

# Tarkio Timber Sale

## Checklist Environmental Assessment



**September 21, 2010**  
**Montana Department of Natural Resources and Conservation**  
**Southwestern Land Office**  
**Missoula Unit**

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## CHECKLIST ENVIRONMENTAL ASSESSMENT

**Project Name: Tarkio Timber Sale**  
**Proposed**  
**Implementation Date: December 1, 2010**  
**Proponent: MT DNRC**  
**Location: Section 2 T14N R25W**  
**Sections 35 and 36 T15N R25W**  
**County: Mineral**

### I. TYPE AND PURPOSE OF ACTION

The Missoula Unit of the Department of Natural Resources and Conservation (DNRC) is proposing to harvest timber in the Tarkio, MT area. The proposed project area is composed of 622 acres of Common School and 793 acres of State Normal School trust land approximately 14 miles southeast of Superior, MT. Objectives include generating revenue for the trusts, improving stand productivity and promoting natural regeneration of seral species. The proposed action could be implemented as early as February, 2011 and could continue until September, 2014.

### II. PROJECT DEVELOPMENT

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

*Provide a brief chronology of the scoping and ongoing involvement for this project. List number of individuals contacted, number of responses received, and newspapers in which notices were placed and for how long. Briefly summarize issues received from the public.*

Scoping was initiated in April, 2008 with public notices mailed or emailed to 24 interested parties, adjacent property owners and the Mineral County Commissioners. Notices were also submitted to the Montana Department of Fish, Wildlife and Parks (FWP) and DNRC resource specialists. In October, 2009, a DNRC Interdisciplinary Team (IDT) began project area analysis and internal review to develop a project plan. A public notice was posted in *The Mineral Independent* for 10 days in June, 2010.

The DNRC received two responses from private individuals in addition to comments from FWP and DNRC specialists. Responses were used to identify the following issues:

- 1) Removal of trees could increase the exposure of adjacent property to high winds and storms.
- 2) Road closures associated with the proposed action could impact commercial/emergency vehicle access to private property east of the project area.
- 3) The proposed action could impact recreation and the aesthetics along the Alberton Gorge/Clark Fork River corridor.
- 4) The proposed action could result in noxious weed infestations, reducing the suitability of the project area for big game habitat.
- 5) The proposed action could impact the suitability of the project area for big game, sensitive species and Threatened and Endangered species.

- 6) The proposed action could impact a wildlife linkage zone between the Ninemile Valley and State Park and Wildlife Management Area lands managed by FWP (Montana Fish, Wildlife and Parks) in the Rock Creek/Fish Creek Drainages.
- 7) The proposed action could adversely affect large woody debris and sediment quantities in the Clark Fork River
- 8) The proposed action could result in soil disturbance and impact soil productivity.

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

*Examples: cost-share agreement with U.S. Forest Service, 124 Permit, 3A Authorization, Air Quality Major Open Burning Permit.*

DNRC is classified as a major open burner by the Montana Department of Environmental Quality (DEQ), and is issued a permit from the DEQ to conduct burning activities on State lands managed by the DNRC. As a major open burning permit holder, DNRC agrees to comply with all of the limitations and conditions of the permit.

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**3. ALTERNATIVE DEVELOPMENT:**

*Describe alternatives considered and, if applicable, provide brief description of how the alternatives were developed. List alternatives that were considered but eliminated from further analysis and why.*

**Alternative A: Deferred Harvest (No Action)**

Activities associated with Alternative B: Harvest would not occur in the project area at this time. No revenue would be generated in support of the Common School and State Normal School trust as a result of the proposed action. DNRC approved activities would continue in the project area.

**Alternative B: Harvest (Action)**

Alternative B: Harvest was developed to address relevant issues, comply with applicable regulations and laws, provide effective mitigation for potential impacts and achieve project objectives. The proposed harvest would include removal of approximately 1.5 MMBF (million board feet) of ponderosa pine, Douglas-fir and western larch sawlogs and 300 tons of pulp/biomass material from approximately 400 acres of school trust lands through a combination of Individual Tree Selection (ITS) and Commercial Thinning (CT) prescriptions (Figure 3.1). Stands were identified for treatment based on field reconnaissance by the project IDT.

Silvicultural prescriptions were developed to emulate natural disturbance processes as required by the Montana Administrative Rules for Forest Management (ARM 36.11.408). Commercial thinning in even aged ponderosa pine dominated stands would retain large vigorous mature ponderosa pine and western larch on a 20-50 foot spacing. Reducing competition in these stands would likely reduce the risk of large scale pine beetle infestation currently occurring in the region. Maintenance of multi-aged, mixed species stands through Individual Tree Selection would retain structural diversity, promote regeneration of seral species in canopy gaps, and improve resistance to pine beetle infestation.

### 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 direct, indirect, and cumulative effects to soils.*

The proposed project would occur on a broad gently sloping terrace above the Clark Fork River. There is no special unique or unstable terrain in the project area. There are mixed deposits of ancient Lake Missoula Lakebed silts and old river alluvium of gravels and cobbles in the proposed project area. All material is common excavation. There is an older gravel pit in the NW ¼ of Section 35, or possibly DOT stockpile if feasible where gravel is needed.

Primary soils on Tarkio Section 2 T14N, R25W are deep Lake Missoula silts (Tarkio) with mixed deposits of alluvial sandy loams (Krause) and alluvial cobbly loams forming the flat to gently rolling terraces in section 35 and 36. These soils are very productive. Tarkio and Entente soils are sensitive to rutting and compaction which can be mitigated by limiting operations to dry or frozen conditions. Erosion potential is low. Previous harvest effects are minimal, skid trails are well vegetated and no erosion observed. Planned logging operations on gentle slopes and dry or frozen conditions present low risk of direct, indirect and cumulative soil impacts based on implementing BMP's, mitigation measures and soil monitoring on comparable sites. Mitigations include avoiding excessive soil disturbance, season of use restrictions, and general skid trail planning.

#### 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 direct, indirect, and cumulative effects to water resources.*

The Clark Fork River flows along the south boundary of section 2, but is not adjacent to any proposed harvest (over 100 yards) and there are no sources of sediment delivery from the project site. The Clark Fork River is on the 303d list for sediment impacts and water quality. There are no streams or surface water within the proposed harvest permit area and no proposed operations would occur in SMZ's or on sites that would deliver sediment to stream channels or affect water quality down slope. The harvest is not in a municipal watershed. The designated access haul road route does not cross any streams and no sediment sources were identified on the haul route. The project would be accessed by existing roads that have adequate drainage and erosion control features would be repaired if damaged. The proposed harvest of overstocked trees would have no measurable water yield increase compared to the current conditions based on retaining mixed conifer species canopy, gentle slopes on a broad terrace and no offsite surface runoff. Planned harvest operations and roads present no risk of direct, indirect and cumulative impacts based on implementing all forestry BMP's and applicable forest rules.

#### 6. AIR QUALITY:

*What pollutants or particulate would be produced (i.e. particulate matter from road use or harvesting, slash pile burning, prescribed burning, etc)? Identify the Airshed and Impact Zone (if any) according to the Montana/Idaho Airshed Group. Identify direct, indirect, and cumulative effects to air quality.*

##### Alternative A: Deferred Harvest

No changes to air quality would occur and no pollutants or particulate would be produced under the no action alternative. No prescribed burning of logging slash would occur as a result of the proposed project.

##### Alternative B: Harvest

DNRC is a member of the Montana/Idaho Airshed Group, which regulates prescribed burning, including both slash and broadcast burning associated with DNRC forest management activities. As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit in Missoula, MT. The proposed project is within Airshed 3A.

The proposed action would require burning of slash piles at log landings. The majority of slash would be retained in harvest units to facilitate nutrient cycling. Smoke produced from slash burning could result in a minor temporary impact to localized air quality. Over 70% of emissions emitted from prescribed burning are less than 2.5 microns (National Ambient Air Quality PM 2.5). High, short-term levels of PM 2.5 may be hazardous. Within the typical column of biomass burning, the chemical toxics are: Formaldehyde, Acrolein, Acetaldehyde, 1,4 Butadiene, and Polycyclic Organic Matter.

Harvesting equipment and log hauling may create dust that could impact air quality. Dust control and road surfacing may be required as a contract stipulation. Due to prevalent wind directions and the distance of proposed landing locations from adjacent residences and Interstate 90, there is low risk of direct, indirect or cumulative effects to air quality.

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## **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 direct, indirect, and cumulative effects to vegetation.*

### **Alternative A: Deferred Harvest**

No changes to vegetation cover, quantity and quality would occur as a result of the proposed action. Shade tolerant Douglas-fir would likely become dominant in ponderosa pine stands. Infestation of western pine beetle (*Dendroctonus brevicomis*) could potentially result in widespread mortality in heavily stocked ponderosa pine stands. Integrated weed management including monitoring and treatment would continue under the no action alternative.

### **Alternative B: Harvest (Action)**

The proposed action would reduce canopy closure and stocking of mature trees, resulting in a more developed understory. Grass and forbs would likely increase and regeneration of ponderosa pine, western larch and Douglas-fir would likely occur where harvest created canopy gaps. While project objectives include recruitment of western larch, ponderosa pine would likely remain the dominant cover type throughout the project area after treatment. Major changes to age class structure are not expected.

Large vigorous western larch and ponderosa pine free of western gall rust (*Endocronartium harknesii*) would be retained on a 20-50 foot spacing as growing stock and seed source. Leave trees are typically evenly distributed but may be clumped. A few very large ponderosa pine greater than 30" diameter at breast height (DBH) are scattered throughout the project area. Most of these trees would be retained as wildlife trees and snag recruits. No rare plants were identified in the project area.

