Shorts-Evers Forest Management Project

Environmental Analysis

Stillwater Unit

Northwest Land Office

Montana Department of Natural Resources and Conservation

May 2023

Environmental Assessment Checklist

Project Name: Shorts-Evers Forest Management Project
Proposed Implementation Date: June 16, 2023
Proponent: Stillwater Unit, Northwest Land Office, Montana DNRC
County: Flathead

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 Short-Evers Forest Management Project. The project is located 13 miles west of Whitefish in Flathead County (refer to Attachments vicinity map A-1 and project map A-2) and includes the following sections:

Table 1, *Trust Beneficiaries and Treated Acreage*

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools			
Public Buildings	**T31N R24W S14 & 24**	**1,280**	**630**
MSU 2nd Grant			
MSU Morrill			
Eastern College-MSU/Western College-U of M			
Montana Tech			
University of Montana			
School for the Deaf and Blind	**T31N R24W S13**	**160**	**88**
Pine Hills School			
Veterans Home			
Public Land Trust			
Acquired Land			

Objectives of the project include:

- Contribute to DNRC's sustained yield by generating revenue for the following Trusts: Public Buildings and the School for the Deaf and Blind
- Promote biodiversity on State ownership by managing for appropriate or desired stand structures and species composition based on ecological characteristics such as topography, habitat type, disturbance regime, and unique characteristics
- Capture the economic value of dead and dying trees and promote the regeneration of healthier, more resilient trees

Proposed activities include:

Table 2, *Table of Proposed Activities*

Action	Quantity
Proposed Harvest Activities	# Acres
Seed Tree	108
Shelterwood	63
Commercial Thinning	186
Overstory Removal	42
Total Treatment Acres	**399**
Proposed Forest Improvement Treatment	# Acres
Pre-commercial Thinning*	**365**
Site preparation/scarification	**171**
Planting**	**151**
Proposed Road Activities	# Miles
Road maintenance	7.5
Other Activities	
North Fork Evers Creek Culvert Removal	1
Duration of Activities:	40 months
Implementation Period:	June 2023-October 2028

**includes 254 acres of PCT units and 111 acres of PCT in commercial harvest units*
***includes 86 acres of planting in commercial harvest units and 65 acres of other planting units*

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.

Project Development

SCOPING:

- DATE:
  - May 31 - July 1, 2022 and January 13 – February 13, 2023
- PUBLIC SCOPED:
  - The scoping notice was posted on the DNRC Website: http://dnrc.mt.gov/public-interest/public-notices
  - The scoping notice was posted in the Whitefish Pilot & the Daily Inter Lake
  - Adjacent landowners, environmental non-profits, forest product companies and organizations, and a local trapper were notified individually.
- AGENCIES SCOPED:
  - Statewide tribal governments, land board staffers, and Montana FWP
- COMMENTS RECEIVED:
  - How many: Six public comments were received. One by phone call, one by phone call with a follow-up site visit, and one by phone call with follow-up at the unit office. Two letters of support were sent by email.
  - Concerns: Three comments in support of active management were received, two of which were from industry representatives with additional comments on economics, forest improvement and Streamside Management Zone (SMZ) management. An adjacent landowner expressed concern about water quality and timber management activities adjacent to their property. The Blackfeet Tribal Historic Preservation Office had no concerns related to the project. Another adjacent landowner expressed concerns about traffic safety at the Star Meadows / 60 E road junction.
  - Results: The project will follow all SMZ laws and Administrative Rules for Forest Management as well as adhere to BMPs to protect water quality. Project leader will ensure traffic safety is improved. Project Leader will consider and incorporate some of the comments received during a site visit with the adjacent landowner when designing final harvest units.

DNRC specialists were consulted, including Tony Nelson - *Hydrologist*, Justin Cooper - *Wildlife Biologist*, Mike Anderson - *Fisheries Biologist*, Tim Spoelma - *Silviculturist/Forest Ecologist*, Nicole Porter - *Special Uses Forester*, and Patrick Rennie - *Archeologist*

Internal and external issues and concerns were incorporated into project planning and design and will be implemented in associated contracts.

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.

  A Short-term Exemption from Montana's Surface Water Quality Standards (318 Authorization) may also be required from DEQ if activities such as replacing a bridge on a stream would introduce sediment above natural levels into streams.

- **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 2010). As a member, DNRC must submit a list of planned burns to the Airshed Group's Smoke Monitoring Unit describing the type of burn to be conducted, the size of the burn in acres, the estimated fuel loading in tons/acre, and the location and elevation of each burn site. The Smoke Monitoring Unit provides timely restriction messages by airshed. DNRC is required to abide by those restrictions and burn only when granted approval by the Smoke Monitoring Unit when forecasted conditions are conducive to good smoke dispersion.

- **Montana Department of Fish, Wildlife and Parks (DFWP)-** A Stream Protection Act Permit (124 Permit) is required from DFWP for activities that may affect the natural shape and form of a stream's channel, banks, or tributaries. Such activities include a culvert removal on the North Fork of Evers Creek

ALTERNATIVES CONSIDERED:

No-Action Alternative: Under this alternative, no timber would be harvested. Therefore, no revenue would be generated from the project area for the Public Buildings Trust and School for the Deaf and Blind Trust 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: Commercial timber harvest would remove 2.6 – 3.2 MMBF of timber using ground-based methods on 399 acres. Specific harvest unit data is provided in Attachment B- *Shorts-Evers Forest Management Project Prescription Table*. This table along with the maps in Attachment A - *Maps* will provide additional detail for this project.

- New stands of healthy trees would be regenerated on 171 acres through **seed tree** and **shelterwood treatments**.
- **Commercial thinning** would be executed on six stands. 100 acres of western larch/ Douglas-fir, 64 acres of Douglas-fir, and 22 acres of mixed conifer stands would be thinned. Stands would vary from traditional even aged thinning of 30' spacing for 44 acres, and 142 acres of uneven-aged thinning. Uneven-aged thinning would have variable retention. Variable retention would have spacing of tree less than 15" DBH at 25' and trees greater than or equal to 15" at 50'-60'.
- **Overstory Removal** treatments would be implemented on two stands, the first of which would complete a seed tree treatment on a 32 acre stand that has successfully regenerated. An additional

11 acres would have an over-mature overstory removed. This would capture economic value and aid in promoting root rot tolerant species.

- **Post-Harvest Treatments** would be required to ensure successful regeneration. Mechanical site prep would take place on up to 171 acres. Of those 171 acres, 109 could be treated for site prep using prescribed fire. Planting would occur on 151 acres to regenerate desired species in old seed tree units and convert stands to root rot tolerant species.
- **Road maintenance** would take place on 7.5 miles of existing roads. Weed spraying would take place on all associated roads with the proposed Shorts-Evers timber sale. An old, undersized culvert on the North Fork of Evers Creek would be removed and then lay the stream bank back 1:2 for stabilization. This would allow access to about 35 acres of future harvest with a cross laminated timber bridge. The culvert would need to be replaced prior to any harvest as it does not meet BMPs.

Impacts on the Physical Environment

VEGETATION:

Vegetation Existing Conditions: This project area exists in a previously glaciated landscape that had been influenced by fire for thousands of years. The evidence remains in scoured bed rock and charred stumps. The first record of active timber harvest in the project area occurred in 1923 by the Shorts brothers when they harvested 4.95 million board feet (MMBF). The arrival of industrial logging in the area from 1950-1954 resulted in the construction of many roads on the edges of wetlands and cutting in of jammer roads for access to timber. Approximately 13.5 MMBF of timber was cut with 12.4 MMBF being western larch and Douglas-fir and evidence of the use of crosscut saws to cut cat-faced larch can still be found in the area. Throughout the 50s, 60s and 70s Christmas trees were harvested as well as post and rail material. There was an active grazing lease in the project area that was terminated in 1989.

In 1981, the Evers Creek 1 Timber Sale harvested approximately 2.5 MMBF from the project area to address a mountain pine beetle epidemic. In 1987, Evers Creek 2 harvested 0.67 MMBF from the project area to address a continuing mountain pine beetle outbreak. In 1995, Shorts Meadow Timber Sale improved many stands and regenerated some stands when 1.6 MMBF was harvested. This was followed in 2007 Shorts Meadow/Ever Creek timber sale that regenerated many stands and harvested 3.4 MMBF.

