

CATEGORICAL EXCLUSION DOCUMENTATION FOR DNRC FOREST MANAGEMENT ACTIVITY

Project Name: Snowshoe Salvage II Timber Permit

Proposed Implementation Date: September 2010

Proponent: Dept. of Natural Resources and Conservation

Type and Purpose of Action: Commercial salvage timber permit to harvest an estimated 500 MBF of Douglas-fir, spruce, lodgepole pine and subalpine fir sawtimber from approximately 155 acres of tractor ground. Project would primarily address an estimated 400 MBF of sawtimber that has been infested with Douglas-fir bark beetle, Mountain Pine beetle and Spruce budworm focusing on removing those trees which are dead, dying and "at-risk" to infestation within previously treated and untreated stands. Additionally, an estimated 100 MBF of green sawtimber would be harvested from the previously untreated stands. These stands would have overall stand density reduced by 60-70% of the merchantable volume, targeting shade intolerant species and trees exhibiting overstocked/suppressed conditions, utilizing group selection/selection and regeneration harvests. Existing access road would be cleared of slash and debris and two culverts would be installed, no new road would be constructed. Purpose of action is to generate revenue for the common school trust, utilize the resource and recover value from insect damaged timber prior to its deterioration, and improve forest health and productivity through the removal of overstocked and diseased timber in the proposed project area.

Location: SW4 Section 3, Section 4, E2NE4 Section 5 and N2N2 Section 9, Township 13 South, Range 2 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)

By process of the adoption of the Administrative Rules for Forest Management on February 27, 2003, pursuant to ARM 36.2.523(5)(a), the Department of Natural Resources and Conservation, Trust Land Management Division, has adopted the above categorical exclusions for activities conducted on state forest lands. "Categorical Exclusion" refers to a type of action that does not individually, collectively, or cumulatively require an EA or EIS unless extraordinary circumstances occur (ARM 36.2.522(5)).

Extraordinary Circumstances:

Will the proposed action affect one or more of the following resources or situations in the project area? If the resource or situation is present, but project design avoids potential adverse effects on the resource, the answer is "no". One "Yes" answer indicates that Categorical Exclusion is not appropriate for the project, and an EA or EIS must be conducted.

- | YES | NO | |
|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 1) Sites with high erosion risk. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 2) Federally listed threatened and endangered species or critical habitat for threatened and endangered species as designated by the USFWS. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 3) Municipal watersheds. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 4) The SMZ of fish bearing streams or lakes, except for modification or replacement of bridges, culverts and other crossing structures. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5) State natural area. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 6) Native American religious and cultural sites. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 7) Archaeological sites. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 8) Historic properties and areas. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9) Several related projects that individually may be subject to categorical exclusion but that may occur at the same time or in the same geographic area. Such related actions may be subject to environmental review even if they are not individually subject to review. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10) Violations of any applicable state or federal laws or regulations. |

The project listed above meets the definition of the indicated categorical exclusion, including specified conditions and extraordinary circumstances, as provided in the Administrative Rules for Forest Management (ARM 36.11.447).

Prepared by: Chuck Barone 9/14/10
(Name) (Date)

Decision by: Tim Egan Dillon Unit Manager
(Name) (Title)

/S/ Timothy Eagn 9/15/2010

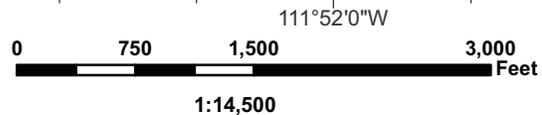
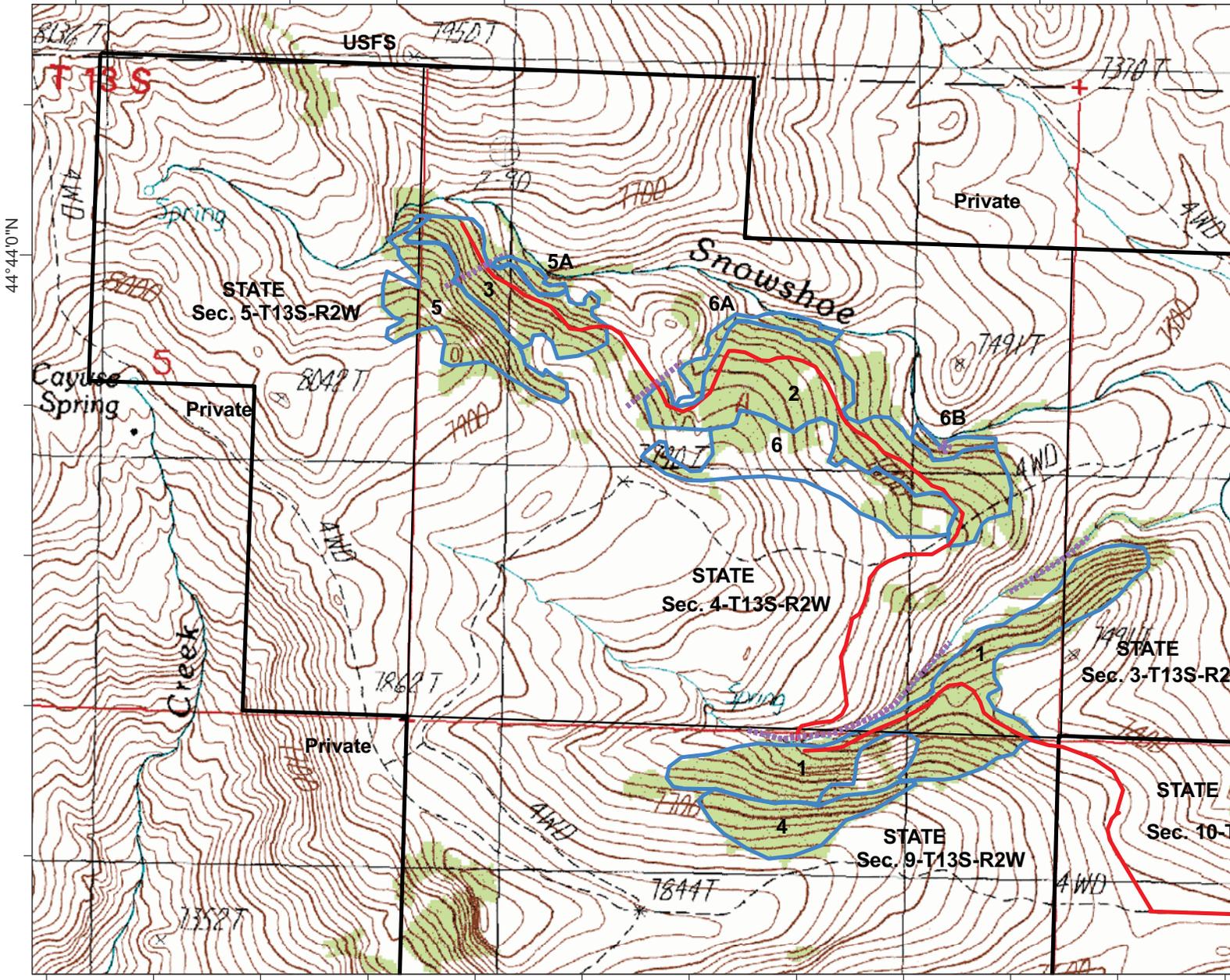
(Signature) (Date)

