

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	RATTLESNAKE CREEK TIMBER SALE
Proposed Implementation Date:	JULY 1, 2006
Proponent:	DNRC – HELENA UNIT, 8001 NORTH MONTANA AVE., HELENA, MONTANA 59602
Location:	SECTION 36, T14N, R6W
County:	LEWIS & CLARK COUNTY, MONTANA

RECEIVED

I. TYPE AND PURPOSE OF ACTION

MAY 04 2006

A. Type of Action: *Rattlesnake Creek Timber Sale*

LEGISLATIVE ENVIRONMENTAL
POLICY OFFICE

The Montana Department of Natural Resources and Conservation (DNRC) is proposing a timber sale near Rattlesnake Creek in Lewis & Clark County, Montana. Under this harvest alternative, the DNRC plans to cut approximately 650 MBF of sawlog material from one, 165-acre unit. Noxious weed control and/or monitoring shall continue five years after harvesting has been completed.

The proposed action could be implemented as early as July 1, 2006. Due to limited access and salvage logging requirements, the timber sale contract would be two and a half years in length, ending November 1, 2008.

B. Purpose of Action:

- The lands involved in this proposed project are held by the State of Montana in trust for the support of specific beneficiary institutions such as public schools, state colleges, 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 Board of Land Commissioners and the DNRC are required by law to administer these trust lands to produce the largest measures of reasonable and legitimate return over the long run for these beneficiary institutions (Section 77-1-202, MCA). On May 30th, 1996, the Department released the "Record of Decision" on the State Forest Lands Management Plan (SFLMP). The Board of Land Commissioners approved the SFLMP's implementation on June 17, 1996. The SFLMP outlines DNRC's philosophy for management of state forested Trust Lands.

The Department shall manage lands involved in the project according to the philosophy in SFLMP, which states the following:

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

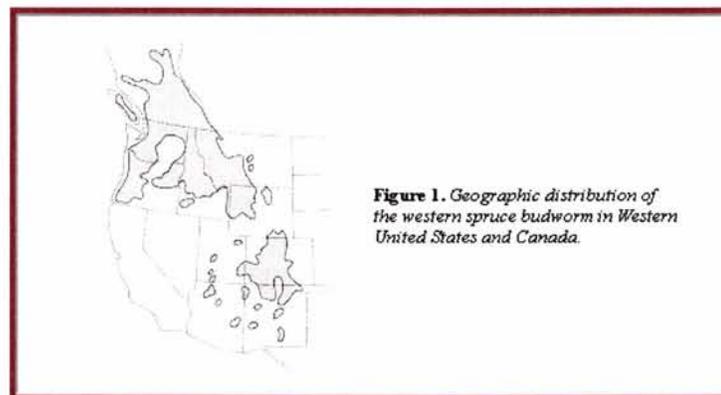
¹ "State Forest Land Management Plan, Final Environmental Impact Statement, Record of Decision", Montana Department Of Natural Resources And Conservation, May 30, 1996, p. ROD-1, ROD-2.

- In order to meet the goals of the management philosophy adopted through programmatic review in the SFLMP, the Department has set the following specific project objectives:
 - Improve forest health and vigor/salvage Douglas-fir severely damaged by Western Spruce budworm.
 - Opportunity to generate revenue for the State Trust.

1. Improve forest health and vigor/salvage Douglas-fir severely damaged by Western Spruce budworm.

Douglas-fir:

The western spruce budworm, *Choristoneura Occidentalis Freeman* is the most destructive defoliator of conifers in the western North America. It occurs in the Rocky Mountains from Arizona and New Mexico northward into Colorado, Utah, Wyoming, Montana, and Idaho. In the Pacific Northwest it can be found in Oregon and Washington and in British Columbia and Alberta, Canada (*Figure 1*). Major outbreaks can last for more than a decade and impact millions of acres of forests. The five types of tree damage associated with budworm defoliation are growth loss, top-kill, deformity, reduced seed production, and tree mortality. Host trees that survive major budworm outbreaks in a weakened condition are often killed later by bark beetles.



Indicators – Western Spruce Budworm:

The most common host-tree species of the western spruce budworm are: Douglas-fir, grand fir, white fir, subalpine fir, corkbark fir, blue spruce, Engelmann spruce, white spruce, and western larch. Tree damage caused by western spruce budworm can be described as follows:

Cones and seeds. - In addition to foliage, budworm larvae feed heavily on staminate flowers and developing cones of host trees. The resultant decline in seed production has a serious impact in seed orchards, seed production areas, and forest sites that are difficult to regenerate naturally.

Regeneration. - The budworm also seriously affects regeneration-host trees usually less than 5 feet tall and 1 to 2 inches in diameter. These young trees are especially vulnerable when growing beneath mature trees, since larvae disperse from the overstory and feed on the small trees below. Coniferous seedlings have relatively few needles and shoots and can be seriously deformed or killed by only a few larvae.

Young stands. - As with regeneration, young stands are particularly vulnerable when growing beneath a canopy of overstory trees. In stands of Douglas-fir, true firs, and spruce, after 3 or more years of sustained larval feeding, many trees are almost entirely defoliated, and diameter and height growths are sharply reduced. Some trees are top-killed, which often results in stem deformity, multiple leaders, or the death of the entire tree. In young western larch stands, sustained larval feeding and severance of new shoots causes top deformity and can reduce height growth by as much as 25 to 30 percent. Severe defoliation and topkilling predispose young trees to secondary insects and wood-decaying fungi.

