

CHECKLIST ENVIRONMENTAL ASSESSMENT (CE

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MAR 24 2006

Project Name:	RED RIDGE SALVAGE PERMIT
Proposed Implementation Date:	March 21, 2006
Proponent:	Montana Department of Natural Resources and Conservation (DNRC)
Location:	Swan River State Forest - Section 20, 21, 28, and 29, T24N, R17W
County:	LAKE

LEGISLATIVE ENVIRONMENTAL POLICY OFFICE

I. TYPE AND PURPOSE OF ACTION

DNRC, as manager of Swan River State Forest, proposes a forest-management project to salvage the diseased, dying, dead, and down timber in Sections 20, 21, 28, 29, T24N, R17W, to reduce the spread of various insect infestations and disease infections and recover the value of the trees that have been killed or weakened. The proposal would include harvesting affected trees in an area consisting of 2 units that cover approximately 677 acres. No new roads would be built.

The lands involved in the proposed project are held by the State of Montana in trust for the support of specific beneficiary institutions. These include public schools, State colleges and universities, and other specific State institutions, such as the School for the Deaf and Blind (*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 required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for these beneficiary institutions (*Section 77-1-202, Montana Codes Annotated [MCA]*).

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*).

On March 12, 2003, DNRC adopted Administrative Rules for Forest Management (Administrative Rules of Montana [ARM] 36.11.401 through 450). DNRC will manage the lands involved in this project in accordance with these Rules.

PROJECT AREA

The project area consists of flat lowland areas and draws that run along glacial moraines that form low, flat-topped ridges. Soup Creek Road, a year-round open road, provides access to the project area from Highway 83. DNRC-managed lands surround the project area.

GOALS AND OBJECTIVES

The goals and objectives of the Red Ridge Salvage Permit project are as follows:

- Reduce, slow, or stop ongoing insect and disease outbreaks, especially of Douglas-fir bark beetles and mountain pine beetles, by applying essential and proven forest-management techniques and utilizing accepted timber-salvage practices in an economical and ecologically acceptable manner.
- Recover revenue for the school trust by salvaging trees that have been killed or damaged by wind, diseases, and/or insects.
- Reduce the risk of catastrophic fire to State lands and adjacent landowners by reducing forest fuel loading of windthrown or dead and dying timber as a result of insect attacks and/or disease outbreaks.
- Contribute approximately 200 thousand board feet (mbf) to the Northwestern Land Office (NWLO) portion of the annual timber harvest on State trust lands that is required by State law (*77-5-221 through 223, MCA*).

- Salvage this timber in a manner that complies with the Swan Valley Grizzly Bear Conservation Agreement (SVGBCA), Montana Best Management Practices (BMPs), and other applicable laws, rules, standards, and guidelines.

II. PROJECT DEVELOPMENT

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

Provide a brief chronology of the scoping and ongoing involvement for this project.

The initial scoping included the project information sheet and cover letter signed by Steve Beaulieu, Management Forester. The packet, mailed on July 29, 2005 to landowners, various Agency resource specialists and representatives, and all interested parties, requested a response by September 12, 2005. APPENDIX B – SCOPING DOCUMENTATION - has a complete listing of all recipients of the scoping proposal. From this scoping, 2 comments were received: Arlene Montgomery, Friends of the Wild Swan, and Jim Bower, DNRC, Fisheries Program Specialist. Both comments had concerns about the proposed project. This document will address those concerns (see APPENDIX B – SCOPING DOCUMENTATION).

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

Montana Department of Fish, Wildlife, and Parks (DFWP) has jurisdiction over the management of fisheries and wildlife populations in the project area. DFWP is on the mailing list and has received the scoping letter.

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. Only permits pertaining to air quality are needed for this project.

The SVGBCA, a cooperative agreement between DNRC, Plum Creek Timber Company (PCTC), United States Fish and Wildlife Service (USFWS), and United States Forest Service (USFS), is currently in effect. This project will define mitigation measures for operating within the SVGBCA timber-harvesting parameters.

3. ALTERNATIVES CONSIDERED:

- ***NO-ACTION ALTERNATIVE***

- No timber would be harvested.
- When funding is available and equipment is in the area, roads and closures would be maintained.
- Wildfire suppression efforts, when applicable, would continue.
- Efforts to control the spread of noxious weeds would continue.
- No forest-improvement work would take place in the near term, but may take place in the future as time and funding permit.
- Future actions, including timber harvesting, may be proposed and go through the appropriate environmental analysis.

- ***ACTION ALTERNATIVE***

- Approximately 200 mbf of windthrown trees and trees killed or damaged by insects and diseases would be salvaged before commercial value is lost.
- Roads would be maintained and sediment and erosion problems would be addressed, no new roads would be constructed.
- The buildup of woody fuels would be reduced through timber harvesting and slash piling and burning.
- Wildfire suppression efforts, when applicable, would continue.
- Efforts to control the spread of noxious weeds would continue.
- Proven forest-management principles would be applied to improve these stands by reducing tree mortality from insect and disease attacks.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *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.

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 any cumulative impacts to soils.

EXISTING CONDITION

The project area has been mapped as part of the Flathead National Forest Soil Survey (*Martinson and Basko, 1998*). Soils in the project area consist of medium-textured loess surface soils influenced with volcanic ash, overlying glacial till derived from quartzite and sandstone. Soil resources are well suited to the operation of conventional ground-based harvest methods, although a compacted or displaced surface layer could reduce productivity. Due to the gentle slopes and rock content, no soils in the project area are considered to be a high erosion risk.

DIRECT AND INDIRECT EFFECTS

- ***No-ACTION-ALTERNATIVE***

No measurable direct, indirect, or cumulative effects would be expected if this alternative were selected.

- ***ACTION-ALTERNATIVE***

Generally, up to 20 percent of the harvest unit would be trafficked by skid trails or landings; however, due to the scattered distribution of trees that would be harvested under this alternative, DNRC would expect less than 10 percent of the harvest area to be trafficked by skid trails and landings. Because harvesting would occur during frozen, snow-covered, or dry conditions, the risk of unacceptable direct or indirect impacts to soils under this alternative is low. A list of mitigation measures that recommend protecting soil resources can be found in *APPENDIX C - STIPULATIONS AND SPECIFICATIONS*.

CUMULATIVE EFFECTS

Harvesting operations under the Action Alternative would be limited to periods of dry, frozen, or snow-covered conditions; therefore, the potential for adverse cumulative effects would be minimized and would not be expected to be measurable.

REFERENCES

Martinson, Albin H. and William J. Basko, 1998. Soil Survey of Flathead National Forest Area, Montana. USDA Forest Service.

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 cumulative effects to water resources.

See *APPENDIX B – WATER QUALITY AND FISHERIES ANALYSIS*

6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify 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. Currently, temporary local reductions in air quality occur from wildfires, prescribed broadcast burning, slash burning, and road dust.

DIRECT AND INDIRECT EFFECTS

- ***NO-ACTION-ALTERNATIVE***

The existing condition would not change.

- ***ACTION-ALTERNATIVE***

Postharvest burning would produce smoke emissions; log hauling and other project-related traffic on dirt roads during dry periods would temporarily increase road dust. 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 Airshed Group.

CUMULATIVE EFFECTS

- ***NO-ACTION-ALTERNATIVE***

The existing condition would not change.

- ***ACTION-ALTERNATIVE***

Additional smoke produced from prescribed burning on adjacent USFS, PCTC, 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 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 cumulative effects to vegetation.

INTRODUCTION

The following analysis provides a detailed description of the present conditions of the forest and address the potential effects of the proposed alternatives related to the following issues:

- The ongoing Douglas-fir bark beetle attacks would likely cause significant additional tree mortality if harvesting does not remove active brood trees. Trees would be targeted for removal this winter. Harvesting operations could continue until August 31, 2006, with the exception of April 1 through June 15.
- The risk of catastrophic fires may increase on Swan River State Forest and adjacent timberlands if standing dead or dying and/or down trees are not removed. The amount of fuel would be reduced in the affected areas.
- Harvesting would remove infected or damaged trees and allow the remaining healthy trees to continue to mature in the stand. By removing the affected tree species, the overall health and vigor of the stand

should improve, which may reduce the potential for future attacks. Healthy trees of preferred species would remain in the stands rather than natural succession, which would allow nonpreferred species, such as grand fir, to dominate.

BACKGROUND

As a whole, the forest has an ongoing and severe bark beetle problem. Douglas-fir bark beetles, mountain pine beetles, and fir engravers are currently attacking trees on Swan River State Forest. Douglas-fir bark beetles have caused significant tree mortality within the project area. Mountain pine beetle and fir engraver attacks have become more prevalent, causing mortality in lodgepole pine, western white pine, and grand fir.

DNRC is required by law to establish a timber program that provides for the timely salvage of dead and dying timber that is threatened by insects, diseases, wildfires, or windthrow on State forests (*section 77-5-207, MCA*). Under this requirement, DNRC shall, to the extent practicable, harvest dead and dying timber before wood decay and value loss are substantial.

CURRENT HABITAT TYPES AND FOREST PRODUCTIVITY WITHIN THE PROJECT AREA

The majority of stands in the project area are a grand fir habitat type and in the warm, moist habitat group. Forest productivity (growth) is rated as high to very high. These stands typically contain varying populations of Douglas-fir, western larch, grand fir, Engelmann spruce, and western red cedar, and incidental representations of ponderosa pine, western white pine, and subalpine fir.

PAST MANAGEMENT ACTIVITIES

Inventory records show that past timber harvesting in the project area began in the early 1960s. The following information pertains to timber sales in and adjacent to the Red Ridge Salvage Permit project area:

- Since 1970, salvage harvesting has occurred within the project area. Most of the harvesting has consisted of both salvage and green timber sales. The green timber sales that have occurred over the last 25 years have been primarily seedtree removal and clearcut harvests. Three of the stands have successfully regenerated and been precommercial thinned. The other 4 stands are regenerating at a slower rate.
- Current management activities in or adjacent to the project area include the Cilly Bug Salvage Timber Sale. The treatment activities associated with this sale include selectively removing dead, dying, and windthrown trees.

AGE CLASS AND COVERTYPES

EXISTING CONDITION

Salvage harvesting is proposed for 9 stands in Sections 20, 21, 28, and 29, T24N, R17W.

- Six stands have a mixed-conifer composition. All are classified as old stands (150-plus years old) and cover a total of approximately 75 acres. Two are designated as old growth according to the Stand Level Inventory (SLI). Dominant tree-species represented in these 6 stands include Douglas-fir, western larch, grand fir, and Englemann spruce; western white pine and lodgepole pine are scattered throughout, while ponderosa pine is a minor component. These old stands are in an advanced state of decline due to reduced vigor and insect and disease attacks.
- Two stands have a western larch/Douglas-fir composition. Both stands are classified as old stands (150-plus years old). One stand is classified as old growth. These stands, covering approximately 47 acres, are in an advanced state of decline due to reduced vigor and insect and disease attacks. Western larch, Douglas-fir, grand fir, and western white pine are the dominant tree species represented. Lodgepole pine and a minor amount of ponderosa pine are also represented.

