Loose Horse Projects
Environmental Assessment Checklist

Clearwater Unit
Southwest Land Office
Montana Department of Natural Resources and Conservation
August 2025

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Project Name: Loose Horse Projects
Proposed Implementation Date: September, 2025
Proponent: Clearwater, Southwest Land Office, Montana DNRC
County: Missoula

Type and Purpose of Action

Description of Proposed Action:

The Clearwater Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the Loose Horse Projects. The project is located approximately 9.25 miles south of Seeley Lake, Montana (refer to **Attachments A-1 Vicinity Map, A-2 Proposed Silvicultural Harvest Treatments Map, A-3 Proposed Forest Improvement Projects Map, A-4 Proposed Road Maintenance Map**) and includes the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools	**S19 T15N R14W** **S30 T15N R14W**	**609** **448**	**26** **241**
Public Buildings			
MSU 2nd 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	**S30 T15N R14W**	**160**	**21**
Veterans Home			
Public Land Trust			
Acquired Land			

Objectives of the project include:

- Contribute to the DNRC's annual target of timber harvest volume (sustained yield) as mandated by state law (*77-5-221, MCA*).
- Generate revenue for the trust beneficiaries (Common Schools, Pine Hills School).
- Minimize the risk of devastating wildfire by reducing fuel loading and stand density through silvicultural treatments and pre-commercial thinning.
- Return stands to their Desired Future Condition (ARM 36.11.405) using silvicultural treatments, site preparation, and planting.
- Improve stand growth and vigor and reduce the threat of future losses to fires, insects, and disease.

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	Acres
Seed Tree	238
Shelterwood	7
Selection	47
Total Treatment Acres	**292**
Proposed Forest Improvement Treatment	Acres
Pre-commercial Thinning	22
Site preparation/scarification	13
Planting	*As needed*
Prescribed burning	*As needed*
Proposed Road Activities	Miles
Road maintenance	5.72

Duration of Activities:	10 years
Implementation Period:	September 2025 – March 2035

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:
  - February – March, 2025
- PUBLIC SCOPED:
  - The scoping notice was posted on the DNRC Website: https://dnrc.mt.gov/News/scoping-notices
  - The Initial Proposal was emailed to the Statewide and Clearwater Unit Timber Lists, agencies, and other organizations which have expressed interest in DNRC's management activities.
  - The Initial Proposal was mailed to an additional three adjacent landowners.
- AGENCIES SCOPED:
  - Montana Department of Fish, Wildlife, and Parks (FWP), United States Forest Service (USFS)
  - Montana Tribal Nations
- COMMENTS RECEIVED:
  - How many: The DNRC received one comment from the Initial Proposal
  - Concerns: FWP wrote a comment letter proposing various mitigations for bears.
  - Results: A letter was written in acknowledgement of FWP's concerns and stated that DNRC will utilize appropriate specialists and mitigations when necessary.

DNRC Interdisciplinary Team:

- **Project Leader:** Travis M. Serdar
- **Hydrologist & Soil Scientist:** Andrea Stanley
- **Fisheries Biologist:** Mike Anderson
- **Wildlife Biologist:** Garrett Schairer
- **Archeologist:** Patrick Rennie
- **MEPA Planner:** Emilia Grzesik

Internal and external issues and concerns were incorporated into project planning and design and would 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 https://dnrc.mt.gov/TrustLand/about/planning-and-reports.

- **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 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.

ALTERNATIVES CONSIDERED:

No-Action Alternative:

- The proposed forest management activities would not occur.
- No revenue would be generated from the included Common Schools trust or the Pine Hills School trust parcels under this proposed project.
- Insects and disease would continue to cause damage and mortality to trees.
- Stands would remain overstocked and at incipient threat of insect and disease attacks.
- Concerns regarding overstocked stands and associated fire danger would continue.
- Shade-tolerant species would continue to out-compete seral species, removing stands from their historic cover type and species distribution and away from the Desired Future Condition (DFC) (ARM 36.11.405) in most stands.
- Other uses such as recreation, fire suppression, requests for permits, and ongoing management requests may still occur.

Action Alternative:

- Proposed forest management would occur, including commercial timber harvest, pre-commercial thinning, site preparation, and planting.
- Additional revenue would be generated for the Common Schools trust and Pine Hills School trust.
- Commercial harvest of 292 acres would produce an estimated one and a half million board feet of volume to contribute to the DNRC's sustained yield, as mandated by state statute *77-5-222*.
- Stand stocking levels would be reduced and could show a decrease in losses by insect and disease.
- Fuel conditions would be improved and risk of fire spread on DNRC lands would be decreased.
- A mix of even-aged and intermediate forest management strategies would be applied across the harvested units to promote DNRC's Desired Future Condition.
- Weed management and road maintenance would occur.
- Other uses such as recreation, fire suppression, requests for permits, and ongoing management requests may still occur.

Impacts on the Physical Environment

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

VEGETATION:

Stand History / Past Management:
This area falls within the Bitterroot-Blackfoot climatic section M332B, which was historically 79% forested (Losensky, 1997). The project area ranges in elevation from 3,990 to 4,280 feet. These areas were historically dominated by large, mature ponderosa pine and western larch / Douglas-fir stands.

Western larch/Douglas-fir stands occupied about 4% of the climatic section. Past harvest treatments were not necessarily done with the same ideals that we use today. As a result, some stands have regenerated to a different species than what would be historically expected. Now, compared to the Desired Future Condition, Douglas-fir and other cover types are over-represented while ponderosa pine stands are vastly under-represented. See table V-1 below.

Fire played a large role in shaping these stands. Much of this proposed sale area (808 acres) is classified as Fire Group six (Fisher and Bradley 1987). These sites were “shaped” by wildfire and had a Mean Fire Interval of 42 years (Arno and Gruell 1983). Throughout the sale area there is evidence of both infrequent and stand replacing fires and light ground fires. Evidence (fire scars on 200+ year old ponderosa pine trees and occasional stumps) found during field reconnaissance indicates that these fires burned in the 1800s through their harvest date. It is certainly believable that this fire occurrence preceded that date. In many cases, the climax species such as Douglas-fir have begun to dominate the stands. Often, regeneration present is predominantly Douglas-fir and is in either the seedling or sapling stage. A few patches of advanced pole stage regeneration are also present within the project area.

Although fire shaped these stands prior to the arrival of European settlers, much of this area has been treated by timber harvesting. Given the location of these stands adjacent to the Clearwater River, Blackfoot River, Greenough, and an extensive railroad system at the time of this harvest, harvest has occurred in this area since the late 1880’s.

DNRC has managed the north ½ of the northeast ¼ and east ½ of the southeast ¼ of section 30 since 1894. The remaining portions of sections 19 & 30 were acquired by DNRC from Champion International and Montana Department of Fish, Wildlife and Parks. DNRC records show timber harvest entries within these sections dating back to 1945. It is likely that several entries were made prior to 1945 for which records do not exist. The recent harvest entries are listed below:

- Clearwater River #2 Timber Sale (2000)
- Clearwater River #3 Timber Sale (2003)
- Clearwater PCT (2009)
- Clearwater Flats PCT 2010)
- Clear Down PCT (2011)
- Winterkill Timber Permit (2018)
- South of Blanchard Timber Sale (2020)
- Lost Elbow Timber Sale (2024)

Issues and Concerns: *The following issue statements were developed during scoping regarding the effects of the proposed action to vegetation.*

- The present timber stand species mixes do not meet the Desired Future Condition (DFC).
- Shade tolerant species would continue to out-compete seral species, removing stands from their historic cover type and species distribution.
- Tree mortality from insects and disease is above acceptable levels.
- Young stands are currently overstocked.
- Forest fuel loadings are at moderate to high levels, increasing risk of intense wildfire.
- Timber harvest and road building may result in the introduction of new weeds or increased spread of noxious weeds.
- There is a concern proposed project activities could negatively impact populations of threatened, endangered, or sensitive plant species.

Vegetation Existing Conditions:

Table V-1: Current and appropriate cover type for the Loose Horse Projects area.

Cover Type	Current Acres	Current Percent of Project Area	Desired Future Condition (DFC)	
			Acres	Percent
Douglas-fir	19.5	**6.7 %**	-	0%
Western larch	13.5	**4.6%**	-	0%
Douglas-fir / western larch	28.1	**9.6%**	-	0%
Ponderosa pine	230.9	**79.1%**	292	**100%**
Total:	292	100%	292	100%

Acres in table include road acreage within cover types.

Harvest Unit	Habitat Group	Fire Regime	Current Cover Type	Age Class (years)	DFC	RX	Acres
1	Moderately warm and dry (westside)	Low-to-mixed	Ponderosa pine	0-39	Ponderosa pine	Seed Tree	238
2	Moderately warm and dry (westside)	Low-to-mixed	Ponderosa pine	0-39	Ponderosa pine	Individual/Select Tree Harvest	20
3	Moderately warm and dry (westside)	Low-to-mixed	Douglas-fir	100-149	Ponderosa pine	Individual/Select Tree Harvest	27
4	Moderately warm and dry (westside)	Low-to-mixed	Douglas-fir	100-149	Ponderosa pine	Shelterwood Harvest	7

Fire Hazard/Fuels:
Overstocking of young sawtimber in combination with ladder fuels in the lower canopy levels may promote intense crown fires if wildfire were to occur in some portions of the project area. Other portions of the project area are widely spaced with a grass understory and heavy pine needle accumulation, which could lead to mortality from a low intensity fire by smoldering on top of the roots or girdling the base of tree boles. Brush and densely stocked regeneration in other portions of the project area have moderate and mixed levels of fire hazard. Harvest treatments during entries 25-50 years ago mitigated some of these hazards, though some of the area has grown back to pre-treatment levels of fuel loading and therefore fire hazard.

Insects and Diseases:
Background levels of insect and disease damage within the project area include persistent spruce budworm defoliation, sporadic bark beetle outbreaks, disfigurement from ungulate forage, and pockets of root rot diseases.

Mortality from western pine beetle (*Dendroctonus brevicomis)* and / or mountain pine beetle (*Dendroctonus ponderosae*) can be observed sporadically throughout the project area.

The current stand conditions lend themselves to continuing and increasing spruce budworm defoliation, further bark beetle outbreaks, continued disfigurement from ungulate forage, increasing mortality from root rot diseases.

Sensitive/Rare Plants:
The Montana Natural Heritage Program (MNHP) has identified two rare vascular plants that are known to exist within the general proximity of the project area. None of the plants were discovered within the project area, however the following plant species may exist in the surrounding area based on data from MNHP.