Table 3, *Existing Conditions in Proposed Stands*

Harvest Unit	Habitat Group	Fire Regime	Current Cover Type	Age Class (years)	DFC	RX	Acres
1	Cool and moist (westside)	Mixed-to-Stand Replacing	Mixed Conifer	100-149	Western Larch/Douglas Fir	Shelterwood Harvest	13
2	Cool and moist (westside)	Mixed-to-Stand Replacing	Western Larch/Douglas Fir	40-99	Western Larch/Douglas Fir	Commercial Thinning	22
3	Warm and moist (westside) Cool and moist (westside)	Mixed-to-Stand Replacing	Western Larch/Douglas Fir	0-39	Western Larch/Douglas Fir	Overstory Removal	32
4	Cool and moist (westside)	Mixed-to-Stand Replacing	Western Larch/Douglas Fir	200+	Western Larch/Douglas Fir	Commercial Thinning	33
5	Cool and moist (westside) Warm and moist (westside)	Mixed-to-Stand Replacing	Douglas Fir	200+	Western Larch/Douglas Fir	Commercial Thinning	28
6	Cold and moderately dry (westside) Moderately cool and moist (westside)	Mixed-to-Stand Replacing	Douglas Fir	150-199	Western Larch/Douglas Fir	Commercial Thinning	36
7	Warm and moist (westside)	Mixed-to-Stand Replacing	Western Larch/Douglas Fir	200+	Western Larch/Douglas Fir	Shelterwood Harvest	31
8	Cold and moderately dry (westside)	Mixed-to-Stand Replacing	Western Larch/Douglas Fir	200+	Western Larch/Douglas Fir	Seed Tree	43
9	Warm and moist (westside)	Mixed-to-Stand Replacing	Western Larch/Douglas Fir	200+	Western Larch/Douglas Fir	Commercial Thinning	30
10	Warm and moist (westside) Cold and moderately dry (westside)	Mixed-to-Stand Replacing	Mixed Conifer	150-199	Western Larch/Douglas Fir	Commercial Thinning	22
11	Cold and moderately dry (westside)	Mixed-to-Stand Replacing	Douglas Fir	200+	Western Larch/Douglas Fir	Seed Tree	23
12	Cold and moderately dry (westside)	Mixed-to-Stand Replacing	Douglas Fir	200+	Western Larch/Douglas Fir	Seed Tree	42

13	Cold and moderately dry (westside)	Mixed-to-Stand Replacing	Douglas Fir	0-39	Western Larch/Douglas Fir	Overstory Removal	10
14	Warm and moist (westside) Cold and moderately dry (westside)	Mixed-to-Stand Replacing	Western Larch/Douglas Fir	200+	Western Larch/Douglas Fir	Commercial Thinning	15
15	Cool and moist (westside)	Mixed-to-Stand Replacing	Western Larch/Douglas Fir	200+	Western Larch/Douglas Fir	Shelterwood Harvest	19

Current Cover-Type/DFCs: The cover-type in the project area would be adjusted to increase presence of seral species in accordance with desired future conditions. Currently stands that are Douglas-fir or mixed conifer stand types would be shifted towards western larch/Douglas-fir (WL/DF) through regeneration harvest and selective thinning.

Old Growth: There is no old growth in the project area, but Stand Level Inventory (SLI) data showed 127 acres of potential old growth recruitment stands. Old growth cruises were completed for all of these stands to determine the number of big trees and their age. Stands were evaluated using Green et al. (1992) "Old-growth Forest Types of the Northern Region". The results of the old growth cruise indicate there are old enough trees but not enough big trees for the stand to qualify as old growth.

Fire Hazard/Fuels: The entire proposed project area resides in Flathead County's Wildland Urban Interface (WUI) and shares 1.2 miles of boundary with private properties. Stands in Fire group 7 have an average downed woody fuel loading of about 18 tons per acre and experience infrequent, stand replacing fire. Fire group 9 has an average downed woody fuel load of 25 tons per acre and experience infrequent, mixed fire severity. Stands in Fire Group 11 have an average fuel load of 25 tons per acre and also experience infrequent, mixed fire severity.

Table 4, *Fire Groups in Proposed Harvest Units*

Fire Group	Acres within Proposed Harvest Units	Percent of Proposed Harvest Units	Habitat Type Group	Severity
11	129	32.3	Warm and moist (westside)	Infrequent/Mixed
9	117	29.3	Cool and moist (westside)	Infrequent/Mixed
9	5	1.3	Moderately cool and moist (westside)	Infrequent/Mixed
7	148	37.0	Cool and moderately dry (westside)	Infrequent/Stand-Replacing

Insects and Diseases: Spruce beetle (*Dendroctonus rufipennis*), Douglas-Fir beetle (*Dendroctonus pseudotsugae*), and fir engraver (*Scolytus ventralis*) are present at endemic levels causing expected levels of mortality throughout the project. Pini (*Phellinus pini*) and paint fungus (*Echinodontium tinctorium*) are stem rots throughout stands at low levels. Low levels of Schweintzii root and butt rot (*Phaeolus schweinitzii*) are present in the project area. Armillaria root disease (*Armillaria ostoyae*) is present at low

levels in some stands. In the southwest quarter of section 24, Armillaria is causing mortality in overmature Douglas-fir stands

Sensitive/Rare Plants: Through utilization of Montana's Natural Heritage Program Database, two species of concern were identified to exist within the project area. The presence of marsh horsestail (*Equisetum palustre*) and scorpidium moss (*Scorpidium scorpioides*) has been identified and would be monitored throughout the project.

Noxious Weeds: Spotted knapweed (*Centaurea maculosa*), orange hawkweed (*Pilosella aurantiaca*), oxeye daisy (*Leucanthemum vulgare*), and St. John's-wort (*Hypericum perforatum*) exist in and around the proposed project area. Current occurrences are found mainly along existing roads and old landings.

Table 5, *Impacts to Vegetation*

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Current Cover/DFCs	**X**					**X**				**X**				**V-1**
Age Class	**X**				**X**				**X**					
Old Growth	**X**				**X**				**X**					
Fire/Fuels	**X**				**X**				**X**					
Insects/Disease	**X**				**X**				**X**					
Rare Plants	**X**				**X**				**X**					
Noxious Weeds	**X**					**X**				**X**				**V-2**
Action														
Current Cover/DFCs		**X**				**X**				**X**			**Y**	**V-3**
Age Class		**X**				**X**				**X**			**Y**	**V-3**
Old Growth	**X**				**X**				**X**					
Fire/Fuels		**X**				**X**				**X**			**Y**	**V-4**
Insects/Disease		**X**				**X**				**X**			**Y**	**V-5**
Rare Plants	**X**				**X**				**X**					
Noxious Weeds		**X**				**X**				**X**			**Y**	**V-2**

Comments:

- V-1: The No-Action Alternative would not directly affect the vegetative communities through harvest treatments; it would indirectly affect the timber stands with a trend towards more shade tolerant trees, continued mortality, and reduced growth. Cumulatively, other timber sales on the Stillwater Unit have advanced timber stands to their DFC.
- V-2: Soil disturbances from road work and logging equipment could increase the amount and distribution of noxious weeds in the project area. Mitigations listed below would lessen any impacts to the area
- V-3: The Action Alternative would harvest 2.5-3.5 MMBF over 399 acres of treatment. Treatment prescriptions include commercial thin, shelterwood, seed tree, and overstory removal.

DFC - These trees would be harvested to achieve the following silvicultural results: reduce overall stocking; remove shade tolerant species; reduce insect and disease damage currently evident in stands.

Cover Type - Treatments would result in cover type changes towards less shade tolerant species in the project area. Specifically, 35 acres would move from mixed conifer to Douglas-fir/western larch and 139 acres would move from Douglas-fir to Douglas-fir/western larch in the overstory canopy.

Age Class – Treatments would remove trees from all age classes, so most stands would not change in overall age class. The age class of the primary canopy layer in Unit 13 (11 acres) would be reduced to 0-39 following the overstory treatment.

