# CHECKLIST ENVIRONMENTAL ASSESSMENT

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| PROJECT NAME: | SKIDWAY TIMBER SALE |
| PROPOSED IMPLEMENTATION DATE: | JULY 1, 2006 |
| PROPONENT: | DNRC – HELENA UNIT, 8001 NORTH MONTANA AVE., HELENA, MONTANA 59602 |
| LOCATION: | SECTION 16, T7N, R5E |
| COUNTY: | BROADWATER COUNTY, MONTANA |

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LEGISLATIVE ENVIRONMENTAL POLICY OFFICE

## I. TYPE AND PURPOSE OF ACTION

### A. TYPE OF ACTION: SKIDWAY TIMBER SALE

The Montana Department of Natural Resources and Conservation (DNRC) is proposing a timber sale near Townsend, Montana in Broadwater County. Under this harvest alternative, the DNRC plans to cut approximately 520 MBF of sawlog material from 148-acres. 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. Access to harvest units would be from both an existing road system (with minor spot reconstruction being necessary to provide adequate drainage) and a short temporary road spur. Contract length would be two years, eight months in length ending March 15, 2009.

### 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]

[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 while reducing potential impacts caused by Western Spruce Budworm.

    - Opportunity to generate revenue for the State Trust.

## 1. IMPROVE FOREST HEALTH AND VIGOR WHILE REDUCING POTENTIAL IMPACTS CAUSED 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. 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 (*Figure 1)*, 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.

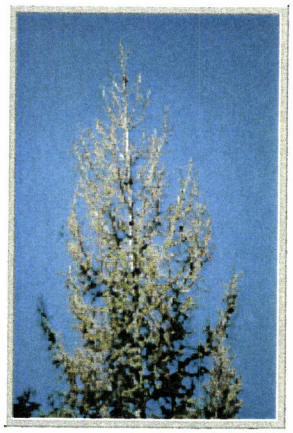

*Figure 1. Large Douglas-fir infested by the spruce budworm have thin upper crowns.*

*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. 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]

*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]

**2. OPPORTUNITY TO GENERATE REVENUE FOR THE STATE TRUST.**

Harvesting approximately 520 MBF of Douglas-fir sawtimber would generate a net positive return to the State Trust.

*INDICATOR:*

Stumpage receipts to the DNRC in dollars.

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

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

# 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 January 13, 2006 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 *Great Falls Tribune* on January 27th, February 3ed, and February 10th, 2006. Comments were to be directed to the DNRC Helena Unit office by February 24, 2006.

### 1.2 Issues Studied in Detail:

The DNRC received comments from the Broadwater, Board of County Commissioners, stating that they "supported restoration and improvement of forest health and vigor while providing revenue flow for the school trust". [4]

## 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.[5]

[4] Letter, *Board of County Commissioners*, Steven R. McCullough, Chairman of the Board, February 13th, 2006.
[5] "Smoke Monitoring Unit", Montana/Idaho State Airshed Group. Available at: http://www.smokemu.org

Slash generated from the timber harvest would be piled, burned, trampled and/or 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*".

Slash that accumulates in excess to the nutrient cycling and course woody debris requirements would be piled and burned and burned at the landing area by the DNRC, Helena Unit Fire Crew after submitting a request and receiving approval to burn from the Smoke Monitoring Unit.

### 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-two stream segment.

**2.2.1 Tree Retention** on each side of a Class-1 stream segment must consist of 50% of the trees ≥ 8 inches in diameter, or 10 trees ≥ to 8 inches in diameter in each 100 liner-feet of the SMZ.[6]

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

**2.3.1 Road Use Permit** through Forest Service Lands would be needed to use existing road systems in two locations. The project contract holder would be responsible for obtaining proper permits from the Forest Service and paying of any associated fees.

## 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"[7].

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

[7] DNRC, *Administrative Rules of Montana [ARM] 36.11.401 through 450,* DNRC Trust Land Management Division, Forest Management Bureau. Missoula, Montana. 2003, 87p.

