

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	2009 Anaconda Salvage
Proposed Implementation Date:	October 2009
Proponent:	Department of Natural Resources and Conservation's Anaconda Unit
Location:	T5N, R14W, Section 16; T5N, R15W, Section 36; T8N, R15W, Section 16
County:	Granite

I. TYPE AND PURPOSE OF ACTION

Pursuant to MCA 77-5-207 and Montana Administrative Rules for Forest Management 36.11.409, the Montana Department of Natural Resources and Conservation's Anaconda Unit is proposing to salvage harvest Lodgepole currently infested or at high risk from Mountain Pine Beetle within 3 State owned Common School Trust sections in Granite County. Approximately 216 acres would be harvested in Upper Willow Creek – T8N, R15W, S16; 91 acres in Little Trout Creek – T5N, R14W, S16; and 18 acres in the East Fork Rock Creek – T5N, R15W, S36.

II. PROJECT DEVELOPMENT

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

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

Scoping notices were sent to adjacent landowners and those on the statewide scoping list. External comments were received by the MT FWP.

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

MT DEQ – Open Burning Regulations.
MT FWP – 124 Permit (Stream Preservation Act)

3. ALTERNATIVES CONSIDERED:

Alternative A – Action Alternative.

This alternative would remove Lodgepole pine currently infested or at high risk from Mountain Pine Beetle from 216 acres in the Upper Willow Creek section; 91 acres within the Little Trout Creek section; and 18 acres within the East Fork Rock Creek section. Approximately .63 miles of new temporary road would be needed on the Upper Willow Creek section and 1000' of temporary road would be needed on the East Fork Rock Creek section. Approximately 900' of temporary road would be needed on the Little Trout Creek section. New roads would be ripped and re-vegetated upon completion. Most of the existing Douglas-fir would be retained throughout the harvest area.

Alternative B – No Action

This alternative would not salvage harvest the dead Lodgepole pine. No roads would be built.

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.

A field reconnaissance was conducted in August 2009 by DNRC Soil Scientist, Jeff Schmalenberg in the Trout Creek and Upper Willow Creek project area for the presence of sensitive, compactable or unstable soils. Information from GIS analysis, coarse filter screening, and previous analysis (DNRC 2004) was employed for the East Fork Rock Creek Project area. Through these methods, sensitive soils prone to compaction were identified and excluded from the area of operations. Within the proposed harvest areas, no unstable or fragile soils were identified. If recommended mitigation measures and applicable BMPs are implemented, detrimental soil disturbance (compaction, displacement and erosion) will be limited to less than 15% of harvest units as recommended by the State Forest Land Management Plan (DNRC 1996). By limiting soil disturbance to 15% or less and retaining adequate levels of coarse and fine woody material (10-15tons/acre) the long-term productivity of the site will be maintained (DNRC 2005) and no long-term environmental effects are expected.

Cumulative effects by definition are the collective impacts on the human environment from the proposed action when considered in conjunction with other past, present and future actions related to the proposed action by location or generic type. For an impact to soil resources to be cumulative, they must overlap a least twice in both time and space. No harvest activities are proposed in previously entered forest stands thus no cumulative impacts will occur.

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.

The proposed salvage harvests are located within the watersheds for Little Trout Creek, East Fork Rock Creek and an unnamed tributary to Upper Willow Creek. All three of these watersheds are located within the Rock Creek drainage. Upper Willow Creek has been identified on the 2008 Montana 303(d) list as only partially supporting aquatic life and cold water fisheries beneficial uses. The East Fork of Rock Creek has been identified on the 2008 303(d) list as not supporting aquatic life and cold water fishery beneficial uses.

A field review of the proposed project area was conducted by DNRC hydrologist, Gary Frank in August of 2009. Existing impacts to water quality that have been identified within the Little Trout Creek and unnamed tributary to Upper Willow Creek project areas are limited to erosion and sediment delivery resulting from the current grazing practices and stream crossing culverts that do not meet BMP's. The proposed actions include the removal and rehabilitation of several problem culvert sites on the unnamed tributary to Little Trout Creek and the unnamed tributary to Upper Willow Creek. Some short-term and low levels of sediment delivery are expected to occur at these sites during and immediately following culvert removal and reclamation of these sites. All applicable BMPs and appropriate erosion control measures will be utilized to minimize the levels of erosion and risk of sediment delivery. These restoration activities are expected to result in reduced long-term risk of erosion and sediment delivery, and improve overall watershed conditions.

The proposed salvage harvests in the East Fork of Rock Creek is limited to a single harvest unit located on a moderate slope that is well buffered from any stream channels or ephemeral drainage features. The only drainage feature in the immediate vicinity of the proposed harvest is an irrigation channel that is located upslope of the harvest area. There is a very low risk of any impacts to water resources or water quality associated with the proposed harvest in this project area.

There is low risk of cumulative impacts to water quality and quantity to result from the proposed salvage timber harvests in any of the affected watersheds. The improvements to the existing road system and culvert removals are expected to reduce long-term risks of sediment delivery. The proposed harvest of trees that are dead, dying or at risk of beetle attack is expected to have the same effects on water yield as the no action alternative.