ATTACHMENT A

Proposed Snowshoe Salvage II Timber Permit Sec. 3,4,5 & 9-T13S-R2W, Beaverhead County

111°52'0"W

111°51'0"W



SMZ



Harvest Area



ATTACHMENT C

SOIL & GEOLOGY ASSESSMENT

PATCHTOP TIMBER SALE

JEFF COLLINS, Soil Scientist

June 10, 2003

EXISTING ENVIRONMENT- Geology & Soils

The Patchtop Project area is located on moderate to steep slopes with soils weathering from alpine glaciated, volcanic bedrock of the Huckleberry tuff formation. Some outcrops may be suitable for building stone quarry. Volcanic bedrock is common at shallow depth and outcrops mainly along ridges and convex slopes should be avoided. The black and tan porous rock can be ripped, but may bring up rough boulders that make the roads difficult to grade, slow and bumpy. Several passes across road surface with dozers can help break down the larger rock. Localized limestone and tertiary age landslide deposits occur in the North ½ of section 4, but are not part of the proposed harvest units. No especially unique or unstable geology/soils occur in the section.

Predominant forest soils on convex slopes of 30 to 50% and ridges in area of proposed units are shallow to moderate depth, extremely stony loams and cobbly clay loams. Topsoils are 4-6 inches cobbly silt loams and fine sandy loams with ½ to 1 inch of duff. These soils are excessively well drained and droughty. Erosivity is moderate. Compaction hazard is a concern in spring when soils are wet. Soils have a relatively long dry or frozen season of use when operability should not cause adverse effects. Slopes 45% are well suited to ground based harvest methods. Primary concern for soil productivity is maintaining the shallow topsoils, by minimizing displacement and retaining a portion of woody debris for long term nutrient cycling.

Concave slopes of 15-35% have deeper cobbly soils with higher clay contents and better site quality. Forest interpretations are similar for these soils. Timber productivity is estimated as moderate. Climate and moisture limit tree growth. Erosion potential for disturbed soils is moderate, except for steeper sideslopes. Erosion can be controlled by installing standard drainage features and grass seeding of trails where needed. Soil compaction potential is a concern when soils are wet. Localized area of low rock content, high clay soils near stream in unit 5 have low bearing strength and will require blading in suitable fill from adjacent area.

Environmental effects on soils.

The No-action alternative would have little direct or cumulative effect on soil resources. Segments of existing range roads with inadequate drainage would continue to erode without maintenance. No past BMP departures were noted in the area.

Effects of the Action Alternative

Primary soil concerns are potential rutting, compaction or displacement associated with harvest operations and site preparation. Effects of tractor skidding harvest could cause direct effect of soil disturbance that could result in increased erosion and reduce soil productivity depending on the area and degree of soil effects. For the action alternative, specific mitigation measures and BMP's would be implemented to minimize the area and degree of soil effects associated with proposed harvest. Mitigations include skid trail planning, placing drainage and woody debris on trails to control erosion. The most sensitive soils are found on small wet sites, short steep slopes, and a small area (2-3 acres) of marginal slope stability, which will be avoided or protected with site-specific mitigation measures. Ground effects of harvest operations will be closely monitored. Soil effects would be minimal and long-term productivity would be maintained or improved by implementing mitigation measures, BMP's and reducing the stocking to make limited soil moisture and nutrients available to retained trees.

Cumulative Effects:

Cumulative effects could occur from repeated entries into the harvest area. Some past harvest by

selective logging has left minimal effect on the soils, with only a few horse trails still evident. Skidding and slash disposal mitigation measures will limit the area impacted and therefore presents low risk of cumulative effects. Future stand entries in uneven aged stands would use existing trails and landings. A proportion of large woody debris will be retained to help reduce erosion, and maintain nutrient cycling and long-term productivity.

Road Access & Effects of action alternatives:

County and private road access crosses rangeland sites with deep sandy soils and some clay rich tertiary valley fill deposits. Existing roads are mainly two track, range type roads with grass in the center and little or no excavation. Portions of existing range roads have low spots which hold water. Some rutting and erosion is apparent on short steep road pitches. While segments of the access road have inadequate drainage, there are no sediment sources contributing to surface waters. Portions of existing road near the state section were built at steep road grades and narrow width principally for range management and service of irrigation line. Most access roads can be used as is with some localized repairs and maintenance.

Existing drainage would be maintained and improved by blading and adding road surface drainage on approximately 3.5 miles of State, County and Private roads. With the action alternative, segments of the existing road would be relocated to improve grade for safety and road surface drainage. Road drainage improvements to existing roads will allow seasonal access to the area and reduce erosion.

Proposed new roads involve construction across mainly moderate sideslopes and some short steep segments. All locations were reviewed to locate best available road grade and location to avoid wet sites and minimize construction. Roads will be constructed to adequate standard for safety and long-term stability. Erosion on roads can be controlled with adequate drainage and prompt reseeding. Construction of all stream crossings will implement mitigation measures to control sediment.

Following use, temporary roads will be closed and have long-term drainage features installed and reseeding with grass.

HARVEST DESIGN MEASURES COMMON TO ALL ACTION ALTERNATIVES:

* Implement Forestry BMPs as the minimum standard for all operations with the proposed timber sale

Ground-based logging systems (tractor, skidders, and mechanical harvesters) would be limited to slopes less than 45%. Some steeper slopes may be winched or mechanically harvested and decked on more moderate slopes for skidding. Use minimum SMZ width required by law as located in the field. No high erosion risk soil types were noted.

The contractor and sale administrator would agree to a skidding plan prior to equipment operations. Protect all draws, springs and wet areas with marked equipment restriction zones (ERZ) as needed. Locate ERZ around small wet area and small old slump in unit 4 above road. To control erosion, install skid trail drainage and/or distribute slash on trails where surface soil is disturbed.

Limit equipment operations to periods when soils are relatively dry, (less than 20%) to minimize soil compaction and rutting, and maintain drainage features. Check soil moisture conditions prior to equipment start-up. Some moister conditions are accepted on harvest units where tractors remain on designated trails and timber will be winched to trails.

Down Woody Material: Within the harvest units operations should retain five to ten tons per acre of woody material larger than 3 inches diameter to be left scattered throughout the sale units. A majority of slash should be left within the harvest unit or return skidded as required by the Forest Officer to insure distribution for erosion control. Slash should be left in the harvest units where feasible and distributed on skid trails upon completion of use for erosion control and nutrient cycling.

Road construction mitigation measures for action alternatives:

Install proper and adequate road drainage such as drain-dips to control erosion from roads. Install and maintain all road surface drainage concurrent with harvest activities, reconstruction and reconditioning. Provide effective sediment filtration along drainage features located in areas with inadequate buffer capacity to channel.

On all sites reviewed, slopes are relatively stable. Slope stability can be maintained by constructing cut slopes at stable angles of 1:1 for common material 3/4:1 for talus or as will stand for bedrock.

Leave all temporary or abandoned roads in a condition that will provide adequate drainage and will not require future maintenance. Complete seeding of site adapted grasses. Where it is available, scatter slash across the road surface. Install water bars at regular intervals and breaks in grade to insure effective surface drainage.