- V-4: Potential for wildfire ignition would continue after treatment, however intensity would likely be reduced throughout the project area. Lower stem density post-harvest would reduce the vertical and horizontal connectivity of fuels which could reduce potential for fire in the overstory.
- V-5: Trees with existing populations of insects would be harvested to capture the economic value of those trees. Similarly, trees that are dying because of armillaria would be harvested to capture the economic value of those trees.

Vegetation Mitigations:

- Implement High Standard Hazard Reduction practices for 100’ inside unit boundaries on harvest units within 1,000 feet of structures.
- If any listed sensitive plants are found during this project period, then harvesting operations would be diverted from those locations and further reviewed by DNRC and plant specialists.
- Mitigation measures for noxious weed control include washing equipment before entering the site, sowing grass seed on roads after road maintenance and harvesting (ARM 36.11.445) and applying herbicide on spots of weed outbreaks along roadways including areas behind road closures. This would minimize the spread and continued prevalence of noxious weeds in the project area.
- Additional mitigation measures for noxious weed control include annual weed spraying and monitoring on haul roads and associated spurs prior to and after the timber sale.

SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions: Timber harvesting in the proposed project area has been ongoing since the 1920s. Based on field reconnaissance, less than 15% of soils are impacted from past entries where ground-based yarding was done and impacts to soils from these activities are ameliorating through root penetration and frost action.

Table 6, *Impacts to Soils*

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		
No-Action														
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**					
Action														
Physical Disturbance (Compaction and Displacement)		**X**				**X**				**X**			**Y**	**S-1**
Erosion		**X**				**X**				**X**			**Y**	**S-2**
Nutrient Cycling	**X**				**X**				**X**					
Slope Stability	**X**				**X**				**X**					
Soil Productivity		**X**				**X**				**X**			**Y**	**S-3**

Comments:

- S-1: Based on DNRC soil monitoring on similar soils with a similar harvest intensity, approximately 14% of area may be in an impacted condition (DNRC, 2006). This level is below the range analyzed for in the *EXPECTED FUTURE CONDITIONS* section of the *SFLMP*, and well within the 20-percent impacted area established as a level of concern in the *SFLMP (DNRC 1996)*. This level translates to a low risk of low direct, secondary and cumulative impacts to soil physical disturbance.

- S-2: Low impacts to soil erosion are possible due to exposure of bare soil during yarding and skidding operations. Risk of erosion would be mitigated by implementing all applicable BMPs to harvesting activities.

- S-3: Soil productivity would be impacted by the use of ground-based machinery to yard timber. As stated in comment S-1, levels of ground disturbance are expected to be less than 14% with roads included, which is well below the range analyzed for in the EXPECTED FUTURE CONDITIONS section of the SFLMP, and well within the 20-percent impacted area established as a level of concern in the SFLMP (DNRC 1996).

This level translates to a low risk of low direct, secondary and cumulative impacts to soil productivity.

Soil Mitigations:

- Operate ground-based equipment only during periods of dry, frozen or snow-covered conditions
- Space skid trails a minimum of 60 feet apart to minimize areas impacted by ground-based equipment
- Use existing skid trails if they are in suitable locations to minimize potential for cumulative impacts to soil physical disturbance
- Leave approximately 7-25 tons of woody material 3-inches in diameter or greater on the ground for nutrient cycling

WATER QUALITY AND QUANTITY:

Water Quality and Quantity Existing Conditions: Past activities in and around the proposed project area include timber management, agriculture, and home site development. These activities have led to reductions in forest canopy cover, and construction of roads. None of these activities has led to any identified impacts to water quality or quantity in or around the project area. Evers Creek, a perennial class 1 stream, flows through the northern portion of the proposed project area. Several additional class 2 and class 3 streams were identified throughout the proposed project area. All identified stream channels in the proposed project area were found to be stable and well-vegetated during field reconnaissance.

Table 7, *Impacts to Water Quality and Quantity*

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		
No-Action														
Water Quality	**X**				**X**				**X**					
Water Quantity	**X**				**X**				**X**					
Action														
Water Quality		**X**				**X**				**X**			**Y**	**W-1**
Water Quantity		**X**				**X**				**X**			**Y**	**W-2**

Potential cumulative effects to water quality and quantity were deemed low due to the limited area of proposed harvest relative to watershed size, current channel stability and the flow regime of the hydrology in the project area (beaver ponds and wetlands).

Comments:

- WQ-1: All requirements found in ARM 36.11.301-313, and ARM 36.11.421-427 would be implemented, where applicable. In addition, all applicable forest management BMPs would be implemented. These measures would minimize any potential risk of sediment delivery to a stream or draw and leave a low risk of direct, secondary or cumulative impacts to water quality.

- WQ-2: There is a very low risk of the proposed project affecting water quantity. Vegetation removal can impact water use and snowpack distribution in harvested areas. The proposed project would harvest timber from approximately 400 acres. In an approximately 7,769-acre watershed with wetlands and ponds to store and ameliorate changes in flow, the proposed harvest represents approximately 5% of the watershed area in harvesting. This presents a very low risk of measurable impacts to water quantity from the proposed harvesting.

Water Quality & Quantity Mitigations:

- Avoid use of ground-based equipment in the bottoms of draws to reduce risk of scour, compaction or routing of surface runoff in draws
- Implement all applicable BMPs, HCP commitments, and SMZ Law rules to ensure protection of project area streams

FISHERIES:

Fisheries Existing Conditions: One fish-bearing stream was identified in the proposed project area by the FishMT website (FWP, 2023). This stream is Evers Creek, and likely contains eastern brook trout and longnose suckers. The stream is perennial and contributes flow to Logan Creek and eventually to the Stillwater River. It also has a series of beaver ponds and wetlands that support fish populations perennially.

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):

Table 8, *Impacts to Fisheries*

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Sediment	**X**				**X**				**X**					
Flow Regimes	**X**				**X**				**X**					
Woody Debris	**X**				**X**				**X**					
Stream Shading	**X**				**X**				**X**					
Stream Temperature	**X**				**X**				**X**					
Connectivity	**X**				**X**				**X**					
Populations	**X**				**X**				**X**					
Action														
Sediment		**X**				**X**				**X**			**Y**	**F-1**
Flow Regimes		**X**				**X**				**X**			**Y**	**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**					
Populations		**X**				**X**				**X**			**Y**	**F-4**

Comments:

- F-1: All requirements found in ARM 36.11.301-313, and ARM 36.11.421-427 would be implemented, where applicable. In addition, all applicable forest management BMPs would be implemented. These measures would minimize any potential risk of sediment delivery to a fish-bearing stream and leave a low risk of direct, secondary or cumulative impacts to water quality and fish habitat.
- F-2: As outlined in WQ-2, with the proposal to harvest 400 acres of timber from approximately 5% of the watershed, there would be a very low risk of measurable impacts to water quantity or flow regime from the proposed harvesting.
- F-3: All proposed harvesting of trees within the SMZ or RMZ of a class 1 stream or lake would follow all requirements of ARM 36.11.425 and DNRC's HCP commitments. This would leave a very low risk of the proposed project affecting existing or potential downed woody debris, stream shading or stream temperature in any fish-bearing stream.
- F-4: Provided the measures listed in F-1, F-2, F-3, DNRC's HCP and the mitigation measures listed in the water quality portion of this analysis are followed, there is a very low risk of adverse direct, secondary or cumulative impacts to fish habitat or populations as a result of the proposed project.

References:

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

DNRC, 2011. Montana Forestry Best Management Practices Monitoring: The 2010 Forestry BMP Audits Final Report. Montana Department of Natural Resources and Conservation, Forestry Division.

FWP, 2023. "FishMT" 1 March, 2023. < https://myfwp.mt.gov/fishMT/waterbody/55910>

WILDLIFE:

Wildlife Existing Conditions: The Project Area consists of three DNRC-managed parcels totaling 1,440 acres. This area is comprised of habitat conditions that favor native wildlife species associated with wetlands and mature forest types with a variety of canopy closure levels. All three parcels are bordered by a mix of undeveloped UDSA Forest Service (USFS) lands and private lands with low-density development and mixed forest management practices.

The Project Area contains an estimated 1,013 acres of forest with relatively closed canopies (≥40% canopy closure), which includes 493 acres of mature forest stands (trees ≥9" dbh with ≥40% canopy closure). Additionally, the Project Area contains 29 acres of open mature forests (trees ≥9" dbh with <40% canopy closure), 285 acres of regenerating stands harvested 16 years ago, 77 acres of permanently non-forested areas, and an estimated 36 acres of wetland habitat.