## 3.2 Description of Alternatives:

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

### 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 #1416 would continue in the project area contributing $685.02 (98 AUM's x $6.99) annually to the State Trust.

- **Outfitting/Hunting License** - Raw Hide Guide Service, White Sulphur Springs, Montana, currently has an exclusive outfitting/hunting license for this section of State Trust land. Annual revenue generated from this license is approximately $0.30/acre, or $192.00.

- **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 will also authorize 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 unauthorized motorized use, as existing roads are either obstructed or gated.

- **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 Round Grove Ranch 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 Project:

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

### 3.2.2 Alternative B: Skidway 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 520 MBF of Douglas-fir 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 **Douglas-fir** timber types, 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 Douglas-fir 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 $ft^2$ of basal area per

[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.

acre. Thinning from below removing poor quality trees should increase the health and vigor of the residual stand and increase overall growth.

- Two existing secondary road systems (totaling 0.3 miles) on USDA Forest Service property would provide access to the proposed harvest area. A "Special Use Permit" would be required from the Forest Service to transport rough forest products on these roads. The purchaser would be responsible for obtaining this permit.

  A Land Use License allowing the construction of a temporary logging road (1.4 miles) on State Trust Lands has been granted to Sun Mountain Lumber. This road will be used to transport sawlogs from forest management practices currently taking place on adjacent private ownership. This road system, along with one additional existing road (1.3 miles) would be the main entry points for this timber sale.

  Upon completion of this project or the private harvest, whichever is latest, the temporary logging road that has been constructed by Sun Mountain Lumber would be closed to motorized use. The 1.3 miles of existing road that has been traditionally used by the lessee for tending cattle would remain open for lessee use.

- 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 EXISTING ENVIRONMENT - GEOLOGY & TERRAIN:

The sale area is located on moderate to steep slopes with shallow to moderately deep extremely gravelly soils weathering from argillite bedrock. This is a moderate precipitation area with underlying geologic structure forming the terrain and abrupt draws. There are no especially unusual or unique geologic features in the proposed harvest area. Slopes are generally stable. Rock outcrops occur on ridges and convex slopes and limit skid trail location and equipment operations on some sites. Bedrock is mainly well fractured and makes excellent road material. Bedrock may require ripping on some sites.

Soils have a very shallow surface and easily displaced. Primary Soils are a complex of Whitore type, which are extremely channery loams on 25-60% slopes with included, deeper soils on more moderate slopes of 15-35%. Erosion and displacement risk are moderate for slopes 15-35%. Erosion and displacement risk are high for steep slopes over 40%. Subsoils have carbonates at 2 to 3 feet depth. These high gravel soils are well drained and tend to be droughty.

These are low to moderate productivity soils that are limited by soil depth and droughty site conditions. Primary soil concern is limiting displacement of the shallow surface soils during harvesting and slash disposal. Leaving slash can provide shade to enhance survival of seedlings thru droughty periods. - Erosion can be controlled by installing adequate drainage where needed.

### 4.2 Environmental Effects & Mitigation Measures:

The No-action alternative would have no soil effects within harvest units, yet erosion on access roads to the section and associated sedimentation would continue.

Under the proposed action alternative soil impacts would be minimized by implementing BMP's and the following mitigation measures: including limiting the slope range of tractor operations, limiting season of use, and minimizing ground disturbance to levels needed for silvicultural prescriptions. Road drainage would be improved and road reconstruction and new construction would be completed to comply with BMP's. Based on these mitigation measures the level of impact to soils within the project area is low expected to be low. Results of monitoring of comparable DNRC harvest sites show that the level of total soil impacts ranged from 5.6 to 10% of harvest area (DNRC 2004). Deterimental soil impacts are considered substantive when they exceed 20 percent of a harvest area DNRC 1996).

### 4.3 General Harvest Mitigation Measures:

* Limit equipment operations to periods when soils are relatively dry (less than 20%), frozen or snow covered to minimize soil compaction and rutting, and maintain drainage features. Check soil moisture conditions prior to equipment start-up. Some moister conditions are accepted on harvest units where tractors remain on designated trails and timber will be winched to trails.