There is potential for the introduction and spread of noxious weeds due to soil disturbance associated with timber harvest and road maintenance. An integrated weed management approach including prevention, revegetation, monitoring and treatment would reduce the possibility of noxious weed infestation. Contract stipulations would include washing of all machinery and inspection by the DNRC prior to delivery to the project area. Revegetation of disturbed sites would encourage desirable species. Monitoring for noxious weeds and herbicide treatment during and after project completion would address

new infestations. As a result, there would be low risk of direct, indirect or cumulative effects to quality of vegetation and vegetation communities.

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## **8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:**

*Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify direct, indirect, and cumulative effects to fish and wildlife.*

Harvest units and prescriptions were designed to minimize impacts to wildlife and habitat. No harvest or road use would occur where aquatic life or fish habitat could be affected. Appropriate mitigation measures would be implemented as recommended by the DNRC wildlife biologist, fisheries biologist and FWP (Attachment B: Wildlife Analysis, Fisheries Analysis, FWP comments) and as required by the Montana Administrative Rules for Forest Management. As a result, no direct, indirect or cumulative effects to terrestrial, avian and aquatic life and habitats would be expected.

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## **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 direct, indirect, and cumulative effects to these species and their habitat.*

The project area has been identified by FWP as part of a wildlife linkage zone between the Bitterroot Mountains and the Mission Mountains/Rattlesnake Wilderness. Connectivity is important between wildlife populations to maintain genetic diversity. Habitat for threatened, endangered and sensitive species is present in the project area. No harvest or road use would occur where aquatic life or fish habitat could be affected. Mitigation measures would be implemented as recommended by the DNRC wildlife biologist, fisheries biologist and FWP (Attachment B: Wildlife Analysis, Fisheries Analysis, FWP comments). As a result, no effects to unique, fragile or limited environmental resources would be expected.

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## **10. HISTORICAL AND ARCHAEOLOGICAL SITES:**

*Identify and determine direct, indirect, and cumulative effects to historical, archaeological or paleontological resources.*

The project area was analyzed by the DNRC archeologist in September, 2005 and June, 2010. The historic Mullan Trail has been identified on the north side of Interstate 90 in sections 35 and 36. Mitigation measures were in place to avoid impacts to the site during salvage harvest of burned timber in 2005. Harvest units associated with the proposed action are located on the south side of I-90, well away from the Mullan Trail. No other resources were identified in the project area.

Sites of historical significance discovered during the course of the project would be protected from disturbance by logging operations. As a result, there would be low risk of direct, indirect or cumulative effects to historical, archaeological or paleontological resources.

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## **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 direct, indirect, and cumulative effects to aesthetics.*

The project area is adjacent to the Clark Fork River/Alberston Gorge recreation corridor. Motorized and non-motorized recreation occurs in the project area.

**Alternative A: Deferred Harvest (No Action)**

No changes to current conditions would be expected under the no action alternative.

**Alternative B: Harvest (Action)**

Harvest units were designed to avoid areas visible from the Clark Fork River, but would be visible from Interstate 90. The appearance of stumps, fresh slash and skid trails and noise from equipment operation and log hauling could temporarily reduce the aesthetic quality of the project area.

The proposed project would significantly reduce stand densities. Silvicultural prescriptions would retain large healthy trees on a 20-50 foot spacing within harvest units and protect intermediate sized trees and advanced regeneration. Revegetation of disturbed sites as a weed management practice would reduce visual impacts. As a result, there would be a low risk of direct, indirect and cumulative effects to aesthetics.

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**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 direct, indirect, and cumulative effects to environmental resources.*

The proposed action is not expected to require any limited resources. Equipment operation and log hauling would require diesel fuel which is readily available in Mineral County.

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**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 DNRC recently acquired ownership of section 35 T15N R25W as part of the Five Valleys Land Exchange involving the Lolo National Forest, the DNRC and Five Valleys Land Trust.

As a result of the I-90 fire in August of 2005, salvage harvest of burned timber occurred on approximately 192 acres in 35 and 36 T15N R25W north of Interstate 90. The DNRC planted approximately 30 acres of this burned area with ponderosa pine nursery stock in April, 2010.

The Montana Department of Transportation has proposed construction of a new I-90 interchange to provide access to residences near the project area. The proposed site is approximately 2 miles east of the project area in section 31 T15N R25W. It is possible that this construction could result in temporary and long term changes to traffic patterns in the project area.

Montana FWP recently acquired 40,900 acres of forest land previously owned by Plum Creek Timber Company in the Fish Creek vicinity immediately south of the project area and the Nemote Creek/Cyr vicinity north and east of the project area. This land will be managed as a 34,000 acre Wildlife Management Area and 6,900 acre State Park. There would likely be increased emphasis on wildlife management and habitat quality in the project area as a result of this land acquisition.

**IV. IMPACTS ON THE HUMAN POPULATION**

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

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**14. HUMAN HEALTH AND SAFETY:**

*Identify any health and safety risks posed by the project.*

Operation of logging equipment and log hauling on public roads could create a temporary hazard to individuals recreating and driving in and near the project area. Warning signs would be posted on roads and near harvest operations as a contract stipulation.

Overhead power and communication lines and buried fiber optic lines occur within harvest units in the project area. Coordination with public utility managers would provide for safety of equipment operators and reduce the potential for damage.

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**15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:**

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

The project would supply approximately 1.5 MMBF of sawlogs for the manufacture of dimension and structural lumber, fiber products and biomass fuel at regional sawmills and processing facilities.

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**16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:**

*Estimate the number of jobs the project would create, move or eliminate. Identify direct, indirect, and cumulative effects to the employment market.*

The proposed action would create short term employment for a logging contractor. No major direct, indirect or cumulative effects to the employment market would be expected.

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**17. LOCAL AND STATE TAX BASE AND TAX REVENUES:**

*Estimate tax revenue the project would create or eliminate. Identify direct, indirect, and cumulative effects to taxes and revenue.*

The proposed action would create short term employment for a logging contractor who would in turn pay federal and state income tax. Logs would likely be processed at local mills by mill employees who would pay income tax. Due the temporary nature of the project and limited amount of volume harvested, it is unlikely that the proposed action would have any direct, indirect or cumulative effects to taxes and revenue.

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**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 direct, indirect, and cumulative effects of this and other projects on government services*

Log hauling and equipment delivery would result in a temporary increase in heavy truck traffic on frontage roads near the I-90 Tarkio and Fish Creek exits. Construction of a proposed interchange 2 miles east of the project area would reduce the frontage road haul distance considerably. As a result, there would be low risk of direct, indirect and cumulative effects on government services as a result of the proposed action.

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**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.*

On June 17, 1996, the Land Board approved the State Forest Land Management Plan (SFLMP). The SFLMP provides the philosophy adopted by DNRC through programmatic review (DNRC 1996a) for managing School Trust Lands. In 2003, the DNRC adopted Administrative Rules for Forest Management (Administrative Rules of Montana [ARMs] 36.11.401 through 456; DNRC 2003). The ARMs provide DNRC personnel with consistent policy, direction, and guidance for the management of forested trust lands.

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**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 direct, indirect, and cumulative effects to recreational and wilderness activities.*

The project area is located approximately ½ mile north of the Alberton Gorge and the Clark Fork River, a popular whitewater floating destination. Harvest units were designed to avoid areas visible from the Clark Fork River. Motorized recreation occurs on open roads in the project area. These roads do not provide access to recreational activities or wilderness and may be closed to motorized use in the near future after completion of a proposed I-90 interchange east of the project area. As a result there would be low risk of direct, indirect or cumulative effects to recreational and wilderness activities.

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**21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:**

*Estimate population changes and additional housing the project would require. Identify direct, indirect, and cumulative effects to population and housing.*

The proposed action would likely provide temporary employment for local logging contractors and their employees. As a result, there would be no anticipated changes to population and housing.

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**22. SOCIAL STRUCTURES AND MORES:**

*Identify potential disruption of native or traditional lifestyles or communities.*

No native or traditional communities have been identified near the project area.

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**23. CULTURAL UNIQUENESS AND DIVERSITY:**

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

No sites of unique qualities or cultural significance have been identified in the project area.

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**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 direct, indirect, and cumulative economic and social effects likely to occur as a result of the proposed action.*

**Alternative A: Deferred Harvest (No Action)**

No revenue would be generated in support of the State Normal School or Common School trusts and no Forest Improvement fees would be collected as a result of the proposed action. No improvements to roads or infrastructure would be completed in association with the project. DNRC permitted activities would continue in the project area.

**Alternative B: Harvest (Action)**

The proposed harvest would contribute approximately \$117,000 (estimated at \$15.00/ton) in revenue to the State Normal School trust, \$35,100 to the Common School trust and generate \$58,237 (\$31.31/MBF) in Forest Improvement fees.

Improvements associated with the proposed project include gate installation, road surfacing, grass seeding and weed spraying. These improvements could require an investment of approximately \$16,000 and would be provided by the purchaser as a contract stipulation. Subsequent weed and slash treatments could require Forest Improvement and operating expenditures of approximately \$1000.

Forest Management would likely continue as the primary use of the project area in the immediate future. Precommercial thinning of the understory would likely occur in the next decade, requiring investment of Forest Improvement funds. There are no plans for alternative management of the project area at this time.