Weed Management

Noxious weeds are not apparent (in the proposed harvest area. The following prevention measures would be implemented to limit the possible introduction of noxious weeds into the project area.

All road construction and harvest equipment will be cleaned of plant parts, mud and weed seed to prevent the introduction of noxious weeds. Equipment will be subject to inspection by forest officer prior to moving on site.

All newly disturbed soils on road cuts and fills will be promptly reseeded to site adapted grasses to reduce weed encroachment and stabilize roads from erosion.

DNRC would review the proposed harvest area for weeds periodically following the sale. If any weeds are identified, a weed management plan would be developed and implemented.

REFERENCES

Sonderegger, John., Scofield,James., Berg,Richard.,Mannick, Matthew. 1982 *Geology of the Upper Centennial Valley, Beaverhead and Madison Counties, Montana* , Memoir 50, Montana Bureau of Mines and Geology.

RECOMMENDED SEED MIX for BROADCAST APPLICATION

| | | |
|--|----------------|-----|
| “Revenue or Primar” Slender Wheatgrass | | 6# |
| “Alta or Fawn” Tall Fescue | | 4# |
| Pubescent Wheatgrass | | 5# |
| “Bromar” Mountain Brome | | 3# |
| “Ruebens” Canada Bluegrass | | 3# |
| TOTAL | LBS./ACRE | 21# |
| | PURE LIVE SEED | |

**ATTACHMENT D
WATERSHED/FISHERIES ASSESSMENT
PATCHTOP TIMBER SALE**

Gary Frank, Resource Section Supervisor

4/29/03

Affected Environment

The proposed timber sale includes five harvest units within the Snowshoe Creek watershed, which is a tributary to Tepee Creek in the Red Rocks drainage basin. Snowshoe Creek drains a 7,407-acre watershed, but flows are often discontinuous due to subsurface flow. Due to its ephemeral nature, Snowshoe Creek does not support fish.

Access to the proposed harvest area will utilize existing county and private roads, with new road construction on State ownership.

The Snowshoe Creek watershed is mostly non-forested range and foothills. The forested region in the headwaters of the watershed is under State ownership and included in the project area. The lower portions of the watershed that are privately owned are used for agriculture and cattle grazing.

Water Quality

The Missouri River drainage including Snowshoe Creek is classified as B-1 in the Montana Surface Water Quality Standards. The B-1 classification is for multiple use waters suitable for domestic use after conventional treatment, growth and propagation of cold-water fisheries, associated aquatic life and wildlife, and agricultural and industrial uses. Among other criteria for B-1 waters, no increases are allowed above naturally occurring concentration of sediment, which will harm or prove detrimental to fish or wildlife. Naturally occurring includes conditions or materials present from runoff on developed land where all reasonable land, soil and water conservation practices have been applied. Reasonable practices include methods, measures or practices that protect present and reasonably anticipated beneficial uses. The State has adopted Forestry Best Management Practices through its Nonpoint Source Management Plan as the principle means of controlling nonpoint source pollution from silvicultural activities.

Snowshoe Creek is not listed in either the 1996 or 2002 303(d) list, which is list compiled by the Montana Department of Environmental Quality (DEQ) of water quality limited water bodies. Although Upper Red Rocks Lake, which Snowshoe Creek is a tributary, is listed as water quality limited by the DEQ.

Existing Conditions – Direct, Indirect, and Cumulative Impacts to Water Quality

Existing direct, indirect, and cumulative impacts to water quality and associated beneficial uses within the project area are primarily associated with historic disturbances, including livestock grazing and the existing road systems. These impacts include channel instability, flow alteration, reduced channel functions and accelerated rates of fine sediment delivery.

A coarse filter approach was used to screen the affected watershed to determine existing conditions and to evaluate the potential for cumulative watershed impacts due to increases in water yield. Recent aerial photography was utilized to estimate the percentage of drainage area forested and the extent of the existing timber harvests in watershed analysis area. The analysis also included field evaluations conducted to: 1) Determine the existing stream channel and riparian conditions, 2) identify potential in-channel sources of sediment, and 3) verify harvest information obtained from air photos.

Results of the coarse filter show that Snowshoe Creek watershed is approximately only 2.6% forested. Since this watershed is comprised of mostly non-forested range (97.4%) the effects of forested areas on stream water yield increases is very limited.

Detailed stream channel and sediment source surveys were completed on the State parcels within the affected watershed by a DNRC hydrologist and soil scientist. The purpose of these surveys was to identify and inventory all existing and potential sources of channel instability, erosion, and sediment delivery to the streams occurring on State land.

Access to the proposed harvest areas is provided by an existing road system located on mainly private land, and several miles of new road construction on State land. Many of the existing roads do not fully comply with Best Management Practices (BMPs) due to the steep grades and lack of drainage features. However, the location of the existing roads is far from the stream and therefore poses little threat to direct sediment delivery to Snowshoe Creek.

The portion of Snowshoe Creek that flows through the State parcels is spring fed and perennial. However, the stream is intermittent immediately downstream of the project area. The downstream reaches of Snowshoe Creek only contribute surface flows to Tepee Creek during ephemeral storm flow and snowmelt events. Snowshoe Creek does not support fish.

CHAPTER 4 – WATERSHED AND FISHERIES EFFECTS

This section addresses the anticipated direct, indirect, and cumulative effects of the proposed timber sale activities on water and fisheries resources within the affected watershed. The primary concern related to these resources is the potential impacts to the water quality of Snowshoe Creek.

Effects of No Action Alternative

Conditions under the no action alternative would be similar to existing conditions. Several segments of existing road within the affected watershed do not fully comply with Best Management Practices (BMPs) due to lack of drainage features and maintenance. Under no action, some of the existing road segments may contribute sediment to the stream because no improvements, mitigation, or remedial action measures would be implemented.

Effects of the Action Alternative

The following table summarizes the road and harvest activities proposed under the action alternative for the affected watershed.

| Watershed | Proposed Harvest | Proposed Road Construction | Proposed Stream Crossings |
|----------------|------------------|----------------------------|---------------------------|
| Snowshoe Creek | 126 acres | 2.57 miles | 3 |

Water Yield

A review of recent aerial photography indicates that only 2.6 % of the Snowshoe Creek watershed is forested. The remaining land area in the drainage consists of rangeland and non-forested mountain foothills. Therefore, the small amount of existing forest crown canopy contained in the watershed has very little influence on the timing, duration or magnitude of runoff produced from the watershed. The levels of potential increase in offsite water yield resulting from the proposed harvest and road/skid trail construction are expected to be negligible.

Cumulative impacts due to water yield increases in Snowshoe Creek are not anticipated to result from the actions proposed under the action alternative.

Sediment Yield

Land management activities such as road construction, maintenance and use, and timber harvest can potentially increase levels of fine sediment delivery to streams if not properly located, designed and mitigated. The primary risks to water quality that are associated with the proposed timber harvest are roads, especially roads located along or crossing streams. Risk of erosion and sediment delivery are highest when roads are located in

areas with inadequate buffering between streams and other drainage features, on erosive soils, or on steep and/or unstable slopes. A lack of periodic maintenance, inadequate surface drainage features, and use during wet periods or conditions may also contribute to higher risk.

