails would be used only where existing trails are unacceptable 3) mitigating the potential direct and indirect effects with soil moisture restrictions, season of operation, and

method of harvest 4) retention of a portion of coarse woody debris and fine litter for nutrient cycling.

Table S-2 – Soil Map Unit Descriptions for the Westside Fir Engraver Salvage Project Area

Map Unit	Name	Soil & Vegetation Descriptions	Management Considerations		
			K _w **/erosion potential*	Timber	Roads
10-2	Stream Bottoms, 0-5%	Soils of this map unit are formed from alluvial deposits. Vegetation is moist mixed forest with forbs/grass understory.	K _w = 0.05-0.15 Erosion risk is low	Potential Prod: High Equipment: Tractor Regen: Frost Pockets	Roads perform standard local and maintenance. Floods can damage roads.
10-3	Stream Bottoms, 0-5%	Soils of this map unit are formed from alluvial deposits. Vegetation is moist mixed forest with forbs/grass understory.	K _w = 0.05-0.10 Erosion risk is low	Potential Prod: Moderate Equipment: Tractor Regen: Can be limited by frost pockets and competition	Roads are affected by frost. Placement of roads may be necessary for stable road surface.
23-8	Glaciated Mountain Slopes, 20-40%	Soils of this map unit are glacial till formed from metasedimentary rocks. Vegetation is moist mixed forest and dry mixed forest with forbs/shrub understory.	K _w = 0.17-0.64 Erosion risk is moderate	Potential Prod: Moderate/high Equipment: Cable Regen: Can be limited by grass competition	Roads perform standard local and maintenance. Steepness may limit road placement.
23-9	Glaciated Mountain Slopes, 40-60%	Soils of this map unit are glacial till formed from metasedimentary rocks. Vegetation is moist mixed forest and dry mixed forest with forbs/shrub understory.	K _w = 0.17-0.64 Erosion risk is moderate	Potential Prod: Moderate/high Equipment: Cable Regen: Can be limited by grass competition	Roads perform standard local and maintenance. Steepness may limit road placement.
26C-8	Glacial Moraines, 20-40%	Soils of this map unit are glacial till. Vegetation is a moist mixed forest with forbs/shrub understory.	K _w = 0.20-0.64 Erosion risk is moderate	Potential Prod: High Equipment: Tractor Regen: Can be limited by frost pockets	Roads perform standard local and maintenance. Steepness may limit road placement.
26C-9	Glacial Moraines, 40-60%	Soils of this map unit are glacial till. Vegetation is a moist mixed forest with forbs/shrub understory.	K _w = 0.20-0.64 Erosion risk is moderate	Potential Prod: High Equipment: Cable Regen: None	Roads perform standard local and maintenance. Cutslopes may be affected by frost.
57-8	Glaciated Mountain Ridges, 20-40%	Soils of this map unit are glacially scoured metasedimentary rocks. Vegetation is lower subalpine forest with forbs/shrub understory.	K _w = 0.15-0.49 Erosion risk is moderate	Potential Prod: Moderate Equipment: Tractor Regen: Can be limited by moisture stress	Roads perform standard local and maintenance.

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Appendix B
WILDLIFE ANALYSIS
For the Westside Fir Engraver Salvage

INTRODUCTION

I reviewed the Westside Fir Engraver Salvage project proposed in Sections 1, 2, and 12; T23 North, R18 west and Sections 34 and 35; T24 North, R18 West (*FIGURE W-1*). Salvage operations would be focused on 118 acres within the Project Area. The proposed salvage would focus on selectively harvesting trees affected by fir engraver beetles and bark beetles as well as trees that are at risk of attack. No road construction, including temporary roads, would occur. Ongoing activities in the vicinity of the Project Area include timber sales associated with the Scout Lake (*DNRC 2012*) and Cilly Cliffs (*DNRC 2014*) Multiple Timber Sale Projects. DNRC is unaware of other timber projects occurring on other ownerships (*USFS 2014*). Cumulative effects for Canada lynx were considered at the scale of the 54,580-acre *Swan Lynx Management Area*, which is a designated portion of DNRC-managed land where resident lynx populations are known to occur or where there is a high probability of periodic lynx occupancy over time (*USFWS and DNRC 2010*). Cumulative effects for the remaining species and coarse-filter issues were considered at the scale of the 37,666-acre Porcupine Woodward Grizzly Bear Subunit. The proposed activities would occur across a 5 month time period from December 1- March 31 and possibly for an additional 30 operational days from June 16 - August 31. The following analysis summarizes the anticipated effects of the proposed activities on wildlife.