- Howell's Gumweed *(Grindelia howellii)*
- Beck Water-marigold *(Bidens beckii)*

Howell's Gumweed may also occur in disturbed areas such as roadsides. The MNHP website states:

> *Most populations are small and many occur on roadsides or other similarly disturbed habitat. This habitat preference in conjunction with the short-lived nature of the species means occurrences may drift from place to place or from year to year and as a result many occurrences may be ephemeral. These attributes make determination of population numbers as well as the number of extant populations at any given time difficult to assess. Invasive weeds are a threat to many occurrences, as the habitat occupied by* G. howellii *is also favorable for many weedy species. Application of herbicides to control these weeds, especially along roadsides may also have a direct, negative impact.*

Noxious Weeds:
Noxious weeds occurring in the project area consist mainly of spotted knapweed (*Centaurea maculosa*), houndstongue (*Cynoglossum officinale L*), common mullein (*Verbascum thapsus*) and Canada thistle (*Cirsium arvense*).

Knapweed is extensive throughout the area, primarily along roads, old log landings, primitive dispersed campsites along open roads, and drier forested and non-forested portions of the project area. Moist sites with well-established surface vegetation provide a competitive advantage over noxious weed establishment. Reseeding of roadcuts followed by roadside spot herbicide treatments has been used on portions of the project area. This has helped reduce the spread of noxious weeds.

Introduction and continual spread of noxious weeds comes from past timber harvest and hauling activities, soil disturbance from fire, recreational use such as horseback riding, wildlife grazing and off-road vehicles carrying seed along roads and old skid trails.

Old Growth
No Old Growth (as defined by Green, et al.) exists within the proposed project area. Younger trees would typically be targeted for harvest while retaining healthy, vigorous, mature trees. This would increase the stand age and shorten the length of time required for stands within the project area to reach Old Growth status, as well as increase forest resiliency to disturbance.

Environmental Effects:

No-Action Alternative – Direct, Indirect, and Cumulative Effects:
The No-Action alternative would not change the current existing conditions within the proposed project area. The proposed management activities—including commercial harvest, pre-commercial harvest, site preparation, planting, weed management, road maintenance, and road abandonment—would not occur. These stands would remain at overstocked levels and at a greater susceptibility to insects and disease.

Concerns of potential hazardous forest fuel loading would not be treated. All pre-commercial stands would continue to grow with decreased vigor and would show increased mortality. As a result, there would be low to moderate risk of direct impacts, and low to no impacts in the secondary and cumulative impacts to the vegetative community.

Rare plants and noxious weeds would be unaffected. Treatment of noxious weeds would likely occur under another project if necessary.

Action Alternative – Direct, Indirect, and Cumulative Effects:
This proposal includes commercial timber harvest under two sales on approximately 808 acres, removing an estimated three million board feet. Additional timber permits may occur as necessary. Pre-commercial thinning would also occur under this assessment on a proposed 306 acres. The DNRC would try to address the concerns within the Existing Conditions on these acres using various site-specific treatments. Silvicultural prescriptions would vary based on stand conditions and would include the following management strategies:

Selection Harvest:
Selection harvest is an intermediate treatment meant for stands managed under an uneven-aged system. These harvest methods lead to establishment and management of multiple size and age classes within a timber stand. An “Individual Tree Selection” considers the spacing and growth requirements of each residual tree within the stand. An Individual Tree Selection prescription would be applied to Units 2 and 3.

General spacing can vary, but the average application would leave an average of 22 to 65 residual trees per acre, and 40 to 80 square feet of basal area per acre. Past management resulted in successful regeneration in Unit 2, therefore only 5-15 trees per acre would be retained and concentrated in the areas where regeneration was unsuccessful. Unit 3 was not commercially treated with the last entry. It has less regeneration and more diversity of sizes and species in the canopy. This stand would receive a prescription leaving 25-35 trees per acre which should promote regeneration and maintain a multistory canopy.

Seed Tree
Seed tree harvest prescriptions are an even-aged management system which leave residual trees for the purpose of seeding and regenerating the stand. Where applicable, the trees with the best form and displaying highest quality genetics are selected for retention. Typically seral trees such as ponderosa pine and western larch are most favorable for retention with this treatment.

Residual stocking levels could be between 4 and 15 trees per acre, resulting in average spacing ranging from 50 to 100 feet between trees. Residual basal area could range from 7 to 21 square feet per acre. Two snags and two snag recruits, at minimum, would be left to comply with DNRC’s HCP commitments.

The stands proposed for seed tree harvest were treated under the Clearwater River timber sale. Seral tree regeneration was an objective of the harvest prescription, however lack of soil disturbance due to winter logging did not prepare an adequate seed bed for seral trees to regenerate. This proposal would include summer-only harvest restrictions or other means of preparation of a seed bed. If seral tree regeneration is again unsuccessful, planting may occur to supplement the residual stand.

Shelterwood Harvest
Shelterwood harvest is a traditional prescription that is a “regenerative” harvest. This is designed to produce regeneration of a preferred tree species that has been chosen and has been left as a “shelter” above the regeneration. This overstory stand is later removed (within regulations of the landowner). The stand which is proposed to receive this treatment is composed primarily of western larch, with a few Douglas-fir and ponderosa pine in the subdominant overstory.

Spacing after harvest is predicted to be variable and would be based upon the individual tree characteristics. It would range between 25 and 35 trees per acre, with an average spacing of 30 feet between residual trees. The reduction of the overstory and treatment of the existing pole size and subdominant overstory generally causes a stand to produce regeneration of the remaining overstory. The reduction of the total western larch number in the overstory, and a percentage increase of other species (ponderosa pine and Douglas-fir) would promote a stand closer to pre-settlement times. The proposed stand density would make limited resources (light, water, and nutrients) more plentiful for the residual overstory trees and potential regeneration. These changes would continue the progression toward the DNRC appropriate condition.

Pre-Commercial Thinning
The treatment of pre-commercial thinning is defined as removing small trees to reduce stand stocking, release of limited nutrients (water, light, and nutrients), and improve growth of desired trees. It has also proven to decrease the loss of deterioration through mortality and poor growth over a longer time period, especially on poor sites. Small trees (<6 inches diameter at breast height) are the target of this silvicultural prescription. This treatment often follows a harvest treatment where quality regeneration is present.

Residual spacing from pre-commercial thinning treatments would leave on average between 134 and 435 trees per acre, resulting in spacing ranging from 10 to 18 feet between trees.

Fuel treatment after the pre-commercial thinning would include slashing of felled trees to a level less than 18 inches above the ground, or hand piling of the material to be burned in the future.

Planting
Tree planting could occur under this proposal. The purpose of planting would be to bolster natural regeneration from even-aged treatments such as Seed Tree harvest where natural regeneration has been poor in the past, and in areas of pure Douglas-fir where ponderosa pine is desired instead.

Seedling spacing for any planting activities would generally be between 10 and 15 feet, or 194 to 435 trees per acre. Planting density could increase in open areas and decrease in areas where good seed sources exist.

Site preparation such as dispersed skidding, unit pile burning, equipment scarification, and broadcast burning may precede the planting activities.

Site Preparation / Scarification
Site preparation is necessary for several seral species including ponderosa pine and western larch to regenerate naturally. These species require exposed mineral soil for the successful germination and establishment of their seeds. This can be achieved through dispersed skidding, unit pile burning, equipment scarification, or broadcast prescribed fire.

To ensure enough mineral soil is exposed in areas where natural regeneration is desired, one or more of these activities may be utilized.

Prescribed Fire
Prescribed fire would occur in the form of pile burning and broadcast burning for purposes of slash disposal, site preparation, and fuel hazard mitigation.

Slash residue generated from commercial timber harvest would be treated on a project-specific basis. While some landing piles would be allowed, many would be distributed throughout the harvest area. When these piles are burned, they would create small areas of exposed mineral soil, facilitating seral tree regeneration.

Road Maintenance
Road maintenance would occur on all existing roads within the project area. This includes 5.72 miles of existing mainlines, arterials, and spur roads.

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				V-2
Insects/Disease			X			X				X				V-3
Rare Plants	X				X				X					
Noxious Weeds		X				X			X					
Action														
Current Cover/DFCs			X		X				X					V-1
Age Class		X			X				X					
Old Growth	X				X				X					
Fire/Fuels		X				X				X			Y	V-2
Insects/Disease		X				X				X			Y	V-3
Rare Plants		X			X				X					
Noxious Weeds		X				X			X				Y	V-4

Comments:

V-1: Currently, 20.9% (61.1 acres) of the proposed treatment area is forested with a cover type inconsistent with the Desired Future Condition. Under this proposal those acres would receive silvicultural harvest treatments which would convert the cover type from Douglas-fir (19.5 acres), western larch (13.5 acres) and western larch/Douglas-fir (28.1 acres) to ponderosa pine. See Table V-1 above.

V-2: Given the previously mentioned fire hazard and fuels segment it is likely that the existing fuels could help create a large fire within the project area. This potential wildfire could burn at an intensity that would change fuel conditions and fire hazards. Similarly, the proposed actions also would have a direct effect on reducing the fire hazard and fuels by increasing crown spacing and reducing fuelbed continuity and ladder fuels within the treated stand.

V-3: Under the No-Action Alternative, existing forest health conditions would persist including defoliation and sporadic mortality. The Action Alternative would have a favorable effect on stand conditions by targeting affected trees and managing for stand conditions which are less susceptible to defoliation and mortality caused by insects and diseases. See previous portions of Vegetation Section regarding insects and diseases.

V-4: Timber harvest could introduce or spread noxious weeds, but mitigation measures would be utilized.

Recommended Mitigation Measures for Vegetation: *The analysis and levels of effects to vegetation resources are based on implementation of the following mitigation measures.*

- Favor ponderosa pine and western larch in harvest units and pre-commercial thinnings to shift species represented toward the accepted Desired Future Condition (DFC).
- Plant ponderosa pine and western larch in planting units where natural regeneration is difficult to achieve. This would also ensure the establishment of the accepted DFC species for that unit.
- Harvest prescriptions would emulate natural disturbance historically present on the landscape.
- Healthy, vigorous, advanced regeneration exhibiting good form would be protected during harvest activities.
- Logging equipment would be washed before entering the sale area to limit noxious weed introduction.
- Grass seed would be planted on newly disturbed road surfaces to expedite grass establishment, thereby limiting the resources available for weeds to become established.
- Herbicide would be applied to spot infestations of weeds along roadways and landings, but spraying would be avoided within any Howell's gumweed populations.
- Slash produced during harvest would be piled and burned post-harvest to reduce fuel loading. In addition, any slash that remains in the woods would be scattered, limbed and slashed to a depth of no more than 18 inches.
- Snags, snag recruits and coarse woody debris would be managed according to ARM 36.11.411 through 36.11.414. Clumps of existing snags could be maintained where they exist to offset areas without sufficient snag presence. Course woody debris retention would emphasize retention of downed logs 15-inches diameter and larger.