* The logger and sale administrator will agree to a general skidding plan prior to equipment operations. Designated skid trails may be required on complex terrain. Tractor skidding will be limited to 45% or less slopes on all other sites.

* Mark and maintain ERZ's Equipment restriction zones on localized moist sites, draws and short steep slopes within harvest units as noted in site-specific notes.

* Slash Disposal- Limit scarification to 30% of units where regeneration desired. No tractor piling on wet sites or slopes over 35%. Retain 5-10 tons/acre large woody debris for nutrient cycling and longterm productivity. On the rock outcrop sites with lower BA retain large woody debris as feasible since it may not be possible to retain 5 tons/acre. Consider lop and scatter or jackpot burning on steeper slopes.

### 4.4 Noxious Weed Management:

No noxious weeds occurrences were noted within the project area. A general site survey for noxious weeds would be completed during the contract review for design needs. As an integrated weed management approach, DNRC considered a combination of the following measures to be most effective; pre-

ventative measures; herbicide control of spot weed infestations if they occur; and prompt revegetation of roads and landings to limit the possible spread of noxious weeds into the project area[9].

DNRC. 1996. State Forest Land Management Plan - Final Environmental Impact Statement. Forest Management Bureau, Missoula, MT
DNRC. 2004. DNRC Compiled Soils Monitoring Report on Timber Harvest Projects 1988-2003. Forest Management Bureau, Missoula, MT

## 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 AFFECTED ENVIRONMENT:

#### 5.1.1 WATERSHED:

The proposed timber sale is located in an area that is drained by two unnamed, first order, intermittent tributaries, and one unnamed, third order, perennial tributary to the Castle Fork of Deep Creek. Deep Creek is a large perennial tributary to the Missouri River. The unnamed tributaries drain a combined watershed area of approximately 1947 acres. Less than 30% of the watershed area is forested. The watershed area consists of predominately south aspects with primarily grassland and rangeland vegetative cover.

This portion of the Missouri River basin, including Deep Creek and its tributaries, is classified as B-1 in the Montana Surface Water Quality Standards. The B-1 classification is for multiple use waters suitable for domestic use after conventional treatment, growth and propagation of cold-water fisheries, associated aquatic life and wildlife, agricultural, and industrial uses. Among other criteria for B-1 waters, no increases are allowed above naturally occurring concentrations of sediment, which will prove detrimental to fish or wildlife. Naturally occurring includes conditions or materials present from runoff on developed land where all reasonable land, soil, and water conservation practices have been applied. Reasonable practices include methods, measures, or practices that protect present and reasonably anticipated beneficial uses. The State has adopted Forestry Best Management Practices through its Nonpoint Source Management Plan as the principle means of controlling nonpoint source pollution from silvicultural activities. The most sensitive downstream beneficial uses in Deep Creek are cold- water fisheries and aquatic life support.

#### 5.1.2 CUMULATIVE WATERSHED EFFECTS:

There has been very little development activity in the watersheds of the three unnamed tributaries in the recent past. There are only about 2.7 miles of existing road and 80 acres of recent timber harvest within these watersheds. The existing harvest units were treated with of individual and group selection prescriptions. The existing harvest area and roads combine for an equivalent clearcut area (ECA) of approximately 45 acres. This figure represents less than 3% of the total watershed area in equivalent clearcut area. These levels are well below commonly accepted thresholds for ECA and

[9] *"Soils Report for Skidway Timber Sale"*, Gary Frank, Supervisor, Resource Management Section –DNRC, Missoula, Montana, February 28, 2006, p.2

potential water yield increases that are associated with detrimental impacts to stream channels. Stream channel conditions and stability where evaluated during a previous DNRC project in 1993 and found to relatively good condition. The area only receives an average of approximately 18" of annual precipitation resulting in a relatively low amount of runoff. Field reviews conducted in 1993 also found no evidence of cumulative watershed impacts occurring in these drainages. The State section is currently under lease for grazing of 377 AUMs. No substantial impacts from livestock grazing were noted during field reviews.