- The last stand, classified as an old stand (150-plus years old), has a western white pine composition, with representations of Douglas-fir, western larch, western white pine, and grand fir, and covers approximately 40 acres. Previous salvage efforts and recent dead and dying Douglas-fir have created numerous small openings that have filled in with various brush species. The stand has limited grand fir regeneration, and minor amounts of Douglas-fir and Engelmann spruce regeneration.

Within the project area, but not within the harvest unit boundary, are 7 stands that have a variety of tree species that include ponderosa pine, western larch, western white pine, and Douglas-fir, with scatterings of Engelmann spruce and grand fir. Three of these stands comprised of 53 acres, consist of sapling-sized trees that have been precommercially thinned to approximately 222 trees per acre in the recent past. The other 4 stands, comprised of approximately 101 acres, are classified as nonstocked according to the SLI.

DIRECT AND INDIRECT EFFECTS

- ***NO-ACTION ALTERNATIVE***

The project area has light to severe damage and mortality is scattered throughout. If the proposed salvage does not occur in these stands, the shade-tolerant trees would continue to regenerate, changing the dominant tree/covertypes from seral to climax species. The long-term coverts would change to an overstory dominated principally by grand fir. Age class for the stand would continue to decrease as the older Douglas-fir, ponderosa pine, and western larch die from the effects of insect and disease attacks.

- ***ACTION ALTERNATIVE***

Salvage harvesting would be concentrated in areas affected by Douglas-fir bark beetle attacks. The salvage of other dead or dying tree species, such as western white pine that are seriously affected by white pine blister rust and grand fir that are affected by Indian paint fungus and fir engraver beetles, would also occur. Salvaged areas would create numerous small openings within the project area to allow seral species an opportunity to regenerate. Since the trees targeted for removal are dead or dying from natural events, stand coverts and age-class composition would not change beyond what is naturally occurring. The coverts effects would not be considerably different from the No-Action Alternative.

CUMULATIVE EFFECTS

- ***NO-ACTION ALTERNATIVE***

The brood trees for the Douglas-fir bark beetles would not be removed. Coverts would continue to change as Douglas-fir in the overstory die from continued bark beetle attacks and the canopy becomes occupied with other shade-tolerant species, primarily grand fir. In the short term, the canopy may have openings created by mortality or windfall. For the long term, these openings would close as the shade-tolerant species grow and develop.

As insect and disease infected trees die and the younger shade-tolerant trees begin to move into the dominant class, the age class of the overall stand may change to that of a younger stand.

- ***ACTION ALTERNATIVE***

Because Douglas-fir bark beetles in the project area are attacking Douglas-fir, a dominant overstory species, the stand composition would change. Some portions of the project area would become predominantly grand fir; other portions would regenerate to seral species that may take advantage of the small openings created during salvaging operations. These openings would be created sooner and be relatively larger than if they were generated naturally. Combined with soil disturbance and the removal of a majority of the large woody debris, the openings would increase opportunities for seral species to regenerate.

The stand's age class may change to that of a younger stand as beetle-infested trees die and the current understory of younger shade-tolerant trees begin to move into the dominant class. The natural regeneration

of the salvaged areas would also reduce the stand's age class. The removal of brood trees, however, would allow more of the unaffected older trees to survive and moderate the change in age classification.

FRAGMENTATION

EXISTING CONDITIONS

State trust lands in Swan River State Forest and adjacent ownerships display a pattern of fire-generated stands overlain by human-generated stands of harvest units and cleared land. Swan River State Forest's SLI database shows that timber stands are delineated along natural and human-generated boundaries. The natural boundaries fall along edges of moisture regimes, age classes, soil types, topographic features, and fire influences that created visible differences in timber-stand characteristics. The human-generated boundaries follow property, natural, and past-harvest boundaries. Stand size is highly variable.

DIRECT AND INDIRECT EFFECTS

- ***No-Action Alternative***

Forest fires and timber harvesting on adjacent ownerships would continue to change existing patterns and edges associated with the forest patch size and shape.

- ***Action Alternative***

Existing patterns and edges associated with the forest patch size and shape would not change except through forest management on adjacent ownerships or wildfires. Stand boundaries would not change. The stand composition density and structure would not be altered enough to create a fragmented stand.

CUMULATIVE EFFECTS

Forest fires and timber harvesting on DNRC-managed lands and adjacent ownerships would continually change existing patterns and edges associated with forest patch size and shape.

OLD GROWTH

EXISTING CONDITIONS

Of the 9 stands being proposed for salvage harvesting, 3 are listed as old growth. The stands listed as old growth, approximately 41 acres, were not field checked but meet the criteria for old growth in the SLI. Some or all of the stands listed as old stands could possibly meet the old-growth criteria adopted by DNRC. Stands other than those being proposed could be entered for salvage harvesting. The stands would be outside the harvest units but within the project area.

DNRC has adopted *Green et al (1992)* to define old growth on State lands. This definition is based on the number, age, and size of trees over a specified diameter at breast height (dbh) per acre based on habitat type and covertype. The SLI provides the initial data for labeling stands as old growth. At the project level, stands identified as old growth through the SLI are verified through field reconnaissance and/or the collection of field data from the project stands.

DIRECT AND INDIRECT EFFECTS

Portions of the 3 old-growth stands would be harvested. The trees to be harvested are dead, dying, or weakened. The effects from this salvage operation could mimic natural events such as trees being attacked by insects or injured by disease or wind. High winds and moist soils can lead to trees being blown down. Openings created by salvage harvesting in these stands should not have an effect on trees being blown down due to the small size of the openings. Reducing the number of snags in the larger diameter classes and removing a minor amount of down woody material greater than 3-inches in diameter would affect old-growth attributes. After harvesting, an anticipated 15 to 20 tons of down woody material would be retained per acre,

and the number of snags reserved in all size classes would still provide diversity. The number of large snags reserved would meet requirements under the Forest Management Rules and would consist of species available in the stands.

CUMULATIVE EFFECTS

General site characteristics and past road construction, timber harvesting, insect and disease events, weather events, and wildfires have led to the current forest structure and composition. The overall composition of the forest is not expected to change under either alternative since only dead, down, damaged, diseased, and dying trees are being considered for harvesting. Other activities in the area include the Cilly Bug Salvage Timber Sale, Rock Squeezer Salvage Permit, Triple D Salvage Permit, and the Goat Squeezer II and Goat Squeezer III timber sale projects. Both Goat Squeezer sales are harvesting green trees, but not in designated old-growth stands. The Triple D Salvage and Rock Squeezer Salvage timber permits are salvaging timber that is dead, down, damaged, diseased, and dying in old-growth stands. Essentially, that same approach would be followed in this project. Based on the above-described harvesting of trees, the impacts to old-growth stands would be very similar to what would occur naturally. Impacts from this project would be minimal under either alternative.

FIRE EFFECTS

EXISTING CONDITIONS

Wildfire hazards in these stands are above natural levels, with moderate to high accumulations of downed woody debris in all size classes and increased ladder fuels. On-the-ground fuel loads would increase if the current and future snags that have been killed by the current cycle of insect and disease attacks begin to fall over or break off above the ground. The encroachment and establishment of young shade-tolerant trees, coupled with the continuing mortality of dominant and co-dominant trees caused by beetle kill and windthrow, are increasing fuel loads and, therefore, catastrophic fire risks.

DIRECT AND INDIRECT EFFECTS

- ***No-Action Alternative***

The risks of wildfire would continue to increase over time. With continued accumulations of large and fine fuels, snags, ladder fuels, and deadwood components, the risk of a stand-replacement fire would increase.

- ***Action Alternative***

The proposed salvage would remove a considerable portion of the dead and dying large woody fuel material. These treated areas would see short- and long-term fire hazards reduced. Immediately following the salvage harvesting, the amount of fine, flashy fuels would moderately increase. Scattering slash and cutting limbs and tops to lay low to the ground to hasten decomposition, coupled with yarding trees to landings and piling slash for later burning, would reduce fire hazards. Residual fuel loads after harvesting would be within the range of 15 to 20 tons per acre.

CUMULATIVE EFFECTS

- ***No-Action Alternative***

The risk of stand-replacing wildfires in historically nonlethal regimes would continue to increase as a result of forest fuel accumulation.

- ***Action Alternative***

Fuel loads would be reduced in stands that are treated with salvage harvesting; thus, wildfire risks in these specific areas would be reduced. Similar treatments on other sales would decrease fire hazards as well.

FOREST INSECTS AND DISEASES

EXISTING CONDITIONS

A number of insects, pathogens, and abiotic factors are adversely altering stand productivity, structure, and composition in a large part of the project area. Stands are rapidly declining as the number of healthy trees continues to fall.

DIRECT AND INDIRECT EFFECTS

- ***No-Action Alternative***

Trees would continue to be lost from the project area due to insects and disease attacks. Stand growth and vigor would continue to decline as insect infestations and disease infections spread unchecked. Stand composition would be altered as seral tree species are killed and replaced by shade-tolerant species, primarily grand fir and Engelmann spruce.

- ***Action Alternative***

This salvage harvest would primarily remove Douglas-fir trees that host active bark beetle broods or have been recently killed by insect attacks. Reducing beetle populations would reduce mortality within these stands and, thereby, limit further attacks. Top-killed or obvious blister-rust-infected western white pine would be harvested. Small amounts of lodgepole pine, Engelmann spruce, and grand fir would also be harvested. All of these efforts would reduce the future and immediate threat of insect infestations and disease infections spreading to the remaining healthy trees.

CUMULATIVE EFFECTS

- ***No-Action Alternative***

Dead or dying trees would not be harvested. These stands would continue to decline with loss of growth and volume per acre due to insect and disease mortality. Fuel loading would continue to increase. Current forest conditions would continue throughout Swan River State Forest. Nearby timber sales are harvesting insect-infested and disease-infected trees. In the immediate project area, control of these insect and disease outbreaks would be through natural means only.

- ***Action Alternative***

Harvesting infected trees on this project area, in combination with the harvesting efforts on the Cilly Bug Salvage Timber Sale, would reduce the overall threat of Douglas-fir bark beetle attacks in the area. The risk of further attacks in the project area could be reduced in the short term.

SNAGS

EXISTING CONDITION

The project area currently has a moderate amount of snags in various diameter classes. Snags in the larger diameter classes (21 inches dbh and greater) are common in the proposed project area. The predominant species of large snags is Douglas-fir.

Other species contribute to the snag presence, but in smaller diameter classes; grand fir and lodgepole pine are the predominant species.

DIRECT AND INDIRECT EFFECTS

- ***.NO-ACTION-ALTERNATIVE***

The number of snags in all of the stands would continue to increase. Due to restricted access, firewood losses would be minimal or not occur. Short-term snag recruitment would be accelerated due to the number of trees under attack from insects and diseases.