Vegetation References:

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SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions:

The project is located in the eastern foothills of the Rattlesnake Mountains and approximately a half-mile west of the Clearwater River. Bedrock is mainly argillite and quartzite. Fractured bedrock is likely to be encountered at shallow depths. Soils are mainly gravely loams with the majority of the ground with shallow slopes. The ground is suitable for ground-based operations with mild slopes (less than 45%). Indicators of slope instability (e.g., scarps, debris fans, tilted or pistol-butted trees) have not been observed in the project area.

No unique or sensitive geologic features or unstable slopes have been identified within the project area.

Soils within the proposed harvest area are Evaro gravelly loams (37). These soils are very deep, somewhat excessively drained that formed in colluvium derived mainly from argillite and quartzite. These soils also have a large component of volcanic ash in the surface layer. These andisols are linked with forest productivity due to water and nutrient holding capacity. This is demonstrated by how the proposed harvest area follows the boundary of this soil type. Volcanic ash-cap soils such as those occurring within the project area are more sensitive to compaction and erosion risk under all moisture conditions (Crawford et al., 2021).

Concentrations of existing coarse woody debris (CWD) are appropriate to the site.

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**				**N/A**	**1**
Erosion	**X**				**X**				**X**				**N/A**	**1**
Nutrient Cycling	**X**				**X**				**X**				**N/A**	**1**
Slope Stability	**X**				**X**				**X**				**N/A**	**1**
Soil Productivity	**X**				**X**				**X**				**N/A**	**1**
Action														
Physical Disturbance (Compaction and Displacement)		**X**				**X**				**X**				**2, 3, 4, 5, 8**
Erosion		**X**				**X**				**X**				**2, 3, 5, 8**
Nutrient Cycling		**X**				**X**				**X**				**4, 5, 6**
Slope Stability	**X**				**X**				**X**					**7**
Soil Productivity		**X**				**X**				**X**				**4, 5, 6, 8**

Comments:

1. Implementation of the no-action alternative would result in no new soil resource impacts in the project area. Soil resource conditions would remain similar to those currently at the site.

2. The proposed harvest system would be ground-based. Soil and vegetation disturbance from harvest activities may result in temporary increased risk of erosion.

3. Soil disturbance and erosion risk increases with slope. Slopes in proposed harvest areas are mild (less than 45%). Therefore, risk for excessive soil disturbance and erosion are low.

4. Direct impacts by physical detrimental disturbance would likely occur by the proposed ground-based yarding. The net observable soil impact within harvest units treated with ground-based yarding system(s) are expected to be less than 13.2% of the project area and would be minimized by use of existing roads and skid trails. This disturbance rate estimate is based off previous soil disturbance monitoring of timber sales completed by the DNRC (DNRC, 2011).

5. Applicable state plans, rules, and practices have guided project planning and would be implemented during project activities, including the Montana Code Annotated (specifically Title 77, Chapter 5), the Administrative Rules of Montana (specifically Rule Chapter 36.11), the Montana Forest Best Management Practices, the DNRC Trust Lands Habitat Conservation Plan, and the State Forest Land Management Plan.

6. According to Graham et al. (1994), a minimum of 10 tons/acre of coarse woody debris (CWD) would be a desired post-harvest condition to maintain forest productivity for this forest habitat type. The action alternative would include increasing or maintaining CWD concentrations per mitigation described below.

7. Unstable slopes were not observed on site. The project is anticipated to have no risk to slope stability.

8. Site preparation by dispersed skidding would occur in the project area. These activities would be directed by the Forest Officer and are not anticipated to cause detrimental disturbance to project area soils. Areas with these types of slight disturbances can be quickly revegetated by tree seedlings and native vegetation (per State Forest Land Management Plan). See the mechanical scarification mitigations described below.

Soil Mitigations:

- BMP's would be implemented on all roads and within the units. A portion of lopped and scattered slash would be left in the units to mitigate erosion risks and retain nutrients on-site.

- Ground-based logging equipment (tractors, skidders, and mechanical harvesters) would be limited to slopes less than 45% unless not causing excessive disturbance.

- The Contractor and Sale Administrator should agree to a general skidding or dispersed skidding plan prior to equipment operations. Skid trails would be mitigated as needed and concurrent with harvesting and yarding operations with water bars and/or slash.
- The properties of the soils in the proposed harvest units make limiting harvest operations to dry or frozen conditions critical for preserving soil productivity. To prevent soil compaction ground-based mechanical felling and yarding would be restricted to one or more of the following conditions:
    - Soil moisture content at 4-inch depth less than 20% oven-dry weight.
    - Minimum frost depth of 4 inches.
    - Minimum snow depth of 18 inches of loose snow or 12 inches packed snow.

- For nutrient retention, minimum of 10 tons/acre of coarse and fine woody debris would be left on site (or return-skidded from landings). Existing CWD on site would remain undisturbed as much as possible.

- If mechanical scarification is used to encourage seedling establishment:
    - Ensure low-moisture soil conditions (less than 20% oven-dry weight).
    - Ensure equipment is washed and inspected for imported dirt, plant parts, and noxious weed seeds prior to entering the project area.
    - Limit the combination of disturbance and scarification to 30 to 40 percent of the harvested units or other designated areas. Consider disturbance incurred during skidding operations to, at least, partially provide scarification for regeneration.
    - 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.
    - Activities are guided with the objective of removing surface duff and minor amounts of topsoil, and not exposing more mineral soil than is necessary for obtaining desired seedling recruitment.
    - Consider working with the grazing licensee to rotate cattle out of scarified areas to encourage success of seedling establishment and reduce risk of weed seed introductions.

Soil References:

Crawford, L.J., Heinse, R., Kimsey, M.J., Page-Dumroese, D.S., 2021, Soil Sustainability and Harvest Operations: A Review. 40 p.

DNRC, 2011. DNRC compiled soils monitoring report on timber harvest projects, 2006-2010, 1st Edition. Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, MT.

Graham, R.T., Harvey, A.E., Jorgensen, M.F., Jain, T.B., and Page-Dumrose, D.S., 1994, Managing Course Woody Debris in Forests of the Rocky Mountains. U.S., Forest Service Research Paper INT-RP-477. Intermountain Research Station. 16p.

WATER QUALITY AND QUANTITY:

Water Quality and Quantity Existing Conditions:

The project is south of Lost Horse Creek and north of Blanchard Creek. Both creeks are tributary to the Clearwater River. A class 2 tributary to Lost Horse Creek is north of the proposed harvest area. This stream flows less than 6 months per year. A small wetland occurs south of this unnamed creek and would border one of the harvest areas. The project is within the watershed of Lost Horse Creek and the Clearwater River. No other surface water features occur within the project area. None of the water resources located within or adjacent to the project area are listed as impaired.

Field observations of Lost Horse Creek indicate the riparian functions of this creek have been degraded and are at risk within Section 19 due to localized heavy grazing, failure of abandoned beaver dams, and an existing undersized and laterally misaligned culvert. Work and management actions to improve these degraded conditions are planned with the Lost Elbow EA.

No road construction or reconstruction is proposed with this project. The haul route crosses Blanchard Creek 1,000 feet before joining Highway 200. This crossing is on a portion of the haul route maintained by Missoula County (Missoula County 2025).

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**				N/A	1
Water Quantity	**X**					**X**			**X**				N/A	1
Action														
Water Quality		**X**				**X**				**X**			**Y**	**2, 4**
Water Quantity		**X**				**X**				**X**			**Y**	**3**

Comments:

1. With no action, no timber harvesting or related activities would occur. Water quality conditions would likely persist similar to its current condition. Similarly, no risk of change to current fluctuations in annual water yield or stream flow would result.
2. Applicable state plans, rules, and practices have guided project planning and would be implemented during project activities, including the Montana Code Annotated (specifically Title 77, Chapter 5), the Administrative Rules of Montana (specifically Rule Chapter 36.11), the Montana Forest Best Management Practices, the DNRC Trust Lands Habitat Conservation Plan, and the State Forest Land Management Plan.

3. Changes to steam flow hydrology (water quantity or water flow) are expected to not be detectible with the Action Alternative within Lost Horse Creek and the Clearwater River, even when accounting for recent and planned harvest north of the project area with the State's Lost Elbow EA project area. When combined with what is proposed with this project the total harvest area would be 14% of the Lost Horse Creek watershed. Studies correlating vegetation harvest and treatment with streamflow yield have suggested approximately 15-20% of the watershed vegetation must be harvested to have a measurable increase in water yield in similar mountain environments (Stednick, 1996; and Bosch and Hewlett, 1982).

4. Proposed harvest activities exclude the SMZ of the Class 2 tributary of Lost Horse Creek north of the project area.

Water Quality & Quantity Mitigations:

1. Maintain or improve road drainage as needed to meet Montana Forestry BMP standards.

Water References:

Bosch, J.M. and J.D. Hewlett. 1982. A review of catchment experiments to determine the effect of vegetation changes on water yield and evapotranspiration. J. Hydrology, 55: 3-23.

Missoula County GIS. Queried June 2025. https://gis.missoulacounty.us/PropertyInformation/?l=Maintenance

Stednick, J.D. 1996. Monitoring the effects of timber harvest on annual water yield. J. Hydrology 176:79-95

FISHERIES:

Fisheries Existing Conditions:

Lost Horse Creek, north of the project area, is the nearest fish-bearing stream to the project area. The Westslope cutthroat (WCT) population in Lost Horse creek genetically pure. One Brown trout was captured in the lower portion of Lost Horse Creek during a 2018 survey. No other introduced species have been observed in the stream. No Bull trout or Bull trout critical habitat are present in either project area stream but are present in the Clearwater River.

Fish habitat does not occur within the project area, proposed harvest is not adjacent to any fish-bearing streams, and the proposed haul route would not cross Lost Horse Creek.

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		
No-Action														
Populations	**X**				**X**				**X**					
Connectivity	**X**				**X**				**X**					
Sediment	**X**					**X**				**X**				**5**
Flow Regimes	**X**				**X**				**X**					
Woody Debris	**X**				**X**				**X**					
Stream Shading	**X**				**X**				**X**					
Stream	**X**				**X**				**X**					
Action														
Populations	**X**				**X**				**X**					
Connectivity	**X**				**X**				**X**					
Sediment		**X**				**X**				**X**			**Y**	**5**
Flow Regimes	**X**				**X**				**X**					
Woody Debris	**X**				**X**				**X**					
Stream Shading	**X**				**X**				**X**					
Stream	**X**				**X**				**X**					

Fisheries Comments and Mitigations:

1. No proposed introduction, removal, or suppression of native or non-native fish species would occur.
2. No known fish habitat occurs within the project area.
3. No riparian timber harvest is proposed as part of the Action Alternative.
4. Proposed timber harvest areas are greater than 500 feet from any known fish-bearing waterbody.
5. Proposed timber haul route intersects a single fish-bearing waterbody on private land downstream from DNRC ownership, which is maintained by Missoula County.