### 5.1.3 WATER QUALITY:

Deep Creek was included on the 1994 and 1996 Montana 303(d) list of water quality limited waterbodies. Deep Creek was included on the list because the cold-water fisheries and aquatic life support beneficial uses were determined to be only partially supporting. The causes of impairment were identified as flow alteration, other habitat alterations, siltation and suspended solids. The probable sources of impairment were identified as agriculture, irrigated crop production, natural sources and rangeland.

A Total Maximum Daily Load (TMDL) was developed for Deep Creek in 1996. The emphasis of the Deep Creek TMDL was to improve the potential of this stream to provide natural spawning and recruitment for migratory trout. The TMDL focused on agricultural and irrigation uses in the lower and middle segments of the watershed. The TMDL did not address the forested headwaters where the proposed timber sale is located.

Portions of a newly constructed road in the State section would require additional surface drainage to fully meet Best Management Practices (BMPs). This includes at least one stream-crossing site with potential for direct sediment delivery to one of the intermittent tributaries. Improvements and additional drainage feature were installed in the existing road located in the SW1/4 of the section under a timber permit in1994. The road was improved to meet BMPs and is not considered a source of water quality impact in its present condition.

### 5.1.4 FISHERIES:

There are no fisheries within the State section. The mainstem of Deep Creek contains brook trout, brown trout, rainbow trout, mottled sculpin, flathead chub, longnose dace, longnose sucker, and white sucker. There may also be stocked fluvial arctic grayling in Deep Creek. There are no known fish surveys in the Castle Fork of Deep Creek (MFISH 2006).

## 5.2 ENVIRONMENTAL CONSEQUENCES:

The proposed timber sale would harvest approximately 520 MBF with approximately 72 acres of intermediate thinning, 40 acres of seed tree and 36 acres of shelterwood prescriptions. The proposal also includes approximately 0.57 miles of temporary road construction and use of 2.7 miles of existing road located on the State section and the adjoining Helena National Forest. The remaining access and haul route consist of paved State highway.

### 5.2.1 CUMULATIVE WATERSHED EFFECTS:

No impacts due to cumulative watershed effects are anticipated under the proposed action. Forest stands are not likely to be a major influence on the hydrology and flow regimes of the streams draining the proposed timber sale area. Many of the trees in the proposed harvest units have been affected by spruce budworm. The proposed harvest is not expected to substantially decrease the levels of canopy interception or evapotranspiration potential over that likely to occur in these watersheds under no action. The levels of harvest proposed are also well below those cumulative levels associated with detrimental increases in water yield. There is no evidence of channel instability or existing cumulative watershed impacts in the drainage.

### 5.2.2 WATER QUALITY:

The primary risks to water quality are associated with roads, especially roads constructed along or crossing streams. The proposal involves only a minor amount of temporary road construction and no new stream crossings or road adjacent to streams are proposed. The proposed temporary roads are located high on or near ridge tops. These locations contain gentle to moderate slopes and are well buffered from streams or ephemeral draw features. The proposal includes improvements to the existing road system on State land to ensure compliance with BMP standards.

Some SMZ timber harvest is included in the proposed action. These harvests would consist of cable yarding of individually selected trees from within the SMZ. All SMZ harvest would be designed and conducted in accordance with all requirements of the Montana Streamside Management Zone Law and rules. The amount of trees harvested from within the SMZ would be constrained by the minimum retention tree requirements. The amount of SMZ harvest is not expected to be substantial given the levels of stocking of saw timber size tree located immediately adjacent to streams.

Best Management Practices (BMP's) for road building and timber harvest and site-specific design recommendations from a DNRC Hydrologist would be incorporated into the design of the proposed actions. Application of BMP's and the SMZ Law is expected to reduce erosion and potential water quality impacts to an acceptable level. Acceptable levels are defined under the Montana Water Quality Standards as those conditions occurring where all reasonable land, soil and water conservation practices have been applied. There is little risk of direct, indirect or cumulative impacts to water quality or downstream beneficial uses occurring under this proposed action.