Mature stands. - The greatest impact from budworm defoliation in mature stands is reduced growth, although repeated defoliation sometimes results in top-killing and tree mortality (Figure 2). At times, larger, dominant trees are severely defoliated and top-killed, but do not die because the trees produce adventitious foliage throughout the length of the crown, allowing the trees to survive. In some mature stands, trees severely defoliated by the western spruce budworm may be predisposed to one or more species of tree-killing bark beetles, mainly the Douglas-fir beetle, *Dendroctonus pseudotsugae* Hopkins, and the fir engraver beetle, *Scolytus ventralis* LeConte.²



Figure 2. Large Douglas-fir infested by the spruce budworm have thin upper crowns.

² David G. Fellin, and Jerald E. Dewey, "Western Spruce Budworm", U.S. Department of Agriculture Forest Service, Forest Insect & Disease Leaflet 53.

Douglas-fir growing near Flesher Pass (located on Montana State Highway 279, north of Canyon Creek, Montana) has been severely impacted by western spruce budworm for several years. Branch dieback, top-kill and tree mortality is apparent when driving through this area. Current weather as well as stand conditions throughout this area seems to favor a continuation of the western spruce budworm outbreak. Adjacent property managers are conducting salvage timber sales to capture the loss associated with this infestation, while trying to increase overall forest health and vigor.

Indicators – Douglas-fir Beetle:

Evidence that a tree has been successfully attacked is usually the reddish-brown boring dust found in bark crevices on the lower portion of the tree's bole or on the ground at its base. Wind and rain may remove the dust, however, and since attacks are often high on the bole, careful inspection may be required to determine if beetles are present. An occasionally evident sign of infestation may be a clear resin, which has exuded from the upper level of attacks-typically 30 to 35 feet off the ground. These pitch streamers are often visible for a considerable distance. Streams of pitch lower on the bole may be evidence of unsuccessful attacks or other injury. As a rule, successful attacks can only be confirmed by removing sections of bark to reveal egg galleries, eggs, and/or developing brood.³

Ponderosa Pine:

Approximately two hundred insect species may affect ponderosa pine from its cone stage to maturity. Twenty-four are seed and cone insects, sixty affect seedlings and saplings, and one hundred and sixty affect pole or sawlog-sized trees.

Bark Beetles, *Dendroctonus* and *Ips* are major killers of ponderosa pine in unmanaged stands. A long-term solution to beetle infestations may be to regulate stand density through timber harvesting. Maintaining dominant and codominant trees that are fairly uniformly spaced and removing smaller diameter or poorly formed trees could reduce mountain pine beetle numbers.

Indicators – Mountain Pine beetle:

Field evaluations can identify increased Mountain Pine Beetle activity. Indications of bark beetle activity include:

- Popcorn-shaped masses of resin, called "pitch tubes," on the trunk where beetle tunneling begins. Pitch tubes may be brown, pink or white.
- Boring dust in bark crevices and on the ground immediately adjacent to the tree base.
- Evidence of woodpecker feeding on trunk. Patches of bark are removed and bark flakes lie on the ground or snow below tree.

³ "Douglas-Fir Beetle", Forest Insect and Disease Identification and Management Training Manual. Available at: <http://www.barkbeetles.org>

- Foliage turning yellowish to reddish throughout the entire tree crown. This usually occurs eight to 10 months after a successful Mountain Pine Beetle attack.
- Presence of live MPB (eggs, larvae, pupae and/or adults) as well as galleries under bark. This is the most certain indicator of infestation. A hatchet for removal of bark is needed to check trees correctly.
- Blue-stained sapwood. Check at more than one point around the tree's circumference.⁴

2. Opportunity to generate revenue for the State Trust.

Harvesting approximately 650 MBF of Douglas-fir and ponderosa pine sawtimber would generate a net positive return to the State Trust.

Indicator: Stumpage receipts to the DNRC in dollars.

1. II. PROJECT DEVELOPMENT

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

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

1.1 History of Planning Process:

A scoping letter was sent out December 10, 2005 to interested parties on the DNRC, Helena Unit "Timber Sale Scoping List". The "Initial Proposal" letter briefly outlined project needs and objectives as well as existing landscape conditions.

Adjacent landowners also received the same scoping letter. They were identified using GIS Metadata obtained through the Montana Cadastral Mapping Project. This public-private sector partnership creates, maintains, and disseminates a digital GIS land ownership (cadastral) map database of the entire state. In addition, current land-use information on State Trust property was obtained from the DNRC Trust Lands Management System.

A legal notice was published in the *Helena Independent Record* on January 8th, 11th, and 15th, 2006. Comments were to be directed to the DNRC Helena Unit office by February 13, 2006.

Written comments were received from Pat Glueckert a Helena, Montana resident. A complete listing of persons, groups, and agencies as well as written comments are on file at the Helena Unit DNRC office located at 8001 North Montana Avenue, Helena, Montana 59602.

⁴ D.A. Leatherman, "Mountain Pine Beetle", # 5.528, Colorado State University Cooperative Extension. Available at: <http://www.ext.colostate.edu/pubs/insect/05528.html>

1.2 Issues Studied in Detail:

1.2.1 The DNRC carefully considers public comments that are received as an integral part of the scoping process. The only comment received was from Pat Glueckert, an adjacent property owner who was in favor of the proposed project.⁵

1.2.2 Advanced defoliation of Douglas-fir by repeated outbreaks of Western Spruce Budworm was also considered in the planning phase of this project. Field visits to discuss the severity of the infestation as well as appropriate silvicultural prescriptions were conducted by Shawn Morgan, DNRC, Helena unit Forester and Amy Kearney, DNRC, Forest Pest Specialist.

