

Courie
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CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Smith River II	RECEIVED <small>on</small> DNRC-Trust L MAY 08 2004
Proposed Implementation Date:	July 1, 2004	
Proponent:	DNRC, 8001 North Montana Ave. Helena, Montana 59602	
Location:	Section 36, Township 16 North, Range 3 East	
County:	Cascade County, Montana	

LEGISLATIVE ENVIRONMENTAL
POLICY OFFICE

I. TYPE AND PURPOSE OF ACTION

Implementation of an even-aged silvicultural system should improve the overall health and vigor of Douglas-fir timber type on the landscape, as well as enhancing age-class diversity. This irregular shelterwood harvest would reduce the currently heavily stocked Douglas-fir stand to levels that would have historically occurred had fire been a recent part of the natural ecosystem. In addition, income generated from this timber harvest should benefit the school trust.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:
Provide a brief chronology of the scoping and ongoing involvement for this project.

An initial scoping letter was sent out in late August of 2003 to selected entities who are listed on the DNRC, Helena Unit "Timber Sale Scoping List". Individuals selected to receive an Initial Proposal Letter expressed an interest in the project, whether it be a county representative, special interest or coordinating group, or committee. Adjacent landowners also received an Initial Proposal Letter making them aware of planned activities in their area. Legal notices were published in the Cascade Courier and Great Falls Tribune in early September of 2003, requesting comments be made to the DNRC Helena Unit office by September 31, 2003. A complete listing of persons and agencies contacted, as well as written comments are on file at the Helena Unit DNRC office located at the address noted above.

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

Permits from other agencies would not be needed for the implementation of this project.

3. ALTERNATIVES CONSIDERED:

The "No Action Alternative" would be to not harvest timber at this time. Property would continue to be used for grazing and recreational outfitting.

The Proposed Action Alternative would include the following actions:

- Use of existing 3.22-mile access road may require excavation to create drain dips in key locations, diverting road segments that are excessive in slope, and leveling/grading of the rough spots.
- Construction of new road, for a distance of 6,559 feet would be necessary to access the sale unit. After harvesting operations are completed, a portion (2766 feet) of the newly constructed road would be closed, and motorized access restricted.
- An even-aged silvicultural system implementing an irregular shelterwood harvest should remove approximately 76% of the trees in Unit 1-L, or roughly 69% of the basal area of trees ≥ 6 inches d.b.h.
- Excessive slopes of ≥ 60% favor a skyline-yarding operation. Use of a fixed position carriage to laterally-yard cut forest products should minimize residual tree damage.

- Lop and scattering of course woody debris should minimize potential wildland fire hazards, retain soil nutrients, and serve as an erosion control practice. Slash generated alongside road system would be used to close the access route after project completion.
- Weed management actions would include a 3-year post-harvest monitoring program with treatment being based upon need.

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.

Issues related to soil protection, scarification, timing of activities, and recommended BMP's were reviewed by Jeff Collins, Soil Scientist, DNRC and are as follows:

- Geology is limestone, which is exposed on ridges. No unstable slopes or unique geology features are present. Smith River Breaks are fairly unique rock bluffs east of sale are. Forest soils are shallow to mod. deep very stony loams on mid to upper slopes, and erosion risk is moderate. Carbonates occur at shallow depth. Toeslopes have deeper clay rich soils adjacent to creek. Soils on steep slopes are easily displaced by equipment operation that may impact soil productivity depending on area and degree of effects. Planned cable harvest and road construction should have low direct, indirect or cumulative impacts to soils. Mitigations include implementing BMP's and prompt revegetation of disturbed sites to protect soil resources.

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.

A report pertaining to hydrology, water quality, beneficial uses, and fisheries was prepared by Gary Frank, Hydrologist, DNRC, and is attached for review. Implementation of the proposed action alternative should have no direct or cumulative impacts on water resources.

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.

Effects to air quality should be nonexistent as slash will be lopped and scattered, not burned.

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.

The Vegetative Analysis area encompasses ~ 4,575 acres, of which 85% of the ownership is private, 14% State Trust Lands, and 1% Montana Fish, Wildlife, and Parks. Open rangelands make up 71% of the current cover type, with forested acres at 25%, Agricultural fields at 1%, and harvested timber lands at 3%. State Trust Lands within the analysis area totals one section, and is 638 acres in size. The Smith River, a Class-1 stream segment, borders the east edge of the study area and is used quite extensively for recreation.

The proposed shelterwood harvest totals ~ 40 acres, or about 6% of State ownership. Although this stand is primarily even-aged Douglas-fir at roughly 100 years old, a small component of older (204+ years) thick bark-plated fir can be found scattered throughout as well. It appears that these larger trees may have survived a

near stand replacement fire to provide seed and shelter to the current trees that have developed underneath. Planned even-aged silvicultural practices would emulate past fire regimes by removing approximately 112 ft² of basal area from the stand. Large dominant sawlog sized trees, where applicable would be left to maintain some structural diversity, produce future den and nesting trees and increase visual diversity on the landscape.

No known noxious weeds have been found in the harvest unit or along the access route while conducting field reviews. In all likelihood, Leafy Spurge can be found along the Smith River (no survey was conducted in this area) where the proposed action has no impacts. A detailed Vegetative Analysis of the project area was completed and is attached.

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.

The Class-1 stream segment north of the project area does not support a fishery. Measures have been taken however, to maintain the riparian zone by incorporating wider than required SMZ's, utilizing natural-landscape features. Timber harvesting will not take place within the SMZ, maintaining it's current vegetative condition. The ecosystem of the Smith River corridor should remain in its current state, as harvesting activities would take place on the northwest-facing slope of the ridge, therefore being entirely outside of the main Smith River watercourse.

Deer, elk, black bear, other small mammals, and avian species that currently utilize habitat within this project area should continue to fill their respective niches after implementation of the action alternative. The State tract is at present 60% forested and will remain that way after harvest albeit, in a slightly different age-class structure. This may move stand composition and age-class structure towards more representative historic conditions when fire was more apart of the landscape. No direct or cumulative adverse effects are anticipated.

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.