### 5.2.3 FISHERIES:

No direct, indirect or cumulative impacts to downstream fisheries in Castle Fork or the mainstem of Deep Creek are expected to occur as a result of the proposed actions. There are no fish bearing streams within the immediate project area. The potential for downstream effects to fish or fish habitat is limited to a low risk of accelerated rates of downstream sediment delivery from the proposed sale area. The risk of this occurring is low due to the following reasons: 1) The proposed new road construction does not include new stream crossings or road segments at risk for downstream sediment delivery; 2) the proposed temporary road construction is located on gentle to moderate slopes locate on or near ridge tops that are well buffered from streams and ephemeral drainage features; 3) timber harvest and temporary road construction would fully utilize BMPs to minimize risk

or erosion; and 4) the proposed SMZ harvest would be conducted by cable yarding and follow all requirement of SMZ law and rules. [10]

## 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.[11]
- 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:

Montana Natural Heritage Program has identified Austin's Knotweed, *Polygonum douglasii ssp. austinae* as a "Sensitive" plant species of concern.

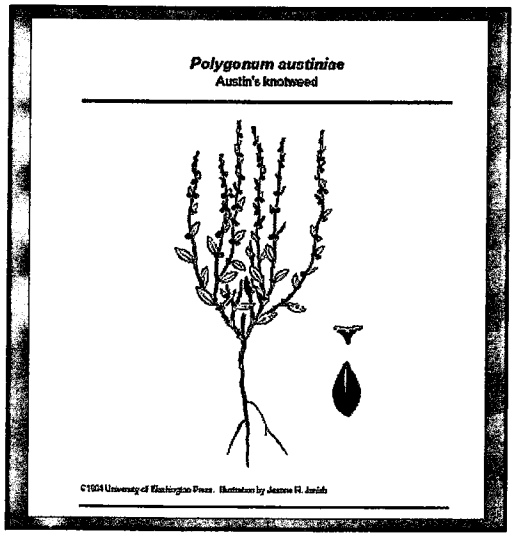
**General Description:** Low, basally branched and ascending to erect, more or less scurfy (covered with scale-like particles) annual, usually 2-4 (but sometimes up to 8) inches tall; leaves numerous, jointed at base, the lower ones ovate or elliptic to broadly oblanceolate, usually 3/16 to ⅔ inch long and ½ to ⅓ as broad, narrowed to a very short petiole, gradually reduced and becoming sessile upward and transitional to the uppermost small bracts; stipules ⅛ to 3/16 inch long, eventually lacerate; flowers 1-4 in the axils of all but the lowermost leaves, in slender open racemes, soon reflexed, the pedicels 1/16 inch long; perianth about 1/16 inch long, connate for 1/4 to 1/5 the length, the segments 5, greenish with whitish or pink-tinged margins; stamens 5-8; styles 3, distinct barely <1/16 inch long; achene with 3 salient angles (the sides concave or channeled), black, nearly smooth, shining, ⅛ inch long, ovate in outline but tapered to both ends.

[10] *"Watershed and Fisheries Report Skidway Timber Sale"*, Gary Frank, Supervisor, Resource Management Section –DNRC, Missoula, Montana, February 27, 2006, p.3

[11] *"Smoke Monitoring Unit"*, Montana/Idaho State Airshed Group. Available at: http://www.smokemu.org

**Range:** Disjunct in WA; central Oregon, to northeast California, east across southern Idaho to south-central Montana and Wyoming. Reported also for eastern British Columbia. In WA, the species is known from Grant County in the Columbia Basin physiographic province.