<b>EA Checklist Prepared By:</b>	<b>Name:</b> Wayne Lyngholm	<b>Date:</b> December 6, 2010
	<b>Title:</b> Forester	

**V. FINDING**

**25. ALTERNATIVE SELECTED:**

Alternative B: Harvest (Action)

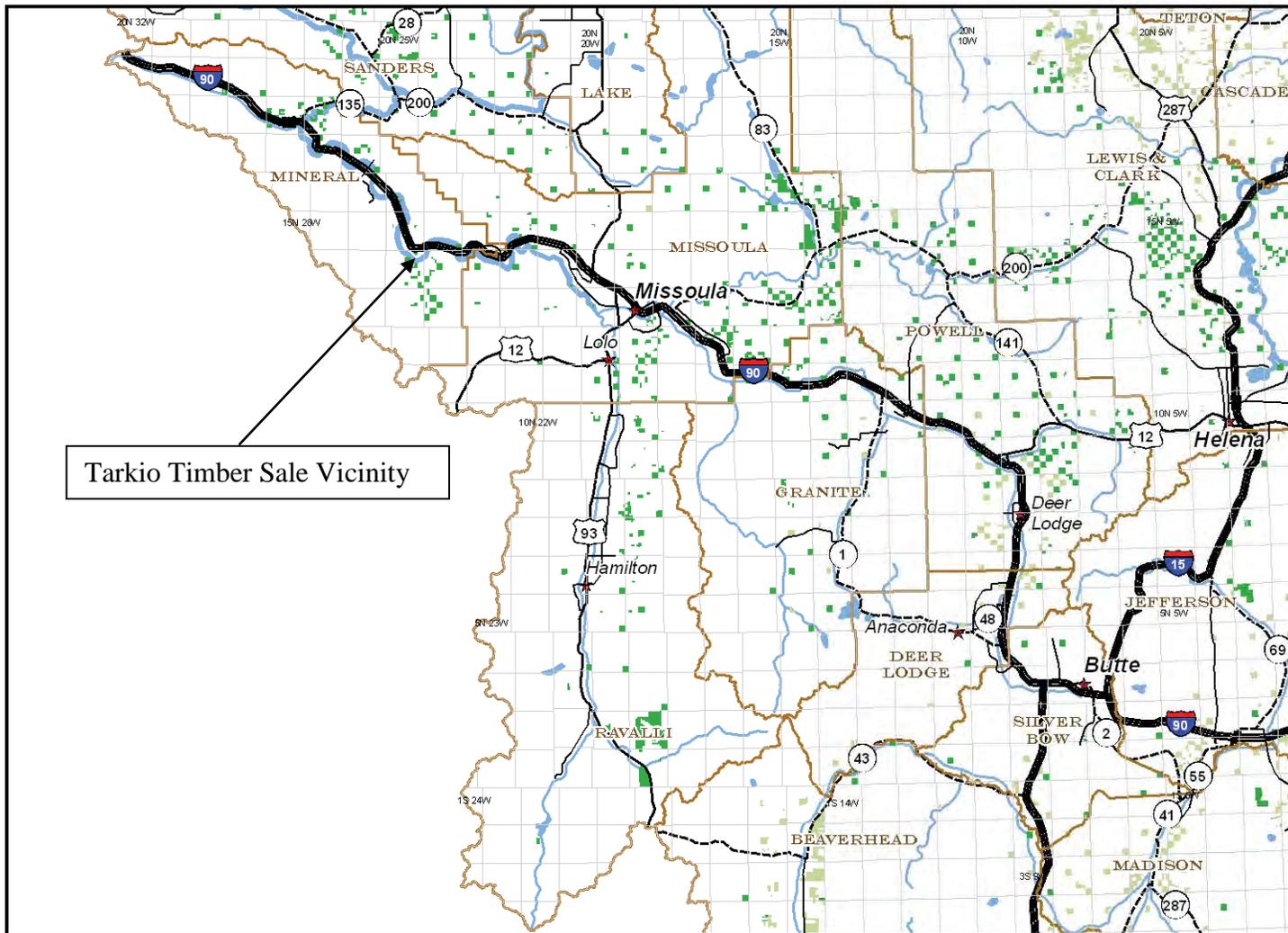
**26. SIGNIFICANCE OF POTENTIAL IMPACTS:**

No Significant Impacts

**27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:**

EIS                     
  More Detailed EA                     
  No Further Analysis

<b>EA Checklist Approved By:</b>	<b>Name:</b> Jeffrey L. Rupkalvis	
	<b>Title:</b> Forest Management Supervisor	
<b>Signature:</b> /s/ Jeffrey L. Rupkalvis	<b>Date:</b> December 8, 2010	



Tarkio Timber Sale Vicinity



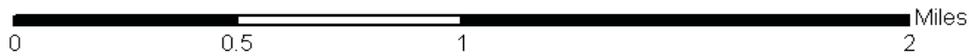
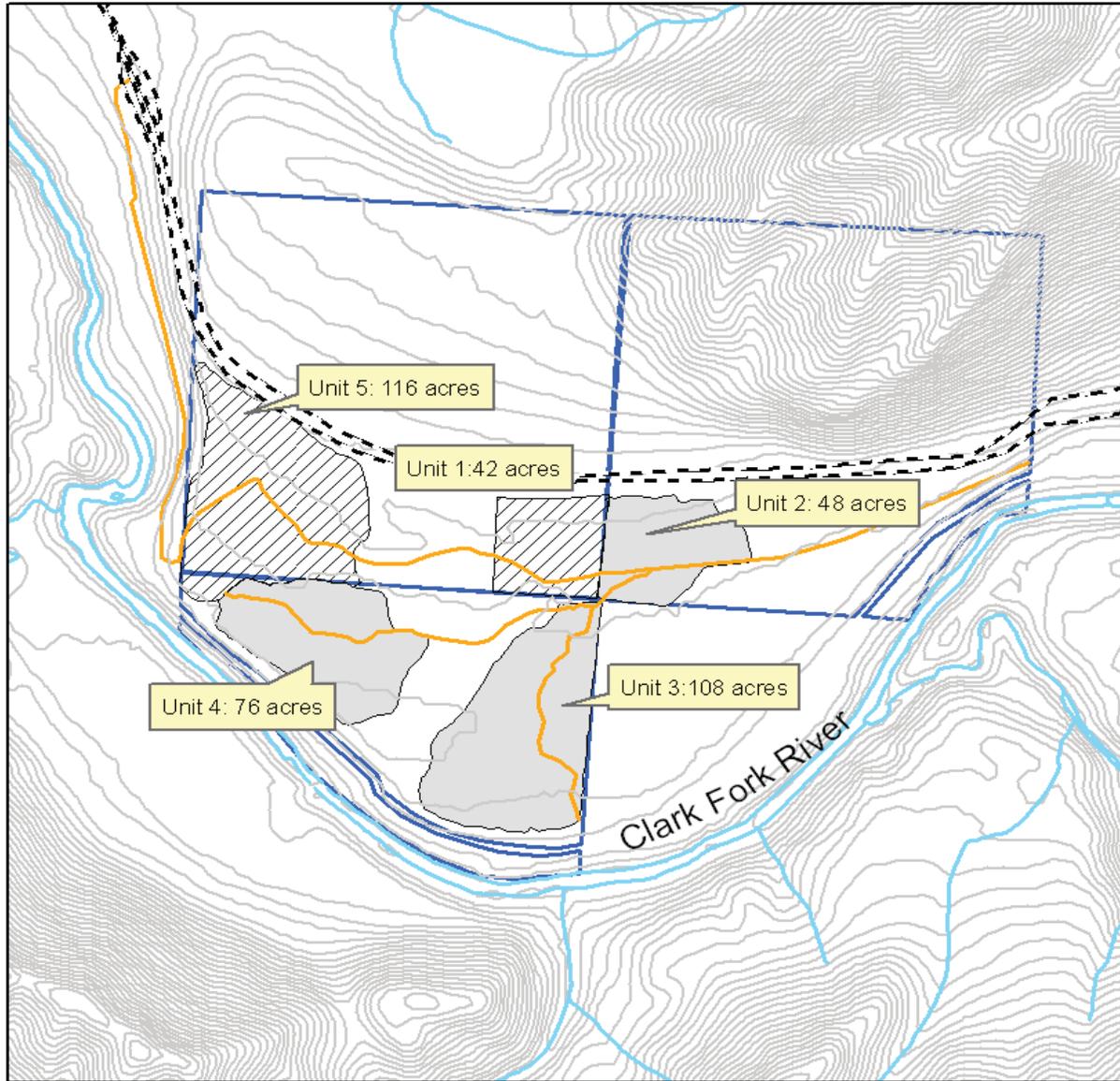
	Interstate Highway		Rivers		Lakes
	U.S. Route		City		DNRC managed for timber
	State Highway		County		DNRC other
	Secondary Roads		Township/Range		

21 February 2007  
 Montana DNRC  
 Technical Services Section/dr



# Tarkio Harvest Units

Sections 35 and 36 T15N R25W  
Section 2 T14N R25W



**Legend**

- - - I-90
- Tarkio haul route
- Individual Tree Selection
- ▨ Commercial Thin
- Tarkio School Trust Lands



## Vegetation Analysis

### Introduction

The DNRC performs an analysis of vegetation for proposed forest management projects to determine current conditions, appropriate treatments and the potential for effects associated with a proposed activity. Analysis for the Tarkio Timber Sale included review of the DNRC Stand Level Inventory (SLI), a query of the Montana Natural Heritage Program for the presence of sensitive plants and site visits by the project IDT.

### Existing Conditions

Three prominent forest cover types exist in the project area as a result of prior treatments and fire, with ponderosa pine as the dominant species. Western pine beetle (*Dendroctonus brevicomis*) and western gall rust (*Endocronartium harknesii*) are present in ponderosa pine (*pinus ponderosa*) (Hagle et al).

- 1) Approximately 500 acres in Sections 35 and 36 north of Interstate 90 experienced stand replacing fire in August, 2005. Subsequent salvage harvest of burned trees occurred on 190 acres in the same year. The DNRC planted ponderosa pine nursery stock on approximately 30 acres in April, 2010 and a fair amount of ponderosa pine is regenerating naturally in the rest of the harvested area.
- 2) Portions of section 2 (harvest units 3 and 4) are multi-aged mixed species stands with a significant western larch (*larix occidentalis*) component and scattered Douglas-fir (*pseudotsuga menziesii*). Selective harvest occurred in these stands in 1981 and subsequent natural regeneration is dominated by sapling/pole sized western larch and ponderosa pine. Precommercial thinning of this understory occurred in harvest unit 3 in 2006.
- 3) The south half of sections 35 and 36 are dominated by even-aged stands of ponderosa pine with clumpy Douglas-fir in the understory. Commercial thinning occurred in section 36 in 2000 with some subsequent regeneration of ponderosa pine in openings. Evidence suggests that section 35 was selectively harvested approximately 100 years ago. The DNRC acquired trust lands in section 35 in 2009. Stands are very well stocked and trees exhibit limited incremental growth and high rate of western gall rust infection compared to adjacent managed stands of the same age.