- ***.ACTION-ALTERNATIVE***

In harvest areas, snags that are 21 inches dbh and greater would be reduced to a minimum of 2 per acre. Some areas within these stands may not be harvested; therefore, the retained snags may give each stand a higher tree-per-acre count. The postharvest snag density on any given acre of land would vary based on the original snag numbers. A large portion of the merchantable snags would be harvested. Residual snags would be well scattered throughout the portion of the stand to be salvaged; some snags may be clumped together in small groups. All snags with cavity openings that could be used for nesting would be reserved from cutting.

CUMULATIVE EFFECTS

- ***.NO-ACTION-ALTERNATIVE***

Snags in the project area would continue to increase, especially in the larger diameter classes of Douglas-fir. Snag recruitment in and around the project area would be accelerated due to the large number of trees under attack from insects and diseases. The total number of snags in all size classes in all stands would increase.

- ***.ACTION-ALTERNATIVE***

The majority of snags within the project area would be harvested; therefore, the snags per acre would decrease. Live trees with active bark beetle attacks or pathogen problems would also be harvested, thereby, reducing the number of snag-recruitment species in these stands. However, the unharvested areas of these and surrounding stands would continue to provide snags in all size classes. The number of retained snags 21 inches dbh and greater in all harvest units would meet the minimum requirements established by the Administrative Rules for Forest Management. Firewood cutting would have a minor effect on the number of snags.

SENSITIVE PLANTS

EXISTING CONDITION AND ANALYSIS METHODOLOGY

Swan River State Forest completed a sensitive plant survey on all State lands within the forest boundaries; fieldwork was finished in the summer of 2003. Plants targeted were species of special concern listed by the Montana Natural Heritage Program (MNHP). Results of this survey were compared to the proposed harvest sites for potential direct and indirect impacts of the proposal. Sensitive plant species were found in the project area. The areas identified as supporting sensitive species populations would be removed from the harvest unit. If sensitive species were discovered during harvesting operations, appropriate mitigation measures would be developed.

DIRECT, INDIRECT, AND CUMULATIVE EFFECTS

No short-term or cumulative impacts on sensitive plants are anticipated from this project.

NOXIOUS WEEDS

EXISTING CONDITIONS

Spotted knapweed (*Centaurea mauclosa*), St. John's-wort (*Hypericum perforatum L.*), ox-eye daisy (*Chrysanthemum leucanthemum L.*), and orange hawkweed (*Hieracium aurantiacum*) have become established along roads within the project area. Swan River State Forest has a program to reduce the spread and occurrence of noxious weeds.

DIRECT AND INDIRECT EFFECTS

- ***No-Action Alternative***

Swan River State Forest has an active noxious weed program that includes roadside and spot spraying under the Forest Improvement (FI) program to reduce noxious weeds along forest roads.

- ***Action Alternative***

Logging disturbance may provide opportunities for noxious weeds to establish; log trucks and equipment may introduce seeds from other sites. Mitigation steps would require machinery to be washed and inspected prior to entering the project area. Grass seeding disturbed roads and landings would reduce or prevent the establishment of new weed populations. Roadside herbicide spraying is not planned as a part of this project. Swan River State Forest has an active noxious weed program that includes roadside and spot spraying under the FI program. Noxious weeds are sprayed annually.

CUMULATIVE EFFECTS

- ***No-Action Alternative***

The No-Action Alternative would have negligible effects on the weeds in the area. If spraying were initiated in the area, weed populations would be reduced.

- ***Action Alternative***

Following the above mitigation measures, this alternative is expected to have negligible effects on the noxious-weed population. If spraying were initiated in the area, weed populations would be reduced.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

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

See APPENDIX A – WILDLIFE ANALYSIS: Bald Eagle, page 4; Pileated Woodpecker, page 8.

See APPENDIX B – WATER QUALITY AND FISHERIES ANALYSIS

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 cumulative effects to these species and their habitat.

See APPENDIX A – WILDLIFE ANALYSIS; Threatened and Endangered Species, page 4.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

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

No known historical or archaeological sites are on the project area.

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 cumulative effects to aesthetics.

EXISTING CONDITIONS

Generally, foreground views are those associated with and connected to open roads. The project area is bordered by open roads, Soup Creek Road on the south and Cilly Creek Road on the east. The project is screened from these roads by dense stands of timber. Soup Creek Campground is within 0.5 miles of the project area. The most prominent viewshed is the foreground view since most views within the project area are from the road that winds through the area. The view contains dense forest stands, sapling-sized stands that have been precommercially thinned, old cutting units and wet meadows. Middleground views usually consist of hillsides or drainages. Several wet meadows are in the project area, one can be seen from Soup Creek Road. The area contains lower elevation rolling ridges with both natural and man made openings dispersed throughout. Due to topography, these types of views are limited within the project area. Background views consist of a collection of drainages and ridges that make up a portion of the central Swan and Mission mountain ranges.

DIRECT AND INDIRECT EFFECTS

• ***NO-ACTION ALTERNATIVE***

Current conditions would not change.

• ***ACTION ALTERNATIVE***

Limited views of the stands in Section 20, 21, 28 or 29, T24N, R17W, would be seen from the Soup and Cilly Creek roads. With the limited amount of trees that are targeted for removal, effects to aesthetics would be minimal. Small openings in the tree canopy may be created, which would be consistent with the surrounding area. The majority of the area proposed for salvage operations would not be visible in the foreground, middleground, or background viewsheds due to topography and the location of the project area.

CUMULATIVE EFFECTS

Natural processes on the landscape, such as wildfires, wind throw, insect infestations, and disease infections, would continue to alter the view over time. Timber salvaging and firewood gathering would alter the foreground view by creating small openings in the canopy. Current and proposed timber sale harvesting projects would alter the aesthetics of all viewsheds.

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 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.

The Cilly Bug Salvage Timber Sale, Goat Squeezer Environmental Impact Statement (EIS), Triple D Salvage, and Rock Squeezer Salvage were considered in the cumulative effects analysis, but are not in the analysis area.

The Three Creeks Timber Sale Project is in the planning process and was not included in the cumulative effects analysis due to its current level of development. This project is adjacent to the analysis area.

In relation to grizzly bears, cumulative effects of timber management and road construction were analyzed in the 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).

<p style="text-align: center;">IV. IMPACTS ON THE HUMAN POPULATION</p>

- | |
|---|
| <ul style="list-style-type: none">• 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 200 mbf of timber would be available to the woods-product industry.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

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

The wood-products industry currently employs people in this area. Due to the relatively small size of this project, the proposed action would result in no substantial changes to local employment, but would provide continued opportunities in the natural-resource industry.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

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

People currently employed in the wood-products industry in this region are paying income and business taxes. 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 cumulative effects of this and other projects on government services

Due to the relatively small size and short operating period of this salvage project, the short-term impacts to traffic, and the low probability of a few people temporarily relocating to the area, the demand for government services would not be cumulatively impacted by this salvage project.

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.

DNRC will manage lands involved in this project in accordance with the Administrative Rules of Forest Management (ARM 36.11.401 through 450) adopted in March of 2003.

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 cumulative effects to recreational and wilderness activities.

EXISTING ENVIRONMENT

The Red Ridge Salvage Permit project area, primarily used for hunting, hiking, snowmobiling, and bicycling, receives light to moderate recreational use throughout the year.

DIRECT AND INDIRECT EFFECTS

- ***No-Action/Alternative***

Recreational uses would not likely change.

- ***Action/Alternative***

All stands within this project area are located behind locked gates on restricted roads. Short delays due to log hauling, road grading, and snowplowing may inconvenience 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 the roads during the period of harvest operations.

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

CUMULATIVE EFFECTS

- ***No-Action/Alternative***

Recreational use is not expected to change.

- ***.ACTION.ALTERNATIVE***

The harvesting and log-hauling activities of this project and the Cilly Bug Salvage Timber Sale would both utilize the same open road (Soup Creek Road) for hauling, which may displace recreational use to adjacent areas. All levels of existing recreational use on Swan River State Forest are expected to continue.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify 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 forest-products industry in the region, no measurable 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 cumulative economic and social effects likely to occur as a result of the proposed action.

DIRECT AND INDIRECT EFFECTS

- ***.NO-ACTION.ALTERNATIVE***

Since no direct economic activity is associated with this alternative, no effect on local employment or wages would be expected.

- ***.ACTION.ALTERNATIVE***

The potential benefit to the trust can be estimated by looking at recently sold timber sales in the area. Recent sales of sawlog material have sold in the range of \$33.75 to \$45.66 per ton. These sales had comparable logging and road costs on a per-ton basis. To estimate this sale, the above values would be averaged. Hence, the average for this sale will be \$39.70 per ton. Multiplying 200 mbf times 5 tons per mbf (conversion factor) equals 1,000 tons; 1,000 tons times \$39.70 per ton equals \$39,700.00. This is the potential return to the trust and is higher than the appraised value would be. This figure assumes a highly competitive market with several interested parties. This calculation is not an actual appraisal of the projected timber sale.

The average employment and wage effects are found in TABLE 24-2 – *AVERAGE EMPLOYMENT IMPACT UNDER THE ACTION ALTERNATIVE*. The project is estimated to create the equivalent of 2 jobs. These would not necessarily be new jobs, but would be employment primarily in the winter months when jobs typically are scarce for loggers.

Table 24-2 - Average Employment Impact – Under The Action Alternative

	Employment	Wages
Average	10.58 jobs/MMBF	\$34,000/job
Estimated effect of sale	2 jobs	\$68,000

CUMULATIVE EFFECTS

• ***No-Action/Action Alternatives***

If the dead and dying trees were not salvage harvested, their commercial value and the benefits described above would be permanently lost to the trust and local and State economies.

EA Checklist Prepared By:	Name:	Date:
	Title:	

V. FINDING

25. ALTERNATIVE SELECTED:

Two alternatives are presented and fully analyzed in the CEA:

- The No-Action Alternative includes existing activities, but does not include a 200 mbf timber sale salvage permit.
- In addition to existing activities, the Action Alternative proposes preparing and selling a timber permit that salvage harvests a total of 200 mbf of timber from approximately 677 acres.

I have decided to select the Action Alternative without additional modifications based on the analysis in the CEA for the Red Ridge Salvage Permit and associated activities. Upon review of the correspondence from the public and information presented in the CEA, I feel the Action Alternative best meets the purpose and need for action based on the following reasons:

- The selected Action Alternative is consistent with the goals and objectives in the CEA given in SECTION I - TYPE AND PURPOSE OF ACTION and in the general forest direction. The proposed activities are located on State-owned 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 has met all requirements of the Administrative Rules for Forest Management (*ARM 36.11.401 through 450*) and all agreements with the SVGBCA, in that the impacts to environmental, biological, cultural resource, aesthetic, and economic considerations are minor in scope and will not be significantly impacted.
- The proposed activities provides an important mechanism to manage intensively for a sustainable, healthy, and biologically diverse forested ecosystem in a way that harvests dead, dying, or damaged timber before a substantial value loss occurs. While limiting environmental impacts, these actions meet forest plan direction

and standards for vegetation and wildlife management, provides for future old growth, and helps achieve desired future species and age class composition.

