

## CATEGORICAL EXCLUSION DOCUMENTATION FOR DNRC FOREST MANAGEMENT ACTIVITY

Project Name: Carroll Hill Salvage Timber Permit

Proposed Implementation Date: November 2011

Proponent: Dept. of Natural Resources and Conservation

Type and Purpose of Action: Commercial harvest of an estimated 500 MBF of lodgepole pine, Douglas-fir and spruce sawtimber from approximately 200 acres. The proposed project would primarily address timber that has been affected by insect and disease infestations, focusing on removing dead, dying, susceptible and overstocked trees. The proposed harvest would include the removal of 100 MBF of green, overstocked trees. The project would incorporate group selection, selection and regeneration harvest methods utilizing conventional/tractor harvest systems. The project would utilize existing roads and install a temporary 24" cmp at an existing crossing site on State lands to access the harvest units. The existing roads on State lands would have drainage features installed. Purpose of action is to generate revenue for the Common School Trust; remove overstocked and suppressed timber before its value is lost to insect and disease or wildfire; and improve the health, vigor and productivity of the forest in the proposed project area.

Location: Section 16, Township 6 South, Range 13 West

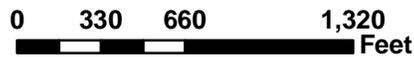
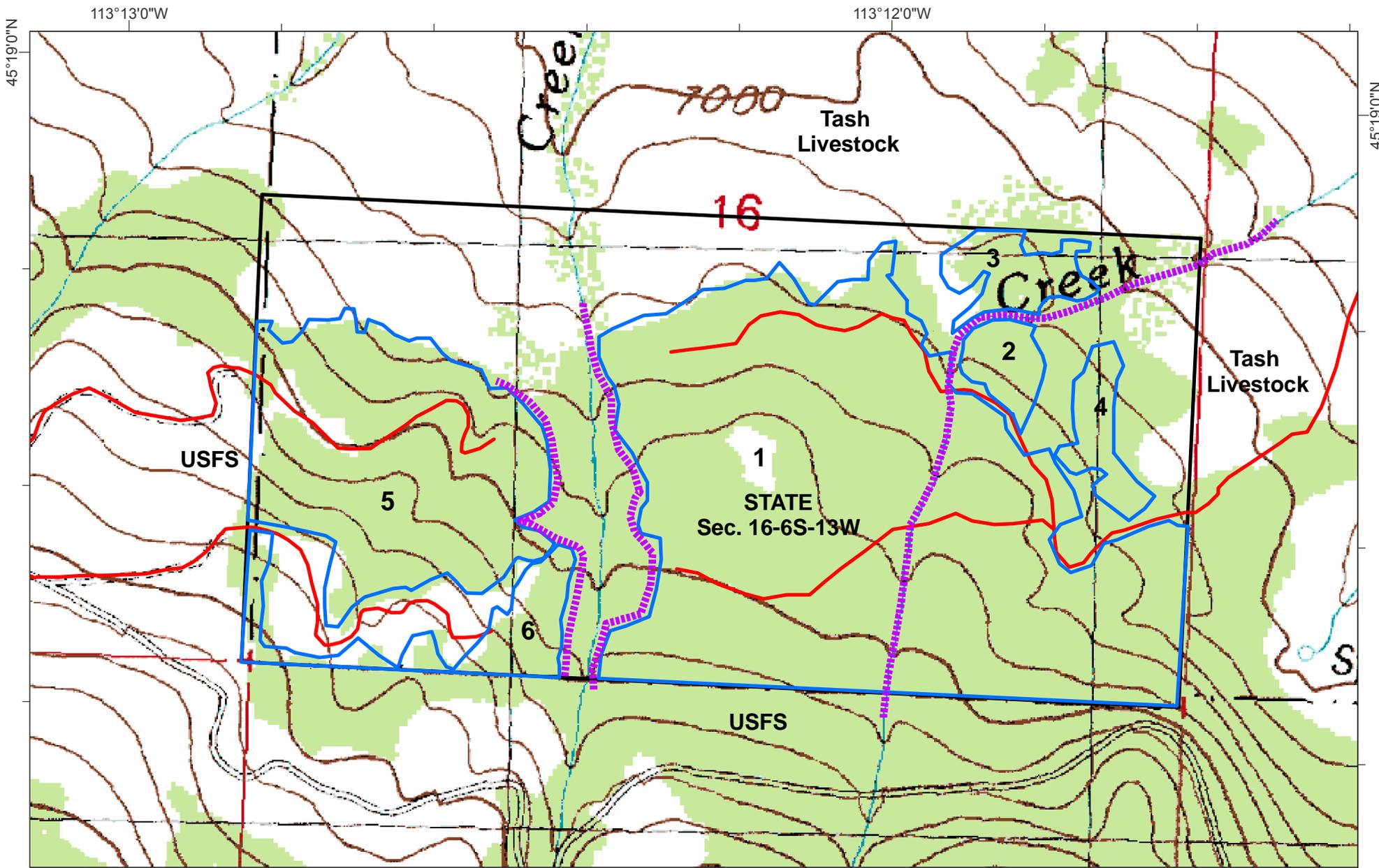
County: Beaverhead