ANALYSIS METHODS

Analysis methods are based on DNRC State Forest Land Management Rules, which are designed to promote biodiversity. The primary basis for this analysis includes information obtained by: field visits, scientific literature consultation, Montana Natural Heritage Program (MNHP) data queries, DNRC Stand Level Inventory (SLI) data analysis, and aerial photograph analysis. The coarse-filter wildlife analysis section includes analyses of the direct, indirect and cumulative effects of the proposed alternatives on old growth forest, connectivity of mature forest habitats, and snags and coarse woody debris. In the fine-filter analysis, individual species of concern are evaluated. These species include wildlife species federally listed under the Endangered Species Act, species listed as sensitive by DNRC, and species managed as big game by DFWP.

RELEVANT AGREEMENTS, LAWS, PLANS, RULES, AND REGULATIONS

Various legal documents dictate criteria for management of terrestrial wildlife and their habitat on state-managed lands. These include the *DNRC Forest Management Rules (ARMs)*, *DNRC Forested Trust Lands Final Environmental Impact Statement and Habitat Conservation Plan (USFWS and DNRC 2010)*, *SVGBCA (1997)*, *Endangered Species Act*, *Migratory Bird Treaty Act*, and *Bald and Golden Eagle Protection Act*.

COARSE-FILTER ANALYSIS

TABLE W-1 –COARSE-FILTER. *Analysis of the anticipated effects of the Westside Fir Engraver Salvage on coarse-filter resource topics.*

COARSE-FILTER RESOURCE TOPIC	COARSE-FILTER ANALYSIS
Old Growth Forest	Approximately 29 acres of the 426 acres old-growth present in the Project Area would be affected by the proposed salvage. However, post-harvest, these acres would retain enough large trees per acre to continue providing old-growth conditions for wildlife associated with old-growth forests. Wildlife species preferring open old-growth stands would benefit from the proposed activities while wildlife species that prefer dense old-growth stands would be adversely affected.
Connectivity of Mature Forest Habitat	The proposed activities would focus on removing trees affected by or susceptible to attack by fir engraver and bark beetles. Post-harvest the majority of the 88 acres of connected forest proposed for harvest would continue to provide mature forest conditions, although canopy cover would be reduced and more patchily distributed. Approximately 7 acres would not retain adequate canopy cover to provide mature forest conditions for wildlife. These acres are located in Section 2 adjacent to existing mature forest. Post-harvest, connectivity would be slightly reduced due to high tree infection in Section 2. Thus, considering the small amount of mature forest that would be removed, that connectivity would be minimally affected, and that many of the trees proposed for harvest would not provide live canopy cover in the future due to beetle attack, negligible adverse direct, indirect or cumulative

	<p>effects on species sensitive to removal of mature forest cover would be anticipated.</p>
<p>Snags and Coarse Woody Debris</p>	<p>Merchantable snags and snag recruits would be removed from a 118-acre area affected by fir engraver and bark beetles. Given operability and human safety constraints, existing non-merchantable snags would be left standing. Additionally, across the harvest units, at least 2 large snags and 2 large recruitment trees (>21 inches dbh) per acre would be retained (<i>ARM 36.11.411</i>). If such large trees and snags are absent, the largest available snags and/or recruitment trees would be retained. Coarse woody debris would be retained according to (<i>ARM 36.11.414</i>). Thus, minor adverse direct, indirect and cumulative effects on species that depend on these resources would be anticipated.</p>

FINE-FILTER WILDLIFE ANALYSIS

TABLE W-2 –FINE-FILTER. Analysis of the anticipated effects of the Westside Fir Engraver Timber Sale on fine-filter wildlife species.

