

# Jim Junction Timber Sale Project



MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Northwest Land Office – Stillwater Unit

June 2020





## Environmental Assessment Checklist

**Project Name: Jim Junction Timber Sale Project**

**Proposed Implementation Date: August 2020**

**Proponent: Stillwater Unit, Northwest Land Office, Montana DNRC**

**County: Lincoln**

### Type and Purpose of Action

**Description of Proposed Action:**

The Stillwater Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the Jim Junction Forest Management Project. The project is located 7.5 miles south of Trego, MT (refer to Attachments **A-1** - Vicinity Map and **A-2** - Project Map) and includes the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools	T33N R26W S36	640	202
Public Buildings	T33N R 26W S13, 24, 25	759	205
MSU 2 <sup>nd</sup> Grant			
MSU Morrill			
Eastern College-MSU/Western College-U of M			
Montana Tech			
University of Montana			
School for the Deaf and Blind			
Pine Hills School			
Veterans Home			
Public Land Trust			
Acquired Land			

Objectives of the project include:

- Establish areas of regeneration of the desired species mix,
- Improve vigor/tree growth of residual stands,
- Reduce stocking densities and ladder fuels to reduce potential for large fire growth in populated areas near Trego, Montana,
- Remove trees which could cause outages along Lincoln Electric Cooperative's (LEC) powerlines, and
- Contribute to the DNRC and Northwestern Land Office's annual targets of timber-harvest volumes. DNRC is required by state law (77-5-221 through 223, MCA) to annually harvest approximately 56.9 million board-feet (MMbf) statewide.

Proposed activities include:

Action	Quantity
<b>Proposed Harvest Activities</b>	
	# Acres
Clearcut (roadside harvest)	22
Seed Tree	37
Commercial Thinning	196
Overstory Removal	38
Improvement Harvest	99
Shelterwood	13
<b>Total Treatment Acres</b>	<b>406</b>
<b>Proposed Forest Improvement Treatment</b>	
	# Acres
Thinning	196
Planting	0
Mechanical Site Prep	172
<b>Proposed Road Activities</b>	
	# Miles
New permanent road construction	0
New temporary road construction	0
Road maintenance	10.3
Road reconstruction	0
Road abandoned	0
Road reclaimed	0.1
<b>Other Activities</b>	

<b>Duration of Activities:</b>	3 years
<b>Implementation Period:</b>	June 2020 – April 2024

The lands involved in this proposed project are held in trust by the State of Montana. (Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11). The Board of Land Commissioners and the DNRC are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for the beneficiary institutions (Section 77-1-202, MCA).

The DNRC would manage lands involved in this project in accordance with:

- The State Forest Land Management Plan (DNRC 1996),
- Administrative Rules for Forest Management (ARM 36.11.401 through 471),
- The Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP) (DNRC 2010)
- and all other applicable state and federal laws.

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## Project Development

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### SCOPING:

- DATE:
  - October 24, 2019
- PUBLIC SCOPE:
  - The scoping notice was posted on the DNRC Website: <http://dnrc.mt.gov/public-interest/public-notice>
  - In October 2019, DNRC solicited public participation for 30 days on the Jim Junction Timber Management Project. The Initial Proposal with maps was sent to approximately 50 individuals, agencies, and other organizations that have expressed interest in DNRC's management activities. A notification of this project was also published in the Tobacco Valley News and Daily Interlake newspapers, and was posted at the Trego Post Office.
- AGENCIES SCOPE:
  - MT Fish, Wildlife and Parks,
  - US Forest Service (USFS), Kootenai National Forest
  - All Montana Tribal Organizations
- COMMENTS RECEIVED:
  - How many: Five (5) individuals or groups made comments.
  - Concerns:
    - Lincoln Electric Cooperative (LEC) is concerned about trees falling into the powerline potentially causing outages, fire starts, and putting the linemen at risk.
    - Two individuals were concerned about wildfire potential and felt we could reduce that risk with this project;
    - Local residents have voiced concerns that the log hauling might damage the road the residents have been paying to maintain;
    - One individual was concerned about trees blowing down after the harvest, and was especially concerned the trees might fall towards his house and outbuildings;
    - The same individual was concerned that after the harvest his house may be less protected from stray bullets;
    - Another commenter was in favor of logging.
  - Results (how were concerns addressed):
    - The project was designed to remove potentially hazardous trees adjacent to the powerlines. Trees that could fall on the powerline would be harvested along approximately 1 mile of the powerline corridor on State land. This area near the powerline includes 1 acre of streamside management zone harvest
    - DNRC would assure the project meets the slash hazard laws postharvest and implement higher levels of slash reduction near residences;
    - DNRC would complete road maintenance on the haul roads to assure they meet Montana Best Management Practices (BMPs). Most roads are cost-shared between the USFS and DNRC;

- DNRC has donated and displayed signs to alert individuals (hunters) that there is a house within a ¼ mile of the signs.

DNRC specialists on the Interdisciplinary Team (ID Team) were consulted. The ID Team considered all the internal and external issues and determined that through project design and various mitigations one action alternative could be developed and reviewed in this EA. The development of the project is described below and displays how concerns were addressed. The ID Team includes several foresters and DNRC specialists: Chris Forristal (Wildlife Biologist), Marc Vessar (Hydrologist), and Patrick Rennie (Archeologist).

### **PROJECT DEVELOPMENT:**

Project leaders and the ID Team considered several aspects related to internal and external concerns, DNRC Forest Management Rules and other forest management rules. The two primary aspects were prioritizing which stands to harvest and how, as well as, consider what maintenance items need to be addressed on the road systems.

- Stand Prioritization
  - Initial reconnaissance of the area included prioritizing areas that had been previously harvested that needed additional treatments;
    - A successfully regenerated shelterwood cut in section 24 where the removal of the larger diameter trees would improve growth and vigor in the residual smaller trees;
    - Stands of subalpine fir in Section 36 (harvested during the 1960s and 1990s) have grown to sawlog size and are currently at a stage that stem rot and mortality have not affected the merchantability of the timber.
  - Timber adjacent to powerline right-of-way and private property:
    - Taller trees in these areas can fall whether the areas are harvested or not. Specifically, the shallow root systems of spruce trees reduce stability, which increase the likelihood of windthrow.
  - The following issues guided foresters to recommend silvicultural treatments focused on improving stand health in poorly growing stands, and improving vigor in healthy stands:
    - Some previously harvested areas have not regenerated with the preferred species composition or stocking level.
    - The overstory in stands that did not have prior entry are suffering mortality and stagnation due to attacks from insects and disease. The closed canopy in these stands created an overly dense amount of poorly formed shade-tolerant tree species in the understory.
    - Lodgepole stands that had been precommercial thinned in the 1990s have grown to a point where competition induced mortality would occur in the coming years if not commercially thinned.
  - Wildland Urban Interface Fuel Reduction: Fuel loading and stand densities adjacent to private land directed foresters to consider fuels reduction treatments near private property.
- Transportation Development
  - Initial reconnaissance of the Jim Junction Timber Management Project Area revealed that the current transportation system needed minimal work to reestablish BMP standards.

## OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS

**NEEDED:** (*Conservation Easements, Army Corps of Engineers, road use permits, etc.*)

- **United States Fish & Wildlife Service-** DNRC is managing the habitats of threatened and endangered species on this project by implementing the Montana DNRC Forested Trust Lands HCP and the associated Incidental Take Permit that was issued by the United States Fish & Wildlife Service (USFWS) in February of 2012 under Section 10 of the Endangered Species Act. The HCP identifies specific conservation strategies for managing the habitats of grizzly bear, Canada lynx, and three fish species: bull trout, westslope cutthroat trout, and Columbia redband trout. This project complies with the HCP. The HCP can be found at <http://dnrc.mt.gov/divisions/trust/forest-management/hcp>.
- **Montana Department of Environmental Quality (DEQ)-** DNRC is classified as a major open burner by DEQ and is issued a permit from DEQ to conduct burning activities on state lands managed by DNRC. As a major open-burning permit holder, DNRC agrees to comply with the limitations and conditions of the permit.
- **Montana/Idaho Airshed Group-** The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006). 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.
- **Montana Department of Natural Resources and Conservation -** A *Site-specific Alternative Practice (ARM 36.11.310)* to the *Streamside Management Zone (SMZ) Law (MCA 77-5-303(1))* is required. The Forestry Bureau is completing the Jim Junction Alternative Practice EA and permit. Mitigations have been designed to allow equipment to enter a Class I SMZ to allow SMZ harvest of trees with a high potential to fall into powerlines. This site-specific plan demonstrates reasonable certainty that the proposed alternative practice would conserve the integrity of the SMZ and would not significantly diminish its function.

## ALTERNATIVES CONSIDERED:

**No-Action Alternative:** Under this alternative, no timber would be harvested and therefore no revenue would be generated from the project area Common School or Public Buildings Trusts at this time. Salvage logging, firewood gathering, recreational use, fire suppression, noxious-weed control, additional requests for permits and easements, and ongoing management requests may still occur. Natural events, such as plant succession, tree mortality due to insects and diseases, windthrow, down fuel accumulation, in-growth of ladder fuels, and wildfires would continue to occur.

**Action Alternative:** Under this alternative, a commercial timber harvest would take place to remove between 2 and 3 million board feet (MMbf) of timber. Timber would be harvested using

ground-based methods on 406 acres. Specific harvest unit data are provided in Attachment B – Jim Junction Prescription Table. The prescriptions used with the maps in Attachment A – Jim Junction Maps provides additional detail for this alternative.