There is no old-growth forest in the Project Area using Green et al. (1992) standards. Insects and disease are active within the Project Area, reducing live tree abundance and canopy closure in some patches. Approximately 9.2 miles of roads are present within the Project Area, of which 1.6 miles are open county roads and 7.6 miles are restricted from public motorized use. A gated driveway easement exists on 0.8 miles of the restricted roads, serving a single residence to the south of the Project Area. Restricted roads receive occasional motorized use for resource and fire-management purposes. Public non-motorized use is likely low in these parcels except during the hunting season, when it likely increases to moderate or high levels.

Cumulative effects analysis areas (hereafter CEAA) incorporate lands near the Project Area and include an 8,850-acre Small CEAA for animals with smaller home ranges like pileated woodpeckers and a 35,936-acre Large CEAA for animals that travel across broader areas such as Canada lynx and big game. Additional information on cumulative effects analysis areas and analysis methods are available upon request. Overall, conditions within the Project Area favor wildlife species using habitat with larger trees and denser forests.

No-Action Alternative: None of the proposed activities would occur. In the short-term, forest insects and disease will likely continue to kill some mature trees. Previously harvested areas would continue to regenerate into mature forest. An increase in stand-replacement wildfire risk would also be anticipated. In the long-term, habitat suitability for mature forest-associated species would remain similar or improve compared to current conditions.

Action Alternative (see Wildlife table below):

Table 10, *Impacts to Wildlife*

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Threatened and Endangered Species														
Grizzly bear *(Ursus arctos)*		**X**				**X**					**X**		**Y**	**WI-1**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Habitat: Recovery areas, security from human activity														
Lynx (*Felis lynx*) Habitat: SF hab.types, dense sapling, old forest, deep snow zone		**X**				**X**				**X**			**Y**	**WI-2**
Yellow-billed cuckoo (*Coccyzus americanus*) Habitat: open cottonwood riparian forest with dense brush understories (Lake and Flathead counties)	**X**				**X**				**X**					**WI-3**
Sensitive Species														
Bald eagle *(Haliaeetus leucocephalus)* Habitat: Late-successional forest within 1 mile of open water	**X**				**X**				**X**					**WI-4**
Black-backed woodpecker *(Picoides arcticus)* Habitat: Mature to old burned or beetle-infested forest	**X**				**X**				**X**					**WI-3**
Common loon *(Gavia immer)* Habitat: Cold mountain lakes, nest in emergent vegetation	**X**				**X**				**X**					**WI-3**
Fisher *(Martes pennanti)* Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian		**X**				**X**				**X**			**Y**	**WI-5**
Flammulated owl *(Otus flammeolus)* Habitat: Late-successional ponderosa pine and Douglas-fir forest	**X**					**X**				**X**			**Y**	**WI-6**
Northern Bog Lemming		**X**				**X**			**X**				**Y**	**WI-7**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
(*Synaptomys borealis*) Habitat: wet meadows, fens, or bogs with sphagnum mats														
Peregrine falcon *(Falco peregrinus)* Habitat: Cliff features near open foraging areas and/or wetlands	**X**				**X**				**X**					**WI-3**
Pileated woodpecker *(Dryocopus pileatus)* Habitat: Late-successional ponderosa pine and larch-fir forest			**X**				**X**				**X**		**Y**	**WI-8**
Fringed myotis (*Myotis thysanodes*) Habitat: low elevation ponderosa pine, Douglas-fir and riparian forest with diverse roost sites including outcrops, caves, mines	**X**				**X**				**X**					**WI-3**
Hoary bat (*Lasiurus cinereus*) Habitat: coniferous and deciduous forests and roost on foliage in trees, under bark, in snags, bridges		**X**				**X**				**X**			**Y**	**WI-9**
Townsend's big-eared bat *(Plecotus townsendii)* Habitat: Caves, caverns, old mines	**X**				**X**				**X**					**WI-3**
Wolverine (*Gulo gulo*) Habitat: high elevation areas that retain high snow levels in late spring	**X**				**X**				**X**					**WI-3**
Big Game Species														
Elk		**X**				**X**				**X**			**Y**	**WI-10**
Whitetail			**X**				**X**			**X**			**Y**	**WI-10**
Mule Deer			**X**				**X**			**X**			**Y**	**WI-10**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Other														
Mature Forest			**X**				**X**			**X**				**WI-11**

Comments:

WI-1. Grizzly Bear – Timber harvest and pre-commercial thinning would affect approximately 468 acres (32.5% of the Project Area) of grizzly bear hiding cover within non-recovery occupied grizzly bear habitat (Wittinger 2002). Of the 1,013 acres of hiding cover in the Project Area, the proposed action would remove 213 acres (21.0% of available hiding cover) and reduce cover quality on the remaining 255 acres (25.2% of available hiding cover). The project area provides several potential high-quality foraging areas. These areas include Shorts Meadow, other isolated wetlands, and the riparian areas associated with North Evers Creek. These sites provide primarily spring and summer forage features. Timber harvests could reduce the potential use of these areas by removing security cover and/or by increasing nearby disturbance. To reduce impacts from larger harvested openings lacking cover, all points within proposed harvest units would be within 600 feet of vegetative or topographic screening/cover.

No new roads would be built, but motorized use of 7.4 miles of open and existing restricted roads within the Project Area would increase during project implementation. Visual screening would be maintained along open roads. Existing restricted roads used for harvesting would remain restricted during and after the conclusion of the project. Additionally, timing restrictions would be applied from April 1 – June 15 to provide security for grizzly bears in the spring. Any grizzly bears using the Project Area could be temporarily displaced by the proposed activities for up to three years. After harvest, hiding cover would persist on 30% of the 35,936-acre Large cumulative effects analysis area (hereafter Large CEAA). Impacts to hiding cover and increased disturbance under the Action Alternative would be additive to any ongoing vegetation management projects on private lands and to approximately 4,560 acres of proposed USFS timber harvest within the Large CEAA. The proposed USFA project would reduce hiding cover by an additional 1,595 acres within the Large CEAA (totaling 16.1% of hiding cover removed within the Large CEAA). Measurable cumulative changes to grizzly bear use of the Large CEAA would be low as a result of the Action Alternative. However, if USFS timber harvest were to be concurrent with the Action Alternative, moderate adverse cumulative effects associated with grizzly bear displacement and removal of hiding cover would be expected within the Large CEAA.

WI-2. Canada Lynx – Approximately 992 acres of suitable lynx habitat exists in the Project Area (68.9% of the Project Area) with another 370 acres of temporary nonsuitable lynx habitat (25.7% of the Project Area). An estimated 467 acres of suitable lynx habitat (32.4% of the Project Area) would be affected by the proposed Action Alternative. Of these acres, 215 acres (21.7% of suitable lynx habitat in the Project Area) would be treated with harvest prescriptions that would not retain enough conifer cover to continue providing suitable lynx habitat immediately post-harvest. The remaining 252 acres (25.4% of suitable lynx habitat in the Project Area) would receive treatments that would reduce some suitable habitat attributes but would continue to provide suitable lynx habitat overall. To ensure that forest structural attributes preferred by lynx and lynx prey (snowshoe hares) remain following harvest, some patches of advanced regeneration and shade-tolerant trees would be retained within portions of suitable lynx habitat. Additionally, 7 to 25 tons/acre of coarse woody debris would be retained in accordance with DNRC Forest Management Rules (*ARM 36.11.414*) and retention of downed logs ≥15-inch diameter would be emphasized. Lynx habitat connectivity within the Project Area would be reduced; however, suitable lynx habitat would remain in 54.7% of the Project Area and include a north-south corridor of suitable habitat maintained through the western half of the Project Area via a riparian management zone (RMZ). This suitable habitat corridor would remain connected to a larger block of suitable habitat on

USFS lands to the west and private lands to the north and south. Lynx have not been observed near the Project Area in over 25 years (MNHP 2022, DNRC unpublished data); therefore, the likelihood of lynx using the Project Area is low. However, 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. Disturbance/displacement and habitat alteration by the proposed DNRC activities would be additive to recent forest management projects on adjacent private lands and to approximately 4,560 acres of proposed USFS timber harvest within the Large CEAA. However, the Large CEAA consists of approximately 31.0% suitable habitat for lynx and provides sufficient connected habitat for lynx persistence at the larger landscape level.