Please refer to the extended Water Resource Report located in the project file for further information regarding the existing conditions and potential effects related to the proposed actions.

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.

There would be a minor amount of particulate produced as slash accumulations are burned. All burning would be done in accordance with Montana Smoke Management and Airshed requirements.

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.

No rare plants or cover types were identified.

EXISTING CONDITIONS - UPPER WILLOW CREEK

Stand Level Inventory data (SLI) shows 372 acres of forest cover which is predominantly Lodgepole pine. Few Douglas-fir are scattered throughout the overstory. The current age class distribution is: 133 acres in the 000-039 age class; 239 acres in the 040-099 age class. The 133 acres in the 000-039 age class was the result of harvesting in 1985 and has subsequently regenerated extremely well. Approximately 40 acres of the 040-099 age class was commercially thinned in 1987.

Cruise plots installed prior to the culmination of the 2009 MPB flight showed 20% of the stand was infested. A post-flight walk through estimates the infestation to be around 40%. Understory tree vegetation is a mix of Douglas-fir and subalpine fir. Understory shrub/grass vegetation is comprised primarily of pine grass, grouse whortleberry and dwarf huckleberry. No old growth was identified by the Department's Stand Level Inventory (SLI) and due to the current Mountain Pine Beetle infestation, no opportunity exists for recruitment.

EXISTING CONDITIONS - LITTLE TROUT CREEK

SLI inventory shows 460 acres of forested cover which is a mix of Lodgepole pine and Douglas-fir. SLI data shows the current age class distribution for the section is: 000-039 years – 93 acres; 040-099 years – 0 acres; 100-149 years – 12 acres; 150+ years – 252 acres; old growth – 104 acres. 187 acres within the section was previously harvested in 1983/1984 and have regenerated extremely well. 115 acres were selectively harvested in 2004 to address a Douglas-fir beetle infestation. Cruise plots show the infestation to be around 40%. Understory vegetation is comprised of dwarf huckleberry and pine grass. Due to the Mountain Pine Beetle infestation, and subsequent lack of live lodgepole contributing to old growth requirements, these stands would no longer meet the department's old growth requirements.

EXISTING CONDITIONS - EAST FORK ROCK CREEK

SLI data shows 144 acres of forested cover. The current age class distribution is: 0000-039 years – 0 acres; 040-099 years – 0 acres; 100-149 years – 9 acres; 150+ years – 104 acres; Old growth – 31 acres. 83 acres were harvested in 2004 to address a Douglas-fir beetle infestation. Cruise plots show 60% of the Lodgepole pine is infested. Understory vegetation is comprised of dwarf huckleberry and pine grass. Due to the Mountain Pine Beetle infestation, and subsequent lack of live lodgepole contributing to old growth requirements, these stands would no longer meet the department's old growth requirements.

The following table shows the age class distribution of Lodgepole pine on the Anaconda Unit and historical data according to Losensky (1993)

	Non-Stocked	000-39 years	040-099 years	100-149 years	150+ years
Historical %	5.3%	35.5%	40.9%	17.2%	1.1%
Current acres (%) for Anaconda Unit	0 (0%)	2,106 (23.5%)	5,162 (57.5%)	1,297 (14.5%)	400 (4.5%)

Action Alternative

The proposed salvage would only harvest Lodgepole pine within lodgepole pine cover types. The current cover type would not change with stand size and shape remaining the same but densities and age class distribution

would be changed. In the Upper Willow Creek section, 216 acres would be moved from the 040-099 age class to the 000-039 age class. 23 acres would be retained in the 040-099 age class. In the Trout Creek section, 91 acres of old growth would be moved to the 000-039 age class. In the East Fork section, 18 acres of the old growth would be moved to the 000-039 age class.

Based on past harvest within the section, successful natural regeneration is expected.

No Action Alternative

Under the no action alternative, the dead, dying and at risk lodgepole pine would not be salvaged. Continued mortality would be expected until nearly all of the lodgepole pine greater than 7" DBH (which is estimated to be 80% of the trees) have been killed by pine beetles. Over time, these trees would be expected to fall over and create a high fuel loading that could contribute to a higher intensity fire.

Within the Upper Willow Creek section, age class distribution would not change. Within the Trout Creek and East Fork sections, enough trees < 7" DBH would survive and move all of the old growth to the 100-149 year age class. The stand would no longer qualify as old growth due to the lack of live, large trees contributing to the department's old growth requirements. Negative impacts to overall stand health would be anticipated as the trees less than 7" would not increase in size or vigor and would remain stagnant until the next fire comes through and re-initiates the stand.

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.

FISHERIES

A field review of the project area (T8N R15W Section 16) and associated stream reaches of an unnamed tributary to Upper Willow Creek was conducted by DNRC Fisheries Biologist, Jim Bower on 8/20/09. The analysis area for the assessment of fisheries resources includes the entire watershed of the unnamed tributary. All perennial streams in the project area support native westslope cutthroat trout and nonnative eastern brook trout. Fisheries resource issues include: the proposed forest management actions may have effects to fisheries and fish habitats, including sedimentation, woody debris recruitment, increased stream temperatures due to reduced canopy density (shading), and connectivity.

