Environmental Assessment Checklist

Project Name: Jellison Bearpaw Forest Management Project
Proposed Implementation Date: Summer 2023
Proponent: Stillwater Unit, Northwest Land Office, Montana DNRC
County: Flathead

Type and Purpose of Action

Description of Proposed Action:

The Stillwater Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the Jellison Bearpaw Forest Management Project. The project is located approximately 5 miles northeast of Olney and 14 miles northwest of Whitefish (refer to Attachments vicinity map A-**1** and project map A-**2**) and includes the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools	**T33N R23W, sec. 13, 14, 23, 24; T33N R22W, N1/2 sec. 30**	**1,405**	**124.0**
Public Buildings			
MSU 2nd Grant	**T33N R22W sec. 31, SW1/4 sec. 30**	**683**	**22.4**
MSU Morrill	**T33N R22W, sec. 32**	**282**	
Eastern College-MSU/Western College-U of M			
Montana Tech			
University of Montana			
School for the Deaf and Blind	**T33N R22W sec. 29**	**2**	
Pine Hills School			
Veterans Home			
Public Land Trust			
Acquired Land			

Objectives of the project include:

- Establish areas of regeneration of the desired species mix, improve vigor/tree growth.
- Meet the HCP commitments and Forest Management Rules in relation to wildlife, fisheries, and water quality.
- Contribute to the DNRC and Northwestern Land Office's annual targets of timber-harvest volumes. DNRC is required by state law (77-5-221 through 223, MCA) to annually harvest approximately 60 million board feet (MMbf) statewide.

- Apply Best Management Practices (BMPs) or meet design criteria that are necessary to promote long-term water quality during logging and road improvement operations.
- Increase timber productivity and quality through commercial thinning.

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	# Acres
Clearcut	**14.5**
Seed Tree	**48.3**
Shelterwood	
Selection	
Old Growth Maintenance/Restoration	
Commercial Thinning	**81.1**
Salvage	
Overstory Removal	**2.5**
Total Treatment Acres	
Proposed Forest Improvement Treatment	# Acres
Pre-commercial Thinning	
Site preparation/scarification	**17.6**
Planting	
Proposed Road Activities	# Miles
New permanent road construction	
New temporary road construction	**0.6**
Road maintenance	**14.3**
Road reconstruction	
Road abandoned	
Road reclaimed	
Other Activities	

Duration of Activities:	5 years
Implementation Period:	June-Dec

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:
  - April 5, 2021
- PUBLIC SCOPED:
  - The scoping notice was posted on the DNRC Website: http://dnrc.mt.gov/public-interest/public-notices
  - In April 2021, DNRC solicited public participation for 30 days on the Jellison Bearpaw Timber Sale Project. The Initial Proposal with maps was sent to 70 individuals, agencies, and other organizations that have expressed interest in DNRC's management activities. A notification of this project was advertised in the Daily Interlake and Whitefish Pilot newspapers and posted in the Trego and Stryker Post Offices.
- AGENCIES SCOPED:
  - MT Fish, Wildlife, & Parks; all DNRC Bureaus; and all MT Tribes.
- COMMENTS RECEIVED:
  - How many: 4
  - Concerns:
    - MTFWP biologist expressed concern about potential impacts to riparian and wetland areas and security cover for big game species (esp. moose) and grizzly bear.
    - Project could increase sedimentation into Swift Creek which could affect Bull Trout spawning areas.
    - Crucial Lynx habitat could be reduced by the timber sale project.
    - One comment inquired about the effects on Old Growth in the project area.
    - Chemicals to control noxious weeds may seep into streams.
    - One comment had questions regarding the project location and whether gates would remain closed after harvesting was completed.
    - Two comments were in favor of the forest management project.
  - Results: Internal and external issues, as well as resource concerns, were considered by the Interdisciplinary Team (ID) and project Decisionmaker (Stillwater Unit Manager). These issues and concerns were incorporated into project planning and design phases of the project and would be implemented in associated actions and contracts. The ID Team developed an action alternative within the framework of the SFLMP, HCP, and DNRC Forest Management Rules. One action alternative was developed because the various issues and concerns

the ID Team can be addressed with adequate planning and associated mitigations.

Interdisciplinary Team (ID):
• Project Leader: Josh Tomlin
• Archeologist: Patrick Rennie
• Wildlife Biologist: Chris Forristal
• Hydrologist: Marc Vessar
• Special Uses Program Manager: Nicole Stickney

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED: *(Conservation Easements, Army Corps of Engineers, road use permits, etc.)*

- **United States Fish & Wildlife Service-** DNRC is managing the habitats of threatened and endangered species on this project by implementing the Montana DNRC Forested Trust Lands HCP and the associated Incidental Take Permit that was issued by the United States Fish & Wildlife Service (USFWS) in February of 2012 under Section 10 of the Endangered Species Act. The HCP identifies specific conservation strategies for managing the habitats of grizzly bear, Canada lynx, and three fish species: bull trout, westslope cutthroat trout, and Columbia redband trout. This project complies with the HCP. The HCP can be found at http://dnrc.mt.gov/divisions/trust/forest-management/hcp.

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

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

- **Montana/Idaho Airshed Group-** The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2010). As a member, DNRC must submit a list of planned burns to the Airshed Group's Smoke Monitoring Unit describing the type of burn to be conducted, the size of the burn in acres, the estimated fuel loading in tons/acre, and the location and elevation of each burn site. The Smoke Monitoring Unit provides timely restriction messages by airshed. DNRC is required to abide by those restrictions and burn only when granted approval by the Smoke Monitoring Unit when forecasted conditions are conducive to good smoke dispersion.

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

ALTERNATIVES CONSIDERED:

No-Action Alternative: Under this alternative, no timber would be harvested and therefore no revenue would be generated from the project area for the Common Schools and Montana State University 2nd Grant at this time. Salvage logging, firewood gathering, recreational use, fire suppression, noxious-weed control, additional requests for permits and easements, and ongoing management requests may still occur. Natural events, such as plant succession, tree mortality due to insects and diseases, windthrow, down fuel accumulation, in-growth of ladder fuels, and wildfires, would continue to occur.

Action Alternative: A commercial timber harvest would occur to remove approximately 750 thousand board feet of timber using ground-based harvesting systems across approximately 146 acres. Silvicultural prescriptions applied under this alternative would generate new stands of healthy trees on 63 acres through implementation of clearcut w/reserves and seed tree treatments. A commercial thin treatment would be applied to 81 acres to increase stand productivity and resiliency.

In addition to the proposed harvest treatments, post-harvest actions will also be required to ensure successful regeneration of new stands as well as reductions in fuel loadings. Mechanical site preparation would occur on 18 acres. Weed spraying would occur on all roads within the proposed Jellison Bearpaw Timber Sale Project. Road maintenance and BMP improvements would be performed on approximately 14.3 miles of existing roads and up to 0.6 miles of new temporary road construction to facilitate harvest operations.

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:

Vegetation Existing Conditions:

Major harvests (greater than 250 Mbf) occurred in the 1940s, 1960s, 1982, 1999 and 2010. Fire suppression efforts since the 1920s have allowed an increase of shade tolerant species such as grand fir, subalpine fir, Engelmann spruce and western red cedar. More recent harvests from 1990s and 2000s have concentrated on moving stands towards more seral species composition such as western larch/Douglas-fir and western white pine.

The Forest Management Rules direct DNRC to promote biodiversity by taking a coarse-filter approach that favors an appropriate mix of stand structures and composition on State lands (ARM 36.11.404). Cover type refers to the dominant tree species that currently occupy a forested area and is one of the factors DNRC uses to describe biodiversity levels. Table V-1 THE CURRENT AND DESIRED FUTURE CONDITIONS OF COVER TYPES IN THE JELLISON BEARPAW PROJECT AREA depicts the current cover types vs. the desired future condition cover types.

Table V-1 THE CURRENT AND DESIRED FUTURE CONDITIONS OF COVER TYPES IN THE JELLISON BEARPAW PROJECT AREA

Cover Type	Current Condition	Desired Future Condition
	Acres	
Alpine Fir	44.3	0
Douglas-Fir	43.8	0
Hardwoods	0.3	46.8
Mixed Conifer	1527.6	133.5
Ponderosa Pine	22.1	22.1
Subalpine Fir	20.2	0
Western Larch/Douglas-Fir	479.6	243.8
Western White Pine	234.4	1,440.4
Non-inventoried		485.6

Table V-2 UNIT SPECIFIC STAND LEVEL INVENTORY DATA (After further evaluation, units 1-7,12 and 15 were removed due to sensitive soil conditions.)

