

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Perry Squeezer Permit Project
Proposed Implementation Date:	July 2012
Proponent:	Montana Department of Natural Resources (DNRC)
Location:	Swan River State Forest - Section 16, Township 23 North, Range 17 West
County:	Lake

I. TYPE AND PURPOSE OF ACTION

DNRC, as manager of Swan River State Forest, proposes to harvest approximately 100 thousand board feet (Mbf) of timber on approximately 32 acres located in Section 16, T23N, R17W. The proposed activities would remove trees at high risk for insect infestations and disease infections and thin other trees through uneven-aged management techniques, such as, single tree select and group select to improve the vigor and growth of trees remaining in the forest for the purpose of benefiting future trust actions. This project would produce an estimated \$12,000 in revenue for the Common Schools Trust.

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*).

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 EIS 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.

In May 2012, DNRC solicited public participation on the Perry Squeezer Permit Project. Scoping notices were advertised in the Bigfork Eagle and Seeley-Swan Pathfinder. The Initial Proposal with maps was sent to neighboring landowners, individuals, agencies, 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.

The public comment period for the Initial Proposal was open for 14 days. DNRC received 2 letters, 2 emails, and 1 verbal comment. The comments were reviewed by the Interdisciplinary

Team (ID Team) to identify issues that were within the scope of the project, and were analyzed in individual sections to which they pertained or were addressed within *APPENDIX A – RESPONSES TO COMMENTS*.

In May 2012, the ID Team began to compile issues based on the comments received and to gather information related to current conditions. Soils, wildlife, vegetative, and hydrological concerns were identified by DNRC resource specialists and field foresters as elements to be addressed on this project. The ID Team determined that the issues raised by the public and DNRC resource specialists directly related to the proposed actions could be addressed in one action alternative through project design and/or mitigation measures.

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.

U.S. FISH AND WILDLIFE SERVICE (USFWS)

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.

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS (DFWP)

DFWP has jurisdiction over the management of fisheries and wildlife populations in the project area. DFWP is on the mailing list and was sent the scoping letter.

MONTANA AIRSHED GROUP

DNRC is a member of the Montana Airshed Group, which regulates slash burning through air-quality and weather monitoring on state trust lands. DNRC receives an air-quality permit for burning slash through participation in this group. Air quality is the only permit needed for this salvage project.

SWAN VALLEY GRIZZLY BEAR CONSERVATION AGREEMENT (SVGBCA)

The SVGBCA, a cooperative agreement between DNRC, Plum Creek Timber Company (PCTC), USFWS, and the U.S. Forest Service (USFS), is currently in effect. *The Nature Conservancy* (TNC) has acquired ownership of PCTC within Swan River State Forest and TNC has agreed to follow the intent of the SVGBCA. This project will define mitigation measures for operating within the SVGBCA timber-harvesting parameters.

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 decisionmaker 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, no timber would be harvested and, therefore, no revenue would be generated for the Common Schools Trust at this time. Salvage logging, firewood gathering, recreational use, fire suppression, noxious-weed control, additional requests for permits and easements, and ongoing management requests may still occur. Natural events, such as plant succession, tree mortality due to insects and diseases, windthrow, down fuel accumulation, in-growth of ladder fuels, and wildfires, would continue to occur.

- ***Action Alternative***

Under this alternative, the DNRC would commercially harvest 100 Mbf of timber from approximately 32 acres and improve the vigor and growth on 32 acres through uneven-aged management techniques such as single tree select and group select.

Alternatives Eliminated From Further Analysis

Approximately 17 acres and 100 Mbf were dropped from the proposed project because the stands proposed for harvest were classified as old growth using definitions by Green et al. (*Old-Growth Forest Types of the Northern Region, 1992*) that did not justify treatment at this time, based on the scope of the project.

<p align="center">III. IMPACTS ON THE PHYSICAL ENVIRONMENT</p>

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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.

The potential impacts to geology and soil quality in the project area are addressed in *APPENDIX B - 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 B - 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.

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

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.

EXISTING ENVIRONMENT

The current covertypes of the stands within the proposed harvest unit are western larch/Douglas-fir (9 acres) and mixed conifer (23 acres). The desired future covertype for these stands, based on *Stand Level Inventory* (SLI) data is western larch/Douglas-fir. The current age class of the stands within the proposed harvest unit is 100 to 149 years. The major insects and diseases present are mountain pine beetle, Douglas-fir bark beetle, and *Armillaria* root rot. Using the *Natural Heritage Program* (NHP) database, no sensitive, threatened, or endangered plant species have been documented within the project area.

ENVIRONMENTAL EFFECTS

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

Timber harvesting would not occur at this time. Neither covertypes nor age-class distributions would be directly, indirectly, or cumulatively affected. Stocking levels and downed woody debris would increase within those stands over time. Various factors, such as insects, diseases, and weather events, would eventually cause more snags to occupy portions of the stands. This, in turn, would increase the potential and/or severity of a wildfire, and in the event that one was ignited, would make it harder to suppress.

• ***Direct, Indirect, and Cumulative Effects of the Action Alternative***

Under the proposed action, harvesting would focus on uneven-aged management through individually- or group-selected trees based upon species, health, and vigor as well as insect and disease presence or risk. The resulting stand would have up to 1/10-acre sized openings as well as 20- to 40-foot spacing and 30 percent or greater crown cover. Twenty-three acres of mixed-conifer covertype would be converted to a western larch/Douglas-fir covertype. Nine acres of western larch/Douglas-fir covertype would remain unchanged. The cumulative effects of changes to covertypes would be additive to the changes from the Scout Lake FEIS. No change in age class would occur. Mortality from insects and diseases would decrease as

susceptible tree species are removed from the stand. Decreased mortality, fewer snags, and more open stand conditions would decrease the potential and/or severity of a wildfire.