Information regarding identified Threatened and Endangered as well as Sensitive species as outlined in the Montana Administrative Rules is as follows:

- **Bald Eagle** - Montana Natural Heritage Program shows an Eagle nesting site located over a half mile to the northeast. Although the proposed activities would take place outside of the "Nesting Site Area" (400m) and the "Primary Use Area" (800m), it would still be within what is considered the "Home Range" area of 2.4 miles. Timber harvesting requirements would protect existing large snags, while creating large perch and roost trees by implementation of the proposed shelterwood practice. This enhanced habitat in all likelihood would not be used by the Bald Eagle as it is not in close proximity to the Smith River. Some potential transient use may occur due to the adjacent location of the Smith River corridor to the east. No effects to the Bald Eagle are expected.
- **Gray Wolf** - No known den sites or recorded use by wolfs in this area.
- **Grizzly Bear** - The project area is not in the Grizzly Bear recovery area and would not be considered part of any realistic long distance travel corridor.
- **Lynx** - Suitable Lynx habitat is not found within the project area.
- **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 do not match the favored habitat requirements of the Flammulated Owl, and therefore conflicts are not expected.

- Black-Backed Woodpecker - There have been no recent burns within several miles of the project area to create suitable habitat for the Black-Backed Woodpecker, therefore no adverse impacts are anticipated.
- Pileated Woodpeckers - Large diameter ponderosa pine, western larch, and black cottonwood used for nesting cavities by the Pileated Woodpecker are not found within the sale area therefore conflicts are not expected.
- Fisher - Suitable Fisher habitat is not found within the project area.
- Northern Bog Lemming - The project area contains no suitable Lemming habitat.
- Peregrine Falcon - No known nest sites. Some potential transient use may occur due to the adjacent location of the Smith River corridor to the east. No effects to the Falcon are expected, as no actions are proposed for the cliff faces, which might provide nesting habitat.

Montana Natural Heritage Program was contacted as well, to provide Threatened and Endangered, and Sensitive species information for the project area. The Bald Eagle was the only species identified.

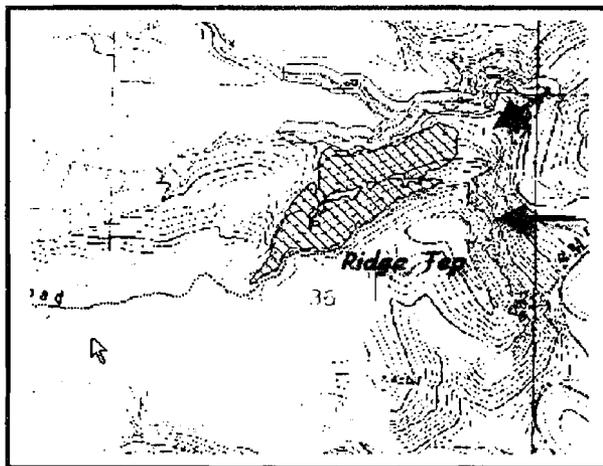
10. HISTORICAL AND ARCHAEOLOGICAL SITES:

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

No cultural resources were observed during several project reconnaissance of the area.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.



Timber sale area indicated with blue cross-hatching, red arrows show steep slopes leading up to the ridge top above.

Steep Madison Limestone canyon walls of the Smith River Corridor, covered with mature Douglas-fir, provide spectacular views for river users below. The position of the timber sale area, on the northwest facing slope of this hilly topography, along with the dense forested stands that are between the harvest unit and the river should visually screen any logging activity that would take place. Within the harvest unit, an irregular shelterwood harvest would result in large, mature Douglas-fir being scattered throughout to not only provide seed and shelter to a newly developing stand, but vertical structure as well. Because of the relatively small acreage involved (75 to 100 loads of logs), harvesting activities should be short in duration, and as a result minimal noise disturbances are expected. Logging operations will not be conducted from March 1st through July 15th to account for spring break-up and seasonal rafting opportunities on the Smith River. There are no residences in the close proximity (several miles) to the proposed sale area. Cumulative aesthetic effects due to additional

harvesting activities should be minimal as no other timber sales or other agency actions are being planned on adjacent lands to my knowledge.

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.

Not Applicable.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

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

The state tract includes an active grazing lease on 275 suitable acres, producing 115 AUM's annually. In addition, a Special Use License for recreational outfitting is attached to this property as well. These activities would remain unchanged in both alternatives. Under the action alternative, the Department may begin weed management activities following harvesting if the need arises.

<p style="text-align: center;">IV. IMPACTS ON THE HUMAN POPULATION</p> <ul style="list-style-type: none">• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i>• <i>Enter "NONE" if no impacts are identified or the resource is not present.</i>
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14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

Cascade County is planning maintenance activities to upgrade the Upper Millegan Road system, the main public access route to the proposed project area. Coordination between Cascade County Road Department, sale contractor, and DNRC would take place before harvesting operations begin, to determine uses patterns which will minimize damage to the newly refurbished road system. This may include limited hauling during periods of saturated county road conditions, to minimize rutting. Due to the small amount of volume being removed, (75-100 loads of logs), an agreement that takes into consideration the concerns of all involved entities should be obtainable. Seasonal operational restrictions from March 1st, through July 15th should reduce potential conflicts between logging trucks, rafting outfitters, and shuttle companies transporting clients to and from the Smith River. This should also account for the seasonal road break-up period, which occurs each spring, further protecting the Upper Millegan Road.

Upper Millegan Road has been used to access private timber harvest in the past, as well as to enter the Smith River for rafting and other recreational activities. The traffic generated as part of the action alternative should pose no increased risk to users of this road.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

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

Not Applicable.

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 the region. Due to the relatively small size of the timber sale program, there should be no measurable cumulative impact from this proposed action on employment.

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 from the wood products industry in the region. Due to the relatively small size of the timber sale program, there should be no measurable cumulative impact from this proposed action on tax revenues.

18. DEMAND FOR GOVERNMENT SERVICES:

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

There should be no measurable cumulative impacts related to demand for government services due to the relatively small size of the timber sale program, the short term impacts to traffic, possible temporary relocation 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.

The State Forest Land Management Plan (SFLMP), approved by the State Land Board in June 1996, guides the management of the forested trust lands. This guidance is provided in the form of general management philosophy and specific resource management standards. The strategic guidance provided by SFLMP is as follows:

- Our premise is that the best way to produce long-term income for the trust is to manage intensively for health and biologically diverse forest. Our understanding is that a diverse forest is a stable forest that will produce the most reliable and highest long-term revenue stream. Healthy and biologically diverse forest would provide for sustained income from both timber and a variety of other uses. They would also maintain stable trust income in the face of uncertainty regarding future resource values. In the foreseeable future timber management will continue to be our primary source of revenue and primary tool for achieving biodiversity objectives.

In February 2003, the State Land Board approved new Forest Management Administrative Rules (Rules) that provide programmatic direction for the Forest Management Program. These rules are written in support of the resource management standards contained within SFLMP.

