

DNRC - Trust Land Management Division

CHECKLIST ENVIRONMENTAL ASSESSMENT

FOR THE

KNOWLTON EXCHANGE TIMBER SALE

RECEIVED

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LEGISLATIVE ENVIRONMENTAL
POLICY OFFICE

Prepared by Chris Pileski
Eastern Land Office-DNRC
January, 2004

**Knowlton Exchange Timber Sale
Formal Public Review Distribution List**

No Requests made for formal comment

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CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name: Knowlton Exchange Timber Sale Proposed Implementation Date: June 2004, 05,06

Proponent: Eastern Land Office

Type and Purpose of Action: ELO/DNRC is proposing a commercial timber harvest of ponderosa pine in the Knowlton area approximately 40 miles East of Miles City. Silvicultural treatment is being proposed on approximately 500-700 acres with approximately 6,000-11,250 tons of merchantable material being removed. The proposed harvest area is located within one and three quarter sections of state land. The harvest is proposed to remove trees from a range of size classes, while maintaining a healthy stand of ponderosa pine. Approximately 3-5 miles of existing road will be reconstructed and approximately 4-5 miles of temporary spur roads will be constructed. All temporary spur roads will be reclaimed through moving the berm back onto the road surface, mechanical surface scarification and surface broadcast seeding composed of native grass species. Road use after sale activity will be restricted through possible placement of a physical barrier and placement of road closure signs. The harvest prescription is predicted to result in a healthy stand of ponderosa pine that can support re-entry in 20-40 years. If the Action Alternative is selected an estimated income to the school trust fund of approximately \$72,000-\$180,000 is predicted.