Fisheries Mitigations:
No additional project-specific mitigations necessary beyond the project design and the mitigations listed in the Water Resources analysis.

WILDLIFE:

Evaluation of the impacts of the No-Action and Action Alternatives including **direct, indirect, and cumulative** effects on Wildlife.

Wildlife Existing Conditions: The project area is a mix of forested Douglas-fir, Douglas-fir/western larch, and ponderosa pine stands in pole timber and saw timber size classes. The project area contains habitat for a diverse array of wildlife that rely on the upland coniferous forests of western Montana. Grizzly bears likely use the vicinity of the project area during the non-denning period. Little of no use of the project area by wolverine would be anticipated. Portions of the project area are within the home range associated with the Clearwater Junction bald eagle territory. Potential habitat exists for fisher, flammulated owls, and pileated woodpeckers in the project area. Potential fringed myotis foraging habitats may exist in the project area; some potential hoary bat roosting habitats could exist in the project area. Big game summer range as well as white-tailed deer, mule deer, and elk winter ranges exist in the project area. Habitats in the project area contribute to big game security habitats in the vicinity.

No-Action: No potential for disturbance to wildlife would be anticipated. No timber management or associated activities would be conducted, thus no appreciable changes to existing habitats would occur. Continued maturation could improve grizzly bear, fisher, and pileated woodpecker habitats, as well as big game winter and summer range attributes, but could reduce habitat quality for flammulated owls and big game forage attributes over the long term. No changes to large diameter trees or snags would occur in the project area. Generally, negligible direct, indirect, or cumulative effects to wildlife would occur.

Action Alternative (see Wildlife table below):
In general, habitats for those species adapted to more-open forest conditions similar to areas that historically experienced low-intensity, under burns would increase in the project area. No changes in legal motorized public access would occur in the project area. Contract stipulations would minimize the presence of human-related attractants for the duration of the proposed activities. Prescriptions would retain at least 2 large snag and 2 large recruitment trees per acre (both >21 inches dbh where they exist, otherwise next largest size class available). Proposed pre-commercial thinning could reduce horizontal cover and any broadcast burning that may occur could further reduce horizontal cover, coarse woody debris, and possibly snags while also creating potential new snags from reserved live trees.

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Indirect				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Threatened and Endangered Species														
Grizzly bear (Ursus arctos) Habitat: Recovery areas, security from human activity		**X**				**X**				**X**			**Y**	**1**
Canada lynx (Felix lynx) Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone	**X**				**X**				**X**					**2**
Yellow-Billed Cuckoo (Coccyzus americanus) Habitat: Deciduous forest stands of 25 acres or more with dense understories and in Montana these areas are generally found in large river bottoms	**X**				**X**				**X**					**2**
Wolverine (Gulo gulo) Habitat: Alpine tundra and high-elevation boreal forests that maintain deep persistent snow into late spring		**X**				**X**				**X**				**3**
Sensitive Species														
Bald eagle (Haliaeetus leucocephalus) Habitat: Late-successional forest within 1 mile of open water		**X**				**X**				**X**			**Y**	**4**
Black-backed woodpecker (Picoides arcticus) Habitat: Mature to old burned or	**X**				**X**				**X**					**2**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Indirect				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
beetle-infested forest														
Common loon (Gavia immer) Habitat: Cold mountain lakes, nest in emergent vegetation	**X**				**X**				**X**					**2**
Fisher (Martes pennanti) Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian		**X**				**X**				**X**				**5**
Flammulated owl (Otus flammeolus) Habitat: Late-successional ponderosa pine and Douglas-fir forest		**X**				**X**				**X**			**Y**	**6**
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**			**Y**	**7**
Northern Hoary bat (Lasiurus cinereus) Habitat: coniferous and deciduous forests and roost on foliage in trees, under bark, in snags, bridges		**X**				**X**				**X**			**Y**	**8**
Peregrine falcon (Falco peregrinus) Habitat: Cliff features near open foraging areas and/or wetlands	**X**				**X**				**X**					**2**
Pileated woodpecker		**X**				**X**				**X**			**Y**	**9**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Indirect				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
(Dryocopus pileatus) Habitat: Late-successional ponderosa pine and larch-fir forest														
Townsend's big-eared bat (Plecotus townsendii) Habitat: Caves, caverns, old mines	**X**				**X**				**X**					**2**
Big Game Species														
Elk		**X**				**X**				**X**			**Y**	**10,11**
Whitetail Deer		**X**				**X**				**X**			**Y**	**10,11**
Mule Deer		**X**				**X**				**X**			**Y**	**10,11**
Bighorn Sheep	**X**				**X**				**X**					**2**
Other														

COMMENTS:

W-1 The project area is 11 miles southwest of the Northern Continental Divide Ecosystem grizzly bear recovery area, and within `occupied' grizzly bear habitat as mapped by grizzly bear researchers and managers to address increased sightings and encounters of grizzly bears in habitats outside of recovery zones (Wittinger et al. 2002). Individual animals likely use the project area throughout the non-denning period. Approximately 724 acres (59%) of the project area appear to have sufficient cover to potentially serve as hiding cover for grizzly bears. There are roughly 3.4 miles of open roads (1.7 mi./sq. mi., simple linear calculation) in the project area. Non-motorized access to the project area exists given the location of the open roads and the 6.7 miles of restricted roads (3.4 mi./sq. mi., simple linear calculation) in the project area. Additionally, numerous forms of human disturbance exist that likely reduces overall usefulness of the project area for grizzly bears.

In the cumulative effects analysis area, hiding cover likely exists on 1,658 acres (58%) of DNRC managed lands; hiding cover has been removed with the ongoing Lost Elbow Timber Management project on DNRC-managed lands in the cumulative effects analysis area. On other ownerships in the cumulative effects analysis area, hiding cover likely exists on approximately 15,144 acres (56%) of densely stocked mature forest and young forest stands. Human access is relatively high, with several open roads (at least 42 miles, 0.9 miles/sq. mile) that facilitate access and numerous restricted roads (at least 197 miles; 4.1 miles/sq. mile) that could be used for non-motorized use. Within the cumulative effects analysis area, at least 2 patches of potential security habitat exist that extend beyond the cumulative effects analysis area.

Grizzly bears could be affected directly through increased road traffic, noise, and human activity, and indirectly by altering the amount of hiding cover and forage resources in the project area. Proposed activities could occur during the denning period or the non-denning period but would avoid the spring period (April 1-June 15) when grizzly bears are more sensitive to human disturbance. Proposed activities conducted in the denning period would not be expected to

disturb grizzly bears; some disturbance to grizzly bears would be possible with proposed activities that may occur during the non-denning period and would be additive to ongoing activities associated with the Lost Elbow Timber Management Project in the project area and cumulative effects analysis area. Overall, the proposed activities would occur in areas where some grizzly bear use would be anticipated, thus potential for disturbance and displacement of grizzly bears would be anticipated.

No new roads would be constructed and no changes in open road density or motorized public access would be anticipated. Negligible changes to non-motorized public access could occur, thus no appreciable changes in contact between humans and grizzly bears would occur. Hiding cover would be reduced on most of the 277 acres (38%) of hiding cover proposed to receive treatments, some potential hiding cover could be retained depending on the density of trees retained. Meanwhile, proposed activities in habitats that are not presently providing hiding cover (14 acres; 3%) would slow the development of those attributes into the future. Additionally, to reduce the potential avoidance of harvest units and provide some security for grizzly bears, the proposed seedtree harvest unit would be laid out to ensure that no point of the unit exceeds 600 feet to vegetative cover or topographic break. Some hiding cover in the form of brush, shrubs, and sub-merchantable trees would persist in several of the units, albeit at a reduced level from the existing condition; additional reductions in grizzly bear hiding cover would occur with the proposed pre-commercial thinning and any burning that may occur. Hiding cover would increase through time as young trees and shrubs regenerate over the next 5 to 10 years. Generally, reductions in hiding cover would occur on the edge of the area contributing to one of the blocks of potential security habitats that extends beyond the project area. Although hiding cover would be reduced on roughly 277 acres that are distant enough from the existing open roads, minor changes to security habitat would occur given the small area that would be altered, the location of those changes, and the lack of changes in open roads in the project area. Any unnatural bear foods or attractants (such as garbage) would be kept in a bear resistant manner. Any added risk to grizzly bears associated with unnatural bear foods or attractants would be minimal. Continued use of the project area and cumulative effects analysis area by grizzly bears would be anticipated at levels similar to present.

W-2 The project area is either out of the range of the normal distribution for this species or suitable habitat is not present. Thus, no direct, indirect, or cumulative effects would be anticipated.

W-3 Generally wolverines are found in sparsely inhabited remote areas near treeline characterized by cool to cold temperatures year-round and rather deep and persistent snow well into the spring (Copeland et al. 2010). The availability and distribution of food is likely the primary factor in the large home range sizes of wolverines (Banci 1994). The project area is generally below the elevations where wolverines tend to be located. No areas of potentially deep persistent spring snow occur in the vicinity. Individual animals could occasionally use lands in the project area while dispersing or possibly foraging, and they could be displaced by project-related disturbance if they are in the area during proposed activities. However, given their large home range sizes (~150 sq. mi. -- Hornocker and Hash 1981) and the manner in which they use a broad range of forested and non-forested habitats, the proposed activities and alterations of forest vegetation on the project area would have negligible influence on wolverines.

W-4 The project area is in the home range associated with the Clearwater Junction bald eagle territory. The nest associated exists in close proximity to an open road that accesses the project area, and the pair appears habituated to traffic on the road. Additionally other potential disturbances close to the nest includes the Clearwater River and associated recreation and a FWP campground. Recent timber management around the nest by FWP has not appeared to

have altered use of the nest. Proposed activities could occur when soils are dry, frozen, or snow covered and would not occur between April 1 and June 15. Thus, the proposed activities could occur during the very early- (Feb 1- Mar 31) or later- (June 16-Aug 15) portions of the bald eagle nesting season, or the non-nesting (August 16-February 1) season. Minor disturbance to bald eagles could occur for any activities that could be conducted during the nesting period. Conversely, no disturbance to bald eagles would be anticipated should those activities be conducted during the non-nesting period. Generally, any potential disturbance would be associated with the increased activity on the open Lost Prairie road between the project area and Highway 200 and given the apparent habituation of this bald eagle pair to road, river, and recreation disturbance, little effect would be anticipated. Minor reductions in the availability of large snags or emergent trees in the project area that could be used as nest or perch trees in the home range could occur; any reductions would only occur in a small portion of the home range, which would be additive to past and ongoing activities within the home range. No changes to human access to the home range would occur, thereby limiting potential for introducing additional human disturbance to the territory.