New stands of healthy trees would be naturally regenerated on 159 acres through seed tree with reserves, clear cut with reserves, shelterwood, and improvement cut with group select openings. Commercial thinning would be conducted on 168 acres to promote stand health and increase growth and approximately 41 acres of improvement harvest would be selectively harvested to reduce fire hazards and maintain a stocked stand.

Overstory removal treatment would be conducted on 38 acres. This would remove existing seed trees while retaining a minimum of 2 snags and 2 snag recruits per acre for wildlife considerations.

Mechanical site preparation would occur on 172 acres of the total harvest to promote establishment of natural regeneration.

Riparian Management Zone (RMZ) harvest would occur on 8 acres within harvest units 3, 4, and 5.

Streamside Management Zone (SMZ) harvest would occur on 1 acre alongside Jim Creek Road to reduce potential damage to powerlines between the road and Jim Creek. MT DNRC has applied for a Site-Specific SMZ Alternative Practice to conduct harvest operations within the SMZ. Please refer to Attachment C - Alternative Practice application for further explanation.

Established noxious weed populations would be sprayed with herbicide, and soil disturbed by road-building activities would be grass seeded to compete with weeds and reduce road surface erosion.

Road maintenance and BMP improvements would be performed on all haul roads.

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## Impacts on the Physical Environment

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Evaluation of the impacts on the No-Action and Action Alternatives including **direct, secondary, and cumulative** impacts on the Physical Environment.

### **VEGETATION:**

#### **Vegetation Existing Conditions:**

Historical data indicate recorded logging activities starting in the late 20s, with repeated entries into this area during each decade since the 1940s. The latest activity was the Butcher Stewart Timber Sale (closed in 2012).

Proposed Harvest Units 1 and 2 are characterized by a vigorously growing upper layer with Douglas-fir, western larch, and Engelmann spruce. These units are well stocked, however there is some stem and butt rot present. The lower canopy levels are poorly stocked with Douglas-fir, western larch, and Engelmann spruce.

In units 3 and 6, Engelmann spruce is more prevalent throughout all size classes. These units are directly adjacent to existing powerlines, Jim Creek Road, and Jim Creek. The middle canopy layer is medium stocked with moderately vigorous Douglas-fir, western larch, and Engelmann spruce.

Units 5 and 7 show evidence of previous harvest, with dense pockets of Engelmann spruce, western larch, and Douglas-fir layer throughout the middle and upper canopy layer. These dense pockets are fragmented by old skid trails and roads throughout, and most of the trees show poor vigor.

Unit 8 is dominated by Douglas-fir, with damage and mortality caused by Douglas-fir beetle (*Dendroctonus pseudotsugae*). Douglas-fir and western larch regeneration has been established well in Unit 9, while the residual overstory is dominated by stunted Douglas-fir and western larch with short crowns, sweep, and insect damage.

Subalpine fir, western hemlock, and Engelmann spruce have grown in and established very dense understory pockets in units 10, 11, 12A, 12B, 13, and 14. Previous efforts to thin out these shade-tolerant species have effectively promoted growth and health in the western larch, subalpine fir, and Douglas-fir pole timber. Defoliators, stem rot, animal damage, and root rot have caused damage and mortality primarily in shade tolerant understory stems.

The Forest Management Rules direct DNRC to promote biodiversity by taking a coarse-filter approach that favors an appropriate mix of stand structures and composition on State lands (ARM 36.11.404). Cover type refers to the dominant tree species that currently occupy a forested area and is one of the factors DNRC uses to describe biodiversity levels. In the proposed units, the four current cover types present are as follows: Douglas-fir (40 acres), mixed conifer (31 acres), subalpine fir (57 acres), and western larch/Douglas-fir (279 acres).

As of September 2019, Stillwater and Coal Creek State Forests currently have 12.5% of the forest classified as old growth. In the project area, old growth characteristics have been verified on 69.8 acres.

The following rare or sensitive plants have been previously identified in the project area: moonwort (*Botrychium lunaria*), meadow horsetail (*Equisetum pretense*), prairie sedge (*Carex prairea*), meesia moss (*Meesia uliginosa*), scorpion moss (*Scorpidium scorpioides*). Though they may occur in the area, they were not observed during reconnaissance or fieldwork.

Weeds identified in the project area include: oxeye daisy (*Leucanthemum vulgare*), orange hawkweed (*Hieracium aurantiacum*), spotted knapweed (*Centaurea maculosa*), and Canada thistle (*Cirsium arvense*).

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Vegetative community	X				X				X					
Old Growth	X				X				X					
Forest Fuels	X				X					X				
Rare Plants	X				X				X					
Noxious Weeds		X				X				X				
<b>Action</b>														
Vegetative community		X				X				X			yes	V-1
Old Growth		X				X				X			yes	V-3
Forest Fuels		X				X				X			yes	V-2
Rare Plants	X				X				X					

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Noxious Weeds		X				X				X			yes	V-1

*Comments:*

**V-1: VEGETATIVE COMMUNITY** – This proposal includes timber harvest and a timber permit on approximately 406 acres to remove 2-3 MMBF. After implementation of the proposed treatments, the cover types would be altered to comply with the desired future conditions. Only 6 acres remaining as mixed conifer while 122 acres would be converted to the western larch/Douglas-fir cover type. In the units where commercial thinning, shelterwood and improvement harvest treatments have been proposed, no change to age class would occur since trees from all canopy layers would be both removed and retained. In the roadside areas where clearcut with reserves has been proposed, the age class would be reduced to “less than 39 years” with vigorous seedlings and saplings dominating those acres. Similarly, in the units where overstory removal has been proposed, 28.5 acres would transition from “150-199 years” to “less than 39 years”.

**V-2: OLD GROWTH** – MT DNRC has proposed to treat seven acres that meet Old Growth criteria with a “Clearcut with Reserves” silvicultural prescription. This would reduce the potential hazard to the nearby overhead powerlines while improving wildland firefighter access into the forests south of this unit. These acres removed from Old Growth status would represent an overall reduction in 0.04% of Old Growth Distribution on the Stillwater Unit. Including currently proposed timber sales, this would reduce the old-growth stands to 11.5% of Stillwater Unit’s total acres.

**V-3: FOREST FUELS** – Dense multi-storied stands exist throughout the project area which contain extensive ladder fuels due to the existing blowdown and understory ingrowth. These ladder fuels could increase fire intensity and activity, potentially allowing a wildfire to spread into the overstory canopy. These areas have been specifically identified for treatment to reduce some of the danger to nearby residents. Because of the heavy fuel loading that exists on the landscape in section 36 (units 10, 11, 12A, 12B, 13, and 14) in the form of blowdown, ladder fuels, and dense pockets of timber, the potential for stand-replacing wildfire exists but would be reduced and allow for success from aerial and ground firefighting efforts (see Vegetation Mitigations below).

**V-4: NOXIOUS WEEDS** – Noxious weeds are present along open and closed roads within the project area. Further soil disturbance and logging equipment activity could increase the amount and distribution of noxious weeds in the project area although with implementation of vegetation mitigations listed below the increase in populations and location would be lessened.

*Vegetation Mitigations:*

1. FOREST FUELS –
  - o Units within 1000 feet of a residence would be treated to comply with High Hazard Fuel Reduction standards.
  - o Existing blowdown would be trampled with equipment to promote decay
  - o Slash would be burned to reduce concentrations

- Post-harvest thinning would reduce horizontal and vertical continuity
- 2. NOXIOUS WEEDS-
  - To limit weed establishment and propagation, the following measures would be implemented:
    - Require all tracked or wheeled equipment to be cleaned of noxious weeds prior to beginning project operations.
    - Control the spread of noxious weeds with pre- and post- herbicide treatments on established weed populations.
    - Require prompt vegetation seeding of all disturbed roadside sites. Roads used and closed as part of this proposal would be reseeded and reshaped to prevent motorized use.

## **SOIL DISTURBANCE AND PRODUCTIVITY:**

**Soil Disturbance and Productivity Existing Conditions:** A review of *Soil Survey of Kootenai National Forest Area, Montana and Idaho* (Kuennen and Nielsen-Gerhardt 1995) shows three landtypes in the project area. Harvest is proposed on all three landtypes.

Landtype 323 (201 acres of proposed harvest)- Rolling foothills and drumlins are characteristic of this landtype. Soils in this landtype are formed in calcareous glacial till. Surface layers consist of silt loam over a gravely silt loam to silty clay loam subsoil resulting in moderate to well drained soils. This landtype is well suited for timber management and moderately suited to road construction except on steep slope where the suitability is poor. No steep slopes are present in the proposed harvest units.

Landtype 325 (38 acres of proposed harvest)- This landtype is found on stream bottoms along small mountain streams. Soils are formed in calcareous alluvial deposits that over lie glacial till. Lime content can be very high. Vegetation is made up of mixed conifers species that grow in most moist environments of the Northwest. The understory is dominated by forbs and low shrubs. Potential annual timber production is high. Due wetness, compaction and ruts can result from tractor operation if not properly managed. Road construction may require suitable subgrade. Material disturbed during road construction has a moderate erosion risk, but the fine material is harmful to spawning gravels.

Landtype 329 (168 acres of proposed harvest)- Moraines are the characteristic landform of this landtype. Soils in this landtype are formed in calcareous, compacted glacial till. Surface layers consist volcanic ash-influence loess up to 14 inches thick. Potential annual timber production is high. This landtype is well suited for timber management although operations must be managed to minimize compaction. The erosion risk from road construction is moderate.