WI-3. 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-4. Bald Eagle – There is a bald eagle territory near Tally Lake that includes a portion of the Project Area. Currently the nest is 1.8 miles from the Project Area and appreciable use of the Project Area by bald eagles is not anticipated.

WI-5. Fisher – Approximately 279 acres of suitable fisher habitat would be affected by the proposed activities (55.7% of fisher habitat available in the Project Area). Of these acres, 105 acres (21.0% of fisher habitat available in the Project Area) would not be suitable for fishers post-harvest due to low amounts of mature conifer cover. This includes approximately 2 acres of riparian fisher habitat harvested along Evers Creek within the RMZ; however, the opposite bank will remain unharvested to maintain some connectivity through the riparian corridor. The remaining 175 acres (34.9% of fisher habitat in the Project Area) would receive treatments that would reduce some suitable habitat attributes but would continue to provide fisher habitat overall. This would include treatments within 15 acres of streamside management zone (SMZ) and wetland management zone (WMZ) areas along a class 2 stream and wetlands throughout the Project Area. Some suitable habitat connectivity would remain in the western portion of the Project area within the RMZ corridors and would provide connectivity to suitable cover types to the west and south of the Project Area. 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. However, given the lack of fisher observations (Krohner 2022, MNHP 2022, DNRC unpublished data) and prevalence of unsuitable forest types, which are avoided by fishers (Olson et al. 2014), the likelihood of fishers using the Project Area or CEAA is low. Should any fishers be present within the Large CEAA, habitat alteration and potential disturbance under the Action Alternative would be additive to any activities occurring or planned on surrounding private lands and to approximately 4,560 acres of proposed USFS timber harvest within the Large CEAA. Considering the relatively small amount of potential fisher habitat harvested at the scale of the Large CEAA (estimated 15.4% of the Large CEAA, including planned DNRC and USFS harvest combined), and low probability of fishers using the area (Krohner 2022, MNHP 2022, DNRC unpublished data), adverse cumulative effects are expected to be low for fishers in the Large CEAA.

WI-6. Flammulated Owls – The proposed timber harvest would not affect any of the 21 acres of preferred flammulated owl habitat within the area. Suitable flammulated owl habitat would likely persist in the Project Area; however, there is insufficient suitable habitat within or adjacent to the Project Area to currently support breeding 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*). If harvesting occurred during the summer or early fall period, flammulated owls could be temporarily displaced by the proposed activities adjacent to suitable habitat. Within the 8,850-acre Small CEAA, an estimated 172 acres of forest stands could be potentially suitable for flammulated owls; however, snags available for nesting are likely limited in some areas due to differing snag conservation philosophies on surrounding private ownerships.

WI-7 Northern Bog Lemming – Approximately 34 acres of wetland habitat (94% of the wetland habitat within the Project Area, 2.4% of the Project Area) would be indirectly affected by harvest activities associated with noise and ground vibration under the proposed action. This includes an estimated 17 acres of suitable habitat for bog lemmings with an extensive sphagnum mat (47.2% of wetland habitat within the Project Area), and an additional 8 acres (22.2% of wetland habitat within the Project Area) of isolated, less suitable wetland habitat that bog lemmings could potentially occupy. The proposed action was designed to maintain buffered areas (200-250 feet) surrounding sphagnum mats or suitable wetland areas that could provide corridors for dispersal to adjacent patches of suitable habitat and minimize competition with meadow voles and other species that could compete with northern bog lemmings. Wetland Management Zone (WMZ) restrictions would retain as many shrubs and submerchantable trees as possible around the isolated, less suitable wetlands to help reduce competition with other small mammal species if bog lemmings are currently present. An additional 40 acres of potentially suitable wetland habitat exists within the Small CEAA. Most of this area is connected via Evers Creek or Johnson Creek; however, the presence of bog lemming is currently unknown due to a lack of surveys and the difficulty of surveying for this elusive species. Habitat quality also varies within the Small CEAA because of differing wetland vegetation composition and wetland conservation philosophies on surrounding private and federal ownerships.

WI-8. Pileated Woodpecker – The proposed activities would affect 287 acres of suitable pileated woodpecker habitat (66.5% of habitat available in the Project Area). Of these acres, 144 acres (33.4% of the 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 143 acres would undergo less intensive harvesting and would likely retain some suitable habitat for pileated woodpeckers post-harvest, although fewer large trees and snags available for nesting and foraging. Approximately 288 acres (20.0% of the Project Area) of suitable pileated habitat would remain within the Project Area post-harvest. 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*). Additionally, 7 to 25 tons/per acre of downed wood would be retained, with an emphasis on logs >15" diameter. The Project Area would likely continue to support breeding pileated woodpeckers if they are currently present, although any breeding territory would be expected to extend outside of the Project Area into the Small CEAA as well. Habitat availability within the Small CEAA is limited due to open meadows and past timber harvesting on surrounding private lands; however, an estimated 2,412 acres (27.3% of the Small CEAA) 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 to approximately 964 acres of proposed USFS timber harvest, which is expected to remove an additional 493 acres of piliated woodpecker habitat within the Small CEAA. Overall, continued use of the Small CEAA by pileated woodpeckers would be anticipated.

WI-9. Hoary bat – The proposed activities would affect approximately 400 acres of potential hoary bat habitat (27.8% of the Project Area). Because hoary bats typically roost in trees and snags, they could be temporarily disturbed by timber harvesting. Potential disturbance would only be expected from June through September, when hoary bats are in Montana. After the conclusion of activities, continued use of the Project Area, including harvested areas, by hoary bats would be anticipated. 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 could provide roosting habitat. Should any hoary bats be present within the Large CEAA, habitat alteration and potential disturbance under the Action Alternative would be additive to any activities occurring or planned on surrounding private lands, including approximately 4,560 acres of proposed USFS timber harvest within the Large CEAA. Hoary bats are considered common and widespread throughout Montana, but wind energy and diseases such as white-nosed syndrome pose threats to their population (Bachen et al 2020).

WI-10. Big Game – The proposed activities would reduce thermal cover and snow intercept on potential white-tailed deer and moose winter range and elk summer range (*DFWP 2008*). Timber harvesting would affect 155 acres of thermal cover (22.1% of available) and an additional 58 acres of marginal thermal cover (22.2% of total thermal cover available in the Project Area). All these acres would be treated with harvest prescriptions that would reduce mature canopy cover to 5-20%; reducing the capacity of these stands to provide thermal cover during more severe winter conditions. Additionally, 231 acres of thermal cover (33.0% of available) and an additional 68 acres of marginal thermal cover (31.2% of total thermal cover available in the Project Area) would be treated with a prescription that would retain roughly 40% canopy cover, maintaining marginal thermal cover/snow intercept on southerly slope aspects and during less severe winter conditions. Approximately 468 acres (32.5% of the Project Area) of hiding cover would be affected by timber harvest and pre-commercial thinning. Seed tree and shelterwood harvests would remove up to 171 acres of hiding cover (16.8% of total hiding cover within the Project Area). The remaining 297 acres would be treated with harvests leaving 15-30 mature trees per acre, plus the retention of some regenerating conifers and submerchantable trees (which are present in patches throughout most of the Project Area) would maintain adequate hiding cover. Hiding cover would persist on 55.5% of the Project Area after harvest. No new roads would be built, and visual screening would be retained adjacent to open roads to increase security and reduce human-caused mortality. Impacts to hiding cover and thermal cover/snow intercept under the Action Alternative would be additive to any ongoing vegetation management projects on private lands and to approximately 4,560 acres of proposed USFS timber harvest within the Large CEAA. Thermal cover would remain on 8,971 acres of the Large CEAA (24.9% of the Large CEAA) and would be located almost entirely on USFS and DNRC lands. Hiding cover would remain relatively abundant within the Large CEAA (86.0% of the Large CEAA). Overall, measurable big game population changes at the scale of the Large CEAA would not be expected as a result of the Action Alternative.