**Habitat:** Dry to moist flats or banks, from the sagebrush plains into the lower mountains, often in ponderosa pine (*Pinus ponderosa*) forest. In WA, the species occurs with thyme buckwheat (*Eriogonum thymoides*) and very sparse grass.[12]




Map provided by the Natural Heritage Program indicates the location of Austin's Knotweed to be in close proximity to Dry Creek, outside of the proposed project area. In addition, the habitat requirements of this vascular plant as defined above, do not coincide with the habitat type fond in the proposed harvest area. Because of this adverse impacts to this sensitive species are not anticipated by the implementation of this timber harvest.

## 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.

## 7.3 Vegetative Analysis:

Montana Natural Resources Information System (NRIS), which is a clearinghouse for GIS databases and provides services to groups or individuals needing access to GIS technology, was used to determine vegetative cover types, timber harvest areas, and ownership.

### 7.3.1 Vegetative Analysis Study Area:

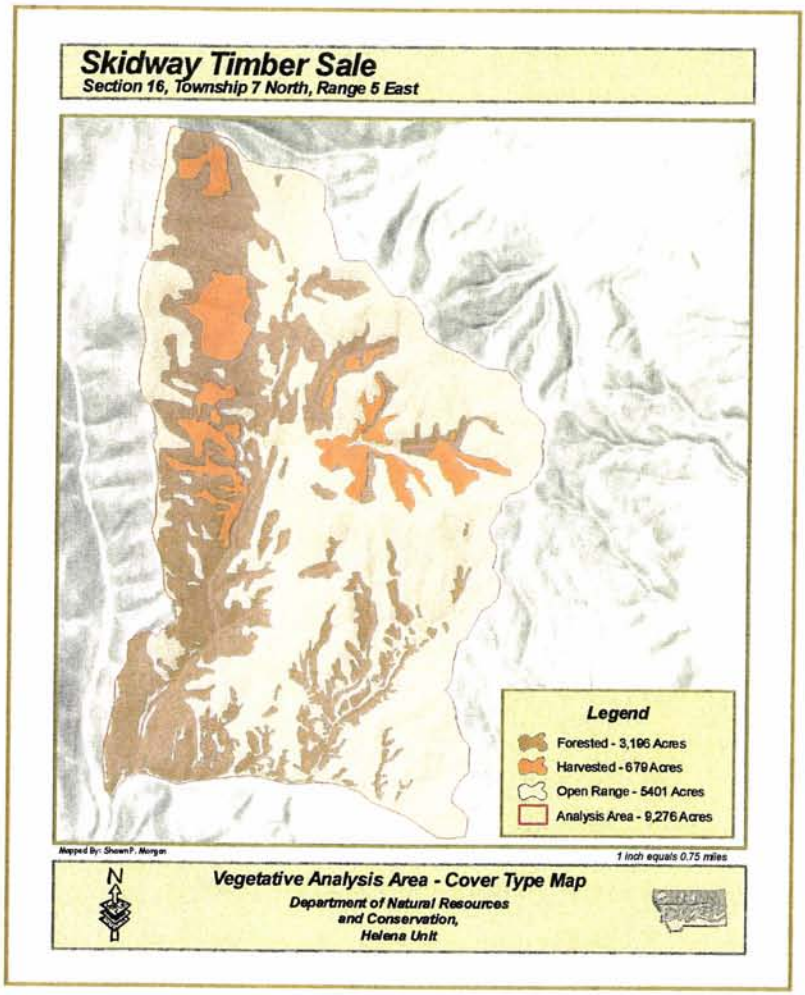
The study area is approximately 9,276 acres and follows the rough description listed below:. Starting in the southeast corner of the analysis area on U.S. Route 12, you would travel north-northwest for close to 8.6 miles. This segment of the boundary follows the Broadwater/Meager County line. From this point, the study area periphery breaks to the south along "Windy Ridge" for approximately 6.2

[12] Hitchcock, C. L., A. Cronquist, M. Ownbey, and J.W. Thompson. 1964. *"Vascular Plants of the Pacific Northwest, Part 2: Salicaceae to Saxifragaceae"*. University of Washington Press, Seattle. 597 pp.

miles before tying into U.S. Route 12 once again. Traveling east along the bottom edge of the study area, you would go through Deep Creek Canyon for approximately 3.2 miles before returning to your starting point.