Understory vegetation is dominated by pinegrass (*Calamagrostis rubescens*) with scattered shrubs. Shade tolerant Douglas-fir is dominating understory regeneration in the absence of treatment or natural fire. Habitat types present are PSME/CAGE and PSME/VACA. Spotted knapweed is present along roads but has been actively treated in recent years and native plant communities are vigorous enough to prevent spread. No sensitive plants have been identified in the project area. No old growth, as defined by Green et al, has been identified in the project area. Large ponderosa pine (>25" DBH) that were retained from previous harvest entries are scattered or in small clumps of 2-8 trees throughout the project area.

The DNRC maintains biodiversity by managing for appropriate stand structures and compositions on school trust lands. Appropriate stand cover types are determined by a site specific model that considers the ecological characteristics and estimated historical cover type conditions that existed on the site prior to European settlement. Approximately 100% of stands in the project area currently exist as the appropriate cover type (ponderosa pine) as identified by the DNRC Forest Management Bureau SLI and field reconnaissance. Treatments were designed to maintain the appropriate cover type and improve age class distribution and species composition to achieve biodiversity and forest health objectives (ARM 36.11.405).

## **Direct and Indirect Effects**

### Alternative A: Deferred Harvest (No Action)

No changes to existing vegetation communities would occur as a result of the proposed action. Mortality from insects and disease would likely continue or increase and shade tolerant Douglas-fir would likely become dominant. There would be low risk of direct, indirect or cumulative effects under this alternative.

### Alternative B: Harvest (Action)

The proposed treatment would reduce stocking levels by approximately 40-60% and canopy cover by approximately 40%. Mature healthy trees exhibiting favorable form and growth characteristics would be retained as crop trees and seed source for future stands. Western larch would be favored for retention where present. Most large ponderosa pine scattered throughout the project area would be retained as relic trees and snag recruits as required by ARM 36.11.411.

An ITS prescription applied to Units 2 and 3 would result in a more balanced age class distribution in these stands by removing a portion of mature ponderosa pine and recruiting understory western larch and ponderosa pine. Age class distribution is not expected to change in Units 1, 4 and 5.

Reducing the canopy closure through harvest would promote regeneration of shade intolerant species that historically occupied the site. Mature stands that developed with high stocking rates such as those in harvest units 1 and 5 (section 35) can be prone to windthrow damage post-harvest. While leave tree marking on a tighter spacing in these stands will help reduce the risk, there is potential for significant windthrow and subsequent salvage harvest after the proposed project.

Soil and vegetation disturbance associated with harvest could increase the spread of noxious weeds. An integrated management approach including prevention, revegetation, treatment and monitoring would reduce the potential for introduction and spread of noxious weeds. Contract stipulations include power washing of all equipment and inspection by the DNRC prior to delivery on site. Prompt seeding of desirable species on disturbed sites would reduce the possibility of establishment by weeds. Active herbicide treatment would occur during and after the project where monitoring detects weed populations. As a result, there would be low risk of direct or indirect effects to vegetation communities as a result of the proposed action.

## **Cumulative Effects**

### Alternative A: Deferred Harvest (No Action)

No harvest would occur as a result of the proposed action. Permitted activities would continue in the project area. Programmatic weed management would continue.

In the absence of fire and forest management, gradual transition from seral species to shade tolerant Douglas-fir as the dominant species would be expected. Continued or increased mortality of ponderosa pine from western gall rust and western pine beetle would be likely. Accumulation of fuel from mortality and understory development of Douglas-fir would increase the risk of stand replacing fire.

### Alternative B: Harvest (Action)

Active forest management in the project area would continue, resulting in periodic future harvest and vegetation management treatments. These would include future timber sales and precommercial thinning projects to promote establishment of seral species. Adjacent privately owned forest land has been actively managed in a similar manner. It is expected that there would be low risk of cumulative effects to vegetation communities as a result of the proposed action.

## References

DNRC, 1996. State Forest Land Management Plan. Montana Department of Natural Resources and Conservation. Missoula, MT.

Green, P. J. Joy, D. Sirucek, W. Hann, A. Zack, and B. Naumann. 1992. Old-Growth forest types of the Northern Region. USDA Forest Service, Northern Region. Missoula, Montana.

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11 August 2010

Mike McGrath  
SWLO Wildlife Biologist

## **Tarkio Timber Sale Wildlife Analysis**

### **Chapter 1**

#### **Issues and Concerns**

There is concern that the proposed action may negatively affect a wildlife linkage zone between Ninemile and Fish Creek.

There is concern that the proposed action may negatively affect gray wolves.

There is concern that the proposed action may negatively affect bald eagle nesting efforts.

There is concern that the proposed action may negatively affect pileated woodpecker habitat.

There is concern that the proposed action may negatively affect flammulated owl habitat.

#### **Issues Eliminated from Further Study**

**Black-backed Woodpecker**—There is concern that timber harvest activities would alter black-backed woodpecker habitat or provide unnecessary disturbance. The portion of the project area north of I-90 contains habitat burned by the 2005 I-90 fires, and is located approximately 1 mile northwest of lands burned by the 2003 Fish Creek fire. Because burned habitat > 5 years old has greatly reduced habitat suitability for black-backed woodpeckers (Hutto 1995), much of the nearby burned areas may not be as attractive to this species as they recently were. As a result of the diminished value of the nearby burns to this species, there would likely be low risk of direct, indirect, or cumulative effects to black-backed woodpeckers as a result of the proposed action.

**White-tailed Deer**—There is concern that timber harvest activities may negatively affect white-tailed deer winter range. However, the affected parcels do not contain dense stands with canopy cover > 70%. Most stands within the project area are moderately stocked, with canopy cover ranging between 40% and 70%. As a result, the project area is marginal winter range for white-tailed deer. Thus, there would likely be low risk of direct, indirect, or cumulative effects to white-tailed deer from the proposed action.

The following species were considered but eliminated from detailed study due to lack of habitat present: Canada Lynx, Fisher, Peregrine Falcon, Harlequin Duck, Townsend's Big-eared Bat, Coeur

d'Alene Salamander, Northern Bog Lemming, Common Loon, Mountain Plover, and Columbian Sharp-tailed Grouse.

### **Chapter 3: Affected Environment**

#### **Description of Relevant Affected Resources**

##### **Wildlife**

##### **Issue: There is concern that the proposed action may negatively affect a wildlife linkage zone between Ninemile and Fish Creek.**

A linkage zone is an area between larger blocks of habitat where animals can live during certain seasons and where they can find the security they need to successfully move between larger habitat blocks; they are broad areas of seasonal habitat where animals can find food, shelter, and security (Servheen et al. 2001). Linkage zones are important because they provide for dispersal and gene flow among habitat islands. As such, these zones can become compromised through human development and environmental changes or catastrophes (e.g., fires or floods).

The affected area is part of a linkage zone that occurs from Cyr west to Tarkio, and incorporates habitat between Martel Mountain, a crossing just east of Tarkio, and includes an area from Rock Creek to Rivulet. This linkage zone provides broad-scale landscape connectivity for forest carnivores (grizzly bear, Canada lynx, and wolverine) from the Mission and Rattlesnake Wilderness areas, through the Ninemile Divide, to the Selway-Bitterroot Mountains and Wilderness (Montana Fish, Wildlife & Parks 2010). As such, grizzly bear activity has been documented in the nearby Ninemile drainage, and to the southwest in Kelly Creek, Idaho; lynx have historically used the Fish Creek drainage to the south; and recent genetic analysis of wolverine and spring snow pack data revealed that the Fish Creek drainage may be a stepping stone to this major movement corridor (Schwartz et al., in press; Montana Fish, Wildlife & Parks 2010).

The project area is a mixture of Douglas-fir, Ponderosa pine, and western larch (Douglas-fir/bluebunch wheatgrass, Douglas-fir/dwarf huckleberry, and Douglas-fir/ninebark/pinegrass phase habitat types). Residences exist on private parcels located immediately southeast and southwest of the project area, and Montana Fish, Wildlife & Parks recently acquired approximately 40,945 acres of former Plum Creek lands northeast of the project area and to the south in the Fish Creek drainage. Montana Fish, Wildlife & Parks will be developing a state park to the southeast of the project area, with portions of the proposed park occurring within a community-identified linkage area (C. Servheen, USFWS Grizzly Bear Recovery Coordinator, public scoping comments to MTFWP's Draft Environmental Assessment for the Proposed Land Acquisition Fish Creek Wildlife Management Area and Fish Creek State Park, February 2, 2010). The proposed DNRC action falls within a model-identified linkage zone (C. Servheen comments, February 2, 2010). Within these linkage zones, Servheen recommends the following to maintain the effectiveness of these areas for wildlife movement: 1) no additional site developments such as campgrounds, boat ramps or trailheads where human activity and human-related attractants like garbage and foods are concentrated; 2) no increase in motorized access routes or motorized use areas; and 3) maintenance or enhancement of visual cover in these areas so as to make wildlife more secure when they move through such areas. Additionally, approximately 41,025 acres burned in the 2003 Fish Creek Fire, and approximately 12,050 acres of the South Fork Nemote Creek area, northeast of the project area, burned in the 2005 I-90 Fire. Both fires affected both the model-identified and community-identified linkage areas.