SPECIES/HABITAT	EFFECTS ASSESSMENT
THREATENED & ENDANGERED SPECIES	
<p>Canada lynx (<i>Felis lynx</i>) Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zones</p>	<p>The proposed activities would occur in 118 acres (5.1 percent) of suitable lynx habitat in the Project Area. Post-harvest, 7 acres of winter foraging habitat would not retain enough canopy cover to continue providing suitable habitat for lynx. The connectivity of lynx habitat would remain relatively unaffected considering that the proposed units are located adjacent to existing temporary non-suitable habitat and that a 0.75 mile-wide corridor of suitable lynx habitat would remain in the Woodward Creek drainage. The remaining acres proposed for harvest would continue providing lynx habitat, albeit at a reduced density and quality. Coarse woody debris would be retained in accordance with DNRC <i>Forest Management Rules (ARM 36.11.414)</i> and retention of downed logs ≥ 15 inch diameter would be emphasized. The salvage would be additive to past, ongoing, and proposed activities in the vicinity of the Project Area. The Scout Lake Multiple Timber Sales (DNRC 2012) are ongoing and the Cilly Cliffs Multiple Timber Sales (DNRC 2014) may begin activities in January of 2015. If present in the vicinity of the Project Area, lynx could be temporarily displaced by forest management activities for up to 5 months. Thus, considering the small amount of habitat that would be removed, that connectivity would be minimally affected, and the short-duration of activities, negligible adverse direct, indirect, and cumulative effects to Canada lynx would be anticipated.</p>

<p>Grizzly bear (<i>Ursus arctos</i>)</p> <p>Habitat: Recovery areas, security from human activity</p>	<p>The Project Area is located in the Porcupine Woodward Grizzly Bear Subunit of recovery zone habitat associated with the Northern Continental Divide Ecosystem (NCDE) (USFWS 1993). The subunit is currently closed to commercial activities during the non-denning season and the salvage will comply with stipulations of the SVGBCA. The proposed salvage would occur in approximately 89 acres of existing hiding cover. Approximately 7 acres would not provide hiding cover post-harvest, while the remaining acres would retain enough trees to continue providing hiding cover. The Porcupine Woodward Subunit would exceed standards for hiding cover established in the SVGBCA post-harvest. No road construction, including temporary road construction, would occur; however, traffic would increase on approximately 9.4 miles of existing roads (excluding Highway 83). The proposed activities would occur for approximately 5 months, although bears would only be active during one of these months (as permitted by the SVGBCA 3(b)(iv) exception for salvage). Thus, considering the small amount of hiding cover that would be affected and that bears would only be active for 1 month during the salvage, negligible adverse direct, indirect, and cumulative effects on grizzly bears would be anticipated.</p>
<p><i>SENSITIVE SPECIES</i></p>	
<p>Bald eagles (<i>Haliaeetus leucocephalus</i>)</p> <p>Habitat: Late-successional forest less than 1 mile from open water</p>	<p>Whitetail Creek, Woodward Creek, and the Swan River are located in the vicinity of the Project Area. However, nesting bald eagles have not been documented on these creeks or within 2.5 miles of the Project Area. Thus, negligible direct, indirect, or cumulative effects to bald eagles would be anticipated.</p>

<p>Black-backed woodpeckers (<i>Picoides arcticus</i>)</p> <p>Habitat: Mature to old burned or beetle-infested forest</p>	<p>No recently (<5 years) burned areas occur within 0.25 miles of the Project Area. Thus, no direct, indirect, or cumulative effects to black-backed woodpeckers would be expected to occur as a result of either alternative.</p>
<p>Coeur d'Alene salamanders (<i>Plethodon idahoensis</i>)</p> <p>Habitat: Waterfall spray zones, talus near cascading streams</p>	<p>No moist talus or streamside talus habitat occurs in the Project Area. Thus, no direct, indirect, or cumulative effects to Coeur d'Alene salamanders would be expected to occur as a result of either alternative.</p>
<p>Columbian sharp-tailed grouse (<i>Tympanuchus Phasianellus columbianus</i>)</p> <p>Habitat: Grassland, shrubland, riparian, agriculture</p>	<p>No grassland habitat occurs in the vicinity of the proposed harvest units. Thus, no direct, indirect, or cumulative effects to Columbian sharp-tailed grouse would be anticipated.</p>
<p>Common loons (<i>Gavia immer</i>)</p> <p>Habitat: Cold mountain lakes, nest in emergent vegetation</p>	<p>No suitable lake habitat occurs within 500 feet of the Project Area. Thus, no direct, indirect, or cumulative effects to common loons would be expected to occur as a result of either alternative.</p>