Harvest Unit	Habitat Group	Fire Regime	Current Cover Type	Age Class (years)	DFC	RX	Acres
8	Cool and moist (westside)	Low-to-mixed	Western Larch/Douglas Fir	40-99	Western White Pine	Commercial Thinning	35.3
9	Warm and moist (westside)	Low-to-mixed	Subalpine Fir	150-199	Western White Pine	Seed Tree	14.1
10	Warm and moist (westside)	Low-to-mixed	Western Larch/Douglas Fir	200+	Western White Pine	Overstory Removal	2.5
11	Warm and moist (westside)	Low-to-mixed	Western White Pine	150-199	Western White Pine	Seed Tree	31.1
13	Cool and moist (westside)	Low-to-mixed	Subalpine Fir	150-199	Western White Pine	Seed Tree	3.1
14	Cool and moist (westside)	Low-to-mixed	Mixed Conifer	40-99	Western Larch/Douglas Fir	Commercial Thinning	45.8
16	Cool and moist (westside)	Low-to-mixed	Mixed Conifer	150-199	Western White Pine	Clear Cutting	6.6
17	Cool and moist (westside)	Low-to-mixed	Western Larch/Douglas Fir	150-199	Western White Pine	Clear Cutting	7.9

DNRC uses the minimum criteria for number and age of large, live trees and stand basal area as described by Green et al. to identify old growth stands on State trust lands. Stillwater Unit currently has 14,785 acres classified as old growth. Currently planned harvest activities (including this project) would reduce the total old growth acres to 14,539. The Jellison Bearpaw project area contains 158.1 acres of classified old growth of which 10.4 acres are proposed for removal. After the currently planned harvest activities are completed, The Stillwater Unit will retain 11.2% of the forest in old growth status. For complete description of prescriptions on the harvest units, please reference Att*achment B-1: Timber Sale Harvest Unit Prescriptions.*

Fire Hazard/Fuels: There are two primary fire groups within the project area, fire groups 9 and 11. Fire group 9 consists of the moist, lower subalpine habitat types and fir group 11 consists of the warm, moist grand fir, western red cedar and western hemlock habitat types. These groups are characterized by infrequent but potentially severe fires. Heavy duff layers, dense

understories and heavy fuel loading all contribute to severe surface fire during unusually dry moisture conditions (Fisher, 1987).

Fuel loading is variable throughout the project area. Blowdown and disease mortality has significantly increased the amount of large downed woody debris material, especially in areas with heavily saturated soils. Most of the project area contains a dense understory consisting of grand fir, western red cedar and Engelman spruce.

Insects and Diseases: There are a variety of insect and disease pathogens impacting tree vigor and growth within the project area. Armillaria (*Armillaria ostoyae*), quinine conks (*Fomitopsis officinalis*), white pine blister rust (*Cronartium ribicola*), pini (*Phellinus pini*), fir engraver (*Scolytus ventralis*), larch dwarf mistletoe (*Arceuthobium abietinum*) and indian paint fungus (*Echinodontium tinctorium*) were the most commonly observed. The primary damages observed were stem damage, wind throw and premature needle cast.

Sensitive/Rare Plants: Montana Natural Heritage Database identified that the species of concern listed in Table V-3 SPECIES OF CONCERN IN JELLISON BEARPAW PROJECT AREA may occur in the project area.

TABLE V-3: SPECIES OF CONCERN IN JELLISON BEARPAW PROJECT AREA

Common Name	Scientific Name	MT State Rank	Habitat
moonworts	*Botrychium sp.*	S1 S3	Meadows
pale corydalis	*Corydalis sempervirens*	S3	Forests/Meadows
slim larkspur	*Delphinium depauperatum*	S2	Meadows
crested shieldfern	*Dryopteris cristata*	S2	Wetland/Riparian
adder's tongue	*Ophioglossum pusillum*	S3	Fens, Wet meadows
big-leaf sedge	*Carex amplifolia*	S3	Subalpine forest, timberline
coville's rush	*Juncus covillei*	S3	Wetland

Montana State Rank Definitions	
S1	At high risk because of extremely limited and/or rapidly declining population numbers, range and/or habitat, making it highly vulnerable to global extinction or extirpation in the state.
S2	At risk because of very limited and/or potentially declining population numbers, range and/or habitat, making it vulnerable to global extinction or extirpation in the state.
S3	Potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas

None of these Species of Concern (SOC) or Potential SOCs were identified in the proposed harvest units during project reconnaissance. These SOCs were not identified in the Plant Survey conducted in 1998 (Vanderhorst, 1998). If any are confirmed, timber harvest would be postponed in that specific area would be postponed until risk to any SOCs can be evaluated (MTNHP, 2017). No additional analysis will be conducted.

Noxious Weeds: Montana Law (MCA 7-22-2101) defines noxious weeds as, "any exotic plant species established or that may be introduced in the state that may render land unfit for agriculture, forestry, livestock, wildlife, or other beneficial uses or that may harm native plant communities". Throughout the project area, weeds listed in Table V-4 NOXIOUS WEEDS IN JELLISON BEARPAW PROJECT AREA have been identified in roadsides, landings and other areas with disturbed soils. Currently the primary spread of noxious weeds comes from vehicle traffic.

Table V-4: NOXIOUS WEEDS IN JELLISON BEARPAW PROJECT AREA

Common Name	Scientific Name	Weed Priority
orange hawkweed	*Hieracium aurantiacum*	2A
tansy ragwort	*Senecio jacobea*	2A
Spotted knapweed	*Centraurea maculosa*	2B
Common tansy	*Tanacetum vulgare*	2B
Canada thistle	*Cirsium arvense*	2B

Weed Priority 2A	These weeds are common in isolated areas of Montana. Management criteria will require eradication or containment where less abundant (MFG, 2019).
Weed Priority 2B	These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant (MFG, 2019).

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					
Age Class	x				x				x					
Old Growth	x				x				x					
Fire/Fuels	x				x				x					
Insects/Disease	x				x				x					
Rare Plants	x				x				x					
Noxious Weeds	x				x				x					
Action														
Current Cover/DFCs		x			x					x				**V-1**
Age Class		x			x					x				**V-2**
Old Growth		x				x				x				**V-3**
Fire/Fuels		x			x					x				**V-4**
Insects/Disease	x					x				x				**V-5**
Rare Plants	x				x				x					**V-6**
Noxious Weeds		x			x					x			**Y**	**V-7, V-8**

Vegetation Comments:

V-1 A positive impact to desired future conditions would occur. Approximately 17.1 acres of subalpine fir, 10.4 acres of western larch/Douglas-fir and 6.6 acres of mixed conifer would be converted to a western white pine cover type. Approximately 45.8 acres of mixed conifer would be converted to the western larch/Douglas-fir cover type.

V-2 Impacts to overall age class would be low within the project area. Approximately 17 acres in the 150-199 year old age class would be converted to the 0-39 year old age class. No other changes to age class will occur.

V-3 Approximately 10.4 of the 158.1 acres of old growth within the project area would no longer meet the old growth definition post-harvest. This project would reduce the amount of old growth on the Stillwater State Forest by .07% and cumulatively, when considering other proposed sales on the Unit, old growth would be reduced by 1.4%. Following implementation of Stillwater Unit's currently proposed timber sales, the Unit would reduce old growth from 14,785 to approximately 14,574 acres.

V-4 Minimal fuels reduction would occur across the project area. A slight decrease in ladder fuels and improved roads would be the largest positive impacts on wildland fire control.

V-5 A low secondary impact to current insect and disease issues would occur. A commercial thin on 81.1 acres would increase the health and vigor of the remaining trees post-harvest. The regeneration harvests on the remaining 83.3 acres would move the stands towards a younger and healthier forest type.

V-6 Most of the rare and sensitive plants within the project area have habitats that are within wetland ecosystems. The proposed timber sale units do not extend into wetland areas, no impact to rare and sensitive plants is expected.

V-7 Positive impacts to the control of noxious weed populations would continue given the Stillwater Unit's herbicide spray program conducted within the project area.