**Issue: There is concern that the proposed action may negatively affect gray wolves.**

Wolves are currently classified as an experimental population south of Interstate 90, and federally endangered north of Interstate 90 in Montana. Cover, and road and prey densities likely have some influence on wolves. Wolf activity has been documented in the area by the two separate packs: Bitterroot Range and Quartz Creek. For cumulative effects analysis, the analysis area encompasses approximately 284 square miles, incorporating portions of Fish Creek, Trout Creek, and from the Montana/Idaho border to I-90. Open road density within the cumulative effects analysis area is approximately 1.57 miles of open road per square mile (simple linear calculation; approximately 447 miles of open road). Currently, no known wolf den or rendezvous site is known to be located within 1 mile of the project area.

**Issue: There is concern that the proposed action may negatively affect bald eagle nesting efforts.**

Bald eagles typically nest and roost in large diameter trees within 1 mile of open water. They are sensitive to a variety of human caused disturbances, ranging from residential activities to resource use and heavy equipment operation, among others (Montana Bald Eagle Working Group 1994). Bald eagle response to such activities may range from spatial and temporal avoidance of disturbance activities to total reproductive failure and abandonment of breeding areas (MBEWG 1994). While foraging, they typically perch within 500 m of shoreline habitat (Mersmann 1989); and roost in trees ranging in diameter from 12 to 39 inches and 49 to 200 feet in height (Stalmaster 1987). Eagles are generally associated with aquatic foraging habitat. However, roost trees are located away from houses and roads throughout their range (Buehler 2000). The Fish Creek territory has one nest located approximately 0.1 mile east of the project area, and within 0.25 mile of a proposed harvest unit (unit 3).

**Issue: There is concern that the proposed action may negatively affect pileated woodpecker habitat.**

The pileated woodpecker is one of the largest woodpeckers in North America (15-19 inches in length), feeding primarily on carpenter ants (*Camponotus* spp.) and woodboring beetle larvae (Bull and Jackson 1995). The pileated woodpecker nests and roosts in larger diameter snags, typically in mature to old-growth forest stands (Bull et al. 1992)(McClelland et al. 1979). Due primarily to its large size, pileated woodpeckers require nest snags averaging 29 inches dbh, but have been known to nest in snags as small as 15 inches dbh in Montana (McClelland 1979). Pairs of pileated woodpeckers excavate 2-3 snags for potential nesting sites each year (Bull and Jackson 1995). Snags used for roosting are slightly smaller, averaging 27 inches dbh (Bull et al. 1992). Overall, McClelland (1979) found pileated woodpeckers to nest and roost primarily in western larch, ponderosa pine, and black cottonwood. The primary prey of pileated woodpeckers, carpenter ants, tend to prefer western larch logs with a large end diameter greater than 20 inches (Torgersen and Bull 1995). Thus, pileated woodpeckers generally prefer western larch and ponderosa pine snags > 15 inches dbh for nesting and roosting, and would likely feed on downed larch logs with a large end diameter greater than 20 inches.

The most abundant habitat types (Pfister et al. 1977) within the affected area are Douglas-fir/dwarf huckleberry and Douglas-fir/bluebunch wheatgrass (Stand Level Inventory database). Within the affected parcels for which there are Stand Level Inventory data, there are approximately 447 acres that are predominately ponderosa pine or western larch, with average stand diameter  $\geq$  15 inches dbh that would be considered suitable pileated woodpecker habitat (crown cover  $\geq$  40%; SLI database). The cumulative effects analysis area will encompass the project area and a one mile radius surrounding each affected School Trust parcels.

**Issue: There is concern that the proposed action may negatively affect flammulated owl habitat.** The flammulated owl is a tiny forest owl that inhabits warm-dry ponderosa pine and cool-dry Douglas-fir forests in the western United States and is a secondary cavity nester. Nest trees in 2 Oregon studies were 22-28 inches dbh (McCallum 1994). Habitats used have open to moderate canopy closure (30 to 50%) with at least 2 canopy layers, and are often adjacent to small clearings. It subsists primarily on insects and is considered a sensitive species in Montana. Periodic underburns may contribute to increasing habitat suitability for flammulated owls because low intensity fires would reduce understory density of seedlings and saplings, while periodically stimulating shrub growth. Among the project area parcels, there are approximately 1,158 acres of flammulated owl preferred habitat types. Approximately 503 acres of flammulated owl preferred habitat types within the project area experienced stand replacing fire in the 2005 I-90 Fire. The cumulative effects analysis area will encompass the affected parcels within the analysis area.

## **Chapter 4: Environmental Consequences**

### **Wildlife**

**Issue: There is concern that the proposed action may negatively affect a wildlife linkage zone between Ninemile and Fish Creek.**

No Action Alternative

Direct and Indirect Effects

Under the No Action Alternative, no changes to existing conditions would be expected.

Cumulative Effects

Under the No Action Alternative, the proposed timber harvest would not occur. However, aspects of the wildlife linkage zones have been compromised since 2003. In 2003, the Fish Creek fire burned approximately 41,025 acres in the middle and southern ends of the Fish Creek drainage. In 2005, the I-90 Fire burned approximately 8,877 acres in Sheridan and Nemote Creeks, as well as in the Freezeout Gulch area north of I-90. As a result of these recent fires, visual screening cover was reduced in the community-identified linkage area, on both sides of I-90, and visual screening cover for the model-identified linkage zone was affected north of I-90. Much of these fire-affected areas are now under management by DNRC and through a land purchase in 2010, Montana Fish, Wildlife & Parks. Different portions of the lands recently acquired by MTFWP will be managed either as a Wildlife Management Area or as a State Park. Portions of the State Park include lands identified as part of the community-identified linkage area in Township 14N Range 24W, and include the potential for a developed campground in Section 6 (MTFWP Fish Creek Acquisition EA, 2010, Appendix B). However, any such development would be subject to future MEPA review (MTFWP, 2010, Decision Notice for the Proposed Land Acquisition: Fish Creek Wildlife Management Area and Fish Creek State Park). Thus, the No Action Alternative would likely not provide additional cumulative effects to those effects the wildlife linkage zone sustained from the 2003 and 2006 fires.

Action Alternative

Direct and Indirect Effects

The proposed action would commercially thin approximately 158 acres and conduct an individual tree selection harvest on approximately 232 acres, while not constructing any new road. Within the proposed commercial thin units, standing volume would be reduced by approximately 30%, while retaining trees on a more uniform spacing. As a result, visual screening cover would be reduced by

approximately 30% within the two commercial thin units. Within the three proposed individual tree selection units, multi-aged mixed species stands would be maintained, while promoting growth of the intermediate age classes and species. As a result, visual screening cover would likely see minimal to small reductions within these areas. As such, the proposed action would not increase human-related attractants or human activity (albeit only temporarily associated with the harvest activity, and would not increase motorized access routes or motorized use areas. However, the proposed action would see relatively small (approximately 30% reductions), temporary reductions in visual screening cover within the proposed harvest units. Because the proposed action would largely meet considerations for maintaining effective movement areas for wildlife (C. Servheen public scoping comments to MTFWP, February 2, 2010), there would likely be minimal to low risk of direct or indirect effects to the wildlife linkage zone between Ninemile and Fish Creek.

#### Cumulative Effects

As discussed for the No Action Alternative's cumulative effects, the linkage zone sustained impacts from the 2003 and 2006 fires that greatly reduced visual screening cover through stand replacing fires. The proposed action would reduce visual screening cover approximately 30% within the approximately 390 acres of proposed harvest. However, no new roads would be constructed, no long term human-related attractants would be added, and no increases in human activity would be promoted beyond the actual timber harvest activities. As a result, there would likely be minimal increases in cumulative effects to the wildlife linkage zone from the proposed action.

#### **Issue: There is concern that the proposed action may negatively affect gray wolves.**

##### No Action Alternative

##### Direct and Indirect Effects

Under the No Action Alternative, no changes to existing conditions would be expected.

##### Cumulative Effects

Under the No Action Alternative, the proposed timber harvest would not occur. However, visual screening cover in the southeastern portion of the analysis area was compromised by the Fish Creek fire in 2003. In 2003, the Fish Creek fire burned approximately 41,025 acres in the middle and southern ends of the Fish Creek drainage. Much of the fire-affected area is now under management by DNRC and through a land purchase in 2010, Montana Fish, Wildlife & Parks. Different portions of the lands recently acquired by MTFWP will be managed either as a Wildlife Management Area or as a State Park. MTFWP plans to reduce open road density in much of the recently acquired area (MTFWP Fish Creek Acquisition EA, 2010). Thus, the No Action Alternative would likely not provide additional cumulative effects to those effects the analysis area sustained from the 2003 fire and subsequent post-fire salvage harvests in the Fish Creek drainage.

##### Action Alternative

##### Direct and Indirect Effects

Under the proposed action no new roads would be constructed and standing tree volume within the proposed harvest units would be reduced approximately 30% to 50%, with topography being relatively flat. As a result, sight distance would be increased. Thus, there may be a low risk of direct and indirect effects to gray wolves in the experimental population due to increased sight distance which may leave wolves more vulnerable to poaching.

##### Cumulative Effects

Roads within the project area are on relatively level terrain and are not blocked to motor vehicle traffic in any way. The proposed timber harvest would reduce visual screening cover approximately 30% to 50% within the approximately 390 acres covered by the proposed harvest units, and no new roads would be constructed. The proposed reduction of visual screening cover by 30% to 50% on approximately 390 acres within the approximately 284 square mile analysis area would likely have low risk of cumulative effects to wolves.

**Issue: There is concern that the proposed action may negatively affect bald eagle nesting efforts.**

No Action Alternative

Direct, Indirect, and Cumulative Effects

Under the No Action Alternative, no changes to existing conditions would be expected.