1.2.3 Safety concerns pertaining to the use of a long, single-lane access road by multiple logging operations was a major concern of both the DNRC and adjacent landowner.

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

2.1 Smoke Monitoring Unit:

In 1978, federal, state, local government agencies, and the forest products industry formed the Montana State Airshed Group. Their purpose was to manage and limit the impacts of smoke generated from necessary prescribed burning. In 1990, agencies and companies in North Idaho joined the Montana group on an operational basis to accomplish the same purposes. Agencies and companies from southern Idaho joined the group in 1999.

Accumulation of smoke from controlled burning is limited through scientific monitoring of weather conditions and formal coordination of burns. Members submit a list of planned burns to the Monitoring Unit in Missoula, Montana. For each planned burn, information is provided describing the type of burn to be conducted, the number of acres, as well as the location and elevation at each site. Burns are reported by "Airshed", which are geographical areas with similar topography and weather patterns. The program coordinator and a meteorologist provide timely restriction messages for airsheds with planned burning.⁶

Slash generated from the timber harvest would be lopped and scattered to reduce wildfire risk, adhering to state standards, which are as follows:

"General Standard" as defined by Administrative Rule-36.11.222, Number 4, which states: "Slash must be reduced such that a fire starting under conditions similar to a standard day, as defined by the department's HRA Manual, would burn with a flame length of four feet or less, as calculated by the fire science BEHAVE model, or other fire behavior model selected by the department".

Minimal amount of slash that would accumulate at the landing area would be piled and burned by the DNRC, Helena Unit Fire Crew after submitting a request and receiving approval to burn from the Smoke Monitoring Unit.

⁵ "Letter" Pat Glueckert, Helena, Montana, p.1

⁶ "Smoke Monitoring Unit", Montana/Idaho State Airshed Group. Available at: <http://www.smokemu.org>

2.2 Streamside Management Zone Law:

In 1991 Montana Legislature passed House Bill 731, known as the Streamside Management Zone (SMZ) Law (Sec.77-5-301 through 77-5-307, MCA). This law restricts forest practices within a 50-foot streamside management zone (SMZ) along each side of a stream, around lakes, or other bodies of water. The SMZ width can be extended for areas with steeper slopes or adjacent wetlands.

A small volume of timber in the SMZ may be suitable for harvest. Rule #5 (36.11.305), Clearcutting and Retention Trees in the SMZ, would be applicable to proposed timber cutting along this Class-One stream segment.

2.2.1 Tree Retention on each side of a Class-1 stream segment must consist of 50% of the trees \geq 8 inches in diameter, or 10 trees \geq 8 inches in diameter in each 100 linear-feet of the SMZ.⁷

2.3 Limited Access Permit/ Temporary Right-Of-Way Deed:

2.3.1 Limited Access Permit through Sieben Ranch Company is needed to use over 8.5 miles of existing road. A stipulation of this permit is that a mutually agree upon logging contractor is to be used to harvest timber on both State Trust and Sieben Ranch Company lands. Reason being the safe use of this single lane roadway could not be guaranteed if multiple logging operations were active simultaneously.

Harvesting activities on both private and State Trust lands at the same time should increase stumpage rates (due to additional volume), while minimizing impacts to the landscape.

2.3.2 Temporary Right-Of-Way Deed for the use of approximately eight-hundred feet of existing road will be required from Grady Ranch Company.

3. ALTERNATIVES CONSIDERED:

3.1 Introduction:

Alternatives including the proposed action are the heart of this "Checklist Environmental Assessment". The purpose of this section is to describe the alternatives, comparing them in terms of environmental impacts and achieved objectives. Alternatives were determined through scoping, identifying the issues of concern, input from Interdisciplinary Team (IDT) specialists, and guidance from resource management standards set forth in the "SFLMP" and "Administrative Rules".

3.2 Description of Alternatives:

This section describes the activities of the No Action Alternative and all other Action Alternatives.

⁷ DNRC, "Guide to the Streamside Management Zone Laws and Rules," DNRC Forestry Division, Service Forestry Bureau, Missoula, Montana, 2002, 32p.

3.2.1 Alternative A: Deferred Harvest (No Action)

3.2.1.1 Principle Actions: Alternative A

Timber harvesting would be deferred until a later entry. However, ongoing State Trust Land permitted, licensed, and approved activities would continue as follows:

- **Livestock grazing** - existing grazing lease #4155 would continue in the project area contributing \$438.24 (66 AUM's x \$6.64) annually to the State Trust.
- **Fire suppression** - human and natural caused fires would be suppressed by the DNRC, volunteer fire departments, and other government agencies.
- **Hunting** - deer, elk, bear, other big game hunting, as well as upland game bird hunting would continue according to the rules and regulations set forth by Montana Department of Fish, Wildlife & Parks. Beginning in 2004, purchase of a conservation license authorized use of accessible trust lands for hunting and fishing.
- **Public vehicle access** - existing motorized access privileges, as well as limitations, would remain the same. Currently this section is not accessible to motorized vehicles.
- **Hiking and other recreational uses** - persons having a valid State Trust Land Recreational Use Permit are welcome to hike, pick chokecherries, or perform other outdoor activities on this acreage.

3.2.1.2 Present Relevant Action Not Part of the Proposed Action:

Current land uses as described above would continue on property owned by the State of Montana. Timber harvesting on Sieben Ranch Company lands would continue, as they are actively involved in forest management. No current timber management activity is taking place on BLM or U.S. Forest Service lands close to the project area.