Existing major impacts to fish populations occur to westslope cutthroat trout due to the historic introduction of eastern brook trout. Eastern brook trout adversely impact westslope cutthroat primarily through competitive displacement and to a lesser degree predation and disease. Existing sedimentation rates to all fish-bearing stream reaches are above normal, which is primarily due to grazing impacts. Impacts from grazing are minor throughout the project area but are especially concentrated and severe on adjacent, downstream private lands. Major existing impacts to woody debris recruitment and stream temperatures also occur on adjacent, downstream private lands where the riparian area has been severely altered; impacts to these habitat resources are very minor throughout the project area. Habitat connectivity throughout the watershed is also moderately impacted by 6 different road-stream crossing structures (CMPs); 1 on the county road downstream of the project area, 1 on private lands downstream of the project area, and 4 within the project area. All 6 CMPs limit fish passage either partially or completely. Moderate existing collective effects to fisheries resources in the analysis occur and are primarily due to the combined effects from (1) introduced eastern brook trout and (2) downstream grazing and habitat alteration on private lands.

If the No-Action Alternative is selected, no direct, indirect, or cumulative impacts to fisheries resources would occur beyond those described above as existing conditions.

If the Action Alternative is selected, no measurable or detectable sedimentation to fish-bearing streams from upland equipment operations is expected to occur, however, short-term sedimentation to fish-bearing streams will occur during the removal of the 3 existing CMPs in the project area and associated stream restoration activities (see the 'Hydrology' and 'Soils and Geology' analyses). The removal of 3 existing CMPs is expected to have a long-term positive impact to fisheries resources since the risk of sedimentation at the road-stream crossing sites would be eliminated.

The Riparian Management Zone (RMZ) along fish-bearing reaches in the project area is demarcated at 80 feet on each side of the streams. Two different riparian management prescriptions would be applied adjacent to 3 different fish-bearing streams in the project area:

- The following riparian management prescription would apply to the 2 northern most fish-bearing streams: Approximately 3,600 feet of fish-bearing streams in the project area (~41% of fish-bearing streams in analysis area) are adjacent to proposed harvest units, and a 50-80 foot no-cut timber retention zone would be established along these streams. Since timber harvest would occur in the outer 0-30 feet of the RMZ along these reaches, and RMZ trees have a diminishing effect on recruitment rates and shading the farther located from a stream, a low risk of low impacts to recruitable woody debris and stream temperatures is expected.
- The following riparian management prescription would apply to the southern most fish-bearing stream: The SMZ Law and Rules would be implemented along approximately 1,200 feet of fish-bearing streams in the project area (~14% of fish-bearing streams in analysis area). Implementing the SMZ Law and Rules would harvest a small proportion of trees within 10 to 50 feet of the stream and all trees in the outer 30 feet of the RMZ. Levels of recruitable debris and canopy density would be reduced. Stream temperatures may increase as a result of the proposed actions; however peak seasonal temperatures are not expected to increase more than 1 degree Celsius. Along these stream reaches a high risk of low impacts to recruitable woody debris and stream temperatures is expected. (A high risk of low impacts implies that the foreseeable impacts are expected to be detectable or measurable, but the impact is not necessarily detrimental to the resource.) Pre- and post-action monitoring of recruitable woody debris and canopy density and post-action monitoring of stream temperature will occur if the proposed actions are implemented. This type of project-level monitoring would help validate assumptions in this environmental assessment and contribute to adaptive forest management practices potentially affecting fisheries resources.

Removing the 3 CMPs in the project area would improve habitat connectivity to approximately 4,600 feet of fish-bearing streams (~53% of fish-bearing streams in analysis area). This action is expected to have positive impacts on native fisheries and fish habitat connectivity.

Individual impacts considered as part of cumulative effects are: short-term adverse impacts to sedimentation from CMP removals, long-term positive impacts to sedimentation from CMP removals and channel restorations, a high likelihood of low impacts to recruitable woody debris and stream temperature, and positive impacts to native fisheries and fish habitat connectivity. Due to the varying level of foreseeable impacts, the proposed actions are not expected to have either a net negative or net positive cumulative effect to fisheries resources.

TROUT CREEK and EAST FORK sections

Existing fisheries resources are not expected to be affected by the proposed actions since (1) no RMZ harvest would occur, (2) no new road construction or deconstruction immediately adjacent to fisheries resources would occur, and (3) no measurable or detectable sedimentation to fish-bearing streams from upland equipment operations is expected to occur (see the 'Hydrology' and 'Soils and Geology' analyses).

BIG GAME WINTER RANGE

A field review and analysis was completed by DNRC Wildlife Biologist, Mike McGrath. The following is a summary of effects. For detailed information, a copy of the detailed analysis can be found in the project file.