<p>Fishers (<i>Martes pennanti</i>)</p> <p>Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian</p>	<p>Approximately 87 acres of suitable fisher habitat are proposed for harvest. Post-harvest, 7 of these acres would not provide suitable forest conditions for fisher use due the amount of beetle activity and proposed salvage in the stand. These acres are primarily located adjacent to stands that are not suitable for fisher use, thus, fisher habitat connectivity would be minimally affected. Riparian fisher habitat would not be affected as riparian areas would not be targeted by the salvage. New permanent road construction would not occur and therefore trapping risk is not anticipated to increase. Thus, considering the small amount of fisher habitat that would be removed, that connectivity would be unaffected, and that the activities would occur over a short 5 month time period, negligible adverse direct, indirect, and cumulative effects to fishers associated with habitat availability and trapping risk would be anticipated.</p>
<p>Flammulated owls (<i>Otus flammeolus</i>)</p> <p>Habitat: Late-successional ponderosa pine and Douglas-fir forest</p>	<p>Flammulated owl habitat does not occur in the Project Area. Thus, no direct, indirect, or cumulative effects to flammulated owls would be anticipated.</p>
<p>Gray wolves (<i>Canis lupus</i>)</p> <p>Habitat: Ample big game populations, security from human activities</p>	<p>The 2013 home ranges of the Cilly and Cedar Packs are located in the vicinity of the Project Area (<i>DFWP data, 2014</i>). However, the proposed activities are anticipated to have minimal effects on big game and would occur over a dispersed area for up to 5 months. If wolf rendezvous or den sites are documented in the vicinity of the Project Area, mechanized activities would be restricted within 1 mile of wolf dens (<i>ARM 33.11.430(1)(a)</i>) and 0.5 miles of wolf rendezvous sites (<i>ARM 33.11.430(1)(b)</i>). Thus, negligible direct, indirect or cumulative effects to gray wolves would be anticipated.</p>

<p>Harlequin ducks (<i>Histrionicus histrionicus</i>)</p> <p>Habitat: White-water streams, boulder and cobble substrates</p>	<p>Potentially suitable high-gradient stream habitat may occur in the vicinity of the Project Area. However, harlequin ducks have not been observed using any of the streams in the vicinity of the Project Area (MNHP data, September 22, 2014). Thus, no direct, indirect, or cumulative effects to harlequin ducks would be anticipated.</p>
<p>Northern bog lemmings (<i>Synaptomys borealis</i>)</p> <p>Habitat: Sphagnum meadows, bogs, fens with thick moss mats</p>	<p>No suitable sphagnum bogs or fens occur in the Project Area. Thus, no direct, indirect, or cumulative effects to northern bog lemmings would be expected to occur as a result of either alternative.</p>
<p>Peregrine falcons (<i>Falco peregrinus</i>)</p> <p>Habitat: Cliff features near open foraging areas and/or wetlands</p>	<p>No suitable cliffs/rock outcrops for nest sites were observed during field tours of the area. Additionally, peregrine eyries have not been documented within 0.5 miles of the Project Area (MNHP data, September 22, 2014). Thus, no direct, indirect, or cumulative effects to peregrine falcons would be anticipated as a result of either alternative.</p>
<p>Pileated woodpeckers (<i>Dryocopus pileatus</i>)</p> <p>Habitat: Late-successional ponderosa pine and larch-fir forest</p>	<p>The proposed activities would affect approximately 50 acres of suitable pileated woodpecker habitat. All but 7 of these acres would retain suitable stand conditions for pileated woodpecker use post-harvest, albeit at a reduced stand density and quality. Merchantable snags affected by beetle activity would be removed by the salvage, reducing foraging opportunities. However, at least 2 large snags and 2 large recruitment trees (>21 inches dbh or the next largest size class) per acre would be retained (ARM 36.11.411). Additionally, snags cut for safety reasons would remain in the unit. Thus, considering the small amount of habitat that would be removed, and that large snag and snag recruits would be retained, negligible adverse direct, indirect, or cumulative effects to pileated woodpecker habitat availability would be anticipated as a result of either alternative.</p>