All existing roads and proposed new road locations within and accessing the timber sale area have been reviewed by a DNRC hydrologist and soil scientist. The existing roads and proposed road locations were evaluated to determine both existing and potential risk of erosion and sources of sediment delivery to streams. Many of the existing roads within the proposed sale area do not fully comply with minimum BMPs. Several of these existing road segments will continue to be a source of future erosion and potential sediment delivery to streams unless improvements and mitigation measures are implemented.

Under the proposed action alternative, 6.1 miles of existing road would be improved to a standard that complies with minimum BMPs. These improvements are expected to result in reduced erosion and decreased potential for sediment delivery to streams or ephemeral draw features within the affected watershed.

Approximately 2.57 miles of new road would be constructed under the proposed action. Almost all of the proposed new road would be located on slope positions or in areas that do not have direct surface runoff or concentrated flow to streams or other bodies of water. These road segments are located on gentle to moderate slopes with soils that have low to moderate erosion hazard and well buffered from streams. There is low risk of sediment delivery to result from construction and use of these road segments. Furthermore, the new road would be closed after harvest activities were completed with barriers at select locations and slash where possible.

There are three new stream crossings associated with the proposed road construction. All of these crossings are located on intermittent tributaries to Snowshoe Creek. Only one of the proposed crossings is located on a stream channel that is contiguous with delivery to Snowshoe Creek. Some short-term increases in sediment delivery to Snowshoe Creek may occur during and/or shortly after the construction of this stream crossing. Application of BMPs, site-specific design and mitigation measures are expected to reduce erosion and potential sediment delivery to an acceptable level as defined under the Montana Water Quality Standards. Acceptable levels are defined as those conditions occurring where all reasonable land, soil, and water conservation practices have been applied. The levels of potential short-term sediment delivery expected to occur at this site is not high enough to seriously degrade water quality. The other two tributaries are discontinuous below the proposed road crossing sites. No impacts to downstream beneficial uses due to increased sediment delivery to Snowshoe Creek from any of these stream crossings is anticipated.

The other two stream crossings are located on small, unnamed, intermittent and discontinuous tributaries to Snowshoe Creek. There is low risk of sediment delivery to Snowshoe Creek occurring from these crossing sites.

All proposed harvest stands have also been reviewed and evaluated in the field by a DNRC hydrologist and soil scientist. Selection of appropriate harvest and yarding systems, operating seasons, limiting equipment operations to suitable slopes or designated trails and appropriate ground conditions, and implementation of appropriate BMPs and mitigation measures will be used to reduce the risk and severity of soil erosion and potential sediment delivery to streams and ephemeral drainage features. Streamside management zones and equipment restriction zones will be designed to effectively buffer streams and other ephemeral drainage features from harvest activities. No sediment delivery to streams is expected to result from timber harvest operations.

Fisheries

Snowshoe Creek does not support a fishery. The proposed actions are not expected to harm aquatic habitat since streamside management zones would be maintained, expected water yield impacts are very low, and road construction would follow BMPs to reduce the risk of sediment delivery to the stream. No impacts to downstream fisheries or fish habitat in Tepee Creek, or Red Rocks Lake are anticipated.

In conclusion, no substantive direct, indirect, or cumulative impacts to water quality, and no impacts to downstream beneficial uses are expected to result from the proposed action alternative.

References

MDEQ, 2000. Year 2002 Montana 303(d) List, Montana Department of Environmental Quality, Helena, MT.

MDEQ, 1996. Year 1996 Montana 303(d) List, Montana Department of Environmental Quality, Helena, MT.

MDFWP, 2002. Montana Fish Information System Database, Unpublished data (Internet).

ATTACHMENT E SNOWSHOE SALVAGE II TIMBER PERMIT

CHECKLIST FOR ENDANGERED, THREATENED AND SENSITIVE SPEICES
Pertains to Section II. 9. of the DS-252 DNRC Environmental Checklist
CENTRAL LAND OFFICE

Prepared by Chuck Barone

August 29, 2010

| 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 is situated approximately 17 miles west of the Greater Yellowstone Ecosystem Grizzly Bear Recovery Zone. In recent years, grizzly bears have been documented ranging greater distances outside of the Yellowstone Ecosystem. Grizzly bears have occasionally been documented in the vicinity of the proposed project area and the proposed project area lies within a zone considered as occupied habitat (Interagency Occupied Habitat Map, September 2002). As such, the lands in the general vicinity of Red Rocks Lakes were identified as those where one would reasonably expect to find grizzly bear use occurring during most years. DNRC is not aware of any specific observations of grizzly bears associated with the proposed project area; however, periodic or transient use is possible. Riparian habitats preferred by bears do not occur within the proposed project area. The dry draws support relatively low levels of hiding cover and human access levels are presently moderate. Present hiding cover is composed predominately of Douglas-fir within the proposed harvest units and ranges from low to moderate due to the more open nature of these stands. Heavier cover is found in scattered lodgepole pine stands where Douglas-fir is not well represented. The value of habitat contained in the proposed project area overall is low for grizzly bears as forest patches are isolated from other suitable habitat, habitats are relatively dry, and desirable bear foods are not prevalent. No new road would be constructed; and any existing abandoned road reopened and skid trails developed to accomplish harvest objectives would be closed with slash, debris or barriers. Proposed project activities would not occur during the spring period. Harvest and road opening/closure activities would be short-term in nature. Should contractors camp on site during project activities, food and garbage would be contained in a bear resistant manner (i.e., in a vehicle, hard sided camper or building, etc.). The potential for any</p> |