### Category (refer to ARM 36.11.447 for additional detail):

- 1) Temporary Uses of Land with Negligible Effects
- 2) Plans and Policies
- 3) Leases and Licenses
- 4) Acquisition of Land or Interest in Land
- 5) Road Maintenance and Repair
- 6) Bridges and Culverts
- 7) Crossing Class 3 Streams
- 8) Temporary Road Use Permits
- 9) Road Closure
- 10) Material Stockpiles
- 11) Backfilling
- 12) Gathering Forest Products for Personal Use
- 13) Regeneration
- 14) Nursery Operations
- 15) Water Wells
- 16) Herbicides and Pesticides
- 17) Other Hazardous Materials
- 18) Fences
- 19) Waterlines
- 20) Removal of Small Trees
- 21) Removal of Hazardous Trees
- 22) Cone Collection
- 23) Timber Harvest (<100 MBF green or **500 MBF salvage**)



**ATTACHMENT A**  
**Carroll Hill Salvage Timber Permit**  
**Sec. 16-T6S-R13W, Beaverhead County**



1:9,000

— Access Road

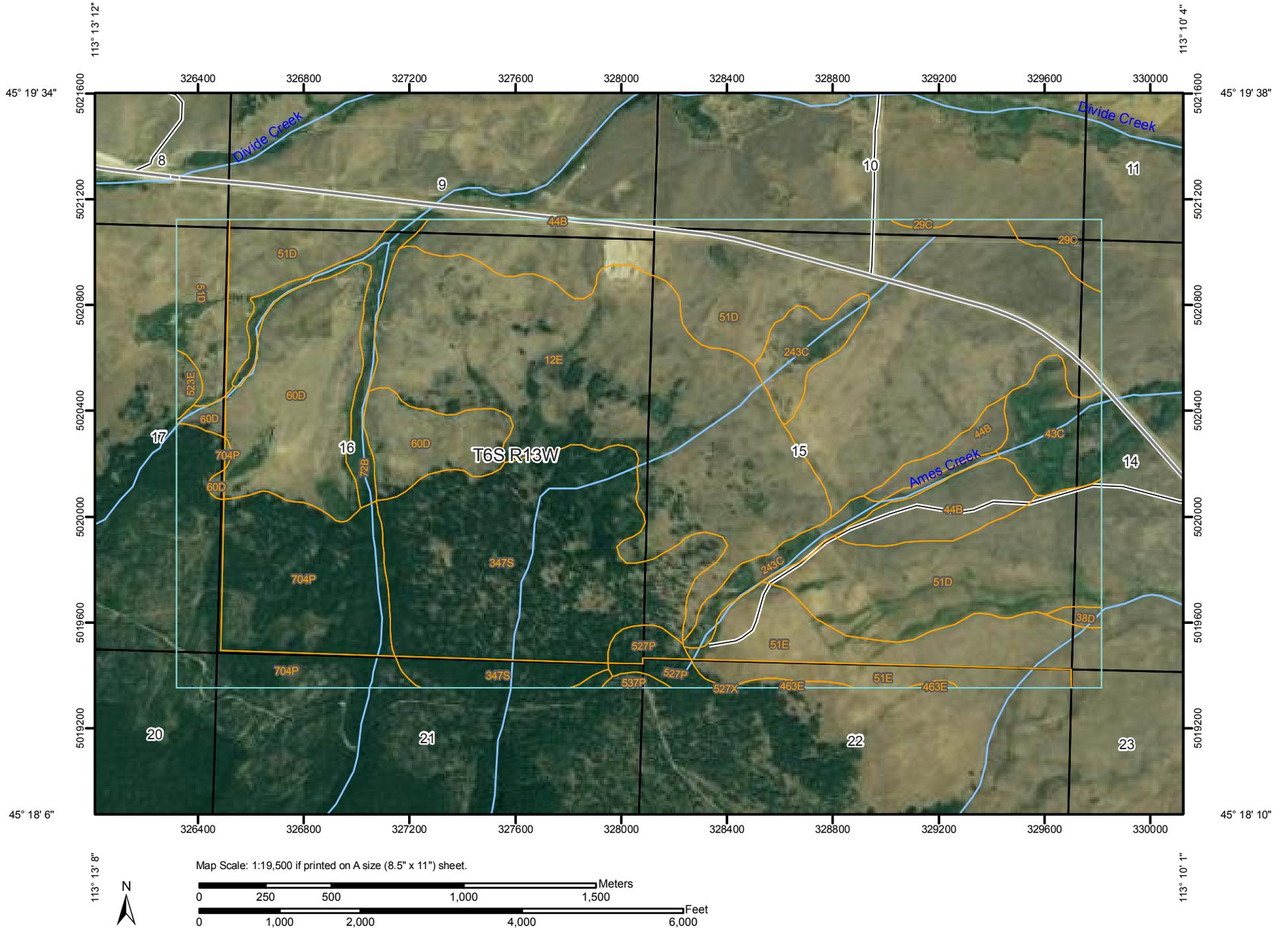
..... SMZ



Harvest Area



(Carroll Hill Salvage Timber Permit)



Map Scale: 1:19,500 if printed on A size (8.5" x 11") sheet.



Natural Resources  
Conservation Service

Web Soil Survey

Map - Beavercreek National Forest, West of National Superfund Site - Carroll Hill Salvage Timber Permit - Part of Beavercreek County, Missouri

9/28/2011  
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## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Units

### Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot

 Very Stony Spot

 Wet Spot

 Other

### Special Line Features

-  Gully
-  Short Steep Slope
-  Other

### Political Features

-  Cities
-  PLSS Township and Range