3.2.1.3 Reasonably Foreseeable Relevant Actions Not Part of the Proposed Action:

U.S. Forest Service, BLM, and Private ownership would undoubtedly experience timber-harvesting activities during the next several decades.

3.2.2 Alternative B: Rattlesnake Creek Timber Harvest:

3.2.2.1 Principle Actions: Alternative B

If Alternative B were selected for implementation, the following actions would occur:

- The proposed harvest would cut approximately 650 MBF of Douglas-fir, and ponderosa pine sawtimber, generating a net positive return to the State

Trust. Logging methods used would include both tractor and line-yarding equipment due to the various slope grades within the proposed harvest unit.

- In areas dominated by **Douglas-fir**, even-aged silvicultural systems should be employed.

The severity of Western Spruce Budworm damage in Douglas-fir dominated locations within the harvest area should dictate which even-aged system is implemented.

Shelterwood/Seed Tree: Douglas-fir that has been excessively defoliated, resulting in top-kill and/or tree mortality, should be salvaged. Implementation of a shelterwood or seed tree regeneration harvest could capture potential economic loss, while providing a younger, healthier stand. Residual overstory trees should be selected based not only their health and vigor, but resistance to spruce budworm as well.

Shelterwood and/or seed tree harvest methods of regenerating an even-aged stand should provide a new age class of Douglas-fir to develop beneath the partially shaded microenvironment provided by the residual overstory.⁸

Post-harvest monitoring of seedling/sapling development following timber harvest may be necessary to determine if this stand is adequately stocked. The seedling/sapling establishment phase of this silvicultural method may take up to twenty years. At that time if tree stocking were determined to be sufficient, removal of overstory trees would be recommended, as coniferous seedlings have relatively few needles and shoots and can be seriously deformed or killed by only a few larvae during a budworm epidemic. On the other hand, if regeneration is inadequate, hand planting of ponderosa pine seedlings may be necessary. Conversion to alternative tree species such as ponderosa pine may prove beneficial, as they are less susceptible to Western Spruce Budworm.

Intermediate Thinning: Areas that are not severely defoliated by Western Spruce Budworm should be thinned to approximately 70 ft² of basal area per acre. Thinning from below removing poor quality trees should increase the health and vigor of the residual stand and increase overall growth.

- Opportunities to maintain or convert to **ponderosa pine** should be sought as the successional trend, due to the lack of fire is towards Douglas-fir. Areas that are dominated by ponderosa pine should be managed through an even-aged seed tree method, with heavy reliance on natural regeneration. This should reduce costs as well as lower administrative overhead while providing ponderosa pine regeneration.

A new age class of ponderosa pine should develop from seedlings that germinate in fully-exposed micro-environment after removal of all the previous stand except for a small number of trees, which have been left to provide seed. Instead of removing these seed trees after regeneration is established, as is a common practice, they will be left as reserves.

⁸ David Adams, John Hodges, David Loftis, Jim Long, Bob Seymour and John Helms, "Silvicultural Terminology", SAF's Silvicultural Working Group Newsletter (D-2), 1993.

- Access to the proposed harvest unit would be mainly from 8.5 miles of existing roads on Sieben Ranch Company lands. New road construction for approximately 1.5 miles would be necessary within the harvest unit itself and would be closed after timber harvesting is completed.
- Logging methods within the proposed harvest unit would consist of both tractor and line yarding equipment due to varying slope conditions.
- Post-harvest weed management would consist of monitoring for noxious weeds for a minimum of five years following timber harvesting. Spot weed spraying would then be done if necessary. Prior to coming into the project area, harvesting equipment would be required to be clean of noxious and nuisance weeds.

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.

4.1 Background Information:

The harvest area is located on moderate to steep slopes with residual soils forming in colluvial material weathered from bed-rock of argillite and some igneous rock on the sideslopes. Cutting units are located on Stemple/Tigeron very channery loam soils on slopes of 30-60% which are well drained. Rock outcrops occur with shallow soils on upper slopes and ridges that form low productivity sites.

The Tigeron soils occur in swales and concave spots and have some clay in subsoils at about 22" depth. These soils have a long season of use and form the more productive timber sites. Surface soils are shallow very channery loams over extremely channery loams and clay loams. The potential for soil compaction is moderate. Potential soil displacement and erosion of the shallow top-soils are the primary concerns on steep slopes.

4.2 General Recommendations:

Tractor skidding should be limited to slopes less than 45%, and tractor brush piling only on slopes less than 35%. Areas steeper in slope should be line yarded to reduce adverse impacts to the resource.

Timber hauling and equipment operations should be should be limited to periods when soils are relatively dry, frozen or snow covered to maintain road drainage features.

Soils along draw bottom have higher clay contents and a higher potential for rutting. Equipment restriction zones located along draw should minimize site impacts.

4.3 Roads:

The proposed temporary road is on a well-located grade and alignment. Bedrock occurs at shallow depth along portions of the road. Helena Unit recognized the existing roads require reconstruction and drainage work to meet BMP's.

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.

5.1 Watershed:

The proposed sale area lies in the Big Sawmill Gulch drainage. Sawmill Gulch is a perennial third order tributary to Canyon Creek. Canyon Creek is a tributary to the Little Prickly Pear Creek on the Missouri River System. The watershed area is partially non-forested rangeland and foothills. The drainage receives an average of approximately 25" of precipitation annually, resulting in moderate-low runoff. Ownership is largely private ranchland with some Forest Service and State land in the headwaters portion of the drainage.