No Action Alternative

Direct and Indirect Effects

Within the project area (East Fork Rock Creek and Little Trout Creek), lodgepole is a component (10 – 100% by stand composition) of approximately 423 forested acres; subsequently, these same acres are susceptible to infestation by mountain pine beetles. Through the summer of 2009, all of the approximately 572 acres of winter range habitat within the project area had been affected by mountain pine beetle infestation and Douglas-fir beetles in 2004. Thus, snow intercept cover on the majority of winter range within the affected parcels could be greatly reduced (reductions of 10 – 100%, by stand composition; Stand Level Inventory data) by beetle-induced tree mortality, causing commensurate reductions in elk winter range habitat suitability. As a result of the past and ongoing infestation, as well as the fragmented nature of the project area (i.e., forested stringers in a

grassland matrix), the no action alternative would likely have moderate risk of direct and indirect reductions in elk winter range within the project area.

Cumulative Effects

Through the no action alternative, the beetle infestation would continue to grow and further affect forested stands on USFS land within the analysis area. Similar to the discussion under Direct and Indirect effects, there would be increases in snags and corresponding decreases in snow-intercept cover as a result of reduced canopy closure. With continued spread of the beetle infestation on adjoining forestland, which is generally in larger, contiguous blocks, there would likely be moderate risk of cumulative effects to wintering elk as a result of the no action alternative.

Action Alternative

Direct and Indirect Effects

The proposed action would primarily harvest affected lodgepole pine within elk and mule deer winter range. As such, the proposed harvest would directly affect more than 109 acres of winter range habitat, which is less than the approximately 423 acres of lodgepole pine within the project area (East Fork Rock Creek and Little Trout Creek) that would be susceptible to the mountain pine beetle infestation under the no action alternative. On the winter range acreage that is proposed for treatment, due to stand composition, there would be a 10 to 100% reduction (between stand variation) in snow intercept cover within the treated stands. Thus, under the proposed action, there would be reductions in elk winter range habitat suitability within the project area, but the effects would likely be similar to those expected under the no action alternative when the dead lodgepole would fall to the ground.

Cumulative Effects

Within the analysis area, habitat has been compromised due to past harvest on along the west facing slopes of the Middle Fork of Rock Creek due to past harvests on federal lands, within the project area due to recent harvest in 2004, and mountain pine beetle and Douglas-fir beetle infestations since 2003. The proposed action would treat more than 109 acres of winter range habitat that has already been affected by the mountain pine beetle infestation. Thus, the proposed action would likely have minimal increases in cumulative effects to elk winter range over the no action alternative, although the changes would occur earlier under the proposed action than the under the no action alternative.

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.

A field review and analysis was completed by DNRC Wildlife Biologist, Mike McGrath. The following is a summary of effects. For detailed information, a copy of the detailed analysis can be found in the project file.

The following species were discussed in detail:

Grizzly Bear

No Action Alternative

Direct and Indirect Effects

Through the 2008 flight of pine beetles approximately 11 acres of the Upper Willow Creek parcel had been affected. A review of the stand level inventory database for the parcel indicates that there are approximately 380 acres susceptible to infestation due to the presence of mature lodgepole. Lodgepole pine snags are likely to fall within 10 years of dying, but would continue to provide some screening cover until the snags fall. Additionally, while the approximately 380 acres are susceptible to insect infestation, Douglas-fir is generally < 20% of the standing volume in these stands. As a result, while there would be a loss of cover in these stands, Douglas-fir would continue to provide some screening cover. Habitat loss would likely be temporary (15 to 25 years), until the forest has regenerated and replaced screening cover that would otherwise be provided by lodgepole pine poles and sawlogs. Under this alternative, security cover would not change, but there would likely be temporary reductions in hiding cover due to affected lodgepole pine. Additionally, there would not be

increases in open or total road densities. However, seasonal habitats for grizzly bears may temporarily be increased through resultant open forests which would likely provide food sources in autumn (McLellan et al. 2001). As a result, there would likely be low to moderate risk of direct and indirect effects to grizzly bear habitat within the project area from the no action alternative.

Cumulative Effects

Approximately 6.5% of the analysis area has been affected by the mountain pine beetle since 2005. Examination of the aerial detection surveys indicates that the infestation has been working its way west over the past several years. This level of infestation is relatively low in the analysis area, with the heaviest concentration occurring between the towns of Maxville and Quigley. As the infestation grows, it would likely occupy a larger portion of the analysis area, and would likely temporarily reduce hiding cover while increasing seasonal foods for grizzly bears. With the exception of reductions in visual screening cover surrounding riparian areas and wetlands within the analysis area, these seasonal habitats would likely experience little impact from the no action alternative. However, due to the level of infestation, and the likelihood that the infestation would continue to increase, with likely subsequent temporary reductions in hiding cover when the affected lodgepole pine fall to the ground, there would likely be low to moderate risk of cumulative effects to grizzly bear habitat under the no action alternative.

Action Alternative

Direct and Indirect Effects

The proposed action would harvest approximately 1.9 MMBF of affected lodgepole pine within the Upper Willow Creek parcel, while continuing to maintain cover within 50 feet of class 2 streams and 100 feet on streams with an adjacent slope > 35%, as per the SMZ law. Similar to the no action activity, there would be a temporary loss of vegetative screening cover until the forest has regenerated. However, associated with the proposed harvest, timber-felling machinery would provide soil scarification, thus establishing good growing sites for future trees. As such, forest regeneration may be established sooner than under the no action alternative. During this time, the insect infestation is likely to continue to run its course. The proposed action would not stop mountain pine beetle activity.