WI-11. Mature Forest – The proposed action would affect approximately 280 acres of mature forest (56.8% of mature forest within the Project Area) with a reasonably closed canopy (≥40% canopy closure). Harvest prescriptions covering 114 acres (23.1% of available mature forest, 7.9% of the Project Area) would reduce live tree densities and bring overstory canopy cover below 40%. At the same time, habitat suitability for species utilizing younger stands and open forest with widely scattered mature trees would increase. However, insects and disease will likely continue to affect mature trees (and canopy closure) in some areas. Approximately 379 acres (26.3% of the Project Area) of mature forest would remain in the Project Area. However, connectivity of mature forest would be reduced, as large continuous sections of mature forest would be fragmented into smaller patches within the Project Area. Proposed harvesting would alter approximately 10.7% of existing mature forest within the Small CEAA. Existing connectivity and abundance of mature forest within the Small CEAA was already low due to open meadows and past forest management on private lands; however, a corridor of mature forest in section 14 of the Project Area would remain connected with other mature stands outside of DNRC lands within the Small CEAA via a riparian area. Forest management projects on DNRC, USFS and private lands have removed mature forest and continue to alter mature forest stands within the Small CEAA; the proposed action would be additive to these changes at the broader spatial scale and include 493 acres of proposed mature forest harvest on USFS lands in the Small CEAA (18.8% of mature forest within the Small CEAA). Mature forest abundance would remain relatively low (23.2%) and scattered through much of the Small CEAA.

Wildlife Mitigations:

- If a threatened or endangered species is encountered, consult a DNRC biologist immediately. Similarly, if undocumented nesting raptors or wolf dens are encountered within ½ mile of the Project Area, contact a DNRC biologist.

- 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.
- Prohibit contractors and purchasers conducting contract operations from carrying firearms while on duty as per *ARM 36.11.444(2)*.
- Effectively close restricted roads and skid trials in the Project Area via a combination of gates, kelly humps, rocks, and stumps. Maintain public motorized restrictions on restricted and temporary roads during and after harvest activities.
- Prohibit all harvesting-related motorized activities more than 100 feet from open roads from April 1 – June 15.
- Within commercial harvest units, retain patches of advanced regeneration trees as per *LY-HB4* (*USFWS and DNRC 2010*).
- Retain shade-tolerant trees (grand fir, subalpine fir, and spruce) <3 feet tall that do not pose competition risks to crop trees as per LY-HB4 (USFWS and DNRC 2010) in all pre-commercial thinning units.
- Maintain visual screening along open roads by conserving seedling and submerchantable trees in addition to some merchantable timber.
- 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.
- Retain coarse-woody debris according to *ARM 36.11.414* and emphasize retention of 15-inch diameter downed logs aiming for at least one 20-foot-long section per acre (*USFWS and DNRC 2010*).

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AIR QUALITY:

The project area is located within Montana Airshed 2, which encompasses portions of Flathead County. Most of the project area lies in the Kalispell Impact Zone within the larger Airshed.

Table 11, *Impacts to 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		
No-Action														
Smoke	**X**													
Dust	**X**													
Action														
Smoke		**X**											**Y**	**AQ-1**
Dust		**X**											**Y**	**AQ-2**

Comments:

- AQ-1: Smoke would be produced during pile burning operations and during prescribed fire operations but would be of short duration.

- AQ-2: Log hauling may increase the dust levels on portions of native surface state roads. and DNRC should consider requiring dust abatement of logging roads tributary to the Star Meadow Road.

Air Quality Mitigations:

- Only burn on days approved by the Montana/Idaho Airshed group and DEQ.
- Conduct test burns to verify good smoke dispersal.
- Dust abatement may be required depending on road conditions.

ARCHAEOLOGICAL SITES / AESTHETICS / DEMANDS ON ENVIRONMENTAL RESOURCES:

Table 12, *Impacts to Archeological Sites, Aesthetics, and 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		
No-Action														
Historical or Archaeological Sites	**X**				**X**				**X**					**ARCH-1**
Aesthetics	**X**				**X**				**X**					
Demands on Environmental Resources of Land, Water, or Energy	**X**				**X**				**X**					
Action														
Historical or Archaeological Sites	**X**				**X**				**X**					**ARCH-1**
Aesthetics		**X**				**X**				**X**			**Y**	**AEST-1**

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		
Demands on Environmental Resources of Land, Water, or Energy	**X**				**X**				**X**					

Comments:

ARCH-1: Scoping letters were sent to those Tribes that requested to be notified of DNRC timber sales. No response was returned that identified a specific cultural resource issue. 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 results revealed that no cultural or paleontological resources have been identified in the APE, but it should be noted that Class III level inventory work has not been conducted there to date.

Because the topographic setting and geology suggest a low to moderate likelihood of the presence of cultural or paleontological resources, proposed timber harvest activities are expected to have *No Effect* to *Antiquities*. No additional archaeological investigative work will be conducted in response to this proposed development. 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.

Mitigations:

- 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 cover type and sapling stage lodgepole stands. This proposal would harvest approximately 500 feet of the Star Meadow roadside.

Mitigations:

- Timber sale design would minimize visual impacts by variably spacing retention trees in the units and implementing visual screens along open roads.

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.*

- Shorts Meadow/Evers Creek Timber Sale Project – Completed in 2010, this project removed 3.4 MMBF of sawlogs from this area.
- Round Star Resource Management Project (RSRMP) – This USFS timber management project is located west and east of the Shorts-Evers Timber Sale Project area. Timber Sales associated with

the RSRMP will be sold during the next 4-5 years. Harvest and hauling may occur concurrently with the Shorts-Evers Timber Sale Project.

- Cyclone Bill Project – This USFS timber management project is located south of the of the Shorts-Evers Timber Sale Project area. The final decision for this project will be submitted during the winter of 2023.

Impacts on the Human Population

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

Table 13, *Impacts to 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		
No-Action														
Health and Human Safety	**X**													
Industrial, Commercial and Agricultural Activities and Production	**X**													
Quantity and Distribution of Employment	**X**													
Local Tax Base and Tax Revenues	**X**													
Demand for Government Services	**X**													
Access To and Quality of Recreational and Wilderness Activities	**X**													
Density and Distribution of population and housing	**X**													
Social Structures and Mores	**X**													
Cultural Uniqueness and Diversity	**X**													
Action														
Health and Human Safety		**X**			**X**					**X**			**Y**	**H-1**
Industrial, Commercial and Agricultural Activities and Production		**X**				**X**				**X**			**Y**	**H-2**
Quantity and Distribution of Employment	**X**				**X**				**X**					**H-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		
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**				**N**	**H-4**
Density and Distribution of population and housing	**X**				**X**				**X**					
Social Structures and Mores	**X**				**X**				**X**					
Cultural Uniqueness and Diversity	**X**				**X**				**X**					

Table H-1. *Impacts of alternatives on Human Population*

Comments:

- H-1: Log traffic would occur within the project area and along Star Meadow County Road increasing the potential for traffic accidents. An estimated 10 log trucks per day and occasional administrative traffic would occur Monday through Friday. Log truck traffic from this sale and adjacent USFS sales would increase traffic if the projects were operating concurrently. Mitigations would be applied to help communicate to the public and residents that logging and hauling operations are active.
- H-2: A consistent flow of timber contributes towards meeting the current and future demand for raw material resources to operate value-added timber products manufacturing facilities.
- H-3: Employment in the logging industry is common in the area and this project would, in a small part, contribute to local employment in the logging industry and other supporting industries.
- H-4: Horseback riding, hunting, trapping, bike riding, walking, biking, and Nordic skiing have been observed by DNRC staff in the project area. Noise and traffic associated with harvest activities would likely lessen the public's quiet enjoyment of the area. It would be expected that some recreational activities would temporarily be displaced until harvest operations and log hauling has been completed.

Mitigations:

- Signs displaying location of harvest activities and logging would be installed.
- Existing restriction levels would continue to be applied to project area roads.
- Trees would be removed to improve the line of sight on the intersection of Star Meadow County Road and Evers Creek connection road (60E)

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.*

- Flathead County Community Wildfire Protection Plan

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

Action: The timber harvest would generate additional revenue for the Public Buildings Trust. The estimated return to the trust for the proposed harvest is $538,532 based on an estimated harvest of 2,711,862 board feet (18,108 tons) and an overall stumpage value of $29.74 per ton. 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 timber harvest would generate additional revenue for the School for the Deaf and Blind Trust. The estimated return to the trust for the proposed harvest is $42,469 based on an estimated harvest of 213,857 board feet (1,428 tons) and an overall stumpage value of $29.74 per ton. 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.