5.2 Water Use:

There are existing water right for livestock watering downstream of the sale area.

5.3 Cumulative Effects:

There are no cumulative watershed effect constraints with this sale. This recommendation is based on the following reasons: 1) Only a moderate level of timber harvest has occurred in the drainage. 2) The watershed is partially non-forested. 3) The small size of the prescription and harvest unit. and 4) The moderate amount of runoff produced over the sale area.

5.4 Harvest Units:

The proposed sale consist a single harvest unit with two different treatments. A portion of the unit is located on gentle side slopes and will be treated with a seed-tree/shelterwood harvest using tractor skidding. The remaining harvest area is located on steeper side slopes and will be seed-tree/shelterwood harvested using cable yarding. There is a Class-1 intermittent stream channel on the edge of the harvest area. To ensure compliance with House Bill 731, establishment of a 50-foot streamside management zone is necessary. Merchantable trees may be removed from the SMZ by

directional felling and cable yarding. Retain all sub-merchantable trees within the SMZ and merchantable trees that are rooted in the edge of the streambank.

5.5 Roads:

The sale will primarily utilize existing roads with the exception of one short segment of new road construction. Install drain dips as needed to provide adequate road surface drainage.

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.

6.1 Air Quality:

Air quality may be affected by burning slash that would accumulate as a result of the implementation of this proposed timber harvest. An ample amount of logging slash would remain on site however to provide for erosion control and nutrient recycling.

6.1.1 Montana / Idaho Airshed Group:

The DNRC, a member of the Montana / Idaho Airshed Group, is required to:

- Minimize or prevent the accumulation of smoke in Montana to such degree as is necessary to protect state and federal ambient air quality standards when prescribed burning is necessary for the conduct of accepted forest practices such as hazard reduction, regeneration and wildlife habitat improvement. The development of alternative methods shall be encouraged when such methods are practical.⁹
- Submit a plan and receive approval to burn, in Airshed 6, the slash that would accumulate as a result of this project.

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.

7.1 Rare Plants and Weeds:

Consulting the Natural Heritage Program showed no rare or endangered plants within the proposed project area.

7.2 Vegetative Cover Type Changes:

The overall vegetative community of the surrounding ecosystem should not be adversely impacted due to the relatively small scope of this project. When applicable, ponderosa pine management should be a priority so as to maintain it on the landscape.

⁹ "Smoke Monitoring Unit", Montana/Idaho State Airshed Group. Available at: <http://www.smokemu.org>

7.3 Vegetative Analysis:

On August 15, 1992 D.J. Bakken, Helena Unit Forester, prepared a Vegetative Analysis for timber harvesting activities in Sawmill Gulch. At that time it was estimated that 84% of the 54,876-acre analysis area was forested, that 16% had been logged. Because the Rattlesnake Creek Timber Sale is within the vegetative analysis area as described above, it will be used as the basis for landscape review of the current proposed project.

To determine timber-harvesting activities that have taken place since August 1992, the Montana DNRC Hazard Reduction System was consulted. This system is used to account for various commercial forest products that are cut on private lands, thus insuring fire hazards created from logging slash have been abated. Using the "year to date" sawlog volumes reported for HRA's within the analysis area, then dividing by eight (average harvest volume per acre), an estimate of total harvested acres was determined. In addition, timber harvesting on state and federal lands was also considered in evaluating current vegetative trends.

At this time, 81.5% of the 54,828acre Vegetative Analysis Area is forested, with 18.5% being harvested. The overall impact of timber harvesting over the past fourteen years on private, state, and federal land within the analysis area is a net increase of 2.5%. For more detailed information please review the Rattlesnake Creek Timber Sale packet on file at the DNRC, Helena Unit, 8001 North Montana Ave, Helena, Montana, 59602.

7.4 Old Growth:

Information pertaining to old growth was derived from the following source: P. Green, J. Joy, D. Sirucek, A. Zack, B. Naumann, "Old-Growth Forest Types of The Northern Region", USDA Forest Service, Northern Region, April, 1992, 43 p.

7.4.1 Old Growth Definition:

There is no single all-inclusive definition of old growth, as characteristics vary by region, forest type, and local conditions. However, a generic definition of an old growth forest would be an ecosystem that is distinguished by old trees and related structural attributes. It would encompass the later stages of stand development that typically differ from earlier stages in characteristics such as tree age, tree size, number of large trees per acre and basal area. In addition, attributes such as decadence, dead trees, the number of canopy layers and canopy gaps are important but more difficult to describe because of high variability.

7.4.5 Old Growth Determination For Proposed Project:

Trees within the proposed Rattlesnake Creek timber sale area do not meet the minimum age characteristics for East Side Montana, Old Growth Type Code 1, and are therefore eliminated from further study.

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.

8.1 Fish:

The proposed timber harvest should have no adverse effect on fish habitat. Tree retention requirements as outlined in the SMZ Law will be adhered to when cutting timber along the class-1 stream segment within the harvest unit.

8.2 Birds:

Large sawlog-class Douglas-fir and ponderosa pine will remain after harvest to provide nesting trees and for future snag recruitment. Implementation of the proposed alternative should have minimal, if any, effect on avian species.

8.3 Animals:

A variety of animals utilize the diverse habitat of the Rattlesnake Creek watershed basin including: deer, black bears, small mammals, and elk, among others. No direct or cumulative adverse effects are anticipated from the implementation of the proposed timber sale.