V-7 Soil disturbances and logging equipment could increase the amount and distribution of noxious weeds in the project area, yet positive impacts to the control of noxious weed populations would also occur. Road work would increase access on roads for weed spraying equipment and the Unit would continue to conduct weed spraying within the project area and elsewhere on the Stillwater Unit.

Vegetation Mitigations*:*

1) The spread of noxious weeds from the use of mechanized equipment and ground disturbance would be minimized, but not eliminated, by the washing of equipment before entering the site, weed spraying on roads before and after harvesting (ARM 36.11.445), and grass seeding disturbed areas and after blading.

SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions: According to the *Soil Survey of Flathead National Forest Area, Montana* (Martinson and Basko 1998) four landtypes have been identified in the project area (10-2, 14-2, 26C-7 and 26C-8). All the landtypes are generally considered to have a moderate susceptibility to surface erosion. Harvest units within the project area are located on landtypes 10-2 and 26C-7. Both landtypes have a moderate-to-high susceptibility to compaction – unless carefully managed – which can lower the productivity of the soil.

Past harvesting has occurred on most of the project area and proposed harvest area. Harvesting of forest products is documented as early as 1926 in the project area and includes sawlog material, post and poles, firewood, Christmas trees and railroad ties. During field reconnaissance, visual estimates of impacted areas within previously harvested sites is less than 10 percent. This includes skid trails and landings which are slow to recover due to compaction.

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**				**S-1**
Erosion	**x**				**x**					**x**				
Nutrient Cycling	**x**				**x**				**x**					
Slope Stability	**x**				**x**				**x**					
Soil Productivity	**x**				**x**					**x**				
Action														
Physical Disturbance (Compaction and Displacement)		**x**				**x**				**x**				**S-1, S-3**
Erosion		**x**				**x**				**x**				**S-3**
Nutrient Cycling		**x**				**x**				**x**				**S-2**
Slope Stability	**x**				**x**				**x**					
Soil Productivity		**x**				**x**				**x**				**S-2**

Soil Comments:

S-1 Past monitoring on DNRC timber sales from 1988 to 2011 has shown an average of 11.3 percent soil impacts due to compaction, displacement or severe erosion across all parent materials. Seventeen monitoring sites had soil textures similar (gravelly silt loam) to the areas proposed for harvest in this project. Stratifying the results by soil texture that are similar to the majority of the proposed harvesting shows an average of approximately 14.3 percent of the harvest areas impacted from erosion, displacement or severe compaction on ground-based harvesting operations. (DNRC 2011).

S-2 Coarse woody debris would be left on-site in volumes recommended to help maintain soil moisture and forest productivity, generally in the 10 to 20 tons per acre range for habitat types found in the harvest locations. Because coarse woody debris would be left on site in amounts similar to other productive stands with similar habitat types, and fine debris removal would be maintained as much as practicable, the risk of measurable adverse direct or indirect impacts to nutrient cycling would be low.

S-3 By designing the proposed harvesting operations with soil-moisture restrictions, season of use, and method of harvesting, the risk of unacceptable long-term impacts to soil productivity from compaction and displacement and nutrient pool losses would be low.

Soil Mitigations:

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

1) Limit equipment operations to periods when soils are relatively dry, (less than 20 percent), frozen, or snow-covered to minimize soil compaction and rutting, and maintain drainage features. Check soil moisture conditions prior to equipment start-up.

2) On ground-based units, the logger and sale administrator would agree to a skidding plan prior to equipment operations. Skid-trail planning would identify which main trails to use and how many additional trails are needed. Trails that do not comply with BMPs (i.e. trails in draw bottoms) would not be used unless impacts can be adequately mitigated. Regardless of use, these trails may be closed with additional drainage installed, where needed, or grass-seeded to stabilize the site and control erosion.

3) Tractor skidding should be limited to slopes of less than 40 percent unless the operation can be completed without causing excessive displacement or erosion. Based on site review, short, steep slopes may require a combination of mitigation measures, such as adverse skidding to a ridge or winchline, and skidding from more moderate slopes of less than 40 percent.

4) Keep skid trails to 20 percent or less of the harvest unit acreage. Provide for drainage in skid trails and roads concurrently with operations.

5) Slash disposal: Limit the combination of disturbance and scarification to 30 to 40 percent of the harvest units. No dozer piling on slopes over 35 percent; no excavator piling on slopes over 40 percent, unless the operation can be completed without causing excessive erosion. Consider lopping and scattering or jackpot burning on the steeper

slopes. Consider disturbance incurred during skidding operations to, at least, partially provide scarification for regeneration.

6) Retain 10 to 20 tons of large woody debris and a feasible majority of all fine litter following harvesting operations. On units where whole tree harvesting is used, implement one of the following mitigations for nutrient cycling: 1) use in-woods processing equipment that leaves slash on site; 2) for whole-tree harvesting, return-skid slash and evenly distribute within the harvest area; or 3) cut tops from every third bundle of logs so that tops are dispersed as skidding progresses.

WATER QUALITY AND QUANTITY:

The risk of measurable cumulative impacts is based upon the low amount of harvest proposed in relation to the 6th code watershed. In addition, stream channel stability was reviewed for this project and past projects in the area.

Water Quality and Quantity Existing Conditions:

The 6th code Swift Creek-Hemlock Creek watershed is an 18,248-acre subset of the entire Swift Creek watershed. Several named streams are tributary to Swift Creek below the project area including King, Bear, Anchor, Trail and Hemlock creeks. While only a portion of Gill Creek is within the project area, multiple unnamed tributaries are present. Ownership within the Swift Creek-Hemlock Creek watershed is 77 percent State Trust Lands managed by DNRC, 21 percent federal lands managed by the USFS, 1 percent industrial timber lands and 1 percent in private non-industrial ownership.

Swift Creek and its tributaries were inventoried in 1999 for channel stability, sediment sources and stream crossing conditions. Channel stability was also evaluated during fieldwork in 2021 for this timber sale proposal and during fieldwork for the King-Hemlock Timber Sale (DNRC 2014), Lazy-Swift 2 Timber Sale (DNRC 2013), and the Beaver-Swift-Skyles Timber Sale (DNRC 2009). An R1/R4 fisheries habitat inventory was conducted on Swift Creek in 2002. In-channel sediment sources such as mass wasting sites or excessive erosion were not found during field reconnaissance on the tributaries to Swift Creek. Several large eroding Pleistocene banks can be found along Swift Creek above, below and along the southwestern side of the project area. These eroding banks are very similar to eroding banks on the North and Middle Forks of the Flathead River and are considered natural features. Suspended sediment in Swift Creek is high during the high flow period but low during the low flow period (DEQ 2012).

Water Quality & Quantity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Water Quality	**x**				**x**					**x**				
Water Quantity	**x**				**x**					**x**				**H-1**

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		
Action														
Water Quality		**x**			**x**					**x**				**H-2**
Water Quantity	**x**				**x**					**x**				**H-1**

Water Quality & Quantity Comments:

H-1 Approximately 146 acres would be harvested using conventional ground-based and yarding methods. Due to the limited proposed harvest, it is unlikely that any measurable increase in water yield would result. Annual water yield was estimated to be near seven percent in 2020 with a threshold of 11 percent. Therefore, a low risk of cumulative impacts from water yield would be expected.

H-2 Approximately 1.2 acres of harvest near two Class 3 stream segments and up to 0.25 acres of RMZ harvest within 100 feet of a Class 1 stream is proposed. During a review of BMP effectiveness, including stream buffer effectiveness, Raskin et al 2006 found that 95 percent of erosion features (disturbed soil) greater than 10 meters (approximately 33 feet) from the stream did not deliver sediment. His findings indicated that the main reasons stream buffers are effective include 1) keeping active erosion sites away from the stream, and 2) stream buffers may intercept and filter runoff from upland sites if the runoff is not concentrated in gullies or similar features (Raskin et al 2006).

Because BMPs would be implemented during timber-harvesting and road maintenance operations, a low risk of low cumulative impacts to water quality and beneficial uses, would be expected.

Water Quality & Quantity Mitigations:

Follow all applicable Forestry BMPs to minimize the risk of sediment delivery to streams.

FISHERIES:

Fisheries Existing Conditions: Fish presence in streams within the project area was investigated using the Montana Fisheries information System (MFISH) managed by Montana Fish, Wildlife and Parks. Field verification was conducted by the DNRC fisheries biologist using a backpack electroshocker. Few fish were found upstream of the Lower Whitefish Road, indicating that some impediment to fish passage may be occurring, however habitat above the Lower Whitefish Road is marginal due to steeper stream gradients. Species present within the project area streams include bull trout, westslope cutthroat trout, eastern brook trout, rainbow trout, slimy sculpin, and mountain whitefish. The unnamed tributaries that are prevalent in the project area primarily contain eastern brook trout and a lesser population of westslope cutthroat trout.