W-5 Roughly 85 acres (7%) of potential upland fisher habitats and 0 acres (0%) of potential riparian fisher habitats exist in Douglas-fir/western larch, and western larch stands in the project area. Generally, habitats in the project area and cumulative effects analysis area are somewhat disconnected and interspersed with some drier and/or more open habitats than generally used by fisher, thus extensive use by fisher would not be anticipated. Observations of fishers in the vicinity within the last 30 years are lacking and recent research suggests that fishers are largely absent east of the wet forests along the Montana-Idaho border (Montana Natural Heritage Program 2025, Krohner et al. 2022). Human disturbance, developments, existing matrix of unsuitable types, and ongoing timber management in the vicinity have likely limited fisher use of the project area and cumulative effects analysis area. Proposed activities could introduce more, short-duration disturbance in the upland habitats. Alterations to roughly 26 acres (31%) of potential upland habitats would occur, but activities would avoid riparian habitats commonly used by fisher. Proposed pre-commercial thinning and any broadcast burning that may occur would reduce horizontal cover; burning could also reduce coarse woody debris and some snags while potentially recruiting additional snags from existing live trees. Proposed treatments in upland habitats would reduce canopy closure and resultant stands would likely be too open to be used by fisher. No changes in open roads would be anticipated; trapping pressure and the potential for fisher mortality would not change. Reductions in upland habitats would further reduce the amount of suitable upland fisher habitats in the cumulative effects analysis area.

W-6 Roughly 1,136 acres (93%) of potential flammulated owl habitats exist in the project area in dry ponderosa pine, Douglas-fir, and Douglas-fir/western larch stands. Approximately 306 acres of potential flammulated owl habitats in the project area are being treated by DNRC's Lost Elbow Timber Management Project which is reducing canopy closure and potentially improving foraging habitats. These more open stand conditions, the retention of fire adapted tree species, and the maintenance of existing snags are moving the project area toward historical conditions, which is preferred flammulated owl habitat. Pre-commercial thinning and any broadcast burning following ongoing timber management will further modify flammulated owl foraging habitats in the project area. On DNRC-managed lands in the cumulative effects analysis area, there are an additional 2,950 acres (91%) of potential flammulated owl habitats in stands dominated by dry Douglas-fir, Douglas-fir/western larch, and ponderosa pine, which includes another 472 acres that are being altered with the Lost Elbow Timber Management Project with modifications to flammulated owl habitats similar to those occurring in the project area. Some suitable habitats likely exist on a portion of the 2,003 acres (72% of non-DNRC-managed lands) of open and closed forested habitats on other ownerships in the cumulative effects analysis area; however, portions of these forested areas may not be preferred flammulated owl habitat types. Elsewhere

in the cumulative effects analysis area, some of the forested habitats have been harvested in the recent past, potentially improving flammulated owl habitat by creating foraging areas and reversing a portion of the Douglas-fir encroachment and opening up stands of ponderosa pine; however, retention of large ponderosa pine and/or Douglas-fir was not necessarily a consideration in some of these harvest units, thereby minimizing the benefits to flammulated owls.

Flammulated owls can be tolerant of human disturbance (McCallum 1994), however the elevated disturbance levels associated with proposed activities could negatively affect flammulated owls should activities occur when flammulated owls are present. Proposed activities could overlap the nestling and fledgling periods, which has the potential to disturb nesting flammulated owls; activities would not occur during the early nesting season (April 1-June 15). Since some snags and large trees (both >21 inches dbh where they exist, otherwise next largest size class available) would be retained, loss of nest trees would be expected to be minimal. Proposed activities on 291 acres of potential flammulated owl habitats (26% of the habitats in the project area) would open the canopy while favoring ponderosa pine, western larch, and Douglas-fir. The proposed treatments would reduce canopy closure and improve foraging habitats. The more open stand conditions, the retention of fire adapted tree species, and the maintenance of existing snags would move the project area toward historical conditions, which is preferred flammulated owl habitat. Proposed pre-commercial thinning and any burning could further alter flammulated owl foraging habitats. Disturbance in flammulated owl habitats would occur on a small portion of the cumulative effects analysis area and could be additive to ongoing activities in the area. Proposed activities would increase the amount of the cumulative effects analysis area that has been recently harvested, which would add to the amounts of foraging habitats available, but possibly at the expense of losing snags and large trees important for nesting. Overall, no change in the amount of potential flammulated owl habitats would occur on DNRC-managed lands or any other ownerships; a slight improvement in habitat quality at the cumulative-effects analysis level could be realized with this alternative and the more historic conditions likely after proposed activities.

W-7 Fringed Myotis are year-round residents of Montana that use a variety of habitats, including deserts, shrublands, sagebrush-grasslands, and forested habitats. They overwinter in caves, mines, crevices, or human structures. Fringed myotis forage near the ground or near vegetation. No known caves, mines, crevices, or other structures used for roosting occur in the project area or immediate vicinity. Fringed myotis have been documented to the south of the project area near Highway 200. Given relative proximity to known observations along with suitable habitat in the project area, some use is possible. Proposed activities could disturb fringed myotis should they be in the area during proposed activities. Changes in vegetation structural attributes could change overall prey availability, but considerable foraging habitats would persist in the project and cumulative effects analysis areas. Overall, negligible changes to fringed myotis use of the project area or cumulative effects analysis areas would be anticipated.

W-8 Northern hoary bats are summer residents (June-September) across a variety of forested habitats in Montana. They frequently forage over water sources near forested habitats. They are generally thought to roost alone, primarily in trees, but will use also use caves, other nests, and human structures. Some use of the project area by northern hoary bats would be possible given the varied habitats present and the proximity to the Clearwater River, Elbow Lake, Salmon Lake, and numerous other smaller streams and wetlands. Individual trees and snags in the existing forested habitats could be used for roosting. No known caves or other structures used for roosting occur in the project area or immediate vicinity. Northern hoary bats have been documented in the vicinity of the project area. Proposed activities could disturb northern hoary bats should they be in the area during proposed activities. Loss of potential roosting habitats

could occur, but considerable amounts of trees would persist in the project and cumulative effects analysis areas. No changes in foraging habitats would be anticipated. Overall, negligible changes to northern hoary bat use of the project area or cumulative effects analysis areas would be anticipated.

W-9 Roughly 201 acres (16%) of pileated woodpecker nesting habitat exist in the project area; another 677 acres (55%) of potential foraging habitats exist in the project area. Approximately 207 acres (17 %) of potential pileated woodpecker nesting habitats and another 51 acres (4%) of potential pileated woodpecker habitats have been removed in the project area with DNRC's Lost Elbow Timber Management Project which reduced canopy closure and suitability for pileated woodpeckers. Pre-commercial thinning and any broadcast burning following ongoing timber management will further reduce suitability of those habitats but could recruit some additional snags and/or expedite the growth of future pileated habitats in the project area.

On DRNC-managed lands in the cumulative effects analysis area, there are another 913 acres (28%) of potential pileated woodpecker nesting habitats and roughly 1,589 acres (49%) of potential pileated woodpecker foraging habitats, which includes 16 acres of potential pileated woodpecker nesting habitats and 414 acres of potential foraging habitats that have been removed with the Lost Elbow Timber Management Project. Some suitable habitats likely exist on a portion of the 1,185 acres of forested habitats on other ownerships in the cumulative effects analysis area (43% of non-DNRC lands). Much of the 1,587 acres (57%) of shrubs, herbaceous areas, poorly stocked forested stands, and recently harvested stands on other ownerships in the cumulative effects analysis area is likely too open to be useful to pileated woodpeckers.

Pileated woodpeckers can be tolerant of human activities (Bull and Jackson 1995), but might be temporarily displaced by any proposed activities that could occur during the nesting period, however activities would be restricted (April 1 – June 15) during the early nesting season. Roughly 33 acres (16%) of the potential nesting habitat along with 258 acres (38%) of potential foraging habitats would be altered with proposed activities. Most of these stands proposed for treatment would be temporarily unsuitable for pileated woodpeckers due to the openness of the stands following proposed treatments, but some use could occur depending on the density of trees retained. Overall quality of these potential pileated woodpecker habitats would be reduced for 30-50 years. Elements of the forest structure important for nesting pileated woodpeckers, including snags, coarse woody debris, numerous leave trees, and snag recruits would be retained in the proposed harvest areas. Since pileated woodpecker density is positively correlated with the amount of dead and/or dying wood in a stand (McClelland 1979), pileated woodpecker densities in the project area would be expected to be reduced on 291 acres proposed for treatment. No appreciable changes to pileated woodpecker habitats would be anticipated with the proposed pre-commercial thinning; any broadcast burning that may occur could remove some existing coarse woody debris and potentially some snags but may create additional snags from existing live trees. In the cumulative effects analysis area, the reduction in quality on 33 acres of potential nesting habitats and 258 acres of foraging habitats would further reduce available habitats and reduce the overall quality of the cumulative effects analysis area for pileated woodpeckers. Overall, a reduction in the quality of pileated woodpecker habitats in the cumulative effects analysis area would be anticipated, but continued use would be expected.