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.

9.1 Issues Eliminated From Further Study:

Montana Natural Heritage Program was contacted to provide threatened, endangered, and sensitive species information for the project area. Both the grizzly bear and Canadian lynx have been identified as "threatened" in this report. Because the proposed project is outside the recovery or occupied zone of the grizzly bear, and preferred lynx habitat is not found, adverse impacts to these threatened species is not expected.

Threatened, endangered, and sensitive species as outlined in the "Montana Administrative Rules" have been eliminated from further study for the following reasons:

9.1.1 Bald Eagle:

Some potential transient use may occur but is not anticipated. Adverse impacts to the Bald Eagle or its habitat are not expected.

9.1.2 Gray Wolf:

Potential transient use by the gray wolf may occur within the proposed timber sale area. If den sites become established within the sale area, "Administrative Rules" and contractual requirements are in place to protect this species.

9.1.3 Grizzly Bear:

The project area is not within Grizzly Bear recovery or occupied zones. Transient use may occur due to the roaming nature of this species and its wide range of habitats requirements. Adverse impacts to this species are not expected.

9.1.4 Lynx:

Suitable Canadian Lynx habitat is not found within the proposed project area. Adjacent lands owned by MT-FWP are on the USFWS map of proposed critical Lynx habitat. (<http://mountain-prairie.fws.gov/species/mammals/lynx/criticalhabitat.htm>) The Rattlesnake tract is not included

on this map. The mapping of potential Lynx habitat for the HCP does not indicate any stands with potential Lynx habitat on this section. Adverse impacts to this species are not expected.

9.1.5 Flammulated Owl:

This species prefers seral ponderosa pine stands or secondarily Douglas-fir timber types where historical fire regimes occurred on the landscape. Favored stands are usually found on warm, dry slopes with basal areas of 35 to 80 ft.²/acre. Proposed harvest area characteristics at present do not match the favored habitat requirements of the Flammulated Owl. Conflicts to this species are not expected.

9.1.6 Black-Backed Woodpecker:

There have been no recent burns within several miles of the project area to create suitable habitat for the Black-Backed Woodpeckers. The defoliation of Douglas-fir by Western Spruce Budworm may result in trees becoming stressed and thus more susceptible to secondary insect infestations. Wood-boring beetles could attack these trees, providing suitable forage for the Black-Backed Woodpecker.

Because of the relatively small nature of this project, anticipated effects to the Black-Backed Woodpecker should be minimal.

9.1.7 Pileated Woodpecker:

Large diameter ponderosa pine, western larch, and black cottonwood are used for nesting cavities by the Pileated Woodpecker. If nesting sites become established within the sale area, "Administrative Rules" and contractual requirements are in place to protect this species. Conflicts with this woodpecker are not expected.

9.1.8 Fisher:

Suitable Fisher habitat is not found within the project area.

9.1.9 Northern Bog Lemming:

The project area contains no suitable Lemming habitat.

9.1.10 Peregrine Falcon:

Nest sites or habitat suitable for the Peregrine Falcon are not found within the project area, therefore, negative effects are not expected.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

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

10.1 Historical And Archaeological Sites:

A search of the statewide cultural resources database and the DNRC's in-house files for the above referenced project areas has been conducted. No cultural resources have been identified within the proposed project area. Because of the degree of slope throughout both parcels, I am not

recommending archaeological investigative fieldwork prior to commencement of timber harvest activities.¹⁰

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.

11.1 Local Effects to Aesthetics:

The location of the proposed Rattlesnake Creek timber sale is somewhat isolated, accessed through Sieben Ranch Company property. Because the scope and nature of this project is somewhat small, long lasting negative visual effect are not expected. The existing landform is rolling with the harvest area being located at mid slope on the mountainside.

A variety in vegetation exists between Douglas-fir, ponderosa pine, lodgepole pine. The harvest unit will be irregular in shape and approximately 165 acres. Slated for harvest are disease/damaged dominant and codominant as well as suppressed and intermediate Douglas-fir and ponderosa pine. Residual ponderosa pine and Douglas-fir should most likely be large in diameter and at a spacing that most resembles a seed tree harvest.

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.

Demands on land, water, air or energy is not expected to increase in intensity as a result of timber harvesting on State Trust Lands.

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.

13.1 DNRC Plans/Current Projects:

State tract includes active Forest Grazing License on 550 suitable acres, producing 66 AUM's annually. This activity would remain unchanged under both alternatives. Implementation of the action alternative would initiate a noxious weed management program by the DNRC. This spot spaying would concentrate on noxious and nuisance weeds, controlling them before and after timber harvesting.

IV. IMPACTS ON THE HUMAN POPULATION

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

¹⁰ Patrick Rennie, "e-mail", Montana DNRC Archaeologist, February 23, 2006, 1p.

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

No significant change is expected from the implementation of the project.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

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

No significant change is expected from the implementation of the project.

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.

People are currently employed in the wood products industry in this region of Montana. No measurable cumulative impacts are expected on employment from the execution of this alternative action due to the relatively small DNRC timber sale program.

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 are currently paying taxes on monies generated from the wood products industry in this region of Montana. No measurable cumulative impacts are expected on tax revenues from the execution of this alternative action due to the relatively small DNRC timber sale program.

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

There should be no measurable cumulative impacts related to demand for government services due to the relatively small DNRC timber sale program, short term impacts to traffic, possible temporary addition of a few people to the area, and the lack of other timber sales on adjacent lands.

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.