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| | <p>measurable increases in bear-human conflicts following the project activities are expected to be low. Adverse direct, indirect and cumulative impacts to 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 >5,000 ft. elev.</p> | <p>[N] The proposed project area is located along the fringes of preferred lynx habitat. The majority of the habitat found in Sections 3, 4, 5 & 9, approximately 128 acres (91%) would be categorized as "other" and 13 acres (9%) would be categorized as mature foraging. There is no young foraging or denning habitat within the State parcels. Of the ~141 acres of potential lynx habitat (other and mature foraging) on the State parcels, ~105 acres of "other" habitat and ~10 acres of mature foraging are proposed for harvest. This would convert ~ 50 of these acres to temporary non-habitat. Additionally, ~50 acres of currently classified temporary non-habitat is proposed for harvest. Microsites relatively high in coarse woody debris abundance found in subalpine fir habitat types preferred by lynx do occur within the proposed project area but are limited. Potential for denning is poor due to the lack of suitable lynx foraging habitat within the proposed project area. Dense sapling stands and dense mature forest containing abundant forest cover at the ground level are also limited within the proposed project area. 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> |
| <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 Yellowstone Nonessential Experimental Area for gray wolves. The nearest packs are the Centennial and Horn Mtn. packs. Individuals from these packs or transients from other packs could occasionally use portions of the proposed project area; however, due to the size, nature, duration and location of the proposed project, activities associated with this proposal are not expected to effect wolves or recovery efforts. Should a new den be located within one mile of the proposed 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 align="center">DNRC Sensitive Species</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>Bald Eagle (<i>Haliaeetus leucocephalus</i>) Habitat: late-successional forest <1 mile from open water</p> | <p>[N] Bald Eagles have been documented within the quarter latilong (L47A) that encompasses the proposed project area (Skaar 1996, MNHP 2010). No nesting habitat occurs on, or within one mile of the proposed project area, and the project area occurs outside of any bald eagle nesting home range. Thus, 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>[Y] Black-backed woodpeckers have not been documented within the quarter latilong (L47A) that encompasses the proposed project area (Skaar 1996, MNHP 2010). However, stands found within the proposed project area are presently experiencing insect activity and could attract birds. No recent burns (≤ 5 years old) have occurred within the State tracts or adjoining sections. Due to the small size, location and short duration of this proposed project only minor potential for direct, indirect or cumulative effects to black-backed woodpeckers would be expected to occur.</p> |
| <p>Black-tailed Prairie Dog (<i>Cynomys ludovicianus</i>) Habitat: grasslands, short-grass prairie, sagebrush semi-desert</p> | <p>[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.</p> |
| <p>Flammulated Owl (<i>Otus flammeolus</i>) Habitat: late-successional ponderosa pine and Douglas-fir forest</p> | <p>[N] Flammulated owls have not been documented within the quarter latilong (L47A) that the proposed project area lies within (Skaar 1996, MNHP 2010). The parcel involved in the proposed project maintains an elevation of 7300-8300 feet. Flammulated Owls have been found in warm, dry Douglas-fir cover types. The parcels involved in this project have 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.</p> |
| <p>Sage Grouse (<i>Centrocercus urophasianus</i>) Habitat: sagebrush semi-desert</p> | <p>[N] Sage Grouse have been documented in the quarter latilong (L36C) that encompasses the proposed project area (Skaar 1996, MNHP 2010). Sagebrush semi-desert habitats suitable for use by Sage Grouse do occur within one mile of the project area. The area surrounding the proposed project has been identified as a core and lek area. No leks have been identified within one mile of the project area. A lek has been identified near the haul route along the county road segment. 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</p> |

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|---|--|
| | 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 been documented in the quarter latilong (L47A) that encompasses the proposed project area (Skaar 1996, MNHP 2010). 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 in the quarter latilong (L47A) that encompasses the proposed project area (Skaar 1996, MNHP 2010). 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. Thus, no impacts to bog lemmings would be expected to occur as a result of this project. |
| Peregrine Falcon (<i>Falco peregrinus</i>) Habitat: cliff features near open foraging areas and/or wetlands | [N] Peregrine Falcons have been documented within the quarter latilong (L47A) that encompasses the proposed project area (Skaar 1996, MNHP 2010). No cliff features suitable for use by nesting peregrine falcons are known to occur within 1 mile of the project area. No direct, indirect or cumulative effects associated with this project are anticipated. |
| Pileated Woodpecker (<i>Dryocopus pileatus</i>) Habitat: late-successional ponderosa pine and larch-fir forest | [N] Pileated woodpeckers have not been documented within the quarter latilong (L47A) that encompasses the proposed project area (Skaar 1996, MNHP 2010). The project area is poorly suited for use by pileated woodpeckers. Due to the small size, location and short duration of this proposed project and 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. |
| Townsend's Big-Eared Bat (<i>Plecotus townsendii</i>) Habitat: caves, caverns, old mines | [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. |

*Skaar, P.D. 1996. Montana bird distribution, fifth edition. Montana National Heritage Program 2010. National Heritage Tracker.

ATTACHMENT F

Vegetative Analysis/Stand Prescription White Line Salvage Timber Permit

The State parcel is located along the lower reach of White Creek on the southern edge of the Pioneer Mountains. Slopes range from 10-65% with an elevation range of 6600-7800 feet. No previous harvesting has occurred within the State parcels. Harvesting has occurred on the private lands to the south of the Section 16 over the past 20 years. The State parcels have ~512 forested acres which are dominated by Douglas-fir. The cover type is Douglas-fir and the habitat type is Douglas-fir/Idaho Fescue (Psmc/Feid). Forested stands are included in fire group five with Douglas-fir the indicated climax species. The fire disturbance regime was likely low to moderate severity fires maintaining many mature stands in an open, park-like condition. 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 heavy infestations of Douglas fir beetle and Spruce Budworm and a higher susceptibility to fire. Soils in Section 9 are derived from granitic parent material while soils in Section 16 are derived from argillite parent material which is more resistant than the granitics. The toe slopes and open sage/grasslands are a complex of coarse alluvial soils and tertiary valley fill deposits with higher clay content.

Unit 1 (7.8 ac/25 MBF), Unit 2 (18.0 ac/79 MBF), Unit 3 (3 ac/10 MBF), Unit 4 (5 ac/25 MBF), Unit 5 (6.0 ac/20 MBF) - Stands are composed of Douglas fir sawtimber and submerchantable material. Scattered individuals and small clumps (<5 acres) of old relic Douglas-fir trees do occur within these stands. Unit 2 has a core area of ~7 acres that would meet the "old growth" definition. This core area has been infested with bark beetle and the scattered old relic trees in the other stands have been infested or are "at-risk" of being infested. Overall health and growth of the stands are poor. The stands are overstocked and suppressed and have heavy infestations of Douglas fir beetle and Spruce Budworm. Overall, live Douglas fir have poor to fair crown ratios. Dominate trees are 60-70' and co-dominates are 40-55' with an age range of 100-200 years. Yield capacity is 30 cu. ft/acre. Regeneration is light and understory vegetation is sparse. Coarse woody debris is light. Heavy livestock use in all stands.

Treatments for Douglas-fir cover types would target dead, dying and at-risk trees for removal. While the younger age classes would be favored for the residual stand, all age classes have been affected with insect infestations. Douglas fir beetle infesting the larger trees and Spruce budworm heavily defoliating the small to medium sized sawtimber and all seedling/sapling size trees. 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, overall stand density would be reduced by 55-70% of the merchantable volume, targeting trees exhibiting overstocked/suppressed conditions, utilizing group selection/selection harvests. This stand density reduction would be concentrated in areas of the stands containing younger-aged/small to medium sized trees while retaining some of the healthy older trees, if available and applicable. 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.

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; maintain lodgepole pine and Douglas-fir cover types while maintaining a semblance of historic stand conditions; and promote existing aspen stands.

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.

Retain all fine litter and 5-10 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 ~8.8% of the total forested acres within the State parcels. Harvesting an estimated 350 MBF of timber would alter the forest cover on approximately 45 acres. The proposed levels of harvest and subsequent reduction in forest canopy would be similar or less than 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 5-10 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, new construction would have adequate drainage provided and 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.

ATTACHMENT G
PATCHTOP TIMBER SALE
WILDLIFE HABITAT ASSESSMENT

Ross Baty, Wildlife Biologist

June 19, 2003

Field Review Date: September 19, 2002

Project Area Legals: T13S, R2W, Secs. 3, 4, 5, 9 and 10.

