

Environmental Assessment Checklist

Project Name: Beavertail Beetles Timber Sale
Proposed Implementation Date: July, 2015
Proponent: Missoula Unit, Southwest Land Office, Montana DNRC
County: Missoula

Type and Purpose of Action

Description of Proposed Action:

The Missoula Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing The Beavertail Beetle Timber Sale. The project is located 1/2 mile north of the Beavertail Exit along Interstate-90 (refer to vicinity map Attachment A-1 and project map A-2) and includes the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools	Section 2 T11N R16W	320	182
Public Buildings			
MSU 2 nd Grant			
MSU Morrill			
Eastern College-MSU/Western College-U of M			
Montana Tech			
University of Montana			
School for the Deaf and Blind			
Pine Hills School			
Veterans Home			
Public Land Trust			
Acquired Land			

Objectives of the project include:

- Salvage Bark Beetle infested ponderosa pine
- Reduce stand density by removing ponderosa pine high in defect and/or susceptible to beetle infestation.
- Increase stand growth and vigor
- Generate revenue for the Common School Trust

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	
Clearcut	0
Seed Tree	0
Shelterwood	0
Selection	175 acres
Commercial Thinning	0
Salvage	7 acres
Total Treatment Acres	182 Acres
Proposed Forest Improvement Treatment	
Pre-commercial Thinning	20 acres
Planting	200 acres
Proposed Road Activities	
New permanent road construction	0
New temporary road construction	0
Road maintenance	4.5 miles
Road reconstruction	0
Road abandoned	0
Road reclaimed	0

Duration of Activities:	15 Months
Implementation Period:	7/2015-10/2016

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 19, 2015

- PUBLIC SCOPED:
 - The scoping notice was posted on the DNRC Website: <http://dnrc.mt.gov/public-interest/environmental-docs>
 - All individuals, agencies and organizations on the statewide timber sale scoping list were sent scoping notices.
 - Adjacent landowners
 - An ad was placed in the Missoulian legal section and ran for 5 days.

- AGENCIES SCOPED:
 - MT FWP and all Montana Tribal Nations

- COMMENTS RECEIVED:
 - 3 comments were received during the scoping period. Two letters and one telephone call.
 - Alvin Windy Boy- THPO, Chippewa Cree Tribe: A call was received from Mr. Windy Boy indicating that there might be plant species that are important to tribes within the project area. The project leader welcomed the tribe to come look at any time and the project lead would coordinate with him. Mr. Windy Boy said he would be in touch and to date the project lead has not heard from him.
 - James Walks Along-THPO, Northern Cheyenne Tribe: A form was received via mail indicating no adverse effect for the proposal and deferring to Northwest Montana Tribal THPOs.
 - A letter was received from an adjacent landowner outlining the following concerns:
 - Recent timber permits in the area: A recently closed timber permit was active for 4 years causing the landowner concern about the duration of the proposed timber sale.
 - The spread of noxious weeds as a result of recent and proposed harvest activities.
 - Aesthetics-portions of the harvest would be visible from the landowner's residence; they requested a short sale duration and post-harvest cleanup to limit noise and visual impacts.
 - Wildlife- During the timber permit the landowner was informed DNRC would not be harvesting during hunting season, but harvesting occurred during hunting season. This also caused concerns about effective Contract Administration.
 - Concerns about adhering to State standard practices and minimizing environmental impacts.

Issues and concerns were incorporated into project planning and design and would be implemented in associated contracts. Specific examples of mitigations based on external comments include (but are not limited to):

- No harvesting during general rifle season
- A short sale duration, in order to maximize value by minimizing beetle infected trees and limit visual and noise impacts to adjacent land owners.
- Washing equipment prior to entry into project area to minimize spread of weeds.

DNRC specialists were consulted, including: Patrick Rennie-Archeologist; Garrett Schairer-Wildlife Biologist and Jeff Collins-Soils scientist/Hydrologist.

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 www.dnrc.mt.gov/HCP.
- **Montana Department of Environmental Quality (DEQ)** - DNRC is classified as a major open burner by DEQ and is issued a permit from DEQ to conduct burning activities on state lands managed by DNRC. As a major open-burning permit holder, DNRC agrees to comply with the limitations and conditions of the permit.
- **Montana/Idaho Airshed Group-** The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006). As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit.

ALTERNATIVES CONSIDERED:

No-Action: No commercial harvest or road maintenance would occur at this time.

Action Alternative (Provide a brief description of all proposed activities):

- A commercial timber harvest would take place to remove approximately 600 thousand board feet (MBF) of timber. Timber would be harvested using cable yarding and ground based methods.
- Road maintenance would take place on existing roads in the project area associated with the timber harvest.
- Pre-commercial thinning and tree planting would take place following harvest activities.

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: The project area is dominated by ponderosa pine in the overstory with very limited natural regeneration present. However, when present, regeneration is dominated by Douglas-fir with occasional clumps of ponderosa pine. A recent timber permit that targeted beetle hit ponderosa pine, created small scattered openings throughout the project area.

There are two distinct stand types within the project area. The first is dominated by ponderosa pine with a dbh range of 5-12". These stands were pre-commercially thinned by hand in the 1960's-1970's by the BLM, prior to DNRC ownership. Trees are spaced 8-16 feet apart and are in a closed canopy condition. This has limited natural regeneration in the understory and overall tree growth in the overstory. The second stand type contains scattered large diameter ponderosa pine. These trees range in age from 150-300+ years old. Although these large old trees exist, these stands do not meet minimum Old Growth criteria outlined in Green et al. Among these scattered large diameter pine are ponderosa pine 8-20" diameter, and depending on aspect, Douglas-fir are also present. Similar to the first stand type, overstocking (8-12 foot spacing between boles) has limited growth and regeneration in these stands causing susceptibility to insects and disease.

Root rot and Mountain Pine beetle can be found throughout the project area. Approximately 30% of the overstory trees are currently impacted by mountain pine beetle and/or root rot. This can be observed in standing dead trees that no longer contain needles as well as green trees with fresh pitch tubes. This holds true for all size classes within the project area.

As mentioned, there are no stands classified as Old Growth in the project area.

Outside of the harvest area approximately 20 acres of thick Douglas-fir (2-6" dbh) exist. Stocking levels range from 600-1,000+ trees per acre. These areas have become stagnant and are experiencing very little growth.

Existing weeds (mainly knapweed, houndstongue and thistle) are common in the area, especially along roads and disturbed areas such as a past wildfire adjacent to the project area. Increased activity in the project areas, as well as a more open canopy, can lead to an increased risk of noxious weeds.

Vegetation Impacts Summary Table										
Vegetation	Impact								Can Impact Be Mitigated ?	Comment Number
	Direct & Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High		
No-Action										
Noxious Weeds			X				X			
Rare Plants	X				X					
Vegetative community		X				X				
Old Growth	X				X					
Action										
Noxious Weeds			X				X		Y	
Rare Plants	X				X				N/A	
Vegetative community		X				X			3	
Old Growth	X				X				N/A	

Vegetation Comments:

1) DNRC would complete roadside spraying in the project area to reduce the spread along roads. However, noxious weeds would continue to occur and are likely to increase on state and adjacent lands, spread by wind, animals, and equipment operations, on areas of physical and fire disturbance. Project areas would be monitored for noxious weeds after implementation and herbicide would be applied along roads.

2) No rare plants have been identified within the project area through field surveys or a search within the Natural Heritage website.

3) The action alternative would utilize 58% ground based and 42% cable yarding harvest systems to remove beetle infected or suppressed trees of all size classes, as well as emulate natural disturbances (such as historically occurring wildfire). Trees previously killed by beetles that no longer contain beetles, beetle larvae or commercial value would be left unless they have to be removed in order to safely harvest the area. These trees would eventually fall over creating microsites which would be utilized during tree planting activities to capture shade for seedlings. Trees in both stand types identified in the vegetation existing conditions portion of this EA would have a reduction in stand density. When present, Douglas-fir and large diameter ponderosa pine were favored, to maintain species and size class diversity within the stand. At minimum 2 snags and 2 snag recruits per acre were left. Trees were marked to leave using an individual tree selection prescription. This prescription would result in a post- harvest stand appearance resembling natural disturbance, with scattered clumps as well as unevenly spaced overstory trees remaining throughout the project area.

Under the action alternative, approximately 20 acres of pre-commercial thinning would occur to increase growth and vigor in Douglas-fir that are currently stagnant.

Planting would occur throughout the project area in openings created by Mountain Pine beetle mortality.

The action alternative would have a low risk of direct, indirect and cumulative effects on the vegetative community for the following reasons:

- *stand density would be reduced, increasing vigor in the residual stand.*
- *Mountain Pine Beetle infested trees would be salvaged.*
- *No Old Growth exists within the project area.*
- *Planting would take place in openings created by Mountain Pine Beetle mortality.*
- *A mix of species and size classes more closely representing that which existed historically.*

Vegetation Mitigations:

- *Protect existing advanced regeneration during all aspects of timber harvest.*
- *Planting would take place in openings created by Mountain Pine Beetle mortality.*
- *Monitor project area for noxious weeds after implementation and apply herbicide along roads.*
- *Clean equipment to minimize the potential of introducing new weeds to the project area.*

GEOLOGY, SOIL DISTURBANCE AND PRODUCTIVITY:

Geology, Soil Disturbance and Productivity Existing Conditions: No especially unstable or unique geology was identified in the project area, yet slopes are steep and subject to rock ravel. Principal soils are Winkler series extremely gravel sandy loams on warm-dry slopes of 30-60 %. Topsoil is shallow and susceptible to soil displacement with increasing slopes, especially on slopes over 45%. The Winkler soils are moderately deep to shallow with common rock outcrops on ridges. Soil moisture retention is low and trees can experience drought stress early in the summer on these steep southerly aspects due to high temperature, solar radiation and plant competition from grasses. Erosion potential is moderate and a continued process on these steep slopes. Existing roads include steep pitches, but with the durable rocky nature of soils, road surface drainage can be controlled by drain-dips. The moderate slopes less than 45% are well suited to ground based operations and dry sites have a long season of use. North and east aspects have slightly deeper surface soils and slightly improved moisture retention and cooler, supporting Douglas-fir and competitive understory.

Soils on the concave slopes near the north boundary of the project area are Bignell gravelly clay loams that remain moist later into the spring and are subject to rutting if operated on when wet, which is a short period. Roads with clayey soils and steep grades would require closer drain-dip spacing. These soils have higher moisture and nutrient retention than the Winkler soils. Herbicide treatments on planting sites would be an advantage for young conifers across the proposed harvest areas.

A recent salvage permit harvested dead and dying trees within this parcel, mainly on moderate slopes and skid trails have revegetated with no apparent BMP departures and there were low cumulative effects.

Soil Impacts Summary Table										
Soil Disturbance and Productivity	Impact								Can Impact Be Mitigated?	Comment Number
	Direct				Cumulative					
	N o	Low	Mod	High	No	Low	Mod	High		
No-Action										
Physical Disturbance (Compaction and Displacement)	X				X					
Erosion		X				X				
Nutrient Cycling	X				X					
Slope Stability	X				X					
Soil Productivity	X				X					
Action										
Physical Disturbance (Compaction and Displacement)		X				X			Y	1
Erosion		X				X			Y	1
Nutrient Cycling			X			X			Y	2
Slope Stability	X				X					
Soil Productivity			X			X			Y	2

Soil Comments:

1) *BMP's would be implemented on all roads and within the units. To minimize soil impacts of displacement and erosion, ground based operations would be limited to moderate slopes less than 45% and dry, frozen or snow covered conditions. Slopes over 45% would be cable harvested.*

2) *Promoting codominant trees that are well spaced to reduce moisture competition and improve growth would moderate the high solar insolation risk. Southerly aspects are droughty and retaining a mixed stand that provides moderate shade can moderate temperature/moisture stress. Interplanting and vegetation treatments can improve regeneration success and tree stocking on understocked areas. If hexazinone is applied to control grass competition, the impacts are minimal and would be beneficial when applied according to label directions.*

Soil Mitigations:

- *Harvesting and hauling operations would be limited to winter operations of frozen, or snow covered ground .If winter conditions deteriorate, harvest would only take place when soils are adequately dry.*
- *Existing skid trails would be used whenever possible*
- *5 tons/ acre of unmerchantable pieces of trees and defect wood and a portion of fine litter would be left in the woods to provide coarse woody debris (CWD) for soil*

moisture/productivity, to moderate solar effect, provide conifer microsites, and for nutrient recycling.

WATER QUALITY AND QUANTITY:

Water Quality and Quantity Existing Conditions: Low Effects- Water quality within the Clark Fork River-Ryan Gulch HUC 170102021402 is impacted by road use and inadequate road drainage on portions of roads, and mixed uses of timber harvest, grazing, rural development and infrastructure including, highways, power lines and pipelines. There are no streams, surface waters or wetlands within the proposed harvest areas or on the state parcel. This is a rocky site with low precipitation (16-18 'avg./year) and high insolation on southerly aspects. There is a Class 2 stream crossing on the private access road that has inadequate road surface drainage at the crossing and has fill on the culvert outlet that is a sediment source. The stream segment flows for about 100 yards downslope of the culvert and flows mainly in the spring and is not connected to other surface waters or the Clark Fork River.

Water Quality & Quantity Impacts Summary Table										
Water Quality & Quantity	Impact								Can Impact Be Mitigated?	Comment Number
	Direct				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High		
No-Action										
Water Quality		X				X				
Water Quantity		X				X				
Action										
Water Quality		X				X			Y	1
Water Quantity		X				X			Y	1

Water Resources Comments:

- 1) *The proposed harvest would use existing roads. Road drainage would be improved to meet BMP's and the potential is very low for increased sediment associated with the proposed logging and hauling operations. The culvert on a class 2 stream segment on the private access road would have the culvert outlet cleaned and rock armored which would reduce sediments, and this is the only low potential impact to water quality which would improve conditions.*

- 2) *The removal of dead and overstocked trees has a low potential to increase runoff from decreased interception and transpiration; due to low precipitation and retaining well stocked and spaced conifers to maximize growth, and there would be no measurable change in water yield.*

Water Resources Mitigations:

- *Road drainage would be improved to meet BMP's*

- *The culvert on a class 2 stream segment on the private access road would have the outlet cleaned and rock armored which would reduce sediments.*

FISHERIES: No Effects- There are no streams or surface waters within 200 feet of the proposed harvest areas. There is a Class 2 stream crossing on the access road that is not fish bearing and does not connect to other surface waters.

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 ponderosa pine and Douglas-fir stands. Bald eagles have an established territory in the vicinity on the Clark Fork River. Potential habitat exists for flammulated owls and pileated woodpeckers in the project area. A couple of gray wolf packs are in the vicinity, but use of the project area has not been documented. Big game winter range and security habitat exists in the project area.

No-Action: Continued maturation could improve pileated woodpecker habitats and big game winter range attributes, but could reduce habitat quality for flammulated owls over the long term. Generally, negligible direct, indirect, or cumulative effects would occur.

Action Alternative (see Wildlife table below):

Wildlife	Effects								Can Impact be Mitigated?	Comment Number
	Direct and Indirect				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High		
Threatened and Endangered Species										
Grizzly bear <i>(Ursus arctos)</i> Habitat: Recovery areas, security from human activity		X				X			Y	W-1
Canada lynx <i>(Felix lynx)</i> Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone	X				X					
Sensitive Species										
Bald eagle <i>(Haliaeetus leucocephalus)</i> Habitat: Late-successional forest less than 1 mile from open water		X				X			Y	W-2
Black-backed woodpecker <i>(Picoides arcticus)</i> Habitat: Mature to	X				X					

Wildlife	Effects								Can Impact be Mitigated?	Comment Number
	Direct and Indirect				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High		
old burned or beetle-infested forest										
Coeur d'Alene salamander <i>(Plethodon idahoensis)</i> Habitat: Waterfall spray zones, talus near cascading streams	X				X					
Columbian sharp-tailed grouse <i>(Tympanuchus Phasianellus columbianus)</i> Habitat: Grassland, shrubland, riparian, agriculture	X				X					
Common loon <i>(Gavia immer)</i> Habitat: Cold mountain lakes, nest in emergent vegetation	X				X					
Fisher <i>(Martes pennanti)</i> Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian	X				X					
Flammulated owl <i>(Otus flammeolus)</i> Habitat: Late-successional ponderosa pine and Douglas-fir forest		X				X			Y	W-3
Gray Wolf <i>(Canis lupus)</i> Habitat: Ample big game populations, security from human activities		X				X			Y	W-4
Harlequin duck <i>(Histrionicus histrionicus)</i> Habitat: White-water streams,	X				X					

Wildlife	Effects								Can Impact be Mitigated?	Comment Number
	Direct and Indirect				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High		
boulder and cobble substrates										
Northern bog lemming (<i>Synaptomys borealis</i>) Habitat: Sphagnum meadows, bogs, fens with thick moss mats	X				X					
Mountain plover (<i>Charadrius montanus</i>) Habitat: short-grass prairie & prairie dog towns	X				X					
Peregrine falcon (<i>Falco peregrinus</i>) Habitat: Cliff features near open foraging areas and/or wetlands	X				X					
Pileated woodpecker (<i>Dryocopus pileatus</i>) Habitat: Late-successional ponderosa pine and larch-fir forest		X				X			Y	W-5
Townsend's big-eared bat (<i>Plecotus townsendii</i>) Habitat: Caves, caverns, old mines	X				X					W-6
Wolverine (<i>Gulo gulo</i>) Habitat: Alpine tundra and high-elevation boreal forests that maintain deep persistent snow into late spring	X				X					
Big Game Species										
Elk		X				X			Y	W-7
Whitetail		X				X			Y	W-7

Wildlife	Effects								Can Impact be Mitigated?	Comment Number
	Direct and Indirect				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High		
Mule Deer		X				X			Y	W-7
Moose		X				X			Y	W-7
Other	X				X					

WILDLIFE COMMENTS:

W-1) The project area is 21 miles south of the Northern Continental Divide Ecosystem grizzly bear recovery area and is 13 miles south of '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 could occasionally use 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, and 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 grizzly bears.

W-2) The project area is within the home range associated with the Beavertail Hill bald eagle territory. This territory experiences considerable levels of human disturbance associated with Highway 90, the Montana Rail Link railroad, human residences, agricultural operations, timber management, and various forms of summer and winter recreation. Proposed activities could occur during the nesting season (February 1 –August 15), or the non-nesting (August 16-February 1) season. Negligible levels of disturbance to bald eagles could occur should any activities be conducted during the nesting period. Conversely, should activities be conducted during the non-nesting period, no disturbance to bald eagles would be anticipated. Negligible reductions in the availability of large snags or emergent trees that could be used as nest or perch trees could occur in the home range.

W-3) There are approximately 257 acres of potential flammulated owl habitats in ponderosa pine and dry Douglas-fir stands across the project area. Portions of the project area and cumulative effects analysis area 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 period. Since some snags would be retained, loss of nest trees would be expected to be minimal. Proposed activities on 174 acres of potential flammulated owl habitats would open the canopy while favoring ponderosa pine and Douglas-fir. The more open stand conditions, the retention of fire adapted tree species, and the maintenance of snags would move the project area toward historical conditions, which is preferred flammulated owl habitat.

W-4) Although the project area has not been included in the annual home ranges of any known wolf packs, a couple of wolf packs are in the vicinity, including the Chamberlain and Sliderock Mountain wolf packs. In general, some wolf use of the project area is possible, but extensive use is somewhat unlikely given the proximity to Interstate 90 and other forms of human

disturbance. No known den or rendezvous sites occur in the project area, but some use of the project area by wolves could occur for breeding, hunting, or other life requirements. Big game species exist in the vicinity of the project area much of the year and winter range exists in the project area. Wolves using the area could be disturbed by proposed activities and are most sensitive at den and rendezvous sites, which are not known to occur in the project area or within 1 mile of the project area. Disturbance at potential den sites and rendezvous sites could exist if these features are in the vicinity and operations were conducted during the spring period; however soil moisture stipulations in the contract could limit potential disturbance during part of the time periods when wolves may be using denning and/or rendezvous sites. Should either a den or rendezvous site be identified within 1 mile of the project area, a DNRC biologist would be consulted to determine if additional mitigations would be necessary. In the short-term, the proposed activities could lead to slight shifts in big game use, which could lead to a shift in wolf use of the area. Proposed activities would alter canopy closure, summer big game habitat, and big game winter range habitat, which could alter some big game use of the area, but would not be expected to appreciably alter wolf prey abundance.

W-5) Roughly 297 acres of pileated woodpecker nesting habitat exist in the project area; another 21 acres of potential foraging habitats exist in the project area. Disturbance to pileated woodpeckers could occur if proposed activities occur during the nesting period. Harvesting would reduce forested habitats for pileated woodpeckers in the project area. Roughly 178 acres of potential foraging habitats would be opened up with proposed treatments. These areas could continue to be potential foraging habitats depending on density of trees retained. 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 182 acres.

W-6) Townsend's big-eared bats have been documented further up Cramer Creek to the north of the project area. However, no suitable caves or mine tunnels are known to occur in the project area or vicinity. Thus, no direct, indirect or cumulative effects to Townsend's big-eared bats would be anticipated as a result of either alternative.

W-7) Montana Department of Fish, Wildlife, and Parks identified white-tailed deer (40 acres), mule deer (292 acres), elk (90 acres), and moose (9 acres) winter range in the project area. These winter ranges are part of larger winter ranges in the area. Mature ponderosa pine stands in the project area are providing attributes facilitating some use by wintering big game. Proposed activities could occur in the winter, and disturbance created by mechanized logging equipment and trucks could temporarily displace big game animals during periods of operation for 2 to 4 years; however, winter logging provides felled tree tops, limbs, and slash piles that could concentrate feeding big game. No long-term effect to winter range carrying capacity or factors that would create long-term displacement or reduced numbers of big game would be anticipated. Proposed activities would reduce canopy closure on roughly 186 acres of deer and elk winter range. Following proposed activities, the capacity of these stands to intercept snow and provide thermal cover for big game would be reduced and/or removed depending on density of trees retained, reducing habitat quality for wintering big game. Proposed activities would not prevent big game movement through the project area appreciably in winter and could stimulate browse production in the units. Potential big game security habitat exists in the project area, but no changes in open roads would occur, thus minor alterations to big game security habitat would be anticipated.

WILDLIFE MITIGATIONS:

- A DNRC biologist would 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 36.11.435) are needed.
- Motorized public access would be restricted at all times on restricted roads that are opened for harvesting activities; signs would be used during active periods and a physical closure (gate, barriers, equipment, etc.) would 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.
- Snags, snag recruits, and coarse woody debris would be managed according to ARM 36.11.411 through 36.11.414, 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 would be prohibited from carrying firearms while on duty.
- Food, garbage, and other attractants would be stored in a bear-resistant manner.

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			Yes	1
Dust	X				X				X					

Air Quality Comments:

1) Under the Action Alternative, slash piles consisting of tree limbs and tops and other vegetative debris would be created throughout the project area during harvesting. These slash piles would ultimately be burned after harvesting operations have been completed.

Air Quality Mitigations:

- Burning within the project area would be short in duration and would be conducted when conditions favored 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.

Will the No-Action or Action Alternatives 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									
Aesthetics		X				X							N	1
Demands on Environmental Resources of Land, Water, or Energy	X				X									
Action														
Historical or Archaeological Sites	X				X									
Aesthetics		X				X							Y	2
Demands on Environmental Resources of Land, Water, or Energy	X				X									

Aesthetics Comments:

1) Under the No Action Alternative, the stand would continue to suffer mortality from insects and disease. This mortality would cause openings to develop throughout the project area as well as a “jackstraw” stand condition as trees fall over. This would occur across all size classes, including large diameter ponderosa pine. As insects move through the stand, red needled trees would be observed throughout the stands. Under the No-Action alternative this condition would persist.

2) Approximately 50% of the overstory trees would be removed under the Action-Alternative utilizing 50% ground based and 50% cable yarding harvest systems to remove beetle infected or suppressed trees across all size classes, as well as emulate natural disturbances (such as historically occurring wildfire). Trees previously killed by beetles that no longer contain beetles, beetle larvae or commercial value would be left unless they have to be removed in order to safely harvest the area. These trees would eventually fall over creating microsites which would be utilized during tree planting activities to capture shade for seedlings. This prescription would result in a post- harvest stand appearance resembling natural disturbance, with scattered clumps as well as unevenly spaced overstory trees remaining throughout the project area. In areas being treated by cable yarding systems, yarding corridors would be kept narrow to limit visual impacts. Slash piles consisting of tree limbs, tops and other vegetative debris would be created throughout the project area during harvesting. These slash piles would ultimately be burned after harvesting operations have been completed.

Aesthetics Mitigations:

- Tree seedlings would be planted to encourage regeneration and limit long term visual impacts
- In areas being treated by cable yarding systems, yarding corridors would be kept narrow to limit visual impacts.

- Areas not accessible by cable yarding, that would have required excavated skid trails to reach with ground based systems were not included in the proposed harvest units in order to reduce visual impacts.

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.*

- None

Impacts on the Human Population

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

Will the No-Action or Action Alternatives 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					
Cultural Uniqueness and Diversity	X				X				X					
Action														
Health and Human Safety	X				X				X					

Will the No-Action or Action Alternatives 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		
Industrial, Commercial and Agricultural Activities and Production	X				X				X					
Quantity and Distribution of Employment	X				X				X					
Local Tax Base and Tax Revenues	X				X				X					
Demand for Government Services	X				X				X					
Access To and Quality of Recreational and Wilderness Activities	X				X				X					
Density and Distribution of population and housing	X				X				X					
Social Structures and Mores	X				X				X					
Cultural Uniqueness and Diversity	X				X				X					

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 solely intended for relative comparison of alternatives. They are not 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 proposed timber harvest would generate additional revenue for the Common School Trust. The estimated return to the trust would be \$75,000 based on an estimated harvest of 600 thousand board feet and an average stumpage value of \$15.90 per ton. DNRC does not track project-level costs for individual timber sales. An annual cash flow analysis is conducted on the DNRC forest product sales program. Revenue and costs are calculated by land office and statewide. These revenue-to-cost ratios are a measure of economic efficiency. A recent revenue-to-cost ratio of the Southwestern Land Office was 1:1.82. This means that, on average, for every \$1.00 spent in costs, \$1.82 in revenue was generated. 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.
- McCallum, D. A. 1994. Review of technical knowledge: flammulated owls. Pages 14-46 *in* G. D. Hayward and J. Verner, tech eds. Flammulated, boreal, and great gray owls in the United States: a technical conservation assessment. USDA Forest Service Gen. Tech. Rep. RM-253. Fort Collins, Colorado.
- McClelland, B.R. 1979. The pileated woodpecker in forests of the Northern Rocky Mountains. Pages 283-299 *in* Role of insectivorous birds in forest ecosystems. Academic Press.
- Wittinger, W.T. 2002. Grizzly bear distribution outside of recovery zones. Unpublished memorandum on file at USDA Forest Service, Region 1. Missoula, Montana.2pp.

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: Amy Helena
Title: Forest Management Supervisor
Date: May 15, 2015

Finding

Alternative Selected

Alternative B-The Action Alternative

Significance of Potential Impacts

An interdisciplinary team (ID Team) has completed the Environmental Assessment (EA) for the proposed Beavertail Beetles Timber Sale prepared by the Montana Department of Natural Resources and Conservation (DNRC). After a review of the EA, project file, public correspondence, Department Administrative Rules, policies, and the State Forest Land Management Plan (SFLMP), I have made the following decisions:

ALTERNATIVE SELECTED

Two alternatives were presented and the effects of each alternative were fully analyzed in the EA:

Alternative A: Deferred Harvest (No Action Alternative)

Alternative B: Harvest (Action Alternative)

Alternative B proposes to harvest approximately 600,000 board feet of timber on 182 acres. Alternative A does not include the harvest of any timber. Subsequent review determined that the alternatives, as presented, constituted a reasonable range of potential activities.

For the following reasons, I have selected the Action Alternative without additional modifications:

The Action Alternative meets the Project Need and the specific project objectives as described on page 2 of the EA. The Action Alternative would produce an estimated net return of \$75,000 to the Common School (CS) Trust, while providing a mechanism whereby the existing timber stands would be moved towards conditions more like those, which existed historically.

The analysis of identified issues did not disclose any reason compelling the DNRC to not implement the timber sale.

The Action Alternative includes mitigation activities to address environmental concerns identified during both the Public Scoping phase and the project analysis.

SIGNIFICANCE OF IMPACTS

For the following reasons, I find that the implementation of Alternative B will not have significant impacts on the human environment:

Soils-Leaving 5-15 tons of large, woody debris on site will provide for long-term soil productivity. Harvest mitigation measures such as skid trail planning and season of use limitations will limit the potential for severe soil impacts.

Water Quality-The Action Alternative would improve the surface drainage on existing roads, clean ditches and culverts outlets thereby reducing the amount of current sedimentation within the project area. Water Quality Best Management Practices for Montana Forests (BMPs) and the Streamside Management Zone (SMZ) law will be strictly adhered to during all operations involved with the implementation of the Action Alternative.

Cumulative Watershed Effects-Estimated increases in annual water yield for the proposed action have been determined to be negligible by the DNRC Hydrologist. Increases in sediment yield are expected to be negligible due to the amount of area treated, location along the

landscape, replacement and/or improvement of existing culverts and mitigations designed to minimize erosion.

Cold Water Fisheries- No Effects- There are no streams or surface waters within 200 feet of the proposed harvest areas.

Air Quality-Any slash burning conducted as part of the Beavertail Beetles Timber Sale will be conducted in coordination with the Montana/Idaho Airshed group in order to ensure that ideal smoke dispersion conditions exist prior to ignition and throughout the duration of any burning operations. As a result, impacts to air quality should be minor and short in duration.

Noxious Weeds-Equipment will be cleaned prior to entering the project area, which will reduce the likelihood of weed seeds being introduced onto treated areas. The DNRC will monitor the project area for two years after harvest and will use an Integrated Weed Management strategy to control weed infestations should they occur.

Forest Conditions and Forest Health-The proposed harvest will begin the process of returning the timber stands within the project area to those conditions that most likely existed on the site(s) prior to organized fire suppression.

Visual Quality-The limited amount of new permanent roads, a harvest prescription that leaves the largest, healthiest trees within treated stands, and minimizing the width of cable corridors when yarding steeper slopes will result in a minimal visual impact in the short term. The aesthetic quality of the project area should improve in the long term as trees remaining within treated stands increase in size and their crowns expand.

Wildlife-The proposed harvest operations present a minimal likelihood of negative impacts to Threatened and Endangered Species. Those potential impacts that do exist have been mitigated to levels within acceptable thresholds. The same is true for those species that have been identified as “sensitive” by the DNRC. The effects of the proposed action on Big Game species would be low to moderate.

Economics-The Action Alternative would provide approximately \$75,000 in net short-term revenue to the Common School Trust and does not limit the DNRC’s options for generating revenue from these sites in the future.

3. PRECEDENT SETTING AND CUMULATIVE IMPACTS-

The project area is located on State-owned lands, which are “principally valuable for the timber that is on them or for growing timber or for watershed” (**MCA 77-1-402**). The proposed action is similar to past projects that have occurred in the area. Since the EA does not identify future actions that are new or unusual, the proposed timber harvest is not setting precedence for a future action with significant impacts.

Taken individually and cumulatively, the identified impacts of the proposed timber sale are within established threshold limits. Proposed timber sale activities are common practices and none of the project activities are being conducted on fragile or unique sites.

The proposed timber sale conforms to the management philosophy adopted by DNRC in the SFLMP and is in compliance with existing laws, Administrative Rules, and standards applicable to this type of action.

4. SHOULD DNRC PREPARE AN ENVIRONMENTAL IMPACT STATEMENT (EIS)?

Based on the following, I find that an EIS does not need to be prepared:

The EA adequately addressed the issues identified during project development, and displayed the information needed to make the pertinent decisions.

Evaluation of the potential impacts of the proposed timber sale indicates that significant impacts to the human environment will not occur as a result of the implementation of the Action Alternative.

The ID Team provided sufficient opportunities for public review and comment during project development and analysis.

Need for Further Environmental Analysis

EIS

More Detailed EA

No Further Analysis

Environmental Assessment Checklist Approved By:

Name: Jonathan Hansen

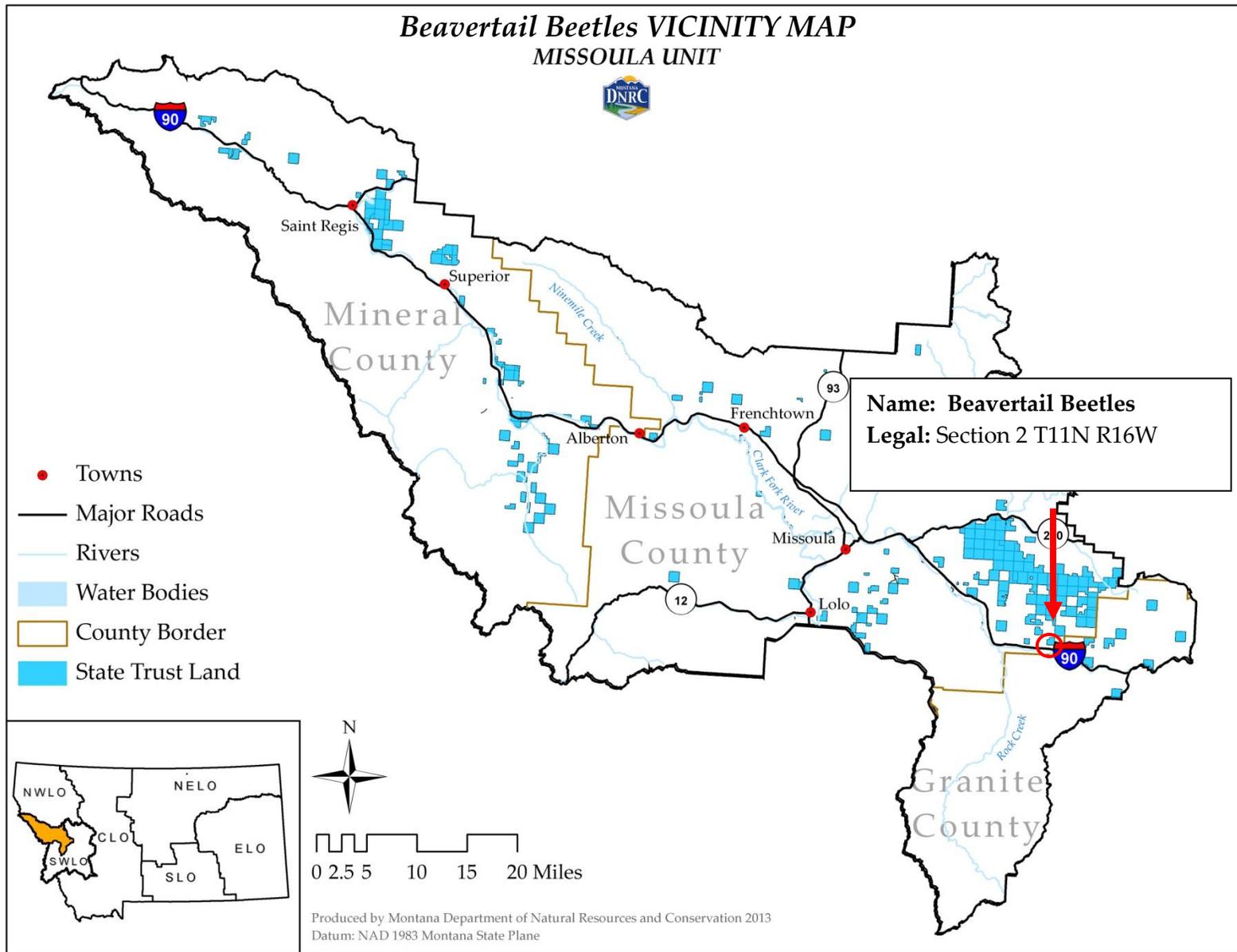
Title: Missoula Unit Manager

Date: June 15, 2015

Signature: /s/ *Jonathan Hansen*

Attachment A- Maps

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Harvest Unit