Impacts from past activities in the proposed harvest units are considered low. Vegetation on existing skid trails is present throughout the project area.

Soil Disturbance and Productivity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Physical Disturbance (Compaction and Displacement)	X				X					X				
Erosion	X				X					X				
Nutrient Cycling	X				X					X				
Slope Stability	X				X				X					
Soil Productivity	X				X					X				
<b>Action</b>														
Physical Disturbance (Compaction and Displacement)		X				X				X				S-1
Erosion		X												S-1
Nutrient Cycling		X				X								S-2
Slope Stability	X				X				X					
Soil Productivity		X				X				X				S-2

*Comments:*

**S-1:** Using the same methodology employed for the Jim/Beaver Timber Sale soils analysis (DNRC 2009) and assuming winter harvest operations for 42.8 acres and summer harvest for 364.4 acres, the total area in moderate or higher impacts for the proposed units would be approximately 51.9 acres or 12.7 percent of the harvest unit area. Although erosion would potentially result from this alternative, the magnitude, area and duration of erosion and other adverse impacts (such as compaction and displacement) would remain low. Therefore, the risk of unacceptable adverse direct and indirect impacts to physical soil properties would be low.

**S-2:** Coarse woody debris would be left on-site in volumes recommended to help maintain soil moisture and forest productivity, generally in the 10 to 20 tons per acre range for habitat types found in the harvest locations (Graham et. al. 1994). Because coarse woody debris would be left on site in amounts recommended by scientific literature, benefits to nutrient cycling and forest productivity would be maintained over the long term.

*Soil Mitigations:*

ARM 36.11.422 (2) and (2)(a) state that appropriate BMPs shall be determined during project design and incorporated into implementation. To ensure that the incorporated BMPs are implemented, the specific requirements would be incorporated into the DNRC Timber Sale Contract. As part of this alternative design, the following BMPs are considered appropriate and would be implemented during harvesting operations:

1. Limit equipment operations to periods when soils are relatively dry, (less than 20 percent), frozen, or snow-covered to minimize soil compaction, rutting, and to maintain drainage features. Check soil moisture conditions prior to equipment start-up.
2. On ground-based units, the logger and sale administrator would agree to a skidding plan prior to equipment operations. Skid-trail planning would identify which main trails to use

and how many additional trails are needed. Trails that do not comply with BMPs (i.e. trails in draw bottoms) would not be used unless impacts can be adequately mitigated. Regardless of use, these trails may be closed with additional drainage installed, where needed, or grass-seeded to stabilize the site and control erosion.

3. Tractor skidding should be limited to slopes of less than 40 percent unless the operation can be completed without causing excessive displacement or erosion. Based on site review, short, steep slopes may require a combination of mitigation measures, such as adverse skidding to a ridge, or winchline, and skidding from more moderate slopes of less than 40 percent.
4. Keep skid trails to 20 percent or less of the harvest unit acreage. Provide for drainage on skid trails and roads concurrently with operations.
5. Slash disposal: Limit the combination of disturbance and scarification to 30 to 40 percent of the harvest units. No dozer piling on slopes over 35 percent; no excavator piling on slopes over 40 percent, unless the operation can be completed without causing excessive erosion. Consider lopping and scattering or jackpot burning on the steeper slopes. Consider disturbance incurred during skidding operations to, at least, partially provide scarification for regeneration.
6. Retain 10 to 20 tons of large woody debris and a feasible majority of all fine litter following harvesting operations. On units where whole tree harvesting is used, implement one of the following mitigations for nutrient cycling: 1) use in-woods processing equipment that leaves slash on site; 2) return-skid slash and evenly distribute within the harvest area; or 3) cut tops from every third bundle of logs so that tops are dispersed as skidding progresses.

## **WATER QUALITY AND QUANTITY:**

For the Middle Fortine Creek watershed (6<sup>th</sup> code HUC), the proposal would result in harvesting approximately 1.7% of the watershed with a variety of harvest prescriptions. The proposal includes utilizing an SMZ alternative practice to remove timber from the SMZ, however this area is estimated to cover less than one acre. Additionally, the proposed RMZ harvest is limited except where powerlines are directly adjacent to the RMZ. Any harvest operations would require meeting the Forestry Best Management Practices and would include additional mitigations for minimizing ground disturbance when operating in the SMZ. Due to the small size of the proposal in relation to the 6<sup>th</sup> code watershed size *and* the mitigation measures proposed, the risk of detrimental impacts to water quality and quantity would be low.

**Water Quality and Quantity Existing Conditions:** The Middle Fortine Creek watershed is approximately 23,550 acres and includes several named and unnamed tributaries including Stewart, Beaver, Butcher and Lime Creeks. Precipitation ranges from 17 to 45 (25.6 inches average) inches per year, mostly in the form of snow. Elevations in this watershed range from 3,300 feet above sea level at the furthest downstream point to approximately 5,485 feet above sea level on Sunday Mountain. Several wet meadows with dense shrubs are present along this portion of Fortine Creek which can be easily seen from the County Road. Most of the stream length in this watershed has numerous meanders and low gradient; the upper end of this watershed is more confined. Ownership within the watershed is comprised of private land (23 percent), DNRC-managed lands (10 percent), and USFS-managed lands (67 percent).

A full description of the watershed area can be found in the Jim/Beaver Timber Sale Project Checklist Environmental Assessment (DNRC 2009).

Water Quality & Quantity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Water Quality		X				X				X				H-1
Water Quantity	X				X					X				H-2
<b>Action</b>														
Water Quality		X					X			X			Y	H-1
Water Quantity		X				X				X			N	H-2

*Comments:*

**H-1:** The timber harvest proposed in units 3, 4, 5, and 6 would harvest up to approximately 0.77 acres of SMZ and 7.1 acres of RMZ within 105 feet of Jim Creek. While the majority of the harvest in the RMZ would maintain at least half the trees at least 8 inches in diameter, a portion of the RMZ (approximately 2 acres of RMZ and the 0.77 acres of SMZ) would remove additional trees that pose a risk of falling onto power lines in the area. This practice would retain all submerchantable trees and shrubs as well as any trees that are not anticipated to fall into powerlines. Access to harvest within the SMZ portion would utilize an existing trail that is well-vegetated but located within the 50-foot SMZ; this work would be implemented under winter conditions.

Water quality for timber related project primarily refers to impacts from harvest operations which could affect sediment delivery or impacts stream temperature as a result of reduced shade. While erosion of the driving surface of proposed haul routes was identified during field reconnaissance, no direct delivery of sediment was noted. Additionally, the risk of sediment delivery was minimized at stream crossing locations through the implementation of Forestry Best Management Practices.

Although stream temperature data is limited for Jim Creek, the temperatures are suitable for westslope cutthroat trout which are found in the stream. The removal of additional trees in the RMZ and SMZ would reduce the shade along approximately 930 feet of stream. This would be expected to have a moderate risk (50% chance) of having low impacts (measurable, but not detrimental). A low risk of low impacts (unlikely to occur) of sediment delivery from this proposal, including using the existing trail in the SMZ. This is based upon the assumption that all work would take place during frozen soil conditions or adequate snow to protect soil from displacement.

**H-2:** The proposed timber harvest would result in less than a 0.5 percent increase in annual water yield when using the Equivalent Clearcut Acre model. When combined with the existing water yield increases described in the Jim/Beaver Timber Sale Project Checklist Environmental Assessment (DNRC 2009), the cumulative increase would be expected to have a low risk of low impacts.

*Water Quality & Quantity Mitigations:*

Hydrologic related resource mitigations that would be implemented with the proposed Action Alternative include:

1. Limit equipment operations to periods when soils are relatively dry, (less than 20 percent oven-dried weight), frozen, or snow-covered to in order to minimize soil compaction and rutting, and maintain drainage features. All equipment operations within the SMZ require frozen conditions. Check soil moisture conditions prior to equipment start-up.
2. On ground-based units, especially on previously harvested areas, the logger and sale administrator would agree to a skidding plan prior to equipment operations. Skid-trail planning would identify which main trails to use and how many additional trails are needed. Trails that do not comply with BMPs (i.e. trails in draw bottoms) would not be used unless impacts can be adequately mitigated. Regardless of use, these trails may be closed with additional drainage installed, where needed, or grass-seeded to stabilize the site and control erosion.
3. Tractor skidding should be limited to slopes of less than 40 percent unless the operation can be completed without causing excessive displacement or erosion. Short, steep slopes may require a combination of mitigation measures, such as adverse skidding to a ridge or winchline, and skidding from more moderate slopes of less than 40 percent.
4. Keep skid trails to 20 percent or less of the harvest unit acreage. Provide for drainage in skid trails and roads concurrently with operations.
5. Slash disposal: Limit the combination of disturbance and scarification to 30 to 40 percent of the harvest units. No dozer piling on slopes over 35 percent; no excavator piling on slopes over 40 percent, unless the operation can be completed without causing excessive erosion. Consider lopping and scattering or jackpot burning on the steeper slopes. Consider disturbance incurred during skidding operations to, at least, partially provide scarification for regeneration.
6. Follow all Forestry Best Management Practices for road construction and maintenance to minimize the risk of sediment delivery.