Cover Types: The predominant cover type is Douglas-fir (~70%) with sub-components of Engelmann spruce (~29%) and subalpine fir (~1%). Traces of limber pine and lodgepole pine are also present in these stands. Habitat types are predominantly Abla/Arco on northerly aspects and Psme/Cage on drier southerly slopes. Several small aspen patches are scattered throughout the coniferous forest patches ranging from about 0.5 to 2 acres. No rare or unique biological communities were observed during the field review.

Forest Structure and Attributes: Coniferous stands generally possess two canopy levels and several tree age classes are present. The mature canopy (~80 to 150 years old) is generally continuous with scattered relic dominants. Old growth patches >5 acres are present, particularly in harvest units 4 and 5. Six trees were bored for age estimation during the field review. Their diameters and ages were as follows: Douglas-fir - 8 in dbh = 102 yrs.; Douglas-fir - 12 in dbh = 126 yrs.; Douglas-fir - 13 in dbh = 78 yrs.; Douglas-fir - 21 in dbh = 153 yrs.; Douglas-fir - 36 in dbh = 283 yrs.; Engelmann spruce - 20 in dbh = 118 yrs.

Extremely dense stand conditions exist within the core of mature stands as a result of forest succession. In these areas sight distances range from ~20 to 50 feet. Dense patches of pole-sized and small saw timber greatly reduce sight distances. Within mature stands overall, sight distances average about 100 feet (visual estimation). Areas of younger forest along mature forest fringes are open and park-like -- likely a result of forest encroachment into grassland communities.

Understory Vegetation: Common understory plant species observed include: wild strawberry, *Potentilla* spp., common yarrow, boreal gallium, *Lupinus* spp., *Antenaria* spp., sticky geranium, arnica, western meadowrue, wild raspberry, other *Ribes* spp., silver sage, big sagebrush, snowberry, creeping juniper, Oregon grape, *Bromus* spp., basin wild rye, Kentucky bluegrass, timothy, *Festuca* spp., pine grass, *Agropyron* spp., *Agrostis* spp., and elk sedge. Little herbaceous or shrub understory vegetation occurs in forested stands with dense overstory canopy closure.

Fire History/Past Disturbance: Most old Douglas-fir trees possess fire scars that were likely caused by frequent, historic fire events of relatively low intensity. Where old Douglas-fir relics occur in these stands, they are positioned on a ~ 40 foot spacing.

Existing Douglas-fir, subalpine fir, and Engelmann spruce trees that are less than 150 years old appear to represent forest encroachment due to forest succession and lack of fire disturbance during the past century. Stands in this area were likely naturally fragmented, open-park type communities that were maintained by frequent fire events.

A number of old stumps were observed in these stands. Thus, some past logging occurred. The estimated time of logging was ~80 years ago. Evidence from observations of stumps indicated that many of these trees had been cut with axes. Evidence of relatively heavy grazing by livestock was also present within the project area.

Snags and Coarse Woody Debris: Large Douglas-fir trees from 21 to 40 inches dbh are relatively (>5/acre) abundant in mature stands that are suitable for snag recruitment trees. Snags less than 18 inches dbh range in abundance from ~1 to 5 per acre, and snags >21 inches dbh are present at ~1 per acre. Most of the large existing snags are >30 inches dbh.

Coarse woody debris amounts range from ~2 to 40 tons per acre, which is comprised of 3 to 30 inch diameter material. The average amount of coarse woody debris overall for mature stands is about 25 tons/acre and the average diameter of the material is about 12 inches. Woody debris tends to be more sparse within younger portions of the stands.

Analysis Areas: For this analysis, the project area is considered the entirety of section 4, and the small forested portions of sections 3, 5, 9, and 10 (T13S, R2W). The eight sections of land surrounding section 4 were considered as the cumulative effects analysis area for the majority of effects determinations for wildlife species of concern. If divergence from this analysis area was deemed appropriate for a particular species or concern it was described in the existing condition narrative for that issue.

Threatened Species

Bald Eagle: Forested habitat within the project area occurs >4 miles from bodies of water of suitable size for use by nesting or perching eagles (ie., Lower and Upper Red Rocks Lakes). Thus, habitat found within the project area is too distant to provide ample foraging opportunities and it is not suitable. Impacts to bald eagles would not be expected as a result of the alternatives considered.

Grizzly Bear: The project area is situated approximately 17 miles west of the Greater Yellowstone Ecosystem Grizzly Bear Recovery Zone. In recent years, grizzly bears have been documented ranging greater distances outside of the Yellowstone Ecosystem. Grizzly bears have occasionally been documented in the vicinity of the project area and the project area lies within a zone considered as occupied by an interagency Grizzly Bear Study Team (interagency map dated September 2002). As such, the lands in the general vicinity of Red Rocks Lakes were identified as those where one would reasonably expect to find grizzly bear use occurring during most years -- as of 2002. DNRC is not aware of any specific observations of grizzly bears associated with the project area, however, periodic or transient use is possible.

The project area is comprised of approximately 200 acres of coniferous-forest habitat and 440 acres of grassland habitat (dot grid estimation). Within the nine-section cumulative effects analysis area centered about the project area (5,760 acres), approximately 460 acres (8%) of coniferous forest is present in relatively small patches (<100 acres). Hiding cover in mature forest stands is fair to good with sight distances ranging from ~20 to 300 feet. A small creek (Snowshoe Creek) runs diagonally through section 4, which possesses limited hiding cover and visual screening. The value of habitat contained in the project area overall is low for grizzly bears as forest patches are isolated from other suitable habitat, habitats are relatively dry, and desirable bear foods are not prevalent.

Effects (No Action) - Under this alternative, vegetation would not be altered as a result of forest management activities and no additional road construction or disturbance would occur. No additional risk to bears would occur under this alternative.

Effects (Action) - Under this alternative, proposed harvest operations that could occur during a portion of the non-denning season (June 15 to October 31) would result in minor direct, indirect or cumulative risk to bears, should they occur in the area. Greatest risk would be for direct displacement of bears occurring in the project vicinity into surrounding areas of lesser disturbance. However, the likelihood of bears spending appreciable time in the project area or cumulative effects analysis area is low due to relatively poor habitat quality present. The project would be completed within two operating seasons, with the majority of logging activity occurring within one season. Risk of any additional indirect effects associated with hiding cover reduction on 129 acres would be minor. Construction of ~2.6 miles of additional roads would cumulatively increase existing road densities on the project area and surrounding ownerships in the vicinity. However, these roads would be physically closed upon project completion. Thus, long-term security for bears would be minimally influenced. Portions of stands within riparian areas will not be entered, and moderately to densely-stocked mature patches will be maintained where opportunities exist along Snowshoe Creek to provide for visual screening. Cattle grazing occurs on the project area and surrounding private ownerships, which represents a minor existing cumulative risk to bears, should they occasionally use the project area or surrounding lands during periods of proposed activity.

Gray Wolf: The project area lies within the Yellowstone Nonessential Experimental Area for gray wolves. Parcels involved in the project are situated at the southernmost end of the Freezeout pack's home range documented for 2001 and 2002. Individuals from this pack or transients from other packs could occasionally use portions of the project area or cumulative effects analysis area. However, due to the size, nature, duration, and location of the proposed harvest, neither of the alternatives considered (No Action and Action) would be expected to directly, indirectly, or cumulatively effect wolves or recovery efforts (J. Fontaine, USFWS Biologist, Pers. Comm. 6/17/03). Should a new den be located within one mile of any proposed harvest units, 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 harvest activity.