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														
Sediment	**x**				**x**				**x**					
Flow Regimes	**x**				**x**				**x**					
Woody Debris	**x**				**x**				**x**					
Stream Shading	**x**				**x**				**x**					
Stream Temperature	**x**				**x**				**x**					
Connectivity	**x**				**x**				**x**					
Populations	**x**				**x**				**x**					
Action														
Sediment		**x**				**x**				**x**			**Y**	**F-1**
Flow Regimes	**x**				**x**					**x**			**N**	**F-2**
Woody Debris		**x**				**x**				**x**			**Y**	**F-3**
Stream Shading		**x**				**x**				**x**			**Y**	**F-3**
Stream Temperature		**x**				**x**				**x**			**Y**	**F-3**
Connectivity	**x**				**x**					**x**			**Y**	**F-4**
Populations	**x**				**x**					**x**			**N**	

***Fisheries Comments**:*

F-1 See *Water Quality and Water Quantity* section above.

F-2 See *Water Quality and Water Quantity* section above.

F-3 Total RMZ harvest proposed is 0.25 acres. As described in the Montana DNRC Forested Trust Lands Habitat Conservation Plan Final EIS (DNRC 2010), a no-harvest zone of 50 feet immediately adjacent to streams would be expected to retain a level of stream shading similar to pre-harvest conditions. The RMZ buffers proposed under this alternative would maintain all the trees within 50 feet of Class 1 streams and remove a maximum of 50 percent of the merchantable trees proposed 0.25 acres parcel. Therefore, stream shading post-project is expected to maintain a low risk of increasing stream temperatures due to timber harvesting. Additionally, the RMZ would continue to provide recruitable woody debris into the stream for fisheries habitat.

F-4 Stream crossings along the proposed haul route were evaluated over the last few years. Three stream crossings that are considered as partial barriers will be replaced during

2022 or 2023 although the affected road segments would not be used for timber hauling under this project.

F-5 The most prevalent species in the project area is the non-native eastern brook trout. No changes to populations or species composition would be expected from this proposal.

Fisheries Mitigations:
Follow all applicable Forestry BMPs to minimize the risk of sediment delivery to streams.

WILDLIFE:

Wildlife Existing Conditions: The Project Area consists of contiguous DNRC-managed lands in the Stillwater State Forest totaling 2,372 acres. The Project Area is comprised of diverse habitat conditions that favor native wildlife species using forested habitat. Habitats range from old-growth forest to open wet meadows to young regenerating conifer stands at elevations from 4,200 to 3,500 feet. The Project Area contains 1,250 acres of mature forest stands (trees ≥9" dbh with ≥40% canopy closure). There are approximately 158 acres of old-growth forest using Green et al. (1992) standards. Approximately 346 acres harvested in the 1990s and early 2000s currently consist of well-stocked forest stands up to 35 feet tall. Most of these acres are on 1,209 acres of private industrial timberlands acquired by DNRC in 2018 and 2019. High-elevation alpine (unforested) environments are present 1 mile to the east at the crest of the Whitefish Mountains. Additional DNRC-administered lands surround the Project Area, although most lands to the south and west were also recently acquired private industrial timberlands. Approximately 18.4 miles of roads are present within the Project Area, of which 7.0 miles are open and 11.4 miles are restricted from public motorized use. Open roads are being used for forest management and recreational activities. Restricted roads receive occasional agency motorized use for resource and fire-management purposes. Public non-motorized use is likely low in this Project Area except during the huckleberry picking season (July) and big game hunting season (Oct-Nov) when it elevates to a moderate level. Cumulative effects analysis areas (hereafter CEAAs) incorporate lands near the Project Area and include a 15,640-acre area for smaller-ranged animals like pileated woodpeckers and a 33,126-acre area for animals that travel across larger areas such as grizzly bears and big game. Additional information on CEAAs and analysis methods are available upon request.

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

Action Alternative (see Wildlife table below):

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

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

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
and Douglas-fir forest														
Peregrine falcon *(Falco peregrinus)* Habitat: Cliff features near open foraging areas and/or wetlands	**X**				**X**				**X**					**WI-3**
Pileated woodpecker *(Dryocopus pileatus)* Habitat: Late-successional ponderosa pine and larch-fir forest		**X**				**X**				**X**			**Y**	**WI-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**					**WI-7**
Hoary bat (*Lasiurus cinereus*) Habitat: coniferous and deciduous forests and roost on foliage in trees, under bark, in snags, bridges		**X**				**X**			**X**				**Y**	**WI-8**
Townsend's big-eared bat *(Plecotus townsendii)* Habitat: Caves, caverns, old mines	**X**				**X**				**X**					**WI-3**
Wolverine (*Gulo gulo*) Habitat: high elevation areas that retain high snow levels in late spring	**X**				**X**				**X**					**WI-9**
Big Game Species														
Elk		**X**				**X**				**X**			**Y**	**WI-10**
Whitetail		**X**				**X**				**X**			**Y**	**WI-10**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Mule Deer		**X**				**X**				**X**			**Y**	**WI-10**
Other														
Mature Forest		**X**				**X**				**X**				**WI-11**
Old-growth Forest		**X**				**X**				**X**				**WI-11**

Wildlife Comments:

WI-1. Grizzly Bear – Approximately 146 acres of hiding cover would be affected by the proposed activities (7.4% of existing habitat in the Project Area; 0.7% in the Large CEAA). Of these acres, approximately 65 acres would be treated with harvest prescriptions that would not retain adequate vegetation to provide hiding post-harvest. Another 81 acres of hiding cover would receive an intermediate harvest treatment that would reduce some vegetation but maintain cover for grizzly bears. After harvest, 81.2% of the Project Area and 66.6% of the Large CEAA would provide hiding cover for bears. To mitigate for potential adverse effects, patches of cover would be retained such that no point within seed tree or clearcut units would be greater than 600 feet to hiding cover. Visual screening would also be retained between open roads and harvest units having fewer than 25 tree per acre to reduce the potential of human-bear conflicts and displacement of bears from important habitat. No new permanent roads would be constructed, however functionally open roads could temporarily increase from 1.9 miles per square mile to 2.6 miles per square mile during project activities. Approximately 0.6 miles of temporary road would be constructed, but these roads would be closed post-harvest and long-term open road density would not change. Additionally, spring timing restrictions would be applied from April 1 – June 15 to provide security for grizzly bears in the spring. Impacts to hiding cover and increased disturbance under the Action Alternative would be additive to any recent or ongoing vegetation management projects within the CEAA. The following table summarizes these projects and acres affected:

Project Name	Agency	Status	Project Area	Small CEAA	Large CEAA
King Hemlock Timber Sale	DNRC	Completed 2018		25.8 ac	492.8 ac
Antice South Timber Sale	DNRC	Completed 2020		209.9 ac	209.9 ac
Antice Knobs2 Timber Sale	DNRC	Completed 2021		144.1 ac	252.8 ac
Swift Smith Excaline	DNRC	Completed 2022		166.2 ac	166.2 ac
Antice Central Timber Sale	DNRC	Active			275.9 ac
Antice Point North Timber Sale	DNRC	Active			61.2 ac
Upper Swede Timber Sale	DNRC	Active		120.7 ac	253.0 ac
Acquisition Lands PCT	DNRC	Active		86.6 ac	752.2 ac
Taylor Hellroaring Trails	USFS	Active			8.2 mi
Taylor Hellroaring Vegetation Management	USFS	Active			513.5 ac

Overall, appreciable changes to the grizzly bear population or long-term movements of grizzly bears within the CEAA would not be anticipated.