DNRC, 2011. Montana Forestry Best Management Practices Monitoring: The 2010 Forestry BMP Audits Final Report. Montana Department of Natural Resources and Conservation, Forestry Division.

FWP, 2023. "FishMT" 1 March, 2023. < https://myfwp.mt.gov/fishMT/waterbody/55910>

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: Joseph Rizzi
Title: Management Forester
Date: April 3, 2023

Finding

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 the Type and Purpose of Action section of this document. This project received six public comments during the 30-day scoping period. These comments were addressed in the analysis.

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). An estimated $581,000.64 would be generated for the Public Buildings Trust and for the School for the Deaf and Blind Trust.

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. 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 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

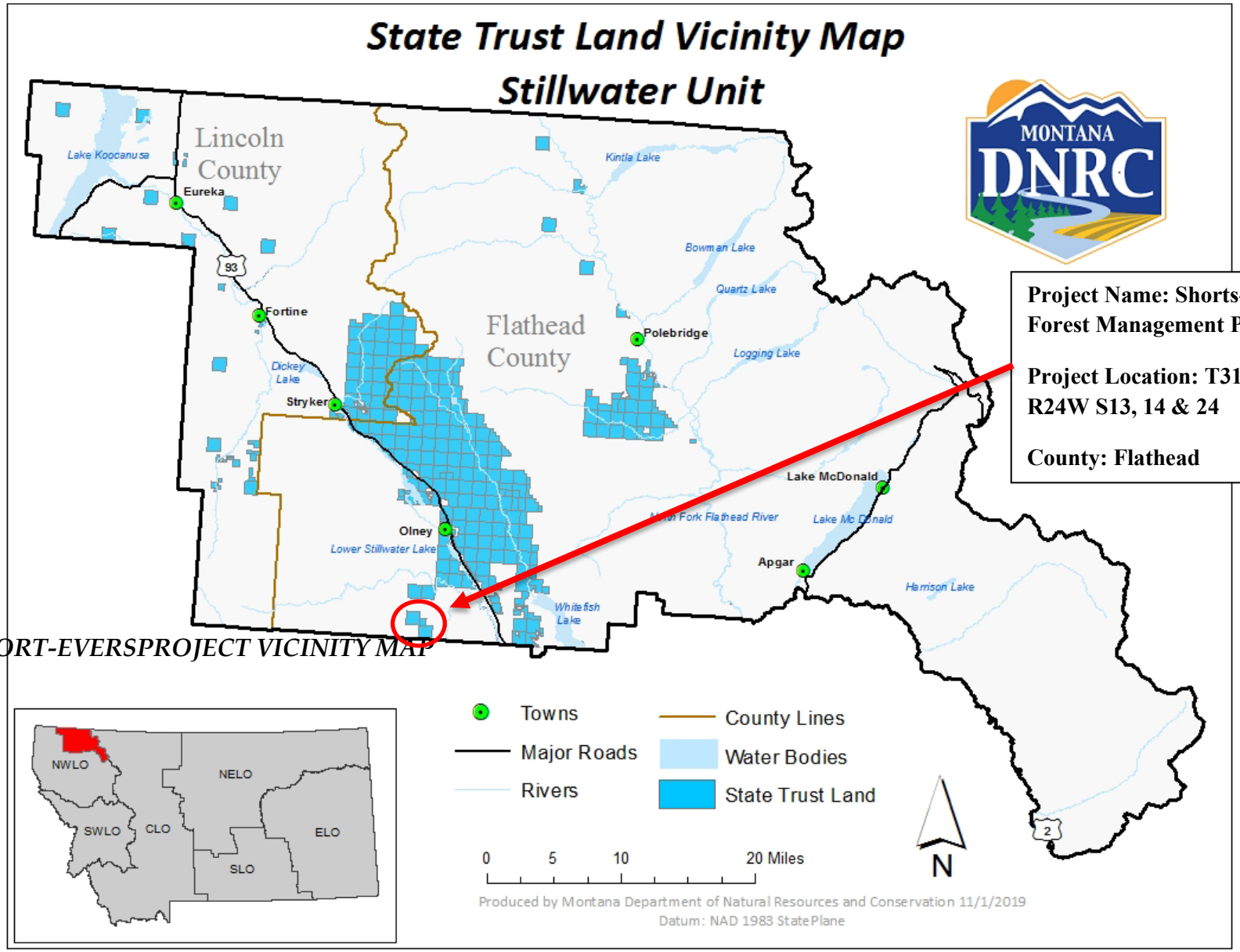
[ ]	EIS	[ ]	More Detailed EA	[X]	No Further Analysis

Environmental Assessment Checklist Approved By:

Name: Dave Ring
Title: Stillwater Unit Manager
Date: April 4, 2023
Signature: /s/ David A. Ring

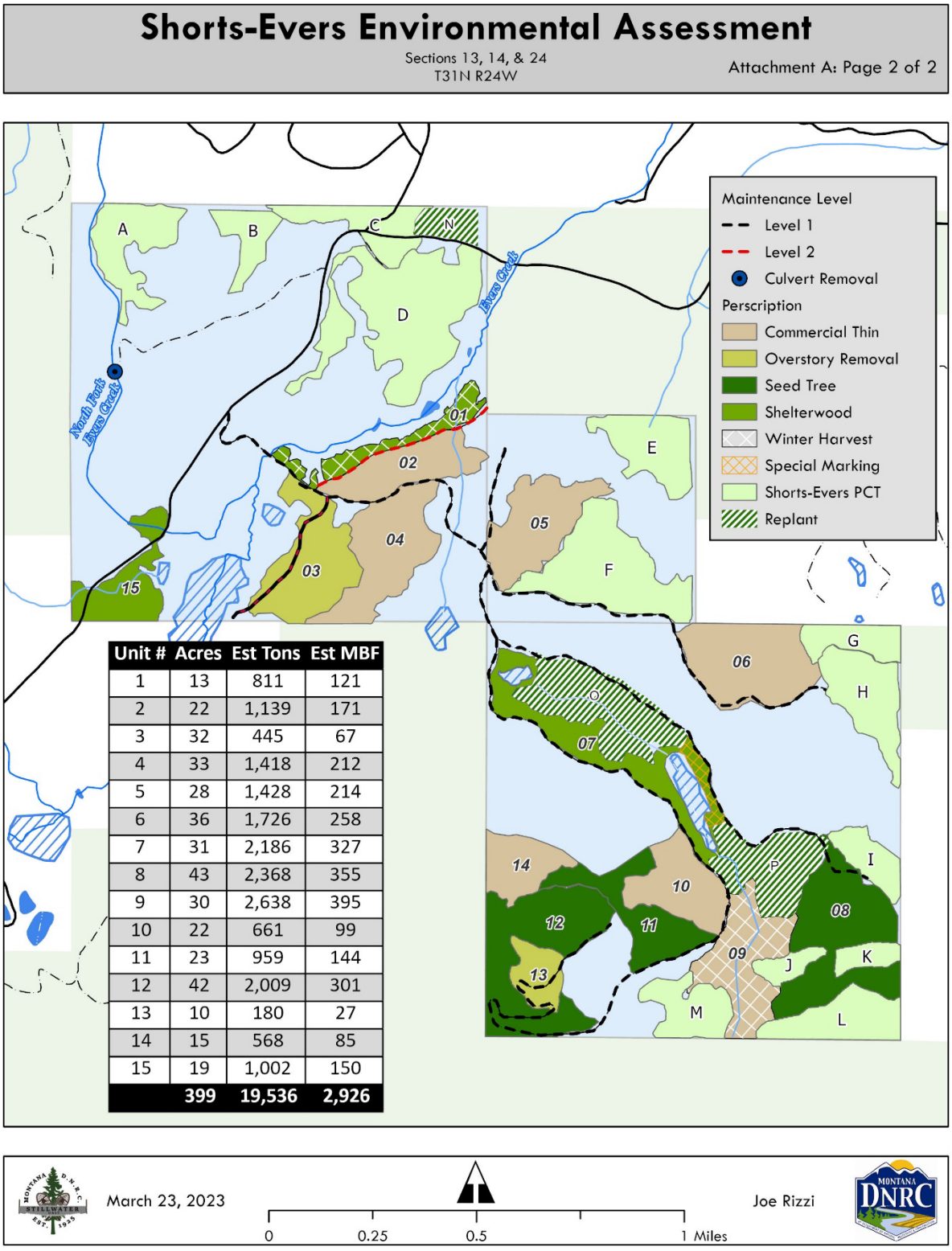
Attachment A - Maps

A-1: Timber Sale Vicinity Map



SHORT-EVERSPROJECT VICINITY MAP

A-2: Timber Sale Harvest Units



Unit #	Acres	Est Tons	Est MBF
1	13	811	121
2	22	1,139	171
3	32	445	67
4	33	1,418	212
5	28	1,428	214
6	36	1,726	258
7	31	2,186	327
8	43	2,368	355
9	30	2,638	395
10	22	661	99
11	23	959	144
12	42	2,009	301
13	10	180	27
14	15	568	85
15	19	1,002	150
	399	**19,536**	**2,926**