Canada Lynx: Lynx habitat is present in the Gravelly Mountain Range, however, the project area contains a small amount of forested habitat (~200 acres), which is relatively isolated from other sizable expanses of suitable lynx habitat. Other suitable habitat patches greater than 100 acres in size occur on National Forest lands approximately 1.5 miles to the north of forested stands found within the project area. However, within the nine-section cumulative effects analysis area comprising 5,760 acres, approximately 460 acres (8%) of coniferous forest occurs in isolated, small patches (<100 acres). Microsites relatively high in coarse woody debris abundance that occur in subalpine fir habitat types preferred by lynx occur within the project area. However, potential for denning is poor due to the lack of suitable lynx foraging habitat within the cumulative effects analysis area. Within the cumulative effects analysis area overall, lynx habitat is marginal due to the lack of desirable habitat conditions for lynx and their primary prey -- snowshoe hares. Due to the generally low suitability of habitat in the project area and cumulative effects analysis area, direct, indirect or cumulative impacts to lynx would not be expected to occur as a result of either of the alternatives considered.

CHECKLIST FOR DNRC SENSITIVE SPECIES

| DNRC Sensitive 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>Flammulated Owl (<i>Otus flammeolus</i>) Habitat: late-successional ponderosa pine and Doug.-fir forest</p> | <p>[N] Flammulated owls have not been documented in the latilong (L47) that the project area lies within (Skaar 1996). The parcel involved in this project maintains elevations that range from about 7,400-8,000 feet and cool, dry Douglas-fir cover types characteristic of this area are not preferred habitat for flammulated owls. Direct, indirect and cumulative effects to flammulated owls would not be expected to occur under the alternatives considered.</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 been documented within the latilong (L47) that encompasses the project area (Skaar 1996). However, stands found within the project area are not presently experiencing substantial insect activity, and no recent burns (≤5 years old) occur within the project area or cumulative effects analysis area. Thus, foraging and nesting opportunities are presently limited. No</p> |

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| | direct, indirect or cumulative effects to black-backed woodpeckers would be expected to occur as a result of this project. |
| Pileated Woodpecker (<i>Dryocopus pileatus</i>) Habitat: late-successional ponderosa pine and larch-fir forest | [N] One transient pileated woodpecker observation was reported within the quarter latilong (L47A) that encompasses the project area in 1995 (Skaar 1996, MNHP 2003). However, the project area is poorly suited for use by pileated woodpeckers due to limited habitat availability. As suitable habitat is not present in the project area or cumulative effects analysis area, no impacts to pileated woodpeckers would be expected to occur 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 project area. Thus, no impacts to bog lemmings would be expected to occur as a result of this project. |
| Harlequin Duck (<i>Histrionicus histrionicus</i>) Habitat: white-water streams, boulder and cobble substrates | [N] No high gradient streams suitable for use by harlequins occur within the project area or cumulative effects analysis area. No impacts to harlequin ducks would be expected to occur as a result of this project. |
| Peregrine Falcon (<i>Falco peregrinus</i>) Habitat: cliff features near open foraging areas and/or wetlands | [N] A breeding pair of peregrine falcons was documented within the quarter latilong (L47A) that encompasses the project area in 1995 (MNHP 2002). However, no cliff features suitable for use by nesting peregrine falcons occur within 1 mile of the project area. Thus, no direct, indirect or cumulative effects associated with this project are anticipated. |
| Mountain Plover (<i>Charadrius montanus</i>) Habitat: short-grass prairie, alkaline flats, prairie dog towns | [N] Mountain plovers have not been documented in the latilong (L47) that the project area lies within (Skaar 1996, MNHP 2003). No short-grass prairie or prairie dog towns occur on, or within one mile of the project area. No impacts to mountain plovers are expected as a result of this project. |
| Townsend's Big-Eared Bat (<i>Plecotus townsendii</i>) Habitat: caves, caverns, old mines | [N] The DNRC is unaware of any mines or caves within the project area or close vicinity that would be suitable for use by Townsend's big-eared bats. Thus, impacts to Townsend's big-eared bats are not |

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| | anticipated as a result of this project. |
| Black-tailed Prairie Dog (<i>Cynomys ludovicianus</i>) Habitat: grasslands, short-grass prairie, sagebrush semi-desert | [N] The project area is situated outside of the distribution of black-tailed prairie dogs. Thus, impacts to black-tailed prairie dogs are not anticipated. |
| Sage Grouse (<i>Centrocercus urophasianus</i>) Habitat: sagebrush semi-desert | [N] Breeding sage grouse have been documented in the latilong (L47) that the project area lies within (Skaar 1996). Sage grouse occur within the cumulative effects analysis area, at least on a seasonal basis (A. Martinell, Private Landowner, Pers. Comm. June 2003). However, no sage grouse breeding leks are known to occur within the cumulative effects analysis area or project area. 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., June 15), and preferred sagebrush habitat would not be appreciably altered. Impacts to sage grouse would not be anticipated. |

Fragmentation and Corridors

Issue: There is a concern that road construction and timber harvest associated with this proposal may increase fragmentation and alter corridors that may adversely influence wildlife.

Existing Condition

Lands within the project area are comprised of foothills with slopes ranging from ~0-65%. Ridge tops are generally broad and gentle. Habitats are primarily grassland with small forest patches and interspersed rock outcrops, parks and meadows. Elevations in this parcel range from about 7,400 to 8000 feet.

The abundance of old trees with fire scars found on the project area indicates that founding trees and stands were likely influenced by relatively frequent fire events historically. The presence and absence of forest and non-forest patches would have been dynamic, shifting through time. Periodically, sites where conifers presently occur would have appeared more as non-forest meadows than forest. Surviving individual trees and clumps of trees in cool areas and gentle ridge tops served as seed sources that would have promoted the periodic regeneration of young-aged stands, that may or may not have survived subsequent fire events. Historic fire events likely contributed to a naturally

fragmented patchy distribution of forest stands at the landscape scale. Historic fires, climate and land forms have contributed to the existing patchy distribution of dense, mature forest habitat. Existing forest cover exhibits a low level of habitat connectivity across a network of sparse to densely forested stringers and habitat patches. No known wildlife corridors of notable importance occur within the project or analysis area.

Effects (No Action)- Under the no action alternative, habitat conditions would not change in the near term from their current condition. Forested habitat patches within the project area would remain at their current size and shape and offer the greatest level of habitat security and lower proportional amounts of edge habitat. Wildlife species adapted to use larger patches of mature forest would be expected to benefit from this alternative, albeit slightly as existing forest patches are inherently small. Over time, influences of forest succession would be expected to decrease habitat availability for species that are adapted to thrive in open forest and edge habitats, or for those that use such habitats for meeting their life requisites.