- As mandated by State statute (77-5-222 MCA), the proposed sale will contribute to DNRC's sustained yield.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Based on the environmental analyses documented in the CEA, I have determined that the scope of effects for the Action Alternative is insignificant and that there are no reasonable foreseeable significant adverse impacts on the human environment for the following reasons:

- The proposed project conforms to the management philosophies of DNRC and does not threaten a violation of Federal, State or local law or requirements imposed for the protection of the environment. Best Management Practices for Forestry will be met through application of the State of Montana Administrative Rules for Forest Management (*ARM 36.11.401 through 450*).
- No historic or cultural resources, parklands, prime agriculture lands, wetlands, wild and scenic rivers, or ecologically critical areas will be adversely impacted. Sensitive areas will be protected by implementing site-specific mitigation and specification measures as identified in *APPENDIX C – STIPULATIONS AND SPECIFICATIONS*.
- The degrees to which this action may adversely affect an endangered or threatened species or its habitat have been considered. No direct, indirect, or cumulative effects are anticipated to any proposed, threatened, endangered, or sensitive species.
- This action does not set a precedent for future activities on State-owned lands with significant effects and does not represent a decision in principle about a future consideration. The physical and biological effects are limited to the area of planned activity in the CEA and will not preclude analysis of future actions on State lands.
- There are no apparent significant adverse cumulative effects between this project and other past, present, and reasonably foreseeable activities on State-owned lands. The proposed actions are similar to past projects on State lands using common practices in the industry.
- Public health and safety are minimally affected by the proposed actions and the effects on the human environment are not highly uncertain and do not involve unique or unknown risks.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

I have determined that the Action Alternative does not present significant adverse resource effects, individually or cumulatively, and will not affect the quality of the human environment. Therefore, a more detailed Environmental Assessment (EA) or an Environmental Impact Statement (EIS) does not need to be prepared. I have considered both extent and content in my determination that is based on the following:

- The activities of the Action Alternative are limited in extent where effects will not go beyond the local project area and both beneficial and adverse impacts have been considered.
- The site-specific environmental analyses documented in the CEA concerning the proposed Red Ridge Salvage Permit and associated activities on Swan River State Forest adequately addressed the issues identified during project development and thoroughly presented the information needed to make decisions.
- The Action Alternative for this proposed Red Ridge Salvage Permit is consistent with the SFLMP because mitigation measures for impacts have been fully applied in the planned actions. This action is feasible and reasonable, and will result in applying management practices that meet the SFLMP overall direction of protecting the environment while producing revenue for the trust beneficiaries.

- Evaluation of the potential impacts of the proposed Red Ridge Salvage Permit indicates that no foreseeable significant irreversible or irretrievable impacts would occur.
- A letter announcing that the DNRC was conducting a site-specific area analysis of the project area was mailed to individuals, groups, and organizations on July 29, 2005. The letter requested input on opportunities, issues, and concerns for the proposed project area and provided adequate opportunities for public review and comment. Concerns expressed by interested publics over environmental effects have been mitigated through application of site-specific mitigation requirements and were incorporated into the analysis of impacts as displayed in APPENDIX D – SCOPING DOCUMENTATION.

EIS

More Detailed EA

No Further Analysis

EA Checklist Approved By:	Name: Jon Harris
	Title: Swan Unit Forest Management Supervisor
Signature:	Date: 3/8/06

APPENDIX A

WILDLIFE ANALYSIS

TERRESTRIAL AND AVIAN WILDLIFE

COARSE FILTER ANALYSIS

The project area contains 4 stands of ponderosa pine and western larch/Douglas-fir types in mature age classes that meet the *Green et al* old-growth definition. Past harvesting has affected the presence and attrition of snags and coarse woody debris. Snags and defective trees may be the most valuable individual component of the Northern Rocky Mountain forests for wildlife species (Heijl and Woods 1991). Currently, the area is experiencing insect infestations, especially by Douglas-fir bark beetles that are creating deadwood resources. The project area includes extensive mature, forested habitats that are well connected, and likely provides habitats for forested-interior and old-stand-associated species. Within the vicinity of the project area, the forests are a mosaic of mature stands, which benefit species relying on mature forests, and regenerating forests, which benefit wildlife species that use early seral stages either exclusively or seasonally.

- ***Direct and Indirect Effects of the No-Action Alternative to Coarse Filter***

Wildlife using the project area would not experience any direct disturbance under this alternative. Losses of individual trees and small pockets of mature trees would not appreciably alter wildlife use of the proposed project area. No substantial changes in age classes, forested cover, connectivity, or cover types would be expected. Under this alternative, no changes in the diversity of wildlife species would be expected; wildlife favoring generally dense stands of shade-tolerant tree species would benefit. No direct changes in the dead wood resources would be expected. Snags would continue to provide wildlife habitats, and a pulse of new snags created by insect and disease attacks would be available on the landscape. Coarse woody debris levels would remain high without other disturbance influencing distribution and quality. Wildlife species relying on these deadwood resources would benefit in the near-term due to the increase in availability of these resources; however, benefits would likely decrease in the long run as stands continue moving toward shade-tolerant species. No changes to habitat for forested-interior species and old-stand-associated species, such as the American marten, northern goshawk, and pileated woodpecker, would be expected with this alternative.

- ***Direct and Indirect Effects of the Action Alternative to Coarse Filter***

Harvesting operations would be expected to affect wildlife species using the area. Should operations be conducted during the grizzly bear denning period (November 16 through March 31) fewer species would be expected to be affected given that, largely, it is not the reproductive season, a host of migrants have left, and several species are inactive at this time of the year. However, if operations occur during the summer period (after June 16), disturbance and displacement of additional wildlife species would be expected though the area affected would be small and adjacent habitat is available for animals that would be displaced.

No substantial changes in age classes, forested cover, connectivity, or cover types would be expected. Changes in canopy cover from salvage operations are expected to have minimal effects on wildlife since losses to canopy closure have already occurred, or are occurring due to the ongoing insect and disease outbreak in these stands; this alternative would accelerate the reduction in canopy closure a few years. The harvesting of infected trees that are not yet

dead would reduce short-term snag recruitment. Under this alternative, densities of large snags would be expected to meet or exceed the requirements under *ARM 36.11.411(a)*. The proposed harvesting of snags would result in decreased foraging, nesting, denning, and roosting sites for wildlife species that rely on this component of old stands, including several old-stand-associated species. However, the proposed salvage would be expected to maintain a diversity of existing snags to provide habitat, albeit in reduced amounts, for snag-dependent species.

- ***Cumulative Effects of the No-Action Alternative to Coarse Filter***

No substantial changes in age classes, forested cover, connectivity, or cover types would be expected. Under this alternative, no changes in the diversity of wildlife species would be expected. No additional disturbance to snags and coarse woody debris would occur. The reductions in snags, coarse woody debris, and forested cover associated with the Cilly Bug Salvage Timber Sale and the proposed Three Creeks Timber Sale Project would alter the overall availability of these habitats. The host of insects and diseases affecting the project area would continue to cause mortality in and around the project area. The increased tree mortality in the project area would provide additional snags and coarse woody debris for wildlife species that forage, den, roost, and nest in these resources. However, continued higher levels of mortality would reduce future densities of snags and coarse woody debris as suitable large trees are converted to snags more quickly than would be expected in the absence of the insect and disease outbreaks. No appreciable changes to habitats for forest-interior and old-stand-associated species would be anticipated.

- ***Cumulative Effects of the Action Alternative to Coarse Filter***

No substantial changes in age classes, forested cover, connectivity, or cover types would be expected. The loss of snags and coarse-woody-debris resources associated with this alternative would be additive to past reductions, primarily salvage harvests in the analysis area. Ongoing harvesting with the Cilly Bug Salvage Timber Sale project is reducing snags and coarse woody debris. The proposed Three Creeks Timber Sale Project could also reduce snags, coarse woody debris, forested cover, and landscape connectivity depending on which alternative is selected. Reductions in snags and coarse woody debris across all active and proposed projects would alter habitat components used by some of the old-stand-associated species; however, continued use of the analysis area and Swan River State Forest by these species would be anticipated, but likely at a reduced level.

Big Game

Winter Range

Winter ranges enable big game survival by minimizing the effects of severe winter weather conditions that can be limiting for populations. Winter ranges tend to be relatively small areas that support large numbers of big game that are widely distributed during the remainder of the year. Winter ranges suitable for buffering the effects of severe winter conditions have adequate midstory and overstory to reduce wind velocity and intercept snow, while moderating ambient temperatures. Besides providing a moderated climate, the snow-intercept capacity effectively lowers snow depths, which enables big game movement and access to forage. No big game winter range exists in the project area.

Big Game Security

Timber harvesting can increase elk vulnerability by changing the size, structure, juxtaposition, and accessibility of areas that provide security during hunting season (*Hillis et al. 1991*). Dense forest patches (250 acres or greater) at least 0.5 mile from an open road that would provide elk

(and, subsequently, deer) security (Hillis *et al* 1991) during the general rifle season are limited in the project area. Much of the project area is not distant enough from open roads to provide security habitat; however, a portion of the project area includes enough area and is far enough from the open roads to meet this definition. When elk security is substantially compromised, effects to deer can also be expected (albeit to a lesser degree than for elk). White-tailed deer, mule deer, elk, and moose use the area in the non-winter period. The vicinity receives moderate recreational hunting pressure. Existing road networks provide considerable access to the area.

Cumulative effects were analyzed on the South Fork Lost Soup Subunit using a combination of field evaluations and aerial photograph interpretation. (FIGURE W-1 – LAND-OWNERSHIP PATTERN WITHIN THE SOUTH FORK LOST SOUP GRIZZLY BEAR SUBUNIT USED FOR THE CUMULATIVE EFFECTS ANALYSIS FOR SEVERAL WILDLIFE SPECIES). Currently, security habitat exists on approximately 6,040 acres (27.5 percent) of the subunit, which is below the recommended threshold of 30 percent (Hillis *et al* 1991). Additionally, the analysis area includes the Three Creeks Timber Sale Project area, which, depending upon the alternative selected, could alter elk security habitat, winter range, and big game habitat effectiveness.

- ***Direct and Indirect Effects of the No-Action Alternative to Big Game***

No additional direct effects are expected. This alternative is expected to cause an increase in deadwood loading over time, which could alter forage access. Security and hiding cover would not be affected with this alternative. No changes in human access or big game vulnerability would be expected.

- ***Direct and Indirect Effects of the Action Alternative to Big Game***

In the short-term, harvesting operations could increase forage availability for the winter season when the project is active. Losses of canopy cover are already occurring and activities proposed under this alternative might accelerate the loss a year or two. Proposed harvesting would reduce the risk of deadwood build-up that could hinder big game movements and access to forage resources. No appreciable changes in human access or elk security habitat would be expected.