The proposed action alternative complies with the Montana Forest Management Administrative Rules.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

The road system used to enter State Trust Lands passes through private ownership, currently restricting public motor vehicle access to the state tract. A public access opportunity does exist however, if interested users are willing to float the Smith River, which borders State Trust Lands as well as Montana Fish, Wildlife, and Parks property on the east side. Persons having a valid State Trust Land Recreational Use Permit are welcome to hike or perform other outdoor activities such as picking chokecherries. Beginning in 2004, purchase of a conservation license will authorize use of accessible Trust Lands for hunting and fishing. An exclusive outfitting, special recreational use license (CLO-99-016) is currently applied to this acreage for hunting. An exclusive outfitting license is given to one licensed outfitter for operation of their business within a particular tract. It does not preclude public hunting by individuals with a valid hunting license, permit and access.

Smith River provides a unique recreational floating opportunity for nearly 3,700 people a year, as there is only one public put-in and take-out site on nearly 59 miles of river between Camp Baker and Eden Bridge. It is the only permitted river in the State of Montana, being administrated by the Great Falls Office of FWP, Region 4. Applications are taken each year from January 1st through February 15th, with the drawing of permits being held in March.

Mountain snow pack and rainfall are heavily relied upon to provide seasonal floating opportunities on the Smith River, which usually last from late April until early July. Large economic impacts to small businesses and local communities result from the creation of seasonal jobs, which cater to users of the waterway whether it is vehicle shuttle companies or rafting outfitters.

The proposed harvest unit is relatively small in size implementing an irregular shelterwood harvest, and would not be visible to users of the Smith River, as described in section-11. By definition, an irregular shelterwood harvest will delay removal of the overstory Douglas-fir to provide protection to the new seedling crop, gain additional growth on the overstory trees, and provide future snag recruitment. This type of delay may induce irregularity in the height growth of the new stand. The remaining shelterwood trees, coupled with the irregular height growth, could increase the visual aesthetics of the harvest unit by developing vertical structure. The overstory would be proposed for removal in 15 to 20 years when the seedling/sapling stand was well developed and fully stocked the site. Implementation of this even-aged silvicultural action alternative would continue to provide wildlife habitat suitable for deer, elk, bear and many other species that need young trees for browse, cover, and utilize forest edge.

An effective vegetative buffer has been maintained along a class-1 stream segment, which is adjacent to the northern sale boundary line. The SMZ exceeds 120 feet in many locations and does not include any potentially adverse actions.

Execution of this action alternative should promote biodiversity through a coarse filter approach, favoring an appropriate mix of stand structure and composition on the landscape. A silvicultural system has been selected to resemble a natural disturbance regime (near stand-replacement fire), promoting age class distribution, stand structure, healthy diverse forests, and canopy structure to name a few. This should not only increase ecosystem diversity on the environmental surroundings, but provide income to the Trust as well.

This project is not expected to result in any real adverse effects to recreational use or aesthetics.

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 relatively small size of the timber sale program, and the fact people are already employed in this occupation in the region.

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.

The action that is being proposed not only takes into consideration silvicultural and biological characteristic of managing this forested stand, but the economic viability of implementing such a project as well. Developmental fees are expected to total roughly \$4.95/MBF; covering such items as R/W use agreements and potential future weed control cost. The expected purchaser road building and associated cost is approximately \$19,617.01, or \$53.02/MBF. Total development cost would therefore be, adding the two together, \$57.97/MBF. On top of this, adding rates for timber harvesting, hauling, and other business expenditures would bring the total stump to mill cost up around \$264.09/MBF.

Lumber price index for Douglas-fir was \$386.26/MBF during February of 2004. Subtracting the anticipated costs of \$264.09/MBF would leave approximately \$122.17/MBF for stumpage. Forest improvement and stumpage combined should bring in \$137.67/MBF (\$50,937.90) to the Trust.

Future forest management options may include pulpwood harvest, helicopter logging, and other line-yrading opportunities, which are currently not feasible due to market conditions and access limitations. Implementation of these future objectives should increase the managed forest base within this section and, as a result produce a healthier forested stand that would bring in additional revenue to the Trust. If the current trend continues it is likely that the proposed harvest area could be entered in 60 - 80 years, when the stand is once again mature.

Grazing of State Trust Lands in this section currently brings in \$561.20/yr. (\$4.88/AUM X115), while outfitting contributes \$451.59 annually. 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 probably 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: 3-24-2004
	Title: Helena Unit Forester	

V. FINDING

25. ALTERNATIVE SELECTED:

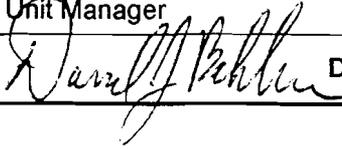
I have selected the proposed action alternative, to harvest timber on an estimated 40 acres of school trust land using a shelterwood silvicultural system and a combination of 3.22 miles of existing private road, approximately 0.72 miles of new permanent road (across open rangeland), and approximately 0.52 miles of new temporary road.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

The proposed actions will generate positive revenues for the school trust. Natural tree regeneration will yield a healthy forest stand with vertical structure and diverse conditions, a semblance of conditions, which occur naturally on this type of site. Use of standard BMPs, compliance with the Forest Management Administrative Rules, and project administration consistent with standard DNRC practice and contract provisions will prevent any significant direct or cumulative adverse effects.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

FIS More Detailed FA No Further Analysis

EA Checklist Approved By:	Name: D.J. Bakken	
	Title: Helena Unit Manager	
Signature: /S/ Darrel J. Bakken 	Date: 4-28-2004	

TO: SHAWN MORGAN, Field Supervisor, Helena Unit
D. J. BAKKEN, Unit Manager Helena Unit
GARRY WILLIAMS, Area Manager, Central Land Office
GARY FRANK, Supervisor, Watershed Resource Section
JIM BOWER, Fisheries Biologist, Watershed Management Section

FROM: JEFF COLLINS, Soil Scientist

SUBJECT: SMITH RIVER 2 TIMBER SALE Section 36 T16N, R3E,

Potential Issues and Concerns

Potential impacts are soil erosion, increased sediment delivery to draws, displacement and decreased soil productivity, depending on the area and degree of effects.

EXISTING CONDITIONS

1.) Geology

The proposed sale area is located on one state section with moderate to steep slopes on the westerly side of the Smith River. Madison Limestone forms the canyon ridges along the Smith River and the bluffs are fairly unique geologically. Siltstones and clay shales occur on range sites and concave slope above the river breaks. Bedrock outcrops are common on ridges and upper slopes. Bedrock is rippable on most proposed road location, but several spots near the road end will likely require blasting. The moderate sideslopes form the rounded ridges and benches above the cliffs, which are good positions for cable operations and roads. No unstable sites were noted on the proposed harvest area. On forest sites, soils are forming in residual and colluvium material weathered from bedrock of limestone. The limestone bedrock is stable. New roads across shallow limestone can be rough and abrasive to tires. Elevation range is 4000-4500 feet and precipitation received during the year is about 16-24 inches, occurring mostly in winter.