Attachment B - Shorts-Evers Forest Management Project Prescription Table

Shorts-Evers Forest Management Project Prescription Table

Commercial Harvest Units				
Unit #	Est. acres	Cut total & Cut Mbf/ ac	Prescription	Particulars involved in units
1	13	121 Mbf 9 Mbf/ac	Shelterwood	-Tractor Harvest Unit -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre. -Protect all submerchantable timber -WL & DF Marked to cut at 20'-40' spacing; Cut all white woods; The residual stand will have a clumpy-gappy visualization -2 acres of Class 1 SMZ harvest using HCP allowances for DFC marked to cut -Winter harvest only -Excavator-scarify for natural regen with WL/DF interplanting in the SMZ
2	22	171 Mbf 8 Mbf/ac	Commercial Thin	-Tractor Harvest Unit -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre. -Preference to leave western larch, then Douglas fir, then white wood at 25'-30' spacing -Protect all submerchantable timber - 1.5 acres of Class 2 SMZ harvest in unit marked to cut
3	32	67 Mbf 2Mbf/ac	Overstory Removal	- Tractor harvest unit -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre. -Protect all submerchantable timber -Pre-commercial thin post-harvest
4	33	212 Mbf 7 Mbf/ac	Commercial Thin	- Tractor harvest unit -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre. -If DBH>15" leave at 50' spacing. -If DBH<15" leave at 25' spacing -Species preference to retain: WL>DF>ES>LP>GF>AF -Protect all submerchantable timber -Pre-commercial thin post harvest
5	28	214 Mbf 8 Mbf/ac	Commercial Thin	- Tractor harvest unit -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre. -If DBH>15" leave at 50' spacing; -If DBH<15" leave at 25' spacing -Species preference to retain: WL>DF>ES>LP>GF>AF -Protect all submerchantable timber -Unit contains ERZ
6	36	258 Mbf 7 Mbf/ac	Commercial Thin	- Tractor harvest unit -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre. -If DBH>15" leave at 50' spacing; -If DBH<15" leave at 25' spacing -Species preference to retain: WL>DF>ES>LP>GF>AF -Protect all submerchantable timber -Pre-commercial thin post harvest -Unit contains .2 ac isolated wetland
7	31	327 Mbf 10 Mbf/ac	Shelterwood	-Tractor Harvest Unit -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre. -Protect all submerchantable timber -Retain WL and DF under 15" DBH at 25' spacing and equal to or over 15" DBH at 50' spacing; Cut all white woods; The residual stand will have a clumpy gappy visualization -WMZ harvest will occur along two wetlands -Excavator scarify for natural regen with WL/DF interplanting in the WMZ

8	43	355 Mbf 8 Mbf/ac	Seed Tree	- Tractor harvest unit -Marked to leave at 10-12 TPA -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre -Protect all submerchantable timber -Natural regeneration using prescribed fire or mechanical scarification
9	30	395 Mbf 13 Mbf/ac	Commercial Thin	- Tractor harvest unit -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre. -Thin to 30' spacing - Species preference to retain: WL>DF>ES>LP>GF -Protect all submerchantable timber -4.5 acres of Class 2 SMZ marked to cut -Winter harvest only
10	22	99 Mbf 4 Mbf/ac	Commercial Thin	- Tractor harvest unit -Thin to 30' spacing - Species preference to retain: WL>DF>ES>LP>GF>SAF -Retain a minimum of 2 snag recruits>21" DBH and 2 of the largest snags per acre -Protect all submerchantable timber
11	23	144 Mbf 6Mbf/ac	Seed Tree	- Tractor harvest unit -6-10 TPA or 85'-66' spacing depending on aspect -Leave all Ponderosa Pine then WL>DF -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre -Protect all submerchantable timber -Site prep with prescribed fire or mechanical scarification for natural regen
12	42	301 Mbf 7Mbf/ac	Seed Tree	- Tractor harvest unit -10-12 TPA or 66'-60' spacing depending on aspect -Leave all Ponderosa Pine then WL>DF -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre -Site prep with prescribed fire or mechanical scarification -Plant PP 30% and WL 70% at 14x14
13	10	27 Mbf 3 Mbf/ac	Overstory Removal	- Tractor harvest unit -Cut diseased and susceptible DF and leave PP and WL for snags and seed source -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre -Precommercial thinning following harvest -Grizzly Bear hiding cover patch will be retained
14	15	85 Mbf 6 Mbf/ac	Commercial Thin	- Tractor harvest unit -Retain WL and DF under 15" DBH at 25' spacing and equal to or over 15" DBH at 60' spacing; Cut all white woods -Protect submerchantable timber -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre
15	19	150 Mbf 8 Mbf/ac	Shelterwood	-Tractor Harvest Unit -Retain a minimum of 2 snag recruits >21" DBH and 2 of the largest snags per acre. -WL & DF Marked to cut at 20'-40' spacing; Cut all white woods; The residual stand will have a clumpy gappy visualization -Protect all submerchantable timber -Class 1 SMZ and RMZ in portion of stand -Visual screen along Star Meadow road -Mechanical site prep for natural regeneration -Designated class 3 SMZ crossing

Pre-commercial Thinning/Slashing Units				
Unit #	Est. acres	Remaining Stems/ ac.	Prescription	Particulars involved in units
3	32	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
4	33	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
6	36	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
13	10	170 - 222	Pre-commercial thinning	-Pre-commercially thin the following species to 14' or 16' spacing -Species priority: ---western larch ---ponderosa Pine - Pre-commercially thin the following species to a 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
A	21	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir

B	10	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
C	17	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
D	56	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
E	20	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
F	40	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir

G	11	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
H	22	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
I	10	170 - 222	Pre-commercial thinning	-Pre-commercially thin the following species to 14' or 16' spacing -Species priority: ---western larch ---ponderosa Pine - Pre-commercially thin the following species to a 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
J	6	170 - 222	Pre-commercial thinning	-Pre-commercially thin the following species to 14' or 16' spacing -Species priority: ---western larch ---ponderosa Pine - Pre-commercially thin the following species to a 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
K	6	170 - 222	Pre-commercial thinning	-Pre-commercially thin the following species to 14' or 16' spacing -Species priority: ---western larch ---ponderosa Pine - Pre-commercially thin the following species to a 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir

L	19	170 - 222	Pre-commercial thinning	-Pre-commercially thin the following species to 14' or 16' spacing -Species priority: ---western larch ---ponderosa Pine - Pre-commercially thin the following species to a 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir
M	16	170 - 222	Pre-commercial thinning	-Thin the following species to 14' or 16' spacing ---western larch ---Douglas-fir -Thin the following species to 10' spacing ---lodgepole pine ---Engelmann spruce ---grand fir ---subalpine fir

Replant Units				
Unit #	Est. acres	Spacing	Prescription	Particulars involved in units
N	7	14 x 14	Replant	-100% western larch
O	33	20 x 20	Replants	-50% western larch -50% Douglas-fir -Consider Engelman spruce
P	25	20 x 20	Replant	-50% western larch -50% Douglas-fir -Consider Engelman spruce