### 7.3.2 COVER TYPES:

Air photo and topographic map coverage was evaluated in Arc GIS to determine vegetative status in the analysis area. The area was broken into three cover type categories, digitized to determine acres, and divided according to ownership.




Open rangelands encompass nearly 5,400 acres, or 58% of the study area with native grass being utilized by cattle for grazing. Douglas-fir, the primary timber type on close to 3,196 acres, or approximately 34%, dominates steeper north facing slopes. Past timber harvesting has occurred on roughly 679 acres (8% of the analysis area) and is mostly on private lands within the analysis area. Round Grove Ranch, whose ownership takes in approximately 4,013 acres (43%) of the study area, is currently participating in timber management activities.

The 148-acre, Skidway Timber Sale would reduce the polesized and sawtimber forested-acres within the Analysis area by approximately 4.6%. The proposed project would not adversely impact, or alter greatly the current vegetative cover types within the analysis area.

### 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.

#### 7.4.2 OLD GROWTH DETERMINATION FOR PROPOSED PROJECT:

Trees within the proposed Skidway Timber Sale area do not meet the minimum age characteristics for East Side Montana, Old Growth Type Code 1, and therefore has been 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 would 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-2 steam segment within the harvest unit.

### 8.2 BIRDS:

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

### 8.3 ANIMALS:

A variety of animals utilize the diverse habitat of the Deep 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. Austin's Knotweed, *Polygonum douglasii ssp. austinae* was identified as a "Sensitive" plant species of concern. It is anticipated that harvesting activities would not adversely impact this vascular plant as required habitat does not coincide with that found in the project area.

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. 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:

Toston-Maudlow fire of 2000 burned nearly 77,000 acres near the proposed harvest area. Because these trees have been dead for more than five years, adverse impacts to the Black-Backed Woodpeckers are not anticipated.

### 9.1.7 PILEATED WOODPECKER:

Large diameter ponderosa pine, western larch, and black cottonwood are used for nesting cavities by the Pileated Woodpecker. These species are not presently found in the harvest area, however if nesting sites become established, "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.*

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. [13]

## 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 Skidway Timber Sale is somewhat isolated, accessed through Forest Service 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 units being located at various slope intervals on the mountainside.

The harvest units will be irregular in shape and size and will be approximately 148 acres. Slated for cutting are disease/damaged dominant and codominant as well as suppressed and intermediate Douglas-fir. Residual Douglas-fir should most likely be large in diameter and at spacing that most resembles a seed tree or shelterwood harvest. In addition, a small portion of the harvest units may be intermediately thinned to approximately 70 $ft^2$.

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

**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 are 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 producing 377 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.*

**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 will authorize 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:

- 520 MBF x 150.00/MBF = $78,000.00

This estimate is based on current stumpage value and is intended for relative comparison of alternatives. It is not intended to be used as an absolute estimate of return.

### 24.2 FUTURE MANAGEMENT OPTIONS:

Implementation of this project would increase the managed forest base on State Trust Lands. This would 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 $685.02 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 proposed alternative to harvest approximately 520 MBF from up to 148 acres. The harvest will be from several different forest stands on this tract using various even-aged silvicultural

prescriptions specific to each. Harvest will be conducted using both ground based and cable yarding systems depending upon the terrain.

## 26. SIGNIFICANCE OF POTENTIAL IMPACTS:

No issues with significant adverse direct, indirect or cumulative effects have been identified. Compliance with Forestry Best Management Practices, the SMZ Law, Administrative Rules and Standards, and contract provisions provide a framework of standard environmental protections.

## 27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

| | | | | | |
|---|---|---|---|---|---|
| | EIS | | More Detailed EA | X | No Further Analysis |

| | | | | |
|---|---|---|---|---|
| EA CHECKLIST APPROVED BY: | NAME: | D.J. Bakken | | |
| | TITLE: | Helena Unit Manager | | |
| SIGNATURE: | | Darrel J Bakken | DATE: | 3/24/2006 |