Action Alternative

Direct, Indirect, and Cumulative Effects

The proposed action would commercially thin approximately 158 acres and conduct an individual tree selection harvest on approximately 232 acres. Within the proposed commercial thin units, large, healthy dominant and codominant Ponderosa pine and snag recruits would be retained on a more uniform spacing. As a result, potential perch and roost trees would be retained. Within the three proposed individual tree selection units, including the unit closest to the nest tree (unit 3), overstory canopy cover would be reduced by approximately 50%, while multi-aged mixed species stands would be maintained, and growth of the intermediate age classes and species would be promoted. Due to the distance, the majority of the proposed action would be located within the territory's home range (Montana Bald Eagle Working Group 1994), and would be subject to home range-level mitigations (ARM 36.11.429 (1)(e)(i), (ii), and (iii)), while the proposed harvest unit 3 would occur in the territory's nest area, primary use area, and home range. The proposed action would implement the following mitigations:

1. As per ARM 36.11.411, an average of at least one snag and one snag recruit per acre of the largest size class available would be retained within the proposed harvest units, and would provide for large snags, potential perch trees, and emergent trees (ARM 36.11.429 1.c.ii and 36.11.429 1.d.ii).
2. The proposed action would harvest timber in the proposed unit 3 during the non-nesting season (August 16 through January 31; ARM 36.11.429 1.c.i and 36.11.429 1.d.i).
3. The proposed action would not construct new roads, which would be in compliance with ARM 36.11.429 1.e.iii.

Pending implementation of the mitigations recommended above, there would likely be low risk of direct, indirect, or cumulative effects to bald eagles as a result of the proposed action.

**Issue: There is concern that the proposed action may negatively affect pileated woodpecker habitat.**

No Action Alternative

Direct and Indirect Effects

Under the No Action Alternative, no changes to existing conditions would be expected.

Cumulative Effects

Under the No Action Alternative, no changes to existing conditions would be expected.

## Action Alternative

### Direct and Indirect Effects

The proposed action would commercially thin approximately 158 acres, retaining large, healthy dominant and codominant Ponderosa pine and snag recruits, while reducing canopy cover by approximately 40%; and conduct uneven aged management on approximately 232 acres, through an individual tree selection harvest that would remove overstory trees in favor of promoting growth of the intermediate age classes. The proposed individual tree selection harvest would likely reduce canopy cover by approximately 50%. All harvests would be conducted in potential pileated woodpecker habitat. Snags and snag recruits would be retained as dictated under ARM 36.11.411. As a result of the proposed harvests, habitat suitability of the affected acres for pileated woodpeckers would likely be marginalized due to the direct reductions in canopy cover in all harvest units, and particularly in overstory trees in the individual tree selection harvest units. Thus, there would likely be low to moderate risk of direct and indirect effects to pileated woodpeckers that occur within the project area from the proposed action.

### Cumulative Effects

As previously mentioned, portions of the analysis area experience the I-90 Fire in 2005, with approximately 1,379 acres of the analysis area being burned and then salvage harvested by DNRC and private entities. This past fire and salvage harvest affected approximately 18% of the analysis area. The proposed harvest of approximately 390 acres would increase the amount of affected potential pileated woodpecker habitat from approximately 18% of the analysis area to approximately 23%. Additionally, much of the former Plum Creek lands (now managed by MT FWP) south of the Clark Fork river are currently unsuitable for pileated woodpeckers due to past timber harvest. The proposed timber harvest, while likely marginalizing potentially suitable habitat for this species through reductions in canopy cover, may still retain some utility for this species through retention of larger diameter trees in the commercial thin units, and uneven aged structure in the individual tree selection units. As a result, there would likely be a low to moderate risk of cumulative effects to pileated woodpeckers within the analysis area from the proposed action.

### **Issue: There is concern that the proposed action may negatively affect flammulated owl habitat.**

#### No Action Alternative

##### Direct, Indirect, and Cumulative Effects

Under the No Action Alternative, no changes to existing conditions would be expected.

#### Action Alternative

##### Direct, Indirect, and Cumulative Effects

The proposed commercial thinning of approximately 158 acres would likely temporarily reduce habitat suitability for this species due to reductions in overstory canopy closure and structural diversity from thinning saplings and poles in the understory. The proposed individual tree selection harvest on approximately 232 acres may increase habitat suitability for flammulated owls through promotion of multi-storied forest structure, retention of snags and snag recruits in the largest size classes available (ARM 36.11.411), and promotion of ponderosa pine and western larch in the post-harvest stands. Both tree species provide long term snags. As such, the proposed action would likely have low to moderate risk of direct, indirect, and cumulative effects to flammulated owls within the project area.

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## Montana Fish, Wildlife & Parks

Region 2 Office  
3201 Spurgin Road  
Missoula, MT 59804-3101  
406-542-5500  
Fax 406-542-5529  
August 28, 2008

Wayne Lyngholm  
DNRC, Missoula Unit  
1500 Tower St.  
Missoula, MT 59804

Reference: Tarkio timber sale--Scoping

Dear Mr. Lyngholm:

Thank you for requesting Montana Fish, Wildlife & Parks' input on the proposed timber harvest activities on school trust lands in the Tarkio area (Sections 35 and 36, T15N, R25W, and Section 2, T14N, R25W). Our comments and recommendations follow.

### Wildlife

1. There is a bald eagle nest located along the Clark Fork River in the western portion of Section 1 (T14N, R25W), along the Clark Fork River. Within ¼ mile of the nest, any timber thinning should occur outside of the nesting season (February 1--July 15). In addition, it is important to thin only smaller trees, leaving numerous larger and medium trees scattered within the ¼-mile buffer zone. These trees would provide visual cover to-and-from the nest, as well as provide older, live trees for future nesting sites. From the ¼-mile to ½-mile "zone" from the nest site, heavy equipment use should not occur during the nesting season (January--July 15). Furthermore, in this ¼- to ½-mile zone, we recommend also leaving larger, live trees for future, potential nesting sites. If you have any questions, please contact our native species coordinator, Kristi Dubois (phone 406-542-5500; [kdubois@mt.gov](mailto:kdubois@mt.gov)).
2. The lower portion of the Fish Creek drainage is important big game winter range and part of a very significant wildlife linkage zone. The DNRC parcels are a portion of this crossing area for ungulates, as well as for forest carnivores, including grizzly bear, Canada lynx, and wolverine. Ecologically, it is important to maintain this linkage for genetic diversity and diversity between populations in the Bitterroot Mountains and the Mission Mountains/Rattlesnake Wilderness. Furthermore, elk winter range extends into these sections--last winter, our local wildlife biologist witnessed elk crossing Interstate Highway 90 (I-90) in this area. Measures should be taken to ensure appropriate cover and security is left for wildlife to cross I-90 in order to access more suitable, wilder habitats.
3. According to the Montana Natural Heritage Program's (MNHP) Species of Concern GIS layer, a black-backed woodpecker (*Picoides arcticus*) was sighted in Section 36. FWP has identified this species as a Species of Concern in Montana, as well as one in greatest need of conservation (MFWP, 2005). Based upon the following excerpt taken from the MNHP website (MNHP, 2008), we recommend *no* removal of dying and recently killed trees within the burned area.

Management. No known active management is ongoing for Black-backed Woodpeckers in the state. However, studies from the western United States on the logging of post-fire trees indicated the negative impacts of this activity on Black-backed Woodpeckers (Kotliar et al. 2002). The conclusion reached was that this species rarely used even partially logged post-fire forests. Therefore, when salvage logging is planned, a delay of work for at least five years after the disturbance event is very important (Hutto 1995, Dixon and Saab 2000). This time delay is essential to provide habitat as the woodpecker's main prey items (wood-boring beetles) become less abundant after this period (Caton 1996). Salvage operations should retain more than 104 to 123 snags per hectare (more than 42 to 50 snags per acre) that are more than 23 cm diameter at breast height (dbh), more than 9 inches dbh (Dixon and Saab 2000, Wisdom et al. 2000). [Citations listed can be found on the MNHP website at [http://fieldguide.mt.gov/detail\\_ABNYF07090.aspx](http://fieldguide.mt.gov/detail_ABNYF07090.aspx).]

4. Black bears would be expected in this project location (with the possibility of grizzly bear). In case any temporary field camps are set up in conjunction with this project, personnel should be made aware that bears are attracted to oil products and machinery lubricants, and hoses and seats of heavy equipment--in addition to any food products or scraps on site. We recommend that any contractors camping in the area during project activities be required to store potential attractants such as food, garbage and/or pet food in bear-resistant containers. Please feel free to contact our bear specialist, Jamie Jonkel (542-5508 at Missoula; [jajonkel@mt.gov](mailto:jajonkel@mt.gov)) with any questions.

### Recreation

One of the key components to recreation management in the Alberton Gorge section of the Clark Fork River is protecting the viewshed along the river corridor. While much of the land proposed for timber harvest in this sale would not likely be visible from the river, timber harvest on the hillside immediately adjacent to the river in Section 2 (T14N, R25W) could negatively affect the viewshed through this scenic stretch of the river. We recommend DNRC consider the least intrusive harvest techniques possible in this area and as well as leaving an adequate amount of timber in this area to protect the viewshed from the river.

Thank you for providing the opportunity for FWP to comment on this proposal.

Sincerely,

*/s/ Mack Long*

Mack Long  
Regional Supervisor

ML/sr

### Literature Cited

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**From:** Bower, Jim  
**Sent:** Monday, June 30, 2008 10:31 AM  
**To:** Lyngholm, Wayne  
**Cc:** Collins, Jeff; Frank, Gary  
**Subject:** 'Tarkio Timber Sale' - Internal Fisheries Issue and Comments

Wayne,

Please accept the following internal fisheries issue and comments to the proposed 'Tarkio Timber Sale':

COMMENT: The Clark Fork River contains westslope cutthroat trout. DNRC is a signatory to the 2007 (interagency) Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout and Yellowstone Cutthroat Trout. The maintenance of genetically pure and slightly hybridized populations are important components of that plan. Westslope cutthroat trout are also identified as a DNRC 'sensitive species' (ARM 36.11.427.) (Although, based on the area photo and recent NHD data, there do not appear to be any tributaries to the Clark Fork River within the proposed project area, any perennial tributaries to the Clark Fork River within the project area should be presumed to be fish-bearing unless otherwise determined by either myself or a FWP fish biologist.)