WI-2. Canada Lynx – Approximately 146 acres of suitable lynx habitat (6.3% of existing suitable habitat in the Project Area; 0.6% in the Large CEAA) would be altered by the proposed Action Alternative. Of these acres, 65 acres would be treated with harvest prescriptions that would not retain enough conifer cover to continue providing suitable lynx habitat immediately post-harvest. The remaining 81 acres would receive treatments that would reduce some suitable habitat attributes but would continue to provide conditions that support use by lynx. Suitable lynx habitat would remain in 95.5% of the Project Area and 70.9% of the Large CEAA. To ensure that forest structural attributes preferred by lynx and lynx prey (snowshoe hares) remain following harvest, some patches of advanced regeneration and shade-tolerant trees would be retained within portions of suitable lynx habitat. Additionally, 10 to 20 tons/acre of coarse woody debris would be retained in accordance with DNRC Forest Management Rules (*ARM 36.11.414*) and retention of downed logs ≥15 inch diameter would be emphasized. Lynx habitat connectivity within the Project Area would be minimally reduced and would remain well-connected throughout the area. Suitable habitat in the Project Area would remain connected to potentially suitable habitat in the surrounding Large CEAA. Any lynx that might be using the area could temporarily be displaced from the Project Area for up to four years by the proposed activities. Disturbance/displacement and habitat alteration by the proposed DNRC activities would be additive to recent or ongoing forest management projects on lands within the larger CEAA (see table of projects within the Grizzly Bear section above).

WI-3. This species was evaluated and it was determined that the Project Area lies outside of the normal distribution for the species, and/or suitable habitat was not found to be present.

WI-4. Bald Eagle – No known bald eagle territories occur within the Project Area. Appreciable use of the Project Area by bald eagles would not be expected due to the lack of preferred habitat (e.g. lakes, large meadows), although occasional use of the eastern border (Swift Creek) by foraging eagles could occur.

WI-5. Fisher – Approximately 104 acres of suitable fisher habitat would be affected by the proposed activities (6.6% of fisher habitat available in the Project Area; 1.4% of suitable habitat in the Medium CEAA). None of these 104 acres would be suitable for breeding fishers post-harvest due to low amounts of mature conifer cover. Some stands (48 acres) would retain total crown closure over 40% (including smaller conifers) and could still be used for travel cover by fishers. To reduce adverse effects on fishers, at least 2 large snags and 2 large snag recruitment trees per acre (>21 inches dbh) would be retained (*ARM 36.11.411*). These snags are important habitat features that provide resting and denning sites for fishers. Overall connectivity would be reduced to a minor degree and remain well-connected across the Project Area, although it is limited by low availability of suitable habitat on adjacent lands. Furthermore, given the lack of fisher observations (MNHP 2022, DNRC unpublished data) the likelihood of fishers using the Project Area is low. Should any fishers be present within the Small CEAA, habitat alteration and potential disturbance would be additive to any activities occurring or planned on surrounding lands, including recent DNRC timber sales (see table of projects within the Grizzly Bear section above). However, considering the minor amount of harvest at the scale of the Small CEAA, and complete absence of fisher observations within the region in the last 20 years (Krohner 2022, MNHP 2022, Coltrane and Inman 2021), negligible effects to fishers in the large CEAA would be expected.

WI-6. Pileated Woodpecker – The proposed activities would affect 56 acres of suitable pileated woodpecker habitat (7.4% of habitat available in the Project Area; 1.9% within the Small CEAA). All these acres would be treated with harvest prescriptions causing these stands to become unsuitable for pileated woodpecker use post-harvest. Approximately 692 acres of

suitable pileated woodpecker habitat would remain post-harvest, or 29.2% of the Project Area. To decrease potential adverse effects on pileated woodpeckers, at least 2 large snags and 2 large snag recruitment trees per acre (>21 inches dbh, or largest size class available), along with large cottonwood trees, would be retained and all snags cut for safety reasons would be left in the harvest unit (*ARM 36.11.411*). Additionally, 10 to 20 tons/per acre of downed wood would be retained, with an emphasis on logs >15" diameter. Although the Project Area by itself would likely continue to support breeding pileated woodpeckers, habitat quality would decrease to a minor degree. Habitat availability within the Small CEAA is limited due to unsuitable covertypes in high-elevation areas and past timber harvesting on surrounding lands, however over 2,983 acres would remain as suitable habitat. Habitat alterations due to the proposed action would be additive to recent forest management projects on DNRC and USFS lands (see table of projects within the Grizzly Bear section above). Overall, continued use of the Small CEAA by pileated woodpeckers would be anticipated.

WI-7. Fringed myotis – The Project Area contains few rocky outcrops that could be used by roosting fringed myotis. No known caves or mines are present. Harvesting activities would not generally occur in these areas, however roosting bats (should they be present) could be temporarily disturbed by equipment in proximity to rocky areas. As these sites are not high-congregation areas and disturbance would be temporary, low impacts to fringed myotis would be anticipated.

WI-8. Hoary bat – The proposed activities would affect approximately 146 acres of potential hoary bat habitat. Because hoary bats typically roost in trees and snags, they could be temporarily disturbed by timber harvesting. Potential disturbance would only be expected from June through September, when hoary bats are in Montana. After the conclusion of activities, continued use of harvested areas by hoary bats would be anticipated. At least 2 large snags and 2 large snag recruitment trees per acre (>21 inches dbh, or largest size class available) would be retained and could provide roosting habitat. Hoary bats are considered common and widespread throughout Montana, but wind energy and diseases such as white-nosed syndrome pose threats to their population (Bachen et al 2020).

WI-9. Wolverine - No potentially suitable wolverine habitat exists within the proposed Project Area. The Project Area does not maintain deep snow into late spring and does not contain high-elevation alpine habitat. While a wolverine could pass through the Project Area during its extensive movements, particularly given its proximity to the Whitefish Mountains, appreciable use of the area is not expected. Given the large home range area (average 150+ sq. miles) wolverines occupy, and long distances wolverines typically cover during their movements, the proposed activities would not be expected to measurably affect use of the area by wolverines.

WI-10. Big Game – White-tailed deer, mule deer and elk winter range is not present within the Project Area (*DFWP 2008*). However, use of the Project Area by these species during the non-winter seasons is likely. Winter range for moose is present, though moose are not as constrained by deep snow conditions and thermal cover/snow intercept availability as deer and elk. Timber harvesting would affect 76 acres of thermal cover (8.4% of thermal cover available in the Project Area). All these acres would be treated with harvest prescriptions that would reduce mature canopy cover below 40%, reducing the capacity of these stands to provide thermal cover during typical winter conditions. High-quality thermal cover/snow intercept would remain on 833 acres within the Project Area. Approximately 778 acres would contain mature and submerchantable tree density sufficient to provide some thermal cover during less severe winters. Approximately 146 acres (65.1% of the Project Area) of hiding cover would be altered by thinning or harvesting. Harvest prescriptions would remove cover on 65 acres and reduce

cover quality, but still provide it, on 81 acres. Because contractors would be required to conserve select patches of regenerating conifers and submerchantable trees (which are plentiful throughout most of the Project Area), hiding cover would remain within some harvested areas postharvest. Broken topography reduces sight distances in other parts of the Project Area. No new open roads would be built. New temporary roads would be built totaling 0.6 miles; these roads would be restricted from public motorized use during and after the conclusion of activities. Thus, security for big game would return to existing levels after the proposed Action is complete. Impacts to hiding cover and thermal cover/snow intercept under the Action Alternative would be additive to any ongoing vegetation management projects on lands within the larger surrounding area, including recent DNRC timber sales (see table of projects within the Grizzly Bear section above). Hiding cover would remain relatively abundant within the Large CEAA, however high-quality thermal cover/snow intercept would continue to be limited (29.0% of the CEAA) on big game winter range due to unsuitable forest types, past wildfire, and forest management. Overall, measurable big game population changes at the scale of the Large CEAA would not be expected because of the action alternative.

WI-11. Mature Forest/Old-growth Forest – The proposed Action would harvest approximately 84 acres of mature forest (6.7% of mature forest within the Project Area; 1.5% within the Small CEAA) with a reasonably closed canopy (≥40% canopy closure). Of these acres, 10 acres of old-growth forest (6.6% of old-growth within the Project Area; 0.6% within the Small CEAA) would be harvested and removed from old-growth status. Harvest prescriptions on 84 acres, including all 10 acres of old-growth being harvested, would reduce live tree densities and bring overstory canopy cover below 40%. Thus, these stands would no longer be suitable for wildlife species preferring dense forest with more shaded canopies. At the same time, habitat suitability for species utilizing younger stands and open forest with widely scattered mature trees would increase. Approximately 1,166 acres (49.2% of the Project Area) of mature forest would remain in the Project Area. Connectivity of mature forest would be reduced to a minor degree within the Project Area and existing stands would remain connected with other mature stands outside in the Small CEAA. Proposed old-growth removal would not fragment larger old-growth stands or substantially effect old-growth connectivity. Past wildfire (Werner Peak fire, 2001) and forest management projects on DNRC, USFS and private timberlands have removed some mature forest and continue to alter mature forest stands within the Small CEAA; the proposed action would be additive to these changes at the broader spatial scale (see table within the Grizzly Bear section above). However, mature forest would remain moderately present (34.3%) and well-connected through much of the small CEAA.