Location: Lots 1-12,S2 Sec 2; All sec 11 Twn 6N Rng 53E County: Custer

I. PROJECT DEVELOPMENT	
1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED: Provide a brief chronology of the scoping and ongoing involvement for this project.	Letters were sent in February of 2003 to resource professionals and other interested parties seeking comment on the proposed action. A public notice was placed in the Miles City Star, and ran for two consecutive weeks. Comments were received from: Monte Mason DNRC Minerals Management Bureau, Patrick Rennie, Archaeologist, Surface Management Bureau, The Montana Natural Heritage Program, , George Mathieus, hydrologist DNRC, and the Bureau of Land Management
2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:	In the Crow Boundary Settlement Land Exchange the BLM retained an exclusive easement on several existing roads on the newly acquired State Lands. Right-of-Way will have to be secured from the BLM for use of these roads.
3. ALTERNATIVES CONSIDERED:	<p>NO ACTION: Current land use activities of grazing and recreation would continue without change. Increased fire hazard may occur as more ponderosa pine encroachment invades grassland areas and as stand become more heavily stocked and stagnated.</p> <p>TIMBER HARVEST ALTERNATIVE: This alternative will continue the current land uses of grazing and recreation and will also incorporate a selective timber harvest of 6,000-15,000 tons of ponderosa pine from approximately 500-700 acres. The timber harvest will be a selective harvest attempting to reduce stocking levels to a more historic, pre-fire suppression stand density, while maintaining the current uneven-aged stand structure. The harvest will attempt to emulate a low intensity high frequency or Non Lethal fire regime that would historically have been expected on this site. A target Basal Area per acre for these stands will range from 20-80sqft depending on existing stocking levels and stand structure. The remaining stand will consist of trees of all size classes favoring trees with good form, crown, and vigor. The harvest activity will require the construction of approximately 4-5 miles of temporary spur roads and the reconstruction of approximately 3-5 miles of existing road. All temporary spur roads will be closed and reclaimed upon completion of the sale (see discussion in box 4, Soils).</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] The existing stand is generally an uneven-aged stand of ponderosa pine. In the preharvest work, tree ages were sampled by boring trees of all size classes. It was determined that the stand was dominated by 80-95 year old trees and did not meet the definition of old growth. The silvicultural prescription calls for Selective harvest of trees from all size classes in an attempt to emulate low intensity high frequency or Non Lethal fire regime that would have historically occurred on this site prior to intensive fire suppression efforts that the stand has evolved in. The prescription calls for lowering stocking levels to 20-80 square feet of basal area per acre, depending on current stocking levels while maintaining the stands uneven aged structure by leaving trees from all size and age classes. The long-term plan for this stand is to maintain the uneven-aged structure while maintaining the decreased stocking levels. This will be done through this and subsequent harvests. The Montana Natural Heritage Program was contacted and their search found no recorded T&E or sensitive plant or animal species within their analysis area. DNRC has adopted the old-growth definitions proposed by Green et al (Old Growth Forest Types of the Northern Region, R-1 SES 4/92, USDA Forest Service, Northern Region, Missoula, MT) None of the proposed harvest units are in stands meeting the definition of old growth based on Green et al. Due to the selective nature of the proposed harvest and contract mitigation measures, no cumulative impacts to vegetative communities are likely to occur as a result of the proposed activity.</p>
<p>RESOURCE</p>	<p>[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES</p>
<p>8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish? Are cumulative impacts likely to occur as a result of this proposed action?</p>	<p>[Y] This section holds the potential for a wide variety of wildlife species. The primary species that inhabit the area are mule deer, whitetail deer, Merriams turkey, toads, cottontail rabbits, raptors, migratory prairie birds and others. A letter was sent to MT Dept. of Fish Wildlife and Parks Biologist in July of 2003 seeking comments and no comments were received. The timber harvest operations should produce only minor environmental impacts to wildlife species because of the operational season of use, the layout/location of the harvest units. The operating season (June 15 - April 1) will not interfere with fawning, or nesting or activities. The harvest plans call for selective harvest of commercial size ponderosa pine(9" DBH with a 16.5 ft log). This will result in a very healthy remaining stand of ponderosa pine. Consequently, reduction of canopy cover will not be extensive in any one locale. All existing snags will be left in place as potential nesting and rest sites. Edge effect within the proposed timber sale should be increased due to the irregular harvest unit boundary layout. Mule deer and to a lesser extent, whitetail deer may be temporarily displaced during harvest activities but their inherent mobility coupled with surrounding unharvested areas will provide security and biological needs during the displacement period. Due to the selective nature of this harvest, the selective nature of harvest on surrounding ownership, and the large unharvested areas, there will be no cumulative impacts on terrestrial, avian, and aquatic habitats as a result of the proposed action.</p>
<p>9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Sensitive Species or Species of special concern? Are cumulative impacts likely to occur as a result of this proposed action?</p>	<p>[N] There are no known threatened and endangered species in this general area. There are no documented studies suggesting the existence of T&E species in this area. There are no limited environmental resources within this area. The Natural Heritage Program was also contacted and they have no records of any T&E species, DNRC listed sensitive species, or any species of special concern on or near this section. The small size and selective nature of the sale and the existing surrounding habitat will create no cumulative impacts as a result of the proposed activity.</p>

<p>10. HISTORICAL AND ARCHAEOLOGICAL SITES: . Are any historical, archaeological or paleontological resources present?</p>	<p>[Y] A Class III inventory of cultural resources was conducted f the area of potential effect per the mandates of the Montana State Antiquities Act. During the course of that inspection seven cultural resource sites were identified. Those resources consist of:</p> <ul style="list-style-type: none"> a) four lithic scatters (Monty RAWs (MR), 24CR838, 24CR924 and 24CR925) presumably associated with stone tool manufacturing activities of prehistoric Native Americans; b) an isolated porcellanite flake (IF-KTS-1) presumably associated with stone tool manufacturing activities of prehistoric Native Americans; c) the remnants of an historic homestead (24CR839); and d) the remnants of what may have been a wind break constructed at a school bus stop. <p>With the exception of the Monty RAWs site, these cultural resources have been recorded with the State Historic Preservation Office (SHPO) in Helena, and a copy of the corresponding inventory report is also on file at the SHPO. The DNRC Archaeologist has recommended no ground disturbing activities take place within the defined site boundaries including modification of segments of two-track trails. However, road maintenance, skidding, log decking and slash piling activities may require a minimal amount of ground disturbance to take place within the defined boundaries of some of the cultural resource sites. These locations will be identified on-the-ground through consultation with the DNRC Archaeologist. Because of this, sites 24CR838, 24CR924 and 24CR925 will be evaluated to determine their potential eligibility for listing in the National Register of Historic Places before ground disturbing timber harvest activities begin. Additional consideration to site avoidance will be given for those properties determined to be potentially eligible for listing in the NR. It should also be noted that the timber sale contract holds a special stipulation that requires immediate curtailment of any action/activity if undocumented historical or archaeological sites are discovered during harvest operations. Those operations will cease until such time as the newly discovered property can be appropriately evaluated by an archaeologist.</p>
<p>11. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light? Are cumulative impacts likely to occur as a result of this proposed action?</p>	<p>[N] The proposed harvest will produce temporary visual impacts. This effect will be mitigated over time as the disturbed sites recover and the slash piles are burned. The surrounding region is lightly populated which will result in the temporary visual impact distributed over a limited population size. For these reasons, along with the scattered nature of the timber and grasslands no cumulative impacts are anticipated as a result of the proposed activity.</p>
<p>12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project? Are cumulative impacts likely to occur as a result of this proposed action?</p>	<p>[N] The project will not use resources that are limited in the area. The selective harvest on adjacent ownership and vast unharvested areas will have no cumulative effects on limited resources.</p>
<p>13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA: Are there other studies, plans or projects on this tract? Are cumulative impacts likely to occur as a result of other private, state or federal current actions w/n the analysis area, or from future proposed state actions that are under MEPA review (scoping) or permitting review by any state agency w/n the analysis area?</p>	<p>[N] This section is leased for livestock grazing and is a classified grazing tract. The lessee was contacted by letter requesting comments and concerns. No concerns were received from the lessee. No cumulative impacts are likely to occur as there are no other current private, state or federal actions occurring. No other state actions are under MEPA scoping that pertain to this analysis area.</p>