Under this alternative, the following measures would be implemented for grizzly bear mitigations:

1. Visual screening cover adjacent to open roads would be retained to the extent practicable;
2. New roads constructed off of existing open roads on the Upper Willow Creek parcel would be effectively closed by a road closure device or be obliterated post-harvest;
3. If the contractor chooses to camp on the sale area, they would be required to keep a clean camp. Food should be stored by hanging, or placement in bear resistant containers. Cleaning of the campsite and landings should be done every day.
4. If the Purchaser / contractor does not choose to camp onsite, lunches and other food would be stored within vehicle or equipment cabs.
5. Contractors and purchasers conducting contract operations would be prohibited from carrying firearms while operating (ARM 36.11.433 (1)(d)) and bear spray would be recommended for protection of personnel.

Given that approximately 11 acres between 2005 and 2008 were affected by mountain pine beetles within the project area, and approximately 380 acres susceptible to infestation due to the presence of mature lodgepole pine, the proposed action's planned removal of lodgepole pine would likely not be additive to baseline conditions. Implementation of the proposed grizzly bear mitigations would promote quicker recovery of visual screening cover, reduce the potential for human-bear conflicts during the proposed operation, and ensure no net increase in open road densities. Thus, there would likely be low risk of the proposed action increasing the direct and indirect effects above baseline conditions.

Cumulative Effects

Given the relatively low level of mountain pine beetle infestation in the analysis area, and the expected subsequent increase in the infestation, a level of hiding cover loss due to affected lodgepole pine falling to the ground within 15 years of death, would be expected for grizzly bear habitat within the analysis area under baseline conditions. The proposed action would harvest affected lodgepole pine on approximately 216 acres within the Upper Willow Creek parcel, and effectively close or obliterate new roads constructed off of existing open roads within the aforementioned parcel. As such, the proposed action would likely reduce the time visual screening cover is reduced, while providing for no net increase in open road density. Therefore, there would be

a low likelihood the proposed action would increase the cumulative effects to grizzly bear habitat beyond baseline conditions.

Canada Lynx

No Action Alternative

Direct and Indirect Effects

Under this alternative, no new road would be constructed or timber harvested by the DNRC on School Trust land. The mountain pine beetle infestation would likely continue to grow, infest, and likely, eventually kill additional lodgepole pine stands. Where advanced regeneration is present, current mature foraging habitat would likely be converted to young foraging habitat due to mountain pine beetle-induced tree deaths, and “other” lynx habitat would likely be converted to temporary non-foraging habitat due to lodgepole pine comprising >80% of the mature timber. As a result, there would likely be a conversion of approximately all 25 acres of mature foraging habitat to young foraging habitat within the project area, and the 196 acres of “other” lynx habitat would likely become temporary non-lynx habitat until the time that the forest has regenerated sufficiently to provide either young foraging habitat or returned to “other” status. Thus, there would likely be direct and indirect reductions in the quantity of suitable Canada lynx habitat within the project area under the no action alternative.

Cumulative Effects

Through 2008, approximately 17,268 acres in both analysis areas had been affected by mountain pine beetles. Approximately 12,424 of those acres occur in the analysis area surrounding the Upper Willow Creek parcel; and the remaining 4,844 acres are within the analysis area surrounding the East Fork Rock Creek and Little Trout Creek parcels.

Within the Upper Willow Creek analysis area, lynx habitat is largely intact, but has been compromised along the east facing slopes of Upper Willow Creek due to past harvests on federal and school trust lands. Lodgepole pine comprises a significant proportion of the tree species within the analysis area. As such, the mountain pine beetle infestation may spread throughout the analysis area. However, under current conditions, lynx habitat is largely intact. Thus, there would likely be low risk of cumulative effects to Canada lynx habitat in the Upper Willow Creek analysis area with the no action alternative, providing the mountain pine beetle infestation remains stable. Should the infestation continue to grow, there could be moderate risk of cumulative effects to lynx habitat under the no action alternative, particularly if advanced regeneration is lacking to provide for young foraging habitat post-infestation.

Within the East Fork Rock Creek/Little Trout Creek analysis area, lynx habitat is largely intact, but has been compromised along the west facing slopes of the Middle Fork of Rock Creek due to past harvests on federal, and development around Georgetown Lake. Lodgepole pine comprises a significant proportion of the tree species within the analysis area. As such, the mountain pine beetle infestation may spread throughout the analysis area. However, under current conditions, lynx habitat is largely intact, with the infestation centered around Georgetown Lake. Thus, there would likely be low risk of cumulative effects to Canada lynx habitat in the East Fork Rock Creek/Little Trout Creek analysis area with the no action alternative, providing the mountain pine beetle infestation remains stable. Should the infestation continue to grow, there could be moderate risk of cumulative effects to lynx habitat under the no action alternative, particularly if advanced regeneration is lacking to provide for young foraging habitat post-infestation.