**FISHERIES:**

**Fisheries Existing Conditions:** A description of the fisheries habitat parameters can be found in the Jim/Beaver Timber Sale Project Checklist Environmental Assessment (DNRC 2009).

**No-Action:** No direct or indirect impacts would occur to affected fish species or affected fisheries resources beyond those described in Fisheries Existing Conditions. Cumulative effects (other related past and present factors; other future, related actions; and any impacts described in Fisheries Existing Conditions) would continue to occur.

**Action Alternative (see Fisheries table below):**

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Sediment	X				X					X			Y	F-1
Flow Regimes	X				X					X			N	F-2
Woody Debris	X				X					X			Y	F-3
Stream Shading	X				X					X			Y	F-3
Stream Temperature	X				X					X			Y	F-3

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Connectivity	X				X					X			Y	F-4
<b>Action</b>														
Sediment		X					X			X			Y	F-1
Flow Regimes		X				X				X			N	F-2
Woody Debris		X				X				X			Y	F-3
Stream Shading		X				X				X			Y	F-3
Stream Temperature		X				X				X			Y	F-3
Connectivity	X				X					X			Y	F-4

*Comments:*

**F-1:** See *Water Quality & Quantity* comment H-1.

**F-2:** A low risk of low impacts due to annual water yield increases would be expected. See *Water Quality & Quantity* comment H-2.

**F-3:** See *Water Quality & Quantity* comment H-1.

**F-4:** A fish barrier was installed on Jim Creek as part of the Jim/Beaver Timber Sale Project to protect a potentially pure genetic strain of westslope cutthroat.

**WILDLIFE:**

**Wildlife Existing Conditions:** The project area contains a variety of habitat conditions for native wildlife species. The project area consists of three blocks of DNRC-managed lands within 2 miles of each other. All three parcels are bordered by a mix of undeveloped USDA Forest Service (USFS) lands and private lands containing low-density housing developments. Approximately 3.0 miles of open roads are present within the Project Area. Because of the proximity of these parcels to occupied homes and open roads, motorized and non-motorized recreational use of the majority of the Project Area is moderate. Snags and large downed wood are reduced within 300 feet of open roads due to firewood cutting by the public. The Project Area contains 791 acres of mature forest stands (trees ≥9" diameter breast height (dbh) with ≥40% canopy closure) and 70 acres are old-growth forest using Green et al. (1992) standards. Insects and disease are active within these stands; reducing live trees and crown closure. Another 179 acres consist of stands with mature trees and a more open (<40%) canopy. Approximately 429 acres are comprised of regenerating sapling patches and stands dominated by pole-sized trees 5-9" dbh. Overall, habitat conditions within the project area are relatively diverse and adequate to support a variety of wildlife species. However, some species more sensitive to human disturbance may be rare to absent due to open roads, surrounding homes and moderate recreational use.

**No-Action Alternative:** None of the proposed activities would occur. In the short-term, no changes to the amounts, quality, or spatial arrangement of forested habitat would occur. In the long-term, habitat suitability for mature forest-associated species would remain similar or increase compared to current conditions. Overall, an increase in habitat availability for species preferring mature connected forests would likely occur over time as other stands mature, while habitat availability would decrease for species preferring young, open stand types.

**Action Alternative (see Wildlife table below and comments):**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>Threatened and Endangered Species</b>														
<b>Grizzly bear</b> <i>(Ursus arctos)</i> Habitat: Recovery areas, security from human activity		X				X				X			Y	WI-1
<b>Canada lynx</b> <i>(Felix lynx)</i> Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone		X				X				X			Y	WI-2
<b>Sensitive Species</b>														
<b>Bald eagle</b> <i>(Haliaeetus leucocephalus)</i> Habitat: Late-successional forest within 1 mile of open water	X				X				X					WI-3
<b>Black-backed woodpecker</b> <i>(Picoides arcticus)</i> Habitat: Mature to old burned or beetle-infested forest	X				X				X					WI-4
<b>Coeur d'Alene salamander</b> <i>(Plethodon idahoensis)</i> Habitat: Waterfall spray zones, talus near cascading streams	X				X				X					WI-4
<b>Columbian sharp-tailed grouse</b> <i>(Tympanuchus Phasianellus columbianus)</i> Habitat: Grassland, shrubland, riparian, agriculture	X				X				X					WI-4
<b>Common loon</b>	X				X				X					WI-4

Jim Junction Forest Management Project  
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Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<i>(Gavia immer)</i> Habitat: Cold mountain lakes, nest in emergent vegetation														
<b>Fisher</b> <i>(Martes pennanti)</i> Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian			X		X					X			Y	WI-5
<b>Flammulated owl</b> <i>(Otus flammeolus)</i> Habitat: Late-successional ponderosa pine and Douglas-fir forest		X			X					X			Y	WI-6
<b>Gray Wolf</b> <i>(Canis lupus)</i> Habitat: Ample big game populations, security from human activities		X			X				X				Y	WI-7
<b>Harlequin duck</b> <i>(Histrionicus histrionicus)</i> Habitat: White-water streams, boulder and cobble substrates	X				X				X					WI-4
<b>Northern bog lemming</b> <i>(Synaptomys borealis)</i> Habitat: Sphagnum meadows, bogs, fens with thick moss mats	X				X				X					WI-4
<b>Peregrine falcon</b> <i>(Falco peregrinus)</i> Habitat: Cliff features near open foraging areas and/or wetlands	X				X				X					WI-4
<b>Pileated woodpecker</b> <i>(Dryocopus pileatus)</i> Habitat: Late-			X				X			X			N	WI-8

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
successional ponderosa pine and larch-fir forest														
<b>Townsend's big-eared bat</b> <i>(Plecotus townsendii)</i> Habitat: Caves, caverns, old mines	X				X				X					WI-4
<b>Wolverine</b> <i>(Gulo gulo)</i> Habitat: Alpine tundra and high-elevation boreal forests that maintain deep persistent snow into late spring	X				X				X					WI-4
<b>Big Game Species</b>														
<b>Elk</b>		X				X				X				WI-9
<b>Whitetail</b>		X				X				X				WI-9
<b>Mule Deer</b>	X				X				X					WI-9
<b>Other</b>														
<b>Mature Forest</b>			X				X			X				WI-10
<b>Old-growth Forest</b>		X			X					X				WI-10

*Comments:*

**WI-1: GRIZZLY BEAR** – Approximately 406 acres (29.0% of the Project Area) of grizzly bear hiding cover within non-recovery occupied habitat would be harvested. Of the 1,243 acres of hiding cover in the Project Area, harvesting would remove 98 acres and reduce cover quality on another 308 acres. To mitigate for potential adverse effects, patches of cover would be retained such that no point within seed tree or clearcut units would be greater than 600 feet to hiding cover. No new open roads would be built, but motorized use of open roads and existing restricted roads within the project area would increase during project implementation. Existing restricted roads used for harvesting would remain restricted during and after conclusion of the project. Visual screening along some open roads would be impacted due to the presence and harvest of trees adjacent power lines. Any grizzly bears using the project area could be temporarily displaced by the proposed activities for up to three years. Additionally, spring timing restrictions would be applied from April 1 – June 15 to provide security for grizzly bears in the spring. Impacts to hiding cover and increased disturbance under the Action Alternative would be additive to any ongoing vegetation management projects on private lands. However, hiding cover would persist on over 70% of the 46,110-acre large cumulative effects analysis area (hereafter large CEAA). The greatest risks to bears within the CEAA would remain neighboring human habitations and associated attractants that bring bears into conflict with people.

**WI-2: CANADA LYNX** – Approximately 271 acres of suitable lynx habitat (28.4% of existing suitable habitat in the Project Area) would be altered by the proposed timber sale. Of these acres, 58 acres would be treated with harvest prescriptions that would not retain enough conifer

cover to continue providing suitable lynx habitat immediately post-harvest. The remaining 213 acres would receive treatments that would reduce some suitable habitat attributes but would overall continue to provide suitable lynx habitat as long as sufficient understory conifers are retained. To ensure that forest structural attributes preferred by lynx and snowshoe hare prey remain following harvest, some patches of advanced regeneration and shade-tolerant trees would be retained within portions of suitable lynx habitat. Additionally, 10 to 20 tons/acre of coarse woody debris would be retained in accordance with DNRC Forest Management Rules (*ARM 36.11.414*, except along boundaries with private property) and retention of downed logs  $\geq 15$ -inch diameter would be emphasized. Lynx habitat connectivity within the project area would be reduced; however, overall suitable lynx habitat would remain continuous in the southern 2/3 of the Project Area (where suitable habitat types exist) and narrow habitat corridors along riparian areas would be maintained. Any lynx that might be using the area could temporarily be displaced from the Project Area for up to three years by the proposed activities, however appreciable use of the area under current existing conditions would not be expected due to surrounding unsuitable habitat types and human disturbance. Disturbance/displacement and habitat alteration by the proposed DNRC activities would be additive to recent forest management projects on adjacent private lands and approximately 808 acres of USFS timber harvest within the CEAA. The large CEAA likely contains  $>75\%$  suitable habitat for lynx and provides ample connected habitat for lynx persistence at the larger landscape level.

**WI-3: BALD EAGLE** – The Project Area is not within any known bald eagle territory. However, occasional use of the Project Area by bald eagles is possible due to the presence of small, fish-bearing streams. Occupied home sites and open roads in the Project Area would suggest that any eagles that may forage in the area are likely habituated to human disturbance. Despite this, timber harvesting activities in the vicinity of streams could temporarily displace eagles for a short time. Measurable cumulative effects to breeding eagles would not be expected.