III. IMPACTS ON THE HUMAN POPULATION

RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
14. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	[N] Human health will not be impacted by the proposed timber sale or associated activity. Safety considerations and temporary risks will increase for the professional contractors working within the sale area, and possibly for public vehicle traffic on the highway and the county road while log trucks are hauling. There are no unusual safety considerations associated with the proposed timber sale. The general public or local residents should not face increased health or long term safety hazards because of the proposed timber sale.
15. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	[Y] The section involved with the proposed timber sale is classified grazing land. The primary grazing period or season of use is late May through late summer. The current amount of available livestock forage will temporarily be reduced. Over a short period of time the disturbed and re-seeded sites will recover and forage levels should return to their present levels or beyond.
16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so estimated number. Are cumulative impacts likely to occur as a result of this proposed action?	[N] People are currently employed in the wood products industry in the region. Due to the relatively small size of the timber sale program, there will be no measurable cumulative impact from this proposed action on employment.
17. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue? Are cumulative impacts likely to occur as a result of this proposed action?	[N] 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 will be no measurable cumulative impact from this proposed action on tax revenues.
18. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc) be needed? Are cumulative impacts likely to occur as a result of this proposed action?	[N] There will 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, the small possibility of a few people temporarily relocating to the area, and the lack of other timber sales in the adjacent area.
19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[Y] In June 1996, DNRC began a phased-in implementation of the State Forest Land Management Plan (Plan). The management direction provided in the Plan comprises the framework within which specific project planning and activities take place. The Plan philosophy and appropriate Resource Management Standards have been incorporated into the design of the proposed action. The Bureau of Land Management currently has a travel management plan in effect for the entire Knowlton Recreation Area including the proposed sale area. At the completion of harvest activities the status of all roads in the travel management area will remain the same as they were prior to harvest. All new temporary spur roads will be closed at the completion of harvest activity.
20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract? Are cumulative impacts likely to occur as a result of this proposed action?	[Y] This area receives a substantial amount of recreation use from the general public. Due to the selective nature of the proposed harvest there should be little or no impact to the recreation potential of this area. No cumulative effects will occur as a result of the proposed action.
21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing? Are cumulative impacts likely to occur as a result of this proposed action?	[N] 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 that people are already employed in this occupation in the region.
22. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N]
23. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N]

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES: Is there a potential for other future uses for easement area other than for timber management? Is future use hypothetical? What is the estimated return to the trust. Are cumulative impacts likely to occur as a result of this proposed action?

[N] The proposed economic return to the trust for this sale will be approximately \$72,000-\$180,000, which was calculated by taking the estimated 6,000-15,000 tons multiplied by the minimum bid rate. The minimum stumpage price was estimated by using comparable sales analysis.

Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives. They are not to be used as absolute estimates of return.