***Wildlife Mitigations**:*

- If a threatened or endangered species is encountered, consult a DNRC biologist immediately. Similarly, if undocumented nesting raptors or wolf dens are encountered within ½ mile of the Project Area, contact a DNRC biologist.
- Contractors will adhere to food storage and sanitation requirements as described in the timber sale contract. Ensure that all attractants such as food, garbage, and petroleum products are stored in a bear-resistant manner.
- Prohibit contractors and purchasers conducting contract operations from carrying firearms while on duty as per *ARM 36.11.444(2)*.
- Prohibit all harvesting-related motorized activities more than 100 feet from open roads from April 1 – June 15.
- Retain visual screening along open roads to the greatest extent practicable.
- Effectively close restricted roads and skid trials in the Project Area via a combination of gates, kelly humps, rocks, and stumps. Maintain public motorized restrictions on restricted and temporary roads during and after harvest activities.

- Within commercial harvest units, retain patches of advanced regeneration of shade-tolerant trees as per *LY-HB4* (*USFWS and DNRC 2010*).
- Retain at least 2 snags and 2 snag recruits per acre >21 inches dbh or the next available size class, particularly favoring ponderosa pine, western larch and Douglas-fir for retention. If snags are cut for safety concerns, they must be left in the harvest unit.
- Retain all black cottonwood trees >14 inches dbh as per *ARM 36.11.436(13(iv))*.
- Retain 10-20 tons/acre of coarse-woody debris and emphasize retention of 15-inch diameter downed logs, aiming for at least one 20-foot-long section per acre.

Literature:

Bachen, D.A., A. McEwan, B. Burkholder, S. Blum, and B. Maxell. 2020. Accounts of Bat Species Found in Montana. Report to Montana Department of Environmental Quality. Montana Natural Heritage Program, Helena, Montana. 58 p.

DFWP. 2008. Maps of moose, elk, mule deer, and white-tailed deer distribution in Montana. *In* Individual GIS data layers. Available online at: https://gis-mtfwp.opendata.arcgis.com/

Coltrane, J. and Inman, R. 2021. Fisher occupancy twenty-five years after translocation in the Rocky Mountains of Montana. Northwestern Naturalist 102(1): 43-54.

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

Krohner, J. M., P. M. Lukacs, R. Inman, J. D. Sauder, J. A. Gude, C. Mosby, J. A. Coltrane, R. A. Mowry, and J. J. Millspaugh. 2022. Finding fishers: determining fisher occupancy in the Northern Rocky Mountains. The Journal of Wildlife Management 86: e22162.

MNHP. 2022. Natural Heritage Map Viewer. Montana Natural Heritage Program. Retrieved on June 13, 2022, from http://mtnhp.org/MapViewer.

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

AIR QUALITY:

Air Quality	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Smoke	**x**				**x**				**x**					
Dust	**x**				**x**				**x**					
Action														
Smoke		**x**			**x**					**x**			**Y**	**A-1, A2**
Dust		**x**			**x**					**x**			**Y**	**A-3**

Air Quality Comments:

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

A-2 Burning that may occur on adjacent properties in combination with the proposed action could potentially increase cumulative impacts to the local airshed. Thus, cumulative impacts to air quality due to slash pile burning associated with the proposed action would also be expected to be minimal.

A-3 Under the Action Alternative, dust may be generated by log hauling activities during dry conditions.

Air Quality Mitigations:

1. 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.

2. The DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days. DNRC would also follow regulations Flathead County has for Air Quality. Thus, direct, secondary and cumulative effects to air quality due to slash pile burning associated with the proposed action would be minimal.

3. Dust abatement may be required on a portion of Upper Whitefish and Lower Whitefish roads if deemed necessary by the Forest Officer.

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**					**AR-1**
Aesthetics		**x**			**x**					**x**			**Y**	**AR-2**
Demands on Environmental Resources of Land, Water, or Energy	**x**				**x**				**x**					

***Archaeological Comments**:*

AR-1 A Class I (literature review) level review was conducted by the DNRC staff archaeologist for the area of potential effect (APE). This entailed inspection of project maps, DNRC's sites/site leads database, land use records, General Land Office Survey Plats, and control cards. The Class I search results revealed that no cultural or paleontological resources have been identified in the APE. Much of the APE was inventoried in the 1980s and 1990s for previous timber sale proposals.

Because the topographic setting and geology suggest a low to moderate likelihood of the presence of cultural or palaeontologic resources, proposed timber harvest activities are expected to have No Effect to Antiquities. No additional archaeological investigative work will be conducted in response to this proposed development. However, if previously unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.

AR-2 The project area is not located on a prominent topographic area or visible from a densely populated area, but portions of the projects harvest units would be visible from open roads within the project area. Following harvest, landings and slash would be visible in the foreground views and minor changes to tree densities would be noticeable.

Archeological Mitigations:

1) The proposed harvest treatments would leave more trees near the open roads in compliance with the HCP guidelines for visual screening.

2) Following harvest, landings and slash piles would be visible in the foreground views. Forest improvement work and burning of slash piles and landings would be planned within a year of harvest.

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.*

- Chicken Antice Timber Sale Environmental Assessment January 2009
- Swedish Chicken Timber Sale Environmental Assessment February 2011
- Antice Stryker Timber Sale Environmental Assessment April 2016
- Upper Swede Timber Sale Environmental Assessment March 2020

Impacts on the Human Population

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

RECREATION:

Recreation Existing Conditions:

General Recreation- In the summer and fall, the project area is primarily used for berry picking, hunting, fishing, camping, hiking, biking, and sightseeing. In winter months, the area is primarily used for snowmobiling and trapping. Both the Upper Whitefish Road and Lower Whitefish Road are open, high-use roads shared by recreationists and commercial harvesting operations and are the proposed main haul routes for this timber sale. These roads are part of a system of open gravel roads that connect the following areas: Olney, Stryker, Whitefish, Red Meadow Lake and Polebridge. Because of this, the area has become popular with adventure tourism and receives a moderate amount of use.

Commercial Recreation- The Upper Whitefish Road and Lower Whitefish Road are part of a system of groomed snowmobile trails that is licensed and maintained by the Flathead Snowmobile Association. These trails are groomed between December 1st and April 1st or as conditions allow. Three commercial winter recreation license-holders utilize these groomed trails for snowmobiling. In addition, the DNRC issues Special Recreational Use Licenses (SRUL) for guided bicycling and fishing.

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	**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		
population and housing														
Social Structures and Mores	x				x				x					
Cultural Uniqueness and Diversity	x				x				x					
Action														
Health and Human Safety		x			x				x				Y	HP-1
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			Y	HP-2
Density and Distribution of population and housing	x				x				x					
Social Structures and Mores	x				x				x					
Cultural Uniqueness and Diversity	x				x				x					

Recreation Comments:

HP-1: General recreation in the project area would continue to be accessible by the public on open, unrestricted roads. Increased log truck traffic may increase the risk to the public and contractors while driving the Lower Whitefish Road which is narrow and has limited visibility.

HP-2: If winter harvesting occurred, snow plowing on the Upper Whitefish and Lower Whitefish roads would occur and mitigations for safe travel would be implemented as noted below. Due to the volume of snowmobiles and log trucks using the shared plowed roads, the disturbance of the user experience would be expected to be moderate but short term. Some snowmobilers may choose an alternate groomed trail system to avoid riding on a plowed road with truck traffic.

Recreation Mitigations*:*

1) Install signs to increase awareness of log truck traffic to public users and recreationists.

2) If winter harvest activities and log hauling take place, then DNRC would:
   - Restrict log hauling to weekdays only, Monday-Friday.
   - Not allow log hauling to occur between the periods of December 24 and January 2.
   - Further develop safety measures that ensure safe travel and communication between commercial harvesting operations and recreationalists (signage, reduced speed, softened approaches onto plowed roads and designated parking areas).
   - Plow the road where the snow berm is winged-off, making a suitable trail for snowmobiles.
   - Apply road restrictions for the general public if deemed necessary.