**WI-4:** This species was evaluated and it was determined that the project area lies outside of the normal distribution for the species, and/or suitable habitat was not found to be present.

**WI-5: FISHER** – Approximately 169 acres of suitable fisher habitat and another 28 acres of preferred cover types would be affected by the proposed activities (38.2% of fisher habitat available in the Project Area). Of the suitable habitat acres, 169 acres would not be suitable post-harvest due to low amounts of mature conifer cover. Approximately 28 acres of preferred cover types, which do not currently contain adequate forest structure for fishers, would undergo a reduction in vegetation that would increase the time until those acres grow into suitable habitat. To reduce some adverse effects on fishers, at least 2 large snags and 2 large snag recruitment trees per acre ( $>21$  inches dbh) would be retained (*ARM 36.11.411*). These snags are important habitat features that provide resting and denning sites for fishers. Approximately 6 acres of suitable riparian fisher habitat would be harvested. Approximately 1 acres of suitable riparian fisher habitat would be removed by harvest treatments. Another 5 acres of riparian fisher habitat would be selectively thinned, which would reduce habitat quality but not remove it from suitability. Overall connectivity would remain relatively similar across the Project Area, although it is currently limited by interspersed unsuitable cover types and low availability of suitable habitat on adjacent private lands. Overall, the low availability of mature stands in the surrounding area, lack of fisher observations (*MNHP 2020*), and prevalence of unsuitable forest types, which are avoided by fishers (*Olson et al. 2014*), the likelihood of fishers using the Project Area is low. Should any fishers be present within the CEAA, habitat alteration and potential disturbance would be additive to any activities occurring on surrounding private lands. However, considering the small amount of harvest at the scale of the CEAA, and lack of fisher

observations within the last 35 years (*MNHP 2020*), negligible effects to fishers in the CEAA would be expected.

**WI-6: FLAMMULATED OWLS** – The proposed timber harvest would affect approximately 136 acres (33.6% of habitat in the Project Area) of preferred flammulated owl cover types. Most of these are currently too densely forested to be considered suitable for flammulated owl use. Improvement cut treatments on 98 acres would open stand crown closure and would favor seral species, which would create more open forest stand conditions potentially beneficial to flammulated owls. Harvest prescriptions on 38 acres of preferred cover types would not likely retain sufficient mature trees to support flammulated owls. To retain potential nesting trees for flammulated owls at least 2 large snags and 2 large snag recruitment trees per acre (>21 inches dbh) would be retained (*ARM 36.11.411*). Within the 16,591-acre small CEAA, approximately 1,612 acres (9.7% of the CEAA) of forest stands appear to be structurally suitable for flammulated owls, however snags available for nesting are likely limited on private property and near open roads due to widespread firewood gathering. Additionally, it is likely that many of these stands are not flammulated owl cover types. Current suitability of the CEAA to support a population of breeding flammulated owls is relatively low; harvesting proposed under the Action Alternative would have low cumulative effects.

**WI-7: GRAY WOLF** – Wolves may use habitat near the Project Area. Disturbance associated with timber sales at den and rendezvous locations can adversely affect wolves; however, timing restrictions would apply if den or rendezvous sites are documented (*ARM 33.11.430(1)(a)(b)*).

**WI-8: PILEATED WOODPECKER** – The proposed activities would affect 259 acres of suitable pileated woodpecker habitat (43.1% of habitat available in the Project Area). Of these acres, 254 acres (42.3% of habitat available in the Project Area) would be treated with harvest prescriptions causing these stands to become unsuitable for pileated woodpecker use post-harvest. The remaining 5 acres would undergo less intensive harvesting and would likely remain suitable for pileated woodpeckers post-harvest, although fewer large trees and snags would be available for nesting and foraging. The project area would continue to support breeding pileated woodpeckers, but the numbers of pairs would likely be reduced. To decrease potential adverse effects on pileated woodpeckers, at least 2 large snags and 2 large snag recruitment trees per acre (>21 inches dbh, or largest size class available) would be retained and all snags cut for safety reasons would be left in the harvest unit (*ARM 36.11.411*). Habitat availability within the small CEAA is limited due to past timber harvesting and development on private lands, however over 50% (9,000 acres) would remain as suitable habitat. Habitat alterations due to the proposed action would be additive to recent forest management projects on adjacent private lands and past USFS harvest within the CEAA.

**WI-9: BIG GAME** – The proposed activities would reduce thermal cover on potential white-tailed deer and elk winter range (*DFWP 2008*). The proposed harvest would affect 339 acres of thermal cover (33.0% of thermal cover available in the Project Area). Of these acres, 98 acres (9.6% of thermal cover available in the Project Area) would be treated with harvest prescriptions that would retain 5-20% mature canopy cover, reducing the capacity of these stands to provide thermal cover during typical winter conditions. Another 241 acres would be treated with intermediate harvest prescriptions that would continue providing some thermal cover post-harvest, albeit at a reduced quality. Approximately 131 acres of forest habitat comprised of more open forest and large poletimber would continue to grow and provide higher-quality thermal cover within the next 20 years. No new roads would be built and visual screening along existing roads would be maintained where it is available and feasible given powerline clearing guidelines. Hiding cover, as well as thermal cover/snow intercept would remain relatively

abundant within the large CEAA. Measurable big game population changes during the winter at the scale of the CEAA would not be expected.

**WI-10: MATURE FOREST/OLD-GROWTH FOREST** – The proposed action would harvest approximately 302 acres of mature forest (38.1% of mature forest within the project area) with a reasonably closed canopy ( $\geq 40\%$  canopy closure). Of these acres, 7 acres of old-growth forest (10.0% of old-growth within the project area) would be harvested and removed from old-growth status. Harvest prescriptions on 297 acres, including all 7 acres of old-growth being harvested, would reduce live tree densities and bring overstory canopy cover below 40%. Thus, these stands would no longer be suitable for wildlife species preferring dense forest with more shaded canopies. At the same time, habitat suitability for species utilizing younger stands and open forest with widely scattered mature trees would increase. Approximately 489 acres (35.0% of the Project Area) of mature forest, including 63 acres of old-growth forest, would remain within the Project Area. Connectivity of mature forest would be reduced, as several larger patches in the Project Area would be fragmented by harvesting. However, a number of these stands would remain connected with other mature stands outside of DNRC lands within the CEAA. Existing old-growth is comprised of several small, scattered patches within the Project Area and old-growth connectivity would be minimally impacted by the proposed harvesting. Forest management projects on DNRC, USFS and private lands have removed some mature forest and continue to alter mature forest stands within the CEAA; the proposed action would be additive to these changes at the broader spatial scale. However, mature forest would remain relatively abundant ( $>50\%$ ) and well-connected through much of the CEAA.

*Wildlife Mitigations:*

1. If a threatened or endangered species is encountered, consult a DNRC biologist immediately. Similarly, if undocumented nesting raptors or wolf dens are encountered within  $\frac{1}{2}$  mile of the Project Area, contact a DNRC biologist.
2. Contractors will adhere to food storage and sanitation requirements as described in the timber sale contract. Ensure that all attractants such as food, garbage, and petroleum products are stored in a bear-resistant manner.
3. Prohibit contractors and purchasers conducting contract operations from carrying firearms while on duty as per *ARM 36.11.444(2)*.
4. Prohibit all harvesting-related motorized activities more than 100 feet from open roads from April 1 – June 15.
5. Retain visual screening along roads to the greatest extent practicable.
6. Effectively close restricted roads and skid trails in the Project Area via a combination of gates, kelly humps, rocks, and stumps.
7. Retain patches of advanced regeneration of shade-tolerant trees as per *LY-HB4 (USFWS and DNRC 2010)*.
8. Retain at least 2 snags and 2 snag recruits per acre  $>21$  inches dbh or the next available size class, particularly favoring ponderosa pine, western larch and Douglas-fir for retention. If snags are cut for safety concerns, they must be left in the harvest unit.
9. Retain 10-20 tons/acre of coarse-woody debris and emphasize retention of 15-inch diameter downed logs, aiming for at least one 20-foot-long section per acre.

*Literature:*

DFWP. 2008. Maps of moose, elk, mule deer, and white-tailed deer distribution in Montana. *In* Individual GIS data layers. Available online at:  
<http://fwp.mt.gov/gisData/imageFiles/distributionElk.jpg>  
<http://fwp.mt.gov/gisData/imageFiles/distributionMoose.jpg>  
<http://fwp.mt.gov/gisData/imageFiles/distributionMuleDeer.jpg>  
<http://fwp.mt.gov/gisData/imageFiles/distributionWhiteTailedDeer.jpg>

Green, P., J. Joy, D. Sirucek, W. Hann, A. Zack, and B. Naumann. 1992. Old Growth Forest Types of the Northern Region. R-1 SES. USDA Forest Service, Northern Region, Missoula MT 60pp.

MNHP. 2020. Natural Heritage Map Viewer. Montana Natural Heritage Program. Retrieved on March 24, 2020, from <http://mntnhp.org/MapViewer>.

Olson, L. E., J. D. Sauder, N. M. Albrecht, R. S. Vinkey, S. A. Cushman, and M. K. Schwartz. 2014. Modeling the effects of dispersal and patch size on predicted fisher (*Pekania [Martes] pennanti*) distribution in the U.S. Rocky Mountains. *Biological Conservation* 169:89-98.