Action Alternative

Direct and Indirect Effects

The proposed action would directly affect approximately 174 acres of currently suitable lynx habitat (167 acres of “other”, and 7 acres of mature foraging habitat). Of the affected lynx habitat, the proposed treatment would likely accelerate natural forest regeneration due to ground scarification and increased sunlight, which would promote lodgepole pine regeneration. The site preparation associated with this treatment would likely shorten the time affected habitat would be unsuitable for lynx, in comparison to the no action alternative. Within the affected mature foraging habitat, damage to existing advanced regeneration could be reduced through skid trail planning. As a result, young foraging habitat characteristics could be retained within this patch. Thus, through likely accelerated forest regeneration from site preparation, and conversion of affected mature foraging habitat to young foraging habitat, the proposed action would likely produce shorter duration direct and indirect loss of Canada lynx habitat than the no action alternative. Therefore, there would likely be minimal to low risk of increasing the direct and indirect effects to lynx habitat beyond baseline conditions.

Cumulative Effects

Within the Upper Willow Creek analysis area, lynx habitat is largely intact, but has been compromised along the east facing slopes of Upper Willow Creek due to past harvests on federal and school trust lands. Lodgepole pine comprises a significant proportion of the tree species within the analysis area, and approximately 12,424 acres have been affected by mountain pine beetle from 2005 through 2008. As such, the mountain pine beetle infestation may spread throughout the analysis area. However, under current conditions, lynx habitat is largely intact. With the potential for an increasing level of lynx habitat that could be affected by mountain pine beetles, there could be conversion of currently suitable habitat, which does not contain advanced regeneration, to unsuitable habitat. Where advanced regeneration is present in spruce/subalpine fir habitat types, there would likely be conversion from mature foraging to young foraging habitat, with potential den sites once lodgepole pine fall, and the creation of temporarily unsuitable habitat where advanced regeneration is currently absent. The proposed action would likely accelerate forest regeneration from site preparation and convert the affected 99 acres of "other" habitat to young foraging habitat. Thus, the proposed action would not likely reduce suitable Canada lynx habitat within the Upper Willow Creek analysis area beyond what is expected under the no action alternative.

Within the East Fork Rock Creek/Little Trout Creek analysis area, lynx habitat is largely intact, but has been compromised along the west facing slopes of the Middle Fork of Rock Creek due to past harvests on federal, and development around Georgetown Lake. Lodgepole pine comprises a significant proportion of the tree species within the analysis area, and approximately 4,844 acres have been affected by mountain pine beetle from 2005 through 2008. As such, the mountain pine beetle infestation may spread throughout the analysis area. However, under current conditions, lynx habitat is largely intact. With the potential for an increasing level of lynx habitat that could be affected by mountain pine beetles, there could be conversion of currently suitable habitat, which does not contain advanced regeneration, to unsuitable habitat. Where advanced regeneration is present in spruce/subalpine fir habitat types, there would likely be conversion from mature foraging to young foraging habitat, with potential den sites once lodgepole pine fall, and the creation of temporarily unsuitable habitat where advanced regeneration is currently absent. The proposed action would likely accelerate forest regeneration from site preparation and convert the affected 68 acres of "other" habitat and 7 acres of mature foraging habitat to young foraging habitat. Thus, the proposed action would not likely reduce suitable Canada lynx habitat within the East Fork Rock Creek/Little Trout Creek analysis area beyond what is expected under the no action alternative.

Gray Wolf

No Action Alternative

Direct and Indirect Effects

Douglas-fir is generally < 20% of the standing volume in the stands affected by the mountain pine beetle infestation. As a result, while there would be a loss of cover in these stands, Douglas-fir would continue to provide some screening cover. Habitat loss would likely be temporary (15 to 25 years), until the forest has regenerated and replaced screening cover that would otherwise be provided by lodgepole pine poles and sawlogs. Additionally, there would not be increases in open road densities. As a result, there would likely be low risk of direct and indirect effects to wolf habitat within the project area from the no action alternative.

Cumulative Effects

Examination of the aerial detection surveys indicates that the infestation has been working its way west over the past several years. The level of infestation is currently relatively low in the analysis area, with the heaviest concentration occurring between the towns of Maxville and the old town site of Quigley, at the confluence of Rock Creek and Brewster Creek. As the infestation grows, it would likely occupy a larger portion of the analysis area, and would likely temporarily reduce screening cover for wolves. However, due to the level of infestation, and the likelihood that the infestation would continue to increase, with likely subsequent temporary reductions in visual screening when the affected lodgepole pine fall to the ground, there would likely be low risk of cumulative effects to wolf habitat under the no action alternative.

Action Alternative

Direct and Indirect Effects

The proposed action would harvest approximately 2.6 MMBF of affected lodgepole pine within the project area, while continuing to maintain cover within 50 feet and 100 feet (where sideslopes are greater than 35%) of class 1 and 2 streams, as per the SMZ law. Similar to the no action activity, there would be a temporary loss of vegetative screening cover until the forest has regenerated. However, associated with the proposed harvest, timber-felling machinery would provide soil scarification, thus establishing good growing sites for future trees. As such, forest regeneration may be established sooner than under the no action alternative. During this time, the insect infestation is likely to continue to run its course. The proposed action would not stop mountain pine beetle activity.