COMMENT: The Clark Fork River contains bull trout (a USFWS listed 'threatened' species). DNRC is a signatory to the 2000 (interagency) Restoration Plan for Bull Trout in the Clark Fork River Basin and Kootenai River Basin, Montana, and the maintenance of strong nodal bull trout populations are an important component of that plan. Bull trout are also identified as a DNRC 'sensitive species.'

COMMENT: Many non-native fish species also inhabit the Clark Fork River. Non-native fish species can adversely affect westslope cutthroat trout and bull trout through various types of displacement, genetic introgression, disease, and predation. A primary mechanism for maintaining strong westslope cutthroat trout and bull trout populations where the species coexist with non-native fish is the maintenance of key habitat variables.

COMMENT: An integral component of promoting strong bull trout and westslope cutthroat trout populations is the maintenance of key habitat variables, such as stream temperature, expected sediment classes, connectivity, large woody debris recruitment, pool frequency and volume, channel complexity, expected levels of streambank stability, expected ranges of stream shading, nutrient inputs, etc. (ARM 36.11.425.)

ISSUE: Actions related to the proposed timber sale may adversely affect stream sediments and recruitable large woody debris in the Clark Fork River. (Depending on the final project area, these two variables should either be considered for additional analysis or dismissed from further analysis within the project EA.)

COMMENT: The four comments and one issue above should not dissuade DNRC from conducting timber management activities within the riparian management zones adjacent to the Clark Fork River. Through the thoughtful assessment of existing riparian conditions and historic stand conditions, DNRC should be able to manage the riparian management zones adjacent to the two streams to achieve (1) early seral stand conditions, (2) adequate levels of stream temperatures, stream shading, stream sediments, and recruitable large woody debris, and (3) the fiduciary responsibilities to the trust, among other project objectives.

If you or the project hydrologist would like any help interpreting fisheries related ARMs 36.11.425 and 36.11.427 I would be happy to provide that guidance. Also, it would be very helpful if you could

forward me preliminary unit maps as soon as they are developed, since there may be some opportunities to conduct pre- and post- timber sale monitoring of riparian management zones and/or fisheries resources. This type of pre- and post- timber sale monitoring would be designed to supplement SFLMP monitoring goals and benefit our overall timber management program.

Please feel free to reply if you have questions or concerns. Thanks,  
Jim

Jim Bower | Fisheries Program Specialist  
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September 3, 2010

TO: WAYNE LYNGHOLM, Forester, Missoula Unit  
JEFF RUPKALVIS, Lead Forester, Missoula Unit  
JON HAYES, Silviculturist, Southwestern Land Office

FROM: JEFF COLLINS, Hydrologist

RE: Watershed/Soils/Noxious Weeds, Report for Tarkio Timber Sale  
Section 2, T14N R25W and Sections 35 and 36 T15N R25W

## Introduction

The proposed project would occur on a broad gently sloping terrace above the Clark Fork River. The harvest would mainly use existing and temporary road during periods of dry, frozen and/or snow covered ground. In initial scoping, concerns were raised that the proposed timber sale may adversely affect water quality, fisheries, stream sediments and recruitment of large woody debris in the Clark Fork River. Based on project design, no actions would occur near the Clark Fork River and no streams occur on the project area or on access roads. The proposed action presents no potential effects to fish or aquatic habitats and these concerns are dismissed from further analysis. The following potential issues and concerns were developed from public and agency comments.

## Potential Issues

- \* Equipment operations during timber harvest on wet sites or sensitive soils can result in soil rutting, compaction and displacement and erosion.
- \* Long term soil productivity can be reduced depending on area and degree of physical effects, amount and distribution of coarse woody debris retained for nutrient cycling.
- \* In initial scoping, concerns were raised that actions related to the proposed timber sale may adversely affect water quality, fisheries, stream sediments and recruitable large woody debris in the Clark Fork River. Based on the project design, no actions would occur near the Clark Fork River and no streams occur on the project area or on access roads. The proposed action presents no potential effects to fish or aquatic habitats and these concerns are dismissed from further analysis.
- \* Noxious weed spread and encroachment associated with ground disturbance, road construction/ reconstruction, and traffic by trucks and recreationist.

## Existing Conditions-Geology and Soils

The proposed project would occur on a broad gently sloping terrace above the Clark Fork River. There is no especial unique or unstable terrain in the project area. There are mixed deposits of ancient Lake Missoula Lakebed silts and old river alluvium of gravels and cobbles in the proposed project area. The Clark Fork River valley has been subjected to the deep deposits of Lake Missoula sediments followed by flood scour of Lake Missoula and then river alluvium deposition and downcutting. Some small areas of abrupt, terrace slope breaks of marginal slope stability occur above the Clark Fork River below the old Milwaukee railroad grade. No operations are planned near the river or unstable sites and slope stability will be dismissed from further analysis. Argillite bedrock is exposed on the steeper slope in the north half of section 35. All material is common excavation. There is an older gravel pit in the NW ¼ of Section 35, or possibly DOT stockpile if feasible where gravel is needed.

Primary soils on Tarkio Section 2 T14N, R25W are deep Lake Missoula silts (Tarkio) with mixed deposits of alluvial sandy loams (Krause) and alluvial cobbly loams forming the flat to gently rolling terraces (refer to attached map) in section 35 and 36. Tarkio silty clay loam soils have a silt loam surface (4-10") over deep silty clay subsoils from glacial Lake Missoula sediments on 0-10% slopes. These soils are very productive, but have some limitations that require special mitigation measures, and this site is droughtier than some typical Tarkio

soils. Soil fertility and moisture holding capacity are high, yet these south exposures can be droughty, and bared surface soils are white, which can reflect heat at the seedling level and cause moisture stress. Retaining some shade and woody debris helps regeneration success. Erosivity is moderate on gentle benches, but high on steeper terrace edges near the river where no actions are planned.

These soils have poor bearing strength, due to high clay (35-50%) content subsoils that are very susceptible to compaction and rutting if operated on when wet, which could reduce soil productivity. Skid trail planning and season of use limits can reduce soil impacts. Roads are dusty when dry and can be impassible when wet. These limitations can be overcome by strictly limiting the season of use to dry, frozen or snow covered conditions. Short segments of road may require turnpiking or spot gravel based on site specific review. There is a moderate risk of windthrow for large seed trees, depending on exposure to wind.

Entente silt loams are a minor soil in the project area on flat slopes of 0-10%, and have less clay than the Tarkio soils, but similar interpretations. These deep silt loams soil may have slightly better drainage than the Tarkio soils. Limitations are doughiness and hazard of rutting and displacement if operated on when wet.

Soils in section 35 T15N, R25W are mainly Krause deep gravelly loams formed from alluvium of broad alluvial fans, outwash sediments and river deposits. Krause soil has moderate topsoil of mixed volcanic ash silts and surface cobble is common on the surface near the powerline. The mixed ash surface adds to moisture retention and growth potential. These coarse soils are well-drained and droughty supporting mainly ponderosa pine. The site has the longest dry season of use in the sale area and is well suited to tractor harvest. Soils are easily moved and require careful site preparation to avoid displacement of shallow surface soils. Pine regenerates easily and can overstock if disturbance is excessive. Tree length skidding should be avoided on this soil unless frozen or snow covered, because topsoils are easily displaced when dragging tops. Coarse woody debris is below average. Operations during frozen or snow covered conditions have the least effect on soils. Care would be taken during harvest and scarification to control disturbance and avoid excessive soil impacts, displacement and possible overstocking.

There have been several harvest entries into this area for uneven age management and salvage operations. DNRC recognized the concern for soil effects on the Tarkio soils, and operations in the last 30 years were completed on dry or frozen conditions with minimal soil impacts. Soil impacts are estimated at less than 10 % of the area.

### **Effects of No-action alternative on Soils**

The No-action alternative would have little effect on soil resources. Existing roads with inadequate drainage would continue to erode without maintenance.

### **Effects of action alternative on Soils**

The primary risks to long term soil productivity are erosion, rutting, compaction and displacement of surface soils by equipment operation and road construction. The proposed access would use existing roads with only minor spur road construction.

Operations are planned to maintain soil productivity, avoiding displacement of topsoils and limit season of use to minimize effects. Emphasis is to use existing landings and skid trails as feasible to reduce area affected and improves skidding efficiency. Slash disposal and site preparation will limit the amount of surface disturbance to the minimum required for silvicultural goals and retain woody debris and fines for nutrient cycling.

Cumulative effects to soils could occur from repeated entries into the harvest area based on the projected 20 year reentries. The risk of cumulative effects are low based on use of existing roads, skid trail planning to use existing trails and lands and limiting excessive disturbance to 15% of the area.

### **Water Quality**

The project is located well away from the river and there is no potential for impacts to water or fisheries resources. The Clark Fork River flows along the south boundary of section 2, but is not adjacent to any

proposed harvest (over 100 yards) and there are no sources of sediment from the project site. This portion of the Clark Fork River (MT76Moo1\_010) has been identified as partially impaired beneficial uses for cold water fisheries and aquatic life in the 303(d) list that appears in the 2008 Montana 305(b) Report. Probable impairment is nutrients and heavy metals. Probable sources are mining and industry runoff. A Total Max Daily Load (TMDL) Analysis and restoration plan has not been completed for the Middle Clark Fork watershed.

The designated access haul road route does not cross any streams and no actively eroding sediment sources were identified. The project would be accessed by existing roads that have adequate drainage and erosion control features would be repaired if damaged. The proposed harvest of overstocked trees would have no measurable water yield increase compared to the current conditions based on retaining mixed conifer species canopy, gentle slopes on a broad terrace and no offsite surface runoff. Existing cumulative water quality effects in the general area are associated with past and current management activities that include timber harvest, road and railroad construction, grazing, wildfire, fire suppression and recreation. In 2007 the I-90 fire burned through the area that included the NW ¼ of section 35. The fire caused tree mortality and portions of the fire were harvested, yet there were no water quality impacts of the fire in the project area due to no surface drainage offsite, no surface water and high infiltration on droughty sites.