USFWS and DNRC. 2010. Montana Department of Natural Resources and Conservation Forested Trust Lands Habitat Conservation Plan, Final Environmental Impact Statement, Volumes I and II., U.S. Department of Interior, Fish and Wildlife Service, Region 6, Denver, Colorado and Montana Department of Natural Resources and Conservation, Missoula, MT.

**AIR QUALITY:**

Air Quality	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Smoke	X				X					X				
Dust	X				X				X					
<b>Action</b>														
Smoke		X				X				X			Y	A-1
Dust		X				X				X			Y	A-2

*Comments:*

**A-1: SMOKE** – This project is within Airshed 1, but is not within an impact zone, as described by the Montana/Idaho Airshed Group. Under the Action Alternative, some slash piles consisting of tree limbs, tops, and other vegetative debris would be created throughout the project area during harvesting and site preparation. These slash piles would ultimately be burned after harvesting and site preparation operations have been completed.

Burning that may occur on adjacent properties and in combination with the proposed action could potentially increase cumulative impacts to the local airshed. However, because DNRC would burn only on approved days as determined by the Montana DEQ and Montana/Idaho Airshed group, cumulative impacts to air quality due to slash pile burning associated with the proposed action would also be expected to be minimal.

**A-2:** DUST – Under the Action Alternative, dust may be generated by log hauling activities during dry conditions; less dust would be generated if harvested during the winter.

*Air Quality Mitigations:*

1. Burning activities within the project area would be brief in duration and would be conducted when conditions favor good to excellent ventilation and smoke dispersion, as determined by the Montana Department of Environmental Quality, and the Montana/Idaho Airshed Group.
2. The DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days. DNRC would also follow regulations Flathead County has for Air Quality. Thus, direct, secondary, and cumulative effects to air quality due to slash pile burning associated with the proposed action would be minimal.
3. During dry conditions dust abatement, such as water or magnesium chloride may be applied especially near residences.

**ARCHAEOLOGICAL SITES / AESTHETICS / DEMANDS ON ENVIRONMENTAL RESOURCES:**

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Historical or Archaeological Sites	X				X				X					
Aesthetics	X				X				X					
Demands on Environmental Resources of Land, Water, or Energy	X				X				X					
<b>Action</b>														
Historical or Archaeological Sites	X				X				X				Y	ARCH-1
Aesthetics			X			X				X			Y	AEST-1
Demands on Environmental Resources of Land, Water, or Energy	X				X				X					

*Comments:*

**ARCH-1:** The tribes of Montana were scoped but none identified a specific cultural resource concern. A Class I (literature review) level review was conducted by the DNRC staff archaeologist for the area of potential effect (APE). This entailed inspection of project maps, DNRC's sites/site leads database, land use records, General Land Office Survey Plats, and control cards. The Class I search revealed that no cultural or paleontological resources have been identified in the APE. Much of the project area has been inventoried to Class III standards for past timber sales. Additionally, many past timber harvesting operations have occurred

historically on these tracts. Finally, because of a lack of geology that would suggest caves, rock shelters, or sources of tool stone, no additional archaeological investigative work will be conducted in response to this currently proposed timber harvest project. However, if previously unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.

**AEST-1:** Aesthetic impacts were primarily analyzed from a visual perspective along open roads. Currently the roadsides on State lands in the project area are well stocked with mature, forested stands comprised of a mixed-conifer covertype and this proposal would harvest approximately 0.9 miles of the Jim Creek roadside.

At close range, standing within or adjacent to individual harvest units and along open roads, the visual impact would be highest. Most harvest along the open road systems would be implemented to clear a corridor to protect the powerline. These areas are approximately 100-foot wide paralleling the roadway and would resemble a seedtree harvest or clearcut except where available sapling-sized trees would be retained. Generally, the sight distance would be limited to this 100-foot buffer. Initially, the impacts would be a stark change from mature trees to grasses, stumps, brush, and small trees. Over time, as the harvest areas regenerate and the trees and brush grow larger, the visual distinction of the harvested areas would be lessened.

During harvest operations, noise may be discernable from private residences in the area. The main harvest operations would last approximately 8 months.

*Mitigations:*

1. Timber sale design would minimize visual impacts by variably spacing retention trees in the units and retaining fully stocked stands behind the roadside harvest units.
2. Retain a minimum of 2 large-diameter trees per acre and snags.

**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.*

- Jim Junction SMZ Alternative Practice Environmental Assessment Checklist (DNRC, in progress)
- Butcher Stewart Environmental Assessment Checklist (DNRC, 2011)
- Jim/Beaver Timber Sale Project Checklist Environmental Assessment (DNRC 2009).
- Stewart Butcher Environmental Assessment (DNRC, 1996)
- Jim Creek #2 Environmental Assessment (DNRC, 1991)

## Impacts on the Human Population

Evaluation of the impacts on the proposed action including **direct, secondary, and cumulative** impacts on the Human Population.

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Health and Human Safety	X				X				X					
Industrial, Commercial and Agricultural Activities and Production	X				X				X					
Quantity and Distribution of Employment	X				X				X					
Local Tax Base and Tax Revenues	X				X				X					
Demand for Government Services	X				X				X					
Access To and Quality of Recreational and Wilderness Activities	X				X				X					
Density and Distribution of population and housing	X				X				X					
Social Structures and Mores	X				X				X					
Cultural Uniqueness and Diversity	X				X				X					
<b>Action</b>														
Health and Human Safety		X				X				X			Y	HUM-1
Industrial, Commercial and Agricultural Activities and Production	X				X				X				N	HUM-2
Quantity and Distribution of Employment	X				X				X				N	HUM-2
Local Tax Base and Tax Revenues	X				X				X				N	HUM-2
Demand for Government Services	X				X				X				N	
Access To and Quality of Recreational and		X				X			X				N	HUM-3

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Wilderness Activities														
Density and Distribution of population and housing	X				X				X				N	
Social Structures and Mores	X				X				X				N	
Cultural Uniqueness and Diversity	X				X				X				N	

*Comments:*

**HUM-1:** Mitigations have been developed for all log hauling to allow for safe travel on shared use of roads. If winter harvesting occurred, snow plowing on the Sunday Mountain, Jim Creek, and West Jim Creek roads would occur and mitigations for safe travel would be implemented as noted below.

**HUM-2:** Due to relatively small size of the proposed timber sale, no measurable direct, indirect, or cumulative effects would be likely.

**HUM-3:** General motorized recreation in the project area would continue to be accessible by the public on open, unrestricted roads. Walk-in recreation opportunities would not change.

*Mitigations:*

1. Signs displaying location of harvest activities and logging would be installed.
2. Roads may be temporarily closed for public safety reasons when equipment or logs are expected to block the road, if approved or directed by the Forest Officer. Notification to residences potentially being affected would be attempted. Temporary barricades notifying the public that the road is closed shall be placed within 500 feet of both ends of the closed area during the time of the closure. Barricades shall only be in place when the road is closed and removed when open. Signs stating that the road is closed ahead shall be placed at convenient turn-arounds prior to barricades.
3. If winter harvest activities and log hauling take place, then DNRC would:
  - Further develop safety measures that ensure safe travel and communication between commercial harvesting operations and recreationalists (signage, reduced speed and softened approaches onto plowed roads).
  - Continue to apply current road restrictions for the general public.

**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.*

- None

**Other Appropriate Social and Economic Circumstances:**

Costs, revenues and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return. The estimated stumpage is based on comparable sales analysis. This method compares recent sales to find a

market value for stumpage. These sales have similar species, quality, average diameter, product mix, terrain, date of sale, distance from mills, road building and logging systems, terms of sale, or anything that could affect a buyer's willingness to pay.

**No-Action Alternative:** The No-Action alternative would not generate any return to the trust at this time.

**Action Alternative:** The timber harvest would generate additional revenue for the Common Schools and Public Buildings Trust. The estimated return to the trust for the proposed harvest is \$386,000 based on an estimated harvest of 2,465 board feet (16,500 tons) and an overall stumpage value of \$17.50 per ton. An additional \$73,000 would be generated for the Forest Improvement funding. Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives, they are not intended to be used as absolute estimates of return.

## References

DNRC, 1996. State forest land management plan: final environmental impact statement (and appendixes). Montana Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, Montana.

DNRC, 2010. Montana Department of Natural Resources and Conservation Forested State Trust Lands Habitat Conservation Plan: Final EIS, Volume II, Forest Management Bureau, Missoula, Montana.

**Does the proposed action involve potential risks or adverse effects that are uncertain but extremely harmful if they were to occur?**

No

**Does the proposed action have impacts that are individually minor, but cumulatively significant or potentially significant?**

No

**Environmental Assessment Checklist Prepared By:**

**Name: Matt Lufholm and Mike McMahon**  
**Title: Management Forester and Forest Management Supervisor**  
**Date: May 2020**

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## Finding

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### Alternative Selected

Upon Review of the Checklist EA and attachments, I find the Action Alternative, as proposed, meets the intent of the project objectives as stated in Section I – *Type and Purpose of Action*

The lands involved in this project are held by the State of Montana in trust for the support of specific beneficiary institutions and DNRC is required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run (*Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X Section 11; and, 77-1-212 MCA*).

The Action Alternative complies with all pertinent environmental laws, the DNRC SFLMP and HCP, and is based upon a consensus of professional opinion on limits of acceptable environmental impact. This Action Alternative also addresses the five public comments received during the 30-day public scoping process. For these reasons and on behalf of DNRC I have selected the Action Alternative to be implemented on this project.