-  PLSS Section

### Water Features

 Streams and Canals

### Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

## MAP INFORMATION

Map Scale: 1:19,500 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Beaverhead National Forest Area, Montana  
Survey Area Data: Version 12, Aug 25, 2010

Soil Survey Area: Horse Prairie-South Valley Area - Part of Beaverhead County, Montana  
Survey Area Data: Version 7, Dec 2, 2010

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Date(s) aerial images were photographed: 9/6/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

<b>Beaverhead National Forest Area, Montana (MT605)</b>			
<b>Map Unit Symbol</b>	<b>Map Unit Name</b>	<b>Acres in AOI</b>	<b>Percent of AOI</b>
51D	Butchhill-Donald complex, 2 to 15 percent slopes, very stony	29.4	1.9%
51E	Butchhill-Donald complex, 15 to 35 percent slopes, very stony	26.8	1.8%
60D	Hairpin loam, 2 to 15 percent slopes, stony	5.1	0.3%
347S	Garlet-Worock-Como families, complex, glacial moraines	19.1	1.2%
463E	Philipsburg-Prudy-Tibson families, complex, ice-margin slopes	3.6	0.2%
523E	Rooset-Woodhurst-Tiban families, complex, gentle mountain slopes	4.4	0.3%
527P	Howardsville-Elve-Libeg families, complex, gentle mountain slopes	6.6	0.4%
527X	Elve-Libeg-Sebud families, complex, gentle mountain slopes	0.0	0.0%
537P	Elve-Gambler-Libeg families, complex, moderately steep mountain slopes	2.6	0.2%
704P	Loberg-Bridger-Rooset families, complex, landslide deposits	64.6	4.2%
<b>Subtotals for Soil Survey Area</b>		<b>162.2</b>	<b>10.6%</b>
<b>Totals for Area of Interest</b>		<b>1,530.2</b>	<b>100.0%</b>

<b>Horse Prairie-South Valley Area - Part of Beaverhead County, Montana (MT612)</b>			
<b>Map Unit Symbol</b>	<b>Map Unit Name</b>	<b>Acres in AOI</b>	<b>Percent of AOI</b>
12E	Hairpin-Libeg, very stony complex, 4 to 45 percent slopes, landslides	273.8	17.9%
29C	Donald silt loam, 2 to 8 percent slopes	14.5	0.9%
38D	Philipsburg gravelly loam, 2 to 15 percent slopes	3.0	0.2%
43C	Redfish, occasionally flooded-Shewag-Slagamelt complex, 0 to 8 percent slopes	35.6	2.3%
44B	Bearmouth cobbly loam, 0 to 4 percent slopes	45.0	2.9%
51D	Butchhill-Donald complex, 2 to 15 percent slopes, very stony	449.3	29.4%
51E	Butchhill-Donald complex, 15 to 35 percent slopes, very stony	66.8	4.4%
60D	Hairpin loam, 2 to 15 percent slopes, stony	126.7	8.3%
72B	Foolhen-Finn complex, 0 to 4 percent slopes, frequently flooded	26.2	1.7%
243C	Finn-Slagamelt-Hairpin, stony complex, 0 to 8 percent slopes	44.1	2.9%
347S	Garlet-Worock-Como families, complex, glacial moraines	188.0	12.3%

<b>Horse Prairie-South Valley Area - Part of Beaverhead County, Montana (MT612)</b>			
<b>Map Unit Symbol</b>	<b>Map Unit Name</b>	<b>Acres in AOI</b>	<b>Percent of AOI</b>
527P	Howardsville-Elve-Libeg families, complex, gentle mountain slopes	8.0	0.5%
704P	Loberg-Bridger-Rooset families, complex, landslide deposits	87.1	5.7%
<b>Subtotals for Soil Survey Area</b>		<b>1,368.0</b>	<b>89.4%</b>
<b>Totals for Area of Interest</b>		<b>1,530.2</b>	<b>100.0%</b>

# ATTACHMENT E

## CARROLL HILL SALVAGE TIMBER PERMIT CHECKLIST FOR ENDANGERED, THREATENED AND SENSITIVE SPECIES

Pertains to Section II. 9. of the DS-252 DNRC Environmental Checklist  
(Rev. August 1, 2007)  
CENTRAL LAND OFFICE

Prepared by Chuck Barone

October 27, 2011

Threatened and Endangered Species	[Y/N] Potential Impacts and Mitigation Measures N = Not Present or No Impact is Likely to Occur Y = Impacts May Occur (Explain Below)
<p>Grizzly Bear (<i>Ursus arctos</i>) Habitat: recovery areas, security from human activity</p>	<p>[N] The proposed project area lies outside of any grizzly bear recovery area. The nearest recovery area is the Yellowstone Grizzly Bear Recovery Zone (USFWS 1993) situated ~60 miles southeast of the project area. The project area is comprised of dry forest types not typically preferred by bears. Grizzly bear use of the Beaverhead Mountains may occur, however, the project area is currently considered outside of occupied habitat (Interagency Occupied Habitat Map, September 2002). Riparian habitats preferred by bears occur in the project area along Ames Creek. This creek supports relatively moderate levels of hiding cover, and human access levels are presently moderate due to road access. No new road would be constructed and access points to the State section would be physically closed at the end of the project. Proposed project activities would not occur from March 15 - June 15. Potential for any measurable increases in bear-human conflicts following project activities are not expected. Due to the size, nature, duration and location of the proposed project, activities associated with this proposal are not expected to affect grizzly bears. Adverse direct, indirect and cumulative impacts to grizzly bears as a result of this project are expected to be minimal.</p>
<p>Lynx (<i>Felis lynx</i>) Habitat: mosaics--dense sapling and old forest &gt;5,000 ft. elev.</p>	<p>[N] The proposed project area is located along the fringes of preferred lynx habitat. Suitable lynx habitat is potentially present in the Beaverhead Mountains (MNHP 2011) and Lynx could occasionally use the project area. However, habitats high in coarse woody debris that are preferred for denning, and large acreages (&gt;50 acres) of dense conifer regeneration at high elevations that are preferred for foraging are not present in the project area. Lynx habitat is marginal due to naturally induced fragmentation, and the high level of interspersions of native grassland habitat and dry forest types. The majority of the habitat on the State parcel would be</p>

	<p>categorized as “other” (283 ac – 88%) habitat. There is no identified young/mature foraging or denning habitat within the State parcel. Of the ~283 acres of potential lynx habitat on the State parcels, ~202 acres of “other” habitat are proposed for harvest. This would leave ~40 acres converted to temporary non habitat with the remaining 162 acres still categorized as “other” habitat. Preferred lynx habitat is marginal within the proposed project area due to the lack of highly desirable habitat conditions for lynx and their primary prey, snowshoe hares. Adverse direct, indirect or cumulative impacts to lynx as a result of this project are expected to be minimal.</p>
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<p><b>DNRC Sensitive Species</b></p>	<p>[Y/N] Potential Impacts and Mitigation Measures  N = Not Present or No Impact is Likely to Occur  Y = Impacts May Occur (Explain Below)</p>
<p>Gray Wolf (<i>Canis lupus</i>)  Habitat: ample big game pops., security from human activity</p>	<p>[N] The proposed project area falls within the Central Idaho Nonessential Experimental Area for gray wolves. The Horse Prairie pack resides in the vicinity of the project area. Individuals from this pack or transients from other packs could occasionally use portions of the project area; however, due to the size, nature, duration and location of the proposed project, activities associated with this project are not expected to affect wolves or recovery efforts. Should a new den be located within one mile of the project area, activities would cease and a DNRC Biologist would be contacted immediately. Mitigations would then be developed and implemented to minimize adverse impacts to wolves prior to initiating any activity.</p>
<p>Bald Eagle (<i>Haliaeetus leucocephalus</i>)  Habitat: late-successional forest &lt;1 mile from open water</p>	<p>[N] Bald Eagles have been documented within the quarter latilong (L36D) that encompasses the proposed project area (Skaar 1996, MNHP 2011). No nesting habitat occurs on, or within one mile of the proposed project area, and the project area likely occurs outside of any Bald Eagle nesting home range. No direct, indirect or cumulative effects to Bald Eagles associated with this project are anticipated.</p>
<p>Black-Backed Woodpecker (<i>Picoides arcticus</i>)  Habitat: mature to old burned or beetle-infested forest</p>	<p>[N] Black-backed woodpeckers have not been documented within the quarter latilong (L36D) that encompasses the proposed project area (Skaar 1996, MNHP 2011). However, stands found within the proposed project area are presently experiencing moderate insect activity and could attract birds. Foraging and nesting opportunities are likely to increase in the area due to present increase in insect activity. No recent burns (<math>\leq 5</math> years old) have occurred within the State tracts or adjoining sections. Due to the size, location and short duration of this proposed project only minor potential for direct, indirect or cumulative effects to black-backed</p>

	woodpeckers would be expected to occur.
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Black-tailed Prairie Dog ( <i>Cynomys ludovicianus</i> ) Habitat: Prairie, shortgrass prairie, badlands	[N] Grassland habitats suitable for use by black-tailed prairie dogs do not occur within one mile of the proposed project area. Impacts to black-tailed prairie dogs are not anticipated.
Flammulated Owl ( <i>Otus flammeolus</i> ) Habitat: late-successional ponderosa pine and Doug.-fir forest	[N] Flammulated Owls have not been documented within the quarter latilong (L36D) that encompasses the proposed project area (Skaar 1996, MNHP 2011). The parcel involved in the proposed project maintains elevations that range from about 6,800-7,300 feet. Flammulated Owls have been found in warm, dry Douglas-fir cover types. The parcel involved in this project has similar vegetative conditions, represented by small, scattered patches but the associated higher elevations are not their preferred habitat. Direct, indirect and cumulative effects to Flammulated Owls would not be expected to occur under the alternatives considered.
Greater Sage-grouse ( <i>Centrocercus urophasianus</i> ) Habitat: sagebrush semi-desert	[N] Sage Grouse have been documented in the quarter latilong (L36D) that encompasses the proposed project area (Skaar 1996, MNHP 2011). Sagebrush semi-desert habitats suitable for use by Sage Grouse do occur within one mile of the project area. No leks, lek areas or core areas have been identified within one mile of the project area or haul route. Should sage grouse be present in the vicinity of the project area, any effects to habitat or disturbance-related effects would be expected to be minimal, due to the late start-up date of activities (i.e., post June 15), and preferred sagebrush habitat would not be altered. Impacts to Sage Grouse are not anticipated.
Harlequin Duck ( <i>Histrionicus histrionicus</i> ) Habitat: white-water streams, boulder and cobble substrates	[N] Harlequin ducks have not been documented within the quarter latilong (L36D) that encompasses the proposed project area (Skaar 1996, MNHP 2011). No high gradient streams suitable for use by harlequins occur within the project area or along proposed haul routes. No impacts to Harlequin Ducks would be expected to occur as a result of this project.
Mountain Plover ( <i>Charadrius montanus</i> ) Habitat: short-grass prairie, alkaline flats, prairie dog towns	[N] Mountain Plovers have not been documented within the quarter latilong (L36D) that encompasses the proposed project area (Skaar 1996, MNHP 2011). No short-grass prairie or prairie dog towns occur on, or within one mile of the proposed project area. No impacts to Mountain Plovers are expected as a result of this project.
Northern Bog Lemming ( <i>Synaptomys borealis</i> ) Habitat: sphagnum meadows, bogs, fens with thick moss mats	[N] No sphagnum meadows or bogs occur in the proposed project area. No impacts to Bog Lemmings would be expected to occur as a result of this project.

<p>Peregrine Falcon (<i>Falco peregrinus</i>)  Habitat: cliff features near open foraging areas and/or wetlands</p>	<p>[N] Peregrine Falcons have not been documented within the quarter latilong (L36D) that encompasses the proposed project area (Skaar 1996, MNHP 2011). Cliff features suitable for use by nesting Peregrine Falcons do not occur within 1 mile of the project area. No direct, indirect or cumulative effects associated with this project are anticipated.</p>
<p>Pileated Woodpecker (<i>Dryocopus pileatus</i>)  Habitat: late-successional ponderosa pine and larch-fir forest</p>	<p>[N] Pileated Woodpeckers have not been documented within the quarter latilong (L36D) that encompasses the proposed project area (Skaar 1996, MNHP 2011). The project area is poorly suited for use by Pileated Woodpeckers. As suitable habitat is not present in the project area, no impacts to Pileated Woodpeckers would be expected to occur as a result of this project.</p>
<p>Townsend's Big-Eared Bat (<i>Plecotus townsendii</i>)  Habitat: caves, caverns, old mines</p>	<p>[N] The DNRC is unaware of any mines or caves within the proposed project area or close vicinity that would be suitable for use by Townsend's big-eared bats. Impacts to Townsend's big-eared bats are not anticipated as a result of this project.</p>

\* Skaar, P.D. 1996. Montana bird distribution, fifth edition. Montana National Heritage Program 2011. National Heritage Tracker.

## ATTACHMENT F

### Vegetative Analysis/Stand Prescription Carroll Hill Salvage Timber Permit

The State parcel is located in the forest/grassland interface along the lower reaches of Abrams and Ames Creeks on the very south eastern corner of the Beaverhead Mountains. The parcel is bordered by private to the east and north and the USFS to the south and west and was lightly harvested in the mid 1970's. Harvesting has occurred on the private lands to the east and USFS lands over the past 20 years. Slopes range from 10-40% with an elevation range of 6800-7300 feet. The State parcel has ~276 forested acres which are dominated by Douglas-fir mixed with lesser amounts of spruce on the wet, riparian areas. Additionally, scattered patches of lodgepole pine occur throughout the stands. The cover type is Douglas-fir and the habitat type is Douglas-fir/Pine Grass (Psme/Caru) except within the riparian areas (Picea/Vaca). The southwest corner of the section has a heavier lodgepole pine component mixed with Douglas fir.

Forested stands are included in fire group six with Douglas-fir the indicated climax species and an integral part of the seral community. Lodgepole pine is also a major seral component. The fire disturbance regime was likely low to moderate severity fires maintaining many mature stands in an open, park-like condition with stand replacement fires occurring in the denser, fuel heavy areas. The absence of fire, in combination with encroachment, has resulted in mature/over mature, overstocked and suppressed stands which along with extended drought, have provided conditions for the current moderate infestations of Mountain Pine Beetle and Dwarf Mistletoe in the lodgepole pine and scattered pockets of Douglas fir beetle and moderate Spruce Budworm infestations in the Douglas fir. Additionally, the stand has a higher susceptibility to fire.

Soils are generally sandy loam and cobble with a high infiltration rate and medium to high erosion potential. Mass failure and soil compaction problems are low. Two perennial streams, Ames and Abrams, are located within the State parcel. Ames has a fishery of brook trout and contributes to Divide Creek. Abrams has no fishery and is totally diverted off for irrigation.

There are ~1.8 miles of road within the section which were constructed to access the first timber harvest. The roads are in good condition and could be made usable with some light blading and the installation of a culvert (temporary 18"x24') in Abrams Creek. No new road would be needed to service the remaining timber.

Unit 1 (129 ac) and Unit 5 (47.2 ac) – These stands were harvested using a light selective harvest and are composed of Douglas fir sawtimber and scattered lodgepole pine and submerchantable material. Scattered individuals and small clumps (<5 acres) of old relic Douglas-fir trees (225-280+ years) do occur within these stands but do not meet DNRC "old growth" definition. Overall health and growth of the stands are fair. The stands have moderate infestations of Spruce Budworm and scattered pockets of Douglas fir beetle. The lodgepole pine has moderate to heavy infestations of Mountain Pine Beetle and moderate infestations of Dwarf Mistletoe. Additionally, there are many defective trees (crook, forks, dead tops, chlorotic foliage, etc.) Overall, live Douglas fir have fair to good crown ratios, lodgepole pine poor. Dominate trees are 55-65' and co-dominates are 45-55' with an age range of 120-170 years. Yield capacity is 50 cu. ft/acre. Regeneration is light and understory vegetation is light. Coarse woody debris is light. Heavy livestock use in all stands.

Unit 2 (11 ac) and Unit 4 (5.3 ac) – These stands have not been harvested before and are composed of Douglas fir with heavier concentrations of lodgepole pine along the riparian edges. Overall health and growth of the stands are good in the Douglas fir. The stands have moderate infestations of Spruce Budworm and are overstocked. Overall, live Douglas fir have fair to good crown ratios and lodgepole pine is poor. Dominate trees are 55-65' and co-dominates are 45-55' with an age range of 100-150 years.

Yield capacity is 50 cu. ft/acre. Regeneration is sparse and understory vegetation is light. Coarse woody debris is light. Heavy livestock use in all stands.

Unit 6 (10.3 ac) - This stand has not been harvested before and are composed of lodgepole pine with scattered Douglas fir. Overall health and growth of the lodgepole pine is poor. The lodgepole pine has heavy infestations of Mountain Pine Beetle and moderate infestations of Dwarf Mistletoe. The Douglas fir has moderate infestations of Spruce Budworm. Overall, live Douglas fir have fair to good crown ratios and lodgepole pine is poor. Dominate trees are 50-55' and co-dominates are 40-45' with an age range of 100-140 years. Yield capacity is 50 cu. ft/acre. Regeneration is moderate and understory vegetation is moderate. Coarse woody debris is light. Heavy livestock uses.

Treatments for Douglas-fir cover types would target dead, dying, damaged and at-risk trees for removal. Sawtimber trees of all age classes exhibiting signs of insect/disease, poor health and/or poor tree form characteristics would be designated for harvest. Additionally, where stands are exhibiting overstocked/suppressed conditions, overall stand density would be reduced by 50-60% of the merchantable volume, including riparian areas, utilizing group selection/selection harvests. Large live trees, live cull trees, snags, cull snags, and coarse woody debris and fine materials would be protected and retained in sufficient quantities where applicable.

Treatments for lodgepole pine would target all dead, dying and at-risk lodgepole pine, utilizing regeneration harvests. Lodgepole pine <9" dbh would not be harvested in areas where Mountain Pine Beetle does not appear to be infesting the smaller size classes.

Aspen Areas - A regeneration harvest of all conifer sawtimber within 50-75 feet of the aspen clone would be used to reduce conifer encroachment into aspen stands and promote aspen regeneration. Submerchantable conifer and aspen would not be protected during harvest operations to further reduce conifer encroachment and induce suckering of aspen. Post harvest treatment to fall and lop any remaining submerchantable conifer trees.

Severity of stand conditions would dictate harvest method used, emulating moderately severe ground fire to stand replacing fire. Harvest prescription would recover value from resources before it is lost, reduce overstocking, fire hazard, and additional insect and disease while promoting forest health, vigor and productivity. Additionally, harvest would open the stands to encourage natural regeneration of shade intolerant species; promote Douglas-fir cover types while maintaining a semblance of historic stand conditions; and promote existing aspen stands.

Retain all fine litter and 10-15 tons/acre of large woody debris >3" diameter as feasible. Consolidate remaining slash at landings for burning. Conduct regeneration survey in 7-9 years and a thinning survey in 15 years.

There is currently more total forest cover in Beaverhead County than in prior historical conditions. The proposed harvest represents ~73% of the total forested acres within the State parcels. Harvesting an estimated 500 MBF of timber would alter the forest cover on approximately 202 acres. The proposed levels of harvest and subsequent reduction in forest canopy would be similar to what would be expected to occur under the present natural conditions. Natural regeneration would be expected. No rare plants or cover types have been noted or observed within the project area.

#### MEASURES RECOMMENDED TO MITIGATE POTENTIAL IMPACTS:

- 1) Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, the Montana Stream Protection Act (124 Permit) and applicable DNRC Forest Management Administrative Rules.
- 2) Limit equipment operations to periods when soils are dry (less than 20% soil moisture), frozen or snow covered (12 inches packed or 18 inches unconsolidated) to minimize soil compaction,

rutting, vegetative disturbance and maintain drainage features. Control erosion by installing adequate drainage on roads and skid trails.

- 3) The Forest Officer shall approve a plan for felling, yarding and landing location in each harvest unit prior to the start of operations in the unit. The locations and spacing of skid trails and landings shall be designated and approved by the Forest Officer prior to operations and skid trails will not be spaced less than 60 feet. Retain all fine litter as feasible and 10-15 tons/acre of large woody debris >3" diameter. Minimize soil disturbance by general skid trail planning and limit sustained tractor skidding to slopes  $\leq 50\%$ . Limit scarification to 30-40% of the harvest area. Slash would be left in the harvest units where feasible, and distributed on skid trails upon completion of use, for nutrient cycling, to control erosion and to provide shade and protection for seedlings.
- 4) For slope stability on the road construction segments, construct cutslopes at 1:1 (run/rise) in common material and 1/4:1 for rock. Install adequate road drainage to control erosion concurrent with harvest activities and road opening and new construction. Provide effective sediment filtration along drainage features near crossing sites. On State lands, roads would have adequate drainage provided and culvert installation on Abrams Creek would be removed and rehabilitated at the end of the project. Major skid trails would be closed with slash and debris and/or barriers, and adequate drainage provided.
- 5) All road and logging equipment would be power washed and inspected prior to being brought on site. Sale area would be monitored for weeds following harvest and a treatment plan would be developed should noxious weeds occur.
- 6) At sale closure, grass seed roads, skid trails (where needed) and landings with an appropriate seed mixture.
- 7) One snag and one snag recruit per acre, of the largest diameter class, would be retained where available and applicable. Cull live trees and cull snags would be retained where available and applicable.
- 8) Retain live, healthy older trees and stand attributes suitable for old growth development where available and applicable.
- 9) Contact DNRC wildlife biologist should any threatened or endangered species be encountered within the proposed project area.