Refer to Section 1: "Type and Purpose of Action", Part-B, "Purpose of Action", of this document for reference to the "State Forest Land Management Plan".

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.

20.1 Local Effects to Recreational Opportunities:

Persons having a valid State Trust Land Recreational Use Permit are welcome to hike or perform other approved outdoor activities. Beginning in 2004, purchase of a conservation license authorized use of accessible Trust Lands for hunting and fishing. Implementation of the proposed alternative should have minimal effect on recreational opportunities.

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.

There will be no measurable, cumulative impacts related to population and housing due to the relatively small nature of the DNRC timber sale program. Personnel required to execute this project are currently employed in this region of Montana.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

Not Applicable.

23. CULTURAL UNIQUENESS AND DIVERSITY:

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

Not Applicable.

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.

24.1 Economic Cost/Return Associated With Project:

The action being proposed not only takes into consideration silvicultural and biological characteristics of managing this forested stand, but the economic viability of implementing such a project.

Due to the combined logging activities on both private and State Trust Lands it is anticipated that the financial return would be approximately:

- $650 \text{ MBF} \times 120.00/\text{MBF} = \$78,000.00$

24.2 Future Management Options:

Implementation of this project should increase the managed forest base on State Trust Lands. This should most likely result in the production of a healthier forested stand that would bring in additional revenue to the Trust.

24.3 Current Activities:

Grazing of State Trust Lands in this area currently brings in \$438.24 per year. Some revenue percentage from the General Recreational Use License as well as the newly adopted Conservation License may also be attributed to this tract, although this revenue probably is quite small.

No negative, cumulative economic or social effects are anticipated as a result of the proposed action.

EA Checklist Prepared By:	Name:	Shawn P. Morgan	Date:	1/26/2006
	Title:	Helena Unit Forester		

V. FINDING

25. ALTERNATIVE SELECTED:

I have selected the action alternative to harvest roughly 650 MBF from approximately 165 acres utilizing mostly an existing private road system and approximately 1.5 miles of new temporary road. The harvest will provide income to the State School Trust. Salvage of recently dead & dieing Douglas-fir will capture value before natural defects develop to reduce product value. The sale will be conducted under the limited access provisions of 77-5-201 MCA. Simultaneous state & private harvest operations are proposed for this area, both utilizing the narrow single lane roadway. Operations by a single contractor provide for safer travel on this road system.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

There are no anticipated adverse effects from this project. No impacts to any threatened, endangered or sensitive species. No old growth is in the project area. Utilization of standard BMP's, compliance with the SMZ Law and other forestry management Administrative Rules provide further assurance against impacts.

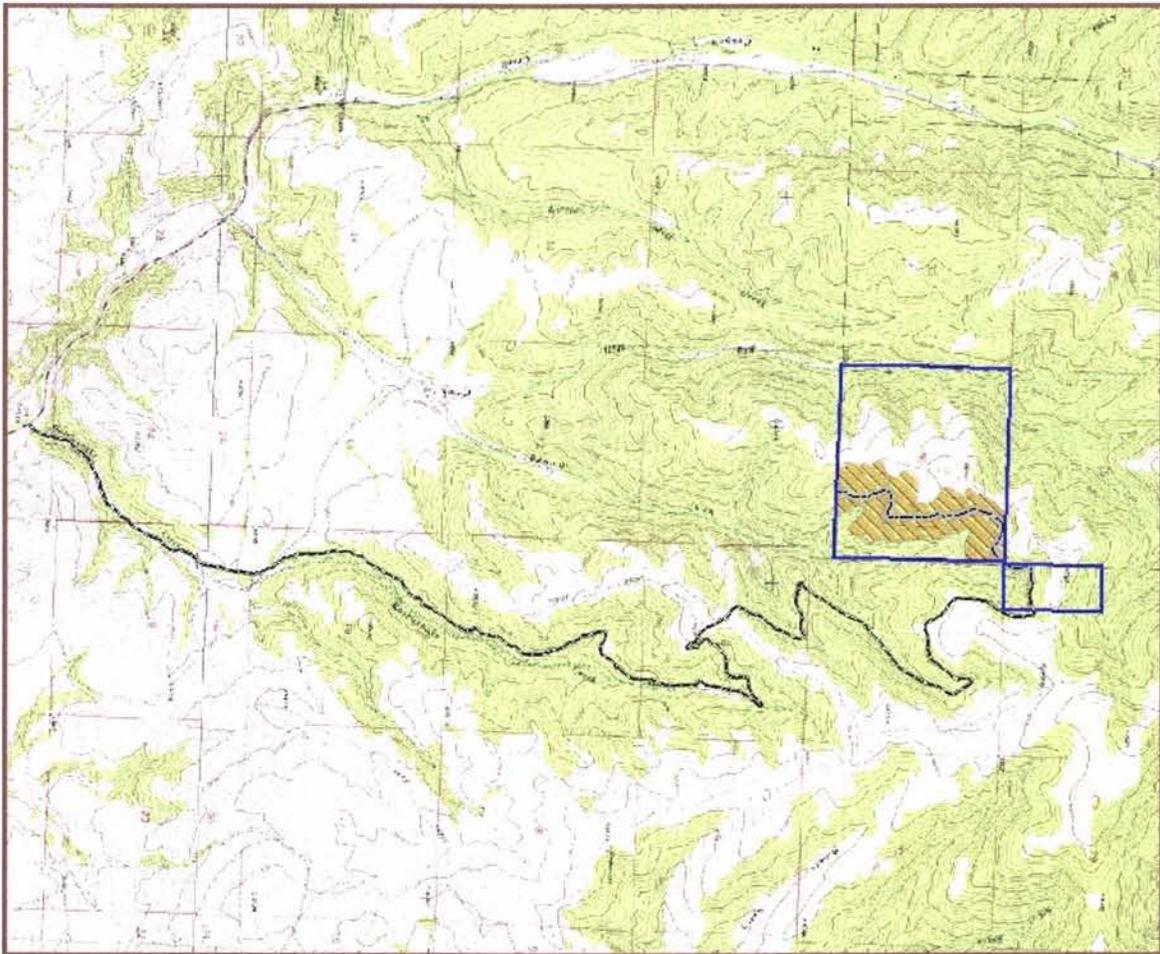
27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