### Significance of Potential Impacts

After a review of the scoping documents and comments, project file, Forest Management Rules, SFLMP and HCP checklists, and Department policies, standards, and guidelines, I find that all the identified resource management concerns have been fully addressed in this Checklist EA and its attachments.

Specific project design features and various recommendations by the resource management specialists will be implemented to ensure that this project will fall within the limits of environmental change. Taken individually and cumulatively, the proposed activities are common practices, and no project activities are being conducted on important unique or fragile sites. I find there will be no significant impacts to the human environments as a result of implementing the Action Alternative.

In summary, I find that the identified adverse impacts will be controlled, mitigated, or avoided by the design of the project to the extent that the impacts are not significant.

### Need for Further Environmental Analysis

EIS

More Detailed EA

No Further Analysis

### Environmental Assessment Checklist Approved By:

**Name: Dave Ring**

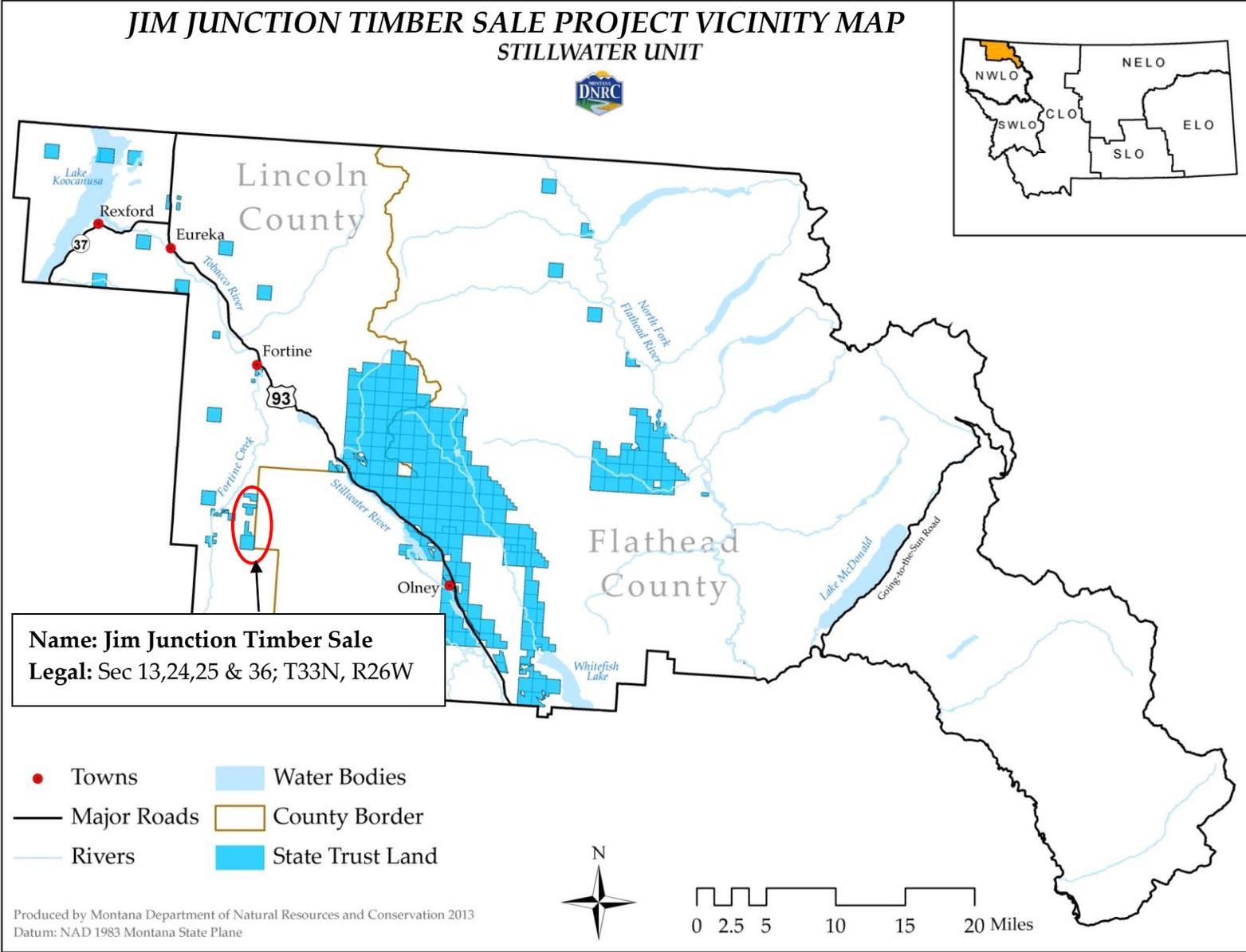
**Title: Stillwater Unit Manager**

**Date: June 29, 2020**

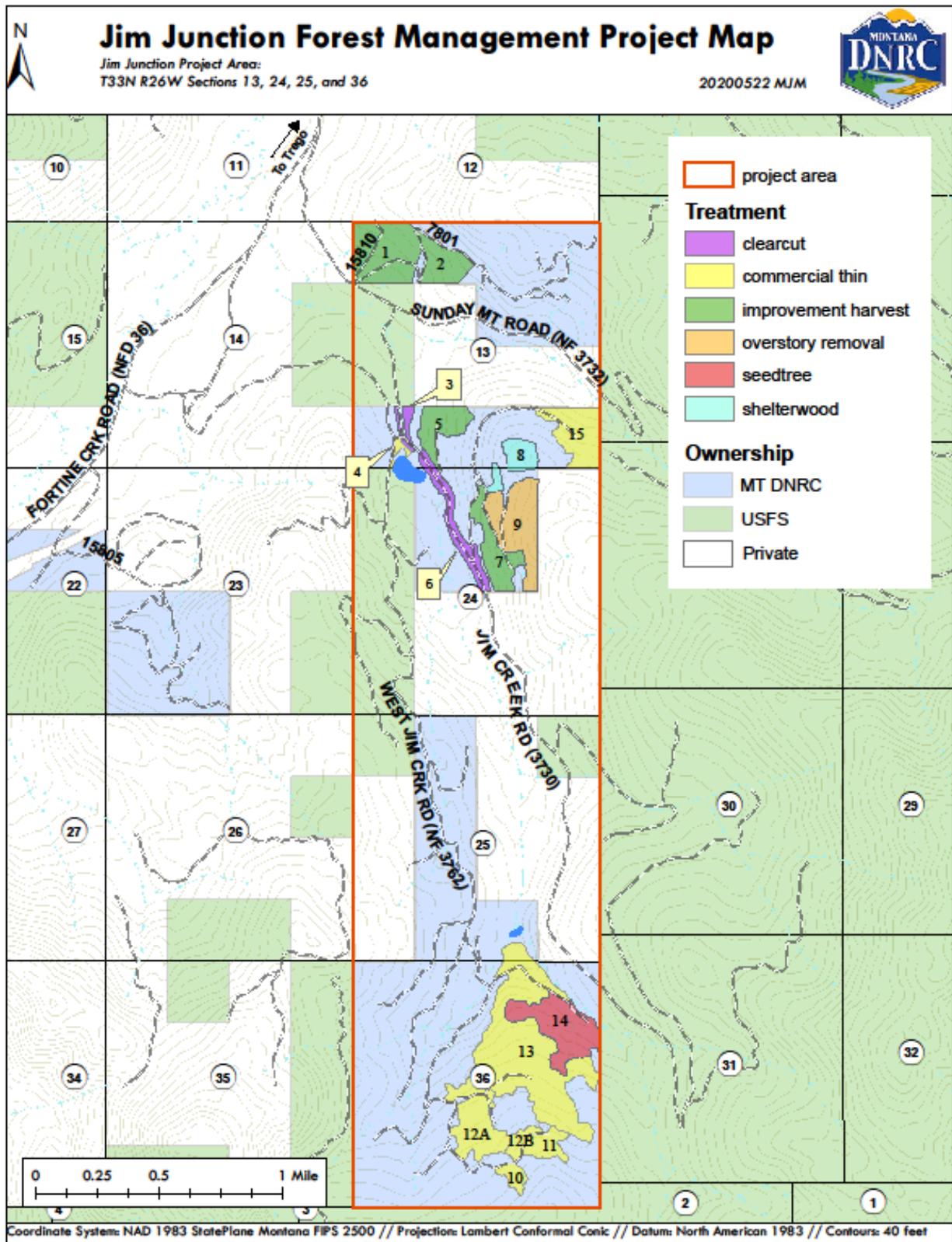
**Signature: /s/ David A. Ring**

## **Attachment A- Maps**

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Harvest Unit Map



## Attachment B: Jim Junction Prescription Table

Unit Number	Est. Acres / MBF	Prescription	Particulars involved in unit(s)
1	41 acres (includes road) 390 MBF	-Improvement Cut with Group-select	<ul style="list-style-type: none"> <li>-Tractor harvest Unit.</li> <li>- Retain ~60 square feet of basal area.</li> <li>- Retain most large-diameter western larch (WL) as future seed source;</li> <li>- Consider harvesting over-sized Douglas-fir (DF) especially those showing signs of moderate vigor;</li> <li>- Group openings may be made where over-sized trees are the majority;</li> <li>- Within 100' or SPTH of powerline, harvest trees with a lean toward the line; retain sapling/pole-size trees and only those trees that have a high likelihood of <u>not</u> falling into the powerline within the next 30 years;</li> <li>- Retain hiding cover along both the powerline road and Spur 13; this may, in part, be accomplished with skidding parallel to road.</li> <li>- Consider slashing/thinning, trampling slash and site preparation of small openings to achieve fuels reduction.</li> </ul>
2	19 acres (includes road) 164 MBF	-Improvement Cut	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- Retain ~60 square feet of basal area.</li> <li>- Retain most large-diameter western larch (WL) as future seed source;</li> <li>- Consider harvesting over-sized Douglas-fir (DF) especially those showing signs of low-moderate vigor;</li> <li>- Comply with High Hazard Reduction specification</li> <li>- Trample slash</li> </ul>
3	4 acres (includes road) 43 MBF	Roadside clearcut with reserves and RMZ harvest	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- No SMZ harvest except at culvert head.</li> <li>- Unit is to be flagged approximately 100 feet either side of powerline and WL/DF leaning away from powerline are to be retained. Also retain submerchantable within this area.</li> <li>- On east side of road, the RMZ and 0.8 acres between unit boundary and RMZ: <ul style="list-style-type: none"> <li>• North of the West Jim Road mark Engelmann Spruce (ES) with high potential for blowing down (trees with lean and some over 10" DBH if there is 40% canopy closure of sawlog trees;</li> <li>• Between the West Jim Road and the culvert on Jim Creek Road the trees threatening the powerline may be harvested – this would be approximately 0.2 acres;</li> </ul> </li> <li>- Protect submerchantable trees to the fullest extent practical.</li> <li>- Site preparation along roadside</li> <li>- Natural regeneration.</li> </ul>
4	2 acres 10 MBF	Commercial thin with RMZ harvest.	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- Retain WL and DF at approximately 25' spacing</li> <li>- If thinning in RMZ occurs retain all submerchantable trees.</li> <li>- No SMZ harvest.</li> <li>- Leave 2 snags and 2 snag recruits per acre &gt; 21" DBH or of the</li> </ul>

Unit Number	Est. Acres / MBF	Prescription	Particulars involved in unit(s)
			next largest size available (~100' spacing); additional recruits would be retained where snags are not available.
5	18 acres 109 MBF	Improvement harvest with group select and minor RMZ harvest	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- SMZ Class 1, west of unit.</li> <li>- No SMZ harvest except at culvert head.</li> <li>- Thinning in RMZ would retain 40% canopy closure, all submerchantable trees (only minor harvest of boundary trees;</li> <li>- Harvest most ES which will create openings for regeneration (estimate most of unit will have new regeneration although there will be groups of commercial thinning)</li> <li>- Retain all vigorous WL and DF</li> <li>- Leave 2 snags and 2 snag recruits per acre &gt; 21" DBH or of the next largest size available (~100' spacing); additional recruits would be retained where snags are not available.</li> <li>- Trample slash and scarify</li> </ul>
6	12 acres (includes road) 130 MBF	Clear cut with reserves with WMZ/SMZ harvest.	<ul style="list-style-type: none"> <li>- Tractor harvest</li> <li>- Unit is flagged approximately 100 feet either side of powerline and trees leaning away from powerline to be marked to leave. Also retain submerchantable within this area.</li> <li>- SMZ along Class 1 harvest per SMZ Alternative Practice permit, this part of unit would require winter logging conditions.</li> <li>- Sight distance may exceed 100' from open road.</li> <li>- Leave 2 snags and 2 snag recruits per acre &gt; 21" DBH or of the next largest size available (~100' spacing); additional recruits would be retained where snags are not available.</li> <li>- Natural regeneration and slashing of trees that may reach the powerline in 25 years may occur.</li> </ul>