Effects (Action)- Under the action alternative, harvest would occur in five harvest units totaling 129 acres. Thus, an increase in the amount of open, park-like forest would occur in harvested areas. Species of wildlife preferring less dense forest conditions would benefit from creation of additional habitat, whereas species adversely affected by decreased forest density would not. Due to the small number of acres harvested, expected effects would be minor. Endemic species that occur in this area would likely not be affected appreciably, as most likely evolved with naturally fragmented forest conditions, created by natural disturbance events. The proposed 2.6-miles of constructed road would have minimal expected adverse impact on fragmentation of habitat or increases in human activity as it would primarily be situated in grassland habitat and it would be physically obstructed and effectively closed upon project completion. Cumulative fragmentation effects associated with this project would be minor as other appreciable amounts of harvestable timber are absent within the cumulative effects analysis area. Average patch size of existing forested acreage would be reduced little within the project area as the general configuration of patches would be retained. Within-stand density and forest canopy structure, however, would be reduced. Cumulative effects related to the proposed road construction on the project area would be minimal due to the small area affected and partial closure that is planned upon project completion. No known wildlife corridors of notable importance would be affected by the proposed activities.

Elk Security

Issue: The concern was expressed that timber harvesting and road building associated with this project could have adverse on effects elk security, and bull elk vulnerability, thus reducing hunter opportunity.

Existing Condition

Timber harvest can increase elk vulnerability by changing the size, structure, juxtaposition and accessibility of areas that provide security during hunting season (Hillis

et al. 1991). As visibility and accessibility increase within forested landscapes, elk have a greater probability of being observed and subsequently harvested by hunters. Because the cow segment of the harvest is normally regulated carefully, primary concerns are related to substantial reduction of the bull segment and subsequent decrease in hunter opportunity. The presence of fewer mature bulls early in the hunting season, reduces the odds of any given hunter to see or harvest such an animal throughout the remainder of the 6-week season. All forested stands within the project area and cumulative effects analysis area do not meet the Hillis et al. (1991) definition of security cover, due to their small size and accessibility by motorized vehicles.

The project area lies within DFWP Hunting district 327 and it occurs in important fall habitat for elk (B. Brannon, DFWP, Letter, October 30, 2002). Elk use has been documented in the project area (Hamlin and Ross 2002). Within this Elk Management Unit (EMU), DFWP has a stated habitat objective (DFWP 1992) to..."Work with land management agencies to maintain fall elk security so that elk harvest is distributed throughout the hunting season with no more than 40-45% of harvested bulls taken during the first week of the general season." This objective is stated to promote hunter opportunity, which is considered an important aspect of DFWP's mission (DFWP 1992:4).

Within the Gravellys EMU and Hunting District 327, the total acreage of cover patches that are greater than 247 acres was estimated to be 485,931 and 162,348 acres respectively (converted from data presented in Hamlin and Ross 2002:171). However, cover patches greater than 247 acres make up only 27.8% of the Gravellys EMU administrative area and 36% of Hunting District 327 (Hamlin and Ross 2002:171).

In the Gravellys EMU, the three-year average for the percentage of the bull harvest occurring during the first week of the general season was 54% for years 1999, 2000, 2001 (B. Brannon, DFWP, Letter and data, October 30, 2002). Thus, bull harvest exceeded DFWP objective for this area. Specifically, in hunting district 327, the three-year average for bull harvest during the first week of the general hunting season was 62%. Terrain in this hunting district is open and gentle, which allows relatively easy access to motorized vehicles. Access considerations coupled with low hiding and security cover levels in this Hunting District offer challenges to managing elk populations and hunters (Hamlin and Ross 2002). Additional reductions in hiding cover and/or security habitat may influence achievement of DFWP's harvest goal for this Hunting District and EMU.

Effects (No Action)- Under this alternative, no immediate change from the present condition would occur. Hiding cover and access would remain essentially unchanged. Over time, and in the absence of wildfires, conifer cover would continue to mature and develop into dense forest, further increasing amounts of hiding cover and size of potential security blocks. The extent to which forested areas such as those occurring on the project area may serve as sink source habitats (Pullium 1988) for elk is unknown. Given available local information, selection of this alternative is presumed to provide the lowest risk of increasing elk vulnerability over the short term and over the long term (>20 years) in the absence of wildfires or other natural disturbance agents. Subsequently, it is

expected that bull elk survival and hunter opportunity would have the least risk of being impacted under this alternative.

Effects (Action)- Under the action alternative, ~ 129 acres of hiding cover would be altered, reducing that which would be available to elk during the general hunting season. In conjunction with harvest activities, the proposed new road segments would be physically closed and obstructed to minimize the potential for increased motorized access from existing levels. This would likely have a minor influence on mitigating elk vulnerability within the cumulative effects analysis area, due to the high inherent accessibility of the open terrain.

Visual screening properties of hiding cover would change considerably in all harvest units. Following proposed harvest, visual obstruction would be provided by smaller patches and stringers of mature and sub merchantable trees than the larger, dense patches, which currently exist in the project area. Leave trees will be retained in a clumped distribution to minimize sight distance where opportunities exist. Mature forest could have hiding cover value reduced by up to 90% in some treated portions. Across all stands, basal area of mature trees would be reduced by approximately 50%. Hiding cover value would likely be reduced by a similar proportion. Connectivity of forest patches to other nearby mature forest, would remain poor as stands in the project area are naturally isolated. Reducing 129 acres of hiding cover would potentially represent a 28% cumulative reduction within the cumulative effects analysis area (129/460 ac total forest cover = 28%). Thus, low to moderate proportional increases in elk vulnerability could be expected for elk that use this area.

Within the context of Hunting District 327 and the Gravellys EMU, cover removal associated with this project would result in a minor adverse contribution to cumulative effects, but would be additive to other timber harvests occurring within these administrative boundaries on state trust lands and other ownerships. This could result to some degree, in increasing the difficulty that DFWP could have in meeting their Elk Plan objective for maintaining bull harvest below 40-45% during the first week of the general big game hunting season. Effects associated with this proposal would likely be difficult to detect in the population at the Hunting District level. However, over a broader cumulative acreage considered at the EMU scale, risk of hunter harvest rate increases during the first week of the general hunting season is present until recovery of hiding cover and/or security cover can occur. Recovery of forest cover in this area can take several decades to a century, depending upon growing conditions of a site and the intensity of the treatment implemented. Other DNRC timber sales within the Gravellys EMU that have been proposed or have occurred during the last 10 years are listed in Table 1. Any potential direct disturbance or displacement of elk due to harvest operations would be minor and of short duration (ie., two operating seasons with the majority of logging activity occurring within one season.).

Table 1. DNRC timber sales within the Gravellys EMU from 1993 to 2003.

| <i>Timber Sale Name</i> | <i>Acres¹</i> | <i>Status</i> | <i>Hunting District</i> |
|--------------------------------------|--------------------------|---------------|-------------------------|
| Long Cottonwood | 376 | Proposed | 325 |
| Alaska Basin | 302 | Proposed | 327 |
| Teepee Creek | 238 | Completed | 327 |
| West/Middle Fork Black-Tail Creek | 1,100 | Ongoing | 325 |
| Brown's Gulch | 60 | Ongoing | 330 |
| Idaho Creek | 82 | Completed | 330 |
| Trout Creek | 87 | Ongoing | 322 |
| Basin Creek | 126 | Proposed | 325 |
| Total | 2,371 | N/A | N/A |

¹ Acreages are approximate.

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