W-10 Most or all of the project area contains winter range for white-tailed deer (100%), mule deer (81%), and elk (100%). Ongoing activities associated with DNRC's Lost Elbow Timber Management Project is removing canopy closure and stand density on white-tailed deer (319 acres), mule deer (312 acres), and elk winter ranges (319 acres). Approximately 463 acres of the project area (38%) appear to have sufficient canopy closure to be providing snow intercept

and thermal cover attributes for big game; roughly 258 acres (19% of the project area) are being treated by DNRC's Lost Elbow Timber Management Project which is reducing canopy closure and thermal cover attributes and is not providing thermal cover for big game. Evidence of non-winter use by deer and elk was noted during field visits. Within the cumulative-effects analysis area, big game species are fairly common and winter range for deer and elk are fairly widespread in the lower elevation areas along the Clearwater River. Roughly 8,392 acres (27%) of white-tailed deer, 5,098 acres (16%) of mule deer, and 15,660 acres (51%) of elk winter ranges exist in the cumulative effects analysis area. There are roughly 1,685 acres (52%) of stands dominated by Douglas-fir, Douglas-fir/western larch, mixed conifers, and ponderosa pine on DNRC-managed lands in the cumulative effects analysis area that appear to be providing snow intercept and thermal cover attributes for big game; approximately 12,924 acres (48%) of forested habitats on other ownerships in the cumulative effects analysis area appear to have sufficient canopy closure to provide thermal cover and snow intercept for big game, however portions of these habitats may be too high in elevation to be suitable for winter thermal cover. Human disturbance within the winter range is associated with residential development, agricultural activities, recreational snowmobile use, commercial timber management, and several roads.
Proposed activities could occur during the winter or non-winter periods. Some potential for disturbance to wintering big game could occur with any activities that may occur during the winter period. Proposed activities conducted during the non-winter period would not disturb wintering big game but could disturb big game species using the project area during the non-winter period, however given the time of the year and the availability of other habitats in the vicinity, the potential effect to big game would be minor. Proposed activities would occur on roughly 291 acres (24%) of white-tailed deer winter range, 229 acres (23%) of mule deer winter range, and 291 acres (24%) of elk winter range; proposed activities would reduce canopy closure and potential winter use by big game on roughly 51 acres (11%) that likely have attributes facilitating considerable winter use by big game. Following proposed activities, canopy densities in these stands providing snow intercept and thermal cover would be reduced, reducing habitat quality for wintering big game. Pockets of cover would persist in the project area that likely would provide some thermal cover and snow intercept capacity for big game as well as opportunities to move through the area in areas of reduced snow loads. Within the proposed units, increases in forage production could benefit big game in the short-term. In general, it could take 30-50 years for the stands in the proposed units to regenerate and attain a size capable of providing thermal cover for big game. No appreciable changes to big game thermal cover would be anticipated with the proposed pre-commercial thinning; negligible reductions in thermal cover would be anticipated with any burning that may occur. Potential disturbance to wintering big game would be additive in the cumulative effects analysis area to other forms of disturbance, including timber management, numerous open roads, and a variety of human developments. Further reductions in thermal cover and snow intercept would be additive to losses from recent timber management, residential land clearing, and other disturbances in the cumulative effects analysis area. Continued use of the larger winter ranges would be anticipated at levels similar to present levels following proposed treatments.

W-11 The project area is adjacent to a large piece of The Nature Conservancy lands that are enrolled in the Block Management Program, which facilitates non-motorized public access for the purpose of recreational hunting. There are numerous access points to the BMA, including several in the project area; considerable recreational use of the project area occurs. Hiding cover is somewhat limited in portions of the project area due to past timber management, grazing activity, wildlife foraging, as well as the natural openness of some of the habitats in the project area; similarly hiding cover is moderate in the cumulative effects analysis area, with many of these same limiting factors influencing big game hiding cover. There are roughly 3.4

miles of open roads (1.7 mi./sq. mi., simple linear calculation) in the project area. Non-motorized access to the project area exists given the location of the open roads, the 6.7 miles of restricted roads (3.4 mi./sq. mi., simple linear calculation) in the project area, and the proximity to lands enrolled in the Block Management Program. A portion of the project area does not contain big game security habitats due to the proximity to open roads, however roughly 147 acres along the western boundary (12% of project area) are distant enough and contain sufficient cover to be able to contribute to a larger block of potential security habitat that extends beyond the project area. In the cumulative effects analysis area, access for recreational hunting is relatively high, with many open roads (at least 42 miles, 0.9 miles/sq. mile) that facilitate access and numerous restricted roads (at least 197 miles; 4.1 miles/sq. mile) that could be used for non-motorized use. Within the cumulative effects analysis area, 2 patches (total of 16,066 acres; 52%) of potential security habitat exist. Each of these patches extend beyond the cumulative effects analysis area and contribute to larger blocks of potential security habitats that extend beyond the cumulative effects analysis area.

Tree density within proposed units would be reduced on approximately 291 acres, including roughly 61 acres (41%) of forested stands in the project area contributing to potential big game security habitats. Overall, hiding cover would be reduced within the proposed units but could improve as trees and shrubs become reestablished in the openings over the next 10-20 years. The retention of structure within proposed units and unharvested areas between the various units, including riparian habitats would reduce the potential effects of the hiding cover reductions. Some increases in sight distance in the project area would be anticipated; these increases in sight distances could increase big game vulnerability to hunting mortality as hunters would be able to detect big game at longer distances in proposed units. Further increases in sight distances would be anticipated with the proposed pre-commercial thinning and any broadcast burning that may occur. Increases in forage production in proposed units could benefit big game in the short-term, but ongoing grazing management would likely partially offset some of these increases. No changes in open roads or motorized access for the general public would occur. During all phases of the project, any roads opened with project activities would be restricted to the public and closed after the completion of project activities. No appreciable changes in non-motorized access would occur. Numerous contract stipulations would minimize the effect on the existing big game security habitat by prohibiting contractors from carrying firearms while conducting contract operations and prohibiting contractors from accessing restricted areas for other purposes, such as hunting. Alterations of cover could reduce the quality of big game security habitat in a small portion of the cumulative effects analysis area and would be additive to past reductions in the cumulative effects analysis area. No changes in public, motorized access or non-motorized access would be expected, which would not affect big game vulnerability in the cumulative effects analysis area. Hiding cover on a small amount (61 acres) of potential big game security habitats would be altered. Overall minor effects to big game security habitats would be expected given the small amount of area that would be altered, the location of those changes, and the lack of changes in open roads in the project area; big game security habitats would persist in the cumulative effects. Negligible effects to big game survival would be anticipated.

WILDLIFE MITIGATIONS:

- A DNRC biologist will be consulted if a threatened or endangered species is encountered to determine if additional mitigations that are consistent with the administrative rules for managing threatened and endangered species (ARM 36.11.428 through 36.11.443) are needed.

- Motorized public access will be restricted at all times on restricted roads that are opened for harvesting activities; signs will be used during active periods and a physical closure (gate, barriers, equipment, etc.) will be used during inactive periods (nights, weekends, etc.). These roads and skid trails would be reclosed to reduce the potential for unauthorized motor vehicle use.
- Minimize potential for disturbance to grizzly bears and numerous avian species by restricting activities between April 1 and June 15.
- Provide visual screening for grizzly bears by designing new seed tree units such that no point in the unit is more than 600 feet from vegetation or topographic break.
- Snags, snag recruits, and coarse woody debris will be managed according to ARM 36.11.411 through 36.11.413, particularly favoring western larch and ponderosa pine. Clumps of existing snags could be maintained where they exist to offset areas without sufficient snags. Coarse woody debris retention would emphasize retention of downed logs of 15-inch diameter or larger.
- Contractors and purchasers conducting contract operations will be prohibited from carrying firearms while on duty.
- Food, garbage, and other attractants will be stored in a bear-resistant manner.
- Should a raptor nest be identified in or near project activities, activities will cease and a DNRC biologist will be contacted. Site-specific measures will be developed and implemented to protect the nest and birds prior to re-starting activities.
- Provide connectivity for fisher and a host of other species by maintaining corridors of unharvested and/or lighter harvested areas along riparian areas, ridge tops, and saddles.

Wildlife References

Banci, V. 1994. Wolverine. Pp 99-127 in L. F. Ruggiero, K. B. Aubry, S. W. Buskirk, L. J. Lyon, and W. J. Zielinksi, editors. The scientific basis for conserving forest carnivores: American marten, fisher, lynx, and wolverine in the western United States. USDA Forest Service Rocky Mountain Forest and Range Experiment Station, General Tech. Report RM-254, Fort Collins, Colorado, USA.

Bull, E. L., and J. A. Jackson. 1995. Pileated woodpecker: Dryocopus pileatus. American Ornithologists' Union. Washington DC. 24pp.

Copeland, J. P., K.S. McKelvey, K.B. Aubry, A. Landa, J. Persson, R.M. Inman, J. Krebs, E. Lofroth, H. Golden, J.R. Squires, A. Magoun, M.K. Schwartz, J. Wilmot, C.L. Copeland, R.E. Yates, I. Kojola, and R. May. 2010. The bioclimatic envelope of the wolverine (*Gulo gulo*): do climatic constraints limit its geographic distribution? Can. J. Zool. 88: 233-246.

Hornocker, M. and H. Hash. 1981. Ecology of the wolverine in northwestern Montana. Journal of Wildlife Management 44(3):1286-1301.

Krohner, J. M., Lukacs, P. M., Inman, R., Sauder, J. D., Gude, J. A., Mosby, C., Coltrane, J. A., Mowry, R. A. and J. J. Millspaugh. 2022. Finding fishers: determining fisher occupancy in the Northern Rocky Mountains. The Journal of Wildlife Management, 86(2): 1-20.

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**				**X**				**X**					
Dust	**X**				**X**				**X**					
Action														
Smoke		**X**			**X**				**X**				**Y**	**A-1**
Dust		**X**			**X**				**X**				**Y**	**A-2**

Comments:

A-1: Slash consisting of tree limbs and tops and other vegetative debris would be piled throughout the project area during harvesting. Slash would ultimately be burned after harvesting operations have been completed. Burning would introduce particulate matter into the local airshed, temporarily affecting local air quality. Over 70% of emissions emitted from prescribed burning are less than 2.5 microns (National Ambient Air Quality PM 2.5). High, short term levels of PM 2.5 may be hazardous. Within the typical column of biomass burning, the chemical toxics are: Formaldehyde, Acrolein, Acetaldehyde, 1, 4 Butadiene, and Polycyclic Organic Matter.

The project area is located within Montana Airshed 3B which encompasses portions of Missoula County and Powell County and includes the Seeley Lake and Missoula impact zones. The project area does not lie within either impact zone.

A-2: Dust may be produced by hauling if it occurs during dry periods. Mitigation (i.e. dust abatement) is possible but would likely not be used as hauling would occur on forest roads that are not used for residential purposes and all county roads that are maintained by the county.

Air Quality Mitigations:

Burning within the project area would be short 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. The DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days.

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		
No-Action														
Historical or Archaeological Sites	**X**				**X**				**X**					
Aesthetics	**X**				**X**				**X**					
Demands on Environmental Resources of Land, Water, or Energy	**X**				**X**				**X**					
Action														
Historical or Archaeological Sites	**X**				**X**				**X**					**AE-1**
Aesthetics		**X**				**X**			**X**					**AE-2**
Demands on Environmental Resources of Land, Water, or Energy	**X**				**X**				**X**					

Comments:
AE-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 a few previously documented cultural resources, but these are all outside the APE. Varius portions of the state parcels containing the APE have also been previously inventoried for both cultural and paleontologic resources.

AE-2: Any change to the scenery in the area from these alternatives would be in addition to past timber harvests, road building, vegetation management (grazing, pre-commercial thinning, etc.) and fire activity within the project area. This analysis includes all past and present effects. Due to slash and the initial color contrasts of the slash and limited road building, there is an expected short-term impact. Given the treatments proposed and the open nature of surrounding areas (as a result of past management activities and natural grassy openings), no risk of an increase in cumulative visual effects to the landscape would be expected.
Mitigations:

AE-1: 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.