Under this alternative, the following measures would be implemented for wolf mitigations:

1. Visual screening cover adjacent to open roads would be retained to the extent practicable; and
2. New roads constructed off of existing open roads would be effectively closed by a road closure device or be obliterated post-harvest.

Given that approximately 15 acres between 2005 and 2008 were affected by mountain pine beetles within the project area, and approximately 635 acres susceptible to infestation due to the presence of mature lodgepole pine, the proposed action's planned removal of lodgepole pine would likely not be additive to baseline conditions. Implementation of the proposed wolf mitigations would promote quicker recovery of visual screening cover and ensure no net increase in open road densities. Thus, there would likely be low risk of the proposed action increasing the direct and indirect effects above baseline conditions.

Cumulative Effects

Given the relatively low level of mountain pine beetle infestation in the analysis area, and the expected subsequent increase in the infestation, a level of visual screening loss due to affected lodgepole pine falling to the ground within 15 years of death, would be expected for wolf habitat within the analysis area under baseline conditions. The proposed action would harvest affected lodgepole pine on approximately 325 acres within the project area, and effectively close or obliterate new roads constructed off of existing open roads within the project area. As such, the proposed action would likely reduce the time visual screening cover is reduced, while providing for no net increase in open road density. Therefore, there would be a low likelihood the proposed action would increase the cumulative effects to wolf habitat beyond baseline conditions.

Pileated Woodpecker

No Action Alternative

Direct and Indirect Effects

As previously discussed, the affected parcels have been impacted by a mountain pine beetle infestation that has been killing, mature lodgepole pine on the project area and the surrounding area. As of a field visit on 26 August 2009, the infestation had impacted all of the approximately 38 acres of pileated woodpecker habitat in the project area. However, given that approximately 15 acres of the project area had been infested by mountain pine beetles between 2005 and 2008, and approximately 635 acres are susceptible to infestation due to the presence of mature lodgepole or ponderosa pine within the project area, increased infestation would be highly likely. Due to the prevalence of lodgepole pine in the potential pileated woodpecker habitat, virtually all of it would be susceptible to infestation by mountain pine beetles. As a result, canopy closure < 40% would be expected, which would reduce the suitability of the stands for nesting by pileated woodpeckers. However, there would be a large pulse of lodgepole pine snags, and eventually coarse woody debris, which could be used for foraging sites. The resulting stands may be of reduced value to pileated woodpeckers and increase their vulnerability to predation by avian predators. Thus, this alternative would likely have low to moderate risk of direct and indirect effects to pileated woodpeckers.

Cumulative Effects

Approximately 64% (7,386 acres) of the analysis area is grassland or has been impacted by past timber harvest, and approximately 6% has been affected by the current mountain pine beetle infestation from 2005 through 2008. With the mountain pine beetle infestation, there has been a reduction in canopy closure due to infestations in mature lodgepole pine within the analysis area, and possibly mortality in a portion of these stands. Under this alternative, within potential pileated woodpecker habitat there would likely be a mosaic of new snags, and possibly entire stands that have succumbed to the infestation. As such, the effects of the infestation would increase the habitat potential of some stands, while reducing the potential of others.

Therefore, the no action alternative may have minimal to moderate risk of cumulative effects to pileated woodpecker habitat within the analysis area.

Action Alternative

Direct and Indirect Effects

The proposed action would harvest approximately 2.6 MMBF of affected lodgepole pine within the project area, while continuing to maintain cover within 50 feet and 100 feet (where sideslopes are greater than 35%) of class 1 and 2 streams, as per the SMZ law. As such, recruitment of snags and coarse woody debris that could be used for potential nest and foraging sites, would be greatly reduced compared to the no action alternative, as ARMs 36.11.411 and 414 would be implemented. However, on the East Fork Rock Creek parcel two snags and two snag recruits per acre would be retained for use by woodpeckers and other wildlife species. Although the habitat suitability for the affected stands would be greatly reduced, due to reduced canopy closure, under the no action alternative, it would still retain valuable habitat features (i.e., more snags and downed wood) that could eventually be used by this species. However, reduction in snag and downed wood retention under the proposed action may reduce pileated woodpecker vulnerability to avian predators because this species may not utilize the post-harvest stands. As a result, the proposed action may have low to moderate risk of direct and indirect effects to pileated woodpeckers.

Cumulative Effects

Given the effects of the mountain pine beetle infestation, and past timber harvest within the rest of the analysis area (see No Action Alternative Cumulative Effects discussion), and that the proposed action would treat the remaining pileated woodpecker habitat within the project area, the commensurate reduction in potential pileated woodpecker habitat, due to the proposed treatment, would likely result in moderate risk of cumulative effects to pileated woodpecker habitat within the analysis area.

Flammulated Owl

No Action Alternative

Direct, Indirect, and Cumulative Effects

The mountain pine beetle infestation would reduce canopy closure, create legacy snags, and likely spur forest regeneration through the openings in the overstory that they create. Depending on the extent of the overstory mortality, the effects for flammulated owls could be variable under this alternative. In stands with limited to moderate overstory mortality, flammulated owl habitat could be improved within 15 years, provided forest regeneration occurs in the new openings. Stands that might experience more extensive mortality may suffer reductions in habitat suitability for this species, or may serve more as foraging areas. Thus, there may be minimal to low risk of direct, indirect, or cumulative effects for flammulated owls as a result of this alternative.