<p>Townsend's big-eared bats (<i>Plecotus townsendii</i>)</p> <p>Habitat: Caves, caverns, old mines</p>	<p>No suitable caves or mine tunnels are known to occur in the Project Area and Townsend's big-eared bats have not been documented in the Swan River State Forest (<i>MNHP data, September 22, 2014</i>). Thus, no direct, indirect or cumulative effects to Townsend's big-eared bats would be expected to occur as a result of either alternative.</p>
<p>Wolverines (<i>Gulo gulo</i>)</p> <p>Habitat: Alpine and high-elevation boreal forests, areas that maintain deep persistent snow into late spring</p>	<p>Wolverines have been documented in the vicinity of the Project Area (<i>MNHP data, September 22, 2014</i>) and use of the Project Area by wolverines could occur at any time; however, the proposed units are located outside of areas that maintain deep snowpack late into spring. Given the location of the Project Area, small size of the Project Area, and the large home range size of wolverines (150 plus square miles), negligible adverse direct, indirect or cumulative effects to wolverines would be expected to occur under the proposed action.</p>
<p><i>BIG GAME</i></p>	
<p>Elk (<i>Cervus canadensis</i>)</p> <p>Mule Deer (<i>Odocoileus hemionus</i>)</p> <p>White-tailed Deer (<i>Odocoileus virginianus</i>)</p>	<p>The Project Area contains elk and white-tailed deer winter range as identified by DFWP (2008). The proposed salvage would affect approximately 58 acres of elk winter range and 70 acres of white-tailed deer winter range located approximately 1 mile west of the Swan River. The salvage would focus on removing trees that are bark-beetle infested or visibly vulnerable to attack. These trees are unlikely to survive and contribute to thermal cover in future winters. In all stands identified as big game winter range, at least 40 percent mature canopy cover would be retained, providing some residual thermal cover; however, habitat quality would be reduced due to the salvage and infestation of beetles. The units are not located along open roads, so visual screening would not be affected. Thus, considering that many of the trees that are proposed for harvest would not provide thermal cover for wintering big game in the near future, negligible adverse direct, indirect or cumulative effects to big game are anticipated.</p>

LIST OF MITIGATIONS

- If a threatened or endangered species is encountered, consult a DNRC biologist and develop additional mitigations that are consistent with the *Forest Management Rules* for managing threatened and endangered species (ARM 36.11.428 through 36.11.435).
- Prohibit contractors and purchasers conducting contract operations from carrying firearms while on duty and enforce food storage and sanitation requirements.
- Within Canada lynx winter foraging habitat, retain shade-tolerant trees (grand fir, subalpine fir, and spruce) that do not pose competition risks to crop trees as per LY-HB4 (USFWS and DNRC 2010).
- Retain 2 large snags and 2 large snag recruitment trees per acre (>21-inches dbh or the next largest available size class) particularly favoring western larch, ponderosa pine, western white pine, and Douglas-fir. Leave snags cut for safety purposes in the harvest unit.
- Retain coarse woody debris amounts consistent with *Graham et al. (1994)* and emphasize the retention of downed logs ≥ 15 -inches dbh where they occur as per LY-HB2 (USFWS and DNRC 2010).
- Restrict public access at all times on restricted roads that are opened for salvage activities.
- Follow the SVGBCA to provide seasonal security for grizzly bears; operations may occur in the Porcupine Woodward Subunit during the denning season (November 16 - March 31) and for 30 operational days from June 16 - August 31. Ensure any days used in the summer months are tracked for compliance monitoring.