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.*

In 1996, the Land Board approved the Record of Decision (ROD) for the State Forest Land Management Plan (SFLMP). The SFLMP provides philosophical basis, consistent policy, technical rationale, and guidance for the management of forested state trust lands. In 2003, DNRC adopted the Administrative Rules for Forest Management (Forest Management Rules; ARM 36.11.401 through 456). The Forest Management Rules are the specific legal resource management standards and measures under which DNRC implements the SFLMP and subsequently its forest management program. The SFLMP outlines the management philosophy, and the proposal will be implemented according to the Forest Management Rules.

In December 2011, the Land Board approved the ROD for the Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP). Approval of the ROD was followed by the issuance of an Incidental Take Permit (Permit) by the U.S. Fish and Wildlife Service (USFWS). The HCP is a required component of an application for a Permit which may be issued by the U.S. Fish and Wildlife Service or National Marine Fisheries Service to state agencies or private citizens in situations where otherwise lawful activities might result in the incidental take of federally-listed species. The HCP is the plan under which DNRC intends to conduct forest management activities on select forested state trust lands while implementing specific mitigation requirements for managing the habitats of grizzly bear, Canada lynx, and three fish species: bull trout, westslope cutthroat trout, and Columbia redband trout.

Other Appropriate Social and Economic Circumstances:
Costs, revenues and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return. The estimated stumpage is based on comparable sales analysis. This method compares recent sales to find a market value for stumpage. These sales have similar species, quality, average diameter, product mix, terrain, date of sale, distance from mills, road building and logging systems, terms of sale, or anything that could affect a buyer's willingness to pay.

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

Action: The timber harvest would generate additional revenue for the following trusts: Public Buildings, MSU 2nd Grant, MSU Morrill, and School for the Deaf and Blind. The estimated return to the trust for the proposed harvest is $185,000 based on an estimated harvest of 684,600 board feet (4,200 tons) and an overall stumpage value of $44.00 per ton. Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives, they are not intended to be used as absolute estimates of return.

References

DEQ, 2012. Clean Water Act Information Center (http://cwaic.mt.gov/), Montana Water Quality Assessment Database. Assessment Record MT76P004_010.

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 2009. Beaver/Swift/Skyles Timber Sale Project Environmental Analysis. Montana Department of Natural Resources and Conservation, Olney, MT.

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

DNRC 2011. DNRC update to the Compiled Monitoring Report. Includes data from 1988 through 2011. Unpublished. Prepared by J. Schmalenberg, Forest Management Bureau, Missoula, MT.

DNRC, 2013. Lazy Swift 2 Timber Sale Final Environmental Assessment. Montana Department of Natural Resources and Conservation. Olney, MT.

DNRC, 2014. King Hemlock Timber Sale Project Environmental Assessment. Montana Department of Natural Resources and Conservation. Olney, MT.

Fisher, W.C., and A.F. Bradley (1987). Fire Ecology of Western Montana Forest Habitat Types. USFS General Technical Report INT-223.

Martinson, A. H. and W. J. Basko. 1998. Soil Survey of Flathead National Forest Area, Montana. USDA Forest Service, Flathead National Forest, Kalispell, Montana.

Montana Field Guide (MFG) (2019). Invasive and Pest Species. Available online at: http://fieldguide.mt.gov/. Last accessed June 25, 2019.

Raskin, Edward B., Casey J. Clishe, Andrew T. Loch, Johanna M. Bell. 2006. Effectiveness of Timber harvest Practices for Controlling Sediment Related Water Quality Impacts. Journal of the American Water Resources Association 42(5), 1307–1327.

Vanderhorst, J. (1998). Plant Survey of the Stillwater State Forest: Beaver Lake, South Taylor, and Chicken/Werner Project Areas, Flathead County, Montana. Prepared for Montana Department of Natural Resources and Conservation.

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: Josh Tomlin and Matt Lufholm
Title: Jellison Bearpaw Timber Sale Project
Date: August 26, 2022

Finding

Alternative Selected

Upon Review of the Checklist EA, and attachments, I find the Action Alternative, as proposed, meets the intent of the project objectives as stated in the Type and Purpose of Action section of this document. This project received four public comments during the scoping period.

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

- An estimated $185,000 dollars would be generated for the Public Buildings, MSU 2nd Grant, MSU Morrill, and School for the Deaf and Blind. The estimated return to the trust is based on an estimated harvest of 684,600 board feet (4,200 tons) and an overall stumpage value of $44.00 per ton.

The Action Alternative complies with all pertinent environmental laws, the DNRC SFLMP and HCP, and is based upon a consensus of professional opinion on limits of acceptable environmental impact. For these reasons and on behalf of DNRC I have selected the Action Alternative to be implemented on this project.

Significance of Potential Impacts

After a review of the scoping documents and comments, project file, Forest Management Rules, SFLMP and HCP checklists, and Department policies, standards, and guidelines, I find that all

the identified resource management concerns have been fully addressed in this Checklist EA and its attachments.

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

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

Need for Further Environmental Analysis

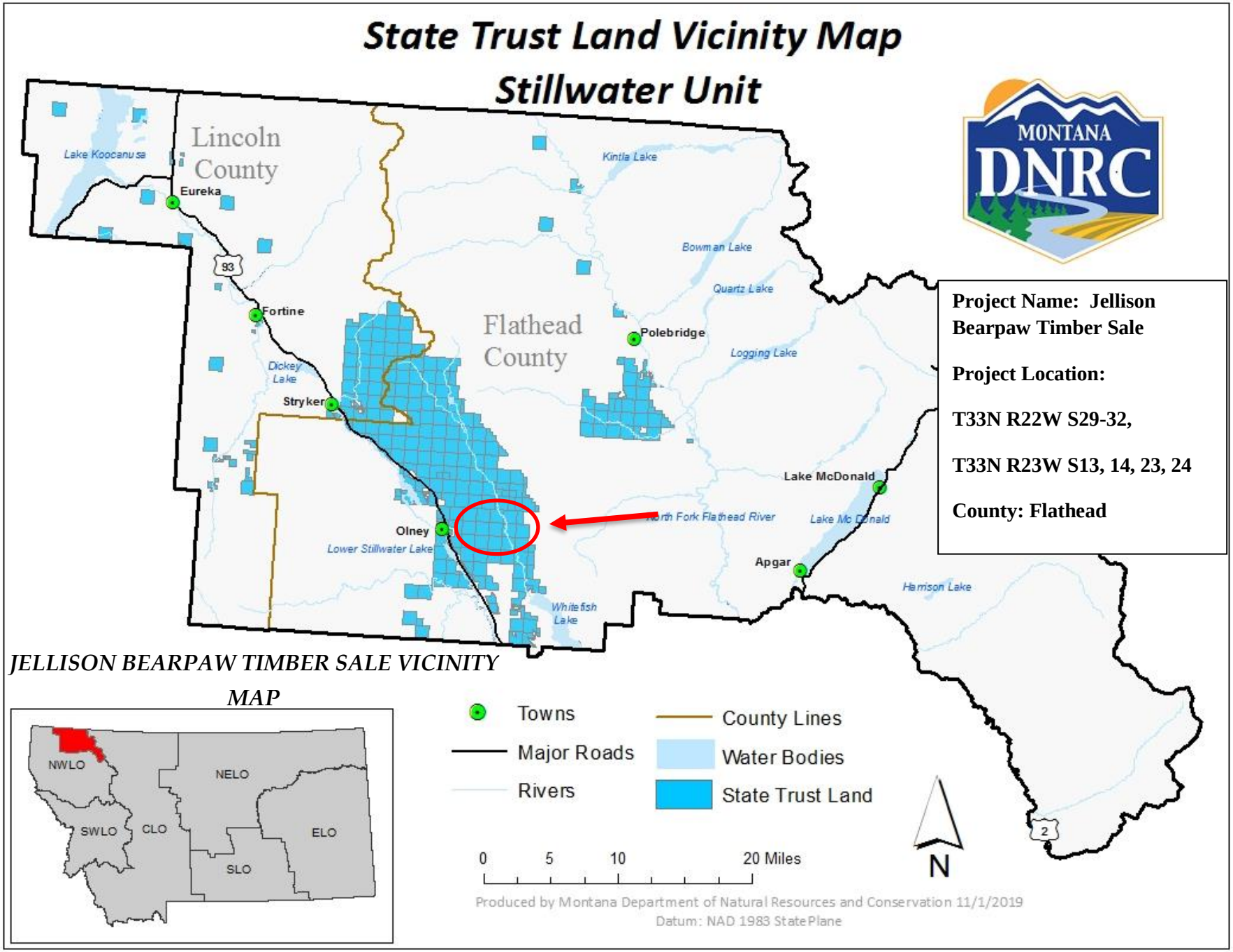
☐	EIS	☐	More Detailed EA	☒	No Further Analysis