- ***Cumulative Effects of the No-Action Alternative to Big Game***

No appreciable changes to big game habitats would be anticipated. Security habitat, big game habitat effectiveness, and thermal cover could all be reduced with the proposed Three Creeks Timber Sale Project should an action alternative be selected. No additional reductions in these habitats would be expected as a result of this alternative.

- ***Cumulative Effects of the Action Alternative to Big Game***

Since no appreciable changes to elk security habitat, habitat effectiveness, or thermal cover would be anticipated with this alternative, risk of cumulative effects would also be low. Security habitat, big game habitat effectiveness, and thermal cover could all be reduced with the proposed Three Creeks Timber Sale Project, should an action alternative be selected. Cumulatively, no further reductions in long-term elk security cover or hunter accessibility are expected with this alternative.

REFERENCES

Heijl, S. J. and R. E. Woods. 1991. Bird assemblages in old-growth and rotation-aged Douglas-fir/ponderosa pine stands in the Northern Rocky Mountains: a preliminary assessment. Pages 93-100 in D. M. Baumgartner and J. E. Lotan, eds. Proc. Symposium: Interior Douglas-fir: the species and its management. Washington State University, Pullman, WA. 306pp.

Hillis, J.M., and M.J. Thompson, J.E. Canfield, L.J. Lyon, C.L. Marcum, P.M. Dolan, and D.W. McCleerey. 1991. Defining elk security: the Hillis paradigm. Pages 38-43 in A.G. Christensen, L.J. Lyon, and T.N. Lonner, comps., Proc. Elk Vulnerability Symp., Mont. State Univ., Bozeman, Montana. 330pp.

THREATENED AND ENDANGERED WILDLIFE SPECIES

➤ *Bald eagle (Haliaeetus leucocephalus)*

The project area is not within any known nesting territory and is approximately 7 miles from the nearest nesting territory. Potential nesting habitat exists along the portion of Swan River that runs through Swan River State Forest, and as eagle populations expand, this area may become populated. Generally, due to the habitats present, the proximity to Highway 83, and the distance to active nests, extensive use is not expected. Therefore, direct, indirect, and cumulative effects to bald eagles would be minimal as a result of the proposed action; therefore, this species will not be discussed further. If a bald eagle nest were discovered within 1 mile of the project area before or during harvesting operations, DNRC would apply the stipulations outlined in *ARM 36.11.429*.

➤ *Grizzly bear (Ursus arctos)*

This project is proposed in grizzly bear habitat in the North Continental Divide Ecosystem (NCDE) Recovery Area (*USFWS 1993*). The NCDE is divided into subunits that approximate the size of a home range for a female bear and is delineated using landscape features that could separate home ranges. This project is proposed in the South Fork Lost Soup Subunit. DNRC, USFS, PCTC, and the U. S. Fish and Wildlife Service (USFWS) collaborated to cooperatively manage grizzly bear habitat and disturbance in Swan Valley under the SVGBCA and; DNRC is committed to managing within the guidelines in the SVGBCA (*ARM 36.11.431[1][a]*).

Under the SVGBCA, a rotation of active and inactive subunits was devised. The rotation schedule allows for active subunits, where harvesting activities might displace grizzly bears, and adjacent quiet subunits, where commercial activities are prohibited to provide undisturbed habitat. The South Fork Lost Soup Subunit will be active in the years 2006 through 2009, with salvage logging being permitted during the denning period (November 16 through March 31). The project area is located in a linkage zone identified in the SVGBCA, which prohibits harvesting during the spring period (April 1- June 15). The project is proposed in stands at lower elevations and includes meadows and cutting units that provide vegetative food sources.

Hiding cover is defined as vegetation needed to conceal 90 percent of a grizzly bear at 200 feet. Based on modeling conducted by DNRC, 82 percent of DNRC lands in the project area provide hiding cover at the present time (*SVGBCA Monitoring Report 2004, Unpub. Report to USFWS*), which exceeds the required threshold of 40 percent.

Cumulative effects were analyzed on the South Fork Lost Soup Subunit (*FIGURE W-1 – LAND-OWNERSHIP PATTERN WITHIN THE SOUTH FORK LOST SOUP GRIZZLY BEAR SUBUNIT USED FOR THE CUMULATIVE EFFECTS ANALYSIS FOR SEVERAL WILDLIFE SPECIES*), which is primarily managed by DNRC and USFS, with minor private components. The Three Creek Timber Sale Proposal, which is under concurrent consideration, is also in the South Fork Lost Soup Subunit. Should the action alternative be chosen, stipulations set forth in the SVGBCA would be followed.

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

No direct or indirect effects would occur under this alternative. No alterations to hiding cover, visual screening, or forage resources would be expected.

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

Should activities associated with this alternative be conducted during the denning period (November 16 through March 31), no direct effects would be expected; however, activities could continue into the summer period (after June 16) if weather prohibits completion during the winter period; should this occur, some displacement of grizzly bears could occur. In the proposed harvest units, the trampling of vegetation and construction of skid trails could slightly alter small pockets or strips of hiding cover, visual screening, and/or forage resources. Substantially, since alterations of habitat attributes are not expected; no change in bear use of the area would be expected. Stipulations in the SVGBCA would be adhered to, which would be expected to reduce the risk to grizzly bears; therefore, direct and indirect effects are expected to be negligible.

- ***Cumulative Effects of the No-Action Alternative to Grizzly Bears***

Since no direct or indirect effects are anticipated with this alternative, no additional cumulative effects would be anticipated. No additional changes in hiding cover and disturbance would be anticipated. Ongoing salvage with the Cilly Bug Salvage Timber Sale and Triple D Salvage project in the South Fork Lost Soup Subunit are within the acceptable guidelines of the SVGBCA.

- ***Cumulative Effects of the Action Alternative to Grizzly Bears***

Effects from this alternative would be additive to other activities occurring simultaneously in the vicinity. The reductions in hiding cover would be additive to losses associated with ongoing salvage logging of the Triple D Salvage and Cilly Bug Salvage Timber Sale projects. Additionally, hiding cover could be reduced with the Three Creeks Timber Sale Project, should an action alternative be selected. These other activities are in compliance with the SVGBCA, and should have acceptable levels of risk to grizzly bears. Likewise, habitat alteration and disturbance levels associated with this alternative would be additive to ongoing and proposed activities, but again would be within the acceptable ranges established by the SVGBCA.

- ***Gray Wolf (*Canis lupus*)***

The project area contains habitat for deer and elk, which could provide prey for wolves. Habitats in the project area are suitable for year-round residency and allow transient wolves to move through the area; however, no recent denning or rendezvous sites or recent use has been documented in or near the project area. Since wolves are not using the area, the project is not expected to affect wolves or their habitat. Therefore, direct, indirect, and cumulative effects to gray wolves would not be expected as a result of either alternative; therefore, this species will not be discussed further.

- ***Canada Lynx (*Lynx canadensis*)***

Canada lynx are associated with subalpine fir forests generally between 4,000 and 7,000 feet in elevation in western Montana (Ruediger et al., 2000). The proposed project area ranges from approximately 3,400 to 3,640 feet in elevation and is dominated by western larch, Douglas-fir, western white pine, and mixed conifers. Since the project area is low elevation and comprised of stands not typically used by lynx, lynx are not expected to use the area.

Therefore, direct, indirect, and cumulative effects to Canada lynx would not be expected as a result of either alternative; therefore, this species will not be discussed further.

SENSITIVE WILDLIFE SPECIES

As shown in TABLE W-1 – LISTED SENSITIVE SPECIES FOR THE NWLO SHOWING THE STATUS OF THESE SPECIES IN RELATION TO THIS PROPOSED PROJECT, each sensitive species was either included in the following analysis or dropped from further analysis because suitable habitat does not occur within the project area or proposed activities would not affect their required habitat components. Thus, there would be no potential for direct, indirect, or cumulative effects to that species under either alternative.

TABLE W-1 – LISTED SENSITIVE SPECIES FOR THE NWLO SHOWING THE STATUS OF THESE SPECIES IN RELATION TO THIS PROPOSED PROJECT

SPECIES	DETERMINATION – BASIS
Black-backed woodpecker	No further analysis conducted – No recently (less than 5 years) burned areas are in the project area.
Coeur d'Alene salamander	No further analysis conducted – No moist talus or streamside talus habitat occurs in the project area.
Columbian sharp-tailed grouse	No further analysis conducted – No suitable grassland communities occur in the project area.
Common loon	No further analysis conducted – No suitable lake habitats occur within the project area
Fisher	Included – Potential fisher foraging and travel habitat occurs in the proposed project area.
Flammulated owl	No further analysis conducted – No suitable dry ponderosa pine habitats occur within the project area.
Harlequin duck	No further analysis conducted – No suitable high-gradient stream or river habitats occur in the project area.
Northern bog lemming	No further analysis conducted – No suitable sphagnum bogs or fens occur in the project area.
Peregrine falcon	No further analysis conducted – No suitable cliffs/rock outcrops occur in the project area
Pileated woodpecker	Included – Western larch/Douglas-fir habitats occur in the project area that could provide foraging and nesting habitats.
Townsend's big-eared bat	No further analysis conducted – No suitable caves or mine tunnels occur in the project area.

SENSITIVE SPECIES ASSESSED

➤ *Fisher (Martes pennanti)*

The fisher, a medium-sized mammal belonging to the weasel family, uses mature and late-successional habitats, particularly for resting and natal dens. Fishers are generalist predators that use a variety of habitat types, but are disproportionately found in stands with dense canopies. In the Rocky Mountains, fishers appear to prefer late-successional moist coniferous forests (Jones 1991). Such areas typically contain large live trees, snags, and logs, which are used for resting and denning sites and dense canopy cover, which would be important for snow intercept (Jones 1991). Fishers have also been noted to avoid large openings, non-forested habitats, and shrub-seedling stands. Forest-management considerations for fisher involve providing for resting and denning habitats near riparian areas while maintaining a network of travel corridors.

The proposed project area ranges from 3,400 to 3,640 feet in elevation, with riparian areas associated with Soup Creek and its tributaries. Uplands are largely mature, densely canopied western larch/Douglas-fir, western white pine, and mixed-conifer stands and frequently contain large snags and downed wood resources that are used by fisher. Although these stands are not typically considered high quality fisher denning habitats, they may be used for foraging and travel. DNRC's strategy to conserve fishers in a managed landscape is aimed at protecting valuable resting habitat near riparian areas and maintaining travel corridors.