LITERATURE CITED

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<http://fwp.mt.gov/gisData/imageFiles/distributionMuleDeer.jpg>.
<http://fwp.mt.gov/gisData/imageFiles/distributionWhiteTailedDeer.jpg>
- DFWP. 2014. 2013 Montana wolf pack locations. Individual GIS data layer. Helena, MT.
- DNRC. 2012. Scout Lake Multiple Timber Sale Project final environmental impact statement. Montana DNRC Swan Unit, Swan Lake, MT.
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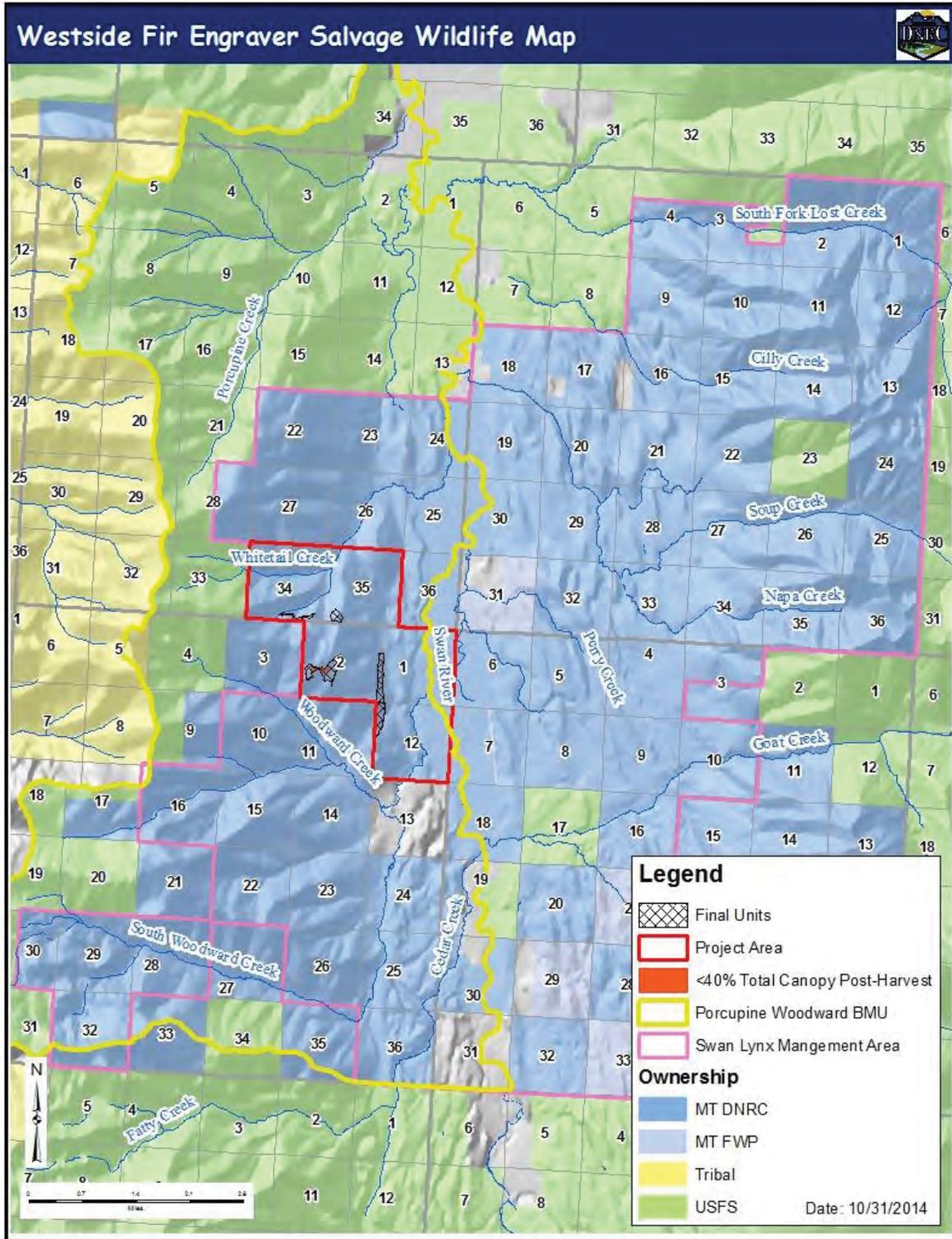
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USFWS. 1993. Grizzly bear recovery plan. Missoula, Montana. 181 pp.

USFWS and DNRC. 2010. DNRC Forested Trust Lands Final Environmental Impact Statement and Habitat Conservation Plan. U.S. Department of Interior, Fish and Wildlife Service, Region 6, Denver, Colorado, and Montana Department of Natural Resources and Conservation, Missoula, MT. August 20, 2010.

FIGURE W-1 –ANALYSIS AREAS. Project Area and Cumulative Effects Analysis Areas for the Westside Fir Engraver Project.