#### **Effects of No-action alternative on Water Quality**

The No-action alternative would have no effect on water resources and no change in effects to beneficial uses. There are no streams, surface waters or wetlands on the proposed harvest areas. Existing roads with inadequate drainage would continue to erode without maintenance, but would not cause sediment or water quality problems.

#### **Effects of action alternative on Water Quality**

The action alternative would have no effect on water resources and no change in effects to beneficial uses. There are no streams, surface waters or wetlands on the proposed harvest areas. Existing roads would have adequate drainage installed and maintained, and there is no potential for direct, indirect or cumulative effects to water quality or quantity associated with this project.

#### **Effects of No-action alternative on Fisheries**

The No-action alternative would have no effect on water resources or fish habitat. There are no streams, surface waters, wetlands or fish habitat on the proposed harvest areas.

#### **Effects of action alternative on Fisheries**

The action alternative would have no effect on water resources fish habitat. There are no streams, surface waters or wetlands on the proposed harvest areas. There is no potential for direct, indirect or cumulative effects to fish habitat associated with this project.

#### **Existing Noxious Weeds**

Knapweed occurs along portions of existing access roads mainly on drier southerly aspects and droughty sites. Knapweed, St. Johnswort, houndstongue and spots of leafy spurge occur in the area and will likely increase without treatment and may displace native plants on the higher risk habitats of Douglas fir snowberry, pinegrass and bunchgrasses. Noxious weed along the road system were treated with herbicide this year to reduce current weeds and spread.

#### **Effects of No-action alternative on Noxious Weeds**

Under the no-action alternative, noxious weeds will continue to spread along open roads and onto dry habitats and animals and wind will carry seeds through the area. DNRC would treat roadside edges and provide bio-control as funding is available.

## Effects of Action alternative on Noxious Weeds

The action alternative will involve ground disturbing activities that have the potential to introduce or spread noxious weeds in susceptible habitat types and animals and wind will carry seeds through the area. For the action alternative, a combination of integrated weed management measures including prevention, revegetation, biocontrol and herbicide application on spot outbreaks are considered the most effective weed management treatments. Where noxious weeds are currently limited to portions of existing roads, mainly on road edges, DNRC would use herbicide treatments for effective control on a site specific basis to reduce existing weeds. Even with these efforts we expect noxious weeds may increase where adjacent lands are not treated. Larger infestations are good candidates for biocontrol. There is a moderate risk of stable or increased weeds with the proposed action and the combination of mitigations should hold weeds near current conditions and efforts will be made to reduce current infestations. Mitigations include limiting disturbance to range needed for silvicultural goals, requiring clean equipment, grass seeding roads, treating roads and infestations with herbicides.

## HARVEST DESIGN MITIGATION MEASURES

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

\* On tractor harvest units the logger and sale administrator will agree to a general skidding plan prior to equipment operations to limit trails to 15% or less of site.

\* Limit scarification to 30-40% of harvest units as excessive scarification may lead to soil impacts and overstocking. No tractor piling on wet sites or slopes over 35%. Consider lop and scatter, jackpot burning or excavator piling on steeper slopes over 35%.

\* Leave 10-15 tons of large woody debris for nutrient cycling. On some light harvest sites, it may not be possible to leave 10 tons of slash, in which case leave tops and as much downed woody material as feasible while meeting slash law requirements.

ROADS Road condition and drainage will be improved by spot grading, spot gravel surfacing or turnpiking short reaches across potholes as needed to comply with BMP'S

\* Construct and maintain erosion control features on trails and roads where needed. Minimal effects are expected with snow road construction.

\* The extensive clay-rich, low strength soils requires strict adherence to dry or frozen season of use to limit the extent of gravel needed. Road use for even short durations when wet can cause rutting that requires considerable maintenance to repair drainage features. Dust can be minimized by; operating on frozen ground, applying water or MgCl<sub>2</sub>

\* Road closures- All temporary spur roads will have adequate drainage maintained during use and will be closed, waterbarred, and grass seeded to control erosion.

\* All road construction and harvest equipment will be cleaned of plant parts, mud and weed seed to prevent the introduction of noxious weeds. Equipment will be subject to inspection by forest officer prior to moving on site.

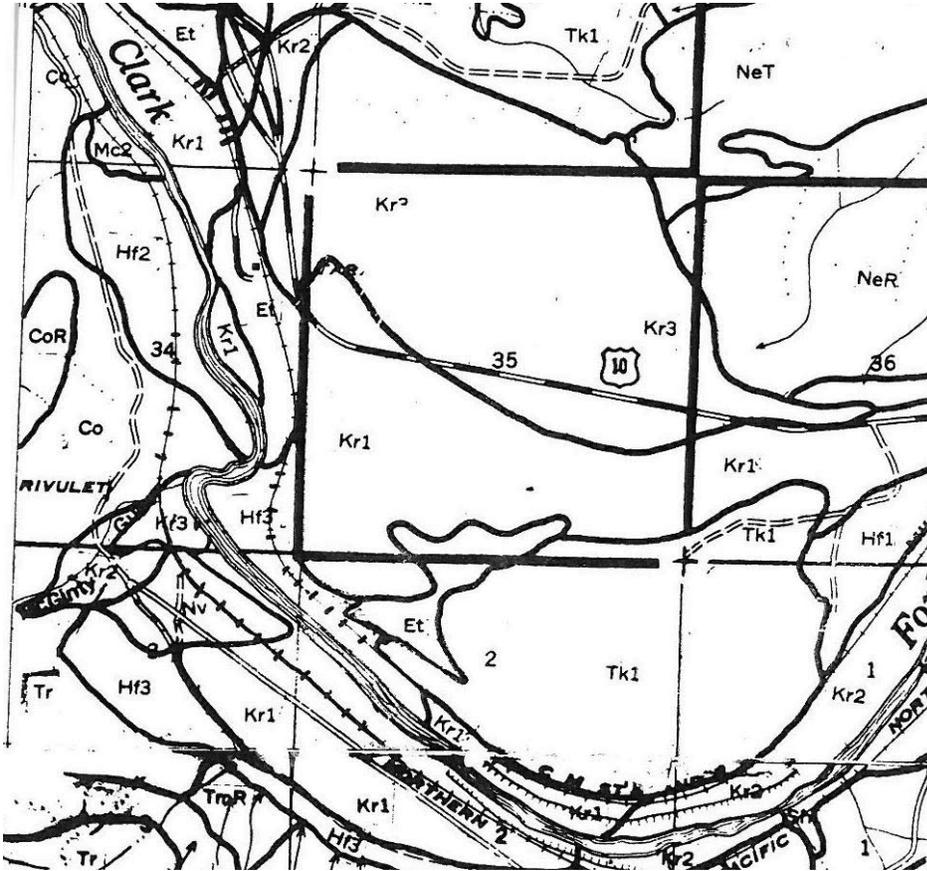
\* All newly disturbed soils on road cuts and fills will be promptly reseeded to site adapted grasses to reduce weed encroachment and stabilize roads from erosion.

\* Weed treatment measures may include spot herbicide treatment of noxious weeds. Where herbicide treatments are required by the forest officer, herbicide must be applied under the supervision of a licensed applicator following label directions in accordance with Department of Agriculture regulations, applicable laws and rules and regulations of the Mineral County weed board.

\* Monitor the sites for 2 years to evaluate weed control measures implemented and determine if any new noxious weeds establish that were not previously identified.

### TARKIO PROJECT AREA SOIL MAP

NORTH



Tk1	Tarkio silty clay loam, 0 to 4 percent slopes
Kr1	Krause gravelly loam, 0 to 4 percent slopes
Et	Entente complex, 0 to 4 percent slopes
Hf3	Half Moon silt loam, 15 to 35 percent slopes
Kr3	Krause gravelly loam, 8 to 15 percent slopes
Hf1	Half Moon silt loam, 0 to 4 percent slopes
Hf2	Half Moon silt loam, 4 to 15 percent slopes

### Harvest Design Mitigations

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

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- Leave 10-15 tons of large woody debris for nutrient cycling. On some light harvest sites, it may not be possible to leave 10 tons of slash, in which case leave tops and as much downed woody material as feasible while meeting slash law requirements.

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### Vegetation Mitigations

- Weed control measures would include equipment washing and inspection, revegetation of disturbed sites, monitoring for new infestations, and weed spraying.
- A combination of even-aged and multi- aged silvicultural systems would be applied to facilitate natural regeneration and maintain biodiversity and forest health.

### Wildlife Mitigations

- As per ARM 36.11.411, an average of at least one snag and one snag recruit per acre of the largest size class available would be retained within the proposed harvest units, and would provide for large snags, potential perch trees, and emergent trees (ARM 36.11.429 1.c.ii and 36.11.429 1.d.ii).
- The proposed action would harvest timber in the proposed unit 3 during the non-nesting season (August 16 through January 31; ARM 36.11.429 1.c.i and 36.11.429 1.d.i).
- The proposed action would not construct new roads, which would be in compliance with ARM 36.11.429 1.e.iii.
- A continuous north/south corridor approximately 700-1700 feet wide would be deferred from harvest to retain cover for wildlife movement in the central portions of sections 2 and 35.

## Aesthetics Mitigations

- Portions of the project area visible from the Clark Fork River/Alberton Gorge recreation corridor would be deferred from harvest.
- Healthy vigorous crop and seed trees would be retained on a 30-50 foot spacing.
- Large relic ponderosa pine trees would be retained.

## Fisheries Mitigations

- Riparian areas adjacent to the Clark Fork River would be deferred from harvest. Harvest would be limited to dry, flat upland slopes 500 feet or more from the Clark Fork River.

## **Appendix A: List of Preparers and Contributors**

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