For FY 03, ELO had revenue to cost ratio of 3.84:1 and statewide DNRC had a ratio of 1.75:1.

EA Checklist Prepared By:

Chris Pileski

Forester

December 5, 2003

Name

Title

Date

Attachment 1: Soils and Hydrology Report
Knowlton Proposed Timber Sale
Sections 2 & 11, T6N-R53E
Eastern Land Office

INTRODUCTION

The following document contains background information for the watershed and soils portion of the proposed Knowlton Timber Sale Environmental Assessment. This analysis includes an existing conditions and effects assessment of all watercourses draining the proposed sale area. Write-up and assessments are based on a coarse filter screening approach and an on-site field review of all contributing areas within the proposed sale area.

POTENTIAL ISSUES

Soil Resources:

Equipment operations and timber harvest on steep slopes or sensitive soils can result in soil impacts that effect soil productivity depending on area and degree of physical effects and amount or distribution of coarse woody debris retained for nutrient cycling.

Noxious Weeds:

Following disturbance events such as timber harvest activities, invasion and spread of noxious weeds is more prevalent than in undisturbed areas. Noxious weed invasion and spread detrimentally influences surface cover, erosion and native species growth.

Cumulative Watershed Effects:

Cumulative watershed effects can be characterized as impacts on water quality and quantity that result from the interaction of disturbances, both human-caused and natural. Timber harvest can affect the timing of runoff, increase peak flows and increase the total annual water yield of a particular drainage.

AFFECTED ENVIRONMENT

The proposed sale area lies within one state section surrounded by private lands. Precipitation ranges from 10-15 inches per year. There are no perennial streams draining the proposed sale area, it consists of ephemeral draws and coulees with only infrequent minor surface flows for short durations. These ephemeral tributaries all drain into the North Fork of Sheep Creek, a tributary to the Powder River.

Regulatory Framework:

This portion of the Yellowstone River Basin, including the Sheep Creek drainage, is classified C-3 in the Montana Water Quality Standards. Waters classified C-3 are suitable for bathing, swimming and recreation, growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers. The quality of these waters is naturally marginal for drinking, culinary and food processing purposes, agriculture and industrial water supply. State water quality regulations prohibit any increases above naturally occurring concentrations of sediment, settleable solids, oils or floating solids, which will or are likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife in waters classified C-3 (ARM 16.20.624 2(f)).

Naturally occurring means conditions or materials present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil and water

conservation practices have been applied. Reasonable land, soil and water conservation practices include methods, measures or practices that protect present and reasonably anticipated beneficial uses. The state of Montana has adopted Forestry Best Management Practices (BMPs) through its Non-point Source Management Plan as the principal means of meeting Water Quality Standards.

Existing beneficial uses in the immediate vicinity of the proposed sale area include stock watering rights for both groundwater and surface water sources. Outside of the analysis area, downstream beneficial uses include aquatic life support and warm water fisheries.

The Clean Water Act and EPA Water Quality Planning and Management Regulations requires the determination of allowable pollutant levels in 303(d)-listed streams through the development of Total Maximum Daily Load (TMDL) limits. There are no water quality limited segments within the project area (as per Section 303(d) of the Clean Water Act) in the 305(b) report.

Water Quality:

There are no streams draining the proposed sale area. It consists of ephemeral draws and swales with only minor seasonal flow.

Fisheries:

Due to the ephemeral nature of the stream channels and surface disconnectivity to Sheep Creek and ultimately the Powder River, no fish species are present within the analysis area.

Soil Resources:

Slopes within the sale area are moderate, ranging from 5-50%, with isolated steeper breaks along draw features. There were no signs of slumping or mass wasting. Draws are typically box-shaped with distinctive topographic breaks.

Soils along ridges are shallow to very shallow sandy silt loams with 2-6" topsoil and considerable outcropping sandstone on upper-forested slopes. Deeper clay loams and silty clay loams occur on moderate slopes of about 5-30% with shale outcrops common. Draw bottoms contain similar red clays as mid-slope, but are deeper and seasonally wetter. The primary soils concern is displacement and erosion of the shallow surface soils.

No especially unusual or unique geologic features were identified in the proposed harvest area.