APPENDIX C

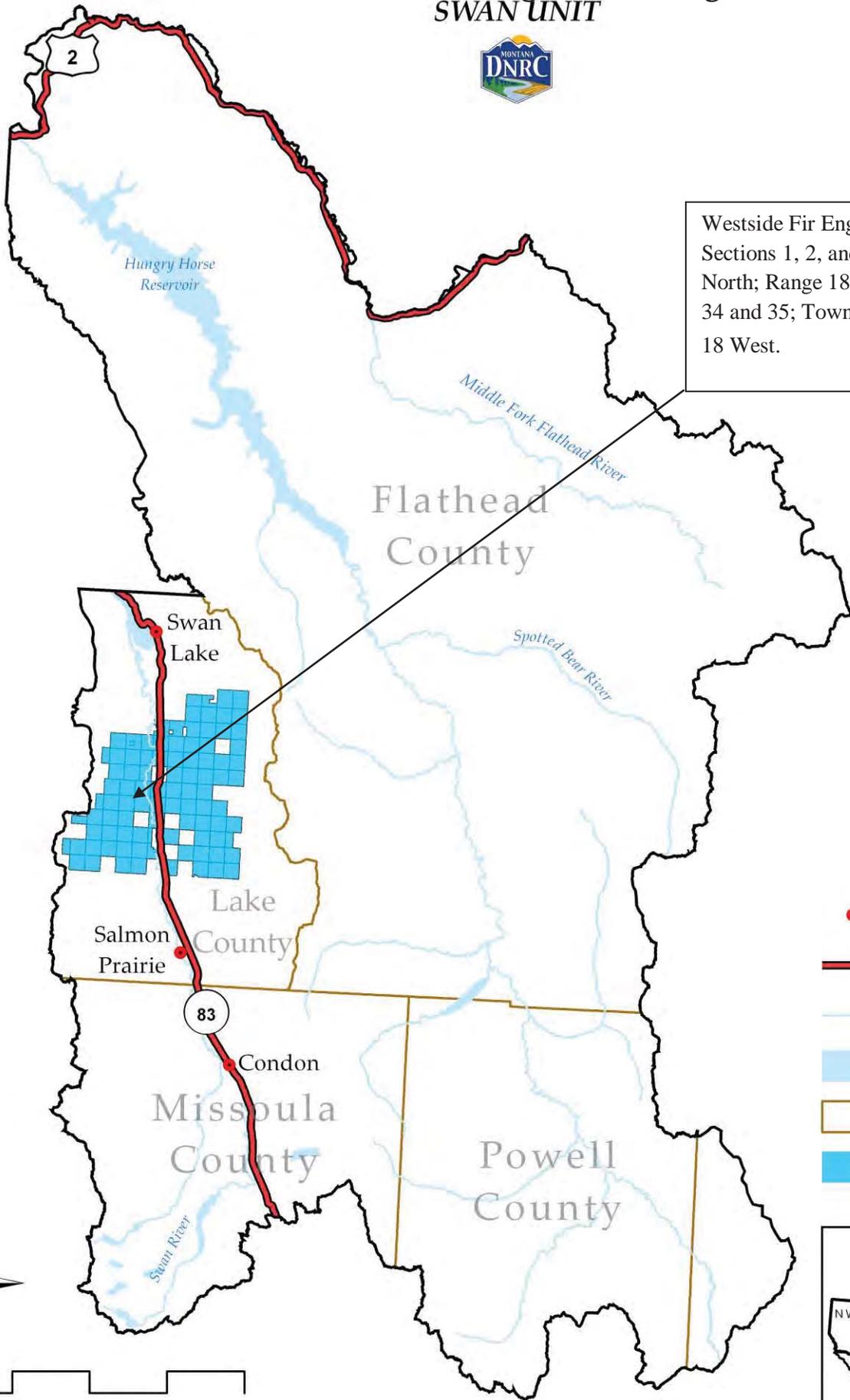
RESPONSES TO COMMENTS

ISSUES IDENTIFIED DURING SCOPING		
The issues stated here are paraphrased to aid in summarizing alike concerns from several separate letters. The the Swan River State Forest Westside Fir Engraver Salvage CEA project file.		
CONCERNED ENTITY	ISSUE	WHERE ADD IN THE
Cultural Significance		
Tribal Heritage Resource office	Has there been a cultural resource survey inventory?	See Page 8 item 10. Historical sites in the CEA document
Construction of new Temporary roads		
Fish Wildlife and Parks	One potential issue for us will be the construction of new temporary roads which is more of an issue for the conservation easement and management plan than for this specific project.	There will be no new or to established with this project

[Westside Fir Engraver Salvage] SWAN UNIT



Westside Fir Engraver Salvage
Sections 1, 2, and 12; Township 23
North; Range 18 West and Sections
34 and 35; Township 24 North; Range
18 West.



- Towns
- Major Roads
- Rivers
- Water Bodies
- County Border
- State Trust Land



0 2.5 5 10 15 20 Miles





Westside Fir Engraver Salvage
Sections 1, 2, and 12; Township 23 North; Range 18 West
and Sections 34 and 35; Township 24 North; Range 18 West.

Montana DNRC
Swan Unit
October 27, 2014