The portion of the South Fork Lost Soup Grizzly Bear Subunit below 6,000 feet in elevation was used to assess cumulative effects (FIGURE W-1 – *LAND-OWNERSHIP PATTERN WITHIN THE SOUTH FORK LOST SOUP GRIZZLY BEAR SUBUNIT USED FOR THE CUMULATIVE EFFECTS ANALYSIS FOR SEVERAL WILDLIFE SPECIES*). In the cumulative effects analysis area, habitat structure and connectivity to adjacent habitat within the South Fork Lost Soup Grizzly Bear Subunit was considered, especially along riparian corridors. Currently, these areas are highly connected with abundant habitat structure, thereby allowing fishers to use and move relatively unimpeded through the project area and the subunit. Within the subunit, 89.8 percent of the lands within 100 feet of class 1 and 50 feet of class 2 streams in preferred fisher habitats are in moderate or well-stocked sawtimber classes, which exceeds the established threshold (*ARM 36.11.440[1][b][i]*). Portions of the cumulative effects analysis area are included in the project area for the Three Creek Timber Sale Project, which is under concurrent consideration. Should an action alternative be chosen for that project, effects to fisher habitats could be realized on 1,785 to 2,191 acres. Project design for all alternatives includes specifications for maintaining some fisher habitats on the landscape. Additionally, ongoing salvage projects (Triple D Salvage and Cilly Bug Salvage Timber Sale) are also affecting potential fisher habitats in the subunit.

- ***Direct and Indirect Effects of the No-Action Alternative to Fisher***

No additional human disturbance would occur; therefore, no direct effects to fishers would be expected. Under this alternative, fisher habitat quality could increase due to the increases in the deadwood habitats.

- ***Direct and Indirect Effects of the Action Alternative to Fisher***

Some minor displacement of individual fishers could occur. Removal of dead and dying trees would reduce current and future deadwood habitats, thereby reducing habitat quality for fisher and their prey. No harvesting in riparian habitats is proposed, which

would reduce the potential for disturbance to fishers. Given the limited activity anticipated in riparian areas, prescriptions to retain some sizeable snags (ARM 36.11.440[1][b][iii]), and the limited area being salvaged, negligible effects to fishers are expected.

- ***Cumulative Effects of the No-Action Alternative to Fisher***

Additional deadwood material would accumulate in the area. Disturbance levels in the analysis area would not change appreciably. Forested riparian areas in the analysis area appear suitable for fisher use, and deadwood resources accumulating in the project area would be expected to benefit fishers using these areas. The action alternatives for the Three Creeks Timber Sale Project include harvesting between 1,785 and 2,191 acres of fisher habitats. Deadwood habitats are being reduced with other ongoing salvage projects in the vicinity (Triple D Salvage and Cilly Bug Salvage Timber Sale). Negligible additional effects to fisher are expected with this alternative.

- ***Cumulative Effects of the Action Alternative to Fisher***

This project would reduce deadwood structure used by fishers, and habitat quality within the cumulative effects area would be further reduced beyond the no-action alternative. The action alternatives for the Three Creeks Timber Sale Project include harvesting between 1,785 and 2,191 acres of fisher habitats. Additional ongoing salvage projects (Triple D Salvage and Cilly Bug Timber Sale) are also reducing deadwood resources in portions of the analysis area. The reductions associated with this alternative would be additive to these other losses; however, the ongoing insect and disease issues in the area are creating additional deadwood resources that would offset some of the losses, provided all mortality in the subunit is not salvaged, which is unlikely. Given the habitats included in this proposal and on the landscape, the additional effects to fishers from this alternative would be expected to be minor.

➤ ***Pileated Woodpecker (*Dryocopus pileatus*)***

Pileated woodpeckers excavate the largest cavities of any woodpecker. Preferred nest trees are western larch, ponderosa pine, cottonwood, and quaking aspen, usually 20 inches dbh and larger. Pileated woodpeckers primarily eat carpenter ants, which inhabit large downed logs, stumps, and snags. Aney and McClelland (1985) described pileated nesting habitat as “stands of 50 to 100 contiguous acres, generally below 5,000 feet in elevation with basal areas of 100 to 125 square feet per acre and a relatively closed canopy.” The feeding and nesting habitat requirements, including large snags or decayed trees for nesting and downed wood for feeding, closely tie these woodpeckers to mature forests with late-successional characteristics. The density of pileated woodpeckers is positively correlated with the amount of dead and/or dying wood in a stand (McClelland 1979).

Past timber harvesting has reduced existing habitat quality for pileated woodpeckers in portions of the project area. The project area provides potential nesting and foraging habitats for pileated woodpeckers. During field visits, many feeding sites and sizeable snags were observed in the proposed project area.

The cumulative-effects analysis area included the 8 surrounding sections (totaling approximately 5,740 acres) and used field evaluations and aerial photograph interpretation. Factors considered within the analysis area included the degree of harvesting and the amount of continuous forest within the analysis area. Presently a large portion of the analysis area (approximately 72 percent) is forested, with most of this area being in western larch/Douglas-fir types, which are preferred pileated woodpecker habitats. Within the analysis area, approximately 1,456 acres (roughly 25 percent) have been harvested in the

last 20 to 40 years and is largely unsuitable for pileated woodpeckers. However, foraging habitats may be developing in some of the older units, and foraging and nesting habitats may exist in conjunction with snags and large trees retained during those entries. Portions of the cumulative effects analysis area are included in the project area for the Three Creeks Timber Sale project, which is under concurrent consideration. Should an action alternative be chosen for that project, pileated woodpecker habitats could be reduced on 1,408 to 1,701 acres, depending upon alternative selected. All alternatives call for the retention of snags, snag-recruit trees, and coarse woody debris. Additionally, the ongoing Cilly Bug Salvage Timber Sale is also removing deadwood resources that are used by pileated woodpeckers.

- ***Direct and Indirect Effects of the No-Action Alternative to Pileated Woodpeckers***

No direct effects are anticipated. A pulse in snag recruitment is expected to increase the amount of pileated woodpecker feeding habitat in the near term. Thus, habitat sustainability and quality for pileated woodpeckers would gradually increase through time, and then decline.

- ***Direct and Indirect Effects of the Action Alternative to Pileated Woodpeckers***

Should activities be conducted during the winter, no direct effects to pileated woodpeckers would be expected; however, activities could continue into the summer period (after June 16) if weather prohibits completion during the winter period, and some displacement and disturbance of reproducing pairs or their nestlings would be expected. Under this alternative, existing snag numbers and near-term recruits would be reduced, and, since pileated woodpecker density is positively correlated with the amount of dead and/or dying wood in a stand (McClelland 1979), pileated woodpecker densities in the project area would likely be reduced with this alternative. The retention of snags, snag-recruitment trees, and coarse woody debris (ARM 36.11.439[1][b]) would accelerate the potential for use in the future. Therefore, pileated woodpecker foraging and nesting sites are expected to decrease in the short-term, but some structure would be retained. Continued use of the project area would be anticipated, but likely at a reduced level.

- ***Cumulative Effects of the No-Action Alternative to Pileated Woodpeckers***

Continued tree mortality would cause a pulse of snags within the project area, and likely spread to the adjacent areas; continued use by pileated woodpeckers would be expected. Pileated woodpecker nesting and foraging habitats have been reduced with past harvesting and are currently being removed with the ongoing Cilly Bug Salvage Timber Sale project. Further reductions in pileated woodpecker habitats are possible depending on the alternative selected with the Three Creeks Timber Sale Project (the action alternatives could affect 1,408 to 1,701 acres of pileated woodpecker habitats). Cumulatively, minimal additional effects to pileated woodpeckers would be expected with this alternative.

- ***Cumulative Effects of the Action Alternative to Pileated Woodpeckers***

Foraging and, to a lesser extent, nesting structure would be removed with this alternative. This would be additive to the reductions of deadwood from ongoing salvage logging with the Cilly Bug Salvage Timber Sale. Further reductions in pileated woodpecker habitats are possible depending upon the alternative selected with the Three Creeks Timber Sale Project (the action alternatives could affect 1,408 to 1,701 acres of pileated woodpecker habitats). Continued use of the project area would be anticipated, but likely at a reduced level.

REFERENCES

Aney, W. and R. McClelland. 1985. Pileated woodpecker habitat relationships (revised). Pages 10-17 in Warren, N. eds. 1990. Old growth habitats and associated wildlife species in the Northern Rocky Mountains. USFS, Northern Region, Wildlife Habitat Relationships Program R1-90-42. 47pp.

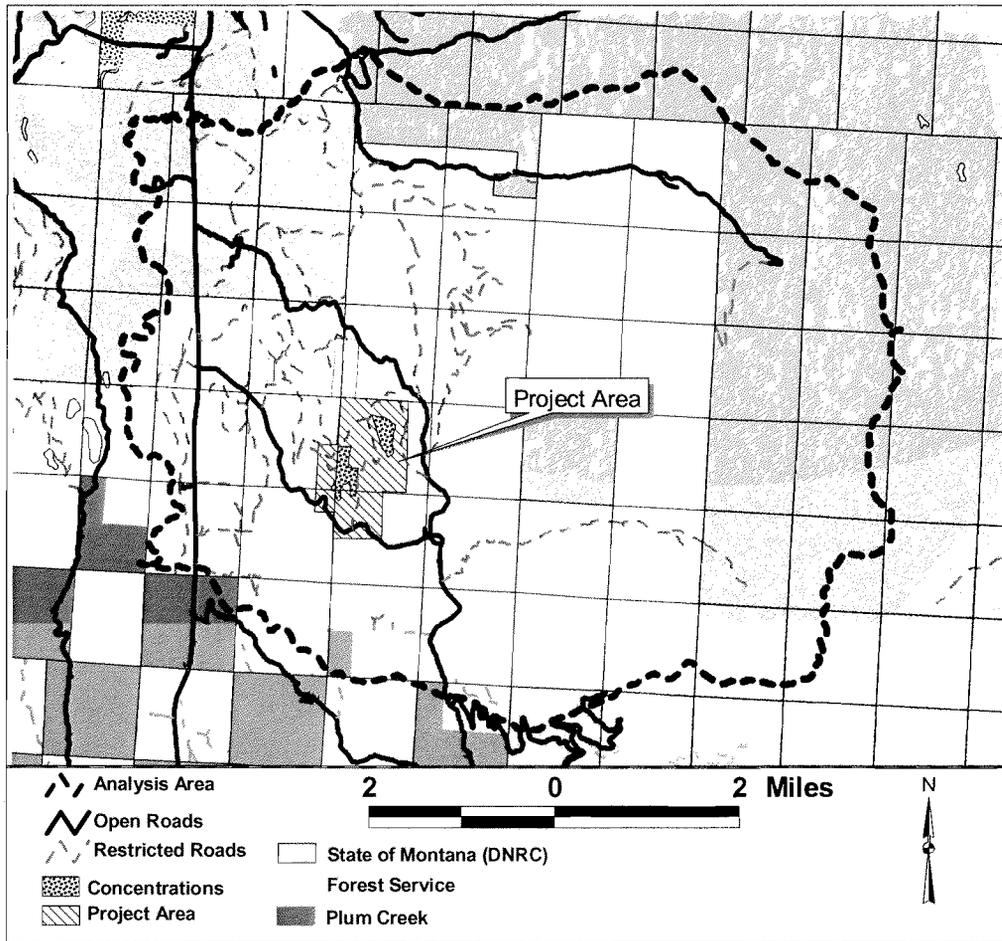
Jones, J.L. 1991. Habitat use of fisher in north-central Idaho. M.S. Thesis, University of Idaho, Moscow, Idaho. 147 pp.