Environmental Assessment Checklist Approved By:

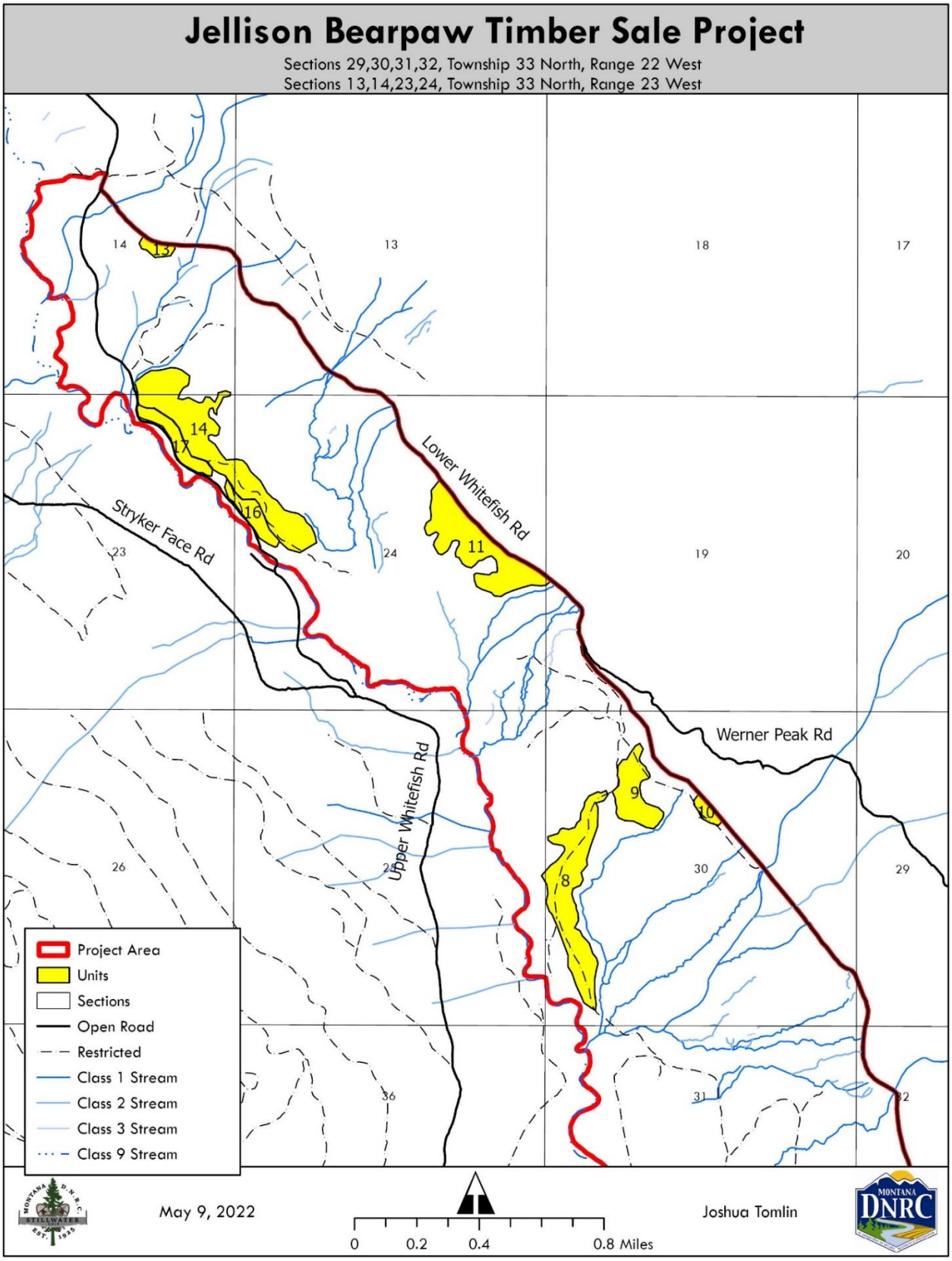
Name: Dave Ring
Title: Stillwater Unit Manager
Date: September 22, 2022
Signature: /s/ David A. Ring

Attachment A - Maps

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Map



Attachment B - Prescriptions

B-1: Timber Sale Harvest Unit Prescriptions

Harvest Prescription Table

Unit	Est. Acres/MBF	Prescription	Particulars involved in unit(s)
8	35.3 acres 64 mbf	Commercial Thin	-Tractor Unit. -Harvest during dry or frozen conditions, harvesting during dry conditions may require winching logs to the road. -Thin to 25-27 trees per acre (approximately 40 ft bole spacing) by removing whitewoods and poorly formed western larch.
9	14.1 acres 100 mbf	Seed tree	-Tractor Unit -Operate during dry or winter conditions. -Retain all vigorous, well-formed western larch and western white pine. -Sound Cottonwood harvest encouraged but optional -Wetland management zones along wetland. - Leave 6-10 trees per acre of the largest diameter class (approximately 66–85-foot bole spacing), of which 2 may be snags and 2 snag recruits. - Class 1 stream on north and south side of unit, no harvesting within SMZ boundaries. - Protect submerchantable trees and shrubs as much as practical within RMZ. - Natural regeneration. Check in five years, evaluate for planting
10	2.5 acres 5 mbf	Overstory Removal	-Tractor Unit. -Harvest during dry or winter conditions -Unit contains mistletoe. Remove most infected trees first but leave 4 trees per acre of the largest diameter class (approximately 100-foot bole spacing), of which 2 may be snags and 2 snag recruits. -Unit adjacent to an open road. -Protect advanced regeneration.

11	31.1 acres 350 mbf	Seed tree	Larch seed tree unit. -Tractor Unit. - Temporary road required, approximately 3,750 feet. -Operate during dry or winter conditions -Unit open to an open road. Retain buffer of 25-27 trees per acre (approximately 40-foot bole spacing) and all submerchantable trees along roadway. -Several class 3 streams and springs within unit boundaries. -Class 1 SMZ on north and south sides of unit, no harvesting within SMZ boundaries.
13	3.1 acres 20 mbf	Seed tree	-Tractor Unit - Operate during dry or winter conditions -Retain all western white pine. -Sound Cottonwood harvest encouraged but optional - Leave 6-10 trees per acre of the largest diameter class (approximately 66–85-foot bole spacing), of which 2 may be snags and 2 snag recruits. -Significant blowdown and cull grand fir within stand, primarily harvesting: western red cedar, spruce and grand fir. -Unit adjacent to an open road, retain hiding cover and all submerchantable trees adjacent to the roadway. . -Excavator site scarification and piling of slash mats during dry conditions. -Existing brushed in areas shall receive scarification. -Plant western larch and western white pine.

14	45.8 acres 100 mbf	Commercial Thin	-Tractor Unit. - Operate during dry or winter conditions -Remove whitewoods and retain 60 sq. ft. basal area of western larch, Douglas-fir and aspen. -Internal wetlands and class 3 SMZ present. -Temp snow road may be approved.
16	6.6 acres 25mbf	Clearcut with Reserves	-Tractor Unit - Operate during dry or winter conditions -Retain all western larch and western white pine. - Leave 4 trees per acre of the largest diameter class (Approximately 100-foot bole spacing), of which 2 may be snags and 2 snag recruits. -Unit adjacent to an open road, protect submerchantable trees and brush along roadway. -Excavator site scarification and piling of slash mats during dry conditions. -Plant western larch and western white pine.
17	7.9 acres 20 mbf	Clearcut with Reserves	-Tractor Unit - Operate during dry or winter conditions -Retain all western larch and western white pine. - Leave 4 trees per acre of the largest diameter class (Approximately 100-foot bole spacing), of which 2 may be snags and 2 snag recruits. -Unit adjacent to an open road, protect submerchantable trees and brush along roadway. -Excavator site scarification and piling of slash mats during dry conditions. -Plant western larch and western white pine.