Action Alternative

Direct, Indirect, and Cumulative Effects

The proposed action would harvest approximately 2.6 MMBF of affected lodgepole pine within the project area, while continuing to maintain cover within 50 feet and 100 feet (where sideslopes are greater than 35%) of class 1 and 2 streams, as per the SMZ law. As such, recruitment of snags that could be used for potential nest sites, would be greatly reduced compared to the no action alternative, as ARM 36.11.411 would be implemented (except on the East Fork of Rock Creek parcel, where two snags and two snag recruits per acre would be retained). Post-harvest, some treatment areas may resemble clearcuts with reserves, while still others may resemble seed tree harvests with reserves. The resulting stands will likely have limited value for flammulated owls for 40 to 60 years post-harvest. As a result, there would likely be low to moderate risk of direct, indirect, or cumulative effects for flammulated owls as a result of the proposed action.

Golden Eagle Nesting Site

No Action Alternative

Direct and Indirect Effects

No changes from current conditions would be expected under the no action alternative because the nest stand is largely Douglas-fir.

Cumulative Effects

No changes from current conditions would be expected under the no action alternative because the nest stand is largely Douglas-fir.

Action Alternative

Direct and Indirect Effects

The proposed action, would occur approximately 0.2 mi northeast of the known nest, and, in an effort to avoid disturbing the golden eagles during the breeding season, would operate on the East Fork parcel between August 1 and December 31. However, FWP and DNRC would conduct aerial and ground-based surveys of the parcel for an active nest, respectively. Should an active territory not be located during these surveys, it may be permissible that operations could occur during the nesting season, after consulting with the appropriate authorities (e.g., Montana Fish, Wildlife & Parks, U.S. Fish & Wildlife Service). Should operations occur during the nesting season and an active nest be located within 0.5 mile of the proposed harvest unit: (1) operations would cease immediately, (2) equipment would be removed from the site in an expeditious manner, and (3) operations could occur between August 1 and December 31.

Through the proposed timber harvest, the proposed action would in effect be opening up the surrounding adjacent stand, providing for easier perching opportunities for recently fledged eagles. Because the golden eagle is a bird of the open country, timber harvest would likely have little direct or indirect effects, as long as the integrity of the nest site is preserved and the operations occur outside of the breeding season (January 1 – July 31).

Cumulative Effects

The analysis area is comprised largely of rolling grasslands interspersed with occasional forest stringers. The proposed action would reduce tree cover within 2 School Trust parcels incorporated within the analysis area for this golden eagle pair. In doing so, the proposed action would temporarily increase the amount of habitat available for foraging, as well as increase the perching opportunities for eagles on these parcels. Because of the proposed timing of the harvest, efforts would be made to minimize impacts to breeding. Thus, there would be low risk of cumulative effects to golden eagles as a result of the proposed action.

The following species were considered but eliminated from further study due to lack of habitat present:

Bald Eagle, Black-backed Woodpecker, Peregrine Falcon, Fisher, Harlequin Duck, Townsend's Big-eared Bat, Coeur d'Alene Salamander, Northern Bog lemming, Mountain Plover, and Columbian Sharp-tailed Grouse.

Fisheries – See item #8 above

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

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

DNRC Archaeologist, Patrick Rennie was contacted. No sites have been identified.

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.

The Upper Willow Creek and East Fork salvage areas can be seen from County roads. Impacts to visuals is determined by individual perception. No comments were received through scoping regarding negative impacts to the aesthetics of the proposed salvage.

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.

No change is expected with either alternative.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

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

N/A

IV. IMPACTS ON THE HUMAN POPULATION
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- | |
|---|
| <ul style="list-style-type: none">• <i>RESOURCES</i> 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.

N/A

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

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

The sections are currently leased for grazing. Minimal change would be expected with either alternative.

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.

Alternative A

This project would create work for one logging company during the life of the project.

Alternative B

No change over existing conditions.

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.

No measureable change with either alternative.

18. DEMAND FOR GOVERNMENT SERVICES:

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

N/A

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.

N/A

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.

The project area is currently within a DFWP block management hunting area and is open to walk in hunting. Short term displacement of animals may impact hunting opportunities within the section.

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.

N/A

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

N/A

23. CULTURAL UNIQUENESS AND DIVERSITY:

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

N/A

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.

No Action Alternative

No revenue would be received. There would be a direct loss in potential revenue to the Common School Trust Fund.

Action Alternative

Approximately \$175,000 would be generated for the Common School Trust Fund.

EA Checklist Prepared By:	Name: Brian Robbins	Date: 9/29/2009
	Title: Forester	

V. FINDING

25. ALTERNATIVE SELECTED:

Alternative A – The action alternative which would remove the dead Lodgepole is the selected alternative.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Overall risk of potential negative impacts with this project is low and no significant impacts would occur as a result of this project.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

EIS

More Detailed EA

No Further Analysis

EA Checklist Approved By:	Name: Fred E Staedler
	Title: Unit Manager
Signature:	Date: