

Environmental Assessment Checklist

Project Name: MSO East FY17 PCT's
Proposed Implementation Date: 2016 & 2017
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 MSO East FY17 pre-commercial thinning projects. The projects are located SW of Potomac, MT. (refer to vicinity & project maps in Attachment A) and include the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools	Sec 16 T12N R16W	640	9
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	Sec 4,5,20,21 & 28 T12N R15W; Sec 2 & 3 T12N R16W; Sec 33 T13N R15W Sec 19,20,28,29,32,33 & 34 T13N R16W	8160	581

Objectives of the projects include:

- Increase growth and vigor of the stand(s)
- Achieve a more uniform stem distribution
- Concentrate growth on fewer trees in order to attain merchantable size in a shorter time frame.
- Increased vigor to reduce the threat of insect and disease infestation.

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	
Clearcut	
Seed Tree	
Shelterwood	
Selection	
Commercial Thinning	
Salvage	
Total Treatment Acres	
Proposed Forest Improvement Treatment	
Pre-commercial Thinning	590
Planting	
Proposed Road Activities	
New permanent road construction	
New temporary road construction	
Road maintenance	
Road reconstruction	
Road abandoned	
Road reclaimed	
Other Activities	

Duration of Activities:	Summer/fall 2016 & 2017
Implementation Period:	Summer/fall 2016 & 2017

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)
- all other applicable state and federal laws.

Project Development

SCOPING:

DNRC specialists were consulted, including: Jeff Collins-Hydrologist, Soil Scientist & Garrett Schairer-Wildlife Biologist

Issues and concerns were incorporated into project planning and design and would be implemented in associated contracts.

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

- **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.
- **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.

ALTERNATIVES CONSIDERED:

No-Action: The proposed pre-commercial thinning would not occur. The stands would remain at overstocked levels with low production rates.

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

Bad Haircut PCT:

The proposed unit would be thinned to an approximate 14' spacing. Preferred leave trees would be PP, WL, DF, and LPP. Residual stand densities after thinning would be 200-225 trees per acre (TPA). Approximately 1,980 TPA would be removed. The stand is currently overstocked and the post thin spacing would support more optimum conifer growth and health. The unit would be hand thinned, and would include all road cut slopes within the units. Along the northern section line slash would be piled a chain interior, all other slash would be lopped and scattered with a lop height of 18 inches. No slash would be left in SMZs.

Elder Haze PCT:

The proposed units would be thinned to an approximate 14' spacing. Preferred leave trees would be PP, WL, DF, and LPP. Residual stand densities after thinning would be 200-225 trees per acre (TPA). On average among all units 2,082 stems per acre would be removed. The stands are currently overstocked and the post thin spacing would support more optimum conifer growth and health. The units would be hand thinned, and would include all road cut slopes within the units. In unit 3 along the northern section line of section 20 slash would be piled a chain interior, all other slash would be lopped and scattered with a lop height of 18 inches. No slash would be left in SMZs.

Camas Forest PCT:

The proposed units would be thinned to an approximate 14' spacing. Preferred leave trees would be PP, WL, DF, and LPP. Residual stand densities after thinning would be 200-225 trees per acre (TPA). On average among all units 2,700 stems/acre would be removed. The stands are currently overstocked and the post thin spacing would support more optimum conifer growth and health. The units would be hand thinned, and would include all road cut slopes within the units. Slash along open roads would be piled and all other slash would be lopped and scattered with a lop height of 18 inches. No slash would be left in SMZs.

Mouth of Ashby PCT:

The proposed units would be thinned to an approximate 14' spacing. Preferred leave trees would be PP, WL, DF, and LPP. Residual stand densities after thinning would be 200-225 trees per acre (TPA). On average among all units 1,500 stems/acre would be removed. The stands are currently overstocked and the post thin spacing would support more optimum conifer growth and health. The units would be hand thinned, and would include all road cut slopes within the units. In both units slash would be piled a chain interior on the northern section line. In unit 1 slash would be piled a chain interior along the west section line as well. All other slash would be lopped and scattered with a lop height of 18 inches. No slash would be left in SMZs.

Thin Mint PCT:

The proposed unit would be thinned to a 12' spacing in lodgepole patches and a 14' spacing in all other species. Preferred leave trees would be PP, WL, DF, and LPP. Residual stand densities after thinning would be 200-225 trees per acre (TPA) or up to 320 TPA in lodgepole patches. Approximately 3,100 TPA would be removed. The stand is currently overstocked and the post thin spacing would support more optimum conifer growth and health. The unit would be hand thinned, and would include all road cut slopes within the unit. All slash would be lopped and scattered with a lop height of 18 inches. No slash would be left in SMZs.

Patches O'Houlihan PCT:

The proposed PCT would be thinned to an approximate 14' spacing, except for unit 1 (12' spacing). Preferred leave trees would be PP, WL, DF, and LPP. Residual stand densities after thinning would be 200-225 trees per acre (TPA) or up to 320 TPA in unit 1. Approximately 2,500 TPA would be removed in unit 1, 2200 TPA in unit 2, 4500 TPA in unit 3, and 1900 TPA in unit 4. The stands are currently overstocked and the post thin spacing would support more optimum conifer growth and health. The units would be hand thinned, and would include all road cut slopes within the units. Along the northern section line of unit 2 slash would be piled a chain interior, all other slash would be lopped and scattered with a lop height of 18 inches. No slash would be left in SMZs.

Impacts on the Physical Environment

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

VEGETATION:

Vegetation Existing Conditions:

Bad Haircut PCT:

(63 acres) The stand is dominated by ponderosa pine, with Douglas-fir, larch and lodgepole pine also present. The southern $\frac{3}{4}$ of the stand is dominated by regeneration existing in thick clumps with some small spacing between the clumps. The northern $\frac{1}{4}$ of the unit has thick, uniform ponderosa pine growing closely together. DF of 1" DBH is the most prevalent species/size class present. Larger size classes (1" to 5" DBH) of all species are dispersed among these small (1" DBH and less) DF clumps. The stand is currently overstocked with about 2,240 TPA. There is also some larger DF (6" – 10" DBH) overstory scattered throughout the stand.

Elder Haze PCT:

Unit 1 (56 acres) is dominated by ponderosa pine. Portions of the unit were planted with ponderosa and Douglas-fir, larch and lodgepole have grown in. The unit is fairly uniform in stand structure, with the exception of an old fireline running through the center of it. DF of 1" DBH and less is the most prevalent species/size class present. Larger size classes (1" to 5" DBH) of all species are dispersed among these small (1" DBH and less) DF clumps. The stand is currently overstocked with about 1,780 TPA. There is also some larger DF (6" – 10" DBH) overstory scattered throughout the stand.

Unit 2 (14 acres) is a mix of ponderosa and Douglas-fir, with ponderosa being more prevalent. Along the east and west boundaries a juniper component is common. There are also occurrences of larch and lodgepole, but these are minor and are limited to the swales. DF of 2" DBH size class are the most prevalent species/size class present. Larger size classes (1" to 5" DBH) of all species are dispersed among these small (1" DBH and less) DF clumps. The stand is currently overstocked with about 3,464 TPA. There is also some larger DF (6" – 10" DBH) overstory scattered throughout the stand.

Unit 3 (32 acres) is dominated by ponderosa pine. Douglas-fir and western larch also show a strong presence in the stand. The majority of the pine in the area were part of a container stock trial planted by Plum Creek timber. Douglas-fir has since grown in among the planted stock. DF of the 2" DBH size class are the most prevalent species/size class present. Larger size classes (1" to 5" DBH) of all species are dispersed among these small (1" DBH and less) DF clumps. The stand is currently overstocked with about 1,800 TPA.

Unit 4 (9 acres) is an even mix of ponderosa, Douglas-fir, larch and lodgepole. Some of the ponderosa appear to have been planted. DF of 1" DBH and less is the most prevalent species/size class present. Larger size classes of ponderosa pine (1" to 5" DBH) are dispersed among these small (1" DBH and less) DF clumps. The stand is currently overstocked with about 1,200 TPA.

Camas Forest PCT

Units 1 (34 acres), 2 (80 acres) & 3 (17 acres) are similar in composition. All units are dominated by ponderosa pine and Douglas-fir. There are also larch and lodgepole pine present throughout the stand, however they occur less frequently than the dominant species. Depending on the unit, DF or PP of 1" DBH and less is the most prevalent species/size class present. Larger size classes (1" to 5" DBH) of all species are dispersed among these small (1" DBH and less) DF clumps. The stands are currently overstocked with on average among all units 3,400 TPA. There is also some larger DF (6" – 10" DBH) overstory scattered throughout the stand. .

Mouth of Ashby PCT

Units 1 (63 acres) & 2 (27 acres) have a clumpy distribution, dominated by ponderosa pine and Douglas-fir. There are occurrences of lodgepole and larch, however these are sparse. Clumps vary in size from 1/10 acre to 1 acre and are heavily stocked. DF of 1" DBH and less is the most prevalent species/size class present. Larger size classes (1" to 5" DBH) of all species are dispersed among these small (1" DBH and less) DF clumps. The stand is currently overstocked with about 1,700 TPA. There is also some larger DF (6" – 10" DBH) overstory scattered throughout the stand.

Thin Mint PCT:

(25 acres) This unit consists of 2 different stand types. Approximately 16 acres (out of 25 total acres) is patchy/clumpy DF/PP dominated stand with a small WL and LPP component. A sparse residual seed tree overstory of larger diameter (>8"DBH) remains, increasing in volume near the SMZ. The remaining 9 acres is an even-aged LPP stand with an estimated 15' average height. TPA within the LLP stands are in excess of 3100 TPA.

Patches O'Houlihan PCT:

Unit 1 (28 acres) is a non-uniform stand with multiple age classes present. On average, the stand consists of larger WL mixed with DF regen. It is a patchy/clumpy unit with numerous skid trails throughout.

Unit 2 (23 acres) is a PP dominated stand with an average height of 5-6'. Past ground based logging systems have resulted in numerous skid trails containing limited amounts of regeneration. DF (average 5-6') and LPP (average 15') are also present in the unit.

Unit 3 (6 acres) is a small, unit dominated by healthy PP regen averaging 5-6'.

Unit 4 (113 acres) is a PP/DF dominated stand. It is a non-uniform stand with multiple age classes present. The three discernable strata are; DF/PP regen averaging 5-6' tall, intermediate DF/WL averaging 20' tall, and a DF/PP overstory (6" – 10" DBH) scattered throughout the unit. The stand is currently overstocked with about 1,500 TPA. The unit consists of high concentrations of serviceberry, hawthorn, and other brush.

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														
Noxious Weeds		X				X				X				
Rare Plants	X				X				X					
Vegetative community		X				X				X				2
Old Growth	X				X				X					
Action														
Noxious Weeds		X				X				X			y	1
Rare Plants	x				x				X					
Vegetative community	x				x				X					
Old Growth	x				x				X					

Comments:

- Existing weeds, mainly knapweed and houndstongue are common in the Potomac valley, especially along roads and disturbed areas. Increased activity in the project areas, as well as a more open canopy, can lead to an increased risk of noxious weeds.
- Competition among conifers would be reduced, allowing the remaining stands to capture more water, sunlight and nutrients, thereby having a positive direct, secondary and cumulative impact.

Vegetation Mitigations:

- DNRC systematically completes roadside spraying in the Potomac valley, yet noxious weeds continue to occur, spread by disturbance, equipment operations, animals and wind. Project areas would be monitored for noxious weeds after implementation and herbicide may be applied when and if needed.

SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions:

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			y	1
Erosion	X				X				X					

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		
Nutrient Cycling	X				X				X					
Slope Stability	X				X				X					
Soil Productivity	X				x				X					
Action														
Physical Disturbance (Compaction and Displacement)		X				X				X				
Erosion		X			X				X				y	2
Nutrient Cycling		X			X				X				y	3
Slope Stability	X				X				X					
Soil Productivity	X				X				X					

Comments:

1. Soil disturbance from thinning activities may result in increased risk of erosion issues.
2. Where slash is piled, nutrients will be concentrated at the piles. Where the unit will be lop-and-scattered not all the nutrients in the slash would be available immediately.

Soil Mitigations:

- BMP's would be implemented on all roads and within the units. Unit boundaries were all buffered to exclude the SMZ's. Slash from the lop-and-scatter thinning process will be left in the units to mitigate erosion risks.
- Residual slash from cut trees would be lopped and scattered to 18 inches and left within the unit. Nutrients would be available to soils as they decompose.

WATER QUALITY AND QUANTITY:

Water Quality and Quantity Existing Conditions: The average slope for all units ranges from 5% up to 40%.

Water Quality & Quantity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Water Quality		X				X				X				
Water Quantity		X				X				X				
Action														
Water Quality		X				X				X			Y	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		
Water Quantity		x				X				X			Y	2

Comments:

1. Water quality is impacted by road use and inadequate road drainage on portions of roads in the Potomac valley and mixed uses of timber harvest, grazing and rural development.
2. The removal of overstocked trees has a low potential to increase runoff from decreased interception and transpiration; due to moderate precipitation and retaining well stocked and spaced conifers to maximize growth. Any potential change in water yield is expected to be minor and unlikely to be measurable or deliver off-site to surface waters.

Water Quality & Quantity Mitigations:

- The Montana Administrative Rules for Forest Management; Watershed Management and watershed RMS would be implemented. BMP's and SMZ's would be implemented. Unit boundaries were all buffered to exclude the SMZ's.
- Thinning operations would be restricted to dry or frozen conditions to avoid road damage which could lead to increased runoff.

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Action														
Sediment		X			X				X				y	1
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					

Comments:

1. No fisheries streams occur within the proposed units. Existing roads have been recently improved to meet BMPs.

Fisheries Mitigations:

1. The Montana Administrative Rules for Forest Management; Watershed Management and watershed RMS would be implemented. BMP's would be implemented on all roads and within the unit. Unit boundaries were all buffered to exclude the SMZ's. Slash from the lop-and-scatter thinning process would be left in the unit.

WILDLIFE:

Evaluation of the impacts of the No-Action and Action Alternatives including **direct, secondary, and cumulative** impacts on Wildlife (including unique, endangered, fragile, or limited environmental resources).

No-Action: Existing stands would continue to mature in a fairly dense condition. Stand growth and maturation would continue at relatively slow speeds, which would delay usefulness of these stands longer into the future for a variety of wildlife that use larger diameter forested conditions. No further potential for disturbance to any wildlife species would be anticipated. Continued wildlife use at levels similar to present conditions would be anticipated.

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 <i>(Ursus arctos)</i> Habitat: Recovery areas, security from human activity		X				X				X			Y	1
Canada lynx <i>(Felix lynx)</i> Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone		X				X				X			Y	2
Sensitive Species														
Bald eagle <i>(Haliaeetus leucocephalus)</i> Habitat: Late-successional forest more than 1 mile from open water	X				X				X					
Black-backed woodpecker <i>(Picoides arcticus)</i> Habitat: Mature to old burned or beetle-infested forest	X				X				X					
Coeur d'Alene salamander <i>(Plethodon idahoensis)</i> Habitat: Waterfall spray zones, talus near cascading streams	X				X				X					

Wildlife	Impact												Can Impact be Mitigated?	Comment Number	
	Direct				Secondary				Cumulative						
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High			
Columbian sharp-tailed grouse <i>(Tymppanuchus Phasianellus columbianus)</i> Habitat: Grassland, shrubland, riparian, agriculture	X				X					X					
Common loon <i>(Gavia immer)</i> Habitat: Cold mountain lakes, nest in emergent vegetation	X				X					X					
Fisher <i>(Martes pennanti)</i> Habitat: Dense mature to old forest less than 6,000 feet in elevation and riparian		X				X					X			Y	3
Flammulated owl <i>(Otus flammeolus)</i> Habitat: Late-successional ponderosa pine and Douglas-fir forest		X				X					X			Y	4
Gray Wolf <i>(Canis lupus)</i> Habitat: Ample big game populations, security from human activities		X				X					X			Y	5
Harlequin duck <i>(Histrionicus histrionicus)</i> Habitat: White-water streams, boulder and cobble substrates	X				X					X					
Northern bog lemming <i>(Synaptomys borealis)</i> Habitat: Sphagnum meadows, bogs, fens with thick moss mats	X				X					X					
Mountain plover	X				X					X					

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<i>(Charadrius montanus)</i> Habitat: short-grass prairie & prairie dog towns														
Peregrine falcon <i>(Falco peregrinus)</i> Habitat: Cliff features near open foraging areas and/or wetlands	X				X				X					
Pileated woodpecker <i>(Dryocopus pileatus)</i> Habitat: Late-successional ponderosa pine and larch-fir forest		X				X				X			Y	6
Townsend's big-eared bat <i>(Plecotus townsendii)</i> Habitat: Caves, caverns, old mines	X				X				X					
Wolverine <i>(Gulo gulo)</i>	X				X				X					
Big Game Species														
Elk		X				X				X			Y	7
Whitetail		X				X				X			Y	7
Mule Deer		X				X				X			Y	7
Bighorn Sheep	X				X				X					
Other														

Comments:

1. The project area is outside of the grizzly bear recovery zone and the 'non-recovery occupied habitat' as mapped by grizzly bear researchers and managers to address increased sightings and encounters of grizzly bears in habitats outside of recovery zones. Occasional use by grizzly bears could occur as bears continue moving out of the recovery zone to the north of the project area and grizzly bears have been documented in the vicinity in the past. Activities would occur during the non-denning period, thus disturbance to grizzly bears could occur. Negligible changes to grizzly bear habitats would occur. No changes to open road densities, security habitats, or human-related food, garbage, or other unnatural grizzly bear attractants would occur.
2. The majority of the proposed units do not contain potential lynx habitats, but approximately 9 acres of temporary non suitable Canada lynx habitats would be thinned in the Elder Haze

units 2 and 4. Within these units, small shade tolerant trees (such as sub-alpine fir and spruce) would be retained where possible to provide potential habitat structure for snowshoe hares by increasing the levels of horizontal cover and accelerating the development of multi-storied stands. Following proposed treatments, these stands would continue to be temporarily non-suitable lynx habitats. Thus negligible changes to lynx habitats would be anticipated.

3. Up to 148 acres of preferred fisher covertypes would be thinned, however many of these potential future habitat are relatively dry with higher percentages of Douglas-fir and ponderosa pine than generally found in more suitable fisher types. Some of these preferred covertypes could develop into marginal upland habitats in the future. Proposed activities in preferred covertypes could improve tree growth, which could facilitate development of attributes that would enable fisher use of these stands sooner than if left untreated. Activities in upland fisher habitats would not change habitat availability, but could alter overall habitat quality slightly with decreases in tree density.
4. Roughly 573 acres of flammulated owl habitats would be thinned, which would further open the canopy while favoring western larch, 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 proposed project area toward historical conditions, which is preferred flammulated owl habitat. Proposed activities could occur during the latter part of the flammulated owl nesting season, which could introduce some disturbance of nesting owls, but activities would not affect nesting structures.
5. Gray wolves are in the vicinity and the project area is partially in the Chamberlain wolf pack home range; additionally the suspected Union Peak wolf pack appears to be in the vicinity of other portions of the project area. Proposed activities would not occur during the spring when wolves are most sensitive at den or rendezvous sites. Some deer and elk winter range exist in portions of the project area (see comment 7). Minor changes to existing thermal cover on these winter range areas would be anticipated, but no appreciable change in big game use would be anticipated, thus limited effects to wolf prey species would be anticipated.
6. Minor amounts of pileated woodpecker habitats would receive treatments. No appreciable change to pileated woodpecker habitats would be anticipated given the nature of the proposed activities. Activities would avoid the spring nesting period and potential for disturbance would be minimal.
7. Elk and deer likely use the project area much of the non-winter period. Approximately 327 acres of white-tailed deer winter range and 188 acres of elk winter range exists in the proposed thinning units. Minor reductions to the thermal cover attributes in these stands would be anticipated with the proposed activities. Negligible changes to security habitat would occur, but no changes to open roads or motorized human access would occur.

Wildlife Mitigations:

- Motorized public access will be restricted at all times on restricted roads that are opened for proposed activities.
- 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.
- Retain small shade tolerant trees (such as sub-alpine fir and spruce) where possible in Elder Haze units 4 and 2 to provide potential habitat structure for snowshoe hares by increasing the levels of horizontal cover and accelerating the development of multi-storied stands.

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	1
Dust		X			x				X				y	2

Comments:

1. If units are hand piled, small hand piles within the unit would be burned.
2. Increased road traffic from contractor(s) commuting to thinning units may increase dust.

Air Quality Mitigations:

- Small hand piles would be burned in the spring or fall depending on conditions. DNRC would work closely with the Monitoring Unit of the Montana/Idaho Airshed Group and obtain special smoke dispersion forecasts in order to burn on only ideal days.
- Dust from thinning operations will be monitored.

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				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					
Aesthetics		X			X					X			Y	1
Demands on Environmental Resources of Land,	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		
Water, or Energy														

Comments:

1. Lop-and-scattered slash from hand thinned units is often noticeable for 1-2 years post-treatment.

Mitigations:

- If a thinning unit is lop-and-scattered, slash will usually settle after 1-2 years of snowload. As the slash settles and decomposes it becomes less noticeable.

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.*

- MSO East FY16 PCT EA

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					

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			
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						
Industrial, Commercial and Agricultural Activities and Production	x				X				X						
Quantity and Distribution of Employment		X			X				X				N/A	1	
Local Tax Base and Tax Revenues	X				X				X						
Demand for Government Services	X				X				X						
Access To and Quality of Recreational and Wilderness Activities	X				X				X						
Density and Distribution of population and housing	X				X				X						
Social Structures and Mores	X				X				X						
Cultural Uniqueness and Diversity	X				X				x						

Comments:

The project size is of a scale that would not have a large effect on local employment; however each unit may provide a private contractor with 1-3 months of employment for his/herself and his/her employees.

Mitigations:

N/A

Locally Adopted Environmental Plans and Goals: List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

None

Other Appropriate Social and Economic Circumstances:

No Action: The No Action alternative would generate no cost to the trust at this time, existing forest conditions would persist.

Action: The proposed pre-commercial thinning would initially generate cost to the trust; however this would be an investment in increased productivity for the stand. This increased productivity should result in increased volume, available at an earlier date. Direct Costs associated with this project are estimated to be \$138,000. This figure is achieved by multiplying the estimated number of acres 575 by estimated cost per acre \$240. This cost estimate is assumed from previous projects. The most recent pre-commercial thinning contract yielded a cost per of \$248. The assumed cost should be recovered, by a net increase in growth, thus lessening rotation between harvests by up to thirty years.

References

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

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

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

NO

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

NO

Environmental Assessment Checklist Prepared By:

Name: Amy Helena
Title: Forest Management Supervisor
Date: 9/19/2016

Finding

Alternative Selected

The Action Alternative

Significance of Potential Impacts

- A. The Action Alternative meets the specific Objectives of the Proposed Action as described on page 1 of the EA. The Action Alternative is likely to produce an economic return to the Acquired Lands Trust in the long run, while providing a

mechanism whereby the existing timber stands would be moved towards conditions more like those which existed historically.

- B. The analysis of identified issues did not disclose any reason compelling the DNRC to not implement this pre-commercial thinning project.

- C. The Action Alternative includes mitigation activities to address environmental concerns identified during the project analysis.

Need for Further Environmental Analysis

EIS

More Detailed EA

No Further Analysis

Environmental Assessment Checklist Approved By:

Name: Jonathan Hansen

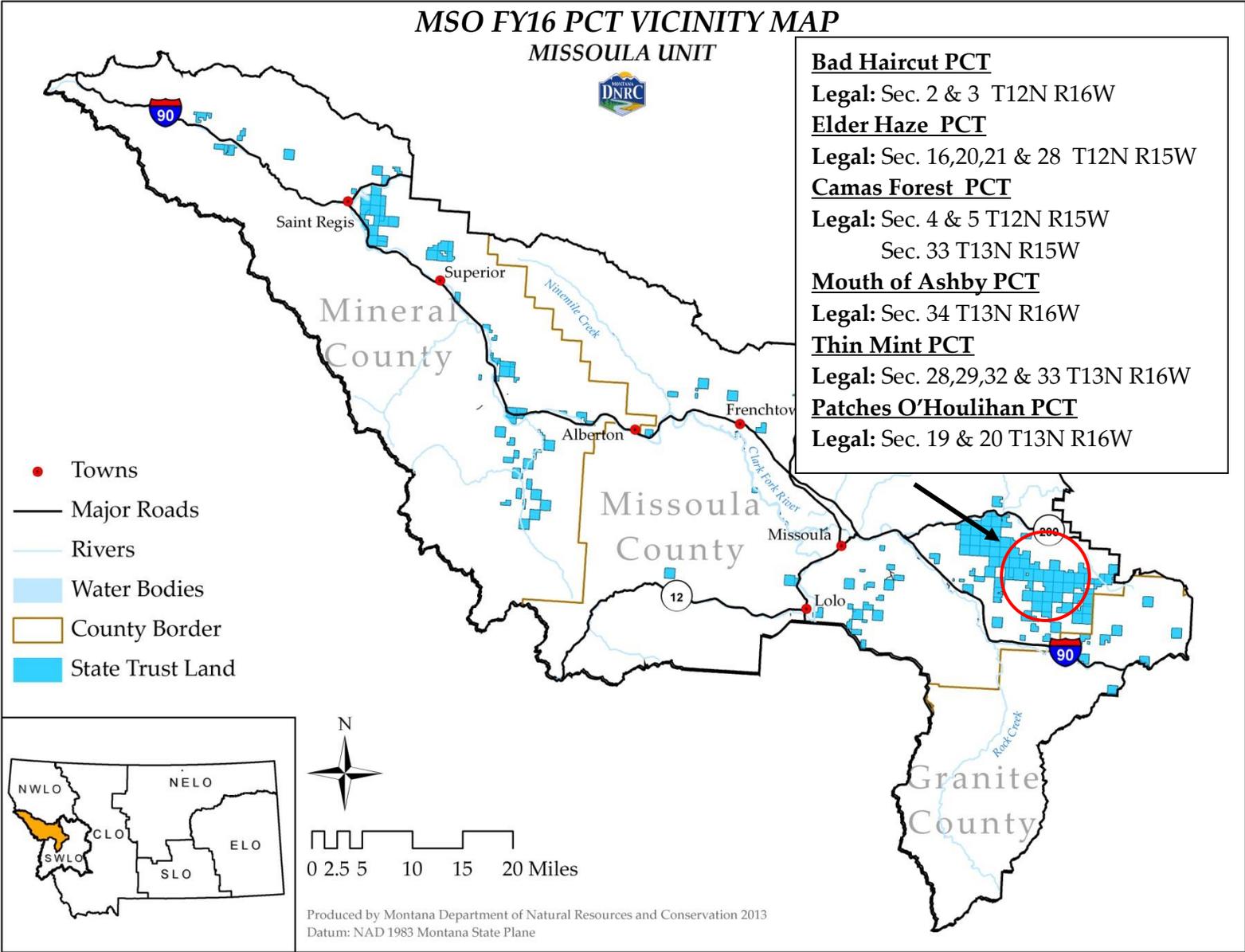
Title: Missoula Unit Manager

Date: October 5, 2015

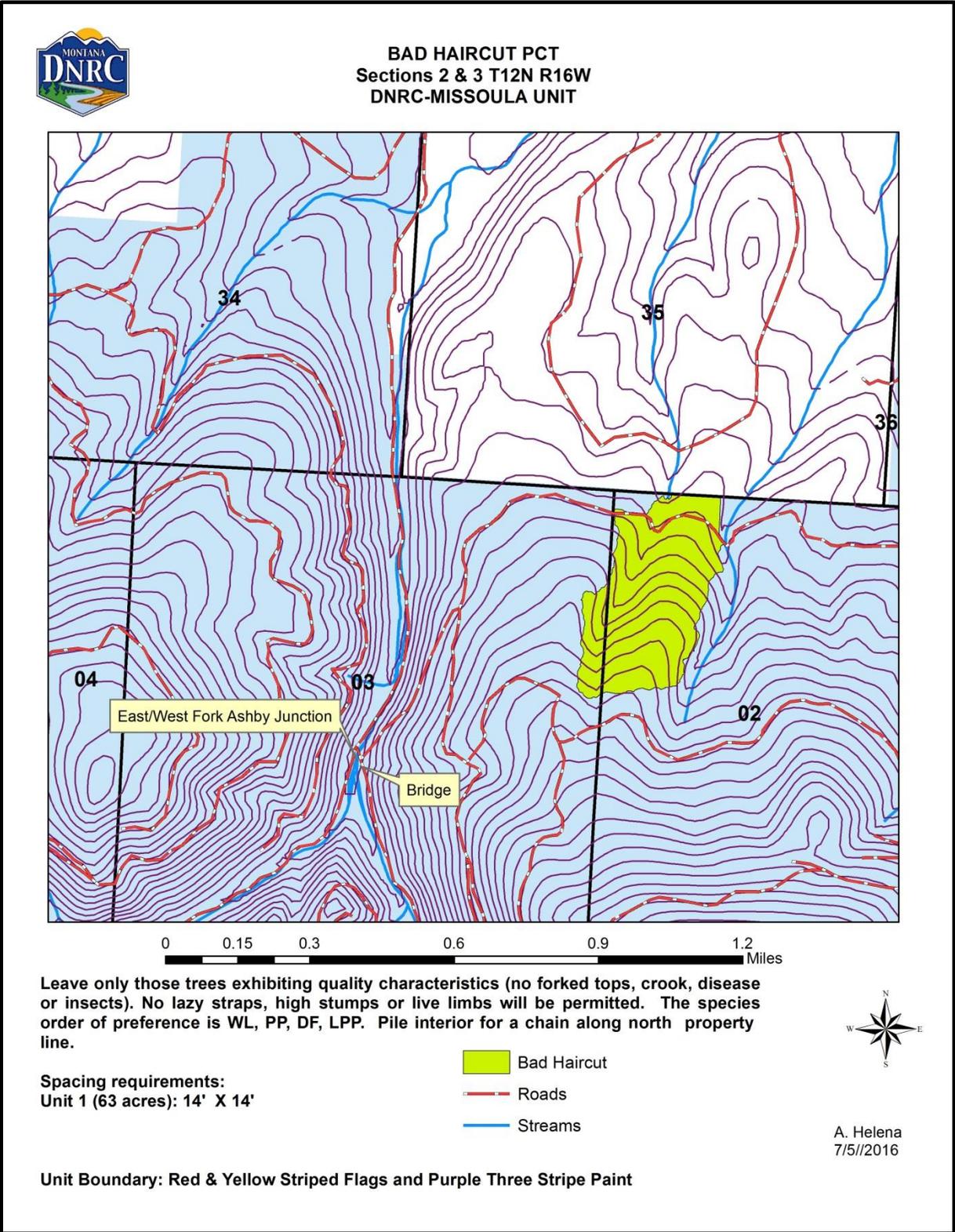
Signature: /s/ *Jonathan Hansen*

Attachment A- Maps

A-1: Timber Sale Vicinity Map

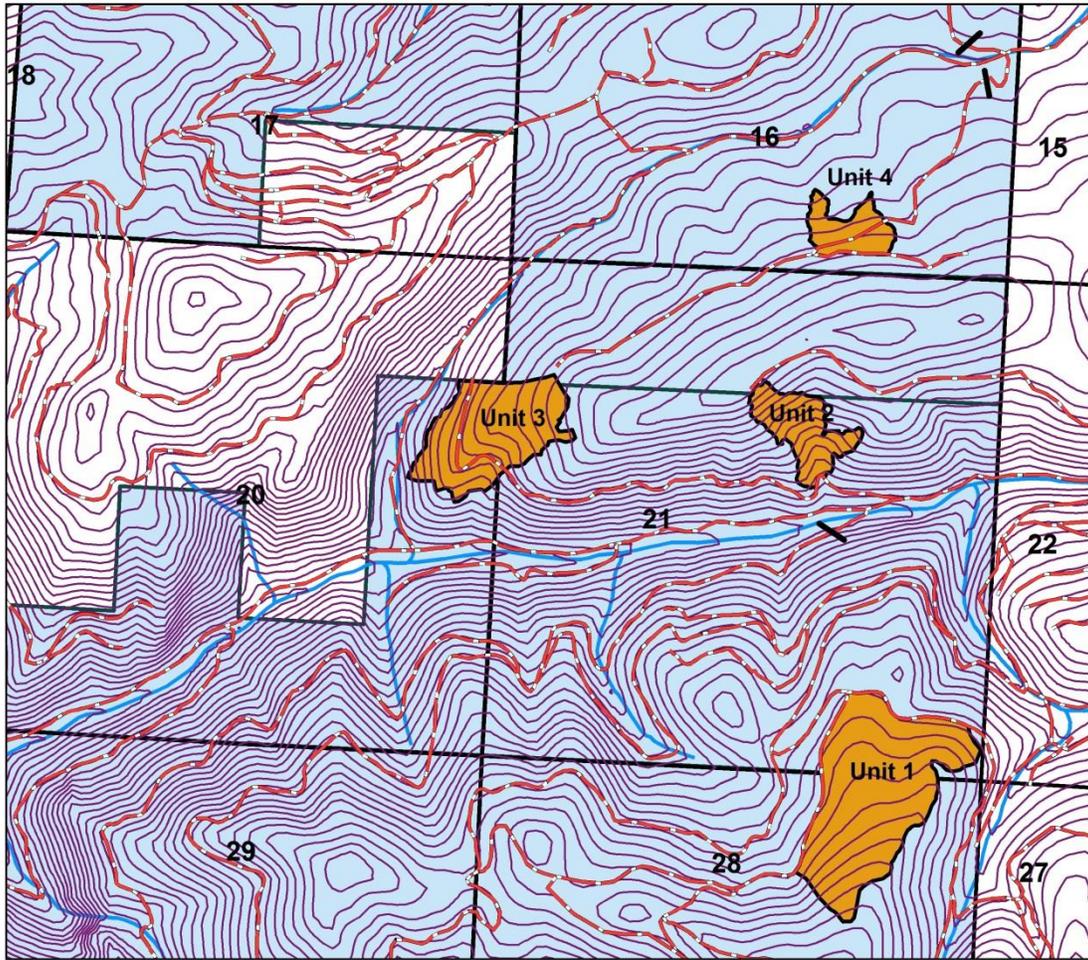


A-2: PCT Units





**Elder Haze PCT (Units 1-4)
 Sections 16, 20, 21 & 28 T12N R15W
 DNRC-MISSOULA UNIT**



Leave only those trees exhibiting quality characteristics (no forked tops, crook, disease or insects). No lazy strags, high stumps or live limbs will be permitted. The species order of preference is WL, PP, DF, LPP. In unit 3 pile interior for a chain along north property line of section 20, Keep slash out of SMZ's.

- Spacing requirements:**
 Unit 1 (56 acres): 14' X 14'
 Unit 2 (14 acres): 14' X 14'
 Unit 3 (32 acres): 14' X 14'
 Unit 4 (9 acres): 14' X 14'

-  Streams
-  Roads
-  Elder Haze

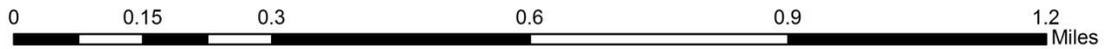
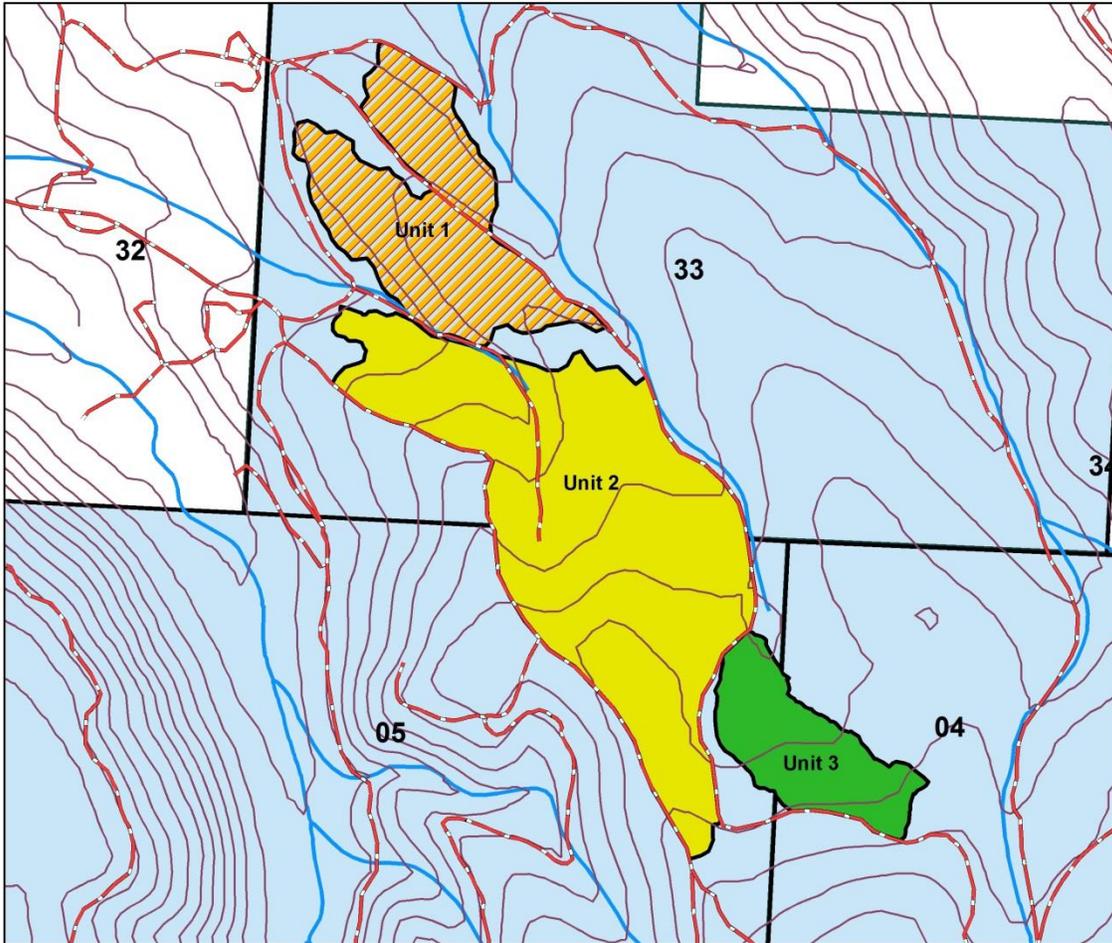


A. Helena
 7/7/2016

Unit Boundary: Red & Yellow Striped Flags and Purple Three Stripe Paint



CAMAS FOREST (UNITS 1, 2 & 3)
 Sections 4,5 T12N R15W & 33 T13N R15W
 DNRC-MISSOULA UNIT



Leave only those trees exhibiting quality characteristics (no forked tops, crook, disease or insects) on a 14' X14' spacing. No lazy straps, high stumps or live limbs will be permitted. The species order of preference is WL, PP, DF.

Unit Boundary: Red & Yellow Striped Flags and Purple Three Stripe Paint

Unit 1: 34 acres
 Unit 2: 80 acres
 Unit 3: 17 acres

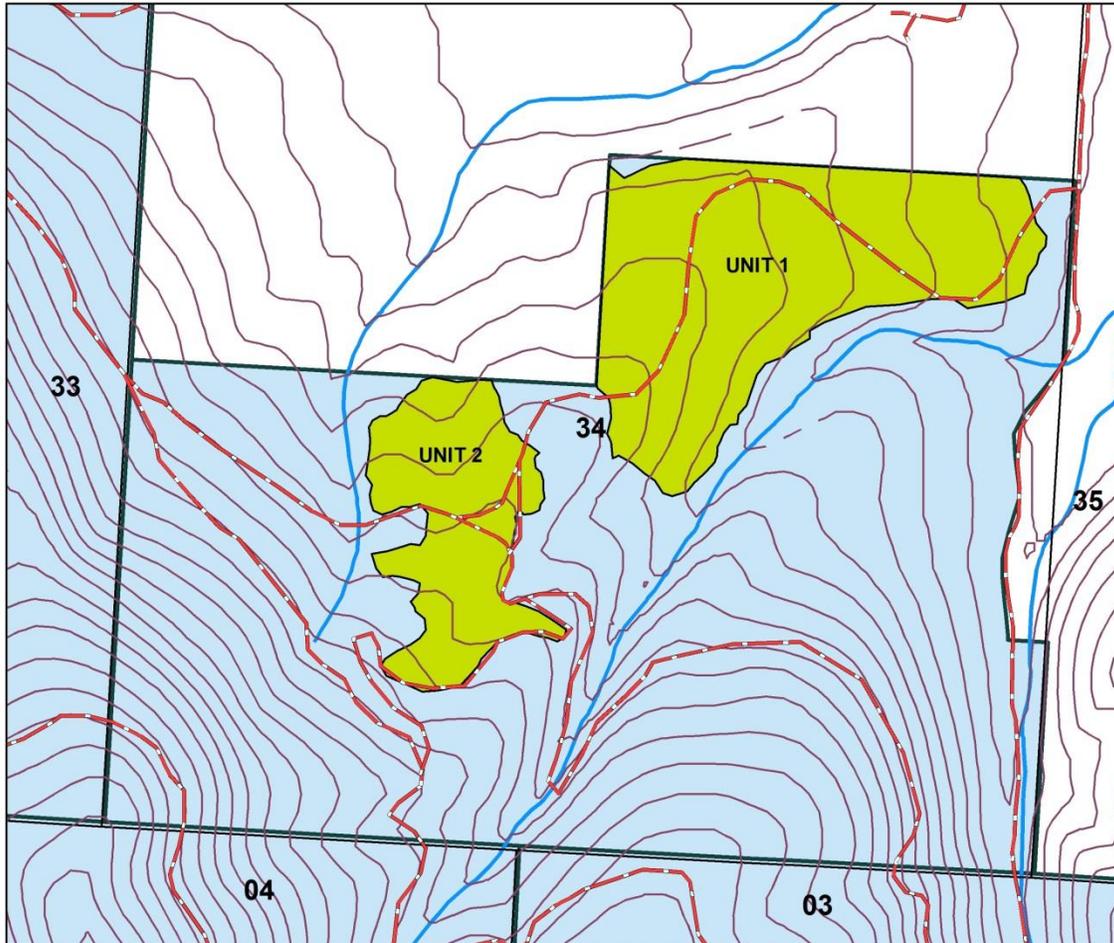
- Roads 1
- Streams 2
- 3



A. Helena
 6/15/2016



MOUTH OF ASHBY (UNITS 1 & 2)
Section 34 T13N R16W
DNRC-MISSOULA UNIT



Leave only those trees exhibiting quality characteristics (no forked tops, crook, disease or insects). No lazy straps, high stumps or live limbs will be permitted. The species order of preference is WL, PP, DF, LPP. In both units pile interior for a chain along north property line, also pile along west property line in unit 1.

Spacing requirements:
Unit 1 (63 acres): 14' X 14'
Unit 2 (27 acres): 14' X 14'

-  Mouth of Ashby
-  Roads
-  Streams

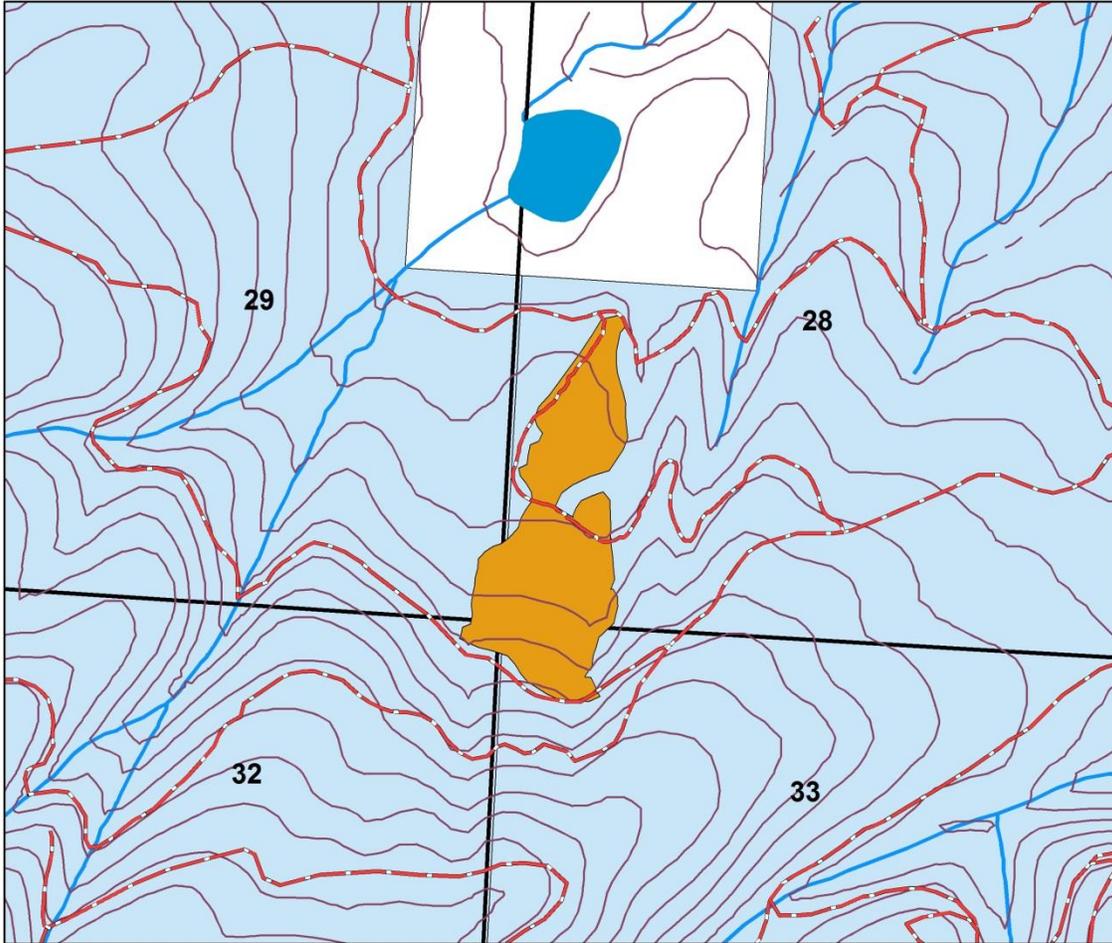


Unit Boundary: Red & Yellow Striped Flags and Purple Three Stripe Paint

A. Helena
6/15/2016



Thin Mint PCT
Sections 28,29,32 & 33 T13N R16W
DNRC-MISSOULA UNIT



Leave only those trees exhibiting quality characteristics (no forked tops, crook, disease or insects). No lazy straps, high stumps or live limbs will be permitted. The species order of preference is WL, PP, DF, LPP.

Unit acreage: 25 acres

Spacing requirements:
12' X 12' in LPP patches and 14' X 14' in all other species.

Unit Boundary: Red & Yellow Striped Flags and Purple Three Stripe Paint

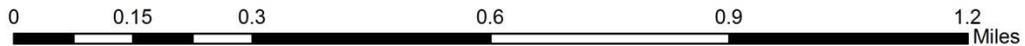
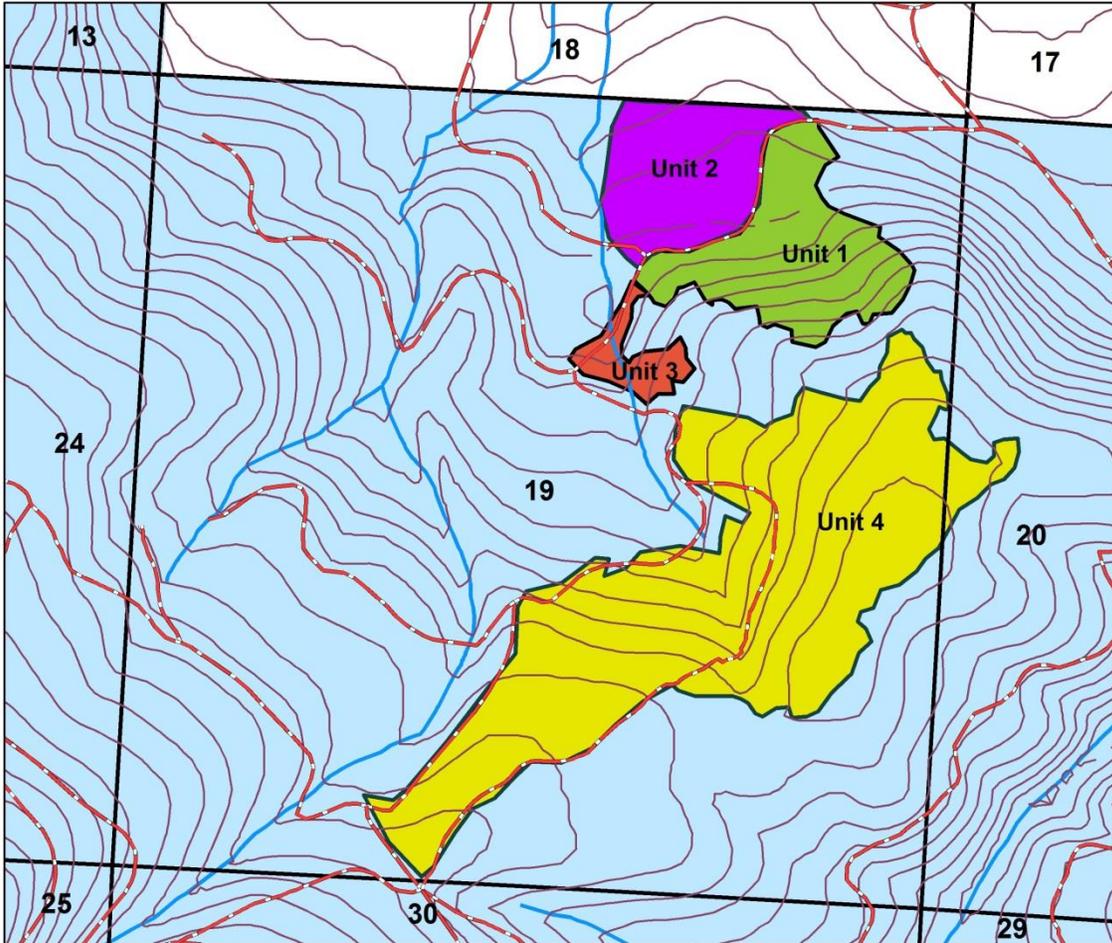
 Thin Mint  Roads
 Streams



A. Helena
7/8/2016



Patches O'Houlihan (UNITS 1-4)
Sections 19 & 20 T13N R16W
DNRC-MISSOULA UNIT



Leave only those trees exhibiting quality characteristics (no forked tops, crook, disease or insects). No lazy straps, high stumps or live limbs will be permitted. The species order of preference is WL, PP, DF, LPP. In Unit 2 Pile interior for a chain along north property line.

Spacing requirements:
 Unit 1 (28 acres): 12' X 12'
 Unit 2 (23 acres): 14' X 14' .
 Unit 3 (6 acres): 14' X 14'
 Unit 4 (113 acres): 14' X 14'

- Unit 1
- Unit 2
- Unit 3
- Unit 4
- Roads
- Streams



Unit Boundary: Red & Yellow Striped Flags and Purple Three Stripe Paint

A. Helena
 7/8/2016