Soils

Dominant soils in the forested area are Sheege very stony loams forming in limestone residuum and colluvium on mid to upper slopes and ridges of 5-60%. Sheege soils have a very stony loam surface about 6 inches deep over very stony loams with carbonates at 6-8inch depth that restrict fine root growth. Fractured bedrock is common at depths of 2 feet or less. Whitore cobbly clay loams are deeper soils forming on mid and lower slopes and have higher moisture retention and higher productivity than the Sheege soils.

The shallow depth to carbonates promotes Douglas fir and some ninebark vegetation. Climate and soil depth limit tree growth potential.

Both Sheege and Whitore soils have a long season of use, and are suitable for tractor skidding on slopes up to 45%. Soil displacement risk is high for equipment operation on steep slopes due to shallow topsoils. Erosion potential is moderate and material quality is good for roads. Downed coarse woody debris levels are average to high, in some areas. Primary concerns on all soils are maintaining surface soils and controlling disturbance and reducing plant competition.

Rangeland soils are typically deep gravelly silt loams and silty clay loams forming in shale and siltstones (Hansen and Work soils series). Erosion potential is moderate, and soils are well drained and droughty with an average dry season of use from June-October. Roads across these soils are good

when dry, but tend to rut if operated on when wet, and have a more limited season of use than the limestone soils on forested sites.

Roads

Existing road access is by the private road system. Some segments of steep road grades are rutted and have inadequate road surface drainage that requires maintenance. Standard road drainage features can provide adequate drainage and erosion control. No water quality departures were noted on the main access road.

No action

Effects would be the same as existing conditions. Existing trees may experience a slow decline in growth as plant competition increases for limited soil moisture.

Environmental effects of Action Alternative on Soil Resources

The proposed timber sale action alternative would selectively treat about 40 acres and reduce the overstocking of small and pole sized trees. Existing roads would have drainage improved to meet BMP's. Approximately 2 miles of minimum standard, new road would be constructed on suitable grades to provide access to unroaded areas. Proposed road construction is on moderate sideslopes that will require minimal excavation and have adequate road surface drainage installed. New roads, landings and disturbed areas would be grass seeded to control erosion. On rocky road edges near the end of the new road, revegetation will be difficult and sparse due to the dry site and calcareous subsoils.

The primary soil concerns are erosion and displacement of surface soil that can reduce soil productivity and moisture retention. The proposed cable harvest would cause minimal disturbance and direct or in-direct effects. A proportion of woody debris and fine litter will be retained for nutrient cycling and to control erosion. Tree growth should slowly improve with better spacing and as plant competition is reduced for limited soil moisture. North aspects should naturally regenerate to Douglas fir with limited soil disturbance.

Cumulative effects could occur from recurrent harvest entries that increased the area of soil impacts. Previous harvest was spotty and mainly post cutter action with no apparent soil effects. Roads were designed and located to provide for long-term access and to minimize construction. The combination of past effects and proposed cable harvest would cause minimal (generally less than 5%) ground disturbance and the risk of cumulative effects is low.

Stipulations and Specifications

- * Implement BMP's during road construction and timber harvest operations.
- * Limit season of use to relatively dry, frozen or snow covered conditions.
- * Retain a portion of slash and large woody debris > 3" diameter (5 tons) during harvest for nutrient cycling to maintain long-term soil productivity.
- * Install and maintain adequate surface drainages on new and existing roads.
- * Weed prevention measures should include requirement for weed free equipment and grass seeding of roads and landings.

* The sale area will be monitored two years following harvest, and if new weeds are detected, a weed control plan will be developed.

Recommended Checklist format for Soils and Noxious Weeds

II. IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES N = Not present or No Impact will occur. Y = Impacts may occur (explain below)
<p>4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are fragile, compactable or unstable soils present? Are there unusual geologic features? Are there special reclamation considerations? Are cumulative impacts likely to occur as a result of this proposed action?</p>	<p>[Y] Geology is limestone, which is exposed on ridges. No unstable slopes or unique geology features are present. Smith River Breaks are fairly unique rock bluffs east of sale area. Forest soils are shallow to mod. deep very stony loams on mid to upper slopes, and erosion risk is moderate. Carbonates occur at shallow depth. Toeslopes have deeper clay rich soils adjacent to creek. Soils on steep slopes are easily displaced by equipment operation that may impact soil productivity depending on area and degree of effects. Planned cable harvest and road construction should have low direct, indirect or cumulative impacts to soils. Mitigations include implementing BMP's and prompt revegetation of disturbed sites to protect soil resources.</p>
<p>7. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be permanently altered? Are any rare plants or cover types present? Are cumulative impacts likely to occur as a result of this proposed action?</p>	<p>[N] Vegetation Analysis, Stand conditions, Old growth analysis etc.....</p> <p>RARE PLANTS AND WEEDS PORTION No rare plants have been identified in the project area (Reference Project File, Montana Natural Heritage Program letter). No noxious weeds were noted within the section, and to prevent introduction of weeds off-road equipment will be cleaned and inspected prior to entry into harvest areas. New roads and disturbed areas will be reseeded with site-adapted grass.</p>

**Watershed/Fisheries Report
Smith River II Timber Sale EA**

G. Frank 3/23/04

AFFECTED ENVIRONMENT

Watershed

The proposed timber sale is located within a single parcel of State ownership (Section 36, T16N, R3E) that lies within the Smith River watershed. The Smith River is tributary to the Missouri River that drains a large basin including headwaters in the Big Belt, Little Belt and Castle Mountain Ranges. The mainstem of the Smith River flows through the east end of the project area (at approximate river mile 43). This section of the Smith River is commonly referred to as the "Deep Creek" section.

The proposed harvest area and new road access are located in the north ½ of the State section on moderate slopes and benches situated above an unnamed, third order, intermittent tributary to the Smith River. This Unnamed Tributary drains a watershed area of approximately 1788 acres. Segments of the Unnamed Tributary contain perennial spring-fed channel. However, the lower reaches of the drainage are intermittent and contain only well-defined Class 2 stream channel. There are no streams or well-defined ephemeral drainage features within the actual proposed harvest unit, or in the immediate vicinity of the proposed road location.

The existing road access and haul route from the proposed sale area would utilize an existing County and private road system.

Regulatory Framework

The Missouri River drainage, including the Smith River and the Unnamed Tributary draining the project area, are classified 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, and agricultural and industrial uses. Among other criteria for B-1 waters, no increases are allowed above naturally occurring concentration of sediment, which will harm or 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.

Existing beneficial uses in the immediate vicinity downstream of proposed harvest area include water rights for stock water, irrigation, wildlife uses of surface waters. Other sensitive downstream beneficial uses include aquatic-life support, cold-water fisheries and recreation.

The Montana Department of Fish, Wildlife and Parks (FWP) holds instream flow reservations for this segment of the Smith River (river mile 24.1 to rm 81.2) for stream flows ranging from 150 cfs to 400 cfs, depending on the time of the year.

The Smith River is managed as part of the Montana State Parks System. Under the Smith River Management Act. The FWP Commission establishes regulations for use of the Smith River in the Smith River Special Use Area.

This reach of the Smith River is listed as a water quality limited waterbody in the 1996, 2002 and Draft 2004 versions of Montana's 303(d) list (MTDEQ 1996, 2002 & 2004). The 303(d) list are compiled by the Montana Department of Environmental Quality (MTDEQ) as required by the Montana Water Quality Act (MCA 75-5-701 through 705) and Section 303(d) of the Federal Clean Water Act, and the Environment Protection Agency (EPA) Water Quality Planning and Management Regulations (40 CFR, Part 130). Under these laws, the State is

required to identify water bodies that do not fully meet water quality standards; or where beneficial uses are threatened or impaired.

State and Federal laws also require that these listed water bodies be targeted for Total Maximum Daily Load (TMDL) development. The TMDL process is used to determine the total allowable amount of pollutants in a water body. Each contributing source is allocated a portion of the allowable limit. These allocations are designed to achieve water quality standards or to fully support all beneficial uses. Under the A TMDL has been scheduled for completion by the U.S. Environmental Protection Agency during the year 2005. Under Montana Law (MCA 75-5-703(10)(c)), new or expanded nonpoint source activities affecting a listed water body may commence and continue provided they are conducted in accordance with reasonable land, soil and water conservation practices.

Existing Conditions – Direct, Indirect and Cumulative Impacts to Water Quality

Road construction, agriculture, livestock grazing, timber harvest, irrigation diversions and fire suppression activities have all occurred in the Smith River watershed throughout the recent and historical past. Existing direct, indirect and cumulative impacts to water quality and associated beneficial uses appear to be primarily related to agriculture, livestock grazing and irrigation related stream de-watering within the Smith River drainage. The Smith River is considered an impaired stream because it's aquatic life support, cold-water fisheries and recreation beneficial uses have been determined by DEQ to only be partially supported (MTDEQ 2004). The probable causes of this impairment have been identified as de-watering, flow alteration, nutrients, pathogens and phosphorus. The probable sources of impairment have been identified as agriculture, crop and grazing related sources (MT DEQ 2004). Other observed impacts to water quality within the project area include increased sediment delivery and channel instability in the unnamed tributary due to high levels of livestock use and bank trampling.

A course filter approach was used to determine existing conditions and to evaluate the potential for cumulative watershed impacts due to increases in water yield. Recent aerial photographs were utilized to estimate the percentage of drainage area forested and the extent of the existing timber harvests in each watershed analysis area. The analysis also included field evaluations conducted to: 1) Determine the existing stream channel and riparian conditions, 2) identify potential in-channel sources of sediment, and 3) verify harvest information obtained from air photos.

The results of the coarse filter analysis indicate there is a low risk of detrimental increases in water yield, or magnitude and duration of peak flows due to existing timber harvest and road construction in the unnamed tributary drainage. Existing cumulative watershed effects are unlikely in the watershed of the unnamed tributary due to the following reasons: 1) The project area is located in a landscape that receives relative low levels of precipitation and subsequent runoff. 2) Little if any of the forested area has been harvested in the recent past. 3) The watershed is only partially forested. Estimated levels of forest cover are only approximately 10% of the total 1708 watershed area. The remaining land area consists of primarily range foothills, open parks, rock walls, and scree and talus slopes. Forest crown has very little influence on the timing, intensity and duration of runoff in this drainage. 4) There is presently more total forest cover in the watershed than what likely occurred in the past due to the presence of range encroachment and higher stocking levels in forested stands than would be expected under natural (pre-fire suppression) conditions; and 5) Field inventories of stream channel conditions on State land in the watershed determined that there was no evidence of channel instability due to increases in the magnitude or duration of peak flows.

Detailed stream and drainage feature inventories and sediment source surveys were completed within the project area and on the State section by a DNRC hydrologist and soil scientist. The purpose of these surveys was to identify and inventory all existing and potential sources of channel instability, erosion and sediment delivery to streams occurring on State land. Channel stability of the Smith River within the State section was determined to be relatively "good" (Pfankuch 1978). The reach of the Smith River located on and immediately downstream of the State ownership has well vegetated banks and is surrounded by vigorous and healthy riparian plant communities. Channel stability of the Unnamed Tributary was determined to be fair. Recent levels of riparian livestock grazing and bank trampling have impacted this stream. The levels of impact were determined to be moderate to high. However, no large or substantial sources of fine sediment delivery were identified within the State section. No road sources or upland sources of direct sediment delivery or areas with high potential risk of deliver were noted on the State ownership.

Cold Water Fisheries – Existing Conditions

The Montana Department of Fish, Wildlife and Parks (MFWP) classified the Smith River a “Blue Ribbon” trout stream. This designation is given to streams with the highest sport fisheries resource values based on an assessment of fish abundance, fishing pressure, esthetic and ingress. MFWP has completed fisheries surveys in the “Deep Creek” section of the Smith River frequently since 1970 (NRIS 2004). These surveys have determined both rainbow and brown trout to be common. Westslope cutthroat trout were not present in any of the fisheries surveys conducted on the all sections of the Smith River. The unnamed tributary does not support a fishery.

The entire lower reaches of the Smith River from the project area downstream to it confluence with the Missouri River have been identified as being impacted by chronic de-watering. MFWP has determined that stream de-watering is a serious impact to fisheries during virtually all years. In response to these concerns MFWP has secured instream flow reservations of approximately 150-400 cfs, depending the time of the year.

WATERSHED AND FISHERIES EFFECTS

This section addressed the anticipated direct, indirect and cumulative effects of the proposed timber sale activities on water quality, quantity and fisheries resources within the affected watersheds. The primary concerns related to these resources are potential impacts to water quality in the Unnamed Tributary and the potential for subsequent downstream impacts to aquatic and fisheries habitat in the Smith River. In order to address these issues the potential direct, indirect and cumulative effects of the proposed action alternative on water yield and sediment delivery were evaluated. Potential impacts related to stream shade, water temperature and large woody debris recruitment were not evaluated because the proposal does not include timber harvest or road construction adjacent or within the immediate proximity of any streams.

Effects of No Action Alternative

Conditions resulting from the no action alternative are expected to be similar to those described under existing conditions.

Effects of the Action Alternative

The proposed action alternative includes approximately 40 acres timber harvest, 1.24 miles of new road construction and use of approximately of 22 miles of existing, low standard, county and privately owned road for access and hauling purposes.

Water Yield

A coarse filter approach was used to evaluate the potential for cumulative watershed impacts due to increased water yield, or magnitude and duration of peak flows resulting from the proposed action. Additional information collected during stream surveys and channel stability inventories were also integrated into this analysis.

Cumulative impacts due to water yield increases in the Unnamed Tributary and the Smith River are not expected to result from the proposed action alternative. The levels of potential increase in offsite water yield resulting from the proposed harvest and road construction are expected to be negligible. This is due to 1) The low runoff potential within the physiographic location of the proposed project area; 2) the low levels existing harvest within the project area; 3) the relatively small amount of harvest area proposed, 4) the overstocked nature of the pre-harvest stands; and 5) the proposed partial crown removal harvest prescription would result in retention of a moderate amount of residual tree canopy. Therefore, there is very low risk of detrimental impacts due to cumulative watershed effects associated with increased water yield, or magnitude and duration of peak flows resulting from the proposed action alternative.

Sediment Yield

Land management activities such as road construction, maintenance and use, and timber harvest can potentially increase levels of fine sediment delivery to streams if not properly located, designed, maintained and mitigated. The primary risks to water quality that are associated with the proposed timber sale are roads, especially roads located along or crossing streams. Risk of erosion and sediment delivery are highest when roads are located in areas with inadequate buffering between streams and other drainage features, on erosive soils, or on steep and/or unstable slopes. A lack of periodic maintenance, inadequate surface drainage features, and use during wet periods or conditions may also contribute to higher risk.

All existing roads and proposed new road construction locations within and accessing the timber sale area have been reviewed and inventoried by a DNRC hydrologist and soil scientist. The existing road and proposed road locations were evaluated to determine both existing and potential risk of erosion and sources of sediment delivery to streams. Several segments of the existing County and private road accessing the proposed timber sale do not fully comply with minimum BMPs. While some of these segments of existing road may be prone to erosion, they are not currently contributing direct sediment delivery to streams and are not a high risk of contributing to direct delivery to streams. Use of the County and private roads for the State's proposed timber access and hauling is not expected to substantially affect the current levels or risk of erosion already occurring.

Approximately 1.24 miles of new road construction is included in the proposed action. The proposed road construction is located on ridge tops, benches and areas with moderate side slopes. The proposed road is not located near nor does it cross any stream channels or well-defined

ephemeral drainage features. The proposed road will utilize grades that are low to moderate, and risk of soil erosion from road construction materials is considered low to moderate. The risk of both short-term and long-term sediment delivery is very low.

Approximately 3.22 miles of existing low standard road located on State and private land would be utilized and improved to standard that complies with minimum BMPs. These improvements are expected to result in reduced erosion and decreased potential for sediment delivery when compared to current conditions.

All proposed harvest areas, potential landings and skid trail location have also been reviewed and evaluated in the field by a DNRC hydrologist and soil scientist. Selection of appropriate harvest and yarding systems, operating seasons, limiting equipment operations to suitable slopes or designated trails and appropriate ground conditions, and implementation of appropriate BMPs and mitigation measures will be used to reduce the risk and severity of soil erosion and potential sediment delivery to streams and ephemeral drainage features. Streamside management zones and equipment restriction zones have been designed to effectively buffer streams and other ephemeral drainage features from harvest activities.

The Unnamed Tributary has been buffered from the proposed harvest unit by a minimum SMZ width of approximately 120 feet. Most of the harvest unit is actually buffered from the stream by a distance much greater than the minimum SMZ utilized. This SMZ buffer contains a gentle bench topographic feature that when combined with the generous width of SMZ is expected to be more than adequate to prevent sediment delivery from the harvest unit. The proposed harvest unit

is located approximately 900 feet from the Smith River at its closest point. The Smith River is topographically isolated from the harvest area by a well-defined ridgeline that is a watershed divide between the unnamed tributary and the Smith River floodplain. No sediment delivery to the Unnamed Tributary or the Smith River expected to result from timber harvest operations.

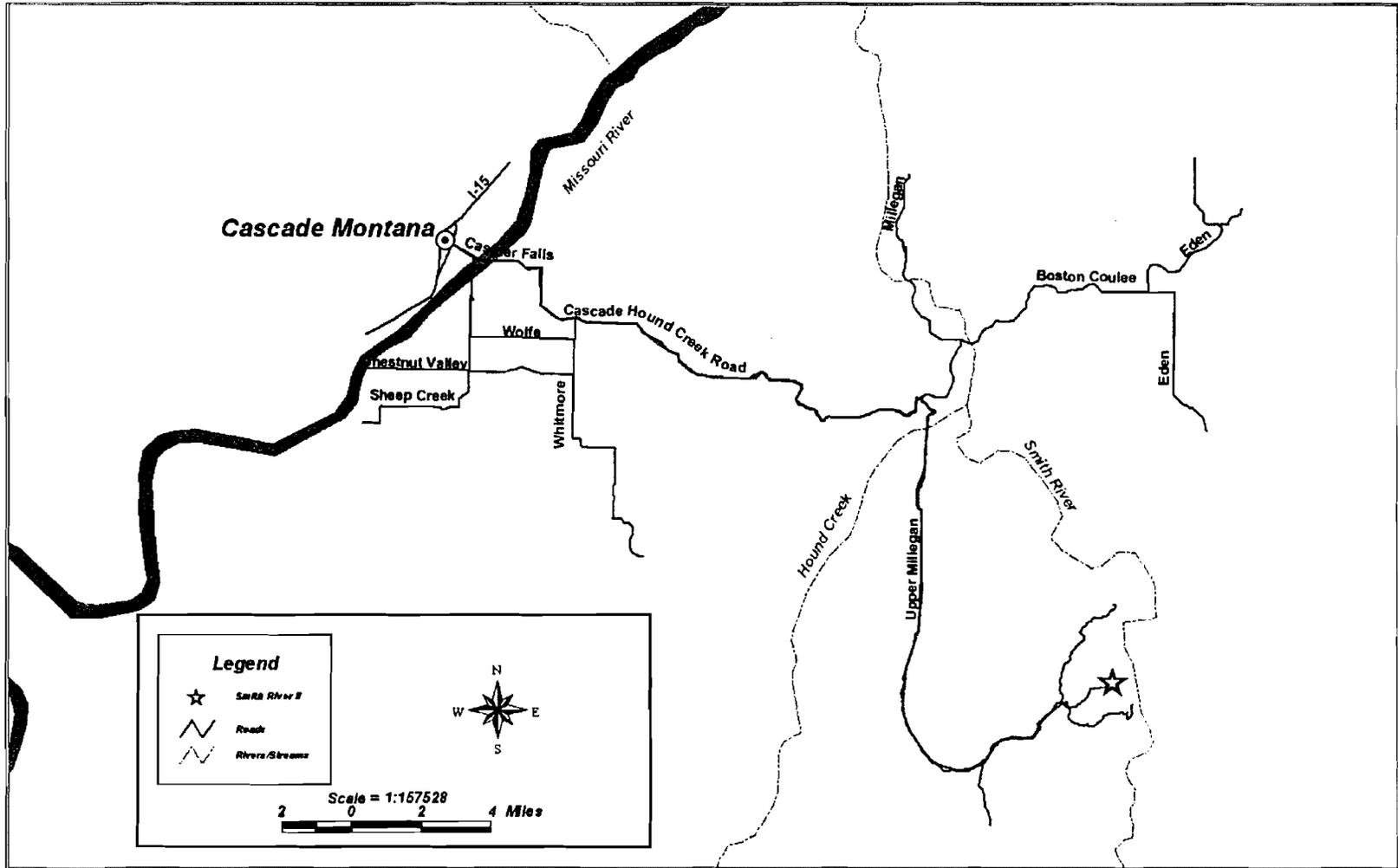
Application of BMPs, site-specific design and mitigation measures are expected to prevent or reduce erosion and potential sediment delivery associated with the road construction, road maintenance, road use and timber harvest operations to an acceptable level as defined under the Montana Water Quality Standards. Acceptable levels are defined as those conditions occurring where all reasonable land, soil, and water conservation practices have been applied. No direct, indirect or cumulative impacts to water quality and downstream beneficial uses in the Smith River are anticipated.

Fisheries

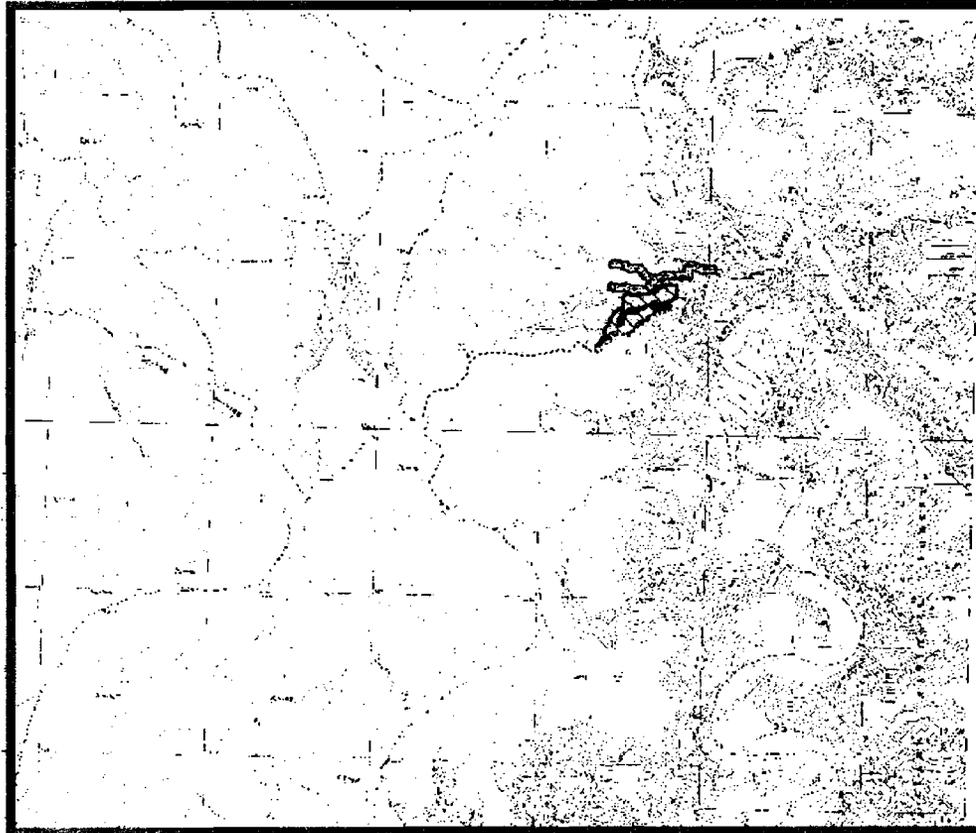
The primary risk to cold-water fisheries associated with the proposed timber sale is increased sediment delivery to the Smith River. The risks of erosion and sediment delivery were evaluated in the previous section under "Sediment Yield". The risk of both short-term and long-term sediment delivery resulting from the proposed action is very low. No direct, indirect or cumulative impacts to cold-water fish habitat, fish populations, or other downstream aquatic habitat and other aquatic beneficial uses are expected to result from the proposed action alternative.

References

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- MTDEQ, 1996. Year 1996 Montana 303(d) List, Montana Department of Environmental Quality, Helena, MT.
- NRIS, 2004. Natural Resource Information System, Montana River Information System. <http://nr.is.state.mt.us/interactive.html>
- Pfankuch, D.J., 1978. Stream Reach Inventory and Channel Stability Evaluation. USDA Forest Service Northern Region, Missoula, MT.
- Rosgen, D.L. 1996. Applied River Morphology. Wildland Hydrology, Pagosa Springs, CO.
- USFS, 1974. Forest Hydrology Part II, Hydrologic Effects of Vegetation Manipulation, Forest Service Northern Region, Missoula, MT.



Appled By: Ryan P. Aeger



SMITH RIVER II Timber Sale

Township: 16 North
Range: 3 East
Section: 36



LEGEND

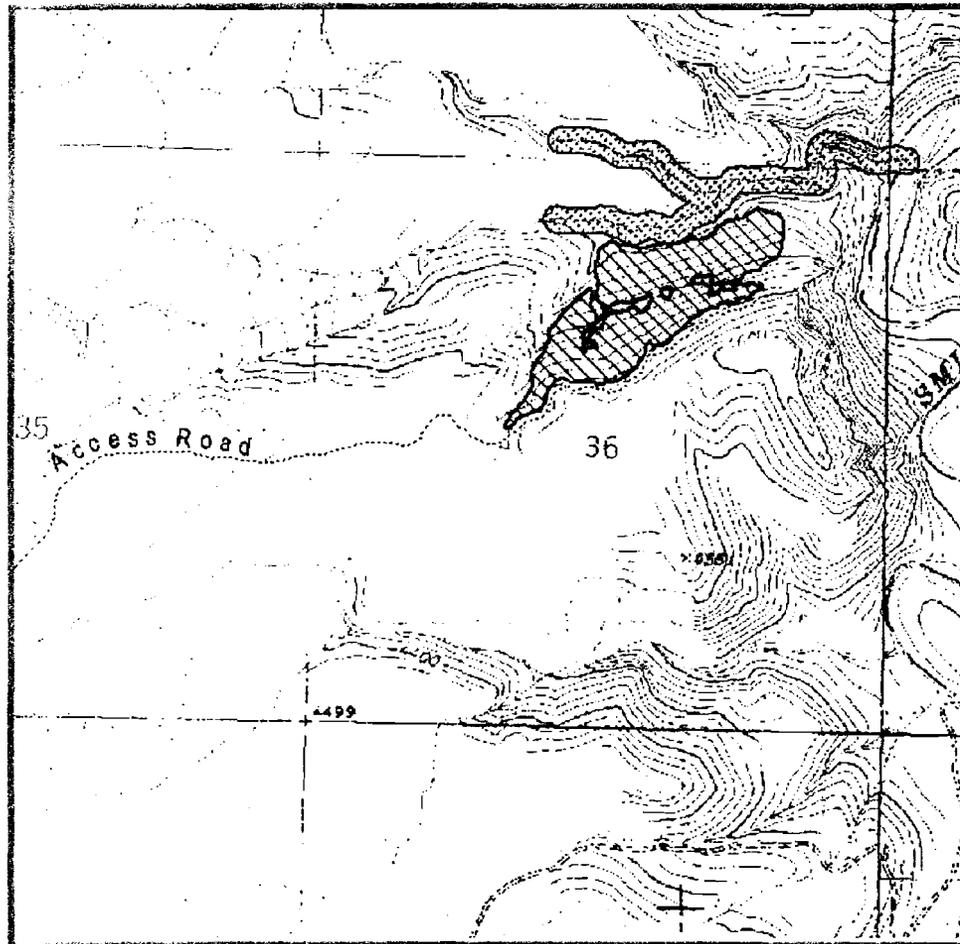
-  New Road Construction - 6,559 feet
-  Intermittent Stream
-  Harvest Unit 1-L (40 acres)
-  Rock Outcrop - (2 acres)
-  Sale Unit 1-L (40 acres)
-  Stream Buffer (100 - feet)



Scale = 1:55000
0.2 0 0.2 0.4 0.6 0.8 1 1.2 Miles



Attachment 6/EA.



Scale = 1:15840
0 500 1000 Feet

SMITH RIVER II Timber Sale

Township: 16 North
Range: 3 East
Section: 36

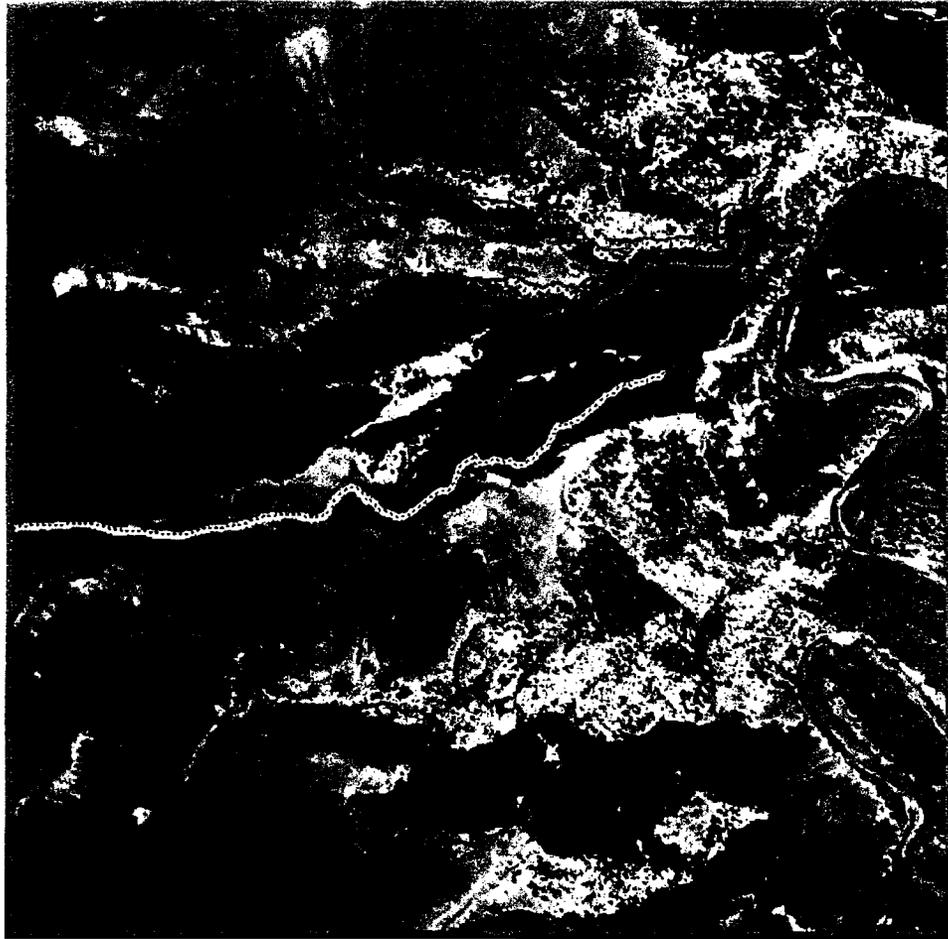


LEGEND

-  New Road Construction - 6,559 feet
-  Intermittent Stream
- Harvest Unit 1-L (40 acres):
 -  Rock Outcrop - (2 acres)
 -  Site Unit 1-L (40 acres)
 -  Stream Buffer (20 - feet)



Mapped By: Shawn P. Morgan



SMITH RIVER II Timber Sale

Township: 16 North
Range: 3 East
Section: 36



LEGEND

-  New Road Cost (100) - 6,559 ft
-  Stream
- Harvest Unit 1-L (40 acres)
-  Rock outcrop - 2 acres
-  Clear Unit 1-L (40 acres)
-  Stream Buffer (100 - 100)



Scale = 1:15840