7	22 acres 142 MBF	Improvement cut with group select	<ul style="list-style-type: none"> <li>- Tractor harvest.</li> <li>- Retain vigorous WL and DF at 25 to 35 foot spacing and create small openings where vigor is poor.</li> <li>- Where vigorous advanced regeneration is present harvest, use Overstory Removal prescription (~1 acre)</li> <li>- Leave 2 snags and 2 snag recruits per acre &gt; 21" DBH or of the next largest size available (~100' spacing); additional recruits would be retained where snags are not available.</li> <li>- Trample slash and scarify any openings</li> </ul>
8	14 acres 142 MBF	-Shelterwood	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- Salvage DF beetle trees</li> <li>- Retain 10 -25 TPA</li> <li>- Scarify for natural regeneration</li> </ul>
9	38 acres 237 MBF	Overstory removal	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- Leave 2 snags and 2 snag recruits per acre &gt; 21" DBH or of the next largest size available (~ 100' spacing); additional recruits would be retained where snags are not available.</li> <li>- Protect advanced regeneration</li> </ul>
10	6 acres 17 MBF	Commercial thin	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- Harvest subalpine fir (SAF) and ES sawlogs and retain WL/DF on</li> </ul>

Unit Number	Est. Acres / MBF	Prescription	Particulars involved in unit(s)
			<p>a 25' spacing or canopy spacing of 10' to 15'</p> <ul style="list-style-type: none"> <li>- Protect submerchantable trees to the fullest extent practical. In-woods processing encouraged.</li> <li>- Leave 2 snags and 2 snag recruits per acre &gt; 21" DBH or of the next largest size available (~100' spacing); additional recruits would be retained where snags are not available.</li> </ul>
11	11 acres 49 MBF	Commercial thin with group-select	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- Harvest subalpine fir (SAF) and ES sawlogs and retain WL/DF on a 25' spacing or canopy spacing of 10' to 15'</li> <li>- Protect submerchantable trees to the fullest extent practical. In-woods processing encouraged.</li> <li>- Small openings would be created through harvest of whitewoods and small area of mature trees</li> <li>- Openings would be approximately 1 acre in size and not to exceed 5 acres.</li> <li>- Leave 2 snags and 2 snag recruits per acre &gt; 21" DBH or of the next largest size available (~100' spacing); additional recruits would be retained where snags are not available.</li> <li>- Machine Scarify openings, trample slash</li> <li>- Natural regeneration.</li> </ul>
12	33 acres 101 MBF	Commercial thin with group-select	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- Harvest subalpine fir (SAF) and ES sawlogs and retain WL/DF on a 25' spacing or canopy spacing of 10' to 15'</li> <li>- Protect submerchantable trees to the fullest extent practical. In-woods processing encouraged.</li> <li>- Small openings would be created through harvest of whitewoods and small area of mature trees</li> <li>- Openings would be approximately 1 acre in size and not to exceed 5 acres.</li> <li>- Leave 2 snags and 2 snag recruits per acre &gt; 21" DBH or of the next largest size available (~100' spacing); additional recruits would be retained where snags are not available.</li> <li>- Machine Scarify openings, trample slash</li> <li>- Natural regeneration.</li> </ul>
13	117 acres 586 MBF	Commercial thin with group-select	<ul style="list-style-type: none"> <li>- Tractor harvest unit.</li> <li>- Harvest subalpine fir (SAF) and ES sawlogs and retain WL/DF on a 25' spacing or canopy spacing of 10' to 15'</li> <li>- Protect submerchantable trees to the fullest extent practical. In-woods processing encouraged.</li> <li>- Small openings would be created through harvest of whitewoods and small area of mature trees</li> <li>- Openings would be approximately 1 acre in size and not to exceed 5 acres.</li> <li>- RMZ harvest: <ul style="list-style-type: none"> <li>• thinning in RMZ would retain 40% canopy closure, mark Engelmann Spruce (ES) to cut with high potential for blowing down (trees with lean and some over 10" dbh <u>IF there is 40% canopy closure of sawlog trees</u>; and</li> <li>• all submerchantable trees</li> </ul> </li> <li>- Leave 2 snags and 2 snag recruits per acre &gt; 21" DBH or of the</li> </ul>

Unit Number	Est. Acres / MBF	Prescription	Particulars involved in unit(s)
			next largest size available (~100' spacing); additional recruits would be retained where snags are not available. - Machine Scarify openings, trample slash - Natural regeneration.
14	37 acres 586 MBF	seedtree with reserves	- Tractor harvest - No SMZ harvest along Class 1 stream - Leave majority of WL/DF for seed source. Average 6-10 seedtrees per acre. - Leave 2 snags and 2 snag recruits per acre > 21" DBH or of the next largest size available (~100' spacing); additional recruits would be retained where snags are not available. - RMZ harvest: <ul style="list-style-type: none"> <li>• thinning in RMZ would retain 40% canopy closure, mark Engelmann Spruce (ES) to cut with high potential for blowing down (trees with lean and some over 10" dbh <u>IF there is 40% canopy closure of sawlog trees</u>; and</li> <li>• all submerchantable trees</li> </ul> - Machine scarify, - Natural Regeneration
15	28 acres 60 MBF	Understory removal	- Tractor Harvest - No RMZ harvest - Remove non-sawlog understory from a previously prescribed improvement harvest completed in 1997.

**NOTES:** \* Please refer to Stipulations and Specifications for more details.

WWP= western white pine

SAF = Sub-Alpine fir

DF = Douglas-fir

WL=Western Larch

ERZ = Equipment Restriction Zone

ES = Engelmann spruce

GF = Grand fir

LPP=Lodgepole pine

BMP = Best Management Practices

DBH = Diameter at Breast Height

RMZ = Riparian Management Zone

SMZ = Streamside Management Zone

WMZ= Wetland Management Zone

ERZ = Equipment Restriction Zone