AE-2: None.

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.*

- Clearwater River #2 Timber Sale (2000)
- Clearwater River #3 Timber Sale (2003)
- Clearwater PCT (2009)
- Clearwater Flats PCT 2010)
- Clear Down PCT (2011)
- Winterkill Timber Permit (2018)
- South of Blanchard Timber Sale (2020)
- Lost Elbow Timber Sale (2024)

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		
No-Action														
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					

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		
Cultural Uniqueness and Diversity	**X**				**X**				**X**					
Action														
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**				**N/A**	**H-1**
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**					

Comments:
H-1: According to the Montana Bureau of Business and Economic Research, a general rule of thumb is that for every million board feet of sawtimber harvested in Montana, ten person-years of employment occur in the forest products industry. This harvest is viewed as a continuation of a sustained yield and as such would not create any new jobs but rather sustain approximately 20 person-years of employment in the forest products industry. A few short-term jobs would also be created/sustained by issuing pre-commercial thinning, planting and site-prep contracts following harvest. Additionally, local businesses, such as hotels, grocery stores, and gas stations would likely receive additional revenues from personnel working on the proposed project. This would have a positive impact to quantity and distribution of employment in the area and therefore mitigation would not be necessary.

Mitigations: N/A

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 further return to the trust at this time.

Action Alternative: The timber harvest would generate additional revenue for the Common Schools Trust and Pine Hills School Trust. The estimated return to the trusts for the proposed harvest is $250,000 based on an estimated harvest of one and a half million board feet (10,000 tons) and an overall stumpage value of $25.00 per ton. An additional $32,625 would be generated in Forest Improvement fees to contribute to Forest Improvement projects. 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: Travis M. Serdar
Title: Trust Lands Management Forester
Date: July 2, 2025

Finding

Alternative Selected

After thorough review of the Loose Horse Projects Environmental Assessment (EA), project file, and public scoping, and, all applicable rules and plans, and laws, I have taken the decision to select the Action Alternative.

The Action Alternative meets the intent of the project objectives as stated in *Type and Purpose of Action* listed on page 1 of the EA. Specifically, the proposed project is expected to:

- Contribute to the DNRC's annual target of timber harvest volume (sustained yield) as mandated by state law (77-5-221, MCA). Estimates within the EA predict a return of over $280,000.00 from sawlog harvest in stumpage received and FI charges.
- Generate revenue for the Trust Beneficiaries (Common Schools and Pine Hills School).
- Minimize the risk of devastating wildfire by reducing fuel loading and stand density through silvicultural treatments and pre-commercial thinning.
- Return stands to their Desired Future Condition (ARM 36.11.405) using silvicultural treatments, site preparation, and planting.
- Improve stand growth and vigor and reduce the threat of future losses to fires, insects, and disease.

Significance of Potential Impacts

The EA addressed the identifiable potential resource issues through proposed mitigation measures which incorporate all applicable rules, plans, guidelines, and laws.

This approach resulted in a project in which potential effects to several resources were expected to be moderate or low. These resources will not be discussed in further detail, specifically:

Current Cover/DFCs – Direct effects are expected to be moderate. This is generally because of the change in cover type to the correct species for the Desired Future Condition. Indirect and cumulative effects are expected to be low. These effects reflect mitigations and harvest plans designed to benefit forest conditions through promotion of increased stand health and diversity, decreased fuel loading, and a movement towards historic/desired future conditions. Concerns regarding site preparation, planting, and pre-commercial thinning were described in the EA and are logical and well thought out.

Old Growth – Direct, indirect, and cumulative effects are expected to be low. These stands within this area are not classified as Old Growth.

Fire/Fuel Hazards - Direct, indirect, and cumulative effects are expected to be low. Although the stands can, and will, support wildfire, the overall effect will be a lessened fuelbed continuity, crown spacing opening, and fire ladder decreases. These changes will decrease the opportunity of a large stand replacement fire.

Soils – Direct, indirect, and cumulative effects are expected to be low. Proposed mitigations along with contract administration are expected to control potential soil disturbance and avoid excessive impacts.

Water Quality and Quantity – Direct, indirect, and cumulative effects to water quality and quantity are expected to be low.

Fisheries Populations - There is a low to no risk of direct, indirect, and cumulative effects on fisheries populations. Sediment levels may increase to the low levels, but no fish species are found within the project area.

Wildlife Concerns – There is a low risk of adverse direct, indirect, and cumulative effects found effecting wildlife concerns. A bald eagle nest is located east of the project area but will not be affected.

Aesthetics – There is no to low concerns for direct, indirect, and cumulative effects. This area is widely used and is visible from highways 83 and 200. All activities will be minimal with the changes given the areas local topography and visual absorption capacity.

Given the expected effects, rationale, mitigations, and overall project benefits, no significant impacts are expected with the selection of the Action Alternative.

Need for Further Environmental Analysis

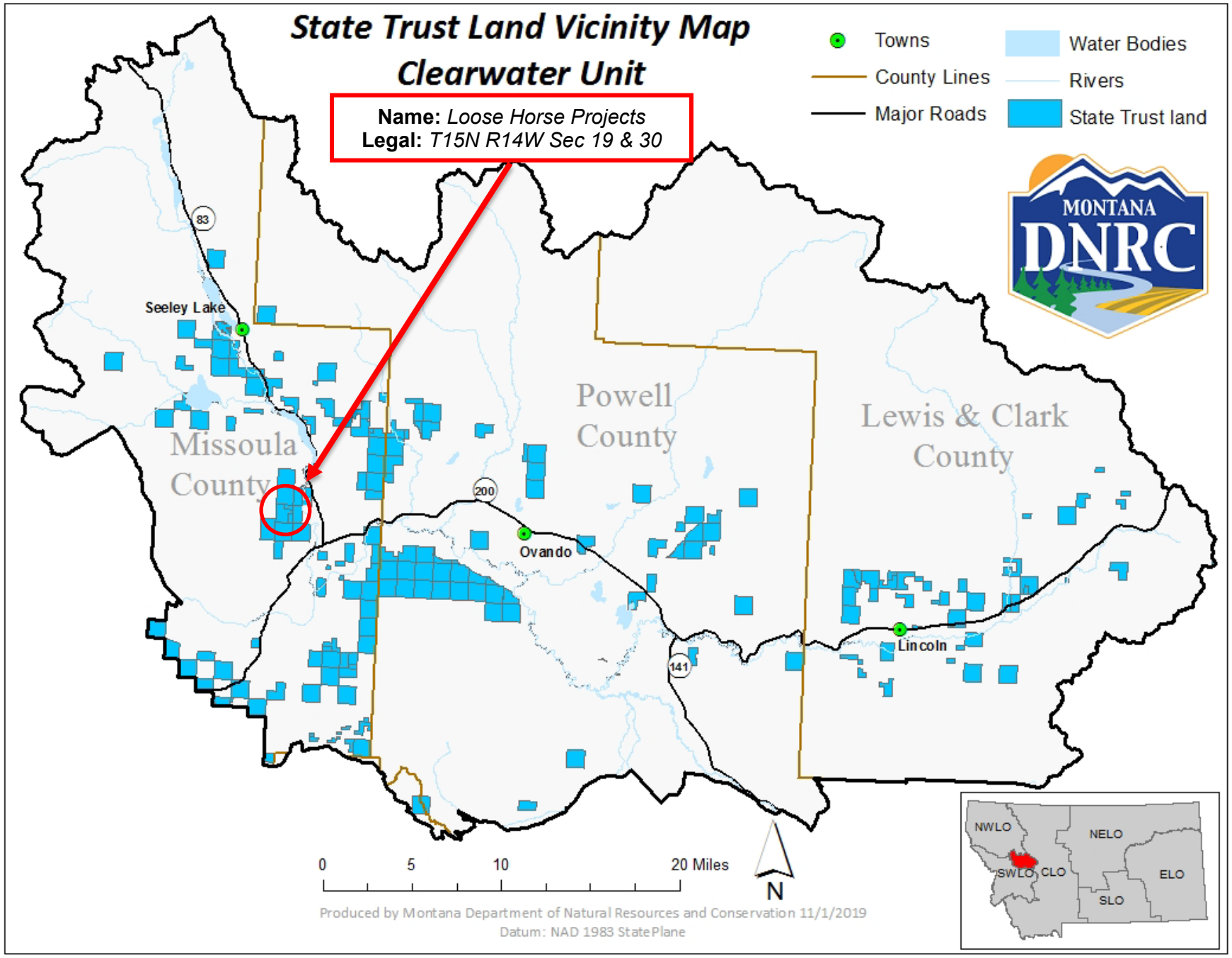
☐	EIS	☐	More Detailed EA	X	No Further Analysis