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Ruediger, B., J. Claar, S. Mighton, B. Nanaey, T. Tinaldi, F. Wahl, N. Warren, D. Wenger, A. Williamson, L. Lewis, B. Holt, G. Patton, J. Trick, A. Vandehey, S. Gniadek, 2000. Canada Lynx Conservation Assessment (2nd Edition). USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Missoula, Montana. 122 pp

USFWS. 1993. Grizzly Bear Recovery Plan. Missoula, Montana. 181pp.

FIGURE W-1 - LAND-OWNERSHIP PATTERN WITHIN THE SOUTH FORK LOST SOUP GRIZZLY BEAR SUBUNIT USED FOR THE CUMULATIVE-EFFECTS ANALYSIS FOR SEVERAL WILDLIFE SPECIES



APPENDIX B

WATER QUALITY AND FISHERIES ANALYSIS

INTRODUCTION

This analysis discloses the existing condition of the hydrologic and fisheries resources and displays the anticipated effects that may result from each alternative of this proposal. During the initial scoping, comments regarding water quality and fisheries habitat were submitted initially and by the public. Internal comments expressed the following issue statements were expressed regarding the effects of the proposed timber harvesting:

- Timber harvesting and road construction activities may increase sediment delivery into the stream and affect water quality.
- Timber harvesting and road construction activities may reduce recruitable large woody debris, an important habitat for fisheries.

ANALYSIS METHODS

SEDIMENT DELIVERY

The methods applied to the project area to evaluate potential direct, indirect, and cumulative effects include evaluating the risks of potential sediment sources from haul routes.

RECRUITABLE WOODY DEBRIS

Change in recruitable woody debris is evaluated by comparing the site-potential tree height (*ARM 36.11.425[5]*) with the proposed prescription, especially the harvest prescription near fish-bearing streams. The stream closest to the harvest units is the North Fork of Soup Creek, which is a fish-bearing stream.

Because the prescription would not harvest trees within 100 feet of any fish-bearing stream and the site potential tree height is estimated to be similar to the South Fork of Lost Creek (approximately 95 feet), the potential for reducing recruitable woody debris is very low. Therefore, no further analysis will occur.

ANALYSIS AREA

Under this CEA, the project area is described as 677 acres in Sections 20, 21, 28, and 29, T24N, R17W. The analysis area for sediment delivery is the proposed project area and forest roads anticipated for hauling. Cumulative effects will be discussed on a watershed level.

REGULATORY FRAMEWORK

Water Quality Standards

The Montana Department of Environmental Quality (DEQ) (*ARM 17.30.608*) classifies this portion of the Flathead River drainage, including Swan River and its tributaries above Swan Lake, as B-1. The water-quality standards for protecting beneficial uses in B-1 classified watersheds are located in *ARM 17.30.623*. Water in B-1 classified waterways is suitable for drinking, culinary and food processing purposes after conventional treatment, bathing, swimming, and recreation, growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers, and agricultural and industrial water supply.

State regulations regarding water quality prohibit any increase in sediment above naturally occurring concentrations in water classified B-1. *Naturally occurring* as defined in *ARM 17.30.602 (17)* means "...condition or materials present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil, and water conservation practices have been applied." *Reasonable land, soil and water conservation practices* include "...methods, measures or practices that protect present and reasonably anticipated beneficial uses" (*ARM 17.30.602 (21)*). The State of Montana has adopted BMPs through its nonpoint-source management plan as the principle means of meeting Water Quality Standards.

The Clean Water Act (CWA) and the Environmental Protection Act (EPA) Water Quality Planning Regulations require each state to identify watersheds that contain water quality-limited segments. A Water Quality Limited Segment (WQLS) is a portion or entire lake, stream, or other body of water that is not fully meeting State water-quality standards or has intended beneficial uses that are being threatened. The State of Montana has published a list of WQLS in a document titled the Montana 305(b) Report. Swan Lake is listed as a waterbody in need of a total maximum daily load (TMDL).

STREAMSIDE MANAGEMENT ZONES (SMZ)

All rules and regulations pertaining to the SMZ Law will be followed. An SMZ width of 100 feet is required on Class I and II streams when the slope is greater than 35 percent. An SMZ width of 50 feet is required when the slope is less than 35 percent. No insect infestations have been located within SMZs and, therefore, no SMZs would be delineated.

EXISTING CONDITIONS

This project proposal is located on Swan River State Forest, located approximately 36 air miles southeast of Kalispell, Montana. The DNRC generally manages ownership surrounding the project area, although some lands are managed by the USFS or owned by PCTC or non-industrial private landowners.

The 677-acre project area lies within 2 watersheds: Soup Creek, 9,790-acre, and Cilly Creek, 5,260-acres. Precipitation in the affected watersheds ranges from 20 inches per year in the valley to 70 inches per year in the headwaters. Most of the precipitation is realized in the form of snow; however, spring rain events contribute to the total annual precipitation. The main channels in both watersheds flow in a general east-to-west direction, with tributary streams entering from the north and south. The closest stream channel to the project area is the North Fork of Soup Creek, an intermittent channel with much of the stream dry during base flows. The stream temperature has been measured above 22 degrees Celsius during spring, indicating that the stream is typically very warm and generally not conducive to the support of native salmonids. During surveys taken by the DNRC fisheries biologist in 2005, eastern brook trout was the only species found.

Gates and earth berms restrict the roads accessing the project area, which results in very little traffic. Roads are grassed over and have gentle slopes, reducing the potential for sediment transport. The proposed haul route would cross the North Fork of Soup Creek once on the Soup Creek Road (Site #323) and a second time on the tributary road (Site #324) accessing the units. Quantitative sediment delivery was inventoried on Site #323 as part of the Swan Lake TMDL work. Estimated delivery from this crossing was approximately 5 tons per year, nearly all from the road tread. Since that inventory, surface drainage has been installed, which would substantially reduce the estimated delivery. Site #323 was not inventoried because the site is well vegetated and has a low potential for sediment delivery. Road ditches are in need of filtration prior to this crossing.

Cumulative effects include current and past activities on all ownerships and future planned State actions within the watershed. This includes past/current salvage harvests and the planned Three

Creek Timber Sale Project. The existing annual water-yield increases for Cilly Creek is estimated at 2.3 percent over natural conditions; Soup Creek annual water yield is estimated at 1.0 percent over natural conditions. Considering the action alternatives being analyzed as part of the Three Creek Timber Sale Project Environmental Impact Statement (EIS), the annual water yield for Cilly Creek may increase to an estimated 8.7 to 11.9 percent over natural conditions; the Soup Creek annual water yield may increase to 1.9 to 3.1 percent over natural conditions. At this time, no alternative has been selected for the Three Creeks Timber Sale Project EIS; any alternative may be selected, including the No-Action Alternative, which would have no annual water-yield increase associated with its implementation.

Sediment delivery from road crossings would decrease in the Cilly Creek watershed by up to 34 percent, and the Soup Creek watershed by up to 95 percent depending on the alternative selected from the Three Creeks Timber Sale Project EIS.

DIRECT AND INDIRECT EFFECTS

- ***NO-ACTION ALTERNATIVE***

Dead and dying trees would not be harvested. No roads would be constructed. Road maintenance would occur as funding becomes available. Therefore, no direct or indirect impacts would be expected from this alternative.

- ***ACTION ALTERNATIVE***

No harvesting would occur within 100 feet of any fish-bearing stream, which includes all streams in the project area. Because soil-erosion hazards and sediment-delivery efficiency in the project area are considered to be moderate, standard forestry BMPs would provide a low risk of sediment delivery into streams from harvest units. Minor drainage improvements to stream crossings would reduce the potential for sediment delivery.

Adverse impacts to streams due to sediment delivery would not likely occur; therefore, adverse impacts to fisheries habitat or populations would not likely occur from sediment delivery.

CUMULATIVE EFFECTS

- ***NO-ACTION ALTERNATIVE***

Dead and dying trees in Swan River State Forest would not be harvested and no roads would be constructed. Therefore, no additional cumulative impacts would be expected from this alternative. The potential for a reduction in sediment (depending upon alternative selection) from the Three Creek Timber Sale Project EIS would continue to exist.

- ***ACTION ALTERNATIVE***

Two areas of concentrated beetle-killed trees total approximately 100 acres: 73 in the Cilly watershed, 27 in the Soup watershed. Scattered dead and dying trees that exist throughout the remainder of the project area may be harvested.

REFERENCES

Greenlee, J.T. 1998. Ecologically significant wetlands in the Flathead, Stillwater, and Swan River valleys. Unpublished report to the Montana Department of Environmental Quality. Montana Natural Heritage Program, Helena, MT. 192 pp.

APPENDIX C

STIPULATIONS AND SPECIFICATIONS

SALVAGE CRITERIA

The following salvage criteria identify requirements that must be met before a timber sale can be harvested under this CEA.

TREES TO BE HARVESTED

Trees that meet 1 or more of the following requirements:

- Trees within the designated boundaries that meet the criteria listed below may be harvested. Any trees outside the boundaries must be approved for harvesting and meet these criteria.
- Dead and/or dying timber, including insect-attacked Douglas-fir, lodgepole pine, western white pine, and grand fir. A tree with definite insect attack/damage (frass, pitch streamers, pitch tubes, beetle galleries) and yellowing, fading crowns may be considered a dying tree. Insect attacks may be from Douglas-fir bark beetles, mountain pine beetles, or Scolytus beetles.
- Western white pine infected with white pine blister rust that exhibit a combination of 2 or more of the following characteristics: blister-rust flagging in the lower two-thirds of the crown, dead tops, pitch flows on the main stem, and yellowing/fading crowns. The Forest Officer prior to harvesting must approve all western white pine.
- Blown down timber of any commercial species.
- Any commercial species (Douglas-fir, western larch, western white pine, Englemann spruce, lodgepole pine) with wind damage to 1/3 or more of the bole and/or their root systems pulled out of the ground.
- Commercial species that are infected, dead, or dying from disease; the primary emphasis is on grand fir affected by Indian paint fungus.

SNAGS

Snag retention within the harvest units will meet or exceed the 2 trees per acre requirement stated in the Forest Management Rules. Nonmerchantable snags will not be cut except for safety or operational concerns, as approved by the Forest Officer.

ROADS AND SKID TRAILS

- On ground-skidding units, the logger and sale administrator will agree to a general skidding plan prior to equipment operations. Skid trail planning would identify the main trails to use and the additional trails that are needed. Trails that do not comply with BMP's (i.e. draw bottom trails) would not be used; these trails may be closed with additional drainage installed or grass seeded to stabilize the site and control erosion.
- Existing roads and designated trails must be used to remove harvested material in all harvest areas.

STEEP SLOPES

Tractor skidding should be limited to slopes of less than 40 percent. Based on site review, short steep slopes above incised draws may require a combination of mitigation measures, such as adverse skidding to the ridge or winch line skidding from more moderate slopes less than 40 percent.

SLASH TREATMENT

- All harvest units and locations will be lopped and scattered to a maximum height of 18 inches.
- Concentrations of slash at landings will be machine piled for burning.

DOWN WOODY DEBRIS

Retain 5 to 8 tons of large woody debris per acre. Processing in the woods, return skidding, or lopping tops greater than 3 inches in diameter prior to skidding can accomplish woody debris recommendations for nutrient cycling.

SOILS

- Limit equipment operations to periods when soils are relatively dry (less than 20 percent soil moisture), frozen, or snow covered to maintain drainage features and minimize soil compaction and rutting. Check soil moisture conditions prior to equipment start-up.
- Skidding and yarding activities are restricted to periods when 1 or more of the following conditions exist:
 - The soil moisture content at a 4-inch depth is less than 20 percent of oven-dry weight.
 - The minimum frost depth is 3 inches.
 - The minimum snow depth is 18 inches, loose, or 8 inches packed

WILDLIFE

- Cease all operations if a threatened or endangered species is encountered. Consult a DNRC biologist and develop additional mitigations that are consistent with the administrative rules for managing threatened and endangered species (*ARM 36.11.428 through 36.11.435*).
- Conduct harvesting activities to limit disturbances to grizzly bears as laid out in the SVGBCA (*per ARM 36.11.431[1][a]*).
- Restrict public access on restricted roads using signs when harvesting activities are occurring and placing a barrier across the road when harvesting activities are not occurring (weekends, nights, inactive periods).
- Manage for snags, snag recruits, and coarse woody debris, particularly favoring western larch and ponderosa pine (*ARM 36.11.439[1][b]*).
- Prohibit contractors and purchasers conducting contract operations from carrying firearms while operating on restricted roads (*ARM 36.11.432[1][m]*).

REGULATORY FRAMEWORK

- Harvest-related activities must adhere to BMPs
- Harvest-related activities must follow the SVGBCA

APPENDIX D

SCOPING DOCUMENTATION

INITIAL SCOPING

The following is a list of landowners, Agency representatives, various specialists, and all interested parties that were sent an initial scoping letter on July 29, 2005.

- Jane Adams
- Alliance for the Wild Rockies
- Rod Ash
- Roger Bergmeier, Montana Trust
- Bigfork Eagle,
- Jim Bower, DNRC Fisheries Biologist
- Kathy Bramer, Office of Public Instruction
- Allen Branine, DNRC Fire Supervisor
- Dan Bushnell, DNRC Information Technology Bureau
- Tommy Butler, DNRC Legal Council
- Steve Caldbeck
- Kevin Chappell, DNRC Ag & Mgmt Bureau
- Marcia Cross, Tribal Historic Preservation Office
- Anne Dahl, Swan Ecosystem Center
- Bob Sandman, DNRC Area Manager
- Ecology Center
- Ellen Engstedt, MT Wood Products Association
- Brennan Ferguson, Forest Pathologist
- Steve Fuecht
- Ms. Joey Jayne, State Representative
- Ted Geisey, DNRC Manager Forestry & Lands Programs
- Randy Gordon
- Steve Brady, Swan Lake Ranger District
- Pat Heffernan, Montana Logging Association
- Caesar Hernandez, Montana Wilderness Association
- Tony M. Hulett Logging
- Amy Kearney, DNRC Forest Entomologist
- Fred Lestiko, Soup Creek Ranch
- Tom Litchfield, Dept. Fish Wildlife & Parks, Wildlife Biologist
- Luckow Logging Inc
- Jim Mann, Daily Interlake
- Neil Meyer, Swan Valley AD HOC Committee
- Arlene Montgomery, Friends of the Wild Swan
- Doug Mood, Pyramid Mountain Lumber
- Bill Moore
- Bud Moore
- Montana Environmental Information Center
- Todd O'Hair, Governor's Office, Policy Advisor
- Sarah Pierce, DNRC MEPA Specialist
- Tom and Melanie Parker
- Mark Phares, DNRC Legal Council
- Patrick Rennie, DNRC Archeologist
- Scott Rumsey, Dept. of Fish Wildlife & Parks, Fisheries Biologist
- Gordon Sanders, Pyramid Mountain Lumber
- Garrett Schairer, DNRC Wildlife Biologist
- Tom Schultz, Trust Land Management

- Gayle Shirey, Secretary of State's Office
- Ron Buentemeir, F. H. Stoltze Land & Lumber
- Swan View Coalition
- Pat Tabor
- Steve Thompson, Natural Resource Consultant
- Ed Tinsley, State Auditor's Office
- David Groeschl, Bureau Chief, Forestry Division
- Marc Vessar, DNRC Hydrologist
- Montanans For Multiple Use
- Candace West, Dept. of Justice
- Allen Wolf, DNRC Silviculture Supervisor

RESPONDENTS

The following list contains individuals that responded with comments and concerns about the proposed project.

- Jim Bower, Forestry Division, Fisheries Biologist
- Arlene Montgomery, Friends of the Wild Swan

ISSUES IDENTIFIED DURING SCOPING

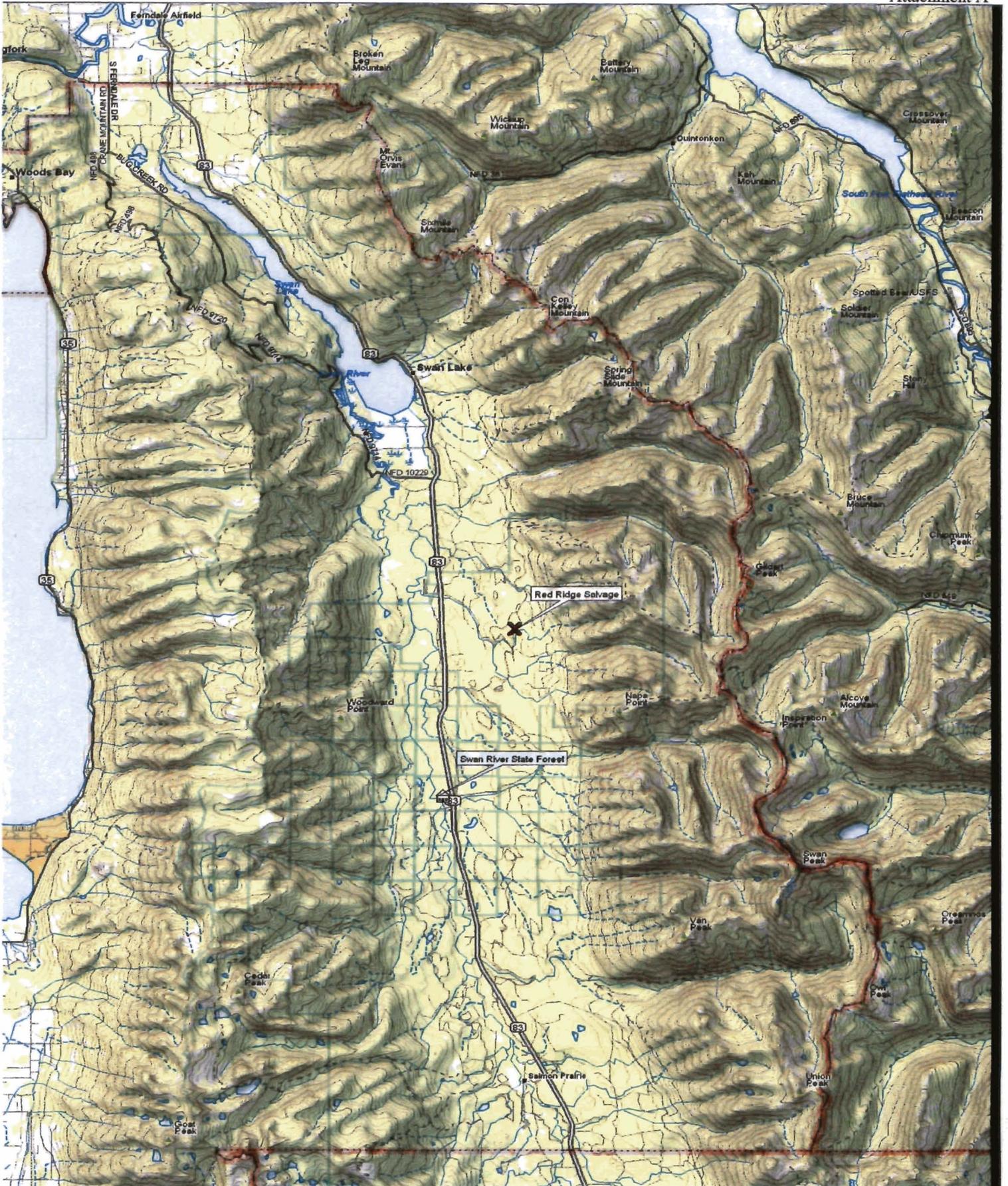
The issues stated here are paraphrased to aid in summarizing alike concerns from several separate letters. The original letters are in the Swan River State Forest Easement Exchange project file.

CONCERNED ENTITY	ISSUE	WHERE ADDRESSED IN THE CEA
Cumulative Effects of Logging		
Friends of the Wild Swan	Analyze the cumulative effects of past, present, and foreseeable future logging plans in this area.	CEA, Item, 7 Vegetation Cover, Quantity and Quality, Old Growth, APPENDIX A – <i>WILDLIFE</i> , and APPENDIX B – <i>WATER QUALITY AND FISHERIES</i> Beyond scope of project
Old-Growth		
Friends of the Wild Swan	Will there be logging in old growth; where are the old-growth habitats located? Are they connected?	CEA, Item, 7 Vegetation Cover, Quantity and Quality, Old Growth

CONCERNED	ISSUE	WHERE ADDRESSED
Big Game		
Friends of the Wild Swan	Core habitat security areas for large mammals and old-growth species. What secure areas are available for wildlife? Are they large enough? Are they connected?	APPENDIX A – <i>WILDLIFE ANALYSIS</i> APPENDIX A – <i>WILDLIFE ANALYSIS</i>
Water Quality		
Jim Bower, Fisheries Program Specialist	Sediment delivered to Unnamed Creek (North Fork of Soup Creek) may adversely affect bull trout in Soup Creek.	APPENDIX B – <i>WATER QUALITY AND FISHERIES ANALYSIS</i>
Economic Analysis		
Friends of the Wild Swan	Biologically or economically unsuitable lands should be removed from the timber base: Logging methods that will be used and rate of regeneration of past units that did or did not use this same method.	Programmatic – beyond the scope of the project. CEA, Item, 7 Vegetation Cover, Quantity and Quality, Old Growth

Red Ridge Salvage

Attachment A



Red Ridge Salvage Units

Attachment A