Approximately 5.5 miles of existing road provides access to the sale area. These road systems contain low standard roads and two-tracks, both of which do not currently meet BMP standards. The existing road system consists of minimum construction and stable, grassed-over road surfaces in most cases. Potential for sediment delivery and erosion is low provided season of use restrictions are upheld.

Noxious Weeds:

Spots of thistle (*Cirsium arvense*) occur within the project area mainly along the existing roads. No real outbreaks or large infestations were noted within the project area.

Cumulative Watershed Effects:

Past management activities in the general vicinity include grazing; fire suppression, road construction and timber harvest. There has been a moderate level of recent selective timber harvest on adjoining state and private lands.

A cumulative watershed effects analysis for the proposed sale was completed to determine the existing conditions of the affected environment. Due to the low precipitation region, ephemeral nature of the stream channels and the large drainage area typical of east-side ephemeral drainage's, a smaller, more defined boundary was selected for the analysis area. This analysis area was selected because it was determined to be the most appropriate scale to detect potential effects.

All drainage features and draw bottoms draining the proposed sale area were evaluated in the field. All drainages within the State section have no surface connectivity or perennial flow.

Field evaluation concludes that past management activities have resulted in impacts to soil resources. These impacts have been minimal and limited to some erosion from existing roads and cattle trampling.

ENVIRONMENTAL CONSEQUENCES

The proposed timber sale is comprised of one action alternative. This alternative would selectively treat approximately 625 acres. Approximately 4.5 miles of new temporary road would be constructed to access the proposed harvest units. Portions of the 5.5 miles of existing road would be improved to meet BMP standards.

Noxious Weeds:

No Action Alternative:

Under the No Action Alternative, weed seed may spread by vehicle traffic, wind and animal dispersion into the project area, which would result in competition with native species trying to establish in recently disturbed areas.

Action Alternative:

Ground disturbing activities associated with the proposed action alternative have the potential to introduce or spread noxious weeds in susceptible habitat types. Under the Action Alternative, DNRC would follow an integrated weed management approach to help prevent the introduction and establishment of noxious weeds and slow the expansion of existing weeds.

Cumulative Effects of Noxious Weeds:

Invasion and spread of noxious weeds would decrease soil productivity and stability and reduce the reestablishment of native species. A combination of prevention, revegetation and monitoring will be implemented to reduce the possible infestation and spread of weeds associated with this project.

Soil Resources:

No Action Alternative:

Under the No-Action alternative, there would be no direct effects to soils or geology. Segments of existing roads with inadequate season of use restrictions would continue to erode without future mitigation and/or maintenance.

Action Alternative:

Due to the ephemeral nature of the draws and the low annual precipitation within the sale area, the proposed activities have a low potential to contribute to the degradation of water quality. The primary water and soil concerns associated with the proposed timber sale activities are sediment

delivery to the draws, erosion of soil and subsequent loss of site productivity. Vegetative regrowth is a critical factor in avoiding long-term soil erosion from harvest activities.

Cumulative Effects to Soil Resources:

Proper application of BMPs and site-specific designs and mitigation measures would reduce future erosion and potential water quality impacts to an acceptable level as defined by the water quality standards. 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 adverse impacts to soil resources, water quality and beneficial uses occurring as a result of the proposed action alternatives.

Cumulative Watershed Effects:

No Action Alternative:

The no-action alternative would have minimal effects to cumulative watershed effects. Moderate timber management activities in the surrounding drainage's and the range-like landscape have resulted in undetectable cumulative watershed effects.

Action Alternative:

There are no cumulative watershed effects constraints associated with the proposed sale area. This is due to the following reasons:

- Low precipitation region.
- No perennial streams.
- New road construction will be minimal design and excavation. These roads will be closed and mitigated at the end of the sale.
- The proposal is for a selective harvest in stands that are overstocked from that of natural, pre-fire suppression stands.

CONTRACT, SALE & MITIGATION DESIGN RECOMMENDATIONS

General Road Design and Mitigation Recommendations:

- Construct drain dips, grade rolls and other drainage features where necessary and practical to insure adequate road surface drainage. **Install and maintain all road surface drainage concurrent with new road construction, reconstruction and reconditioning.** Drain dips constructed on sustained road grades greater than 8% may require gravel surfacing to function properly. Sustained road grades greater than 10% may require installation of conveyor belt water diverters.
- Stabilize newly constructed road cuts and fills following excavation. Stabilization can be met through one or more of the following: seeding, benching or mulching. Apply

seed as soon as conditions permit to maximize successful establishment of grass cover. Local professional judgement and consideration for temperature and precipitation would determine when seeding is likely to be most successful. Delay of seeding may require scarification of crusted soils.