EIS
 More Detailed EA
 No Further Analysis

EA Checklist Approved By:	Name:	D.J. Bakken		
	Title:	Helena Unit Manager		
Signature:	/s/ Darrel J. Bakken		Date:	3/17/2006

Rattlesnake Creek Timber Sale

Section 36, Township 14 North, Range 6 West



Access Route - Proposed and Existing



Department of Natural Resources
and Conservation,
Helena Unit

Legend

-  Proposed Logging Road - 1.51 Miles
-  Proposed Harvest Unit
-  Access Road - 8.53 Miles
-  State Ownership

1 inch equals 4,766.67 feet

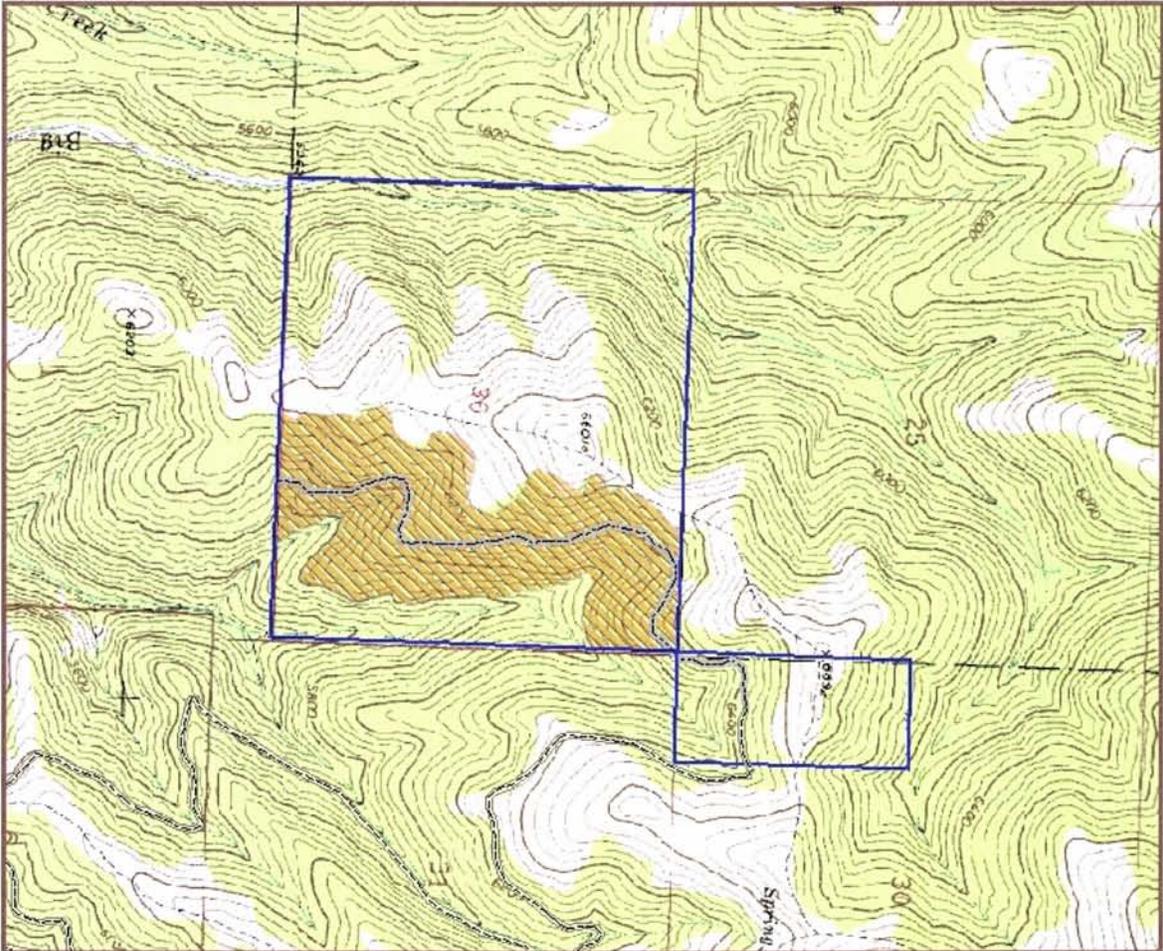



Western Spruce Budworm Damage,
in Douglas-fir

Mapped By: Shawn P. Morgan

Rattlesnake Creek Timber Sale

Section 36, Township 14 North, Range 6 West



Initial Proposal Map



Department of Natural Resources
and Conservation,
Helena Unit

Legend

-  Proposed Logging Road - 1.51 Miles
-  Proposed Harvest Unit
-  Access Road - 8.83 Miles
-  State Ownership



Western Spruce Budworm Damage,
in Douglas-fir

Mappped By: Shawn P. Morgan