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 B - HYDROLOGICAL ANALYSIS* at the end of the document.

Impacts to terrestrial wildlife resources are addressed in *APPENDIX C – 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 B - HYDROLOGICAL ANALYSIS* at the end of the document

Impacts to terrestrial threatened and endangered species are addressed in *APPENDIX C – 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.

DNRC has no record of cultural resources within the proposed project area of potential effect. 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, no measurable direct, indirect, or cumulative effects to the aesthetics would be likely.

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 demand for limited environmental resources or other activities demanding limited environmental resources were identified; therefore, no direct, indirect, or cumulative impacts would 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.

Scout Lake Multiple Timber Sale Final Environmental Impact Statement (FEIS).

In relation to grizzly bears, cumulative effects of timber management and road construction were analyzed in the *Environmental Assessment* (EA) and Biological Opinion for the SVGBCA (USFWS, 1995a and 1995b). Timber harvesting and road use related to the proposed alternative would be conducted in accordance with this agreement (USFWS et al, 1997).

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.

No unusual health or safety considerations are associated with the proposed project.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

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

The proposed timber harvest would provide minor industrial production in the region.

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 small size of the proposed timber harvest, no measurable direct, indirect, or cumulative impacts to the tax base or tax revenue would be likely from either alternative.

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

Due to the small size of the proposed timber harvest, no measurable direct, indirect, or cumulative impacts to the demand for government services would be likely from either alternative.

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 Land Board approved the ROD 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 ROD for the Montana DNRC HCP. Approval of the ROD 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.

Due to the small size of the proposed timber harvest, no measurable direct, indirect, or cumulative impacts to access to and quality of recreational and wilderness activities would be likely from either alternative.

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.

No measurable direct, indirect, and cumulative impacts related to population and housing would be expected due to the small size of the proposed timber harvest.

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.

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

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

- ***Direct, Indirect and Cumulative Effects of the Action Alternative***

The timber harvest would generate approximately \$12,000 for the Common Schools Trust and approximately \$2,500 in Forest Improvement (FI) fees would be collected for FI projects. This is

based on a stumpage rate of \$20.47 per ton, multiplied by the estimated volume of tons. This stumpage rate was derived by comparing attributes of the proposed timber harvest with the attributes and results of other DNRC timber sales recently advertised for bid.

EA Checklist Prepared By:	Name: Jason Parke Title: Management Forester	Date: 6/21/12
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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 a 100 Mbf sawlog sale permit.
- In addition to existing activities, the Action Alternative proposes removing 100 Mbf of green and salvage sawlog timber material from approximately 32 acres to produce an estimated \$12,000 in revenue for the Common Schools Trust.

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 based on 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 DNRC or myself to choose 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 for this project meets all requirements of the Administrative Rules for Forest Management (ARM 36.11.401 through 450) and the SVGBCA, in that impacts are minimal and minor in scope.
- As mandated by State statute (77-5-222 MCA), the proposed sale 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 proposed salvage project 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 Action Alternative will not preclude analysis of future actions on state trust lands.
- The proposed activities are similar to past projects on state trust lands using common practices in the industry and are not being conducted on unique or fragile sites.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

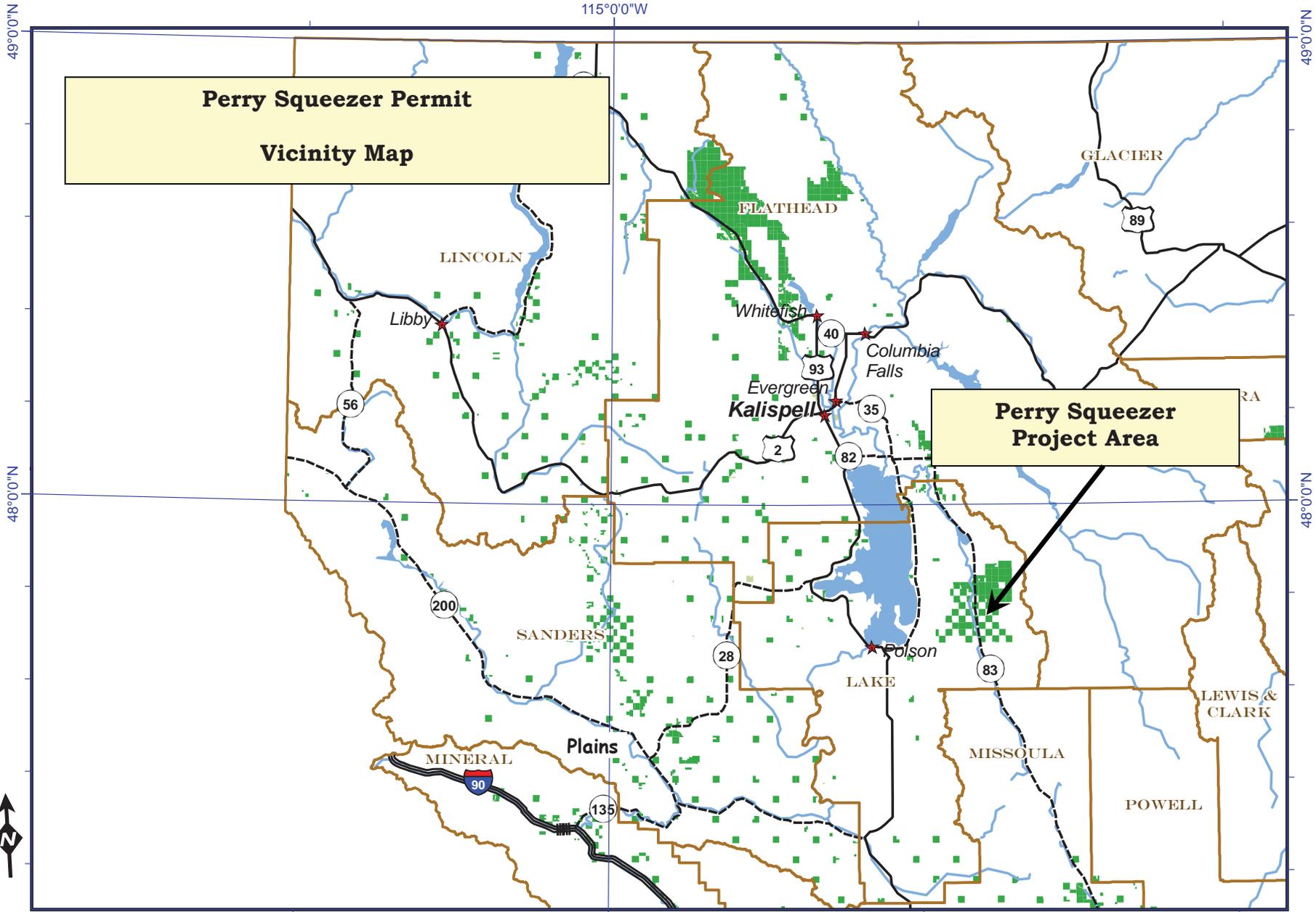
Based on the following, I find that a more detailed EA or an EIS does not need to be prepared:

- The CEA adequately addressed the issues identified during project development and displayed the information needed to make decisions.
- Evaluation of the potential impacts of the proposed Perry Squeezer permit 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 in *APPENDIX A –RESPONSES TO COMMENTS*.

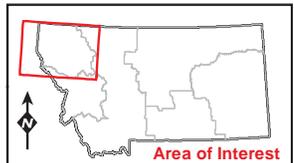
EIS
 More Detailed EA
 No Further Analysis

EA Checklist Approved By:	Name: Kristen Baker
	Title: Forest Management Supervisor
Signature: /s/ Kristen Baker	Date: 7/05/12



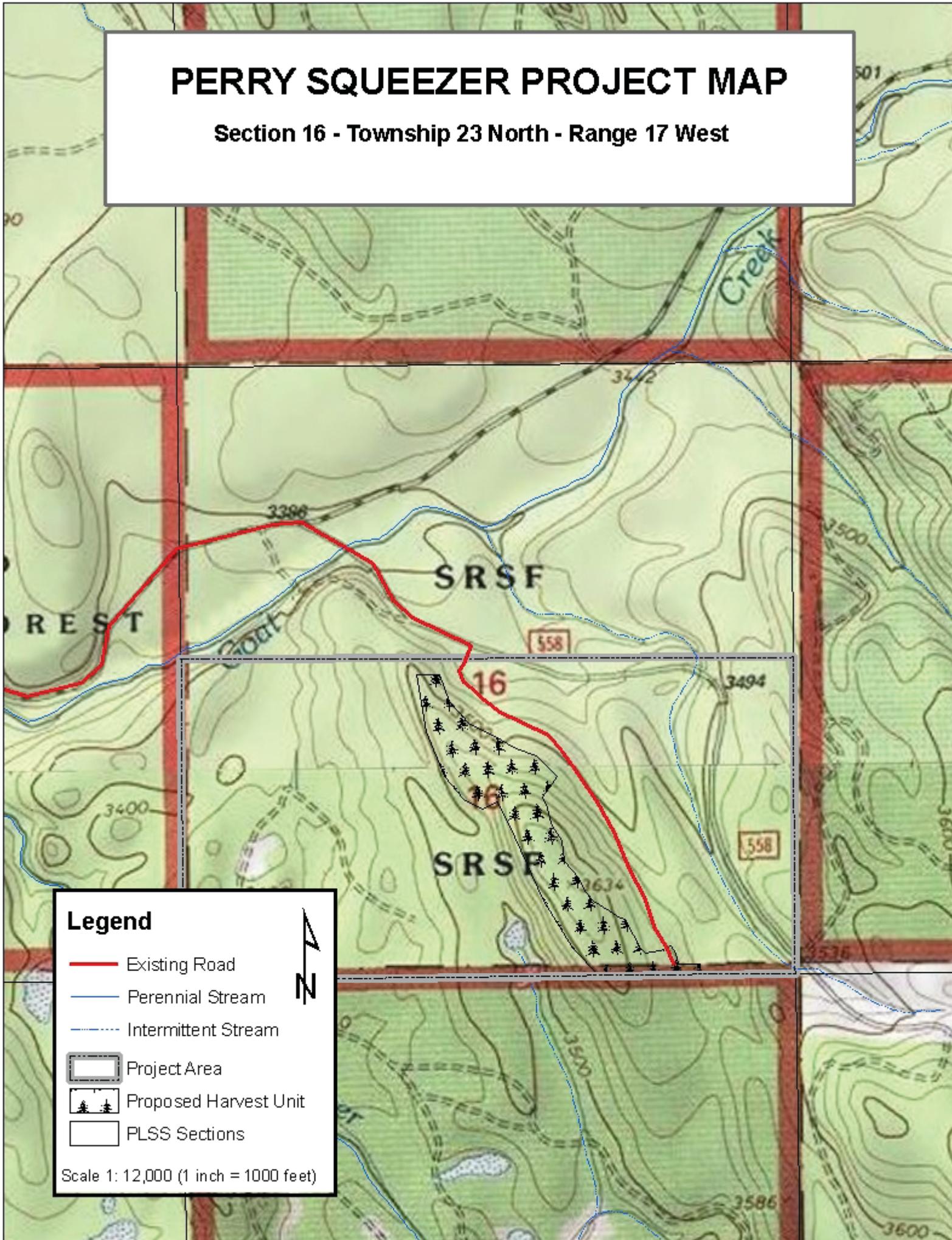
	Interstate Highway		Rivers		Lakes
	U.S. Route		City		DNRC managed for timber
	State Highway		County		DNRC other

21 February 2007
 Montana DNRC
 Technical Services Section/dr



PERRY SQUEEZER PROJECT MAP

Section 16 - Township 23 North - Range 17 West



Legend

- Existing Road
- Perennial Stream
- Intermittent Stream

- Project Area
- Proposed Harvest Unit
- PLSS Sections



Scale 1: 12,000 (1 inch = 1000 feet)

APPENDIX A

RESPONSES TO COMMENTS

ISSUES IDENTIFIED DURING SCOPING		
The issues stated here are paraphrased to aid in summarizing alike concerns from several separate letters. The original letters are in the Swan River State Forest Perry Squeezer CEA project file.		
CONCERNED ENTITY	ISSUE	WHERE ADDRESSED IN THE CEA
Cumulative Effects		
<p>Friends of the Wild Swan</p>	<p>The Perry Squeezer project area is in the same project area as the Scout Lake Multiple Timber Sale EIS. Why weren't these units included in the Scout Lake EIS?</p> <p>The Perry Squeezer Permit was not identified as a reasonably foreseeable action in the Scout Lake EIS and was not analyzed as a cumulative impact.</p> <p>This analysis must evaluate the cumulative effects of past, present, and foreseeable future logging plans in the area.</p>	<p>This sale is considered a '612 Permit.' DNRC considers this a separate project from the Scout Lake EIS because, under law, 612 permits cannot be a part of a larger sale that is being reviewed by the department. MCA 77-5-212 allows the DNRC to issue permits to citizens without advertising for the sale of timber in quantities less than 100 Mbf green and 500 Mbf salvage. Under this type of permitting, citizens who possess proper insurance and can produce a bond have an opportunity to propose a project area for harvest that <i>is not part of a larger proposed sale</i> or a sale that has already been sold.</p> <p>The citizen did not approach the DNRC with the permit proposal unit April 2012, after the Scout Lake EIS had been approved.</p> <p>For the cumulative effects not analyzed in the Scout Lake EIS, refer to the various resource analyses in this CEA and the appendices.</p>

Old Growth		
Friends of the Wild Swan	Before DNRC logs any more old-growth forest habitat they must plan for how old-growth forests will be managed on the Swan River State Forest.	The old-growth stand has been dropped from the proposed project.
Water Quality and Fish Habitat		
Friends of the Wild Swan	Squeezer Creek is a key bull trout stream and is designated critical habitat. How will this project impact the stream?	The proposed unit is located 500 feet or greater from any Class 1 stream.
Wildlife		
Friends of the Wild Swan	For all wildlife, DNRC needs to quantify current habitat to determine if enough habit is available. The analysis must disclose the characteristics and locations of wildlife corridors. DNRC must analyze the effect to big game winter range.	Refer to Perry Squeezer CEA, <i>APPENDIX C – TERRESTRIAL WILDLIFE RESOURCES</i> . Refer to Perry Squeezer CEA, <i>APPENDIX C – TERRESTRIAL WILDLIFE RESOURCES</i> . Refer to Perry Squeezer CEA, <i>APPENDIX C – TERRESTRIAL WILDLIFE RESOURCES</i> .
Economics		
Friends of the Wild Swan	<i>Montana Environmental Protection Act</i> (MEPA) alternative must fully examine other viable economic options. DNRC must track the costs expended to plan and implement this timber sale.	Outside the scope of this project. DNRC tracks costs at a programmatic level.

APPENDIX B
HYDROLOGICAL ANALYSIS

The proposed project would commercially thin the existing stand (mainly Douglas-fir and western larch) on Swan River State Forest, and would occur in Section 16, T23N, R17W. The total area of harvest is approximately 32 acres and would yield an estimated 100 Mbf of saw logs. All work would be completed under dry, frozen and/or snow-covered ground conditions.

The following table evaluates the potential impacts to soil, water and fisheries resources in the project area.

Issue	Assessment
High erosion risk soils?	The inventoried landtypes in the project area are listed as 26D-8 by <i>Flathead National Forest Area, Montana (MT619)</i> . This is not considered as a highly erosive soil. Existing skid trails in the proposed project area are spaced approximately 75 feet apart, on average. This leaves approximately 16 percent of the existing project area in trails, with approximately 75 percent of trails impacted. No trails were identified in draws or other unsuitable locations. All existing trails are suitable for re-use. Frozen or dry conditions will limit the risk of compaction.
Federally listed threatened and endangered <i>aquatic</i> species or critical habitat for threatened and endangered <i>aquatic</i> species as designated by the USFWS?	The project is on a dry ridge in the mid-elevation of the Squeezer Creek Watershed near Condon, Montana. Squeezer Creek is spawning and rearing habitat for bull trout. None of the proposed harvesting is located within 300 feet of any stream channel or surface water. Because the salvage harvest unit is located away from any surface water and the scale of the project is small, only a very low risk of impacts would exist.
Within a municipal watershed?	No municipal water supply is found within 3 miles of the project.
Streamside Management Zone (SMZ) of fish bearing streams or lakes?	Identified harvest area is located well away from streams. The designated haul route from the harvest unit to MT Highway 83 uses established moderate-standard forest roads.

Cumulative effects?	Per <i>ARM 36.11.423 (1) (a-b)</i> , DNRC has completed a coarse-filter screening for cumulative effects, which is located in the project file. As reported in the Scout Lake Multiple Timber Sale Project FEIS, water yield in the Squeezer Creek Watershed would be 4.0 percent above a fully forested watershed. The threshold of concern in Squeezer Creek is 10 percent. Due to the small scale of this project in relation to the watershed size, the risk of additional cumulative impacts would be very low and likely immeasurable. This project would not propose sufficient harvest levels to approach the threshold of concern. Therefore, cumulative impacts would remain well within the established threshold of concern for this watershed.
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CONCLUSION

Due to the small scope of the project, distance from surface water bodies, proposed commercial thinning (removing approximately 30 to 40 percent of the merchantable timber), and the gentle to level topography, impacts to watershed, soils and fisheries are not expected to be measurable. Impacts to soil physical properties (compaction, displacement) are expected to be less than 15 percent of the harvested area provided soils are dry, frozen or snow-covered and skid trails are spaced such that 20 percent or less of the area is trafficked by equipment. New road construction in the proposed project area would reduce the productivity of soils within the prism. Erosion control Best Management Practices (BMPs) on all haul roads would minimize the risk of erosion and sediment delivery off of roads. No streams or draws are found within the proposed project area, so sediment delivery is not an issue with this project.

APPENDIX C

TERRESTRIAL WILDLIFE RESOURCES

INTRODUCTION

The wildlife analysis is designed to disclose the existing condition of wildlife resources and the anticipated direct, indirect, and cumulative effects that may result from implementing the No-Action and Action alternatives. The following issue statements were developed from concerns raised by DNRC specialists and public comments received during scoping, and they will be addressed in the following analysis:

- **Canada Lynx** - The proposed activities could reduce landscape connectivity and the availability of suitable Canada lynx habitat (i.e., summer foraging, winter foraging, other suitable, temporary non-suitable), reducing the ability of the area to support Canada lynx.
- **Grizzly bears** - The proposed activities could alter grizzly bear cover, reduce secure areas, and increase human access, which could adversely affect bears by displacing them from important habitats and/or by increasing risk of human-caused bear mortality.

RELEVANT AGREEMENTS, LAWS, PLANS, RULES, AND REGULATIONS

Legal documents dictate management criteria for the management of wildlife and their habitat on state lands. The documents most pertinent to this project include: *DNRC Forest Management Rules*, *DNRC Forested Trust Lands Final Environmental Impact Statement*, and *Habitat Conservation Plan*, the *Swan Valley Grizzly Bear Conservation Agreement*, the *Endangered Species Act*, the *Migratory Bird Treaty Act*, and the *Bald and Golden Eagle Protection Act*.

ANALYSIS AREAS

The direct and indirect effects of the proposed activities on all species/issues were analyzed within the project area (*FIGURE W-1 – ANALYSIS AREAS*) which consists of 319 acres of DNRC-managed lands in the south half of Section 16 T23N, R17W. Cumulative effects were considered across the 27,602-acre Goat Creek Grizzly Bear Subunit.

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 included information obtained by field visits, scientific literature consultation, MNHP data queries, DNRC SLI data analysis, aerial-photograph analysis, and study of the Scout Lake Multiple Timber Sale Final FEIS wildlife 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.

COARSE-FILTER ANALYSIS

The coarse-filter wildlife analysis discloses the existing conditions of wildlife habitat and the anticipated direct, indirect, and cumulative effects that may result from implementing the No-Action and Action alternatives.

TABLE W-1 –COARSE FILTER *Analysis of the anticipated effects for coarse-filter resource topics on the Perry Squeezer Permit Project.*

COARSE-FILTER RESOURCE TOPIC	COARSE-FILTER ANALYSIS
Old-growth forest	Old-growth forest does not occur in the project area, thus no direct, indirect or cumulative effects would be anticipated.
Connectivity of mature forest habitat	Stand density would be reduced within the 32 acres of mature forest that would receive partial harvest under the proposed Action Alternative. Existing canopy cover ranges from 40 to 50 percent, which would be reduced to 30 to 35 percent following logging. The open structure of the stand following harvest could alter the way some individuals use habitat in the local area; however, changes that would result in appreciable reductions in food availability or altered habitat use at the landscape scale would not be expected. Thus, minor adverse direct, indirect, or cumulative effects on species sensitive to removal of mature forest cover would be anticipated.
Snags and coarse woody debris	Some individual snags and downed logs could be removed due to operational activities and human safety considerations on the 32 acres proposed for treatment. However, all existing snags would be retained where possible and coarse woody debris would be retained in amounts that would meet or exceed those recommended by <i>Graham et al. 1994</i> . Thus, minimal adverse direct, indirect, and cumulative effects on species that depend on these resources would be anticipated.

FINE-FILTER WILDLIFE ANALYSIS

The fine-filter wildlife analysis discloses the existing conditions of wildlife resources and the anticipated direct, indirect, and cumulative effects that may result from the No-Action and Action alternatives. Wildlife species considered include: 1) species listed as threatened or endangered under the *Endangered Species Act of 1973*, 2) species listed as sensitive by DNRC, and 3) species managed as big game by DFWP. *TABLE W-2 –FINE FILTER* provides an analysis of the anticipated effects for each species. Cumulative effects on all species are discussed at the end of the document.

TABLE W-2 –FINE FILTER. Analysis of the anticipated effects for fine-filter species on the Perry Squeezer Permit Project.

	SPECIES/HABITAT	FINE FILTER ANALYSIS
Threatened and endangered species	Canada lynx (<i>Felis lynx</i>) Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zones	<i>Detailed Analysis Provided Below</i> – The project area contains 134 acres of suitable lynx habitat.
	Grizzly bear (<i>Ursus arctos</i>) Habitat: Recovery areas, security from human activity	<i>Detailed Analysis Provided Below</i> – The project area lies within the Goat Creek Grizzly Bear Subunit of the <i>Northern Continental Divide Ecosystem</i> (USFWS, 1993).
Sensitive species	Bald eagles (<i>Haliaeetus leucocephalus</i>) Habitat: Late-successional forest less than 1 mile from open water	No known bald eagle nests or suitable lake habitat is located within 2.5 miles of the project area. The closest suitable lake for bald eagle nesting is Van Lake, which is located approximately 3 miles south of the project area. Thus, no direct, indirect, or cumulative effects to bald eagles would be expected to occur as a result of either alternative.
	Black-backed woodpeckers (<i>Picoides arcticus</i>) Habitat: Mature to old burned or beetle-infested forest	No recently (<5 years) burned areas occur in 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.
	Coeur d'Alene salamanders (<i>Plethodon idahoensis</i>) Habitat: Waterfall spray zones, talus near cascading streams	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>Columbian sharp-tailed grouse (<i>Tympanuchus Phasianellus columbianus</i>)</p> <p>Habitat: Grassland, shrubland, riparian, agriculture</p>	<p>No suitable grassland communities occur in the project area. Thus, no direct, indirect, or cumulative effects to Columbian sharp-tailed grouse would be expected to occur as a result of either alternative.</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 1 mile 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 120 acres of suitable fisher habitat occur within the project area; 23 acres would be harvested. Canopy cover would be reduced from 40 to 50 percent to approximately 30 to 35 percent and stocking density of sawtimber trees would decrease, causing these stands to become unsuitable for appreciable use for fisher, although some use could continue. Riparian fisher habitat would not be affected by the proposed activities. Due to the light harvest proposed for the project area and small spatial scale of the proposed project, overall negligible adverse direct, indirect, or cumulative effects to fisher would be anticipated.</p>
	<p>Flammulated owls (<i>Otus flammeolus</i>)</p> <p>Habitat: Late-successional ponderosa pine and Douglas-fir forest</p>	<p>Approximately 9 acres of flammulated owl preferred cover types occur within the project area. However, these acres contain minimal structural attributes necessary to provide suitable flammulated owl habitat (i.e., relatively open forest). The proposed activities would be expected to slightly increase the suitability of these acres for flammulated owl use by opening the canopy and by retaining large ponderosa pine that are preferred by flammulated owls. Thus, negligible beneficial 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 2011 home range of the Cilly Pack is located in the vicinity of the project area. However, the light harvest is proposed for a small portion (32 acres, 0.2 percent) of the estimated 2011 home range of the Cilly Pack and is not likely to adversely affect big game. Additionally, no rendezvous sites or den sites are located in the vicinity of the project area (K. Laudon, DFWP, wolf management specialist, pers. comm., May 15, 2012); and harvest activities would take place for only 3 to 4 weeks after June 15, when pups if present, would be somewhat mobile. Thus, negligible direct, indirect or cumulative effects to gray wolves would be expected to occur as a result of either alternative.</p>
	<p>Harlequin ducks (<i>Histrionicus histrionicus</i>)</p> <p>Habitat: White-water streams, boulder and cobble substrates</p>	<p>No suitable streams habitat occurs in the vicinity of the project area and no observations of harlequin ducks are located in the vicinity of the project area (MNHP data, 2012). Thus, no direct, indirect, or cumulative effects to harlequin ducks would be expected to occur as a result of either alternative.</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 occur in the project area or within 0.5 miles of the project area. 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>Approximately 65 acres of suitable pileated woodpecker habitat occur within the project area, of which, 22 acres would be harvested. Canopy cover would be reduced to approximately 30 to 35 percent and stocking density would decrease, causing these stands to become unsuitable for appreciable use for pileated woodpeckers, although some use could continue. All snags would be retained unless they posed a safety hazard. Due to the light harvest proposed for the project area, small spatial scale of the proposed project, and minimal impacts to large snags, overall negligible adverse direct, indirect, or cumulative effects to pileated woodpeckers would be anticipated.</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. 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>
Big game species	<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>Approximately 32 acres of elk and white-tailed deer winter range identified by MFWP occur within the project area. The area proposed for harvest contains approximately 40 to 50 percent canopy, with a high western larch component, which likely provides limited suitable cover for elk and deer winter range habitat. Additionally, evidence of big game winter use was not observed during review of the area. Due to the relatively light harvest, small spatial scale of the proposed project area, summer operating season when activities would occur, and low capacity of the area to provide suitable winter range, negligible adverse direct, indirect or cumulative effects to big game are anticipated.</p>

THREATENED AND ENDANGERED SPECIES DIRECT AND INDIRECT EFFECTS

➤ **Canada Lynx**

Issue - The proposed activities could reduce landscape connectivity and the availability of suitable Canada lynx habitat (i.e., summer foraging, winter foraging, other suitable, temporary non-suitable), reducing the ability of the area to support Canada lynx.

Introduction

Canada lynx are listed as 'threatened' under the *Endangered Species Act*. Canada lynx are medium-size cats that prey primarily on snowshoe hares and occupy a mosaic of young and mature forests that provide hunting and denning habitats (Ruediger et al. 2000). Lynx foraging habitat in western Montana consist of young coniferous stands and mature forested stands with high levels of horizontal cover, which provide snowshoe hare habitat (Squires et al. 2010). Lynx denning habitat typically consists of mature forests with abundant coarse woody debris, which provides hiding cover for kittens (Squires et al. 2008). Additionally, lynx typically avoid large openings in the winter; hence, densely forested cover that is well connected is important for travel and security (Squires et al. 2010). Forest management considerations for lynx include providing a mosaic of young and mature lynx habitats and well-connected large patches of mature forested cover occurring in vegetation types preferred by lynx.

Analysis Area

The analysis area for direct and indirect effects is the 319-acre project area (FIGURE W-1 – ANALYSIS AREAS).

Existing Conditions

The project area contains 134 acres of suitable lynx habitat. Of these 134 acres, 45 acres are considered summer foraging habitat and 89 acres are considered winter foraging habitat. The remaining 185 acres consists of 156 acres that are not preferred lynx covertypes, as well as 29 acres that are temporarily unsuitable for lynx. The majority of lynx suitable habitat is located on the east side of the project area. The project area contains an intermittent stream and ridgelines that run north-to-south and are likely to facilitate lynx connectivity.

Environmental Effects

- ***Direct and Indirect Effects of the No-Action Alternative on Canada Lynx***

None of the proposed forest-management activities would occur. Existing lynx habitat present in the project area would persist and connectivity would not be affected. Thus, since: 1) no changes to existing lynx habitat would occur, and 2) no changes to landscape connectivity would occur. Therefore, no adverse direct or indirect effects to Canada lynx associated with landscape connectivity and suitable habitat type availability would be anticipated as a result of the No-Action Alternative.

- ***Direct and Indirect Effects of the Action Alternative on Canada Lynx***

The proposed activities would affect 23 acres (17.2 percent) of the 134 acres of suitable lynx habitats. All of these acres consist of lynx winter foraging habitat, representing 26.1 percent of the existing winter foraging habitat in the project area. Following harvest these acres would remain classified as lynx winter foraging habitat; however, overstory canopy cover would be reduced. To ensure that forest structural attributes preferred by snowshoe hares remain following harvest, all conifer saplings would be retained where possible. Additionally, coarse woody debris would be retained in accordance with DNRC Forest Management Rules (ARM 36.11.414) and retention of downed logs ≥ 15 inch

diameter would be emphasized. The proposed activities are not anticipated to affect habitat connectivity for lynx. If present in the vicinity of the project area, lynx could be temporarily displaced by forest-management activities for approximately 3 to 4 weeks due to disturbance caused by motorized activities. Thus, since: 1) lynx suitable habitat availability would not change, 2) all regenerating conifers would be retained where feasible, 3) overall landscape connectivity would be maintained, and 4) the proposed activities would occur during a limited time period for approximately 3 to 4 weeks, negligible adverse direct and indirect effects to Canada lynx associated with landscape connectivity and availability of suitable habitat would be anticipated as a result of the Action Alternative.

➤ **Grizzly Bear**

Issue: The proposed activities could alter grizzly bear cover, reduce secure areas, and increase human access, which could adversely affect bears by displacing them from important habitats, and/or by increasing risk of human-caused bear mortality.

Introduction

Grizzly bears are opportunistic omnivores that inhabit a diversity of habitats in western Montana and are currently listed as ‘*Threatened*’ under the *Endangered Species Act*. Preferred grizzly bear habitats include avalanche chutes, fire-mediated shrub fields, and riparian areas, all of which provide seasonal food sources (*Serveen 1983, McLellan and Hovey 2001*). Primary threats to grizzly bears are related to human-bear conflicts, habituation to unnatural foods near high-risk areas, and long-term habitat loss associated with human development (*Mace and Waller 1997*). Forest-management considerations for grizzly bears include providing visual screening along open roads, minimizing access and the construction of new roads, and reducing disturbance levels during the non-denning season, especially in the spring period when grizzly bears are nutritionally stressed.

In the Swan Valley, DNRC, USFS, PCTC, and USFWS collaborated to cooperatively manage grizzly bear habitat, linkage, and human access under the SVGBCA (*SVGBCA 1997*). Under this agreement, a rotation of active and inactive subunits was devised. The rotation schedule allows for active subunits where bears may be displaced by harvesting activities and inactive subunits where commercial activities are prohibited to provide undisturbed habitat for bears. These rotations occur on a 3-year-active and 6-year-inactive basis. When a subunit is active, harvesting activities would not occur during the spring period (April 1 through June 15) in spring habitat (areas in designated linkage zones below 5,200 feet).

Analysis Area

The analysis area for direct and indirect effects is the 319-acre project area (*FIGURE W-1 – ANALYSIS AREAS*).

Existing Conditions

The project area occurs in the Goat Creek Grizzly Bear Subunit of the *Bunker Bear Management Unit* (BMU), which is scheduled to be active from 2012 through 2014. The project area includes some spring habitat, but the proposed harvest unit is located outside of spring habitat. Approximately 249 acres (78.1 percent) in the project area possess cover in amounts capable of providing hiding cover for grizzly bears. A small wetland, which is a preferred grizzly bear habitat type, exists in the southern portion of the project area. Other types of preferred grizzly bear habitat such as riparian areas, fire-mediated shrub fields, and avalanche chutes are not present in the project area. Secure habitat (areas free from motorized human use) that are located greater than 0.3 miles from any open, restricted, or high-use roads and trails and at least 2,500 acres in size are not available in the project area due to the proximity of the area to open roads.

Environmental Effects

- ***Direct and Indirect Effects of the No-Action Alternative on Grizzly Bears***

None of the proposed forest-management activities would occur. No changes to grizzly bear habitat would be expected. Hiding cover, existing secure areas, risk of displacement, and open and restricted road density would remain the same. Thus, since: 1) no timber harvesting would alter existing hiding cover, 2) risk of displacement from important habitat would not increase, 3) no existing secure areas would be affected, and 4) no changes to open or restricted road density would occur, no direct or indirect effects associated with grizzly bear displacement or human-caused bear mortality risk would be anticipated as a result of the No-Action Alternative.

- ***Direct and Indirect Effects of the Action Alternative on Grizzly Bears***

Harvesting associated with the action alternative would increase sight distances within proposed harvest units and the 30 acres (12 percent) of existing hiding cover that would be harvested are not likely to provide hiding cover post-harvest. However, all regenerating conifers would be retained to the degree possible and some patches of suitable hiding cover would remain. No additional roads are proposed for construction; thus open and total road density would not change. Harvest would not occur within 500 feet of the small wetland located in the southern portion of the project area and secure areas would not be affected because they are not present in the project area. If present in the vicinity of the project area, grizzly bears could be displaced by forest-management activities for approximately 3 to 4 weeks. Thus, since: 1) the availability of hiding cover in the project area would decrease by 30 acres; 2) grizzly bears could be displaced from the wetland, a preferred grizzly bear habitat for approximately 3 to 4 weeks; 3) grizzly bear security habitat would not be affected by the proposed activities; 4) grizzly bear spring habitat would not be affected; and 5) no new road construction would occur, minor adverse direct or indirect effects associated with grizzly bear displacement or human-caused bear mortality risk would be anticipated as a result of the Action Alternative.

CUMULATIVE EFFECTS ON ALL SPECIES/ISSUES

Cumulative effects analyses account for known past and current activities, as well as planned future agency actions. This analysis tiers to the Scout Lake Multiple Timber Sale Project FEIS as the section involved in this project also was reviewed and included in this recent environmental document. Recent and ongoing projects in the 27,602-acre cumulative-effects-analysis area (*FIGURE W-1 – ANALYSIS AREAS*) that could contribute to cumulative effects include:

- DNRC 2008 Micro Goat Salvage Project – Harvest on 100 acres within Section 16, T23N, R17W.
- DNRC 2008 Winter Blowdown Salvage Timber Permit Project – Harvest on 240 acres within Sections 16, 20, 30, 32, and 34, T23N, R17W.
- DNRC 2010 Luckow Lodgepole – Harvest on 100 acres within Sections 18 and 32, T23N, R17W.
- DNRC 2010 Shay Post and Pole – Harvest on 10 acres within Section 30, T23N, R17W.
- DNRC Scout Lake Multiple Timber Sale (ongoing) – Harvest on approximately 2,009 acres within Sections 16, 18, 19, 20, 21, 27, 28, 29, 32, 33, and 34, T24N, R17W; Sections 6, 8, 16, 18, 20, 22, 26, 28, 30, and 34, T23N, R17W; and Section 36, T23N, R18W the cumulative effects analysis area. Approximately 567 harvested acres will occur in the cumulative-effects-analysis area.

Changes to forest structure resulting from all DNRC projects with the exception of Scout Lake, which is ongoing, have been accounted for in the SLI data used for this analysis.

Environmental Effects

- ***Cumulative Effects of the No-Action Alternative on Wildlife***

None of the proposed forest-management activities would occur. No changes to grizzly bear, lynx, or other wildlife habitat would be expected. Any proposed or ongoing activities within the large cumulative effects analysis area could affect the availability and connectivity of wildlife habitat.

- ***Cumulative Effects of the Action Alternative on Wildlife***

The proposed activities would affect Canada lynx, grizzly bear, fisher, flammulated owl, gray wolf, and big game habitat. The proposed activities would remove canopy cover, snags, as well as other important habitat attributes, reducing habitat quality for some wildlife species. Approximately 30 acres of grizzly bear hiding cover is expected to become unsuitable post-harvest, which would be additive to the Scout Lake Multiple Timber Sale. The percentage of hiding cover in the Goat Creek Bear Management Subunit would decrease from approximately 52.3 percent to 52.2 percent post-harvest, which would exceed the 40 percent minimum threshold required in the *SVGBCA (DNRC 2012)*. The 23 acres of lynx suitable habitat proposed for harvest would remain suitable post-harvest. Negligible cumulative effects to landscape connectivity are anticipated. Wildlife could be displaced by forest-management activities for approximately 3 to 4 weeks. Thus, since 1) the proposed activities would be additive to the Scout Lake Multiple Timber Sale; 2) the area proposed for

harvest is relatively small at 32 acres; and 3) wildlife would be affected for a short duration, 3 to 4 weeks; negligible adverse cumulative effects to wildlife habitat availability would be anticipated as a result of the Action Alternative.

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).
- Within Canada lynx winter foraging habitat, retain up to 10 percent of the stand area in patches of advanced regeneration of shade-tolerant trees (grand fir, subalpine fir, and spruce) as per LY-HB4 (*USFWS and DNRC 2010:Vol. II pp. 2-50, 2-51*).
- Manage for snags, snag recruits, and coarse woody debris, particularly favoring ponderosa pine, western larch and Douglas-fir. Emphasize the retention of downed logs ≥ 15 inches dbh where they occur as per LY-HB2 (*USFWS and DNRC 2010:Vol. II p. 2-48*).

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FIGURE W-1 –ANALYSIS AREAS. *Wildlife analysis areas for the proposed Perry Squeezer Permit Project.*