- Leave all temporary or abandoned roads in a condition that will provide adequate drainage and will not require future maintenance. Partially obliterate abandoned roads through ripping and seeding. Where it is available, scatter slash across the ripped road surface. Install water bars at regular intervals to facilitate surface drainage.
- Provide effective sediment filtration through the use of slash filter windrows, filter fabric fencing or straw bales along drainage features located in areas with inadequate buffer capacity. Note: straw bales alone may not be effective in areas with heavy concentrations of livestock or big game.
- Where potential erosion exists at the outlet of drainage features, provide outfall protection using slash and/or coarse angular rock.
- Filter ditches with direct delivery to ephemeral draws at the outlet by using slash, or filter fabric and straw bales.
- Incorporate a filtering mechanism at all ephemeral draw crossings requiring fills that are greater than 2 feet deep. This may include slash filter windrows, filter fabric fencing, straw bales or rock, depending on feasibility of materials and characteristics of the site. Ensure that method used is keyed into the toe of road fill.
- When excavating material in and around ephemeral draw crossings (i.e. cleaning inlets and outlets, constructing ditches, etc.) Special care should be taken so as not to cause an excessive amount of disturbance to the draw bottom or area immediately adjacent to the crossing sites. Excess or waste material should be disposed of at a location where it will not erode directly into the stream or draw bottom.
- Limit road use and hauling to dry, frozen or snow covered conditions. **Suspend operations during periods before rutting occurs.**

Noxious Weeds:

- Clean all road construction and harvest equipment of plant parts, mud and weed seed to prevent the introduction of noxious weeds. Equipment would be subject to inspection by forest officer prior to moving on site.
- Re-seed all newly disturbed soils on road cuts and fills to site adapted grasses for reduction of weed encroachment and stabilization of roads.
- Monitor the project area for two years after completion of harvest activities to identify occurrence of any noxious weeds on site. If noxious weeds occur, a weed treatment plan should be developed and implemented to eradicate the noxious weeds.

General Design and Mitigation Recommendations for Harvest Units:

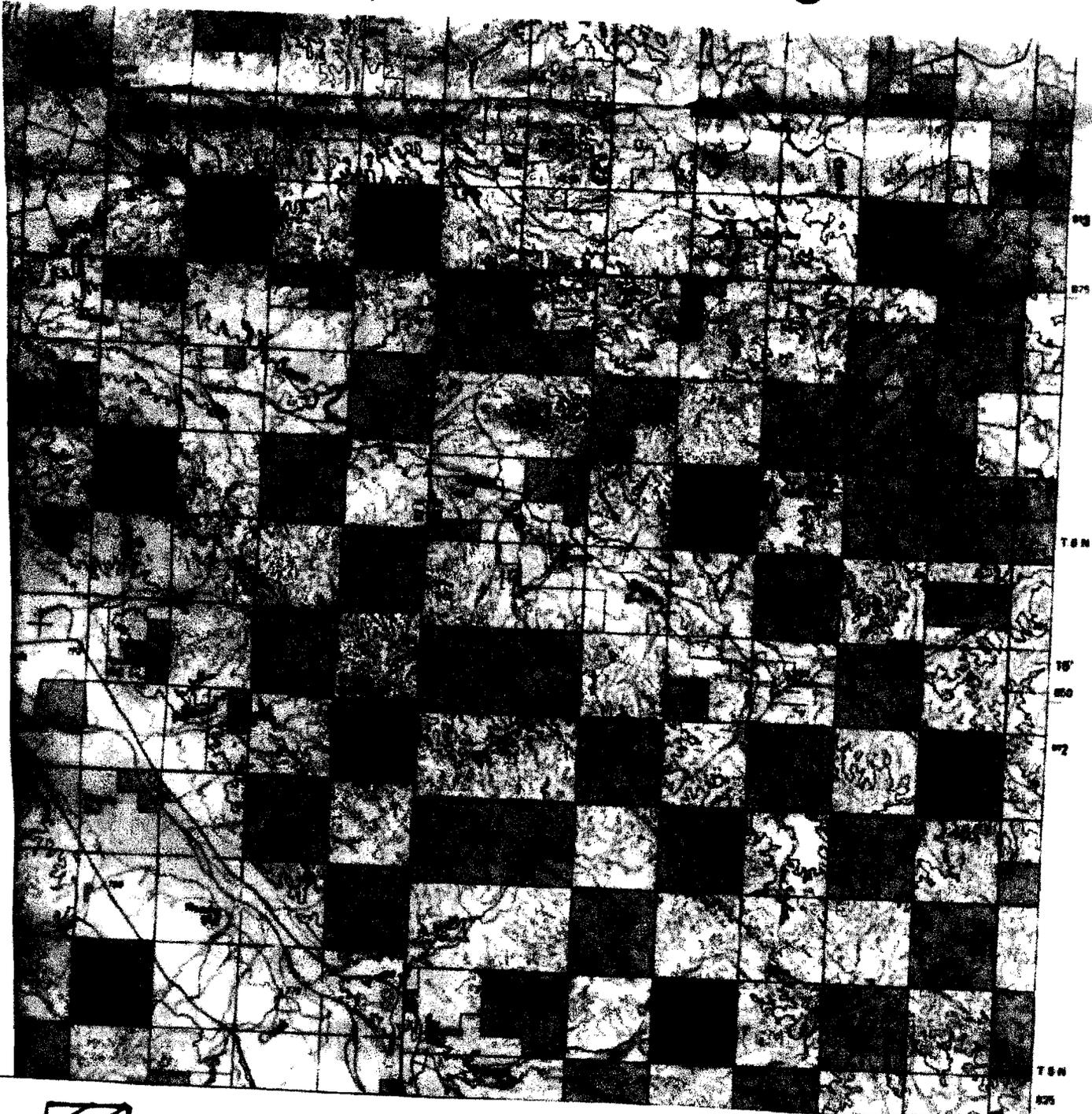
- Do not burn slash piles in or near areas of concentrated ephemeral flow.
- Implement equipment restriction zones (ERZ) along deeply incised ephemeral draws.

- In all units, designate ERZs below slope breaks > 45%. These areas shall require directional felling and winching as designated by the forest officer.
- Develop a skidding plan prior to equipment operations. Skid trail planning would identify which main trails to use, and what additional trails are needed. Trails that do not comply with BMPs (i.e. draw bottom trails) should not be used and closed with additional drainage installed where needed or grass seeded to stabilize the site and control erosion.
- Seed and waterbar skid trails over 30% thus reducing the potential for off-site erosion.
- Leave 5-10 tons/acre of coarse woody debris on the ground to enhance seedling growth and maintain long-term overall soil productivity.