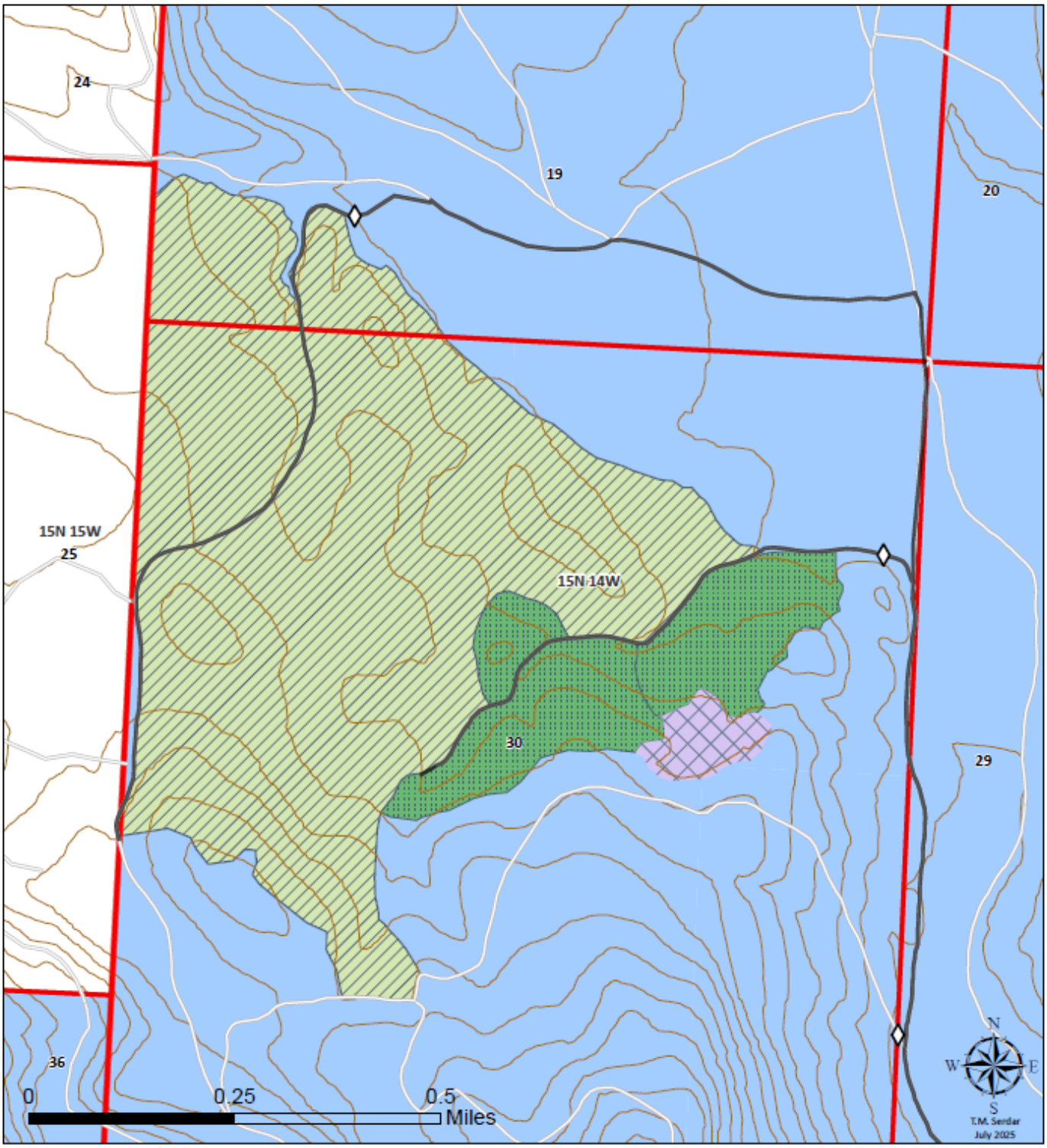
Environmental Assessment Checklist Approved By:

Name: Craig V. Nelson
Title: Clearwater Unit Forester Management Supervisor
Date: August 5, 2025
Signature: /s/ Craig V. Nelson

Attachment A - Maps

A-1: Timber Sale Vicinity Map

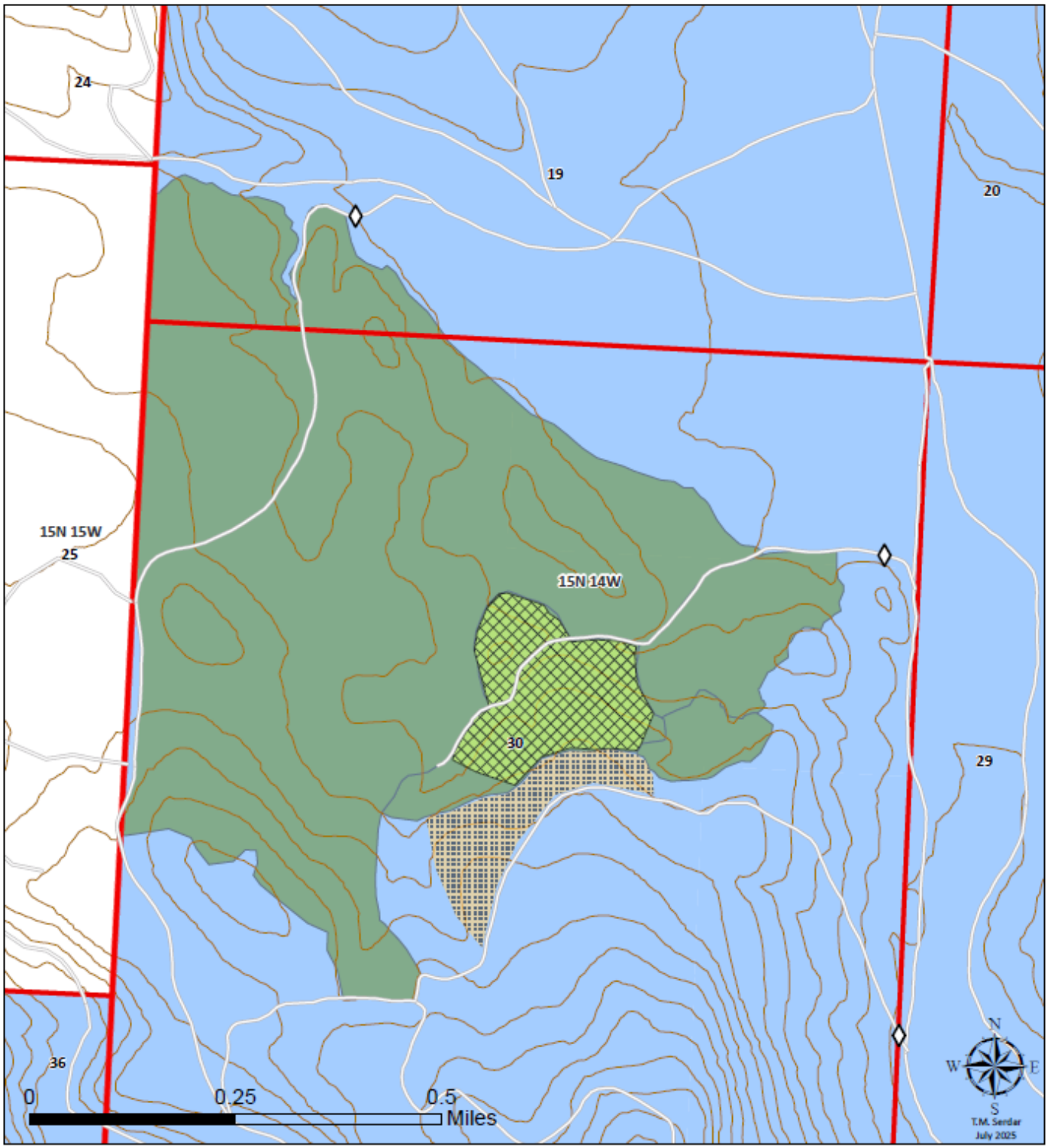




Individual Tree Selection
Seed Tree
Shelterwood
Timber Sale Roads
Other Roads
Gates
40-foot Contours
DNRC Trust Lands
PLSS Township
PLSS First Division

Loose Horse Projects

Attachment A-2
Proposed Silvicultural Harvest Treatments



Pre-Commercial Thinning

Site Preparation (Scarification or Prescribed Fire)

Proposed Harvest Units

Gates

Roads

40-foot Contours

DNRC Trust Lands

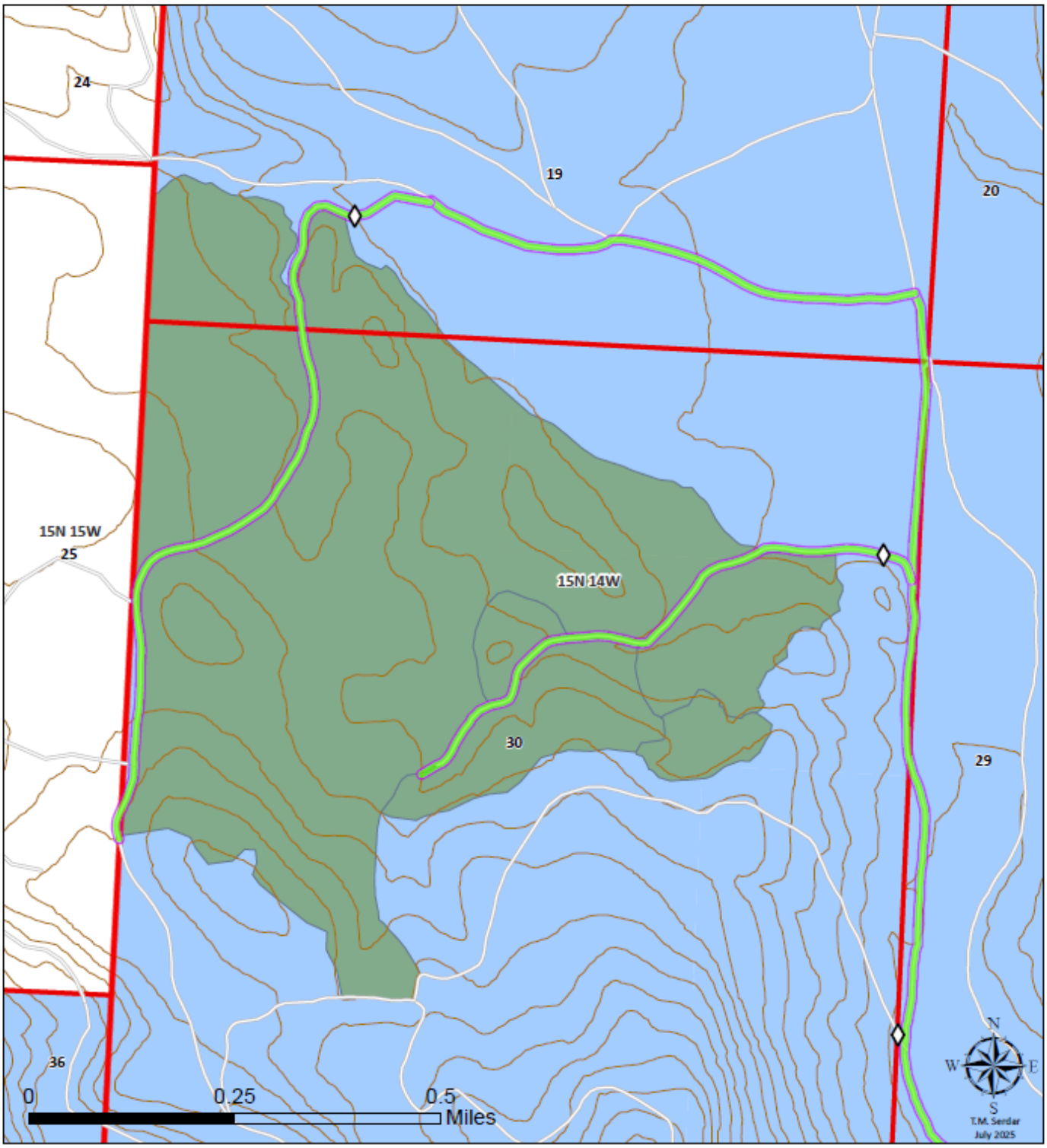
PLSS Township

PLSS First Division

Loose Horse Projects

Attachment A-3

Proposed Forest Improvement Projects



Proposed Road Maintenance
Other Roads
Gates
Proposed Harvest Units
DNRC Trust Lands
PLSS Township
PLSS First Division

Loose Horse Projects

Attachment A-4
Proposed Road Maintenance