KNOWLTON EXCHANGE TIMBER SALE

Vicinity Map

Sec 2, 11 Twn 6N Rng 53E



SALE AREA

Scale 1:100,000

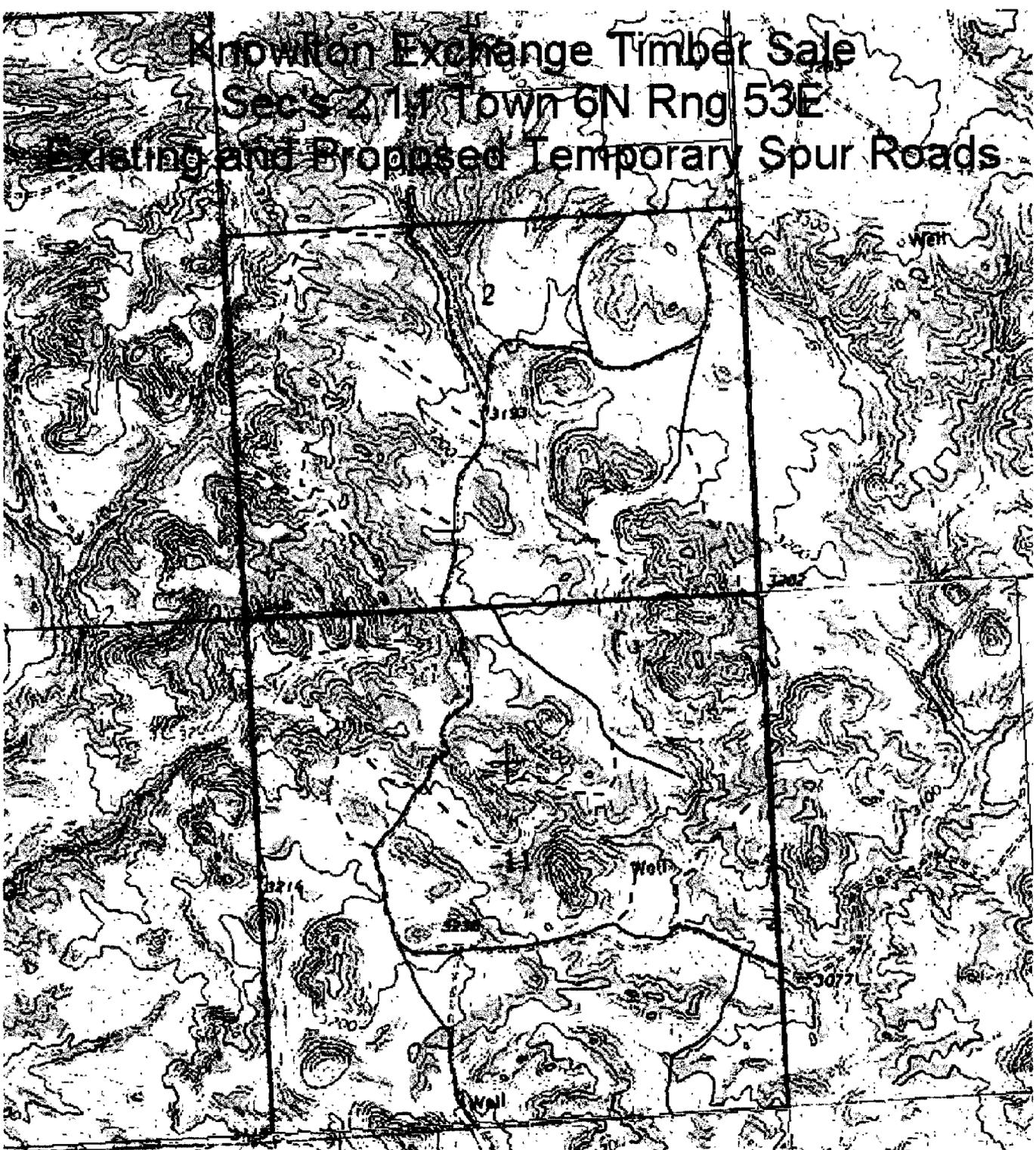


Map by Chris Pileski
Forester ELO
March 26, 2003

Knowlton Exchange Timber Sale

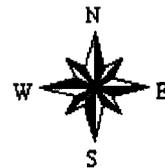
Sec's 2, 14 Town 6N Rng 53E

Existing and Proposed Temporary Spur Roads



-  State Land
-  BLM
-  BLM
-  Private
-  Temporary spur roads
-  Existing Roads

1:15840



PUBLIC NOTICE

The Eastern Land Office of the Department of Natural Resources and Conservation is in the initial planning and scoping phase of a proposed timber sale on the following sections Sec 2 and 11, Twn 6N, Rng 53E, Custer County, located in the Knowlton area. The purpose of this letter is to identify issues and concerns as they relate to the proposed project. A brief description of the proposed action is listed below.

- Harvest approximately 1-2 Million board feet of Ponderosa Pine over approximately 600-700 acres.
- The silvicultural treatment will be a selective harvest with an effort to reduce stocking levels to a more historic, pre-fire suppression, stand density, while maintaining the current uneven aged stand structure.
- No new road construction is anticipated. Approximately 4-5 miles of temporary spur roads will be necessary to accomplish the management objectives. These roads will be obliterated at the completion of use through ripping the road surface and seeding back to native grass species.
- 3-5 miles of existing road will be reconstructed.
- The recreational use status of open and closed roads under the Knowlton Area Travel Management plan will remain the same whether they are used for timber harvest activities or not.

Please review proposed action and provide comments on any issues or concerns by March 15, 2003. If more information is needed or an on-the-ground review desired please don't hesitate to contact me.

Please submit written comments or direct any questions to:

DNRC
Attn Chris Pileski
P.O. Box 1794
Miles City, MT59301
(406) 232-2034